



**US Army Corps  
of Engineers®**  
Seattle District

**Project: WELDING SHOP  
VENTALATION RENOVATION**

**Location: LIBBY DAM, MONTANA**

**CONSTRUCTION  
HEAVY**

**Closing Date: 27 AUG 2002  
Closing Time: 10 AM LOCAL**

**REMARKS: Quotes may be faxed to (206) 764-6817, Attention: Jackie  
Johnson, or mailed to US Army, Corps of Engineers, Seattle-District, PO Box  
3755, Attention: Jackie Johnson, Seattle, Washington 98124-3755.**

REQUEST FOR QUOTATIONS (THIS IS NOT AN ORDER)		THIS RFQ <input checked="" type="checkbox"/> IS <input type="checkbox"/> IS NOT A SMALL BUSINESS SET-ASIDE			PAGE OF PAGES 1   69	
1. REQUEST NO. DACW67-02-Q-0104	2. DATE ISSUED 21-Aug-2002	3. REQUISITION/PURCHASE REQUEST NO. W68MD9-2213-3515	4. CERT. FOR NAT. DEF. UNDER BDSA REG. 2 AND/OR DMS REG. I		RATING	
5a. ISSUED BY USA ENGINEER DISTRICT, SEATTLE ATTN: CENWS-CT P.O. BOX 3755 SEATTLE WA 98124-3755			6. DELIVER BY (Date) <b>SEE SCHEDULE</b>			
5b. FOR INFORMATION CALL: (Name and Telephone no.) (No collect calls) JACQUELINE W JOHNSON 206-764-6693			7. DELIVERY <input checked="" type="checkbox"/> FOB DESTINATION <input type="checkbox"/> OTHER (See Schedule)			
8. TO: NAME AND ADDRESS, INCLUDING ZIP CODE			9. DESTINATION (Consignee and address, including ZIP Code) ADMINISTRATIVE SECTION(LI) 17155 HIGHWAY #37 LIBBY MT 59923-9703 TEL: FAX:			
10. PLEASE FURNISH QUOTATIONS TO THE ISSUING OFFICE IN BLOCK 5a ON OR BEFORE CLOSE OF BUSINESS: (Date) 27-Aug-2002						
<b>IMPORTANT:</b> This is a request for information, and quotations furnished are not offers. If you are unable to quote, please so indicate on this form and return it to the address in Block 5a. This request does not commit the Government to pay any costs incurred in the preparation of the submission of this quotation or to contract for supplies or services. Supplies are of domestic origin unless otherwise indicated by quoter. Any representations and/or certifications attached to this Request for Quotations must be completed by the quoter.						
11. SCHEDULE (Include applicable Federal, State, and local taxes)						
ITEM NO. (a)	SUPPLIES/ SERVICES (b)	QUANTITY (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	
<b>SEE SCHEDULE</b>						
12. DISCOUNT FOR PROMPT PAYMENT		a. 10 CALENDAR DAYS %	b. 20 CALENDAR DAYS %	c. 30 CALENDAR DAYS %	d. CALENDAR DAYS No. %	
<b>NOTE: Additional provisions and representations <input type="checkbox"/> are <input type="checkbox"/> are not attached.</b>						
13. NAME AND ADDRESS OF QUOTER (Street, City, County, State, and ZIP Code)			14. SIGNATURE OF PERSON AUTHORIZED TO SIGN QUOTATION		15. DATE OF QUOTATION	
			16. NAME AND TITLE OF SIGNER (Type or print)		TELEPHONE NO. (Include area code)	

AUTHORIZED FOR LOCAL REPRODUCTION  
PREVIOUS EDITION NOT USABLE

STANDARD FORM 18 (REV. 6-95)  
Prescribed by GSA  
FAR (48 CFR) 53.215-1(a)

Section B - Supplies or Services and Prices

NOTES

Request for a copy of Request for Quote can be made by fax at: 206/764-6817, Attn: Jackie Johnson.

**THIS SOLICITATION IS ISSUED PURSUANT TO THE SMALL BUSINESS COMPETITIVE DEMONSTRATION PROGRAM - LARGE BUSINESS WILL NOT BE CONSIDERED**

**NOTES:**

1. REPRESENTATIONS AND CERTIFICATIONS CONTAINED HEREIN MUST BE COMPLETED BY QUOTERS AND RETURNED WITH OFFERS.

2. MARKINGS OF QUOTE ENVELOPES, QUOTES SHALL BE PLAINLY MARKED AS FOLLOWS:

QUOTE FOR: WELD SHOP RENOVATION – LIBBY MONTANA  
REQUEST FOR QUOTATION NO. DACW67-02-Q-0104  
CLOSING DATE AND TIME: AUG 27, 2002 10 A.M. PST

AMENDMENTS NUMBERED \_\_\_\_\_ WILL BE ACCEPTED UNTIL THE TIME AND DATE FOR CLOSING.

3. FAXED QUOTES SHALL BE ACCEPTED BEFORE CLOSING AT FAX: (206)764-6817. ATTN: JACKIE JOHNSON. MAILED QUOTES SHALL BE ACCEPTED BEFORE CLOSING @ US ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT, PO BOX 3755 SEATTLE, WA 98124. PHYSICAL: 4735 E MARGINAL WAY S., SEATTLE, WA 98134-2385. PLEASE REFERENCE BY RFQ NO. DACW67-02-Q-0104.

4. CONTRACTORS OUTSIDE EDI SHALL BE ALLOWED TO QUOTE. CONTRACTORS ARE REQUIRED TO PROVIDE THE MANDATORY INFORMATION REQUESTED WITHIN THE SOLICITATION.

5. ANY CONTRACTOR RECEIVING AN AWARD IS REQUIRED TO BE REGISTERED IN THE CCR (CENTRAL CONTRACTING REGISTRY).

6. MUST BE CERTIFIED VENTILATION INSTALLATION/REPAIR, NON CERTIFICATION WILL NOT BE CONSIDERED. AWARD WILL BE MADE TO THE RESPONSIVE RESPONSIBLE OFFEROR WITH THE LOWEST TOTAL PRICE.

7. **SITE VISIT (OPTIONAL BUT HIGHLY SUGGESTED) WITH MR. JERRY DAY OR A MEMBER OF HIS CREW WHICH WILL BE PROVIDED AT LIBBY DAM, MONTANA. MUST CALL TO SCHEDULE (509) 244-5571 EXT. 244**

CONTRACTOR IS REQUIRED TO PROVIDE THE FOLLOWING INFORMATION WITH YOUR QUOTE:

FEDERAL TAX ID NUMBER: \_\_\_\_\_

01056/II  
Weld Shop Renovation, Libby Dam, Mt.

DUN AND BRADSTREET NUMBER: \_\_\_\_\_  
CONTRACTOR CAN OBTAIN DUNS NUMBER BY CALLING 800/333-0505

IS CONTRACTOR REGISTERED IN THE CCR? YES \_\_\_\_\_ NO \_\_\_\_\_

CCR NO. \_\_\_\_\_

**PROSPECTIVE OFFERORS:** THE DIRECTOR OF DEFENSE PROCUREMENT HAS ISSUED A FINAL RULE AMENDING THE DEFENSE FEDERAL ACQUISITION REGULATION SUPPLEMENT (DFARS) TO REQUIRE CONTRACTORS TO BE REGISTERED IN THE DOD CENTRAL CONTRACTOR REGISTRATION (CCR) FOR AWARDS RESULTING FROM SOLICITATION ISSUED AFTER MAY 31, 1998.

THIS RULE MORE EFFICIENTLY IMPLEMENTS THE DEBT COLLECTION IMPROVEMENT ACT OF 1996 AS IT REQUIRES CONTRACTORS TO BE REGISTERED IN CCR FOR CONSIDERATION OF FUTURE SOLICITATIONS, AWARDS, AND PAYMENT. REGISTRATION IS REQUIRED PRIOR TO AWARD OF ANY CONTRACT, BASIC AGREEMENT, BASIC ORDERING AGREEMENT, OR BLANKET PURCHASE AGREEMENT FROM A SOLICITATION ISSUED AFTER MAY 31, 1998. LACK OF REGISTRATION IN THE CCR DATABASE WILL MAKE AN OFFER INELIGIBLE FOR AWARD.

THE CCR WEB SITE MAY BE ACCESSED AT <http://ccr/edi/disa.mil/>. YOU MAY CALL 1-888-227-2423 TO OBTAIN A REGISTRATION PACKET OR REGISTER ONLINE AT [www.acq.osd.mil/ec](http://www.acq.osd.mil/ec).

NOTE: IN ACCORDANCE WITH 52.228-2, CONSTRUCTION CONTRACT AWARDS OVER \$25,000 ARE REQUIRED TO PROVIDE 100% PAYMENT BOND.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	WELD SHOP RENOVATION FFP - Renovate weld shop ventilation system in the power house at Libby Dam, Montana. Existing system in the Welding Shop does not sufficiently exhaust smoke produced during some of the heavier duty welding processes. Work includes the demolition and removal of the existing duct work, hoods and fan, and installation of new duct work, welding-smoke removal hoods, fan, and door grille. A portion of the existing ventilation system is buried beneath the Libby Dam Power House Parking Lot and will require saw cutting of the existing bituminous road surface and excavation. Excavation will be back filled and asphalt surface will be replaced. All work will be in accordance with the plans and specifications.  Project must be completed by September 30, 2002.  PURCHASE REQUEST NUMBER: W68MD9-2213-3515	1	Lump Sum		
				NET AMT	

FOB: Destination

01451-3

Section C - Descriptions and Specifications

SCOPE OF WORK

SECTION 01001

SUPPLEMENTARY REQUIREMENTS

1. CONDUCT OF WORK

1.1 COORDINATION AND WORK HOURS

1.1.1 Coordination with using agencies shall be made through the Contracting Officer to assist the Contractor in completing the work with a minimum of interference and inconvenience.

1.1.2 Work hours in the construction area will be restricted to 6:30 a.m. to 5:00 p.m. daily, Monday through Thursday, excluding holidays. The Contractor shall not access the construction area before 6:30 a.m. and shall be off site before or by 5:00 p.m. Requests for alternate work schedules may be considered, but will be approved only by the Contracting Officer. Alternate work schedules will not be approved if a Government quality assurance inspector is not available to be on site full time during all hours outside those previously stated.

1.2 GENERAL ACCESS REQUIREMENTS

Access to the powerhouse and dam structures will be controlled at an entrance guard station. Incoming traffic will be restricted from entering the controlled area until proper identification is provided. Access during other than established working hours will be in accordance with the provisions above.

1.2.1 Contractor's Vehicles

Contractor's vehicles shall only park in approved areas in accordance with the parking plan provided by the Contracting Officer.

1.3 CONTRACTOR SECURITY

The Corps of Engineers will not be responsible for providing security for Contractor-owned/controlled equipment, supplies, or materials. The Contractor shall provide those necessary security measures.

1.4 KEYS

Keys are required for access to the construction area and will be provided by the Contracting Officer. The Contractor shall be responsible for Government-owned keys issued for this contract. Upon completion of the work, or upon request of the Contracting Officer, key or keys shall be returned. Should the Contractor lose a key:

a. The Contracting Officer shall be notified, in writing, within three (3) working days after the loss is discovered, and

b. Should the key not be found before final acceptance, the final contract payment shall be reduced by \$100.00 for re-keying.

1.5 Refuse Disposal and Cleanup

1.5.1 Refuse Disposal

The cost of refuse disposal, such as transportation, handling, dumping fees as applicable, and similar cost, shall be included in the Contract price. Refuse shall be disposed of offsite at the Contractor's expense.

1.5.2 Fire Hazard

Cloths, cotton waste, and other combustible materials that might constitute a fire hazard shall be placed in closed metal containers and placed outside or destroyed at the end of each day.

1.5.3 Restrictions

The Contractor will not be permitted to deposit refuse in existing garbage cans or refuse dumpsters. Cleaners shall not be poured, drained, or washed into plumbing fixtures or sanitary or storm sewers. Debris, dirt, dust, and strains attributable to or resulting from the work effort shall be removed, cleaned, or effaced by the Contractor to the satisfaction of the COR prior to final acceptance of the job.

#### 1.5.4 Particulates

Dust particles, aerosols, and gaseous byproducts from construction activities, processing, and preparation of materials shall be controlled at all times, including weekends, holidays, and hours when work is not in progress. Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and state allowable limits at all times.

## 2. PERSONNEL IDENTIFICATION

### 2.1 EMPLOYEE LISTING

The Contractor shall submit a complete listing of Contractor personnel, including job title and identification credential number, who will be working on the project. This listing shall be updated as needed to insure that the Government has been notified of any changes of Contractor Personnel in advance of new personnel engaging in work on the project. The Government will allow access to the controlled areas of only the Contractor Personnel authorized in advance and included on the employee listing.

### 2.2 Identification Credentials

Contractor personnel shall either be issued a photo identification card (ID) by the Contractor or agree to provide their individual vehicle driver's license as an appropriate identification credential. In either case, the identification number shall be included on the listing required above. If the Contractor determines to issue ID cards to its employees, the following information shall be included:

Contractor Identification and Card Number Indicating Employees:

- |  |                                     |
|--|-------------------------------------|
| <input type="checkbox"/> Full Name         | <input type="checkbox"/> Height     |
| <input type="checkbox"/> Current Address   | <input type="checkbox"/> Weight     |
| <input type="checkbox"/> Birth Date        | <input type="checkbox"/> Hair Color |
| <input type="checkbox"/> Recent Photograph | <input type="checkbox"/> Eye Color  |

### 2.3 Employee Termination

If a Contractor employee resigns or is terminated the Contracting Officer, or designated representative shall be so notified at the earliest opportunity, but in no case later than the start of the succeeding workday.

