

# AMENDMENT INSTRUCTIONS

## AMENDMENT CHANGES

1. Changes to any specification section will result in the entire section being reissued, with the amendment changes shown underlined and the amendment number (i.e. #2) inserted in the left-hand margin to the left of the change or to the left of the paragraph number.
2. Each reissued section or new section will bear the following notation in the header, on every page:  
  
“ACCOMPANYING AMENDMENT NO. 000\_ TO SOLICITATION NO. DACA63-97-B-00\_\_.”
3. New sections will be reissued with the amendment header above only.
4. Changes within a paragraph: The paragraph will be rewritten to the corrected version, with the changed phrases or sentences underlined.
5. Deletions:
  - (1) Paragraphs deleted by the amendment are indicated by the word “DELETED” next to the paragraph number. The previous paragraph text will be gone.
  - (2) Deleted lines, such as a deleted reference publication: The publication will be deleted from the REFERENCE paragraph but the space on the page where the publication was will be replaced by blank line with the “#2” in the left-hand margin.
  - (3) Deleted sentences are replaced by a blank line with a period at the end ( \_\_\_\_\_).
6. Changes within a revised section can be located by reviewing the entire section or by searching for the “#” sign. On the Acrobat Reader screen, click on the binocular icon, type “#” or “Am#\_” in the FIND WHAT space, then click on the FIND button.
7. Drawings: Any changes to a drawing sheet will result in the sheet being reissued. Changes will be marked by delta (▲) symbols, enclosing the amendment number or letter inside.

2. AMENDMENT/MODIFICATION NO. 0003	3. EFFECTIVE DATE 2 FEB 98	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. <i>(If applicable)</i>
6. ISSUED BY  Department of the Army Corps of Engineers Fort Worth District		7. ADMINISTERED BY <i>(If other than Item 6)</i>	

8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>	(√)	9A. AMENDMENT OF SOLICITATION NO. DACA63-98-R-0004
	X	9B. DATED <i>(SEE ITEM 11)</i> 22 DECEMBER 1997
		10A. MODIFICATION OF CONTRACTS/ORDER NO.
		10B. DATED <i>(SEE ITEM 13)</i>

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

(√)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

**E. IMPORTANT:** Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*  
 Information Available to Bidders, Wage Rates, General Requirements, Technical Design and Construction Criteria and Attachments for REQUEST FOR PROPOSALS FOR DESIGN/BUILD ADDITION/ALTERATION YAD/ TEXTILE LABORATORY, BROOKS AIR FORCE BASE, SAN ANTONIO, TEXAS, are amended as follows:

See Continuation Sheet.

NOTE: Receipt of Proposal date is 13 February 1998, 4 p.m., CST, as previously announced.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>	16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i>
15B. CONTRACTOR/OFFEROR  <i>(Signature of person authorized to sign)</i>	16B. UNITED STATES OF AMERICA BY <i>(Signature of Contracting Officer)</i>
15C. DATE SIGNED	16C. DATE SIGNED

Item 14. Continued.

a. Information Available To Bidders and Wage Rates.

(1) The following listed accompanying new section, bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004" shall be added to the specifications and add to the Table of Contents:

<u>Section No.</u>	<u>Title</u>
00200	INFORMATION AVAILABLE TO BIDDERS

(2) The following listed section shall be voided and the accompanying new section of the same title and number, bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004" shall be substituted therefor:

<u>Section No.</u>	<u>Title</u>
00710	WAGE RATES

b. Division 1 - General Requirements.

(1) The following listed sections shall be voided and the accompanying new sections of the same title and number, each bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004" shall be substituted therefor:

<u>Section No.</u>	<u>Title</u>
01300	SUBMITTALS FOR DESIGN
01302	DESIGN DOCUMENT REQUIREMENTS
01330	SUBMITTAL PROCEDURES (DURING CONSTRUCTION)

c. Division 2 - Technical Design and Construction Criteria.

(1) The following listed section shall be voided and the accompanying new section of the same title and number, bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004" shall be substituted therefor:

<u>Section No.</u>	<u>Title</u>
02300	ARCHITECTURAL DESIGN REQUIREMENTS

d. Division 3 - Attachments.

(1) The following listed accompanying new attachment, bearing the notation "ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004" shall be added and add to the Table of Contents:

<u>Attachment No.</u>	<u>Title</u>
10	WORK STATIONS

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

SECTION 00200

INFORMATION AVAILABLE TO BIDDERS

**PART 1 GENERAL**

**1.1 RESPONSES TO BIDDER COMMENTS**

The following responses to bidders' questions are furnished for bidder information only, and do not alter the solicitation's drawings or specifications unless changes to specific drawings or specifications are issued by an amendment. This Section and these responses will not become a part of the contract if and when a contract is awarded.

**PART 2 PRODUCTS (Not Used)**

**PART 3 EXECUTION (Not Used)**

- - oOo - -

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

**ATTACHMENT TO SECTION 00200**

Questions and Answers

1. 02500 1.8.1 & 1.8.2 Please clarify where the foundation loading criteria given in these two paragraphs apply.

02500 1.8.1 & 1.8.2

1.8.1. This loading criteria applies to both laboratory areas (Scientific Testing Lab and Life Science Lab). The concrete floors in these labs shall be designed for loads stated in this paragraph.

1.8.2. This loading criteria applies to the Administrative areas (offices, corridors and etc.) Of the new building. The concrete floors in these areas shall be designed as per applicable loads of paragraph 1.3.2, however the minimum floor thickness shall be 125 mm.

2. 02500 1.8.1 Please provide more information on the nature of the 6000 lb one-time loading criteria. What is this object, does it move around, how will it be brought into the building etc.

02500 1.8.1. The 6000 lb load is given by the lab user. It is not a one-time load, it may occur several times a year. Please see para. 1.12.2.1 for the nature of the loads in the Life Sciences Lab area. The 6000 lb load will be brought inside the lab by forklift trucks from outside. The concrete floors, including aprons shall be designed for a possible maximum load specified in the RFP. A traveling path of a forklift truck (carrying equipment, cockpits and etc. from outside) shall be determined during the design process and the concrete floors along this path shall be designed for forklift trucks carrying maximum loads plus the weight of the forklift. Note that the one time load is 66.8 KN (15,000 lbs) in the Scientific Testing Lab.

3. 00120 2.4.1.5.5 The title says SECTIONS, the text says section, are more than one section required ?

00120 2.4.1.5.5. The title will be amended to SECTION.

4. 01300 1.4.1 Is the Government expecting the Contractor's ME to review shop drawings prior to the Contractor sending them to the COE ?

01300 1.4.1. Yes, the Contractor is required to approve all submittals before sending any to the Government.

5. 01300 1.5-5.1 Can the design document-; be done in AutoCADD, then translated into Intergraph at the final submission ?

01300 1.5.5.1. Yes.

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

**ATTACHMENT TO SECTION 00200**

6. 01302 3.4.1 The A\|E is to submit three color exterior building schemes at the 50% submission, yet 02300-7, para 1.3 and 02500-4, para. 1-5.2 direct him to match the existing building. What is expected of the two additional color schemes ? The two additional schemes don't appear to do much expect raise the cost of the project-

01302 3.4.1. Will be amended so that only one color scheme is required.

7. 02200 3.1 Why do the walks connecting the facility with Bldgs 628 and 643 not have to meet ADA requirements'? This seems to go against various references to ADA and handicapped accessibility throughout the solicitation.

02200 3.1. The design, whether interior or exterior, shall meet UFAS/ADA requirements. However, the requirement for handicap accessibility is met on the east side of the facility, where parking is available. Therefore, the walks on the west side of the building are not required for this purpose.

8. 02300 pgs 3-6 Unless noted in the room descriptions, do all the rooms in the Life -science Lab get a 14' ceiling ?

02300 pgs 3-6. User requires rooms described in the following paragraphs to be open to the exposed roof structure: 1.1.9.1, 1.1.9.23, corridors adjacent to these rooms, 1.1.9.15, 1.1.9.16, 1.1.9.21-1.1.9.23 and corridors adjacent to these rooms. Rooms 1.1.9.3-1.1.9.5 have 9' ceilings. Room 1.1.9.6 has 12' ceiling. Snack bar/exit, Men's and Women's toilets have 9' ceilings. Other rooms have ceiling heights as indicated in Section 02300.

9. 02300 1.1.9 Please clarify the last sentence in this paragraph.

02300 1.1.9. Will be clarified by amendment to say: AThe smallest lab shall be the central hallway/layout room, which shall be minimum 1.83 M wide and shall extend the full length of the two lab rooms.@

10. 02300 1.1.14-19-21 Can you be more specific on the lighting levels required to meet the intent of these three paragraphs.

02300 1.1.14. 19 Thru 21 Refer to IES Handbook for required lighting levels for various types of tasking.

11. 02700 3.3 This paragraph states the extinguisher cabinets are to be fully or semi-recessed. Paragraph 5.9.1 of Section 02300-14 says they are to fully recessed. Please clarify.

02700 3.3. Bubble type FEC doors may be used in a situation where a wall may not be thick enough to accept fully recessed FEC's. Insure Life Safety Code is fully met. However, All walls should have sufficient space within the cavity to allow for fully recessed FEC.

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

**ATTACHMENT TO SECTION 00200**

12. General Please clarify; are the as-builts referred to in the pm-proposal conference a part of the solicitation ?

GENERAL As-built drawings are not part of solicitation. Contractor is responsible for dimensions and other existing site conditions.

13. What is the estimated construction contract amount?

See NOTE 8 of the Price Proposal Schedule.

14. Is life safety to be met?

Yes.

15. Is project to be awarded no later than 30 March 1998?

Yes.

16. Is systems furniture to be provided by the contractor?

Systems furniture is to be provided and installed by UNICOR unless UNICOR grants the contractor a waiver. The contractor is responsible for providing a furniture layout to UNICOR.

17. Clarify design review periods.

30 days.

18. If after 50% design approval, the user changes approved design, what happens?

It would be a contract modification.

19. Is 10% submittal part of the contract?

Yes.

20. Are as-built drawings available?

Yes. They are available for viewing in the Base Civil Engineering Office.

21. Will the government stand behind the validity of the as-built drawings?

No.

22. What is the purpose of the color boards?

To get assurance that appropriate colors can be provided.

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

**ATTACHMENT TO SECTION 00200**

23. Are the Annex Building demolition costs to be included in Bid Item No. 0001 or 0002?

Bid Item No. 0001.

24. Are the existing Building 578 rehab costs to be included in Bid Item No. 0001 or 0002?

Bid Item No. 0001.

25. Will the contractor have the responsibility to abate the Pipe Tee Wrap and/or the Ext. Louver Caulk (Ref. Sheet H-1, Seq No. 3) as listed in the "Bulk Asbestos Laboratory Analysis Report"? If so, in which Bid Item No. should the costs be included?

Louver Caulk - yes, but not at sample A03, but at Area 7 shown on Table "Estimated Quantities of ACM11.

26. will the contractor have the responsibility to abate lead-based paint in all areas as shown on Sheet H-1 (Seq No. 3) other than that listed in General Note No. 7? If so, in which Bid Item No. should the costs be included?

No lead abatement but per spec 02091. Contractor needs to provide air monitoring and worker protection during project execution and initial exposure. Assessment at project start.

27. will the contractor have the responsibility to abate the items listed in the table "Estimated Quantities of ORM"? If so, in which Bid Item No. should the costs be included?

Yes will create Bid Item for all ORM quantities.

28. Are the contractor's allowed to call the number of the company listed in the RFP concerning the SEM in the laboratory?

Yes

29. In one section of the RFP, a paragraph states that all administrative areas in the Life Sciences Laboratory are to have a 5" slab. In another paragraph, the RFP states that the floor of the Life Science Laboratory must be designed to support a 2000 lb load with fork lift. A 2000 lab load with a fork lift requires an 8" slab. Does the entire Life Sciences Laboratory floor need to be 8"?

Please refer to para 1.8.2 (Section 02500). A minimum of 5" thick slab is required in the Administrative areas, such as offices etc. (other than lab areas). The floor slabs in the Lab areas shall be designed for the loads indicated in the RFP.

The RFP (section 02500) does not state that a load of 2000 lbs shall be used to design the floor of the Life science Lab. Please refer to the last sentence of the para 1.8.1, which states that 'The floors in the Life science Lab areas shall be designed for forklift trucks carrying 6000 lbs. plus the weight of the forklift'. There is no requirement for a minimum of 8" thick slab. The floors shall be designed for the required loads.

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

**ATTACHMENT TO SECTION 00200**

30. Is the systems furniture in the contract?

Yes

31. What is Administrative Area #4? Is it another section of Building 578 other than the North end area shown at the first site visit?

No

32. Are we allowed to submit a plan that is different from the plan in the RF?. If we are, do we submit it as an alternate? If it has to be an alternate, do we have to submit the plan you gave us as a basis for bid, with a separate sheet labeled alternate? Or can our floor plan be submitted as a base bid?

Yes, bidders are allowed to submit a plan that is different from the plan in the RFP.

33. What is the one time load of 15,000 lbs in the dimensional lab for? Where should this one time load be and what is it for? Is there construction scheduling limitations due to this load?

The one time load of 15,000 lbs (given by user) is for a 5' X 8' Granite table in the Dimensional lab. Please refer to para 1.12.1.2 (section 02500) for additional details.

Once the Granite table is brought to the construction site, there should not be any construction scheduling limitations. This table shall be moved inside the Lab along with other Lab equipment. The contractor shall insure that the floors are designed to handle the load required to bring the granite table into the Dimensional Lab.

34. Note 4 on the Scanning Electron Microscope Room detail sheet indicates that "Room must be shielded to stray AC magnetic field of 3 microtesla or less.

Paragraph 2.10-2 in Section 02800 also indicates that the room is to be shielded to stray AC magnetic field of 3 microtesla or less.

The Installation Facilities Requirements for the Scanning Electronic Microscope Model JSM-580OLV indicates the following requirements for stray fields (Item VII.E.)

"Less than 0. 1 microtesla (1 mGauss) of 50/60 Hz sine wave signals at 15mm WD and 30KV High Voltage. (Note- to achieve optimum performance at 1KV the AC fields should be less than 0. 5mGauss) (Note- DC fields must register less than 0. 1 mGauss)"

Is the shielding design criteria for the SEM room that of the instrument manufacturer or as noted in the RFP documents?

The shielding should be designed as noted in the RFP documents and manufacturer's requirements which state "AC fields should be less than 3 microtesla and DC fields should be less than 0.1 microtesla of 50/60 Hz sine wave signal at 15mm WD and 30 KV High Voltage."

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

**ATTACHMENT TO SECTION 00200**

35. SECTION 02300, PARA 1.1.3. This spec calls for 60 workstations while the drawings asked for 45. If 60 is correct, the special requirements for the offices and work stations equal 5620 sf. The space available equals 3990 sf. Additionally, the 5620 number does not include circulation space, which only makes the shortage worse. If the 45 is correct, the number is 4420 sf without circulation. The same problem only a little smaller. Please clarify.

Section 02300, Para 1.1.2 calls for 15 workstations. Para 1.1.3 calls for 65 workstations. There are three different locations requiring workstations on the drawings. See sketches in Amendment No. 3 showing the workstation requirements in these areas.

**APPLICATION OF WAGE DECISIONS**

Solicitation Number: **DACA63-98-R-0004**  
Project: **ADAL YAD/Textile Lab**  
Location: **Brooks AFB, Texas**  
**Texas County of Bexar**

I. **CONSTRUCTION** - DAVIS BACON ACT PAYROLLS ARE REQUIRED TO BE SUBMITTED TO ALL WORK PERFORMED UNDER THE DAVIS-BACON ACT PROVISIONS. IT IS A REQUIREMENT THAT THE DELIVERY ORDER NUMBER AND WAGE DECISION NUMBER APPLICABLE TO THE WORK PERFORMED BE SHOWN ON ALL PAYROLLS AND PAYROLL RECORDS. EACH DELIVERY ORDER WILL BE PROCESSED AS A MINI-CONTRACT REQUIRING THAT ALL PAYROLL RECORDS PERTAINING TO THE DELIVERY ORDER BE SUBMITTED PRIOR TO PAYMENT FOR THAT DELIVERY ORDER.

1. Davis-Bacon Act **Wage Decision TX970003, Building Construction Projects**, is applicable to the construction, alteration, or repair of buildings, installations within buildings, appurtenances to buildings, foundations for buildings, excavation and fill for buildings, and utilities within five feet of buildings for **Bexar County, Texas**.

2. Davis-Bacon Act **Wage Decision TX970043, Heavy/Highway Construction Projects**, is applicable to utilities more than five feet from buildings and any other requirements not shown in Paragraph 1 above for **Bexar County, Texas**.

II. **SERVICE CONTRACT ACT (SCA) WAGE DETERMINATION** WILL BE INCLUDED IN ALL DELIVERY ORDERS ISSUED UNDER THIS CONTRACT, FOR SERVICES SUCH AS: surveying, shipping/receiving, computer programming and analyst, secretarial, training, technical writing, etc. SERVICE CONTRACT PAYROLL RECORDS ARE REQUIRED TO BE KEPT BY THE PRIME CONTRACTOR FOR A MINIMUM OF THREE YEARS FROM THE DATE OF CONTRACT COMPLETION. PAYROLL RECORDS ARE NOT REQUIRED TO BE SUBMITTED TO THE CORPS OF ENGINEERS FOR WORK PERFORMED UNDER THE SERVICE CONTRACT ACT (SCA).

Service Contract Act (SCA) Wage Determination 94-2521, Revision 15, dated 11/26/97, will be included in all delivery orders for Services to be performed in Bexar County, Texas during the first year. New SCA wage determination will be incorporated into the contract annually.

General Decision Number TX970003

Superseded General Decision No. TX960003

State: TEXAS

Construction Type:  
BUILDING

County(ies):  
BEXAR

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to and including 4 stories). (Use current heavy & highway general wage determination for Paving & Utilities Incidental to Building Construction).

Modification Number	Publication Date
0	02/14/1997
1	07/07/1997
2	07/25/1997
3	08/08/1997
4	08/15/1997
5	01/16/1998

COUNTY(ies):  
BEXAR

ASBE0087A 07/01/1997

	Rates	Fringes
ASBESTOS/INSULATORS WORKERS (Includes application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems.)	17.43	5.09

BRTX0002A 05/01/1996

	Rates	Fringes
BRICKLAYERS	15.00	2.40

ELEC0060A 06/01/1997

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

	Rates	Fringes
ELECTRICIANS (Including pulling and installing cable through conduit for low voltage)	17.40	2.20+8%
CABLE SPLICERS	17.65	2.20+8%

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ELEV0081A 07/11/1997

	Rates	Fringes
ELEVATOR CONSTRUCTORS: MECHANIC	18.815	6.405+A

FOOTNOTE; A = UNDER 5 YEARS EMPLOYMENT, 6% BHR; OVER 5 YEARS  
EMPLOYMENT, 8% BHR. PAID HOLIDAYS : New Year's Day, Memorial Day,  
Independence Day, Labor Day, Thanksgiving Day, Friday after  
Thanksgiving Day and Christmas Day.

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ENGI0450A 04/01/1994

	Rates	Fringes
POWER EQUIPMENT OPERATORS: Cranes	12.95	3.30

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\* IRON0066A 12/01/1997

	Rates	Fringes
IRONWORKERS (Excluding metal building erectors)		
Structural	14.25	4.05

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MARB0002B 05/01/1995

	Rates	Fringes
TILE SETTERS	13.79	2.07

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PLUM0142A 07/01/1997

	Rates	Fringes
PLUMBERS & PIPEFITTERS (Including HVAC WORK)	20.35	4.32

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\* SFTX0669A 01/01/1998

	Rates	Fringes
SPRINKLER FITTERS	19.22	5.85

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SHEE0067A 04/01/1997

	Rates	Fringes
SHEET METAL WORKERS (HVAC Duct Work Only)	19.43	5.67

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SUTX1052A 11/01/1988

	Rates	Fringes
ACOUSTICAL CEILING INSTALLERS	12.26	
CARPENTERS (Excluding Acoustical Ceiling Installer & Drywall Hanger	10.64	
CEMENT MASONS	11.46	
DRYWALL HANGERS	11.88	
GLAZIERS	10.78	1.40
IRONWORKERS (Excluding Metal Building Assemblers):		
REINFORCING	10.19	3.57
LABORERS:		
Unskilled	7.06	
Mason Tenders	8.36	1.78
Mortar Mixers	8.99	
PLASTERER'S TENDERS	8.68	
LATHERS	15.25	
PAINTERS (Excluding Tapers/Finishers)	8.01	
PLASTERERS	15.25	
POWER EQUIPMENT OPERATORS		
Front End Loader	7.36	
ROOFERS:		
Roofers	8.14	
Kettlemen	8.85	
Waterproofers	6.88	

SHEET METAL WORKERS:

Other Work 11.62

TAPERS/FINISHERS 7.99

TRUCK DRIVERS 7.10

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WELDERS - Receive rate prescribed for craft performing operation  
to which welding is incidental.

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Unlisted classifications needed for work not included within  
the scope of the classifications listed may be added after  
award only as provided in the labor standards contract clauses  
(29 CFR 5.5(a)(1)(v)).  
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In the listing above, the "SU" designation means that rates  
listed under that identifier do not reflect collectively  
bargained wage and fringe benefit rates. Other designations  
indicate unions whose rates have been determined to be  
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can  
be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a  
position on a wage determination matter
- \* a conformance (additional classification and rate)  
ruling

On survey related matters, initial contact, including requests  
for summaries of surveys, should be with the Wage and Hour  
Regional Office for the area in which the survey was conducted  
because those Regional Offices have responsibility for the  
Davis-Bacon survey program. If the response from this initial  
contact is not satisfactory, then the process described in 2.)  
and 3.) should be followed.

With regard to any other matter not yet ripe for the formal  
process described here, initial contact should be with the Branch  
of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division

U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.  
END OF GENERAL DECISION

General Decision Number TX970043

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Superseded General Decision No. TX960043

State: **TEXAS**

Construction Type:  
**HEAVY**  
**HIGHWAY**

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

County(ies):

BELL	CORYELL	TRAVIS
<b>BEXAR</b>	GUADALUPE	WILLIAMSON
BRAZOS	HAYS	
COMAL	MCLENNAN	

**Heavy (excluding tunnels and dams) and Highway Construction**

**Projects** (does not include building structures in rest area projects). \*NOT TO BE USED FOR WORK ON SEWAGE OR WATER TREATMENT PLANTS OR LIFT/PUMP STATIONS IN BELL, CORYELL, MCLENNAN AND WILLIAMSON COUNTIES.

