

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

OFFICE ENGINEER

1727 30th Street MS-43

P.O. BOX 168041

SACRAMENTO, CA 95816-8041

FAX (916) 227-6214

TTY 711

*Flex your power!
Be energy efficient!*

April 12, 2013

02-Las-395-56.5/R61.0

02-3C0724

Project ID 0212000038

ACNH-S395(240)E

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN LASSEN COUNTY AT AND NEAR JOHNSTONVILLE FROM 0.1 MILE NORTH OF SUNNYSIDE ROAD TO 0.1 MILE SOUTH OF ROUTE 36.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on Tuesday, April 23, 2013.

This addendum is being issued to revise the Notice to Bidders and Special Provisions, the Bid book and the Federal Minimum Wages with Modification Number 7 dated 4/12/2013.

In the Special Provisions, Section 39, "Hot Mix Asphalt," is replaced as attached.

In the Bid book, in the "Bid Item List," Item 18 is revised as attached.

To Bid book holders:

Replace page 3 of the "Bid Item List" in the Bid book with the attached revised page 3 of the Bid Item List. The revised Bid Item List is to be used in the bid.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

Addendum No. 1
Page 2
April 12, 2013

02-Las-395-56.5/R61.0
02-3C0724
Project ID 0212000038
ACNH-S395(240)E

This addendum, attachments and modified wage rates are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/02/02-3C0724

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,



JOHN BULINSKI
District Director

Attachments

39 HOT MIX ASPHALT

Add to section 39-1.01:

Produce and place RHMA-G under the QC/QA construction process.

Add to section 39-1.01A:

For HMA Type A, B, and HMA with warm mix asphalt technology do not pave on the traveled way between November 1 and May 1 if:

1. The quantity of HMA is greater than 1000 tons or
2. The project elevation is greater than 1500 feet

For HMA-O, RHMA-G, RHMA-O, or RHMA-O-HB do not pave on the traveled way between September 15 and May 1.

Replace the 1st paragraph of section 39-1.02B with:

Tack coat must comply with the specifications for asphaltic emulsion or asphalts. Use CRS2, CQS1, asphalt binder, or PMCRS2 asphaltic emulsion.

Add to section 39-1.02C:

Asphalt binder mixed with asphalt modifier and CRM for asphalt rubber binder must be PG 64-16.

Add to section 39-1.02E:

Aggregate for RHMA-G must comply with the 3/4-inch RHMA-G gradation.

If aggregate source is from Modoc, Siskiyou, or Shasta County, submit aggregate samples to the Engineer at least 30 days before the aggregate's intended use.

Treat HMA aggregate with lime using the slurry method.

Add to the 4th table of section 39-1.02E:

Aggregate Quality					
Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Sodium sulfate soundness (% max loss) ^c	California Test 214	25	25	25	25
Coarse durability index (min) ^d	California Test 229	65	65	65	65
Fine durability index (min)	California Test 229	50	50	50	50
Plasticity Index	California Test 204	<10	<10	<10	--

^c Requirement applies only if aggregate source is from Modoc, Siskiyou, or Shasta County.

^d Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 2nd row of the 4th table of section 39-1.02E with:

Aggregate Quality					
Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Los Angeles Rattler (% max.)	California Test 211				
Loss at 100 rev.		12	--	12	12
Loss at 500 rev.		25	25	25	25

Replace the 3rd paragraph of section 39-1.03A with:

Laboratories testing aggregate qualities, RAP, and preparing the mix design and JMF must be qualified under the Department's Independent Assurance Program. Take samples under California Test 125.

When doing your mix design take three 80 lb RAP samples from stockpiles under California Test 125. Split each sample into 2 parts:

1. Each part must weigh at least 40 lb.
2. Submit 1 part to the Engineer with the JMF.
3. Use 1 part for your testing.

Add to the 1st table of the RSS for section 39-1.03B:

HMA Mix Design Requirements				
Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Optimum Bitumen Content (OBC)	California Test 367	--	--	7.0% min
Moisture susceptibility (minimum dry strength, psi)	California Test 371	100	100	100
Moisture susceptibility (tensile strength ratio, %) ^b	California Test 371	≥80	≥80	≥80

^b After lime treatment.

