

**FREEDOM OF INFORMATION ACT (FOIA) RESPONSE AND INVOICE**

REQUEST DATE 20030115	REQUEST NUMBER 03-127AB
TO Werres Corporation Attn: Rebecca McKinnon P.O. Box 3699 Frederick, MD 21705-3699	FROM 88 CG/SCCMF (FOIA Office) 2435 5th ST WPAFB OH 45433

1. REQUESTED RECORDS

<input checked="" type="checkbox"/> COMPLETELY RELEASED	<input type="checkbox"/> PARTIALLY RELEASABLE
<input type="checkbox"/> DOCUMENTS ARE ATTACHED	
<input type="checkbox"/> DOCUMENTS WILL BE FORWARDED ON RECEIPT OF PAYMENT	
<input type="checkbox"/> DOCUMENTS MAY BE VIEWED AT THIS LOCATION ( Please call for an appointment)	
<input type="checkbox"/> TIME EXTENSION IS REQUIRED BECAUSE	
<input type="checkbox"/> ALL OR PART OF THE REQUESTED RECORDS ARE NOT AT THIS LOCATION	
<input type="checkbox"/> VOLUMINOUS RECORDS MUST BE COLLECTED AND REVIEWED	
<input type="checkbox"/> RECORDS ARE BEING REVIEWED BY ANOTHER AGENCY FOR POSSIBLE RELEASE	
<input type="checkbox"/> WE HOPE TO PROVIDE A FINAL DECISION BY _____	

2. THE COSTS OF PROVIDING THESE DOCUMENTS ARE INDICATED BELOW

REQUEST ACTIONS	RATE	MATERIAL	TIME	COST
SEARCH (Hourly)	\$20.00		1.00	\$20.00
REVIEW (Hourly)				
COPY (Page)	\$0.15	83		\$12.45
COMPUTER MACHINE TIME (Hourly)				
COMPUTER OPERATOR TIME (Hourly)				
COMPUTER TAPES				
OTHER				
<b>TOTAL AMOUNT DUE</b>				<b>\$32.45</b>

3. Send your check or money order payable to "US DEPARTMENT OF TREASURY " with a copy of this invoice within 30 days.  <i>(Future requests will not be processed until payment is received.)</i>	3A. MAIL TO 88 CG/SCCMF 2435 5th Street, Rm 150 Wright-Patterson AFB OH 45433-7802
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4. THIS ACKNOWLEDGES RECEIPT OF YOUR CHECK OR MONEY ORDER FOR PAYMENT OF REQUESTED DOCUMENTS

NUMBER	DATE	AMOUNT

5. ALL OR PART OF THE INFORMATION YOU REQUESTED IS NOT AVAILABLE AT THIS INSTALLATION. WE HAVE FORWARDED YOUR REQUEST TO THE FOLLOWING LOCATION FOR ACTION WITH DIRECT RESPONSE TO YOU.

6. COMMENTS

Attached:  
1. Request  
2. Records

Point of Contact is Abby Boggs at (937) 904-8203

7. FREEDOM OF INFORMATION ACT MANAGER

NAME AND PHONE SHEREE M. COON (937) 904-8207 FOIA Manager	SIGNATURE <i>Sheree M. Coon</i>	DATE 7 Feb 03
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P.O. Box 3699 • Frederick, Maryland 21705-3699 • 301-620-4000 • Fax 301-662-1028

VIA FACSIMILE  
(937-656-4212)

January 15, 2003

ATTENTION: Freedom of Information Officer

SUBJECT: Contract F33600-98-C-0056 Vertical Lift Modules  
Wright Patterson AFB, OH

*Debby Dowty*

REFERENCE: FOIA REQUEST

Ladies and Gentlemen:

We hereby request, under the Freedom of Information Act, that you furnish to us a copy of the above listed contract for Vertical Lift Modules at Wright Patterson AFB, OH.

We are, of course, prepared to reimburse the Government for costs incurred in order to furnish the requested information. Please send the information to my attention at our Frederick, Maryland address listed above or you may fax it to me at 301-662-1028.

Should you have any questions, please do not hesitate to contact me at (301) 620-4000 ext. 229. Thank you for your assistance.

Very truly yours,

Rebecca McKinnon  
Government Sales Administrator

O. P. R. ASC/PKO  
CONTROL # 03-127 AB  
DUE DATE 13 Feb 03



## CONVERSATION COORDINATION RECORD

CONTROL / REFERENCE NUMBER <i>F3300-48-e-0056</i>	DATE	TIME
SUBJECT OR OTHER IDENTIFICATION <i>FOIA Reg 03-127AB</i>		
COORDINATION EFFECTED WITH		
NAME AND TITLE	ADDRESS OR OFFICE SYMBOL	TELEPHONE NUMBER
<i>Becky Mc Kinnon</i>	<i>Wenes</i>	<i>301-620-4000</i>

SUMMARY OF CONVERSATION (S) (IF ADDITIONAL SPACE IS REQUIRED USE REVERSE SIDE)

*Spoke w/ Becky to be sure - before I copied everything - that they want all the attachments as well. Unfortunately, the ceiling had a water leak where this file was being held prior to being sent to staging and it was soaked. I'll make the best copies I can of everything -- Becky said they can do without the drawing (Ktr's)*

*I'll copy the contract and all the attachments BUT the drawing - she said that'd be fine.*

FUTURE ACTION REQUIRED	
FOLLOW-UP DATE	SIGNATURE AND OFFICE SYMBOL <i>Becky Dowty / PKWRM</i>
	REVIEWED BY (IF APPLICABLE)

**SOLICITATION CONTINUED**  
**BIDDER/OFFEROR TO COMPLETE BLOCKS 11, 22, & 27.**

THIS CONTRACT IS A RATED ORDER UNDER DFAS VTR OFF 350  
 DD C9  
 PAGE 1 OF 18

1. CONTRACT NO: F33600-98-C-0056  
 2. AWARD/EFFECTIVE DATE: [ ]  
 3. SOLICITATION NUMBER: F33600-98-R-0014  
 4. SOLICITATION TYPE:  SEALED BIDS (RFI)  NEGOTIATED (RFQ)  
 5. SOLICITATION ISSUE DATE: [ ]  
 6. THIS ACQUISITION IS:  UNRESTRICTED  LABOR SURPLUS AREA CONCERN  COMBINED SMALL BUSINESS & LABOR SURPLUS AREA CONCERN  OTHER  
 SET ASIDE: 100% FOR  OTHER  
 SMALL BUSINESS SIC: 3599 SIZE STANDARD: 500  
 7. BUYER: D. DOWTY/PKWRM/[937]257-8344  
 8. NO COLLECT CALLS

9. SOLICITATION: SEALED OFFERS WILL BE RECEIVED AT THE ISSUING OFFICE UNTIL 0200 PM ON 12 MAY 98  
 LATE OFFERS ARE SUBJECT TO LATE PROPOSAL PROVISIONS INCORPORATED HEREIN. ALL OFFERS ARE SUBJECT TO SUCH PROVISIONS, REPRESENTATIONS, CERTIFICATIONS AND SPECIFICATIONS AS ARE ATTACHED OR INCORPORATED BY REFERENCE.  
**FINAL PROPOSAL REVISION**

10. ITEMS TO BE PURCHASED (BRIEF DESCRIPTION):  
 SUPPLIES  SERVICES AUTOMATED STORAGE & RETRIEVAL SYSTEM, ROBINS AFB GA, CSN: LRB741

11. IF OFFER IS ACCEPTED BY THE GOVERNMENT WITHIN 120 CALENDAR DAYS  
 160 CALENDAR DAYS UNLESS OFFEROR INSERTS A DIFFERENT PERIOD FROM THE DATE SET FORTH IN BLK 9 ABOVE, THE CONTRACTOR AGREES TO HOLD ITS OFFERED PRICES FIRM FOR THE ITEMS SOLICITED HEREIN AND TO ACCEPT ANY RESULTING CONTRACT SUBJECT TO THE TERMS AND CONDITIONS STATED HEREIN.  
 12. ADMINISTERED BY: ASC/PKWRM BLDG 1 AREA C 1940 ALLBROOK DRIVE SUITE 3 WRIGHT PATTERSON AFB OH 45433-5309  
 CODE: FY1294

13. CONTRACTOR/OFFEROR: SILOAD RETRIEVAL SYSTEMS 40 20th STREET BROOKLYN NY 11232-1138  
 TELEPHONE NO: 718-768-2040 TIN #: 582293615  
 CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER  
 DUNS #: 016537115 SIZE CODE: J  
 14. PAYMENT WILL BE MADE BY: DFAS-DY/FPD PO BOX 20428 1050 FORRER BLVD DAYTON OH 45420-0428  
 PAS #: NONE SCOD: D  
 CODE: F03000  
 15. 11 AUG 1998  
 16. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:  10 U.S.C. 2304 (C)  41 U.S.C. 253 (C)

17. HDMPT PAY DISCOUNT: 1% - 10 days

17. ITEM NO.	18. SCHEDULE OF SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT
	SEE SCHEDULE				
NOTE: SPECIFICATIONS/DRAWINGS ARE AVAILABLE ON THE INTERNET AT THE FOLLOWING ADDRESS: <a href="http://www.pixs.wpafb.af.mil/pixs/pixslibr/mmhs/mmhs.htm">http://www.pixs.wpafb.af.mil/pixs/pixslibr/mmhs/mmhs.htm</a>					
*THE ACCEPTANCE PERIOD IN BLOCK 11 ABOVE IS HEREBY CHANGED FROM 60 TO 120 CALENDAR DAYS.					

23. ACCOUNTING AND APPROPRIATION DATA: SEE SECTION G  
 24. TOTAL AWARD AMOUNT FOR UNIT USE ONLY: EST \$196,731.00

CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 1 COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY CONTINUATION SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.  
 26. AWARD OF CONTRACT: YOUR OFFER ON SOLICITATION NUMBER 0001-0003 SHOWN IN BLOCK 4 INCLUDING ANY ADDITIONAL CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO TERMS.

27. SIGNATURE OF OFFEROR/CONTRACTOR: John Castaldi  
 NAME AND TITLE OF SIGNER (TYPE OR PRINT): John Castaldi  
 DATE SIGNED: 5/1/98  
 28. UNITED STATES OF AMERICA SIGNATURE OF CONTRACTING OFFICER: Michael L. Wickizer  
 NAME OF CONTRACTING OFFICER: MICHAEL L. WICKIZER  
 DATE SIGNED: 11 Aug 98

CONTRACT/PURCH ORDER NO

CAGE CODE:

BUYER CODE:

TOTAL DOLLAR AMOUNT:

ACRN FUND CODE/YEAR DOLLAR AMOUNT

ACRN FUND CODE/YEAR DOLLAR AMOUNT

Inv'd 0855, 11 May 98

D. Dewty  
PKWRM

8.3

128,498

727

4/4

4/4

PART I - THE SCHEDULE  
 SECTION B  
 SUPPLIES OR SERVICE AND PRICES/COSTS

ITEM	SUPPLIES/SERVICES	QTY UNIT	UNIT PRICE	AMOUNT
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0001	DESIGN, FABRICATE AND INSTALL A VERTICAL STORAGE COLUMN (VSC) SYSTEM IN BLDG 640 AT ROBINS AFB GA. IN ACCORDANCE WITH THE COVER PURCHASE DESCRIPTION, APPENDIX A AND DRAWING LRB741-01 LISTED IN SECTION J. PR NR: AFMCM-98-000015-01 PR LI: 0001 FOB: DESTINATION QUANTITY VARIATION: ACRN: AA POA/INSP SITE: DESTINATION	1 SY	\$ <u>194,231</u>	\$ <u>194,231</u>
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$\frac{194,231}{p/1} + 8,500 = 202,731$   
 $\frac{202,731}{p/2} - (500) = 202,181$

QUANTITY VARIATION:      % OVER      % UNDER  
 ACRN: AA  
 POA/INSP SITE: DESTINATION      ACCEPTANCE: DESTINATION

(A) GOVERNMENT'S REQUIRED DELIVERY SCHEDULE:

QTY	U/I	DELIVERY	SHIP TO	REQUISITION NR	PRI
1	SY	180 DAYS ARO	BELOW	NON-MILSTRIP	--

(B) PROPOSED DELIVERY SCHEDULE (SEE SECTION F):

QTY	U/I	DELIVERY	SHIP TO	REQUISITION NR	PRI
1	SY	<u>N/A</u>	BELOW	NON-MILSTRIP	--

0002	DATA IAW DD FORMS 1423 AND 1664 (SEE SECTION J). PR NR: AFMCM-98-000015-01 PR LI: 0001 FOB: DESTINATION QUANTITY VARIATION: ACRN: AA POA/INSP SITE: DESTINATION	1 LO	\$ _____	\$ <u>NSP</u>
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QUANTITY VARIATION:      % OVER      % UNDER  
 ACRN: AA  
 POA/INSP SITE: DESTINATION      ACCEPTANCE: DESTINATION

(A) GOVERNMENT'S REQUIRED DELIVERY SCHEDULE:

QTY	U/I	DELIVERY	SHIP TO	REQUISITION NR	PRI
1	LO	IAW FORM 1423	BELOW	NON-MILSTRIP	--

(B) PROPOSED DELIVERY SCHEDULE (SEE SECTION F):

QTY	U/I	DELIVERY	SHIP TO	REQUISITION NR	PRI
1	LO	<u>N/A</u>	BELOW	NON-MILSTRIP	--

0003

		1	KT	EST	\$2,500.00	EST	\$2,500.00
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SPARE PARTS ON A COST-REIMBURSABLE  
 NO FEE BASIS.  
 PR NR: AFMCM-98-000015-01  
 PR LI: 0002  
 FOB: DESTINATION  
 QUANTITY VARIATION:      % OVER      % UNDER  
 ACRN: AA  
 PQA/INSP SITE: DESTINATION                      ACCEPTANCE: DESTINATION

(A) GOVERNMENT'S REQUIRED DELIVERY SCHEDULE:

QTY	U/I	DELIVERY	SHIP TO	REQUISITION NR	PRI
1	KT	TEN	BELOW	NON-MILSTRIP	--

(B) PROPOSED DELIVERY SCHEDULE (SEE SECTION F):

QTY	U/I	DELIVERY	SHIP TO	REQUISITION NR	PRI
1	KT	_____	BELOW	NON-MILSTRIP	--

*204,681.00 Bnl*  
*(530.00)*  
*\$205,211.00 Bnl*  
*P1 + 2500.00*  
\$ 196,731.00

ESTIMATED CONTRACT TOTAL

THE FOLLOWING CONTRACT LINE ITEMS ARE FIRM FIXED PRICE: 0001 & 0002

THE FOLLOWING CONTRACT LINE ITEMS ARE COST REIMBURSEMENT WITH NO FEE: 0003

SITE ACCESS: UPON AWARD

NOTE: CONTRACTOR'S ARE HEREBY PUT ON NOTICE THAT THE DELIVERY SCHEDULE IS A CRITICAL ELEMENT OF THE SOLICITATION AND ANY RESULTANT CONTRACT. THE DELIVERY PERIOD INCLUDES ALL TESTING.

SHIP TO/MARK FOR:

SHIP TO: WR-ALC/LY  
 BLDG 640  
 ROBINS AFB GA  
LOCAL CITY: WARNER ROBINS GA

ADD TO SHIPPING LABEL, "TO BE OFFLOADED AND OPENED BY THE CONTRACTOR"

MARK FOR: CONTRACTOR SHOULD INSERT THE FOLLOWING:

- (CONTRACTOR NAME)
- (CONTRACTOR OR CONTRACTOR REPRESENTATIVE)
- (LOCAL COMMERCIAL PHONE NUMBER)
- (BUILDING NUMBER)

B-1.

CLAUSES AND PROVISIONS

- (a) Clauses and provisions from the Federal Acquisition Regulation (FAR) and supplements thereto are incorporated in this document by reference and in full text. Those incorporated by reference have the same force and effect as if they were given in full text.
- (b) Clauses and provisions in this document will be numbered in sequence, but will not necessarily appear in consecutive order.
- (c) Sections K, L and M will be physically removed from any resultant award, but will be deemed to be incorporated, by reference, in that award.

PART I - THE SCHEDULE  
SECTION C  
DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C-1. SPECIFICATIONS, STANDARDS AND DRAWINGS  
(IAW FAR 10.008)

Specifications, standards or drawings (as applicable) are furnished/listed below:

ITEM NR                      SPECIFICATIONS, STANDARDS AND/OR ATTACHMENTS

ALL ITEMS                      IAW specifications furnished herewith.

C-205. 252.211-7005      SUBSTITUTIONS FOR MILITARY OR FEDERAL  
SPECIFICATIONS AND STANDARDS

AUG 1997

(IAW DFARS 211.273-4, and D.L. LTR 97-017 dated 20 AUG 97)

(a) Definition.

"SPI process," as used in this clause, means a management or manufacturing process that has been accepted previously by the Department of Defense under the Single Process Initiative (SPI) for use in lieu of a specific military or Federal specification or standard. Under SPI, these processes are reviewed and accepted by a Management Council, which includes representatives from the Defense Contract Management Command, the Defense Contract Audit Agency, and the military departments.

(b) Offerors are encouraged to propose SPI processes in lieu of military or Federal specifications and standards cited in the solicitation.

(c) An offeror proposing to use an SPI process shall--

- (1) Identify the specific military or Federal specification or standard for which the SPI process has been accepted, and the specific paragraph or other location in the solicitation where the military or Federal specification or standard is required;
- (2) Provide a copy of the Department of Defense acceptance of the SPI process;
- (3) Identify each facility at which the offeror proposes to use the specific SPI process; and
- (4) Unless provided in response to paragraph (c)(2) of this clause, provide the name and telephone number of the cognizant Administrative Contracting Officers for each facility where the SPI process is proposed for use.

(d) Absent a determination at the head of the contracting activity or program executive officer level that an SPI process is not acceptable for this procurement, the Contractor shall use the following SPI processes in lieu of military or Federal specifications and standards:

(Offeror Insert Information for, Each SPI Process)

SPI Process: \_\_\_\_\_

Facility: \_\_\_\_\_

Military or Federal Specification or Standard: \_\_\_\_\_

Affected Contract Line Item and Subline Item Number and Requirement Citation: \_\_\_\_\_

Cognizant Administrative Contracting Officer: \_\_\_\_\_

C-551

INCORPORATION OF REFERENCE DOCUMENTS

All specifications, exhibits, drawings or other documents which are referred to in this contract, whether or not attached, are incorporated herein by reference.