Modification Number	Publication Date
0	02/14/1997

COUNTY(ies):

BELL	CORYELL	TRAVIS
<b>BEXAR</b>	GUADALUPE	WILLIAMSON
BRAZOS	HAYS	
COMAL	MCLENNAN	

SUTX2042A 11/16/1991

	Rates	Fringes
AIR TOOL OPERATOR	6.500	
ASPHALT HEATER OPERATOR	6.500	
ASPHALT RAKER	7.011	
ASPHALT SHOVELER	6.550	
BATCHING PLANT WEAHER	8.173	
BATTERBOUARD SETTER	7.700	
CARPENTER	9.054	
CONCRETE FINISHER-PAVING	8.60	
CONCRETE FINISHER-STRUCTURES	7.903	
CONCRETE RUBBER	6.740	
ELECTRICIAN	13.71	
FLAGGER	5.150	
FORM BUILDER-STRUCTURES	8.017	
FORM LINER-PAVING & CURB	7.250	
FORM SETTER-PAVING & CURB	7.683	
FORM SETTER-STRUCTURES	7.928	
LABORER-COMMON	6.078	
LABORER-UTILITY	6.852	
MECHANIC	10.774	
OILER	9.389	
SERVICER	7.280	
PAINTER-STRUCTURES	10.000	
PILEDRIVER	6.600	
PIPE LAYER	7.229	
BLASTER	9.067	

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

ASPHALT DISTRIBUTOR OPERATOR	7.304
ASPHALT PAVING MACHINE	7.945
BROOM OR SWEEPER OPERATOR	7.117
BULLDOZER, 150 HP & LESS	8.125
BULLDOZER, OVER 150 HP	8.593
CONCRETE PAVING CURING MACHINE	7.633
CONCRETE PAVING FINISHING MACHINE	9.067
CONCRETE PAVING GANG VIBRATOR	7.250
CONCRETE PAVING SAW	6.200
SLIPFORM MACHINE OPERATOR	8.700
CRANE, CLAMSHELL, BACKHOE, DERRICK, DRAGLINE, SHOVEL LESS THAN 1 1/2 C.Y.	8.427
CRANE, CLAMSHELL, BACKHOE, DERRICK, DRAGLINE, SHOVEL 1 1/2 C.Y. & OVER	9.880
FOUNDATION DRILL OPERATOR CRAWLER MOUNTED	10.475
FOUNDATION DRILL OPERATOR TRUCK MOUNTED	10.923
FRONT END LOADER 2 1/2 C.Y. & LESS	7.499
FRONT END LOADER OVER 2 1/2 C.Y.	8.255
HOIST - DOUBLE DRUM	10.750
MOTOR GRADER OPERATOR	9.657
PAVEMENT MARKING MACHINE	6.078
PLANER OPERATOR	7.250
ROLLER, STEEL WHEEL PLANT-MIX PAVEMENTS	7.083
ROLLER, STEEL WHEEL OTHER FLATWHEEL OR TAMPING	6.403
ROLLER, PNEUMATIC, SELF PROPELLED	6.433
SCRAPER-17 C.Y. & LESS	7.245
SCRAPER-OVER 17 C.Y.	7.495
SELF PROPELLED HAMMER OPERATOR	6.078
SIDE BOOM	9.000
TRACTOR-CRAWLER TYPE	7.539
TRACTOR-PNEUMATIC	6.707
TRENCHING MACHINE	6.850
WAGON-DRILL/BORING MACHINE/POST HOLE DRILLER OPERATOR	6.926
REINFORCING STEEL SETTER PAVING	8.158
REINFORCING STEEL SETTER STRUCTURES	9.062
STEEL WORKER-STRUCTURAL	9.242
SIGN ERECTOR	8.640
SPREADER BOX OPERATOR	6.541
BARRICADE SERVICER WORK ZONE	6.078

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

MOUNTED SIGN INSTALLER PERMANENT	
GROUND	6.078
TRUCK DRIVER-SINGLE AXLE LIGHT	6.493
TRUCK DRIVER-SINGLE AXLE HEAVY	6.674
TRUCK DRIVER-TANDEM AXLE SEMI-	
TRAILER	6.824
TRUCK DRIVER-LOWBOY/FLOAT	8.041
TRUCK DRIVER-TRANSIT MIX	6.078
WELDER	8.824

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).  
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In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

- 1.) Has there been an initial decision in the matter? This can be:
- \* an existing published wage determination
  - \* a survey underlying a wage determination
  - \* a Wage and Hour Division letter setting forth a position on a wage determination matter
  - \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U. S. Department of Labor  
200 Constitution Avenue, N. W.  
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

**END OF GENERAL DECISION**

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

WAGE DETERMINATION NO: 94-2521 REV (15) AREA: TX,SAN ANTONIO

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WAGE DETERMINATION NO: 94-2521 REV (15) AREA: TX,SAN ANTONIO

\*\*\*FOR OFFICIAL USE ONLY BY FEDERAL AGENCIES PARTICIPATING IN MOU WITH DOL\*\*\*

REGISTER OF WAGE DETERMINATIONS UNDER  
THE SERVICE CONTRACT ACT  
By direction of the Secretary of Labor

U.S. DEPARTMENT OF LABOR  
EMPLOYMENT STANDARDS ADMINISTRATION  
WAGE AND HOUR DIVISION  
WASHINGTON, D.C. 20210

William W. Gross     Division of  
Director                 Wage Determinations

Wage Determination No.: **94-2521**  
Revision No.: **15**  
Date of Last Revision: **11/26/1997**

State(s):Texas

Area: TEXAS COUNTIES OF ATASCOSA, BANDERA, **BEXAR**, COMAL, DE WITT, DIMMIT,  
EDWARDS, FRIO, GILLESPIE, GONZALES, GUADALUPE, KARNES, KENDALL, KERR,  
KINNEY, LA SALLE, MAVERICK, MCMULLEN, MEDINA, REAL, UVALDE,  
VAL VERDE, WILSON, ZAVALA.

\*\* Fringe Benefits Required For All Occupations Included In  
This Wage Determination Follow The Occupational Listing \*\*

<b>OCCUPATION CODE AND TITLE</b>	<b>MINIMUM HOURLY WAGE</b>
<b>ADMINISTRATIVE SUPPORT AND CLERICAL:</b>	
01011 Accounting Clerk I	\$ 7.25
01012 Accounting Clerk II	\$ 8.50
01013 Accounting Clerk III	\$ 9.80
01014 Accounting Clerk IV	\$ 12.17
01030 Court Reporter	\$ 10.98
01050 Dispatcher, Motor Vehicle	\$ 10.98
01060 Document Preparation Clerk	\$ 9.12
01070 Messenger (Courier)	\$ 8.37
01090 Duplicating Machine Operator	\$ 9.12
01110 Film/Tape Librarian	\$ 9.75
01115 General Clerk I	\$ 6.75
01116 General Clerk II	\$ 7.68
01117 General Clerk III	\$ 9.44
01118 General Clerk IV	\$ 13.62
01120 Housing Referral Assistant	\$ 12.35
01131 Key Entry Operator I	\$ 7.03
01132 Key Entry Operator II	\$ 8.28
01191 Order Clerk I	\$ 8.00
01192 Order Clerk II	\$ 9.39
01261 Personnel Assistant (Employment) I	\$ 7.88
01262 Personnel Assistant (Employment) II	\$ 9.85
01263 Personnel Assistant (Employment) III	\$ 11.94
01264 Personnel Assistant (Employment) IV	\$ 13.97
01270 Production Control Clerk	\$ 12.35

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

01290 Rental Clerk	\$ 9.75
01300 Scheduler, Maintenance	\$ 9.75
01311 Secretary I	\$ 9.75
01312 Secretary II	\$ 10.98
01313 Secretary III	\$ 12.35
01314 Secretary IV	\$ 15.11
01315 Secretary V	\$ 16.74
01320 Service Order Dispatcher	\$ 9.75
01341 Stenographer I	\$ 8.96
01342 Stenographer II	\$ 9.98
01400 Supply Technician	\$ 15.11
01420 Survey Worker(Interviewer)	\$ 10.98
01460 Switchboard Operator- Receptionist	\$ 7.40
01510 Test Examiner	\$ 10.98
01520 Test Proctor	\$ 10.98
01531 Travel Clerk I	\$ 7.58
01532 Travel Clerk II	\$ 8.03
01533 Travel Clerk III	\$ 8.44
01611 Word Processor I	\$ 8.96
01612 Word Processor II	\$ 10.37
01613 Word Processor III	\$ 11.62
AUTOMATIC DATA PROCESSING:	
03010 Computer Data Librarian	\$ 8.94
03041 Computer Operator I	\$ 7.95
03042 Computer Operator II	\$ 9.32
03043 Computer Operator III	\$ 13.96
03044 Computer Operator IV	\$ 15.48
03045 Computer Operator V	\$ 17.16
03071 Computer Programmer I 1/	\$ 13.08
03072 Computer Programmer II 1/	\$ 16.87
03073 Computer Programmer III 1/	\$ 18.75
03074 Computer Programmer IV 1/	\$ 21.68
03101 Computer Systems Analyst I 1/	\$ 18.10
03102 Computer Systems Analyst II 1/	\$ 24.00
03103 Computer Systems Analyst III 1/	\$ 27.62
03160 Peripheral Equipment Operator	\$ 8.94
AUTOMOTIVE SERVICE:	
05005 Automobile Body Repairer, Fiberglass	\$ 13.89
05010 Automotive Glass Installer	\$ 12.47
05040 Automotive Worker	\$ 12.47
05070 Electrician, Automotive	\$ 13.20
05100 Mobile Equipment Servicer	\$ 11.12
05130 Motor Equipment Metal Mechanic	\$ 13.89
05160 Motor Equipment Metal Worker	\$ 12.47
05190 Motor Vehicle Mechanic	\$ 13.89
05220 Motor Vehicle Mechanic Helper	\$ 10.54
05250 Motor Vehicle Upholstery Worker	\$ 11.79
05280 Motor Vehicle Wrecker	\$ 12.47
05310 Painter, Automotive	\$ 13.20
05340 Radiator Repair Specialist	\$ 12.47
05370 Tire Repairer	\$ 11.12
05400 Transmission Repair Specialist	\$ 13.89
FOOD PREPARATION AND SERVICE:	
07010 Baker	\$ 9.09
07041 Cook I	\$ 7.66
07042 Cook II	\$ 9.09

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

07070 Dishwasher	\$ 5.62
07100 Food Service Worker (Cafeteria Worker)	\$ 5.62
07130 Meat Cutter	\$ 9.09
07250 Waiter/Waitress	\$ 5.95
FURNITURE MAINTENANCE AND REPAIR:	
09010 Electrostatic Spray Painter	\$ 13.20
09040 Furniture Handler	\$ 9.38
09070 Furniture Refinisher	\$ 13.20
09100 Furniture Refinisher Helper	\$ 10.54
09110 Furniture Repairer, Minor	\$ 11.79
09130 Upholsterer	\$ 13.20
GENERAL SERVICES AND SUPPORT:	
11030 Cleaner, Vehicles	\$ 5.62
11060 Elevator Operator	\$ 5.62
11090 Gardener	\$ 7.08
11121 Housekeeping Aide I	\$ 5.28
11122 Housekeeping Aide II	\$ 5.62
11150 Janitor	\$ 5.62
11210 Laborer, Grounds Maintenance	\$ 5.95
11240 Maid or Houseman	\$ 5.28
11270 Pest Controller	\$ 7.52
11300 Refuse Collector	\$ 5.62
11330 Tractor Operator	\$ 6.73
11360 Window Cleaner	\$ 5.95
HEALTH:	
12020 Dental Assistant	\$ 9.84
12040 Emergency Medical Technician/ Paramedic Ambulance Driver	\$ 10.28
12071 Licensed Practical Nurse I	\$ 7.83
12072 Licensed Practical Nurse II	\$ 8.79
12073 Licensed Practical Nurse III	\$ 9.84
12100 Medical Assistant	\$ 9.06
12130 Medical Laboratory Technician	\$ 9.06
12160 Medical Record Clerk	\$ 9.06
12190 Medical Record Technician	\$ 13.75
12221 Nursing Assistant I	\$ 6.38
12222 Nursing Assistant II	\$ 7.18
12223 Nursing Assistant III	\$ 7.83
12224 Nursing Assistant IV	\$ 8.79
12250 Pharmacy Technician	\$ 11.70
12280 Phlebotomist	\$ 9.06
12311 Registered Nurse I	\$ 12.96
12312 Registered Nurse II	\$ 15.85
12313 Registered Nurse II, Specialist	\$ 17.40
12314 Registered Nurse III	\$ 18.40
12315 Registered Nurse III, Anesthetist	\$ 18.40
12316 Registered Nurse IV	\$ 22.04
INFORMATION AND ARTS:	
13002 Audiovisual Librarian	\$ 15.51
13011 Exhibits Specialist I	\$ 13.83
13012 Exhibits Specialist II	\$ 14.97
13013 Exhibits Specialist III	\$ 17.03
13041 Illustrator I	\$ 13.83
13042 Illustrator II	\$ 14.97
13043 Illustrator III	\$ 17.03
13047 Librarian	\$ 15.25

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

13050 Library Technician	\$ 11.06
13071 Photographer I	\$ 11.30
13072 Photographer II	\$ 13.83
13073 Photographer III	\$ 14.97
13074 Photographer IV	\$ 17.03
13075 Photographer V	\$ 20.67
LAUNDRY, DRY CLEANING, PRESSING:	
15010 Assembler	\$ 5.51
15030 Counter Attendant	\$ 5.51
15040 Dry Cleaner	\$ 6.95
15070 Finisher, Flatwork, Machine	\$ 5.51
15090 Presser, Hand	\$ 5.51
15100 Presser, Machine, Dry Cleaning	\$ 5.51
15130 Presser, Machine, Shirts	\$ 5.51
15160 Presser, Machine, Wearing Apparel, Laundry	\$ 5.51
15190 Sewing Machine Operator	\$ 7.41
15220 Tailor	\$ 7.75
15250 Washer, Machine	\$ 5.99
MACHINE TOOL OPERATION AND REPAIR:	
19010 Machine-tool Operator (Toolroom)	\$ 13.20
19040 Tool and Die Maker	\$ 15.79
MATERIALS HANDLING AND PACKING:	
21010 Fuel Distribution System Operator	\$ 11.12
21020 Material Coordinator	\$ 9.98
21030 Material Expediter	\$ 9.98
21040 Material Handling Laborer	\$ 7.46
21050 Order Filler	\$ 8.38
21071 Forklift Operator	\$ 8.59
21080 Production Line Worker (Food Processing)	\$ 9.42
21100 Shipping/Receiving Clerk	\$ 8.16
21130 Shipping Packer	\$ 8.16
21140 Store Worker I	\$ 7.67
21150 Stock Clerk ( Shelf Stocker; Store Worker II )	\$ 8.16
21210 Tools and Parts Attendant	\$ 9.42
21400 Warehouse Specialist	\$ 9.42
MECHANICS AND MAINTENANCE AND REPAIR:	
23010 Aircraft Mechanic	\$ 14.50
23040 Aircraft Mechanic Helper	\$ 11.19
23050 Aircraft Quality Control Inspector	\$ 14.98
23060 Aircraft Servicer	\$ 12.43
23070 Aircraft Worker	\$ 12.99
23100 Appliance Mechanic	\$ 13.20
23120 Bicycle Repairer	\$ 11.12
23125 Cable Splicer	\$ 13.89
23130 Carpenter, Maintenance	\$ 13.20
23140 Carpet Layer	\$ 12.47
23160 Electrician, Maintenance	\$ 14.22
23181 Electronics Technician, Maintenance I	\$ 15.69
23182 Electronics Technician, Maintenance II	\$ 20.36
23183 Electronics Technician, Maintenance III	\$ 21.36

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

23260	Fabric Worker	\$ 11.79
23290	Fire Alarm System Mechanic	\$ 13.89
23310	Fire Extinguisher Repairer	\$ 11.12
23340	Fuel Distribution System Mechanic	\$ 13.89
23370	General Maintenance Worker	\$ 12.88
23400	Heating, Refrigeration and Air Conditioning Mechanic	\$ 13.89
23430	Heavy Equipment Mechanic	\$ 13.89
23440	Heavy Equipment Operator	\$ 13.89
23460	Instrument Mechanic	\$ 13.89
23470	Laborer	\$ 5.62
23500	Locksmith	\$ 13.20
23530	Machinery Maintenance Mechanic	\$ 13.89
23550	Machinist, Maintenance	\$ 13.89
23580	Maintenance Trades Helper	\$ 10.54
23640	Millwright	\$ 13.89
23700	Office Appliance Repairer	\$ 13.20
23740	Painter, Aircraft	\$ 13.20
23760	Painter, Maintenance	\$ 13.20
23790	Pipefitter, Maintenance	\$ 13.89
23800	Plumber, Maintenance	\$ 13.20
23820	Pneudraulic Systems Mechanic	\$ 13.89
23850	Rigger	\$ 13.89
23870	Scale Mechanic	\$ 12.47
23890	Sheet-metal Worker, Maintenance	\$ 13.89
23910	Small Engine Mechanic	\$ 12.47
23930	Telecommunications Mechanic I	\$ 13.89
23931	Telecommunications Mechanic II	\$ 14.63
23950	Telephone Lineman	\$ 13.89
23960	Welder, Combination, Maintenance	\$ 13.89
23965	Well Driller	\$ 13.89
23970	Woodcraft Worker	\$ 13.89
23980	Woodworker	\$ 11.12
PERSONAL NEEDS:		
24570	Child Care Attendant	\$ 8.30
24580	Child Care Center Clerk	\$ 10.60
24600	Chore Aide	\$ 5.48
24630	Homemaker	\$ 11.50
PLANT AND SYSTEM OPERATION:		
25010	Boiler Tender	\$ 13.89
25040	Sewage Plant Operator	\$ 13.20
25070	Stationary Engineer	\$ 13.89
25190	Ventilation Equipment Tender	\$ 10.54
25210	Water Treatment Plant Operator	\$ 13.20
PROTECTIVE SERVICE:		
27004	Alarm Monitor	\$ 8.65
27006	Corrections Officer	\$ 12.28
27010	Court Security Officer	\$ 12.28
27040	Detention Officer	\$ 12.28
27070	Firefighter	\$ 14.30
27101	Guard I	\$ 5.36
27102	Guard II	\$ 7.74
27130	Police Officer	\$ 14.83
STEVEDORING/LONGSHOREMEN SERVICE OCCUPATIONS:		
28010	Blocker and Bracer	\$ 11.15
28020	Hatch Tender	\$ 11.15

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

28030	Line Handler	\$ 11.15
28040	Stevedore I	\$ 10.54
28050	Stevedore II	\$ 11.80
TECHNICAL:		
29010	Air Traffic Control 2/ Specialist, Center	\$ 23.45
29011	Air Traffic Control 2/ Specialist, Station	\$ 16.17
29012	Air Traffic Control 2/ Specialist, Terminal	\$ 17.81
29023	Archeological Technician I	\$ 10.81
29024	Archeological Technician II	\$ 12.10
29025	Archeological Technician III	\$ 14.97
29030	Cartographic Technician	\$ 14.97
29035	Computer Based Training Specialist/Instructor	\$ 17.61
29040	Civil Engineering Technician	\$ 14.97
29061	Drafter I	\$ 10.04
29062	Drafter II	\$ 11.30
29063	Drafter III	\$ 15.03
29064	Drafter IV	\$ 17.22
29081	Engineering Technician I	\$ 9.35
29082	Engineering Technician II	\$ 11.67
29083	Engineering Technician III	\$ 13.09
29084	Engineering Technician IV	\$ 14.41
29085	Engineering Technician V	\$ 16.94
29086	Engineering Technician VI	\$ 19.24
29090	Environmental Technician	\$ 14.97
29100	Flight Simulator/Instructor (Pilot)	\$ 24.00
29150	Graphic Artist	\$ 17.61
29160	Instructor	\$ 14.90
29210	Laboratory Technician	\$ 11.96
29240	Mathematical Technician	\$ 14.97
29361	Paralegal/Legal Assistant I	\$ 11.42
29362	Paralegal/Legal Assistant II	\$ 15.11
29363	Paralegal/Legal Assistant III	\$ 18.47
29364	Paralegal/Legal Assistant IV	\$ 22.34
29390	Photooptics Technician	\$ 14.97
29480	Technical Writer	\$ 19.67
29491	Unexploded Ordnance Technician I	\$ 14.90
29492	Unexploded Ordnance Technician II	\$ 18.03
29493	Unexploded Ordnance Technician III	\$ 21.61
29494	Unexploded Safety Escort	\$ 14.90
29495	Unexploded Sweep Personnel	\$ 14.90
29620	Weather Observer, Senior 3/	\$ 15.02
29621	Weather Observer, Combined 3/ Upper Air and Surface Programs	\$ 13.52
29622	Weather Observer, Upper Air 3/	\$ 13.52
TRANSPORTATION/MOBILE EQUIPMENT OPERATION:		
31030	Bus Driver	\$ 9.41
31260	Parking and Lot Attendant	\$ 7.00
31290	Shuttle Bus Driver	\$ 8.85
31300	Taxi Driver	\$ 8.37
31361	Truckdriver, Light Truck	\$ 8.85

ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004

31362 Truckdriver, Medium Truck	\$ 9.41
31363 Truckdriver, Heavy Truck	\$ 11.12
36364 Truckdriver, Tractor-Trailer	\$ 11.12
MISCELLANEOUS:	
99020 Animal Caretaker	\$ 6.35
99030 Cashier	\$ 6.94
99041 Carnival Equipment Operator	\$ 6.73
99042 Carnival Equipment Repairer	\$ 7.08
99043 Carnival Worker	\$ 5.62
99050 Desk Clerk	\$ 8.50
99095 Embalmer	\$ 14.90
99300 Lifeguard	\$ 7.43
99310 Mortician	\$ 14.90
99350 Park Attendant (Aide)	\$ 9.51
99400 Photofinishing Worker ( Photo Lab / Dark Room Technician )	\$ 7.43
99500 Recreation Specialist	\$ 11.79
99510 Recycling Worker	\$ 6.69
99610 Sales Clerk	\$ 7.43
99620 School Crossing Guard (Cross- walk Attendant)	\$ 5.62
99630 Sports Official	\$ 7.43
99658 Survey Party Chief	\$ 12.60
99659 Surveying Technician	\$ 10.33
99660 Surveying Aide	\$ 8.65
99690 Swimming Pool Operator	\$ 7.97
99720 Vending Machine Attendant	\$ 6.69
99730 Vending Machine Repairer	\$ 7.97
99740 Vending Machine Repairer Helper	\$ 6.69

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\*\* Fringe Benefits Required For All Occupations Included In  
This Wage Determination \*\*

HEALTH & WELFARE: \$1.16 per hour or \$46.40 per week or \$201.07 per month.

VACATION: Two weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 5 years; 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractor in the performance of similar work at the same Federal facility. (Reg. 4.173)

HOLIDAYS: Minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

1/

Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See 29 CFR 4.156)

2/

APPLICABLE TO AIR TRAFFIC CONTROLLERS ONLY - NIGHT DIFFERENTIAL: An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.

3/

APPLICABLE TO WEATHER OBSERVERS ONLY - NIGHT PAY & SUNDAY PAY: If you work at night as a part of a regular tour of duty, you will earn a

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

NIGHT DIFFERENTIAL and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employee (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

**\*\* UNIFORM ALLOWANCE \*\***

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$4.25 per week (or \$.85 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

**\*\* NOTES APPLYING TO THIS WAGE DETERMINATION \*\***

Source of Occupational Titles and Descriptions:

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fourth Edition, January 1993, as amended by the Second Supplement, dated August 1995, unless otherwise indicated. This publication may be obtained from the Superintendent of Documents, at 202-783-3238, or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Copies of specific job descriptions may also be obtained from the appropriate contracting officer.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE  
{Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).
- 2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).
- 4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.
- 5) The contracting officer transmits the Wage and Hour decision to the contractor.
- 6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

SECTION 01300

SUBMITTALS FOR DESIGN

**PART**

**1 GENERAL**

**1.1 SUMMARY**

**1.1.1 Section Includes.**

This section includes requirements for developing and submitting a design including preparation of drawings, specifications and design analyses conforming to the requirements contained in this section.

**1.1.2 Section Excludes.**

This section does not include requirements for construction submittals which are specified in Section 01330, "Submittal Procedures (During Construction)."

**1.2 DESIGN COMPLETION SCHEDULE**

See paragraph SCHEDULE in Section 01000 DESIGN AND CONSTRUCTION SCHEDULE for the Completion Schedule of the entire work.

**1.3 METRIC REQUIREMENTS**

**1.3.1 Definitions**

Definitions of hard and soft metric are specified in Section 01030 Metric Measurements.

**1.3.2 Modular Construction Products**

Soft metric conversions from their English units are permitted for modular construction products, unless the application of the product requires it to dimensionally coordinate into the 100 millimeter building module. Modular construction products are brick, concrete block, wallboard, plywood, suspended ceiling systems, recessed lighting, raised access flooring and other manufactured components with dimensions based upon a four (4) inch building module. Coordinate finishes available in metric with those available in non-metric.

**1.3.3 SI Units of Measure**

Products and building components furnished in "hard" metric units are those manufactured using SI units of measure. SI units of measure shall be stated in metric only; do not repeat their English equivalency in parentheses following the metric unit.

**1.3.4 Metric Design Guide**

The designer shall obtain a copy of and follow the requirements in the "Metric Design Guide (PBS-PQ260), May 1994, U.S. General Services Administration Public Buildings Service". A copy will be furnished after award of the contract.

**1.4 DEFINITIONS**

**1.4.1 Acceptance**

This is the Government's review of the design submittals, construction submittals and record drawings for conformance to the RFP and Contractor's proposal requirements. The Contractor's Architect/Engineer (A/E) is the "Designer of Record" and officially approves the design submittals, construction submittals and record drawings. The Contractor is ultimately responsible for the contract design and construction. The Contractor's Quality Control Staff will check and certify all submittals.

