

Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division

HI A-AD 6(5), State Route 200
Saddle Road
Pohakuloa Training Area
Hawaii County, Hawaii

INVITATION FOR BID

This invitation for bid cites Federal Highway Administration
Specifications FP-96, 1996, English

Cut & Paste on Bid Submittal Envelope

OF-17 (cflhd7/03) FAR (48) CFR 53.214(g)
OFFER LABEL FAR (48) CFR 53.215-1(h)

NOTICE TO OFFEROR

1. THIS LABEL MAY ONLY BE USED ON ENVELOPES LARGER THAN 156 mm (6 ½ INCHES) IN HEIGHT AND 292 mm (11 ½ INCHES) IN LENGTH.
2. Print or type your name and address in the UPPER left corner of the envelope containing your offer.
3. Complete the bottom portion of this form and paste it on the lower left corner of the envelope, unless the envelope is 156 mm by 292 mm (6 ½ inches by 11 ½ inches) or smaller.

OFFER

SOLICITATION NO.

DATE FOR RECEIPT OF OFFERS

TIME FOR RECEIPT OF OFFERS

OFFICE DESIGNATED TO RECEIVE OFFERS

Contractor _____

Street Address _____

City/State/Zip _____

State: Hawaii

County: Hawaii

Location: Pohakuloa Training Area

Length: Schedule A = 7.3 miles
Option X = installation of 6-inch asphalt curb and waterborne pavement markings
Option Y = Superpave Asphalt Concrete Pavement, 4-inch asphalt curb, thermoplastic pavement markings, and rumble strips.

Type of Improvement: embankment construction, placing subbase, hot asphalt treated base course

NOTICE REGARDING PROJECT SITE INSPECTION

This project provides for Saddle Road construction on lands that are under the legal jurisdiction of the Department of the Army and the State of Hawaii Department of Land and Natural Resources. These lands are semi-remote and highly susceptible to fire; access onto these lands is therefore controlled. Escorted tours will be conducted to permit inspection of the roadway project limits between mileposts 35 and 42 and PTA quarry, in accordance with the dates and times shown in the table below. The proposed centerline for this project will be flagged at adequate intervals prior to the project advertisement period to permit visual location of the proposed alignment.

INSPECTION SCHEDULE

DATE	ROADWAY SITE INSPECTION Tour: 9:00 AM to Noon
August 19, Tuesday <i>Note: Report 8:30 AM</i>	SR 200 - MP 35; Mauna Kea State Park
August 28, Thursday <i>Note: Report 8:30 AM</i>	SR 200 - MP 35; Mauna Kea State Park
September 3, Wednesday <i>Note: Report 8:30 AM</i>	SR 200 - MP 35; Mauna Kea State Park

Individuals interested in attending the site inspections must contact the CFLHD Project Office to (a) register (names of attendees, company represented, phone number); and (b) confirm that the tour will be conducted as scheduled. Please contact the Project Office 24-hours prior to the desired inspection date:

Office: 808-961-0832

Cell: 303-810-8711

email: richard.gillette@fhwa.dot.gov

CFLHD personnel will escort registered parties to the site but will not answer project-related questions. Questions may be submitted in writing to CFLHD via email to CFLContracts@fhwa.dot.gov or by fax (720-963-3360). All questions and resultant replies will be posted and available on CFLHD's website (<http://www.cflhd.gov/procurement/>) for review.

Report to MP 35 at least thirty (30) minutes prior to the start of the field inspections for security check-in at PTA and safety briefing. Vehicle registration, proof of insurance, safety check record and driver's license are required to obtain a vehicle pass to enter onto PTA. The Army reserves the right to cancel inspections if they conflict with military training schedules. Weather or ground conditions at the project site may also necessitate cancellation of the tours as shown above.

General Inspection Requirements

INSPECTIONS WILL BEGIN PROMPTLY AT TIMES INDICATED ON THE INSPECTION SCHEDULE; INDIVIDUALS WHO ARE NOT PRE-REGISTERED TO ATTEND OR ARRIVE LATE WILL NOT BE PERMITTED TO INSPECT THE PROJECT SITE AND QUARRY ON THAT DAY. VEHICLE PASSES ARE REQUIRED AND MUST BE OBTAINED PRIOR TO THE INSPECTION START TIME. VEHICLES MUST STAY ON EXISTING ROADS AND TRAILS. EACH PARTICIPATING VEHICLE MUST HAVE A 2.5 LB. CAPACITY ABC DRY CHEMICAL FIRE EXTINGUISHER IN THE EVENT OF STARTING A FIRE WITHIN THE INSPECTION SITES AND PTA.

NO SMOKING WILL BE PERMITTED DURING THE INSPECTIONS.

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NOTICE TO BIDDERS AND OFFERORS

Before mailing your offer, please check the following:

- Your offer sets forth full, accurate, and complete information as required by this solicitation, including representations and certifications/bidder qualifications and acknowledgement of any amendments that may have been issued.
- You have completed the bid schedule and checked your bid figures, including calculations on your work sheets.
- You have provided the required minimum Bid Guarantee in proper form and amount including Power of Attorney Affidavit. See FAR Provision 52.228-1.
- You have completed and signed all required documents.

INVITATION FOR BID BOOKLET

It is the responsibility of the bidder to verify that this solicitation booklet and the plan set is complete as listed in the table of contents and the index to plan sheets. Also, the bidder is responsible for submitting all required forms and documents with the bid.

Applicable FAR provisions and clauses in this IFB are incorporated by reference or full text. FAR provisions and clauses incorporated by reference can be accessed on the Internet at www.arnet.gov/far/. Bidders are strongly encouraged to review the provisions and clauses referenced in this document before submitting a bid.

Bidders **must** fill out and submit with their offers: (1) this page completed, which indicates interest in partnering; (2) pages A-1 and A-2; (3) pages number B-1 through B-15; (4) Sections C and D in their entirety; and (5) page F-3 of the Contract Clauses indicating Bidder's option to waive the price evaluation preference for HUBZone Certified Firms. The remaining pages may be retained by the bidder for their information.

PARTNERING (See Subsection 103.05 of the FP)

Please indicate your interest in participating in Partnering by checking the appropriate blank below.

The offeror is interested in participating in partnering.

The offeror is not interested in participating in partnering.

NOTICE TO BIDDERS AND OFFERORS

BONDING

FAR Provision 52.228-1, Bid Guarantee, requires a bid guarantee of not less than 20 percent of the amount of the bid (see page A-3). A bid bond from a corporate surety must be from a surety acceptable to the Government as appearing on the Department of the Treasury's list of approved sureties. The bid bond must have an original signature and an embossed seal for the surety. If a Power of Attorney is required with the bid bond, an original, photocopy or facsimile of an original Power of Attorney is sufficient evidence of authority to bind the surety. If the Power of Attorney form contains any language stating that the Power of Attorney can be revoked at any time, the document must contain an original signature or an embossed seal in the certification section.

Small business concerns, including minority business enterprises, may obtain assistance in securing necessary bonding for this project by contacting the office of the Small Business Administration located in their State.

ATTENTION: Minority, Women-owned, and Disadvantaged Business Enterprises (DBEs). The Department of Transportation (DOT), offers working capital financing and bonding assistance for transportation related contracts. DOT's Bonding Assistance Program (BAP) offers bid, performance and payment bonds on contracts up to \$1,000,000. DOT's Short-Term Lending Program (STLP) offers lines of credit to finance accounts receivable. Maximum line of credit is \$500,000 with interest at the prime rate. For further information, call (800) 532-1169. Internet address: <http://osdbuweb.dot.gov>.

INDIVIDUAL SURETIES

See FAR contract clause 52.228-11, Pledges of Assets.

UTILIZATION OF SMALL BUSINESS, HUBZone SMALL BUSINESS, SMALL DISADVANTAGED BUSINESS, WOMEN-OWNED SMALL BUSINESS, VETERAN OWNED, AND SERVICE-DISABLED VETERAN OWNED SMALL BUSINESS CONCERNS SUBCONTRACTING PROGRAM

FAR Clause 52.219-8, Utilization of Small Business Concerns states that Prime Contractors afford small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns the maximum practicable opportunity to participate in performing contracts let by any Federal agency.

FAR Clause 52.219-9, Small Business Subcontracting Plan, Alternate I, requires that the large business concern who is the successful low bidder on a Federal project with an anticipated award amount exceeding \$1 million, is required to submit a subcontracting plan prior to contract award. The subcontracting plan expresses goals in terms of percentages of total planned subcontracting dollars for the use of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. To view and download a sample plan for subcontracting

NOTICE TO BIDDERS AND OFFERORS

requirements, visit <http://www.cflhd.gov/procurement/construction/reference-links.cfm>. If the apparent successful low bidder fails to submit a subcontracting plan acceptable to the CO within the allowable time, that bidder may be ineligible for award of the contract.

A list of currently known business concerns owned and controlled by socially and economically disadvantaged individuals and/or women-owned small business concerns that have indicated an interest in participating in highway construction is available at <http://www.ccr.gov>

PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS

The award of this contract is subject to a 10% Price Evaluation Preference for HUBZone Small Business Concerns (SBC). Refer to FAR Clause 52.219-4. This price evaluation preference can apply to any qualified HUBZone SBC certified by the Small Business Administration. For any HUBZone SBC electing to waive the preference, see Page F-3 of this solicitation.

NOTICE TO POTENTIAL HUBZONE SBC BIDDERS

In the event this full and open competition results in a contract award to a qualified HUBZone SBC after a price evaluation preference, FAR Clause 52.236-1, Performance of Work by the Contractor, on page F-4, does not apply.

§126.700 of the Code of Federal Regulations (Title 13, Part 126, Subpart G), stated below, will replace the performance of work requirements stated in the above mentioned FAR clause.

A qualified HUBZone SBC receiving a contract under this solicitation for general construction must spend at least 50% of the cost of the contract incurred for personnel on its own employees or employees of other qualified HUBZone SBCs. This requirement may be met by expending at least 50% of the cost of the contract incurred for personnel on its employees or it may subcontract at least 35% of the cost of the contract performance incurred for personnel to one or more qualified HUBZone SBCs. A qualified HUBZone SBC prime contractor may not, however, subcontract more than 50% of the cost of the contract incurred for personnel to non-qualified HUBZone SBCs.

PROGRESS PAYMENTS

DFARS 204.7302, NASA, DOT and Treasury FAR Supplements, requires prospective bidders be registered in Central Contractor Registration (CCR) system prior to the award of a contract, basic agreement, basic ordering agreement, or blanket purchase agreement (Refer to FAR Clause 52.204-7, Central Contractor Registration). The DOT has partnered with the Department of Defense (DOD) to use the CCR system to obtain contractor financial electronic funds transfer (EFT) information.

NOTICE TO BIDDERS AND OFFERORS

FAR Clause 52.232-33, Payment by Electronic Funds Transfer -- Central Contractor Registration requires that the EFT information in the CCR must be accurate in order for contractors' invoices to be considered proper invoices for the purpose of prompt payment. Contractors must input and maintain their current EFT information.

To register in CCR, access the following DOD web site: www.ccr.gov .

FAR Clause 52.232-5, Payments Under Fixed-Price Construction Contracts, states reimbursement will be made for premiums paid by the Contractor to obtain performance and payment bonds as required under this contract. As specified in the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP), Section 151, Mobilization, payment for performance and payment bond premiums will be included in the mobilization item and shall not be in addition to the contract price.

FAR Clause 52.232-27, Prompt Payment for Construction Contracts, states the due date for progress payments shall be the 14th day after receipt of a proper payment request by the Government's designated billing office. Bidders are advised to review Subsection 109.08, Progress Payments and Subsection 109.05, Scope of Payment of the FP concerning direct and indirect payments.

FACSIMILE OR TELEGRAPHIC BIDS ARE NOT AUTHORIZED FOR THIS SOLICITATION

Bids may be modified or withdrawn by facsimile or telegraphic notice, if such notice is received by the time specified for receipt of bids. The Government will not be responsible for ANY failure attributable to the transmission or receipt of telegraphic or facsimile data. See FAR Provision 52.214-5, Submission of Bids.

FAX Number to submit modifications to bids for this project is (808) 541-2704.

SOLICITATION, OFFER AND AWARD <i>(Construction, Alteration or Repair)</i>	1. SOLICITATION NO. DTFH68-08-B-00021	2. TYPE OF SOLICITATION <input checked="" type="checkbox"/> SEALED BID (<i>IFB</i>) <input type="checkbox"/> NEGOTIATED (<i>RFP</i>)	3. DATE ISSUED 08/11/08	PAGE OF PAGES 1 OF 2
IMPORTANT - THE "OFFER SECTION ON THE REVERSE MUST BE FULLY COMPLETED BY OFFEROR.				
4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NO. HI A-AD 6(5), State Route 200, Saddle Road		
7. ISSUED BY: FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS DIVISION 12300 WEST DAKOTA AVENUE, SUITE 167 LAKEWOOD, COLORADO 80228		CODE: 69050001	8. ADDRESS OFFER TO: Mr. Abraham Wong, Division Administrator Federal Highway Administration Hawaii Division Office Attn: Mr. Pat Phung 300 Ala Moana Boulevard, Room 3-306 Honolulu, HI 96850	
9. FOR INFORMATION CALL SEE PAGE A-3	A. NAME: SEE PAGE A-3		B. TELEPHONE NO. (<i>Include area code</i>) SEE PAGE A-3	
SOLICITATION				
<i>NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder."</i>				
10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED. CONSTRUCTION OF HI A-AD 6(5), SADDLE ROAD, IN STRICT ACCORDANCE WITH: <ol style="list-style-type: none"> 1. FEDERAL ACQUISITION AND TRANSPORTATION ACQUISITION REGULATIONS (<i>FAR & TAR</i>) 2. DEPARTMENT OF LABOR, DAVIS BACON MINIMUM WAGE RATES (<i>See Section G</i>) 3. SPECIAL CONTRACT REQUIREMENTS (<i>See Section I</i>) 4. PLANS 5. BID SCHEDULE (<i>See Section B</i>) 6. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-96, 1996, ENGLISH 7. SUBCONTRACTING PLAN (IF APPLICABLE) <p>See Subsection 104.04 of the FP for governing order of precedence</p> <p style="text-align: right;">*COMPLETION DATE WILL BE DETERMINED AT TIME OF AWARD</p>				
11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u> </u> * calendar days after receiving <input type="checkbox"/> award <input checked="" type="checkbox"/> notice to proceed. The performance period is <input checked="" type="checkbox"/> mandatory <input type="checkbox"/> negotiable.				
12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND 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 10
13. ADDITIONAL SOLICITATION REQUIREMENTS: <ol style="list-style-type: none"> A. Sealed offers in original and <u>0</u> copies to perform the work required are due at the place specified in Item 8. by <u>2:00 p.m.</u> (hour) local time on <u>09/18/08</u> (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes 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 <input checked="" type="checkbox"/> is <input type="checkbox"/> 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 reference. D. Offers providing less than <u>60</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected. 				

OFFEROR (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)	15. TELEPHONE NO. (Include area code)
CODE	16. REMITTANCE ADDRESS (Include only if different than Item 14)
FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing with calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)

AMOUNTS	SEE INDIVIDUAL BID SCHEDULE(S)
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18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS
(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	20B. SIGNATURE	20C. OFFER DATE
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AWARD (To be completed by Government)

21. ITEMS ACCEPTED:
ALL WORK MUST BE COMPLETED to be filled in at award CALENDAR DAYS AFTER ISSUANCE OF THE NOTICE TO PROCEED.

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA
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24. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 27 (4 copies unless otherwise specified)	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 15 U.S.C. 637() <input type="checkbox"/> 41 U.S.C. 253(c)()
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26. ADMINISTERED BY CODE: _____	27. PAYMENT WILL BE MADE BY FEDERAL HIGHWAY ADMINISTRATION CENTRAL FEDERAL LANDS HIGHWAY DIVISION 12300 W. DAKOTA AVENUE, SUITE 167 LAKEWOOD, COLORADO 80228
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CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	<input type="checkbox"/> 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
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30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	31A. NAME OF CONTRACTING OFFICER (Type or print)
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30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE
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ADDITIONAL SOLICITATION INFORMATION

Block 9: DATA AVAILABLE

The following materials are available electronically at www.cflhd.gov/procurement/construction/advertised-projects.cfm

Geotechnical Engineering Report, October 10, 2003

Report of Superpave Asphalt Mix Design [from 6(3) project], January 9, 2007

Results of Hot Mix Asphalt Mix Design [from 6(3) project], November 1, 2006

Geotechnical Report for PTA Quarry, January 17, 2008

Earthwork Summary

The following materials are available electronically:

Manual of Uniform Traffic Control Devices for Streets and Highways, (Current Edition published by U.S. Government Printing Office found at <http://mutcd.fhwa.dot.gov> .

AASHTO Manuals found at <http://fhwapap04.fhwa.dot.gov/index.jsp> under the Standard Specifications and Supplements link.

FP-96, Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, 1996, found at <http://www.cflhd.gov/design/index.cfm#> under the Construction Specs tab.

Contractor Guidelines for Quality Control Plans and example QC Plans found at <http://www.cflhd.gov/design/index.cfm#> under the Construction Specs tab.

For amendments, bid results and tabulations or other procurement information please visit our website at www.cflhd.gov/procurement/construction

Block 13: A bid guarantee of not less than 20 percent of the amount of the bid or \$3 million, whichever is less, is required. If the bidder fails to provide the required bid guarantee in the proper form and amount, such failure may result in rejection of the bid. See FAR Provision 52.228-1, Bid Guarantee. If the bid guarantee is a bid bond, it must be submitted on Standard Form 24. Also refer to Subsections 102.03 and 102.04 of the FP for additional information.

Block 26: The Contractor shall submit invoices to:

FHWA, CFLHD, Project Engineer's Office (Address to be designated at preconstruction conference), for submission to the designated billing office shown in Block 7.

Final billing shall be submitted directly to the address shown in Block 7.

Other: The estimated price range of the project work is between \$25,000,000 and \$35,000,000.

For questions regarding access to the Federal Business Opportunities (FBO) website or how to obtain plans and other solicitation documents, please contact either Brenda McGehee at (720) 963-3353 or Tiffany Atchison at (720) 963-3354.

As explained in FAR Provision 52.214-6, any explanation or interpretation of the solicitation, drawings, specifications, etc must be requested in writing to one of the following:

E-mail address: CFLContracts@fhwa.dot.gov
FAX Number: 720-963-3360
Mailing Address: Federal Highway Administration
Central Federal Lands Highway Division
Attention: Acquisition and Contracting
12300 W. Dakota Avenue, Suite 360
Lakewood, Colorado 80228

Responses will be provided to the individual questioner and also be posted on our website at <http://www.cflhd.gov/procurement/construction/advertised-projects.cfm> under the project link. Potential Offerors are advised to check this site on a regular basis to assure the most current and up-to-date information.

All amendments resulting from this solicitation will be uploaded to the FBO website at http://www.fbo.gov/spg/DOT/FHWA/68/postdatePrevDays_1.html and posted on our website at <http://www.cflhd.gov/procurement/construction/advertised-projects.cfm> under Current Solicitations.

**BIDDERS PLEASE BE ADVISED THAT QUESTIONS RELATIVE TO THIS
IFB WILL NOT BE ACCEPTED AFTER 4:00P.M. MDT ON SEPTEMBER 15, 2008.**

Bid Schedule Instructions

PLEASE NOTE: Before preparing your bid, read the Solicitation Provisions (Pages E-1 thru E-6).

This Invitation for Bid is comprised of one schedule and two options as follows:

Schedule A: includes embankment construction, placing subbase, hot asphalt treated base course

Option X: includes installation of 6-inch asphalt curb and waterborne pavement markings

Option Y: includes Superpave Asphalt Concrete Pavement, 4-inch asphalt curb, thermoplastic pavement markers, and rumble strips.

- ✓ Insert a numeric Unit Bid Price for each pay item listed on Schedule A, Option X, and Option Y. When the words “Lump Sum” appear as a Unit Bid Price, insert an Amount Bid.
- ✓ Multiply the Unit Bid Price by the Estimated Quantity for each pay item and insert the Amount Bid.
- ✓ Total Amount Bid for all Pay Items on Schedule A, Option X and Option Y. Show the total on Page B-7 for Schedule A; Page B-10 for Option X; and Page B-13 for Option Y.
- ✓ On Page B-7, provide the number of calendar days necessary to complete all Schedule A and Option Y work and all Schedule A and Option X work from the issuance of Notice to Proceed (NTP) until the day of final construction completion. The NTP date and the construction completion date should be included in the number of calendar days necessary to complete all work. Refer to Page F-5 for Notice to Proceed information.
- ✓ The maximum calendar days bid for Schedule A and Option Y shall not exceed 352, and the minimum calendar days bid shall not be less than 250.
- ✓ The maximum calendar days bid for Schedule A and Option X shall not exceed 313, and the minimum calendar days bid shall not be less than 222.

Evaluation Factors

To be eligible for award of a contract, the bidder shall submit prices for each item necessary to complete all contract work in Schedule A, Option X, and Option Y. The offer shall also provide the number of calendar days necessary to complete all contract work for Schedule A and Option Y, and Schedule A and Option X.

The Government intends to exercise either Option X or Option Y together with Schedule A at the time of award (See FAR 52.217-4 Evaluation of Options Exercised at Time of Contract Award, June 1988).

Evaluation for award of a contract will consist of a combination of the Bid Item Totals for Schedule A and Option Y and the Calendar Days bid multiplied by the Administrative Cost. If sufficient funds are not available to award Schedule A and Option Y, then the Bid Item Totals for Schedule A and Option X and the Calendar Days bid multiplied by the Administrative Cost will be evaluated. Accordingly, contract award will be made to the lowest responsible bidder conforming to the solicitation, provided funds are available.

In the event that Schedule A and Option X constitutes the awarded contract, the Government reserves the right to modify the contract to perform Option Y work in lieu of Option X work, at the prices and calendar days bid, should additional funds become available. The contract modification to execute the Option switch shall occur no later than 120 days following Notice to Proceed. FAR Clause 52.217-7, Option for Increased Quantity – Separately Priced Line Item, March 1989). Calendar days accrued prior to execution of the contract modification will be considered part of the calendar days allowable for Schedule A and Option Y.

Completion Dates

The total number of calendar days bid for the Schedule A plus the Option awarded will become the basis for determining the fixed contract completion date (see Subsection 108.03 of FP-96, English), except as noted above. If the contract is modified to substitute Option Y work for Option X work, the calendar days expended between the issuance of Notice to Proceed and the execution of the contract modification will be applied to the calendar days bid for Schedule A plus Option Y. It is against this date that liquidated damages will be assessed according to Subsection 108.04, as amended by the Special Contract Requirements (SCR).

BID SCHEDULE A

FOR

HI A-AD 6(5), SADDLE ROAD

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
15101	MOBILIZATION ALL	Lump Sum	\$ _____
15202	SLOPE, REFERENCE, AND CLEARING AND GRUBBING STAKES 0.9 MILE	\$ _____	\$ _____
15203	CENTERLINE RE-ESTABLISHMENT 7.3 MILE	\$ _____	\$ _____
15204	DRAINAGE STRUCTURE SURVEY AND STAKING 2 EACH	\$ _____	\$ _____
15207	GRADE FINISHING STAKES 7.3 MILE	\$ _____	\$ _____
15212A	MINOR APPROACH ROAD SURVEY AND STAKING 3 EACH	\$ _____	\$ _____
15301	CONTRACTOR QUALITY CONTROL ALL	Lump Sum	\$ _____
15501	CONSTRUCTION SCHEDULE ALL	Lump Sum	\$ _____
15703	SILT FENCE 14,350 LNFT	\$ _____	\$ _____
15709	CHECK DAMS 155 EACH	\$ _____	\$ _____
15735	SEDIMENT CONTROL LOG 290 EACH	\$ _____	\$ _____
15805	WATERING 10,000 MGAL	\$ _____	\$ _____
20101	CLEARING AND GRUBBING 11.2 ACRE	\$ _____	\$ _____

Bid Schedule

Project: HI A-AD 6(5)

SADDLE ROAD PTA ALIGNMENT - PHASE 5

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
20302RA	REMOVAL OF ASPHALT CURB 520 LNFT	\$ _____	\$ _____
20402	SUBEXCAVATION 2,000 CUYD	\$ _____	\$ _____
20403	UNCLASSIFIED BORROW 24,700 CUYD	\$ _____	\$ _____
20409	EMBANKMENT CONSTRUCTION 29,300 CUYD	\$ _____	\$ _____
21101	ROADWAY OBLITERATION 650 SQYD	\$ _____	\$ _____
25101C	PLACED RIPRAP, CLASS 3 23 CUYD	\$ _____	\$ _____
25111	PLACED INDIVIDUAL BOULDERS 45 EACH	\$ _____	\$ _____
25206	ROCKERY WALL 1,300 SQFT	\$ _____	\$ _____
30104E	SUBBASE, GRADING E 33,000 TON	\$ _____	\$ _____
30302	ROAD RECONDITIONING 164,000 SQYD	\$ _____	\$ _____
30612	DUST PALLIATIVE 25,000 GAL	\$ _____	\$ _____
30701LA	STOCKPILED AGGREGATE, 3" GRADING 10,200 TON	\$ _____	\$ _____

Bid Schedule

Project: HI A-AD 6(5)

SADDLE ROAD PTA ALIGNMENT - PHASE 5

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
30701LB	STOCKPILED AGGREGATE, 6" GRADING		
	3,400 TON	\$ _____	\$ _____
40501E	HOT ASPHALT TREATED BASE COURSE, GRADING E		
	77,700 TON	\$ _____	\$ _____
40504C	ANTISTRIP ADDITIVE, TYPE 3		
	780 TON	\$ _____	\$ _____
40505PGDB	ASPHALT BINDER, GRADE PG 64-16		
	5,000 TON	\$ _____	\$ _____
40507	MATERIALS TRANSFER VEHICLE		
	ALL	Lump Sum	\$ _____
40908BA	FOG SEAL GRADE CSS-1 OR CSS-1H, SS-1 OR SS-1H		
	40 TON	\$ _____	\$ _____
41101CM	PRIME COAT GRADE CSS-1, CSS-1H, SS-1, OR SS-1H		
	119 TON	\$ _____	\$ _____
41201CM	TACK COAT GRADE CSS-1, CSS-1H, SS-1, OR SS-1H		
	40 TON	\$ _____	\$ _____
41301F	ASPHALT PAVEMENT MILLING, 2-INCH DEPTH		
	2,040 SQYD	\$ _____	\$ _____
60104	CONCRETE (PEDESTRIAN PAD)		
	8 EACH	\$ _____	\$ _____
60104	CONCRETE (HOLE FOUNDATION)		
	8 EACH	\$ _____	\$ _____
60201M	24-INCH PIPE CULVERT		
	15 LNFT	\$ _____	\$ _____
60201N	30-INCH PIPE CULVERT		
	184 LNFT	\$ _____	\$ _____

Bid Schedule

Project: HI A-AD 6(5)

SADDLE ROAD PTA ALIGNMENT - PHASE 5

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
60206N	END SECTION FOR 30-INCH PIPE CULVERT		
	2 EACH	\$ _____	\$ _____
60223	REMOVE AND RESET END SECTION		
	1 EACH	\$ _____	\$ _____
61701BBAA	GUARDRAIL SYSTEM G2, TYPE 2, CLASS A (STEEL POSTS)		
	375 LNFT	\$ _____	\$ _____
61702EA	TERMINAL SECTION TYPE EXTRUDER (ET 2000 PLUS)		
	1 EACH	\$ _____	\$ _____
61702FL	TERMINAL SECTION TYPE FLARED (TYPE A)		
	1 EACH	\$ _____	\$ _____
61901AC	FENCE, WOVEN WIRE TYPE, 48-INCH HEIGHT		
	37,300 LNFT	\$ _____	\$ _____
61901FA	FENCE TEMPORARY CONSTRUCTION		
	2,000 LNFT	\$ _____	\$ _____
61902BG	GATE, METAL TYPE, 14-FOOT WIDTH		
	7 EACH	\$ _____	\$ _____
61902BK	GATE, METAL TYPE, 20-FOOT WIDTH		
	3 EACH	\$ _____	\$ _____
61906	REMOVE AND RESET FENCE		
	520 LNFT	\$ _____	\$ _____
62201AE	DUMP TRUCK, 10-12 CUBIC YARD CAPACITY		
	20 HOUR	\$ _____	\$ _____
62201BC	BACKHOE LOADER, 48 GAL MINIMUM RATED CAPACITY BUCKET (24-INCH WIDTH)		
	20 HOUR	\$ _____	\$ _____

Bid Schedule

Project: HI A-AD 6(5)

SADDLE ROAD PTA ALIGNMENT - PHASE 5

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
62201CE	LOADER, WHEEL TYPE, 4 CUBIC YARD MINIMUM CAPACITY 20 HOUR	\$ _____	\$ _____
62201DG	BULLDOZER, D-9 60 HOUR	\$ _____	\$ _____
62201LB	MOTOR GRADER, 12 FOOT MINIMUM BLADE 20 HOUR	\$ _____	\$ _____
62201MT	HYDRAULIC EXCAVATOR, TRACK TYPE, 165 HP FLYWHEEL POWER, 1.3 CUBIC YARD BUCKET, EQUIVALENT TO A CATERPILLAR 225B, WITH A RAM HOE 20 HOUR	\$ _____	\$ _____
62301	GENERAL LABOR 150 HOUR	\$ _____	\$ _____
62404N	PLACING CONSERVED TOPSOIL, 6-INCH DEPTH 25,900 SQYD	\$ _____	\$ _____
62504B	MULCHING, HYDRAULIC METHOD 17.4 ACRE	\$ _____	\$ _____
62508	WATER 2,000 MGAL	\$ _____	\$ _____
62514	HERBICIDE 200 GAL	\$ _____	\$ _____
62901C	EROSION CONTROL MAT TYPE 3 2,460 SQYD	\$ _____	\$ _____
63001	HIRED TECHNICAL SERVICES 40 HOUR	\$ _____	\$ _____
63003	ADDITIONAL SURVEYING SERVICES 80 HOUR	\$ _____	\$ _____

Bid Schedule

Project: HI A-AD 6(5)

SADDLE ROAD PTA ALIGNMENT - PHASE 5

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63301	SIGN INSTALLATION 124 EACH	\$ _____	\$ _____
63306	OBJECT MARKERS 687 EACH	\$ _____	\$ _____
63307G	DELINEATORS FLEXIBLE 20 EACH	\$ _____	\$ _____
63308A	REMOVING AND RESETTNG SIGN 6 EACH	\$ _____	\$ _____
63505B	BARRICADE, TYPE 2 100 EACH	\$ _____	\$ _____
63505C	BARRICADE TYPE 3 10 EACH	\$ _____	\$ _____
63506	CONE 100 EACH	\$ _____	\$ _____
63507	CONSTRUCTION SIGN 630 SQFT	\$ _____	\$ _____
63508	DRUM 100 EACH	\$ _____	\$ _____
63509	FLAGGER 1,700 HOUR	\$ _____	\$ _____
63511A	TEMPORARY BARRIER (WATER FILLED) 1,300 LNFT	\$ _____	\$ _____
63514	TEMPORARY PAVEMENT MARKINGS 1,600 LNFT	\$ _____	\$ _____

Bid Schedule

Project: HI A-AD 6(5)

SADDLE ROAD PTA ALIGNMENT - PHASE 5

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63519A	PAVEMENT MARKING REMOVAL 2,130 SQFT	\$ _____	\$ _____
63523	MAINTENANCE OF TRAFFIC, PAVEMENT PATCH 150 TON	\$ _____	\$ _____
63524A	VARIABLE MESSAGE SIGN 120 DAY	\$ _____	\$ _____
63539C	TRAFFIC AND SAFETY SUPERVISOR 16 WEEK	\$ _____	\$ _____
63637	FLASHING BEACON 1 EACH	\$ _____	\$ _____

Schedule A Bid Item Total \$ _____

Option X Bid Item Total from Page B-10 \$ _____

Option Y Bid Item Total from Page B-13 \$ _____

Multiply the Calendar Days by the Administrative Cost, then add Schedule A and Option Y Bid Item Totals to calculate the Amount Bid for Schedule A and Option Y.

Number of Calendar Days to complete Schedule A and Option Y	Administrative Cost	Amount Bid for Schedule A and Option Y (including Administrative Costs)
Calendar Days * _____	\$5,000.00 Per Day	\$ _____

Multiply the Calendar Days by the Administrative Cost, then add Schedule A and Option X Bid Item Totals to calculate the Amount Bid for Schedule A and Option X.

Number of Calendar Days to complete Schedule A and Option X	Administrative Cost	Amount Bid for Schedule A and Option X (including Administrative Costs)
Calendar Days * _____	\$5,000.00 Per Day	\$ _____

* The number of calendar days used shall include all weekends, holidays, periods of inclement weather, winter shutdown periods, and all other days during which work may or may not be performed.

Submitted by: _____
Name of Bidder

OPTION X

FOR

HI A-AD 6(5), SADDLE ROAD

Bid Schedule

Project: HI A-AD 6(5)
SADDLE ROAD PTA ALIGNMENT - PHASE 5 - OPTION X

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
15101	MOBILIZATION		
	ALL	Lump Sum	\$ _____
15301	CONTRACTOR QUALITY CONTROL		
	ALL	Lump Sum	\$ _____
30104E	SUBBASE, GRADING E		
	9,700		
	TON	\$ _____	\$ _____
40501E	HOT ASPHALT TREATED BASE COURSE, GRADING E		
	4,200		
	TON	\$ _____	\$ _____
40504C	ANTISTRIP ADDITIVE, TYPE 3		
	45		
	TON	\$ _____	\$ _____
40505PGDB	ASPHALT BINDER, GRADE PG 64-16		
	275		
	TON	\$ _____	\$ _____
40908BA	FOG SEAL GRADE CSS-1 OR CSS-1H, SS-1 OR SS-1H		
	8		
	TON	\$ _____	\$ _____
41101CM	PRIME COAT GRADE CSS-1, CSS-1H, SS-1, OR SS-1H		
	23		
	TON	\$ _____	\$ _____
41201CM	TACK COAT GRADE CSS-1, CSS-1H, SS-1, OR SS-1H		
	8		
	TON	\$ _____	\$ _____
60905N	ASPHALT CONCRETE CURB, 6-INCH DEPTH		
	37,800		
	LNFT	\$ _____	\$ _____
62201AE	DUMP TRUCK, 10-12 CUBIC YARD CAPACITY		
	5		
	HOUR	\$ _____	\$ _____

Bid Schedule X

Project: HI A-AD 6(5)
SADDLE ROAD PTA ALIGNMENT - PHASE 5 - OPTION X

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
62201BC	BACKHOE LOADER, 48 GAL MINIMUM RATED CAPACITY BUCKET (24-INCH WIDTH) 5 HOUR	\$ _____	\$ _____
62201CE	LOADER, WHEEL TYPE, 4 CUBIC YARD MINIMUM CAPACITY 5 HOUR	\$ _____	\$ _____
62201DG	BULLDOZER, D-9 5 HOUR	\$ _____	\$ _____
62201LB	MOTOR GRADER, 12 FOOT MINIMUM BLADE 5 HOUR	\$ _____	\$ _____
62201MT	HYDRAULIC EXCAVATOR, TRACK TYPE, 165 HP FLYWHEEL POWER, 1.3 CUBIC YARD BUCKET, EQUIVALENT TO A CATERPILLAR 225B, WITH A RAM HOE 5 HOUR	\$ _____	\$ _____
62301	GENERAL LABOR 20 HOUR	\$ _____	\$ _____
63401BA	PAVEMENT MARKINGS, TYPE B, SOLID (4-INCH) 93,300 LNFT	\$ _____	\$ _____
63401BA	PAVEMENT MARKINGS, TYPE B, SOLID (8-INCH) 79,600 LNFT	\$ _____	\$ _____
63401BA	PAVEMENT MARKINGS, TYPE B, SOLID (12-INCH) 5,350 LNFT	\$ _____	\$ _____
63401BB	PAVEMENT MARKINGS, TYPE B, BROKEN 14,570 LNFT	\$ _____	\$ _____

Bid Schedule X

Project: HI A-AD 6(5)

SADDLE ROAD PTA ALIGNMENT - PHASE 5 - OPTION X

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63406	PAVEMENT MARKINGS, SYMBOLS 52 EACH	\$ _____	\$ _____

TOTAL \$ _____

Submitted by: _____
Name of Bidder

OPTION Y

FOR

HI A-AD 6(5), SADDLE ROAD

Bid Schedule

Project: HI A-AD 6(5)
SADDLE ROAD PTA ALIGNMENT - PHASE 5 - OPTION Y

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
15101	MOBILIZATION		
	ALL	Lump Sum	\$ _____
15301	CONTRACTOR QUALITY CONTROL		
	ALL	Lump Sum	\$ _____
30104E	SUBBASE, GRADING E		
	15,400		
	TON	\$ _____	\$ _____
40103PGDB	ASPHALT CEMENT GRADE PG 64-16		
	1,810		
	TON	\$ _____	\$ _____
40105C	ANTISTRIP ADDITIVE, TYPE 3		
	270		
	TON	\$ _____	\$ _____
40106ABBL	SUPERPAVE ASPHALT CONCRETE PAVEMENT, 1/2-INCH NOMINAL MAXIMUM SIZE AGGREGATE		
	26,600		
	TON	\$ _____	\$ _____
40107	MATERIALS TRANSFER VEHICLE		
	ALL	Lump Sum	\$ _____
40908BA	FOG SEAL GRADE CSS-1 OR CSS-1H, SS-1 OR SS-1H		
	8		
	TON	\$ _____	\$ _____
41101CM	PRIME COAT GRADE CSS-1, CSS-1H, SS-1, OR SS-1H		
	22		
	TON	\$ _____	\$ _____
41201CM	TACK COAT GRADE CSS-1, CSS-1H, SS-1, OR SS-1H		
	7		
	TON	\$ _____	\$ _____
60905K	ASPHALT CONCRETE CURB, 4-INCH DEPTH		
	37,800		
	LNFT	\$ _____	\$ _____

Bid Schedule Y

Project: HI A-AD 6(5)
SADDLE ROAD PTA ALIGNMENT - PHASE 5 - OPTION Y

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
62101	MONUMENT 33 EACH	\$ _____	\$ _____
62201AE	DUMP TRUCK, 10-12 CUBIC YARD CAPACITY 5 HOUR	\$ _____	\$ _____
62201BC	BACKHOE LOADER, 48 GAL MINIMUM RATED CAPACITY BUCKET (24-INCH WIDTH) 5 HOUR	\$ _____	\$ _____
62201CE	LOADER, WHEEL TYPE, 4 CUBIC YARD MINIMUM CAPACITY 5 HOUR	\$ _____	\$ _____
62201DG	BULLDOZER, D-9 5 HOUR	\$ _____	\$ _____
62201LB	MOTOR GRADER, 12 FOOT MINIMUM BLADE 5 HOUR	\$ _____	\$ _____
62201MT	HYDRAULIC EXCAVATOR, TRACK TYPE, 165 HP FLYWHEEL POWER, 1.3 CUBIC YARD BUCKET, EQUIVALENT TO A CATERPILLAR 225B, WITH A RAM HOE 5 HOUR	\$ _____	\$ _____
62301	GENERAL LABOR 20 HOUR	\$ _____	\$ _____
63401IA	PAVEMENT MARKINGS TYPE I, SOLID (4-INCH WIDTH) 93,300 LNFT	\$ _____	\$ _____
63401IA	PAVEMENT MARKINGS TYPE I, SOLID (8-INCH WIDTH) 79,600 LNFT	\$ _____	\$ _____
63401IA	PAVEMENT MARKINGS TYPE I, SOLID (12-INCH WIDTH) 5,550 LNFT	\$ _____	\$ _____

Bid Schedule Y

Project: HI A-AD 6(5)

SADDLE ROAD PTA ALIGNMENT - PHASE 5 - OPTION Y

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63401IB	PAVEMENT MARKINGS TYPE I, BROKEN 1,290 LNFT	\$ _____	\$ _____
63405	RAISED PAVEMENT MARKERS I, BROKEN 7,250 EACH	\$ _____	\$ _____
63406	PAVEMENT MARKINGS, SYMBOLS 52 EACH	\$ _____	\$ _____
63408	RUMBLE STRIP 22 MILE	\$ _____	\$ _____
63509	FLAGGER 300 HOUR	\$ _____	\$ _____

TOTAL \$ _____

Submitted by: _____
Name of Bidder

Continuation of Bid Schedule

**BUY AMERICAN ACT- CONSTRUCTION MATERIALS
UNDER TRADE AGREEMENTS**

It is understood and agreed that the materials and components listed in Subpart 25.1 of the FAR are a part of this contract and are deemed to be Domestic Construction Material for the purposes of this contract.

NOTE TO CONTRACTOR:

The following information and any applicable supporting data is required for evaluation of requests under FAR Clause 52.225-11 Paragraph (c) & (d) and FAR Provision 52.225-12 Paragraph (b).

Material and/or Component

Construction Material Description	Unit of Measure	Quantity	*Cost Delivered to Job Site
Foreign Construction Material			
Comparable Domestic Material			

Material and/or Component

Construction Material Description	Unit of Measure	Quantity	*Cost Delivered to Job Site
Foreign Construction Material			
Comparable Domestic Material			

[Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]
[Please include name, address, telephone number and contact for suppliers surveyed. Attach copy of response; if oral, attach summary. Include all applicable supporting information.]*

HAZARDOUS MATERIALS

As required by FAR Clause 52.223-3, Hazardous Materials Identification and Safety Data - Alternate I, the apparent low bidder must submit prior to award a Material Safety Data Sheet (MSDS) for all hazardous materials that the bidder identifies in paragraph (b) of the FAR clause and defined under the latest version of Federal Standard No. 313.

Hazardous Material	Identification Number

USE OF RECOVERED MATERIALS ON FEDERAL LANDS HIGHWAY PROJECTS

Use of fly ash and ground granulated blast furnace slag and construction materials containing fly ash and ground granulated blast furnace slag on Federal Lands Highway projects:

- It is the policy of the United States Government that fly ash and ground granulated blast furnace slag and materials containing fly ash and ground granulated blast furnace slag shall have maximum practicable opportunity for incorporation into its construction projects.
- The Contractor agrees to investigate the use of fly ash and ground granulated blast furnace slag and materials containing fly ash and ground granulated blast furnace slag to the fullest extent consistent with the efficient performance of this contract. Both the contractor and the subcontractors are urged to seek out suppliers of fly ash and ground granulated blast furnace slag, cement and concrete containing fly ash and ground granulated blast furnace slag and to solicit bids for these materials.
- Names of firms that supply fly ash and ground granulated blast furnace slag and materials containing fly ash and ground granulated blast furnace slag are available from the American Coal Ash Association and the National Slag Association.