PART I - THE SCHEDULE  
SECTION D  
PACKAGING AND MARKING

D-4830. 5352.247-9006      MARKING OF WARRANTED ITEMS (AFMC)  
(IAW AFMCFARS 5347.305-10(a)(92))

JUL 1997

The Contractor shall mark the items or otherwise furnish notice with the items to show the existence of the warranty, its substance and duration; and the name, address, and telephone number of the person to notify if the items are defective in accordance with FAR 46.706(b)(9), Warranty terms and conditions.

- D-484C. 5352.247-9007 SPECIFICATION COMMERCIAL PACKAGING AND MARKING (AFMC) (IAW AFMCFARS 5347.305-10(a)(93)) JUL 1997
- (a) Items shall be packaged and marked in accordance with American Society for Testing and Materials (ASTM) D3951, Standard Practice for Commercial Packaging. Individual shipments exceeding 150 pounds, 108 inches in length, or 130 inches in girth plus length shall be packaged on skidded crates or palletized to allow handling by forklift.
- (b) The exterior container shall be marked (readable from 24 inches): "ASTM D 3951 - NOT FOR OUTSIDE STORAGE."

PART I - THE SCHEDULE  
 SECTION E  
 INSPECTION AND ACCEPTANCE

- E-10. 52.246-2 INSPECTION OF SUPPLIES--FIXED-PRICE (IAW FAR 46.302) AUG 1996
- E-22. 52.246-16 RESPONSIBILITY FOR SUPPLIES (IAW FAR 46.316) APR 1984
- E-35. DD FORM 1423 DATA INSPECTION AND ACCEPTANCE (IAW FAR 46.401(b) and 46.503)  
 The Inspection and Acceptance for Data items are as shown on DD Form 1423 attached hereto.
- E-41. INSPECTION AND ACCEPTANCE (IAW FAR 46.401(b), and 46.503)  
 Inspection and acceptance of the (Services/Supplies) will be performed at ROBINS AFB GA by A REPRESENTATIVE OF AFMC-LSO/LOE.

PART I - THE SCHEDULE  
 SECTION F  
 DELIVERIES OR PERFORMANCE

- F-1. 52.211-8 TIME OF DELIVERY (IAW FAR 11.404(a)(2)) JUN 1997
- (a) The Government requires delivery to be made according to the following schedule:

REQUIRED DELIVERY SCHEDULE

ITEM NO.	QUANTITY	WITHIN DAYS AFTER DATE OF CONTRACT
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DELIVERY FOR EACH ITEM IS ANNOTATED IN THE SCHEDULE (PART I SECTION B) UNDER EACH LINE ITEM.

The Government will evaluate equally, as regards time of delivery, offers that propose delivery of each quantity within the applicable delivery period specified above. Offers that propose delivery that will not clearly fall within the applicable required delivery period specified above, will be considered nonresponsive and rejected. The Government reserves the right to award under either the required delivery schedule or the proposed delivery schedule, when an offeror offers an earlier delivery schedule than required above. If the offeror proposes no other delivery schedule, the required delivery schedule above will apply.

OFFEROR'S PROPOSED DELIVERY SCHEDULE

ITEM NO.	QUANTITY	WITHIN DAYS AFTER DATE OF CONTRACT
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ANNOTATE YOUR PROPOSED DELIVERY, IF ANY, UNDER THE GOVERNMENT'S DELIVERY SET FORTH UNDER EACH ITEM IN THE SCHEDULE.

(b) Attention is directed to the Contract Award provision of the solicitation that provides that a written award or acceptance of offer mailed, or otherwise furnished to the successful offeror, results in a binding contract. The Government will mail or otherwise furnish to the offeror an award or notice of award not later than the day award is dated. Therefore, the offeror should compute the time available for performance beginning with the actual date of award, rather than the date the written notice of award is received from the Contracting Officer through the ordinary mails. However, the Government will evaluate an offer that proposes delivery based on the Contractor's date of receipt of the contract or notice of award by adding (1) five calendar days for delivery of the award through the ordinary mails, or (2) one working day if the solicitation states that the contract or notice of award will be transmitted electronically. (The term "working day" excludes weekends and U.S. Federal holidays.) If, as so computed, the offered delivery date is later than the required delivery date, the offer will be considered nonresponsive and rejected.

F-26.	52.242-15	STOP-WORK ORDER (IAW FAR 42.1305(b)(1))	AUG 1989
F-29.	52.242-17	GOVERNMENT DELAY OF WORK (IAW FAR 42.1305(d))	APR 1984
F-36.	52.247-34	F.O.B. DESTINATION (IAW FAR 47.303-6(c))	NOV 1991
F-37.	52.247-35	F.O.B. DESTINATION, WITHIN CONSIGNEE'S PREMISES (IAW FAR 47.303-7(c))	APR 1984

PART I - THE SCHEDULE  
 SECTION G  
 CONTRACT ADMINISTRATION DATA

G-1. ACCOUNTING AND APPROPRIATION DATA

AA:5783080 178 47E2 843054 0002 00000 LRB741 503000 F0300L  
\$ 196,731.00

CONTRACTOR: INVOICES SHOULD BE PREPARED IN ACCORDANCE WITH FAR PART 32 PAYMENTS CLAUSES. INVOICES SHOULD CITE THE CONTRACT NUMBER AND LIST APPLICABLE CONTRACT LINE ITEM NUMBERS AND ASSOCIATED CHARGES.

SEND INVOICES TO THE ADDRESS LISTED BELOW (ORIGINAL & 3 COPIES):

ASC/PKWRM  
 1940 ALLBROOK DRIVE, STE 2  
 WRIGHT-PATTERSON AFB OH 45433-5309

PART II - CONTRACT CLAUSES  
 SECTION I  
 CONTRACT CLAUSES

FAR	52.252-2	CLAUSES INCORPORATED BY REFERENCE (IAW FAR 52.107(b))	JUN 1988
		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.	
NO	FAR PARA	CLAUSE TITLE	DATE
I-11.	52.202-1	DEFINITIONS (IAW FAR 2.201)	OCT 1995
I-19.	52.203-3	GRATUITIES (IAW FAR 3.202)	APR 1984
I-20.	52.203-5	COVENANT AGAINST CONTINGENT FEES (IAW FAR 3.404)	APR 1984
I-21.	52.203-6	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (IAW FAR 3.503-2)	JUL 1995
I-22.	52.203-7	ANTI-KICKBACK PROCEDURES (IAW FAR 3.502-3)	JUL 1995
I-23.	52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (IAW FAR 3.104-9(a))	JAN 1997

I-25.	52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (IAW FAR 3.104-9(b))	JAN 1997
I-25C.	52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (IAW FAR 3.808(b))	JUN 1997
I-39.	52.204-4	PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER (IAW FAR 4.304)	JUN 1996
I-78.	52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (IAW FAR 9.409(b))	JUL 1995
I-83.	52.211-5	NEW MATERIAL (IAW FAR 11.302)	OCT 1997
I-102.	52.211-15	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (IAW FAR 11.604(p))	SEP 1990
I-128.	52.215-2	AUDIT AND RECORDS--NEGOTIATION (IAW FAR 15.209(b)(1))	AUG 1996
I-129G.	52.215-8	ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT (IAW FAR 15.209(h))	OCT 1997
I-137C.	52.215-14	INTEGRITY OF UNIT PRICES (IAW FAR 15.408(f)(1))	OCT 1997
I-212.	52.219-6	NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE (IAW FAR 19.508(c))	JUL 1996
I-214.	52.219-8	UTILIZATION OF SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS CONCERNS (IAW FAR 19.708(a))	JUN 1997
I-221.	52.219-14	LIMITATIONS ON SUBCONTRACTING (IAW FAR 19.508(e), 19.811-3(e), and 19.1006 (c)(3))	DEC 1996
I-263.	52.222-20	WALSH-HEALEY PUBLIC CONTRACTS ACT (IAW FAR 22.610)	DEC 1996
I-264.	52.222-26	EQUAL OPPORTUNITY (IAW FAR 22.810(e))	APR 1984
I-274.	52.222-35	AFFIRMATIVE ACTION FOR SPECIAL DISABLED AND VIETNAM ERA VETERANS (IAW FAR 22.1308(a)(1), and DFARS 22.1308(a)(1))	APR 1984
I-276.	52.222-36	AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS (IAW FAR 22.1408(a))	APR 1984
I-278.	52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (IAW FAR 22.1308(b))	JAN 1988
I-292.	52.223-2	CLEAN AIR AND WATER (IAW FAR 23.105(b))	APR 1984
I-294.	52.223-5	POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (IAW FAR 23.1005)	MAR 1997
I-295.	52.223-6	DRUG-FREE WORKPLACE (IAW FAR 23.505)	JAN 1997
I-297E.	52.223-14	TOXIC CHEMICAL RELEASE REPORTING (IAW FAR 23.907(b))	OCT 1996
I-306.	52.225-3	BUY AMERICAN ACT-SUPPLIES (IAW FAR 25.109(d))	JAN 1984
I-311.	52.225-10	DUTY-FREE ENTRY (IAW FAR 25.605(a))	APR 1984

For the purposes of this clause the blank(s) are completed as follows:  
 (f)(3) The notation "UNITED STATES GOVERNMENT, DEPARTMENT OF DEFENSE, Duty-free entry to be claimed pursuant to Schedule 8, Part 3, Item No. 832.00 Tariff Schedules of the United States (19 U.S.C. 1202). Upon arrival of shipment at port of entry, District Director of Customs, please release shipment under 19 CFR 142 and notify the appropriate contract administration office for execution of Customs Forms 7501 and 7501-A and any required duty-free entry certificates."

I-312.	52.225-11	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (IAW FAR 25.702)	OCT 1996
I-315.	52.227-1	AUTHORIZATION AND CONSENT (IAW FAR 27.201-2(a))	JUL 1995
I-317.	52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENTS (IAW FAR 27.202-2)	AUG 1996

I-318.	52.227-3	<b>PATENT INDEMNITY</b> (IAW FAR 27.203-1(b), 27.203-2(a), and 27.203-4(a)(2)) (Applicable to supplies or services (or such items with relatively minor modifications) when normally sold or offered for sale to the public in the commercial open market except when both performance and delivery are outside the U.S., its possessions, and Puerto Rico, unless the supplies or other deliverables are ultimately to be shipped into one of those areas)	APR 1984
I-337.	52.228-5	<b>INSURANCE--WORK ON A GOVERNMENT INSTALLATION</b> (IAW FAR 28.310)	JAN 1997
I-352.	52.229-3	<b>FEDERAL, STATE, AND LOCAL TAXES</b> (IAW FAR 29.401-3)	JAN 1991
I-354.	52.229-5	<b>TAXES--CONTRACTS PERFORMED IN U.S. POSSESSIONS OR PUERTO RICO</b> (IAW FAR 29.401-5)	APR 1984
I-383.	52.232-1	<b>PAYMENTS</b> (IAW FAR 32.111(a)(1))	APR 1984
I-391.	52.232-8	<b>DISCOUNTS FOR PROMPT PAYMENT</b> (IAW FAR 32.111(c)(1))	MAY 1997
I-394.	52.232-11	<b>EXTRAS</b> (IAW FAR 32.111(d)(2))	APR 1984
I-400.	52.232-16	<b>PROGRESS PAYMENTS</b> (IAW FAR 32.502-4(a))	JUL 1991
I-401.	52.232-16	<b>ALTERNATE I</b> (IAW FAR 32.502-4(b))	AUG 1987
I-403.	52.232-17	<b>INTEREST</b> (IAW FAR 32.617(a), and 32.617(b))	JUN 1996
I-409.	52.232-23	<b>ASSIGNMENT OF CLAIMS</b> (IAW FAR 32.806(a)(1))	JAN 1986
I-410.	52.232-23	<b>ASSIGNMENT OF CLAIMS -- ALTERNATE I</b> (IAW FAR 32.806(a)(2))	APR 1984
I-412.	52.232-25	<b>PROMPT PAYMENT</b> (IAW FAR 32.908(c))	JUN 1997
For the purposes of this clause the blank(s) are completed as follows:			
	(a)(5)(i)	<u>7th</u>	
	(b)(1)	<u>30th</u>	
I-416F.	52.232-33	<b>MANDATORY INFORMATION FOR ELECTRONIC FUNDS TRANSFER PAYMENT</b> (IAW FAR 32.1103(a), and 32.1103(c))	AUG 1996
I-417.	52.233-1	<b>DISPUTES</b> (IAW FAR 33.215)	OCT 1995
I-419.	52.233-3	<b>PROTEST AFTER AWARD</b> (IAW FAR 33.106(b))	AUG 1996
I-445.	52.236-2	<b>DIFFERING SITE CONDITIONS</b> (IAW FAR 36.502)	APR 1984
I-446.	52.236-3	<b>SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK</b> (IAW FAR 36.503)	APR 1984
I-448.	52.236-5	<b>MATERIAL AND WORKMANSHIP</b> (IAW FAR 36.505)	APR 1984
I-449.	52.236-6	<b>SUPERINTENDENCE BY THE CONTRACTOR</b> (IAW FAR 36.506)	APR 1984
I-450.	52.236-7	<b>PERMITS AND RESPONSIBILITIES</b> (IAW FAR 36.507)	NOV 1991
I-452.	52.236-9	<b>PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS</b> (IAW FAR 36.509)	APR 1984
I-453.	52.236-10	<b>OPERATIONS AND STORAGE AREAS</b> (IAW FAR 36.510)	APR 1984
I-454.	52.236-11	<b>USE AND POSSESSION PRIOR TO COMPLETION</b> (IAW FAR 36.511)	APR 1984
I-455.	52.236-12	<b>CLEANING UP</b> (IAW FAR 36.512)	APR 1984
I-456.	52.236-13	<b>ACCIDENT PREVENTION</b> (IAW FAR 36.513(a), and 36.513(b))	NOV 1991
I-457.	52.236-13	<b>ACCIDENT PREVENTION -- ALTERNATE I</b> (IAW FAR 36.513(b))	NOV 1991
I-458.	52.236-14	<b>AVAILABILITY AND USE OF UTILITY SERVICES</b> (IAW FAR 36.514)	APR 1984
I-466.	52.236-21	<b>SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION</b> (IAW FAR 36.521)	FEB 1997
I-478.	52.237-2	<b>PROTECTION OF GOVERNMENT BUILDINGS, EQUIPMENT, AND VEGETATION</b> (IAW FAR 37.110(b))	APR 1984

I-541.	52.242-13	<b>BANKRUPTCY</b> (IAW FAR 42.903)	JUL 1995
I-546.	52.243-1	<b>CHANGES--FIXED-PRICE</b> (IAW FAR 43.205(a)(1))	AUG 1987
I-552.	52.243-2	<b>CHANGES--COST-REIMBURSEMENT</b> (IAW FAR 43.205(b)(1))	AUG 1987
I-573.	52.244-5	<b>COMPETITION IN SUBCONTRACTING</b> (IAW FAR 44.204(e))	DEC 1996
I-574.	52.244-6	<b>SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS</b> (IAW FAR 44.403)	OCT 1995

(a) Definition.

"Commercial item", as used in this clause, has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract", as used in this clause, includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c) Notwithstanding any other clause of this contract, the Contractor is not required to include any FAR provision or clause, other than those listed below to the extent they are applicable and as may be required to establish the reasonableness of prices under Part 15, in a subcontract at any tier for commercial items or commercial components:

- (1) 52.222-26, Equal Opportunity (E.O. 11246);
- (2) 52.222-35, Affirmative Action for Special Disabled and Vietnam Era Veterans (38 U.S.C. 4212(a));
- (3) 52.222-36, Affirmative Action for Handicapped Workers (29 U.S.C. 793); and
- (4) 52.247-64, Preference for Privately Owned U.S.-Flagged Commercial Vessels (46 U.S.C. 1241) (flow down not required for subcontracts awarded beginning May 1, 1996).

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

I-608.	52.246-17	<b>WARRANTY OF SUPPLIES OF A NONCOMPLEX NATURE</b> (IAW FAR 46.710(a)(1))	APR 1984
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For the purposes of this clause the blank(s) are completed as follows:

(b)(1) 365 DAYS AFTER FINAL ACCEPTANCE

(c)(1) 45 DAYS AFTER DISCOVERY OF DEFECT

I-627.	52.246-23	<b>LIMITATION OF LIABILITY</b> (IAW FAR 46.805)	FEB 1997
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I-628.	52.246-24	<b>LIMITATION OF LIABILITY--HIGH-VALUE ITEMS</b> (IAW FAR 46.805)	FEB 1997
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I-629.	52.246-24	<b>LIMITATION OF LIABILITY--HIGH-VALUE ITEMS --ALTERNATE I</b> (IAW FAR 46.805(a)(3))	APR 1984
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For the purposes of this clause the following items are high value items and are subject to the clause entitled "Limitation of Liability--High-Value Items":  
 Item(s) 0001

I-671.	52.248-1	<b>VALUE ENGINEERING (DEVIATION)</b> (IAW FAR 48.201(b), and DDP Memo dated 27 Jun 97, DAR Tracking #97-00005)	MAR 1989
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As prescribed in 48.201, insert the following clause in supply or service contracts to provide a value engineering incentive under the conditions specified in 48.201. In solicitations and contracts for items requiring an extended period for production (e.g., ship construction, major system acquisition), if agency procedures prescribe sharing of future contract savings on all units to be delivered under contracts awarded during the sharing period, the contracting officer shall modify subdivision (1)(3)(i) and the first sentence under subparagraph (3) of the definition of

acquisition savings by substituting "under contracts awarded during the sharing period" for "during the sharing period." For engineering-development and low-rate-initial-production solicitations and contracts, the contracting officer shall modify subdivision (1)(3)(i) and the first sentence under subparagraph (3) of the definition of acquisition savings by substituting for "the number of future contract units scheduled for delivery during the sharing period," "a number equal to the quantity required over the highest designated number of consecutive months of planned production, based on planning or production documentation at the time the VECP is accepted. The number of monthsshall be established at the discretion of the contracting officer for each VECP. A range of 36-60 months shall be used. "Sharing period," as used in this clause, means the period beginning with acceptance of the first unit incorporating the VECP and ending at the later of (1) the end of a sharing period of 3-5 years, set at the discretion of the Contracting Officer, after the first unit affected by the VECP is accepted or (2) the last scheduled delivery date of an item affected by the VECP under this contract's delivery schedule in effect at the time the VECP is accepted. The contracting officer's determination of the sharing period is final and shall not be subject to the Disputes clause or otherwise subject to litigation under 41 U.S.C. 601-613.

