

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE OF PAGES 1
2. AMENDMENT/MODIFICATION NO. AM-0006	3. EFFECTIVE DATE 02/26/02	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. <i>(If applicable)</i>	
6. ISSUED BY CODE	7. ADMINISTERED BY <i>(If other than Item 6)</i> CODE			
US ARMY ENGINEER DISTRICT, HONOLULU CORPS OF ENGINEERS, BUILDING S-200 FORT SHAFTER, HAWAII 96858-5440 CONTRACT SPECIALIST: MARIA BUCKNER				

8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>	<input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO. DACA83-02-B-0001
	9B. DATED <i>(SEE ITEM 11)</i> 12/11/01
	10A. MODIFICATION OF CONTRACT/ORDER NO.
10B. DATED <i>(SEE ITEM 13)</i>	
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.

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

<input checked="" type="checkbox"/> 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.)*
FY01 UMMCA PN 52070, ALIGN GATE, WHEELER ARMY AIRFIELD, OAHU, HAWAII

(See Page 2 of 2 Pages)

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

1. CHANGES TO SPECIFICATIONS: Attached hereto are new and revised pages to the specifications. The revision mark "(Am-0006)" is shown on each page.

A. REVISED PAGES. Following are revised pages to the specifications. Changes are indicated in bold.

00010-3
00010-4
00010-6
02764-7

B. NEW PAGES. Oceanic Cable letter, pages 1 to 3, dated September 7, 2001, should be added to the end of Section 01900, Miscellaneous Provisions.

C. DELETED PAGES. No sheets have been deleted.

2. CHANGES TO DRAWINGS:

A. REVISED DRAWINGS (NOT ISSUED). Following are revisions made to drawings listed. These revisions will not be issued with this amendment but will be furnished to the successful bidder at the time of award of the contract.

(1) Drawing No. 851-90-05, Sheet No. T-2, Ring No. 2 At Zone A1 through A6 and E1 through E6, add circled "a" to note revisions made to the following sheets:

<u>SHEET NO.</u>	<u>RING NO.</u>	<u>SHEET NO.</u>	<u>RING NO.</u>
T-2	2	C-20	24
C-1	3	C-25	29
C-4	8	C-26	30
C-5	9	C-27	31
C-6	10	CD-11	43
C-7	11	CD-25	57
C-8	12	CD-35	67
C-9	13	A-2	73
C-10	14	S-1	74
C-11	15	E-5	86
C-15	19	E-6	87
C-17	21	E-7	88
C-18	22	E-9	90
C-19	23	L-1	123
		L-3	125

- (2) Drawing No. 851-90-05, Sheet No. C-1, Ring No. 3 At Zone D2 and E2, add the following General Note:

26. BASE SECURITY SHALL BE MAINTAINED AT ALL TIMES DURING THE LENGTH OF THE CONTRACT. THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING AS REQUIRED TO MAINTAIN BASE PERIMETER SECURITY AFTER NORMAL WORKING HOURS.

- (3) Drawing No. 851-90-05, Sheet No. C-4, Ring No. 8 At Zone A5, B1, B3, C1, D1, D3, D5, E1, E3, E5, G1, G3, and G5, revise bottom of Type 2A and 2D curbs to terminate at bottom of base course instead of bottom of subbase course.
- (4) Drawing No. 851-90-05, Sheet No. C-5, Ring No. 9. At Zone A1, A3, A5, C3, D1, D5, F3, and G3, revise bottom of Type 2A and 2D curbs to terminate at bottom of base course instead of bottom of subbase course.
- (5) Drawing No. 851-90-05, Sheet No. C-6, Ring No. 10. At Zone G2, revise Pavement Section 1 - within the State ROW in the tabulation as follows:

PAVEMENT SECTION 1 – WITHIN STATE ROW		
AC PAVEMENT	ASPHALT CONCRETE BASE COURSE	AGGREGATE SUBBASE COURSE
4" (101.6mm)	8" (203.2mm)	6" (152.4mm)

- (6) Drawing No. 851-90-05, Sheet No. C-7, Ring No. 11. At Zone F4, F5, F6, G4, G5 and G6, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.
- (7) Drawing No. 851-90-05, Sheet No. C-11, Ring No. 15. At Zone B1 through B5 and C2 through C4, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.