BID BOND (See instructions on reverse)		DATE BOND EXECUTED (Must not be later than bid opening date)			OMB NO. 9000-0045		
Public reporting burden for this collection of information is estimated to average 25 minutes 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 the FAR Secretariat (MVR), Federal Acquisition Policy Division, GSA, Washington, D.C. 20405.							
PRINCIPAL (Legal name and business address)				TYPE OF ORGANIZATION (aX@ one)			
				<input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION			
				STATE OF INCORPORATION			
SURETY(IES) (Name and business address)							
PENAL SUM OF BOND				BID IDENTIFICATION			
PERCENT OF BID PRICE 20 PERCENT	AMOUNT NOT TO EXCEED			BID DATE	INVITATION NO. HI A-AD 6(5), State Route 200		
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS	FOR (Construction, Supplies or Services)	CONSTRUCTION	
<p>OBLIGATION:</p> <p>We, the Principal and Surety(ies) are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.</p> <p>CONDITIONS:</p> <p>The Principal has submitted the bid identified above.</p> <p>THEREFORE:</p> <p>The above obligation is void if the Principal - (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.</p> <p>Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) are waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.</p> <p>WITNESS:</p> <p>The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.</p>							
PRINCIPAL							
SIGNATURE(S)	1. <div style="text-align: right;">(Seal)</div>	2. <div style="text-align: right;">(Seal)</div>	3. <div style="text-align: right;">(Seal)</div>	Corporate Seal			
NAMES(S) & TITLE(S) (Typed)	1.	2.	3.				
INDIVIDUAL SURETY(IES)							
SIGNATURE(S)	1. <div style="text-align: right;">(Seal)</div>	2. <div style="text-align: right;">(Seal)</div>					
NAME(S) (Typed)	1.	2.					
CORPORATE SURETY(IES)							
SURETY A	NAME & ADDRESS			STATE OF INC.	LIABILITY LIMIT \$		
	SIGNATURE(S)	1.	2.				Corporate Seal
	NAMES(S) & TITLE(S) (Typed)	1.	2.				

CORPORATE SURETY(IES) (Continued)					
SURETY B	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAMES(S) & TITLE(S) (Typed)	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAMES(S) & TITLE(S) (Typed)	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAMES(S) & TITLE(S) (Typed)	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAMES(S) & TITLE(S) (Typed)	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAMES(S) & TITLE(S) (Typed)	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAMES(S) & TITLE(S) (Typed)	1.	2.		

INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., 20% of the bid price but the amount not to exceed 3,000,000.00 dollars).
4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed therein. Where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.
 (b) Where individual sureties are involved, a completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capacity.
5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
6. Type the name and title of each person signing this bond in the space provided.
7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

D-1
FEDERAL ACQUISITION REGULATION

SOLICITATION PROVISIONS

REPRESENTATIONS AND CERTIFICATIONS

Effective January 2005, offerors/bidders must submit Representations and Certifications online at www.bpn.gov. All offerors/bidders should submit/update this information at least annually. Refer to the Federal Acquisition Provision 52.204-8 *Annual Representations and Certifications* below. If you have previously accomplished your on-line registration and the NAICS code for this solicitation is different than the code listed in your online profile, please note the amended changes on the lines provided in the Provision below.

REFER TO CFLHD'S WEBSITE AT <http://www.cflhd.gov/procurement/construction/reference-links.cfm> FOR ON-LINE REGISTRATION INSTRUCTIONS

52.204-8 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (JAN 2006)

- (a) (1) The North American Industry Classification System (NAICS) code for this acquisition is 237310.
(2) The small business size standard is 31.0 million or fewer.
(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) (1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (c) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (c) instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

(i) Paragraph (c) applies.

(ii) Paragraph (c) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at <http://orca.bpn.gov>. After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [*offeror to insert changes, identifying change by clause number, title, date*]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR CLAUSE	TITLE	DATE	CHANGE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

(End of Provision)



FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

BIDDER'S QUALIFICATIONS

INSTRUCTIONS: Answer all questions on this form inserting "none" or "not applicable" where appropriate. If more space is required attach additional sheets. Return the signed, dated and completed form with the bid to the address shown in the invitation for bids on or before the time set for bid opening. The prospective bidder shall provide any additional information requested by the Government during evaluation of the bids.

If the prospective bidder is a joint venture or general partnership, a separate Bidder's Qualifications form shall be provided individually for each joint venture participant or partner.

1. Name and address of business:

Name _____			DUNS Number (See FAR Provision 52.204-6)* _____
Street _____			Home Office Congressional District (Insert District #) * _____
City _____	State _____	Zip Code _____	* Necessary for Government reporting purposes only To obtain a Dun & Street number, call 800-333-0505.
County _____			
Telephone Number (Include Area Code) _____			
Fax Number (Include Area Code) _____			

2. a. Type of organization (check appropriate box):

<input type="checkbox"/> Individual	<input type="checkbox"/> Non-profit organization	<input type="checkbox"/> Corporation
<input type="checkbox"/> Partnership	<input type="checkbox"/> Joint Venture	<input type="checkbox"/> Incorporated in: _____

If a Foreign entity:

<input type="checkbox"/> Individual	<input type="checkbox"/> Non-profit organization	<input type="checkbox"/> Corporation
<input type="checkbox"/> Partnership	<input type="checkbox"/> Joint Venture	<input type="checkbox"/> Registered in: _____

b. Size and type of Business Concern (check appropriate boxes):

<input type="checkbox"/> Large Business Concern	<input type="checkbox"/> Small Disadvantaged Business Concern	<input type="checkbox"/> Emerging Small Business
<input type="checkbox"/> Small Business Concern	<input type="checkbox"/> Women-Owned Small Business	<input type="checkbox"/> SBA 8(a) Certified
<input type="checkbox"/> HUB Zone Business Concern	<input type="checkbox"/> Veteran Owned Business Concern	<input type="checkbox"/> Service-Disabled Veteran-Owned Business Concern

3. If a joint venture or general partnership:

- a. Provide the name under which the project will be bid, the home office address, and name of the principal who will represent the company with regard to this project if different from "1." above.

Principal _____

 Business Name _____

 Street _____

 City State Zip Code _____

- b. Provide the name and home office addresses of each of the joint venture partners; indicate which partner is the sponsoring partner. Attach a separate sheet for additional partners.

Sponsoring Partner _____			Other Partner _____		
Street _____			Street _____		
City	State	Zip Code	City	State	Zip Code

4. Date organization established: _____

5. Name of succeeded business, if any: _____

6. How many years have you been in business as:

- a. General contractor ___ years.
 b. Subcontractor ___ years.

7. a. Furnish the following information concerning the owner, partners, officers and directors:

Name	Title	Percent of Business Owned	Years of Business Experience	
			Contracting	Other

- b. Attach resumes of these key personnel as well as the on-site project manager(s) and superintendent(s), and specifically identify the following:
- Present position, responsibility, and length of employment.
 - Amount and type of construction experience.
 - Amount and type of highway construction experience, including position, responsibility, and a brief project description of each period of employment.
 - Formal education and training, professional or technical registrations or licenses.

8. a. Contracts in force. (Attach additional sheets if necessary)

Project Name and Contract Numbers	Owner's Name, Address, and Contact Name and Telephone #	Scope of Work Performed	Contract Amount	Estimated Completion Date	Name of Surety

b. Are there any unresolved claims or lawsuits associated with these projects? If so, state the amount in dispute, parties involved, nature and circumstances of the dispute, and status of the matter on a separate sheet.

FEDERAL ACQUISITION REGULATIONSOLICITATION PROVISIONSInstructions to Bidders**52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)**

This solicitation incorporates one or more solicitation provisions 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. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also the full text of a solicitation provision may be accessed electronically at this address:

<http://www.arnet.gov/far/>.

(End of Provision)

- 52.204-5 WOMEN-OWNED BUSINESS OTHER THAN SMALL BUSINESS (MAY 1999)
- 52.211-6 BRAND NAME OR EQUAL (AUG 1999)
- 52.214-3 AMENDMENTS TO INVITATIONS FOR BIDS (DEC 1989)
- 52.214-4 FALSE STATEMENTS IN BIDS (APR 1984)
- 52.214-5 SUBMISSION OF BIDS (MAR 1997)
- 52.214-6 EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)
- 52.214-7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS
(NOV 1999)
- 52.214-18 PREPARATION OF BIDS - CONSTRUCTION (APR 1984)
- 52.214-19 CONTRACT AWARD - SEALED BIDDING - CONSTRUCTION (AUG 1996)
- 52.214-34 SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)
- 52.214-35 SUBMISSION OF OFFERS IN U.S. CURRENCY (APR 1991)
- 52.217-4 EVALUATION OF OPTIONS EXERCISED AT TIME OF CONTRACT AWARD
(JUN 1988)
- 52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

**52.211-4 AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS NOT LISTED
IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND
COMMERCIAL ITEM DESCRIPTIONS (JUN 1988)**

Specifications cited in this solicitation which are not available for distribution may be examined at the following location:

Federal Highway Administration
Central Federal Lands Highway Division
12300 West Dakota Avenue, Suite 360
Lakewood, Colorado 80228
Contact: Brenda McGehee @ (720) 963-3353 or Tiffany Atchison @ (720) 963-3354

(End of Provision)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm-fixed price contract resulting from this solicitation.

(End of Provision)

**52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY (FEB 1999)**

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
70.4%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on

(1) its implementation of the Equal Opportunity clause,

(2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and

(3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the -

(1) Name, address, and telephone number of the subcontractor;

(2) Employer's identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Hawaii County, Hawaii.

(End of Provision)

**52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENTS-
CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (JAN 2005)**

(a) *Definitions.*

“Construction material,” “designated country construction material,” “domestic construction material,” and “foreign construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act—Construction Materials Under Trade Agreements” (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) *Requests for determination of inapplicability.* An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the request. If an offeror has not requested a determination

regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers.

(1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material, other than designated country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic or designated country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic or designated country construction material, and the offeror shall be required to furnish such domestic or designated country construction material. An offer based on use of the foreign construction material for which an exception was requested—

- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
- (ii) May be accepted if revised during negotiations.

Alternate II (Nov 2006). As prescribed in [25.1102\(d\)\(3\)](#), add the definitions of “Bahrainian construction material” and “Mexican construction material” to paragraph (a) and substitute the following paragraph (d) for paragraph (d) of the basic provision:

(d) Alternate offers.

(1) When an offer includes foreign construction material, except foreign construction material from a designated country other than Bahrain or Mexico, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic or designated country construction material other than Bahrainian or Mexican construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic or designated country construction material other than Bahrainian or Mexican construction material. An offer based on use of the foreign construction material for which an exception was requested--

- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or
- (ii) May be accepted if revised during negotiations.

(End of Provision)

52.225-20 – Prohibition on Conducting Restricted Business Operations in Sudan--Certification.

(a) *Definitions.* As used in this provision—

“Business operations” means engaging in commerce in any form, including by acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, or any other apparatus of business or commerce.

“Marginalized populations of Sudan” means—

- (1) Adversely affected groups in regions authorized to receive assistance under section 8(c) of the Darfur Peace and Accountability Act (Pub. L. 109-344) (50 U.S.C. 1701 note); and
- (2) Marginalized areas in Northern Sudan described in section 4(9) of such Act.

“Person” means—

- (1) A Natural person, corporation, company, business association, partnership, society, trust, any other nongovernmental entity, organization, or group;
- (2) Any governmental entity or instrumentality of a government, including a multilateral development institution (as defined in section 1701(c)(3) of the International Financial Institutions Act (22 U.S.C. 262r(c)(3)); and
- (3) Any successor, subunit, parent company or subsidiary of any entity described in paragraphs (1) or (2) of this definition.

“Restricted business operations” means business operations in Sudan that include power production activities, mineral extraction activities, oil-related activities, or the production of military equipment, as those terms are defined in the Sudan Accountability and Divestment Act of 2007 (Pub. L. 110-174). Restricted business operations do not include business operations that the person conducting the business can demonstrate—

- (1) Are conducted under contract directly and exclusively with the regional government of southern Sudan;
- (2) Are conducted pursuant to specific authorization from the Office of Foreign Assets

Control in the Department of the Treasury, or are expressly exempted under Federal law from the requirement to be conducted under such authorization ;

(3) Consist of providing goods or services to marginalized populations of Sudan;

(4) Consist of providing goods or services to an internationally recognized peacekeeping force or humanitarian organization;

(5) Consist of providing goods or services that are used only to promote health or education;
or

(6) Have been voluntarily suspend.

(b) *Certification.* By submission of its offer, the offeror certifies that it does not conduct any restricted business operations in Sudan.

(End of provision)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.

(c) The amount of the bid guarantee shall be 20 percent of the bid price or \$3,000,000, whichever is less.

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of Provision)

52.233-2 SERVICE OF PROTEST (SEPT 2006)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from:

Kevin R. Black
Contract Development Engineer
Central Federal Lands Highway Division
12300 West Dakota Avenue, Suite 360
Lakewood, Colorado 80228

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of Provision)

52.252-3 ALTERATIONS IN SOLICITATION (APR 1984)

Portions of this solicitation are altered as follows:

None.

(End of Provision)

**1252.216-70 EVALUATION OF OFFERS SUBJECT TO AN ECONOMIC PRICE
ADJUSTMENT CLAUSE (OCT 1994)**

Offers shall be evaluated without an amount for an economic price adjustment being added. Offers will be rejected which: (1) increase the ceiling stipulated; (2) limit the downward adjustment; or (3) delete the economic price adjustment clause. If the offer stipulates a ceiling lower than that included in the solicitation, the lower ceiling will be incorporated into any resulting contract.

(End of Provision)

FEDERAL ACQUISITION REGULATION
CONTRACT CLAUSES
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52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also the full text of a clause may be accessed electronically at this address:

<http://www.arnet.gov/far/>.

(End of Clause)

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**52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK
(APR 1984)**

The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than (See Standard Form 1442). The time stated for completion shall include final cleanup of the premises.

(End of Clause)

52.211-12 LIQUIDATED DAMAGES - CONSTRUCTION (SEPT 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of (See Subsection 108.04 of the Special Contract Requirements) for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of Clause)

**52.222-39 NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING
PAYMENT OF UNION DUES OR FEES (DEC 2004)**

(a) *Definition.* As used in this clause—

“United States” means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) Except as provided in paragraph (e) of this clause, during the term of this contract, the Contractor shall post a notice, in the form of a poster, informing employees of their rights concerning union membership and payment of union dues and fees, in conspicuous places in and about all its plants and offices, including all places where notices to employees are customarily posted. The notice shall include the following information (except that the information pertaining to National Labor Relations Board shall not be included in notices posted in the plants or offices of carriers subject to the Railway Labor Act, as amended (45 U.S.C. 151-188)).

Notice to Employees

Under Federal law, employees cannot be required to join a union or maintain membership in a union in order to retain their jobs. Under certain conditions, the law permits a union and an employer to enter into a union-security agreement requiring employees to pay uniform periodic dues and initiation fees. However, employees who are not union members can object to the use of their payments for certain purposes and can only be required to pay their share of union costs relating to collective bargaining, contract administration, and grievance adjustment.

If you do not want to pay that portion of dues or fees used to support activities not related to collective bargaining, contract administration, or grievance adjustment, you are entitled to an appropriate reduction in your payment. If you believe that you have been required to pay dues or fees used in part to support activities not related to collective bargaining, contract administration, or grievance adjustment, you may be entitled to a refund and to an appropriate reduction in future payments.

For further information concerning your rights, you may wish to contact the National Labor Relations Board (NLRB) either at one of its Regional offices or at the following address or toll free number:

National Labor Relations Board
Division of Information
1099 14th Street, N.W.
Washington, DC 20570
1-866-667-6572
1-866-316-6572 (TTY)

To locate the nearest NLRB office, see NLRB's website at <http://www.nlr.gov>.

(c) The Contractor shall comply with all provisions of Executive Order 13201 of February 17, 2001, and related implementing regulations at 29 CFR part 470, and orders of the Secretary of Labor.

(d) In the event that the Contractor does not comply with any of the requirements set forth in paragraphs (b), (c), or (g), the Secretary may direct that this contract be cancelled, terminated, or suspended in whole or in part, and declare the Contractor ineligible for further Government contracts in accordance with procedures at 29 CFR part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures. Such other sanctions or remedies may be imposed as are provided by 29 CFR part 470, which implements Executive Order 13201, or as are otherwise provided by law.

(e) The requirement to post the employee notice in paragraph (b) does not apply to—

(1) Contractors and subcontractors that employ fewer than 15 persons;

(2) Contractor establishments or construction work sites where no union has been formally recognized by the Contractor or certified as the exclusive bargaining representative of the Contractor's employees;

(3) Contractor establishments or construction work sites located in a jurisdiction named in the definition of the United States in which the law of that jurisdiction forbids enforcement of union-security agreements;

(4) Contractor facilities where upon the written request of the Contractor, the Department of Labor Deputy Assistant Secretary for Labor-Management Programs has waived the posting requirements with respect to any of the Contractor's facilities if the Deputy Assistant Secretary finds that the Contractor has demonstrated that—

(i) The facility is in all respects separate and distinct from activities of the Contractor related to the performance of a contract; and

(ii) Such a waiver will not interfere with or impede the effectuation of the Executive order; or

(5) Work outside the United States that does not involve the recruitment or employment of workers within the United States.

(f) The Department of Labor publishes the official employee notice in two variations; one for contractors covered by the Railway Labor Act and a second for all other contractors.

The Contractor shall—

(1) Obtain the required employee notice poster from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW, Room N-5605, Washington, DC 20210, or from any field office of the Department's Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;

(2) Download a copy of the poster from the Office of Labor-Management Standards website at <http://www.olms.dol.gov>; or

(3) Reproduce and use exact duplicate copies of the Department of Labor's official poster.

(g) The Contractor shall include the substance of this clause in every subcontract or purchase order that exceeds the simplified acquisition threshold, entered into in connection with this contract, unless exempted by the Department of Labor Deputy Assistant Secretary for Labor-Management Programs on account of special circumstances in the national interest under authority of 29 CFR 470.3(c). For indefinite quantity subcontracts, the Contractor shall include the substance of this clause if the value of orders in any calendar year of the subcontract is expected to exceed the simplified acquisition threshold. Pursuant to 29 CFR part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures, the Secretary of Labor may direct the Contractor to take such action in the enforcement of these regulations, including the imposition of sanctions for noncompliance with respect to any such subcontract or purchase order. If the Contractor becomes involved in litigation with a subcontractor or vendor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

(End of Clause)

52.225-11 Buy American Act—Construction Materials under Trade Agreements (Nov 2006)

(a) *Definitions.* As used in this clause—

“Caribbean Basin country construction material” means a construction material that—

- (1) Is wholly the growth, product, or manufacture of a Caribbean Basin country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a Caribbean Basin country into a new and different construction material distinct from the materials from which it was transformed.

“Component” means an article, material, or supply incorporated directly into a construction material.

“Construction material” means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

“Cost of components” means—

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

“Designated country” means any of the following countries:

(1) A World Trade Organization Government Procurement Agreement country (Aruba, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea (Republic of), Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, or United Kingdom);

(2) A Free Trade Agreement country (Australia, Bahrain, Canada, Chile, El Salvador, Guatemala, Honduras, Mexico, Morocco, Nicaragua, or Singapore);

(3) A least developed country (Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Djibouti, East Timor, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Laos, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Nepal, Niger, Rwanda, Samoa, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, Tanzania, Togo, Tuvalu, Uganda, Vanuatu, Yemen, or

Zambia); or

(4) A Caribbean Basin country (Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Costa Rica, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, Netherlands Antilles, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, or Trinidad and Tobago).

“Designated country construction material” means a construction material that is a WTO GPA country construction material, an FTA country construction material, a least developed country construction material, or a Caribbean Basin country construction material.

“Domestic construction material” means—

- (1) An unmanufactured construction material mined or produced in the United States; or
- (2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

“Foreign construction material” means a construction material other than a domestic construction material.

“Free Trade Agreement country construction material” means a construction material that—

- (1) Is wholly the growth, product, or manufacture of a Free Trade Agreement (FTA) country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a FTA country into a new and different construction material distinct from the materials from which it was transformed.

“Least developed country construction material” means a construction material that—

- (1) Is wholly the growth, product, or manufacture of a least developed country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a least developed country into a new and different construction material distinct from the materials from which it was transformed.

“United States” means the 50 States, the District of Columbia, and outlying areas.

“WTO GPA country construction material” means a construction material that—

- (1) Is wholly the growth, product, or manufacture of a WTO GPA country; or
- (2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a WTO GPA country into a new and different construction material distinct from the materials from which it was transformed.

(b) Construction materials.

(1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the WTO GPA and Free Trade Agreements (FTAs) apply to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country construction materials.

(2) The Contractor shall use only domestic or designated country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to the construction materials or components listed by the Government as follows:

1. None

[Contracting Officer to list applicable excepted materials or indicate "none"]

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of this clause if the Government determines that—

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act.

(1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including—

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act

applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) *Data.* To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction Material Description	Unit of Measure	Quantity	Price (Dollars)*
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Item 1:

Foreign construction material	_____	_____	_____
Domestic construction material	_____	_____	_____

Item 2:

Foreign construction material	_____	_____	_____
Domestic construction material	_____	_____	_____

[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]

[Include other applicable supporting information.]

[* Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]

(End of clause)

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by _____*_____.

(b) Weather conditions: Contact National Weather Service.

(c) Transportation facilities NA_____.

(d) _____*_____.

* See continuation of Standard Form 1442.

(End of Clause)

52.252-4 ALTERATIONS IN CONTRACT (APR 1984)

Portions of this contract are altered as follows: None_____.

(End of Clause)

General Decision Number: HI080001 07/25/2008 HI1

Superseded General Decision Number: HI20070001

State: Hawaii

Construction Types: Building, Heavy (Heavy and Dredging), Highway and Residential

Counties: Hawaii Statewide.

BUILDING CONSTRUCTION PROJECTS; RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories); HEAVY AND HIGHWAY CONSTRUCTION PROJECTS AND DREDGING

Modification Number	Publication Date
0	02/08/2008
1	02/15/2008
2	02/22/2008
3	02/29/2008
4	03/07/2008
5	04/18/2008
6	05/30/2008
7	06/20/2008
8	07/04/2008
9	07/11/2008
10	07/18/2008
11	07/25/2008

ASBE0132-001 09/02/2007

	Rates	Fringes
Asbestos Workers/Insulator Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls.....	\$ 33.60	20.59

BOIL0627-005 10/01/2007

	Rates	Fringes
BOILERMAKERS.....	\$ 29.95	20.90

BRHI0001-001 09/03/2007

	Rates	Fringes
BRICKLAYER		
Bricklayers and Stonemasons.	\$ 33.15	16.17
Pointers, Caulkers and Weatherproofers.....	\$ 33.40	16.17

BRHI0001-002 09/03/2007

	Rates	Fringes
Tile, Marble & Terrazzo Worker		
Terrazzo Base Grinders.....	\$ 31.59	16.17
Terrazzo Floor Grinders and Tenders.....	\$ 30.04	16.17
Tile, Marble and Terrazzo Workers.....	\$ 33.40	16.17

CARP0745-001 09/03/2007

	Rates	Fringes
Carpenters:		
Carpenters; Hardwood Floor Layers; Patent Scaffold Erectors (14 ft. and over); Piledrivers; Pneumatic Nailers; Wood Shinglers and Transit and/or Layout Man.....	\$ 34.95	18.50
Millwrights and Machine Erectors.....	\$ 35.20	18.50
Power Saw Operators (2 h.p. and over).....	\$ 35.10	18.50

CARP0745-002 09/03/2007

	Rates	Fringes
Drywall and Acoustical Workers and Lathers.....	\$ 35.20	18.50

ELEC1186-001 02/24/2008

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 41.20	30.6%+10.65
Electricians.....	\$ 37.45	30.6%+10.65
Technicians.....	\$ 38.57	30.6%+10.65

ELEC1186-002 02/24/2008

	Rates	Fringes
Line Construction:		
Cable Splicers.....	\$ 41.20	30.6%+10.65
Groundmen/Truck Drivers.....	\$ 28.09	30.6%+10.65
Heavy Equipment Operators...	\$ 33.71	30.6%+10.65
Linemen.....	\$ 37.45	30.6%+10.65
Technicians.....	\$ 38.57	30.6%+10.65

ELEV0126-001 01/01/2008

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 46.00	16.285+a+b

a. VACATION: Employer contributes 8% of basic hourly rate for 5 years service and 6% of basic hourly rate for 6 months to 5 years service as vacation pay credit.

b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day and Christmas Day.

ENGI0003-002 09/03/2007

	Rates	Fringes
Diver (Aqua Lung) (Scuba) Diver (Aqua Lung) (Scuba) (over a depth of 30 feet)...	\$ 54.80	22.13

Diver (Aqua Lung) (Scuba) (up to a depth of 30 feet)..	\$ 45.43	22.13
Stand-by Diver (Aqua Lung) (Scuba).....	\$ 36.05	22.13
Diver (Other than Aqua Lung) Diver (Other than Aqua Lung).....	\$ 54.80	22.13
Diver Tender (Other than Aqua Lung).....	\$ 33.02	22.13
Stand-by Diver (Other than Aqua Lung).....	\$ 36.05	22.13
Helicopter Work		
Airborne Hoist Operator for Helicopter.....	\$ 34.60	22.13
Co-Pilot of Helicopter.....	\$ 34.74	22.13
Pilot of Helicopter.....	\$ 34.91	22.13
Power equipment operator - tunnel work		
GROUP 1.....	\$ 31.04	22.13
GROUP 2.....	\$ 31.15	22.13
GROUP 3.....	\$ 31.32	22.13
GROUP 4.....	\$ 31.59	22.13
GROUP 5.....	\$ 31.90	22.13
GROUP 6.....	\$ 32.55	22.13
GROUP 7.....	\$ 32.87	22.13
GROUP 8.....	\$ 32.98	22.13
GROUP 9.....	\$ 33.09	22.13
GROUP 9A.....	\$ 33.32	22.13
GROUP 10.....	\$ 33.38	22.13
GROUP 10A.....	\$ 33.53	22.13
GROUP 11.....	\$ 33.68	22.13
GROUP 12.....	\$ 34.04	22.13
GROUP 12A.....	\$ 34.40	22.13
Power equipment operators:		
GROUP 1.....	\$ 30.74	22.13
GROUP 2.....	\$ 30.85	22.13
GROUP 3.....	\$ 31.02	22.13
GROUP 4.....	\$ 31.29	22.13
GROUP 5.....	\$ 31.60	22.13
GROUP 6.....	\$ 32.25	22.13
GROUP 7.....	\$ 32.57	22.13
GROUP 8.....	\$ 32.68	22.13
GROUP 9.....	\$ 32.79	22.13
GROUP 9A.....	\$ 33.02	22.13
GROUP 10.....	\$ 33.08	22.13
GROUP 10A.....	\$ 33.23	22.13

GROUP 11.....	\$ 33.38	22.13
GROUP 12.....	\$ 33.74	22.13
GROUP 12A.....	\$ 34.10	22.13
GROUP 13.....	\$ 31.02	22.13
GROUP 13A.....	\$ 31.29	22.13
GROUP 13B.....	\$ 31.60	22.13
GROUP 13C.....	\$ 32.25	22.13
GROUP 13D.....	\$ 32.57	22.13
GROUP 13E.....	\$ 32.68	22.13

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Fork Lift (up to and including 10 tons); Partsman (heavy duty repair shop parts room when needed).

GROUP 2: Conveyor Operator (Handling building material); Hydraulic Monitor; Mixer Box Operator (Concrete Plant).

GROUP 3: Brakeman; Deckhand; Fireman; Oiler; Oiler/Gradechecker; Signalman; Switchman; Highline Cableway Signalman; Bargeman; Bunkerman; Concrete Curing Machine (self-propelled, automatically applied unit on streets, highways, airports and canals); Leveeman; Roller (5 tons and under); Tugger Hoist.

GROUP 4: Boom Truck or dual purpose "A" Frame Truck (5 tons or less); Concrete Placing Boom (Building Construction); Dinky Operator; Elevator Operator; Hoist and/or Winch (one drum); Straddle Truck (Ross Carrier, Hyster and similar).

GROUP 5: Asphalt Plant Fireman; Compressors, Pumps, Generators and Welding Machines ("Bank" of 9 or more, individually or collectively); Concrete Pumps or Pumpcrete Guns; Lubrication and Service Engineer (Grease Rack); Screedman.

GROUP 6: Boom Truck or Dual Purpose "A"Frame Truck (over 5 tons); Combination Loader/Backhoe (up to and including 3/4 cu. yd.); Concrete Batch Plants (wet or dry); Concrete Cutter, Groover and/or Grinder (self-propelled unit on streets, highways, airports, and canals); Conveyor or Concrete Pump (Truck or Equipment Mounted); Drilling Machinery (not to apply to waterliners, wagon drills or jack hammers); Fork Lift (over 10 tons); Loader (up to and including 3 and 1/2 cu. yds); Lull High Lift (under 40 feet); Lubrication and Service Engineer (Mobile); Maginnis Internal Full Slab Vibrator (on airports, highways, canals and warehouses); Man or Material Hoist; Mechanical Concrete Finisher (Large Clary, Johnson Bidwell, Bridge Deck and similar); Mobile Truck Crane Driver; Portable Shotblast Concrete Cleaning Machine; Portable Boring Machine (under streets, highways, etc.); Portable Crusher; Power Jumbo Operator (setting slip forms, etc., in tunnels); Rollers (over 5 tons); Self-propelled Compactor (single engine); Self-propelled Pavement Breaker; Skidsteer Loader with attachments; Slip Form Pumps (Power driven by hydraulic, electric, air, gas, etc., lifting device for

concrete forms); Small Rubber Tired Tractors; Trencher (up to and including 6 feet); Underbridge Personnel Aerial Platform (50 feet of platform or less).

GROUP 7: Crusher Plant Engineer, Dozer (D-4, Case 450, John Deere 450, and similar); Dual Drum Mixer, Extend Lift; Hoist and/or Winch (2 drums); Loader (over 3 and 1/2 cu. yds. up to and including 6 yards.); Mechanical Finisher or Spreader Machine (asphalt), (Barber Greene and similar) (Screedman required); Mine or Shaft Hoist; Mobile Concrete Mixer (over 5 tons); Pipe Bending Machine (pipelines only); Pipe Cleaning Machine (tractor propelled and supported); Pipe Wrapping Machine (tractor propelled and supported); Roller Operator (Asphalt); Self-Propelled Elevating Grade Plane; Slusher Operator; Tractor (with boom) (D-6, or similar); Trencher (over 6 feet and less than 200 h.p.); Water Tanker (pulled by Euclids, T-Pulls, DW-10, 20 or 21, or similar); Winchman (Stern Winch on Dredge).

GROUP 8: Asphalt Plant Operator; Barge Mate (Seagoing); Cast-in-Place Pipe Laying Machine; Concrete Batch Plant (multiple units); Conveyor Operator (tunnel); Deckmate; Dozer (D-6 and similar); Finishing Machine Operator (airports and highways); Gradesetter; Kolman Loader (and similar); Mucking Machine (Crawler-type); Mucking Machine (Conveyor-type); No-Joint Pipe Laying Machine; Portable Crushing and Screening Plant; Power Blade Operator (under 12); Saurman Type Dragline (up to and including 5 yds.); Stationary Pipe Wrapping, Cleaning and Bending Machine; Surface Heater and Planer Operator, Tractor (D-6 and similar); Tri-Batch Paver; Tunnel Badger; Tunnel Mole and/or Boring Machine Operator Underbridge Personnel Aerial Platform (over 50 feet of platform).

GROUP 9: Combination Mixer and Compressor (gunite); Do-Mor Loader and Adams Elegrader; Dozer (D-7 or equal); Wheel and/or Ladder Trencher (over 6 feet and 200 to 749 h.p.).

GROUP 9A: Dozer (D-8 and similar); Gradesetter (when required by the Contractor to work from drawings, plans or specifications without the direct supervision of a foreman or superintendent); Push Cat; Scrapers (up to and including 20 cu. yds); Self-propelled Compactor with Dozer; Self-Propelled, Rubber-Tired Earthmoving Equipment (up to and including 20 cu. yds) (621 Band and similar); Sheep's Foot; Tractor (D-8 and similar); Tractors with boom (larger than D-6, and similar).

GROUP 10: Chicago Boom; Cold Planers; Heavy Duty Repairman or Welder; Hoist and/or Winch (3 drums); Hydraulic Skooper (Koehring and similar); Loader (over 6 cu. yds. up to and including 12 cu. yds.); Saurman type Dragline (over 5 cu. yds.); Self-propelled, rubber-tired Earthmoving Equipment (over 20 cu. yds. up to and including 31 cu. yds.) (637D and similar); Soil Stabilizer (P & H or equal); Sub-Grader (Gurries or other automatic type); Tractors (D-9 or equivalent, all attachments); Tractor (Tandem Scraper); Watch Engineer.

GROUP 10A: Boat Operator; Cable-operated Crawler Crane (up to and including 25 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (up to and

including 1 cu. yd.); Dozer D9-L; Dozer (D-10, HD41 and similar) (all attachments); Gradall (up to and including 1 cu. yd.); Hydraulic Backhoe (over 3/4 cu. yds. up to and including 2 cu. yds.); Mobile Truck Crane Operator (up to and including 25 tons) (Mobile Truck Crane Driver Required); Self-propelled Boom Type Lifting Device (Center Mount) (up to and including 25 tons) (Grove, Drott, P&H, Pettibone and similar; Trencher (over 6 feet and 750 h.p. or more); Watch Engineer (steam or electric).

GROUP 11: Automatic Slip Form Paver (concrete or asphalt); Band Wagon (in conjunction with Wheel Excavator); Cable-operated Crawler Cranes (over 25 tons but less than 50 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (over 1 cu. yd. up to 7 cu. yds.); Gradall (over 1 cu. yds. up to 7 cu. yds.); DW-10, 20, etc. (Tandem); Earthmoving Machines (multiple propulsion power units and 2 or more Scrapers) (up to and including 35 cu. yds., "struck" m.r.c.); Highline Cableway; Hydraulic Backhoe (over 2 cu. yds. up to and including 4 cu. yds.); Leverman; Lift Slab Machine; Loader (over 12 cu. yds); Master Boat Operator; Mobile Truck Crane Operator (over 25 tons but less than 50 tons); (Mobile Truck Crane Driver required); Pre-stress Wire Wrapping Machine; Self-propelled Boom-type Lifting Device (Center Mount) (over 25 tons m.r.c); Self-propelled Compactor (with multiple-propulsion power units); Single Engine Rubber Tired Earthmoving Machine (with Tandem Scraper); Tandem Cats; Trencher (pulling attached shield).

GROUP 12: Clamshell or Dipper Operator; Derricks; Drill Rigs; Multi-Propulsion Earthmoving Machines (2 or more Scrapers) (over 35 cu. yds "struck"m.r.c.); Operators (Derricks, Piledrivers and Cranes); Power Shovels and Draglines (7 cu. yds. m.r.c. and over); Self-propelled rubber-tired Earthmoving equipment (over 31 cu. yds.) (657B and similar); Wheel Excavator (up to and including 750 cu. yds. per hour); Wheel Excavator (over 750 cu. yds. per hour).

GROUP 12A: Dozer (D-11 or similar or larger); Hydraulic Excavators (over 4 cu. yds.); Lifting cranes (50 tons and over); Pioneering Dozer/Backhoe (initial clearing and excavation for the purpose of providing access for other equipment where the terrain worked involves 1-to-1 slopes that are 50 feet in height or depth, the scope of this work does not include normal clearing and grubbing on usual hilly terrain nor the excavation work once the access is provided); Power Blade Operator (Cat 12 or equivalent or over); Straddle Lifts (over 50 tons); Tower Crane, Mobile; Traveling Truss Cranes; Universal, Liebherr, Linden, and similar types of Tower Cranes (in the erection, dismantling, and moving of equipment there shall be an additional Operating Engineer or Heavy Duty Repairman); Yo-Yo Cat or Dozer.

GROUP 13: Truck Driver (Utility, Flatbed, etc.)

GROUP 13A: Dump Truck, 8 cu.yds. and under (water level); Water Truck (up to and including 2,000 gallons).

GROUP 13B: Water Truck (over 2,000 gallons); Tandem Dump Truck, over 8 cu. yds. (water level).

GROUP 13C: Truck Driver (Semi-trailer. Rock Cans, Semi-Dump or Roll-Offs).

GROUP 13D: Truck Driver (Slip-In or Pup).

GROUP 13E: End Dumps, Unlicensed (Euclid, Mack, Caterpillar or similar); Tractor Trailer (Hauling Equipment); Tandem Trucks hooked up to Trailer (Hauling Equipment)

BOOMS AND/OR LEADS (HOURLY PREMIUMS):

The Operator of a crane (under 50 tons) with a boom of 80 feet or more (including jib), or of a crane (under 50 tons) with leads of 100 feet or more, shall receive a per hour premium for each hour worked on said crane (under 50 tons) in accordance with the following schedule:

Booms of 80 feet up to but not including 130 feet or Leads of 100 feet up to but not including 130 feet	0.50
Booms and/or Leads of 130 feet up to but not including 180 feet	0.75
Booms and/or Leads of 180 feet up to and including 250 feet	1.15
Booms and/or Leads over 250 feet	1.50

The Operator of a crane (50 tons and over) with a boom of 180 feet or more (including jib) shall receive a per hour premium for each hour worked on said crane (50 tons and over) in accordance with the following schedule:

Booms of 180 feet up to and including 250 feet	1.25
Booms over 250 feet	1.75

ENGI0003-004 09/03/2007

	Rates	Fringes
Dredging: (Boat Operators)		
Boat Deckhand.....	\$ 31.02	22.13
Boat Operator.....	\$ 33.23	22.13
Master Boat Operator.....	\$ 33.38	22.13
Dredging: (Clamshell or Dipper Dredging)		
GROUP 1.....	\$ 33.74	22.13
GROUP 2.....	\$ 33.08	22.13
GROUP 3.....	\$ 32.68	22.13
GROUP 4.....	\$ 31.02	22.13

Dredging: (Derricks)		
GROUP 1.....	\$ 33.74	22.13
GROUP 2.....	\$ 33.08	22.13
GROUP 3.....	\$ 32.68	22.13
GROUP 4.....	\$ 31.02	22.13
Dredging: (Hydraulic Suction Dredges)		
GROUP 1.....	\$ 33.38	22.13
GROUP 2.....	\$ 33.23	22.13
GROUP 3.....	\$ 33.08	22.13
GROUP 4.....	\$ 33.02	22.13
GROUP 5.....	\$ 32.68	22.13
GROUP 6.....	\$ 32.57	22.13
GROUP 7.....	\$ 31.02	22.13

CLAMSHELL OR DIPPER DREDGING CLASSIFICATIONS

- GROUP 1: Clamshell or Dipper Operator.
- GROUP 2: Mechanic or Welder; Watch Engineer.
- GROUP 3: Barge Mate; Deckmate.
- GROUP 4: Bargeman; Deckhand; Fireman; Oiler.

HYDRAULIC SUCTION DREDGING CLASSIFICATIONS

- GROUP 1: Leverman.
- GROUP 2: Watch Engineer (steam or electric).
- GROUP 3: Mechanic or Welder.
- GROUP 4: Dozer Operator.
- GROUP 5: Deckmate.
- GROUP 6: Winchman (Stern Winch on Dredge)
- GROUP 7: Deckhand (can operate anchor scow under direction of Deckmate); Fireman; Leveeman; Oiler.

DERRICK CLASSIFICATIONS

- GROUP 1: Operators (Derricks, Piledrivers and Cranes).
- GROUP 2: Saurman Type Dragline (over 5 cubic yards).
- GROUP 3: Deckmate; Saurman Type Dragline (up to and including 5 yards).
- GROUP 4: Deckhand, Fireman, Oiler.

 ENGI0003-044 09/03/2007

	Rates	Fringes
Power Equipment Operators (PAVING)		

Asphalt Concrete Material Transfer.....	\$ 33.47	20.03
Asphalt Plant Operator.....	\$ 33.90	20.03
Asphalt Raker.....	\$ 32.51	20.03
Asphalt Spreader Operator...	\$ 33.99	20.03
Cold Planer.....	\$ 34.30	20.03
Combination Loader/Backhoe (over 3/4 cu.yd.).....	\$ 32.51	20.03
Combination Loader/Backhoe (up to 3/4 cu.yd.).....	\$ 31.53	20.03
Concrete Saws and/or Grinder (self-propelled unit on streets, highways, airports and canals).....	\$ 33.47	20.03
Grader.....	\$ 34.30	20.03
Laborer, Hand Roller.....	\$ 29.74	20.03
Loader (2 1/2 cu. yds. and under).....	\$ 33.47	20.03
Loader (over 2 1/2 cu. yds. to and including 5 cu. yds.).....	\$ 33.79	20.03
Roller Operator (five tons and under).....	\$ 32.24	20.03
Roller Operator (over five tons).....	\$ 33.67	20.03
Screed Person.....	\$ 33.47	20.03
Soil Stabilizer.....	\$ 34.30	20.03

IRON0625-001 09/01/2007

	Rates	Fringes
Ironworkers:.....	\$ 30.00	23.01

a. Employees will be paid \$.50 per hour more while working in tunnels and coffer dams; \$1.00 per hour more when required to work under or are covered with water submerged) and when they are required to work on the summit of Mauna Kea, Mauna Loa or Haleakala.