(f) **Sharing rates.** If a VECP is accepted, the Contractor shall share in net acquisition savings according to the percentages shown in the table below. The percentage paid the Contractor depends upon (1) this contract's type (fixed-price, incentive, or cost-reimbursement), (2) the sharing arrangement specified in paragraph (a) above (incentive, program requirement, or a combination as delineated in the Schedule), and (3) the source of the savings (the instant contract, or concurrent and future contracts), as follows:

**CONTRACTOR'S SHARE OF NET ACQUISITION SAVINGS**  
 (figures in percent)

Contract Type	Sharing arrangement			
	Incentive (voluntary)		Program requirement (Mandatory)	
	Instant contract rate	Con-current and future contract rate	Instant contract rate	Con-current and future contract rate
Fixed-price (other than incentive)	***	***	25	25
Incentive (fixed-price or cost)	*	***	*	25
Cost-reimbursement (other than incentive)**	****	***	15	15

\*Same sharing arrangement as the contract's profit or fee adjustment formula.

\*\*Includes cost-plus-award-fee contracts.

\*\*\*A rate between 50 and 75 percent set by the Contracting Officer for each VECP. This decision is final and shall not be subject to the Disputes clause or otherwise subject to litigation under 41 U.S.C. 601-613.

\*\*\*\*A rate between 25 and 50 percent set by the Contracting Officer for each VECP. This decision is final and shall not be subject to the Disputes clause or otherwise subject to litigation under 41 U.S.C. 601-613.

(j) **Collateral savings.** If a VECP is accepted, the instant contract amount shall be increased, as specified in subparagraph (h)(5) above, by between 20 and 100 percent, as determined by the Contracting Officer, of any collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings shall not exceed (1) the contract's firm-fixed-price, target price, target cost, or estimated cost, at the time the VECP is accepted, or (2) \$100,000, whichever is greater. The Contracting Officer shall be the sole determiner of the amount of collateral savings, and that amount shall not be subject to the Disputes clause or otherwise subject to litigation under 41 U.S.C. 601-613.

I-699.	52.249-8	DEFAULT (FIXED-PRICE SUPPLY AND SERVICE) (IAW FAR 49.504(a)(1))	APR 1984
I-710.	52.249-14	EXCUSABLE DELAYS (IAW FAR 49.505(d))	APR 1984
I-733.	52.252-6	AUTHORIZED DEVIATIONS IN CLAUSES (IAW FAR 52.107(f))	APR 1984
		(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.	
		(b) The use in this solicitation or contract of any Defense Federal Acquisition Regulation Supplement (48 CFR Chapter 2) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.	
I-750.	52.253-1	COMPUTER GENERATED FORMS (IAW FAR 53.111)	JAN 1991
IA-22.	252.203-7001	SPECIAL PROHIBITION ON EMPLOYMENT (IAW DFARS 203.570-5)	JUN 1997
IA-33.	252.204-7003	CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (IAW DFARS 204.404-70(b))	APR 1992
IA-90.	252.209-7000	ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ON-SITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (IAW DFARS 209.103-70)	NOV 1995
IA-282.	252.223-7006	PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (IAW DFARS 223.7103)	APR 1993
IA-287.	252.225-7001	BUY AMERICAN ACT AND BALANCE OF PAYMENTS PROGRAM (IAW DFARS 225.109(d))	JAN 1994
		(The "Balance of Payments Program" is not applicable when the estimated cost of the product or service is at or below the Simplified Acquisition Threshold in FAR Part 13)	
IA-288.	252.225-7002	QUALIFYING COUNTRY SOURCES AS SUBCONTRACTORS (IAW DFARS 225.109-70(a))	DEC 1991
		(The balance of Payments Program is not applicable when the estimated cost of the product or service is at or below \$100,000)	
IA-291G.	252.225-7008	SUPPLIES TO BE ACCORDED DUTY-FREE ENTRY (IAW DFARS 225.605-70(a))	DEC 1991
		Supplies to be accorded duty-free entry: NONE	
IA-292.	252.225-7009	DUTY-FREE ENTRY--QUALIFYING COUNTRY END PRODUCTS AND SUPPLIES (IAW DFARS 225.605-70(b))	JAN 1997
IA-292C.	252.225-7010	DUTY-FREE ENTRY--ADDITIONAL PROVISIONS (IAW DFARS 225.605-70(d))	JAN 1997
		For the purposes of paragraph (d) of this clause, the CAD is listed on the front page of this document and the corresponding Activity Address number is in Appendix G of the Defense FAR Supplement.	
IA-293.	252.225-7012	PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (IAW DFARS 225.7002-3(a), and D.L. Ltr 97-018 dated 8 Sep 97)	SEP 1997
IA-295.	252.225-7014	PREFERENCE FOR DOMESTIC SPECIALTY METALS (IAW DFARS 225.7002-3(b))	FEB 1997
IA-297.	252.225-7016	RESTRICTION ON ACQUISITION OF BALL AND ROLLER BEARINGS (IAW DFARS 225.7019-4)	JUN 1997
		(Clause is not applicable when items acquired overseas are for use overseas)	
IA-312.	252.225-7025	RESTRICTION ON ACQUISITION OF FORGINGS (IAW DFARS 225.7102-4(a))	JUN 1997
IA-312H.	252.225-7031	SECONDARY ARAB BOYCOTT OF ISRAEL (IAW DFARS 225.770-5)	JUN 1992
IA-332.	252.227-7013	RIGHTS IN TECHNICAL DATA--NONCOMMERCIAL ITEMS (IAW DFARS 227.7102-3(b), and 227.7103-6(a))	NOV 1995
		(e)(3) In addition to the assertions made in the Attachment, other assertions may be identified after award when based on new information or inadvertent omissions unless the inadvertent omissions would have materially affected the source selection decision. Such identification and assertion shall be submitted to the Contracting Officer as soon as practicable prior to the scheduled date for delivery of the data, in the following format, and signed by an official authorized to contractually obligate the Contractor:	

Identification and Assertions of Restrictions on the Government's Use, Release, or Disclosure of Technical Data.

The Contractor asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data should be restricted--

Technical Data to be Furnished With Restrictions*	Basis for Assertion**	Asserted Rights Category***	Name of person Asserting Restrictions****
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

- \* If the assertion is applicable to items, components, or processes developed at private expense, identify both the data and each such item, component, or process.
- \*\* Generally, the development of an item, component, or process at private expense, either exclusively or partially, is the only basis for asserting restrictions on the Government's rights to use, release, or disclose technical data pertaining to such items, components, or processes. Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the Government's rights should be restricted.
- \*\*\* Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited or government purpose rights under this or a prior contract, or specifically negotiated licenses).
- \*\*\*\* Corporation, individual, or other person, as appropriate.

Date \_\_\_\_\_  
 Printed Name and Title \_\_\_\_\_  
 Signature \_\_\_\_\_

(End of identification and assertion)

(f)(2) Government purpose rights markings.  
 Data delivered or otherwise furnished to the Government purpose rights shall be marked as follows:

**GOVERNMENT PURPOSE RIGHTS**

Contract No. \_\_\_\_\_  
 Contractor Name \_\_\_\_\_  
 Contractor Address \_\_\_\_\_  
 \_\_\_\_\_  
 Expiration Date \_\_\_\_\_

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted by paragraph (b)(2) of the Rights in Technical Data--Noncommercial Items clause contained in the above identified contract. No restrictions apply after the expiration date shown above. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings.

(End of Legend)

(3) Limited rights markings.  
 Data delivered or otherwise furnished to the Government with limited rights shall be marked with the following legend:

LIMITED RIGHTS

Contract No. \_\_\_\_\_  
Contractor Name \_\_\_\_\_  
Contractor Address \_\_\_\_\_

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted by paragraph (b)(3) of the Rights in Technical Data--Noncommercial Items clause contained in the above identified contract. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings. Any person, other than the Government, who has been provided access to such data must promptly notify the above named Contractor.

(End of legend)

(4) Special license rights markings.

(i) Data in which the Government's rights stem from a specifically negotiated license shall be marked with the following legend:

SPECIAL LICENSE RIGHTS

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these data are restricted by Contract No. \_\_\_\_\_ (Insert contract number) \_\_\_\_\_, License No. \_\_\_\_\_ (Insert license identifier) \_\_\_\_\_. Any reproduction of technical data or portions thereof marked with this legend must also reproduce the markings.

(End of legend)

IA-336	252.227-7014	RIGHTS IN NONCOMMERCIAL COMPUTER SOFTWARE AND NONCOMMERCIAL COMPUTER SOFTWARE DOCUMENTATION (IAW DFARS 227.7203-6(a)(1))	JUN 1995
IA-337D	252.227-7016	RIGHTS IN BID OR PROPOSAL INFORMATION (IAW DFARS 227.7103-6(e)(1), 227.7104(e)(1), or 227.7203-6(b))	JUN 1995
IA-338G	252.227-7019	VALIDATION OF ASSERTED RESTRICTIONS--COMPUTER SOFTWARE (IAW DFARS 227.7104(e)(3), and 227.7203-6(c))	JUN 1995
IA-342	252.227-7023	DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF GOVERNMENT (IAW DFARS 227.7107-1(b))	MAR 1979
IA-345	252.227-7027	DEFERRED ORDERING OF TECHNICAL DATA OR COMPUTER SOFTWARE (IAW DFARS 227.7103-8(b))	APR 1988
IA-347	252.227-7030	TECHNICAL DATA--WITHHOLDING OF PAYMENT (IAW DFARS 227.7103-6(e)(2) or 227.7104(e)(4))	OCT 1988
For the purposes of this clause, the Contracting Officer may withhold <u>ten percent (10%)</u> of the total contract price.			
IA-350	252.227-7033	RIGHTS IN SHOP DRAWINGS (IAW DFARS 227.7107-1(c))	APR 1966
IA-352	252.227-7038	DECLARATION OF TECHNICAL DATA CONFORMITY (IAW DFARS 227.7103-6(e)(3) or 227.7104(e)(5))	JAN 1997
IA-353	252.227-7037	VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA (IAW DFARS 227.7102-3(c), 227.7103-6(e)(4), 227.7104(e)(6), or 227.7203-6(f))	NOV 1995
IA-399	252.231-7000	SUPPLEMENTAL COST PRINCIPLES (IAW DFARS 231.100-70)	DEC 1991

- IA-420. 252.232-7004 DOD PROGRESS PAYMENT RATES FEB 1996  
 (IAW DFARS 232.502-4-70(b)), and 232.502-4-70(c))
- IA-422. 252.232-7006 REDUCTION OR SUSPENSION OF CONTRACT PAYMENTS UPON FINDING OF FRAUD AUG 1992  
 (IAW DFARS 232.111-70)
- IA-463. 252.236-7001 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS DEC 1991  
 (IAW DFARS 236.570(a)(2))

for the purposes of this clause the blank(s) are completed as follows:

SEE SECTION J FOR LISTING

- IA-474. 252.236-7005 AIRFIELD SAFETY PRECAUTIONS DEC 1991  
 (IAW DFARS 236.570(b)(3))
- IA-632. 252.242-7000 POSTAWARD CONFERENCE DEC 1991  
 (IAW DFARS 242.570)
- IA-648. 252.243-7001 PRICING OF CONTRACT MODIFICATIONS DEC 1991  
 (IAW DFARS 243.205-71)
- IA-649. 252.243-7002 CERTIFICATION OF REQUESTS FOR EQUITABLE ADJUSTMENT JUL 1997  
 (IAW DFARS 243.205-72, and D.L. Ltr 97-015 dated 29 Jul 97)

(a) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

\_\_\_\_\_  
 (Official's Name)

\_\_\_\_\_  
 (Title)

- IA-679. 252.246-7000 MATERIAL INSPECTION AND RECEIVING REPORT DEC 1991  
 (IAW DFARS 246.370)
- IA-745. 252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA NOV 1995  
 (IAW DFARS 247.573(b))

(a) Definitions.

As used in this clause--

- (1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.
- (2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.
- (3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.
- (4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international Waters.
- (5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract. However, effective May 1, 1996, the term does not include a supplier, materialman, distributor, or vendor of commercial items or commercial components.
- (6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.
  - (i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.
  - (ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; and items; construction materials; and components of the foregoing.
- (7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b) The Contractor shall employ U.S.-flag vessels in the transportation by sea of any supplies to be furnished in the performance of this contract. The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that-

- (1) U.S.-flag vessels are not available for timely shipment;
- (2) The freight charges are inordinately excessive or unreasonable; or
- (3) Freight charges are higher than charges to private persons for transportation of like goods.

(c) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum--

- (1) Type, weight, and cube of cargo;
- (2) Required shipping date;
- (3) Special handling and discharge requirements;
- (4) Loading and discharge points;
- (5) Name of shipper and consignee;
- (6) Prime contract number; and
- (7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(d) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information--

- (1) Prime contract number;
- (2) Name of vessel;
- (3) Vessel flag of registry;
- (4) Date of loading;
- (5) Port of loading;
- (6) Port of final discharge;
- (7) Description of commodity;
- (8) Gross weight in pounds and cubic feet if available;
- (9) Total ocean freight in U.S. dollars; and
- (10) Name of the steamship company.

(e) The Contractor agrees to provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

- (1) No ocean transportation was used in the performance of this contract;
- (2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
- (3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or
- (4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM	CONTRACT	
DESCRIPTION	LINE ITEMS	QUANTITY
TOTAL		

(f) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(g) The Contractor shall include this clause, including this paragraph (g) in all subcontracts under this contract, which exceed the simplified acquisition threshold in Part 13 of the Federal Acquisition Regulation.

18-320. 5352.223-9000 **ELIMINATION OF USE OF CLASS I OZONE  
DEPLETING SUBSTANCES (ODS)**  
(IAW AFFARS 5323.890-7)

MAY 1996

- (a) It is the Air Force policy to preserve mission readiness while minimizing dependency on Class I Ozone Depleting Substances (ODS), and their release into the environment, to help protect the Earth's stratospheric ozone layer.
- (b) Unless a specific waiver has been approved, Air Force procurements:
- (1) May not include any specification, standard, drawing or other document that requires the use of a Class I ODS in the design, manufacture, test, operation, or maintenance of any system, subsystem, item, component or process; and
  - (2) May not include any specification, standard, drawing, or other document that establishes a requirement that can only be met by use of a Class I ODS;
- (c) For the purposes of Air Force policy, the following are Class I ODS:
- (1) Halons: 1011, 1202, 1211, 1301, and 2402;
  - (2) Chlorofluorocarbons (CFCs): CFC-11, CFC-12, CFC-13, CFC-111, CFC-112, CFC-113, CFC-114, CFC-115, CFC-211, CFC-212, CFC-213, CFC-214, CFC-215, CFC-216, and CFC-217, and the blends R-500, R-501, R-502, and R-503; and
  - (3) Other Controlled Substances: Carbon Tetrachloride, Methyl Chloroform, and Methyl Bromide.
- (d) The Air Force has reviewed the requirements specified in this contract to reflect this policy. Where considered essential, specific approval has been obtained to require use of the following substances:

Substance	Application/Use	Quantity (lbs)
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N/A

- (e) To assist the Air Force in implementing this policy, the offeror/contractor is required to notify the contracting officer if any Class I ODS not specifically listed above is required in the performance of this contract.

18-321. 5352.223-9001 **HEALTH AND SAFETY ON GOVERNMENT INSTALLATIONS**  
(IAW AFFARS 5323.9002)

JUN 1997

- (a) In performing work under this contract on a Government installation, the contractor shall:
- (1) Comply with the specific health and safety requirements established by this contract;
  - (2) Comply with the health and safety rules of the Government installation that concern related activities not directly addressed in this contract;
  - (3) Take all reasonable steps and precautions to prevent accidents and preserve the health and safety of contractor and Government personnel performing or in any way coming in contact with the performance of this contract; and
  - (4) Take such additional immediate precautions as the contracting officer may reasonably require for health and safety purposes.
- (b) The contracting officer may, by written order, direct Air Force Occupational Safety and Health Standards (AFOSH) and/or health/safety standards as may be required in the performance of this contract and any adjustments resulting from such direction will be in accordance with the Changes clause of this contract.
- (c) Any violation of these health and safety rules and requirements, unless promptly corrected as directed by the contracting officer, shall be grounds for termination of this contract in accordance with the Default clause of this contract.

18-343. 5352.242-9000 **CONTRACTOR ACCESS TO AIR FORCE  
INSTALLATIONS**  
(IAW AFFARS 5342.490-1)

MAY 1996

- (a) The contractor shall obtain base identification and vehicle passes for all contractor personnel who make frequent visits to or perform work on the Air Force installation(s) cited in the contract. Contractor personnel are required to wear or prominently display installation identification badges or contractor-furnished, contractor identification badges while visiting or performing work on the installation.

(b) The contractor shall submit a written request on company letterhead to the contracting officer listing the following: contract number, location of work site, start and stop dates, and names of employees and subcontractor employees needing access to the base. The letter will also specify the individual(s) authorized to sign for a request for base identification credentials or vehicle passes. The contracting officer will endorse the request and forward it to the issuing base pass and registration office or security police for processing. When reporting to the registration office, the authorized contractor individual(s) should provide a valid driver's license, current vehicle registration, valid vehicle insurance certificate AND ANY OTHER REQUIREMENTS OF ROBINS AFB GA to obtain a vehicle pass.

(c) During performance of the contract, the contractor shall be responsible for obtaining required identification for newly assigned personnel and for prompt return of credentials and vehicle passes for any employee who no longer requires access to the work site.

(d) When work under this contract requires unescorted entry to controlled or restricted areas, the contractor shall comply with AFI 31-209, the Air Force Resource Protection Program, and AFI 31-501, Personnel Security Program Management, as applicable.

(e) Upon completion or termination of the contract or expiration of the identification passes, the prime contractor shall ensure that all base identification passes issued to employees and subcontractor employees are returned to the issuing office.

(f) Prior to submitting an invoice for final payment, the prime contractor shall obtain a clearance certification from the issuing office which states all base identification passes have been turned in, accounted for, or transferred to a follow-on contract. This certification shall be submitted to the contracting officer prior to submission of the final invoice for payment.

(g) Failure to comply with these requirements may result in withholding of final payment.