### 2.4 Access Control

Contractor personnel shall be instructed to present identification credential upon request by proper authority as established by the Contracting Officer.

## 3. UTILITY OUTAGES

Contractor shall coordinate utility outages with the Contracting Officer at least 7 days in advance. Outages shall be kept to a minimum and any one outage shall not last more than 2 hours.

## 4. SUBMITTALS

Submittals shall be as specified in Section 01330 SUBMITTAL PROCEDURES.

## 5. WARRANTY OF CONSTRUCTION (APR 1984) (FAR 52.246-21)

5.1 In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph 5.9 of this Clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

5.2 This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

5.3 The Contractor shall remedy at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to Government-owned or controlled real or personal property, when that damage is the result of:

- a. the Contractor's failure to conform to contract requirements or
- b. any defect of equipment, material, workmanship, or design furnished.

5.4 The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

5.5 The Government will notify the Contractor, in writing or by telephone, after the discovery of any failure, defect or damage and the Contractor shall respond and be on-site to correct the problem within 1 working day after notification.

5.6 If the Contractor fails to remedy any failure, defect, or damage within a reasonable time as determined by the Government, after receipt of notice, the Government will have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

5.7 With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall:

- a. obtain all warranties that would be given in normal commercial practice;
- b. require all warranties to be executed in writing, for the benefit of the Government, if directed by the Contracting Officer; and
- c. enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

5.8 Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

5.9 This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects or fraud.

## 6. AVAILABILITY OF UTILITY SERVICES

### 6.1.1 Water

The Government will make available to Contractor, from existing outlets and supplies, reasonable amounts of potable water without charge. Contractor shall reasonably conserve potable water furnished. Contractor, at its own expense, shall install and maintain necessary temporary connections and distribution lines and shall remove the connections and lines prior to final acceptance of construction.

### 6.1.2 Electricity

Subject to available supply, reasonable amounts of electric current will be made available by the Government, without charge, to the Contractor for performing work at the work area. The Contractor shall carefully conserve electricity furnished. The Contractor, at its own expense and in a workmanlike manner satisfactory to the Contracting Officer, shall extend the existing electrical distribution system (overhead and underground) for temporary electrical service to the worksite, shall install and maintain necessary temporary connections, and shall remove the same prior to final acceptance of the construction.

## 7. SANITARY PROVISIONS

Public accommodations available for use of Contractor's employees are available within the construction area as designated. Contractor shall leave facilities in a neat and sanitary condition after use.

## 8. TEMPORARY ELECTRIC WIRING

### 8.1 Temporary Power and Lighting

The Contractor shall provide construction power facilities in accordance with the safety requirements of the National Electric Code NFPA No. 70 and the SAFETY AND HEALTH REQUIREMENTS MANUAL EM 385-1-1. The Contractor, or its delegated subcontractor, shall enforce the safety requirements of electrical extensions for the work of subcontractors. Work shall be accomplished by skilled electrical tradesmen.

### 8.2 Construction Equipment

In addition to the requirements of EM 385-1-1, SAFETY AND HEALTH REQUIREMENTS MANUAL, temporary wiring conductors installed for operation of construction tools and equipment shall be either Type TW or THW contained in metal raceways, or shall be hard usage or extra hard usage multiconductor cord. Temporary wiring shall be secured above the ground or floor in a workmanlike manner and shall not present an obstacle to persons or equipment. Open wiring may only be used outside of buildings, and then only in accordance with the provisions of the National Electric Code.

## 9. FIRE PROTECTION

During construction period, the Contractor shall provide fire extinguishers in accordance with the safety requirements of the SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1. The Contractor shall remove the fire extinguishers at the completion of the contract.

## 10. AS-BUILT FIELD DATA

### 10.1 General

The Contractor shall keep at the construction site a complete set of full size blueline prints of the contract drawings, reproduced at Contractor expense. During construction, these prints shall be marked to show all deviations in actual construction from the contract drawings. The color red shall be used to indicate all additions and green to indicate all deletions. The drawings shall show the following information but not be limited thereto:

- a. The locations of any changes within the building or structure.
- b. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including, but not limited to, fabrication erection, installation, and placing details, etc.
- c. All changes or modifications from the original design and from the final inspection.

These deviations shall be shown in the same general detail utilized in the contract drawings. Marking of the prints shall be pursued continuously during construction to keep them up to date. In addition, the Contractor shall maintain full size marked-up drawings, survey notes, sketches, nameplate data, pricing information, description, and serial numbers of all installed equipment. This information shall be maintained in a current condition at all times until the completion of the work. The resulting field-marked prints and data shall be referred to and marked as "As-Built Field Data," and shall be used for no other purpose. They shall be made available for inspection by the COR whenever requested during construction and shall be jointly inspected for accuracy and completeness by the COR and a responsible representative of the Contractor prior to submission of each monthly pay estimate.

### 10.2 Submittal of the As-Built Field Data

The As-Built Field Data shall be submitted to the Contracting Officer for review and approval a minimum of 10 calendar days prior to the date of final inspection. If review of the preliminary as-built drawings reveals errors and/or omissions, the drawings will be returned to the Contractor for corrections. The Contractor shall make all corrections and return the drawings to the Contracting Officer within 5 calendar days of receipt. When submitted drawings are accepted, one set of marked drawings will be returned to the Contractor for the Completion of the as-built drawings.

## 11. HOUSEKEEPING AND CLEANUP

Contractor shall remove all debris from the work area daily.

12. PROTECTION OF PROPERTY

The Contractor shall protect all Government property. Protection shall include, but is not limited to protection from construction generated dust, debris, water, and vibration.

13. CORRESPONDENCE

13.1 All correspondence shall be addressed to the Contracting Officer, shall be serially numbered commencing with Number 1, with no numbers missing or duplicated and shall be furnished with an original and one copy. Enclosures attached or transmitted with the correspondence shall also be furnished with an original and one copy. Each serial letter shall make reference to the contract name, contract number and shall have only one subject.

13.2 All correspondence from the Contracting Officer will be also serially numbered with no numbers missing or duplicated.

14. STAGING AREA

Contractor will be provided adequate open staging area as directed by the Contracting Officer. Area is unsecured, and Contractor shall make provisions for its own security.

15. SAFETY REQUIREMENTS

Operations shall be in accordance with all requirements of Corps of Engineers Manual, EM 385-1-1, "Safety and Health Requirements Manual," dated September 1996.

16. HARD HAT SIGNS

The Contractor shall provide 24 by 24 inch square Hard Hat Area signs at each entry to the project or work area as directed by the Contracting Officer. A minimum of two signs will be required. Signs shall be in accordance with the sketch at the end of this section.

17. COMMENCEMENT AND COMPLETION OF WORK:

Work shall begin upon receipt of bonding approval and notice to proceed. Work shall be completed by 30 September 2002. The time stated for completion includes final cleanup of the premises.

18. Work shall conform to the following specifications and drawings:

18.1 Specifications:

<u>Section No.</u>	<u>Section Title</u>
01001	Supplementary Requirements (contained herein)
01330	Submittals
05502	Metals: Miscellaneous, Standard Articles, Shop Fabricated Items
15895	Air Supply, Distribution, Ventilation, and Exhaust System
15950	Heating, Ventilating and Air Conditioning (HVAC) Control System
15990	Testing, Adjusting, and Ballancing of HVAC Systems

18.2 Drawings:

<u>FILE NUMBER</u>	<u>SHEET NUMBER</u>	<u>PLATE NUMBER</u>	<u>TITLE</u>	<u>REVISION NUMBER</u>	<u>DATE</u>
			Libby Dam Weld Shop Renovation, Kootenai River near Libby,		

MT

E-53-11-189	1	G-1	Cover Sheet, Vicinity Map and Drawing Index	01JUL30
	2	M-1	Demolition Plan	01JUL30
	3	M-2	Abbreviations and General Notes	01JUL30
	4	M-3	Mechanical Schedules	01JUL30
	5	M-4	HVAC Plan	01JUL30
	6	M-5	HVAC Details	01JUL30
	7	M-6	Seismic Details	01JUN25

REFERENCE DRAWINGS

Reference drawings provided show conditions at time of construction. These drawings are furnished for information only and the Government does not warrant that conditions will be exactly as shown. Minor deviations can be anticipated and shall not be the basis for a claim for extra compensation.

FILE NUMBER	REF DWG NUMBER	TITLE	REV No.	DATE
<b>Libby Dam Kootenai River, Montana Powerhouse Erection Bay - Arrangement</b>				
E-53-11-189	1	Plans El. 2131.5 and El. 2148	A	72MAR10
<b>Libby Dam Kootenai River, Montana Powerhouse HVAC Renovation</b>				
E-53-11-189	2	Welding Shop Plan El. 2131.5	O	92APR24

STANDARD DETAILS BOUND IN THE SPECIFICATIONS

DRAWING NUMBER	SHEET NUMBER	TITLE	DATE
<u>SECTION 01001 - Supplementary Requirements</u>			

1 Hard Hat Sign

10SEP90

01451-10





US Army Corps  
of Engineers  
Seattle District

SAFETY PAYS

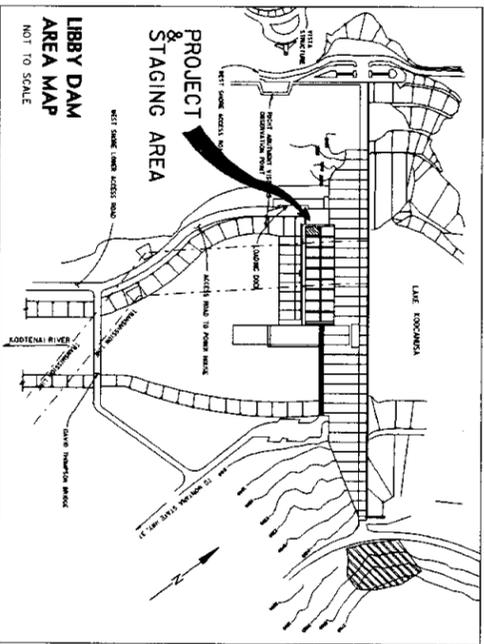
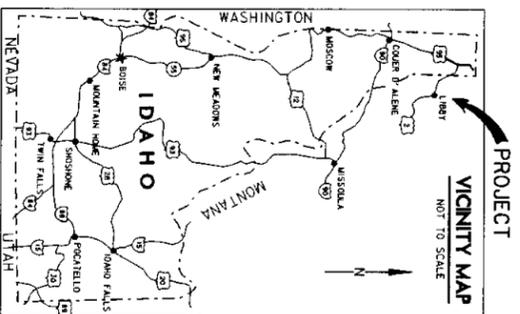


US Army Corps  
of Engineers  
Seattle District

# LIBBY DAM WELD SHOP RENOVATION

## KOOTENAI RIVER near LIBBY, MONTANA

DRAWING INDEX		
SHEET NO	PLATE NO	TITLE
1	G-1	LOCATION MAPS AND DRAWING INDEX
2	M-1	ABBREVIATIONS AND GENERAL NOTES
3	M-2	DEMOLITION
4	M-3	MECHANICAL SCHEDULES
5	M-4	ENLARGED HVAC PLAN
6	M-5	HVAC DETAILS
7	M-8	SEISMIC DETAILS



DATE AND TIME PLOTTED: 17-DEC-2001 15:08 DESIGN FILE: I:\DESIGN\MISC\MECH\LIBBY DAM\WELDING SHOP\LWSHGD1.DGN

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

Designed by: <b>BRANDT</b>	Date: 17 DEC 01
Drawn by: <b>BRANDT</b>	File #: E-53-11-189
Checked by:	

U.S. ARMY ENGINEER DISTRICT, SEATTLE CORPS OF ENGINEERS SEATTLE, WASHINGTON
Prepared by: <b>SVEN, H. LE, P.E.</b> Chief, Electrical/Structural Section

WELD SHOP RENOVATION POWERHOUSE LOCATION MAPS AND DRAWING INDEX
E-53-11-189 LIBBY DAM MONTANA

PLATE NUMBER <b>G-1</b> Sheet 1 of 7
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US Army Corps  
of Engineers  
Seattle District

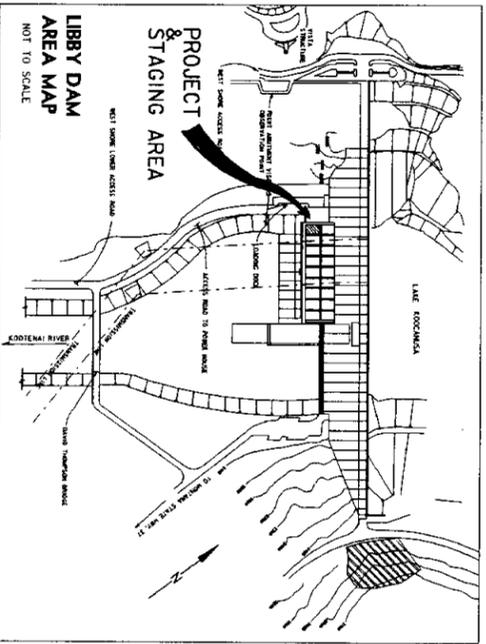
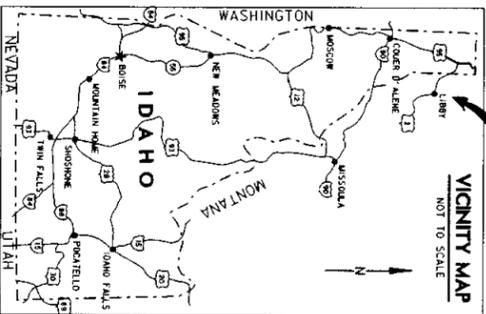
SAFETY PAYS



# LIBBY DAM WELD SHOP RENOVATION

## KOOTENAI RIVER near LIBBY, MONTANA

DRAWING INDEX		
SHEET NO.	PLATE NO.	TITLE
1	G-1	LOCATION MAPS AND DRAWING INDEX
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7	M-6	SEISMIC DETAILS



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Plate Number  
**G-1**  
Sheet 1 of 7

WELD SHOP RENOVATION POWERHOUSE  
**LOCATION MAPS AND DRAWING INDEX**  
KOOTENAI RIVER E-53-11-189 LIBBY DAM MONTANA

U.S. ARMY ENGINEER DISTRICT, BATTLE  
CORPS OF ENGINEERS  
BATTLE, WASHINGTON  
Prepared by:  
SVEN H. LE, P.E.  
Chief, Electrical/Instrumentation Section

Designed by:  
BRANDT  
Date: 17 DEC 01  
Drawn by:  
BRANDT  
File #: E-53-11-189  
Checked by:

Symbol	Description	Date	Appr.	Special	Description	Date	Appr.