At Zone F-1, revise existing callout “REMOVE ALL CURB STOPS (TYP)” to read “REMOVE EXISTING WHEEL STOPS AND REPLACE TO MATCH NEW PARKING STALL LOCATIONS. SEE SHEET C-19”.

- (8) Drawing No. 851-90-05, Sheet No. C-18, Ring No. 22. At Zone A4 through A6, B4 through B6, C4 and C5, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.
- (9) Drawing No. 851-90-05, Sheet No. C-20, Ring No. 24. At Zone F6, G6 and H6, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.
- (10) Drawing No. 851-90-05, Sheet No. CD-25, Ring No. 57. At Zone G3, add the following notes:

5. FENCE HEIGHT SHALL BE 6'-0". GATE HEIGHT SHALL BE 6'-0"

6. BARBED WIRE STRANDS SHALL BE PLACED VERTICALLY ABOVE THE GATE. THE DISTANCE FROM THE CENTER OF THE HORIZONTAL TOP OF GATE RAIL TO THE TOPMOST BARBED WIRE SHALL BE 1'-6".

- (11) Drawing No. 851-90-05, Sheet No. CD-35, Ring No. 67. At Zone F1 and G1, add the following note:

FENCE HEIGHT SHALL BE 1830.

- (12) Drawing No. 851-90-05, Sheet No. A-2, Ring No. 73. At Zone E2 and F2, revise dimension in note "19 PLYWOOD SHEATHING" from "19" to "15.9".
- (13) Drawing No. 851-90-05, Sheet No. S-1, Ring No. 74. At Zone C5, NOTE 8, LINE 6, revise "16" TO "15.9".

At Zone C4, PREFABRICATED WOOD TRUSS NOTE 4, Item D, revise "EQUIPTMENT" TO "EQUIPMENT".

- (14) Drawing No. 851-90-05, Sheet No. E-5, Ring No. 86. At Zone C3, D2, D3, D5, D6, E2, E3, E5, E6, F2, F3, F5, and F6, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.
- (15) Drawing No. 851-90-05, Sheet No. E-6, Ring No. 87. At zone A1 and B1, add the following notes:

- 3. WORK TO BE PROVIDED UNDER OPTION 8.**
- 4. DISCONNECT AND REMOVE EXST. STREET LIGHT TO FACILITATE TRANSFER OF OCEANIC CABLES. REINSTALL AND RECONNECT EXST. STREET LIGHT WITHIN 8 HOURS.**
- 5. POLE AND STREET LIGHT SHALL NOT BE INSTALLED UNTIL AFTER OCEANIC CABLE HAS TRANSFERRED THEIR FACILITIES.**

- (16) Drawing No. 851-90-05, Sheet No. E-7, Ring No. 88. At Zone C3 through C6, D4, and D5, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.
- (17) Drawing No. 851-90-05, Sheet No. E-9, Ring No. 90. At Zone C3 through C5, D3 through D5, E3 through E5, and F2 through F5, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.

At Zone D4 and D5, add four traffic loop detectors at Lyman Gate exit lanes (two additional loops per lane) and four traffic loop detectors at the relocated Kunia Gate exit lanes (two additional loops per lane).

At Zone F5, revise "F1" to "F2".

At Zone H6, revise pedestrian signal head type from "L.E.D." to "Neon".

- (18)

- (19) Drawing No. 851-90-05, Sheet No. L-1, Ring No. 123. At Zone C5, D4, D5, E4, E5, and F5, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.
- (20) Drawing No. 851-90-05, Sheet No. L-3, Ring No. 125. At Zone C5, D4, D5, E4, E5, and F5, revise Right-of-Way limits per revisions on Sheet C-8, Ring No. 12.

B. REVISED DRAWINGS (ISSUED). The following revised drawings replace like-numbered drawings and are issued herewith:

<u>DRAWING NO.</u>	<u>SHEET NO.</u>	<u>RING NO.</u>	<u>REVISION LETTER</u>	<u>REVISION DATE</u>
851-90-05	C-8	12	a	2/1/02
851-90-05	C-9	13	a	2/1/02
851-90-05	C-10	14	a	2/1/02
851-90-05	C-15	19	a	2/1/02
851-90-05	C-17	21	a	2/1/02
851-90-05	C-19	23	a	2/1/02
851-90-05	C-25	29	a	2/1/02
851-90-05	C-26	30	a	2/1/02
851-90-05	C-27	31	a	2/1/02
851-90-05	CD-11	43	a	2/1/02

3. The bid opening date of March 15, 2002, 2:00 p.m. Hawaiian Standard Time remains unchanged.

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NUMBER DACA83-02-B-0001	2. TYPE OF SOLICITATION <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 12/11/01	PAGE OF PAGES *1 of 6 *
	IMPORTANT - The "offer" section on the reverse must be fully completed by the offeror.			