LABO0368-001 09/03/2007

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 26.20	14.15
GROUP 2.....	\$ 23.60	14.15

GROUP 3.....	\$ 27.20	14.15
GROUP 4.....	\$ 26.70	14.15
GROUP 5.....	\$ 25.70	14.15
GROUP 6.....	\$ 17.60	9.95

LABORERS CLASSIFICATIONS

GROUP 1: Asbestos Removal Worker (EPA certified workers); Asphalt Laborer, Ironer, Raker, Luteman, and Handroller, and all types of Asphalt Spreader Boxes; sphalt Shoveler; Assembly and Installation of Multiplates, Liner Plates, Rings, Mesh, Mats; Batching Plant (portable and temporary); Boring Machine Operator (under streets and sidewalks); Buggymobile; Burning, Welding, Signalling, Choke Setting, and Rigging in connection with Laborers' work (except demolition); Chainsaw, Faller, Logloader, and Bucker; Compactors (Jackson Jumping Jack and similar); Concrete Bucket Dumpman; Concrete Chipping; Concrete Chuteman/Hoseman (pouring concrete) (the handling of the chute from ready-mix trucks for such jobs as walls, slabs, decks, floors, foundations, footings, curbs, gutters, and sidewalks); Concrete Core Cutter (Walls, Floors, and Ceiling); Concrete Grinding or Sanding; Concrete: Hooking on, signaling, dumping of concrete for treme work over water on caissons, pilings, abutments, etc.; Concrete: Mixing, handling, conveying, pouring, vibrating, otherwise placing of concrete or aggregates or by any other process; Concrete: Operation of motorized wheelbarrows or buggies or machines of similar character, whether run by gas, diesel, or electric power; Concrete Placement Machine Operator: operation of Somero Hammerhead, Copperheads, or similar machines; Concrete Pump Machine (laying, coupling, uncoupling of all connections and cleaning of equipment); Concrete and/or Asphalt Saw (Walking or Handtype) (cutting walls or flatwork) (scoring old or new concrete and/or asphalt) (cutting for expansion joints) (streets and ways for laying of pipe, cable or conduit for all purposes); Concrete Shovelers/Laborers (Wet or Dry); Concrete Screeding for Rough Strike-Off: Rodding or striking-off, by hand or mechanical means prior to finishing; Concrete Vibrator Operator; Coring Holes: Walls, footings, piers or other obstructions for passage of pipes or conduits for any purpose and the pouring of concrete to secure the hole; Curbing (Concrete and Asphalt); Curing of Concrete (impervious membrane and form oiler) mortar and other materials by any mode or method; Cut Granite Curb Setter (setting, leveling and grouting of all precast concrete or stone curbs); Cutting and Burning Torch (demolition); Dri Pak-It Machine; Falling, bucking, yarding, loading or burning of all trees or timber on construction site; Fence and/or Guardrail Erector; Forklift (9 ft. and under); Grating and Grill work for drains or other purposes; Green Cutter of concrete or aggregate in any form, by hand, mechanical means, grindstone or air and/or water; Grout: Spreading for any purpose; Guinea Chaser (Grade Checker) for general utility trenches, sitework, and excavation; Headerboard Man (Asphalt or Concrete); Heat Welder of Plastic (Laborers' AGC certified workers) (when work involves waterproofing for waterponds, artificial lakes and reservoir, or heat welding for sewer pipes); Heavy Highway Laborer (Rigging, signaling, handling, and installation of pre-cast catch basins, manholes, curbs and gutters); High Pressure Nozzleman - Hydraulic Monitor (over 100# pressure); Installation of lightweight backfill; Jackhammer Operator; Jacking of slip forms: All semi and unskilled work connected therewithin;

Laying of all multi-cell conduit or multi-purpose pipe; Lead base paint abatement laborers (EPA certified workers); Magnesite and Mastic Workers (Wet or Dry)(including mixer operator); Mason Tender, Mortar Man; Mortar Mixer (Block, Brick, Masonry, and Plastering); Nozzlemans (Sandblasting and/or Water Blasting): handling, placing and operation of nozzle; Operation, Manual or Hydraulic jacking of shields and the use of such other mechanical equipment as may be necessary; Pavement Breakers; Paving, curbing and surfacing of streets, ways, courts, under and overpasses, bridges, approaches, slope walls, and all other labor connected therewith; Pilecutters; Pipe Accessment in place, bolting and lining up of sectional metal or other pipe including corrugated pipe; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit, and any other stationary-type of tubular device used for conveying of any substance or element, whether water, sewage, solid, gas, air, or other product whatsoever and without regard to the nature of material from which tubular material is fabricated; No-joint pipe and stripping of same, Pipewrapper, Caulker, Bander, Kettleman, and men applying asphalt, Laykold, treating Creosote and similar-type materials (6-inch) pipe and over); Piping: resurfacing and paving of all ditches in preparation for laying of all pipes; Pipe laying of lateral sewer pipe from main or side sewer to buildings or structure (except Contactor may direct work be done under proper supervision); Pipe laying, leveling and marking of the joint used for main or side sewers and storm sewers; Laying of all clay, terra cotta, ironstone, vitrified concrete or other pipe for drainage; Placing and setting of water mains, gas mains and all pipe including removal of skids; Plaster Mortar Mixer/Pump; Pneumatic Impact Wrench; Portable Sawmill Operation: Choker setters, off bearers, and lumber handlers connected with clearing; Posthole Digger (Hand Held, Gas, Air and Electric); Power Broom Sweepers (Small); Preparation and Compaction of roadbeds for railroad track laying, highway construction, and the preparation of trenches, footings, etc., for cross-country transmission by pipelines, electrical transmission or underground lines or cables (by mechanical means); Raising of structure by manual or hydraulic jacks or other methods and resetting of structure in new locations, including all concrete work; Ramming or compaction; Riprap, Stonepaver, and Rock Slinger (includes placement of stacked concrete, wet or dry and loading, unloading, signaling, slinging and setting of other similar materials); Rotary Scarifier (including multiple head concrete chipping Scarifier); Salamander Heater, Drying of plaster, concrete mortar or other aggregate; Scaffold Erector Leadman; Scaffolds: (Swing and hanging) including maintenance thereof; Scaler; Septic Tank/Cesspool and Drain Fields Digger and Installer; Shredder/Chipper (tree branches, brush, etc.); Stripping and Setting Forms; Stripping of Forms: Other than panel forms which are to be re-used in their original form, and stripping of forms on all flat arch work; Tampers (Barko, Wacker, and similar type); Tank Scaler and Cleaners; Tarman; Tree Climbers and Trimmers; Trencher (includes hand-held, Davis T-66 and similar type); Trucks (flatbed up to and including 2 1/2 tons when used in connection with on-site Laborers' work; Trucks (Refuse and Garbage Disposal) (from job site to dump); Vibra-Screed (Bull Float in connection with Laborers' work); Well Points, Installation of or any other dewatering system.

GROUP 2: Air Blasting; Appliance Handling (job site) (after delivery and unloading in storage area); Asphalt Plant Laborer; Backfilling, Grading and all other labor connected therewith; Boring Machine; Bridge Laborer; Burning of all debris (crates, boxes, packaging waste materials); Chainman, Rodmen, and Grade Markers; Cleaning and Clearing of all debris; Cleaning, clearing, grading and/or removal for streets, highways, roadways, aprons, runways, sidewalks, parking areas, airports, approaches, and other similar installations; Cleaning or reconditioning of streets, ways, sewers and waterlines, all maintenance work and work of an unskilled and semi-skilled nature; Cleanup of Grounds and Buildings (other than "Light Clean-Up") (Janitorial Laborer); Clean-up of right-of-way; Clearing and slashing of brush or trees by hand or mechanical cutting; Concrete Bucket Tender (Groundman) hooking and unhooking of bucket; Concrete Forms; moving, cleaning, oiling and carrying to the next point of erection of all forms; Concrete Products Plant Laborers; Conveyor Tender (conveying of building materials); Cribbers, Shorer, Lagging, Sheeting, and Trench Jacking and Bracing, Hand-Guided Lagging Hammer Whaling Bracing; Crushed Stone Yards and Gravel and Sand Pit Laborers and all other similar plants; Demolition, Wrecking and Salvage Laborers: Wrecking and dismantling of buildings and all structures, with use of cutting or wrecking tools, burning or cutting, breaking away, cleaning and removal of all masonry, wood or metal fixtures for salvage or scrap, All hooking, unhooking, signaling of materials for salvage or scrap removed by crane or derrick; Digging under streets, roadways, aprons or other paved surfaces; Chuck Tender, Outside Nipper; Dry-packing of concrete (plugging and filling of she-bolt holes); Excavation, Preparation of street ways and bridges; Fence and/or Guardrail Erector: Dismantling and/or re-installation of all fence; Finegrader; Firewatcher; Flagman (Coning, preparing, establishing and removing portable roadway barricade devices); Signal Men on all construction work defined herein, including Traffic Control Signal Men at construction site; Garbage and Debris Handlers and Cleaners; Gas, Pneumatic, and Electric Tools, not listed Group 1 (except Rototiller); General Clean-up: sweeping, cleaning, washdown, wiping of construction facility, and equipment (other than "Light Clean-up" [Janitorial] Laborer); General Excavation and Grading (all labor connected therewith); Digging of trenches, ditches and manholes and the leveling, grading and other preparation prior to laying pipe or conduit for any purpose; Excavations and foundations for buildings, piers, foundations and holes, and all other construction; General Laborer; Ground and Soil Treatment Work (Pest Control); Junk Yard Laborers (same as Salvage Yard); Landscape Nursery Laborers; Laser Beam "Target Man" in connection with Laborers' work; Layout Person for Plastic (when work involves waterproofing for waterponds, artificial lakes and reservoirs); Limbers, Brush Loaders, and Pilers; Loading, Unloading, carrying, distributing and handling of all rods and material for use in reinforcing concrete construction (except when a derrick or outrigger operated by other than hand power is used); Loading, unloading, sorting, stockpiling, handling and distribution of water mains, gas mains and all pipes; Loading and unloading of all materials, fixtures, furnishings and appliances from point of delivery to stockpile to point of installation; hooking and signalling from truck, conveyance or stockpile; Material Yard Laborers; Pipelayer Tender; Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, Creosote, and similar-type materials (pipe under 6 inches); Plasterer Laborer (including Hod Carrier); Preparation, construction and maintenance of roadbeds and sub-grade for all paving, including

excavation, dumping, and spreading of sub-grade material; Prestressed or precast concrete slabs, walls, or sections: all loading, unloading, stockpiling, hooking on of such slabs, walls or sections; Quarry Laborers; Railroad, Streetcar, and Rail Transit Maintenance and Repair; Removal of surplus material; Roustabout; Rubbish Trucks in connection with Building Construction Projects (excluding clearing, grubbing, and excavating); Salvage Yard: All work connected with cutting, cleaning, storing, stockpiling or handling of materials, all cleanup, removal of debris, burning, back-filling and landscaping of the site; Sandblasting (Pot Tender): Hoses and pots or markers; Scaffolds: Erection, planking and removal of all scaffolds used for support for lathers, plasters, brick layers, masons, and other construction trades crafts; Scaffolds: (Specially designed by carpenters) laborers shall tend said carpenter on erection and dismantling thereof, preparation for foundation or mudsills, maintenance; Scraping of floors; Screeds: Handling of all screeds to be reused; handling, dismantling and conveyance of screeds; Setting, leveling and securing or bracing of metal or other road forms and expansion joints; Sheeting Piling/trench shoring (handling and placing of skip sheet or wood plank trench shoring); Ship Scalers; Sign Erector (subdivision traffic, regulatory, and street-name signs); Sloper; Slurry Seal Crews (Mixer Operator, Applicator, Squeegee Man, ttle Man, Top Man); Snapping of wall ties and removal of tie rods; Soil Test operations of semi and unskilled labor such as filling sand bags; Striper (Asphalt, Concrete or other Paved Surfaces); Tagging and Signaling of all building materials into high-rise units; Tool Room Attendant (Job Site); Traffic Delineating Device Applicator; Underpinning, lagging, bracing, propping and shoring, loading, signaling, right-of-way clearance along the route of movement, The clearance of new site, excavation of foundation when moving a house or structure from old site to new site; Utilities employees; Water Man; Waterscape/Hardscape Laborers; Wire Mesh Pulling (all concrete pouring operations); Wrecking, stripping, dismantling and handling concrete forms an false work.

GROUP 3: Licensed Powdermen; Driller (Track, Diamond Core, and Wagon) (Ingersoll-Rand ECM-350/ECM-635/ECM-635/ECM660, Sandvik Pantera HL 1500, Atlas-Copco ROC 7F); Driller (Joydrill Model TWM-2A, Gardner Denver Dri-143 and similar type drills) (in accordance with the Memorandum of Understanding between the Laborers and Operating Engineers dated at Miami, Florida, February 3, 1954); Driller (Mechanical) (Not ocvered elsewhere) (including multiple unit) (Ingersoll-Rand DM45E/DM50E/LM-100/LM-600C, Gardner-Denver SCH2500/SCH3500 BV, rukawa HCR-C300, Tamrock Drilltech CHA 800/DHH 850/Tamrock Commando)(similar and Replacement equipment thereof); Drilling for blasting; Operation of all rock and concrete drills and Jack Hammers, including handling, carrying, laying out of hose. (Ingersoll-Rand DM45E/DM50E/LM-100/LM-600C. Gardner-Denver SCH2500/SCH3500 BV Furukawa HCR-C300, Tamrock Drilltech CHA 800/DHH 850/Tamrock Commando, Pantera 900, 1100 and 1500, Ranger 700, Super Tiger 700), (similar and replacement equipment thereof); Drilling (Mechanical) on the site or along the right-of-way as well as access roads, reservoirs, including areas adjacent or pertinent to construction sites.

GROUP 4: Gunnite Operator; High Scaler (working suspended), Pipelaying.

GROUP 5: Window Washer (Outside) (Working from bosun's chair and/or cable-suspended scaffold or work platform).

GROUP 6: Light/Final Clean-Up.

LABO0368-002 10/01/2007

	ates	Fringes
Landscape & Irrigation		
Laborers		
GROUP 1.....	19.86	7.32
GROUP 2.....	20.36	7.32
GROUP 3.....	16.46	7.32

LABORERS CLASSIFICATIONS

GROUP 1: Installation of non-potable permanent or temporary irrigation water systems performed for the purposes of Landscaping and Irrigation architectural horticultural work; the installation of drinking fountains and permanent or temporary irrigation systems using potable water for Landscaping and Irrigation architectural horticultural purposes only. This work includes (a) the installation of all heads, risers, valves, valve boxes, vacuum breakers (pressure and non-pressure), low voltage electrical lines and, provided such work involves electrical wiring that will carry 24 volts or less, the installation of sensors, master control panels, display boards, junction boxes, conductors, including all other components for controllers, (b) and metallic (copper, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe including all work incidental thereto, i.e., unloading, handling and distribution of all pipes fittings, tools, materials and equipment, (c) all soldering work in connection with the above whether done by torch, soldering iron, or other means; (d) tie-in to main lines, thrust blocks (both precast and poured in place), pipe hangers and supports incidental to installation of the entire irrigation system, (e) making of pressure tests, start-up testing, flushing, purging, water balancing, placing into operation all irrigation equipment, fixtures and appurtenances installed under this agreement, and (f) the fabrication, replacement, repair and servicing of landscaping and irrigation systems. Operation of hand-held gas, air, electric, or self-powered tools and equipment used in the performance of Landscape and Irrigation work in connection with architectural horticulture; Choke-setting, signaling, and rigging for equipment operators on job-site in the performance of such Landscaping and Irrigation work; Concrete work (wet or dry) performed in connection with such Landscaping and Irrigation work. This work shall also include the setting of rock, stone, or riprap in connection with such Landscape, Waterscape, Rockscape, and Irrigation work; Grubbing, pick and shovel excavation, and hand rolling or tamping in connection with the performance of such Landscaping and Irrigation work; Sprigging, handseeding, and planting of trees, shrubs, ground covers, and other plantings and the performance of all types of gardening and horticultural work relating to said planting; Operation of flat bed trucks (up to and including 2 1/2 tons):

GROUP 2. Layout of irrigation and other non-potable irrigation water systems and the layout of drinking fountains and other potable irrigation water systems in connection with such Landscaping and Irrigation work. This includes the layout of all heads, risers, valves, valve boxes, vacuum breakers, low voltage electrical lines, hydraulic and electrical controllers, and metallic (coppers, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe. This work also includes the reading and interpretation of plans and specifications in connection with the layout of Landscaping, Rockscape, Waterscape, and Irrigation work; Operation of Hydro-Mulching machines (sprayman and driver), Drillers, Trenchers (riding type, Davis T-66, and similar) and fork lifts used in connection with the performance of such Landscaping and Irrigation work; Tree climbers and chain saw tree trimmers, Sporadic operation (when used in connection with Landscaping, Rockscape, Waterscape, and Irrigation work) of Skid-Steer Loaders (Bobcat and similar), Cranes (Bantam, Grove, and similar), Hoptos, Backhoes, Loaders, Rollers, and Dozers (Case, John Deere, and similar), Water Trucks, Trucks requiring a State of Hawaii Public Utilities Commission Type 5 and/or type 7 license, sit-down type and "gang" mowers, and other self-propelled, sit-down operated machines not listed under Landscape & Irrigation Maintenance Laborer; Chemical spraying using self-propelled power spraying equipment (200 gallon capacity or more).

GROUP 3: Maintenance of trees, shrubs, ground covers, lawns and other planted areas, including the replanting of trees, shrubs, ground covers, and other plantings that did not "take" or which are damaged; provided, however, that re-planting that requires the use of equipment, machinery, or power tools shall be paid for at the rate of pay specified under Landscape and Irrigation Laborer, Group 1; Raking, mowing, trimming, and runing, including the use of "weed eaters", hedge trimmers, vacuums, blowers, and other hand-held gas, air, electric, or self-powered tools, and the operation of lawn mowers (Note: The operation of sit-down type and "gang" mowers shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer, Group 2); Guywiring, staking, propping, and supporting trees; Fertilizing, Chemical spraying using spray equipment with less than 200 gallon capacity, Maintaining irrigation and sprinkler systems, including the staking, clamping, and adjustment of risers, and the adjustment and/or replacement of sprinkler heads, (Note: the cleaning and gluing of pipe and fittings shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer(Group 1); Watering by hand or sprinkler system and the performance of other types of gardening, yardman, and horticultural-related work.

LABO0368-003 09/03/2007

	Rates	Fringes
Underground Laborer		
GROUP 1.....	\$ 26.80	14.15
GROUP 2.....	\$ 28.30	14.15
GROUP 3.....	\$ 28.80	14.15
GROUP 4.....	\$ 29.80	14.15

GROUP 5.....	\$ 30.15	14.15
GROUP 6.....	\$ 30.40	14.15
GROUP 7.....	\$ 30.85	14.15

GROUP 1: Watchmen; Change House Attendant.

GROUP 2: Swamper; Brakeman; Bull Gang-Muckers, Trackmen; Dumpmen (any method); Concrete Crew (includes rodding and spreading); Grout Crew; Reboundmen

GROUP 3: Chucktenders and Cabletenders; Powderman (Prime House); Vibratorman, Pavement Breakers

GROUP 4: Miners - Tunnel (including top and bottom man on shaft and raise work); Timberman, Retimberman (wood or steel or substitute materials thereof); Blasters, Drillers, Powderman (in heading); Microtunnel Laborer; Headman; Cherry Pickerman (where car is lifted); Nipper; Grout Gunmen; Grout Pumpman & Potman; Gunite, Shotcrete Gunmen & Potmen; Concrete Finisher (in tunnel); Concrete Screed Man; Bit Grinder; Steel Form Raisers & Setters; High Pressure Nozzleman; Nozzleman (on slick line); Sandblaster-Potman (combination work assignment interchangeable); Tugger

GROUP 5: Shaft Work & Raise (below actual or excavated ground level); Diamond Driller; Gunite or Shotcrete Nozzleman; Rodman; Groundman

GROUP 6: Shifter

GROUP 7: Shifter (Shaft Work & Raiser)

PAIN1791-001 07/01/2008

	Rates	Fringes
Painters:		
Brush.....	\$ 30.25	21.90
Sandblaster; Spray.....	\$ 30.25	21.90

PAIN1889-001 07/01/2007

	Rates	Fringes
Glaziers.....	\$ 27.65	21.62

PAIN1926-001 03/02/2008

	Rates	Fringes
Soft Floor Layers.....	\$ 26.00	19.60

 PAIN1944-001 01/01/2008

	Rates	Fringes
Taper.....	\$ 36.00	16.30

 PLAS0630-001 09/03/2007

	Rates	Fringes
Plasterer.....	\$ 33.94	16.17

 PLAS0630-002 09/03/2007

	Rates	Fringes
Cement Masons:		
Cement Masons.....	\$ 33.10	16.17
Trowel Machine Operators....	\$ 33.25	16.17

 PLUM0675-001 07/06/2008

	Rates	Fringes
Plumber, Pipefitter, Steamfitter & Sprinkler Fitter...	\$ 34.10	20.33

 * ROOF0221-001 04/29/2007

	Rates	Fringes
Roofers (Including Built Up, Composition and Single Ply).....	\$ 31.10	13.83

 SHEE0293-001 09/02/2007

	Rates	Fringes
Sheet metal worker.....	\$ 35.97	16.59

 SUHI1997-002 09/15/1997

	Rates	Fringes
Drapery Installer.....	\$ 13.60	1.20

FENCE ERECTOR (Chain Link Fence).....	\$ 9.33	1.65
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RIGGERS; WELDERS - Receive rate prescribed for craft performing operation to which rigging or welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
 Wage and Hour Division
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

STATE ROUTE 200 - SADDLE ROAD PTA-1 SECTION PHASE 5

The following Special Contract Requirements amend and supplement the *Standard Specifications for Construction of Roads and Bridges, on Federal Highway Projects (FP-96) English*, Department of Transportation, Federal Highway Administration.

Section 101. - TERMS, FORMAT, AND DEFINITIONS

101.02 Specifications Format. Delete the third and fourth paragraphs and substitute the following:

Division 150 consists of project contract requirements that are applicable to all contracts. Work under Division 150 is paid for directly or indirectly according to Subsection 109.05 and the Section ordering the work. When there is no pay item in the bid schedule, no direct payment is made.

Divisions 200 through 600 consist of construction contract requirements for specific items of work. Work under these Divisions is paid for directly or indirectly according to Subsection 109.05 and the Section ordering the work.

101.03 Abbreviations.

(a) Acronyms. Add the following:

HDOH	Hawaii Department of Health
HDOT	Hawaii Department of Transportation
USF&WS	US Fish & Wildlife Service
PE	Professional Engineer
DOA	Department of the Army
VECP	Value Engineering Change Proposal
NPDES	National Pollutant Discharge Elimination System
PTA	Pohakuloa Training Area
USACE	US Army Corps of Engineers
DLNR	Department of Land and Natural Resources
BMPP	Best Management Practices Plan
NOI	Notice of Intent
FDR	Fire Danger Rating
UXO	Unexploded Ordinance
DAR	Defense Access Road
CHCD	County of Hawaii Civil Defense

STATE ROUTE 200 - SADDLE ROAD PTA-1 SECTION PHASE 5

(b) **SI symbols.** Add the following:

English Unit symbols.

ac.	— acre	area
BTU	— British Thermal Unit	energy
cu. in. or in³	— cubic inches	volume
cu. ft., cf, ft³ or CUFT	— cubic feet	volume
cu. yd., cy, yd³ or CUYD	— cubic yards	volume
D	— day	time
deg. or °	— degree	plane angle
Fc	— foot-candles	luminous intensity
fl. oz.	— fluid ounces	volume
ft. or '	— foot or feet	length
gal. or GAL	— gallon	volume
hr. or HR	— hour	time
in. or "	— inch or inches	length
K	— kelvin	temperature
lb or LB, lbs	— pound, pounds	mass
Lbf	— pound-force	force
lnft or LNFT	— linear foot	length
mi.	— miles	length
min. or m	— minute	time
min. or '	— minute	plane angle
°F	— degrees Fahrenheit	temperature
oz.	— ounces	mass
Psi	— pounds/square inch	pressure
Q	— cubic feet/second	flow rate
sec. or s	— second	time
sec. or "	— second	plane angle
sq. in. or in²	— square inches	area
sq. ft., sf, ft² or SQFT	— square feet	area
sq. yd., sy, yd² or SQYD	— square yards	area
Sta.	— station	length
T	— short ton (2000 lbs)	mass
YD	— yard or yards	length

101.04 Definitions.

Suitable Material - Add the following:

Suitable material may necessitate drying, the addition of moisture, reduction in size, screening, or other common methods of manipulation prior to use. Suitable material includes the

classification(s) of materials, resulting R-values and other characteristics, for which the project was designed.

Unsuitable Material - Delete the text and substitute the following:

Material which the CO determines to be unsuitable for use in the construction of foundations, embankments, or roadbeds. Unsuitable materials generally include muck and soils with high organic contents.

Section 102. - BID, AWARD, AND EXECUTION OF CONTRACT

102.03 Bid Guarantee.

(a) General. Delete the first sentence and substitute the following:

Submit a bid guarantee of 20 percent of the amount of the bid or \$3 million, whichever is less.

102.06 Performance and Payment Bonds. Delete the first paragraph including lines (a), (b), and (c), and substitute the following:

FAR Clause 52.228-15 - Performance and Payment Bonds - Construction is supplemented as follows: Furnish a performance bond and a payment bond in the penal amounts of 100 percent of the original contract price.

Add the following Subsection:

102.07 Escrow Bid Documents.

Before the specified time for bid opening, Bidders must submit one (1) copy of all documentation information generated in preparation of bid prices for this Project. This material is hereinafter referred to as “Escrow Bid Documents.” The Escrow Bid Documents of the successful Contractor will be held in escrow for the duration of the Contract.

The successful Contractor agrees, as a condition of the award of the Contract, that the Escrow Bid Documents constitute all of the information used in preparation of the Bid, and that no other Bid preparation information shall be considered in resolving disputes or claims. The successful Contractor also agrees that nothing in the Escrow Bid Documents changes or modifies the terms or conditions of the Contract.

The purpose of the Escrow Bid Documents procedure is intended to create a spirit of cooperation in an atmosphere of honesty and candor between the Government and the successful Contractor.

Escrow Bid Documents will be used to assist in the negotiation and in the settlement of disputes and claims. They will not be used for pre-award evaluation of the Bidder's anticipated methods of construction or to assess the Bidder's qualifications for performing the work.

(a) Ownership. The Escrow Bid Documents remain the property of the successful Contractor, subject to joint review by the Government and the successful Contractor as provided herein. The Escrow Bid Documents are proprietary and secret information belonging to the successful Contractor and exempt from the Federal Freedom of Information Act.

The Government stipulates and expressly acknowledges that the Escrow Bid Documents, as defined herein, constitutes proprietary information. This acknowledgement is based on the Government's express understanding that the information contained in the Escrow Bid Documents is not known outside the successful Contractor's business, is known only to a limited extent and only to a limited number of the successful Contractor's employees, is safeguarded while in the successful Contractor's possession. The Government further acknowledges that the Escrow Bid Documents and the information contained therein are made available to the Government only because such action is an express prerequisite to award of the Contract. The Government acknowledges that the Escrow Bid Documents include a compilation of information used in the successful Contractor's business, intended to give the Contractor an opportunity to obtain an advantage over competitors who do not know of or use the contents of the documentation. The Government further agrees to safeguard the Escrow Bid Documents, and all information contained therein, against disclosure to the fullest extent permitted by law.

(b) Format and Contents. The Bidder and subcontractor may submit Escrow Bid Documents in their usual cost estimation format. No standard format is required. It is not the intention of the Government to cause the Bidders extra work during the preparation of the Bid, but to ensure that the Escrow Bid Documents will be adequate to enable complete understanding and proper interpretation for their intended use. Prepare the Escrow Bid Documents in English.

As part of the Escrow Bid Documents, itemize the estimated costs to perform the work of each bid item contained in the bid package. Separate bid items into sub-items as would be required to present a complete and detailed cost estimate and allow a detailed cost review. As part of the Escrow Bid Documents include all quantity takeoffs, crew, equipment, calculations of rates of production and progress, copies of quotations from subcontractors and suppliers, and memoranda, narratives, add/deduct sheets, and all other information used by the Bidder to arrive at the prices contained in the Bid. Break down estimated costs into the Bidder's usual estimate categories such as direct labor, repair labor, equipment, ownership and operation, expendable materials, permanent materials, and subcontract cost, as appropriate. Provide detail of plant and equipment and indirect costs in the Bidder's usual format. Identify the Bidder's reallocation of indirect costs, contingencies, markup, and other items to each bid item.

Identify all costs. For bid items amounting to less than \$10,000 (unit bid price multiplied by estimated contract quantities), estimated unit costs are acceptable without detailed cost estimates, provided that labor, equipment, materials, and subcontracts, as applicable are included and provided that indirect costs, contingencies, and markups, as applicable are allocated. Bid

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documents provided by the Government need not be included in the Escrow Bid Documents unless needed to comply with the following requirements.

(c) Submission. Submit the Escrow Bid Documents in a sealed container(s), containing only the Escrow Bid Documents, by 2:00pm on September 18, 2008, to:

Richelle Takara
FHWA Hawaii Division Office
Prince Jonah Kuhio Kalaniana'ole Federal Building
300 Ala Moana Boulevard, Room 3-306
Honolulu, Hawaii 96850

Clearly mark the container(s) with the Contractor's name, date of submittal, HI A-AD 6(5), Saddle Road and the words "Escrow Bid Documents."

Provide the Escrow Bid Documents with the certification on the following page, signed by an individual authorized by the Bidder to execute Bids, stating that the material in the Escrow Bid Documents constitutes all the documentary information used in preparation of the Bid and that the Bidder has personally examined the contents of the Escrow Bid Documents container and has found that the documents in the container are complete. The Escrow Bid Document certification shall be signed and submitted for each subcontractor exceeding 10 percent (10%) of the total Contractor Price as bid.

If the itemized cost breakdowns and allocations described elsewhere are not revised to reflect the final Bid prices, then submit information reconciling the Bid preparation documents and the Bid unit prices. Consider this reconciliation as part of the Escrow Bid Documents and include in the Bid submittal.

BID DOCUMENTATION CERTIFICATION

THE UNDERSIGNED HEREBY CERTIFIES THAT THE BID DOCUMENTATION CONTAINED HERIN CONSTITUTES ALL THE INFORMATION USED IN PREPARATION OF THE BID AND THAT I HAVE PERSONALLY EXAMINED THESE CONTENTS AND HAVE FOUND THAT THIS BID DOCUMENTATION IS COMPLETE.

SIGNATURE: _____

NAME: _____

TITLE: _____

FIRM: _____

DATE: _____

If any Bid is based on subcontracting any part of the work, each subcontractor, whose total subcontract price exceeds 10 percent (10%) of the total Bid Price, must provide separate Escrow Bid Documents to be included with those of the Bidder.

If the successful Contractor wishes to subcontract any portion of the work after award, the Government retains the right to require the successful Contractor to submit Escrow Bid Documents from the subcontractor before the subcontract is approved if the subcontract exceeds 10 percent (10%) of the total Contractor Price as bid.

(d) Storage. The Escrow Bid Documents will be placed in escrow, for the life of the Contract, in a mutually agreeable institution. The Government will pay all storage costs.

(e) Examination. The Escrow Bid Documents shall be examined by the Government, the successful Contractor, and the subcontractor(s) if the subcontract exceeds 10 percent (10%) of the total Contractor Price as bid, at any time deemed necessary by either the Government, the Contractor or subcontractor to assist in the negotiation of changes in Contract Price or the settlement of disputes and claims.

Examination of the Escrow Bid Documents is subject to the following conditions:

- (1) As trade secrets, the Escrow Bid Documents are proprietary and confidential.
- (2) The Government and the successful Contractor shall each designate, in writing to the other party and within 10 days after execution of the Contract, representatives who are authorized to examine the Escrow Bid Documents. No other person shall have access to the Escrow Bid Documents, except that, if named individuals quit the employ of either the Government or the Contractor or are transferred to other projects, the Government or the successful Contractor may name replacement individuals following the same procedure in writing.
- (3) Access to the Escrow Bid Documents may take place only in the presence of duly designated representatives of both the Government and the Contractor.
- (4) The Government will assure the successful Contractor that the Escrow Bid Documents at all times remain the property of the successful Contractor and that confidentiality is assured.

(f) Final Disposition of Escrow Bid Documents. The Escrow Bid Documents will be returned to the Contractor at such time as the following conditions have been satisfied:

- (1) The Project has been completed.
- (2) Release of claims has been signed by the successful Contractor and the Government has issued final payment.

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(3) All litigation has been completed, and a written agreement has been executed between the Government and the Contractor that no further litigation will be made.

The Escrow Bid Documents will be sealed and promptly returned to the Contractor by the party in charge of the Escrow Bid Documents. Reproduction of any portion of the Escrow Bid Documents will not be permitted at any time without the written permission of the successful Contractor.

(g) Disposition of Escrow Bid Documents From Unsuccessful Bidders. Escrow bid documents received from unsuccessful bidders will be returned, unopened, no later than 30 days following award of this contract.

Section 103. - SCOPE OF WORK

103.03 Value Engineering. Delete the second paragraph and substitute the following:

Before undertaking significant expenditures, provide the CO with a written description of the value engineering change proposal (VECP) concept. Within 14 days, the CO will inform the Contractor as to whether the concept appears to be viable or if the concept is unacceptable. If the CO indicates that the concept appears to be viable, prepare and submit the formal VECP proposal.

103.05 Partnering. Delete the last sentence of the fourth paragraph and substitute the following:

The Government's share will not exceed \$10,000.

Section 104. – CONTROL OF WORK

104.03 Specifications and Drawings. Add the following:

(c) As-built working drawings. Prepare and furnish as-built working drawings prior to final acceptance. The Government will provide one set of 11 x 17 inch contract drawings to be used exclusively for recording the as-built details of the project. Mark plans on title sheet “As-Built Plans”. Use red ink to record the information described below.

Note all additions or revisions to the location, character and dimensions of the prescribed work shown on the contract drawings. Location changes are to be shown in the same coordinate system used for the staking notes. Strikeout all details shown that are not applicable to the completed work. Check and initial all plan sheets that were incorporated into the completed work without change.

Retain the drawings at the project site and, as work progresses, continuously update them to reflect the as-built details. Submit a copy of the updated as-built drawings at least every 30 days to the CO for review for compliance with these specifications.

As a minimum, show the following information on the as-built drawings:

(1) Title Sheet

- (a) Name of contractor.
- (b) Name of Project Engineer.
- (c) Project completion date.
- (d) Revisions to project length.
- (e) Revisions to begin and end stations of project.
- (f) Revisions to index to sheets.
- (g) Strikeout any schedules or options not awarded.
- (h) A note stating “All work was constructed as designed unless otherwise noted.”

(2) Typical section(s)

- (a) Revisions in dimensions.
- (b) Revisions in materials.
- (c) Revisions in station ranges.
- (d) Revisions to begin and end stations of project, and length of project.
- (e) Revisions to station equations.
- (f) Revisions to slope ratio and curve widening tables.
- (g) Revisions to any notes.

(3) Summary of Quantities and Tabulation Sheets

- (a) Revisions to all quantities, locations, notes/remarks, including totals.
- (b) Strikeout unused pay items.
- (c) Revisions to application rates.
- (d) Revisions to location, type, end treatments, riprap, skew, on drainage summary.

(4) Control Sheets

- (a) Show any control that was removed, destroyed, established, according to subsections 107.02, paragraph 2; 152.02, paragraph 2; and 152.03.
- (b) Use a unique naming convention for newly established control points. Do not reuse CFL control point numbers.

(5) Plan and profile and layout sheets

- (a) Revisions to the alignment; grades, elevations and stationing of intersection PIs; station equations and superelevation.
- (b) Major changes in the construction limits; particularly changes requiring additional design, additional right of way, or contract modifications. (Show information on plan and profile, layout sheets, and right of way plans if applicable.).
- (c) Changes in permanent rights of way caused by acquisition during construction. (Show information on plan and profile, layout sheets, and right of way plans if

- applicable). In addition, annotate any construction completed according to agreements made with landowners during construction.
- (d) Revisions in location, type and grade of road approaches.
 - (e) Revisions in locations of sub-excavation and roadway obliteration.
 - (f) Location, type and elevation of all constructed or relocated utilities, aerial and underground. Location, type and elevation of utilities not previously or inaccurately mapped, but encountered during construction, indicated as “approximate” or “as mapped”. (Show information on plan and profile and layout sheets and utilities plans if applicable).
 - (g) Location, size and type of underdrains.
 - (h) Location, number and type of horizontal, lateral, trench and blanket drains.
 - (i) Revisions to culvert diameter, length, type, stationing, skew, riprap and end treatments.
 - (j) Length of culvert extension, skew, and offset from centerline to the ends of extended culverts.
 - (k) Channel changes.
 - (l) Location of monuments and permanent references replaced according to Subsection 107.02.
 - (m) Location, length and type of fencing.
 - (n) Location, length, stationing and type of walls.
 - (o) Location, length, stationing and end treatment of roadside design features, including, but not limited to, guardrail, guardwall, signs, fences, gates, etc.
 - (p) Revisions in location of pavement markings.
 - (q) Revisions to parking areas or turnouts location.
 - (r) Revisions in location, type and length of curbs, sidewalks, and accessible ramps.
 - (s) Revisions to any notes.
 - (t) Revisions to permanent erosion control measures.

(6) Structural Sheets

- (a) Stationing of bridge ends.
- (b) Revisions to footing and seal elevations.
- (c) Pile length, size, type and tip elevation.
- (d) Modifications and repairs to drilled shafts.
- (e) Any changes in plan or dimensions including any major changes in reinforcing.

(7) Standards, Details, and Specials

Revisions to notes, dimensions, locations, and materials.

No direct payment will be made for preparing and furnishing as-built working drawings. A retention of 1/10th of 1% of payment due will be withheld from project pay estimates if the Contractor has not kept current the designated set of as-built plans. In addition, a retention of 1/10th of 1% of the contract amount paid to date will be withheld at the end of the project until the set of as-built plans has been submitted to and accepted by the Project Engineer. The final completed as-built working drawings must be submitted to and accepted by the Contracting Officer before final acceptance will be granted on the project.

104.05 Load Restrictions. Add the following:

Comply with all legal load restrictions when hauling materials on PTA roads, public roads, newly constructed subbase and new pavements.

Provide front and rear pilot cars with “wide load” signs and roof mounted flashing lights for transportation of construction equipment on State Route 200.

Add the following Subsection:

104.06 Vehicle Requirements. All contractor vehicles entering and leaving PTA property must have an operating flashing yellow or amber strobe light. The vehicles must also have readily identifiable 12” to 18” high vehicle number plates on both sides and rear of the vehicles.

Section 105. - CONTROL OF MATERIAL**105.01 Source of Supply and Quality Requirements.** Add the following:

Submit samples of materials for quality verification testing for materials required to conform to Sections 703, 704, and 705.

Materials containing petroleum-based solvents such as cutback asphalts and traffic paints may be restricted from use by local laws or ordinances in certain geographic areas. Upon presenting proof of such restrictions, alternate materials considered acceptable to the CO may be substituted for the materials specified in the contract.

105.02 Local Material Sources Delete the text of this Subsection and substitute the following:

(a) Government Mandatory Source. The Government-owned, PTA aggregate quarry, located 1.6 miles south of Saddle Road (SH 200) at MP 39.3 is designated for use on this project. This quarry is a government-provided materials source for this project. Quarry access from Saddle Road is along gravel roads. NO utilities are available at the quarry. **Use this source, free of charge,** to generate materials for the following.

- Subbase Aggregates
- Aggregate for Superpave HACP
- Aggregate for Hot Asphalt Treated Base
- Unclassified Borrow
- Placed Boulders, riprap, rockery, and stockpiled aggregates

Material quality in the source is acceptable in general, but may contain areas of unacceptable materials or materials requiring blending to produce aggregate meeting the contract quality requirements. It is not feasible to ascertain from samples the quality of materials for the entire source and due to the nature of the lava flows. Variation should be expected.

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The use of this source is mandatory and reserved solely for work contained in this contract unless otherwise approved by the CO. Rights to the use of this quarry are non-transferable and non-assignable. Do not sell, exchange, or give materials from this source to other parties.

Military training missions will take precedence over quarry operations. Be advised that at any time, military training and maneuvers may cause delays in, or suspension to, the production and haul of material to and from this source.

No direct payment will be made for any work related to the PTA quarry, including development and reclamation plans, excavation, stripping, waste handling, drilling/blasting, access roads improvements and other related work, all of which is included under other pay items in the bid schedule.

The plans show an estimated quantity of onsite unclassified borrow material of approximately 12,000 cubic yards near station 17+00 and 2,000 cubic yards near station 353+00, respectively. Actual quantities will vary. Use this material before obtaining and removing unclassified borrow material from the quarry.

(b) Other Contracts. Coincident with this contract, contracts performing work on other non related projects may occupy an adjacent portion of the quarry or utilize the same gravel quarry access routes.

The County of Hawaii is planning to pave a portion of the western section of existing Saddle Road in late Summer or early Fall of 2008. Work is expected to be between mile post 35 and State Route 190.

FHWA Contract # DTFH68-08-C-00001 for HI A-AD 6(4). This project extends from Station 17+00 to Station 351+00. The contract completion date for this project is December 14, 2008.

The contractor is responsible for coordinating with these contractors should these conditions arise.

(c) Materials Sources Development and Rehabilitation Plans. At least 30 days prior to commencement of any work at the quarry, submit a development and reclamation plans necessary to produce materials from the quarry meeting contract requirements. Night work at the PTA Quarry source with the exception of drilling and blasting will be allowed. Use the “PTA Quarry Investigation – Materials Source Report HI-A-AD 6(5)” and PTA Quarry Pit plan sheets to develop. These plans should include the following:

- Excavation methods used to optimize source materials to produce the aggregate type and quality required
- Excavation and scheduling plan, including unexploded ordnance (UXO) support plan to be conducted prior to beginning any operations within the quarry limits or beyond the initial quarry limits.
- Type of equipment to be used at the quarry.
- Crusher, Hot Plant and Stockpile locations.

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- Erosion control measures.
- Environmental Protection Plan to address containment of chemicals, petroleum products and requirements described in Subsection 107.
- A list of any hazardous materials that will be at the PTA Quarry site and a plan to store and handle these materials.
- Reclamation plan including method for disposal of overburden and waste materials.
- If blasting is required, submit a blasting plan according to Section 205 and 107.11. Army restrictions pertaining to the use of explosives within PTA also apply.
- If night work is required, submit a separate night work schedule including list of proposed outdoor lighting fixtures and their locations. Provide written certification for outdoor lighting fixtures to ensure compliance with applicable State and County laws, ordinances, rules and regulations.

(d) Permits, Licenses, and Agreements. The government has acquired the rights to remove materials from the PTA quarry and to use such property for a plant site and stockpiles. Acquire all source permits for use of the PTA quarry according to the requirements/condition of the State of Hawaii Department of Health, Clean Air and Clean Water Branches. The following permits are known to be required:

- Air pollution control permit for crusher operations (Clean Air Branch);
- Air pollution control permit for hot mix plant operations (Clean Air Branch);
- NPDES permit coverage (Clean Water Branch).

Note: The Government previously obtained NPDES permits for construction of this project. Thirty (30) days prior to using the quarry, submit all missing or supplemental information identified in Special Contract Requirement Section 107 to the Department of Health.

Comply with all permit and agreement terms and conditions, including required fees and insurance requirements.

(e) Available PTA Quarry Access Roads. Do not use Existing State Route 200, Saddle Road between MP 34 and 42 to transport materials, to or from, the Quarry including empty haul units.

Access to and from the PTA Quarry will be limited to the following access road:

- Quarry to Ahi Road crossing the existing Saddle Road at MP 39.3 onto project near station 128+00.

Alternate routes may be proposed, however approval from the CO and the Department of the Army is required prior to use.

Access roads will not accommodate two-way traffic at all locations.

Keep access gates locked at all times. Employ gatekeeper personnel, if desired, at no cost to the Government.

Overhead utility lines span some access roads. Any adjustments to overhead utility lines needed to accommodate contractor equipment will not be measured for payment but will be considered subsidiary to other contract items.

The access roads may be improved by blading and shaping. Place PTA quarry-produced aggregates as required to eliminate dust pockets and provide a reasonably stable haul surface. Submit a proposed improvement plan to the CO for approval prior to start of any access road improvements. Do not widen existing roads beyond existing disturbance or as staked by the CO. Blading, shaping, and adding aggregate to the haul roads will not be measured for payment but is considered subsidiary to other contract items. Payment for dust control as directed by the CO will be under Item 306.

Upon completion of haul operation the access roads will be bladed, shaped and areas that have been damaged by haul operations will be repaired at no cost to the government. Restore the portion of Ahi Road north of old Saddle Road to its original condition by removing any improvements made under this contract. Apply dust palliative as directed by the CO and as recommended by the CO.

Do not exceed the following speeds within PTA:

- 35 mph on Saddle Road;
- 15 mph on PTA roads, trails, and between station 311+00 and 322+00;
- As limited by temporary traffic control.
- 5 mph in areas where military troops are present

Bituminous surfacing on haul roads will be allowed. Bituminous surfacing will not be measured for payment but considered subsidiary to other contract items. Upon completion of haul operations, repair all damaged areas using the same bituminous materials/treatments. Repair any erosion damage to adjacent areas caused by runoff from the bituminous surfacing.

(f) Restrictions. Do not drive or walk off approved access roads or outside the designated quarry limits.

Cover all trucks hauling loose materials when traveling on public roads.

Upon leaving Saddle Road to access the quarry and upon leaving the quarry to access Saddle Road, contact PTA range control.

All construction personnel must attend a mandatory briefing on unexploded ordnance according to Section 108 of the Special Contract Requirements.

Comply with security requirements on a military reservation according to Subsection 108.01.

Keep all access gates on the project locked at all times.

Stockpile all excess material in an approved manner for use by the Department of the Army (DOA). Do not construct stockpiles or staging areas in locations that block access to the Army's quarry area or roads and trails within PTA needed for military access or other construction projects.

Backfill any excavations or holes created by quarry operations below the natural ground level to the same elevation with waste or overburden materials.

Pressure wash all equipment used in quarry operations prior to bringing onsite according to Section 107 of the Special Contract Requirements.

Upon completion of quarry operations, maintain or install new erosion control elements downstream of all stockpiled aggregates, overburden and waste piles. Remove all equipment, trash or other materials not designated to remain and restore the area to the condition specified in the contract and satisfactory to the CO.

105.04 Storing and Handling Material. Add the following:

An existing site at the intersection of new Saddle Road and Makai Road can be used as a staging area for this project. If the Contractor chooses to use areas outside the Saddle Road right-of-way or an area outside the limits of disturbance at the PTA Quarry, the contractor will need to obtain the necessary right of entries and permits such as the Conservation District Use Permit, NPDES, Grading, and Grubbing.