DATE AND TIME PLOTTED: 17-DEC-2001 15:08 DESIGN FILE: I:\DESIGN\HIS\MECH\LIBBY DAM\WELDING SHOP\LDWSH06A.DGN



US Army Corps  
of Engineers  
Seattle District

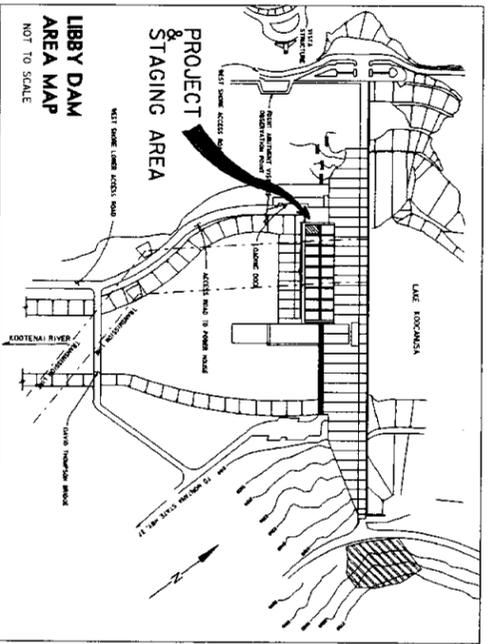
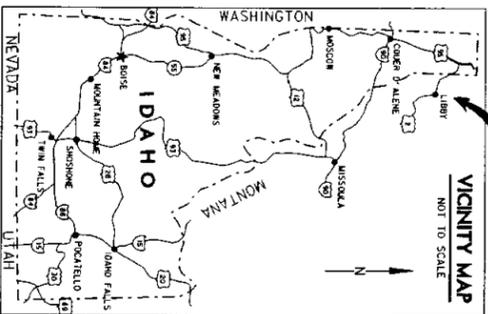
SAFETY PAYS



# LIBBY DAM WELD SHOP RENOVATION

## KOOTENAI RIVER near LIBBY, MONTANA

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DATE AND TIME PLOTTED: 17-DEC-2001 15:08 DESIGN FILE: I:\DESIGN\NISC\MECH\LIBBY DAM\VELDING SHOP\LDWSHGA.DGN

Plate Number: G-1 Sheet 1 of 7

WELD SHOP RENOVATION POWERHOUSE  
LOCATION MAPS AND DRAWING INDEX  
KOOTENAI RIVER E-53-11-189 LIBBY DAM MONTANA

U.S. ARMY ENGINEER DISTRICT, SEATTLE  
CORPS OF ENGINEERS  
SEATTLE, WASHINGTON  
Prepared by:  
SVEN H. LE, P.E.  
Chief, Structural/Neurological Section

Designed by: BRANDT  
Drawn by: BRANDT  
Checked by:

Date	Description	Date	Appr.
17 DEC 01			
E-53-11-189			



US Army Corps  
of Engineers  
Seattle District

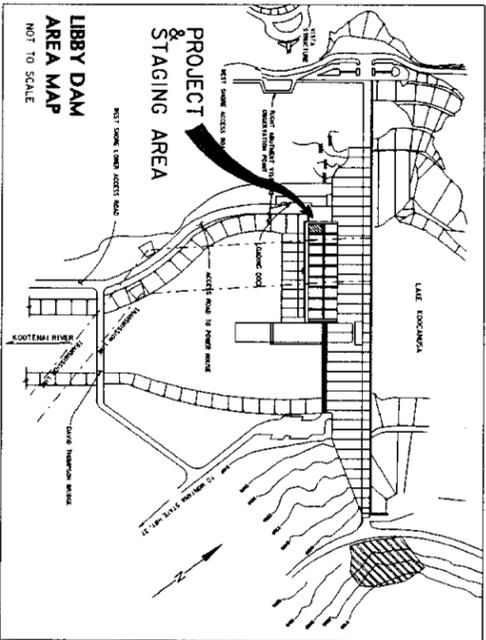
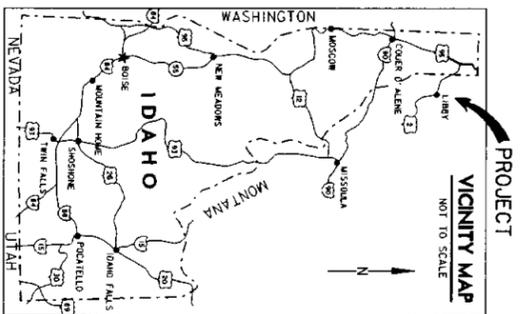
SAFETY PAYS



# LIBBY DAM WELD SHOP RENOVATION

## KOOTENAI RIVER near LIBBY, MONTANA

SHEET NO.	PLATE NO.	TITLE
1	C-1	LOCATION MAPS AND DRAWING INDEX
2	M-1	ABBREVIATIONS AND GENERAL NOTES
3	M-2	DEMOLITION
4	M-3	MECHANICAL SCHEDULES
5	M-4	ENLARGED HVAC PLAN
6	M-5	HYDRAULIC DETAILS
7	M-6	SEISMIC DETAILS



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Sheet number:  
**G-1**  
Sheet 1 of 7

WELD SHOP RENOVATION  
POWERHOUSE  
**LOCATION MAPS AND DRAWING INDEX**  
KOOTENAI RIVER E-53-11-189 MONTANA  
LIBBY DAM

U.S. ARMY ENGINEER DISTRICT, SEATTLE  
CORPS OF ENGINEERS  
SEATTLE, WASHINGTON  
Prepared by:  
SVEN H. L.E., P.E.  
Chief, Equipment/Infrastructure Section

Designed by:  
BRANDT  
Checked by:  
BRANDT  
Date: 17 DEC 01  
File #: E-53-11-189

Year	Description	Date	Appr.	Specdr.	Description	Date	Appr.

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of Engineers  
Seattle District

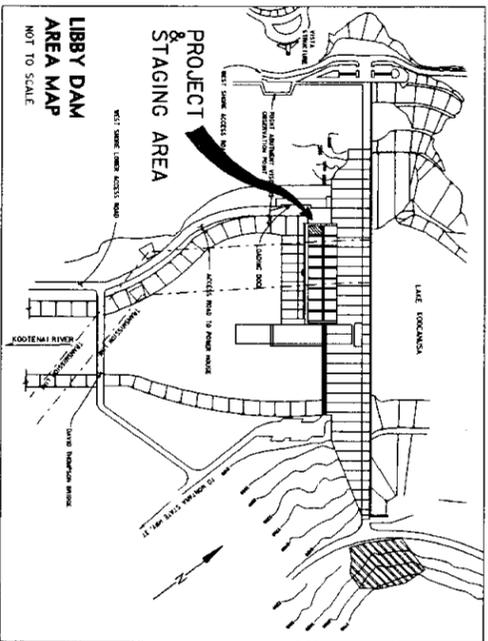
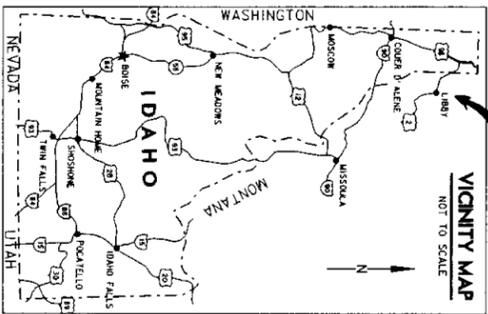
SAFETY PAYS



# LIBBY DAM WELD SHOP RENOVATION

## KOOTENAI RIVER near LIBBY, MONTANA

DRAWING INDEX		
SHEET NO	PLATE NO	TITLE
1	C-1	LOCATION MAPS AND DRAWING INDEX
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Designed by <b>BRANDY</b>	Date <b>17 DEC 01</b>
Drawn by <b>BRANDY</b>	File # <b>E-53-11-169</b>
Checked by	

U.S. ARMY ENGINEER DISTRICT, SEATTLE CORPS OF ENGINEERS SEATTLE, WASHINGTON	Prepared by <b>SVEN H. L.E. P.E.</b> Chief, Electrical/Mechanical Section
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WELD SHOP RENOVATION POWERHOUSE LOCATION MAPS AND DRAWING INDEX	KOOTENAI RIVER E-53-11-169 LIBBY DAM MONTANA
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Sheet number: <b>G-1</b>	Sheet 1 of 7
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US Army Corps  
of Engineers  
Seattle District

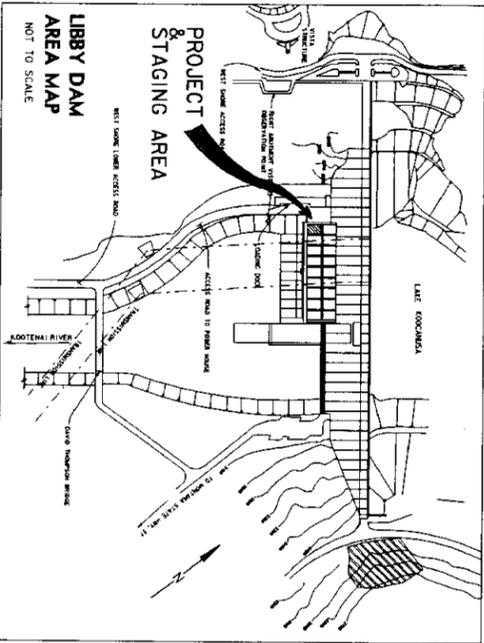
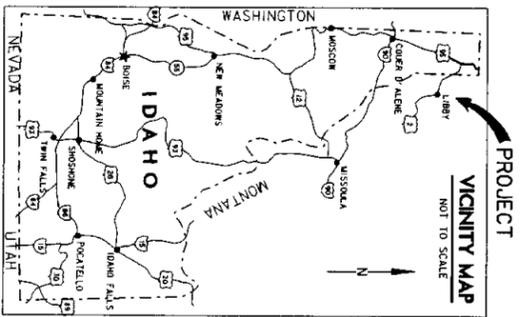
**SAFETY PAYS**



# LIBBY DAM WELD SHOP RENOVATION

## KOOTENAI RIVER near LIBBY, MONTANA

DRAWING INDEX	
SHEET NO	TITLE
1	C-1 LOCATION MAPS AND DRAWING INDEX
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4	M-3 ENLARGED HVAC PLAN
5	M-4 HVAC DETAILS
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WELD SHOP RENOVATION POWERHOUSE <b>LOCATION MAPS AND DRAWING INDEX</b>  KOOTENAI RIVER E-53-11-189 MONTANA LIBBY DAM	U.S. ARMY ENGINEER DISTRICT, SEATTLE CORPS OF ENGINEERS SEATTLE, WASHINGTON  Prepared by: SVCH, H. L. E., P. E. Chief, Structures/Structural Section	Designed by: BRANDT Drawn by: BRANDT Checked by:	Date: 17 DEC 01 File #: E-53-11-189	<table border="1"> <thead> <tr> <th>Symbol</th> <th>Description</th> <th>Date</th> <th>Appr.</th> <th>Symbol</th> <th>Description</th> <th>Date</th> <th>Appr.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.																																																																																
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QUALITY OF WORK

**SECTION 01451**

**CONTRACTOR QUALITY CONTROL**

**PART 1 GENERAL**

**1.1 REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(1999b) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
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ASTM E 329	(1998a) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
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**1.2 PAYMENT**

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

**PART 2 PRODUCTS (Not Applicable)**

**PART 3 EXECUTION**

**3.1 GENERAL REQUIREMENTS**

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

**3.2 QUALITY CONTROL PLAN**

**3.2.1 General**

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 60 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

### 3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project manager. If the project manager and project superintendent are the same person, the CQC System Manager shall report to someone higher in the Contractor's organization than the project manager.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test.
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

### 3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

### 3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

### 3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 5 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be

developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

**3.4 QUALITY CONTROL ORGANIZATION**

**3.4.1 Personnel Requirements**

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health manager shall receive direction and authority from the CQC System manager and shall serve as a member of the CQC staff. The Contractor shall provide a CQC organization which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawings submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

**3.4.2 CQC System Manager**

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 5 years construction experience on construction similar to this contract or a construction person with a minimum of 10 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

**3.4.3 CQC Personnel**

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

<b>Experience Matrix</b>	
<b>Area</b>	<b>Qualifications</b>
c	Mechanical Graduate Electrical Engineer with 2 years related experience or person with 5 years related experience

**3.4.4 Additional Requirement**

In addition to the above experience education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered at AGC offices throughout the state of Washington and Oregon.

### 3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

### 3.5 SUBMITTALS AND DELIVERABLES

Submittals shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements. All Contractor forms for submitting test results are subject to Contracting Officer approval.