4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER	6. PROJECT NUMBER
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7. ISSUED BY U. S. Army Engineer District, Honolulu Corps of Engineers, Bldg . 200 ATTN: CEPOH-CT-C Fort Shafter, Hawaii 96858-5440	CODE	8. ADDRESS OFFER TO U.S. Army Engineer District, Honolulu Corps of Engineers, Bldg. 200 Attn: CEPOH-CT-C Fort Shafter, Hawaii 96858-5440 (Deliver hand-carried bids to Room 115, Building 200, Fort Shafter, Hawaii 96858-5440)
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9. FOR INFORMATION CALL	A. NAME Maria Buckner	B. TELEPHONE NUMBER (Include area code) (NO COLLECT CALLS) (808)438-8583
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SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying number, date):

FY01 UMMCA PN52070, Align Gate, Wheeler Army Airfield, Oahu, Hawaii

SEE MAIN TABLE OF CONTENTS

THIS PROCUREMENT IS UNRESTRICTED.

11. The Contractor shall begin performance within 7 calendar days and complete it * 361 * calendar days after award, notice to proceed. This performance period is mandatory, negotiable. (See FAR Clause 52.211-10.)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE PAYMENT BONDS? <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12B. CALENDAR DAYS 14
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13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 0 copies to perform the work required are due at the place specified in Item 8 2:00 P.M. (hour) local time * 3/15/02 * (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee is, is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by

D. Offers providing less than 120 calendar days for Government acceptance after the date offers are due will not be considered and be rejected.

Invitation for Bids No. DACA83-02-B-0001

SECTION 00010
BIDDING SCHEDULE

FY01 UMMCA PN52070, Align Gate
Wheeler Army Airfield, Oahu, Hawaii

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	AMOUNT
<u>BASE SCHEDULE</u>				
1.	Kunia Gate Realignment.	1	JOB	\$ _____
	TOTAL BIDDING SCHEDULE			\$ _____
OPTIONS				
2.	Net additional cost for upgrading Wheeler approach road pavement to Pavement Section 1 in lieu of Pavement Section 2. (Option 1)	1	JOB	\$ _____
3.	Net additional cost for electric operated sliding gate and concrete unit masonry walls in lieu of swinging chain link gates and chain link fence. (Option 2)	1	JOB	\$ _____
4.	Net additional cost for grassing in lieu of existing asphalt concrete pavement for island surfacing at Wheeler approach/Wright Road Intersection. (Option 3)	1	JOB	\$ _____
5.	Net additional cost for landscaping plants in lieu of grassing. (Option 4)	1	JOB	\$ _____
6.	Net additional cost for underground irrigation systems for areas to be grassed and plants as indicated on Sheets L-3 and L-4. (Option 5)	1	JOB	\$ _____
7.	Net additional cost for period lights in lieu of standard light poles and bases. (Option 6)	1	JOB	\$ _____
8.	Cost for two-foot concrete curb offsets Wheeler approach. (Option 7)	1	JOB	\$ _____
9.	Net additional cost for lengthing the south bound Kunia Road to Lyman Gate deceleration lane. (Option 8)	1	JOB	\$ _____

- | | | | | |
|-----|--|---|-----|----------|
| 10. | Net additional cost for modification at
Drainline "A" outlet. (Option 9) | 1 | JOB | \$ _____ |
| 11. | Net additional cost for Drainline "J",
ditch grading, and headwall modification.
(Option 10) | 1 | JOB | \$ _____ |

NOTES TO BIDDING SCHEDULE

1. Failure to bid on all the items in the Bid Schedule may cause the bid to be considered nonresponsive.
2. By submission of an offer under the OPTION, Bidder agrees that the Government may exercise the OPTION at the time of award, or at any time within 120 days following the date of the award of the basic contract. (See Provision No. 52.217-5, EVALUATIONS OF OPTIONS, in Section 00100).
3. **The total amount of the base schedule plus any awarded Options is subject to a statutory limit.** After deductions are made for Government supervision and administration, contingencies and other costs, and for the purpose of award of the contract this amount is limited to \$2,680,000.