Add the following after the third sentence of the second paragraph:

For Contractor-located, non-commercial staging, storing, and material handling areas, secure environmental clearances according to Subsection 107.10.

Section 106. - ACCEPTANCE OF WORK

106.01 Conformity with Contract Requirements. Delete the text and substitute the following:

Follow the requirements of FAR Clause 52.246-12 Inspection of Construction.

References to standard test methods of AASHTO, ASTM, GSA, and other recognized standard authorities refer to the methods in effect on the date of solicitation for bids.

Perform all work to the lines, grades, cross-sections, dimensions, and processes or material requirements shown on the plans or specified in the contract.

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Incorporate manufactured materials into the work according to the manufacturer's recommendations or to these specifications, whichever is more strict.

Plan dimensions and contract specification values are the values to be strived for and complied with as the design values from which any deviations are allowed. Perform work and provide material that is uniform in character and reasonably close to the prescribed value or within the specified tolerance range. The purpose of a tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons.

When standard manufactured items are specified (such as fence, wire, plates, rolled shapes, pipe conduits, etc., that are identified by gauge, unit mass, section dimensions, etc.), the identification will be considered to be nominal masses or dimensions. Unless specific contract tolerances are noted, established manufacturing tolerances will be accepted.

The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Acceptable work conforming to the contract will be paid for at the contract unit bid price. Four methods of determining conformity and accepting work are described in Subsections 106.02 to 106.05 inclusive. The primary method of acceptance is specified in each Section of work. However, work may be rejected at any time it is found by any of the methods not to comply with the contract.

Remove and replace work that does not conform to the contract, or to prevailing industry standards where no specific contract requirements are noted, at no cost to the Government.

(a) Disputing Government test results. If the accuracy of Government test results is disputed, promptly inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve the dispute, further evaluation may be obtained by written request. Include a narrative describing the dispute and a proposed resolution protocol that addresses the following:

- (1) Sampling method
- (2) Number of samples
- (3) Sample transport
- (4) Test procedures
- (5) Testing laboratories
- (6) Reporting
- (7) Estimated time and costs
- (8) Validation process

If the evaluation requires additional sampling or testing be performed, mutually agree with the Government on witnessing procedures and on sampling and testing by a third party laboratory. Use a third party laboratory accredited by the AASHTO accreditation program. Provide proof of the laboratory's accreditation for the test procedures to be used. Do not use the same laboratory that produced the disputed Government test results or that produced the test results used as a basis for the dispute.

The CO will review the proposed resolution protocol and may modify it before final approval and execution.

The Government will use the approved resolution protocol test results to determine the validity of the disputed testing. If the Government test results are validated, the Contractor will be responsible for all costs associated with developing and performing the resolution protocol. If the Government test results are not validated, the Government will be responsible for all costs associated with developing and performing the resolution protocol. If the validity of the Government test results cannot be determined, the Contractor and Government will equally share all costs associated with developing and carrying out the resolution protocol.

(b) Alternatives to removing and replacing non-conforming work. As an alternative to removal and replacement, the Contractor may submit a written request to:

- (1) Have the work accepted at a reduced price; or
- (2) Be given permission to perform corrective measures to bring the work into conformity.

The request must contain supporting rationale and documentation. Include references or data justifying the proposal based on an evaluation of test results, effect on service life, value of material or work, quality, aesthetics, and other tangible engineering basis. The CO will determine disposition of the nonconforming work.

Where sample/testing procedures make reference to AASHTO, ASTM, or other standards (designated as FLH T), the procedure as modified in the Materials Manual shall govern. Where the specifications make reference to AASHTO Test T11, "Procedure B - Washing Using a Wetting Agent" shall be the procedure followed.

Delete references made to AASHTO T-238 or T-239 and substitute with ASTM D 2922 and D3017 or AASHTO T-310. When AASHTO Test T310 is referenced, "Direct Transmission Method of In-Place Nuclear Density and Moisture Content" shall be the procedure followed.

Reference to the Materials Manual means the Federal Lands Highway "Field Materials Manual, U.S. Department of Transportation, Federal Highway Administration," Publication No. FHWA-FL-91-002, dated March 1991, revised March 1994, and all amendments and supplements thereto. Copies are available upon request via email to CFLContracts@fhwa.dot.gov or by faxing your request to 720-963-3360.

106.03 Certification. Add the following after the first paragraph:

Other than references in or to the FAR or Federal Law, when this contract references certifications; certificates; or certified documents, equipment or individuals, these references are not certifications within the meaning of Section 4301 of Public Law 104-106, the National Defense Authorization Act for Fiscal Year 1996. These references simply refer to documentation of peripheral contract requirements required to be validated by an individual or organization having unique knowledge or qualifications to perform such validation.

Add the following after the second paragraph:

See Table 106-3 for Schedule for Full or Partial Acceptance by Material Certification. Submit certification and sample of material for testing as required.

(a) Production certification. Delete items (2) through (5) and substitute the following:

(2) Lot number or other means of cross-referencing to the manufacturer's inspection and testing system

(3) Substantiating evidence that the material conforms to the contract quality requirements as required by FAR 46.105(a)(4), including all of the following:

(a) Test results on material from the same lot and documentation of the inspection and testing system

(b) Manufacturer's statement that the material complies with all contract requirements

(c) Manufacturer's signature or other means of demonstrating accountability for the certification

106.05 Statistical Evaluation of Work and Determination of Pay Factor (Value of Work).**(b) Acceptance.** Delete the last sentence of the second paragraph and substitute the following:

If a lot is concluded or terminated with fewer than five samples, the samples will be combined with those of an adjacent lot. In the event there is no adjacent lot, the material will be accepted according to Subsection 106.04.

Delete the third paragraph and substitute the following:

If the current pay factor of a lot falls below 0.90, terminate production. The current lot is terminated at this point and the material represented by the lot will be accepted as provided in the following paragraphs. After the Contractor has taken effective actions to improve the quality of the production, production may resume and a new lot will begin.

Table 106-3
Schedule For Full or Partial Acceptance by Materials Certification

Section	Description	Material	Material Property Or Specification	Frequency	
				Certification	Sample
306	Dust Palliative	Magnesium Chloride, Emulsified Asphalt, Lignin Sulfonate, Calcium Chloride	As specified	1 per shipment	First shipment
308	Minor Crushed Aggregate	Crushed Aggregate	Source, Quality and Gradation	1 per source	1 per source
402 and 417	Minor Hot Asphalt Concrete, Minor Cold Asphalt Mix	Aggregate Asphalt Mix	Source quality, Gradation, Stability, and Grade	1 per mix	1 per source
634 and 635	Permanent Pavement Markings, Temporary Traffic Control	634.02 as applicable, 635 as applicable	As specified	1 per source	-----
701	Hydraulic Cement	Portland Cement, Blended Hydraulic Cement and Masonry Cement	AASHTO M 85, M 240, and ASTM C 91	1 per shipment	1 per 100 tons
702.01	Asphalt Material	Asphalt Cement	AASHTO M 20, M 226, MP 1 or as applicable	1 per shipment	1 per shipment
702.02	Asphalt Material	Cut-back Asphalt	AASHTO M 81 or M 82 as applicable	1 per shipment	1 per shipment
702.03	Asphalt Material	Emulsified Asphalt	AASHTO M 140 or M 208 as applicable	1 per shipment	1 per shipment
702.05	Asphalt Material	Asphalt Materials used for Damproofing and Waterproofing Concrete Surfaces	As specified for each type of asphalt material	1 per shipment	-----
702.06	Recycling Agent	As specified	As applicable	1 per shipment	1 per shipment
702.08	Antistrip	As specified	As applicable	1 per shipment	-----
706	Concrete and Plastic Pipe	As specified	As applicable	1 per shipment	-----
707	Metal Pipe	Metal Pipe as specified	As applicable	1 per shipment	-----
708	Paint	As specified	As applicable	1 per batch\lot	1 sample for quantities >25 gallons

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709	Reinforcing Steel and Wire Rope	As specified	As applicable	1 per shipment	For 709.01 & 709.03 submit 3, 3-foot bars of each size and grade of bar furnished. 709.02 submit 1 6-foot length for each size furnished
710	Fence and Guardrail	As specified	As applicable	1 per shipment	-----
711	Concrete Curing Material and Admixtures	As specified	As applicable	1 per material source per material type	-----
712	Joint Material (all)	As specified	As applicable	1 per shipment	-----
713	Roadside Improvement Materials (all)	As specified	As applicable	1 per shipment	-----
714	Geotextile and Geocomposite Drain	As specified	As applicable	1 per shipment	1 per project per type
715	Piling	As specified	As applicable	1 per shipment	-----
716	Material for Timber Structures	Timber and Hardware	As applicable	1 per shipment	-----
717	Structural Metal	As specified	As applicable	1 per shipment	717.01(e) minimum 6 per shipment for each size used. 717.10 1 per project
718	Traffic Signing and Marking (all)	As specified	As applicable	1 per shipment	-----
720	Structural Wall and Stabilized Materials (all)	As specified	As applicable	1 per shipment per material type	-----
721	Electrical and Illumination Material (all)	As specified	As applicable	1 per shipment per material type	-----
722	Anchor Material	As specified	As applicable	1 per shipment per material type	-----
725	Miscellaneous materials	As specified	As applicable	1 per shipment per material type	-----

Section 107. - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.01 Laws to be Observed. Add the following:

Obtain the following permits:

(1) A County of Hawaii “Permit to Work Within the County Right-of-Way” to: (a) perform the construction work between mile posts 34 to 42 of the existing Saddle Road; (b) to place project signs near Saddle Road mile post 7 and at State Route 190 and Saddle Road junction; and (c) to utilize the existing Saddle Road for hauling material. Use and place only signs that meet all applicable MUTCD and safety requirements.

(2) All other State of Hawaii or County of Hawaii permits necessary to perform the work to complete the project. These may include but are not limited to: air quality permits, blasting permit, crusher permit, and permits to set up concrete and asphalt batch plants.

The Government has applied for and received the following permits:

(1) County of Hawaii Grading Permit

(2) National Pollution Discharge Elimination System (NPDES) Individual Permit Coverage Authorizing Discharges of Storm Water Associated with Construction Activities from the Hawaii Department Of Health (HDOH).

(3) Conservation District Use Permit

(a) General. Implement the requirements of the National Pollutant Discharge Elimination System (NPDES) authorizations to discharge storm water runoff from construction activities as specified under the Hawaii Department of Health Storm Water Individual Permit [HI S000031].

(b) Individual Permit BMPP. Designate the erosion control/water quality supervisor according to Subsection 157.03 who will be responsible for implementing the construction site BMPP and compliance with the Permit. The erosion control/water quality supervisor shall be familiar with the Permit and BMPP procedures and practices and shall ensure that emergency procedures and the BMPP are updated as needed and available for inspection. A copy of the Individual Application and General Permit authorization are included in the Appendix.

(c) Review and update the Individual Application, BMPP and NPDES Authorization. Individual permits application and associated BMPP have been developed and include project plans containing erosion control details and quantities. The Individual application also includes excerpts from project specifications, which may be superseded by the final special contract requirements. The Individual permit application does not include the work at the PTA quarry, however, the Government has received written authorization to conduct quarry operations under the Individual permit covering this project. At least 35 days prior to the beginning of construction, review the quarry plans and specifications and BMPP and amend and supplement

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the BMPP to include the quarry development and operations. Provide the following information to the CO:

- (1) Information required in Individual NPDES Form C, Item 3 and 15, and item 13 of the application that is missing or incomplete.
- (2) Expected sequencing of operations and construction schedule
- (3) Weather monitoring procedure
- (4) Descriptions and details of erosion controls, including dust control
- (5) Applicable specifications and Special Contract Requirements
- (6) Maintenance and inspection procedures and forms
- (7) Contractor and Subcontractor Certification forms
- (8) Other record keeping forms and procedures
- (9) "Good housekeeping" practices and requirements
- (10) Grading Plan with 20-acre maximum exposure per drainage area applied
- (11) Plan view of the stockpile and staging areas and storage yards showing any fuel storage area, location of tanks, location of appropriate BMPs, location of oil absorbent materials, and ingress/egress treatment, including flow direction arrows through this area.
- (12) A detail showing the temporary stabilized construction entrance for the ingress/egress to and from the staging areas.
- (13) A schedule showing when the disturbance will occur and the duration of the disturbance at each of the discharge points listed in the Individual.
- (14) A spill prevention and material management controls and practices plan
- (15) A letter stating the contractor's commitment to keep the disturbances at or near the discharge points to an absolute minimum.
- (16) A completed copy of the "Solid Waste Disclosure Form for Construction Sites."

Jointly review the BMPP with the CO and agree to any needed revisions. Sign the revised BMPP indicating approval of the revised BMPP. The CO shall also sign the revised BMPP and submit any substantive changes to HDOH.

The approved BMPP will describe and ensure the implementation of practices used to reduce the pollutants in storm water discharges to assure compliance with the terms and conditions of the Individual and General Permit.

Place a copy of the approved updates in the three-ring binder so that completed inspection forms and other records may be inserted. Maintain current copies of the Individual application/BMPP and all associated records and forms at the job site throughout the duration of the project. Make the BMPP available for public inspection and for the inspection and use of the CO.

Implement the BMPP as required throughout the construction period and maintain all related erosion control elements in proper working order. Do not perform earthwork until the appropriate erosion control measures are in-place.

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Prior to construction, the Contractor and all subcontractors shall sign certifications (included in the BMPP) that they understand the requirements of the Permit. All subcontractors shall comply with the requirements of the Permit under the supervision of the Contractor.

The Individual application, including inspection forms and all data used to update and complete the Individual application, shall be provided to the CO at the completion of the project. The Contractor shall retain his own records for a period of at least three years from the date the site is finally stabilized.

(d) HDOH Authorization. Post a copy of the HDOH authorization at the construction site bulletin board throughout the duration of the project.

(e) Erosion Controls. Implement soil erosion controls according to the BMPP and Section 157.

- (1) As practicable, divert storm water flowing toward the construction area by using appropriate control measures, or as directed by the CO.
- (2) Design erosion control measures according to the size of disturbed or drainage areas to detain runoff and trap sediment.

(f) Controls for Other Pollutants. Implement controls to eliminate the discharge of pollutants, other than erodible soil, into storm water such as pollutants from materials stored onsite. Include the implementation of spill prevention and material management controls and practices to prevent the release of pollutants into storm water. Specify these controls and practices in the updated BMPP and include storage procedures for chemicals, construction materials and other pollution prevention measures.

Do not allow discharges that cause or contribute to a violation of the basic water quality criteria as specified in HRS 11-54-04.

Spill prevention, containment and counter-measures will be required if the volume of oil (including fuel) in a single location exceeds 1320 gallons. The total storage volume at any one site is the sum of all containers with a capacity of 55 gallons or more.

Immediately clean up hazardous material spills. Haul soil contaminated with smaller spills from the project site and dispose of according to applicable State and Federal laws.

Contact the CO immediately in the event of any spill of a hazardous material.

(g) “Good Housekeeping” Practices and Requirements. The BMPP shall specify the Contractor's “good housekeeping” practices and requirements including vehicle wash-down areas, onsite and offsite tracking control, protection of equipment storage and maintenance areas, and sweeping of highways and roadways related to hauling activities.

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Take sufficient precautions, considering all conditions, to prevent pollution of any water body with fuels, oil, bitumen, or dust palliatives. None of these materials shall be discharged into any channels leading to streams, lakes or reservoirs.

To reduce the possibility and minimize the impacts of accidental spills or discharge, machinery service and refueling areas shall be located away from streambeds or washes.

Non-waste materials such as used cans, containers, packaging, oils, machine and equipment parts, paint, hazardous materials, plastic and rubber parts, discarded metals, and building materials, shall be removed from the construction site and disposed of at an approved landfill.

Where the Contractor's working area encroaches on a running or intermittent stream, barriers shall be constructed and maintained between the working areas and the streambed adequate to prevent the discharge of any contaminants.

(h) Inspections and Revisions to the BMPP. Perform regular inspections of the construction site and controls, including disturbed areas that have not been finally stabilized, areas used for storage of materials, locations where vehicles enter or exit the site, and all of the erosion and sediment controls that are included in the BMPP. Repair all control measures as necessary. Check controls daily during periods of prolonged rainfall. Check controls weekly during dry periods and within twenty-four hours after any rainfall of greater than or equal to ½ inch within a 24-hour period. Monitor rainfall with a rain gauge accurate to the nearest ⅛ inch of rain and maintain records of the duration and estimated volume of storm water discharge(s).

Document the inspections, checks, and repairs on forms provided in the BMPP. The inspection forms shall be signed according to the requirements of the General Permit. Retain the inspection forms onsite in the BMPP notebook throughout the construction period.

It may be necessary to revise the BMPP during construction to make necessary improvements or revisions or to respond to unforeseen conditions noted during construction or site inspections. For that purpose, the BMPP shall specify the mechanism whereby revisions may be proposed by the Contractor or the CO and incorporated into the plan, including review and approval of minor changes. The CO and the Contractor shall jointly approve and sign each revision to the BMPP before implementation. Implement approved modifications within seven calendar days following the date of the inspection when deficiencies or necessary corrections were first noted.

(i) Notice of Cessation (NOC). FHWA is responsible for submitting the proper documentation to cease coverage under the Individual Permit.

107.02 Protection and Restoration of Property and Landscape. Add the following after the third paragraph:

Stockpile, equipment parking, and turnaround areas are to be contained within the designated construction limits. Install erosion control devices, as necessary, around the perimeter of

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stockpile, equipment parking, and turnaround areas. Do not allow equipment outside the designated construction limits without specific authorization by the CO.

When directed by the CO, install temporary construction fencing to delineate and protect specific areas of vegetation and other environmental features within or adjacent to the work area. Install and maintain temporary construction fence at the following location: all stockpile and storage areas; around trees and shrubs designated to remain; and at other locations determined by the CO. Unless directed otherwise by the CO, remove this fencing upon completion of work.

Flag the construction limits and construction access points. Do not allow contractor personnel, vehicles or equipment outside of these delineated areas. Remove all flagging after completion of construction.

Obtain approval from the CO of all proposed staging sites. Provide two weeks notice to the CO for approval of proposed staging areas. Install temporary fencing around the perimeter of all approved staging areas.

Restrict contractor operations to the approved construction limits, construction access points, and staging sites. Store and maintain all equipment, material, and support structures either within the approved construction limits or staging sites. Remove the fencing upon completion of construction. Restore the area to an acceptable condition, as determined by the CO.

A temporary construction fence was installed as part of a prior project from the north right of way line to south of and around Station 204+00 to Station 209+00 to protect a population of endangered plants. Do not enter this area.

Add the following after the fourth paragraph:

The Archeological Resources Protection Act of 1979 (ARPA, Public Law 95-96) provides for civil penalties equal to the archeological value and cost of restoration and repair for damaged resources.

All known archeological sites within the project limits have been investigated. An archeological monitor may observe ground disturbing activities to ensure that necessary historical data has been recorded.

In the event that a lava tube or cave is encountered or inadvertently breached during construction, the CO will implement a contingency plan in coordination with the State Historic Preservation Office (SHPO):

- All construction with the potential to impact a lava tube or cave shall immediately cease,
- Protect the opening from surface runoff according to Section 157,

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- Inform the CO of the lava tube or cave. The CO will contact the SHPO, the USGS, Army, and the USFWS as appropriate to determine whether historic sites or burials are present, and if unique geological, biological or cultural values merit investigation and data collection.
- Do not crush or fill passages without authorization from the CO.
- If burials or historic sites are present, the mitigation directed by the SHPO and the Hawaii Island Burial Council will be followed, according to Chapter 6E, Hawaii Revised Statutes, Section 106 of the National Historic Preservation Act, Public Law 101-85, and Public Law 101-601. In addition, if the historic sites are determined to be important for preservation in place, Section 4(f) of the Transportation Act will be triggered. All work on that portion of the project will cease while the Government coordinates with the SHPO to evaluate measures to avoid the significant site.
- If no historic sites are present, the disposition of the lava tube or cave will be as follows:
 - If appropriate and feasible, leave the cave or lava tube as is.
 - If the cave or lava tube poses a structural hazard to the road or related features, appropriate direction will be provided by the CO to produce a structurally sound surface for construction.

Delete the sixth paragraph and substitute the following:

Before beginning work in an area, contact the local Utility Locator Service, at the phone number shown on the plan title sheet, to have all utilities located. Protect utilities from construction operations. Cooperate with utility owners to expedite the relocation or adjustment of their utilities to minimize interruption of service, duplication of work, and delays.

Status of Utilities:

	<i>Company</i>	<i>Utility Type</i>	<i>Contact Name</i>	<i>Phone Number</i>	<i>Status 1, 2, 3, or 4</i>
1	HELCO	Overhead Power	Bruce Matsubara	808-969-0363	3
2	Hawaiian Telecom	Overhead Telephone	Severino Urubio	808-933-6488	3

Status 1: The utilities are in conflict with the project and REQUIRE relocation by OTHERS DURING construction.

Status 2: The utilities are in conflict with the project and REQUIRE relocation by the Contractor DURING construction.

Status 3: The utilities are in conflict with the project and REQUIRE relocation BEFORE construction.

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Status 4: The utilities are located within the project rights of way but require NO relocation.

All necessary utility relocations listed above are scheduled to be completed by Fall 2008.

There is an existing buried fiber optic line from approximately station 123+47 to 127+27. Do not disturb this buried line.

107.03 Bulletin Board. Add the following:

(g) “Beck” poster, according to FAR Clause 52.222-39 Notification of Employee Rights Concerning Payment of Union Dues or Fees.

107.05 Responsibility for Damage Claims. Add the following after the first paragraph:

Indemnify, defend and hold harmless the State of Hawaii, Department of Land and Natural Resources from and against all claims or demands for damage, including claims for property damage, personal injury, or death, arising out of or resulting from: 1) any act or omission on the part of the Contractor relating to Contractor’s use, occupancy, maintenance, or enjoyment of the areas covered by the Land License and right-of-entry issued by Department of Land and Natural Resources; 2) any failure on the part of the Contractor to maintain the License and right of entry areas, and including any accident, fire or nuisance growing out of or caused by any failure on the part of Contractor to maintain any of Contractor’s equipment within the License and right of entry areas in a safe condition; and 3) and against all actions, suits, damages, and claims by whomsoever brought or made by reason of the Contractor’s non-observance or non-performance of the rules, regulations, ordinances, and laws of the federal, state, municipal or county governments; and 4) the release of hazardous materials on the License and right of entry areas, or elsewhere, resulting from the actions of the Contractor taken pursuant to the activities under the Land License and right of entry.

Hold harmless, indemnify and defend the County of Hawaii, its officers, employees and agents thereof, from all claims, demands, suits, actions, or proceedings of every name, character, and description which may be brought against the County of Hawaii for or on account of any injuries or damages to any person by or in consequence of any act or acts of the holder of the “Permit to Work Within the County of Hawaii Right-Of-Way” for actions done under the permit.

(b) Comprehensive or commercial general liability insurance. Add the following:

Obtain a comprehensive public liability insurance policy or policies from an insurance company or companies licensed to do business in the State of Hawaii, naming as additional insurers, the State of Hawaii and the Federal Highway Administration, covering any claim for personal injury, death and property damage arising in the areas covered by the Land License and right of entry granted by the Department of Land and Natural Resources. The minimum amount of coverage shall be in an amount of at least \$1,000,000 per occurrence. The policy and coverage shall be kept in force during the term of the Contract. The Contractor, no less than thirty (30) days prior to entry and use of the right of entry and License areas shall furnish the the Department of Land

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and Natural Resources with a certificate(s) showing the policy(s) to be initially in force, keep the certificate(s) on deposit during the entire right of entry and License terms, and furnish a like certificate(s) upon each renewal of the policy(s). The insurance shall not be cancelled, limited in scope of coverage, or non-renewed until after thirty (30) calendar days written notice has been given to the Department of Land and Natural Resources.

Obtain a public liability insurance policy, naming as an additional insured, the County of Hawaii, its officers, representatives, employees, and agents, covering any claim or liability for damages, injuries or death resulting from any of the uses permitted under the “Permit to Work Within the County of Hawaii Right-Of-Way”. The minimum amount of coverage under such policy shall be \$1,000,000 per occurrence. The policy and coverage shall be kept in force until all work under the permit is completed to the satisfaction of the Director of the Department of Public Works. Provide a certificate of insurance to the County of Hawaii.

107.08 Sanitation, Health, and Safety. Add the following.

Provide a sufficient number of refuse containers for collecting all construction debris. Place construction debris in refuse containers; do not place or store refuse outside of containers. Dispose of refuse prior to capacity of containers being exceeded, at public or private dumping areas. Wet down dry materials and rubbish to prevent blowing dust. Keep volatile wastes in covered containers.

Add the following at the end of the subsection:

Contractor-Selected, Non-Commercial Areas. Contractor-selected, non-commercial areas, include, but are not limited to disposal sites, waste areas, haul roads, and staging areas. (A commercial source is a current operating concern which has in the recent past provided same-type materials or services). These requirements do not apply for areas identified by the FHWA as having previously received clearance.

Prior to construction activities in contractor-selected, non-commercial areas, provide the following to the CO and the FHWA Environmental section (12300 West Dakota Avenue, Suite 280, Lakewood, CO 80228-2683/Fax 720-963-3610):

(1) A report with documentation, according to the Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation, to determine if prehistoric or historic buildings, structures, sites, objects, or districts listed or eligible for listing in the National Register of Historic Places (NRHP) are present and if they will be affected by the proposed activity. Include information identifying the location, total land area, and type of activity proposed. The FHWA will review this documentation. If NRHP listed or eligible sites are present and/or will be affected, the FHWA will coordinate with the State Historic Preservation Officer (SHPO) and other parties, which will require the following time frames:

- (a) Coordination on eligibility and affects may require 45 days or longer.
- (b) Coordination on mitigation of adverse effects may require 60 days or longer.

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(2) Written documentation that such activities will not affect any “Waters of the U.S.” as defined by the U.S. Army Corps of Engineers. Provide documentation by an individual capable of performing wetland delineations according to the 1987 Corps of Engineers’ manual. Documentation of effects to wetlands or other Waters of the U.S. will be submitted to the CO and to the FHWA Environment section for coordination with the Corps of Engineers. This coordination may require 45 days or longer. Substantial additional delays could result from wetland impacts.

(3) Written documentation that such activities will not affect any species protected under the Endangered Species Act (ESA). Provide documentation prepared by a biological specialist. The written documentation will include a “no affect”, a “may affect-is not likely to adversely affect”, or a “may affect-is likely to adversely affect”, determination according to Section 7 of the Endangered Species Act. Submit the documentation to the CO and the FHWA Environmental section. If the determination is “may affect-is not likely to adversely affect” or “may affect-is likely to adversely affect”, the FHWA will coordinate with the U.S. Fish and Wildlife Service (FWS), which will require the following time frames:

- (a) “May affect-is not likely to adversely affect” may require 45 days or longer.
- (b) “May affect-is likely to adversely affect” may require 150 days or longer.

Contract time will not be increased due to the submittal and approval process for the above three items.

Measures to Minimize Environmental Harm. Comply with and perform the following measures:

(1) Control of Invasive Species.

The CO will arrange for a qualified biologist to inspect all proposed borrow site(s) for use on this project for the presence of invasive species and invertebrates. Provide two weeks notice for inspection of the borrow site. Use approved borrow sites only.

Thoroughly pressure wash and fumigate all construction equipment offsite prior to transporting it to the construction site to remove all dirt, plant matter, insects, and foreign material. Once equipment has been moved off the construction site, pressure wash and fumigate it again before transporting it back onto the job site. Particular attention must be given to the under carriage and any surface where soil containing exotic seeds or invertebrates may exist.

Inspect the right-of-way for emerging fountain grass every three months during the course of construction. Spray emerging fountain grass with an approved herbicide. Prior to applying herbicides, obtain approval of the herbicide products for use on roadway sections passing through State and Army lands from the Department of Public Works Installation Pest

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Management Coordinator (IPMC) or from the appropriate State agency. See special contract requirement Section 625 for herbicide requirements.

(2) Hazardous Materials/Waste and Spill Control

Develop and implement a vehicle fluid leakage plan in the event of unexpected spills in the project area. Submit the plan to the CO for approval. The plan will specify immediate clean up of any hazardous substance and define how each hazardous substance will be treated in case of leaks or spills.

Do not cause or permit the escape, disposal or release of any hazardous materials except as permitted by law. Do not store or use such materials in any manner not sanctioned by law or by the highest standards prevailing in the industry for the storage and use of such materials, nor allow such to be brought onto the project except to use in the ordinary course of business. Provide written notice to the Department of Land and Natural Resources of the identity of such materials and obtain consent before bringing such materials onto the project. Indemnify, defend and hold harmless the Department of Land and Natural Resources from any damages and claims resulting from the release of hazardous materials on the project.

Immediately clean up, mitigate, and remedy all unauthorized discharges of hazardous materials and non-hazardous chemical and biological products released from fleet or other support vehicles or stationary sources in compliance with all federal, state, and local regulations.

Notify the CO when a spill, leak, or other release of 5 gallons or greater occurs, as soon as possible, without impeding cleanup. Immediately report the loss of 40 gallons or greater of any petroleum fluid to the CO, County of Hawaii Civil Defense (CHCD) at 808 935-0031 and the State of Hawaii Department of Health (HDOH) at 808 974-6001 to initiate emergency response actions. Perform cleanup according to all federal, state, and local regulations.

Equip all vehicles with load rating of 2 tons or greater with at minimum, enough absorbent materials to effectively immobilize the total volume of fluids contained within the vehicle.

Vehicles and operators transporting hazardous materials must be DOT certified and/or registered; operators must be state licensed and knowledgeable of local emergency response and personal safety protocol.

Use oil pans and absorbent materials to prevent leaks, spills and draining petroleum fluids from falling onto bare ground and paved surfaces during servicing of equipment. Remove soils contaminated with such fluids and place in appropriate safety containers. Remove contaminated materials from the project and dispose of according to federal, state, and local regulations. Repair oil leaks for equipment immediately on discovery. Have oil pans and absorbent materials on hand and in place prior to beginning repair work. Sand and soil are not approved absorbent materials.

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Absorbent materials may be ordered from:

Automotive Supply Center, Ltd.
411 East Kawili Street
Hilo, HI 96720
Phone: 808 935-3767

Zep Manufacturing
91-110 Hanua Street, No. 102
Kapolei, HI 96707
Phone: 808 682-6096 on Oahu or 808 895-0772 in Hilo
Fax: 682-3025

Pacific Environmental Corporation
Pier 14, 1st Floor
Honolulu, HI 96817
Phone 808 545-5195

If previously unidentified hazardous substances or petroleum products are found within the project corridor during construction which indicate an existing release, a past release, or a material treat of a release of any hazardous substance or petroleum products into the project corridor, the Government will pursue further investigation, as warranted. Stop all work in the area of the discovery as directed by the CO. If the CO is out of contact, call the CHCD and HDOH to inform them of the situation. The CO will coordinate clean-up efforts.

(3) Dust Control

Cover all loose material loads (aggregate, soils, etc.) when transporting on public roads.

(4) Endangered Species

No construction lighting or unshielded equipment maintenance lighting will be permitted after dark between the date of April 1st and October 31st.

(5) Noise Control.

Provide continuous noise abatement during construction. Place noise sources as far away as possible from sensitive use areas. Equip all construction equipment with mufflers kept in proper operating condition.

107.11 Protection of Forests, Parks, and Public Lands. Add the following:**Protection of Vegetation**

Preserve and protect trees and plants designated to remain, including root systems. Remove trees designated by the CO. Construct temporary construction fence around trees and plants designated by the CO to remain prior to beginning clearing and grubbing. Do not fasten ropes, cables, or guys to existing trees. Trees and plants that are designated to remain, but are destroyed due to construction operations shall be replaced at no cost to the Government. The CO will designate the species and source of replacement material to be transplanted. Perform transplanting according to the American Standard for Nursery Stock (ANSI 260.1 – 1986). Damage of vegetation and resources outside the designated construction limits or designated areas set aside for the contractor's use will incur the fines and penalties as are applied to other parties damaging State or Army resources.

The following conditions apply with respect to replacement of trees and shrubs damaged or destroyed:

1. Replace trees or shrubs of replaceable size with plant materials of the same species and minimum size of those damaged or destroyed at the expense of the Contractor.
2. Replace trees or shrubs beyond the replaceable size with equal vegetative volume of trees or shrubs of identical species as those damaged or destroyed. Calculated vegetative volume according to the method provided by the CO.

The determination of whether a plant is of replaceable size or beyond will be made by the CO. If the plant has been disposed of, the value will be placed as if it were beyond the replacement size, based upon average spacing of like kind in an adjoining area of similar vegetation. For multi-trunk trees the average sectional area will be calculated by determining the size of the largest stem plus 60 percent of the area of the combined remaining stems of the trunk.

Fire Prevention:

Comply with the following fire prevention plan requirements.

This project is located on lands under the jurisdiction of the State of Hawaii and the Department of the Army. Immediately report all fires, including suppressed fires, to the PTA Dispatch by calling 911; give exact location and description. Do not hang up until told to do so by the dispatcher. The CO will suspend operations when directed by the State or County of Hawaii.

For fire related issues, contact the following individual:

Eric H. Moller, Deputy Fire Chief, USAG-HI, IFSO (Installation Fire and Safety Office) (PTA) (808) 969-2441.

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During periods of contract performance, meet the following fire prevention requirements.

Execution of Fire Plan:

- (a) Army personnel involved in the operations will, in all cases, be coordinated through the CO, except in cases of emergency.
- (b) Designate a fire plan representative who is responsible for preparing a written fire plan and for executing and carrying out the requirements of said fire plan.
- (c) Include the fire requirements in all sub-contracts.
- (d) Ensure that all contract employees are informed of the existence and conditions of the fire requirements.

Compliance Inspection:

- (a) Inspections by the CO will be made to ensure compliance with the fire requirements.
- (b) Should any deficiencies be identified during the inspection, the Contractor will be informed and the deficiencies will be corrected within 24 hours. Activities with potential to start fires shall be halted until the deficiencies are corrected and the CO approves the corrections.
- (c) The Contractor's fire plan representative shall make daily inspections to ensure that the terms of the fire requirements are met at all times.

Fire Suppression:

Take independent action in conjunction with qualified firefighting assets, of all fires in the work area or vicinity. Vicinity is defined as a 1000-foot extension from the operations area boundary.

Personnel:

Designate at least one representative to train and supervise each work crew in fire prevention, detection, and suppression. Documentation of such training will be kept on file and updated as necessary.

To prevent, detect, and suppress fires, provide a trained fireguard for activities involving internal combustion engines. The fireguard shall perform guard duties during operating hours. The fireguard may perform contract work in conjunction with fireguard duties, as long as such duties do not prevent him/her from completing the requirements set forth for the fireguard.

Each fireguard shall report all fires and take suppression action on any fire that starts in the project area or vicinity. Each fireguard shall be equipped with a vehicle which contains, as a

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minimum, a 250 gallon water unit (maximum 1000 gallon) with a pump capable of sustaining a minimum pressure of 100 psi and a flow of 15 gpm, 200 feet of 1-inch forestry hose with hose reel, one nozzle capable of both straight or fog-pattern, one shovel, one Pulaski, and a 10 lb fire extinguisher (ABC Class). The fireguard vehicles shall be available, filled with water, and stationed within a reasonable distance (1300 feet), of all blasting or other operations with fire risk potential.

Work Hours

Restrict operations according to the following emergency fire precaution schedule unless the CO waives the requirement in writing and provides a copy to the Chief of the PTA IFSO.

Each day of operation when there is a predicted change in the fire precaution plan, the Army Representative will inform the CO of such changes between 3:00 p.m. and 6:00 p.m. Notification shall be made of the fire precaution plan to be followed the next day within the local operating area.

No later than 9:00 a.m. the following day, the Army representative will inform the Contractor of any changes in the fire precaution schedule.

Fire Plan

The following outlines the mutual responsibilities of the Army, the CO, and the Contractor to ensure effective prevention and prompt suppression of all fires within the right-of-way and other work areas.

General

Promptly report discovered fires to the 911 Dispatch, CO, and the fireguard. Take action on any and all fires within the right-of-way, access roads, and work areas. Crews will promptly attack fires to control them while they are small. Fires will not be abandoned until the proper authorities declare them to be out or relieves the Contractor and his employees.

Fire suppression should first be attempted with hand tools and water from the accompanying water tender. Heavy equipment should only be utilized as directed by the CO in conjunction with the proper authorities.

As directed by the CO, place equipment and employees at the disposal of the proper authorities for the purpose of fighting fires outside the right-of-way, access roads, and work areas according to this plan.

Employees of the Contractor will operate equipment. The County of Hawaii will assume no responsibility toward such equipment for ordinary wear or damage, damage due to negligence, carelessness, or willful misconduct.

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Tool Cache

During contract performance, furnish and maintain, at no additional cost, one fire toolbox at a centrally located point, as long as it is within one mile of the location where the Contractor is currently performing work. In addition, a fire toolbox shall be provided at each worksite as designated by the CO. Several tool caches should be anticipated.

The fire toolboxes are to be maintained with tools in good condition in the following quantities for each five people in the Contractor's work force. The equipment is for the sole purpose of firefighting.

- 5 Long Handled Shovels (round point size no. 1)
- 3 Pulaski's with Sheaths
- 5 One Gallon Canteens
- 2 Five Gallon Backpack Pumps (filled)
- 5 McLeod Tools

Replenish the fire toolbox after each incidence of fire use or as required.

Vehicles

All vehicles on this project, except those capable of building fire lines, and fuel or service trucks, shall have a minimum of one long handled, size no. 1, round-pointed shovel, one axe or Pulaski with sheaths, and not less than one 2½ lb. capacity, ABC, Dry Chemical extinguisher.

All earth moving equipment, such as dozers and scrapers, shall have a 5 lb. capacity, ABC, dry chemical fire extinguisher. All crawler tractors and rubber tired equipment suitable for fire suppression on the jobsite shall be prepared for nighttime use by mounting brackets for portable, self contained, battery operated lights, furnished by the Contractor.

Fuel and service trucks, and work camp shall be equipped with a shovel, Pulaski, and a UL Listed Class ABC dry chemical extinguisher of not less than 100 lb. capacity by weight.

All internal combustion engines, including those on tractors, jammers, or any stationary or mobile equipment, shall be equipped with a spark arrester. Heavy equipment equipped with an exhaust driven turbocharger in good working order and with no exhaust bypass will qualify. A straight mechanically driven supercharger does not qualify. Light trucks up to 2 tons, pickups, jeeps, and passenger cars shall have effective mufflers and exhaust pipes comparable to the manufacturer's standard equipment installation. Serviceable baffled muffler with standard exhaust tailpipes is considered adequate on trucks, pickups, and sedans.

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Prior to initial operation, inspect all internal combustion engine driven vehicles and equipment. All such vehicles and equipment arriving on the worksite after the initial inspection shall be reported to the CO for inspection prior to operation. All equipment will be inspected periodically after the initial inspection to insure that spark arrestors or turbochargers are in working order. All operators shall submit their equipment to the CO for inspection upon request.

All 1975 and later model passenger vehicles and ½ ton pickups equipped with a catalytic converter will have a sticker clearly displayed on the dashboard warning the driver of the fire hazard of driving the vehicle over or parking the vehicle where tall grass or other flammable materials can come in contact with the catalytic converter.

The Contractor shall make daily inspections of all internal combustion engines, stationary and mobile, to ascertain that spark arresters and mufflers are whole and effective, and that there are no connections that can leak burning particles.

Equipment service areas and gas and oil storage areas shall be cleared of brush, litter, debris, and grass for a radius of at least 50 feet.

Smoking

No smoking is allowed within the project limits or PTA.

No smoking is allowed when traveling to and from work areas within the project limits.

All restrictions shall be carefully observed.

Violations of the smoking regulations (36 CFR 261.52(a)(c)(d)) and fire requirements will result in criminal action against the violator. Advise all employees of this regulation.

Violations or deficiencies of the fire requirements shall result in immediate suspension of operations until the deficiency or violation is corrected. Repetitive violations will be grounds for default termination.

Chain Saws

Chain saws will be equipped with an approved and serviceable spark arrester/muffler. The spark arrester shall be maintained in effective working order, meeting either Department of Agriculture, Forestry Service Standard 5100.1a, or appropriate Society of Automotive Engineers (SAE) recommended practice J335 and J350 (36 CFR 261.52(j)), as revised to the date of the opening of the proposals.

Keep power saws in a safe, serviceable condition at all times. Keep mufflers in place at all times and check the spark arrester screens daily. Promptly replace broken or burned screens.

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Fuel power saws on mineral soil and move the saw at least 10 feet from the point of refueling to another barren spot before starting.

Do not place or rest power saws with warm or hot sparks arresters/mufflers (running or not) on sawdust piles, litter duff, stumps, or spots that are easily ignited.

Accompany each power with one round pointed shovel in good condition and a fuel-safety can. Keep one ½ lb. dry chemical extinguisher with the power saw operation at all times while working on the project. Keep the shovel with the fuel supply.

Check the sawdust at each tree fell before leaving to make sure that no fires have been started.

When the Fire danger rating in High or higher, patrol each work area for at least one hour after the cessation of power saw operations.

Burning

Burning of tree stumps, slash, camps refuse, or other debris or any other burning is not permitted.

Fires

Warming, burning of debris, campfires, or cooking fires are not permitted.

Campsites, Parking, and Storage Areas

Campsites, parking and storage areas outside of the construction limits are not permitted.

All campsites shall comply with all applicable Federal, State, and County statutes and ordinances concerning safety, health, and sanitation. Sites shall be cleared, maintained and used according to State or local regulations in order to keep the danger of fires to a minimum. The CO shall approve the layout of buildings, tanks, trailers, sanitary facilities, etc.

All chimneys shall be equipped with ½ inch mesh screen for spark arresters. Fire extinguishers shall be placed in readily accessible places in campsites and storage areas.

Fires are not permitted. The Contractor shall maintain a cleared fire line around campsites.

Welding

Welding shall be done only at sites, which have been cleared to mineral soil. An area commensurate with the amount of welding to be accomplished shall be cleared before welding operations are started. As a minimum, a five or ten gallon backpack pump filled with water is to be available in addition to the vehicle extinguisher. The area in the immediate vicinity of the operation is to be wetted down before and after operations. The area adjacent to the welding operations shall be thoroughly checked for fires for one hour after welding has stopped.

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Blasting

Use of fuse caps and safety fuse detonators for blasting is not permitted, unless approved by the CO. A fireguard shall be required according to the enclosed emergency fire precaution schedule. This individual, when required, shall remain on duty for at least one hour after blasting is finished. Minimum equipment shall consist of a round pointed shovel, size 0 or larger, and a three to five gallon backpack pump filled with water. Blaster hours will be determined in advance by the CO and based upon prescription criteria. Primer cord shall be understood to be an explosive and not a fuse.

Fire Danger Rating

The Fire Danger Rating (FDR) is established by the PTA IFSO and is utilized to develop a prescription for operations. This prescription shall identify hazards to avoid and permissible actions during the various ratings.