^c Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r , and absorption of fine aggregate.

Replace the 1st and 2nd rows of the 1st table of the RSS for section 39-1.03B with:

HMA Mix Design Requirements				
Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Air void content (%)	California Test 367	4.0	4.0	3.5
Voids in mineral aggregate (% min.)	California Test 367 ^c			
No. 4 grading		17.0	17.0	--
3/8" grading		15.0	15.0	--
1/2" grading		14.0	14.0	18.0-23.0
3/4" grading		13.0	13.0	18.0-23.0

Replace the 2nd table in the RSS for section 39-1.03B with:

**Additional HMA Mix Design Requirements
for RAP Substitution Rate Greater Than 15 Percent**

Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth)	AASHTO T 324 (Modified)			
PG-58		10,000	10,000	--
PG-64		15,000	15,000	
PG-70		20,000	20,000	
PG-76 or higher		25,000	25,000	
Hamburg wheel track (inflection point minimum number of passes)	AASHTO T 324 (Modified)			
PG-58		10,000	10,000	--
PG-64		10,000	10,000	
PG-70		12,500	12,500	
PG-76 or higher		15000	15000	

Add to section 39-1.03B:

If the project is greater than 1500 feet elevation, perform a mix design that produces the quality characteristic shown in the table when mixed with the asphalt used on the project in the amount determined to be optimum by California Test 367:

Quality Characteristic	Test	Requirement
Surface abrasion	California Test 360	Loss not to exceed 0.4 g/cm ²

Replace the 4th and 5th paragraphs of section 39-1.03C with:

For HMA Type A, B or RHMA-G submit test results with the JMF submittal for:

1. California Test 204 plasticity index
2. California Test 371 for treated and untreated HMA for:
 - 2.1. Tensile strength ratio
 - 2.2. Minimum dry strength
3. AASHTO T 324 (Modified), for RAP substitution greater than 15 percent

Replace the 6th paragraph of section 39-1.03C with:

For HMA Type A, B or RHMA-G submit the California Test 371 tensile strength ratio, California Test 371 minimum dry strength, and AASHTO T 324 (Modified) test results to:

1. The Engineer
2. Moisture_Tests@dot.ca.gov

Delete the last two paragraphs of the RSS for Section 39-1.03C.

Delete the last paragraph of section 39-1.03E.

Delete "If required," from the 5th item in the 2nd paragraph of the RSS for section 39-1.03G.

Replace the 3rd paragraph of the RSS for section 39-1.03G with:

With an accepted modified JMF submittal, the Engineer verifies each modified JMF within 10 business days of receiving all verification samples.

Replace the 4th paragraph of the RSS for section 39-1.03G with:

The Engineer verifies the modified JMF after the modified JMF HMA is placed on the project and verification samples are taken within the first 750 tons following sampling requirements in section 39-1.03E, "Job Mix Formula Verification." The Engineer tests verification samples for compliance with:

1. Stability as shown in the table titled "HMA Mix Design Requirements"
2. Air void content at
 - 2.1. design value ± 2.0 percent for HMA Type A and Type B
 - 2.2. design value ± 1.5 percent for RHMA-G
3. Voids in mineral aggregate as shown in the table titled "HMA Mix Design Requirements"
4. Voids filled with asphalt, report only
5. Dust proportion, report only
6. Optimum Bitumen Content
7. Tensile Strength Ratio
8. Minimum Dry Strength
9. Hamburg Wheel Track for RAP substitution greater than 15 percent, as shown in the table titled "Additional HMA Mix Design Requirements for RAP Substitution Rate Greater Than 15 Percent"

Replace the last paragraph of the RSS for section 39-1.03G with:

The Engineer deducts \$4,000 from payments for each modified JMF verification.