PAYMENTS

Compensation for all work to be performed under this contract will be made under the payment item listed herein. The principal features of the work to be included under the payment item is noted. Work required by the drawings and specifications and not particularly mentioned shall be included in and be paid for under the contract price for the item to which the work pertains. Payment for the item shall cover all work, complete and finished in accordance with the drawings and specifications, and shall be full compensation for all work in connection therewith, including quality control and cost of performance and payment-bond premiums as specified in the CONTRACT CLAUSES. For the purpose of CONTRACT CLAUSE entitled "PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS", the term "designated billing office" and "designated payment office" are as follows:

a. Billing Office

U.S. Army Engineer District, Honolulu
Fort Shafter Resident Office, Bldg 230
Fort Shafter, HI, 96858-5440

b. Payment Office

U.S. Army Engineer District, Honolulu
Attn: Accounts Payable Branch (CEPOH-RM-FA). Bldg 230
Fort Shafter, HI, 96858-5440

Item numbers mentioned herein after correspond to the item numbers in the BIDDING SCHEDULE.

Item No. 1: Kunia gate realignment, will be paid for at the contract price, complete in place and ready for use, including clearing and grubbing, asphalt concrete pavement, pavement striping, markers, signs, concrete curbs and gutters, sanitary sewer line, storm drainage systems, chain link fence and gates, street lighting, electrical distribution systems, earthwork for gate house, reinforced concrete foundations, and floor slab, concrete unit masonry walls, wood roof framing, standing seam metal roofing, flashing and sheet metal work, exterior finish system, bullet resistant exterior metal doors, wood doors, bullet resistant fixed windows, gypsum board wall and ceiling, ceramic tile, painting, identifying devices, toilet accessories, plumbing, electrical work, testing, final connections, cleanup, and all incidental items necessary to complete the work.

Item No. 2 (Option No. 1): Net additional cost for upgrading Wheeler approach road pavement to Pavement Section 1 in lieu of Pavement Section 2, will be paid for at the contract price, complete in place and ready for use.

Item No. 3 (Option No. 2): Net additional cost for electric operated sliding gate and concrete unit masonry walls in lieu of swinging chain link gates and chain link fence, will be paid for at the contract price, complete in place and ready for use.

Item No. 4 (Option No. 3): Net additional cost for grassing in lieu of existing asphalt concrete pavement for island surfacing at Wheeler approach/Wright Road Intersection, complete in place and ready for use.

Item No. 5 (Option No. 4): Net additional cost for landscaping plants in lieu of grassing, will be paid for at the contract price, complete in place and ready for use.

Item No. 6 (Option No. 5): Net additional cost for underground irrigation systems for areas to be grassed and plants as indicated on Sheets L-3 and L-4, will be paid for at the contract price, complete in place and ready for use.

Item No. 7 (Option No. 6): Net additional cost for period lights in lieu of standard light poles and bases, will be paid for at the contract price, complete in place and ready for use.

Item No. 8 (Option No. 7): Cost for two-foot concrete curb offsets Wheeler approach, will be paid for at the contract price, complete in place and ready for use.

Item No. 9 (Option No. 8): Net additional cost for lengthing the south bound Kunia Road to Lyman Gate deceleration lane, will be paid for at the contract price, complete in place and ready for use.

Item No. 10 (Option No. 9): Net additional cost for modification at Drainline "A" outlet, will be paid for at the contract price, complete in place and ready for use.

Item No. 11 (Option No. 10): Net additional cost for construction of Drainline "J" (Headwall J1, Catch Basin J2, Drain Manhole J3, Catch Basin J4, and the pipe between these structures), trapezoidal ditch grading, and modification of existing headwall structure, will be paid for at the contract price, complete in place and ready for use.

- End of Section -



200 Akaimoani Street • Mililani, Hawaii 96789-3999 • Telephone: (808) 625-2100

September 7, 2001

Ronald Ho and Assoc.
2138 Algaroba St
Honolulu, HI 96826-2714

Attn: Mr. Scott Lee

Subject: Kunia Gate Realignment

Replacement of the existing lines would be necessary if Oceanic cannot transfer the existing aerial cables. A rough cost estimate to replace the existing CATV aerial cables is \$216,916.00.