**1.4.2 Approve, Approved and Approval**

As these words are used throughout the documents, they shall mean "as approved by the Designer of Record".

**1.4.3 Contractor**

Firm or company to whom award was made to design and construct the project.

**1.4.4 Design**

Documents which include design drawings, project specifications, and design analyses (basis of design and calculations) prepared by or under the direct supervision of registered professional architects and engineers and proposed by the Contractor to meet the requirements of this solicitation.

**1.4.5 Design Drawings**

Documentation showing in graphic and quantitative form the extent, design, location, relationships, and dimensions of the construction to be provided by the Contractor. (Note: Shop Drawings, as defined in Section 01330, "Submittals During Construction" are not to be provided until after design drawings are approved for construction.)

**1.4.6 Designer**

Architects and Engineers (A/E) associated with the Contractor who are responsible for the design and have the qualifications and experience specified.

**1.4.7 Request for Proposal (RFP)**

Documents furnished to prospective offerors containing proposal information and specifying criteria and project requirements for design and construction of the project. The documents include this specification, attachments, and the information drawings.

**1.4.8 Technical Specifications**

Technical specifications are the Contractor's developed construction specifications consisting of the Government-furnished Division 1 (General Requirements) sections and the Contractor-written sections in Divisions 2 through 16. Divisions 2 through 16 shall include the RFP mandatory specifications, the Contractor-edited RFP's mandatory CEGS and FW guide specifications, Contractor-developed CEGS sections for those items of work covered by the CEGS guides, and the Contractor-developed sections for those items of work not covered by the CEGS guides.

**1.4.9 50% Design/Submittal**

Shall mean 50% Building and 100% Foundation Design/Submittal.

**1.4.10 Complete Specification Section**

A Complete Specification Section is one that follows the CEGS Section format as shown in CEGS-01020 CEGS TEMPLATE, including the required submittal and testing requirements.

**1.4.11 Corps of Engineers Guide Specifications (CEGS)**

Includes the Corps of Engineers Guide Specifications (CEGS) for Military Construction, Corps of Engineers Abridged Guide Specifications (CEAGS) for Military Construction, the narrow-scope sections developed by the Fort Worth District (FWGS), and the Fort Worth District Supplements to the CEGS.

**1.5 SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES**

**1.5.1 Certification**

The Contractor shall certify that all items submitted in the design documents (after contract award) comply with Division 1 specifications, the following specification sections, and requirements of the CEGS. The criteria specified in this RFP are binding contract criteria and in case of any conflict, after award, between the RFP criteria and Contractor's submittals, the criteria stated in the order of precedence (Section 01300) will govern unless there is a written and signed agreement between the Contracting Officer and the Contractor waiving a specific requirement. The Contractor shall present with the letter of transmittal for each design submittal (including the 100 percent corrected design (compliance check) submittal) a certification that the submittal (plans, specifications, design analysis, etc.) complies with the requirements stated above. Prepare the design certification and transmittal letter in the format shown on Attachment A attached at the end of this Section.

**1.5.1.1 Signatures**

The certification shall be signed by an officer of the Contractor's company and the licensed architect/engineer of record attesting that the drawings, specifications and design analyses prepared for the construction of the facility meet the requirements of the RFP.

### **1.5.2 Deviations**

Deviations from the RFP technical requirements shall be identified in each design submittal's letter of transmittal. Deviations from the RFP technical requirements will be considered for approval by the Contracting Officer if the changes result in a significant improvement to the project or they exceed the minimum RFP technical requirements.

### **1.5.3 Field Verification**

The Contractor shall verify field conditions which are significant to design by field inspection, researching and obtaining all necessary existing facility as-built drawings and reproducing them for his\her own use as necessary, and discussing status with knowledgeable personnel. The information shall be reflected in the design documents.

### **1.5.4 Number of Copies**

The Contractor shall submit, in accordance with paragraph SCHEDULE of Section 01000 DESIGN AND CONSTRUCTION SCHEDULE, the number of copies (as specified in paragraph "Review Location") of the construction drawings and specifications, design analyses, equipment schedules, and all other submittal data, which shall be in accordance with the requirements of the RFP, all current revisions, the Contractor's proposal, and all other terms and conditions affecting contract award. Upon final acceptance, the Contractor shall within 7 calendar days furnish the same number of copies as above (and one reproducible) of the accepted technical documents (drawings, design analysis, and specifications). Proposed modifications shall be submitted in 2 copies. Final modifications, after negotiations, shall be submitted in 2 copies (including one reproducible).

### **1.5.5 Final Construction Drawings**

Provide documents complete, accurate and explicit enough to show compliance with the RFP requirements and to permit construction. Drawings and specifications illustrating systems proposed to meet the requirements of the RFP performance specifications shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components and coordination with the design analysis and specifications required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. See Section 01302 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

#### **1.5.5.1 Computer Aided Design and Drafting (CADD) Systems**

Final design (100 percent) drawings, and as-built drawings after the completion of the project, shall be submitted on CD-ROM disk in Intergraph DGN format, along with the hard copies of the drawings, specifications and design analysis. Two sets of the CADD disks furnished by the Contractor. Format shall conform to the Fort Worth District Drafting Manual drafting standards, Fort Worth District CADD Standards, and the Fort Worth District CADD Design File and Sheet Naming Conventions, all of which are available upon request (after contract award).

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Furnish for approval the qualifications and experience of the personnel, and types of equipment and software, to be used for this work. CADD work will not proceed until the Contractor's proposed CADD system and resulting CADD files have been acceptably demonstrated to work on the Corps of Engineers' Resident Office and the User's CADD systems.

**1.5.5.2 Size of CADD Drawings**

Size of CADD drawings shall be 594 mm by 841 mm (23.7 by 33.6 inches) trim to trim with borders and title conforming to the Fort Worth District Drafting Manual standard drawing layout. Recommended overall sheet size is 610 mm by 914 mm (24 by 36 inches).

**1.5.5.3 Specifications and Design Analysis**

Specifications and design analysis shall be provided in hard copy and on the same CD-ROM disk as the drawings, Microsoft Word for Windows (Version 6) format. The Division 1 sections included in the RFP shall be reprinted in the final 100 percent Construction specifications. Hard copies of the specifications and design analyses shall be bound separately in 3-ring binders. Each set of documents shall have its own Table of Contents. See Section 01302 DESIGN DOCUMENTS REQUIREMENTS for editing and format requirements.

**1.6 Design Documents**

Design documents shall include construction drawings, specifications, and design analysis for categories such as, but not limited to, architectural, structural, mechanical, electrical, grading, drainage, paving, and outside utility services. Specifications shall be in sufficient detail to fully describe and demonstrate the quality of materials, the installation and performance of equipment, and the quality of workmanship. Specifications shall conform to the Construction Specifications Institute (CSI) 16-Division 3-Part format, follow the CSI's section numbering system defined in CSI Masterformat, and utilize the Corps of Engineers CEGS, Fort Worth District FW guide specifications, and Fort Worth District Supplements to the CEGS. Specifications shall include any mandatory specifications specified in Attachment 3. Division 1 specifications shall consist of the Division 1 sections included in this RFP. Detailing and installation of all equipment and materials shall comply with the manufacturers recommendations. Construction drawings and specifications shall not make reference to RFP requirements. The design analysis shall be for each discipline of work and shall include all features with the necessary calculations, tables, methods, and sources used in determining equipment and material sizes and capacities, and shall provide sufficient information to support the design. The Contractor, including designers, shall visit the site and make other trips as necessary during the design to accomplish the work.

The specifications shall clearly identify the specific products chosen to meet the requirements of the RFP (manufacturers' brand names and model numbers or similar product information). Turfing sections shall indicate planting dates.

## 1.7 Design Reviews

Design reviews shall be held at Brooks Air Force Base at the 50 percent and 100 percent completion stages of the final design. The Government shall have not less than thirty (30) days review period for each submittal (50 percent design and 100 percent Design) and seven (7) days review period for any resubmittal. Design review conference(s) between the Contractor and the Government may be held after submittal of the 50 percent and 100 percent design(s) if the Government determines them necessary. The time for Government review will be calculated from the date of receipt of the design submittals at the Government address to the date annotated conformance review comments are mailed to the Contractor.

Am#3

### 1.7.1 Design Submittals

#### 1.7.1.1 50 Percent Design Submittal

The 50 percent design submittal includes the 50 percent in-progress building design plus the 100% complete sitework, exterior utilities, and foundation design. These documents shall be packaged and stamped "For Review Only - 50% Design"; and each sheet of the drawings shall also be stamped except sitework, exterior utilities, and foundation drawings, which will be stamped 100% design submittal. See Section 01302 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

#### 1.7.1.2 100 Percent Design Submittal

The 100 percent design submittal includes complete site and utility design and building design and shall be stamped "For Review Only -100% Design", and each sheet of the drawings shall also be stamped. Contractor shall make final proposal of all materials and finishes at this stage. The compliance check design submittal(s) after the Government review of the 100 percent complete building design shall be stamped "100% Corrected Design"; and each sheet of the drawings shall also be stamped. No additional time for completion of the contract will be granted to the Contractor due to insufficient design submittals. See Part 3 paragraph "Government Design Review and Acceptance" for additional requirements. See Section 01302 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

#### 1.7.1.3 Drawing Review Design Documents

The Contractor shall submit all drawing design documents on blue-line media with "FOR REVIEW" stamped in 12.5 mm high letters in the lower right corner in red ink. Specifications and Design Analyses shall be hard copy with "FOR REVIEW" stamped in 12.5 mm high letters in the lower right corner in red ink. The Contractor shall submit approved documents on black-line media with "APPROVED FOR CONSTRUCTION" similarly stamped.

### 1.7.2 Review Location

Review documents shall be sent, in the quantity indicated, to the addresses listed below. The documents will be in their then present "on-board" design status. All documents must contain an index of contents. Work shall, however, continue up to the time of the review conference date(s) when 2 copies of then-current design documents will be brought to the issuing office for the conference review. Originals of transmittal

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letters shall be sent to the Area Engineer, address as shown below, and copies should accompany each mail package. Transmittal letters shall indicate distribution by use of the "ATTN" code shown in the address.

- (1 copy) Commander  
ATTN: HQ AFMC CES/CECC (Darold D. Irvine)  
4225 Logistics Ave, Suite 7  
Wright Patterson AFB, OH 45433-5001
- (7 copies) Commander  
ATTN: 70 CES/CEC (Sandy Hamby)  
8103 9th Street  
Brooks Air Force Base  
San Antonio, Texas 78235-5355
- (7 copies) District Engineer  
US Army Engineer District, Fort Worth  
ATTN: CESWF-EC-S  
P.O. Box 17300  
Fort Worth, TX 76102-0300
- (5 copies) Resident Engineer  
U.S. Army Engineer District, Fort Worth  
ATTN: CESWF-R0-K (Stuart Shillington)  
2105 15th Street, Building 4195  
Fort Sam Houston, Texas 78234-5046

**1.7.3 Additional Review Time**

If for any reason the Government requires more time than that stated for review, then the Contractor will be granted an extension of time equal to the number of calendar days of delay.

**Am#2 1.8 DELETED.**

**Am#2 1.9 Government Design Review and Acceptance**

Government personnel will present review comments for discussion and resolution. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. On receipt of final corrected design documents and their acceptance, the Fort Worth District will \_\_\_\_\_ issue a \_\_\_\_\_ letter authorizing the Contractor to proceed with construction. The Government, however, reserves the right to disapprove design document submittals if comments are of too great a significance. In this case, every effort shall be made during follow-up action between the Contractor and the Fort Worth District to resolve conflicts and problems such that documents can be accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of \$500.00 per submittal.

**PART 2 PRODUCTS (Not Applicable)**

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PART 3 EXECUTION (Not Applicable)

- - o 0 o - -

Attachment A

[Prime Contractor's Letterhead]

[Date: \_\_\_\_\_]

[Contract No. \_\_\_\_\_]

[Reviewing Component Address]

Subj: DESIGN CERTIFICATION AND TRANSMITTAL FOR

[Project Title \_\_\_\_\_]

[Project Location \_\_\_\_\_]

[Contract No. \_\_\_\_\_]

Gentlemen

Enclosed are the following documents which I hereby certify are in compliance with the RFP requirements of the subject construction contract and can be used to commence construction subject to Government acceptance:

1. Design Drawings
2. Project Specification
3. Design Analysis
  - a. Civil
  - b. Water Supply and Wastewater Collection
  - c. Architectural
  - d. Interior Design
  - e. Structural
  - f. Mechanical
  - g. Fire Protection
  - h. Electrical
4. Submittals Register
5. Deviations

[Typed Name and Signature of an  
Officer of the Prime Contractor's company]

Copy to:  
[As standard with the Contractor]

[Typed Name and Signature of the  
Licensed Architect/Engineer of Record]

SECTION 01302

DESIGN DOCUMENT REQUIREMENTS

**PART**

**1 GENERAL (Not Used)**

**PART 2 PRODUCTS (Not Used)**

**PART 3 EXECUTION**

**3.1 DRAWINGS**

Prepare, organize, and present drawings in the format specified. Provide drawings complete, accurate and explicit enough to show compliance with the RFP requirements and to permit construction. Drawings illustrating systems proposed to meet the requirements of the RFP performance specifications shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components and coordination with the design analysis and specifications required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. For specific drawing requirements, see paragraphs: 50 PERCENT DESIGN REQUIREMENTS and 100 PERCENT DESIGN REQUIREMENTS. The following subparagraphs cover general drawing requirements.

**3.1.1 Drawings Format**

Prepare 594 mm x 841 mm, full size drawings. Full size drawings shall be submitted for all design submittals. Title block shall be as indicated in the Fort Worth District CADD Standards Manual. Recommended drawing scales are specified herein. Each Contractor-prepared drawing shall bear the stamp or seal and signature of the registered architect or appropriate registered engineer responsible for the work portrayed on that drawing and proposed to meet the RFP requirements. Drawing code numbers for the design drawings shall be provided by the Contracting Officer.

**3.1.2 Drawings Sequence**

Arrange drawings by design discipline in accordance with the Fort Worth District's Drafting Manual and CADD Standards Manual.

**3.1.3 Drawings Required**

As a minimum, the construction drawings shall consist of the following:

- a. Title Sheet, Index of Drawings (each technical discipline shall have a separate drawing legend sheet located in front of each respective section), Legend, and Abbreviations and Soil Borings
- b. Civil Drawings
- c. Utility Drawings (Water Supply, Wastewater, Gas, Electrical, Fiber and Communication)

- d. Architectural Drawings
- e. Interior Design Drawings
- f. Structural Drawings
- g. Mechanical Drawings
- h. Electrical Drawings (including security and fire alarm)
- i. Lightning Protection
- j. Fire Protection Drawings

### **3.2 TECHNICAL SPECIFICATIONS**

#### **3.2.1 Editing Technical Specifications**

The Contractor shall use applicable guide specifications for developing construction specifications. Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original guide specification sections. Only bracketed choices and inapplicable items may be deleted. Designer note numbers and bracketed choices are marked with redline (shading) for removal in corrected 100 percent specifications submittal. The Contractor shall complete the editing of all options in these specifications. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the Notes. The specifications shall clearly identify, where appropriate, the specific products chosen to meet the requirements of the specifications (manufacturers' brand names and model numbers or similar product information). The Contractor shall be responsible for coordinating references, along with the RFP requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used. See additional requirements in paragraphs: 50 PERCENT DESIGN REQUIREMENTS and 100 PERCENT DESIGN REQUIREMENTS.

##### **3.2.1.1 Additions**

If the Technical Specifications do not cover a feature that is in the project, new sentences and/or paragraphs shall be inserted in the proper locations to adequately cover the feature of work. Additions shall not lessen the quality of materials indicated by the specifications. If a new material is added, it shall be properly referenced in "APPLICABLE PUBLICATIONS," "MATERIALS," "SUBMITTALS," "TESTS," and "INSTALLATION" paragraphs, as applicable.

##### **3.2.1.2 Deletion of Inapplicable Text Material**

Delete all inapplicable text material to tailor the specifications to fit the project. After deletion has been made of all inapplicable paragraphs, subparagraphs, choices, and schedules from the body of the guide specifications (including but not limited to the correction of lists in

"SUBMITTALS," "TESTS," and "INSTALLATION" paragraphs), delete all nonapplicable references listed in the preceding "REFERENCES" and "MATERIALS" paragraphs.

#### **3.2.1.3 Special Tokens**

Do not remove any of the special tokens that are represented throughout the specifications i.e. \\* \*\, \- -\, \= =\, \+ +\, unless the text is not required. These tokens are used to generate reports and submittal registers.

#### **3.2.1.4 References to Specification Sections**

The Contractor shall be responsible for coordinating references, along with the RFP requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

#### **3.2.1.5 Submittals**

The Contractor is responsible for all submittals. See Section 01330 SUBMITTAL PROCEDURES (FOR CONSTRUCTION) for the definition of Government Approved and For Information Only submittals. All submittals shall be "FIO" unless otherwise specified. Submittals noted in the CEGS guides as "GA" shall be changed to "FIO".

### **3.2.2 Commercially Available Guide Specifications**

For items of work not covered by the CEGS guide specifications, the Contractor may develop specifications utilizing commercially available construction guide specifications such as "SpecText" published by The Construction Specifications Institute and "MasterSpec" published by The American Institute of Architects . These must be converted to CEGS format to be compatible with the Corps of Engineers Resident Management System (RMS) and the Specsintact Guide Specification and Submittal Register System. The CEGS format is specified in CEGS guide specifications CEGS-01010 CEGS ORGANIZATION GUIDANCE and CEGS-01020 CEGS TEMPLATE. Commercially available guide specifications must be converted to the CEGS format in order to develop the submittal register. Use Wordspec to convert the sections to Specsintact SISGML to produce the sections' submittal registers. References to the "Architect/Engineer" and the "Owner" shall be changed to refer to the "Government" or "Contracting Officer," as appropriate.

### **3.2.3 Division 1 Sections**

Include Division 1 specifications sections contained in the RFP as part of the project specifications without change.

### **3.2.4 FORMAT FOR PROJECT SPECIFICATIONS**

Submit the project specifications, including cover page and Table of Contents, printed with a word processor using Microsoft Word for Windows, Version 6.0 or higher, and Wordspec, or the Corps of Engineers Specsintact with SGML, Version 2.0, software. The use of Wordspec and Specsintact are

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compatible with MS Word and will produce the submittal register. The Corps of Engineers Specsintact and Wordspec software can be downloaded from the Internet at the following address:

[http://kscdl2.ksc.nasa.gov/specsintact/.](http://kscdl2.ksc.nasa.gov/specsintact/)

The Corps of Engineers CEGS and CEAGS guide specifications (SI SGML format) and the Lighting Fixture Standard Drawing 40-06-04 Details can be downloaded from the Internet at the following address:

[http://www.hnd.usace.army.mil/techinfo/index.htm.](http://www.hnd.usace.army.mil/techinfo/index.htm)

The guides can only be downloaded in \*.zip files. PKZIP software will be required to unzip them into working files.

Specsintact software and the CEGS guide specifications can also be obtained from the current version of the Construction Criteria Base CD, issued by the National Institute of Building Sciences, telephone number 202/289-7800, fax number 202-289-1092, internet address is:

[http://www.nibs.org.](http://www.nibs.org)

Fort Worth District guide specifications and the District supplements to the CEGS guide specifications can be obtained from the Fort Worth District upon request.

Print hard copies using laser printer and good quality white paper. For the 50 percent and 100 percent design submittals, editing of the Technical Specifications shall be shown by using redline (shaded text) for text deletions and double underlining for text insertions. The corrected 100 percent specifications with review comments incorporated shall be cleaned up (markings for insertion and deletion removed) and submitted in both hard copy and on magnetic media (DOS compatible 1.44 MB floppy disk). Carbon copies are not acceptable.

**3.2.4.1 Format**

Format shall match that used by the CEGS guide specifications.

**3.2.4.2 Cover Page**

The Cover page shall be similar to the RFP Cover page and shall include:

- a. Project title, activity and location
- b. Construction contract number
- c. Construction Contractor's name and address
- d. Design firm's name and address
- e. Names of design team members responsible for each Contractor prepared technical discipline of the project specification
- f. Name and signature of a Principal of the design firm

- g. The Table of Contents shall list the 16 Divisions contained in CSI format and the specification section numbers and titles contained in the project specification.

### 3.2.5 Construction Submittals

All construction submittals shall be in accordance with Section 01330, "Submittal Procedures (During Construction)."

### 3.3 DESIGN ANALYSES

Prepare design analyses (basis of design and calculations) for each design discipline. Specific requirements relative to the technical content to be provided are specified in the paragraphs for 50 and 100 percent design requirements. The design analyses shall be a presentation of facts to demonstrate that the concept of the project is fully understood and that the design is based on sound engineering. The design analysis for each discipline shall include:

- a. A basis of design consisting of:
  - (1) An introductory description of the project concept which addresses the salient points of the design;
  - (2) An orderly and comprehensive documentation of criteria, rationale, assumptions and reasoning for system selection.
- b. Calculations required by the specifications sections to support the design.

#### 3.3.1 Format

The design analysis shall include:

- a. a cover page indicating:
  - (1) the stage of design ("PRELIMINARY DESIGN ANALYSIS" for 50 percent design submittal and "FINAL DESIGN ANALYSIS" for 100 percent design submittal),
  - (2) the project title and location,
  - (3) who prepared the design analysis ("Prepared By:" followed by Name of the Contractor and the Contractor's AE, and the locations of the AE and the Contractor's Office(s) involved with the design),
  - (4) construction contract number; and
  - (5) the volume number and total number of volumes for the project.
- b. table of contents; and
- c. tabbed separations for each part of design analysis for quick reference.

Provide a cover sheet for each volume. Submit design analyses prepared on 216 mm by 280 mm (8 1/2 by 11 inch) white bond paper. The design analysis for all disciplines shall be bound in one volume, excluding calculations. Multiple volumes for individual disciplines, appropriately numbered, may be provided when required. Organize the design analysis narrative into the

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following parts, as follows:

**3.3.1.1 Part 1 - General Description**

This part will provide statements of purpose, authority and applicable criteria. A description of the project and a summary of the economic factors influencing the choice of the architectural, structural, mechanical, electrical, fire safety, water supply and wastewater disposal systems used in the project shall be provided along with an indication of how initial and life costs were considered.

a. **Purpose.** Include the project description contained in the Contract Summary on the Contract Award CD-ROM disk.

b. **Authority**

Provide the following authorization statement under the heading "AUTHORITY" for the project:

"The preparation of design documents was authorized for this project by the Contract Notice to Proceed dated \_\_\_\_ for Contract No. DACA63-98-C-00\_\_."

c. **Applicable Criteria**

Provide a list of the general criteria that pertains to all disciplines used in the design. Specific criteria used in a particular engineering /architectural discipline shall be listed in the text of the appropriate discipline in Part 2 of the design analysis. Such criteria shall be referenced accordingly.

d. **Project Description**

Provide a description of the project and summary of economic factors influencing the choice of materials and systems used in the project.

**3.3.1.2 Design Requirements and Provisions**

This part of the design analysis shall provide statements of factors considered and provided in the design along with supporting justification of design decisions and design calculations. Include narratives for each of the following areas. See paragraphs: 50 PERCENT DESIGN REQUIREMENTS and 100 PERCENT DESIGN REQUIREMENTS for specific requirements.

