AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

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2. AMENDMENT/MODIFICATION NO. 000002

3. EFFECTIVE DATE 06/25/2013

4. REQUISITION/PURCHASE REQ. NO.

5. PROJECT NO. *(If applicable)*

6. ISSUED BY CODE MSFC

NASA/Marshall Space Flight Center
Office of Procurement
Marshall Space Flight Center AL 35812

7. ADMINISTERED BY *(If other than Item 6)* CODE MSFC

NASA/Marshall Space Flight Center
Marshall Space Flight Center AL 35812

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CODE

FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO. NNM13ZPS004E

x 9B. DATED *(SEE ITEM 11)* 05/29/2013

10A. MODIFICATION OF CONTRACT/ORDER NO.

10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

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

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

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

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

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

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

The purpose of this amendment to IFB NNM13ZPS004E, Revitalization and Repair of Central Chilled Water System for Building 4473, is to revise Drawing No. FAC-V-4473-M16, Sheet 31 of 69. Specifically the "Water Cooled Chiller Schedule" is being revised. Drawing No. FAC-V-4473-M16, Revision #2, is attached.

As a result of this amendment, the hour and date for bids is not extended. Bids are still due on Friday, June 28, 2013, at 2:00 P.M. local time at the Huntsville-Madison County Chamber of Commerce located at 25 Church Street, Huntsville, AL 35810.
INCO TERMS 2: Destination

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

15A. NAME AND TITLE OF SIGNER *(Type or print)*

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*
Brian A Speer

15B. CONTRACTOR/OFFEROR
(Signature of person authorized to sign)

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA
Brian A. Speer
(Signature of Contracting Officer)

16C. DATE SIGNED June 25, 2013

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

A | B | C | D | E | F | G

LOUVER / DAMPER SCHEDULE

MARK	BASIS OF DESIGN	MOUNTING HEIGHT A.F.F	LOUVER W	LOUVER H	CFM	PRESSURE DROP (IN)	FREE AREA (SQ. FT.)	FRAME TYPE	SCREEN TYPE	DAMPER W	DAMPER H	BLADES OPPAR	FRAME TYPE	ACTUATOR TYPE	VOLTAGE	CONTROL SIGNAL	MIN TORQUE (IN-LBS/SQFT)	NOTES
L1	RUSKIN ELF3780XCD50	11'-0"	72	48	6800	0.08	12.06	BOX	BIRD	-	-	-	-	-	-	-	-	
L2	RUSKIN ELF3780XCD50	6'-0"	48	72	6800	0.09	13.14	BOX	BIRD	48	72	OB	BOX	MODULATING	24	4-20mA	7.0	

NOTES:

PUMP SCHEDULE

MARK	UNIT LOCATION	UNIT TYPE	UNIT SERVICE	PUMP DATA FLOW RATE (GPM)	PUMP DATA PRESSURE (FT)	PUMP DATA % PUMP EFF.	ELECTRICAL DATA BHP	ELECTRICAL DATA HP	ELECTRICAL DATA VOLT	ELECTRICAL DATA PHASE	BASIS OF DESIGN MAKE	BASIS OF DESIGN MODEL	NOTES
4473-PRIP0007A	4473	HSC	CHW	625	85	81	16.6	20	460	3	AURORA	411-5X6X11C	
4473-PRIP0007B	4473	HSC	CHW	625	85	81	16.6	20	460	3	AURORA	411-5X6X11C	

NOTES:

FAN SCHEDULE

MARK	UNIT LOCATION	UNIT SERVES	UNIT TYPE	FAN DATA AIR FLOW (CFM)	FAN DATA TOTAL SP (IN H2O)	FAN DATA RPM MAX	FAN DATA SONES MAX	FAN DATA BHP MAX	FAN DATA MOTOR (HP)	FAN DATA WHEEL TYPE	FAN DATA DRIVE TYPE	ELECTRICAL DATA VOLTS / PHASE	EQUAL TO MANUF	EQUAL TO MODEL	NOTES
4473-EAF901A	CHW PLANT	HEAT REMOVAL	WALL PROPELLER	18,800	0.125	425	25	1.25	1.5	BOLTED	BELT	480/3	LOREN COOK	48XMPH	6, 13, 15
4473-EAF902A	CHW PLANT	HEAT REMOVAL	WALL PROPELLER	18,800	0.125	425	25	1.25	1.5	BOLTED	BELT	480/3	LOREN COOK	48XMPH	6, 13, 15
4473-EAF903A	CHW PLANT	HEAT REMOVAL	WALL PROPELLER	18,800	0.125	425	25	1.25	1.5	BOLTED	BELT	480/3	LOREN COOK	48XMPH	6, 13, 15
4473-EAF904A	CHW PLANT	HEAT REMOVAL	WALL PROPELLER	18,800	0.125	425	25	1.25	1.5	BOLTED	BELT	480/3	LOREN COOK	48XMPH	6, 13, 15
4473-EAF905A	CHW PLANT	HEAT REMOVAL	WALL PROPELLER	18,800	0.125	425	25	1.25	1.5	BOLTED	BELT	480/3	LOREN COOK	48XMPH	6, 13, 15
4473-EAF906A	CHW PLANT	HEAT REMOVAL	WALL PROPELLER	18,800	0.125	425	25	1.25	1.5	BOLTED	BELT	480/3	LOREN COOK	48XMPH	6, 13, 15
4473-EAF907A	CHW PLANT	HEAT REMOVAL	WALL PROPELLER	18,800	0.125	425	25	1.25	1.5	BOLTED	BELT	480/3	LOREN COOK	48XMPH	6, 13, 15