IB-468C. 5352.228-9001 INSURANCE CLAUSE IMPLEMENTATION (AFMC) JUL 1997  
(IAW AFMCFARS 5328.310(a) and 5328.311-1)

The Contractor shall obtain and maintain the minimum kinds and amounts of insurance during performance of this contract as specified by FAR 28.307-2, Liability, and contemplated by FAR 52.228-5, Insurance--Work on a Government Installation, and/or 52.228-7, Insurance--Liability to Third Persons.

IB-486C. 5352.237-9001 CONTRACTOR IDENTIFICATION (AFMC) JUL 1997  
(IAW AFMCFARS 5337.110-90(b))

(a) Contractor personnel and their subcontractors must identify themselves as Contractors or subcontractors during meetings, telephone conversations, in electronic messages, or correspondence related to this contract.

(b) Contractor-occupied facilities (on AFMC or other Government installations) such as offices, separate rooms, or cubicles must be clearly identified with Contractor supplied signs, name plates or other identification, showing that these are work areas for Contractor or subcontractor personnel.

IB-515C. 5352.245-9004 BASE SUPPORT (AFMC) JUL 1997  
(IAW AFMCFARS 5345.106-90(a))

Base support shall be provided by the Government to the Contractor in accordance with this clause. Failure by the Contractor to comply with the requirements of this clause shall release the Government, without prejudice, from its obligation to provide base support by the date(s) required. If warranted, and if the Contractor has complied with the requirements of this clause, an equitable adjustment shall be made if the Government fails to provide base support by the date(s) required.

(a) Base support includes Government-controlled working space, material, equipment, services (including automatic data processing), or other support (excluding use of the Defense Switched Network (DSN)) which the Government determines can be made available at, or through, any Air Force installation where this contract shall be performed. All Government property in the possession of the Contractor, provided through the base support clause, shall be used and managed in accordance with the Government Property clauses.

(b) The Air Force installations providing the support shall be listed in subparagraph (e), and the Government support to be furnished by each installation under this contract shall be listed in subparagraph (f).

(c) Unless otherwise stipulated in the contract schedule, support shall be provided on a no-charge-for-use basis and the value shall be a

part of the Government's contract consideration.  
 (d) The Contractor agrees to immediately report (with a copy to the cognizant CAO) inadequacies, defective Government-Furnished Property (GFP) or nonavailability of support stipulated by the contract schedule, together with a recommended plan for obtaining the required support. The Government agrees to determine (within 10 workdays) the validity and extent of the involved requirement and the method by which it shall be fulfilled (e.g., purchase, rental, lease, GFP, etc.). Facilities shall not be purchased under this clause. Additionally, the Contractor (or authorized representative) shall not purchase, or otherwise furnish any base support requirement provided by the clause (or authorize others to do so), without prior written approval of the Contracting Officer regarding the price, terms, and conditions of the proposed purchase, or approval of other arrangements.

(e) Following are installations where base support will be provided  
ROBINS AFB GA.

(f) The Government support to be furnished under this contract is SEE SECTION J, ATTACHMENT "2", CONTRACTOR INFORMATION. Because of the nature and location(s) of the work performed, the value of such equipment is undeterminable. The Contractor shall not incur any cost resulting from nonsupport prior to Contracting Officer concurrence in accordance with this clause.

**PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS**  
**SECTION J**  
**LIST OF ATTACHMENTS**  
(All listed attachments are at the end of this document)

<u>FORM NR</u>	<u>TITLE</u>	<u>DATE</u>	<u>NR OF PAGES</u>
ATTACHMENT "1"	CONTRACT DATA REQUIREMENTS LIST	24 DEC 97	1
ALL OF THE FOLLOWING ITEMS ARE AVAILABLE ON THE INTERNET AT: <a href="http://www.pixs.wpafb.af.mil/pixs/pixslibr/mmhs/mmhs.htm">http://www.pixs.wpafb.af.mil/pixs/pixslibr/mmhs/mmhs.htm</a> . NO HARD COPIES ARE ATTACHED HERETO.			
ATTACHMENT "2"	CONTRACTOR INFORMATION	24 NOV 97	2
ATTACHMENT "3"	CONTRACTOR'S TECHNICAL PROPOSAL INCLUDING INTRO, DRAWINGS, DESCRIPTIONS, LITERATURE AND TPQ.	23 FEB 98	
DD FORM 1423	EXHIBIT "A" CONTRACT DATA REQUIREMENTS LIST (A001-A009)	21 NOV 97	9
DD FORM 1664	DATA ITEM DESCRIPTION DI-MGMT-80227/T DI-MGMT-80909/T DI-DRPR-81003 DI-TMSS-80527 DI-TMSS-80528/T	5 SEP 86 6 OCT 89 11 SEP 89 1 FEB 88 1 FEB 88	2 2 2 2 1
PURCHASE DESCRIPTION	COVER PURCHASE DESCRIPTION VERTICAL STORAGE COLUMN (VSC) SYSTEM	21 NOV 97	20
PURCHASE DESCRIPTION	APPENDIX A, RAIL-GUIDED VERTICAL STORAGE COLUMNS (VSC)	21 NOV 97	13
AF DRAWING	LR8741-01, AS/RS INSTALLATION IN BUILDING 640, EAST ANNEX, ROBINS AFB GA	21 NOV 97	1

## Contract Data Requirements List Pricing Sheet

Description: Automated Storage &amp; Retrieval System

Base: Robins AFB GA

Sequence Numbers: A001-A009 (Reference DD Forms 1423)

Contract Line Item: 0002

CDRL Seq No	Description	Qty	Unit Issue	Price Group	Total Price or NSP
A001	Progress, Status & Mgt Report	1	LO	\$ _____	\$ <u>NSP</u>
A002	Program Plan/Schedule	1	LO	\$ _____	\$ <u>NSP</u>
A003	Level 2 Shop Drawings	1	LO	\$ _____	\$ <u>NSP</u>
A004	Level 2 Spare Parts List	1	LO	\$ _____	\$ <u>NSP</u>
A005	O&M Manuals	1	LO	\$ _____	\$ <u>NSP</u>
A006	Illustrated Parts Breakdown Manual	1	LO	\$ _____	\$ <u>NSP</u>
A007	System Checkout Certificate	1	LO	\$ _____	\$ <u>NSP</u>
A008	Requirements Certification	1	LO	\$ _____	\$ <u>NSP</u>
A009	Level 2 As-Built Drawings	1	LO	\$ _____	\$ <u>NSP</u>
TOTAL					\$ <u>NSP</u> *

\*Place this total in the Unit Price & Total Price Columns for CLIN 0002 (the schedule).  
This total must be added to all other priced items on the schedule.

TECHNICAL PROPOSAL QUESTIONNAIRE  
FOR  
VERTICAL STORAGE COLUMNS

Offeror: SILOAD RETRIEVAL SYSTEMS (S.R.S.)  
Solicitation Number: F33600-98-R-0014  
Project Title: Vertical Storage Column (VSC) System  
Base: Robin Air Force Base: bldg 64 CSN: LRB 741  
Appendix A, Vertical Storage Columns, 21 November 1997

This questionnaire shall be completed by the Offeror. All entries to this questionnaire shall be typed. The questionnaire will be used to determine the Offeror's understanding of the requirements and acceptability of the proposed equipment. Please attach product literature/cut sheets for all equipment detailed in this questionnaire and attach any exceptions to the Purchase Description Appendix or recommendations/design alternatives as detailed below.

Vertical Storage Column Manufacturer: Siload Retrieval Systems  
Model Number: Siload II XWS - 200

<u>Paragraph</u>	<u>Characteristics</u>
3.1.	Number of vertical storage columns to be provided: <u>8</u>
3.2.1.	Unit dimensions: Depth: <u>88</u> inches (not including work counter) Width: <u>4</u> feet <u>10</u> inches Height: <u>14</u> feet <u>3</u> inches
3.2.2.	Floor loading when unit is loaded to maximum capacity: <u>306</u> pounds per square foot.
3.2.4.	Storage location adjustability: <u>2</u> inch centers
3.2.5.2.	Number of storage levels: <u>976</u> Number of trays: <u>216</u> Number of storage locations: <u>216</u>
3.2.5.3.	Tray dimensions: Width: <u>48.5</u> inches Depth: <u>27</u> inches Lip height: <u>2</u> inches
3.2.5.4.	Tray capacity: <u>500</u> pounds

Offeror: Siload Retr al Systems (S.R.S)

Solicitation Number: F33600-98-R-0014

3.2.6. Extractor lift chain safety factor: 17 to 1

3.2.6.2. Will the extractor move vertically only after the tray being stored is outside the movement envelope of the extractor?  YES  NO

3.2.6.3. Extractor load capacity: 500 pounds

3.2.6.4. Is extractor free fall prevented?  YES  NO

3.2.6.5. Will the extractor automatically calibrate its location as necessary?  YES  NO

3.2.7.1. Are the outer metal surfaces of the vertical storage column bolted to the column?  
 YES  NO

3.2.7.2. Is a removable or hinged service panel provided which allows access to operating parts as necessary?  YES  NO

3.2.8. Is the maintenance access panel equipped with safety interlock switches to prevent the unit from operating when the service panel is open?  
 YES  NO

Are all the parts requiring periodic maintenance easily accessible?  YES  NO

3.2.9. How long is the system designed to function? 12 years

3.2.11. Work counter load capacity: 500 pounds

Work counter dimensions: Width: 58.25 inches  
Depth: 12 inches

Work counter height above floor: 39 7/8 inches

3.2.12.1. Motor size: 1.5 HP

Do the motors have electronically controlled soft start and stop?  YES  NO

\* See Exception Page

\*\* See Recommendations

Vertical Storage Columns - Page 2 of 4

Offeror: Siload Re yal Systems (S.R.S)  
Solicitation Number: F33600-98-R-0014

3.2.16. Are height sensors provided?  YES  NO

Will the extractor abort operation if an object extends into it's movement envelope?  
 YES  NO

3.2.17. Illumination level lighting provides along the length of the work counter: \_\_\_\_\_ foot candles

3.2.19. Number of storage containers to be provided: 464  
Storage container brand: Danalux  
Storage container model number(s): CF772066  
Number of storage containers of each model number to be provided: 464  
Containers:  
Length: 24" Width: 11" Depth: 8"  
Containers per carrier tier: \_\_\_\_\_  
Containers per carousel: \_\_\_\_\_  
Container manufacturer and part number: \_\_\_\_\_  
~~Dandux CF772066~~  
Quantity of dividers provided: 464

3.2.24. Please describe the Inventory Control System and proposed hardware:

Computer: Compag - Compatible PC/Pentium II 16 mega bytes RAM, PC mouse 2.1 giga bytes HD, 14" monitor, VGA Video Card, 2 serial parts, 1 parallel part

Printer: H.P. Laser Jet 6

Software: See Section 5  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

UPS: APC (American Power Conversion) - 400 VA  
Ad Hoc Report Capability:  YES  NO  
Tape Back-Up Unit:  YES  NO

Offeror: Siload Retrieval Systems (S.R.S.)  
Solicitation Number: F33600-98-R-0014

EXCEPTIONS/RECOMMENDATIONS/DESIGN ALTERNATIVES

Attach any exceptions taken to the Purchase Description Appendix. Please outline those concerns in detail. Your exceptions will be reviewed to determine acceptability.

Are exceptions taken?  YES  NO

Number of pages attached: 2

Attach any recommendations or design alternatives you feel may enhance operation, maintainability, or reduce system cost. Your recommendations and design alternatives will be reviewed to determine acceptability.

Are recommendations/design alternatives attached?  YES  NO

Number of pages attached: 1

We have read the requirements of the Purchase Description Appendix and will comply with all paragraphs as written, with exceptions taken only to those items indicated on the attached exception sheet.

John Castaldi  
Offeror's Signature

Feb 23, 1998  
Date

TYPED NAME: John Castaldi  
COMPANY NAME: Siload Retrieval Systems  
ADDRESS: 850 Mountain Industrial Drive  
Marietta, GA  
PHONE: (888) 906-7100, (718) 768-2040 (NY)  
FAX: (718) 76802069 (NY) Fax

## CONTRACTOR INFORMATION

1. SERVICES AVAILABLE TO THE CONTRACTOR

## A. Work Schedule

Normal Working Hours	Days Of The Week
1st Shift <u>0700</u> to <u>1600</u>	<u>Mon - Fri</u>

The Contractor is not allowed to work U.S. holidays or other than the normal work schedule unless approved in advance by the base project officer.

B. Office space available?  Yes  No

C. Classroom space available?  
(For number required to be trained)  Yes  No

(1) Location: Bldg 640

D. Staging space available?  Yes  No

(1) Under roof square feet: TBD

Location:

Secured area?  Yes  No

(2) Outside square feet: TDB

Location:

Adjacent to Bldg 640

Secured area?  Yes  No

E. Rail siding available?  Yes  No

F. Restrooms available?  Yes  No

Building number: Building 640

G. Telephone Service:  
Pay phone available?  Yes  No

Location: Building 640

H. Utilities available:

(1) Electrical outlets available in area?  Yes  No  
Voltage: 110 Hertz: 60 Phase: 3

(2) Water available?  Yes  No  
Location: Building 640

2. SERVICES NOT AVAILABLE TO THE CONTRACTOR

- A. Forklifts. Government forklifts are not available for the Contractor's use.
- B. Tools. Government tools or equipment are not available for the Contractor's use.
- C. Loading/unloading. Government personnel will not load or unload any Contractor equipment, tools, and system components shipped under this contract.

3. JOINT OCCUPANCY

The Contractor will be installing the equipment in close proximity to normal Air Force operations. The Contractor must minimize interference with base personnel.

4. SITE VISIT

To acquaint bidders/offerers with this project, arrangements may be made to visit the site by contacting:

Name: Wendy Johnston  
Phone: Commercial: (912) 926-2396





# CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved  
OMB A 704-0188

Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.		B. EXHIBIT		C. CATEGORY: TDP _____ TM _____ OTHER _____	
D. SYSTEM/ITEM AS/RS			E. CONTRACT/PR NO.		F. CONTRACTOR
1. DATA ITEM NO. A003	2. TITLE OF DATA ITEM Commercial Drawings and Associated Lists			3. SUBTITLE Shop Drawings	
4. AUTHORITY (Data Acquisition Document No.)			5. CONTRACT REFERENCE P.D. Paragraph 3.4		6. REQUIRING OFFICE AFMC-LSO/LOE
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY ONE/R	12. DATE OF FIRST SUBMISSION 60 Days ARO		14. DISTRIBUTION a. ADDRESSEE b. COPIES Draft Final Reg Repro
8. APP CODE AN		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION		
16. REMARKS					
<p>Block 4: The Contractor shall submit for review a complete set of engineering drawings. The size and format shall be in accordance with ANSI Y14.1. Drawings shall meet the requirements of section 3 of the Purchase Description appendices and the following requirements:</p> <p>(a) The contract and drawing numbers shall be placed in the title block of the drawings and associated lists.</p> <p>(b) Drawings shall be of sufficient detail to show that all system performance, dimensional, integration and interface requirements will be met.</p> <p>(c) Appropriate views of each type of equipment item necessary to show the configuration of the items proposed.</p> <p>(d) A sheet listing all of the drawings provided with the submittal, listing drawing numbers, names and dates</p> <p>(e) Layout drawing(s) for the system shall be prepared in accordance with ASME Y14.24, section 2, clearly showing:</p> <p>(1) The facility and significant obstructions and constraints</p> <p>(2) Locations of all components to be provided</p> <p>(3) Significant dimensions and other information necessary to demonstrate that all interface and functional requirements will be met</p> <p>(4) Other details necessary to clearly describe the proposed</p> <p>Block 12: "ARO" means days after receipt of order.</p> <p>Block 13: (a) The Contractor shall have 15 days to resubmit corrected shop drawings. (b) All items shall be dated.</p> <p>Block 14: (a) Contractor shall send transmittal letter with this data item to all addressees, stating who received data item and indicating contract line item number (CLIN) data item is submitted against (copy of letter of transmittal only to ASC/PKWRM (b)- All items shall be dated.</p>					
15. TOTAL					2
G. PREPARED BY Andrew J. Huser		H. DATE 21 Nov 97		I. APPROVED BY 21 Nov 97	
				J. DATE 21 Nov 97	

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE



# CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved  
OMB N 704-0188

Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.		B. EXHIBIT	C. CATEGORY: IDP _____ IM _____ OTHER _____	
D. SYSTEM/ITEM AS/RS		E. CONTRACT/PR NO.	F. CONTRACTOR	
1. DATA ITEM NO. A005	2. TITLE OF DATA ITEM Commercial Off-the-Shelf (COTS) Manuals		3. SUBTITLE Operation & Maintenance Manuals	
4. AUTHORITY (Data Acquisition Document No.) DI-TMSS-80527		5. CONTRACT REFERENCE P.D. Paragraph 3.4		6. REQUIRING OFFICE AFMC-LSO/LOE
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY ONE/R	12. DATE OF FIRST SUBMISSION 150 Days ARO	14. DISTRIBUTION  a. ADDRESSEE  b. COPIES Draft      Final Reg      Repro
8. APP CODE AN		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION See Block 16	
16. REMARKS				
<p>Block 4: The Data Item is tailored. See the tailored data item. The references, Block 10 of DI-TMSS-80527, shall be updated to MIL-M-7298D. Contractor shall furnish separate operations and maintenance manuals. The operations and maintenance manuals shall not reference each other. Each one shall be complete in itself. A publication identification sheet shall be provided by the Contractor and it shall identify the commercial manual and any supplemental technical data provided. Safety precautions shall be listed on a front page. Changes and revisions to the manuals shall be provided throughout the warranty period.</p>				
<p>Block 12: "ARO" means days after receipt of order.</p>				
<p>Block 13: The Contractor shall have 15 days to resubmit corrected manuals.</p>				
<p>Block 14: (a) Contractor shall send transmittal letter with this data item to all addressees, stating who received data item and indicating contract line item number (CLIN) data item is submitted against (copy of letter of transmittal only to ASC/PKWRM). (b) All items shall be dated.</p>				
				15. TOTAL
				2

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

G. PREPARED BY <i>Andrew J. Huser</i> Andrew J. Huser	H. DATE 21 Nov 97	I. APPROVED BY	J. DATE 21 Nov 97
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# DATA ITEM DESCRIPTION