- a. Civil
- b. Landscaping
- c. Architectural
- d. Interior Design
- e. Structural
- f. Mechanical

- f. Plumbing
- g. Electrical
- i. Fire Protection
- j. Environmental Protection Compliance

### 3.3.2 Calculations

All calculations shall be placed in separate appendix volume(s). Calculations shall include a cover page similar to the design analysis narrative cover page, a table of contents, index page and a summary of criteria for each appendix on the first pages and the project title, and location identified on every page of the calculations. All calculation pages shall be clearly legible and photo-ready. Each discipline which requires calculations shall be consecutively numbered (Example: A-1, A-2, A-3 etc. for Water Supply and Wastewater Calculations and B-1, B-2, B-3, etc. for Structural Calculations) and the date. Cite criteria from which the calculations, rationale, and formulas are extracted by publication number, title, edition and page number. The cover page and each page of calculations shall also include the names of the persons originating and checking the calculations. The person checking the calculations shall be a registered professional engineer other than the originator. In addition, the signature and seal of the appropriate registered professional engineer responsible for the work shall appear on the cover page of the calculations for each discipline. Each appendix index page shall list subtopics (e.g. for Structural - Loads, Materials, References, Wind Analysis, Footing Design, Wall Design, Column Design, etc.) with pages numbers where each of these subtopics can be found in the calculations. Computer printouts shall be consecutively page numbered and identified similar to the calculations. Identify the computer program name, source, and version. All schematic models used for computer input shall be provided.

### 3.4 50 PERCENT DESIGN REQUIREMENTS

Submit the following:

#### 3.4.1 Rendering

The Contractor shall prepare an architectural rendering for inclusion with the 50 percent Design Submittal. The rendering will be in full color, represent the final exterior color and material selections, approximate size 500 mm by 600 mm, on illustration board, matted and framed with non-glare glass, and with project title on mat. The perspective shall be from an eye-level or low-level aerial point of view that will highlight the most attractive features of the project. The Contractor shall furnish one preliminary black-and-white sketch of the proposed rendering to the Contracting Officer, along with one(1) proposed exterior color scheme, for review and acceptance prior to proceeding with the color version.

Am#3

#### 3.4.2 Drawings

Furnish all drawings that are required for the 100 percent submittal. Except for site work, outside utilities, and structural drawings, all

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drawings shall be developed to approximately 50 percent completion. Site work, outside utilities, and structural drawings shall be 100 percent complete.

**3.4.3 Specifications**

All specification sections required for 100 percent submittal. Specifications for site work, utilities, and structural (Division 2 and those applicable in Divisions 3, 4, 5, 15, and 16) shall be 100 percent complete. All other specifications required for the completion of the building, turfing, and landscaping shall be at least mark-ups of the required technical sections and trade sections. Include the identification of the "author" of any industry standard guide specifications used, any mandatory guide specifications required in Division 3 ATTACHMENTS, and a table of contents listing all sections to be included in the project.

**3.4.4 Submittal Register**

Prepare a Submittal Register using ENG Form 4288 "Submittal Register" as specified in Section 01330 SUBMITTAL PROCEDURES (DURING CONSTRUCTION). Submittals for site work, utilities, and building structure shall be 100 percent complete. Submittals for all other work shall be developed to the extent required to support the level of design included in this submittal.

Use the Corps of Engineers' Specsintact software to produce the submittal register. Section format must follow the format shown in Corps of Engineers guide specification CEGS-01020 CEGS TEMPLATE.

**3.4.5 Civil**

**3.4.5.1 Drawings**

**3.4.5.1.1 Location Plan and Vicinity Map**

A Vicinity Map consists of a small scale drawing of the project location, similar to a road map. A Location Plan consists of a small scale drawing showing the Government property or reservation limit with the construction project site shown. The drawing shall show the facility approved Contractor Access and Haul Routes load limits on any bridges along haul routes, and the designated waste and/or borrow areas. A reproducible base sheet, if available, may be provided by the Omaha District for the Contractor's use in preparing the Location Plan.

**3.4.5.1.2 Removal Plan**

The removal plan will show the existing physical features and condition of the site before construction. This information should include the field survey to show all above and below ground utilities; buildings, drives, roads and parking areas, walks, and vegetation; and such facilities as retaining walls, underground storage tanks, foundations, existing contours, etc. Each physical feature to be removed shall be as indicated on the standard legend sheet, a legend on the removal plan, and properly noted: to be removed, to remain, or to be relocated.

**3.4.5.1.3 Site Plan**

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The Site Plan shall show all the site layout information necessary to field locate the building, walks, parking lots, and all other appurtenances to be constructed on the project. All site related work to be constructed will be located by dimensions. The Site Plan will identify all site related items such as: curbs, pavements, walks, courtyards, bollards, trash enclosures, retaining walls, etc. in accordance with a standard legend sheet or with additional legends or notes. Site Plans shall be at a scale of 1:400, 1:500, or 1:600 (1" = 20' or 1" = 30'). No existing or proposed contours shall be shown on this Plan. The Site Plan, prior to adding the dimensions, should serve as the base sheet to the other Plans, such as: Utilities Plan, Grading and Drainage Plans and Landscape Plan. The Site Plan will show all existing physical features and utilities within and adjacent to the work site that will remain after the proposed construction has been completed. This plan will also show any free zones, construction limits, and storage areas etc. Whenever the Site Plan occupies more than one sheet of drawings, a Key Plan shall be included. Additional plans showing specific areas of the site in smaller scales can be included if more detail is necessary.

**3.4.5.1.4 Grading and Drainage Plan**

A preliminary grading and drainage plan shall be provided at a scale of 1:400, 1:500, or 1:600 (1" = 20' or 1" = 30'). Tentative new and existing grading contours shall be indicated at 300 mm (1-foot) contour intervals. Indicate finished floor elevation of new building. Plans shall show layout of the new and existing storm drainage systems.

**3.4.5.1.5 Erosion Control Plans**

Erosion control plans shall show locations of all sediment basins, diversion ditches, areas to receive rock blanket, and other erosion control structures, indicating the approximate drainage areas each will serve. Indicate the materials, construction and capacity of each structure.

**3.4.5.1.6 Composite Utilities Plan**

A Composite Utilities Plan shall be provided at a scale of 1" = 20' or 1" = 30'. Tentative new and existing utilities shall be indicated. Plans shall show layout of the new and existing storm drainage systems, gas systems, sanitary systems, electrical systems, communication systems, water systems, steam systems and any other utilities which need to be provided for. Include new and existing contours.

**3.4.5.1.7 Grading Sections**

Provide grading sections through the new building showing finished and existing grades.

**3.4.5.1.8 Specifications**

The specifications shall be coordinated with the drawings. Provide a list of specifications which will be utilized for the project and complete edited copies of special sections that cover those subjects which are not covered by CEGS guide specifications.

**3.4.5.1.9 Design Analysis Narrative**

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Design analysis shall include the following:

- a. **References:** Design references used in preparing the civil design.
- b. **Grading:** A narrative of the grading design and criteria used.
- c. **Drainage:** A narrative of the drainage design and criteria used. Include information on the storm drain pipe materials selected and their ability to withstand earth dead loads and live loads that will be imposed.

The Design Analysis should give the basis for the site design and should establish specific goals, objectives and priorities for site design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during design. The 50 percent Design Analysis shall be accepted before start of the Final (100 %) Design.

**3.4.5.1.10 Design Analysis Calculations.**

Storm Drainage System Calculations shall include the following:

- a. Drainage area map showing boundaries of each drainage area and respective drain inlet or culvert.
- b. Storm run-off calculations for each drainage area.
- c. Preliminary storm drain pipe sizing calculations.

**3.4.6 Landscape**

**3.4.6.1 Landscape Plan.**

A Landscape Plan showing trees, shrubs, ground covers, seeded and sodded areas, shall be prepared by a Licensed Landscape Architect. The plan shall indicate the limit of sodded areas and the types of turfing treatment specified. Specify types of plant materials that are locally grown, commercially available and acclimated to the project environment. Include a plant materials schedule or listing. This schedule shall include botanical names, common names, key, size and the method of transplanting. The Landscape Plan shall also show all unsurfaced ground areas disturbed by construction within the project limits with these areas shown to be seeded, sodded, or mulched as required.

**3.4.6.2 Landscape Details.**

The Contractor shall provide designs and details as necessary for required site furnishings and accessories.

**3.4.7 Architectural**

**3.4.7.1 Drawings**

50 percent architectural drawing submittal shall be a complete set of architectural drawings without large scale details. All other drawings

shall be complete except referencing of the large scale details.

**3.4.7.1.1 Removal Drawings - Plans and Elevations**

New work and removal work should be shown on separate drawings. The type and the scope of removal work intended shall be clear from an inspection of the documents. Keyed notes for removal will be allowed.

**3.4.7.1.2 Floor Plans**

Provide a double line Composite Floor Plan of the entire building, drawn at the largest scale practicable to include the entire building or floor level on a single sheet. When the building is of a size that will require the floor plans to be divided into multiple areas, provide a key plan of the entire floor on each floor plan sheet with the section shown on the sheet cross-hatched. See paragraph on Drawing Scales for plan scale requirements. Floor plans shall essentially be complete with the exception of large scale detail referencing. Floor plans shall be scaled double-line drawings showing the functional arrangement, pocheing, location of all openings and plumbing fixtures, all section cuts, wall types, all notes and leaders, all general notes, and all dimensions shall be completed. The plans shall indicate door swings, door numbers and window type; door and window schedules are required. Provide a north arrow on each floor plan. Enlarged toilet and stair plans shall also be included. The first composite plan sheet shall include a gross area tabulation comparing the actual square footage with the authorized square footage of the facility. Contractor suggestions for plan improvement shall be fully shown and justified. Include:

- Overall, Control, Opening, and complete dimensioning
- Match Lines for combining individual portions of floor plans
- Room Names and Numbers
- Structural Column or Bay Indicators
- Wall and Building section cuts
- Door Swings and Numbers
- Window Types
- Square Footage
- General Notes

Also provide a Key Plan at a uniform location on all Floor Plan sheets which shows the interrelationships between the building portions. This key plan will also be used, scaled, and oriented in the same manner as the floor plan on all plan type drawings of all disciplines. When dimensioning, use arrowheads, not dots or slashes. Where major structural elements are included as parts of architectural detailing, do not indicate sizes. These elements should all be fully defined as part of the structural design documents. Major elements of mechanical and electrical equipment affecting space allocation, shall be shown on the architectural plan to the extent practicable and coordinated with other respective disciplines. When applicable, Government-furnished, Contractor-installed, or Government-furnished and installed items shall be shown as a dashed line.

**3.4.7.1.3 Reflected Ceiling Plans**

Reflected ceiling plans shall be completed including all notes, complete

legends and pocheing of all materials to be used. See paragraph on Drawing Scales for reflected ceiling plan scale requirements.

**3.4.7.1.4 Roof Plan**

Composite and larger area roof plan shall be complete including all notes, legends, slope indications, and roof and overflow drains. All elements located on the roof shall be coordinated with all disciplines. See paragraph on Drawing Scales for roof plan scale requirements.

**3.4.7.1.5 Building Elevations**

Provide all building elevations complete showing the appearance and architectural treatment. Elevations shall be dimensioned to show story height, total height, and relation to grade. Critical elevations such as top of finish floor, top of steel, etc. shall be indicated. All notes for materials shall be included. See paragraph on Drawing Scales for Exterior Building Elevation scale requirements.

**3.4.7.1.6 Building Sections**

Building cross section and longitudinal sections shall be included to show general interior volumes, framing method, relationship to adjacent structures, and height of ceilings and partitions. Identify materials used and necessary dimensions. See paragraph on Drawing Scales for Building Section scale requirements.

**3.4.7.1.7 Wall Sections**

Drawings shall include all wall section and stair section conditions including enclosed corridor showing vertical control elevations and dimensions with all materials labeled. The sections should normally be cut through doors, windows, and other critical wall section locations. Wall sections shall not be broken. Additional details shall be included when necessary to illustrate abutting adjacent buildings and important or unusual features. All horizontal dimensions shall occur on the plans and vertical dimensions on the sections and elevations. See paragraph on Drawing Scales for Wall Section scale requirements.

**3.4.7.1.8 Room Finish Schedules**

Room finish schedule shall be complete. Include signage.

**3.4.7.1.9 Door, Window, and Louver Schedules**

Door schedule shall be complete including door and frame types, except referencing to door details and hardware sets. Window and louver schedules shall be complete including window and louver types except referencing to details.

**3.4.7.1.10 Fire Ratings**

Wall ratings, and fire hazards shall be clearly indicated as required by Fire Protection criteria. Wall fire ratings shall be graphically shown by a continuous symbol or pocheing within the wall on the reflected ceiling plan

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and/or on a Fire Protection/Life Safety Plan. When other functions coexist with the fire protection functions, their integration shall be clearly indicated with an analysis that describes how both functions will be served. Provide a separate, composite type floor plan which makes an accurate presentation of these various features and functions. By authorized written permission, where the building and features being shown are unusually simple, this information may be included on other drawings. Rated wall details shall include the design number of the testing laboratory certifying the rating.

**3.4.7.1.11 Drawing Scales**

Architectural work shall be drawn at the scales listed below. Other scales may be used only by written authorization through the Contracting Officer. All disciplines should use the same scale for plan sheets.

<u>METRIC</u>	<u>(SI)</u>
Composite Plans (Note 1)	Varies
Floor Plans	1:50
Reflected Ceiling Plans	1:50
Detail Plans (Note 2)	1:20
Roof Plans	1:100
Exterior Elevations	Same scale as plan
Interior Elevations	1:50 min
Interior Toilet Elevations	1:20
Building Cross Sections	1:50
Wall Sections (Note 3)	1:10
Stair Sections	1:20
Details (Note 2)	1:5
Wall Types	1:5

Notes:

1. Scale of composite plan shall be as required so that the entire facility is drawn on one sheet without break lines.
2. The goal of this requirement is that the details be large enough to show all fixtures, accessories, equipment, materials, manner of construction, clearances required for proper maintenance, and complete dimensions. Toilet rooms and Equipment rooms are examples of the kind of spaces which shall be drawn as a Detail Plan. All details containing sheet metal flashing shall be 1:5.
3. May be 1:20 if pertinent details are shown at larger scale.

**3.4.7.1.12 Legends**

Standard architectural material symbols used on the drawings shall be provided as a separate architectural legend drawing located just in front of the architectural drawings in the set. Additional material symbols should be added to the Legend Sheet as needed for the project.

**3.4.7.1.13 North Arrows**

North arrows shall be oriented the same direction on all plan sheets and by

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all disciplines; including site and civil drawings. Plan north shall be "up" or to the left on the drawings. Indicate true north on composite plan drawings.

**3.4.7.1.14 Modular Design**

Modular Design practices shall be followed in the design of all masonry buildings or components of buildings. Dimensions shall be figured to whole or half-unit lengths (in increments of 100 mm) in order to reduce on-site cutting of masonry. Units less than 100 mm long shall be avoided.

**3.4.7.1.15 Symbols**

The Room and Door Numbering system shall be correspond to the room numbering system in existing Building 578. Room numbering shall start at the main entrance and proceed clockwise around functional areas. The standard symbols used for amendments (a triangular box) or contract modifications (a type of circular box, see the chapter on Drafting Criteria) shall not be used for any other purpose, and care must be taken to avoid using even similar appearing but technically different symbols.

**3.4.7.1.16 Schedules**

Schedules for room finish, doors, windows, louvers, etc., shall be clear and complete. As many columns as necessary should be provided in order to present the essential information. The "Remarks" column should not be used as a substitute for an information column. Normally a single item should be presented on each schedule line. Other scheduling methods as standard with the A-E may be used if approved by written authorization from the Contracting Officer.

**3.4.7.1.17 Notes**

Notes may be placed on drawings to reduce the amount of repetitive drafting, provided that clarity is not lost. General notes should be placed at the right-hand edge of the sheet and, if possible, should be located on the first sheet in the set. Notes that pertain to each drawing however, should be placed on each drawing.

**3.4.7.1.18 Dimensions**

Dimensions must be complete, accurate and fully coordinated . Dimensions should be to points easily measurable in the construction, and should be laid out to eliminate refiguring in the field. Dimensions should be tied-in to column lines, etc., to facilitate checking. Plan dimensions for frame construction should be to face of stud (or sheathing) for exterior walls, to one face of stud for interior partitions, and to centerline of openings. For masonry construction, dimensions should be to one or both nominal faces of masonry and to jambs of openings.

**3.4.7.1.19 Facility Elevation**

The elevation of the first floor shall be indicated as 100 000 mm (100.0) and shall be a minimum of 150 mm above finish grade. Elevation for other floors, footings, etc., shall be related to this figure. Sea level

elevations shall not be shown on the building drawings. Elevations of the first floor above sea level are shown on the grading plan (Civil).

**3.4.7.1.20 Access to Utilities**

All utilities within the building, such as piping, ductwork, electrical work, etc., shall be concealed in finished areas. Provide plumbing chases in toilet areas. The clear space above ceilings and the size of chases must be carefully figured to accommodate piping slopes and connections, ductwork crossovers, and fittings, HVAC piping and valve service spaces and similar situations. Access must be provided to valves, cleanouts, etc. Space provided for utilities systems must be adequate but should not be excessive.

**3.4.7.1.21 Reflected Ceiling Plans**

Reflected Ceiling Plans shall be provided for all spaces in the building. Reflected ceiling plans shall show the ceiling tile layout and location of gypsum wallboard and other ceiling types where applicable. All light fixtures, air diffusers, grilles, registers, exit lights, PA speakers, fire alarm strobe lights, sprinkler head layout, ceiling mounted equipment access panels or removable ceiling tile and grid elements, smoke and heat detectors, wall fire ratings, ceiling mounted equipment removal pathways and other ceiling mounted items will also be shown on the reflected ceiling plans. The fixtures and other equipment shall be laid out in a regular pattern symmetrical with the ceiling tile grid, or symmetrical with the room centerlines, columns, windows, or other feature that dominates. All ceiling mounted items shown shall be fully coordinated with all other disciplines.

**3.4.7.1.22 Standard Drawings**

Standard Drawings, when furnished for site adaptation will generally be utilized without basic architectural change. Portions of the drawings not pertinent to the project will be deleted. Specific instructions will be given when design changes are required.

**3.4.7.1.23 Sketches**

All sketches presented during the design phase shall be reduced to 216 mm by 280 mm (8-1/2" by 11") and included in this design analysis to document the design options and decisions evaluated during the design process.

**3.4.7.2 Design Analysis Narrative**

The Design Analysis shall be essentially complete with emphasis on the following:

- a. A statement indicating the basic criteria to be applied to the design including type of construction (noncombustible, etc.), category of construction (permanent, etc.), major fire protection and exit requirements, etc.
- b. A description of materials for all major building components and of all interior and exterior finishes. The description of materials must include type of exterior wall construction, room finish

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schedule, window types, panel materials, etc. The description of finishes may be presented in schedule form.

- c. A list of items on which additional criteria, clarification, or guidance is required.
- d. The written presentation must include the designer's reasons for selecting specific materials, architectural compatibility, and architectural treatment in all cases in which the reason for selection is not obvious.
- e. Site adaptation of standard drawings shall include the following in the design analysis.
  - (1) An outline of the selections made where the standards permit the designer a choice of design or material.
  - (2) An outline of items on the standard that do not conform to current criteria or to the design instructions, and suggested methods for changing the standards.
  - (3) An outline of errors found in the standards and suggested methods for correction.
  - (4) An outline of improvements the designer feels should be made to the standards, with full explanation and justification.

**3.4.7.2.1 General Parameters**

The design analysis shall follow the format described herein and include the following:

- a. The purposes, overall functions, and total capacities of the facility.
- b. The design theme or visual appearance of the exterior and interiors of the building, and how this facility coordinates with the image criteria of the installation on which it will be constructed.
- c. The number of personnel to use facility.
- d. The type of activities and equipment involved.
- e. The anticipated life of the functions to be accommodated.
- f. The category of construction; permanent.
- g. Functional and RFP requirements
- h. Functional areas, occupant capacities, and allocation, including a functional relationship matrix.
- i. All items of equipment, required.
- j. Occupational safety and health.

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- k. Handicapped accessibility.
- l. Energy conservation energy budget goals.
- m. Sound and vibration control.
- n. Interior service areas.
- p. Physical security; lock and keying, intrusion-detection, alarms, restricted access areas, interior guard support, and ties to local authorities.
- o. Justification for selection of exterior and interior finishes and materials.
- q. Moisture vapor control.
- r. Lessons learned incorporated into the design.

**3.4.7.2.2 Design Objectives and Provisions**

- a. Adaptation of the building to the size, shape, and orientation of the site.
- b. Building layout to establish convenient circulation flows during normal operation and emergency evacuation activities, for materials, equipment, services, and people.
- c. Grouping spaces into sound-compatible zones and protective construction zones, e.g., for fire and storm.
- d. Space layout compatible with modular (structural and environmental) support systems.
- e. Type of construction materials, architectural systems, and finishes.
- f. Building expendability/changeability.
- g. Physical security.
- h. Barrier-free design.
- i. Energy conservation (insulation, orientation).
- j. Acoustical design.
- k. Moisture vapor condensation design.
- l. Composition of masses and spaces, architectural compatibility and architectural details to reflect the design theme and desired image, and the scale and nature of the activities involved.
- m. Perception of the building details and volumes. (Specific provisions made, e.g., an identifiable sequence of viewing positions for

experiencing the interior and exterior architectural design.)

- n. Enhancement of materials and systems maintenance and operation.
- o. Economy of building construction, operation, and maintenance: life-cycle cost effectiveness.
- p. Coordination with Installation or Outside Agencies
- r. Physical security support.
- s. Occupational safety and health, as required.
- t. Government furnished equipment.
- u. Operations and maintenance support.
- v. Government furnished and installed Communications Cables.

**3.4.7.2.3 Checklists**

Fire Protection, Code Analysis and Handicapped Checklist shall be included in the Design Analysis. See Attachments A and B at the end of this Section.

**3.4.7.3 Design Analysis Calculations**

Calculations shall include the following:

- a. Net room areas, occupant capacity and gross building areas.  
(Categorize areas and capacities under the titles of "Operational Space Requirements", "Administrative Space Requirements", "Storage Space Requirements", and "Support Space Requirements".)
- b. K-values for each wall, window, door, or roof type studied or selected.
- c. Acoustics.
- d. Rainfall intensity relative to roof area and roof drain size and number calculations.

**3.4.8 Interiors**

**3.4.8.1 Drawings**

**3.4.8.1.1 Furniture Footprint**

A furniture footprint indicating proposed furniture layout shall be incorporated into the drawings for coordination with building utilities and indicate spatial relationships. All furnishings including consoles are not considered part of the construction contract and shall be indicated as such on the drawings by the use of dashed lines.

**3.4.8.2 Technical Specifications**

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Technical specifications shall be provided and coordinated with the drawings and design analysis. Specifications shall be edited to identify proposed product and installation requirements. Where materials or installation requirements are not covered in the provided specifications, information shall be prepared to cover these items.

**3.4.8.3 Design Analysis**

The design analysis will contain an explanation of the desired image or visual appearance of the interior of the facility.

**3.4.8.4 Building Related Exterior/Interior Design (SID)**

**3.4.8.4.1 Definition**

SID is the term referring to the building related exterior and interior finishes. An SID shall involve the selection and sampling of all applied finishes necessary to complete the building's interior and exterior architectural features. Finishes include, but are not limited to, floor, wall and ceiling finishes; roofing; siding and trim; interior paints and finishes; wall covering; trim items; carpet; floor, wall and ceiling tiles; doors; plastic laminates for cabinet work, and signage. All of the SID components shall be included in the base bid.

**3.4.8.4.2 Interior and Exterior Materials, Finishes, Textures and Colors**

Specific project and Army requirements for interior and exterior materials, finishes, textures and colors include:

General: Finishes, materials and colors chosen shall be in accordance with the RFP requirements and the Base's Installation Design Guide. The design shall meet fire, health, safety, and accessibility codes and standards.

Exterior: The exterior portion of the materials and finishes design effort emphasizes the overall exterior appearance and the attention to details that produce a good architectural solution. The exterior solution shall satisfy the architectural and functional requirements of the design program.

Interior: The interior portion of the materials and finishes design ties the exterior of the facility to the habitable spaces. The material and finish selection shall be appropriate to the function of the space.

**3.4.8.4.3 Submittal Requirements for SID Notebooks (Color/Finish Sample Boards)**

Furnish 4 sets of color/finish board(s) with attached samples of the proposed building-related finish materials mounted on 215 mm by 280 mm by 1.5 mm (8-1/2 inch by 11 inch by 1/16 inch) thick mat board in three-ring notebooks. Epoxy glue, hot-melt glue, or contact cement shall be used to attach samples; Scotch tape, double-backed tape, or rubber cement will not be acceptable. Heavy samples shall be mechanically fastened. Photographs or colored photocopies of SID materials are not acceptable.