NOTES:
1. BACKDRAFT DAMPER
2. INLET SCREEN
3. WALL HOUSING

ELECTRIC UNIT HEATER SCHEDULE

MARK	UNIT LOCATION	UNIT SERVES	AIR FLOW RATE (CFM)	CAPACITY (MW)	ELECTRICAL DATA MOTOR (HP)	ELECTRICAL DATA VOLTS	ELECTRICAL DATA PHASE	BASIS OF DESIGN MANUF	BASIS OF DESIGN MODEL	NOTES
4473-UH0001	4473	ELECT RM.	850	10	1/15	480	3	CHROMALOX	BUN	1

NOTES:
1. WALL MOUNTING BRACKET
2. CONNECT TO UCS - LOW VOLTAGE

CONTROL VALVE SCHEDULE

TAG NO.	SERVICE	GPM	PIPE SIZE	CV	BASIS OF DESIGN	REMARKS
4473-CWIV0001	CHILLER - 1 - CWS	3750	16	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0002	CHILLER - 2 - CWS	3750	16	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0003	CHILLER - 3 - CWS	3750	16	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0004	CHILLER - 4 - CWS	3750	16	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0006	CHILLER - 5 - CWS	3750	16	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0006	CHILLER - 6 - CWS	3750	16	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0007A	CHILLER - 7A - CWS	1125	8	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0007B	CHILLER - 7B - CWS	1125	8	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0008	CHILLER - 8 - CWS	3750	16	LINE SIZE	KEYSTONE BUTTERFLY	1, 2
4473-CWIV0009	CHILLER - 9 - CWS	3750	16	LINE SIZE	KEYSTONE BUTTERFLY	1, 2

NOTES:
1. FULL LUG BUTTERFLY VALVE (150 LB FLANGE)–316 STAINLESS BODY, SHAFT, AND DISC; RTFE SEATS; ANSI CLASS VI SHUTOFF.
2. ELECTRIC ACTUATOR (LIM "HQ SERIES" OR APPROVED EQUAL) : 480/3/60, HANDWHEEL OVERRIDE, NEMA 4X, LOCAL/OFF/REMOTE SWITCH, 2 POSITION (OPEN/CLOSE) W/ END SWITCHES. ACTUATOR SIZE TO MATCH VALVE SHAFT TORQUE REQUIREMENTS. MAXIMUM ACTUATION TIME OF 15 SECONDS (ADJ.).

CWV - CONDENSER WATER INLET CONTROL VALVE

WATER COOLED CHILLER SCHEDULE

MARK	UNIT LOCATION	UNIT SERVES	UNIT NOM. TONS	UNIT MAX KW/TON DESIGN	UNIT REFRIG. TYPE	UNIT MIN. FULL LOAD COP	UNIT MAX IPLV KW/TON	COMPRESSOR INPUT (KW)	EVAPORATOR WATER TEMP E/T (deg F)	EVAPORATOR WATER TEMP LWT (deg F)	EVAPORATOR MAX WTR PD (FT)	EVAPORATOR FLOW RATE (GPM)	CONDENSER WATER TEMP EWT (deg F)	CONDENSER WATER TEMP LWT (deg F)	CONDENSER MAX WTR PD (FT)	CONDENSER FLOW RATE (GPM)	ELECTRICAL DATA RLA	ELECTRICAL DATA MCA	ELECTRICAL DATA LRA	ELECTRICAL DATA VOLTS/ PHASE	BASIS OF DESIGN MANUF	BASIS OF DESIGN MODEL	NOTES
4473-CHLR0001, 2, 4 & 5	4473	PLANT	1260	0.57	R-134A		0.48	708	53	42	16.8	2750	85	95	25.5	3750	113	143	744	4160/3	YORK	YK0481K2	2
4473-CHLR0003 & 6	4473	PLANT	1250	0.56	R-134A		0.39	750	53	42	16.8	2750	85	95	25.5	3750	110	138	742	4160/3	YORK	YK0481K2	1
4473-CHLR0008 & 9	4473	PLANT	1250	0.57	R-134A		0.46	709	53	42	15.5	2750	85	95	26.6	3750	113	143	744	4160/3	YORK	YK0481K2	3
4473-CHLR0007A & 7B	4473	PLANT	375	0.60	R-134A		0.42	223	53	42	26	825	85	95	20	1125	318	395	2138	480/3	YORK	YKECETO-ELG	3

NOTES:
1. VARIABLE FREQUENCY DRIVE (SEE ELECTRICAL)
2. UTILIZE EXISTING MOTOR STARTER
3. UNIT MOUNTED VARIABLE FREQUENCY DRIVE.