However, Oceanic's preferred plan is to transfer the existing cables to the new poles. The area about Pole 16 provides the most challenges. In order to transfer the existing aerial lines to the new Pole 16, Oceanic requires the following:

- 1) The street light (existing or / and new) would need to be taken down. If a street light is required to be in service, perhaps a tempo street light pole can be placed on the street side of the existing aerial cables between Pole 15 and 16. The weight of the existing cables may prevent Oceanic from bringing the existing cables over the street light.
- 2) An alley arm would need to be in place on new Pole 16. Oceanic is contacting Verizon to discuss if their plans involve placing an alley arm.
- 3) Oceanic to transfer last. So we can top the pole above the CATV strand.
- 4) Oceanic would need to place new strand, move fiber slack, and splice new coax to attach to the new Pole 16. Cost estimate for the preferred plan is \$1,270.00.

(AM-0006)



200 Akamainui Street • Mililani, Hawaii 96789-3999 • Telephone: (808) 625-2100

In general, it is also required the tree behind P.16 be trimmed, and the new street lights are placed so as not to be in the way of the newly attached strand or transfer of lines. Oceanic hopes to supply greater details after we discuss with Verizon. If any questions, please call 625-8456. I will be on leave from September 10 and return September 27 should you need assistance at this time there will be a forwarding number on my voice mail.

Sincerely,

Dean Yonezawa

Dean Yonezawa

Encl: Sht E-6

memo3.doc

(AM-0006)

BEACON

TIME OF PLACEMENT AND LOCATION OF STREET LIGHT SHOULD BE DONE SO AS NOT TO INTERFERE WITH TRANSFERRING OF EXIST LINES.

HECO TO REMOVE EXST. JOINT UTILITY POLE #16

DE CLASS 3, 30'-0" TREATED WOOD POLE, GRS RISER & WIRING

TRIM TREE

NEW ACCESS EASEMENT IN FAVOR OF HECO

HECO TO INSTALL NEW JOINT UTILITY POLE & GUY. VERIZON & OCEANIC CABLE TO ATTACH NEW CABLES

NEW ROW NEW FENCE

34A
XXXXX III
N250 277V

34
XXXXX III
N250 277V

SATE-G

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DIVISION 02 - SITE WORK

SECTION 02764

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SECTION 02764

PAVEMENT MARKINGS, MARKERS AND SIGNS

PART 1 GENERAL

1.1 REFERENCES

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

HAWAII DEPARTMENT OF TRANSPORTATION (HIDT), HIGHWAYS DIVISION

HIDT HSSRBPWC (1994) Hawaii Standard Specifications for Road, Bridge and Public Works Construction

1.1.1 Referenced Standard Specifications

Materials and workmanship specified herein with reference to HIDT HSSRBPWC shall be in accordance with the referenced articles, sections, and paragraphs of the standard except that contractual and payment provisions do not apply. Where the term "Engineer" is used, it shall mean the Contracting Officer. Where the term "State" is used, it shall mean "Federal Government."

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-03 Product Data

Equipment

Lists of proposed equipment, including descriptive data, and notifications of proposed Contractor actions as specified in this section. List of removal equipment shall include descriptive data indicating area of coverage per pass, pressure adjustment range, tank and flow capacities, and safety precautions required for the equipment operation.

Qualifications

SD-06 Test Reports

Sampling and Testing

Certified copies of the test reports, prior to the use of the materials at the jobsite. Testing shall be performed in an approved independent laboratory.

SD-07 Certificates

Volatile Organic Compound (VOC)

Certificate stating that the proposed pavement marking paint meets the VOC regulations of the local Air Pollution Control District having jurisdiction over the geographical area in which the project is located.

Traffic Control Guide Signs

Certificates of compliances to material specifications.

1.2.1 Qualifications

Document certifying that personnel are qualified for equipment operation and handling of chemicals.

1.3 DELIVERY AND STORAGE

All materials shall be delivered and stored in sealed containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's name, and directions, all of which shall be plainly legible at time of use.

1.4 EQUIPMENT

All machines, tools and equipment used in the performance of the work shall be approved and maintained in satisfactory operating condition. Equipment operating on roads and runways shall display low speed traffic markings and traffic warning lights.