The notebooks shall be labeled on the outside spine and front cover with the phase percentage, SID, project title and location, Contract number, date, and the Contractor's name and address.

**3.4.8.4.4 Sequence and Content of SID Submittal**

The sequence and content of SID Submittals shall be as follows:

Title Page.

Table of Contents.

Narrative of Interior Design Objectives.

Exterior Elevation Drawing.

Exterior Building Material Legend.

Exterior Building Material Color Board.

Interior Color Placement Plan.

Interior Color Boards (according to color placement plan).

Each sample shall indicate color, texture, and finish; and, if patterned, shall be large enough to define full pattern. Samples shall be identified as to type of material, area of installation, manufacturer, and transmittal number under which certification of the material represented will be submitted in accordance with the requirements of Section 01330 SUBMITTAL PROCEDURES (DURING CONSTRUCTION).

Interior Signage Color Boards.

Interior Floor Plans.

Room Finish Schedules.

Signage Plans.

**3.4.9 STRUCTURAL**

**3.4.9.1 Drawings**

Drawings shall include roof framing plans, second floor framing plans (if applicable), floor slab plans and foundation plans. Roof framing plans shall show sufficient details to clearly indicate the type of framing system used, size and spacing of members and their elevations. The location of all in-wall columns or pilasters shall be shown and all building structural members shall be at least outlined. The sizes, locations and elevations of footings shall be shown. Slab plans shall be coordinated with the Electrical sheets and shall indicate the locations of any in-slab electrical raceway trench ducts or similar items. Concrete slab-on-grade thicknesses and sections shall be shown. Proposed treatment of special foundations and other unique or complex features and details shall be shown on the drawings. Elevation views, sections and details necessary to illustrate the design at a 50% level of completion shall be provided. Drawings shall also include overall building plan dimensions, north arrows, and design notes.

**3.4.9.2 Specifications**

For the 50% design submittal the Contractor shall provide a listing by title and number of all Technical Specifications proposed for use in the final structural design.

**3.4.9.3 Design Analysis**

Design analysis shall follow the format described above in Paragraph "Design Analyses" and the specific content shall be essentially as outlined below.

**3.4.9.3.1 Design Criteria References**

A list of design criteria references, such as Uniform Building Codes, ACI Standards, AISC Specifications, etc., which were used in the design of the project shall be included in the narrative.

**3.4.9.3.2 Design Loads and Conditions**

A list of structural design loads and conditions shall be provided, including:

- Snow load and wind load parameters;
- Seismic design parameters;
- Roof live loads;
- Floor live loads, identifying each loading with usage and the room or space where used;
- Lab Equipment loads, identifying each loading with usage and the room or space where used;
- Foundation design criteria, including the design depth for footings, allowable soil bearing pressure, equivalent fluid densities (or lateral earth pressure coefficients) for the design of earth retaining structures and building components, modules of subgrade reaction, and any other pertinent data derived from the recommendations of the Foundation Analysis, a copy of which shall be included as an Appendix to the design analysis.

**3.4.9.3.3 Structural Materials**

A list of structural materials shall be provided, together with the stress grades and/or ASTM designations, as applicable, for structural steel, concrete, and reinforcing steel; the series for steel joists; and identification of the proposed use of each material in the structure.

**3.4.9.3.4 Availability of Precast Concrete Units**

Where precast concrete units of particular cross section(s) and concrete strength are a part of the structural design, verification of their availability from precast producers in the project vicinity shall be documented. Acceptable documentation consists of letters from the producers or a written statement by the Contractor identifying the name and address of the precaster(s), description of units and concrete strength(s) available, date when availability was verified, and name of Contractor's staff member who obtained the verification.

**3.4.9.3.5 Description of the Structural System**

A concise description of the proposed structural system for the building, together with the reasons for its selection, shall be provided. All principal elements of the structural system selected shall be described. Typically, these shall include:

- Roof systems, deck material, type and span direction of secondary roof framing members;
- Primary supporting members for the roof, whether steel frame, concrete frame, and/or concrete or masonry bearing walls;
- Masonry walls, type of material, and whether load bearing or non-load bearing, with location of load-bearing walls defined;
- The proposed system for resisting lateral forces (wind and earthquake) and transferring them to the ground, whether diaphragms, shear walls, braced or moment resisting frame, etc;
- Foundations, whether spread footings or continuous footings with concrete foundation walls;
- Concrete slab-on-grade floors, description of use and the location and types of crack control joints;
- The proposed treatment of any unusual structural loadings, features or unique solutions to structural problems;
- Measures taken to compensate for expansion/contraction and crack control in masonry walls;
- Identification of any major vibrating elements and measures taken to isolate them.
- Identification of any major Lab equipments and measures taken to support them.

**3.4.9.4 Design Analysis Calculations**

The extent of the structural calculations shall be indicative of a design which has reached a 50% level of completion. Computations shall include snow, wind, dead and live loads. Computations shall show sizing and spacing of structural members for roof framing, sidewalls and foundation sizes.

**3.4.10 Mechanical**

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Compliance with the RFP design requirements for the building mechanical systems will be reviewed at the submitted 50 percent drawings, design analysis, and specifications. Any conflicts in the design requirements or lack of thorough understanding of the nature and scope of work shall be identified and resolved prior to submittal of the 100 percent design. The Contractor must comply with Attachment C for mechanical room sizing.

**3.4.10.1 Design Drawings**

The 50 percent design drawings shall be fully coordinated with the design analysis. Sufficient plans, piping diagrams, sections, flow diagrams, details, schedules, and control diagrams/sequences shall be provided as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1:100 scale and shall show room names and numbers. Sheet reference number sequencing shall be in accordance with the Fort Worth District CADD Standards Manual. Submittal drawings shall include, but not limited to, the following:

**a. Mechanical Abbreviation, Legend, and General Notes Sheet**

This sheet shall include all mechanical abbreviations and symbols that will be used on the drawings. Symbols shall be grouped into sections; as a minimum, provide sections for Plumbing and HVAC. Control drawing symbols shall be shown on separate drawing.

**b. Exterior Cooling Tower Piping Plan Sheet**

Provide a sheet to show cooling tower equipment and condenser water piping exterior to the building.

**c. Plumbing Drawings**

The following plumbing drawings shall be provided:

**Composite Plumbing Plan:** For reference, composite plumbing plans shall be provided showing all plumbing systems for each level. Building outline and pertinent HVAC equipment shall be half-toned with plumbing system at standard lineweight. No construction notes shall be provided on the plans. A key plan and room schedule legend shall also be included on the composite plumbing plan sheets.

**Plumbing Plans:** Plumbing plans showing the design and tentative layout of the domestic hot and cold water distribution systems; make-up water piping; soil, waste and vent piping; and storm water drainage system shall be provided. Plans shall show all anticipated routing of piping systems from the connections within the structure to a point 2 meters outside the structure. The grade of all drain lines shall be calculated and invert elevations established. All plans shall show all plumbing fixtures. All electrical panels/equipment and pertinent HVAC equipment (chillers, expansion tanks, boilers, AHU's, pumps, etc.) shall be outlined in half-tone on the plumbing plans. Plans may be drawn at 1:100 scale as long as legibility is not compromised. Plumbing fixtures and drains shown on the drawings shall be designated by the same

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identification system used in the Technical Specification and Plumbing Fixture Schedule. Soil, waste, vent and storm drainage piping shall be shown on separate sheets from cold and hot water distribution piping and make up water piping as a minimum. A roof plan shall be provided to show roof drains and sanitary vent penetrations. Additional sheets shall be provided as need so legibility is not compromised.

**Enlarged Mechanical/Boiler Room Plumbing Plan:** An enlarged mechanical/boiler room plumbing plan drawn at a minimum 1:50 scale shall be provided. Plan shall show layout of all plumbing equipment and piping within the rooms. In addition to all the plumbing systems required, the plan shall show half-toned outlines of all HVAC equipment located in the room, gas service, condenser water or chilled water entrances, the fire protection entrance and risers, and the outline of any electrical panels or equipment located in the room.

**Plumbing Detail and Schedule Sheet:** The following details shall be provided: roof/overflow drains, gas fired water heater, and water service entrance. The provided plumbing fixture schedule and a contractor generated gas fired water heater schedule shall be provided.

**d. Mechanical HVAC Drawings**

Show on mechanical HVAC drawings, all items of mechanical equipment, including boiler room equipment, chilled water equipment, condenser water equipment, air handling units, air distribution and exhaust systems, etc., to clearly illustrate all HVAC system designs, and to determine proper space allocation within the intent of the architectural layout requirements. Plans and sections shall be developed sufficiently to insure that major equipment items, piping, and ductwork cause no interference with structural members, electrical equipment, etc. The following HVAC drawings shall be provided:

**Composite Mechanical HVAC Plan:** For reference, composite mechanical HVAC plans shall be provided showing all associated mechanical systems for each level. For review purposes, all interior walls that extend from the floor to the roof structure shall be identified on the plans. Wall identifications shall be omitted from the 100 percent Corrected Design and Construction drawings. Building outline and electrical equipment shall be half-toned with mechanical systems at standard lineweight. No construction notes shall be provided on the composite mechanical HVAC plans. A key plan and room schedule legend shall also be included on the composite mechanical HVAC plan sheets.

**Mechanical HVAC Plans:** Mechanical HVAC plans showing the design and tentative layout of the hot water piping distribution system and equipment, chilled water piping distribution system and equipment, condenser water piping distribution system and equipment, air supply and distribution systems, and ventilation and exhaust systems shall be provided. Air supply and distribution systems shall show all ductwork, including supply and return mains, branch ducts, terminal unit (single and dual duct VAV and CV boxes) takeoffs, terminal units (single and dual duct VAV and CV boxes), ductwork to diffusers, all diffusers grilles and registers, and all fire and fire/smoke dampers. For the 50 percent submittal, all supply and return mains shall be shown as double-lined,

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while branch ducts, takeoffs, and ductwork to diffusers may be single-lined. The final design submittal shall show all ductwork as double-lined. Piping 6 inches and larger shall be shown as double-lined for the 50 percent and final submittals. All electrical panels/equipment and pertinent plumbing equipment shall be outlined in half-tone on the HVAC plans. Plans may be drawn at 1:100 scale as long as legibility is not compromised. Air supply and distribution systems and ventilation and exhaust systems shall be shown on separate sheets from HVAC piping systems as a minimum. Additional sheets shall be provided as needed so legibility is not compromised.

**Enlarged Mechanical and Boiler Room HVAC Plans:** Enlarged mechanical room and boiler room HVAC plans showing all mechanical systems drawn at a minimum 1:25 scale shall be provided. Plans shall show layout of all HVAC equipment, piping, and ducts located within the rooms. Equipment shall include (but not be limited to) air handling units with associated outside air, relief air, and supply/return air ducts, plenums and louvers; CW, HW and condenser water pumps, exhaust/supply fans, gas service entrance, combustion air opening and ducts, unit heaters, boilers, chillers, expansion tanks, air separators, and DDC control panels. Plans shall show dedicated access space for items requiring maintenance. In addition to all the mechanical HVAC systems required, the plan shall show half-toned outlines of all major plumbing equipment, the water service entrance, fire protection entrance and riser, and any electrical equipment or panels located in the room.

**Mechanical Room Sections:** Preliminary mechanical room section shall be provided to ensure that major equipment items, piping and ductwork will fit as designed.

**Chilled Water System Flow Diagram:** Provide flow diagram showing chillers and cooling towers, the piping layout to the facility, and the facility piping system including the pumps and connected CW equipment and cooling tower equipment. Each pump and equipment item shall show associated GPM flowrate. All thermometers, pressure gauges, valves, and piping, shall be shown on the flow diagram.

**Hot Water System Flow Diagram:** Provide a hot water flow diagram showing the boiler, pumps, and all connected heating equipment. Each equipment item shall show associated GPM flow rate. All thermometers, pressure gauges, valves, and piping shall be shown on the flow diagram.

**Airflow Diagrams:** Airflow diagrams shall be provided for each air handling system showing CFM quantities for outside air, return air, and supply air. Supply-air side of each diagram shall be broken down into zones, with each zone supply, return, and relief/exhaust CFM quantities identified.

**Mechanical Detail Sheets:** Installation details showing all specification requirements such as isolation and balancing valves, thermometers, pressure gauges, equipment pads, strainers, vents, hangers, vibration isolation, etc. shall be provided for each item of mechanical equipment. As a minimum, and as applicable, the following mechanical details shall be provided:

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Hot Water Boiler Piping Diagram  
Chiller Piping Diagram  
Horizontal Unit Heater Piping Detail  
Vertical Unit Heater Piping Detail  
Chemical Shot Feeder  
Gas Service Entrance  
Expansion Tank and Air Separator  
Seismic Requirements for Floor-  
Mounted and Suspended Equipment  
Wall Propeller Supply/Exhaust Fan  
In-line Supply/Exhaust Fan  
Base Mounted End Suction Pump  
In-line Pump  
Air Handler Cooling Coil Piping Detail  
Air Handler Heating Coil Piping Detail  
Terminal Unit Heating Coil Piping Detail

**Mechanical Equipment Schedule Sheets:** Schedules shall be provided for each item of mechanical equipment. Furnished typical equipment schedules shall be used whenever possible and shall be revised and completed as necessary to suit the project requirements. In addition to the equipment schedules, damper and control valve schedules shall also be provided.

**e. HVAC Control Drawings**

One-line type control diagram showing all DDC interface points, a detailed sequence of operation, and a DDC control points list shall be provided for all mechanical equipment and systems. Sequence of operation for each item of equipment and system shall be sub-sectioned into paragraphs describing discreet operational requirements.

**HVAC Control Diagrams:** A Control Diagrams shall be provided for each system or item of equipment. Systems diagrams shall include every major component installed in or connected to the system, and only one system shall be shown on each diagram. Control Diagrams shall schematically show all sensors, controllers, actuators, indicators, and operator interface devices that are required for the complete automatic control and monitoring of the system. All sensing, controlling, activating, indicating and interfacing devices shall be shown with all functional interconnections to inputs and outputs. All associated thermometers and pressure gauges, located in their correct mechanical locations, shall also be shown on the diagrams.

**Sequence of Operations:** Sequence of Operations shall be provided for each item of equipment or system and shall fully describe the intended operation of the equipment or system in all different operating modes. Sequences shall include a description of all indication instrumentation, alarm conditions, and automatic actions to be taken upon occurrence of alarm conditions. Design setpoints shall be specified and indicated as being adjustable.

**Control Points Lists:** Provide DDC control points lists for all items of equipment and systems.

The following drawings shall be provided:

**HVAC Control Plan:** This sheet shall show location of all thermostats and equipment controlled, variable frequency drives and equipment controlled, and DDC panel locations.

**HVAC Controls Legend:** This sheet shall include all control abbreviations and symbols that will be used on the drawings. Furnished Controls Legend sheet shall be used as a basis for all abbreviations and symbols used on the Final Control Drawings.

**Misc Systems:** These sheets shall include all miscellaneous equipment items such as supply/exhaust fans, unit heaters, fan-coils, fintube, controls air compressor, etc. that are not interlocked to the main HW, CW, condenser water, or air handling unit systems. Provide one-line control diagram, sequence of operation, and DDC control points list for each item of equipment on the same sheet.

**Heating Water System:** Provide a heating water system control diagram, sequence of operation, and DDC control points list.

**Chilled Water and Condenser Water System:** Provide a chilled water and condenser water system control diagram, sequence of operation, and DDC control points list.

**Air Handling Systems:** For each air handling system, provide an air handling system control diagram, sequence of operation, and DDC control points list.

#### **3.4.10.2 Technical Specifications**

Submit specification sections to specify the quality, characteristics, installation procedures, commissioning and testing requirements of all items of the proposed mechanical design.

#### **3.4.10.3 Design Analysis**

The narrative portion of the design analysis shall contain a narrative description and analysis for each of the mechanical portions of the design. The basis and reasons for specific engineering decisions, special features, unusual requirements, etc., shall be explained or summarized as applicable. If it is necessary to deviate from criteria or standard practice, reasons shall also be included. Design statements shall be provided in sufficient detail to enable the reviewer to get a clear picture and understanding of all included work so that acceptance will be granted. Narrative shall be complete relative to scope and intended design approaches. The total scope projected to final design shall be outlined in a form that will be conveniently adapted, expanded, and detailed at the final design stage. If alternatives are to be evaluated and selected by the designer, findings (pros and cons) and conclusions shall be included. The design analysis shall carry a complete narrative for every item and system covered in the design, and shall include, but not be limited to, the following:

##### **a. Index**

Provide a design analysis index identifying all main and sub-paragraph headings.

**b. Project Summary**

Provide a brief description of the mechanical design objectives.

**c. Applicable Criteria**

A list of all applicable criteria used for basis of design.

**d. Technical Specifications**

A list of Technical Guide Specifications that will be used for the project.

**e. Design Conditions**

A list of Mechanical HVAC design conditions including elevation, latitude, heating/cooling degree days, winter and summer outside design temperatures, inside design temperatures for all spaces, ventilation rates, etc. shall be provided.

**f. System Descriptions**

Provide a complete description of all building systems; include the designer's reasons for selecting specific materials, systems, etc. in which the reason for selection is not obvious. System descriptions for proposed mechanical systems shall be include, but not limited to, the following:

- Plumbing System
- Roof Drainage System
- Interior Gas Piping System
- Hot Water Heating System
- Chilled Water System
- Condenser Water System
- Air Supply and Distribution Systems
- Ventilation and Exhaust Systems
- Direct Digital Control System (DDC)
- Seismic Protection
- Power Outage Start-Up Sequence

**g. HVAC Zone Descriptions**

A tabulated summary of the heating and cooling load shall be provided. The data shall be broken down by air handling systems, zones, and rooms shall include, the heating and cooling load; the supply, return and ventilation CFM; and heating water GPM for each zone.

**3.4.10.4 Design Analysis Calculations**

The Design Analysis calculations shall provide an estimate of the heating, cooling, and ventilation loads to determine a preliminary selection of the type and size of mechanical equipment to be used. Design calculations shall be provided in sufficient detail to enable the reviewer to get a clear understanding of all work to allow acceptance. Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials, and performance of specific systems or equipment. Manufacturer's catalog data sheets shall be provided for each item of

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equipment selected. Heating and cooling load calculations shall be performed by computerized procedures. Charts, curves, tables, and graphs used in support of calculations shall be provided. Such data must be from a recognized source. Design calculations and computations shall be provided for all systems and shall include, but not be limited to, the following:

**a. Index**

Provide a design analysis index identifying all calculation items.

**b. Design Conditions**

A list of Mechanical HVAC design conditions including elevation, latitude, heating/cooling degree days, winter and summer outside design temperatures, inside design temperatures for all spaces, ventilation rates, etc. shall be provided.

**c. Zone Air-Conditioning Loads**

Preliminary heating and cooling calculations shall be prepared using computer software based on the transfer function method (TETD/TA) as described in the ASHRAE Handbook Fundamentals. As a minimum, separate cooling calculations shall be provided for each temperature control zone.

**d. Psychometric Charts**

A psychometric chart, corrected for site elevation, shall be plotted for each air handling system. All points in the conditioning process (e.g., space condition, return air, outside air, mixed air, fan temperature rise, coil leaving condition) shall be clearly identified on the psychometric chart and verification of both sensible, latent, and total capacity shall be shown using the appropriate data from the chart.

**e. Equipment Selection Data**

Provide computerized selection data where manufacturer's selection software is available. Provide catalog selection data if manufacturers selection software is not available.

**f. Altitude Derating**

All equipment sizing and selection shall include deration for site altitude.

**g. Catalog Cut Sheets**

Catalog cut sheets for each equipment item shall include where relevant, but shall not be limited to, all relevant curves and graphs, input and output capacities, component description and configuration, electrical requirements, accessories, dimensional and weight data, sequence of operation, and manufacturers specifications.

**h. Combustion-Air Requirements**

Include combustion air CFM quantity and free area calculations, combustion

air heating requirements, and selection of combustion air heating equipment.

**i. Mechanical Ventilation**

CFM calculations for each area requiring mechanical ventilation for cooling.

**j. Ventilation**

Ventilation CFM calculations and criteria for provide all break rooms, toilets, restrooms, and janitors closets.

**k. Domestic Water Demand**

Calculations for determining the size of the domestic cold water supply line to the building shall be provided.

**l. Domestic Hot Water Demand**

Calculations for domestic hot water demand.

**m. Gas Piping System**

Calculations for pipe sizes based on equipment input. Equipment input shall be based on volume of gas required to satisfy equipment output at altitude. Provide gas flow diagram showing all equipment, equipment heating and gas volume input, and pipe sizes.

**n. Roof Drainage System**

Roof areas and calculations used in determining storm drainage pipe sizes and sizing of pipes shall be provided.

**o. Electrical Load Summary**

A summary of all mechanical equipment and the associated electrical load requirements shall be provided.

**3.4.11 Electrical**

Determine compliance with the design requirements for the building electrical systems by a review of the RFP requirements, design analysis, and specifications. Conflicts in the design requirements or lack of thorough understanding of the nature and scope of work shall be identified and resolved before submittal of the 50 percent design.

**3.4.11.1 Design Drawings**

Fully coordinate the 50 percent design drawings with the design analysis. Provide sufficient plans, single-line diagrams, riser diagrams, details, and schedules as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1:50 scale and shall show room names and numbers. Sheet reference number sequencing shall be in accordance with the Ft. Worth District CADD

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Standards Manual. Submittal drawings shall include, but not be limited to the following:

**a. Electrical Legend**

Describe and define the electrical and communications symbols used on the plans.

**b. Electrical Abbreviations**

Define abbreviations used on electrical plans. This information may be included on the electrical legend.

**c. Drawing Notes**

Identify drawing notes by a numerical label to further clarify or describe the design engineer's intent.

**d. One-Line Diagram**

Detail the complete electrical system with a simplified one-line diagram. Use standard symbols for electrical equipment including, but not limited to switchgear, sectionalizing cabinets, transformers, generators, uninterruptible power systems (UPS), switchboards, panel boards, power distribution units (PDUs), motor control centers (MCCs), motor starters. Include switchgear fuses or circuit breaker ratings; transformer ratings (including K-ratings) and connection configuration; switchboard ratings (including metering); panelboard current and ampere interrupting current (AIC) ratings; PDU ratings (including isolation transformers and K-ratings), raceway and conduit sizes and material type; MCC ratings; motor starter ratings; and conductor and ground type, size, and insulation ratings.

**e. Riser Diagram**

Illustrate the electrical equipment locations.

**f. Power Plan**

Detail the electrical wiring and non-lighting wall and raised floor receptacles.

**g. Power Cable Tray Plan**

Detail the underfloor power cable tray components, outlets, and routing.

**h. Communications Cable Tray Plan**

Detail the underfloor communications cable tray components, outlets, and routing.

**i. Lighting Plan**

Detail the electrical wiring and switching for lighting.

**j. Lighting Fixture Schedule**

Detail the lighting fixture types to be provided.

**k. Panelboard and PDU Schedules**

Detail the circuits and circuit breakers or fuse locations in all panelboard and PDUs known at this design level.

**l. Emergency Systems**

Detail the electrical requirements for emergency systems such as emergency generator, UPS, emergency lighting and fire alarm system (coordinate with fire protection plans).

**m. Site Plan**

Detail the connection of pad-mounted switchgear, pad-mounted sectionalizing cabinets and detail underground electrical and communications ducts.

**n. Communications Infrastructure**

Detail the conduit and raceways required to support communications systems, including, but not limited to intercoms, security, cable television, data transmission (local area network), and telephone.

**o. Security System**

Detail the security camera, alarm requirements and riser diagram.

**p. Lightning Protection System**

Detail the lightning protection system including air terminal types and locations; cross and down conductor material, sizes and connections; ground rod material, sizes, and locations; ground counterpoise materials, sizes, and routing, and test well construction and locations.

**q. Grounding System**

Detail grounding electrode; conductor materials, sizes, and locations; and isolation grounds.

**r. Cathodic Protection System**

Detail test point construction and locations, sacrificial anode systems, impressed current systems, etc.

**s. Miscellaneous Details**

Provide communications manhole details, electric vault details, special light fixture details, etc.