AIR HANDLING UNIT SCHEDULE

MARK	UNIT LOCATION	UNIT SERVES	MODULE 1 DISCHARGE PLENUM LENGTH	MODULE 1 DISCHARGE PLENUM DOORS	MODULE 2 FAN DATA TOTAL FLOW RATE (CFM)	MODULE 2 FAN DATA OUTSIDE AIR (CFM)	MODULE 2 FAN DATA ESP (IN. W.G.)	MODULE 2 FAN DATA TYPE	MODULE 2 ELECTRICAL DATA BHP	MODULE 2 ELECTRICAL DATA MOTOR (HP)	MODULE 2 ELECTRICAL DATA VOLTS	MODULE 2 ELECTRICAL DATA PHASE	MODULE 2 TOTAL (BTU/H)	MODULE 2 SENS (BTU/H)	MODULE 3 VERTICAL COOLING COIL AIR TEMP EDB (deg F)	MODULE 3 AIR TEMP EWB (deg F)	MODULE 3 AIR TEMP LDB (deg F)	MODULE 3 AIR TEMP LWB (deg F)	MODULE 3 MAX AIR PD (IN. W.G.)	MODULE 3 MAX FACE VEL (FPM)	MODULE 3 COIL ROWS	MODULE 3 FINS/ INCH	MODULE 3 CHILLED WATER TEMP (deg F)	MODULE 3 CHILLED WATER MAX PD (FT.)	MODULE 3 CHILLED WATER FLOW RATE (GPM)	MODULE 4 PREFILTER TYPE	MODULE 4 PREFILTER MAX AIR PD (IN. W.G.)	MODULE 4 PREFILTER MAX FACE VEL (FPM)	MODULE 4 FILTER BOX FILTER TYPE	MODULE 4 FILTER BOX FILTER MAX AIR PD (IN. W.G.)	MODULE 4 FILTER BOX FILTER MAX FACE VEL (FPM)	MODULE 4 FILTER BOX MODULE LENGTH	MODULE 4 FILTER BOX TOP INLET SIZE	MODULE 4 FILTER BOX BACK INLET SIZE	BASIS OF DESIGN MANUF	BASIS OF DESIGN MODEL	NOTES
4473-AH0003	4473	ELEC.RM	46	RIGHT	10,200	100	0.5	F.C.	6.1	7.5	460	3	278,000	273,000	78.5	61.5	54.8	52.6	0.6	500	6	8	45/65	10.	65.	-	-	-	MERV	0.6	350	36			YORK	'SOLITION	

NOTES:

APPROVED FOR DISTRIBUTION
QUALITY ASSURANCE AUTHORITY
DATE
SHEET
BWSAC FILE NO. 33865-50

SIGNATURES ON INDEX SHEET INDICATE ACCEPTANCE OF THIS SHEET

REF. NO. M16 16 OF 16

REV	BY	DATE	REVISION	CLI NO.	APPROVED
2	GLR	06-04-12	CHANGE KW/TON DESIGNMARK TPLKW/PLY AND INPUT CHILLER SCHEDULE		
1	GLR	06-04-12	CHANGE VOLTAGE IN WATER COOLED CHILLER SCHEDULE		
0	DHS	12/21/12	ORIGINAL ISSUE		

Marshall Space Flight Center
Huntsville, Alabama 35812

REVITALIZATION/REPAIR OF CENTRAL CHILLED WATER SYSTEM (4473)

MECHANICAL EQUIPMENT SCHEDULES

AE FIRM: BARGE, WAGGONER, SUMNER, & CANNON, INC.
MASA AE CONTRACT NO: NNM08AA05C

SUBMITTED: D. SCHULLER	APPROVAL RECOMMENDED: NELSON OLINGER, ASST PROJECT MGR	APPROVED: J. QUARIN
NO DATE 12/21/12	APPROVAL RECOMMENDED: NELSON OLINGER, ASST MANAGER, ASE	ASE DIRECTOR DATE 12/21/12
DESIGNED P. TCHEMOR	APPROVAL RECOMMENDED: NELSON OLINGER, ASST TEAM LEAD	DRAWING NO. FAC-V-4473-M16
DRAWN M. ANSCHER		
CHECKED T. ALLEN		
SCALE AS NOTED	SPECIAL NO. M3858	SHEET 31 OF 69