Add to section 39-1.08A:

On the first production day and once during production of the first 5,000 tons, submit:

1. Samples split from your HMA production sample for California Test 371 to:
 - 1.1 The Engineer
 - 1.2 The Transportation Laboratory, Attention: Moisture Test.
2. The California Test 371 results to:
 - 2.1 The Engineer
 - 2.2 Moisture_Tests@dot.ca.gov

After the 1st production day and production of the first 5,000 tons, submit the California Test 371 results for each 5,000 tons to:

1. The Engineer
2. Moisture_Tests@dot.ca.gov

Add to section 39-1.11A of the RSS for section 39-1.11:

Place RHMA-G only when the atmospheric temperature is 70 degrees F or greater.

Use a material transfer vehicle (MTV) if:

1. The project quantity of hot mix asphalt to be paved is greater than 1000 tons, and
2. Any of the following exists:
 - 2.1. Paving is allowed and the atmospheric temperature is below 70 degrees F.
 - 2.2. Time from discharge to truck at the HMA plant until transfer to the paver's hopper is 90 minutes or greater.

The MTV must:

1. Either receive HMA directly from the truck or use a pickup head to load it from a windrow than can be deposited on the roadway surface for a maximum of 100 feet in length.
2. Remix the HMA, with augers, before loading the paver.
3. Transfer HMA directly into the paver's receiving hopper or feed system.
4. Have sufficient capacity to prevent stopping the paver.

The MTV requirements will not apply to replace asphalt concrete surfacing under section 39-1.21.

Replace the 2nd, 3rd, and 4th paragraphs of section 39-1.11B(1) of the RSS for section 39-1.11 with:

Place HMA on adjacent traveled way lanes so that at the end of each work shift the distance between the ends of HMA layers on adjacent lanes is from 5 to 10 feet. Place additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. You may place Kraft paper or another authorized bond breaker under the conform tapers to facilitate the taper removal when paving operations resume.

Delete section 39-1.11B(2) of the RSS for section 39-1.11.

Add to section 39-1.11D of the RSS for section 39-1.11:

Pave shoulders adjacent to the lane before opening a lane to traffic.

Replace the headings and paragraphs in section 39-1.12 with:

39-1.12A General

Section 39-1.12 includes specifications for measuring pavement smoothness with an inertial profiler (IP) and straightedge, analyzing the data with FHWA's engineering software ProVAL, and correcting deficient smoothness. Grinding equipment used for smoothness correction must comply with Section 42-3.03B.

Test pavement smoothness using an IP except use a 12-foot straightedge at the following locations:

1. Traffic lanes less than 1,000 feet in length including ramps, turn lanes, and acceleration and deceleration lanes
2. HMA pavement within 3 feet from and parallel to the construction joint formed between curbs, gutters, or existing pavement
3. Areas within 15 feet of manholes
4. Shoulders
5. Weigh-in-motion areas
6. Miscellaneous areas such as medians, gore areas, turnouts, and maintenance pullouts

Where IP testing is required, pavement smoothness for each lane must be determined by the international roughness index (IRI) for the left and right wheel paths in an individual lane and then averaging the results. The average of the IRIs from the left and right wheel paths for the same lane is the mean roughness index (MRI) of the lane. The wheel paths are a pair of lines 3 feet from and parallel to the edge of a lane. Left and right wheel paths are based on the direction of travel.

Where IP testing is required, identify areas of localized roughness. Areas of localized roughness must be identified using the ProVAL smoothness assurance analysis by calculating continuous IRI for each wheel path with a 25-foot interval using a 250 mm filter.

Interpret references to "must-grinds" as "localized roughness" and "PI₀" as "MRI" in the RSS for section 39.

39-1.12B Submittals

At least 5 business days before start of initial profiling or changing profiler or operator, submit:

1. IP certification issued by Texas Transportation Institute. The certification must be not more than 12 months old.
2. Operator certification for the IP issued by Texas Transportation Institute. The certification must be not more than 36 months old.
3. List of manufacturer's recommended test procedures for IP calibration and verification.