### 3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

#### 3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

### 3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

### 3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

### 3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

## 3.7 TESTS

### 3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information

copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

### 3.8 COMPLETION INSPECTION

#### 3.8.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a punch list of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

#### 3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

#### 3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

### 3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.

- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

### 3.10 SAMPLE FORMS

Sample forms are attached at the end of this specification section.

### 3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.



3. QUALITY CONTROL INSPECTIONS AND RESULTS: (Include a description of preparatory, initial, and/or follow up inspections or meetings; check of subcontractors work and materials delivered to the site compared to submittals and/or specifications; comments on the proper storage of materials; include comments on corrective actions to be taken):

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4. QUALITY CONTROL TESTING AND RESULTS (comment on tests and attach test reports):

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5. DAILY SAFETY INSPECTIONS (Include comments on new hazards to be added to the Hazard Analysis and corrective action of any safety issues):

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6. REMARKS (Include conversations with or instructions from the Government representatives; delays of any kind that are impacting the job; conflicts in the contract documents; comments on change orders; environmental considerations; etc.):

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CONTRACTOR'S VERIFICATION: The above report is complete and correct. All material, equipment used, and work performed during this reporting period are in compliance with the contract documents except as noted above.

\_\_\_\_\_  
CONTRACTOR QC REPRESENTATIVE

(Sample of Typical Contractor's Test Report)

TEST REPORT

STRUCTURE OR BUILDING \_\_\_\_\_

CONTRACT NO. \_\_\_\_\_

DESCRIPTION OF ITEM, SYSTEM, OR PART OF SYSTEM TESTED:

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

DESCRIPTION OF TEST: \_\_\_\_\_

\_\_\_\_\_

NAME AND TITLE OF PERSON IN CHARGE OF PERFORMING TESTS FOR THE CONTRACTOR:

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

SIGNATURE \_\_\_\_\_

I HEREBY CERTIFY THAT THE ABOVE DESCRIBED ITEM, SYSTEM, OR PART OF SYSTEM HAS BEEN TESTED AS INDICATED ABOVE AND FOUND TO BE ENTIRELY SATISFACTORY AS REQUIRED IN THE CONTRACT SPECIFICATIONS.

SIGNATURE OF CONTRACTOR  
QUALITY CONTROL INSPECTOR \_\_\_\_\_

DATE \_\_\_\_\_

REMARKS

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

END OF SECTION

MISC STANDARDS

## SECTION 05502

## METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS

**PART 1 GENERAL**

## 1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36/A 36M	(1996) Carbon Structural Steel
ASTM A 109	(1993) Steel, Strip, Carbon, Cold-Rolled
ASTM A 307	(1994) Carbon Steel Bolts and Studs, 60000 psi Tensile Strength
ASTM F 436	(1993) Hardened Steel Washers

## ASME INTERNATIONAL (ASME)

ASME B16.9	(1993) Factory-Made Wrought Steel Buttwelding Fittings
ASME B18.2.1	(1981; Supple 1991; R 1992) Square and Hex Bolts and Screws (Inch Series)
ASME B18.2.2	(1987; R 1993) Square and Hex Nuts (Inch Series)
ASME B18.6.3	(1972; R 1991) Machine Screws and Machine Screw Nuts
ASME B18.21.1	(1994) Lock Washers (Inch Series)
ASME B18.22.1	(1965; R 1990) Plain Washers

## ENGINEERING MANUALS (EM)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual
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## AMERICAN WELDING SOCIETY (AWS)

AWS D1.1	(1994) Structural Welding Code - Steel
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## 1.2. SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Fabricated Metal Items; G.

Detail drawings shall be submitted for approval as specified.

**SD-03 Product Data**

Miscellaneous Metals and Standard Metal Articles. Shop Fabricated Metal Items; G.

Lists of materials shall be submitted for approval as specified.

**SD-04 Samples**

Miscellaneous Metals and Standard Metal Articles; G. Shop Fabricated Metal Items; G.

Samples shall be submitted for approval as specified. Samples of standard or fabricated items shall be full size and complete as required for installation in the work, and may be installed in the work, provided each sample is clearly identified and its location recorded.

**SD-06 Test Reports**

Miscellaneous Metals and Standard Metal Articles. Shop Fabricated Metal Items; G.

Certified test reports for materials tests and analyses shall be submitted for approval as specified.

**SD-11 Closeout Submittals**

Miscellaneous Metals and Standard Metal Articles. Shop Fabricated Metal Items; G.

Records which identify the disposition of approved material and fabricated items in the work must be submitted for approval as specified.

**1.3. FABRICATION AND WORKMANSHIP REQUIREMENTS**

Workmanship for welding shall be in accordance with AWS D1.1, Section 3 and other applicable requirements of these specifications. Workmanship shall be of the highest grade and in accordance with the best modern practices to conform with the specifications for the item of work being furnished.

**PART 2 PRODUCTS****2.1. MISCELLANEOUS METALS AND STANDARD METAL ARTICLES**

Miscellaneous metal materials and standard metal articles shall conform to the respective specifications and other designated requirements. Sizes shall be as specified or shown. Where material requirements are not specified, materials furnished shall be suitable for the intended use and shall be subject to approval.

**2.1.1. Structural Steel**

Structural steel shall conform to ASTM A 36/A 36M unless otherwise noted.

**2.1.2. Steel Castings**

ASTM A 27/A 27M, Grade 60-30, Class 1, or ASTM A 148/A 148M, Grade 80-40.

**2.1.3. Steel Strips**

ASTM A 109, Temper 1, Edge 4.

**2.1.4. Bolts, Nuts, and Washers**

Bolts, nuts, and washers shall be of the material, grade, type, class, style and finish indicated or best suited for intended use.

**a. Bolts and Nuts - ASTM A 307, Grade A**

**b. Bolts - ASME B18.2.1.**

**c. Nuts - ASME B18.2.2.**

**d. Washers**

**(1) Plain Washers - ASME B18.22M/ASME B18.22.1, Type B.**

**(2) Lock Washer - ASME B18.21.1.**

**(3) Beveled Washers - ASTM F 436M/ASTM F 436, Beveled.**

**2.2. SHOP FABRICATED METAL ITEMS**

Shop fabricated metal items shall conform to the requirements and details as specified or shown.

**PART 3 EXECUTION (Not Applicable)**

END OF SECTION

QUALITY OF STANDARDS FOR IN

SECTION 15950

## HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEM

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)

AMCA 500-D (1997) Laboratory Methods of Testing Dampers for Rating

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 269 (1996) Seamless and Welded Austenitic Stainless Steel Tubing for General Service

ASTM B 88 (1996) Seamless Copper Water Tube

ASTM D 635 (1997) Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position

ASTM D 1693 (1997a) Environmental Stress-Cracking of Ethylene Plastics

## AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B16.34 (1997) Valves - Flanged, Threaded, and Welding End

ASME B40.1 (1991) Gauges - Pressure Indicating Dial Type - Elastic Element

ASME BPV VIII Div 1 (1998) Boiler and Pressure Vessel Code; Section VIII, Pressure Vessels Division 1 - Basic Coverage

## CODE OF FEDERAL REGULATIONS (CFR)

47 CFR 15 Radio Frequency Devices

## INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C62.41 (1991; R 1995) Surge Voltages in Low-Voltage AC Power Circuits

## Instrument Society of America (ISA)

ISA S7.0.01 (1996) Quality Standard for Instrument Air

## NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250 (1991) Enclosures for Electrical Equipment (1000 Volts Maximum)

## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

NFPA 90A (1996) Installation of Air Conditioning and Ventilating Systems

## UNDERWRITERS LABORATORIES (UL)

UL 94 (1996; Rev thru Jul 1998) Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

UL 268A	(1998) Smoke Detectors for Duct Application
UL 508	(1993; Rev thru Oct 1997) Industrial Control Equipment
UL 555S	(1999) Safety for Smoke Dampers
UL 916	(1998) Energy Management Equipment

### 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

#### Shop Drawings

##### Drawings; G

Drawings on A1 841 by 594 mm 34 by 22 inch sheets in the form and arrangement shown. The drawings shall use the same abbreviations, symbols, nomenclature and device identifiers shown. Each control-system element on a drawing shall have a unique identifier as shown. All HVAC control system drawings shall be delivered together as a complete submittal. Drawings shall be submitted for each HVAC system.

- a. HVAC control system drawings shall include the following:

Drawing index, HVAC control system legend, damper schedule, HVAC control system schematic and equipment schedule, HVAC control system sequence of operation and ladder diagram, Control loop wiring diagrams; Motor starter and relay wiring diagram.

#### Product Data

##### HVAC Control System; G Service Organizations; G

Four copies of a list of service organizations qualified to service the HVAC control system. The list shall include the service organization name, address, technical point of contact and telephone number, and contractual point of contact and telephone number.

##### Equipment Compliance Booklet; G

An HVAC control system equipment compliance booklet (ECB) in indexed booklet form with numbered tabs separating the information on each device. It shall consist of, but not be limited to, data sheets and catalog cuts which document compliance of all devices and components with the specifications.

##### Performance Verification Test Procedures; G

Two copies of the HVAC control system performance verification test procedures, in indexed booklet form, 60 days before the Contractor's scheduled test dates. The performance verification test procedures shall refer to the devices by their unique identifiers as shown, shall explain, step-by-step, the actions and expected results that will demonstrate that the HVAC control system performs in accordance with the sequences of operation.

#### Operation and Maintenance Data

##### Operation, Maintenance and Repair Manual; G

Three copies of the operation, maintenance and repair manual.

### 1.3 GENERAL REQUIREMENTS

### 1.4 DELIVERY AND STORAGE

Products shall be stored with protection from the weather, humidity and temperature variations, dirt and dust, and other contaminants, within the storage-condition limits published by the equipment manufacturer.

### 1.5 OPERATION MANUAL

A control system operation manual for each control system shall be provided. The operation manual shall include the system sequence, and procedures for start-up, operation and shut-down. A control system maintenance and repair manual shall be provided. The maintenance and repair manual shall include the routine maintenance checklist, and the qualified service organization list. The manual may be combined with the O&M manual specified in Section 15895 EXHAUST SYSTEM.

## **PART 2 PRODUCTS**

### 2.1 MATERIAL AND EQUIPMENT

Material and equipment shall be standard products of a manufacturer regularly engaged in the manufacturing of such products which are of a similar material, design and workmanship. The standard products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year use shall include applications of equipment and materials under similar circumstances and of similar size. The equipment items shall be supported by a service organization. The Contractor shall submit a certified list of qualified permanent service organizations and qualifications. These service organizations shall be reasonably convenient to the equipment on a regular and emergency basis during the warranty period.

### 2.2 GENERAL EQUIPMENT REQUIREMENTS

#### 2.2.1 Electrical and Electronic Devices

All electrical, and electronic devices not located within an HVAC control panel shall have a NEMA Type 1 enclosure unless otherwise shown.

#### 2.2.2 Standard Signals

The output of all analog transmitters shall be 4-to-20 mA<sub>dc</sub> signals. The signal shall originate from current-sourcing devices and shall be received by current-sinking devices.

#### 2.2.3 Ambient Temperature Limits

Ambient Temperature Actuators and positive positioners and transmitters shall operate within temperature limit ratings of 5 to 60 degrees C (40 to 140 degrees F). All panel-mounted instruments shall operate within limit ratings of 2 to 50 degrees C (35 to 120 degrees F) and 10 percent to 95 percent relative humidity, noncondensing. All devices installed outdoors shall operate within limit ratings of minus 40 to plus 65 degrees C (minus 40 to plus 150 degrees F).

#### 2.2.4 Nameplates, Lens Caps, and Tag Nameplates

A plastic or metal tag shall be mechanically attached directly to each device or attached by a metal chain or wire.

### 2.3 MATERIALS

#### 2.3.2 Wiring

##### 2.3.2.1 Terminal Blocks

Terminal blocks shall be insulated, modular, feed-through, clamp style with recessed captive screw-type clamping mechanism, shall be suitable for rail mounting, and shall have end plates and partition plates for separation or shall have enclosed sides.

**2.3.2.2 Control Wiring for 24-Volt Circuits**

Control wiring for 24-volt circuits shall be 18 AWG minimum, stranded copper and shall be rated for 300-volt service.

**2.3.2.3 Wiring for 120-Volt Circuits**

Wiring for 120-volt circuits shall be 18 AWG minimum, stranded copper and shall be rated for 600-volt service.

**2.3.2.4 Analog Signal Wiring Circuits**

Analog signal wiring circuits within control panels shall not be less than 20 AWG and shall be rated for 300-volt service.

**2.3.2.5 Instrumentation Cable**

Instrumentation cable shall be 18 AWG, stranded copper, single or multiple-twisted, minimum 51 mm (2 inch) lay of twist, 100 percent shielded pairs, and shall have a 300-volt insulation. Each pair shall have a 20 AWG tinned-copper drain wire and individual overall pair insulation. Cables shall have an overall aluminum-polyester or tinned-copper cable-shield tape, overall 20 AWG tinned-copper cable drain wire, and overall cable insulation.

**2.3.2.6 Nonconducting Wiring Duct**

Nonconducting wiring duct in control panels shall have wiring duct in control panels shall have slotted sides, snap-on duct covers, have slotted sides, snap-on duct covers, fittings for connecting ducts, mounting clips for securing ducts, and wire-retaining clips.

**2.3.2.7 Transformers**

Step-down transformers shall be utilized where control equipment operates at lower than line circuit voltage. Transformers, other than transformers in bridge circuits, shall have primaries wound for the voltage available and secondaries wound for the correct control circuit voltage. Transformers shall be sized so that the connected load is 80 percent of the rated capacity or less. Transformers shall conform to UL 508.