**r. Service Modules**

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A design "go-by" drawing for locations of raised access floor service modules will be provided to the Contractor at the pre-design conference. Conformance to the design "go-by" drawing will be required for issuance of design conformance acceptance by the Government.

**3.4.11.2 Technical Specifications**

Submit specification sections to specify the quality, characteristics, installation procedures and testing requirements for all items of the proposed electrical design.

**3.4.11.3 Design Analysis**

The narrative portion of the design analysis shall contain a narrative description and analysis for the following portions of the electrical design: overhead and underground exterior electrical distribution, exterior communications distribution, interior electrical distribution, interior communications distribution, interior and exterior lighting, lightning protection, grounding, emergency power, and cathodic protection. The basis and reasons for specific engineering decisions, special features, unusual requirements, etc., shall be explained or summarized as applicable. Reasons shall be provide if it is necessary to deviate from criteria or standard practice. Design statements shall be provided in sufficient detail to enable the reviewer to get a clear understanding of all included work so that acceptance will be granted. Narrative shall be completed relative to scope and intended design approaches. The total scope projected to final design shall be outlined in a form that will be conveniently adapted, explained, and detailed at the final design stage. If alternatives were to be evaluated and selected, pro and con findings and conclusions shall include, but not be limited to the following:

**a. Index**

Provide a design analysis index identifying all main and sub-paragraph headings.

**b. Project Summary**

Provide a brief description of the electrical design objectives.

**c. Applicable Criteria**

A list of all applicable criteria used for the basis of design.

**d. Technical Specifications**

A list of Technical Guide Specifications that will be used for the project.

**e. Design Conditions**

A list of electrical design conditions.

**f. System Descriptions**

Provide a complete description of all building electrical and communication

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systems. Include the designer=s reasoning for selecting specific materials and systems for which the reason is not obvious. System descriptions shall include, but not be limited to the following:

- Overhead and Underground Exterior Electrical Distribution
- Exterior Communications Distribution
- Interior Electrical Distribution
- Interior Communications Distribution
- Interior and Exterior Lighting,
- Lightning Protection
- Grounding
- Emergency Power
- Cathodic Protection

**g. Design Analysis Calculations**

The design analysis calculations shall provide an estimate of electrical loads to determine a preliminary selection of the type and size of electrical equipment to be utilized. Design calculations shall be provided in sufficient detail to enable the reviewer to get a clear understanding of all work to allow acceptance. Backup data shall be furnished to support basic design decisions related to sizing of major equipment, material selection, and performance of specific systems or equipment. Manufacturer=s catalog data sheets shall be provided for each item of equipment selected. Calculations may be performed by manual or computerized procedures. Use of standardized charts, curve, tables, and graphs will generally be acceptable for portions of required calculations in lieu of specific calculation procedures. Such data must be from a recognized source that is identified in the design analysis and shall be included with the calculations. Design Calculations and computations shall be provided for all systems and shall include, but not be limited to the following:

**(1) Service**

Sizing of building electrical services based on estimated maximum demand for both the technical and non-technical loads.

**(2) Transformers**

Sizing of exterior oil-filled and interior dry type transformers.

**(3) Electrical Cable Trays and Conduit**

Sizing of cable trays and conduit for the interior electrical distribution system.

**(4) Communications Cable Trays**

Sizing of communications cable trays for the interior communications distribution system.

**(5) Feeders**

Sizing of main feeders, including motor circuits. Calculate voltage drops.

**(6) Branch Circuits**

Sizing of branch circuits, including motor circuits. Calculate voltage drops.

**(7) Panelboards and PDUs**

Sizing of panelboards and PDUs, including circuit protection. Calculate K-rating for transformers in PDUs.

**(8) Illumination Calculations**

Calculations for interior and exterior lighting. Calculations shall be adjusted to compensate for special applications: irregularly shaped rooms, open sides, ceiling obstructions, corridors, etc.

**(9) Short Circuit Evaluation**

The maximum possible fault current at the building service shall be calculated for both the technical and utility power.

**(10) Lightning Protection Calculations**

Size the aerial terminals and cross and down conductors.

**(11) Cathodic Protection**

Size the cathodic protection system components.

**3.4.12 Fire Protection**

Compliance with the RFP design requirements for the building fire protection systems will be reviewed at the submitted 50 percent drawings, design analysis, and specifications. Any conflicts in the design requirements or lack of thorough understanding of the nature and scope of work shall be identified and resolved prior to submittal of the 100 percent design.

**3.4.12.1 Design Drawings**

The 50 percent design drawings shall be fully coordinated with the design analysis. Sufficient plans, diagrams, sections, and details shall be provided as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1:100 scale and shall show room names and numbers. Sheet reference number sequencing shall be in accordance with the Fort Worth District CADD Standards Manual. Submittal drawings shall include, but not limited to, the following:

**3.4.12.2 Fire Protection Plans**

Show on fire protection plan drawings:

- fire service entry and size to a point 1525 mm (5 feet) outside of

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- building;
- back flow preventer and size;
- system riser and size;
- zone risers, fire department connection, alarm bell, detectors, zones, room by room occupancy hazards and ceiling types per zone in tabular format, general description of system, applicable NFPA codes listing, sprinkler type per ceiling and application;
- water demand data, including design density, hose allowance, and design area for each applicable occupancy hazard; and
- a note stating that system shall be hydraulically designed.

Plans shall not show sprinkler piping or heads, unless it is necessary for coordination or system definition in special applications.

**3.4.12.3 Fire Protection Detail Drawings**

Show on fire protection detail drawings:

- mechanical riser diagram, including all pipe sizes;
- electrical riser diagram;
- any necessary sections to show routing of piping or sprinkler head locations, fire service entrance detail, exterior wall and slab penetration details, hydraulic design data from flow test provided by Government, hydrant designations from flow test, and fire protection symbols list.

**3.4.12.4 Site Plan**

Site plan shall include:

- underground fire service main routing and size, from point of connection at existing water main, to building entry point;
- and fire hydrant locations used in flow test.

Fire hydrants shall be labeled to match flow test designations shown on drawings and described in design analysis.

**3.4.12.5 Life Safety Plan**

Show on Life Safety Drawing:

- location of fire separation walls, column, floor and roof protection,
- path of travel for emergency egress and panic exits,
- access to building for fire fighting,
- rated doors and windows,
- requirement for mechanical and electrical penetrations through fire separation walls and floors,
- placement of fire extinguishers, and
- occupancy types.

**3.4.12.6 Technical Specifications**

Submit specification sections to specify the quality, characteristics, installation procedures, commissioning and testing requirements of all items of the proposed fire protection design.

**3.4.12.7 Design Analysis**

The narrative portion of the design analysis shall contain a narrative description and analysis for each of the fire protection portions of the design. The basis and reasons for specific engineering decisions, special features, unusual requirements, etc., shall be explained or summarized as applicable. If it is necessary to deviate from criteria or standard practice, reasons shall also be included. Design statements shall be provided in sufficient detail to enable the reviewer to get a clear picture and understanding of all included work so that acceptance will be granted. Narrative shall be complete relative to scope and intended design approaches. The total scope projected to final design shall be outlined in a form that will be conveniently adapted, expanded, and detailed at the final design stage. The design analysis shall carry a complete narrative for every item and system covered in the design, and shall include, but not be limited to, the following:

**a. Index**

Provide a design analysis index identifying all main and sub-paragraph headings.

**b. Project Summary**

Provide a brief description of the fire protection design objectives.

**c. Applicable Criteria**

A list of all applicable criteria used for basis of design.

**3.4.12.8 Technical Specifications**

A list of Technical Guide Specifications that will be used for the project.

**3.4.12.9 System Descriptions**

Provide a complete description of all fire protection systems; include the designer's reasons for selecting specific materials, systems, etc. in which the reason for selection is not obvious. System descriptions for proposed fire protection systems shall include, but not limited to, the following:

Pre-action Sprinkler System  
Fire Alarm and Detection System  
Life Safety Systems and Configurations

**3.4.12.10 Fire Protection Zone Descriptions**

A description of zones served by each zone riser. A description of fire alarm system zones.

**3.4.12.11 Design Analysis Calculations**

The Design analysis calculations shall provide an estimate of hydraulic feasibility based on, water flow demand criteria shown on drawings and in

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design analysis, system configuration, and hydraulic data from flow test provided by Government. Hydraulic calculation must be based on sound engineering judgement and shall indicate conclusive proof that the sprinkler system can be constructed and hydraulically designed to perform in accordance with NFPA 13, using reasonable sprinkler pipe sizes. Although design drawings shall be performance based, underground fire service and system riser sizes shall be shown on drawings, therefore, must be incorporated into calculations. Calculations, shall include, but shall not be limited to; pressure required at most remote sprinkler head; pressure drop in equivalent length of sprinkler piping from system riser to most hydraulically remote location; pressure drop through preaction deluge, check and isolation valve; pressure drop from friction and dynamic losses in system riser and underground fire service to point of connection to water main, and pressure drop through reduced pressure principal backflow preventer. Pressure loss in meters per 100 meters of equivalent length of sprinkler piping allowed shall be provided as a part of calculations to determine if sprinkler pipe sizes required for system to hydraulically perform are within reason. Provide a hydraulic graph showing curve generated from flow test data and system demand curve. System demand curve shall show demand required for sprinkler system, and shall show hose allowance for occupancy hazard of hydraulically most remote area used for hydraulic calculation estimate. Provide appropriate safety factor multiplier for estimated demand in most hydraulically remote area. Safety factor multiplier shall take into account excess sprinkler heads due to room configurations, and increased flow from upstream sprinkler heads. System riser, reduced pressure principal backflow preventer, and underground fire service will be sized, based upon this estimated demand.

**3.4.12.11.1 Hydraulic Calculations**

If hydraulic calculation, based on estimated demand and equivalent length of sprinkler piping to hydraulically most remote area, is borderline; and therefore inconclusive, a detailed hydraulic calculation and analysis, including sprinkler piping and head layout, must be provided.

**3.4.13 Environmental Protection Compliance**

The Contractor shall prepare a Chapter in the Design Analysis entitled: "Environmental Protection Compliance". This Chapter shall summarize how the project complies with all environmental laws and regulations. As a minimum, the Chapter shall include the following:

- a. The Permitting and/or Approving Authority(ies).
- b. Construction/Operating Permits, Notices, Reviews and/or Approvals required. If, when checking with the agencies, a permit, notice or approval is not required, include a copy of the telephone conversation memorandum or letter from the agency.
- c. Time required by the permitting agency(ies) to process the application(s) and issue the permits.
- d. Fee schedule including filing/application fees, review fees, emissions fees, certification testing, etc.

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- e. Monitoring and/or compliance testing requirements.
- f. Actual Environmental regulations governing the applications, exemptions, variances, etc. or at a minimum a brief summary of the regulation and title.

**3.5 100 PERCENT DESIGN REQUIREMENTS**

**3.5.1 Submittal Register**

Prepare a complete a Submittal Register using ENG Form 4288 "Submittal Register" as specified in Section 01330 SUBMITTAL PROCEDURES (DURING CONSTRUCTION), listing submittals for all specification sections that require submittals.

Fill in columns "c" through "o" and submit with the 100 percent design submittal. In columns (p) and (q), insert "GA" for Government approved items and "FIO" for Information Only (Contractor Approved) items.

**3.5.2 Civil**

**3.5.2.1 Drawings**

**a. Landscape Plan**

A Landscape Plan showing trees, shrubs, ground covers, seeded and sodded areas, shall be prepared. The Landscape Plan shall be prepared by a licensed Landscape Architect. The Contractor shall specify types of plant materials that are locally grown, commercially available and acclimated to the project environment. The Landscape Plan shall include a plant materials schedule or listing. This schedule shall include botanical names, common names, key, size and the method of transplanting. The Landscape Plan shall also show all unsurfaced ground areas disturbed by construction within the project limits with these areas shown to be seeded, sodded, or mulched as required.

**b. Landscape Details**

The Contractor shall provide designs and details as necessary for required site furnishings and accessories.

**c. Sprinkler Irrigation Systems**

Sprinkler irrigation plan shall designate the trees, shrubs, bushes, ground cover, and lawn area to be irrigated. Provide flow and pressure requirements. Also include appropriate details.

**3.5.2.2 Specifications**

Specifications shall be coordinated with the drawings and include all items including seeding, sodding, trees and shrubs, landscape furniture, lighting and other specialty items which may be included in the courtyards. Special sections shall be prepared to cover those subjects for which no pattern guide specifications are available. These specifications shall be in final form for construction and include all changes requested during the 50%

review stage.

### **3.5.3 Architectural**

#### **3.5.3.1 Drawings**

The drawings shall be complete, include all necessary and required details, thoroughly checked, and fully coordinated with the technical Specifications and all other Construction Documents. Previous comments and applicable criteria changes shall have been incorporated into the design. Removal work and details should be shown on separate drawings. The contract drawings shall fully describe the type and the scope of work required. The layout of individual sheets and the organization of the assembled set shall follow and communicate a logical sequence. General information shall be presented first, progressing to more detailed information. When assembling details, begin in the upper left-hand corner of the sheet with letters progressing to the right and down. When dimensioning, use arrowheads, not dots or slashes. Where major structural elements are included as parts of architectural detailing, do not indicate sizes. These elements must be fully defined in the structural design documents. See 50% Architectural drawing submittal requirements for drawing scales of remaining drawings to be submitted. Include all drawings from the 50% submittal plus all additional detail drawings required for complete 100% design. These shall include but not be limited to the following:

- Interior Elevations and Details
- Door Details
- Window Details
- Louver Details
- Roof Details
- Stair Details
- Casework Plans, Elevations, and Details
- Wall Plan Details and Plan Details
- Fire Wall Details and Penetration Conditions
- Sound Wall Details and Penetration Conditions
- Sealant Details
- Ceramic Tile Details
- Ceiling Details
- Control/Expansion Joint Details
- All Miscellaneous Details

#### **3.5.3.2 Technical Specifications**

The technical specifications shall be complete and fully coordinated with the drawings. Special sections shall be prepared to cover those subjects for which no pattern guide specification is available. Notes to the Designer that accompany specifications shall be used in editing technical guide specifications. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the guide.

#### **3.5.3.3 Design Analysis**

The Design Analysis shall include the basic information presented in the

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previous submittal, corrected to reflect changes in content made in response to review comments. Outline specifications shall be omitted from the Final Design Analysis as the information is included on the final drawings and project specifications. The design analysis shall be written in the present tense.

**3.5.3.4 Design Analysis Calculations**

The Design Analysis calculations shall include the basic information presented in the previous submittal, corrected to reflect changes in content made in response to review comments.

**3.5.3.5 Common Deficiencies**

Some requirements of the Fort Worth AEIM have been repeatedly overlooked in the past. The work involved in making corrections due to these common deficiencies becomes lost effort and time for the designer. Carefully compare the architectural design and contract documents with these requirements at several points in the design process to avoid unnecessary changes at a later date. Some of the requirements which are most often overlooked include:

- a. Not using correct abbreviations or terminology on the drawings. Abbreviations must match what is used on the standard abbreviation sheet and terminology must match what is used in the standard technical guide specifications.
- b. Not using the correct scales, north arrow designation, section cut system, or incomplete dimensioning on the drawings.
- c. Not providing sufficient space for door operation hardware at doors which swing into a wall running perpendicular to the opening. 100 mm minimum is required between edge of door frame and perpendicular walls.
- d. Not providing correct and complete Design Analysis information written in the present tense. The Design Analysis will be written following the format indicated herein. A separate Fire Protection section in the Design Analysis with input from all disciplines is one area which is often overlooked and shall be included.
- e. Not correctly presenting or coordinating (to avoid interference) features of Fire Protection, Noise Control, and Physical Security.
- f. Not correctly referencing and cross referencing building sections, wall sections, details, etc.
- g. Failure to read and use technical notes in editing the Technical Guide Specifications.
- h. Failure to coordinate all disciplines prior to submittal of projects for review.
- i. Improper use of fire-retardant wood. Fire-retardant wood is combustible; its use in buildings that are of noncombustible construction is extremely limited (see UBC for the minor allowable

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uses). Because of the potential for severe degradation, fire retardant plywood shall not be used in a roof or roofing system, or in structural applications.

- j. Incorrectly listing trade names in door hardware specifications in lieu of ANSI numbers and failure to correctly specify hardware finishes.
- k. Control joints in CMU walls and brick expansion joints in face brick are not shown on both architectural plans, elevations and structural plans, or are inconsistent. Note also control joint locating and coordination for floor tile per Tile Council of America recommendations.
- l. Failure to delete all publications which do not apply to the particular project.
- m. North is not oriented the same direction on all sheets (civil, site, arch).

**3.5.4 Interiors**

**3.5.4.1 Drawings**

Updates required as a result of the 50 percent review indicating proposed furniture layout shall be incorporated into the drawings by the use of dashed lines.

**3.5.4.2 Technical Specifications**

Technical specifications shall be in final form for construction and shall include all changes requested during the 50 percent review stage. All specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product, installation requirements, and testing methods of this facility.

**3.5.4.3 Design Analysis**

Updates as a result of the 50% review conference shall be made to the design analysis.

**3.5.4.4 Building Related Interior Design (SID)**

Updates as a result of the 50% review conference shall be made to the SID Notebooks.

**3.5.5 Structural.**

**3.5.5.1 Drawings**

Final drawings shall be complete, thoroughly checked, and fully coordinated with the other disciplines, specifications and all other construction documents. Previous comments and applicable criteria changes shall have been incorporated into the design. The drawings shall be complete with all

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plan views, sections, details, schedules, diagrams, and notes necessary for the construction of the project. For structural steel framing, the drawings shall meet the requirements for design drawings set forth in the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings. All structural steel members and connections shall be fully detailed. For structural concrete, the drawings shall conform to the standards for engineering (design) drawings set forth in the ACI Detailing Manual-1994 (SP-66). For precast concrete, the drawings shall comply with the requirements set forth in the 1992 PCI Design Handbook. Additionally, those items described below which are applicable to the design shall be incorporated into the drawings.

**3.5.5.1.1 Grid Systems, Dimensions, and Floor Elevations**

Each foundation and slab plan and roof framing plan shall have an alpha-numeric grid system aligned with any in-wall columns or pilasters, or with load bearing and non-load bearing walls, as applicable. The same grid system shall be used for all plan views. Each plan view shown shall have all necessary dimensions. On plan views, the dimensions shall define the location of grid lines, offsets, and all structural elements, as well as the overall sizes of the structure. The finish elevation of the floor slab shall be indicated as 100 000 mm, and elevations for foundations, walls and roof members shall be referenced to this basic elevation.

**3.5.5.1.2 Plan Sheets**

**3.5.5.1.2.1 Foundation and Slab Plans**

Foundation and slab plans shall show the size and location of all foundation elements, such as foundation walls, grade beams and footings. Elevations for footings shall be indicated on the plan. Plans for slabs-on-grade and exterior stoop slabs at building entrances shall show location and type of joints, slab thicknesses and reinforcing, elevation of slab surfaces, and any other design features, such as equipment bases, heavy Lab equipments, isolated foundations and the in-slab electrical raceway, which affect the slab design.

**3.5.5.1.2.2 Roof Framing Plans**

Roof framing plans shall be provided for all parts of the structure. Plans shall show the size, spacing, and location of all roof framing members, their supporting in-wall columns, pilasters or walls, all auxiliary members such as bracing and bridging, and the size and location of all major openings through the roof. Plans shall show support system for satellite dishes.

**3.5.5.1.3 Elevation Views, Sections and Details Sheets**

Elevation views, sections and details necessary to illustrate fully the design shall be provided. Some requirements peculiar to the various structural materials are described below.

**3.5.5.1.3.1 Concrete**

Include elevation views as necessary, plus sections and details to show the

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outlines of concrete cross-sections, reinforcing bar arrangements, concrete cover for rebar, installation of embedded items, and joint construction. All lap splice and embedment lengths for reinforcing bars shall be clearly indicated on the drawings. A sill detail for each foundation condition at exterior and interior doors shall be provided.

**3.5.5.1.3.2 Masonry**

Wall reinforcing shall be located and identified on plans, in section cuts, elevation views or in schedules. Structural elevations when needed shall be included to clarify the construction requirements for masonry reinforcement, especially the reinforcement around wall openings. Details applicable to the project shall be shown on the structural drawings. Listed below are some frequently required masonry details, most of which are shown in Uniform Building Code, 1994, and on the Typical Masonry Sheets. The Typical Masonry Sheets will be provided to the successful offeror upon request and may be edited and incorporated into the final drawings as needed. Additional details as required shall be extracted from other sources and incorporated into the final drawings. All details shall be fully edited to reflect the specific requirements of this project. Supplemental details shall be added as necessary to complete the design.

Masonry Details Frequently Used

- Masonry Control Joint (MCJ).
- Control Joint at Bond Beam.
- Bond Beam Corner Reinforcement.
- Seismic Reinforcement Around Wall Openings.
- Wall Reinforcement Details for 1 and/or 2 bar-per-cell stiffeners.
- Doweled or Other Connection of Masonry to Foundation, Floor, Roof or Bond Beam.
- Bond Beam (or Steel) Lintels and Bearing Details
- Lateral Support Detail for Top of Masonry Partition Walls. (lateral support locations must be shown on framing plan sheets.)
- Steel Joist Bearing

**3.5.5.1.3.3 Structural Steel, Steel Joists, and Steel Decking**

Structural steel connections shall be fully detailed and shown on the drawings. The anchorage of beams, trusses, joists, and steel deck to walls or other bearings, and the extra framing or reinforcement required at deck openings shall also be detailed. Notes, details, or schedules on the drawings shall indicate the steel deck attachment method to be used, and shall give the size and spacing for perimeter, side lap, intermediate supports and end lap attachments. Welded connections shall be detailed using standard weld symbols illustrated in AWS D1.1. All applicable weld sizes, spacing, types, contours and finishes shall be shown.

**3.5.5.1.4 Schedules**

**3.5.5.1.4.1 Foundation Schedules**

Foundation schedules for footings or grade beams shall be included, as applicable. The schedule shall include all pertinent information required for the foundation system being used.

**3.5.5.1.4.2 Framing Schedules**

For concrete framing, beam and column schedules shall conform to the requirements of the ACI Detailing Manual. For structural steel framing, provide a column schedule complete with design loads at splices, if any, and at column bases, plus a tabulation of the loads, shears, moments and/or axial loads to be resisted by the beams and their connections.

**3.5.5.1.5 Equipment Loads**

All equipment loads which exceed 80 kg and are not supported by concrete slab-on-grade, shall be identified on the drawings by showing equipment locations, total weights, and reaction loads at support points.

**3.5.5.1.6 Notes**

**3.5.5.1.6.1 Design Notes**

Under the heading "Designer's Notes," the structural drawings shall contain notes which begin:

"The structural design was prepared using the following data:".

The data then listed shall include the structural loading criteria used for design, such as roof and floor live loads, snow load design parameters, wind speed and wind load design parameters, seismic design parameters (Zone Z, I, R<sub>w</sub>, C, and S values), allowable soil bearing pressures (as recommended by the foundation analysis), foundation design depth, design wind uplift pressures for steel joists and other data pertinent to future alterations. Also, to be listed are the ASTM designations and stress grades of the applicable structural materials: steel, masonry, concrete for each usage, reinforcing bars, and bolts.

**3.5.5.1.6.2 General Notes**

Other notes, which direct the work to be performed, the materials to be used, etc., shall be grouped under the heading of "General Notes." Included in these notes should be a description of the building's structural system, if necessary.

**3.5.5.2 Specifications**

Technical specifications for final design shall be prepared in accordance with the instructions provided in this and Section 01300 SUBMITTALS FOR DESIGN and above in subparagraph "TECHNICAL SPECIFICATIONS." The technical specifications shall be complete and fully coordinated with the drawings. Special sections shall be prepared to cover those items for which no pattern guide specification is available. The "Notes to the Designer" that accompany specifications shall be used in editing the technical specifications. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

**3.5.5.3 Design Analysis**

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The final design analysis narrative shall repeat and expand upon the basic information presented in the 50% design analysis narrative, and shall be corrected to reflect revisions made for the final design.