Form Approved  
OMB No. 0704-0188  
Exp Date: Jun 30, 1985

<b>1. TITLE</b>  Contractor's Progress, Status and Management Report		<b>2. IDENTIFICATION NUMBER</b>  DI-MGMT-80227/T	
<b>3. DESCRIPTION/PURPOSE</b>  3.1 The Contractor's Progress, Status and Management Report indicates the progress of work and the status of the program and of the assigned tasks, reports costs, and informs of existing or potential problem areas.			
<b>4. APPROVAL DATE (YYMMDD)</b> 860905	<b>5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)</b> N/SPAWAR	<b>5a. DTIC REQUIRED</b>	<b>5a. GIDEP REQUIRED</b>
<b>7. APPLICATION/INTERRELATIONSHIP</b>  7.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by the specific and discrete task requirement for this data included in the contract. 7.2 This DID may be applied in any contract and during any program phase. 7.3 This DID supersedes DI-A-2090A, DI-A-3025A, UDI-A-22050B, UDI-A-22052A, UDI-A3960, DI-A-30024, and DI-A-30606. (cont'd. on page 2)			
<b>8. APPROVAL LIMITATION</b>		<b>9a. APPLICABLE FORMS</b>	
		<b>9b. AMSC NUMBER</b> N3947	
<b>10. PREPARATION INSTRUCTIONS</b> 10.1 <u>Contract</u> - This data item is generated by the contract which contains a specific and discrete work task to develop this data product. 10.2 <u>Format</u> - This report shall be typewritten on standard size (e.g. 8 1/2" by 11") white paper, and securely stapled. Pages shall be sequentially numbered. All attachments shall be identified and referenced in the text of the report. The report shall be prepared in the contractor's format and shall be legible and suitable for reproduction. 10.3 <u>Content</u> - The report shall include: a. A front cover sheet which includes the contractor's name and address, the contract number, the nomenclature of the system or program, the date of the report, the period covered by the report, the title of the report, either the serial number of the report or the Contract Data Requirement List (CDRL) sequence number, <del>the security classification</del> , and the name of the issuing Government activity; b. Description of the progress made against milestones during the reporting period; c. Results, positive or negative, obtained related to previously-identified problem areas, with conclusions and recommendations; d. Any significant changes to the contractor's organization or method of operation, to the project management network, or to the milestone chart; e. Problem areas affecting technical or scheduling elements, with background and any recommendations for solutions beyond the scope of the contract; f. Problem areas affecting cost elements, with background and any recommendations for solutions beyond the scope of the contract; g. <del>Cost curves showing actual and projected conditions throughout the contract;</del> h. <del>Any cost incurred for the reporting period and total contractual expenditures as of reporting date;</del> i. Person-hours expended for the reporting period and cumulatively for the contract; j. Any trips and significant results; (cont'd. on page 2)			

7. APPLICATION/INTERRELATIONSHIP (Cont'd)

- 7.4 Paragraphs 10.3.f, 10.3.g, and 10.3.h herein should be tailored on DD Form 1423 when such cost data is already submitted through a sophisticated cost reporting system under the contract.
- 

10. PREPARATION INSTRUCTIONS (Cont'd)

- k. Record of all significant telephone calls and any commitments made by telephone;
- l. Summary of Engineering Change Proposal (ECP) status, including identification of proposed ECPs, approved ECPs, and implemented ECPs;
- m. Contract schedule status;
- n. Plans for activities during the following reporting period;
- o. Name and telephone number of preparer of the report;
- p. Appendixes for any necessary tables, references, photographs, illustrations, and charts.

\*U.S. GOVERNMENT PRINTING OFFICE: 1986-704-0307/50176

# DATA ITEM DESCRIPTION

Form Approved  
OMB No. 0704-0188

<b>1. TITLE</b>  Program Plan		<b>2. IDENTIFICATION NUMBER</b>  DI-MGMT-80909/T	
<b>3. DESCRIPTION/PURPOSE</b> 3.1 The Program Plan provides <del>technical, management, schedule, and cost</del> data. 3.2 <del>The Program Plan provides current information which is used to describe the approach, resources and needs of the contractor to perform the effort.</del>			
<b>4. APPROVAL DATE (YYMMDD)</b>  891006	<b>5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)</b>  A/CSSD-BM	<b>5a. DTIC REQUIRED</b>	<b>6a. GIDEP REQUIRED</b>
<b>7. APPLICATION/INTERRELATIONSHIP</b>  7.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by the specific and discrete task requirement as delineated in the contract. 7.2 This DID relates to the requirements of MIL-STD-881A. 7.3 The DID supersedes DI-A-1021.			
<b>8. APPROVAL LIMITATION</b>	<b>7a. APPLICABLE FORMS</b>		<b>7b. AMSC NUMBER</b>  A4842
<b>10. PREPARATION INSTRUCTIONS</b>  10.1 <u>Format.</u> The Program Plan format shall be contractor selected. The submission shall be <del>securely bound</del> 8 1/2 x 11 inch white paper. One way foldouts may be used for graphic material. <del>Every effort shall be made to keep the plan unclassified.</del> 10.2 <u>Content.</u> <del>The Program Plan shall be an integrated document showing technical, cost and schedule data to a common base, the contract work breakdown structure (CWBS) or its planning equivalent. It shall also provide information on the contractor's organization and practices and techniques to be used in managing the program, specifically management of subcontracts.</del>  10.2.1 The plan shall specifically contain the following:  a. <del>Introduction to the plan.</del>  b. <del>Indication of the relationship of the plan to the CWBS. This shall include a description of each element and the cost associated with each element.</del>			
(Continued on Page 2)			
<b>11. DISTRIBUTION STATEMENT</b>  DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.			

Block 10. Preparation Instructions (continued)

~~c. Milestone chart. A detailed program milestone chart covering the major activities of the program (system deliveries, tests, etc.) by CWBS, if applicable, and in linear time phasing.~~

~~d. Equipment/facilities chart. A chart depicting major government furnished equipment (GFE) and facilities required, and the date and duration that such GFE or facilities are required.~~

~~e. Purchase chart. A chart depicting major subcontracts and equipment or material purchases, the date and approximate amount of each.~~

~~f. Labor loading chart. A chart depicting estimated labor hours for each major task.~~

~~g. Cost chart. A cost chart depicting by month the estimated cost, including subcontractor cost, for each major task.~~

~~h. Technical performance in terms of specific technical parameters used for measuring technical progress, if appropriate. Each parameter shall be identified, related to a specific paragraph in the Prime Item Development Specification (if available) and provided a base value and any limits.~~

~~i. Organization data including:~~

~~(1) Program organization chart. A chart showing the structure of the program organization by title and name. Identify the program office, support contractors, and major subcontractors.~~

~~(2) Program/functional organization relationship chart. A chart showing the relationship of the program functions to the functional organizations indicating lines of authority and communications.~~

~~10.2.2 When the CWBS is a requirement, show program responsibilities vs. WBS element one level below the WBS. The matrix shall depict the organizations responsible for performance, review and approval of each summary WBS. A description of authority and responsibilities of key program and functional individuals shall be identified on the charts.~~

# DATA ITEM DESCRIPTION

Form Approved  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

**1. TITLE**

Commercial Drawings and Associated Lists

**2. IDENTIFICATION NUMBER**

DI-DRPR-81003

**3. DESCRIPTION/PURPOSE**

3.1 Commercial drawings and associated lists define commercially developed items acquired by the Department of Defense.

**4. APPROVAL DATE  
(YYMMDD)**

890911

**5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)**

DO

**5a. DTIC REQUIRED**

**5a. GIDEP REQUIRED**

**7. APPLICATION/INTERRELATIONSHIP**

7.1 This Data Item Description (DID) contains the format and content preparation instructions for Commercial drawings and associated lists resulting from the work task described by 3.6.4 of MIL-T-31000.

7.2 This DID is applicable to DoD acquisitions of commercially developed systems, equipment and components. Before acquiring Commercial drawings

(Continued on Page 2)

**8. APPROVAL LIMITATION**

**9a. APPLICABLE FORMS**

**9b. AMSC NUMBER**

D4819

**10. PREPARATION INSTRUCTIONS**

10.1 Reference Documents. The applicable issue of the documents cited herein, including their approval dates and the dates of applicable amendments and revisions, shall be as cited in the contract or purchase order.

10.2 General. Commercial drawings and associated lists shall meet the requirements of MIL-T-31000 and the DD Form 2554-4 incorporated into the contract or purchase order.

10.3 Format. Commercial drawings and associated lists shall be in the contractor's or original supplier's format.

10.4 Content. Commercial drawings and associated lists shall provide sufficient information to permit Government maintenance, modification, and engineering analysis of commercially developed items.

**11. DISTRIBUTION STATEMENT**

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

Block 7. APPLICATION/INTERRELATIONSHIP (Continued)

7.2 (Cont'd) and associated lists, the acquiring activity should evaluate the contractor's drawing package and engineering documentation practices to determine if the data will be satisfactory for the Government's intended uses.

7.3 This DID should be tailored to the minimum data requirements of the applicable contract or purchase order.

7.4 This DID supersedes DI-CMAN-80784.

7.5 This DID is related to DI-DRPR-81000, DI-DRPR-81001, and DI-DRPR-81002.

# DATA ITEM DESCRIPTION

Form Approved  
OMB No. 0704-0188

1. TITLE Supplemental Data for Commercial Off-the-Shelf (COTS) Manuals		2. IDENTIFICATION NUMBER DI-TMSS-80528/T	
3. DESCRIPTION/PURPOSE 3.1 Supplemental Data for Commercial Off-the-Shelf Manuals provide supplemental data applicable to Commercial Off-the-Shelf (COTS) manuals. 3.2 The supplemental data augment the COTS manual to make it fully acceptable for use in a Government commercial or military environment.			
4. APPROVAL DATE (YYMMDD) 880201	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) TM	5a. DTIC REQUIRED	5a. GIDEP REQUIRED
7. APPLICATION/INTERRELATIONSHIP 7.1 This Data Item Description (DID) is applicable when COTS manuals have been evaluated in accordance with MIL-M-7298 and are basically acceptable; but supplemental data are required to make them fully acceptable. 7.2 This DID is not to be used when the COTS manuals are not basically acceptable in accordance with MIL-M-7298 or to acquire COTS manuals. 7.3 This DID supersedes DI-TMSS-80385 and is related to "Commercial Off-the-Shelf Manuals", DI-TMSS-80527.			
8. APPROVAL LIMITATION		9a. APPLICABLE FORMS	9b. AMSC NUMBER A4321
10. PREPARATION INSTRUCTIONS 10.1 <u>Reference Documents.</u> The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract. <del>10.2 <u>Format and Content.</u> The format and content of the Supplemental Data for Commercial Off-the-Shelf Manuals shall be in accordance with 3.3 of MIL M-7298.</del>			
11. DISTRIBUTION STATEMENT  DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.			

# DATA ITEM DESCRIPTION

Form Approved  
OMB No. 0704-0188

<b>1. TITLE</b> Commercial Off-the-Shelf (COTS) Manuals		<b>2. IDENTIFICATION NUMBER</b> DI-TMSS-80527	
<b>3. DESCRIPTION/PURPOSE</b> 3.1 Commercial Off-the-Shelf (COTS) manuals contain operation, maintenance, parts lists, and other instructions applicable to equipment designed and manufactured for commercial use.  <p style="text-align: center;">(Continued on Page 2)</p>			
<b>4. APPROVAL DATE (YYMMDD)</b> 880201	<b>5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)</b> TM	<b>5a. DTIC REQUIRED</b>	<b>5b. GIDEP REQUIRED</b>
<b>7. APPLICATION/INTERRELATIONSHIP</b> 7.1 This Data Item Description (DID) is applicable when (existing) COTS manuals are acquired in order to evaluate their acceptability for Government use.  7.2 COTS manuals are basically acceptable for Government use when they conform to the applicable requirements of 3.1 and 3.2 of MIL-M-7298.  <p style="text-align: center;">(Continued on Page 2)</p>			
<b>8. APPROVAL LIMITATION</b>	<b>9a. APPLICABLE FORMS</b>	<b>9b. AMSC NUMBER</b> A4320	
<b>10. PREPARATION INSTRUCTIONS</b> 10.1 <u>Reference Documents</u> . The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.  10.2 <u>Format</u> . The style and format of Commercial Off-the-Shelf COTS manuals shall be in accordance with 3.1.1 of MIL-M-7298.  10.3 <u>Content</u> . The content of Commercial Off-the-Shelf COTS manuals shall be in accordance with 3.2 of MIL-M-7298.			
<b>11. DISTRIBUTION STATEMENT</b>  DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.			





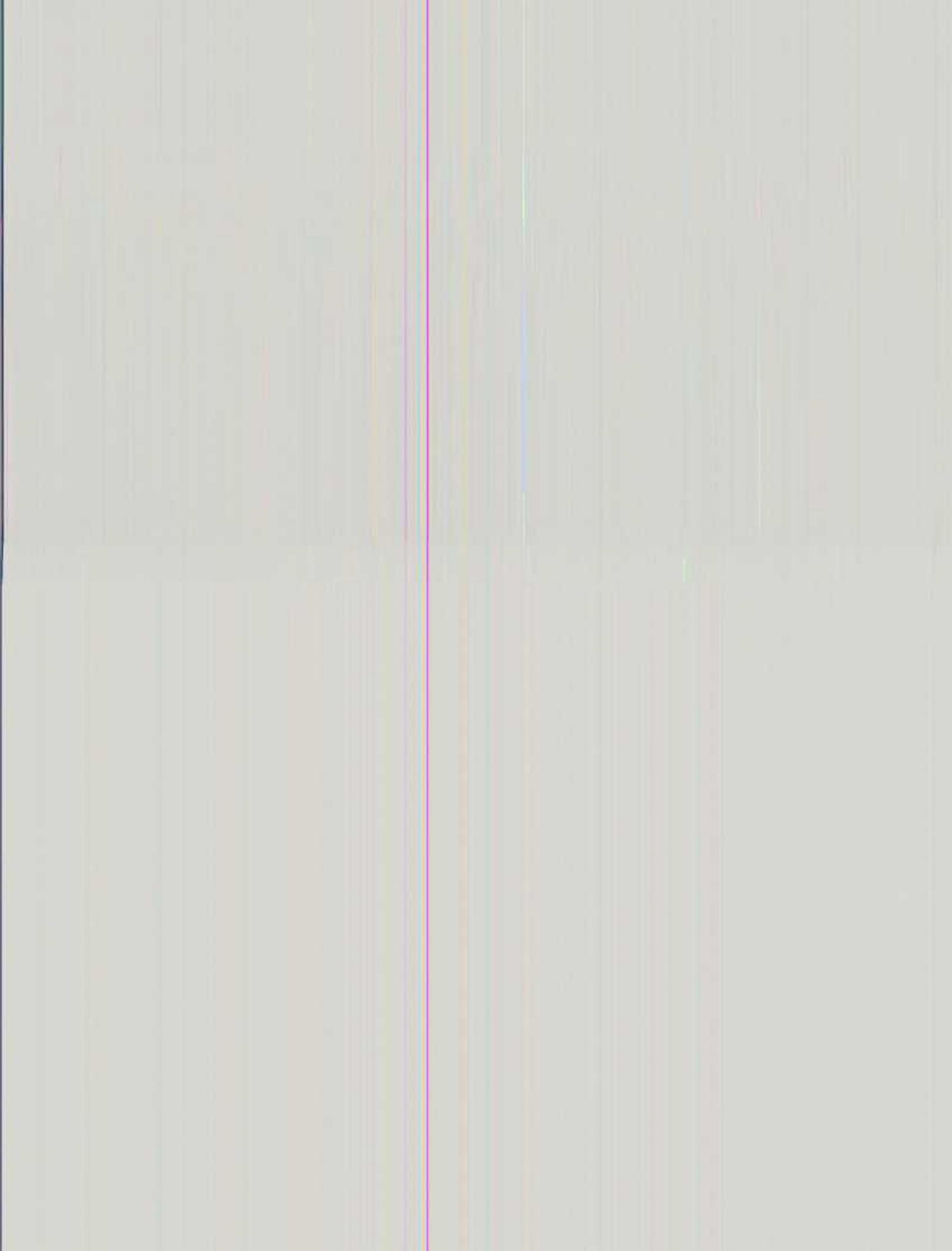












DI-TMSS-80527/T

3. DESCRIPTION/PURPOSE (Continued)

3.2 The Government uses COTS manuals to support commercial equipment in a Government commercial or military environment.

7. APPLICATION/INTERRELATIONSHIP (Continued)

7.3 Basically acceptable COTS manuals may require augmentation by preparation of supplemental data to make them fully acceptable for Government use.

7.4 This DID is related to "Supplemental Data for Commercial Off-the-Shelf (COTS) Manuals", DI-TMSS-80528.

7.5 This DID supersedes DI-M-4022C, DI-M-6153, and DI-TMSS-80385.

COVER PURCHASE DESCRIPTION  
FOR A  
VERTICAL STORAGE COLUMN (VSC) SYSTEM  
FOR AVIONICS DIRECTORATE (LY)  
AT  
ROBINS AIR FORCE BASE, GEORGIA  
BUILDING 640  
CSN: LRB741

DATE: 21 November 1997

PREPARED BY:

Wendy Johnston  
PROJECT ENGINEER  
78 ABW/XPE

Andrew J. Huser  
REVIEWER  
AFMC-LSO/LOE

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## 1. SCOPE

This Purchase Description (PD) consists of a Cover PD and Appendix A. It establishes the minimum performance, design, fabrication, installation, orientation, and test requirements for a Vertical Storage Column (VSC) System for the Avionics Directorate (LY) in Building 640 at Robins Air Force Base (AFB), Georgia. The work shall be completed in accordance with this Cover PD, Appendix A, and Air Force (AF) Drawing LRB741-01. This PD covers all equipment, materials, and labor necessary to complete installation of the system. It also includes performing tests and making adjustments to the system as well as providing classroom and on-the-job instructions to government personnel.

## 2. APPLICABLE DOCUMENTS

The following documents form a part of this PD to the extent specified herein. The issue in effect on the date the solicitation is issued shall apply. In the event of conflict between the documents referenced herein and the content of this PD, the more stringent requirement shall apply. All equipment provided, as well as all work, shall meet or exceed applicable local and national codes and standards. The contractor shall point out any apparent conflict in documents to the Contracting Officer or Technical Representative (COTR) before taking action on that item, so agreement can be reached on interpretation and/or clarification.

### 2.1. GOVERNMENT DOCUMENTS

Applications for copies of the following documents should be addressed to the Superintendent of Documents, Government Printing Office, Washington DC 20402.