**2.4 ACTUATORS**

Actuators shall be electric or electronic and shall be provided with mounting and connecting hardware. Actuators shall fail to their spring-return positions on signal or power failure.

**2.14 PILOT LIGHTS AND MANUAL SWITCHES**

Pilot lights and switches shall be rectangular devices arranged in a horizontal matrix as shown. Momentary switches shall be non-illuminated. Interlocking switches shall have separately illuminated sections. Split legend lights shall have separately illuminated sections. Device illumination shall be by light-emitting diode or neon lamp.

**PART 3 EXECUTION****3.1 GENERAL INSTALLATION CRITERIA**

The HVAC control system shall be installed and ready for operation, as specified and shown. Penetrations through and mounting holes in the building exterior shall be made watertight. The control system installation shall not interfere with the clearance requirements for mechanical and electrical system maintenance.

**3.1.1 Device Mounting Criteria**

Devices mounted in or on piping or ductwork, on building surfaces, in mechanical/electrical spaces, or in occupied space ceilings shall be installed in accordance with manufacturer's recommendations and as shown. Control devices to be installed in piping and ductwork shall be provided with all required gaskets, flanges, thermal compounds, insulation, piping, fittings, and manual valves for shutoff, equalization, purging, and calibration.

**3.1.2 Wiring Criteria**

Wiring external to control panels, including low-voltage wiring, shall be installed in metallic raceways. Cables and conductors shall be tagged at both ends, with the identifier shown on the shop drawings. Other electrical work shall be as shown.

**3.2 CONTROL SYSTEM INSTALLATION (NOT USED)****3.3 CONTROL SEQUENCES OF OPERATION****3.3.1 System Requirements****3.3.1.1 HVAC System Exhaust Fan**

Exhaust fan shall operate under the selection of a High-Low-Off switch.

**3.2 BALANCING, COMMISSIONING, AND TESTING****3.2.1 Coordination with HVAC System Balancing**

Commissioning of the control system shall be performed after HVAC system balancing. The Contractor shall tune the HVAC control system after all air-system balancing has been completed, minimum damper positions set and a report has been issued.

**3.2.2 Control System Calibration, Adjustments, and Commissioning**

Control system commissioning shall be performed for the system, using test plans and procedures approved by the Government. The Contractor shall provide all personnel, equipment, instrumentation, and supplies necessary to perform commissioning and testing of the control system. Wiring shall be tested for continuity and for ground, open, and short circuits. Mechanical control devices shall be adjusted to operate as specified. Written notification of any planned commissioning or testing of the Control system shall be given to the Government at least 14 calendar days in advance.

**3.5.3 Performance Verification Test**

The Contractor shall demonstrate compliance of the HVAC control system with the contract documents. Using test plans and procedures previously approved by the Government, the Contractor shall demonstrate all physical and functional requirements of the project. The performance verification test shall show, step-by-step, the actions and results demonstrating that the control systems perform in accordance with the sequences of operation. The performance verification test shall not be started until after receipt by the Contractor of written permission by the Government, based on Government approval of the commissioning report and completion of balancing.

END OF SECTION

TESTING, ADJUSTING AND BALANCE

## SECTION 15990

## TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS

**PART 1 GENERAL**

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## ASSOCIATED AIR BALANCE COUNCIL (AABC)

AABC MN-1

(1989) National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems

## NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)

NEBB Procedural Stds

(1991) Procedural Standards for Testing Adjusting Balancing of Environmental Systems

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Design Review Report; G

A copy of the Design Review Report, no later than 14 days after approval of the TAB Firm and the TAB Specialist.

TAB Report; G

Three copies of the completed TAB Reports, no later than 7 days after the execution of TAB. All items in the TAB Report shall be signed by the TAB Specialist and shall bear the seal of the Professional Society or National Association used as the TAB Standard.

TAB Verification Report; G

Three copies of the completed TAB Verification Report, no later than 7 days after the execution of TAB Verification. All items in the TAB Verification Report shall be signed by the TAB Specialist and shall bear the seal of the Professional Society or National Association used as the TAB Standard.

## Certificates

Ductwork Leak Testing, G

A written statement signed by the TAB Specialist certifying that the TAB Specialist witnessed the Ductwork Leak Testing, it was successfully completed, and that there are no known deficiencies related to the ductwork installation that will prevent TAB from producing satisfactory results.

TAB Firm; G,

Certification of the proposed TAB Firm's qualifications by either AABC or NEBB to perform the duties specified herein and in other related Sections, no later than 21 days after the Notice to Proceed. The documentation shall include the date that the Certification was initially granted and the date that the current Certification expires. Any lapses in Certification of the proposed TAB Firm or disciplinary action taken by AABC or NEBB against the proposed TAB Firm shall be described in detail.

TAB Specialist; G

Certification of the proposed TAB Specialist's qualifications by either AABC or NEBB to perform the duties specified herein and in other related Sections, no later than 21 days after the Notice to Proceed. The documentation shall include the date that the Certification was initially granted and the date that the current Certification expires. Any lapses in Certification of the proposed TAB Specialist or disciplinary action taken by AABC or NEBB against the proposed TAB Specialist shall be described in detail.

1.3 SIMILAR TERMS

In some instances, terminology differs between the Contract and the TAB Standard primarily because the intent of this Section is to use the industry standards specified, along with additional requirements listed herein to produce optimal results. The following table of similar terms is provided for clarification only. Contract requirements take precedent over the corresponding AABC or NEBB requirements where differences exist.

SIMILAR TERMS

<u>Contract Term</u>	<u>AABC Term</u>	<u>NEBB Term</u>
TAB Standard	National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems	Procedural Standards for Testing Adjusting Balancing of Environmental Systems.
<u>TAB Specialist</u>	<u>TAB Engineer</u>	<u>TAB Supervisor</u>
Systems Readiness Check	Construction Phase Inspection Check & Preliminary Field Procedures.	Field Readiness

1.4 TAB STANDARD

TAB shall be performed in accordance with the requirements of the standard under which the TAB Firm's qualifications are approved, i.e., AABC MN-1 or NEBB Procedural Stds, unless otherwise specified herein. All recommendations and suggested practices contained in the TAB Standard shall be considered mandatory. The provisions of the TAB Standard, including checklists, report forms, etc., shall, as nearly as practical, be used to satisfy the Contract requirements. The TAB Standard shall be used for all aspects of TAB, including qualifications for the TAB Firm and Specialist and calibration of TAB instruments. Where the instrument manufacturer calibration recommendations are more stringent than those listed in the TAB Standard, the manufacturer's recommendations shall be adhered to. All quality assurance provisions of the TAB Standard such as performance guarantees shall be part of this contract. For systems or system components not covered in the TAB Standard, TAB procedures shall be developed by the TAB Specialist. Where new procedures, requirements, etc., applicable to the Contract requirements have been published or adopted by the body responsible for the TAB Standard used (AABC or NEBB), the requirements and recommendations contained in these procedures and requirements shall be considered mandatory.

1.5 QUALIFICATIONS

1.5.1 TAB Firm

The TAB Firm shall be either a member of AABC or certified by the NEBB and certified in all categories and functions where measurements or performance are specified on the plans and specifications, including building systems commissioning. These TAB services are to assist the prime Contractor in performing the quality

oversight for which it is responsible. The TAB Firm shall be a subcontractor of the prime Contractor, and shall report to and be paid by the prime Contractor.

#### 1.5.2 TAB Specialist

The TAB Specialist shall be either a member of AABC or an experienced technician of the Firm certified by the NEBB. The certification shall be maintained for the entire duration of duties specified herein.

#### 1.6 TAB SPECIALIST RESPONSIBILITIES

All TAB work specified herein and in related sections shall be performed under the direct guidance of the TAB Specialist.

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

### **PART 3 EXECUTION**

#### 3.1 DESIGN REVIEW

The TAB Specialist shall review the Contract Plans and Specifications and advise the Contracting Officer of any deficiencies that would prevent the HVAC systems from effectively operating in accordance with the sequence of operation specified or prevent the effective and accurate TAB of the system. The TAB Specialist shall provide a Design Review Report individually listing each deficiency and the corresponding proposed corrective action necessary for proper system operation.

#### 3.2 TAB RELATED HVAC SUBMITTALS

The TAB Specialist shall prepare a list of the submittals from the Contract Submittal Register that relate to the successful accomplishment of all HVAC TAB. The submittals identified on this list shall be accompanied by a letter of approval signed and dated by the TAB Specialist when submitted to the Government. The TAB Specialist shall also ensure that the location and details of ports, terminals, connections, etc., necessary to perform TAB are identified on the submittals.

#### 3.3 TAB SCHEMATIC DRAWINGS AND REPORT FORMS

A schematic drawing showing each system component, including balancing devices, shall be provided for each system. Each drawing shall be accompanied by a copy of all report forms required by the TAB Standard used for that system. Where applicable, the acceptable range of operation or appropriate setting for each component shall be included on the forms or as an attachment to the forms. The schematic drawings shall identify all testing points and cross reference these points to the report forms and procedures.

#### 3.4 DUCTWORK LEAK TESTING

The TAB Specialist shall witness the Ductwork Leak Testing specified in Section 15895 AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEM and approve the results as specified in Paragraph TAB RELATED HVAC SUBMITTALS.

#### 3.5 TESTING, ADJUSTING, AND BALANCING

##### 3.5.1 TAB Procedures

Step by step procedures for each measurement required during TAB Execution shall be provided. The procedures shall be oriented such that there is a separate section for each system. The procedures shall include measures to ensure that each system performs as specified in all operating modes, interactions with other components (such as exhaust fans, kitchen hoods, fume hoods, relief vents, etc.) and systems, and with all seasonal operating differences, diversity, simulated loads, and pressure relationships required.

### 3.5.2 Systems Readiness Check

The TAB Specialist shall inspect each system to ensure that it is complete, including installation and operation of controls, and that all aspects of the facility that have any bearing on the HVAC systems, including installation of ceilings, walls, windows, doors, and partitions, are complete to the extent that TAB results will not be affected by any detail or touch-up work remaining. The TAB Specialist shall also verify that all items such as ductwork and piping ports, terminals, connections, etc., necessary to perform TAB shall be complete during the Systems Readiness Check.

### 3.5.3 Preparation of TAB Report

Preparation of the TAB Report shall begin only when the Systems Readiness Report has been approved. The Report shall be oriented so that there is a separate section for each system. The Report shall include a copy of the appropriate approved Schematic Drawings and TAB Related Submittals, such as pump curves, fan curves, etc., along with the completed report forms for each system. The operating points measured during successful TAB Execution and the theoretical operating points listed in the approved submittals shall be marked on the performance curves and tables. Where possible, adjustments shall be made using an "industry standard" technique which would result in the greatest energy savings, such as adjusting the speed of a fan instead of throttling the flow. Any deficiencies outside of the realm of normal adjustments and balancing during TAB Execution shall be noted along with a description of corrective action performed to bring the measurement into the specified range. If, for any reason, the TAB Specialist determines during TAB Execution that any Contract requirement cannot be met, the TAB Specialist shall immediately provide a written description of the deficiency and the corresponding proposed corrective action necessary for proper system operation to the Contracting Officer.

### 3.5.4 TAB Verification

The TAB Specialist shall recheck ten percent of the measurements listed in the Tab Report and prepare a TAB Verification Report. The measurements selected for verification and the individuals that witness the verification will be selected by the Contracting Officer's Representative (COR). The measurements will be recorded in the same manner as required for the TAB Report. All measurements that fall outside the acceptable operating range specified shall be accompanied by an explanation as to why the measurement does not correlate with that listed in the TAB Report and a description of corrective action performed to bring the measurement into the specified range. The TAB Specialist shall update the original TAB report to reflect any changes or differences noted in the TAB verification report and submit the updated TAB report. If over 20 percent of the measurements selected by the COR for verification fall outside of the acceptable operating range specified, the COR will select an additional ten percent for verification. If over 20 percent of the total tested (including both test groups) fall outside of the acceptable range, the TAB Report shall be considered invalid and all contract TAB work shall be repeated beginning with the Systems Readiness Check.

### 3.5.5 Marking of Setting

Following approval of TAB Verification Report, the setting of all HVAC adjustment devices including valves, splitters, and dampers shall be permanently marked by the TAB Specialist so that adjustment can be restored if disturbed at any time.

### 3.5.6 Identification of Test Ports

The TAB Specialist shall permanently and legibly identify the location points of duct test ports. If the ductwork has exterior insulation, the identification shall be made on the exterior side of the insulation. All penetrations through ductwork and ductwork insulation shall be sealed to prevent air leakage or to maintain integrity of vapor barrier.