Within 2 business days after cross correlation testing, submit ProVAL profiler certification analysis report for cross correlation test results performed on test section to the Engineer and to the electronic mailbox address:

smoothness@dot.ca.gov

Within 2 business days after each day of inertial profiling, submit profile data to the Engineer and to the electronic mailbox address:

smoothness@dot.ca.gov

Profiling data must include:

1. Raw profile data for each lane.
2. ProVAL ride quality analysis report for IRIs of left and right wheel paths of each lane. Submit in pdf file format.
3. ProVAL ride quality analysis report for MRIs of each lane. Submit in pdf file format.
4. ProVAL smoothness assurance analysis report for IRIs of left wheel path. Submit in pdf file format.
5. ProVAL smoothness assurance analysis report for IRIs of right wheel path. Submit in pdf file format.
6. GPS data file for each lane in GPS exchange. Submit in GPS eXchange file format.
7. Manufacturer's recommended IP calibration and verification tests results.
8. AASHTO IP calibration and verification test results including bounce, block, and distance measurement instrument (DMI).

Submit the raw profile data in unfiltered electronic pavement profile file (PPF) format. Name the PPF file using the following naming convention:

YYYYMMDD_TTCCRRR_D_L_W_S_X_PT.PPF

where:

YYYY = year

MM = Month, leading zero

DD = Day of month, leading zero

TT = District, leading zero

CCC = County, 2 or 3 letter abbreviation as shown in section 1-1.08

RRR = Route number, no leading zeros

D = Traffic direction as NB, SB, WB, or EB

L = Lane number from left to right in direction of travel

W = Wheel path as "L" for left, "R" for right, or "B" for both

S = Beginning station to the nearest foot (i.e., 10+20) or beginning post mile to the nearest hundredth (i.e., 25.06) no leading zero

X = Profile operation as "EXIST" for existing pavement, "INTER" for after prepaving smoothness correction, "PAVE" for after paving, and "CORR" for after final surface pavement correction

PT = Pavement type (i.e., HMA, RHMA, HMA-O, RHMA-O, RHMA-G, etc.)

Electronic PPF files that do not follow this standardized naming convention will be rejected.

Within 2 business days of performing straightedge measurements, submit areas requiring smoothness correction. Identify locations of smoothness correction by:

1. Location Number
2. District-County-Route
3. Beginning station or post mile to the nearest 0.01 mile
4. For correction areas within a lane:
 - 4.1. Lane direction as NB, SB, EB, or WB
 - 4.2. Lane number from left to right in direction of travel
 - 4.3. Wheel path as "L" for left, "R" for right, or "B" for both
5. For correction areas not within a lane:
 - 5.1. Identify pavement area (i.e., shoulder, weight station, turnout)
 - 5.2. Direction and distance from centerline as "L" for left or "R" for right
6. Estimated size of correction area

39-1.12C Inertial Profiler Calibration and Verification Tests

IP equipment must display a current certification decal with expiration date.

Operate the IP according to the manufacturer's recommendations and AASHTO R57-10 at 1-inch recording intervals.

Notify the Engineer 2 business days before performing IP calibration and verification testing.

Conduct the following IP calibration and verification tests in the Engineer's presence each day before performing inertial profiling:

1. Block test. Verify the height sensor accuracy under AASHTO R57-10, section 5.3.2.3.
2. Bounce test. Verify the combined height sensor and accelerometer accuracy under AASHTO R57-10, section 5.3.2.3.2.
3. DMI test. Calibrate the accuracy of the testing procedure under AASHTO R56-10, section 8.4.
4. Manufacturer's recommended tests.

Conduct cross correlation IP verification test in the Engineer's presence before performing initial profiling. Verify cross correlation IP verification test at least annually. Conduct 5 repeat runs of the IP on an authorized test section. The test section must be on an existing asphalt concrete pavement surface 0.1 mile long. Calculate a cross correlation to determine the repeatability of your device under Section 8.3.1.2 of AASHTO R56-10 using ProVAL profiler certification analysis with a 3 feet maximum offset. The cross correlation must be a minimum of 0.92.

For each 0.1 mile section, your IRI values must be within 10 percent of the Department's IRI values. The Engineer may order you to recalibrate your IP equipment and reprofile. If your results are inaccurate due to operator error, the Engineer may disqualify your IP operator.

