

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE _____ PAGE _____ OF _____ PAGES

2. AMENDMENT/MODIFICATION NO. _____ 3. EFFECTIVE DATE _____ 4. REQUISITION/PURCHASE REQ. NO. _____ 5. PROJECT NO. *(If applicable)* _____

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

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)* _____ (X) 9A. AMENDMENT OF SOLICITATION NO. _____
 9B. DATED *(SEE ITEM 11)* _____
 10A. MODIFICATION OF CONTRACT/ORDER NO. _____
 10B. DATED *(SEE ITEM 11)* _____
 CODE _____ FACILITY CODE _____

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 ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your 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: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

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

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

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

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

Item 14. Continued.

CHANGES TO THE BIDDING SCHEDULE

1. Bidding Schedule.- Replace the Bidding Schedule with the attached new Bidding Schedule, bearing the notation "ACCOMPANYING AMENDMENT NO. 0004 TO SOLICITATION NO. DACA63-02-B-0006."

CHANGES TO THE SPECIFICATIONS

2. Replacement Sections - Replace the following section with the accompanying new section of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0004 TO SOLICITATION NO. DACA63-02-B-0006:"

07430 COMPOSITE, FOAM-INSULATED, METAL WALL PANELS

CHANGES TO THE DRAWINGS

3. Replacement Drawings.- Replace the drawings listed below with the attached new drawings of the same number, bearing the notation "AM #0004":

C106.cal	C106	LAY OUT PLAN 6
C501.cal	C501	UTILITY PLAN 1
C502.cal	C502	UTILITY PLAN 2
C503.cal	C503	UTILITY PLAN 3
C601.cal	C601	PLAN-PROFILE 1 MAIN ROAD
C602.cal	C602	PLAN-PROFILE 2 MAIN ROAD
C603.cal	C603	PLAN-PROFILE 3 MAIN ROAD
C604.cal	C604	PLAN-PROFILE 4 MAIN ROAD
C605.cal	C605	PLAN-PROFILE 5 MAIN ROAD
C606.cal	C606	PLAN-PROFILE 6 OTHER NEW ACCESS DRIVES
C701.cal	C701	SANITARY SEWER & FORCE MAIN PROFILES
C702.cal	C702	SANITARY SEWER & STORM DRAIN PROFILES
C703.cal	C703	SANITARY SEWER PROFILE BID OPTION #4
C901.cal	C901	PAVEMENT DETAILS 1
C902.cal	C902	PAVEMENT DETAILS 2
C903.cal	C903	PAVEMENT DETAILS 3
C904.cal	C904	UTILITY DETAILS
C905.cal	C905	UTILITY & LIFT STATION DETAILS
C906.cal	C906	STORM DRAINAGE DETAILS 1
C907.cal	C907	STORM DRAINAGE DETAILS 2
C908.cal	C908	STORM DRAINAGE DETAILS 3
C909.cal	C909	CHAIN LINK FENCE DETAILS
C910.cal	C910	GATE DETAILS
G204.cal	G204	VOLUME TWO INDEX SHEET
EA101.cal	EA101	LATRINE BUILDING FLOOR PLAN BID OPTION 4
EA201.cal	EA201	LATRINE BUILDING ELEVATIONS BID OPTION 4
AS201.cal	AS201	BUILDING A ZONE 1 FOUNDATION PLAN
CS201.cal	CS201	"MOTOR POOL DISPATCH BUILDING C FOUNDATION PLAN, ROOF FRAMING PLAN, & DETAILS"
ES201.cal	ES201	LATRINE BUILDING E - BID OPTION 4 FOUNDATION PLAN & DETAILS
ES601.cal	ES601	LATRINE BUILDING E ROOF FRAMING PLAN & DETAILS

U308.cal U308 "ELECTRICAL UTILITIES PLAN AREA F - OPTIONS 2, 3 & 4"
U407.cal U407 "EXTERIOR TELECOMMUNICATIONS PLAN AREA F - BID OPTIONS 2, 3 & 4"
U502.cal U502 CATHODIC PROTECTION PLAN AREA B
U505.cal U505 CATHODIC PROTECTION PLAN AREA E
CE202.cal CE202 "TOC YARD MOTOR POOL DISPATCH BLDG LIGHTING, POWER & COMMO
PLANS"