**3.5.5.4 Design Analysis Calculations**

Calculations shall be prepared by an registered professional structural engineer and shall include an investigation of loading, (gravity, wind, seismic, and allowance for future loads, etc.) shear, moment, stress analysis diagram, uplift, stability and deflection calculations. The computations are to be systematic and accurate. Similar beams, columns, or connections may be grouped by designing the largest member or connection in the group, but every individual slab, beam, column, footing, connection or other structural member or structural consideration indicated by the plans shall be accounted for by pertinent calculations, statement or reasoning, or reference to source. Design formulas shall be written out in symbols the first time each is used, before the numerical values are supplied. All answers shall be identified by dimensional units. Basic assumptions of loads, working stresses, and methods of analysis must appear in the calculations; these assumptions must be applied consistently to a given problem. The calculations shall be presented in a clear and legible form, incorporating a title page, table of contents, and a tabulation showing all design loads and conditions. Pages shall be numbered consecutively and identified in the table of contents. Cross referencing shall be clear. The source of loading conditions, formulas, and references will be identified. Assumptions and conclusions will be explained. Superseded areas of computations must be ruled out. All computations shall be given a complete numerical and theoretical check within the Contractor's office. Calculation sheets shall carry the names or initials of the developer and the checker, and the dates of calculations and checking. No portion of the design calculations shall be developed and checked by the same individual.

**3.5.5.4.1 Computer Calculation Submittals**

All applicable input and output data shall be included in readable printed form as part of the design calculations. Continuous paper such as that used in computer terminals or printers shall be cut into individual pages and shall not be submitted in a continuous roll form. All input and output data shall include a brief synopsis of the computer program(s) stating required input, method of solution, approximations used, codes and specifications used, output generated, extent of previous usage or certification of the program(s), and program author(s). Generalized flow chart(s) may be used to supplement description of solution process, if desired. All computer generated and long-hand calculation sheets shall be identified by sheet number, indexing and cross-referencing. Each member or structure being analyzed shall be identified, dimensioned and shown in a loading diagram. A separate diagram shall be provided for each load case, such as dead plus live, dead plus wind, etc. Input and output values including intermediate values shall clearly be identified if such values are necessary for evaluation of the submittal.

**3.5.6 Mechanical**

The 100 percent final design submittal shall include all the information presented in the 50 percent submittal, updated to final design status,

corrected to reflect any changes made in response to review comments, and shall include the additional requirements specified hereinafter. Any concerns in developing the final design documents shall be resolved prior to starting the final design stage.

#### **3.5.6.1 Design Drawings**

The final design drawings shall be fully coordinated with the design analysis and specifications. Provide sufficient plans, piping diagrams and isometrics, mechanical room sections, water and air flow diagrams, details, schedules, control diagrams, sequences of operation, etc., as necessary to define the design requirements. Large-scale plans of congested areas shall be provided. Coordinate with architectural design for provision of access panels for all concealed valves, traps and air vents, etc. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. The final design drawings shall include all the requirements and drawings defined for the 50 percent submittal. In addition, the following new drawing requirements and drawings shall be provided:

##### **a. Mechanical Abbreviation, Legend, and General Notes Sheet**

On this sheet, include any mechanical general installation notes that may be required to clarify the construction intent that may not be readily apparent in the specifications or on the drawings. General notes may be provided on a separate sheet if space does not exist on the Abbreviation and Legend sheet.

##### **b. Plumbing Drawings**

**Enlarged Toilet Room Plans:** Enlarged toilet room plans showing all fixtures, water, waste, and vent piping shall be provided for each toilet area. Enlarged plans shall be drawn at a minimum 1:25 scale.

**Plumbing Riser Diagrams:** Plumbing water and Waste/Vent riser diagrams shall be provided for each toilet area. Riser diagrams shall be located on the same sheet as the respective enlarged toilet room plans.

##### **c. Mechanical HVAC Drawings**

**Mechanical Room Sections:** For each air handling unit within the mechanical room, a mechanical room section view shall be provided showing, but not limited to, all AHU components, ductwork connections/routing, and relationship to adjacent structural features.

#### **3.5.6.2 Technical Specifications**

The submitted 50 percent technical guide specifications shall be updated, completely edited, and fully coordinated with the drawings to accurately and clearly identify the final product and installation requirements for the facility.

#### **3.5.6.3 Design Analysis**

The Final Design Analysis Narrative shall include the information presented in the 50 percent submittal, shall be corrected to reflect changes in

content made in response to review comments, and shall be expanded to reflect the completed design.

#### **3.5.6.4 Design Analysis Calculations**

The Final Design Analysis calculations shall be performed by a registered professional mechanical engineer, and shall include all the information presented in the 50 percent submittal, shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design. In addition, the following new calculations shall be provided:

- a. Individual Air-Conditioning Loads for each room.
- b. Pipe sizing calculations for the hot water, chilled water cooling tower water systems.
- c. Hot water, chilled water, cooling tower water pump head calculations.
- d. Hot water expansion tank sizing.
- e. Control Valve CV calculations.
- f. Static pressure drop calculations for all duct systems.

#### **3.5.7 Electrical**

The 100 percent final design submittal shall include all the information presented in the 50 percent submittal, updated to final design status, corrected to reflect any changes made in response to review comments. It shall include the additional requirements specified hereinafter. Any concerns in developing the final design documents shall be resolved prior to starting the final design stage.

##### **3.5.7.1 Drawings**

The final design drawings shall be fully coordinated with the design analysis and specifications. Provide sufficient plans, electrical and UPS room sections, single-line diagrams, details, schedules, etc., as necessary to define the design requirements. Coordinate the electrical and communications design with the design for other disciplines. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. The final design drawings shall include all the requirements and drawings defined for the 50 percent submittal. Drawing scale shall match architectural drawing requirements. Plans shall be legible at full-size. Drawings shall include the following:

##### **a. Electrical Legend**

Describe and/or define the electrical and communications symbols used in the plans.

##### **b. Electrical Abbreviations**

Define abbreviations used on the electrical plans (may be included in the

electrical legend).

**c. Drawing Notes**

Generally identified by a numerical label to further clarify or describe the design or design engineer's intent.

**d. One-Line Diagram**

Detail the complete electrical system with a simplified one-line diagram. The diagram shall show ratings of major equipment including short circuit ratings.

**e. Riser Diagram**

Illustrate the electrical equipment locations.

**f. Power Plan**

Detail the electrical wiring for outlets other than lighting. Identify rooms by name and number.

**g. Power Cable Tray Plan**

Detail the electrical wiring and non- lighting wall and raised floor receptacles.

**h. Communications Cable Tray Plan**

Detail the underfloor communications cable tray components, outlets, and routing.

**i. Lighting Plan**

Detail the electrical wiring and switching for lighting. Identify rooms by name and number.

**j. Lighting Fixture Schedule**

Detail the lighting fixture types to be provided.

**k. Panelboard and PDU Schedules**

Detail the circuits and circuit breakers or fuse locations in various panelboards, including panelboards in power distribution units (PDUs). Panelboard schedules shall include the designation, location, mounting (flush or surface), number of phases and wires, voltage, capacity and total connected and demand load. Indicate the trip rating, frame size, interrupting rating and number of poles for each circuit breaker in the panelboards. List the circuit number, circuit description and load for each branch circuit. Include estimated maximum demand for each panel and for entire building and other relative information which will help clarify questionable items on the plans and specifications.

**l. Emergency Systems**

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Detail electrical requirements for emergency systems such as emergency lighting, emergency generators and UPS.

**m. Site Plan**

Detail the connection to switchgear, vaults, and underground electric and communications duct routes. Show utilities the underground electric lines and communications ducts will cross.

**n. Communications System**

Detail audio/visual requirements such as intercoms, cable TV, or computer data.

**o. Security System**

Detail security camera, alarm requirements and riser diagram.

**p. Lightning Protection System**

As a minimum show locations of all air terminals, roof conductors, down conductors, ground rods, and counterpoise.

**r. Grounding System**

Detail grounding electrode locations, grounding conductors and bond locations and types.

**s. Cathodic Protection System**

Detail test points, sacrificial anode systems, impressed current systems, etc.

**t. Miscellaneous Details**

Provide communications manhole details, electric vault details, special light fixture details, etc.

**3.5.7.2 Specifications**

All 50 percent specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product, installation requirements, and testing methods for this facility.

**3.5.7.3 Design Analysis**

The text of the preliminary design analysis shall be expanded to reflect the completed design. Calculations used to develop the design shall be included. The document in its final form should conform in all applicable respects to the requirements of Division 16 technical requirements.

**3.5.7.4 Design Analysis Calculations**

Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials, selection of economic alternatives,

performance of specific systems or equipment. Calculations shall be performed by a registered professional electrical engineer and may be performed by manual or computerized procedures. Use of standardized charts, curves, tables, graphs will generally be acceptable for portions of required calculations or in lieu of specific calculation procedures. Such data must be from a recognized source which is identified in the design analysis. If possible, a copy of applicable sheets or pages should be included with the calculations. For given equipment, the calculations must conform to requirements identified under subsequent paragraphs herein pertaining to the equipment.

Contractor shall verify and coordinate all electrical equipment ratings to be used in the new NRCC project (new or existing), for compatibility as to amps interrupting capacity (AIC), and short-circuit current available, for a complete and operational system. As a minimum the following shall be submitted.

**3.5.7.4.1 Service**

Sizing of building service (technical and utility).

**3.5.7.4.2 Transformers**

Sizing of general purpose dry type transformers. (Generally 1 or 2 samples of detailed calculations to identify the method are sufficient, if input data for remaining units can be derived from panel or feeder sizing data.)

**3.5.7.4.3 Feeders and Branch Circuits**

Sizing of feeders and branch circuits (including motor circuits). (One detailed sample calculation is sufficient to establish the procedure, remaining data can be in schedules, tables, etc.).

**3.5.7.4.4 Panelboards**

Sizing and loading of panelboards and distribution equipment.

**3.5.7.4.5 Voltage drop determination**

Provide voltage drop calculations in accordance with IEEE 241 to demonstrate that the voltage drop requirements of NFPA 70 are satisfied.

**3.5.7.4.6 Illumination calculations**

Data shall identify target and calculated illumination levels for all rooms and areas. Calculations shall be adjusted to compensate for special applications -- irregularly shaped rooms, open sides, ceiling obstructions (beams, ductwork), corridors, etc. If the lumen method is used for corridor calculations, the calculations shall be performed using a module in which the length doesn't exceed 3 times the width (2:1 ratio preferred).

**3.5.7.4.7 Short Circuit Evaluation**

By Registered Electrical Professional Engineer. Calculate the fault current in accordance with IEEE 242 for each node in the electrical distribution system.

**3.5.7.4.8 Protective Coordination Analysis**

Perform a protective coordination study to show that the power system is selectively coordinated and is fully coordinated with the upstream fuses in the S&C switchgear. The protective coordination / short circuit study shall be complete and accepted by the Government before any changes are made to the existing equipment. The protective coordination / short circuit study shall be performed per N.E.T.A. Acceptance Testing Specifications, Section 6.

**3.5.7.4.9 Specialized Applications**

Additional engineering backup shall be included to address special requirements such as accommodation of nonlinear loads, harmonics analysis, energy studies, lightning protection, cathodic protection, cable tray sizing (both electric and COMMO), etc.

**3.5.8 Fire Protection**

The 100 percent final design submittal shall include all the information presented in the 50 percent submittal, updated to final design status, corrected to reflect any changes made in response to review comments, and shall include the additional requirements specified hereinafter. Any concerns in developing the final design documents shall be resolved prior to starting the final design stage.

**3.5.8.1 Design Drawings**

The final design drawings shall be fully coordinated with the design analysis and specifications. Provide sufficient plans, diagrams, sections, details etc., as necessary to define the design requirements. The final design drawings shall include all the requirements and drawings defined for the 50 percent submittal.

**3.5.8.2 Technical Specifications**

The submitted 50 percent technical guide specifications shall be updated, completely edited, and fully coordinated with the drawings to accurately and clearly identify the final product and installation requirements for the facility.

**3.5.8.3 Design Analysis**

The Final Design Analysis Narrative shall include the information presented in the 50 percent submittal, shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design.

**3.5.8.4 Design Analysis Calculations**

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

The Final Design Analysis calculations shall include all the information presented in the 50 percent submittal, shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design. Calculations shall be performed by a registered mechanical engineer.

**3.5.9 Environmental Protection Compliance**

The Contractor shall prepare a Chapter in the Design Analysis entitled: "Environmental Protection Compliance". Include revisions, as required, from the 50 percent design submittal.

ATTACHMENT A

**PART 3 - CODE ANALYSIS**  
**UNIFORM BUILDING CODE (UBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS**

LIFE SAFETY AND FIRE PROTECTION IS AN INTEGRAL PART OF EVERY FACILITY DESIGN. RECOGNIZED CODES AND ACCEPTED SAFETY STANDARDS SHALL BE FOLLOWED IN THE DESIGN OF ALL FACILITIES. OF THE VARIOUS CODES AND SAFETY STANDARDS THE NATIONAL FIRE PROTECTION ASSOC. (NFPA) "LIFE SAFETY CODE" SHALL TAKE PRECEDENCE. ALL APPLICABLE REQUIREMENTS OF THE LIFE SAFETY CODE SHALL BE INCORPORATED INTO EACH DESIGN. FOR TYPE OF CONSTRUCTION, FIRE AREA LIMITATIONS, AND ALLOWABLE BUILDING HEIGHTS THE DESIGN SHALL FOLLOW THE UNIFORM BUILDING CODE (UBC).

**CHECK LIST**

PROJECT NAME \_\_\_\_\_ DATE \_\_\_\_\_  
LOCATION \_\_\_\_\_  
\_\_\_\_\_

**4 UNIFORM BUILDING CODE ANALYSIS**

4.1 OCCUPANCY CLASSIFICATION (See Table 5A):

Area:      Classification:  
          (GROUP: \_\_\_\_\_): Div. \_\_\_\_\_  
          (GROUP: \_\_\_\_\_): Div. \_\_\_\_\_  
          (GROUP: \_\_\_\_\_): Div. \_\_\_\_\_

PRINCIPAL OCCUPANCY \_\_\_\_\_

OTHERS ( SPECIFY ) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4.2 TYPE OF CONSTRUCTION : \_\_\_\_\_

4.3 OCCUPANCY SEPERATION REQUIRED ( SEE TABLE 5-B):

_____	TO _____	= _____	HRS
_____	TO _____	= _____	HRS
_____	TO _____	= _____	HRS
_____	TO _____	= _____	HRS
_____	TO _____	= _____	HRS

4.4 FIRE RESISTANCE OF EXTERIOR WALLS: ( SEE TABLE 5-A)

NORTH \_\_\_\_\_  
SOUTH \_\_\_\_\_  
EAST \_\_\_\_\_  
WEST \_\_\_\_\_  
OTHER \_\_\_\_\_

PART 3 - CODE ANALYSIS  
UNIFORM BUILDING CODE (UBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

4 UNIFORM BUILDING CODE ANALYSIS

4.5 OPENINGS IN EXTERIOR WALLS: ( SEE TABLE 5-A)

NORTH \_\_\_\_\_  
SOUTH \_\_\_\_\_  
EAST \_\_\_\_\_  
WEST \_\_\_\_\_  
OTHER \_\_\_\_\_

4.6 MAX. ALLOWABLE FLOOR AREA ( SEE TABLE 5-C):

ALLOWABLE:

IF SPRINKLERED: \_\_\_\_\_

ALLOW. AREA INCREASES \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CALCULATED ACTUAL FLOOR AREA:

Floor	Square Footage
-------	----------------

Totals:

4.7 MAX. ALLOWABLE HEIGHT ( SEE TABLE 5-D):

FEET: \_\_\_\_\_

STORIES: \_\_\_\_\_

Proposed Height of Building:

Actual No. of Stories:

4.8 COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DESIGNER: \_\_\_\_\_

PART 3 - CODE ANALYSIS  
UNIFORM BUILDING CODE (UBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

5 NFPA 101 "LIFE SAFETY CODE"

5.1 CLASSIFICATION OF OCCUPANCY: \_\_\_\_\_

HAZARD OF CONTENTS:

LOW \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ORDINARY \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

HIGH \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5.2 FIRE RESISTIVE REQUIREMENTS:

EXTERIOR WALLS: \_\_\_\_\_ HRS \_\_\_\_\_

INTERIOR WALLS: \_\_\_\_\_ HRS \_\_\_\_\_

STRUCTURAL FRAME: \_\_\_\_\_ HRS \_\_\_\_\_

VERTICAL OPENINGS: \_\_\_\_\_ HRS \_\_\_\_\_

FLOORS: \_\_\_\_\_ HRS \_\_\_\_\_

ROOFS: \_\_\_\_\_ HRS \_\_\_\_\_

EXTERIOR DOORS: \_\_\_\_\_ HRS \_\_\_\_\_

EXTERIOR WINDOWS: \_\_\_\_\_ HRS \_\_\_\_\_

BOILER ROOM ENCLOSURE \_\_\_\_\_ HRS \_\_\_\_\_

OTHER (LIST ) \_\_\_\_\_ HRS \_\_\_\_\_

\_\_\_\_\_ HRS \_\_\_\_\_  
\_\_\_\_\_ HRS \_\_\_\_\_  
\_\_\_\_\_ HRS \_\_\_\_\_

PART 3 - CODE ANALYSIS

UNIFORM BUILDING CODE (UBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

5 NFPA 101 "LIFE SAFETY CODE"

5.3 MEANS OF EGRESS:

OCCUPANCY LOAD FACTOR: \_\_\_\_\_

OCCUPANCY	FACTOR	ACTUAL AREA	ACTUAL LOAD
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

5.4 NUMBER OF EXITS REQUIRED: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5.5 MINIMUM WIDTH OF EXITS:  
CALCULATED: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
ACTUAL: \_\_\_\_\_  
\_\_\_\_\_

5.6 MAXIMUM ALLOWABLE TRAVEL DISTANCE TO EXIT: \_\_\_\_\_

WITH SPRINKLERS: \_\_\_\_\_  
\_\_\_\_\_

5.7 EXIT DOORS:

MINIMUM WIDTH ALLOWED: \_\_\_\_\_  
MAXIMUM LEAF WIDTH ALLOWED: \_\_\_\_\_  
WIDTH REQUIRED FOR NO.OF OCCUPANTS: \_\_\_\_\_  
\_\_\_\_\_

PART 3 - CODE ANALYSIS

UNIFORM BUILDING CODE (UBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

5 NFPA 101 "LIFE SAFETY CODE"

5.8 EXIT CORRIDORS:

MAX. COMMON PATH OF TRAVEL: \_\_\_\_\_

MINIMUM ALLOWABLE WIDTH: \_\_\_\_\_

REQUIRED TO HAVE EXIT AT EACH END OF CORRIDOR? \_\_\_\_\_

DEAD END CORRIDORS ALLOWED? \_\_\_\_\_

MAXIMUM LENGTH: \_\_\_\_\_

WALL FIRE RESISTANCE REQUIRED: \_\_\_\_\_

DOORS & FRAME FIRE RESISTANCE REQUIRED: \_\_\_\_\_

5.9 STAIRS:

MINIMUM WIDTH \_\_\_\_\_ FOR OCCUP. LOAD OF \_\_\_\_\_

MAX. RISER ALLOWED: \_\_\_\_\_

MINIMUM TREAD ALLOWED: \_\_\_\_\_

LANDINGS:

MIN. SIZE: \_\_\_\_\_

MAX. VERTICAL DIST. BETWEEN LANDINGS: \_\_\_\_\_

REQUIRED HEIGHT OF RAILINGS: \_\_\_\_\_

HANDRAILS:

REQUIRED AT EACH SIDE? \_\_\_\_\_

INTERMEDIATE RAIL REQUIRED? \_\_\_\_\_

HEIGHT ABOVE NOSING \_\_\_\_\_

INTERMEDIATE RAIL REQUIRED? \_\_\_\_\_

MAX. SPACE ALLOWED BETWEEN RAILS: \_\_\_\_\_

STAIR ENCLOSURE REQUIRED? \_\_\_\_\_

STAIR TO ROOF REQUIRED? \_\_\_\_\_

STAIR TO BASEMENT REQUIRED? \_\_\_\_\_

5.10 HATCHWAY ACCESS TO ROOF REQUIRED? \_\_\_\_\_

PART 3 - CODE ANALYSIS

UNIFORM BUILDING CODE (UBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

5 NFPA 101 "LIFE SAFETY CODE"

5.11 LADDER ACCESS TO ROOF REQUIRED? \_\_\_\_\_

5.12 HORIZONTAL EXIT REQUIREMENTS: \_\_\_\_\_  
\_\_\_\_\_

5.13 PROTECTION OF OPENINGS NEAR EXTERIOR STAIR EXIT DOORS:  
\_\_\_\_\_

5.14 SMOKEPROOF ENCLOSURE REQUIRED: \_\_\_\_\_  
\_\_\_\_\_

5.15 RAMPS:  
MAX. SLOPE TO USE AS EXIT \_\_\_\_\_  
HANDRAILS REQUIRED? \_\_\_\_\_

5.16 COMMENTS:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DESIGNER: \_\_\_\_\_

FOLLOWING IS A LIST OF ADDITIONAL "NFPA" CODES THAT ARE COMMONLY USED. INDICATE WHICH OF THESE CODES ARE USED AND ADD THOSE REQUIREMENTS TO THIS ANALYSIS.

- MIL HDBK- 1008B FIRE PROTECTION FOR FACILITIES, ENGR, DESIGN AND CONSTRUCTION.
- NFPA 10 FIRE EXTINGUISHERS, PORTABLE
- NFPA 75 COMPUTER/DATA PROCESSING FACILITIES
- NFPA 80 FIRE DOORS AND WINDOWS
- NFPA 88A PARKING STRUCTURES
- NFPA 409 AIRCRAFT HANGARS
- AFM 88-4 DATA PROCESSING FAC. DESIGN AND CONST.
- AF ETL 89-3 FIRE PROTECTION CRITERIA FOR ELECTRONIC EQUIPMENT INSTALLATIONS.