39-1.12D Acceptance Criteria

For areas that require pavement smoothness determined using an IP, the pavement surface must:

1. Have no areas of localized roughness with an IRI greater than 120 in/mi
2. Comply with the MRI requirements shown in the following tables for a 0.1 mile section:

HMA^a Pavement Smoothness Acceptance Criteria

HMA thickness	MRI requirement
> 0.20 foot	60 in/mi or less
≤0.20 foot	75 in/mi or less

^a Except OGFC

OGFC Pavement Smoothness Acceptance Criteria

OGFC placement on	MRI requirement
New construction, or HMA overlay	60 in/mi or less
Existing pavement	75 in/mi or less
Milled surface	75 in/mi or less

For areas that require pavement smoothness determined using a 12-foot straightedge, the HMA pavement surface must not vary from the lower edge of the straightedge by more than:

1. 0.01 foot when the straightedge is laid parallel with the centerline
2. 0.02 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane
3. 0.02 foot when the straightedge is laid within 24 feet of a pavement conform

Pavement smoothness may be accepted based on your testing in the absence of the Department's testing.

39-1.12E Smoothness Measurement

39-1.12E(1) General

Notify the Engineer of start location by station and start time at least 2 business days before profiling.

Remove foreign objects on the pavement surface before profiling.

39-1.12E(2) Inertial Profiler

Mark the beginning and ending station on the pavement shoulder before profiling. Stationing must be the same when profiling more than one surface.

While collecting the profile data to determine IRI, record the following locations in the raw profile data:

1. Begin and end of all bridge approach slabs
2. Begin and end of all bridges
3. Begin and end of all culverts visible on the roadway surface

Determine the MRI for 0.1-mile fixed sections using the ProVAL ride quality analysis with a 250 mm filter. Profile the left and right wheel paths of each lane. Calculate the MRI of each lane. A partial section less than 0.1 mile that is the result of an interruption to continuous pavement surface must comply with the MRI specifications for a full section. Adjust the MRI for a partial section to reflect a full section based on the proportion of a section paved.

Determine the areas of localized roughness using a continuous IRI for each wheel path with a 25-foot interval using a 250 mm filter. Localized roughness greater than 120 in/mi must be corrected regardless of the IRI values of a 0.1-mile section.

Determine the MRI of the HMA, except OGFC. If the MRI of the final pavement surface is greater than the MRI acceptance requirement in the table titled "HMA Pavement Smoothness Acceptance Criteria" in section 39-1.12D, correct to the MRI acceptance requirement in the table.

The final surface of HMA must meet MRI acceptance requirements in the table titled "HMA Pavement Smoothness Acceptance Criteria" in section 39-1.12D before placing OGFC.

Determine the MRI of the OGFC. If OGFC MRI is greater than the accepted value in the table titled "OGFC Pavement Smoothness Acceptance Criteria" in section 39-1.12D, correct to the MRI acceptance requirement in the table.

39-1.12E(3) Straightedge

Measure areas that require 12-foot straightedge. If the straightedge measurement is greater than the accepted value in section 39-1.12D, correct to the acceptance requirement.

39-1.12F Smoothness Correction

If the final surface of the pavement does not comply with section 39-1.12D, grind the pavement to within specified tolerances, remove and replace it, or place an overlay of HMA. Do not start corrective work until your method is authorized.

Smoothness correction of the final pavement surface must leave at least 75 percent of the specified HMA thickness. If ordered, core the pavement at the locations determined by the Engineer. Coring, including traffic control, is change order work. Remove and replace deficient pavement areas where the overlay thickness is less than 75 percent of the thickness specified as determined by the Engineer.

If you choose to correct OGFC, the Engineer determines if the corrective method causes raveling. OGFC that is raveling must be removed and replaced.

Corrected HMA pavement areas must be uniform rectangles with edges:

1. Parallel to the nearest HMA pavement edge or lane line
2. Perpendicular to the pavement centerline

On ground areas not to be overlaid with OGFC, apply fog seal coat under section 37-2.

Where corrections are made within areas requiring testing with IP, reprofile the entire lane length with the IP device.

Where corrections are made within areas requiring testing with a 12-foot straightedge, retest the corrected area with the straightedge.