1.4.1 Paint Application Equipment

The equipment to apply paint to pavements shall be a self-propelled or mobile-drawn pneumatic spraying machine with suitable arrangements of atomizing nozzles and controls to obtain the specified results. The machine shall have a speed during application not less than 8 kilometers per hour (5 mph), and shall be capable of applying the stripe widths indicated, at the paint coverage rate specified in paragraph APPLICATION, and of even uniform thickness with clear-cut edges. Equipment used for marking streets and highways shall be capable of placing the prescribed number of lines at a single pass as solid lines, intermittent lines or a combination of solid and intermittent lines using a maximum of two different colors of paint as specified. The paint applicator shall have paint reservoirs or tanks of sufficient capacity and suitable gauges to apply paint in accordance with requirements specified. Tanks shall be equipped with suitable air-driven mechanical agitators. The spray mechanism shall be equipped with quick-action valves conveniently located, and shall include necessary pressure regulators and gauges in full view and reach of the operator. Paint strainers shall be installed in paint supply lines to ensure freedom from residue and foreign matter that may cause malfunction of the spray guns. The paint applicator shall be readily adaptable for attachment of an air-actuated dispenser for the reflective media approved for use. Pneumatic spray guns shall be provided for hand application of paint in areas where the mobile paint applicator cannot be used.

1.4.2 Preformed Tape Application Equipment

Mechanical application equipment shall be used for the placement of preformed marking tape. Mechanical application equipment shall be defined as a mobile pavement marking machine specifically designed for use in applying precoated, pressure-sensitive pavement marking tape of varying widths, up to 300 mm (12 inches). The applicator shall be equipped with rollers, or other suitable compactive device, to provide initial adhesion of the preformed, pressure-sensitive marking tape with the pavement surface. Additional hand-operated rollers shall be used as required to properly seat the thermoplastic tape.

1.4.3 Thermoplastic Extrusion Application Equipment

The equipment as specified in HSDT HSSRBWC, Section 629.03(C)(3)(a), which apply material to pavement by extrusion method, shall be continuous mixing and agitation of material.

1.4.4 Surface Preparation Equipment

1.4.4.1 Sandblasting Equipment

Sandblasting equipment shall include an air compressor, hoses, and nozzles of proper size and capacity as required for cleaning surfaces to be painted. The compressor shall be capable of furnishing not less than 70.8 liters per sec (150 cfm) of air at a pressure of not less than 620 kPa (90 psi) at each nozzle used, and shall be equipped with traps that will maintain the compressed air free of oil and water.

1.4.4.2 Waterblast Equipment

The water pressure shall be specified at 17.9 MPa (2600 psi) at 60 degrees C (140 degrees F) in order to adequately clean the surfaces to be marked.

1.4.5 Marking Removal Equipment

Equipment shall be mounted on rubber tires and shall be capable of removing markings from the pavement without damaging the pavement surface or joint sealant. Waterblasting equipment shall be capable of producing an adjustable, pressurized stream of water. Sandblasting equipment shall include an air compressor, hoses, and nozzles. The compressor shall be equipped with traps to maintain the air free of oil and water.

1.4.5.1 Shotblasting Equipment

Shotblasting equipment shall be capable of producing an adjustable depth of removal of marking and pavement. Each unit shall be self-cleaning and self-contained, shall be able to confine dust and debris from the operation, and shall be capable of recycling the abrasive for reuse.

1.4.5.2 Chemical Equipment

Chemical equipment shall be capable of application and removal of chemicals from the pavement surface, and shall leave only non-toxic biodegradable residue.

1.4.6 Traffic Controls

Suitable warning signs shall be placed near the beginning of the worksite

and well ahead of the worksite for alerting approaching traffic from both directions. Small markers shall be placed along newly painted lines or freshly placed raised markers to control traffic and prevent damage to newly painted surfaces or displacement of raised pavement markers. Painting equipment shall be marked with large warning signs indicating slow-moving painting equipment in operation.

1.5 HAND-OPERATED, PUSH-TYPE MACHINES

All machines, tools, and equipment used in performance of the work shall be approved and maintained in satisfactory operating condition. Hand-operated push-type machines of a type commonly used for application of paint to pavement surfaces will be acceptable for marking small streets and parking areas. Applicator machine shall be equipped with the necessary paint tanks and spraying nozzles, and shall be capable of applying paint uniformly at coverage specified. Sandblasting equipment shall be provided as required for cleaning surfaces to be painted. Hand-operated spray guns shall be provided for use in areas where push-type machines cannot be used.