4. New Drawings.- Add the following new drawing:

U506.cal U506 CATHODIC PROTECTION PLAN AREA F - OPTION 4

END OF AMENDMENT

Vehicle Maintenance Facility
Fort Hood, Texas

Solicitation No.DACA63-02-B-0006

BIDDING SCHEDULE
(To be attached to SF 1442)

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
All work required by the Contract documents for the construction of the Ft Hood Vehicle Maintenance Facility <u>excluding</u> Option Bid Items.					
0001	All work to construct the Tactical Equipment Shop, Complete, Including utilities to the 1524mm (5-foot line), and exclusive of all other work listed separately.	Sum	Job	***	\$_____
0002	All work to construct the Deployment Storage Facility, Complete, Including utilities to the 1524mm (5-foot) line, and exclusive of all other work listed separately.	Sum	Job	***	\$_____
0003	All work to construct the Oil Storage Facility, Complete, Including utilities to the 1524mm (5-foot) line, and exclusive of all other work listed separately.	Sum	Job	***	\$_____
0004	All work to construct the two Dispatch Houses, Complete, Including utilities to the 1524mm (5-foot) line, and exclusive of all other work listed separately.	Job	Sum	***	\$_____
0005	Drilled Piers				
0005AA	460mm (18-In) Drilled Piers	428.0	LM	\$_____	\$_____
0005AB	460mm (18-In) Casing	299.7	LM	\$_____	\$_____
0005AC	610mm (24-In) Drilled Piers	282.3	LM	\$_____	\$_____
0005AD	610mm (24-In) Casing	197.8	LM	\$_____	\$_____
0005AE	762mm (30-In) Drilled Piers	372.2	LM	\$_____	\$_____

BIDDING SCHEDULE (cont)

0005AF	762mm (30-In) Casing	263.6	LM	\$_____	\$_____
0005AG	915mm (36-In) Drilled Piers	133.2	LM	\$_____	\$_____
0005AH	915mm (36-In) Casing	85.7	LM	\$_____	\$_____
0005AI	1067mm (42-In) Drilled Piers	14.3	LM	\$_____	\$_____
0005AJ	1067mm (42-In) Casing	10.1	LM	\$_____	\$_____
0006	Concrete Hardstand	Job	Sum	***	\$_____
0007	Construct all Exterior Work outside the building's 5- foot line (Including utilities, earthwork, paving sidewalk, parking lot paving, curb and gutter, turving, and all other work not listed separately)	Job	Sum	***	\$_____
0008	Final Record Drawings	Job	Sum	***	\$ <u>50,000.00</u>
TOTAL BASE BID \$_____					

0009 The monetary value for warranty work is established at 1 percent of the amount awarded for construction. See the Contract Specifications Section 01770 CONTRACT CLOSEOUT, paragraph "Contractor's Response to Construction Warranty Service Requirements."

0010 OPTION NO. 1: All work required by the plans and specifications for construction of resin modified pavement for the hardstand in lieu of the concrete hardstand used in the Base Bid Job Sum *** \$_____

0011 OPTION NO. 2: All work required by the plans and specifications for the construction of the expansion to **(AM#2) Storage Area A** Job Sum *** \$_____

BIDDING SCHEDULE (cont)

0012 OPTION NO. 3: All work required
 by the plans and specifications
 for the additional Electric
 Communications Equipment at
 (AM#2) Storage Area A Job Sum *** \$_____

0013 OPTION NO. 4: All work required
 by the plans and specifications
 to construct Latrine and
 (AM#4) Motor Pool Dispatch buildings
 (AM#2) Storage Area A Job Sum *** \$_____

TOTAL BASE BID PLUS OPTIONS 1 thru 4\$_____

Negative numbers should be denoted by a negative sign (-) or
 brackets < >

BIDDING SCHEDULE (cont)

NOTES:

1. ARITHMETIC DISCREPANCIES (EFARS 14.407-2)

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the bidding schedule as submitted by bidders:

- (1) Obviously misplaced decimal points will be corrected;
- (2) In case of discrepancy between unit price and extended price, the unit price will govern;
- (3) Apparent errors in extension of unit prices will be corrected; and
- (4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

2. If a modification to a bid based on unit prices is submitted, which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price in the bid schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.