END OF SECTION

EXHAUST SYSTEM

Plate number	Brief description of plate
G-1	Project location maps (vicinity map and Libby dam area map) and drawing index
M-1	Abbreviations, general notes and paving & base course notes
M-2	Demolition
M-3	Mechanical schedules (air distribution device schedule, exhaust, supply, return fan schedule and Exhaust fan EF-1 starter)
M-4	Enlarged HVAC plan (includes drawings, HAVAC notes and electrical notes)
M-5	HVAC details (includes swing arm flume exhaust system, duct terminal details, and typical gooseneck details)
M-6	Seismic details (includes seismic details for sway bracing and typical seismic restraint of mechanical equipment)

## SECTION 15895

## EXHAUST SYSTEM

**PART 1 GENERAL****1.1 REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

## AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)

AMCA 210 (1985) Laboratory Methods of Testing Fans for Rating

## AMERICAN BEARING MANUFACTURERS ASSOCIATION (AFBMA)

AFBMA Std 9 (1990) Load Ratings and Fatigue Life for Ball Bearings

AFBMA Std 11 (1990) Load Ratings and Fatigue Life for Roller Bearings

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 53/A 53M (1999b) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

ASTM A 106 (1999e1) Seamless Carbon Steel Pipe for High-Temperature Service

ASTM A 123/A 123M (1997ae1) Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A 924/A 924M (1999) General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process

ASTM D 520 (1984; R 1995e1) Zinc Dust Pigment

ASTM D 1654 (1992) Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments

ASTM D 3359	(1997) Measuring Adhesion by Tape Test
ASTM E 437	(1992; R 1997) Industrial Wire Cloth and Screens (Square Opening Series)

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 70	(1991) Method of Testing for Rating the Performance of Air Outlets and Inlets
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MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)

MSS SP-25	(1998) Standard Marking System for Valves, Fittings, Flanges and Unions
MSS SP-58	(1993) Pipe Hangers and Supports - Materials, Design and Manufacture
MSS SP-69	(1996) Pipe Hangers and Supports - Selection and Application

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA MG 1	(1998) Motors and Generators
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SHEET METAL & AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA HVAC Duct Const Stds	(1995; Addenda Nov 1997) HVAC Duct Construction Standards - Metal and Flexible
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SMACNA Leakage Test Mnl	(1985) HVAC Air Duct Leakage Test Manual
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UNDERWRITERS LABORATORIES (UL)

UL 214	(1997) Tests for Flame-Propagation of Fabrics and Films
UL Bld Mat Dir	(1999) Building Materials Directory

#### 1.2 COORDINATION OF TRADES

Ductwork, piping offsets, fittings, and accessories shall be furnished as required to provide a complete installation and to eliminate interference with other construction.

#### 1.3 DELIVERY AND STORAGE

Equipment delivered and placed in storage shall be stored with protection from the weather, humidity and temperature variations, dirt and dust, or other contaminants.

#### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

Shop Drawings

Drawings; G

## Installation; G

Drawings shall consist of equipment layout including assembly and installation details and electrical connection diagrams; ductwork layout showing the location of all supports and hangers, typical hanger details; and the load imposed on each support or anchor, and typical support details. Drawings shall include any information required to demonstrate that the system has been coordinated and will properly function as a unit and shall show equipment relationship to other parts of the work, including clearances required for operation and maintenance.

## Product Data

## Components and Equipment; G

Manufacturer's catalog data shall be included with the detail drawings for the following items. The data shall be highlighted to show model, size, options, etc., that are intended for consideration. Data shall be adequate to demonstrate compliance with contract requirements for the following:

## Air Systems Equipment

## Test Procedures

Proposed test procedures for piping hydrostatic test, ductwork leak test, and performance tests of systems, at least 2 weeks prior to the start of related testing.

## Similar Services

Statement demonstrating successful completion of similar services on at least 5 projects of similar size and scope, at least 2 weeks prior to submittal of other items required by this section.

## Testing, Adjusting and Balancing

Proposed test schedules for hydrostatic test of piping, ductwork leak test, and performance tests, at least 2 weeks prior to the start of related testing.

## Test Reports

## Performance Tests; G

Test reports for the piping hydrostatic test, ductwork leak test, and performance tests in booklet form, upon completion of testing. Reports shall document phases of tests performed including initial test summary, repairs/adjustments made, and final test results.

## Operation and Maintenance Data

## Operating and Maintenance Manual; G

Three manuals listing step-by-step procedures required for system startup, operation, shutdown, and routine maintenance, at least 2 weeks prior to field training. The manuals shall include the manufacturer's name, model number, parts list, list of parts and tools that should be kept in stock by the owner for routine maintenance including the name of a local supplier, simplified wiring and controls diagrams, troubleshooting guide, and recommended service organization (including address and telephone number) for each item of equipment. Each service organization submitted shall be capable of providing 4 hour onsite response to a service call on an emergency basis.

**PART 2 PRODUCTS****2.1 STANDARD PRODUCTS**

Components and equipment shall be standard products of a manufacturer regularly engaged in the manufacturing of products that are of a similar material, design and workmanship. The standard products shall have been in satisfactory commercial or industrial use for 2 years before bid opening. The 2-year experience shall include

applications of components and equipment under similar circumstances and of similar size. The 2 years must be satisfactorily completed by a product which has been sold or is offered for sale on the commercial market through advertisements, manufacturers' catalogs, or brochures. Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation, for not less than 6000 hours exclusive of the manufacturer's factory tests, can be shown. The equipment items shall be supported by a service organization.

## 2.2 ASBESTOS PROHIBITION

Asbestos and asbestos-containing products shall not be used.

## 2.3 NAMEPLATES

Equipment shall have a nameplate that identifies the manufacturer's name, address, type or style, model or serial number, and catalog number.

## 2.4 EQUIPMENT GUARDS AND ACCESS

Belts, couplings, projecting setscrews, and other rotating parts exposed to personnel contact shall be fully enclosed. A fan platform shall be provided where shown and shall be constructed according to Section 05502 METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS.

## 2.5 PIPING COMPONENTS

### 2.5.1 Steel Pipe

Steel pipe shall conform to ASTM A 53/A 53M, Schedule 40, Grade A or B, Type E or S.

### 2.5.2 Joints and Fittings For Steel Pipe

The manufacturer of each fitting shall be permanently identified on the body of the fitting according to MSS SP-25.

### 2.5.3 Escutcheons

Escutcheons shall be chromium-plated iron or chromium-plated brass, either one piece or split pattern, held in place by internal spring tension or setscrews.

### 2.5.4 Hangers, Inserts, and Supports

Hangers shall conform to MSS SP-58 and MSS SP-69.

## 2.6 ELECTRICAL WORK

Electrical motor-driven equipment specified shall be provided complete with motor, motor starter, and controls. Unless otherwise indicated, motors of 745 W (1 hp) and above shall be high efficiency type. Motor starters shall be provided complete with thermal overload protection and other appurtenances necessary. Each motor shall conform to NEMA MG 1 and shall be of sufficient size to drive the equipment at the specified capacity without exceeding the nameplate rating of the motor. Manual control and protective devices, and any control wiring required, but not shown, shall be provided. Where two-speed motors are indicated, solid-state variable-speed controller may be provided to accomplish the same function. Solid-state variable-speed controllers shall be utilized for motors rated 7.45 kW (10 hp) or less.

## 2.7 CONTROLS

Controls shall be provided as specified in Section 15950 HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEM.

## 2.8 DUCTWORK COMPONENTS

### 2.8.1 Metal Ductwork

All aspects of metal ductwork construction, including all fittings and components, shall comply with SMACNA HVAC Duct Const Standards unless otherwise specified. Elbows shall be radius type with a centerline radius of

1-1/2 times the width or diameter of the duct where space permits. Static pressure Class 125, 250, and 500 Pa (1/2, 1, and 2 inch w.g.) ductwork shall meet the requirements of Seal Class C. Class 750 through 2500 Pa (3 through 10 inch) 3 through 10 inch shall meet the requirements of Seal Class A.

### **2.8.2 Transitions**

Transitions for converging air flow shall be made with each side pitched in a maximum of 30 degrees, for an included angle of 60 degrees, or shall be as indicated. Factory-fabricated reducing fittings for systems using round duct sections when formed to the shape of the ASME short flow nozzle, need not comply.

### **2.8.3 Insulated Nonmetallic Flexible Duct**

Flexible duct shall be used where indicated. Length shall be as shown on the drawings, but shall in no case exceed 3.6 m (12 feet). Flex duct shall be factory fabricated for the intended application.

### **2.8.4 General Service Duct Connectors**

A flexible duct connector approximately 150 mm (6 inches) in width shall be provided where sheet metal connections are made to fans or where ducts of dissimilar metals are connected. For round/oval ducts, the flexible material shall be secured by stainless steel or zinc-coated, iron clinch-type draw bands. For rectangular ducts, the flexible material locked to metal collars shall be installed using normal duct construction methods. The composite connector system shall comply with UL 214 and be classified as "flame-retarded fabrics" in UL Bld Mat Dir.

### **2.8.5 Ductwork Accessories**

#### **2.8.5.1 Duct Access Doors**

Access doors shall be provided in ductwork and plenums where indicated and at all dampers, thermostats, and other apparatus requiring service and inspection in the duct system, and unless otherwise shown, shall conform to SMACNA HVAC Duct Const Stds. Doors shall be minimum 375 x 450 mm (15 x 18 inches), unless otherwise shown. Where duct size will not accommodate this size door, the doors shall be made as large as practicable.

#### **2.8.5.2 Manual Balancing Dampers**

Manual balancing dampers shall be furnished with accessible operating mechanisms. Manual volume control dampers shall be operated by locking-type quadrant operators. Dampers shall be 2 gauges heavier than the duct in which installed. Unless otherwise indicated, multileaf dampers shall be opposed blade type with maximum blade width of 300 mm (12 inches). Access doors or panels shall be provided for all concealed damper operators and locking setscrews. Volume dampers shall be provided where indicated.

#### **2.8.5.3 Air Deflectors and Branch Connections**

Air deflectors shall be provided at duct branch takeoff connections, and at 90 degree elbows, as well as at locations as indicated on the drawings or otherwise specified. Conical branch connections or 45 degree entry connections may be used in lieu of deflectors or extractors for branch connections. Air deflectors shall be factory-fabricated units consisting of curved turning vanes or louver blades designed to provide uniform air distribution and change of direction with minimum turbulence or pressure loss. Air deflectors shall be factory or field assembled. Blade air deflectors, also called blade air extractors, shall be approved factory fabricated units consisting of equalizing grid and adjustable blade and lock. Adjustment shall be easily made from the face of the diffuser or by position adjustment and lock external to the duct. Stand-off brackets shall be provided on insulated

ducts and are described herein. Fixed air deflectors, also called turning vanes, shall be provided in 90 degree elbows with a turning radii less than the R/D that is indicated.

#### 2.8.6 Duct Sleeves, Framed Prepared Openings, Closure Collars

Duct sleeves shall be provided for round ducts 375 mm 15 inches in diameter or less passing through floors, walls, ceilings, or roof, and installed during construction of the floor, wall, ceiling, or roof. Round ducts larger than 375 mm (15 inches) in diameter and square, rectangular, and oval ducts passing through floors, walls, ceilings, or roof shall be installed through framed prepared openings. The Contractor shall be responsible for the proper size and location of sleeves and prepared openings. Sleeves and framed openings are also required where grilles, registers, and diffusers are installed at the openings. Framed prepared openings shall be fabricated from 1.0 mm (20 gauge) galvanized steel, unless otherwise indicated. Where sleeves are installed in bearing walls or partitions, black steel pipe, ASTM A 53/A 53M, Schedule 20 shall be used. Sleeve shall provide 25 mm (1 inch) clearance between the duct and the sleeve or 25 mm (1 inch) clearance between the insulation and the sleeve for insulated ducts.

#### 2.8.7 Registers and Grilles

Units shall be factory-fabricated of steel, corrosion-resistant steel, or aluminum. Inlets and outlets shall be sound rated and certified according to ASHRAE 70. Registers shall be provided with volume damper with accessible operator, unless otherwise indicated; or if standard with the manufacturer, an automatically controlled device will be acceptable. Volume dampers shall be opposed blade type for all registers.

#### 2.8.8 Gooseneck

Gooseneck shall be fabricated from galvanized steel or aluminum sheets with galvanized or aluminum structural shapes. Sheet metal thickness, reinforcement, and fabrication shall conform to SMACNA HVAC Duct Const Standards. Gooseneck shall be provided with bird screen. Gooseneck shall be provided as indicated.

#### 2.8.9 Bird Screens and Frames

Bird screens shall conform to ASTM E 437, No. 2 mesh, aluminum or stainless steel. Aluminum screens shall be rated "medium-light". Stainless steel screens shall be rated "light". Frames shall be removable type, stainless steel or extruded aluminum.

### 2.9 AIR SYSTEMS EQUIPMENT

#### 2.9.1 Fans

Fans shall be tested and rated according to AMCA 210. Fans may be connected to the motors either directly or indirectly with V-belt drive. V-belt drives shall be designed for not less than 150 percent of the connected driving capacity. Motor sheaves shall be variable pitch for 11 kW (15 hp) and below. Variable pitch sheaves shall be selected to drive the fan at a speed which will produce the specified capacity when set at the approximate midpoint of the sheave adjustment. Removable metal guards shall be provided for all exposed V-belt drives, and speed-test openings shall be provided at the center of all rotating shafts. Fans shall be provided with personnel screens or guards on both suction and supply ends, except that the screens need not be provided, unless otherwise indicated, where ducts are connected to the fan. Fan and motor assemblies shall be provided with vibration-isolation supports or mountings as indicated. Vibration-isolation units shall be standard products with published loading ratings. Standard AMCA arrangement, rotation, and discharge shall be as indicated.

##### 2.9.1.1 Centrifugal Fans

Centrifugal fans shall be fully enclosed, single-width single-inlet, AMCA Pressure Class I, II, or III as required or indicated for the design system pressure. Impeller wheels shall be rigidly constructed, accurately balanced both statically and dynamically. Fan wheels 900 mm (36 inches) or less in diameter may have one or more extra long bearings between the fan wheel and the drive. Bearings shall be sleeve type, self-aligning and self-oiling with oil reservoirs, or precision self-aligning roller or ball-type with accessible grease fittings or permanently lubricated type. Grease fittings shall be connected to tubing and serviceable from a single accessible point. Bearing life shall be L50 rated at not less than 200,000 hours as defined by AFBMA Std 9 and AFBMA Std 11. Fan shafts

shall be steel, accurately finished, and shall be provided with key seats and keys for impeller hubs and fan pulleys. Each fan outlet shall be of ample proportions and shall be designed for the attachment of angles and bolts for attaching flexible connections. Motors, unless otherwise indicated, shall not exceed 1800 rpm and shall have drip proof enclosures.