#### FEDERAL SPECIFICATIONS

FF-S-325 Int Amd 3	Shield, Expansion; Nail Expansion; and Nail Drive Screw (Devices, Anchoring, Masonry)
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#### AIR FORCE OCCUPATIONAL SAFETY AND HEALTH (AFOSH)

AFOSH 48-19	Hazardous Noise Program
AFOSH 127-31	Personal Protective Equipment

#### OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS

29 CFR 1910	Occupational Safety and Health
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29 CFR 1926

Standards, (General Industry)

Safety and Health Regulations for  
Construction

AIR FORCE DRAWINGS:

The following drawing is a part of this purchase description.

LRB741-01

AS/RS Installation in Building 640,  
East Annex, Robins AFB, Georgia

2.2. NON-GOVERNMENT DOCUMENTS

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC M016-89 Manual of Steel Construction - Allowable  
Stress Design, Ninth Edition

(Applications for copies shall be addressed to the American  
Institute of Steel Construction, Inc, 1 East Wacker Drive,  
Chicago IL 60601)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI B15.1-84 Safety Standard for Mechanical Power  
Transmission Apparatus, Addenda B15.1A-86

ANSI Z49.1-88 Safety in Welding and Cutting

ANSI B20.1-90 Safety Standard for Conveyors and Related  
Equipment

ANSI B29.1M-86 Precision Power Transmission Roller Chains,  
Attachments, and Sprockets

(Applications for copies shall be addressed to the American  
National Standards Institute, 1430 Broadway, New York, NY 10018)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A123-89 Standard Specification for Zinc (Hot  
REV A Dip Galvanized) Coatings on Iron and  
Steel Products

ASTM A153-82 Standard Specification for Zinc

Coating(Hot-Dip) on Iron and Steel  
Hardware (R 1987)

ASTM A325-91 Standard Specification for High-Strength  
Bolts for Structural Steel Joints

ASTM B633-85 Standard Specification for  
Electrodeposited Coatings of Zinc on Iron  
and Steel

(Applications for copies shall be addressed to the American  
Society for Testing and Materials, 1916 Race Street, Philadelphia  
PA 19103)

ANTI-FRICTION BEARING MANUFACTURERS ASSOCIATION (AFBMA)

AFBMA STD 9-90 Load Ratings and Fatigue Life for  
Ball Bearings

AFBMA STD 11-90 Load Ratings and Fatigue Life for  
Roller Bearings

(Applications for copies shall be addressed to the Anti-Friction  
Bearing Manufacturers Association, Inc., 1101 Connecticut Avenue,  
NW, Suite 700, Washington DC 22036)

AMERICAN WELDING SOCIETY (AWS)

AWS B2.1-84 Welding Procedure and Performance  
Qualification

AWS D1.1-94 Structural Welding Code - Steel

AWS D14.1-91 Welding of Industrial and Mill Cranes and  
Other Material Handling Equipment, Spec for

(Applications for copies shall be addressed to the American  
Welding Society, Inc, 550 NW Lejeune Road, P.O.Box 35140, Miami  
FL 33135)

NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA)

NEMA ICS 1-88 General Standards for Industrial Controls  
and Systems

NEMA ICS 2-88 Standards for Industrial Control Devices,

Controllers, and Assemblies

- NEMA ICS 3-88 Industrial Systems (Rev 3 Oct 87)
- NEMA ICS 6-88 Enclosures for Industrial Controls and Systems
- NEMA 250-85 Enclosures for Electrical Equipment

(Applications for copies shall be addressed to the National Electrical Manufacturers Association, 2101 L Street, NW, Washington DC 20037)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 51B Fire Prevention in Use of Cutting & Welding Processes
- NFPA 70-96 National Electrical Code
- NFPA 255-90 Standard Method of Test of Surface Burning Characteristics of Building Materials

(Applications for copies shall be addressed to the National Fire Protection Association, One Batterymarch Park, P.O. Box 9101, Quincy MA 02269-9101)

SOCIETY OF AUTOMOTIVE ENGINEERS, INC (SAE)

- SAE J429-83 Mechanical and Material Requirements for Externally Threaded Fasteners, Standard

(Applications for copies shall be addressed to the Society of Automotive Engineers, Inc, 400 Commonwealth Drive, Warrendale PA 15906)

3. REQUIREMENTS

3.1. SYSTEM DESCRIPTION

This VSC system is made up of 7 units. Each of these units will be placed as indicated on AF Drawing LRB741-01. Appendix A specifically describes the performance requirements of the VSC units.

### 3.1.1. INSTALLATION PROCEDURES

The installation of the VSC system will require proper coordination so that there will be minimum interference between the contractor and other work in progress. This will be accomplished through coordination between the contractor and the COTR. After schedules are established, any request for change in the schedule must be presented in writing to the COTR, allowing sufficient time for adjustments to be made to effect the change, before such a change can be considered.

The contractor shall provide all necessary parts, tools, permits, licenses, equipment, and labor needed for the installation of the system. The contractor shall also provide on-site project management and project installation supervision to oversee delivery, installation, and testing of the system.

The making of an adequate site investigation will be the responsibility of the contractor. Failure to completely acquaint himself with the nature and location of the work, general and local conditions, character of equipment and facilities needed prior to and during the accomplishment of the work, and all other matters which in any way affect the work or cost thereof under this contract, will not relieve the contractor of responsibility for properly estimating the difficulty or cost for successful performance in accordance with the intent of the contract.

Upon completion of the entire installation, the system shall be tested by the government for conformance to this specification. The system shall be tested in its entirety, during the contractor system check-out test and the government quality conformance test.

The contractor shall modify the existing structure as necessary to accommodate the new system. The modifications shall match existing work and be of comparable quality. The COTR shall approve all modifications before they are implemented.

### 3.2 CHARACTERISTICS

#### 3.2.1 NOISE LEVELS

The contractor shall consider noise levels in the design of the equipment. Hazardous noise shall not exceed 78 decibels A-weighted sound pressure level (dB(A)) for 8 hours in any 24-hour period or equivalent in accordance with AFOSH 48-19. Noise level measurements will be taken at a three-foot distance from the equipment producing the noise and at a level of five feet above the ground/floor in all locations in which personnel may be

present during normal operations. If noise levels of installed equipment exceed this requirement, then noise shall be reduced through engineering controls; i.e., insulation, dampening, and isolation.

### 3.2.2. ELECTRICAL CHARACTERISTICS

#### 3.2.2.1. POWER SOURCE

The government will provide electrical power outlets as required by the contractor. The contractor shall provide the government with a list/drawing of the electrical requirements required to provide proper power distribution to the proposed VSC system with his initial bid for the project.

#### 3.2.2.2. INSTALLATION CODE

The installation of the system shall, at a minimum, conform to applicable rules of NFPA 70-96 (the National Electrical Code).

#### 3.2.2.3. CONDUIT

All wiring installed by the contractor shall be encased in rigid metal conduit conforming to Article 346 of NFPA 70-96; electrical metallic tubing conforming to Article 348 of NFPA 70-96; or flexible metallic tubing conforming to Article 349 of NFPA 70-96. If conduit/cables are dropped from overhead, they shall be enclosed in a power pole. No conduit/cable shall run on top of the floor/ground. Exposed conduit shall be installed parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceilings. Changes in direction of conduit shall be made with symmetrical bends or cast metal fittings. Field made bends shall be made with the proper hickey or conduit bending machine. Crushed or deformed conduit shall not be accepted. Conduit shall be rigidly fastened in place at intervals of not more than 10 feet. Conduit set screw connectors shall not be acceptable.

#### 3.2.2.4. GROUNDING

Each component of the system shall be properly grounded to ensure safe working conditions. This shall include adequate ground against static charges that may be generated. Grounding shall conform to Article 250 of NFPA 70-96.

#### 3.2.2.5. WIRING

Conductors shall be copper. Wire connectors of insulating material or solderless pressure connectors properly taped shall be utilized for all splices where possible. Soldered mechanical

joints shall not be accepted. All wiring shall be color coded, uniquely tagged, or uniquely numbered for identification. Marking shall be applied in such a manner so as to facilitate tracing of wires (circuits) during repairs and/or maintenance. Wiring and wiring installation shall conform to Article 300 of NFPA 70-96. Control wire sizes shall be a minimum Number 12 AWG. Wiring and wiring installation shall conform to Article 300 of NFPA 70-96. All circuits shall be checked for grounds or poor connections prior to being energized.

#### 3.2.2.6. OVERCURRENT PROTECTION

The power distribution panel shall be equipped with circuit breakers and fuses in compliance with Article 240 of NFPA 70-96. Motors shall be equipped with disconnect switches and thermal overload devices. All local disconnects shall be within the sight of all motors/controllers.

#### 3.2.2.7. ENVIRONMENTAL PROTECTION

All enclosures and controls shall be in accordance with NEMA ICS 6-88, Type 12.

#### 3.2.2.8. PROTECTION FROM MECHANICAL DAMAGE

No push button, control panel, conduit, shielded cable, wire, or electrical device that the contractor installs shall be installed so as to expose it to mechanical damage during normal use. If an electrical device, which includes photoeyes, is exposed to damage by material or personnel, then it shall be guarded.

### 3.3. DESIGN AND FABRICATION

#### 3.3.1. DESIGN CRITERIA

##### 3.3.1.1. RELIABILITY/AVAILABILITY

Each component of the system shall demonstrate a mean time between failure (MTBF) of at least 120 hours and an availability greater than or equal to 97%. A failure is defined as any interruption that causes corrective maintenance to be made to the system. Corrective maintenance is defined as any resetting/adjusting/repairing of any component of the system that takes longer than 5 minutes to perform. The operating time will be based actual hours read from the hour meter. The Mean Time to Repair (MTTR) shall be 4 hours. The following formulas will be used to calculate MTBF, Mean Time to Repair (MTTR), and availability.

$$\text{MTBF} = \text{Operating Time} / \text{Total Failures}$$

MTTR = Total Repair Time / Total Failures

Availability = MTBF / (MTBF + MTTR)

3.3.1.2. MAINTAINABILITY

The system shall be designed, fabricated, and installed to facilitate maintainability and ensure a minimum service life of 15 years. The design shall provide for modular assembly of components and subassemblies where feasible to permit repair or replacement of parts in a minimum of time. This shall include plug-in electrical connections for major electrical subassemblies.

3.3.1.3. ENVIRONMENTAL CONDITIONS

The system shall operate in a temperature range of 60 to 100 degrees Fahrenheit with up to 95 percent relative humidity. The system shall be constructed to operate in a climate controlled industrial processing environment. The word operate shall mean that the system and equipment shall run satisfactorily without any loss of capacity, capability, or reliability required by this PD.

3.3.1.4. STANDARD, COMMERCIAL COMPONENTS

Standard, commercial components which have been for sale and available for purchase to the general public or government agencies for at least one year shall be used to the maximum extent possible. If requested by the COTR, the contractor shall furnish evidence that equipment of approximately the same design as that proposed to be installed has been tested and successfully operated. Where two or more units of the same type of equipment are required, these units shall be products of the same manufacturer. All equipment and materials shall be new.

3.3.1.5. STANDARDIZATION

Mechanical and electrical interchangeability shall exist between like assemblies, subassemblies, and replaceable parts regardless of the manufacturer's supplier. Interchangeability does not necessarily mean complete identity, but requires that a substitution of such like-assemblies and replacement parts be easily effected without physical or electrical modifications, including cabling, wiring, and mounting.

3.3.1.6. SPECIAL TOOLS

Maintenance shall be performed with general purpose tools and equipment either listed in the Federal Stock Catalog or available commercially. Use of special tools shall be minimized and, where required for operational adjustments, shall be securely mounted within the equipment in a readily accessible location. The contractor shall furnish any special tools or diagnostic equipment required, in quantities of one for each unit furnished. Standard tools, fittings, lubricants, and fluids shall be used to the maximum practicable extent.

#### 3.3.1.7. ACCESSIBILITY

Structural members shall not prevent access to or removal of components for repair or replacement. Equipment shall be designed for rapid and easy removal as well as replacement or repair of malfunctioning units, by one individual where feasible. Mechanical components shall be designed to permit lubrication of components without disassembly.

#### 3.3.1.8. STRUCTURAL REQUIREMENTS

The system shall be designed and constructed in accordance with state and local codes. The system shall also be designed to withstand seismic zone 1 conditions.

#### 3.3.1.9. VERIFICATION OF DIMENSIONS

The contractor shall become familiar with all details of the work, verify all dimensions in the field, and shall advise the COTR of any discrepancy before performing the work.

#### 3.3.1.10. OZONE DEPLETING SUBSTANCES (ODS)

The contractor shall not use or prescribe to the greatest extent possible any ODS in the installation and maintenance of the system. ODS includes, but is not limited to aerosol cans, certain cleaning solvents, and certain lubricants. If there is a question pertaining to the applicability of a substance, submit the name of the substance to the Contracting Officer for verification.

#### 3.3.1.11. SAFETY

The contractor shall consider the safety of personnel and equipment when designing and installing the system. Safety provisions shall be incorporated to the maximum extent possible. When possible, hazards shall be eliminated through design. When this is not possible, safety devices such as guards, interlocks, and barriers shall be installed. If this does not eliminate the hazard, warning devices such as warning signs, indicator lights,

and audio devices shall be installed. Safety requirements shall include, but are not limited to, the following:

3.3.1.11.1. OSHA

The system installation practices and completed system shall meet all applicable requirements of OSHA 29 CFR 1910 and OSHA 29 CFR 1926.

3.3.1.11.2. MOVING PARTS

Moving parts shall be provided with guards to protect personnel from possible injury. Guards shall be in accordance with ANSI B15.1-84.

3.3.1.11.3. PLACARDS

The contractor shall be responsible for informing the COTR of areas where hazards may exist (e.g., high voltage, pinch points, tripping hazards) and of operating limits (e.g., capacity, speed, incline) of the system. The contractor shall also be responsible for the fabrication of the placards that shall be mounted in conspicuous locations adjacent to these areas. The placards shall be made of a durable material as approved by the COTR.

3.3.1.11.4. FAIL-SAFE CONTROLS

No controls shall cause false operation or endanger personnel if a part should fail. No damage or destruction of any component shall result from reduced voltage or complete loss of power.

3.3.1.11.5. CLEAN-UP

The contractor shall, at all times, keep the work area, including storage areas, free from the accumulation of waste materials and dust which would cause a hazard or nuisance to others. The approved methods of stabilization for dust control are sprinkling, chemical treatment (non-ODS) or a similar method approved by the COTR. If there is a cutting process, the solution shall be vacuumed up during the process to prevent dust pollution and water damage. Before leaving the site, the contractor shall remove all rubbish, tools, equipment, and materials that are not the property of the government. At the completion of the installation/test, the contractor shall leave the site in a clean, neat and orderly condition satisfactory to the COTR. Waste will be removed daily from the site and shall not be allowed to accumulate to the extent that it becomes a safety or fire hazard. It shall be the contractor's

responsibility to dispose of waste in accordance with all applicable federal, state, county and municipal codes.

#### 3.3.1.12. HUMAN ENGINEERING

The system design and layout shall incorporate design criteria so that optimal operator/machine interface is attained. The vehicle driver compartment shall not cause the operator to assume an unusual or discomfoting posture, or cause any unusual fatigue or physical discomfort over the course of an 8-hour work shift.

#### 3.3.2. MATERIALS

##### 3.3.2.1. STEEL

The structural steel components shall meet all design property requirements of AISC M016-89.

##### 3.3.2.2. MECHANICAL FASTENING DEVICES

All threaded connectors of diameter greater than 7/16 inch shall be either A325 bolts conforming to ASTM A325 or SAE Grade 5 bolts conforming to SAE J429. All structural joints shall be in accordance with AISC M016-89. Bolt hole diameters shall not exceed nominal bolt diameters by more than 1/16 inch. All bolt holes shall be free of burrs, pins, or slivers. Bolts shall extend a minimum of two threads beyond the nuts. All nuts, bolts, and other threaded fasteners shall be plated or galvanized to prevent corrosion. All threaded fasteners shall utilize plated flat and lock washers as required.

##### 3.3.2.3. ANCHORS

Anchors shall, at a minimum, meet the requirements of FF-S-325. Anchors shall be either the drop-in expansion type or wedge type. All anchors shall be sufficient in size to withstand the calculated pullout and shear forces experienced by the equipment. Minimum anchor sizes shall be 1/2-inch in diameter. Anchor lengths shall be long enough to assure that the manufacturer's minimum embedment in concrete is maintained and shall be installed properly to maintain the required minimum concrete embedment. Anchors shall be spaced so that the manufacturer's recommended minimum allowable spacing between anchors is maintained and the recommended minimum allowable edge distance is maintained. All anchors shall be torqued to the manufacturer's recommended installation torque. When required, adhesive anchors may be used; subject to approval by the COTR. Concrete anchors shall be of the expanding type, constructed of either steel or lead, and shall be pre-threaded internally with SAE threads to match bolts used to secure materials to concrete.

### 3.3.3. PROTECTIVE COATINGS

All system component surfaces shall be protected from corrosion by painting, plating, or galvanizing.

#### 3.3.3.1. PAINING

Metal surfaces which are not galvanized or plated shall be cleaned, treated, and painted to protect against rust, corrosion, and deterioration. The first coat of paint or primer shall be applied to a dry clean surface as soon as practicable after cleaning and treating the metal. The primer shall not interfere with the application and adhesion of subsequent coats. Paint shall last the service life of the equipment. Paint shall be lead and chromate free and meet air pollution requirements for solvent emissions. When several standard colors are available, a color selection chart shall be submitted to the COTR with the shop drawings for selection. The finish coat shall be a smooth, even surface, free from runs, sags, and defects when dry. Welded surfaces shall be cleaned and painted after the welding process is complete. Prepainted accessories, as well as surfaces not requiring paint, shall be protected from overspray.

#### 3.3.3.2. PLATING

All surfaces to be plated shall be thoroughly cleaned to provide a surface free of mill scale, oil, grease, dirt, rust, and any other foreign material prior to being plated. Plating at a minimum shall comply with ASTM B633-85, Service Condition 1, Type I unless otherwise specified.

#### 3.3.3.3. GALVANIZING

All metal surfaces to be galvanized shall be thoroughly cleaned to provide smooth surfaces and shall comply with ASTM A153-82 and ASTM A123-89.

#### 3.3.4. WELDING

Dimensional tolerances for welded construction, details of welds, and quality of welds shall be in accordance with the applicable requirements of AWS B2.1-84, AWS D1.1-94, and AWS D14.1-91. The government reserves the right to perform supplemental nondestructive and destructive tests to determine compliance. Safety precautions during welding shall conform to ANSI Z49.1-88.