3. Bidders must bid on all items.

4. Costs attributable to Division 01 - General Requirements is assumed to be prorated among bid items listed.

5. Responders are advised that this project may be delayed, cancelled or revised at any time during the solicitation, selection, evaluation, negotiation and/or final award process based on decisions related to DOD changes in force structure and disposition of the Armed Forces.

6. For the purpose of this solicitation, the word "item" shall be considered to mean "schedule" as used in Provision 52.214-0019, CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION, in Section 00100 INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS.

BIDDING SCHEDULE (cont)

NOTES cont.

7. EXERCISE OF OPTIONS (SWDR 715-1-1 (16 January 1996))

The Government reserves the right to exercise the option(s) by written notice to the Contractor either singularly or in any combination for up to 90 calendar days after award of the Base Bid without an increase in the Offeror's Bid Price. Completion of added items shall continue at the same schedule as the Base Bid unless otherwise noted in Section 01000 CONSTRUCTION SCHEDULE, paragraph 1 entitled SCHEDULE.

8. ABBREVIATIONS

For the purpose of this solicitation, the units of measure are represented as follows:

- a. LS (lump sum)
- b. MM (millimeters)
- c. LM (length in linear meters)
- d. M2 (square meters)

END OF BIDDING SCHEDULE

SECTION 07430

COMPOSITE, FOAM-INSULATED, METAL WALL PANELS
03/2002

AM0004

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN IRON AND STEEL INSTITUTE (AISI)

AISI SG-673 (1986) Cold-Formed Steel Design Manual

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

ASHRAE-03 (1989) Handbook, Fundamentals I-P Edition

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 446 (1991) Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality

ASTM A 463/A 463M (1999a) Steel Sheet, Aluminum-Coated, by the Hot-Dip Process

ASTM A 792/A 792M (1999) Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process

ASTM B 117 (1997) Operating Salt Spray (Fog) Apparatus

ASTM C 236 Thermal Performance of Insulated Metal Panels

ASTM C 984 (1994) Perlite Board and Rigid Cellular Polyurethane Composite Roof Insulation

ASTM C 1289 (1998) Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board

ASTM D 522 (1993a) Mandrel Bend Test of Attached Organic Coatings

ASTM D 523 (1999) Specular Gloss

ASTM D 714 (1987; R 1994e1) Evaluating Degree of Blistering of Paints

ASTM D 968 (1993) Abrasion Resistance of Organic Coatings by Falling Abrasive

ASTM D 1308	(1987) Effect of Household Chemicals on Clear and Pigmented Organic Finishes
ASTM D 4214	(1989) Evaluating the Degree of Chalking of Exterior Paint Films
ASTM D 1654	(1992) Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
ASTM D 2244	(1995) Calculation of Color Differences from Instrumentally Measured Color Coordinates
ASTM D 2247	(1997) Testing Water Resistance of Coatings in 100% Relative Humidity
ASTM E 84	(1999) Surface Burning Characteristics of Building Materials
ASTM E 119	(1998) Fire Tests of Building Construction and Materials
ASTM E 283	Air Infiltration of Metal Wall Panels
ASTM G 23	(1996) Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials

UNDERWRITERS LABORATORIES, INC. (UL)

UL 580	(1994; Rev thru Feb 1998) Tests for Uplift Resistance of Roof Assemblies
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1.2 SUBMITTALS

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

SD-02 Shop Drawings

Foam Insulated Metal Panels; G, Fort Worth District Corps of Engineers, EC-AS.

Drawings consisting of catalog cuts, design and erection drawings, shop coating and finishing specifications, and other data as necessary to clearly describe design, materials, factory color finish, sizes, layouts, construction details, fasteners, subgirts, and erection. Drawings shall be accompanied by engineering design calculations for the structural properties of siding units and secondary support system. Engineering design calculations shall be certified by an engineer registered in the state of Texas.

SD-04 Samples

Foam Insulated Metal Panels; G, Fort Worth District Corps of

Engineers, EC-AS.

One piece of each type and finish (exterior and interior) to be used, 230 mm long, full width.

Accessories;

One sample of each type of flashing, trim, closures, caps and similar items. Size shall be sufficient to show construction and configuration.

Fasteners;

Two samples of each type to be used with statement regarding intended use.