[Typed Name and Signature of the  
Licensed Architect/Engineer of Record]  
[Professional Seal of the Licensed Architect/Engineer of Record]

ATTACHMENT B  
 ADA ARCHITECTURAL DESIGN CHECKLIST  
 Project Name: \_\_\_\_\_  
 Project Location: \_\_\_\_\_  
 Design Phase: \_\_\_\_\_

ITEM NO.	INCORP	INCORP LATER	N/A
1. Established with the Base/owner of the facility the for handicap accessibility.	_____	_____	_____
2. Received a waiver for no handicap accessibility requirements on the facility.	_____	_____	_____
3. Facility is designed utilizing:			
New Construction Criteria	_____	_____	_____
Building Alteration Criteria	_____	_____	_____
Historic Building Preservation Criteria:	_____	_____	_____
4. Accessible Route (egress/corridors/halls/aisles).			
- Provided minimum fire egress routes.	_____	_____	_____
- Provided minimum site accessible routes.	_____	_____	_____
- Provided proper clearance widths.	_____	_____	_____
- Provided proper floor level changes.	_____	_____	_____
- Provided proper floor materials.	_____	_____	_____
- Provided protection from protruding objects.	_____	_____	_____

ITEM INCORP N/A NO. LATER	INCORP
5. Ramps:	
- Maximum slopes less than 1:12	_____
_____ - Maximum run less than	_____
_____ 30 feet for 1:12 slopes	
_____ 40 feet for 1:16 slopes	
- Minimum clear width exceeds 36-inches.	_____
_____ - Provided proper edge protection.	_____
_____ - Provided handrails of proper configuration and diameter.	_____
_____ - Provided proper handrail extensions at top and bottom of	_____
_____ ramp.	
- Provided handrails at proper mounting heights.	_____
_____ - Provided proper landings.	_____
_____ - Provided proper cross slope on ramp surface.	_____
_____ _____	
6. Stairs:	
- Protected the space below stairs from access by the blind.	_____
_____ - Provided handrails of proper configuration and diameter.	_____
_____ - Provided proper handrail extensions at top and bottom of	_____
_____ stairs.	
- Provided handrails at proper mounting heights.	_____
_____ - Provided treads greater than 11-inches in width.	_____
_____ - Provided proper nosings.	_____
_____ _____	
7. Elevators:	
- Provided buttons and lanterns at the proper mounting height.	_____
_____ - Provided Braille characters.	_____
_____ - Provided proper door widths.	_____
_____ - Provided proper clearance inside elevator car.	_____
_____ _____	

ITEM INCORP N/A NO. LATER	INCORP
8. Doors And Hardware:	
- Provided proper door widths.	_____
_____ - Provided proper clearance on both sides of jambs.	_____
_____ - Entrance vestibules provided with adequate clearances.	_____
_____ - Provided levers on locksets and exit hardware.	_____
_____ - Provided closers with mechanical adjustments.	_____
_____ - Provided accessible thresholds.	_____
_____ - Provided protection plates on doors heavily used by wheel	_____
_____ chair bound people.	
9. Toilet Facilities:	
- Provided proper floor clearance through out the toilet rooms.	_____
_____ - Provided minimum number of required accessible fixtures.	_____
_____ - Provided accessible toilet stalls.	_____
_____ - Provided stall doors with correct direction of swing.	_____
_____ - Provided accessible water closets.	_____
_____ - Provided grab bars at accessible water closets.	_____
_____ - Provided grab bars with correct configuration and dimension.	_____
_____ - Provided accessible sinks/lavatories.	_____
_____ - Provided accessible urinals.	_____
_____ - Provided accessible water coolers and fountains.	_____
_____ - Provided accessible mirrors.	_____
_____ - Provided accessible toilet accessories at required locations.	_____
_____ - Provided all fixtures and accessories at proper	_____
_____ mounting heights and clearances.	
_____ - Provided insulated or protected exposed pipes at lavatories.	_____
10. Shower/Tub Facilities:	
- Provided the minimum number of accessible showers/tubs.	_____
_____	

- \_\_\_\_\_ - Provided showers/tubs with grab bars. \_\_\_\_\_
- \_\_\_\_\_ - Provided showers/tubs with seats as required. \_\_\_\_\_
- \_\_\_\_\_ - Provided controls mounted at the proper height and location. \_\_\_\_\_
- \_\_\_\_\_ - Provided proper clearances and dimensions in showers/tubs. \_\_\_\_\_
- \_\_\_\_\_ - Provided proper floor clearance through out shower/tubs rooms. \_\_\_\_\_
- \_\_\_\_\_ - Provided doors with correct direction of swing and clearance. \_\_\_\_\_

ITEM \_\_\_\_\_ INCORP N/A \_\_\_\_\_ INCORP  
 NO. \_\_\_\_\_  
 LATER \_\_\_\_\_

11. Storage:
- \_\_\_\_\_ - Provided accessible cabinets, shelves, closets, and \_\_\_\_\_  
 \_\_\_\_\_ drawers as required.
  - \_\_\_\_\_ - Provided proper clearance, mounting heights, and reach \_\_\_\_\_  
 \_\_\_\_\_ provisions.

12. Telephones and Vending:
- \_\_\_\_\_ - Provided the minimum number of required accessible \_\_\_\_\_  
 \_\_\_\_\_ public telephones.
  - \_\_\_\_\_ - Provided proper floor clearance around telephone. \_\_\_\_\_
  - \_\_\_\_\_ - Phone and controls mounted at proper heights and within reach. \_\_\_\_\_
  - \_\_\_\_\_ - Provided vending machines on an accessible route. \_\_\_\_\_
  - \_\_\_\_\_ - Provided vending machines with accessible clearances and \_\_\_\_\_  
 \_\_\_\_\_ protruding object safe guards.

13. Fixed Or Built-in Seating And Tables:
- \_\_\_\_\_ - Provided the minimum number of accommodations for \_\_\_\_\_  
 \_\_\_\_\_ accessibility in areas which required fixed furniture.
  - \_\_\_\_\_ - Provided proper floor clearance around furniture. \_\_\_\_\_
  - \_\_\_\_\_ - Provide proper knee space at tables. \_\_\_\_\_
  - \_\_\_\_\_ - Provided tables and counters with proper top surface heights. \_\_\_\_\_

14. Assembly Areas:
- \_\_\_\_\_ - Provided the minimum number of accessible seating spaces. \_\_\_\_\_
  - \_\_\_\_\_ - Provided seating which is easily accessible to emergency \_\_\_\_\_  
 \_\_\_\_\_ egress.

- Provided companion seating. \_\_\_\_\_
- Integrated and dispersed accessible seating with the rest \_\_\_\_\_  
of the seating.
- Provided accessible dressing rooms. \_\_\_\_\_
- Provided level floor surface at accessible seat locations. \_\_\_\_\_
- Provided clear ground or floor space at accessible seat \_\_\_\_\_  
locations
- Provided access to all performing areas and associated \_\_\_\_\_  
spaces.

ITEM

INCORP N/A

NO.

LATER

INCORP

15. Dining Halls And Cafeterias:

- Provided the minimum number of accessible dining spaces. \_\_\_\_\_
- Provided accessible counters and bars. \_\_\_\_\_
- Provided accessible aisles between tables or walls. \_\_\_\_\_
- Provided clear floor space at accessible dining locations. \_\_\_\_\_
- Provided accessible food service lines meeting minimum \_\_\_\_\_  
clearances and reaches.
- Provided accessible tableware and condiment areas. \_\_\_\_\_
- Provided raised speaker platform with protected edges. \_\_\_\_\_

16. Medical Care Facilities:

- At least 10% of the general patient rooms are accessible. \_\_\_\_\_
- Provided the number of accessible patient rooms as required \_\_\_\_\_  
for specialized treatment, long term care, or alterations  
of existing patient rooms.
- Provided at least one accessible entrance with weather \_\_\_\_\_  
protecting canopy or roof overhang.
- Provided minimum clearances within the patient rooms and \_\_\_\_\_  
around the beds.
- Provided accessible patient toilet/bath rooms. \_\_\_\_\_

17. Business And Mercantile:

- Provided at least one accessible sales counter, services \_\_\_\_\_

counter, teller, information window, etc.  
- Security bollards when provided, do not prevent access

or egress to people in wheel chairs.

ITEM  
INCORP N/A  
NO.  
LATER

INCORP

18. Libraries:

- Provided access to all reading and stack areas, reference  
reference rooms, reserve areas, and special facilities  
or collections. \_\_\_\_\_
- Provided at least 5% or a minimum of one of each element  
or fixed seating, tables, or study carrels as accessible. \_\_\_\_\_
- Provided at least one lane of check out areas as accessible. \_\_\_\_\_
- Provided adequate clearance and reach distances at card  
catalogs and magazine displays. \_\_\_\_\_
- Provide stacks with minimum clear aisle width. \_\_\_\_\_

19. Temporary Lodging:

- All common and public use areas are accessible. \_\_\_\_\_
- Provided accessible units, sleeping rooms, and suites. \_\_\_\_\_
- Provided sleeping accommodations for persons with  
hearing impairments. \_\_\_\_\_
- Provided a dispersed class and a range of room options. \_\_\_\_\_
- Provided accessible rooms in ADAL projects. \_\_\_\_\_
- Provided an accessible route to accessible sleeping rooms. \_\_\_\_\_
- Provided accessible clearance widths within sleeping rooms  
and around beds. \_\_\_\_\_
- Provided accessible doors within accessible sleeping rooms. \_\_\_\_\_
- Provided accessible fixed or built-in furniture and storage  
units. \_\_\_\_\_
- Provided accessible controls throughout accessible units. \_\_\_\_\_
- Where provided as part of an accessible unit each of the  
following were provided as accessible: living area,  
dining area, at least one sleeping area, patio/terrace/  
balcony, toilet/bath, and carport/garage/parking. \_\_\_\_\_
- Where provided as apart of an accessible unit, the kitchen,  
kitchenettes, wet bars, or similar amenities were also  
provided with accessible features. \_\_\_\_\_
- Provided visual alarms, notification devices, and accessible  
telephones. \_\_\_\_\_
- Provided accessible doors and doorways designed to allow  
passage into and within all sleeping units or other \_\_\_\_\_

covered units.

20. Transportation Facilities:

(This section covers Air, Rail, and Bus public transportation facilities. See Section 10 of the ADA Guide for specific requirements for these facilities)

## **ATTACHMENT C**

### **MECHANICAL ROOM SIZE FORM**

Mechanical Systems Design Documents and Guides - Mechanical Room Size Form

At the final design stage, the mechanical designer shall fill out the following Mechanical Room Size Form and include it in the final design calculations.

MECHANICAL ROOM SIZE FORM

The information submitted on this sheet shall be placed in a data base for future use on similar DoD, COE project. (The data base shall be used to help determine appropriate mechanical room sizes). Include this sheet in the final design calculations.

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Engineer: \_\_\_\_\_

Gross floor area of building: \_\_\_\_\_

Gross square footage includes (the entire building) stairs, corridors, etc.

Floor area of mechanical room: \_\_\_\_\_

Percent of gross building area is the mechanical room size: \_\_\_\_\_

Type of facility: \_\_\_\_\_

Sources of energy (E, G, S): \_\_\_\_\_

Mechanical equipment: \_\_\_\_\_

List of equipment outside the mechanical room and location: \_\_\_\_\_

Is the mechanical room too small? \_\_\_\_\_

Does the User think the mech room is too small? (Y, N, Don't know) \_\_\_\_\_

Additional remarks: \_\_\_\_\_

Abbreviations:

- AC - air compressor
- AHU - air handling unit
- B - boiler
- CU - air cooled condensing unit
- DF - direct fired
- DX - direct expansion chilled water heat exchanger
- E - electric
- FC - fan coil unit
- FP - fire protection
- G - natural gas or propane
- HX - heat exchanger
- LC - liquid chiller
- MUA - make up air unit
- UH - unit heater
- ST - domestic hot water storage tank
- S - steam

- - o 0 o - -

SECTION 01330

SUBMITTAL PROCEDURES (DURING CONSTRUCTION)

12/94

**PART 1 - GENERAL**

**1.1 SUMMARY**

**1.1.1 Section Includes**

This section includes administrative and procedural requirements for construction submittals presented by the Contractor. This section also includes requirements for developing, submitting and maintaining a "Submittals Register."

**1.1.2 Section Excludes**

This section does not include requirements for design submittals which are specified in Section 01300 SUBMITTALS FOR DESIGN.

**1.2 SUBMITTAL CLASSIFICATION**

Submittals are classified as follows:

**1.2.1 Information Only**

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

**1.2.2 Government Approved**

Governmental approval is required for changes to the RFP, extensions of design specified in the RFP, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

**1.3 SUBMITTAL DESCRIPTION (SD) DEFINITIONS**

Construction submittals shall use the following submittal description numbers and titles:

SD-01 Data

Submittals which provide calculations, descriptions, or documentation regarding the work.

**ACCOMPANYING AMENDMENT NO. 0003 TO SOLICITATION NO. DACA63-98-R-0004**

SD-04 Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-06 Instructions

Preprinted material describing installation of a product, system or material, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

SD-07 Schedules

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

SD-08 Statements

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

SD-09 Reports

Reports of inspections or tests, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used shall be identified and test results shall be recorded.

SD-13 Certificates

Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements. The statement must be dated after the award of this contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements which are being certified.

SD-14 Samples

Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

SD-18 Records

Documentation to record compliance with technical or administrative requirements.

SD-19 Operation and Maintenance Manuals

Data which forms a part of an operation and maintenance manual.

**1.4 APPROVED SUBMITTALS**

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the CQC requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

**1.5 DISAPPROVED SUBMITTALS**

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

**1.6 WITHHOLDING OF PAYMENT**

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

**PART 2 - PRODUCTS (Not Applicable)**

**PART 3 - EXECUTION**

**3.1 GENERAL**

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

### 3.2 SUBMITTAL REGISTER (ENG FORM 4288)

The Contractor shall prepare and maintain a Submittal Register (ENG Form 4228) for technical specifications. At the end of this section is a ENG Form 4288 listing those items for which submittals are required by Specifications Section 01310; this list is an illustration of how the submittal register should look for the technical specifications. After award, the Contractor may use a Fort Worth District-furnished submittal register program to develop the submittal register. This program was written for Corps of Engineers CEGS guide format, but may be useable with other guide systems providing the paragraph numbering and submittal paragraphs are formatted correctly. It will run on any IBM compatible computer; instructions for operation and installation will be provided on the Contract Award CD Disk. The submittal format shown in Corps of Engineers Guide Specification CEGS-01020 CEGS TEMPLATE and described in Section 01300 SUBMITTALS FOR DESIGN must be followed, in all guides including any industry or commercial guides used, in order for the program to work. The formatting uses automatic paragraph numbering and tokens (\\*, \*\), the omission of any will prevent the program from running (The program is designed to search for these tokens and the corresponding reference paragraphs). Questions concerning the program should be directed to the Fort Worth District Specifications Section, (817) 978-2294. If the submittal register program will not work for any industry or commercial sections used, the submittals will need to be added manually to its PROJSUB.DBF file using MICROSOFT ACCESS FOR WINDOWS, Version 7. After the PROJSUB.DBF file is completed, another Corps program (SN2RMS.EXE) is run to create the QCQA.DBF and SUBMIT.DBF files which in turn are used to interface with the RMS software. If RMS is not used, then the .dbf files can be brought up into Microsoft Excel for Windows, Version 7, and converted to .xls (MS Excel) or .wql (Quattro Pro) files for maintaining the submittal register on spreadsheet files. Or, the technical sections can be edited using the Corps of Engineers Specsintact program, through which can automatically generate the Submittal Register and its disk. These programs, files, and instructions will be furnished on the Contract Award CD-Disk; the Specsintact program can be downloaded from the Internet.

The Contractor shall furnish 4 sets of ENG Forms 4288 and a diskette (using the program described above) containing the computerized ENG form 4288 listing each item of equipment and material for which submittals are required by the specifications to the Contracting Officer for approval with each design submittal and with the corrected final construction documents; columns "c" thru "o" shall be completed by the Contractor. The ENG Forms 4288 will become a part of the contract after final approval. The Contractor shall keep this diskette up to date and shall submit it to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. This register and the progress schedules shall be coordinated.

### 3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 60 calendar days exclusive of mailing time) shall be allowed and shown on the register for

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review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. An additional 7 calendar days shall be allowed and shown on the register for review and approval of submittals for refrigeration and HVAC control systems.

**3.4 TRANSMITTAL FORM (ENG FORM 4025)**

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

**3.5 SUBMITTAL PROCEDURE**

Submittals shall be made as follows:

**3.5.1 Procedures**

**3.5.1.1 Additional Instructions**

In addition to the requirements of this section, additional instructions are specified in the attachment "INSTRUCTIONS TO CONTRACTORS FOR TRANSMITTAL REQUIREMENTS" located at the end of this section.

**3.5.1.2 Contractor Review**

The Contractor's quality control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective and updated system. A copy of the register shall be maintained at the job site. Revised and/or updated registers shall be submitted to the Contracting Officer at least every 60 days in quadruplicate (complete register need not be provided, only those portions containing additions or changes).

**3.5.1.3 Number of Copies**

The Contractor shall provide four (4) sets of all submittals.

**3.5.1.4 Address to Receive Submittals**

Submittals shall be sent to the Corps of Engineers' Area Office assigned to the project.

### 3.5.1.5 Additional Government Approved Submittals

In addition to those specified in PART 1 paragraph SUBMITTAL CLASSIFICATION, the following classifications of submittals also require Governmental approval:

- Mechanical and Electrical Systems and fire protection and fire detection submittals.
- Color Finish/Sample Boards/Notebooks

### 3.5.1.6 Certificates of Compliance

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in the number of copies required by the above paragraph "Number of Copies." Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

### 3.5.1.7 Special Reviews

#### 3.5.1.7.1 Fire Protection/Detection Submittals

The Contractor shall prepare and submit, as one integrated submittal, shop drawings for the fire protection/detection system. This submittal shall also include sprinkler plans and sections, fire detection and alarm plans and risers, and catalog cuts of proposed equipment. The Contractor shall submit proof that the shop drawings were prepared by an engineer regularly engaged in fire protection/detection systems for at least 2 years, and that they are sealed by a registered professional engineer. Shop drawings for the fire protection/detection system shall be prepared on full-size mylar sheets. The shop drawings submitted for review shall be submitted on full-size blue-line sheets. After updating all deviations, modifications, and changes, the final submittal shall be on mylar sheets and will represent the final as-built drawings.

#### 3.5.1.7.2 Mechanical and Electrical Systems

The Contractor shall furnish one reproducible, unfolded copy of all wiring and control diagrams and approved system layout drawings with the operating instructions called for under the various headings of these specifications for mechanical and electrical systems.

### 3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and

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annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

**3.6 CONTROL OF SUBMITTALS**

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

**3.7 GOVERNMENT APPROVED SUBMITTALS**

**Am#3**

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having been checked and approved by the Designer of Record and have received approval from the Contractor, and be so stamped and dated. One (1) copy of the submittal will be returned to the Contractor. The remainder will be retained by the Government.

**3.8 INFORMATION ONLY SUBMITTALS**

**Am#3**

Upon completion of review of Information Only submittals, the submittals will be identified as having been checked and approved by the Designer of Record and have received approval from the Contractor, and be so stamped and dated. Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

**3.9 STAMPS**

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

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CONTRACTOR

(Firm Name)

Am#3

Checked and Approved by the Designer of Record. Submittal  
complies with contract requirements.

Am#3

\_\_\_\_\_  
Designer of Record

\_\_\_\_\_  
Date

\_\_\_\_\_  
Approved

\_\_\_\_\_  
Approved with corrections as noted on submittal data and/or  
attached sheets(s).

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

- - o 0 o - -

INSTRUCTIONS TO CONTRACTORS  
FOR  
TRANSMITTAL REQUIREMENTS

FORT WORTH DISTRICT  
FOR INFORMATION ONLY (FIO) AND GOVERNMENT APPROVED (GA)  
SUBMITTALS

1. General Requirements

a. General requirements for transmittal of FIO and GA submittals is contained in the preceding specifications. Specific requirements on how to transmit FIO and GA Submittals are outlined herein.

b. GA and FIO submittal data shall be transmitted under separate ENG Form 4025s and assigned different Transmittal Numbers. If GA and FIO submittal data is included in the same submittal, using the same ENG Form 4025, they will be considered an FIO submittal until the contractor corrects the error.

c. The Contractor shall designate on each Eng Form 4025, above the Transmittal No., either FIO or GA to show the transmittal type. This procedure allows ready identification of FIO or GA submittals. The Government reserves the right to redesignate the category (GA or FIO) of submittals incorrectly identified by the Contractor.

d. The Contractor shall assure all FIO submittals for each technical section are submitted prior to or concurrent with the GA submittals for that technical section. If appropriate FIO submittals have not been submitted, the GA submittal will be returned disapproved.

e. Data transmitted with ENG Form 4025 shall be identified by marking it with the same item number(s) appearing in the "Item No." column on the form. The model number, part number, color, etc., of proposed materials or equipment shall be highlighted or otherwise identified.

2. Specific Requirements for For Information Only (FIO) Submittals

a. One fully coordinated FIO submittal shall be made for each technical section. Each FIO submittal listed on the ENG Form 4288, shall be submitted as a separate item on the ENG Form 4025 in the order they appear on the ENG Form 4288. Technical data provided with the ENG Form 4025 shall conform to the "Submittals" paragraph in each Technical Section. (Example: SD-04 Drawings as outlined herein.)

b. Items such as mill certificates or other test data unavailable until the equipment/material is manufactured/fabricated shall be identified on the initial ENG Form 4025. An explanation in the "Remarks" section shall explain this data will be submitted by Transmittal Number [ ] (fill in transmittal number) after materials are manufactured/fabricated (or other explanations as appropriate). A separate submittal for long lead time equipment or material may be made if sufficient data is furnished to show contract compliance. An explanation shall be provided in the "Remarks" section or on a separate sheet, if necessary, explaining why a partial submittal is being made. Explanation shall include the estimated delivery date of the above equipment/material and the Transmittal Number of the submittal that will contain data required by the particular specification section for the remaining equipment/materials. For contracts with several buildings/structures, separate transmittals for each technical section may be used if each building/structure is noted in the "Remarks" section of the ENG Form 4025. Samples of materials shall be submitted along with technical data, not under separate transmittals.

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2.1 FIO Submittal Review

a. The Contractor's Quality Control (CQC) Representative has full responsibility for reviewing and certifying that all FIO submittal data and all equipment and/or materials comply with the contract. FIO Submittals are provided to the Government "For Information Purposes Only." Contracting Officer approval is not required and will not be given. The Government will not code any FIO submittals. Copies of FIO Submittals will not be returned to the Contractor.

b. However, the Government may perform QA reviews and re-reviews of FIO submittals at any time during the contract. If the Government determines submittal data is incomplete or not in compliance with contract, comments will be provided. Comments will state, "Disagree with Contractor's Certified Compliance" and list items not in compliance or not provided as required by the contract. The Contractor shall respond to all comments by return FIO resubmittal on a new ENG Form 4025. Repeated incomplete or non-complying FIO submittals with improper certifications may result in disapproval of the Contractor's Quality Control (CQC) Program and/or possible replacement of the Contractor Quality Control (CQC) personnel.

c. Performance of, or failure to perform QA submittal reviews or Government requirement to submit additional data on FIO submittals, will not prevent the Contracting Officer from requiring removal and replacement of non-conforming material incorporated into the work. No adjustment for time or money will be allowed for corrections required because of non-compliance with contract plans and/or specifications.

3. Specific Requirements for Government (GA) Approved Submittals

a. The Contractor's Quality Control Representative is responsible for assuring all data submitted is complete and in compliance with contract requirements. The Contractor shall assure all FIO submittals are submitted prior to or concurrent with the GA submittal for each technical section. If the FIO submittals have not been submitted, the GA submittal will be returned disapproved.

b. A separate submittal shall be made for each technical section with GA submittals. FIO submittal data shall not be mixed with GA submittal data.

c. The Government will provide written comments as appropriate and assign action codes to each item outlined on the back of the ENG Form 4025. One (1) stamped and dated copy of the submittal, along with any comments, will be provided to the Contractor. Action Code "A"- Approved As Submitted, and Code "B"- Approved Except As Noted, constitutes Government Approval. The Contractor shall resubmit under a separate Transmittal Number all data necessary to show compliance with Government comments on all other action codes.

d. Government review time, as stated in Paragraph 3.3 - Scheduling, is a minimum of sixty (60) calendar days unless otherwise specified. Government review time is exclusive of mailing time. Review time starts the day of receipt by the Government and continues until the day comments or notice of approval is provided the Contractor.

e. If the Contractor considers any Government review comment to constitute a change to the contract, notice shall be given promptly as required under the Contract Clause entitled "Changes." No request for "Equitable Adjustment" will be honored unless the Contractor complies fully with the prompt notice provisions of the contract.

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4. Variations/Deviations/Departures from the Contract Drawings or Specifications

Contractor proposed variations, deviations, or departures from the contract drawings or specifications shall be noted in the "Variation" column of ENG Form 4025 with an asterisk, for each FIO submittal. A brief explanation, and the Transmittal Number of the appropriate GA submittal (as explained below), shall be added to the "Remarks" section of the Form (or a separate sheet, if necessary). Each variation, deviation, or departure shall be listed as an item on a separate GA submittal, which may contain other GA submittal items. Variations, deviations, or departures will be processed and approved the same as GA submittals, provided they are included in a GA submittal. Variations, deviations, or departures will not be approved in the FIO submittal, and will be disapproved, until they are properly submitted on a GA submittal. Variations, deviations, or departures shall contain sufficient information to permit complete evaluation. Additional sheets may be used to fully explain why a variation, deviation, or departure is requested. The Government reserves the right to disapprove or rescind inadvertent approval of submittals containing unnoted variations, deviations, or departures.

5. Submittal Numbering

Each submittal shall cover only one specification section. For purposes of consistency and to provide compatibility with the Government's computerized submittal register, submittal numbers shall include a specification section prefix and special suffixes. Note the following examples (for Technical Section 07416):

- a. New submittals - 07416-01, 07416-02, etc.
- b. Resubmittals -
  - (1) First resubmittal - 07416-01.01, 07416-02.01, etc.
  - (2) Second resubmittal - 07416-01.02, 07416-02.02, etc.
  - (3) Third resubmittal - 07416-01.03, 07416-02.03, etc.