The CO will ascertain the Daily FDR by contacting the Range Control Division at (808) 969-2411. The condition will be utilized to determine the operations that can take place safely. The CO will obtain this data three times a day: once before starting, once at 1200HRS, and once at 1500HRS. The following Fire Prevention Schedule will govern the Contractor's operations:

RAWS Station	Training Area	Fuel Model	Fire Danger Rating (BI)				
			Low	Mod	High	V High	Extreme
PTA East	1-6, 21	F	1-24	25-32	33-41	42-58	59+
PTA Portable	7-17	L	1-21	22-30	31-37	38-54	55+
PTA Kipuka	23	F	1-19	20-29	30-36	37-50	51+
PTA West	18-22	N	1-34	35-54	55-66	67-84	85+
PTA Kipuka	Impact Area	C	1-17	18-26	27-36	37-48	49+
PTA West	Keamuku	N	1-34	35-54	55-66	67-84	85+

Restrictions

<i>Fire Danger</i>	<i>Work Restrictions</i>
Low	Normal Precautions
Moderate	The CO will contact Range Control for permitted work activities.
High	Shutdown all operations; the CO will contact Range Control for permitted work activities.
Very High	Shutdown all operations; the CO will contact Range Control for permitted work activities.
Extreme	Total shutdown of all operations and area closed to entry. Notice will be given as soon as area closure appears a reality, followed by a meeting convened to discuss the situation at that time.

Section 108. - PROSECUTION AND PROGRESS

108.01 Commencement, Prosecution, and Completion of the Work: Delete the second paragraph and substitute the following:

A preconstruction conference will be held after the contract is awarded and before beginning work. Seven days before the preconstruction conference, furnish three copies of the preliminary construction schedule according to Section 155.

On-site work between stations 0+00 and 380+00 may not begin until the completion of the HI A-AD 6(4) project, currently scheduled to be completed on December 14, 2008, but subject to change. Material crushing may begin after the Notice to Proceed is issued and all required permits have been obtained.

Add the following:

Limit operations as follows:

- Prior to the commencement of construction, obtain contractor installation access passes for all construction personnel. Obtain passes from the Pohakuloa Training Area (PTA) police building T-286 inside the main gate during the hours of 1 p.m. and 3 p.m. on Tuesdays, Wednesdays, and Thursdays. Contractor installation access passes will be issued upon the submittal and approval of an application form and background check for each employee. The prime contractor may submit applications for groups of employees however all employees must have a pass in order to work on PTA. Passes must be visibly worn at all times when working on PTA.

Prior to the commencement of construction, obtain visitor vehicle passes for all vehicles and equipment that will enter onto PTA. Obtain passes from the PTA police building T286 inside the main gate. Vehicle registration, safety check record, proof of insurance, and driver's license are required to obtain a vehicle pass.

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National security level changes or contractor abuse of these access privileges may necessitate more stringent entrance requirements.

Coordinate the desired daily quarry operation's start and finish times with the PTA Police and Range Control through the CO. Adjustments to the start and finish times may be requested by the contractor during the year to reflect longer daylight hours.

The contractor and subcontractors are required to participate in an environmental quality control program. This program consists of a review of the environmental requirements contained in the contract and will be subsequently held on an as needed basis. Following the pre-construction orientation meeting, hold a Pre-Construction Environmental Awareness Meeting. This meeting is to be administered by the CO and will be attended by all contractors (prime and subcontractors) who will review and explain environmental quality control requirements as contained in the contract documents. Contractors are responsible for ensuring all environmental requirements in the contract are explained to and understood by all construction personnel. An Environmental Awareness Checklist will be reviewed and signed by all construction personnel before they can work on this project. The Checklist includes, but is not limited to the following:

- Contaminated materials and equipment spills and leaks
- Cleaning of construction equipment
- Past and present hazardous spills
- Limits of construction operations
- Use of herbicides
- Archaeological or historic site findings
- Lava tube caves
- Construction Lighting
- Erosion control and NPDES
- Grading restrictions
- Lighting for all night time work

Prospective bidders are hereby alerted that there is a potential for the presence of unexploded ordnance within the PTA from former U.S. military training in the area. The Government has performed a preconstruction evaluation and survey to assess the likelihood of ordnance and identify area that may require ordnance health and safety monitoring during construction. If it is assessed that such support shall be required, the Government shall supply these services. All unexploded ordnance found during the survey has been removed and disposed of from the roadway project limits within PTA and the quarry area. Ordnance health and safety personnel will monitor certain mining activities at the quarry site. If expansion of the quarry is required to obtain sufficient materials to produce the required quality and quantity of aggregates, provide at least 30-day notice to the CO to coordinate and schedule a UXO survey of the proposed expansion area.

In the event potential ordnance is encountered during the Contractor's construction operations, cease all work immediately in the vicinity of the site and flag and cordon off the area from public

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and worker access until the ordnance is mitigated by qualified personnel. The Contractor shall immediately notify the Contracting Officer. The Contracting Officer shall notify the PTA Range Control Officer, local public safety officials and/or the US Army Explosive Ordnance Detail whenever potential ordnance is encountered.

All contractor personnel must attend an unexploded ordnance awareness and safety briefing prior to the start of roadway construction and commencement of quarry operations. Provide at least 4 weeks notice prior to the desired start date of quarry operations to the CO to arrange ordnance awareness and safety briefings.

Perform no work except to maintain traffic control devices, erosion control devices, the roadway driving surface, and to control dust during the listed Federal holidays and surrounding days:

- Memorial Day Weekend: 12:00 Noon Friday to 6:00 am Tuesday.
- Independence Day: 12:00 Noon July 3 to 6:00 am July 5.
If July 4 falls on a weekend, Friday, or Monday, do not work the weekend.
- Labor Day Weekend: 12:00 Noon Friday to 6:00 am Tuesday.
- Thanksgiving: 12:00 Noon Wednesday to 6:00 am Monday.
- Christmas/New Years Holiday: 12:00 Noon December 23 to 6:00 am January 2.
If December 23 or January 1 falls on a Monday, do not work the adjacent weekend and do not work on December 23. If January 1 falls on a Friday, do not work the weekend.

The CO will notify the contractor of any upcoming significant cross-island events and determine if work during those weekends should be avoided or restricted to off road construction work. Some of these events are:

- Merry Monarch Festival
- Wakii Music Festival
- Iron Man Triathlon
- Haili Volleyball Tournament
- Tahiti Fete

Schedule at least 2 non-work days out of every 14 calendar days. The selected non-work days do not need to be consecutive, but they must be scheduled. Provide at least 2 weeks notice before changing the scheduled days off.

Exemptions to scheduled days off may be granted by written approval from the CO for specific project operations and/or for periods of limited duration.

Add the following:

A Notice to Proceed must be issued before commencement of any work. The count of contract time will begin upon issuance of the Notice to Proceed and shall run continuously until final construction completion.

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No night roadway construction is allowed unless approved by the CO.

At any time, military training and maneuvers may cause delays to the construction work. Military training missions will take precedence over contractor operations. Military convoys must be given right of way.

All contractor personnel must attend an unexploded ordnance awareness and safety briefing prior to the start of roadway construction and commencement of quarry operations. Provide at least 4 weeks notice prior to the desired start date of quarry operations to the CO to arrange ordnance awareness and safety briefings.

108.04 Failure to Complete Work on Time. Delete Table 108-1 and substitute the following:

Liquidated damages of \$5,000.00 per day will be assessed for failure to substantially complete work within the contract time specified.

108.05 Stop Order. Delete the text and substitute the following:

The CO may order the performance of the work to be stopped, either in whole or in part, for such periods deemed necessary due to the following:

- (a) Weather or soil conditions considered unsuitable for prosecution of the work;
- (b) Military training or maneuvers; or
- (c) Failure of the Contractor to:
 - (1) Correct conditions unsafe for the workers or the general public;
 - (2) Carry out written orders given by the CO; or
 - (3) Perform any provision of the contract.
- (d) No adjustment in contract time or amount will be made for stop orders issued under this section, except:

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(1) for stop orders issued under paragraph (a), an adjustment in contract time, as provided by FAR Clause 52.249-10 Default (Fixed-Price Construction), may be made when the Contractor is able to demonstrate that the weather was unusually severe based on the most recent 10 years of historical data; and

(2) for stop orders issued under paragraph (b), an adjustment in contract time and amount for days in which roadway work, quarry work, or hauling between the quarry and roadway is completely suspended pursuant to FAR Clause 52.242-14, Suspension of Work; provided, no adjustment in contract time or monetary compensation amount will be made for the first 160 cumulative hours of complete suspension of roadway work, quarry work, or hauling between the quarry and roadway. Adjustments in time will only apply when the project critical path schedule is adversely affected.

For the purpose of computing cumulative hours of suspension used to meet the 160-hour limit, on any day that has 4 or more hours of eligible suspension the cumulative amount of suspension for that day will be considered to be 8 hours.

Section 109. - MEASUREMENT AND PAYMENT

109.01 Measurement Methods. Add the following after the third paragraph:

Submit measurement notes to the CO within 24 hours of performing the work. For on-going work, submit measurement notes weekly. When work is not complete, identify the measurement as being an interim measurement. Submit the final measurement when the installation is completed. Measurement notes form the basis of the Government's receiving report [see Subsection 109.08(d)]. For lump sum items, submit documentation to support invoiced progress payment on a monthly basis.

Use an acceptable format for measurement records. As a minimum, include the following information in all records of measurement:

- (1) Project name and number
- (2) Contract item number
- (3) Date the work was performed
- (4) Location of the work
- (5) Measured quantity
- (6) Calculations made to arrive at the quantity
- (7) Supporting sketch and/or details as needed to clearly define the work performed and the quantity measured.
- (8) Names of persons measuring the work
- (9) Identification as to whether the measurement is interim or final
- (10) Signed certification statement by the persons taking the measurements, performing the calculations, and submitting them for payment that the measurement and calculations are correct to the best of their knowledge and that the quantity being measure is subject to direct payment for the identified item under the contract.

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109.02 Measurement Terms and Definitions.

(m) Square yard. Delete the text and substitute the following:

(m) Square yard. 9 square feet. Measure on a plane parallel to the surface being measured. No deductions from the area computation will be made for individual fixtures having an area of 9 square feet or less. Do not measure overlaps.

109.06 Pricing of Adjustments.

(a) Proposal.

(3) Cost or pricing data. Delete the third paragraph and substitute the following:

Submit with the cost or pricing data a written proposal for pricing the work according to (1) above. See Table 15-2 following FAR Subpart 15.4 for guidance.

Add the following:

(c) Asphalt Cement Price Adjustment.

(1) General. The Asphalt Cement Price Adjustment provision contained herein provides for a price adjustment in the form of payment to the Contractor or a rebate to the Government for fluctuations in the cost of asphalt cement consumed in the performance of applicable construction work for Saddle Road PTA Alignment PH 5, DAR HI A-AD 6(5). The price adjustment provisions are applicable only to the asphalt cement, as defined in Section 702.01, and incorporated in the following eligible contract pay items:

- 40106ABBL, Superpave Asphalt Concrete Pavement, ½-inch Nominal Maximum Size Aggregate
- 40501E Hot Asphalt Treated Base Course, Grading E

The price adjustment provisions are also applicable to these eligible contract pay items when the Government adds extra work to the Contract.

The provision will remain in effect throughout the duration of the contract. Enactment of the Asphalt Cement Price Adjustment Provision will only be considered when the **increase or decrease** in the price of asphalt cement as defined herein exceeds 10 percent.

The Asphalt Cement Price Adjustment provision is intended to reduce but not eliminate the cost effects of price uncertainty to the Contractor and the Government for asphalt cement used in the construction of this contract. It provides for sharing by the Government in a portion of the Contractor's risk, which could result from unusual price fluctuations. The provision is not intended to compensate the Contractor for normal day-to-day fluctuations

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and seasonal changes or to serve as a guarantee of full compensation for asphalt cement price fluctuations.

(2) Price Indexes. The Government will post a monthly price index at <http://www.cflhd.gov/procurement/construction/price-indexes/> for asphalt cement using price data obtained from Poten and Partners, Inc. (PPI), which publishes a weekly report (Asphalt Weekly Monitor) on high and low selling prices for states in five regions throughout the United States including the East Coast/Northeast, the Mid-Continent/Midwest, the Gulf Coast/Mid South, the Rocky Mountains and the West Coast/Northwest. **Weekly high and low selling price data reported for West Coast/Northwest will be averaged and used to establish a base price index, BPI for this project and a monthly performance price index, MPPI, for the duration of the contract.**

These indexes are defined as follows:

- **BASE PRICE INDEX** The base price index, BPI, is the price index posted by the Government as determined by arithmetic average, as specified above, for the four weeks immediately preceding the bid opening. The calculated BPI will be applicable to both the base schedule and all options or schedules included in the contract. It is as follows:

BASE PRICE INDEX (BPI) FOR ASPHALT CEMENT
PER SHORT TON (TON) OR PER METRIC TON = \$ _____

- **MONTHLY PERFORMANCE PRICE INDEX** The monthly performance price index, MPPI, is the monthly price index at the time of performance of applicable work as determined by arithmetic average, as specified above, shown in the four weekly publications issued prior to the last Wednesday of the month (i.e. the monthly price index during which asphalt cement is used in the performance of applicable construction work).

(3) Price Adjustments. Price adjustments are calculated by the Government for average conditions and are not intended to reflect the Contractor's actual purchase price. The ratio of the monthly performance price index and the base price index (MPPI/BPI) is calculated and used to determine price adjustments as follows:

- **No Price Adjustment** – When the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for any asphalt cement used in construction work performed during the relevant month.
- **Government Rebate** – When the ratio MPPI/BPI is calculated to be less than 0.90, the Government is due a rebate determined according to the following formula:
Government Rebate = $[(0.90 - (MPPI/BPI)) (BPI) (Q)]$

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- **Contractor Payment** - When the ratio MPPI/BPI is calculated to be greater than 1.10, the Contractor is due additional payment determined according to the following formula:

$$\text{Contractor Payment} = [(\text{MPPI}/\text{BPI}) - 1.10] (\text{BPI}) (\text{Q})$$

The following definitions are applicable to both the Government Rebate and the Contractor Payment formulas:

MPPI = Monthly Performance Price Index for the month during which asphalt cement is used in the performance of applicable construction work.

BPI = Base Price Index that is established immediately preceding the bid opening.

Q = Quantity in tons (or metric tons) of asphalt cement for eligible pay items that was used on the project during the progress payment period. The quantity will be calculated using the asphalt content of the approved mix design and the following formula:

$$Q = \text{Asphalt Concrete Pavement tons (or metric tons) placed} \times (\% \text{ Asphalt}/100)$$

(4) Price Adjustment compensation. Monthly adjustments will be accrued. The final price adjustment will be paid, or rebated, after completion of all work. The Contractor may request in writing a partial price adjustment payment once every 12 months, or when the unpaid accrued increase exceeds \$10,000. The Government will withhold a rebate when the deductive accrual exceeds \$10,000.

No price adjustments will be made for work performed beyond the Government-approved Contract completion date.

The maximum allowable monthly and final pay adjustment to the Contractor or rebate to the Government is limited to an (MPPI/BPI) ratio of 1.6 and 0.4, respectively.

(d) Fuel Price Adjustment

(1) General. The Fuel Price Adjustment Provision contained herein provides for a price adjustment in the form of payment to the Contractor or a rebate to the Government for fluctuations in the cost of diesel fuel consumed in the performance of applicable construction work for HI A-AD 6(5), Saddle Road PTA Alignment--Phase 5. The price adjustment provisions are applicable only to contract items listed as eligible pay items in Table 1 below, if diesel is used as the primary fuel in the production of the affected items. The price adjustment provisions are also applicable to these eligible pay items when the Government adds extra work to the Contract.

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The provision will remain in effect throughout the duration of the contract. Enactment of the Fuel Price Adjustment Provision will only be considered when the **increase or decrease** in the price of motor fuel as defined herein exceeds 10 percent.

The Fuel Price Adjustment Provision is intended to reduce but not eliminate the cost effects of price uncertainty to the Contractor and the Government for motor fuel used in the construction of this contract. It provides for sharing by the Government in a portion of the Contractor's risk, which could result from unusual price fluctuations. The provision is not intended to compensate the Contractor for normal day-to-day fluctuations and seasonal changes or to serve as a guarantee of full compensation for motor fuel price fluctuations.

(2) Price Indexes. The Government will post a monthly performance price index at <http://www.cflhd.gov/procurement/construction/price-indexes/> for Gross Ultra Low Sulfur, No. 2 Diesel Fuel using price data obtained from the Oil Price Information Service (OPIS), which publishes a weekly Newsletter on distillate wholesale rack prices for major cities throughout the United States. The OPIS 5-Day Newsletter average rack price reported for the Rack City of San Francisco, California will be averaged and used to establish a base price index, BPI, for this project and a monthly performance price index, MPPI, for the duration of the contract. These indexes are defined as follows:

- **BASE PRICE INDEX** The base price index, BPI, is the price index posted by the Government as determined by arithmetic average, as specified above, shown in the four weekly publications immediately preceding the bid opening. It is as follows:

BASE PRICE INDEX (BPI) FOR LOW SULFUR, NO. 2 DIESEL FUEL
PER GALLON = \$ _____

- **MONTHLY PERFORMANCE PRICE INDEX.** The monthly performance price index, MPPI, is the monthly price index at the time of performance of applicable work as determined by arithmetic average, as specified above, shown in the four weekly publications issued prior to the last Wednesday of the month (i.e. the monthly performance price index during which motor fuel is consumed in the performance of applicable construction work).

(3) Price Adjustments. Price adjustments are calculated by the Government for average conditions and are not intended to reflect the Contractor's actual purchase price. The ratio of the monthly performance price index and the base price index (MPPI/BPI) is calculated and used to determine price adjustments for eligible pay items as follows:

- **No Price Adjustment** – When the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for any motor fuel consumed in construction work performed during the relevant month.

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- **Government Rebate** – When the ratio MPPI/BPI is calculated to be less than 0.90, the Government is due a rebate determined in accordance with the following formula:

$$\text{Government Rebate} = [0.90 - (\text{MPPI}/\text{BPI})] (\text{BPI}) (\text{Q}) (\text{FUF})$$

- **Contractor Payment** - When the ratio MPPI/BPI is calculated to be greater than 1.10, the Contractor is due additional payment determined in accordance with the following formula:

$$\text{Contractor Payment} = [(\text{MPPI}/\text{BPI}) - 1.10] (\text{BPI}) (\text{Q}) (\text{FUF})$$

The following definitions are applicable to both the Government Rebate and the Contractor Payment formulas:

MPPI = Monthly Performance Price Index for the month during which motor fuel is consumed in the performance of applicable construction work.

BPI = Base Price Index that is established immediately preceding the bid opening.

Q = Quantity of work on the project during the progress payment period for eligible pay items shown in Table 1 below. The Government, to agree with the units associated with the applicable Fuel Usage Factor, will convert work quantities, as necessary.

FUF = Fuel Usage Factor shown in Table 1 below applicable to both diesel and gasoline.

Table 1 – Eligible Pay Items For Price Adjustments and Associated Fuel Usage Factors		
Eligible Pay Items	Fuel Usage Factor U.S. Customary Units	Fuel Usage Factor Metric Units
Earthwork:		
Section 204 – Excavation and Embankment 20409 Embankment Construction	0.30 gallons per cubic yard	0.39 gallons per cubic meter
Aggregate Courses:		
Section 301 – Untreated Aggregate Courses 30104E Subbase Grading E	0.70 gallons per ton	0.77 gallons per metric ton
Asphalt Pavements:		
Section 40103PGDB – Superpave Hot Asphalt Concrete Pavement 40103 Superpave pavement	2.40 gallons per ton	2.65 gallons per metric ton
Section 40501E – Hot Asphalt Treated Base Course, Grading E 40501E Hot Asphalt Treated Base Course, Grading E	2.40 gallons per ton	2.65 gallons per metric ton
<ul style="list-style-type: none"> • The Government, to agree with the units associated with the applicable Fuel Usage Factor, will convert work quantities, as necessary. • All other contract items are exempt from this fuel escalation clause. Therefore, no adjustments will be made for those items. 		

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(4) Price Adjustment compensation. Monthly adjustments will be accrued. The final price adjustment will be paid, or rebated, after completion of all work for eligible pay items. The Contractor may request in writing a partial price adjustment payment once every 12 months, or when the unpaid accrued increase exceed \$10,000. The Government will take a rebate when the deductive accrual exceeds \$10,000.

No price adjustments will be made for work performed beyond the Government-approved Contract completion date.

The maximum allowable monthly and final price adjustment to the Contractor or rebate to the Government is limited to a (MPPI/BPI) ratio of 1.6 and 0.4, respectively.

109.08 Progress Payments. Delete the text and substitute the following:

FAR Clauses 52.232-5 - Payments under Fixed-Price Construction Contracts and 52.232-27 - Prompt Payment for Construction Contracts are supplemented as follows:

(a) General. Only invoice payments will be made under this contract. Invoice payments include progress payments made monthly as work is accomplished and the final payment made upon final acceptance. Only one progress payment will be made each month. No progress payment will be made in a month when the work accomplished results in a net payment of less than \$1,000. Full or partial progress payment will be withheld until a construction schedule or schedule update is submitted to and accepted by the CO.

(b) Closing date and invoice submittal date. The closing date for progress payments will be designated by the CO. Include work performed after the closing date in the following month's invoice. Submit invoices to the designated billing office by the 7th day after the closing date. Invoices received by the designated billing office after the 16th day following the closing date will not be accepted for payment processing that month. Include late, unprocessed invoice submittals in the following month's invoice.

(c) Invoice requirements. Submit the invoice to the government's designated billing office. Include the following items in the invoice:

(1) The information required in FAR Clause 52.232-27(a)(2)(I) through (a)(2)(x).

(2) A tabulation of total quantities and unit prices of work accomplished or completed on each pay item as of the monthly closing date. Do not include any quantities unless field note documentation for those quantities was submitted by the closing date. Do not include any work involving material for which test reports required under Sections 153 or 154 or certifications required by Subsection 106.03 are past due as of the closing date.

(3) The certification required by FAR Clause 52.232-5(c) and, if applicable, the notice required by FAR Clause 52.232-5(d). Provide an original signature on the certification. Facsimiles are not acceptable.

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- (4) If applicable, a copy of the notices that are required by FAR Clause 52.232-27(e)(5) and (g).
- (5) The amount included for work performed by each subcontractor under the contract.
- (6) The total amount of each subcontract under the contract.
- (7) The amounts previously paid to each subcontractor under the contract.
- (8) Adjustments to the proposed total payment which relate to the quantity and quality of individual items of work. Adjustments for the following may be made by the Government after validation of the invoice.

- (a) Retent resulting from a failure to maintain acceptable progress.
- (b) Retent resulting from violations of the labor provisions.
- (c) Retent pending completion of incomplete work, other "no pay" work, and verification of final quantities.
- (d) Obligations to the Government such as excess testing cost or the cost of corrective work pursuant to FAR Clause 52.246-12(g).
- (e) Liquidated damages for failure to complete work on time.

(d) Government's receiving report. The Government's receiving report will be developed using the measurement notes received and accepted by the CO. Within 4 days after the closing date, the CO will be available by appointment at the Government's designated billing office to advise the Contractor of quantities and unit prices appearing on the Government's receiving report.

(e) Processing progress payment requests. No payment will be made for work unless field note documentation for the work was provided by the closing date.

(1) Invoices received by the 7th day following the closing date.

(a) Proper invoices. If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be paid.

(b) Defective invoices. If the invoice does not meet the requirements of Subsection 109.08(c), or if any of the quantities or unit prices shown on the Contractor's invoice exceed the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be deemed defective and the Contractor so notified according to FAR Clause 52.232-27(a)(2). Defective invoices will not be corrected by the Government and will be returned to the Contractor within 7 days after the Government's designated billing office receives the invoice.

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Revise and resubmit returned invoices by the 18th day following the closing date. The CO will evaluate the revised invoice. If the invoice still does not meet the requirements of Subsection 109.08(c), the Contractor will be so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the revised invoice meets the requirements of Subsection 109.08(c), but still had quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Government's receiving report, the Government's data for that item or work will be used. The Contractor's invoice, as revised by the Government's receiving report, will be forwarded for processing by the 23rd day following the closing date. The Contractor will be notified by the 23rd day following the closing date of the reasons for any changes to the invoice.

(2) Invoices received between the 8th and 16th day following the closing date.

(a) Proper invoices. If the invoice meets the requirements of Subsection 109.08(d), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit prices shown on the CO's receiving report, the invoice will be deemed proper and forwarded for processing within 7 days of receipt.

(b) Defective invoices. If the invoice does not meet the requirements of Subsection 109.08(d), the invoice will be deemed defective, the Contractor so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the invoice meets the requirements of Subsection 109.08(d), but has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Government's receiving report, the Government's data for that item of work will be used. The Contractor's invoice, as revised by the Government's receiving report, will be forwarded for processing within 7 days of the Government's receipt of the invoice. The Contractor will be notified of the reasons for any changes to the invoice.

(f) Partial payments. Progress payments may include partial payment for material to be incorporated in the work, provided the material meets the requirements of the contract and is delivered on or in the vicinity of the project site or stored in acceptable storage places.

Partial payments for stockpiled manufactured material (aggregates) will be based on Contractor process control test results. If test results show the material to be out-of-specification, or in "reject" where statistical evaluation procedures are used, no payment for stockpiled materials will be made.

Partial payment for material does not constitute acceptance of such material for use in completing items of work. Partial payments will not be made for living or perishable material until incorporated into the project.

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Partial payments for material will not exceed the lesser of:

- (1) 80 percent of the contract bid price for the item, or
- (2) 100 percent of amount supported by copies of invoices submitted.

The quantity paid will not exceed the corresponding quantity estimated in the contract.

109.09 Final Payment. Delete the first sentence and substitute the following:

FAR Clause 52.232-5, Payment under Fixed-Price Construction Contracts, and FAR Clause 52.232-27 - Prompt Payment for Construction Contracts are supplemented as follows:

Section 152. - CONSTRUCTION SURVEY AND STAKING

Construction Requirements

152.02 General. Delete the first paragraph and substitute the following:

The Government will furnish to the Contractor an electronic copy of each of the following information:

- 3D coordinates and offset distance from centerline for subgrade and surface course finishing stakes at 50 foot intervals and miscellaneous intermediate stations..
- Slope stake books containing centerline grade and slope staking information at 50-foot station intervals and miscellaneous intermediate stations for mainline.
- Horizontal alignment, vertical alignment, earthwork quantities, and staking details showing superelevation template data and slope information.
- 3D coordinates of control points.
- 3D coordinates of grade finishing stakes.
- 3D coordinates of slope stakes.
- 3D coordinates of clearing limits.

The Government will perform the following:

- Establish basic survey control points for vertical and horizontal control of the project.
- Set centerline stakes.

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Delete the second sentence of the second paragraph and substitute the following:

Reestablish missing control points and stakes before slope staking begins.

Add the following to the fourth paragraph:

Protect all land survey monuments, property corners, USGS bench marks and USGS control points. Move and reference those which fall within the construction limits according to Subsection 107.02, Protection and Restoration of Property and Landscape. Coordinate the new locations with the CO.

Add the following:

Furnish a practicable schedule of staking activities with the construction schedule submitted according to Section 155. Include the dates and sequence of staking requirements.

152.03 Survey and Staking Requirements.

(b) Roadway cross-sections. Delete the text and substitute the following:

Take roadway cross-sections normal to centerline. When the centerline curve radius is less than or equal to 250 feet, take cross-sections at a maximum centerline spacing of 25 feet. When the centerline curve radius is greater than 250 feet, take cross-sections at a maximum centerline spacing of 50 feet. Take additional cross-sections at significant breaks in topography and at changes in the typical section. Ensure that, at a minimum, roadway cross-sections are taken at each cross-section station shown in the plans. Along each cross-section, measure and record points at breaks in topography, but no further apart than 20 feet. Space the points so that the maximum variation in vertical distance from a straight line between two consecutive points and the ground line does not exceed ± 0.75 feet. Measure and record points to at least the anticipated slope stake and reference locations. Reduce all cross-section distances to horizontal distances from centerline.

Submit one printed copy and one electronic file of the cross-sectional data in GEOPAK ASCII text format: station, offset, elevation, north coordinate, east coordinate, p-code text format. Include a file header that defines the data type of the column. (Contact Central Federal lands Survey Manager, at 720-963-3700 for more information on the format.) Include one observation per line in the submitted files showing the following data:

Station (nominal), offset from centerline, elevation, north coordinate, east coordinate, p-code (Feature code: RH for reference hub, CL for centerline).

Deliver all data to the CO after completing the roadway cross-section survey. Submit data to CO at least 21 days prior to anticipated construction. Do not begin embankment construction or excavation operations on the proposed site until the design profile has been verified. The CO will send the cross-sectional data to CFL Survey manager to review for survey sufficiency. If

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significant differences in terrain are found, the Design Engineer will modify the profile if necessary to match the new terrain. If the design profile is modified, new design data will be provided for only those locations where the design profile has been modified. (The Design Engineer will re-run all cross-sections using the new terrain to provide final earthwork quantities; revised plan & profile sheets, cross-section sheets, and staking reports for the modified locations; and an updated grading summary and mass haul diagram). Set slope stakes according to Subsection 152.03(c) for all cross-section stations identified in the plans or as established in this section.

(e) Centerline reestablishment. Delete the text and substitute the following:

Reestablish centerline from instrument control points. The maximum spacing between centerline points is 25 feet when centerline curve radius is less than or equal to 250 feet. When the centerline curve radius is greater than 250 feet, the maximum distance between centerline points is 50 feet. Reestablish centerline as many times as necessary to construct the work.

(f) Grade finishing stakes. Delete the third paragraph and substitute the following:

The maximum longitudinal spacing between stakes is 25 feet when the centerline curve radius is less than or equal to 250 feet. When the centerline curve radius is greater than 250 feet, the maximum longitudinal spacing between stakes is 50 feet. The maximum transverse spacing between stakes is 25 feet. Reset grade finishing stakes as many times as necessary to construct the subgrade and each aggregate course. Use brushes or guard stakes at each stake.

(g) Drainage structures. Delete the first paragraph and substitute the following:

Verify, in the field, the approximate location of each individual structure with the CO prior to surveying, designing, and staking culverts. Use the “Guide for Designing and Staking Culvert in the Field”, dated January 9, 1996, issued by the U.S. Department of Transportation, Central Federal Lands Highway Division, Lakewood, CO, as a guide to the work in this section.

Perform the following:

(4) Add the following:

(a) For single skewed culverts, also submit a plotted field design cross-section, normal to roadway centerline, at each end section. Plot the offset and elevation of natural ground at the end section and at all proposed template break points between centerline and the end section. Ensure the template design embankment slope is not exceeded.

(b) For multiple skewed culverts, also submit a plotted field design cross-section, normal to roadway centerline, at the end sections (left and right) nearest to the shoulder. Plot the offset and elevation of natural ground at the end section and at

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all proposed template break points between centerline and the end section. Ensure the template design embankment slope is not exceeded.

(5) Add the following:

Plot at a scale of 1:100

(6) Add the following:

Do not order culvert materials until pipe plots have been approved.

Add the following:

(7) When the field design has been approved, set drainage structure survey stakes, reference stakes, and stake inlet and outlet ditches to make the structure, including end treatments (e.g., drop inlets) functional.

(8) Adjust slope stakes to provide for catch basins (and transitions into and out of catch basins) which correspond to the final culvert location and design. If the culvert was moved from location shown in the plans, review the slope stakes in the vicinity of the plan location and adjust the slope stakes to remove the planned catch basin.

(l) Miscellaneous survey and staking. Delete the text and substitute the following:

Perform all surveying, staking, recording of data, and calculations necessary for establishing the layout, control, and measurement required to construct the project. Perform the work in such a manner as to ensure the contract work is constructed in the proper location and to the required tolerances. Where staking increments are not identified, propose appropriate staking increments to the CO for acceptance.

(m) Intermediate surveying and staking. Delete the text of the third paragraph and substitute the following:

Remeasure quantities if it has been determined that any portion of the work is acceptable but has not been completed to the lines, grades, and dimensions shown on the plans or established by the CO.

Add the following:

(n) Minor Approach Road Survey and Staking. This work consists of surveying, staking, recording of data, and cross sections for all road connections designated for measurement under item 15212A. The work includes both horizontal and vertical control, slope staking, radius point staking, and all other work required to construct the road connections according to the details provided in the plans.

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Delete Table 152-1 and substitute the following:

**Table 152-1
Construction Survey and Staking Tolerances ⁽⁷⁾**

Staking Phase	Horizontal	Vertical
Existing Government network control points	±0.06 feet	±0.035 ft * \sqrt{K} ⁽⁵⁾
Local supplemental control points set from existing Government network points	±0.03 feet	±0.010 ft * \sqrt{N} ⁽⁶⁾
Centerline points ⁽¹⁾ – (PC), (PT), (POT), and (POC) including references	±0.03 feet	±0.03 feet
Other centerline points	±0.16 feet	±0.16 feet
Cross-section points and slope stakes ⁽²⁾	±0.16 feet	±0.16 feet
Slope stake references ⁽²⁾	±0.16 feet	±0.16 feet
Culverts and minor drainage structures	±0.16 feet	±0.06 feet
Retaining walls and curb and gutter	±0.06 feet	±0.03 feet
Bridge substructures	±0.03 feet ⁽³⁾	±0.03 feet
Bridge superstructures	±0.03 feet ⁽³⁾	±0.03 feet
Clearing and grubbing limits	±2.00 feet	---
Roadway subgrade finish stakes ⁽⁴⁾	±0.16 feet	±0.03 feet
Roadway finish grade stakes ⁽⁴⁾	±0.16 feet	±0.03 feet

⁽¹⁾ Centerline points: PC – point of curve; PT – point of tangent; POT – point on curve.

⁽²⁾ Take the cross-sections normal to the centerline ±1 degree.

⁽³⁾ Bridge control is established as a local network and the tolerances are relative to that network.

⁽⁴⁾ Includes paved ditches

⁽⁵⁾ K is the distance in miles

⁽⁶⁾ N is the number of instrument setups.

⁽⁷⁾ At 95% confidence level. Tolerances are relative to existing Government network control points.

Measurement

152.05 Delete the seventh paragraph and substitute the following:

Do not measure miscellaneous survey and staking.

Add the following:

Reestablishing missing Government-set control points and stakes will be measured under Additional survey services when it is paid by the hour. No payment will be made for reestablishing missing hubs, control points, or stakes after construction operations have begun.

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Payment**152.06** Add the following:

	Pay Item	Pay Unit
15212A	Minor Approach Survey and Staking	Each

Section 153. - CONTRACTOR QUALITY CONTROL**Description****153.01** Add the following:

This work also consists of obtaining samples for acceptance testing.

Construction Requirements**153.02 Contractor Quality Control Plan.****(a) Process control testing.** Add the following:

See Table 153-1 for schedule of minimum sampling and testing for process control. Where no minimums are specified, submit proposed tests to be performed and the proposed sampling and testing frequencies.

Add the following:

For aggregates and/or aggregate/asphalt mixtures accepted under Subsection 106.03, sample and test for conformity with the Certification a minimum of one time per pay item.

(b) Inspection/control procedures.**(3) Production phase.** Add the following:

(d) Inspect materials or assemblies accepted under Subsection 106.03 to ensure that the work and materials comply with all contract requirements. Furnish the results of the inspection, along with the product certification or commercial certification as applicable, to the CO prior to incorporating the materials into the work.

(c) Description of records. Add the following:

Identify the format for reporting test results and the procedures to be used to maintain inspection records.

(d) Personnel qualifications.**(1) Add the following:**

Designate a Quality Control Supervisor (QCS) whose primary responsibility is managing the inspection system. The QCS shall not be the Contractor's Superintendent. Designate a QCS who is experienced to perform and supervise all sampling, testing, and inspection. The QCS shall monitor all phases of the work and identify deficiencies and take appropriate corrective action.

Add the following:

(3) Personnel assigned to sampling or testing shall have 1 year or more of recent job experience in the type of sampling and testing required by the contract, and the following:

(a) NICET Level II certification in highway materials, or State or industry certification-related sampling and testing equivalent to their intended responsibilities.

or

(b) Current or previous employment by an AASHTO accredited laboratory performing sampling and testing equivalent to their intended responsibilities.

(c) Demonstrated proficiency or successful testing of one or more proficiency samples may be substituted for basic qualifications pending verification of test results.

153.03 Testing. Delete the title and text and substitute the following:

153.03 Sampling and Testing. Perform the work required by Table 153-1 and by the acceptable Quality Control Plan.

(a) Sampling.

(1) Acceptance sampling. Acceptance sampling schedules and times or locations will be provided by the CO.

(2) Quality control sampling. Use a procedure for random sampling. Sample according to the acceptable Quality Control Plan. In addition, sample any material that appears defective or inconsistent with similar material being produced, unless such material is voluntarily removed and replaced or otherwise corrected.

(3) Certifications. For materials accepted by certification according to 106.03, review all certifications to insure compliance with the requirements of the contract prior to

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incorporating materials into the work and provide a signed copy of the reviewed certification(s) to the CO.

(b) Testing. Furnish a laboratory equipped with all test equipment necessary to satisfy the requirements of the contract. Ensure test equipment has been checked, calibrated, standardized and/or otherwise verified according to AASHTO and ASTM standards by an individual qualified to do this work. Ensure mobile laboratories receive an equipment inspection after the laboratory has been moved to its permanent location on the project site and anytime it is moved thereafter. Inspect equipment within 45 days of actual use in project testing and at least once a year thereafter. Do not use equipment that has not been inspected or is found to be deficient. Mark deficient equipment and take it out-of-service until it is repaired or replaced and shown by subsequent inspection to perform as required. Maintain records documenting these inspections in the laboratory. Provide certification(s) stating the equipment conforms to testing requirements and provide evidence of current inspection.

The CO may require the Contractor to perform testing to demonstrate acceptable equipment and an acceptable level of technician competence. The CO may also check equipment and inspection records to verify condition. Repair or replace equipment not meeting applicable requirements. Keep laboratory facilities clean and maintain equipment in proper working condition. Provide the CO unrestricted access to the laboratory for inspection and review.

153.04 Records. Add the following to the first paragraph:

When tests are on material being incorporated into the work, report test results within 24 hours. Monthly progress pavements will not be made if test results are not reported within 24 hours.

Submit progress control tests, including all worksheets for daily production of all aggregates.

Add the following to the second paragraph:

Detail inspection results including deficiencies observed and corrective actions taken.

Add the following:

For each day's placement of Items 40106ABBL, Superpave Asphalt Concrete Pavement and Item 40501E, Hot Asphalt Treated Base Course, prepare and submit to the CO a delivery and placement record for each day's work. Include the following information:

- 1) Project identification
- 2) Contract pay item number and description
- 3) Location placed: (station to station, left or right lane, bottom, top or middle lift, other)
- 4) Date
- 5) Calculated yield (percent over or under) for area paved during the day's production.
- 6) Accumulated calculated yield (percent over or under) for total area paved to date.
- 7) Authorized contractor signature

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Use an approved format for the submittals. Furnish the signed submittals within 24-hours of placement.

Furnish process control charts to the CO weekly. No progress payment will be made for any work until the process control charts have been submitted to and accepted by the CO.

Allow 7 days after receipt for acceptance of the process control charts. Monthly progress payments will not be made if linear control charts are not maintained.

153.05 Acceptance. Add the following:

If chronic deficiencies are noted in the Contractor's inspection or testing systems, the CO may order supplemental inspection and/or testing to be performed. The Government will charge to the Contractor all costs associated with such supplemental inspection or testing.

Measurement

153.06 Delete the text and substitute the following:

Contractor quality control will be measured by the lump sum.

Add the following:

Payment

153.07 The accepted quantity, measured as provided above, will be paid at the contract price per unit of measurement for the pay item listed below that is shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

The Contractor quality control lump sum will be paid as follows:

- (1) 25 percent of the lump sum, not to exceed 0.5 percent of the original contract amount, will be paid after all testing facilities are in place, qualified sampling and testing personnel have been identified, and the work being tested has started.
- (2) Payment for the remaining portion of the lump sum will be prorated based on the total work completed.

Payment will be made under:

	Pay Item	Pay Unit
15301	Contractor Quality Control	Lump Sum

Table 153-1
Schedule of Minimum Sampling and Testing For Process Control
 (to be performed by the Contractor)

Section(s): 204, 208, 209.

Material	Property or Characteristic	Test Method or Specification	Frequency	Sampling Point
Embankment Construction Composition of Roadbed in Cuts	Classification and Moisture/Density	AASTHO M 145 AASHTO T 99 or AASHTO T 180 (minimum of 5 proctor points).	1 per material/type.	Source of material.
	In-place density and moisture content	AASHTO T 310	2 per lift, but not less than 2 every 1000 cubic yards.	Compacted embankment, subgrade as applicable.
	R-value	AASHTO T 190 (Tested by FHWA Central Lab).	1 per 2500 feet, or change in material type.	Sample depth: 0-12 inches.
Bedding/Backfill for Structures and Culvert Pipe	Classification and Moisture/Density	AASTHO M 145 AASHTO T 99 or AASHTO T 180 (minimum of 5 proctor points).	1 per material/type.	Source of material.
	In-place density and moisture content	AASHTO T 310	1 per 50 feet/lift. Minimum 2 per lift.	Compacted bedding or backfill as applicable.

Table 153-1
Schedule of Minimum Sampling and Testing For Process Control
 (to be performed by the Contractor)

Section(s): 255.

Material	Property or Characteristic	Test Method or Specification	Frequency	Sampling Point
Select wall backfill 704.13(a) and Wall backfill 704.13(b)	Gradation and liquid limit	AASHTO T 11 AASHTO T 27 AASHTO T 89 AASHTO T 90	1 per material/type	Source of material
	Moisture Density	AASHTO T99, Method C ⁽¹⁾	1 per material/type	Source of material
	In-place density and moisture content	AASHTO T 310	For MSE walls: 1 per 1-foot lift per 250-feet of wall length (minimum of 2 per lift)	Compacted backfill

⁽¹⁾ A minimum of 5 points are required for moisture density test.

Table 153-1
Schedule of Minimum Sampling and Testing For Process Control
 (to be performed by the Contractor)

Section(s): 301, 303, 304, 305, 306, 308.

Material	Property or Characteristic	Test Method or Specification	Frequency	Sampling Point
Subbase, Base Course Aggregate	Gradation (301)	AASTHO T 11 AASTHO T 27	2 per day	Crusher belt
Stabilization and Aggregate Topsoil Courses	Moisture/Density	AASHTO T 99 or AASTHO T 180 (minimum of 5 proctor points)	1 per source of material	Source of material
	In-place density and moisture content	AASHTO T 310 or AASTM D2950	2 per lift at 1000 feet intervals, alternating lanes	Compacted aggregate
	Plasticity index (aggregate surfacing only)	AASHTO T 90	2 per day	Crusher belt
	Gradation (304 materials processed in place)	AASHTO T 11 AASHTO T 27	1 per 1000 feet	Processed material
Magnesium Chloride and Calcium Chloride	Specific Gravity	Hydrometer	1 per shipment	Transport vehicle

Note: Density and Moisture calculations AASHTO T 310...Density corrections based on moisture for recycled materials containing asphalts, or aggregates containing MgCl or CaCl shall be made based on samples taken from each test site and oven-dried in the laboratory.

Table 153-1
Schedule of Minimum Sampling and Testing For Process Control
 (to be performed by the Contractor)

Section(s): 401 (Superpave).

Material	Property or Characteristic	Test Method or Specification	Frequency	Sampling Point
Superpave Hot Asphalt Concrete Pavement	Gradation	AASTHO T 11 AASHTO T 27	2 per day per stockpile	Crusher belt (during production) and Cold Feed or Hot Bins (as applicable during production of hot mix)
	Moisture content of aggregates	AASHTO T 255	1 per day	Cold Feed (during production of hot mix)
	Compaction	ASTM D2950	Test strip, first day of production to establish roller pattern: 12 per 1500 feet, then 3 per 1500 feet	In place, after compaction
	Placement temperature	Thermometer	As directed	Behind laydown machine
	Surface tolerance	Straight edge and FLH T 504	During and after compaction	See Subsection 401.16
Aggregate	Fine aggregate angularity	AASHTO T 304, Method A	1 per day	Cold Feed

Table 153-1
Schedule of Minimum Sampling and Testing For Process Control
 (to be performed by the Contractor)

Section(s): 401, 402, 403, 404, 405.