If so requested, random samples of bolts, nuts, and washers as delivered to the jobsite shall be taken in the presence of the Contracting Officer and provided to the Contracting Officer for testing to establish compliance with specified requirements.

Sealant;

One container of sealant, with installation instructions.

SD-06 Test Reports

Factory Color Finish;

Certified laboratory test report containing the results of testing of at least 5 samples identical to the specified finish. All samples shall pass tests specified under the paragraph "FACTORY COLOR FINISH".

Fire Resistive Rating; G.

Certified test reports substantiating that the fire resistive rating of wall panels of the type to be installed in the exterior walls will be maintained for the hourly rating of the walls. Testing shall be in accordance with ASTM E 119.

SD-07 Certificates

Foam Insulated Metal Panels; .

Certificates attesting that the panels and accessories furnished conform to the requirements specified.

SD-11 Closeout Submittals

Warranty;G,

Provide the manufacturer's warranty against the occurrence of thermal blistering as required by the paragraph QUALITY ASSURANCE.

1.3 DESIGN

Contract drawings indicate extent and general assembly details of the composite metal, foam insulated wall panels. Members and connections not indicated on drawings shall be designed by the Contractor. Panels shall be designed to provide the minimum section properties shown. Wall panels and secondary support system shall be designed to resist a wind load as determined by the Contractor according to the parameters specified in paragraph 1.5 PERFORMANCE REQUIREMENTS without exceeding a deflection of 1/180th of the span. Steel face sheets shall be designed in accordance with the AISI SG-673.

1.4 QUALITY ASSURANCE

In addition to the WARRANTY OF CONSTRUCTION paragraph in Section 00800 SPECIAL CONTRACT REQUIREMENTS, the panel manufacturer shall warrant for three years that the occurrence of thermal blistering shall not exceed the rate of one for every 80 square meters of wall area. Blisters occurring within the warranty period shall be repaired by the panel manufacturer at no additional cost to the Government. When the number of blisters exceed the specified limit above, panels, as selected by the Contracting Officer, shall be replaced by new panels until the number of blisters is within the specified limit. Individual panels having two or more blisters shall be replaced at no additional cost to the Government. The warranty period shall commence upon the date of final acceptance of the project or the date of beneficial occupancy, whichever is earlier.

1.4.1 PERFORMANCE REQUIREMENTS

Metal wall panels, windows, and secondary support systems shall be designed for component and cladding wind loads determined in accordance with ASCE 7-98 for the following parameters:

- a. Building Classification II
- b. Importance Factor 1.0
- c. Exposure Category C
- d. Basic Wind Speed 145km/hr

Secondary supports for the metal wall panel system shall be designed in accordance with AISC. Secondary supports shall not vary from the theoretical plane by more than the following specified tolerances:

- a. 6.25mm in any 6000mm length vertically or horizontally
- b. 12.7mm in any building elevation
- c. 3.125mm within 1500mm of any change in plane such as corners and soffits.

The metal wall system or secondary supports shall be designed to allow differential movement of the buildings roof and floor structures.

1.5 DELIVERY AND STORAGE

Materials shall be delivered to the site in a dry and undamaged condition and stored out of contact with the ground. Materials shall be covered with weathertight coverings and kept dry. Storage accommodations for roof and wall covering shall provide good air circulation and protection from surface staining.

1.5.1 COORDINATION MEETING

A coordination meeting shall be held 30 days prior to the first submittal, for mutual understanding of the Composite, Foam-Insulated, Metal Wall Panels System contract requirements. This meeting shall take place at the building site and shall include representatives from the Contractor, the Panel system manufacturer, the Panel supplier, the erector, the Panel design engineer of record, and the Contracting Officer. All items required by paragraph SUBMITTALS shall be discussed, including applicable standard manufacturer shop drawings, and the approval process. The Contractor shall coordinate time and arrangements for the meeting.Text

PART 2 PRODUCTS

2.1 FOAM INSULATED METAL PANELS

Panels shall be factory-fabricated units with a foamed-in-place polyurethane or polyisocyanurate insulating core between steel face sheets.