1.6 MAINTENANCE OF TRAFFIC

1.6.1 Roads, Streets, and Parking Areas

When traffic must be rerouted or controlled to accomplish the work, the necessary warning signs, flagpersons, and related equipment for the safe passage of vehicles shall be provided.

1.7 WEATHER LIMITATIONS FOR REMOVAL

Operation shall cease during thunderstorms. Operation shall cease during rainfall, except for waterblasting and removal of previously applied chemicals. Waterblasting shall cease where surface water accumulation alters the effectiveness of material removal.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Pavement Markings

Comply with the HIDT HSSRBPWC, Section 629 for the following:

White and Yellow Paints.....Section 755.01.

Pavement Markers.....Section 755.02.

Adhesive for Pavement Markers.....Section 755.03.

Preformed Pavement Marking Tape*.....Section 755.04.

*Ensure that preformed pavement marking tape does not contain metallic foil.

Reflective Thermoplastic Compound Pavement...Section 755.05.
Markings

2.1.2 Traffic Control Guide Signs

Comply with the HIDT HSSRBPWC, Section 630 for the following:

Structural Concrete.....	Section 601.
Signs.....	Section 712.20.
Sign Posts.....	Section 713.11.
Fasteners for Signs and Route Markers.....	Section 713.12.

2.2 THERMOPLASTIC COMPOUNDS

2.2.1 Asphalt Concrete Primer

The primer for asphalt concrete pavements shall be a thermosetting adhesive with a solids content of pigment reinforced synthetic rubber and synthetic plastic resin dissolved and/or dispersed in a volatile organic compound (VOC). Solids content shall not be less than 10 percent by weight at 20 degrees C and 60 percent relative humidity. A wet film thickness of 0.10 mm plus or minus 0.025 mm, shall dry to a tack-free condition in less than 5 minutes.

2.3 SAMPLING AND TESTING

Materials proposed for use shall be stored on the project site in sealed and labeled containers, or segregated at source of supply, sufficiently in advance of needs to allow 60 days for testing. Upon notification by the Contractor that the material is at the site or source of supply, a sample shall be taken by random selection from sealed containers by the Contractor in the presence of a representative of the Contracting Officer. Samples shall be clearly identified by designated name, specification number, batch number, manufacturer's formulation number, project contract number, intended use, and quantity involved. Materials will be sampled and tested by the Government. No material shall be used at the project prior to receipt by the Contractor of written notice that the materials meet the laboratory requirements. The cost of initial testing of samples from each lot of materials will be borne by the Government. If the sample fails to meet specification requirements, the material represented by the sample shall be replaced and the new material will be tested. Cost of sampling and testing the new material will be borne by the Contractor. Testing shall be performed in an approved independent laboratory. If materials are approved based on reports furnished by the Contractor, samples will be retained by the Government for possible future testing should the material appear defective during or after application.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Surfaces to be marked shall be thoroughly cleaned before application of the pavement marking material. Dust, dirt, and other granular surface deposits shall be removed by sweeping, blowing with compressed air, rinsing with water or a combination of these methods as required. Rubber deposits, surface laitance, existing paint markings, and other coatings adhering to the pavement shall be completely removed with scrapers, wire brushes, sandblasting, approved chemicals, or mechanical abrasion as directed. Areas of old pavement affected with oil or grease shall be scrubbed with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinsed thoroughly after each application. After cleaning, oil-soaked areas shall be sealed with cut shellac to prevent bleeding through the new paint. Pavement surfaces shall be allowed

to dry, when water is used for cleaning, prior to striping or marking. Surfaces shall be recleaned, when work has been stopped due to rain.

3.1.1 Cleaning Existing Pavement Markings

In general, markings shall not be placed over existing pavement marking patterns. Existing pavement markings, which are in good condition but interfere or conflict with the newly applied marking patterns, shall be removed. Deteriorated or obscured markings that are not misleading or confusing or interfere with the adhesion of the new marking material do not require removal. New preformed pavement markings shall not be applied over existing preformed markings. Whenever grinding, scraping, sandblasting or other operations are performed the work must be conducted in such a manner that the finished pavement surface is not damaged or left in a pattern that is misleading or confusing. When these operations are completed the pavement surface shall be blown off with compressed air to remove residue and debris resulting from the cleaning work.