Material	Property or Characteristic	Test Method or Specification	Frequency	Sampling Point
Asphalt Concrete Pavement	Gradation	AASHTO T 11 AASHTO T 27	2 per day per stockpile	Crusher belt (during production) and Cold Feed or Hot Bins (as applicable during production of hot mix)
Open-Graded Asphalt Friction Course				
	Moisture content of aggregates	AASHTO T 255	1 per day	Cold Feed (during production of hot mix)
Asphalt Treated Base Course	Compaction	ASTM D2950	Test strip, first day of production to establish roller pattern: 12 per 1500 feet, then 3 per 1500 feet	In place, after compaction
	Placement temperature	Thermometer	As directed	Behind laydown machine
	Surface tolerance	Straight edge and FLH T 504	During and after compaction	See Subsection 401.16

Table 153-1
Schedule of Minimum Sampling and Testing For Process Control
 (to be performed by the Contractor)

Section(s): 409, 410.

Material	Property or Characteristic	Test Method or Specification	Frequency	Sampling Point
Chip seal aggregate	Gradation	AASHTO T 11 AASHTO T 27	2 per day	Production belt or spreader discharge
Slurry seal aggregate	Moisture content of aggregates	AASHTO T 255	1 per day	Stockpile or spreader discharge
Asphalt binder Emulsified asphalt	Placement temperature	Thermometer	Prior to each days production, followed by 2 each day	Distributor truck

Table 153-1
Schedule of Minimum Sampling and Testing For Process Control
 (to be performed by the Contractor)

Section(s): 416, 418.

Material	Property or Characteristic	Test Method or Specification	Frequency	Sampling Point
Continuous Cold Recycled Asphalt Base Course Foamed Asphalt Stabilized Base Course	Gradation	AASHTO T 27 (maximum size only)	1 per 1500 feet	Recycled material prior to compaction
	Moisture content	FLH T 515	Minimum 1 per 1500 feet alternating lanes (as necessary to comply with contract requirements)	In place after compaction and prior to compaction to determine total moisture.
	In-place density	ASTM D2950 or AASHTO T 205	1 per 1500 feet, alternating lanes (1 value will be equal to the mean of 3 in-place tests, and as necessary to comply with contract requirements)	In place after compaction

Note: Density and Moisture calculations ASTM D 2950...Density corrections based on moisture for recycled materials containing asphalts, or aggregates containing MgCl or CaCl shall be made based on samples taken from each test site and oven-dried in the laboratory.

Table 153-1
Schedule of Minimum Sampling and Testing For Process Control
 (to be performed by the Contractor)

Section(s): 501, 552, 601.

Material	Property or Characteristic	Test Method or Specification	Frequency	Sampling Point
Concrete	Gradation and fineness modulus	AASTHO T 11 AASHTO T 27	1 per day	Aggregate, before batching
	Moisture	AASHTO T 255	1 per day/stockpile	Aggregate, before batching
	Slump	AASHTO T 119	1 per 30 cubic yards, minimum 1 per day	See note
	Air content	AASHTO T 152	1 per 30 cubic yards, minimum 1 per day	See note
	Unit weight	AASHTO T 121	1 per 30 cubic yards, minimum 1 per day	See note
	Temperature	Thermometer	1 per 30 cubic yards, minimum 1 per day	See note
	Making test specimens for compressive strength	AASHTO T 23	1 set per 30 cubic yards, minimum 1 set per day	At point of discharge

Note: If an extended set admixture is used for the sole purpose of extending discharge times, sampling and testing shall be performed by the Contractor at point of batching and discharge location to ensure compliance with Subsection 552.08.

Section 154. - CONTRACTOR SAMPLING AND TESTING**Construction Requirements**

154.02 Sampling. Delete the second paragraph and substitute the following:

Sample according to AASHTO or other acceptable procedures. Allow the CO the opportunity to witness all sampling. Deliver the sample in an acceptable container. Submit form 1600c for each sample to the CO and label all samples with the following information:

- (1) Project number
- (2) Source of material
- (3) Item number
- (4) Sample number
- (5) Date sampled
- (6) Time sampled
- (7) Location sample taken
- (8) Name of person sampling
- (9) Name of person witnessing sampling
- (10) Type of test required on sample

Sample according to the Sampling and Testing tables included at the end of each section.

154.03 Testing. Delete the first sentence and substitute the following:

The government will be conducting all acceptance and verification testing.

Section 155. - SCHEDULES FOR CONSTRUCTION CONTRACTS**Construction Requirements**

155.02 General. Delete the first sentence of the third paragraph and substitute the following:

Use the Critical Path Method (CPM) described below to develop the construction schedule for the total contract work.

Add the following to the fourth paragraph:

No progress payment will be made for any work until a construction schedule is submitted to the CO and accepted by the CO.

155.03 Bar Chart Method (BCM). Delete this subsection.

155.05 Written Narrative. Add the following:

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(j) List anticipated monthly and cumulative contract earnings (including, for schedule updates, any contract modifications) for each month from the beginning of construction operations through the completion of the work. Calculate and list each month's anticipated earnings through the close of business on the date provided by the CO as the cut-off date for monthly project pay estimates.

155.06 Schedule Updates. Add the following:

No progress payment will be made for any work until an updated construction schedule has been submitted to and accepted by the CO.

Allow 7 days after receipt for acceptance of the updated construction schedule or a return for revisions.

Section 156. - PUBLIC TRAFFIC

Construction Requirements

156.03 Accommodating Traffic During Work. Delete the last two sentences of the first paragraph and substitute the following:

Submit situation-specific traffic control implementation drawings and alternate traffic control proposals according to Subsection 104.03 for acceptance at least 30 days before intended use.

Add the following:

Provide public crossing of project construction limits at the hunting and fire access locations as shown on the plans for the duration of the project.

Provide for emergency vehicles to pass through construction zones without delays and unimpeded access to roadside facilities at all times. Do not impede emergency vehicle access to roadside facilities adjacent to or within the project limits.

Inform the CO of any significant traffic delays as a result of proposed construction activities at least 60 days in advance so that the public can be informed as required by State policies on traffic closures and major delays.

Coordinate traffic control with other construction projects with traffic control on the Saddle Road or within the PTA training area.

156.04 Maintaining Roadways During Work.

(a) Add the following:

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Do not construct detours outside of the clearing limits or use alternate route detours without the approval of the CO.

156.06 Limitations on Construction Operations.

(d) Delete the text and substitute the following:

For existing Saddle Road, maintain two-way traffic and do not reduce the width of the existing traveled way or pavement surface.

(j) Delete the text and substitute the following:

Limit construction-caused delays to public traffic to a maximum of 15 minutes per passage through the project except during the following times on Monday through Friday:

3:30 p.m. through 8:30 a.m.

During the above times, allow traffic to pass through the construction without delay. These times may be adjusted by the CO if necessary.

Section 157. - SOIL EROSION CONTROL**Construction Requirements**

157.03 General. Delete the second paragraph and substitute the following:

Standard erosion control devices are provided in the contract. Detail site-specific measures for controlling erosion and submit to the CO for acceptance prior to implementation. Provide working drawings and associated data that do not exceed 24 by 36 inches in size. Allow 7 days for acceptance of the drawings or a return for corrections. Include the following in the detailed design:

- (1) Address contractual requirements for storm water runoff permits, environmental commitments, and other permit requirements here or in Subsection 107.01 or 107.10.
- (2) Location of each proposed erosion control measure.
- (3) Type of each erosion control measure.
- (4) Quantities and estimated unit costs of proposed temporary erosion control devices to be implemented during construction.

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- (5) A schedule detailing coordination of erosion control measures with the various construction operations or stages. Include the furnishing, installation, maintaining, and removing of temporary devices and the installation of permanent erosion control features.
- (6) A schedule outlining the proposed schedule of clearing and grubbing, excavation, embankment, and culvert operations such that the area of disturbed or erodible material is minimized. Schedule the work such that temporary and permanent erosion measures can be incorporated at the earliest practical time.
- (7) Construction methods used in various items of work to minimize erosion.

Add the following:

At least 5 days prior to the preconstruction conference, designate in writing an Erosion Control Supervisor who is responsible for implementing the requirements of this Section. Do not designate the project superintendent as the Erosion Control Supervisor.

When temporary erosion control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as part of the work in a timely manner, provide temporary measures at no cost to the Government.

157.04 Controls and Limitations on Work.Delete paragraphs (c) and (d) and substitute the following:

(c) Apply permanent slope stabilization to the finished slopes and ditches within 14 days according to Sections 624 and 625.

(d) Apply temporary turf establishment or other approved measures on disturbed areas within 14 days after last disturbance, except where the area will be redisturbed within 21 days after last disturbance or when initial stabilization is precluded by snow cover or by seasonal arid conditions in arid or semi-arid areas (average annual rainfall of 20 inches or less).

157.14 Acceptance. Add the following:

Soil erosion control will be evaluated under Subsection 106.02 based on the demonstrated ability of the erosion control measures to result in minimal soil erosion, sedimentation and/or siltation, and turbidity increases within or adjacent to the project limits.

Measurement

157.15 Delete the second paragraph and substitute the following:

Measure silt fence, brush barriers, slope drains, earth berms, temporary culvert pipe, and sediment control logs by the linear foot.

Payment

157.16 Add the following:

Pay Item	Pay Unit
15735 Sediment Control Log	Each

Section 158.-WATERING FOR DUST CONTROL

Description

158.01 Delete the text and substitute the following:

This work consists of furnishing and applying water for the control of dust, earthwork, aggregate construction, and revegetation establishment.

Construction Requirements

158.03 General. Add the following:

(c) Control dust caused by construction activities in areas of military installations including residences, airfields and places of training. Contact Steve Hayselden or staff of Bradshaw Flight Operations at 969-2461 daily for fixed winged flight schedules prior to the start of any construction activity. Assure that no airborne dust obstructs their landing and take-off operations, especially when using Makai Road and constructing near the Bradshaw Airfield.

Measurement

158.05 Delete the text of this subsection and substitute the following:

Measure the Section 158 item listed in the bid schedule according to the following:

- (1) Measure water applied according to subsection 158.03 by metering.
- (2) Meter water as it is pumped or transferred into the application vehicle
- (3) Measure water by the number of 1,000(M-gallons) applied according to 158.03

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- (4) Do not measure water used on Quarry access roads or production of aggregates at the PTA Quarry.
- (5) Supply calibrated metering devices capable of measuring both the daily and cumulative quantity of water used. At the close of business each day supply the project engineer with the number of gallons used that day.
- (6) Water used and not measured by metering as required above will not be paid for.

Payment

158.06 Add the following:

Excessive or wasteful use of water as determined by the CO will not be paid for.

Pay Item	Pay Unit
15805 Watering	M-gallon

Section 203. - REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Construction Requirements

203.05 Disposing of Material.

(a) Remove from Project. Add the following:

Secure environmental clearances according to Subsection 107.10.

The contractor is responsible for the proper handling, storage and/or disposal of all waste generated by this construction, including grubbing and excess excavated material. Material brought to the County landfills will be subject to the institute tipping fee system, with no exception or exemption. Contact the County’s Solid Waste Division at (808) 961-8339 for the latest information on the use of public landfills and associated costs.

(b) Burn. Delete the text.

(c) Bury. Add the following:

Do not bury material generated from clearing and grubbing.

Section 204.-EXCAVATION AND EMBANKMENT

Delete text of this Section and substitute the following:

Description

204.01 This work consists of excavating material and constructing embankments. This includes furnishing, hauling, stockpiling, placing, disposing, sloping, shaping, compacting, and finishing earthen and rocky materials

204.02 Definitions.

(a) Excavation. Excavation consists of the following:

(1) Roadway excavation. All material excavated from within the right-of-way or easement areas, except subexcavation covered in Subsection 204.02.a.2 below and structure excavation covered in Sections 208 and 209. Roadway excavation includes all material encountered regardless of its nature or characteristics.

(2) Subexcavation. Material excavated from below subgrade elevation in cut sections or from below the original ground line in embankment sections. Subexcavation does not include the work required by Subsections 204.05, 204.06(b), and 204.06(c).

(3) Borrow excavation. Material used for embankment construction that is obtained from outside the roadway prism. Borrow excavation includes unclassified borrow, select borrow, and select topping.

(b) Embankment construction. Embankment construction consists of the placement and compaction of roadway or borrow excavation. This work includes:

- (1) Preparing foundation for embankment
- (2) Constructing roadway embankments
- (3) Benching for side-hill embankments
- (4) Constructing dikes, ramps, mounds, and berms
- (5) Backfilling subexcavated areas, holes, pits, and other depressions

(c) Embankment material. Materials for embankment construction are:

(1) Rock. Rock is material containing 25 percent or more, by volume, rock particles greater than 3 inches in diameter.

(2) Earth. Earth is material containing less than 25 percent, by volume, rock particles greater than 3 inches in diameter.

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(d) Conserved topsoil. Excavated material conserved from the roadway excavation and embankment foundation area that is suitable for growth of grass, cover crops, or native vegetation. A material reasonably free from hard soil, rock, clay, toxic substances, litter, or other deleterious material.

(e) Waste. Excess and unsuitable roadway excavation and subexcavation that cannot be used.

Material

204.03 Conform to the following Subsections:

Backfill material	704.03
Select borrow	704.07
Topping	704.05
Unclassified borrow	704.06
Water	725.01

Construction Requirements

204.04 Preparation for Roadway Excavation and Embankment Construction. Clear the area of vegetation and obstructions according to Sections 201 and 203.

204.05 Conserved Topsoil. Conserve topsoil and other suitable soil, organic duff and material capable of supporting vegetation from roadway excavation and from embankment foundation areas to the extent and depth determined by the CO. Stockpile conserved topsoil in six feet maximum height windrows in approved locations. Separate topsoil from other excavated material.

Place conserved topsoil on completed slopes according to Section 624.

204.06 Roadway Excavation. Excavate as follows:

(a) General. Do not disturb material and vegetation outside the construction limits.

Excavate material suitable for backfill, roadbed finishing, topping, or other purposes in a sequence that permits the placement of the excavation directly into its final position or in stockpiles for subsequent placing.

Incorporate only suitable material meeting the maximum particle size requirements designated in the construction drawings into the embankments.

At the end of each day's operations, shape to drain and compact the work area to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

(b) Rock cuts. When blasting rock, use controlled blasting methods according to Subsection 205.07. Obliterate any evidence of mechanical scarring left by rock excavation. Excavate rock

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cuts to 6 inches below subgrade within the roadbed limits. Backfill to subgrade with topping or with other suitable material. Compact the material according to Subsection 204.11.

(c) Earth cuts. Scarify earth cuts to 12 inches below subgrade within the roadbed limits. Moisture-condition and compact the scarified material according to Subsection 204.11.

204.07 Subexcavation. Excavate material to the limits designated by the CO. Where applicable, survey cross-sections according to Section 152. Prevent unsuitable material from becoming mixed with the backfill. Dispose of unsuitable material according to Subsection 204.14. Stockpile volcanic ash soils encountered in cut areas and re-use as a source of suitable embankment material as described in Subsection 204.10. Backfill the subexcavation with topping, or other suitable material. Compact the material according to Subsection 204.11.

204.08 Borrow Excavation. Use all suitable roadway excavation in embankment construction. Do not use borrow excavation when it results in excess roadway excavation. Excess borrow excavation will be deducted from the appropriate borrow excavation quantity.

Obtain borrow source acceptance according to Subsection 105.02. Develop and restore borrow sources according to Subsection 105.03. Do not excavate beyond the established limits. When applicable, shape the borrow source to permit accurate measurements when excavation is complete.

204.09 Preparing Foundation for Embankment Construction. Prepare foundation for embankment construction as follows:

(a) Embankment less than 4 feet high over natural ground. Completely break up the cleared ground surface to a minimum depth of 12 inches by plowing or scarifying. Compact the ground surface according to Subsection 204.11.

(b) Embankment less than 2 feet high over an existing asphalt, concrete, or gravel road surface. Scarify gravel roads to a minimum depth of 12 inches. Scarify or pulverize asphalt and concrete roads to 6 inches below the pavement. Reduce all particles to a maximum size of 6 inches and produce a uniform material. Compact the surface according to Subsection 204.11.

(c) Embankment across ground not capable of supporting equipment. Dump successive loads of embankment material in a uniformly distributed layer to construct the lower portion of the embankment. Limit the layer thickness to the minimum depth necessary to support the equipment.

(d) Embankment on an existing slope steeper than 3:1 (3 units horizontal to 1 unit vertical). Cut horizontal benches in the existing slope to a sufficient width to accommodate placement and compaction operations and equipment. Bench the slope as the embankment is placed and compacted in layers. Begin each bench at the intersection of the original ground and the vertical cut of the previous bench.

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204.10 Embankment Construction. Incorporate only suitable roadway excavation material into the embankment. When the supply of suitable roadway excavation is exhausted, furnish unclassified borrow to complete the embankment. Construct embankments as follows:

(a) General. At the end of each day's operations, shape to drain and compact the embankment surface to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

During all stages of construction, route and distribute hauling and leveling equipment over the width and length of each layer of material.

Compact embankment side slopes with a tamping type roller or by walking with a dozer. For slopes 1.75:1 or steeper, compact the slopes as construction of the embankment progresses. For embankment slopes with a vertical height greater than 15 feet, provide a keyway at the toe of the fill slope to provide additional stability of the new embankment slope against sliding. Embed the keyway at least 2 feet below the lowest adjacent grade, and the keyway shall have a minimum base width of 10 feet.

Construct the top 3 inches of the embankment with topping with well graded granular material with maximum particle size of 1½ inches in the largest dimension on top of 21 inches of well graded granular materials with maximum particle size of 6 inches in the largest dimension.

(b) Rock. Place rock in horizontal layers not exceeding 12 inches in compacted thickness. Material composed predominantly of boulders or rock fragments too large for 12-inch layers may be placed in layers of up to 24 inches thick. Incorporate oversize boulders or rock fragments into a 24-inch layer by reducing them in size or placing them individually according to (c) below. Place rock layers with sufficient earth and smaller rocks to fill the voids. Compact each layer according to Subsection 204.11 before placing the next layer.

(c) Individual rock fragments and boulders. Place individual rock fragments and boulders greater than 24 inches in diameter as follows:

(1) Reduce rock to less than 48 inches in the largest dimension.

(2) Distribute rock within the embankment to prevent nesting and fill the voids between them with finer material.

(3) Rock greater than 24 inches in largest dimension shall not be exposed at the face of the embankment slope. Setback rock greater than 24 inches in largest dimension a lateral distance of at least 6 feet measured from the edge of the embankment slope face.

(4) Compact each layer according to Subsection 204.11.

(d) Earth. Place earth in horizontal layers not exceeding 12 inches in compacted thickness. Incorporate oversize boulders or rock fragments into the 12-inch layers by reducing them in size or placing them individually as required in (c) above.

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Compact each layer according to Subsection 204.11 before placing the next layer.

(e) Embankment outside of roadway prism. Where placing embankment outside the staked roadway prism, place material in horizontal layers not exceeding 24 inches in compacted thickness. Compact each layer according to Subsection 204.11(a).

The access road locations shown in the plans are approximate ; the final locations will be determined on-site.

Prior to constructing access roads, mark out the location and limits of disturbance. Obtain approval from the CO for the final location of all access or approach roads prior to construction.

(f) Other Embankments. Where placing embankment on one side of abutments, wing walls, piers, or culvert headwalls, compact the material using methods that prevent excessive pressure against the structure.

Where placing embankment material on both sides of a concrete wall or box structure, conduct operations so compacted embankment material is at the same elevation on both sides of the structure.

Where structural pilings are placed in embankment locations, limit the maximum particle size to 4 inches.

204.11 Compaction. Compact as follows:

(a) Rock embankment. Adjust the moisture content of the material to a moisture content suitable for compaction. Compact each layer of material full width with one of the following:

- (1) Four roller passes of a 50-ton compression-type roller
- (2) Four roller passes of a vibratory roller having a minimum dynamic force of 40,000 pounds impact per vibration and a minimum frequency of 1000 vibrations per minute
- (3) Eight roller passes of a 20-ton compression-type roller
- (4) Eight roller passes of a vibratory roller having a minimum dynamic force of 30,000 pounds impact per vibration and a minimum frequency of 1000 vibrations per minute.
- (5) Eight roller passes of a bulldozer with a static weight of at least 50 tons.

Proportion the compactive effort for layers deeper than 12 inches as follows.

- For each additional 6 inches or fraction thereof, increase the number of roller passes in (1) and (2) above by four.
- For each additional 6 inches or fraction thereof, increase the number of roller passes in (3), (4) and (5) above, by eight.

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Operate compression-type rollers at speeds less than 6 feet per second and vibratory rollers at speeds less than 3 feet per second.

(b) Earth embankment. Classify the material according to AASHTO M 145. For material classified A-1 or A-2-4, determine the maximum density according to AASHTO T 180 method D. For other material classifications, determine the optimum moisture content and maximum density according to AASHTO T 180 Methods A, B or C.

Adjust the moisture content of material classified A-1 through A-7 to within 2 percent of the optimum moisture content determined in accordance with AASHTO T-180.

Compact materials placed in embankments within the upper 2 feet of the finished subgrade elevation or finished grades and the material scarified in cut sections to at least 95 percent of the maximum density determined in accordance with AASHTO T-180. Compact materials placed in embankments below an elevation of 2 feet below the finished subgrade elevation or finished grades to at least 90 percent of the maximum density determined in accordance with AASHTO T-180. Determine the in-place density and moisture content according to ASTM D 2922 and D3017 or AASHTO T-310.

If excessive water is added for compaction, aerate the material to permit proper compaction or place a layer of stabilization geotextile in accordance with Type III-A of Table 714-3 to reduce the potential for pumping. The CO will not pay for stabilization measures made necessary by excessive watering.

204.12 Ditches. Slope, grade, and shape ditches. Remove all projecting roots, stumps, rock, or similar matter. Maintain all ditches in an open condition and free from leaves, sticks, and other debris.

Form furrow ditches by plowing or using other acceptable methods to produce a continuous furrow. Place all excavated material on the downhill side so the bottom of the ditch is approximately 18 inches below the crest of the loose material. Clean the ditch using a hand shovel, ditcher, or other suitable method. Shape to provide drainage without overflow.

204.13 Sloping, Shaping, and Finishing. Complete slopes, ditches, culverts, riprap, and other underground minor structures before placing aggregate courses. Slope, shape, and finish as follows:

(a) Sloping. Leave all earth slopes with uniform roughened surfaces, except as described in (b) below, with no noticeable break as viewed from the road. Except in solid rock, round tops and bottoms of all slopes, including the slopes of drainage ditches. Round material overlaying solid rock to the extent practical. Scale all rock slopes.

If a slide or slipout occurs on a cut or embankment slope, remove or replace the material and repair or restore all damage to the work. Bench or key the slope to stabilize the slide. Reshape the cut or embankment slope to an acceptable condition.

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Backfill and/or grout large cavities exposed on the cut slope face when designated by the CO. Stabilize cut slopes in accordance with Section 625.

(b) Stepped slopes. Where required by the contract, construct steps on slopes of 0.75:1 to 2:1. Construct the steps approximately 18 inches high.

Blend the steps into natural ground at the end of the cut. If the slope contains nonrippable rock outcrops, blend steps into the rock. Remove loose material found in transitional area. Except for removing large rocks that may fall, scaling stepped slopes is not required.

(c) Shaping. Shape the subgrade to a smooth surface and to the cross-section required. Shape slopes to gradually transition into slope adjustments without noticeable breaks. At the ends of cuts and at intersections of cuts and embankments, adjust slopes in the horizontal and vertical planes to blend into each other or into the natural ground.

Blend cut slopes into the existing terrain such as at the end of ridges and natural drainage ways. Flare cut slopes to blend into fill slopes

(d) Finishing. Remove all material larger than 1½ inches from the top 3 inches of the roadbed. In cut areas, remove all material larger than 6 inches from the next 3 inches of the roadbed. In fill areas, remove all material larger than 6 inches from the next 3 to 21 inches of the roadbed. Finish roadbeds to within +/- 0.05 feet of the designed line and grade. Remove unsuitable material from the roadbed and replace it with suitable material. Refer to Table 152-1 for roadway and ditch staking tolerances. Maintain proper ditch drainage.

204.14 Disposal of Unsuitable or Excess Material. Dispose of unsuitable or excess material legally off the project.

When there is a pay item for waste, shape and compact the waste material in its final location. Do not mix clearing or other material not subject to payment with the waste material.

204.15 Acceptance. Material for embankment and conserved topsoil will be evaluated under Subsections 106.02 and 106.04. See Table 204-1 for minimum sampling and testing requirements.

Excavation and embankment construction will be evaluated under Subsections 106.02 and 106.04. See Table 204-1 for minimum sampling and testing requirements.

Clearing will be evaluated under Sections 201 and 203.

Placing of conserved topsoil will be evaluated under Section 624.

Measurement

204.16 Measure as follows:

(a) Roadway excavation. When a roadway excavation pay item is shown in the bid schedule and there is no pay item for embankment construction, measure by the cubic yard in place in its original position as follows:

(1) Include the following volumes in roadway excavation:

- (a) Roadway prism excavation
- (b) Rock material excavated and removed from below subgrade in cut sections
- (c) Unsuitable material below subgrade and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule
- (d) Ditches, except furrow ditches measured under a separate bid item
- (e) Conserved topsoil stripped from cuts
- (f) Borrow material used in the work when a pay item for borrow is not shown in the bid schedule
- (g) Loose scattered rocks removed and placed as required within the roadway
- (h) Conserved material taken from stockpiles and used in Section 204 work except topsoil measured under Section 624. Only materials required to be conserved by the CO are eligible for measurement under this item.
- (i) Slide and slipout material not attributable to the Contractor's method of operation

(2) Do not include the following in roadway excavation:

- (a) Overburden and other spoil material from borrow sources
- (b) Overbreakage from the backslope in rock excavation
- (c) Water or other liquid material
- (d) Material used for purposes other than required
- (e) Roadbed material scarified in place and not removed
- (f) Material excavated when stepping cut slopes
- (g) Material excavated when rounding cut slopes
- (h) Preparing foundations for embankment construction
- (i) Material excavated when benching for embankments
- (j) Slide or slipout material attributable to the Contractor's method of operation
- (k) Conserved material stockpiled at the option of the Contractor
- (l) Material excavated outside the established slope limits
- (m) Conserved topsoil stripped from fills
- (n) Loose scatter rock removed from the clear zone paid for under Section 622

(b) Subexcavation. When a subexcavation pay item is shown in the bid schedule, measure by the cubic yard in place in its original position.

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(c) Unclassified borrow, select borrow, and select topping. When a borrow excavation pay item (unclassified borrow, select borrow, and select topping) is shown in the bid schedule, measure by the cubic yard in original position. Do not measure borrow excavation used instead of excess roadway excavation. If borrow excavation is measured by the cubic yard, take initial cross-sections of the ground surface after stripping overburden. Upon completion of excavation and after the borrow source waste material is returned to the source, retake cross-sections before replacing the overburden.

(d) Embankment construction. When an embankment construction pay item is shown in the bid schedule, measure by the cubic yard in final position. Do not measure roadway excavation except as described in (3) below. Do not make deductions from the embankment construction quantity for the volume of minor structures.

(1) Include the following volumes in embankment construction:

- (a) Roadway embankments
- (b) Material used to backfill holes, pits, and other depressions
- (c) Material used for dikes, ramps, mounds, and berms

(2) Do not include the following in embankment construction:

- (a) Preparing foundations for embankment construction
- (b) Adjustments for subsidence or settlement of the embankment or of the foundation on which the embankment is placed
- (c) Material used to round fill slopes
- (d) Material used to backfill subexcavated areas

(3) When embankment construction and roadway excavation pay items are shown in the bid schedule, measure roadway excavation by the cubic yard in place in its original position and include only the following:

- (a) Unsuitable material below subgrade in cuts and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule.
- (b) Slide and slipout material not attributable to the Contractor's method of operations.
- (c) Drainage ditches, channel changes, and diversion ditches.

(e) Furrow ditches. Measure furrow ditches by the linear foot.

(f) Rounding cut slopes. Measure rounding cut slopes by the linear foot horizontally along the centerline of the roadway for each side of the roadway.

(g) Waste. Measure waste by the cubic yard in final position. Take initial cross-sections of the ground surface after stripping overburden. Upon completion of the waste placement, retake cross-sections before replacing overburden.

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(h) Slope scaling. Measure slope scaling by the cubic yard in the hauling vehicle.

(i) Grade access road. Grade and maintain the Makai access road during construction. Apply dust suppressant as required to control dust at no cost to the contract. It will remain improved after Phase 5 is completed. Allow PTA staff and water tankers use of the road. A fire fighting dipping tank is located on Makai Road and needs to be refilled periodically. Refer to the SOP in the Appendix for additional information.

Payment

204.17 The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay items listed below that are shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment will be made under:

Pay Item	Pay Unit
20402 Subexcavation	Cubic yard
20409 Roadway Embankment	Cubic yard

Section 209. - STRUCTURE EXCAVATION AND BACKFILL

Construction Requirements

209.09 Bedding.

(b) Culverts. Delete the third sentence and substitute the following:

When no class is specified, use bedding material that conforms to class C and to Table 2 of AASHTO M 145 for Classifications A-1, A-2, or A-3 soils.

Add the following:

If lean concrete backfill is used, the bedding requirements for (2) Class B and (3) Class C are waived.

Where installing plastic pipe, use Class B.

209.10 Backfill.

(b) Culvert. Delete the first sentence and substitute the following:

Where installing plastic pipe, use backfill material conforming to the requirements of Class B bedding.

Add the following:

As an alternative to backfill material, the Contractor may use lean concrete backfill for backfill of pipe culverts. When utilizing lean concrete backfill, furnish materials and perform the work according to Section 614. Do not use lean concrete backfill with aluminum or aluminum-coated structures or plastic culverts.

Section 251. - RIPRAP

Delete the text of this section and substitute the following:

Description

251.01 This work consists of furnishing and placing riprap for bank protection, slope protection, drainage structures, and erosion control and placing individual boulders.

Riprap classes are designated as shown in Table 705-1.

Material

251.02 Conform to the following Subsections:

Geotextile type IV	714.01
Grout	725.22(e)
Riprap rock	705.02

Construction Requirements

251.03 General. Perform the work under Section 209. Dress the slope to produce a smooth surface. If earthwork geotextile is required, place according to Section 207. Place individual boulders, with a minimum diameter of 36-inches, as directed by the CO at the locations shown in the plans.

251.04 Placed Riprap. Placed riprap is rock placed on a prepared surface to form a well-graded mass.

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Place riprap to its full thickness in one operation to avoid displacing the underlying material. Do not place riprap material by methods that cause segregation or damage to the prepared surface. Place or rearrange individual rocks by mechanical or hand methods to obtain a dense uniform blanket with a reasonably smooth surface.

251.07 Acceptance. Rock for riprap will be evaluated under Subsections 106.02 and 106.03.

Rock placement for riprap will be evaluated under Subsections 106.02 and 106.04.

Structure excavation and backfill will be evaluated under Section 209.

Geotextile will be evaluated under Section 207.

Measurement

251.08 Measure riprap by the ton or by the cubic yard in place.

Measure placed individual boulders by the each.

Payment

251.09 The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay items listed below that are shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment will be made under:

	Pay Item	Pay Unit
25101C	Placed riprap class 3	Cubic yard
25111	Placed Individual Boulders	Each

Section 252. – SPECIAL ROCK EMBANKMENT AND ROCK BUTTRESS

Delete the title and text of this Section and substitute the following:

Section 252. – ROCKERY, SPECIAL ROCK EMBANKMENT, AND ROCK BUTTRESS

Description

252.01 This work consists of constructing rockeries at the locations and to the dimensions shown on the plans. Rockeries are formed of interlocking, dry-stacked rocks without reinforcing steel, mortar, or concrete. Rockeries may be constructed as either single structures or in tiers.

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Special rock embankment work consists of furnishing and placing hand-placed or mechanically-placed rock in fill sections. Rock buttress work consists of furnishing and placing hand-placed or mechanically-placed rock in cut sections.

Special rock embankments and rock buttresses are designated as hand-placed or mechanically-placed.

Material

252.02 Conform to the following Subsections:

Granular rock backdrain	703.03(c)
Foundation fill	704.01
Rock for special rock embankment	705.04
Rock for buttresses	705.05
Base, facing, and cap rocks	705.07
Plastic pipe	706.08(d) and (e)
Geotextile	714.01

Construction Requirements

252.03 Rockery.

(a) Qualifications. Prior to the start of rockery construction, submit the following:

- (1) References citing satisfactory completion of at least three (3) rockeries of similar height and face area.
- (2) A summary of the experience of the primary equipment operator responsible for placement of base, facing, and cap rocks.

(b) General. Survey the rockery according to Subsection 152.03(i) and verify the limits of the rockery installation. The following definitions apply to rockery construction:

- (1) **Base Rock:** The base rock is the lowermost rock in the rockery, and bears directly on the soil/rock subgrade.
- (2) **Facing Rock:** The facing rocks comprise the bulk of the rockery and are stacked above the base rock.
- (3) **Cap Rock:** The cap rock is the uppermost rock in the rockery section and “caps” the rockery.

(c) Rockery Foundation Excavation. Perform the work under Section 209. Excavate a foundation trench at least 12 inches below the bottom of the rockery, running the full length of the proposed rockery. Deeper embedment may be required where a toe slope is present or

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where a leveling pad is specified. Excavate the foundation to a minimum width equal to the specified base rock width ("B") plus 12 inches to include the granular rock backdrain behind the rockery. Conform to the following:

- (1) Excavate the foundation in sections such that the rockery can be constructed in one shift or one day's work, unless shoring is provided for the purpose to support the excavation.
 - (2) If the CO determines the back cut is stable as excavated, the requirement of Subsection 252.05(a)(1) does not apply.
 - (3) Exercise care during excavation of the back cut. The stability of temporary cut slopes is the responsibility of the Contractor.
- (d) Rock Placement.** Place the first course of rock (base rock) on firm, unyielding soil or bedrock with full contact between the rock and the subgrade. Excavate any loose, soft or other wise unsuitable material present at foundation grade and replace with foundation fill as shown in the plans. Compact the foundation fill according to Subsection 204.11. As the rockery is constructed, place the rocks so that there are no continuous joints in either the vertical or lateral direction.

Stockpile a sufficient number of rocks to provide a good selection for placement. To obtain a better fit, place rocks which do not match the spaces offered by the previous course in a different location.

Avoid placing rocks which have shapes that create voids with a linear dimension greater than 12 inches.

Except in isolated cases, place each rock so that it bears on at least two rocks below it. Locate at least one bearing point a distance no greater than 6 inches from the average face of the rockery.

The allowable tolerance for base rock widths is 6 inches; however, do not place two or more consecutive base rocks with a width less than specified on the plans.

Slope the top surface of each rock towards the back of the rockery at an inclination of at least five (5) percent.

Construct the exposed face of the rockery with a face batter no steeper than 6V:1H and no flatter than 4V:1H.

The minimum rockery thickness is based on minimum base rock width, as specified on the plans, and allowable face batter.

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Securely place facing rocks so that the rocks are unable to be moved with a pry bar after the rockery is complete.

- (e) **Voids.** Where voids with a minimum dimension of 16 inches or greater exist in the face of the rockery, chink the voids with smaller rock.
 - (1) If there is no rock contact within the rockery thickness, chink the void with a smaller piece of rock.
 - (2) Chinking rocks do not provide primary structural support for the overlying rock.
 - (3) Chinking rocks are not loose or able to be moved or removed by hand after rockery is complete. Reset loose chinking rocks until securely placed or grouted in place. Do not allow grout to be readily visible from the face of rockery.

- (f) **Rockery Drainage.** Install the granular rock backdrain between the rockery and the back cut face being supported. The granular rock backdrain layer is at least 12 inches thick, measured horizontally from the back of the base rock to the face of the back cut. Place granular rock backdrain concurrent with rockery so that at no time is either more than 24 inches higher than the other.
 - (1) Separate the crushed rock from the back cut by Type 1-B non-woven geotextile. Overlap the non-woven geotextile at least 12 inches at all seams.
 - (2) Place a 4 inch diameter perforated drain pipe as shown in the plans. Surround the pipe on all sides by at least 4 inches of permeable backfill according to Subsection 703.04.
 - (3) Connect the perforated drain pipe to a non-perforated collector pipe at a spacing not to exceed 100 feet center-to-center. Connect the collector pipe to a controlled drain outlet, such as a storm drain, or outlet to a slope using a riprap apron according to Section 251.
 - (4) Do not connect collector pipes to systems designed for storm water retention in accordance with Best Management Practices design unless approved by the CO.
 - (5) Cap the granular rock backdrain with at least 12 inches of native, relatively impermeable soil. Place non-woven geotextile between the soil cover and the granular rock backdrain.

252.04 Special Rock Embankment and Rock Buttress Construction. Perform the work under Section 204 or 209 as required.

Place the rock in a stable orientation with minimal voids. Offset the rock to produce a random pattern. Use spalls smaller than the minimum rock size to chock the larger rock solidly in position and to fill voids between the large rock.

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Construct the exposed face of the rock mass reasonably uniform with no projections beyond the line of the slope that are more than 12 inches for mechanically-placed rock or 6 inches for hand-placed rock.

252.05 Acceptance. Rock for rockery, special rock embankment, and rock buttress will be evaluated under Subsection 106.02.

Rock placement for rockery, special rock embankment, and rock buttress will be evaluated under Subsections 106.02 and 106.04.

Survey work will be evaluated under Section 152.

Structure excavation will be evaluated under Section 209.

Granular rock backdrain will be evaluated under Subsection 703.03(c). Foundation fill will be evaluated under Subsection 704.01.

Material for plastic pipe and geotextiles listed under Subsections 706.08 and 714.01 will be evaluated under Subsections 106.02 and 106.03.

Construction of rockeries will be evaluated under Subsections 106.02 and 106.04.

Measurement

252.06 Measure Section 252 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure rockeries by the square foot of rockery front face. Measure the rockery front face vertically from the bottom of the base rock elevation to the top of the cap rock. Compute the area using rockery heights measured at a maximum horizontal spacing of 30 feet. Structure excavation, granular rock backdrain, permeable backfill, 4 inch drainage pipes (perforated and non-perforated), geotextile, foundation fill, and grout for chinking rocks will not be measured for payment and are considered incidental to the rockeries.

Measure special rock embankment and rock buttress by the cubic yard in place.

Payment

251.09 The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay items listed below that are shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

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Payment will be made under:

	Pay Item	Pay Unit
25206	Rockery Wall	Square Foot

Section 301. - UNTREATED AGGREGATE COURSES

Construction Requirements

301.03 General. Delete the second sentence and substitute the following:

For base course, set target values within the gradation ranges shown in Table 703-2, Grading E.

301.06 Surface Tolerance. Delete the first sentence and substitute the following:

If grade finishing stakes are required, finish the surface to within +/- 0.05 feet of design line and grade.

301.08 Acceptance.

(a) Aggregate gradation. Add the following:

When all the test results are completed and evaluated for a lot, the Contractor may optimize the final pay factor for the lot by changing the originally established target values for the lot. The target values, as changed, must be within the designated range for the grading selected.

Delete table 301-1 and substitute the following:

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**Table 301-1
Sampling and Testing**

Material or Product	Property or Characteristic	Category	Test Methods or Specifications	Frequency	Sampling Point
Subbase and Base courses	Gradation ⁽¹⁾ – Specified sieves	2	AASHTO T 11 and AASHTO T27	1 sample per 1000 ton	From the windrow of roadbed after processing
	Liquid limit	---	AASHTO T89	1 sample per 3000 ton	From the windrow or roadbed after processing
	Moisture-Density (maximum density)	---	AASHTO T180 method D	1 for each aggregate grading produced	Production output or Stockpile
	Inplace density and moisture content	---	AASHTO T310 or other approved procedures	1 for each 500 ton	Inplace completed compacted layer
Surface course aggregate	Gradation ⁽¹⁾ – #4	2	AASHTO T 11 and AASHTO T27	1 sample per 1000 ton	From the windrow or roadbed after processing
	#40	2			
	#200	2			
	Other specified sieves	2			
	Moisture-Density (maximum density)	---	AASHTO T180 method D	1 for each aggregate grading produced	Production output or stockpile
	Inplace density and moisture content	---	AASHTO T310 or other approved procedures	1 for each 500 ton	Inplace completed compacted layer

(1) Use only sieves indicated for the specified gradation.

Payment

301.10 Add the following:

	Pay Item	Pay Unit
30104E	Subbase, Grading E	Ton

Section 303.—ROAD RECONDITIONING**Description****303.01** Delete the first sentence and substitute the following:

This work consists of reconditioning the graded roadbed from station 17+00 to 353+00

Construction Requirements**303.04** Delete the text and substitute the following:

Cut to grade any high areas in the roadbed and dispose of excess or unsuitable material according to subsection 204.14. Excess or unsuitable material may be disposed of at the PTA quarry. Fill in any low areas with materials meeting the requirements of Section 301, Subbase aggregate, Grading E.

Repair soft and unstable areas by sub-excavating to the limits designated by the CO. . . Unsuitable material may be disposed of at the PTA quarry. Backfill the excavated area with topping or suitable material from the PTA quarry. Compact the materials according to 204.11.

303.07 Finishing Road Surfaces Add the following:

Finish the surface according to Subsection 301.06

303.08 Scarifications Delete the first sentence and substitute the following:

In areas where the grade is low scarify the roadbed to a minimum depth of 4-inches. Mix with material meeting the requirements of 301, spread and compact the finished subgrade.

Measurement**303.10** Delete the test and substitute the following:

Measure roadway reconditioning by the square yard. Measure the square yard area on a horizontal plane as shown in the typical section for the area designated to be reconditioned.

Measure removal and disposal of unsuitable materials under Section 204. Backfill material for sub excavated areas will not be measured for payment.

Measure aggregate for leveling under Section 301.

Section 306. DUST PALLIATIVE**Description****306.01 Add the following:**

Apply dust palliative on the unpaved construction access haul roads as directed by the CO. Palliatives must provide long lasting dust control under heavy traffic conditions for the types of soils to be encountered on this project. The soils along Saddle Rod and access routes consists of A-2-4(0) granular materials per AASHTO M 145. Percent passing the #4 sieve is approximately 96 and the percent passing the #200 sieve range from 11 to 23.

Material**306.02 Delete the text and add the following:**

Furnish a liquid dust suppressant product meeting the following categories as defined by the Dust Palliative Selection and Application Guide published by United States Department of Agriculture (Forest Service, Technology and Development Program) dated November, 1999. (www.wsdot.wa.gov/TA/T2Center/DustGuide.pdf)

- Electrochemical (ionic only)
- Synthetic Polymer

Ensure the agent is:

- A continuously active suppressant
- Suitable for use on highly trafficked unpaved sites and roads with soil/aggregate types that will be encountered along this project and designated haul roads
- Designed for topical application
- Designed for high traffic volumes and weights
- Environmentally safe
- Non-polluting to surface and ground waters
- Penetrating and self-wetting
- Oil-sheen free
- Insoluble in water after application
- Non-corrosive to metal
- Non-toxic and non-carcinogenic to humans
- Non-toxic to humans, animals and vegetation
- Non-curing
- Meets the transportation characteristics of non-hazardous, non-poisonous, non-regulated product, and non-OSHA Hazardous Class
- Non-combustible/non-flammable
- Non-volatile

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- PM10 and PM2.5 compliant
- UV resistant
- Non-aqueous solution
- Non-tracking
- Resistant to rain and sun
- Long lasting
- Non-dilutable
- Reworkable

Other products not listed in the Department of Agriculture reference publication but meeting the requirements as defined by the specified categories and as required above may be approved for use.