#### 3.3.4.1. WELDING PROCEDURE QUALIFICATION

Qualification of welding procedures shall conform to the applicable requirements of AWS B2.1-84, AWS D1.1-94, and AWS D14.1-91. The government reserves the right to request copies of Welding Procedure Specifications for any welding procedure followed in the fabrication of this system.

#### 3.3.4.2. WELDER PERFORMANCE QUALIFICATION

Each welder, welding operator, and tack welder assigned to work on this system shall be qualified in accordance with the applicable requirements of AWS B2.1-84, AWS D1.1-94, and AWS D14.1-91. The government reserves the right to request certification (Performance Qualification Test Record) that each welder, welding operator, or tack welder is qualified as specified.

#### 3.3.4.3. FIRE PROTECTION

All welding, cutting, brazing, and burning operations shall be accomplished in strict compliance with the requirements outlined in NFPA Standard 51B. Prior to starting any welding, cutting, brazing, or burning operations, the contractor shall obtain a permit (USAF Welding, Cutting, and Brazing, AF Form 592). This permit can be obtained by contacting the Robins AFB Fire Department at (912)926-2145 at least 48 hours in advance. (The advance notice will allow the Fire Department time to cut off the smoke alarms in the area prior to any welding, cutting, brazing, or burning operations.) A copy of each permit will be retained at the work site until the work has been completed. Operations that produce flying, dropping slag, metal or embers shall have sufficient non-combustible materials and fire blankets on site to protect against fire damage or personal injury. In addition, the contractor shall provide a minimum of 2 portable fire extinguishers at the work site until the work has been completed. Extinguishers shall meet a rating of 4A-40BC. At the close of their operation, the contractor shall make a thorough inspection of each building in which he/she has performed work. This inspection shall ensure that all necessary safeguards relative to potential fire hazards are in effect and operational. The contractor shall familiarize themselves and their personnel on the location of all telephones needed for fire reporting. The contractor shall maintain good housekeeping practices to reduce the risk of fire, damage, and/or personal injury. All scrap materials, rubbish, and refuse shall be removed daily from in and around the building and shall not be permitted to be strewn on adjacent property. Flammable/combustible materials used inside the building shall be kept to a minimum and removed from the

building during unused periods. Storage of flammable/combustible materials shall not be permitted inside the building.

### 3.3.5. CUTTING

All edges produced by oxygen-flame cutting or any cutting operation shall be finished by grinding (or other method approved by the COTR) to a surface finish equivalent to that of adjacent surfaces. Sharp edges shall not be acceptable.

### 3.3.6. COORDINATION

The contractor shall obtain approval from the Robins AFB Ground Safety, Fire, Civil Engineering, Environmental Management, and Bioenvironmental organizations before making any modifications to the existing structure to accommodate the new system. The modifications shall match existing work and shall be of comparable quality. The COTR shall also approve all modifications before they are made.

### 3.3.7. NAMEPLATES

The contractor shall provide and install one corrosion resistant metal nameplate for each unit in the VSC system. Nameplates shall be located in a visible and safe location. Nameplates shall last the life of the equipment and shall be capable of withstanding local environmental conditions. Nameplates shall be stamped, engraved, or etched in a print type not less than 1/8-inch tall. No nameplate or product marking shall be installed until all touch-up painting has been completed. The nameplates shall clearly display the following headings and corresponding information:

Type of Equipment:  
Name of Manufacturer:  
Model Number:  
Contract Number:  
Serial Number:  
Capacity:  
Weight:  
Manufacture Date (Month/Year):  
"Property of US Government"

### 3.3.8. PRECEDENCE

Where local codes and standards conflict with the contents of this PD, the more stringent requirement shall prevail. The contractor shall notify the COTR of each instance of conflicting or apparently conflicting requirements before proceeding with

work, manufacture, or installation of anything affected by such a conflict.

### 3.4. DOCUMENTATION

The contractor shall provide documentation (data) in accordance with the Contract Data Requirements Lists (CDRL). Where possible, the contractor shall print on recycled paper. Also, where possible, the contractor shall not require the use of any ozone depleting substance in any submittal.

### 3.5. ORIENTATION

The contractor shall provide technical services and materials to orient government personnel. Orientation shall be accomplished by fully qualified contractor personnel who are knowledgeable of the system. Courses shall be combined in accordance with the contractor's standard commercial training courses, where applicable, provided all aspects of training are included. Orientation shall be provided at Robins AFB, Georgia. The contractor shall provide each attendee with a certificate indicating successful completion of the orientation. All orientation shall be completed prior to the start of the quality conformance test.

#### 3.5.1. SYSTEM OPERATOR ORIENTATION

This orientation shall provide instructions in the overall operational functions that are performed by the system operators. Instructions shall include the operation of all the system components. Instruction shall include operation of all components of the system. Upon completion of this course, the students shall be able to operate all components of the system, analyze operator error messages, and reset the system as appropriate. Operators shall be able to perform these functions using only the reference manuals provided with the system relative to operations. An estimated 10 students with possibly no experience will attend. Course length shall be of adequate length to properly acquaint operators to the system and must be a minimum of eight hours or as approved by the COTR.

##### 3.5.1.1. SYSTEM OPERATOR CLASSROOM INSTRUCTIONS

The classroom phase shall include instructions in the operational requirements of the installed system. Classroom instructions shall include a briefing and orientation on the use of the operation manuals supplied by the contractor. Classroom instructions shall be developed so that it can be placed on videotape.

### 3.5.1.2. SYSTEM OPERATOR HANDS-ON INSTRUCTIONS

The hands on phase shall include actual operation of the system under the supervision and instruction of the contractor.

### 3.5.2. MAINTENANCE ORIENTATION

This orientation shall provide instructions in corrective and preventive maintenance of the system delivered. Instruction shall include installation and adjustment of all system components. Upon completion of this orientation, students shall be able to install, adjust, and maintain equipment stated using only the maintenance reference manual delivered. The maintenance course shall emphasize safety practices. An estimated 7 students with some prior maintenance experience will attend this course. Course length shall be of adequate length to properly acquaint operators to the system and must be a minimum of four hours or as approved by the COTR.

#### 3.5.2.1. MAINTENANCE CLASSROOM INSTRUCTION

The classroom phase shall include instruction in the maintenance requirements of the installed system. Classroom instruction shall include a briefing and orientation on the use of the maintenance manuals supplied by the contractor. Safety practices shall be emphasized. Classroom instruction shall be developed so that it can be placed on videotape.

#### 3.5.2.2. MAINTENANCE HANDS-ON INSTRUCTION

The hands-on phase shall include actual field instruction in the maintenance requirements of the components of the installed system.

### 3.5.3. DATABASE MANAGEMENT COURSE

This course shall provide instruction in the management and operation of all parts of the database system provided with the system. Upon completion of this course, students shall be able to make alterations to the database (specifically, the addition/deletion of fields), program the database, and manage the database system. The class shall be conducted prior to final acceptance of the system. An estimated 4 students with some prior database management experience will attend this course.

## 4. QUALITY ASSURANCE PROVISIONS

#### 4.1. GENERAL

The COTR shall monitor the installation of the system. For all inspections and tests, the contractor shall provide all test apparatus (i.e., tape measures, levels, calipers, micrometers, stop watches). All test apparatus will be returned to contractor upon completion of all tests. All test loads will be provided by the government. The contractor shall be responsible for loading and unloading all test loads and performing all inspections and tests. The contractor shall provide a knowledgeable and authoritative representative on site during the entire acceptance tests.

The COTR shall have the right to stop any work that could result in an unacceptable system. The contractor shall not resume work on that portion of the system until the unacceptable practice has been replaced with an acceptable practice, approved by the COTR. The system delivery dates shall not be extended because of work stoppages caused by unacceptable practices and/or test failures.

#### 4.2. ACCEPTANCE TESTS

Upon completion of the installation of the system, the contractor shall test the system in the presence of the COTR. The system is then tested, to ensure that it complies with this PD. Three tests must be successfully completed prior to the government accepting the system. These tests are the system checkout test, the quality conformance test, and the reliability demonstration test.

##### 4.2.1. SYSTEM CHECKOUT TEST

Upon completion of installation, the system shall be checked out by the contractor using loads of the type specified in the system purchase description. The contractor shall inspect the system to assure that the system meets all the requirements of 4.3.1. The contractor shall also test the system in accordance with the test defined in 4.3.2. All inspections and tests shall be repeated until all modifications and/or adjustments are complete and the system passes all inspections and tests. The contractor shall submit to the Contracting Officer written certification that the system has passed the requirements of this paragraph. The COTR will schedule the quality conformance test to start within 10 days following the receipt of the written certification from the contractor.

##### 4.2.2. QUALITY CONFORMANCE TEST

As part of the quality conformance test, the contractor shall provide written certification that the requirements listed in

4.3.3 have been met. This certification is required on or before the start of the quality conformance test. The contractor, in the presence of the COTR, shall inspect the system to confirm that the system meets all the requirements of 4.3.1. The contractor, in the presence of the COTR, shall also test the system in accordance with the test defined in 4.3.2. Upon successful completion of all tests and inspections and the receipt of all certifications, the reliability demonstration shall start.

#### 4.2.3. RELIABILITY DEMONSTRATION TEST

After successful completion of the quality conformance test, each component of the system shall demonstrate a reliability and availability greater than that listed in the reliability/availability table in 3.3.1.1. In addition, all static components shall demonstrate compliance with the requirements of the PD. The test period shall be the 30 calendar days immediately following the successful completion of the quality conformance test. If the system does not demonstrate the required reliability and availability or compliance with the PD, the test will be restarted from the beginning after the contractor has taken corrective action. The contractor shall be allowed to restart the reliability demonstration test a maximum of 2 times. If the system fails to pass the reliability demonstration within 3 attempts, then the system shall be rejected.

#### 4.3. INSPECTIONS, TESTS, AND CERTIFICATIONS

This section defines all inspections and tests that must be completed as part of the system checkout test and repeated at the quality conformance test. This section also includes a list of all certifications that must be received from the contractor on or before the start of the quality conformance test. The contractor may add to this list, or question any requirement, by sending a letter to the Contracting Officer prior to the acceptance tests. The inclusion of a test or reference to a section in this PD in no way relieves the contractor from meeting any other portion of the PD which also bears on the same or another subject. Likewise, inclusion of any test or inspection herein does not relieve the contractor from the responsibility of being asked or required to demonstrate that some other area of the specifications of the PD are met by the same or another portion of the system. The COTR will classify all deficiencies encountered into one of the defects classification listed below. Any critical or major defect found shall be cause for rejection of the system. Any combination of two or more minor defects shall leave the rejection of the system at the discretion of the COTR.

- Critical Defect - A defect that judgment and experience indicate is likely to result in hazardous or unsafe conditions for individuals using, maintaining, working near, or depending upon the equipment.
- Major Defect - A defect other than critical, that is likely to result in failure, or reduce materially the system for its intended purpose.
- Minor Defect - A defect that is not likely to reduce materially the usability of the system for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the system.

#### 4.3.1. INSPECTIONS

The system shall be inspected to verify that it meets all the requirements of sections 1, 2, and 3 of the cover purchase description (and associated appendices, if applicable). These inspections shall be completed as part of the system checkout test and again as a part of the quality conformance test.

#### 4.3.2. TESTS

The tests in associated appendices shall be performed on the system as part of the system checkout test and again as a part of the quality conformance test.

#### 4.3.3. CERTIFICATIONS

The contractor shall provide certification that the following requirements (and the certification requirements of associated appendices) have been met in accordance with the Contract Data Requirements List.

1. The installation conforms to applicable rules of NFPA 70-96. (Paragraph 3.3.2.2.)
2. The system was designed, fabricated, and installed to facilitate maintainability and ensure a minimum service life of 15 years. (Paragraph 3.3.1.2.)
3. The system was designed to withstand seismic zone 1 conditions. (Paragraph 3.3.1.8.)
4. The system installation practices and completed system meet all applicable requirements of OSHA 29 CFR 1910 and OSHA 29 CFR 1926. (Paragraph 3.3.1.11.1.)

5. Guards are in accordance with ANSI B15.1-84. (Paragraph 3.3.1.11.2.)
6. The system design and layout incorporated design criteria as specified in MIL-STD-1472D so that optimal operator/machine interface is attained. (Paragraph 3.3.1.12.)
7. The structural steel components meet all design property requirements of AISC M016-89. (Paragraph 3.3.2.1.)
8. All structural joints are in accordance with AISC M016-89. (Paragraph 3.3.2.2.)
9. Anchors meet the requirements of FF-S-325. (Paragraph 3.3.2.3.)
10. Plating complies with ASTM B633-85, Service Condition 1, Type I. (Paragraph 3.3.3.2.)
11. All metal surfaces to be galvanized were thoroughly cleaned to provide smooth surfaces and comply with ASTM A153-82 and ASTM A123-89. (Paragraph 3.3.3.3.)
12. Dimensional tolerances for welded construction, details of welds, and quality of welds are in accordance with the applicable requirements of AWS B2.1-84, AWS D1.1-91 and AWS D14.1-94. (Paragraph 3.3.4.)
13. Each welder, welding operator, and tack welder assigned to work on this system was qualified in accordance with the applicable requirements of AWS B2.1-84, AWS D1.1-91, and AWS D14.1-94. (Paragraph 3.3.4.2.)

#### 4.3.4 ACCEPTANCE

The acceptance of the system shall be made by the COTR after the contractor has fully demonstrated and tested the system as specified in Section 4.3 and the system meets all other requirements in this PD. In the event that the system fails to pass and gain final acceptance, the contractor shall remove his equipment from the facility and restore the facility to its pre-installation condition. This shall be done at no cost to the government.

APPENDIX A

FOR

VERTICAL STORAGE COLUMNS (VSC)

FOR AVIONICS DIRECTORATE (LY)

AT

ROBINS AIR FORCE BASE, GEORGIA

BUILDING 640

CSN: LRB741

DATE: 21 November 1997

PREPARED BY:

Wendy Johnston

PROJECT ENGINEER  
78 ABW/XPE

Andrew J. Huser

REVIEWER  
AFMC-LSO/LOE

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## 1. SCOPE

### 1.1. GENERAL SCOPE

This appendix establishes the minimum performance, design, fabrication, installation, and test requirements for 7 vertical storage columns for the Avionics Directorate (LY), Building 640 at Robins Air Force Base (AFB), Georgia. The work shall be completed in accordance with this appendix, the Cover Purchase Description (PD), and Air Force (AF) Drawings LRB741-01. This appendix covers all equipment, materials, and labor necessary to complete installation of the system.

### 1.2. DEFINITIONS

- Extractor - A fabricated metal structure attached to lift chains used to insert, extract and transport trays between storage locations and the pick window.
- Tray live load capacity - Actual amount of load supported by a tray, not including the weight of the tray.
- Tray - A container in which items are stored.
- Unit - The vertical storage column.
- Depth - Measurement from front to back when looking at the front of the unit.
- Storage positions - The number of tray storage areas available within a vertical storage column.
- Width - Measurement from side to side when looking at the front of the unit.

## 2. APPLICABLE DOCUMENTS

Applicable documents shall be in accordance with Section 2 of the Cover PD.

## 3. REQUIREMENTS

### 3.1 SYSTEM DESCRIPTION

The contractor shall provide 7 vertical storage columns which shall store and retrieve a wide range of small and medium sized parts which will primarily be a combination of cables, cable connectors, and electronic parts. Parts shall be retrieved

through interface with an inventory database system by entering the part number, stock number, or the job number into the database or manually by entering the location identifier into the keypad on the unit. This identifier shall correspond to the tray markings specified in this appendix. Each vertical storage column shall retrieve trays independently of the other vertical storage units and shall consist of the following:

- a. Extractor
- b. Trays
- c. Storage containers and/or dividers
- d. Storage locations
- e. Pick window
- f. Controls
- g. Conduit, wiring, mechanical fasteners and all other items required to install an operational vertical storage column system.

### 3.2. CHARACTERISTICS

#### 3.2.1. UNIT DIMENSIONS

The dimensions of each vertical storage column shall be a minimum of 9 feet deep and a maximum of 5 feet 6 inches wide as shown on AF Drawing LRB741-01. Depth shall not include the work counter. The contractor shall provide vertical columns that are a minimum of 14 feet high, but no higher than 14.5 feet high.

#### 3.2.2. STRUCTURE

Each vertical storage column shall have a steel framework which supports the fully loaded system without the use of the enclosure panels. Each vertical storage column shall be securely anchored to the floor in a manner that unit distortion will be minimized. Each vertical storage column shall be designed such that the weight of a fully loaded unit shall be distributed over the warehouse floor with a maximum live load capacity of 375 pounds per square foot.

#### 3.2.3. DEFORMATION

No vertical storage column structural member shall exhibit elastic deformation greater than 0.50 percent of the distance between the ends of the member when loaded to capacity. No portion of the vertical storage column shall exhibit permanent deformation.

#### 3.2.4. STORAGE LOCATIONS

Metal storage locations shall be used to store trays. The storage locations shall be adjustable on a maximum of 3 inch centers. The storage locations shall be adjustable with only the use of simple hand tools. The storage locations shall enable safe storage of trays loaded to maximum capacity without permanent deformation of the storage location materials. The contractor shall maximize the number of storage levels within the vertical storage units.

#### 3.2.5. TRAYS

##### 3.2.5.1. TRAY QUANTITY

Each vertical storage column shall have enough trays to provide a minimum of 25 storage positions.

##### 3.2.5.2. TRAY CONSTRUCTION

All trays shall be solid to provide continuous support for the specified rated load. All trays shall have a lip to prevent items or containers from accidentally sliding over the edge of the tray. All trays shall be constructed to be equipped with metal dividers to divide property stored within the tray.

##### 3.2.5.3. TRAY DIMENSIONS

The minimum usable depth of each tray shall be 30 inches. The minimum usable width of each tray shall be 50 inches. Each tray shall have a lip of minimum height of 1 inch and a maximum height of 3 inches. The lip shall enclose all four sides of the tray.

##### 3.2.5.4. TRAY CAPACITY

Each storage level shall have a minimum live load capacity of 500 pounds without exhibiting any permanent deformation.