3.2 APPLICATION

All pavement markings and patterns shall be placed as shown on the drawings. All roadway striping and pavement arrows shall be thermoplastic extrusion material. The Kunia Gate lot and visitor/vehicle search lot at the gate shall be thermoplastic extrusion materials. All other existing lots shall be painted.

3.2.1 Paint

Paint shall be applied to clean, dry surfaces. New asphalt pavement surfaces and new Portland concrete cement shall be allowed to cure for a period of not less than 30 days before applications of paint. Paint shall be applied pneumatically with approved equipment at rate of coverage specified. The Contractor shall provide guide lines and templates as necessary to control paint application. Special precautions shall be taken in marking numbers, letters, and symbols. Edges of markings shall be sharply outlined.

3.2.1.1 Rate of Application

Paint shall be applied through spray machine without clogging at spreading rate in accordance with HDT HSSRBWPC, 629.03(C)(2).

3.2.1.2 Drying

The maximum drying time requirements of the paint specifications will be strictly enforced to prevent undue softening of bitumen, and pickup, displacement, or discoloration by tires of traffic. If there is a delay in drying of the markings, painting operations shall be discontinued until cause of the slow drying is determined and corrected.

3.2.2 Preformed Tape

The preformed markings shall be placed in accordance with the manufacturer's written instructions.

3.2.3 Raised Reflective Markers

Prefabricated markers shall be aligned carefully at the required spacing and permanently fixed in place by means of epoxy resin adhesives. To

insure good bond, pavement in areas where markers will be set shall be thoroughly cleaned by sandblasting and use of compressed air prior to applying adhesive.

3.2.4 Thermoplastic Extrusion Pavement Marking

Clean off dirt, blaze, paint, tape, and grease. Do not apply thermoplastic extrusion pavement marking when pavement surface is not dry. Apply material in variable widths from 50 mm (2") to 300 mm (12"). Apply material for full width of stripe in one application or pass. For example, form 200 mm (8") stripe with 200 mm (8") die. Apply thermoplastic extrusion pavement markings in accordance with HDT HSSRBPWC, Section 629.03(C)(3)(b).

3.3 MARKING REMOVAL

Pavement marking, including plastic tape, shall be removed in the areas shown on the drawings. Removal of marking shall be as complete as possible without damage to the surface. Aggregate shall not be exposed by the removal process. After the markings are removed, the cleaned pavement surfaces shall exhibit adequate texture for remarking as specified in paragraph SURFACE PREPARATION. Contractor shall demonstrate removal of pavement marking in an area designated by the Contracting Officer. The demonstration area will become the standard for the remainder of the work.

3.3.1 Equipment Operation

Equipment shall be controlled and operated to remove markings from the pavement surface, prevent dilution or removal of binder from underlying pavement, and prevent emission of blue smoke from asphalt or tar surfaces.

3.3.2 Cleanup and Waste Disposal

The worksite shall be kept clean of debris and waste from the removal operations. Cleanup shall immediately follow removal operations in areas subject to air traffic. Debris shall be disposed of at approved sites.

3.4 TEMPORARY PAVEMENT MARKINGS

Immediately install temporary pavement markings according to Section 626, Table 629.03-1 when:

- a. Permanent pavement marking are not installed after completion of day's final paving;
- b. Additional guidance through area is required; or
- c. Markings for special traffic patterns are warranted.

3.4.1 Flexible Delineator Posts

Install flexible delineator posts with reflector markers or Type I, Barricades, spaced 24-meter (80') intervals or temporary solid 100 mm (4") pavement marking tapes on edge of travelway for newly paved surfaces, scarified, or cold planed surfaces, reconstructed areas, and unmarked areas for guidance of motorists.

3.4.2 Maintenance of Temporary Pavement Markings

Maintain and replace temporary pavement markings, flexible delineators and barricades as directed by the Contracting Officer. Remove temporary markings before installing permanent pavement markings. Cover or temporarily remove signs that conflict with temporary pavement markings.

3.5 SIGN POST SETTING

Set posts plumb. Provide concrete base of dimensions indicated. Thoroughly compact concrete to be free of voids and finish in a dome. Thoroughly work grout into the hole so as to be free of voids and finish in a dome. Cure concrete and grout a minimum of 3 days before any further work is done on posts.

-- End of Section --