306.04 Preparation and Application. Add the following:

Application methods and rates for dust palliative will be as recommended by the manufacturer. Touchup/maintenance applications as directed by the CO. All dust palliative applications will be topical.

Measurement

306.06 Delete the text and substitute the following:

Measure dust palliative application by the gallon.

306.07 Add the following:

Pay Item	Pay Unit
30612 Dust Palliative	Gallon

Section 307. STOCKPILED AGGREGATES

Description

307.01 Delete the text and substitute the following:

This work consists of crushing and stockpiling aggregates at the PTA quarry for the Department of the Army.

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Material

307.02 Conform to the following Section: Delete the text and substitute the following:

Aggregates

703

Provide the gradations specified in Table 1-AD for the quantities shown in the bid schedule.

Table 1-AD
6" and 3" Aggregate Grading Ranges

<i>Sieve Size</i>	Percent By Mass Passing	
	Grading Designation	
	6"	3"
6"	100	100
2"	40-60	
1.5"		70-90
#4	10-40	10-40
#200	4-16	4-16

Construction Requirements

307.03 Stockpile Site. Add the following:

The aggregates will be stockpiled within the PTA quarry site at a location designated by the CO.

307.04 Stockpile. Delete the last paragraph

307.05 Acceptance. Delete the text of this subsection and substitute the following:

Perform process control testing as shown in table 307-1. Aggregate failing to meet the gradation specified in Table 1-AD will be considered unacceptable.

Table 307-1
Sampling and Testing

Material or Product	Property or Characteristic	Test Methods or Specifications	Frequency	Sampling Point
Subbase and Base courses	Gradation ⁽¹⁾ – Specified sieves	AASHTO T 11 and AASHTO T27	1 sample per 1,500 ton	Production output or Stockpile

⁽¹⁾ Statistical procedures do not apply.

Aggregate quality properties will be evaluated under Subsections 106.02 and 106.04.

Preparation of stockpile sites and construction of stockpiles will be evaluated under Subsections 106.02 and 106.04.

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Measurement

307.06 Delete the text of this subsection and substitute the following:

Measure stockpiled aggregate by the ton.

Payment

307.07 Delete the text of this subsection and substitute the following:

The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay items listed below. Payment will be full compensation for the work prescribed in this Section.

Payment will be made under:

Pay Item	Pay Unit
30701LA Stockpiled aggregate, 3-inch grading	ton
30702LB Stockpiled aggregate, 6-inch grading	ton

Section 401. - HOT ASPHALT CONCRETE PAVEMENT

Delete the title and text of this Section and substitute the following:

Section 401. - SUPERPAVE HOT ASPHALT CONCRETE PAVEMENT**Description**

401.01 This work consists of constructing one or more courses of Superpave hot asphalt concrete pavement.

Superpave hot asphalt concrete is designated as shown in Table 401-1.

Nominal maximum size aggregate is designated as shown in Table 703-14.

Asphalt binder grade is designated as shown in AASHTO M 20, M226, or AASHTO MP-320.

Smoothness type is designated as Type I

Asphalt binder grade is designated as PG64-16.

A minimum of one percent lime will be required in the Superpave hot asphalt concrete mixture.

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Material

401.02 Conform to the following Subsections:

Aggregate	703.17
Antistrip additive	702.08
Asphalt binder	702.01
Mineral filler	725.05

Construction Requirements

401.03 Composition of Mix (Job-Mix Formula). Furnish aggregate and additives that meet applicable gradation and materials requirements in Subsection 703.17. Furnish asphalt binder that meets the applicable materials requirements in Subsection 702.01. Furnish antistrip additive that meets the applicable materials requirements in Subsection 702.03(c). The Superpave hot asphalt concrete mixture will meet the design parameters in Table 401-1. Compact specimens to N_{design} with a gyratory compactive effort specified in Table 401-1. Volumetric mix properties will be determined at N_{design} . Use a gyratory compactor which meets the internal angle requirement according to AASHTO T 312.

Use of baghouse fines in Superpave hot asphalt concrete mixtures requires approval unless included as part of the approved job-mix formula.

For all but the final surface course, recycled material may be used subject to approval and submission of test data demonstrating that the mixture and the specified asphalt binder grade will meet the mix design requirements. Recycled material may not be used in the final surface course.

Table 401-1
Superpave Hot Asphalt Concrete Mixture Requirements
AASHTO M 323, R 35

Design Parameters		Requirements
Percent air voids at design gyrations, N_{design}		4.0
Percent maximum density at initial gyration, N_{initial}		Less than 90.5
Percent maximum density at maximum gyrations, N_{maximum}		Less than 98.0
Tensile strength ratio ⁽¹⁾ , min. (AASHTO T 283)		80
Dust-asphalt ratio ⁽²⁾		0.8 - 1.6
Hveem stabilometer value, minimum, (AASHTO T 246 and T 247)		30
Percent voids in mineral aggregate (VMA), min.	½ inch Nominal Max.	14.0
	¾ inch Nominal Max.	13.0
Percent voids filled with asphalt (VFA)		65 – 78
Gyratory compactive effort (measure volumetric properties after compacting specimens to N_{design})		$N_{\text{initial}} = 7$ $N_{\text{design}} = 75$ $N_{\text{maximum}} = 115$

⁽¹⁾ Sample specimens will be 100mm diameter, 7 ± 0.5 percent air voids, with one freeze thaw cycle. Acceptable method of compaction is AASHTO T247 or the Superpave Gyratory Compactor.

⁽²⁾ Lime, bag house fines, and other mineral matter added to the mixture is included in samples evaluated for the dust fraction.

Submit written job-mix formulas for approval at least 28 days before production. For each job-mix formula, submit the following:

(a) Aggregate and mineral filler.

- (1)** Designate target values within the gradation band for percent passing each sieve size for the specified gradation.
- (2)** Source and percentage of each aggregate stockpile.
- (3)** Gradation of each aggregate stockpile.
- (4)** Representative samples of each aggregate stockpile such that when combined at the proposed job mix formula total 700 pounds.

Advise the CO of the schedule for collecting aggregate samples and provide the CO an opportunity to witness sampling. Verify the gradation of the aggregate stockpile samples to be submitted by performing a gradation on a split of each aggregate stockpile sample. Provide the results of the gradation tests to the CO. Aggregate samples when combined according to the Contractor's recommended stockpile percentages will be within the gradation band defined by the target values plus or minus the allowable deviation for each sieve or the samples will not be

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considered representative. If the gradations are verified, provide the split portion of the sample as part of the mix design submitted. If the gradations are not verified, perform appropriate corrective measures to provide a job mix formula and samples which will result in a mix meeting the contract requirements. Once verified, complete a sample transmittal Form FHWA 1600c for each sample, providing the CO the opportunity to review the completed form prior to sample shipment. Include a copy of each transmittal form on the outside and inside of the corresponding sample container, and provide the CO a copy of each completed form. Ship the samples to the FHWA Materials Laboratory, Building 52, Entrance S-1, Denver Federal Center, Denver, Colorado 80225.

The mix design used to construct previous projects 6(3) and 200(1) using the PTA quarry is posted on the web at <http://www.cflhd.gov/procurement/construction/advertised-projects.cfm>

(b) Asphalt binder.

- (1) Five 1-gallon samples of the asphalt binder to be used in the mix.
- (2) Recent quality test results from the manufacturer for the asphalt binder including a temperature-viscosity curve and specific gravity at 77°F according to AASHTO T 228.
- (3) Mixing and compaction temperature ranges for the asphalt binder.
- (4) Material safety data sheets.

(c) Antistrip additive (lime).

- (1) 5 pounds of lime.
- (2) Name of product.
- (3) Manufacturer.
- (4) Material safety data sheet.

(d) Asphalt mixes. When applicable, the location of all commercial mixing plants to be used. A recent job-mix formula is needed for each plant. The CO will evaluate the suitability of the material and the proposed job-mix formula. If approved, the CO will develop a target value for the asphalt binder content, determine the maximum specific gravity (density) according to AASHTO T 209, and determine the discharge temperature range.

If a job-mix formula is rejected, submit a new job-mix formula as described above.

Changes to an approved job-mix formula require approval before production. Up to 14 days will be required to evaluate a change. Approved changes in target values will not be applied retroactively for payment.

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The CO will deduct all job-mix formula evaluation costs incurred as a result of any of the following:

- (1) Contractor-requested changes to the approved job-mix formula
- (2) Contractor requests for additional job-mix formula evaluations
- (3) Additional testing necessary due to the failure of a submitted job-mix formula

401.04 Mixing Plant. Use mixing plants conforming to AASHTO M 156 supplemented as follows:

(a) All plants.

(1) Automated controls. Control the proportioning, mixing, and discharging of the mix automatically.

(2) Dust collector. AASHTO M 156, Requirements for All Plants, Emission Controls is amended as follows:

Equip the plant with a dust collector. Dispose of the collected material. In the case of baghouse dust collectors, dispose of the collected material or return the collected material uniformly.

If baghouse fines are approved for use, batch plants or continuous mix plants will meter it by volume or mass into the mixing chamber. In drum dryer-mixer plants, return the material to the drum at the same location as the asphalt.

(3) Aggregate storage. Store aggregate according to Section 307.

(b) Drum dryer-mixer plants.

(1) Bins. Provide a separate bin in the cold aggregate feeder for each individual aggregate stockpile in the mix. Use bins of sufficient size to keep the plant in continuous operation and prevent overflow of material from one bin to another.

(2) Stockpiling procedures. Separate aggregate into at least 2 stockpiles with different gradations. As a minimum, one stockpile will contain mostly coarse material, and one stockpile will contain mostly fine material.

(c) Batch and continuous mix plants.

(1) Hot aggregate bin. Provide a bin with 3 or more separate compartments for storage of the screened aggregate fractions to be combined for the mix. Make the partitions between the compartments tight and of sufficient height to prevent spillage of aggregate from one compartment into another.

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(2) Load cells. Calibrated load cells may be used in batch plants instead of scales.

401.05 Pavers. Use pavers that are:

- Self-contained, power-propelled units with adjustable vibratory screeds with full-width screw augers.
- Heated for the full length and width of the screed.
- Capable of spreading and finishing courses of asphalt mix in widths at least 12 inches more than the width of one lane.
- Equipped with a receiving hopper having sufficient capacity to ensure a uniform spreading operation.
- Equipped with automatic feed controls, which are properly adjusted to maintain a uniform depth of material ahead of the screed.
- Operable at forward speeds consistent with satisfactory mix lay down.
- Capable of producing a finished surface of the required smoothness and texture without segregating, tearing, shoving, or gouging the mix.
- Equipped with automatic screed controls with sensors capable of sensing grade from an outside reference line, sensing the transverse slope of the screed, and providing the automatic signals that operate the screed to maintain grade and transverse slope.

401.06 Surface Preparation. Prepare the surface according to 303.07, 413, 502, or 503 as applicable. Apply an asphalt tack coat to contact surfaces of pavements, curbs, gutters, manholes, and other structures according to Section 412.

401.07 Weather Limitations. Place Superpave hot asphalt concrete mix on a dry, unfrozen surface when the air temperature in the shade is above 35°F and rising and the temperature of the road surface in the shade conforms to Table 401-2.

Table 401-2
Superpave Hot Asphalt Concrete Mix Placement Temperature

Compacted Lift Thickness	< 2 inches	2 – 3 inches	> 3 inches
Road Surface Temperature, °F	Minimum Lay-Down Temperature ⁽¹⁾ °F		
< 35	(2)	(2)	(2)
35 – 39.9	(2)	(2)	280
40 – 49.9	(2)	285	275
50 – 59.9	295	280	270
60 - 69.9	285	275	265
70 – 79.9	280	270	265
80 - 89.9	270	265	260
≥ 90	265	260	255

⁽¹⁾ In no case will the Superpave hot asphalt concrete mix be heated above the temperature specified in the approved mix design.

⁽²⁾ Paving not allowed.

401.08 Asphalt Preparation. Uniformly heat the asphalt binder to provide a continuous supply of the heated asphalt binder from storage to the mixer. Do not heat asphalt binder above 350°F.

401.09 Aggregate Preparation. Adjust the aggregate moisture to at least 4 percent by mass of aggregate. Mix the antistriper uniformly with the aggregate before introducing the aggregate into the dryer or dryer drum. Use calibrated weighing or metering devices to measure the amount of antistriper and moisture added to the aggregate.

For batch plants, heat, dry, and deliver aggregate for pugmill mixing at a temperature sufficient to produce a mix temperature within the approved range. Adjust flames used for drying and heating to prevent damage to and contamination of the aggregate.

Control plant operations so the moisture content of the mix behind the paver is 0.5 percent or less according to AASHTO T 110 or FLH T 515.

Add lime to the aggregate by Method A, B, or C as follows. Use calibrated weighing or metering devices to measure the amount of lime and moisture added to the aggregate.

Method A - Add lime to the combined cold feed aggregate using an enclosed in-line cold feed mechanical pugmill mixer. The pugmill mixer will be twin-shaft, continuous mixing with adjustable mixing paddles. There will be no trace of unmixed lime after the lime and aggregate exit the pugmill.

Method B - Add lime to the produced aggregates during stockpiling using a pugmill. Add twenty-five (25) percent of the lime to be added to the coarse aggregate stockpile, and add seventy-five (75) percent of the lime to be added to the fine aggregate stockpile. When more

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than two stockpiles are used, the distribution of lime per stockpile will be included in the mix design.

Minimum moisture content will be two (2) percent by dry weight for the coarse aggregate and four (4) percent by dry weight for the fine aggregate at the time the aggregates and lime are mixed.

Method C - Use a lime slurry consisting of one part lime and three parts water. The plant will be equipped with a mixing unit to allow mixing of the slurry and aggregate prior to entering the dryer or dryer drum.

Adjust the moisture of the coarse and fine aggregates, or combination of aggregates, to obtain uniform coating of the aggregate with the lime.

Prior to the production of Superpave hot asphalt concrete pavement, obtain approval of synchronized metering and weighing devices used to introduce a constant rate of lime and water.

401.10 Mixing. Measure the aggregate and asphalt into the mixer according to the approved job-mix formula. Mix until all the particles are completely and uniformly coated with asphalt according to AASHTO M 156. Maintain the discharge temperature within the approved range.

401.11 Hauling. Use vehicles with tight, clean, and smooth metal beds for hauling asphalt concrete mixes.

Thinly coat the beds with an approved material to prevent the mix from adhering to the beds. Do not use petroleum derivatives or other coating material which contaminate or alter the characteristics of the mix. Drain the bed before loading.

Equip each truck with a canvas cover or other suitable material of sufficient size to protect the mix from the weather. When necessary to maintain temperature, use insulated truck beds and securely fastened covers. Provide access ports or holes for checking temperature of asphalt mix in the truck.

401.12 Start-Up and Production Procedures.

(a) Preparing procedures. At least 2 weeks prior to the start of paving operations, arrange for a pre-paving conference. Coordinate attendance with the CO and any applicable subcontractors. Be prepared to discuss and/or submit the following:

- (1) Proposed schedule of paving operations.
- (2) A list of all equipment and personnel to be used in the production and construction of the work.
- (3) A proposed Traffic Control Plan.

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(4) Discuss Section 153, Contractor Quality Control, minimum frequency schedule for process control sampling and testing (to be performed by the Contractor).

(5) Discuss Subsections 401.12, Start-Up and Production Procedures (control strip); 401.13, Placing and Finishing; 401.14, Compacting; and 401.16, Pavement Smoothness (profilograph measurements).

(6) Discuss Subsection 106.05, Statistical Evaluation of Materials for Acceptance, and 401.17, Acceptance.

Provide 7 days notice before beginning production of a Superpave hot asphalt concrete mix.

On the first day of production, produce sufficient mix to construct a 1000 foot long control strip, one-lane wide, and at the designated lift thickness. Construct the control strip on the project at an approved location.

(b) Control strip procedures. Construct the control strip using mix production, lay-down, and compaction procedures intended for the entire mix. Construct control strips for each plant from which production is intended. Cease production after construction of the control strip until the Superpave hot asphalt concrete mix and the control strip are evaluated and accepted, or up to three days.

Take and deliver splits of the control strip samples to a laboratory designated by the CO. Deliver the samples within 24 hours after production of the mix. The laboratory will generally be the CO's facility at Building 52 on the Denver Federal Center in Lakewood, Colorado, but may be at a closer facility. The CO will designate the laboratory to be used at the preconstruction conference.

(1) Mixture properties. Take three control strip Superpave hot asphalt concrete mix samples and evaluate according to Subsections 401.17 and 106.05. The split samples will be evaluated for asphalt content, gradation, VMA, VFA, Hveem stability, air voids, and other design requirements from Table 401-1. The mix is acceptable if all test results are within specification limits for VMA, VFA, gradation, and asphalt content and the resulting pay factor equals or exceeds 0.90.

(2) Compaction. Take nuclear density readings behind each roller pass to determine the roller pattern necessary to achieve specifications without damaging the mix. Correlate the gauge readings to core samples. Furnish the nuclear gauge readings, and the correlation to cores, to the CO.

At a five locations within the control strip, take nuclear gauge readings and cut core samples. Evaluate the core samples according to Subsections 401.17 and 106.05. The density is acceptable when the pay factor which results from the five samples equals or exceeds 0.90.

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Repeat the control strip process until an acceptable control strip is produced. See Subsection 106.05(b) for the disposition of unacceptable control strips. Acceptable control strips may remain in place and will be accepted and measured as a part of the completed pavement. Tests used for evaluation of acceptable control strips will not be included in the evaluation for payment according to Subsection 106.05. When a control strip is accepted, full production may begin.

Use these control strip procedures when producing material from a different plant or when resuming production after a termination of production due to unsatisfactory quality according to Subsection 106.05.

(c) Production procedures. When the control strip is accepted full paving operations may begin. Continue to sample, split, and test according to section 154. Deliver all splits to the CO.

401.13 Placing and Finishing. Do not use mixes produced from different plants unless the mixes are produced according to the same job-mix formula, use material from the same sources, and are approved.

Place Superpave hot asphalt concrete mix at a temperature conforming to Table 401-2. Measure temperature of the mix in the hauling vehicle just before dumping into spreader or measure it in the windrow immediately before pickup.

Place the mix with a paver conforming to Subsection 401.05. Control horizontal alignment using a reference line. Automatically control the grade and slope from reference lines, a ski and slope control device, or dual skis. Use skis having a minimum length of 30 feet.

On areas where mechanical spreading and finishing is impractical, place and finish the mix with alternate equipment to produce a uniform surface closely matching the surface obtained when using a mechanical paver.

Offset the longitudinal joint of one layer at least 6 inches from the joint in the layer immediately below. Make the longitudinal joint in the top layer along the centerline of two-lane roadways or at the lane lines of roadways with more than two lanes.

The CO will designate the job-mix formula to be used for wedge and leveling courses at each location. Place wedge and leveling courses in maximum 3 inch lifts. Complete the wedge and leveling before starting normal paving operations.

Offset the longitudinal joint of one layer at least 6 inches from the joint in the layer immediately below. Make the longitudinal joint in the top layer along the centerline of two-lane roadways or at the lane lines of roadways with more than two lanes. For simple curve widening locations (widening only on one side) shift the centerline joint location such that the final layer is midway between the normal edge of shoulders. The shift from the staked centerline will be towards the widened lane one-half the total curve widening specified for the given station as shown in the plans.

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Use a Materials Transfer Vehicle (MTV) with storage and remixing capabilities on all mainline construction when placing asphalt concrete mixtures. The MTV will independently remix and deliver mixture from the hauling equipment to the paving equipment.

Furnish an MTV with the following capabilities:

- An unloading system to receive mixtures from the hauling equipment.
- A minimum storage capacity of 13 tons with a remixing system in the MTV storage bin.
- A discharge conveyor to deliver the mixture to the paver hopper.
- The MTV system cannot exceed maximum legal loadings on structures.

Acceptable Material Transfer Vehicles are:

- Barber Greene MTV-3500
- Roadtec SB-1500
- Roadtec SB-2500

In the event the MTV malfunctions during paving operations, the Contractor must suspend paving, however hot mix in transit and stored in the silo at the time of breakdown may be placed without the use of an MTV. Do not resume hot mix placement until the MTV is operational.

401.14 Compacting. Furnish at least 3 rollers. Furnish one roller each for breakdown, intermediate, and finish rolling. At least one roller will be pneumatic-tired. Size the rollers to achieve the required results. Operate rollers according to the recommendation of the manufacturer. Do not use diesel fuel or other petroleum derivatives as a release agent with any roller used to compact the asphalt mix.

Thoroughly and uniformly compact the asphalt surface by rolling. Do not cause undue displacement, cracking, or shoving. Continue rolling until all roller marks are eliminated and the required density is obtained. Do not roll the mix after the surface cools below 175°F.

Monitor the compaction process with nuclear density gauges calibrated to the control strip compaction test results. Compact to a pavement specific gravity (density) that is no less than 91 percent of the maximum specific gravity (density) determined according to AASHTO T 209.

Along forms, curbs, headers, walls, and other places not accessible to the rollers, compact the mix with alternate equipment to obtain the required compaction.

401.15 Joints, Trimming Edges, and Cleanup. Complete construction of adjacent traffic lanes to the same elevation within 24 hours. If drop offs are left overnight, sign the drop offs in excess of 2 inches with "Uneven Lane" warning signs and provide a 3:1 fillet for drop offs in excess of 4 inches.

At connections to existing pavements and previously placed lifts, make the transverse joints vertical to the depth of the new pavement. Form transverse joints by cutting back on previous run to expose the full-depth course.

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Apply an asphalt tack coat to the edge of the joint for both transverse and longitudinal joints according to Section 412.

Place the Superpave hot asphalt concrete mix as continuously as possible. Do not pass rollers over the unprotected end of a freshly laid mix.

Dispose of material trimmed from the edges and any other discarded asphalt mix according to Subsection 211.03(b).

401.16 Pavement Smoothness. Measure pavement smoothness using the following methods:

(a) Pavement smoothness (type I) for reconstructed and new roads. After final rolling, measure the smoothness of the final paved surface course before placement of any surface treatment. Measure in the middle portion of each lane.

Measure the traveled way parallel to the centerline according to FLH T 504 after mainline paving is completed. The Contractor will furnish a California type profilograph and the CO will direct and observe its operation. Operate the profilograph in the “mode” such that the plot produced can be reduced according to FLH T 504. Furnish personnel to operate the profilograph. Furnish the trace to the CO.

Exclude areas according to FLH T 504 from the profile ride index. Excluded 0.1 mile sections will not be used when determining upper specification limit (USL) and length for payment determination according to Subsection 401.19.

A profile ride index will be calculated for each 0.1 mile lane of traveled way using a zero blanking-band. The profile ride index will be determined according to FLH T 504.

The upper specification limit is 24 inches per mile for reconstructed and new roads. Bumps will be located using a 0.4 inch bump template. Defective areas are:

- (1) Bumps in excess of 0.4 inches in 25 feet.
- (2) 0.1 mile segments with profile ride index greater than 28.5 inches per mile.
- (3) Surfaces with a pay factor less than 0.75 as determined under Subsection 106.05.

All pavement surfaces will meet the requirements of (c) below.

(b) Pavement smoothness (type II) for overlay, recycle with overlay or milling with overlay projects. Measure the profile of the existing surface prior to construction traffic. The existing surface is the original surface before milling, or recycling. Measure the profile of the existing travel way parallel to the centerline according to FLH T 504. The existing profile ride index and standard deviation will be used in formulas at the end of this subsection to determine the upper specification limit (USL).

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Measure the traveled way parallel to the centerline according to FLH T 504 after mainline paving is completed. The Contractor will furnish a California type profilograph and the CO will direct and observe its operation. Operate the profilograph in the “mode” such that the plot produced can be reduced according to FLH T-504. Furnish personnel to operate the profilograph. Furnish the trace to the CO.

Exclude areas according to FLH T 504 from the profile ride index. Excluded 0.1 mile sections will not be used when determining upper specification limit (USL) and length for payment determination according to Subsection 401.19.

Measure the final profile ride index on the final riding surface. The profile ride index will be calculated for each 0.1 mile lane of traveled way using a zero blanking-band. The profile ride index will be determined according to FLH T 504.

The minimum calculated upper specification limit is 24 inches per mile for overlay, recycle with overlay, or milled with overlay projects. Bumps will be located using a 0.4 inch bump template. Defective areas are:

- (1) Bumps in excess of 0.4 inches in 25 feet.
- (2) 0.1 mile segments with profile ride index greater than 1.5 times the calculated upper specification limit using one of the formulas below, but not less than 24 inches per mile.
- (3) Surfaces with a pay factor less than 0.75 as determined under Subsection 106.05.

All pavement surfaces will meet the requirements of (c) below.

The minimum existing profile ride index is never less than 24 inches per mile for determining the upper specification limit in the following equations.

For one-lift placement of the final surface:

$$^{(1)}USL_1 = 0.71 * PRI_0 + 0.39 * Sd_0, \text{ but not less than 24 in/mile}$$

For two-lift placement of the final surface:

$$^{(1)}USL_2 = 0.50 * PRI_0 + 0.30 * Sd_0, \text{ but not less than 24 in/mile}$$

⁽¹⁾ Round to the nearest whole number.

Where:

- USL₁ = Upper specification limit for one lift (in/mile)
- USL₂ = Upper specification limit for two lifts (in/mile)
- PRI₀ = Existing surface profile ride index (in/mile)
- Sd₀ = Existing surface profile standard deviation

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Determined pay factor according to Subsection 106.05.

(c) Pavement smoothness (type III) using straightedge measurement. Use a 10 foot metal straight edge to measure at right angles and parallel to the centerline. Defective areas are surface deviations in excess of 0.2 inches in 10 feet between any two contacts of the straightedge with the surface.

(d) Defective area correction. Correct defective areas from (a), (b) and (c) above. Obtain approval for the proposed method of correction.

Re-measure corrected areas according to (a), (b) and (c) above. The smoothness pay factor will be recomputed after measurement.

401.17 Acceptance. Mineral filler and antistripping additive will be evaluated under Subsections 106.02 and 106.03.

Asphalt will be evaluated under Subsections 106.04 and 702.09.

Construction of the Superpave hot asphalt concrete pavement course will be evaluated under Subsections 106.02 and 106.04.

Asphalt content, density, VMA, and pavement smoothness will be evaluated under Subsection 106.05. Other aggregate and Superpave hot asphalt concrete mixture properties will be evaluated under Subsections 106.02 and 106.04. See Table 401-3 for minimum sampling and testing requirements and acceptance quality characteristic category.

(a) Asphalt content. The upper and lower specification limits are the approved job-mix formula target value ± 0.4 percent.

(b) Density. The lower specification limit is 91 percent of the maximum specific gravity (density) determined according to AASHTO T 209 as part of the job-mix formula evaluation specified in Subsection 401.03.

(c) VMA (Voids in Mineral Aggregate). See Table 401-1 for the lower specification limit.

(d) Pavement smoothness. See Subsection 401.16. The evaluation will be made after all defective areas are corrected. A subplot is a 0.1 mile section of the traveled way and a lot is the surface course of the entire project. The upper specification limit is determined according to Subsection 401.16.

(e) Aggregate gradation. The upper and lower specification limits are the approved job-mix formula target values plus or minus the allowable deviations shown in Table 703-14.

(f) VFA (Voids Filled with Asphalt). See Table 401-1 for the upper and lower specification limit.

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Measurement

401.18 Measure Superpave hot asphalt concrete pavement, asphalt binder, mineral filler, and antistrip additive by the ton.

Payment

401.19 The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay items listed below that are shown in the bid schedule except the Superpave hot asphalt concrete pavement contract unit bid price will be adjusted according to Subsection 106.05. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Payment for Superpave hot asphalt concrete pavement will be made at a price determined by multiplying the contract unit bid price by the material pay factor. The material pay factor is the lowest single pay factor determined for asphalt content, VMA, and density.

When the bid schedule contains a pay item for Superpave hot asphalt concrete pavement type I or II pavement smoothness, a separate adjustment will be made for pavement smoothness according to the following formula:

$$A = 32700(PF - 1.00)(L)$$

Where:

- A = Adjustment to contract payment in dollars for pavement smoothness.
- L = Length in lane miles of traveled way less excluded areas measured according to Subsection 401.16. Measure length to 2 decimal places.
- PF = Pay factor for smoothness with respect to the upper specification limit determined according to Subsection 106.05 after completion of corrective work.

Payment will be made under:

	Pay Item	Pay Unit
40103PGDB	Asphalt binder grade PG64-16	Ton
40105C	Antistrip additive type 3	Ton
40106ABBL	Superpave hot asphalt concrete pavement	Ton
40107	Material Transfer Vehicle	Lump sum

**TABLE 401-3
SAMPLING and TESTING**

Material or Property	Property or Characteristic	Category	Test Methods or Specifications	Frequency	Sampling Point
Superpave Hot Asphalt Concrete Pavement	Asphalt Content	I	AASHTO T 308 ⁽¹⁾	1 per 750 ton	Behind the laydown machine before rolling.
	VMA ⁽²⁾	I	AASHTO M 323, R 35, and T 312	1 per 750 ton	Behind the laydown machine before rolling.
	Core density ⁽³⁾	I	AASHTO T 166 and AASHTO T 209 ⁽⁴⁾	1 per 750 ton	In-place after compaction.
	Smoothness ⁽⁵⁾	I	FLH T 504	See Subsection 401.16	See Subsection 401.16
	Gradation	I ⁽⁶⁾	AASHTO T 308 ⁽¹⁾ and AASHTO T 30	1 per 750 ton	Behind the laydown machine before rolling.
	VFA	I ⁽⁶⁾	AASHTO M 323, R 35, and T 312	1 per 750 ton	Behind the laydown machine before rolling.
	Percent air voids at design gyrations N_{design}		AASHTO M 323, R 35, and T 312	1 per 750 ton	Behind the laydown machine before rolling.

⁽¹⁾ Modify AASHTO T308, parts 8.2 and 10.2 to allow the use of FLH 515, Moisture Determination Using a Microwave Oven. Use test method A.

Calculate the binder content by weighing the sample before and after the burn using a calibrated external balance.

⁽²⁾ For acceptance samples taken on site the acceptance parameters will be based on gyratory samples compacted to N_{design} .

⁽³⁾ Cut core samples from the compacted pavement and carefully remove using a core retriever. Fill and compact the sample holes with asphalt concrete mixture.

⁽⁴⁾ AASHTO T 209 on loose mix will be required only on the first three and one per day thereafter.

⁽⁵⁾ Applies only to final surface course.

⁽⁶⁾ After approval of the control strip (see Subsection 401.12), data will be used for informational purposes only, not for final pay determination. Testing will continue for duration of HACP production.

Section 405. - HOT ASPHALT TREATED BASE COURSE**Construction Requirements**

405.03 Composition of Mix (Job-Mix Formula). Delete the first paragraph and substitute the following:

Furnish a mixture of aggregate, asphalt cement, and additives that meets the applicable aggregate gradation in Table 703-2a and the mix design parameters in Table 405-1.

Asphalt binder grade is designated as shown in AASHTO MP-1, PG 64-16

A minimum of one percent lime conforming to subsection 702.08 will be required in the Hot Asphalt Treated Base Course mixture.

The mix design used to construct previous projects 6(3) and 200(1) using the PTA quarry is posted on the web at: <http://www.cflhd.gov/procurement/construction/advertised-projects.cfm>

Table 405-1

Hot Asphalt Treated Base Course Mix Requirements

Design Parameters	Specification
(a) Marshall (AASHTO T 245)	
(1) Compaction, number of blows per side	75
(2) Stability, pounds minimum	2000
(3) Flow, 0.01 inches	8 - 16
(4) Percent Air Voids ⁽¹⁾	3 – 6
(5) Voids in Mineral Aggregate (VMA) % minimum	13.0
(b) Moisture Susceptibility (AASHTO T 165 and T 167 or AASHTO T 283)	
(1) Retained strength, % minimum	70

⁽¹⁾ The percent of air voids are based on AASHTO T 166, AASHTO T 209 and AASHTO T 269.

405.05 Construction Add the following:

Add lime to the aggregate by method A, B, or C as follows. Use calibrated weighing or metering devices to measure the amount of hydrated lime and moisture added to the aggregate.

Method A - Add hydrated lime to the combined cold feed aggregate using an enclosed in-line cold feed mechanical pugmill mixer. The pugmill mixer will be twin-shaft, continuous mixing with adjustable mixing paddles. There will be no trace of unmixed lime after the lime and aggregate exit the pugmill.

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Method B - Add hydrated lime to the produced aggregates during stockpiling using a pugmill. Add twenty-five (25) percent of the lime to be added to the coarse aggregate stockpile, and add seventy-five (75) percent of the lime to be added to the fine aggregate stockpile. When more than two stockpiles are used, the distribution of lime per stockpile will be included in the mix design.

Minimum moisture content will be two (2) percent by dry weight for the coarse aggregate and four (4) percent by dry weight for the fine aggregate at the time the aggregates and lime are mixed.

Method C - Use a lime slurry consisting of one part hydrated lime and three parts water. The plant will be equipped with a mixing unit to allow mixing of the slurry and aggregate prior to entering the dryer or dryer drum.

Adjust the moisture of the coarse and fine aggregates, or combination of aggregates, to obtain uniform coating of the aggregate with the hydrated lime.

Prior to the production of hot asphalt treated base, obtain approval of synchronized metering and weighing devices used to introduce a constant rate of hydrated lime and water.

Add the following:

Furnish a Materials Transfer Vehicle (MTV) with storage and remixing capabilities on all mainline construction when placing asphalt concrete mixtures. The MTV will independently remix and deliver mixture from the hauling equipment to the paving equipment.

Furnish an MTV with the following capabilities:

- An unloading system to receive mixtures from the hauling equipment.
- A minimum storage capacity of 13 tons with a remixing system in the MTV storage bin.
- A discharge conveyor to deliver the mixture to the paver hopper.
- The MTV system cannot exceed maximum legal loadings on structures.

MTV systems not listed below but meeting the specified requirements must be approved by the CO.

Acceptable Material Transfer Vehicles are:

- Barber Greene MTV-3500
- Roadtec SB-1500
- Roadtec SB-2500

In the event the MTV malfunctions during paving operations, the Contractor must suspend paving, however hot mix in transit and stored in the silo at the time of breakdown may be placed without the use of an MTV. Do not resume hot mix placement until the MTV is operational

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405.06 Acceptance. Delete the text of this subsection and substitute the following:

Mineral filler and antistrip additives will be evaluated under Subsections 106.02 and 106.03.

Asphalt will be evaluated under Subsections 106.04 and 106.03.

Construction of the hot asphalt treated base course will be evaluated under Subsections 106.02 and 106.04.

Asphalt content, aggregate gradation, and density will be evaluated under Subsection 106.05. Other aggregate quality properties will be evaluated under Subsections 106.02 and 106.04. See Table 405-2 for minimum sampling and testing requirements.

(a) Asphalt content. The upper and lower specification limits are the approved job-mix formula target value ± 0.5 percent. See Table 405-2 for the acceptable quality characteristic category.

(b) Aggregate gradation. The upper and lower specification limits are the approved job-mix formula target values plus or minus the allowable deviations shown in Table 703-2a. See Table 405-2 for the acceptable quality characteristic categories.

(c) Density. The lower specification limit is 90 percent of the maximum specific gravity (density) determined according to AASHTO T 209 as part of the job-mix formula. See Table 405-2 for the acceptable quality characteristic category.

Payment

405.08 Add the following:

Asphalt binder contract unit bid price will be adjusted according to Subsection 109.06.

Payment will be made under:

	Pay Item	Pay Unit
40501E	Hot asphalt treated base course grading E	Ton
40504C	Antistrip additive, Type 3	Ton
40505PGDB	Asphalt binder, grade PG 64-16	Ton
40507	Materials Transfer Vehicle	Lump sum

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Table 405-1. Sampling and Testing. Delete the table and substitute the following:

**Table 405-2
Sampling and Testing**

Material or Product	Property or Characteristic	Category	Test Methods or Specifications	Frequency	Sampling Point
Hot asphalt treated base course	Asphalt content	I	AASHTO T 308 ⁽⁴⁾	1 per 500 tons for the first 5000 tons, then 1 per 750 ton thereafter.	Behind laydown machine before rolling
	Gradation ⁽¹⁾	I	AASHTO T 30		Behind laydown machine before rolling
	$\frac{3}{8}$ inch				
	No. 4				
	No 200	I	AASHTO T 166 and AASHTO T 209 ⁽³⁾	In place after compaction	
No 40	II				
Core density ⁽²⁾	I	AASHTO T 166 and AASHTO T 209 ⁽³⁾	One per day.	Behind laydown machine before rolling	
Marshall stability and Flow.	---	AASHTO T245			

⁽¹⁾ Use only sieves indicated for the specified gradation.

⁽²⁾ Cut core samples from the compacted pavement according to AASHTO T 230 method B. Fill and compact the sample holes with asphalt concrete mixture.

⁽³⁾ AASHTO T 209 on loose mix will be required on the first five and one per day thereafter. The maximum density will be adjusted each day to determine the in-place compaction based on cores.

⁽⁴⁾ Modify AASHTO T 308, parts 8.2 and 10.2 to allow the use of FLH T 515, Moisture Determination using a Microwave Oven.

Section 409. - ASPHALT SURFACE TREATMENT

Construction Requirements

409.10 Fog Seal. Add the following after the first sentence:

Unless otherwise noted on the plans, dilute the specified emulsion one part water to one part emulsified asphalt.

Measurement

409.14 Add the following:

The quantity of emulsion indicated in the bid schedule is an undiluted quantity.

Water for diluting fog seal according to Subsection 409.10 will not be measured for payment.

Indicate a breakdown of total emulsion and water added on the load invoices supplied to the CO for payment.

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Payment**409.15** Add the following:

	Pay Item	Pay Unit
40908BA	Fog Seal Grade CSS-1, CSS-1H, SS-1 or SS-1H	Ton

Section 411. - ASPHALT PRIME COAT**Description****411.01** Delete the second paragraph and substitute the following:

Prime coat asphalt grade is designated as shown in AASHTO M 140 or AASHTO M 208 for emulsified asphalt; AASHTO M 81 or AASHTO M 82 for cut-back asphalt; or Subsection 702.03(e) for other emulsified asphalts

Measurement**411.08** Delete the first paragraph and substitute the following:

Measure prime coat asphalt by the ton or by the gallon. When asphalt emulsion is used, water for dilution will not be measured for payment.

The quantity of emulsion indicated in the bid schedule is an undiluted quantity.

Indicate a breakdown of total emulsion and water added on the load invoices supplied to the CO for payment.

Payment**411.09** Add the following:

	Pay Item	Pay Unit
41101CM	Prime Coat, Grade CSS-1, CSS-1H, SS-1 or SS-1H	Ton

Section 412. - ASPHALT TACK COAT

Description

412.01 Delete the text and substitute the following:

This work consists of applying an emulsified asphalt or hot asphalt cement tack coat.

Tack coat emulsified asphalt grade will meet AASHTO T 140 or AASHTO T 208.

Tack coat asphalt cement grade will meet AASHTO M 20, M 226, or M 320

Construction Requirements

412.06 Asphalt Application. Delete the first sentence of the second paragraph and substitute the following:

Apply the diluted emulsified asphalt according to Subsection 409.08 at a rate of 0.03 to 0.15 gallons per square yard.

Measurement

412.08 Delete the text and substitute the following:

The quantity of emulsion indicated in the bid schedule is an undiluted quantity.

Water for diluting tack coat according to Subsection 412.06 will not be measured for payment.

The load invoices supplied to the CO for payment will indicate a breakdown of total emulsion and water added.

Payment

412.09 Add the following:

Pay Item	Pay Unit
41201CM Tack Coat Grade CSS-1, CSS-1H, SS-1 or SS-1H	Ton

Section 602. - CULVERTS AND DRAINS

Description

602.01 Add the following: This work also consists of removing and resetting end sections.

Material

602.02 Delete reference to “Special grout backfill, 704.11” and substitute the following:

Lean concrete backfill

614

Construction Requirements

602.03 General. Delete the text and substitute the following:

Furnish culvert pipe with a wall thickness not less than that shown on the plans or determined from the fill-height tables included in the plans. Use the same material and coating on all contiguous pipe sections and special sections, such as elbows and branch connections. For culvert extensions, furnish the same material as the existing culvert.

The plans show the approximate size, location and length of culverts. Determine final size, location, skew, length, elevations, and grade according to Subsection 152.03(g). Do not order culvert material until the CO has accepted the final structure size, length, and alignment.

Perform excavation and backfill work under Section 209.

Add the following:

Do not use precast units unless included in the plans or approved by the CO.

602.05 Laying Metal Pipe. Delete the second paragraph and substitute the following:

Join pipe sections together with soil tight bell and spigot joints or coupling bands according to AASHTO M 36 or M 196. Limit the use of bell and spigot joints to slopes of 10 percent or less and limit the use of coupling bands with projections (dimples) to attaching prefabricated flared end sections.

602.06 Laying Plastic Pipe. Add the following:

Provide watertight joints for plastic pipe culverts.

Provide soil-tight bell and spigot joints for plastic pipe culverts.

If plastic end sections are used, reinforce and stiffen them such that inward buckling during construction is less than ½ inch with 2000 lb of force.

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Measurement**602.09** Add the following:

Measure remove and reset end sections by the each.

Payment**602.10** Add the following:

Pay Item	Pay Unit
60223 Remove and Reset End Section	Each

Section 609. – CURB AND GUTTER**Construction Requirements****609.06 Asphalt Concrete Curb.** Add the following:

Align the curb to be straight on the tangents and smooth along the curves and on the lines defined in the plans.

Measurement**609.10** Add the following:

No separate measurement will be made for the asphalt mixture included in asphalt curb.

Measure curb by the linear foot.

Section 614. - LEAN CONCRETE BACKFILL**Construction Requirements****614.03 Composition of Mix.** Delete Table 614-1 and substitute the following::

Table 614-1
Composition of Lean Concrete Backfill

Property	Specification
Cement content	94 lbs/yd ³ min.
Aggregate particle size	1 inch max.
Aggregate passing No. 200 sieve	10% max.
7-day compressive strength	220 psi max.

Section 619.-FENCES, GATES AND CATTLE GUARDS**619.01** Add the following:

This work also consists of the installation and removal of temporary construction fence.

Material**619.02** Add the following:

Temporary construction fence may be either plastic or wooden. Plastic fence shall conform to Subsection 710.11. Wooden fence shall be approximately 4 feet in height with ½ inch by ¾ inch wooden pickets on 4 inch centers woven together by five cables of two strands each of No. 12 gage galvanized steel wire.

For line posts use galvanized steel studded t posts with anchor plates. For end and in-line brace posts, use schedule 40 galvanized posts.

Alternate fence types may be used with approval.

Construction Requirements**619.03 Fences and Gates.** Add the following:**(c) Wire fences and gates.** Delete the text and substitute the following:

- (1) Brace panels.** Construct gate, end, and in-line brace panels as shown on the plans. Construct brace panels before attachment of woven wire to posts. Limit fence runs to no more than 660 feet between adjacent gate, end, or in-line brace panels. Install in-line brace panels at uniform intervals so the distance between any two brace panels is 660 feet or less. Construct posts within two (2) inches of plumb and such that deflection is no greater than one (1) inch at the top when a horizontal force of 80 pounds is applied.
- (2) Line posts.** Install posts as shown on the plans, facing the appropriate direction for woven wire attachment. Drive posts in a manner that will prevent damage to the post. Do not use posts that are damaged. Erect posts within two (2) inches of plumb and such that they are no more than three (3) inches from the stakeout line. Do not exceed the maximum post spacing shown on the plans and locate posts closer as the terrain dictates. Locate posts on all high points and grade breaks to prevent “bellying” of the woven wire. If required, drive a second post, adjacent to the first, to the depth necessary to provide adequate stability and secure it to the first post.
- (3) Woven wire.** Maintain a gap of no more than twenty-two (22) inches from the ground surface to the bottom of the woven wire. Handle woven wire to minimize damage to the galvanized coating

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Splicing of woven wire is permitted, provided that not more than two splices, spaced a minimum of 50 feet apart occur in any run of fence. Use wrap or telephone type splices for the longitudinal woven wire with each end wrapped around the other wire for not less than six complete turns.