#### 2.9.1.2 Welding Exhaust Fan

Exhaust fans shall be centrifugal type, single inlet, direct or belt driven, orientation as indicated. Fan shall have acoustically insulated housing. Provide chatter-proof integral back draft damper. Fan motor shall be mounted on vibration isolators. Unit shall be provided with mounting platform as indicated. Fan shall be U.L. listed.

#### 2.10 FACTORY PAINTING

Units which are not of galvanized construction according to ASTM A 123/A 123M or ASTM A 924/A 924M shall be factory painted with a corrosion resisting paint finish. Internal and external ferrous metal surfaces shall be cleaned, phosphatized and coated with a paint finish which has been tested according to ASTM B 117, ASTM D 1654, and ASTM D 3359. Evidence of satisfactory paint performance for a minimum of 125 hours for units to be installed indoors and 500 hours for units to be installed outdoors shall be submitted. Rating of failure at the scribe mark shall be not less than 6, average creepage not greater than 3 mm.1/8 inch. Rating of the inscribed area shall not be less than 10, no failure. On units constructed of galvanized steel which have been welded, exterior surfaces of welds or welds that have burned through from the interior shall receive a final shop docket of zinc-rich protective paint according to ASTM D 520 Type I.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

Work shall be installed as shown and according to the manufacturer's diagrams and recommendations.

##### 3.1.1 Equipment and Installation

Frames and supports shall be provided for fans, dampers, and other similar items requiring supports.

##### 3.1.2 Access Panels

Access panels shall be provided for concealed dampers and items requiring inspection or maintenance. Access panels shall be of sufficient size and located so that the concealed items may be serviced and maintained or completely removed and replaced. Access panels shall be as specified in SMACNA.

##### 3.1.3 Flexible Connectors

Flexible connectors and duct shall be attached to other components in accordance with the latest printed instructions of the manufacturer to ensure a vapor tight joint. Hangers, when required to suspend the connectors, shall be of the type recommended by the connector or duct manufacturer and shall be provided at the intervals recommended.

##### 3.1.4 Sleeved and Framed Openings

Space between the sleeved or framed opening and the duct or the duct insulation shall be packed in accordance with manufacturer's recommendations. Sealant shall be a waterproof silicon based product warranted for the type of use indicated for at least 5 years.

##### 3.1.5 Metal Ductwork

Installation shall be according to SMACNA HVAC Duct Const Standards unless otherwise indicated. Duct supports for sheet metal ductwork shall be according to SMACNA HVAC Duct Const Standards, unless otherwise specified. Friction beam clamps indicated in SMACNA HVAC Duct Const Standards shall not be used. Supports shall be attached only to structural framing members and concrete slabs. Where C-clamps are used, retainer clips shall be provided.

### 3.1.5.1 Underground Ductwork

Underground ductwork shall be PVC plastisol coated galvanized steel with coating on interior and exterior surfaces and watertight joints. Ductwork shall be installed as indicated, according to the Air Conditioning Contractors of America (ACCA) Manual 4 and manufacturer's instructions. Maximum burial depth shall be as indicated.

### 3.1.6 Exhaust Ductwork

#### 3.1.6.1 Ducts Conveying Smoke Vapors

Duct material shall be minimum 1.3 mm (18 gauge), Type 304L or 316L, stainless steel.

#### 3.1.6.2 Exposed Ductwork

Exposed ductwork shall be fabricated from minimum 1.3 mm (18 gauge), Type 304L or 316L, stainless steel with continuously welded joints and seams.

### 3.1.7 Duct Test Holes

Holes with closures or threaded holes with plugs shall be provided in ducts and plenums as indicated or where necessary for the use of pitot tube in balancing the air system. Extensions, complete with cap or plug, shall be provided where the ducts are insulated.

### 3.1.8 Power Transmission Components Adjustment

V-belts and sheaves shall be tested for proper alignment and tension prior to operation and after 72 hours of operation at final speed. Belts on drive side shall be uniformly loaded, not bouncing. Direct driven couplings shall be installed with a misalignment no higher than 50 percent of the manufacturer's maximum allowable misalignment value.

### 3.2 DUCTWORK LEAK TEST

Ductwork leak test shall be performed for the entire exhaust system. Designated as static pressure Class 750 Pa (3 inch water gauge) through Class 2500 Pa (10 inch water gauge). Test procedure, apparatus, and report shall conform to SMACNA Leakage Test Manual. The maximum allowable leakage rate is 5% of the total design air flow.

### 3.3 CLEANING AND ADJUSTING

Inside of ducts, plenums, and casing shall be thoroughly cleaned of debris and blown free of small particles of rubbish and dust and then shall be vacuum cleaned. Equipment shall be wiped clean, with traces of oil, dust, dirt, or paint spots removed. Temporary filters shall be provided prior to startup of all fans that are operated during construction, and new filters shall be installed after all construction dirt has been removed from the building, and the ducts, plenums, casings, and other items specified have been vacuum cleaned. System shall be maintained in this clean condition until final acceptance. Bearings shall be properly lubricated with oil or grease as recommended by the manufacturer. Belts shall be tightened to proper tension. Other miscellaneous equipment requiring adjustment shall be adjusted to setting indicated or directed. Fans shall be adjusted to the speed indicated by the manufacturer to meet specified conditions.

### 3.4 TESTING, ADJUSTING, AND BALANCING

Testing, adjusting, and balancing shall be as specified in Section 15990 TESTING, ADJUSTING AND BALANCING OF HVAC SYSTEMS. Testing, adjusting, and balancing shall begin only when the air supply and distribution, including controls, has been completed, with the exception of performance tests.

3.5 PERFORMANCE TESTS

After testing, adjusting, and balancing has been completed as specified, each system shall be tested as a whole to see that all items perform as integral parts of the system and temperatures and conditions are evenly controlled throughout the building. Corrections and adjustments shall be made as necessary to produce the conditions indicated or specified. Capacity tests and general operating tests shall be conducted by an experienced engineer. Tests shall cover a period of not less than 1 day and shall demonstrate that the entire system is functioning according to the specifications.

END OF SECTION

Section G - Contract Administration Data

WAGE DETERMINATION

**General Decision Number MT020002**

General Decision Number MT020002

Superseded General Decision No. MT010002

State: h0h2Montana

Construction Type:

h1h3HIGHWAY

County(ies):

STATEWIDE

h2h4HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/01/2002

COUNTY(ies):

STATEWIDE

ZONE PAY

CEMENT MASONS, IRON WORKERS, LABORERS  
POWER EQUIPMENT OPERATORS, AND TRUCK DRIVERS

The hourly wage rates applicable to each project shall be determined by measuring the road miles over the shortest practical maintained route from the County Courthouse of the following towns to the center of the job:

BILLINGS	GREAT FALLS	KALISPELL	MISSOULA
BOZEMAN	HAVRE	LEWISTOWN	
BUTTE	HELENA	MILES CITY	

ZONE 1: 0 to 30 miles	Base pay
ZONE 2: 30 to 60 miles	Base pay + \$2.95
ZONE 3: over 60 miles	Base pay + \$4.70

SUMT3001A 12/20/2001

	Rates	Fringes	
CEMENT MASONS		17.37	3.20

IRON WORKERS:

Flathead, Glacier, Lake, Lincoln, Mineral, Missoula and Sanders Cos.	20.43	8.83
Remaining Counties	18.97	6.60

LABORERS:

GROUP 1	13.68	4.14
GROUP 2	16.18	4.14
GROUP 3	16.35	4.14
GROUP 4	17.18	4.14

LABORERS CLASSIFICATIONS

GROUP 1: Flag person

GROUP 2: All General Labor work; Burning Bar; Bucket man; Carpenter Tender; Caisson Worker; Cement Mason Tender; Cement Handler (dry); Chuck Tender; Choker Setter; Concrete worker; Curb Machine-Lay Down; Crusher and Batch Plant Worker; Fence Erector; Form Setter; Form Stripper; Heater Tender; Landscaper;

Pipe Wrapper; Pot Tender; Powderman Tender; Rail and Truck Loaders and Unloaders; Riprapper; Sealants for Concrete and other materials; Sign Erection, Guard Rail and Jersey Rail; Stake Jumper; Spike Driver; Signalman; Tail Hoseman; Tool Checker and Houseman; Traffic Control worker

GROUP 3: Concrete Vibrator; Dumpman (Grademan); Equipment Handler; Geotextile and Liners; High-Pressure Nozzlemen; Jackhammer (Pavement Breaker); Laser equipment; Non-riding Rollers; Pipelayer; Posthole Digger (power); Power Driven Wheelbarrow; Rigger; Sandblaster; Sod Cutter-power; Tampers

GROUP 4: Asphalt Raker; Cutting Torch; Grade Setter; High-Scaler; Power Saws (Faller & Concrete); Powderman (\$1.00 per hour above Group 4 rate); Rock & Core Drill; Track or Truck mounted Wagon Drill; Welder including Air Arc

POWER EQUIPMENT OPERATORS:

GROUP 1	17.51	4.82
GROUP 2	18.38	4.82
GROUP 3	19.12	4.82
GROUP 4	19.71	4.82
GROUP 5	20.85	4.82
GROUP 6	21.44	4.82
GROUP 7	23.22	4.82

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: A-Frame Truck Crane; Air Compressor; Auto Fine Grader; Belt Finishing Machine; Boring Machine (small); Cement Silo, Crane; Crusher Conveyor, DW-10, 15, and 20 Tractor Roller; Farm Tractor; Forklift; Form-Grader; Front-end

Loader under 1 cu yd; Oiler, ~~h3h5~~ Heavy Duty Drills; Pumpman; Oiler (All, except Cranes and Shovels)

GROUP 2: Air Doctor; Backhoe/Excavator/Shovel to & incl 3 cu yd Bit Grinder; Bituminous Paving Travel Plant; Boring Machine, large; Broom, Self-Propelled; Concrete Bucket Dispatcher; Concrete Conveyor; Concrete Finish Machine; Concrete Float and Spreader; Concrete Travel Batcher; Distributor; Dozer, Rubber tired, Push, and Side Boom; Drills, ~~h4h6~~ Heavy Duty (all types); Elevating Grader/Gradall; Field Equipment Serviceman; Front-end Loader 1 cu yd to and incl. 5 cu yd; Grade Setter; Hoist/Tugger (All Hydralift & Similar); Industrial Locomotive; Motor Patrol (Except Finish); Mountain Skidder; Oiler, Cranes & Shovels; Pavement Breaker, EMSCO; Power Saw, Self-Propelled; Pugmill; Pumpcrete/ Grout Machine; Punch Truck; Rollers (All except Asphalt Finish and Breakdown); Ross Carrier; Rotomill under 6 ft; Trenching Machine; Washing/Screening Plant

GROUP 3: Asphalt Finish Roller; Asphalt Breakdown Roller; Asphalt Paving Machine; Backhoe/Excavator/Shovel larger than 3 cu yd; Asphalt Screed; Concrete Batch Plant; Cableway

Highline; Concrete Curing Machine; Cranes, 24 tons & under; Cranes, Creter; Cranes, Electric Overhead; Concrete Pump; Curb Machine/Slip Form Paver; Finish Dozer; Mechanic/Welder; Pioneer Dozer; Rotomill 6 ft and over; Scraper, Single Engine; Scraper Twin or pulling Belly Dump; Yo Yo Cat Front-end Loader over 5 cu yd;

GROUP 4: Asphalt/Hot Plant Operator; Cranes, 25 tons to 44 tons; Crusher Operator; Finish Motor Patrol; Finish Scraper

SPECIAL OPERATORS:

GROUP 5: Cranes, 45 tons to and including 74 tons

GROUP 6: Cranes, 75 tons to and including 149 tons

GROUP 7: Cranes, 150 tons to and including 250 tons; Cranes over 250 tons: add \$1.00 for every 100 tons over 250 tons; Crane, Stiff-Leg or Derrick; Crane, Tower all); Crane, Whirley (all); Helicopter Hoist

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TRUCK DRIVERS:

GROUP 1	14.96	4.58
GROUP 2	19.55	4.58

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Pilot Car

GROUP 2: Combination Truck and Concrete Mixer and Transit Mixer; Dry Batch Trucks; Distributor Driver; Dumpman; Dump Trucks and similar equipment; Dumpster; Flat Trucks; Lumber Carriers; Lowboys; Pickup; Powder Truck Driver; Power Boom; Serviceman; Service Truck/Fuel Truck/Tireperson; Truck Mechanic; Trucks with Power Equipment; Warehouseman, Partsman, Cardex and Warehouse Expeditor; Water Trucks  
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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

#### Section I - Contract Clauses

##### CLAUSES INCORPORATED BY REFERENCE

52.216-9	Fixed Fee--Construction	MAR 1997
52.219-21	Small Business Size Representation For Targeted Industry Categories Under The Small Business Competitiveness Demonstration Program	MAY 1999
52.222-1	Notice To The Government Of Labor Disputes	FEB 1997
52.222-3	Convict Labor	AUG 1996
52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation	SEP 2000
52.222-6	Davis Bacon Act	FEB 1995
52.222-7	Withholding of Funds	FEB 1988
52.222-8	Payrolls and Basic Records	FEB 1988
52.222-9	Apprentices and Trainees	FEB 1988
52.222-11	Subcontracts (Labor Standards)	FEB 1988
52.222-12	Contract Termination-Debarment	FEB 1988
52.222-14	Disputes Concerning Labor Standards	FEB 1988
52.222-16	Approval of Wage Rates	FEB 1988
52.222-17	Labor Standards for Construction Work--Facilities Contracts	FEB 1988
52.228-14	Irrevocable Letter of Credit	DEC 1999
52.232-5	Payments under Fixed-Price Construction Contracts	MAY 1997
52.232-27	Prompt Payment for Construction Contracts	FEB 2002
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	MAY 1999
52.233-1	Disputes	DEC 1998
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-12	Cleaning Up	APR 1984
52.236-13	Accident Prevention	NOV 1991
52.243-1	Changes--Fixed Price	AUG 1987
252.204-7004	Required Central Contractor Registration	NOV 2001

##### CLAUSES INCORPORATED BY FULL TEXT

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

"Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

TIN: \_\_\_\_\_

TIN has been applied for.