##### 3.2.5.5. TRAY MARKINGS

Each tray shall be marked with its associated number beginning with number "1" and progressing through all the trays of the vertical storage column. The number shall be contrasting to the

tray color and shall be located in a position which is visible to the operator, on a fully loaded tray. The labels shall be located such that normal operations do not damage the labels. The numbers shall be permanently affixed to the trays.

#### 3.2.5.6. TRAY DIVIDERS

Metal dividers shall be provided for a minimum of 50 percent of the trays provided. (For example, if 25 trays are provided for each unit, that equates to a total of 175 total trays provided. Enough dividers must be provided to equip at least 88 trays with metal dividers.) At least 4 dividers shall be provided that span the width of the trays for each of the trays for which dividers are provided. (Note: The width is the dimension of the tray that is at least 50 inches. If 88 trays are equipped with metal dividers, at least 352 width-wise metal dividers will be provided.) At least 8 dividers shall be provided that span the depth of the trays for each of the trays for which dividers are provided. (Note: The depth is the dimension of the tray that is at least 30 inches. If 88 trays are equipped with metal dividers, at least 704 depth-wise metal dividers will be provided.) The metal dividers will be used to separate property that is being stored directly in the trays. The metal dividers shall be the same height as the lip of the tray and shall be easily inserted and removed from the tray.

#### 3.2.6. EXTRACTOR

The extractor shall be used to insert, extract and transport trays between storage locations and the pick window.

##### 3.2.6.1. EXTRACTOR CHAIN SAFETY FACTOR

Each extractor lift chain shall have a minimum 6-to-1 safety factor based on yield strength.

##### 3.2.6.2. EXTRACTOR TRAY SENSORS

Sensors shall be used to ensure that trays being stored or retrieved are loaded onto or off of the extractor in such a manner that the extractor will not move vertically unless the tray being stored or retrieved is outside of the movement envelope of the extractor.

##### 3.2.6.3. EXTRACTOR LOADING

The extractor shall be capable of supporting the live load capacity of a tray loaded to capacity. Uneven loading shall have no effect on extractor speed or effectiveness.

#### 3.2.6.4. EXTRACTOR FREE FALL

The extractor shall be prevented from falling in a manner such that it or tray contents will be damaged in any event. The prevention of a free fall includes during power failure.

#### 3.2.6.5. EXTRACTOR CALIBRATION

The extractor shall automatically calibrate its location as necessary to ensure continuously accurate storage and retrieval of trays. The extractor shall be easily re-calibrated if the tray locations are changed or if the unit loses electrical power.

#### 3.2.6.6. EXTRACTOR TRAVEL SPEED

The unit shall have a minimum vertical travel speed of 125 feet per minute. The minimum horizontal travel speed shall be 95 feet per minute.

#### 3.2.7. PANELS

##### 3.2.7.1. ENCLOSURE PANELS

Outer surfaces of each vertical storage column shall have bolted solid metal enclosures for security. The enclosures shall be bolted in a manner that permits easy removal for maintenance, shelf adjustment or emergency access. A solid metal enclosure shall be installed to enclose the top of the vertical storage column.

##### 3.2.7.2. MAINTENANCE SERVICE PANEL

A removable or hinged service panel shall provide for maintenance access to operating parts such as motors, brakes, and reducers. The panel shall be equipped with safety interlock switches to prevent the unit from operating when the service panel is open.

##### 3.2.8. MAINTENANCE ACCESS

All parts requiring periodic maintenance shall be easily accessible.

##### 3.2.9. SERVICE LIFE

All equipment furnished shall be new and shall be of high quality to ensure that the completed system is designed to function a minimum of 1,500 hours based on the time registered by the hour meter or that all equipment has a design service life of 10 years or longer.

### 3.2.10. UNIT MARKINGS

Each vertical storage column shall be marked with a letter beginning with the letter "A". The letters shall be placed on the vertical retrieval column face at a position visible and legible to the operator. The letters shall be a contrasting color to the vertical retrieval unit panel color. The letters shall be a minimum 8 inches high and 6 inches wide and shall be permanently affixed to the units.

### 3.2.11. WORK COUNTER

Each vertical retrieval unit shall have a fixed work counter in front of the tray access opening. The counter shall be capable of supporting a minimum 500 pound load. The counter shall be a minimum length no less than the width of the storage trays and have a minimum depth of 12 inches. The counter shall be installed at a nominal height of 38 inches above the floor.

### 3.2.12. DRIVE COMPONENTS

#### 3.2.12.1. MOTORS

Motors shall be of sufficient size for the duty to be performed and shall not exceed their full-rated load when the driven equipment is operating at the specified maximum capacity under the most severe conditions likely to be encountered. All motors shall be designed for continuous duty at ambient temperature, 32 to 100 degrees Fahrenheit. Motors shall be drip proof and shall be designed to operate on electrical power characteristics as they exist at the site. Motors shall have an electronically controlled soft start and stop and shall be equipped with an overload device. Motors shall be located at the bottom of the vertical storage columns to provide safe and easy access for service and maintenance.

#### 3.2.12.2. GEAR REDUCERS

Gear reducers shall not permit oil to leak. The maximum input horsepower rating of the gear reducer shall not be less than the horsepower of the attached drive motor. Motor and reducer frames shall be compatible.

#### 3.2.13. POWER

The vertical storage columns shall operate on power characteristics as detailed in the Cover PD.

#### 3.2.14. CONTROLS

Each vertical storage unit shall have a permanent control cluster that is push button or membrane type. The control cluster shall either be located about the carrier access opening (at a height no higher than 76 inches from the floor) or beside the counter at a location and configuration approved by the COTR. As a minimum, the control cluster shall contain a numeric keypad for inputting a tray address, a button to clear an incorrect tray address, a button to activate movement of the retriever/extractor unit to the desired tray storage location, and an emergency stop button. The control cluster shall have a visual display which shall indicate the current tray number and the next tray to be accessed. Each vertical storage column shall have an "on/off" key lock switch to control each unit's electrical power. A tray shall have the ability to be retrieved directly from the control cluster by entering the tray number.

#### 3.2.15. OBSTRUCTION SENSORS

Sensors shall be mounted on the vertical storage columns at the pick window to stop the movement of the extractor if an object extends through the plane of the tray access opening or the extractor movement area. If this condition occurs, the storage procedure shall be aborted and an error message shall be transmitted audibly to the operator and visually displayed on the control panel.

#### 3.2.16. LOAD HEIGHT SENSORS

Sensors shall be mounted in the pick window to measure the height of a load. This information shall be used by the unit controller to ensure there is adequate height in the storage location to store the load. If there is not adequate height to store the load, the storage procedure shall be aborted and an error message shall be transmitted audibly to the operator and visually displayed on the control panel.

#### 3.2.17. LIGHTING

Each vertical storage column shall have overhead lighting, which shall measure not less than 50 foot-candles at the work counter. The lighting shall be continuous along the length of the work counter.

#### 3.2.18. HOURLY METER

An electrically operated hour meter shall be provided and installed on each vertical storage column to register

cumulatively the duration of operation. The hour meter shall not be of the type that can be reset. The hour meter shall only operate when the vertical storage column extractor is moving. The hour meter shall have a minimum of four positions to register run time of up to 9,999 hours and shall have a minimum of one position to register fractional increments of an hour. The hour meter shall be located in the area of the motor and shall be oriented so that it may be read without removing any part of the vertical storage column except the maintenance service panel.

### 3.2.19. STORAGE CONTAINERS

The containers shall be of the same quality and material as Akro-Mils Bins as approved by the COTR.

#### 3.2.19.1 NUMBER OF CONTAINERS

Enough storage containers shall be provided to fill a minimum of 50 percent of the trays provided. (For example, if 25 trays are provided for each unit, that equates to a total of 175 total trays provided. At least 88 trays shall be equipped with containers in order for containers to be provided for at least 50 percent of the trays.) A minimum of 4 plastic storage containers shall fit on each tray for which containers are provided. (If 88 trays are equipped with containers, this means the contractor must provide at least 352 containers.)

#### 3.2.19.2. DIMENSIONS OF CONTAINERS

The containers provided shall be of sufficient width to take up at least 85 percent of the available tray width. (Note: This will equate to a container with a width of approximately 12 inches.) The containers provided shall be of sufficient depth to take up at least 95 percent of the available tray depth. (Note: This will equate to a container with a depth of approximately 30 inches.) The containers provided shall have a nominal height of 8 inches.

#### 3.2.19.3. CONTAINER QUALITIES

When the containers are positioned on the tray, they shall be inserted and removed easily and shall remain in position as the tray is extracted and returned to its position in the unit. The containers shall have a minimum of 3 positions to install dividers. The dividers shall be easily inserted into or removed from the divider positions within the container and shall remain secured while in position.

#### 3.2.19.4. CONTAINER DIVIDERS

A minimum of 1 storage container divider for each container shall be provided. The dividers shall be of the same material as the storage containers. The dividers shall have a height that is within 1/4 inch of the usable height of the container. The dividers shall have a depth which is within 1 inch of the usable depth of the tray depth.

#### 3.2.20. SECURITY DOOR

A lockable security door shall be provided to enclose the pick window opening when the vertical storage unit is not in use. When closed, the door shall prevent access to the material inside the unit. It shall be on sufficient strength and durability such that extraordinary means are required to gain access to the storage column when the door is closed. The security door shall be lockable using a key lock. A minimum of two sets of keys shall be provided for each lock. The door shall be an integral part of the storage column unit and shall allow unobstructed access to the storage column pick window when not in use.

#### 3.2.21. WEIGHT SENSOR

An indicator shall be mounted on the face of the unit to indicate if the tray exceeds the designed weight limit of the tray. If the weight load limit is exceeded, the unit shall produce an indication that the limit has been exceeded.

#### 3.2.22. INDEPENDENT DISCONNECT

Each unit shall have an accessible master on/off switch to control the unit's electrical power. This switch has have some means (i.e. key switch, padlock, etc.) of locking it into the off position.

#### 3.2.23. RS232C PORT

An RS232C port shall be provided and installed in each unit. The RS232C port shall be connected to the controls to permit an optional computer input interface.

#### 3.2.24. INVENTORY SYSTEM AND CONTROLS

A computer system (hardware and software) shall be provided by the contractor. The computer system shall provide an inventory system that shall maintain the inventory of all 7 units. The computer system shall interface with the control system of the

units and cause the unit to pick the part requested by the operator.

#### 3.2.24.1. COMPUTER

The contractor shall provide an IBM or IBM-compatible PC, based on an Intel Pentium processor. As a minimum, the computer shall be equipped with an ISA bus, 16 megabytes main memory, one 3-1/2 inch high density floppy drive, 125-gigabyte hard disk drive, VGA standard (or SVGA) video card with 1 MB memory, 1 PS/2 mouse, standard keyboard, two serial and one parallel ports, and two expansion slots. The computer will control the movements of the carousel.

#### 3.2.24.2. PRINTER

The contractor shall provide a Hewlett Packard LaserJet IV or equivalent as approved by the COTR. The printer shall be interfaced with the computer and the carousel software package. The user will have the ability to manipulate and to print information from the database system. The printer shall be capable of generating bar code, completed pick lists, receipts, and reports.

#### 3.2.24.3. SOFTWARE

The proposed system shall include a Windows-based computer interface with a database/inventory management system written in ACCESS (at least version 7.0). The database system shall include, at a minimum, the following fields: resource control center (4 characters), opr number (5 characters), stock number (20 characters), document number (12 characters), job number (7 characters), nomenclature (50 characters), location (10 characters), quantity ordered (7 characters), unit of issue (4 characters), upa (4 characters), date ordered (8 characters), priority (2 characters), date received (8 characters), quantity received (7 characters), unit cost (10 characters), estimated due date (8 characters), comments (20 characters), estimated material cost (10 characters). The following fields shall be calculated from the above fields: balance due (7 characters), subtotal (10 characters), extended price (10 characters), cost of material received (10 characters), and funds remaining (10 characters). Each of the fields will have a minimum number of characters as indicated or as approved by the COTR.

The database system shall have the capability of handling a minimum of 7,500 records, with a minimum of 20 percent expansion capability. The contractor shall describe in detail the type of database/inventory management system that he intends to supply.

Operator interactivity of the database system shall be through the use of menus and screen forms which allow access to normal operational parameters but provide for integrity of the data base structure and data element values. It is expected that storage or retrieval of an item can be initiated by stock number, part number, job number, location, or nomenclature.

#### 3.2.24.4. UNIT CONTROL

Each unit shall have a control pad that will allow manual access to the system through input of the location number.

#### 3.2.24.5. AD HOC REPORTS

The software package shall provide the capability for the user to query the system and generate user-defined ad hoc custom reports.

#### 3.2.24.6. TAPE BACK-UP UNIT

The contractor shall provide a tape back-up unit. The tape back-up unit shall have sufficient capacity to store the entire contents of the hard drive installed on the computer.

#### 3.2.24.7. UNINTERRUPTABLE POWER SUPPLY

The contractor shall provide an Uninterruptable Power Supply (UPS). The UPS shall have sufficient capacity to protect the process control system and peripherals, installed as part of the carousel control station, in case of a power failure.

### 4. QUALITY ASSURANCE PROVISIONS

#### 4.1. INSPECTIONS

The system shall be inspected to verify that it meets all the requirements of sections 1, 2, and 3 of this appendix and the cover purchase description. These inspections shall be completed as part of the system checkout test and again as a part of the quality conformance test.

#### 4.2. TESTS

The following tests shall be performed on the system as part of the system checkout test and again as a part of the quality conformance test.

1. An acceptance test of 2 hours as registered by the hour meter shall be made on each vertical storage column. This test

shall demonstrate the reliability as specified in the Cover PD ("RELIABILITY/AVAILABILITY"). Each tray shall be loaded as determined in this appendix ("TRAY CAPACITY") with contractor supplied test loads. All trays shall be called randomly during the test. If this test shows that the installation is defective in any respect or does not comply with this appendix and the Cover PD, the contractor shall immediately make the changes necessary to correct all defects to the satisfaction of the COTR prior to acceptance. The system shall be operational at least 97 percent of the test period based on the time registered on the hour meter. (Cover PD 3.4.1.1.)

2. The deformation shall be tested in conjunction with test number 1 to determine if the storage trays exhibit plastic deformation. The distance from the midpoint of the bottom of the selected tray shall be measured and recorded as M1. The tray will then be loaded to capacity and left for a minimum of four hours. After four hours, the tray will be unloaded and the distance between the two points where M1 was measured shall be measured and recorded as M2. The following formula shall be used to determine the deformation:

$$(M1 - M2) / \text{Usable width of tray} * 100 = \text{Percent Deformation}$$

If permanent deformation is recorded, then the trays shall fail the test. After all loads are removed, the trays shall be examined for permanent deformation. If permanent deformation has occurred, the trays shall fail the test. (Paragraph 3.2.5.4.)

3. All safety interlock switches, sensors, touch bars, and stop buttons shall be tested to ensure that they are completely operational. (Paragraph 3.2.15., 3.2.16.)

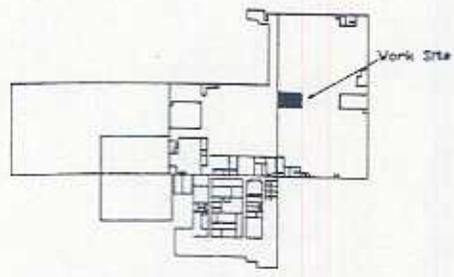
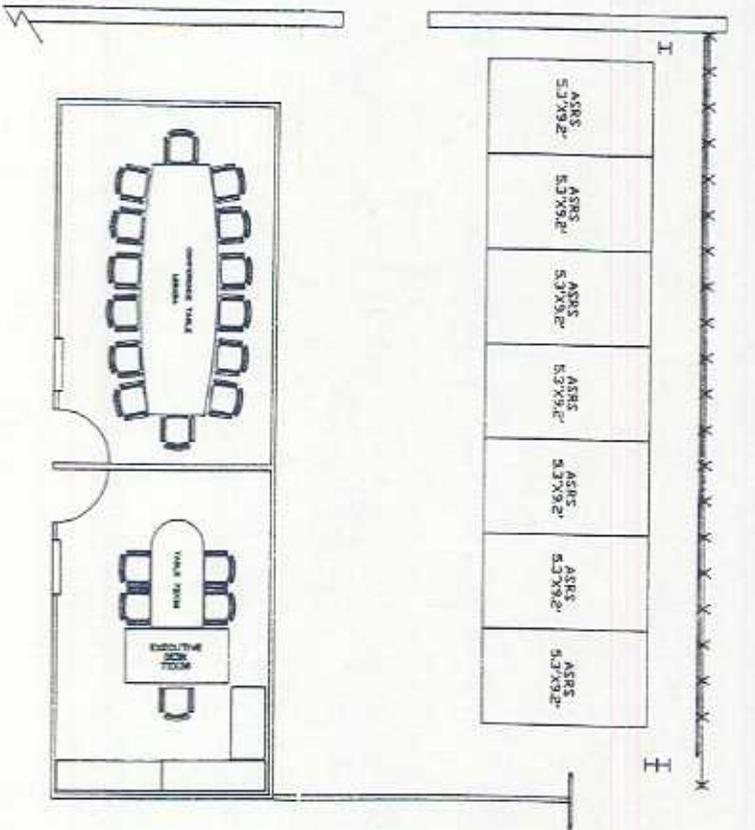
#### 4.3. CERTIFICATIONS

The contractor shall provide certification that the following requirements have been met. All certifications shall be provided in accordance with the Contract Data Requirements List.

1. The contractor shall certify that the weight of a fully loaded vertical storage column is adequately distributed to not exceed the capacity of the floor as specified. (Paragraph 3.2.2.)
2. The contractor shall certify that all extractor support chains have a minimum 6-to-1 safety factor based on yield strength. (Paragraph 3.2.6.1.)

3. The contractor shall certify that the vertical storage columns are designed to function a minimum of 1,500 hours based on the time registered by the hour meter specified in this appendix ("HOUR METER") or that all equipment has a design service life of 10 years or longer. (Paragraph 3.2.9.)

4 5 6 7 8



Bldg 640 Keyplan  
(First Floor)  
See To Scale

REV	DATE	BY	DESCRIPTION	DATE
			MATERIAL HANDLING ENGINEERING DIVISION AFMC-LSD/LOE WPAFB OH	
1		Wendy Johnston	AS/RS Installation in Building 640, East Annex, Robins AFB, Georgia	
2		Andy Huser		
3	Nov 97			
Scale: 3/32" = 1'		Project: LRRAD1	Drawing No: LRB741-01	SHEET 1 OF 6