- (4) Fastening woven wire.** Terminate woven wire at each gate, end, and in-line pull post and at existing posts when connecting to existing fence. Wrap wire ends around posts and then itself for a minimum of four turns.

At line posts, fasten the woven wire to the post at the top, bottom, and at intermediate points not exceeding 12 inches apart. Use approved wire clips or ties to fasten wire securely to posts.

- (5) Gates.** Install gates as shown on the plans. Attach gates to posts with fittings requiring removal with tools only. Set the gate in the horizontal plane. Set gates to swing freely inward and/or outward and to open to at least 90 degrees.

Section 622. – RENTAL EQUIPMENT

Description

622.01 Add the following:

This work includes clearing of rock and other obstructions within the project clear zone as directed by the CO.

Construction Requirements

622.02 **Rental Equipment.** Add the following:

Type of equipment shall be as follows:

Truck, highway, 10-wheel, 3-axle, rear dump, 10-12 cubic yard minimum capacity.

Loader with backhoe, wheel type, 48-gallon minimum rated capacity bucket (24" width)

Front-end Loader, wheel type, minimum 4 cubic yard bucket

Bulldozer, equivalent to a Caterpillar D-9

Motor Grader, 12-foot minimum blade width, equivalent to a Caterpillar 140G.

Hydraulic Excavator, Track Type, 165 hp flywheel power, 1.3 cubic yard bucket, equivalent to a Caterpillar 225B, with hoe ram.

Section 625. – TURF ESTABLISHMENT

Delete the title and text of this Section and substitute the following:

Section 625. – REVEGETATION ESTABLISHMENT

Description

625.01 This work consists of mulching and watering and the control of weeds with the application of herbicides.

Material

625.02 Conform to the following Subsections:

Mulch	713.05
Erosion Control Mats	713.07(a)
Water	725.01

Herbicides. Prior to applying herbicides, obtain approval of the herbicide products for use on roadway sections passing through military lands from the U.S. Army Garrison Hawaii, Department of Public Works Installation Pest Management Coordinator (IPMC) or from the appropriate State agency for sections passing through State lands. Glyphosate products are recommended but must still be approved by the IPMC. Send product label from proposed herbicides to the IPMC.

Construction Requirements

625.03 Herbicides. Apply herbicides in conformance with the manufacturer’s recommendations. Notify the CO at least 24 hours prior to each application of herbicide and indicate the hours of application. Use a photosensitive dye that produces a contrasting color when sprayed on the ground that disappears between 2 to 3 days after application. Do not use dyes that stain any surfaces or injure plant or animal life. Do not apply when weather conditions, including wind, are unsuitable for application work. Application of herbicides must be done by a trained and certified herbicide applicator. Complete DD Form 1532-1 (pesticide use data) after application and submit to IPMC and State agency if required. Comply with all rules and regulations of agencies, which govern the use of herbicides.

625.04 Preparation. Mulch with Mulching, Hydraulic Method on roadside ditches and cut and fill slopes flatter than 2:1. Apply mulching within 14 days of placing conserved topsoil. Do not mulch or mat rock cut slopes as determine by the CO.

625.05 Watering. Provide moisture for 30 days after completion of placement of topsoil matting and mulching and during the local growing season, as directed by the CO. Moisturize topsoil mulching areas in such a way as to not cause any erosion. Provide CO with written plan

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on the method of moisturizing these surfaces. The moisturizing is to irrigate the revegetated slopes.

625.06 Protecting and Caring for Seeded Area. Protect and care for topsoiled areas including watering when needed until final acceptance. Repair all damage to topsoiled areas by placing new topsoil and remulching.

625.07 Acceptance. Mulch will be evaluated under Subsection 106.02 and 106.03. Revegetation establishment work will be evaluated under Subsection 106.02 and 106.04. Herbicide will be evaluated under Subsection 106.02.

Measurement

625.08 Measure mulching by the acre on the ground.

Delete the third paragraph and substitute the following:

Measure water by the M-gallon in the hauling vehicle. See Section 158.

Measure herbicide by the gallon.

Payment

625.09 The accepted quantities, measured as provide above, will be paid at the contract price per unit of measurement for the pay items listed below that are shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See subsection 109.05.

Include water for mulching in the mulching costs.

Payment will be under:

Pay Item	Pay Unit
62504B Mulching, hydraulic method	Acre
62508 Water	M-gallon
62514 Herbicide	Gallon

Section 630. – HIRED TECHNICAL SERVICES

Description

630.01 This work consists of furnishing qualified personnel, to perform survey and staking and/or technical work; ordered by the CO and not otherwise provided for under the contract.

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630.02 Workers and Equipment. Obtain approval of the length of a workday and workweek before beginning the work. Keep daily records of the number of hours worked. Submit the records along with certified copies of the payroll.

630.03 Additional Surveying Services. Furnish personnel, equipment, and material that conform to the requirements of Subsection 152.01. Survey according to Section 152. Survey and establish controls within the tolerances shown in Table 152-1, or within other tolerances as established by the CO.

Prepare field notes in an approved format. Furnish calculations. All field notes, supporting documentation, and calculations become the property of the Government upon completion of the work.

630.04 Hired Technical Services. Furnish qualified engineering personnel experienced in highway construction and design, capable of performing in a timely and accurate manner. Provide personnel with a minimum of NICET Level II certification in highway design and construction, or State (SHA) or industry certification-related design and construction equivalent to their intended responsibilities. Personnel with 2 years or more of recent job experience in the type of highway design and construction provided for under the contract may be used in lieu of certifications. Provide the names and relevant experience of all personnel. Furnish supporting tools and equipment (e.g., calculator, computer, and software, and appropriate and commonly-used drafting tools for the assigned task).

All calculations, notes, and supporting documentation become the property of the government upon completion of the work.

630.05 Acceptance. Additional surveying services will be evaluated under Section 152.

Hired technical services will be evaluated under Subsections 106.02 and 106.04

Measurement

630.06 Round portions of an hour up to the nearest half hour. Measure time in excess of 40 hours per week at the same rate as the first 40 hours.

Measure additional surveying services by the crew hour as ordered by the CO. For surveying services, the minimum field survey crew is two persons. Do not measure time spent in making preparations, performing calculations, plotting cross-sections and other data, and processing computer data, and other efforts necessary to successfully accomplish the ordered survey services.

Do not measure time for worker's transportation time to and from the project site.

Measure hired technical services by the hour as ordered by the CO for performing calculations, plotting cross-sections and other data, and processing computer data.

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Payment

630.07 The accepted quantities, measured as provided above, will be paid at the contract price per unit of measurement for the pay items listed below that are shown in the bid schedule that is shown in the bid. Payment will be full compensation for the work prescribed in this section. See Subsection 109.05.

Payment will be made under:

	Pay Item	Pay Unit
63001	Hired Technical Services	Hour
63003	Additional Surveying Services	Hour

Section 633. - PERMANENT TRAFFIC CONTROL**Description**

633.01 Delete the fourth paragraph and substitute the following:

Posts are designated as wood, aluminum, galvanized steel, or corrosion resistant steel.

Manufacture signs from aluminum panels according to Subsection 718.05.

Construction Requirements

633.05 Panels. Delete the first sentence and substitute the following:

Use type III, VII, VIII, or IX retroreflective sheeting.

Section 634. - PERMANENT PAVEMENT MARKINGS**Description**

634.01 Add the following:

This work also includes placing milled rumble strips.

Construction Requirements

634.03 General. Add the following to the last paragraph:

Remove markings using sandblasting or other methods that do not damage the surface or texture of the pavement. Make the removal pattern uneven so it does not perpetuate the outline of the

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removed pavement markings. Lightly coat sandblasted or removal areas on asphalt surfaces with emulsified asphalt.

Add the following:

Remove all conflicting pavement markings according to Subsection 635.13.

Do not allow more than 1-inch deviation from intended alignment of longitudinal pavement markings on tangents and curves with radii greater than 5,000 feet. Do not allow more than 2-inch deviation from intended alignment of longitudinal pavement markings on curves with radii of 5,000 feet or less. Correct misalignments by removing and reinstalling misaligned portion(s), plus an additional 25-foot segment from each end, within one working day after notification of misalignment by the Contracting Officer.

Place milled rumble strips before installation of pavement markings and raised pavement markers.

Construction Requirements

634.05 Waterborne Traffic Paint (Type B and C). Delete title and text of this Subsection and substitute with the following:

634.05 Waterborne Traffic Paint (Type B). (Option X)

(a) General. White and yellow traffic paint color determinations and specifications shall conform to requirements of the FHWA Color Tolerance Charts or alternate requirements specified in appendix to 23 CFR Part 655, Subpart F.

Premixed retroreflective white and yellow traffic paint shall include pigment, binder, solvent, and glass spheres. Paint shall be suitable for use as traffic markings on concrete and HMA pavements and shall be applied without addition of solvent. Binder shall be defined as pigment and vehicle alone (not including glass spheres). Spheres shall be defined as glass spheres incorporated in premixed compound. Premixed retroreflective white and yellow traffic paints shall be factory mixed and shall be ready for application using spray machines, without thinning, at spreading rate indicated in Table 634.01-1 - Spreading Rate.

Traffic paints shall be ground and mixed well, to uniform consistency, and shall not exhibit skinning, settling, thickening, or livering. Paint shall be applied through spray machine, without clogging.

Spreading rate for 4-inch-wide stripe shall conform to Table 29 755.01-1 - Spreading Rate.

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TABLE 634.01-1 - SPREADING RATE	
Premixed Retroreflective	17 gallons/mile
Instant Dry Premixed Retroreflective	16 gallons/mile plus 2 pounds dropon beads/gallon
Instant Dry	14 gallons/mile plus 6 pounds dropon beads/gallon

Paints shall be dried to elastic adherent finish. Paints shall not show appreciable darkening or discoloration with age. Volatile material shall have minimum solvent action on asphalt, and gums and nonvolatile components of vehicle shall dissolve entirely in volatile material. Volatile material shall not precipitate from solution on standing.

634.08 Thermoplastic Markings (Type H and I). Delete the title and text of this Subsection and substitute the following:

634.08 Thermoplastic Markings (Type I). (Option Y)

Thermoplastic Extrusion Pavement Marking.

(a) Equipment. Apply material to pavement by extrusion method. One side of the shaping die shall be the pavement surface and other three sides shall be contained by, or shall be part of equipment for heating and controlling flow of material.

Ensure continuous mixing and agitation of material. Use mixing and conveying parts, including shaping die that maintains material at plastic temperature and does not allow accumulation and clogging. Ensure equipment produces continuously uniform stripe dimensions. Use an applicator with cleanly and squarely cut off stripe ends. Pans, aprons, or similar appliances that the die overruns will not be allowed.

Apply a minimum 12 pounds of AASHTO M 247, Type 1, glass beads per 100 square feet or more as required to ensure total coverage of the entire surface of the completed stripe. Use an automatic bead dispenser attached to liner. Equip bead dispenser with automatic cutoff control synchronized with cutoff of thermoplastic material.

Use equipment that provides for varying die widths to produce varying widths of traffic markings.

Provide kettle for melting and heating composition. Equip kettle with automatic thermoplastic control device so that heating can be done by controlled heat transfer liquid rather than direct flame. Equip and arrange applicator and kettle according to National Fire Underwriters requirements.

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Use a mobile and maneuverable applicator that is capable of following straight lines and making curves in true arcs. Use applicator capable of containing minimum of 125 pounds of molten material.

(b) Application. Clean off dirt, blaze, paint, tape, and grease. Apply thermoplastic extrusion pavement marking only when pavement surface is dry and when the pavement and air temperature are above 50⁰ F. Extrude the thermoplastic at 412.5⁰ F. +/- 12.5⁰ F. or as recommended by the manufacturer.

Use equipment that can apply material in variable widths from 2 inches to 12 inches. Apply material for full width of stripe in one application or pass.

Apply at a rate to ensure the dry line thickness, as viewed from a lateral cross section, shall measure not less than 3/32 inch at the edges, and not less than 1/8 inch in the center. Verify and document line thickness by means of physical measurements at a minimum frequency of one per 2,500 feet of extruded line. At the end of each day’s production, provide documentation of the measurements to the CO. Obtain approval from the CO for the method of physical measurement prior to beginning work.

Provide finished lines with well-defined edges, free of waviness.

Payment

634.14 Add the following:

	Pay Item	Pay Unit
63406	Pavement markings, symbols	Each
63408	Rumble Strips	Mile

Section 635. - TEMPORARY TRAFFIC CONTROL

Description

635.01 Add the following: This work also consists of submitting a traffic control plan for maintaining public traffic during the construction of the connection at station 1000+00 to 17+00 and the connection at station 361+00.

Construction Requirements

635.03 General Add the following to the first paragraph:

Use barricades, cones, tubular markers, drums, portable sign supports, vertical panels, truck mounted attenuators, and temporary crash cushions that meet crash testing requirements of

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NCHRP 350 or that have been accepted by the FHWA for nation-wide use. Submit a written certification that traffic control devices in use on the project meet crash-testing requirements. Information regarding NCHRP 350 and crash-tested FHWA accepted work zone traffic control devices can be found at:

<http://safety.fhwa.dot.gov/fourthlevel/hardware/wzd.htm>.

Add the following:

Submit the traffic control plan for the connection at station 1000+00 to 17+00 and 361+00 to the C0 for review 30 days prior to start of work at those locations. For each location, submit the following:

- (1) Detailed traffic control implementation drawings and alternate traffic control proposals according to 104.03
- (2) Placement and location of all signs, barrels, cones, and all traffic control devices as applicable to the proposed plan
- (3) Sequencing of connection construction and movement of traffic within the construction limits.

Maintain a minimum of 3-inches of aggregate base meeting the requirement of Section 301 or 308 for the full width of travel way on the temporary connections when open to public travel.

(i) Furnish temporary traffic control devices that meet the NCHRP Report 350, Recommended Procedures for Safety Performance and Evaluation of the Highway Features, crashworthiness standards.

635.05 Barricades. Delete the second sentence and substitute the following:

Use type III retroreflective sheeting.

Add the following:

Use sandbags to weigh down the Type II barricades.

635.06 Cones and Tubular Markers. Delete the third sentence and substitute the following:

Use type III or VI retroreflective sheeting.

635.07 Construction Signs. Delete the first sentence and substitute the following:

Use type III, VII, VIII, or IX retroreflective sheeting. Provide the same type of sheeting on all post-mounted construction signs that pertain to the project.

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635.08 Drums. Delete the third sentence and substitute the following:

Use type III retroreflective sheeting.

635.09 Flaggers. Delete the first sentence and substitute the following:

Furnish flaggers certified by ATSSA, the National Safety Council, the International Municipal Signal Association or a state agency.

635.11 Temporary Concrete Barriers. Delete the title and text of this Subsection and substitute the following:

635.11 Temporary Barriers, Water filled.

Use barriers that meet all requirements of NCHRP 350 and are compliant to TL-2 level or have been accepted by the FHWA for nation-wide use.

Moving temporary barrier will be subsidiary to temporary barrier item.

635.13 Temporary Pavement Markings and Delineation. Delete the text of this Subsection and substitute the following:

Before opening a pavement surface to traffic, remove all conflicting pavement markings by sandblasting or other methods that do not damage the surface or texture of the pavement. Make removal pattern uneven so it does not perpetuate the outline of the removed pavement markings. Lightly coat sandblasted or removal areas on asphalt surfaces with emulsified asphalt.

Provide pavement markings or delineation and signing according to Section 156, the MUTCD, and project plans. Install and maintain temporary pavement markings that are neat, crack free, true, straight, and unbroken.

For seasonal suspensions, apply permanent pavement marking pattern with traffic paint.

Install permanent pavement markings within 14 days. If permanent pavement markings are not placed within 14 days, provide, at no cost to the contract, additional temporary delineation equivalent to the permanent pavement marking pattern required by the contract. Do not apply temporary traffic paint to the final surface.

For temporary pavement markings, use preformed retroreflective tape, traffic paint, or temporary raised pavement markers as follows:

(a) Temporary Markings. For temporary pavement markings, use preformed retroreflective tape, traffic paint, or temporary raised pavement markers as indicated in the plans and as follows:

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(1) Preformed retroreflective tape. Apply according to the manufacturer's instructions. Remove all loose temporary preformed retroreflective tape before placing additional pavement layers.

(2) Temporary traffic paint. Apply temporary traffic paint at a 15-mil minimum wet film thickness (0.9 gallons per 100 square feet). Immediately apply type 1 glass beads on the paint at a minimum rate of 6 pounds per gallon of paint.

(3) Raised pavement markers. When chip seals, slurry seals, or tack coats are used after marker placement, protect the markers with an approved protective cover, which is removed after the asphalt material is sprayed.

Remove all temporary pavement markers before placing additional pavement layers. Remove all temporary pavement markings from the surface course before placing permanent pavement markings.

(b) Delineation for Unmarked Pavements with Vehicle Positioning Guides. For ADT's greater than 1000, vehicle positioning guides may be used in lieu of temporary markings for the delineation of unmarked pavements for a period of no longer than 3 days. For ADT's of 1000 or less, vehicle positioning guides may be used in lieu of temporary markings for the delineation of unmarked pavements for the full 14 day temporary marking period.

For unmarked pavements, install signing and vehicle positioning guides as indicated on plan sheet 635-3. Use vehicle positioning guides that meet the requirements of Subsection 718.21(b), raised pavement markers.

Remove all vehicle positioning guides before placing additional pavement layers. Remove all vehicle positioning guides from the surface course before placing permanent pavement markings.

635.17 Pavement Patch. Delete the text of this Subsection and substitute the following:

Furnish an asphalt mix according to Section 401, 402, or 417 to repair potholes and rough spots in the traveled way of the existing Saddle Road between milepost 34 to 42. Perform daily inspections for potholes and repair within 5 days of discovery. Repair sites immediately that present a safety hazard to the public. To repair potholes, fill with asphalt mix to a level approximately ½" higher than the surrounding existing pavement surface. Compact with two passes of vehicle tire. Do not sawcut potholes prior to filling.

635.18 Variable Message Signs. Delete the text of this Subsection and substitute the following:

Conform to the standards and guidance of MUTCD Section 6F.52, Portable Changeable Message Signs.

Measurement**635.26****(d) Add the following:**

“DO NOT PASS”, “PASS WITH CARE”, and “NO CENTER STRIPE” signs required to be used with vehicle positioning guides are subsidiary to the temporary pavement marking item. Do not measure these signs as construction signs.

(k) Delete the text and substitute the following:

Measure temporary pavement markings by the linear foot along the centerline of the roadway. Measure temporary pavement markings as a single measurement, inclusive of all markings, from end to end regardless of color, material type, or number of lines. Do not deduct for standard gaps between stripes. Measure only one application of temporary pavement markings per lift.

Measure vehicle positioning guides used at the option of the Contractor in lieu of temporary markings as equivalent temporary pavement markings. When vehicle positioning guides exceed the period of use stated in the plans, provide additional temporary or permanent pavement markings at no cost to the Government. Measure vehicle positioning guides by the linear foot along the centerline of the roadway. Measure as a single measurement, inclusive of all markings, from end to end regardless of material type, gaps or number of lines. Measure only one application of vehicle positioning guides per lift. “DO NOT PASS”, “PASS WITH CARE”, and “NO CENTER STRIPE” signs required to be used with vehicle positioning guides are subsidiary to the temporary pavement marking item. Do not measure these signs as construction signs.

(m) Delete the text and substitute the following:

Measure pavement marking removal by the square foot of line removed.

(r) Delete the text and substitute the following:

Measure variable message signs by the day.

Add the following:

Measure Traffic and Safety Supervisor by the week (7 consecutive days, beginning and ending at midnight on the same day of the week) for the work described in Subsection 156.08.

Add the following:

Traffic control plan for connections at station 1000+00 to 17+00 and 361+00 will not be measured for payment.

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Aggregates used at connections at station 1000+00 to 17+00 and 361+00 will not be measured for payment.

Payment

635.27 Add the following:

	Pay Item	Pay Unit
63519A	Pavement Marking Removal	SQFT
63524A	Variable Message Sign	Day
63539C	Traffic and Safety Supervisor	Week

Section 636. – SIGNAL, LIGHTING, AND ELECTRICAL SYSTEMS

Construction Requirements

636.06 Installation of Signal and Lightening Systems. Add the following:

Provide Solar powered 12-inch DC LED lamp flashing beacons meeting the requirements of Section 4k of the MUTCD at the location shown in the plans. Install according to manufacturer's recommendations.

Payment

636.16 Add the following:

	Pay Item	Pay Unit
63637	Flashing Beacon	Each

Section 702. - ASPHALT MATERIAL

702.03 Emulsified Asphalt. Add the following:

(e) **Other emulsified asphalts.** Other emulsified asphalts not covered by items (a) through (d) will conform to the following:

- | | |
|---|--------------|
| (1) Saybolt furol viscosity at 122°F, AASHTO T 59 | 15 – 150 sec |
| (2) Settlement, AASHTO T 59 | 1% max. |
| (3) Residue by distillation, AASHTO T 59 | 65% min. |

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(4) Oil Distillate by volume, AASHTO T 59 25% max.

(5) Solubility in trichloroethylene, AASHTO T 44 97.5 % min.

702.04 Application Temperatures. Delete Table 702-1, and substitute the following:

**Table 702-1
Application Temperatures - Range °F**

Type and Grade Of Asphalt Material	Temperature Ranges Minimum - Maximum	
	Spraying Temperatures	Mixing Temperatures ⁽¹⁾
Cub-back asphalt-		
MC-30	85 - ⁽²⁾	---
RC or MC-70	120 - ⁽²⁾	---
RC or MC-250	165 - ⁽²⁾	135 - 175 ⁽³⁾
RC or MC-800	200 - ⁽²⁾	165 - 210 ⁽³⁾
RC or MC-3000	230 - ⁽²⁾	180 - 240 ⁽³⁾
Emulsified asphalt-		
RS-1	70 - 140	---
RS-2	125 - 185	---
MS-1	70 - 160	70 - 160
MS-2, MS-2h	-	70 - 160
HFMS-1, 2, 2h, 2s	70 - 160	50 - 160
SS-1, 1h, CSS-1, 1h	70 - 160 ⁽⁴⁾	70 - 160
CRS-1	125 - 185	---
CRS-2	140 - 185	---
CMS-2, CMS-2h	100 - 160	120 - 140
Asphalt binder-		
All grades	365 max.	365 max.

⁽¹⁾ Temperatures of mix immediately after discharge.

⁽²⁾ The maximum temperature at which fogging or foaming does not occur.

⁽³⁾ Temperature may be above flash point. Take precautions to prevent fire or explosion.

⁽⁴⁾ For fog seals and tack coats.

702.08 Antistrip Additive.

(c) **Type 3** Delete the text and substitute the following:

Furnish lime conforming to AASHTO M 303.

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Section 703. – AGGREGATE

703.02 Coarse Aggregate for Portland Cement Concrete. Delete the title and text of this Subsection and substitute the following:

703.02 Coarse Aggregate for Concrete. Conform to AASHTO M 80 class A including the restriction on reactive materials, except as amended or supplemented by the following:

- (a) Los Angeles abrasion, AASHTO T 96 40% max.
- (b) Adherent coating, FLH T 512 or ASTM D 5711 1.0% max.
- (c) Grading, AASHTO M 43 All sizes, except Nos. 8, 89, 9 or 10

703.03. Granular Backfill. Add the following:

- (c) **Granular Rock Backdrain.** Furnish granular rock backdrain conforming to Table 703-A.

**Table 703-A
Granular Rock Backdrain Gradation**

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 & T 11)
6 in.	100
4 in.	0.0 – 25
3/4 in.	0.0 – 15
No. 4	0.0 – 5.0
No. 200	0.0 – 2.0

703.05 Subbase, Base and Surface Course Aggregate.

(a) **General.** Delete lines (3), (4), (5), and (6) and substitute the following:

- (3) Fractured faces, one or more, ASTM D 5821 50% min.
- (4) Free from organic matter and lumps or balls of clay

(b) **Subbase or base aggregate.** Delete the text and substitute the following:

In addition to (a) above, conform to the following:

- (1) Gradation, Grading E Item 30104E, Subbase Table 703-2
- (2) Gradation, Grading E, Item 40501 E, Asphalt treated base Table 703-2a

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(3) Liquid limit, AASHTO T 89

25 max.

Table 703-2a
Target Value Ranges for
Asphalt Treated Base Gradation

Sieve Size	Percent by Mass Passing
	Designated Sieve
	Grading Designation
	E
1½ inch	
1 inch	
¾ inch ⁽¹⁾	97-100
½ inch	*(7)
⅜ inch	* (7)
No. 4	* (6)
No. 40	* (4)
No. 200	4.0 – 8.0 (3)

⁽¹⁾ Statistical procedures do not apply.

(*) Submit target values for applicable sieves

() Allowable deviations (+/-) from the target values

703.17 Superpave Hot Asphalt Concrete Aggregate. Delete the text and substitute the following:

Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel conforming to the following:

(a) Los Angeles abrasion, AASTHO T 96 35% max.

(b) Sodium sulfate soundness loss of coarse and fine aggregate, 5 cycles, AASHTO T 104 12% max.

(c) Fractured faces, one or more, ASTM D 5821 90% min.

(d) Fine aggregate angularity, AASHTO T 304, method A 40% min.

(e) Flat and elongated particles, 1:5 ratio. +¾ inch sieve, calculated by mass, weighted average, ASTM D4791 10% max.

(f) Sand equivalent AASTHO T 176, referee method 45 min.

(g) Gradation. Size , grade, and combine the aggregate fractions inn the mix proportions that result in a composite blend between the control points for the appropriate nominal maximum size aggregate in Table 703-14. The nominal maximum size is one size greater than the first sieve to retain more than 10 percent of the combine aggregate. Test according to AASTHO T 11 and T 27.

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**Table 703-14
Superpave Gradation and Target Value Range**

Sieve Size	Percent by Mass Passing Designated Sieve	
	Grading Designation	
	$\frac{3}{4}$ inch ⁽¹⁾	$\frac{1}{2}$ inch ⁽¹⁾
1 inch	100	
$\frac{3}{4}$ inch	90-100	100
$\frac{1}{2}$ inch	90 max	90-100
$\frac{3}{8}$ inch		90 max
No. 4	*(6)	*(6)
No. 8	23-49 (6)	28-58 (6)
No. 16		
No. 30	*(4)	*(4)
No. 50	*(3)	*(3)
No. 100		
No. 200	2-8 (2)	2-10 (2)

⁽¹⁾ Submit target values for applicable sieves

(*) Submit target values for applicable sieves

() Allowable deviations (+/-) from the target values

Section 705. - ROCK

705.02 Riprap Rock. Delete the text and substitute the following:

Furnish hard, durable, angular rock that is resistant to weathering and water action and free of organic or other unsuitable material. Do not use shale, rock with shale seams, or other fissile or fissured rock that may break into smaller pieces in the process of handling and placing. Conform to the following:

- | | |
|--|-------------|
| (a) Apparent specific gravity, AASHTO T 85 | 2.40 min. |
| (b) Absorption, AASHTO T 85 | 4.0% max. |
| (c) Los Angeles abrasion, AASHTO T 96 | 50% max. |
| (d) Gradation for the class specified | Table 705-1 |

Add the following subsection:

705.07 Rock for Rockeries.

- (a) **General.** Furnish hard, angular, and durable rock that consists of intact blocks without open fractures, foliation, or other planes of weakness. Conform to the following:

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- | | |
|--|-----------|
| (1) Rock has sufficient hardness so that it cannot be scratched with a knife or scratched only with difficulty | |
| (2) Apparent specific gravity, AASHTO T 85 | 2.5 min. |
| (3) Absorption, AASHTO T 85 | 4.2% max. |
| (4) Los Angeles abrasion, AASHTO T 96 (500 rev) | 40% max. |
| (5) Coarse durability index, AASHTO T 210 | 50 min. |
| (6) Sodium sulfate soundness (5 cycles), AASHTO T104 | 10% max. |
| (7) Freeze-thaw loss (12 cycles), AASHTO T 103 | 10% max. |
- (b) Sizes and shapes.** Furnish angular rocks that are generally cubical, tabular, or rectangular in shape. Conform to the following:
- (1) The minimum rock length is shown in the Rockery Design Schedule in the plans.
 - (2) Rock width and height are greater than or equal to one-third of the rock length.
 - (3) The minimum rock dimension is 18 inches.
 - (4) The minimum cap rock weight is 600 pounds.
- (c) Color.** Furnish rocks with a color indigenous to the area. Submit at least three (3), 12 inch samples of rock to be used for rockery facing that are representative of rock color for approval by the CO. Furnish rocks free of machine-made scratches, mars, or other damage to the visible face.

Section 706. - CONCRETE AND PLASTIC PIPE**706.08 Plastic Pipe.** Delete the text and substitute the following:

Furnish perforated and nonperforated plastic pipe conforming to the following for the size and types specified. For watertight joints, conform to ASTM D 3212. For pipe culvert, furnish pipe conforming to types (a), (b), or (c) for the size specified.

(b) Corrugated polyethylene pipe. Delete the text and substitute the following:

Furnish 12 to 48 inch diameter pipe conforming to AASHTO M 294. For sanitary sewer applications, furnish AASHTO M 294, type S pipe with watertight joints.

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Section 710. - FENCE AND GUARDRAIL**710.02 Woven Wire.** Add the following:

Furnish class III galvanized (zinc-coated) fabric, conforming to AASHTO M 279 (ATSM A 116). Provide woven wire, style or design number 726-6-12 ½, in the heights specified in the plans, with 12 ½ gage minimum tensile strength

710.04 Fence Posts.**(c) Steel.** Add the following:

For end and in-line brace posts, furnish 1 ½” ID schedule 40 galvanized ASTM A53, grade B posts.

For line posts furnish high carbon, heavy duty, “T” section posts, 1.33 pounds per foot of length, conforming to ASTM A702-89. Hot dip galvanized posts. Furnish posts studded, embossed, or punched for wire attachment, with anchor plate and attachment clips, in the lengths indicated on the plans.

For gate posts furnish galvanized schedule 40 pipe in the sizes specified on the drawings. Unless otherwise allowed, shop weld brace assembly and paint welds with galvanizing paint.

Furnish hot dipped galvanized ball caps for the specified posts.

Section 713. - ROADSIDE IMPROVEMENT MATERIAL**713.05 Mulch.** Add the following:

(i) Mulching, Hydraulic Method. Furnish wood cellulose fibers derived from 100% recycled newspaper, cardboard and/or other paper sources. This Mulch shall be formulated for the specific purpose of allowing plants specific to the area to grow and shall not contain tackifiers, clays or other additives, binders or fillers except as noted below.

Add gypsum based Geobinder Airtol by Gypsum Solutions (800) 487-4431, or equal as approved by the CO two weeks prior to installation. Install per the manufacturer’s recommendations and as shown on the plans. The per acre application rate is as follows:

6,000 Pounds Geobinder
2,000 Pounds Hydraulic Mulch.

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713.07 Erosion Control Mats, Roving, and Geocell.**(a) Erosion control mats.****(3) Type 3 – Coconut mat.** Delete the text and substitute the following:

Provide composite turf reinforcement mat produced of 100% coconut fiber matrix incorporated into a permanent three-dimensional netting structure, as manufactured by North American Green (800) 722-2040 or equal as approved by the CO. Submit a sample mat for approval to the CO two weeks prior to installation. Install per the manufacturer's recommendations and as shown on the plans.

713.16 Silt Fence. Delete the text and substitute the following:

Conform to AASHTO M 288.

Section 714. – GEOTEXTILE AND GEOCOMPOSITE DRAIN MATERIAL**714.01 Geotextile.** Add the following:

For rockery construction with retained soil that has between 15 and 50 percent passing the No. 200 sieve, furnish Type I-B geotextile. If the fines content is outside this range, type I-C geotextile may be required.

Section 718. - TRAFFIC SIGNING AND MARKING MATERIAL**718.04 Steel Panels.** Delete the text in the first paragraph and substitute the following:

Furnish 0.079 inch continuous coat galvanized sheet steel blanks conforming to ASTM A 653. Mill phosphatize the zinc coating (designation G 90) to a thickness of 0.0035 ± 0.00175 ounces per square foot of surface area.

718.08 Signposts.**(b) Steel posts.** Delete the text and substitute the following:

(1) U-channel steel posts. Furnish flanged, channel, galvanized steel posts conforming to ASTM A 499, grade 60, and the following:

(a) Dimensions of U cross section

- | | |
|--|-----------|
| (1) Width of opened end of U including flanges | 3-3½ inch |
| (2) Width of closed end of U | 1-1½ inch |

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(3) Depth of U	1-2 inch
(4) Thickness of steel	0.10-0.20 inch

(b) *Punching.* Starting 1 inch from the top and extending the full length of the post, drill or punch 0.375 inch holes on 1 inch centers along the centerline of the bottom of the U. Remove all burrs and sharp edges.

(c) *Galvanizing after punching* AASHTO M 111

(2) Square tubular steel posts. Furnish square tubular galvanized steel posts conforming to ASTM A 1011, grade 55, or ASTM A 715, grade 60, and the following:

(a) *Dimensions of cross section*

(1) Outside dimensions	1¾ by 1¾ inch or 2 by 2 inch
(2) Wall thickness	0.08 inch
(3) Mass	5.0-6.0 lb/yd

(b) *Punching.* Starting 1 inch from the top and extending the full length of the post, drill or punch 0.43 inch holes on 1 inch centers along the centerline of all four sides, in true alignment and opposite each other directly and diagonally. Remove all burrs and sharp edges.

(c) *Galvanizing after punching*
(inside and outside of post) ASTM A 653, Z275

(3) Corrosion resistant steel posts. Furnish post and breakaway plates conforming to ASTM A 588 or ASTM A 242.

718.10 Hardware. Add the following:

Use stainless steel bolts, washers and nuts for sign installations. Use neoprene washers between the metal washers and the sign panels.

718.12 Delineator and Object Marker Retroreflectors.

(b) Type 2 (retroreflective sheeting). Delete the first sentence and substitute the following:

Furnish a fungus resistant type III, V, VII, VIII, or IX retroreflective sheeting with a class 1 or 2 adhesive backing conforming to ASTM D 4956.

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718.14 Waterborne Traffic Paint. Delete the text of this Subsection and substitute the following:

(a) **Tests.** Tests shall conform to the following:

(1) **Composition.** Paint with composition, formulation, and milling identical to sample shall be furnished and manufacturer's certificate of formulation shall be submitted.

TABLE 755.01-2 - TRAFFIC PAINT COMPOSITION			
	Premixed Retroreflective	Instant Dry Premixed Retroreflective	Instant Dry With Drop-On Beads
Wet Hiding Power ¹	Completely Hides Black	Completely Hides Black	Completely Hides Black
Weight per Gallons (lbs.) ²	+ 0.5 lbs of Orig. Submittal	+ 0.5 lbs of Orig. Submittal	+ 0.5 lbs of Orig. Submittal
No Pick-Up Time, (minutes) ³	2-30	2-30	2-30
Consistency, (K.U.) ⁴	70 - 90	70 - 90	70 - 90
Glass Sphere Content Premixed Paint, (lbs./gal.)	4.0 minimum	3.0 minimum	-
Specific Gravity of Drop-On Beads ⁵	-	2.40 - 2.60	2.40 - 2.60

1 Wet Hiding Power. Paint binder shall be applied with 0.008 inch Bird Film Application on Wet Hiding Power Form 10H, as supplied by the Leneta Company, 15 Whitney Road, Mahwah, New Jersey 07430-3129.

2 Weight Per Gallon. Paint shall weigh within ± 0.5 pound of weight of sample that was submitted for prequalification.

3 No Pickup Time. Paint shall be tested in accordance with ASTM D 711, except apply wet film to glass with 0.005 inch Bird Film Applicator.

4 Consistency. Consistency shall be tested in accordance with ASTM D 562. Paint shall have consistency determined by the Stormer Viscosimeter and expressed as Krebs unit at 77 degrees F.

5 Specific Gravity of Drop-On Beads. Specific gravity of beads shall be in range of 2.40 - 2.60 when tested in accordance with the following procedures:

(a) 100 grams of beads shall be placed in oven at 230 degrees F for one hour.

(b) Beads shall be removed and placed in desiccator until sample is cool.

(c) About 60 grams of beads shall be removed from desiccator and weighed accurately.

(d) Beads shall be poured slowly in clean 100 ml graduated cylinder containing 50 ml of isopropyl alcohol. Air shall not be entrapped among beads.

(e) Volume of beads minus 50 is total volume.

(f) Specific gravity shall be calculated as follows:

Specific Gravity = Weight of Sample / Volume of Sample

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TABLE 755.01-3 – GLASS SPHERES ¹							
Premixed Retroreflective Paint		Instant Dry Premixed Retroreflective With Drop-On Beads				Instant Dry With Drop-On Beads	
		Pre-Mixed		Drop-On			
Sieve Size	Percent Passing	Sieve Size	Percent Passing	Sieve Size	Percent Passing	Sieve Size	Percent Passing
#70	100	#70	100	#16	100	#16	100
#80	85-100	#80	85-100	#20	90-100	#20	90-100
#140	15-55	#140	15-55	#40	Oct-35	#40	Oct-35
#230	0-10	#230	0-10	#50	0-10	#50	0-10
-	-	-	-	#100	0-5	#100	0-5

¹ Glass spheres shall be colorless, clean, transparent, and free from milkiness and air bubbles. Less than 20 percent of glass spheres shall be irregular or fused-spheroids when tested in the State Laboratory. Beads shall have index of refraction of at least 1.50 when tested by liquid immersion method at 77 degrees F. Glass spheres shall have gradation indicated herein when tested with U.S. Standard Sieves in accordance with ASTM D 1214.

(2) Chemical Analysis. The CO will perform a chemical analysis of paints to check formulation by accepted method.

(b) Packing, Marking and Batching. Paints shall be delivered in clean, open-head drums. Each container shall bear label that includes the following information:

- (1) Name and address of manufacturer.
- (2) Shipping point.
- (3) Trademark or trade name.
- (4) Type of paint.
- (5) Formula.
- (6) Number of gallons.
- (7) Date of manufacture.
- (8) Batch number.

(c) Sampling and Testing. At least two paint samples from each paint batch, in one quart sealed containers, shall be furnished to the CO for testing.

Paint shall not be used until laboratory tests are completed, and paint is accepted by the CO.

(d) Qualification of Traffic Paint. Only those traffic paints on current list of prequalified paints shall be used. The CO will establish qualified paint list.

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718.17. Thermoplastic Markings. Add the following:

(a) Type 1 Thermoplastic. Meet AASHTO M249 supplemented as follows: Yellow pigment used shall not contain materials listed under the Resource Recovery and Conservation Act (RRCA), including lead, cadmium, mercury, and hexavalent chromium. Total content of these materials in striping compound shall not exceed 100 parts per million.

(b) Application Properties.

- (1) Material shall not scorch or discolor if kept at molten state temperatures for up to 4 hours.
- (2) After cooling to ambient temperature and without polymerization or other chemical change, compound shall form traffic marking stripe of quality and appearance as specified herein.
- (3) Material shall show no appreciable deformation or discoloration under local traffic conditions and in ambient or pavement temperatures ranging from 0⁰ F to 120⁰ F.
- (4) Drying time is defined as minimum elapsed time from marking application to time after which normal local traffic leaves no impression or imprint on applied marking, and after which stripe attains and retains required characteristics, including thickness. When applied at temperature range of 412.5⁰ F ± 12.5⁰ F, material drying time shall not exceed two minutes when the air temperature is 50⁰ F ± 3⁰ F. When air temperature is 90⁰ F ± 3⁰ F, drying time shall not exceed 10 minutes.
- (5) Material shall allow stripe to maintain original dimensions and placement. Exposed surface shall be free from tack. Applied marking shall not chip or debond under normal movement of pavement surface.
- (6) Pigment shall be dispersed evenly throughout material. Material shall be of uniform density and character, throughout its thickness.
- (7) Material shall not smear or spread at pavement temperatures of 140⁰ F or less.

(c) Specifications and Tests.

- (1) **Color.** Material color after heating for 240 ± 5 minutes at 425⁰ F ± 3⁰ F and cooled to 77⁰ F ± 3⁰ F shall meet the following requirements:
 - (a) **White.** Daylight reflectance at 45⁰ to 0⁰ shall be minimum of 75 percent. Chemical analysis of white titanium pigment shall be performed according to ASTM D 1394. Material shall have maximum yellowness index of 15.
 - (b) **Yellow.** Daylight reflectance at 45⁰ to 0⁰ shall be minimum of 45 percent. Yellow color shall match Federal Standard Number 595B, Color 13538.
- (2) **Water Absorption.** Material shall have less than 0.5 percent by weight of retained water when tested according to ASTM D 570, Procedure (a).
- (3) **Softening Point.** After heating for 240 ± 5 minutes at 425⁰ F ± 3⁰ F, material shall have softening point of 215⁰ F ± 15⁰ F when tested according to ASTM D 36.
- (4) **Specific Gravity.** Material shall have specific gravity of 1.9 to 2.5 when determined according to ASTM D 153, Method A. Kerosene shall be used as immersion liquid. Test sample shall be ground to pass No. 30 sieve.
- (5) **Impact Resistance.** Material shall have impact resistance of not less than 10 inch-pounds at 77⁰ F when tested as follows:

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- (a) Heat material for 240 ± 5 minutes at $425^{\circ} \text{F} \pm 3^{\circ} \text{F}$.
- (b) Cast material into bars of 1 square inch cross-sectional area, 3 inches long.
- (c) Place material with 1 inch extending above vise in cantilever beam (Izod Type) tester, using 25 inch-pound scale according to ASTM D 256.
- (6) **Bond Strength.** Material shall have bond strength of not less than 150 pounds per square inch. Two concrete blocks, 2 inches by 3 inches by 7 inches, shall be cemented together on 3-inch by 7-inch faces with 1/16- to 1/8-inch layer of thermoplastic traffic line material and tested according to ASTM D 4796.
- (7) **Indentation Resistance.** After heating material for 240 ± 5 minutes at $425^{\circ} \text{F} \pm 3^{\circ} \text{F}$, testing according to ASTM D 2240, and taking Shore Durometer readings after 15 seconds, material shall exhibit minimum hardness values, at designated testing temperature, as specified in Table Indentation Resistance.

TABLE INDENTATION RESISTANCE	
Temperature	Reading
115 degrees F	65
77 degrees F	95
40 degrees F	95

(d) **Packaging.** Clearly mark each unit container to clearly show color of material, process batch number or similar manufacturer's identification, manufacturer's name, plant address, and manufacture date. Each batch manufactured shall have its own, unique number. Label shall warn user that material shall be heated to $412.5^{\circ} \text{F} \pm 12.5^{\circ} \text{F}$ during application. Deliver material to a designated area in unit containers, such as sacks or bags, as processed by manufacturer; and shall weigh more than 24 pounds but less than 52 pounds, or as directed by the CO.

(e) **Warranty.** Furnish a warranty meeting the requirements of Hawaii Department of Transportation Standard Specification (latest edition) Section 755.05. Upon acceptance of the project, the warranty will automatically transfer to the Hawaii Department of Transportation. Meet all warranty requirements.