TIN is not required because:

Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

Offeror is an agency or instrumentality of a foreign government;

Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

Sole proprietorship;

Partnership;

Corporate entity (not tax-exempt);

Corporate entity (tax-exempt);

Government entity (Federal, State, or local);

Foreign government;

International organization per 26 CFR 1.6049-4;

Other \_\_\_\_\_

(f) Common parent.

Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

Name and TIN of common parent:

Name \_\_\_\_\_

TIN \_\_\_\_\_

(End of provision)

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clauses that are incorporated by reference:

(1) The clauses listed below implement provisions of law or Executive order:

(i) 52.222-3, Convict Labor (Aug 1996) (E.O. 11755).

(ii) 52.222-21, Prohibition of Segregated Facilities (Feb 1999) (E.O. 11246).

(iii) 52.222-26, Equal Opportunity (Apr 2002) (E.O. 11246).

(iv) 52.225-13, Restrictions on Certain Foreign Purchases (July 2000) (E.O.'s 12722, 12724, 13059, 13067, 13121, and 13129).

(v) 52.233-3, Protest After Award (Aug 1996) (31 U.S.C. 3553).

(2) Listed below are additional clauses that apply:

(i) 52.232-1, Payments (Apr 1984).

(ii) 52.232-8, Discounts for Prompt Payment (Feb 2002).

(iii) 52.232-11, Extras (Apr 1984).

(iv) 52.232-25, Prompt Payment (Feb 2002).

(v) 52.233-1, Disputes (Dec 1998).

(vi) 52.244-6, Subcontracts for Commercial Items and Commercial Components (Mar 2001).

(vii) 52.253-1, Computer Generated Forms (Jan 1991).

(b) The Contractor shall comply with the following FAR clauses, incorporated by reference, unless the circumstances do not apply:

(1) The clauses listed below implement provisions of law or Executive order:

(i) 52.222-20, Walsh-Healey Public Contracts Act (DEC 1996) (41 U.S.C. 35-45) (Applies to supply contracts over \$10,000 in the United States, Puerto Rico, or the U.S. Virgin Islands).

(ii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212) (Applies to contracts of \$25,000 or more).

(iii) 52.222-36, Affirmative Action for Workers with Disabilities (APR 1984) (29 U.S.C. 793) (Applies to contracts over \$10,000, unless the work is to be performed outside the United States by employees recruited outside the United States.) (For purposes of this clause, United States includes the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.)

(iv) 52.222-37, Employment Reports on Disabled Veterans and Veterans of the Vietnam Era (JAN 1999) (38 U.S.C. 4212) (Applies to contracts over \$10,000).

(v) 52.222-41, Service Contract Act, As Amended (May 1989) (41 U.S.C. 351, et seq.) (Applies to service contracts over \$2,500 that are subject to the Service Contract Act and will be performed in the United States, District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, Johnston Island, Wake Island, or the outer continental shelf lands.)

(vi) 52.222-19, Child Labor--Cooperation with Authorities and Remedies (Dec 2001) (E.O. 13126). (Applies to contracts for supplies exceeding the micro-purchase threshold.)

(vii) 52.223-5, Pollution Prevention and Right-to-Know Information (APR 1998) (E.O. 12856) (Applies to services performed on Federal facilities).

(viii) 52.225-1, Buy American Act --Supplies (May 2002) (41 U.S.C. 10a-10d) (Applies to contracts for supplies, and to contracts for services involving the furnishing of supplies, for use within the United States if the value of the supply contract or supply portion of a service contract exceeds the micro-purchase threshold and the acquisition--

(A) Is set aside for small business concerns; or

(B) Cannot be set aside for small business concerns (see 19.502-2), and does not exceed \$25,000.)

(ix) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (June 2000) (46 U.S.C. 1241). (Applies to supplies transported by ocean vessels.)

(A) Is set aside for small business concerns; or

(B) Cannot be set aside for small business concerns (see 19.502-2), and does not exceed \$25,000.)

(x) 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration (May 1999). (Applies when the payment will be made by electronic funds transfer (EFT) and the payment office uses the Central Contractor Registration (CCR) database as its source of EFT information.)

(xi) 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration (May 1999). (Applies when the payment will be made by EFT and the payment office does not use the CCR database as its source of EFT information.)

(2) Listed below are additional clauses that may apply:

(i) 52.209-6, Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (JULY 1995) (Applies to contracts over \$25,000).

(ii) 52.211-17, Delivery of Excess Quantities (SEPT 1989) (Applies to fixed-price supplies).

(iii) 52.247-29, F.o.b. Origin (JUN 1988) (Applies to supplies if delivery is f.o.b. origin).

(iv) 52.247-34, F.o.b. Destination (NOV 1991) (Applies to supplies if delivery is f.o.b. destination).

(c) FAR 52.252-2, Clauses Incorporated by Reference (FEB 1998). This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>  
<http://www.farsite.hill.af.mil>  
<http://www.dtic.mil/dfars>

(d) Inspection/Acceptance. The Contractor shall tender for acceptance only those items that conform to the requirements of this contract. The Government reserves the right to inspect or test any supplies or services that have been tendered for acceptance. The Government may require repair or replacement of nonconforming supplies or reperformance of nonconforming services at no increase in contract price. The Government must exercise its postacceptance rights--

(1) Within a reasonable period of time after the defect was discovered or should have been discovered; and

(2) Before any substantial change occurs in the condition of the item, unless the change is due to the defect in the item.

(e) Excusable delays. The Contractor shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Contractor and without its fault or negligence, such as acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Contractor shall notify the Contracting Officer in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to the Contracting Officer of the cessation of such occurrence.

(f) Termination for the Government's convenience. The Government reserves the right to terminate this contract, or any part hereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges that the Contractor can demonstrate to the satisfaction of the Government, using its standard record keeping system, have resulted from the termination. The Contractor shall not be required to comply with the cost accounting standards or contract cost principles for this purpose. This paragraph does not give the Government any right to audit the Contractor's records. The Contractor shall not be paid for any work performed or costs incurred that reasonably could have been avoided.

(g) Termination for cause. The Government may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Government, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Government for any and all rights and remedies provided by law. If it is determined that the Government improperly terminated this contract for default, such termination shall be deemed a termination for convenience.

(h) Warranty. The Contractor warrants and implies that the items delivered hereunder are merchantable and fit for use for the particular purpose described in this contract.

(End of clause)

52.219-19 SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (OCT 2000)

(a) Definition.

"Emerging small business" as used in this solicitation, means a small business concern whose size is no greater than 50 percent of the numerical size standard applicable to the North American Industry Classification System (NAICS) code assigned to a contracting opportunity.

(b) [Complete only if the Offeror has represented itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation.] The Offeror [ ] is, [ ] is not an emerging small business.

(c) (Complete only if the Offeror is a small business or an emerging small business, indicating its size range.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

No. of Employees	Avg. Annual Gross Revenues
<input type="checkbox"/> 50 or fewer	<input type="checkbox"/> \$1 million or less
<input type="checkbox"/> 51 - 100	<input type="checkbox"/> \$1,000,001 - \$2 million
<input type="checkbox"/> 101 - 250	<input type="checkbox"/> \$2,000,001 - \$3.5 million
<input type="checkbox"/> 251 - 500	<input type="checkbox"/> \$3,500,001 - \$5 million
<input type="checkbox"/> 501 - 750	<input type="checkbox"/> \$5,000,001 - \$10 million
<input type="checkbox"/> 751 - 1,000	<input type="checkbox"/> \$10,000,001 - \$17 million
<input type="checkbox"/> Over 1,000	<input type="checkbox"/> Over \$17 million

(End of provision)

## 52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(End of clause)

## 52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

(End of clause)

## 52.228-13 ALTERNATIVE PAYMENT PROTECTIONS (JULY 2000)

(a) The Contractor shall submit one of the following payment protections:

Payment Bond or Irrevocable Letter of Credit

(b) The amount of the payment protection shall be 100 percent of the contract price.

(c) The submission of the payment protection is required within 5 days of contract award.

(d) The payment protection shall provide protection for the full contract performance period plus a one-year period.

(e) Except for escrow agreements and payment bonds, which provide their own protection procedures, the Contracting Officer is authorized to access funds under the payment protection when it has been alleged in writing by a supplier of labor or material that a nonpayment has occurred, and to withhold such funds pending resolution by administrative or judicial proceedings or mutual agreement of the parties.

(f) When a tripartite escrow agreement is used, the Contractor shall utilize only suppliers of labor and material that signed the escrow agreement.

(End of clause)

## Haul Road Restoration (52.236-4010, NOV 1998)

The Contractor shall preserve and protect all existing private access roads, haul roads, and/or right-of-way roads. At completion of the work and prior to the Contractor leaving the project/work site, the Contractor shall restore the pre-project conditions all such roads at its own expense. Restoration/repair efforts shall include replacement of base rock and/or surface treatment as required.

## 52.243-7 NOTIFICATION OF CHANGES (APR 1984)

(a) Definitions. "Contracting Officer," as used in this clause, does not include any representative of the Contracting Officer. "Specifically authorized representative (SAR)," as used in this clause, means any person the Contracting Officer has so designated by written notice (a copy of which shall be provided to the Contractor) which shall refer to this subparagraph and shall be issued to the designated representative before the SAR exercises such authority.

(b) Notice. The primary purpose of this clause is to obtain prompt reporting of Government conduct that the Contractor considers to constitute a change to this contract. Except for changes identified as such in writing and signed by the Contracting Officer, the Contractor shall notify the Administrative Contracting Officer in writing, within 10 calendar days from the date that the Contractor identifies any Government conduct (including actions, inactions,

and written or oral communications) that the Contractor regards as a change to the contract terms and conditions. On the basis of the most accurate information available to the Contractor, the notice shall state--

- (1) The date, nature, and circumstances of the conduct regarded as a change;
- (2) The name, function, and activity of each Government individual and Contractor official or employee involved in or knowledgeable about such conduct;
- (3) The identification of any documents and the substance of any oral communication involved in such conduct;
- (4) In the instance of alleged acceleration of scheduled performance or delivery, the basis upon which it arose;
- (5) The particular elements of contract performance for which the Contractor may seek an equitable adjustment under this clause, including--
  - (i) What contract line items have been or may be affected by the alleged change;
  - (ii) What labor or materials or both have been or may be added, deleted, or wasted by the alleged change;
  - (iii) To the extent practicable, what delay and disruption in the manner and sequence of performance and effect on continued performance have been or may be caused by the alleged change;
  - (iv) What adjustments to contract price, delivery schedule, and other provisions affected by the alleged change are estimated; and
- (6) The Contractor's estimate of the time by which the Government must respond to the Contractor's notice to minimize cost, delay or disruption of performance.

(c) Continued performance. Following submission of the notice required by (b) above, the Contractor shall diligently continue performance of this contract to the maximum extent possible in accordance with its terms and conditions as construed by the Contractor, unless the notice reports a direction of the Contracting Officer or a communication from a SAR of the Contracting Officer, in either of which events the Contractor shall continue performance; provided, however, that if the Contractor regards the direction or communication as a change as described in (b) above, notice shall be given in the manner provided. All directions, communications, interpretations, orders and similar actions of the SAR shall be reduced to writing and copies furnished to the Contractor and to the Contracting Officer. The Contracting Officer shall countermand any action which exceeds the authority of the SAR.

(d) Government response. The Contracting Officer shall promptly, within 10 calendar days after receipt of notice, respond to the notice in writing. In responding, the Contracting Officer shall either--

- (1) Confirm that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance;
- (2) Countermand any communication regarded as a change;
- (3) Deny that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance; or
- (4) In the event the Contractor's notice information is inadequate to make a decision under (1), (2), or (3) above, advise the Contractor what additional information is required, and establish the date by which it should be furnished and the date thereafter by which the Government will respond.

(e) Equitable adjustments.

(1) If the Contracting Officer confirms that Government conduct effected a change as alleged by the Contractor, and the conduct causes an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether changed or not changed by such conduct, an equitable adjustment shall be made--

- (i) In the contract price or delivery schedule or both; and
- (ii) In such other provisions of the contract as may be affected.

(2) The contract shall be modified in writing accordingly. In the case of drawings, designs or specifications which are defective and for which the Government is responsible, the equitable adjustment shall include the cost and time extension for delay reasonably incurred by the Contractor in attempting to comply with the defective drawings, designs or specifications before the Contractor identified, or reasonably should have identified, such defect. When the cost of property made obsolete or excess as a result of a change confirmed by the Contracting Officer under this clause is included in the equitable adjustment, the Contracting Officer shall have the right to prescribe the manner of disposition of the property. The equitable adjustment shall not include increased costs or time extensions for delay resulting from the Contractor's failure to provide notice or to continue performance as provided, respectively, in (b) and (c) above.

(End of clause)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is **233310**.

(2) The small business size standard is **\$28.5 Million**.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ( ) is, ( ) is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ( ) is, ( ) is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(6) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, as part of its offer, that--

(i) It ( ) is, ( ) is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ( ) is, ( ) is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:\_\_\_\_\_.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women; in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)