Panels shall be square cut, factory color finished, and have the following features or properties:

- a. Panel Width: 900
- b. Exterior Surface Profile: Non-directional stucco embossed
- c. Interior Surface Profile: Non-directional stucco embossed~
- d. U-value: The coefficient of heat transmission or U-value, watt per meter kelvin temperature difference, through the completed panel system, including panel joints, air to air, shall not exceed .1 BTU SQ/FT/F_ for walls when determined for winter conditions in accordance with recognized methods in agreement with ASHRAE-03. The U-value, and therefore the required thickness of the panel, shall be calculated by using a K-value of 0.16 for the insulation.
- e. Fire Resistance: The entire panel assembly shall have a flame spread rating not higher than 75 and a smoke developed rating not higher than 450 when tested in accordance with ASTM E 84. Panels shall be approved by Factory Mutual for metal-faced Class 1 fire-rated construction.
- f. Surface Flatness: Panels shall have a minimum flatness deviation of 2.5 mm in a 1 meter span in any direction.
- h. Length: Length of panels shall be sufficient to cover the entire height of any unbroken wall surface when such height or slope is 800 mm or less. When length of run exceeds 9000mm, each panel in the run shall extend over two or more spans. Panels longer than 9000mm may be furnished if approved by the Contracting Officer.
- i. Expansion and Contraction: Design provisions shall be made for expansion and contraction at the panel joints and at either the ridge or eave.
- j. Panel Joints: Panel side joint shall be of a tongue-and-groove and shiplap design, permitting the use of fasteners, installed from the exterior, that are completely concealed within the side joint. The interior and exterior joints shall be factory caulked. The fastener

shall lock the face sheet of the panel to the structural supports, and provide positive resistance to negative load pull-off. Exposed fasteners are not acceptable. Exposed wet sealants are not acceptable. Horizontal application shall have integral venting where required along the panel length and a gutter interlock to provide effective rain screen and pressure equalized performance.

2.1.1 Face Sheets

Zinc-coated steel conforming to ASTM A 653/A 653M; Face sheets shall be 0.076 mm (22-gage) thick minimum and interior face sheet to be 26 ga.

2.1.2 Insulation

Insulation shall conform to the applicable portions of ASTM C 984 or ASTM C 1289, shall be compatible with adjoining materials, be capable of retaining its U-value for the life of the metal facing sheets, and be unaffected by extremes of temperature and humidity. Insulation shall remain odorless, free from mold, and not become a source of food and shelter for insects.

2.1.3 Thermal Blistering Test

Sample panels shall be factory tested at the rate of three panels per each day's production run. Panels shall be selected at random. The test shall expose the exterior side of the panel to heat at a temperature of 82 degrees C for one hour. The day's production run will not be acceptable if blistering occurs to more than one panel. Sample panels shall be free of blisters prior to the time the test is performed.

2.1.4 Factory Color Finish

Wall panels shall have a factory color finish on the exposed sides. The exterior finish shall consist of a polyvinylidene fluoride coating. Color shall be as specified in Section 09915 COLOR SCHEDULE. **AM0004** Exterior metal panels shall be finished with Centria: Embossed 995 Cambridge White, Duragard Plus - factory finish or approved equal. The interior face of metal panels shall be G90 galvanized on top of base metal with a .3 mil primer and a .3 mil acrylic top coat. Color shall be specified in Section 09915 COLOR SCHEDULE. The interior and exterior color finish shall meet the test requirement specified below. The manufacturer shall have conducted tests on previously manufactured panels of the same type and finish as proposed for the project. The term "appearance of base metal" refers to the metal coating on steel base metal.

2.1.4.1 Salt Spray Test

A sample of the sheets shall withstand a salt spray test for a minimum of 1000 hours in accordance with ASTM B 117, including the scribe requirement in the test. Immediately upon removal of the panel from the test, the coating shall receive a rating of few No. 6 blisters as determined by ASTM D 714; and a rating of 5, 4.7 mm failure at scribe, as determined by ASTM D 1654.

2.1.4.2 Formability Test

When subjected to a 180-degree bend over a 10 mm diameter mandrel in accordance with ASTM D 522, exterior coating film shall show no evidence of fracturing to the naked eye.

2.1.4.3 Accelerated Weathering, Chalking Resistance and Color Change

A sample of the sheets shall withstand a weathering test a minimum of 2000 hours in accordance with ASTM G 23, using a Type D apparatus, without cracking, peeling, blistering, loss of adhesion of the protective coating, or corrosion of the base metal. Protective coating that can be readily removed from the base metal with a pen-knife blade or similar instrument shall be considered as an area indicating loss of adhesion. After the 2000-hour weatherometer test, exterior coating shall not chalk greater than No. 8 rating in accordance with ASTM D 4214 test procedures. After the 2000-hour weatherometer test, exterior coating color change shall not exceed 2 NBS units in accordance with ASTM D 2244.

2.1.4.4 Humidity Test

When subjected to a humidity cabinet test in accordance with ASTM D 2247 for 1000 hours, a scored panel shall show no signs of cracking, creepage, or corrosion, and shall receive a rating of 8, few blisters.

2.1.4.5 Abrasion Resistant Test

When subjected to the falling sand test in accordance with ASTM D 968, the coating system shall withstand a minimum of 80 liters of sand before the appearance of the base metal.

2.1.4.6 Specular Gloss

Finished surfaces shall have a specular gloss value of 20 or less at an angle of 60 degrees when measured in accordance with ASTM D 523. [Low gloss may be obtained with striations or embossing.]

2.1.4.7 Pollution Resistance Test

Coating shall show no visual effects when immersion tested in a 10 percent hydrochloric acid solution for 24 hours in accordance with ASTM D 1308.

2.2 ACCESSORIES

Accessories shall be compatible with the panels furnished. Flashing, trim for top and bottom of wall, corners, treatment at fenestrations [and roof ridges], molded closure strips, caps, and similar metal accessories shall be not less than the minimum thicknesses specified for the panel face sheets. Accessories shall be furnished by the panel manufacturer and shall be compatible with the panels furnished. Exposed metal accessories shall have a factory color finish to match the panels furnished. Molded closure strips shall be closed-cell or solid-cell synthetic rubber or neoprene, or polyvinyl chloride premolded to match configuration of the panels and shall not absorb or retain water.

2.3 FASTENERS

Fasteners shall be the type recommended and furnished by the panel manufacturer to meet or exceed all load considerations specified as a system.

2.4 SEALANT

Sealant shall be the type conforming to the manufacturer's recommendation for factory application. Concealed sealant may be the non-hardening type.

2.5 GASKETS AND INSULATING COMPOUNDS

Gaskets and insulating compounds shall be non-absorptive and suitable for insulating contact points of incompatible materials. Insulating compounds shall be non-running after drying.

PART 3 EXECUTION

3.1 GENERAL

Installation shall be as specified and in accordance with the approved erection instructions and drawings. Finished structure shall be proven weathertight. Dissimilar materials which are not compatible when contacting each other shall be insulated from each other by means of gaskets or insulating compounds. Exposed surfaces and edges shall be kept clean and free from sealant, metal cuttings, hazardous burrs, and other foreign materials. Stained, discolored, or damaged sheets shall be removed from the site.

3.2 PANEL INSTALLATION

Wall panels shall be applied with the longitudinal configurations in the vertical position. Roof panels shall be applied with the longitudinal configurations in the direction of the roof slope. Joints between panels and at accessories shall be sealed. Method of applying joint sealant shall conform to the manufacturer's recommendations. Fasteners shall be driven normal to the surface and to a uniform depth to seat the gasketed washers properly. Accessories shall be fastened into framing members, except as otherwise approved. Scratched, chipped or otherwise abraded surfaces shall be touched up as necessary with the manufacturer's recommended touch-up paint. Closure strips shall be provided as indicated and where necessary to provide weathertight construction.

3.3 THERMAL BLISTERING

When thermal blistering occurs, all repairs shall be made in accordance with the panel manufacturer's instructions and supervision, and with the written approval of the Contracting Officer. Location of all repairs shall be indicated on the contract drawings. In areas where blistering occurs, panels shall be relocated so that no two panels having repaired blisters shall be next to each other.

3.3.1 Blisters Less Than 300 mm in Diameter

A small hole shall be drilled in the blistered area to release the freon gas. If this procedure does not restore the panel's flat appearance, then adhesive shall be injected into the blister to re-adhere the facing to the insulation.

3.3.2 Blisters Greater Than 300 mm in Diameter

Adhesive shall be injected into the blister pocket to restore the structural integrity and the flat appearance.

-- End of Section --