39-1.12G Prepaving Inertial Profiler

Section 39-1.12G applies to existing asphalt concrete areas receiving an HMA overlay. Comply with section 39-1.12A–39-1.12C and 39-1.12E.

Before starting paving operations, perform prepaving IP measurements. Prepaving IP includes taking profiles of the existing pavement, analyzing the data with ProVAL to determine existing pavement IRI, MRI, and areas of localized roughness.

Identify areas of localized roughness greater than 140 in/mi.

39-1.12H Prepaving Grinding

Section 39-1.12H applies to existing asphalt concrete areas receiving an HMA overlay of less than or equal to 0.20 foot.

Correct areas of localized roughness greater than 140 in/mi.

Prepaving grinding day includes correcting areas of localized roughness, taking profiles of the corrected areas, and submitting profile data as specified in section 39-1.12B.

Notify the Engineer of those areas of localized roughness that cannot be corrected by prepaving grinding. The Engineer responds to your notification within 5 business days.

For those areas of localized roughness that cannot be corrected by grinding, the Engineer may order you to either (1) not correct the areas of localized roughness or (2) correct areas of localized roughness by a different method and take profiles of the corrected areas with an IP.

Corrective work not performed by prepaving grinding, including taking profiles of the corrected areas and associated traffic control, is change order work.

Correct prepaving areas of localized roughness that you predict will cause the final surface of HMA pavement to be noncompliant with the smoothness specifications. After correcting prepaving areas of localized roughness, take profiles of the corrected area and submit profile data as specified in section 39-1.12B.

Dispose of grinding residue.

Pave within 7 days of correcting areas.

The final pavement surface must comply with section 39-1.12D.

If ordered not to correct areas of localized roughness, the smoothness specifications do not apply to the final pavement surface placed in those areas.

Replace section 39-1.16 with:

39-1.16 RUMBLE STRIPS

39-1.16A General

Construct rumble strips in the top layer of HMA surfacing by ground-in methods.

39-1.16B Materials

Not Used

39-1.16C Construction

Select the method and equipment for constructing ground-in indentations.

Do not construct rumble strips on structures or approach slabs.

Construct rumble strips within 2 inches of the specified alignment. The grinding equipment must be equipped with a sighting device enabling the operator to maintain the rumble strip alignment.

Indentations must comply with the specified dimensions within 0.06 inch in depth and 10 percent in length and width.

The Engineer orders grinding or removal and replacement of noncompliant rumble strips to bring them within specified tolerances. Ground surface areas must be neat and uniform in appearance.

The grinding equipment must be equipped with a vacuum attachment to remove residue from the roadbed.

Dispose of removed material.

On ground areas, apply fog seal coat under section 37-2.

39-1.16D Payment

Rumble strips are measured by the station along the length of the rumble strips without deductions for gaps between indentations.

Replace section 39-1.17 with:

39-1.17 DATA CORES

39-1.17A General

39-1.17A(1) Summary

This work includes taking data cores and submitting the information.

Three business days before starting coring, submit proposed methods and materials for backfilling data core holes.

39-1.17A(2) Submittals

Submit the following to the Engineer and to Coring@dot.ca.gov:

1. Summary of data cores taken
2. Photograph of each data core

For each data core, the summary must include:

1. Project identification number
2. Date cored
3. Core identification number
4. Type of materials recovered
5. Type and approximate thickness of unstabilized material not recovered
6. Total core thickness
7. Thickness of each individual material to within:
 - 7.1 1/2 inch for recovered material
 - 7.2 1.0 inch for unstabilized material
8. Location including:
 - 8.1. County
 - 8.2. Route
 - 8.3. Post mile
 - 8.4. Lane number
 - 8.5. Lane direction
 - 8.6. Station

Each data core digital photograph must include a ruler laid next to the data core. Each photograph must include:

1. Core
2. Project identification number
3. Core identification number
4. Date cored
5. County
6. Route
7. Post mile
8. Lane number
9. Lane direction

39-1.17B Materials

Not Used

39-1.17C Construction

Take data cores that include the completed HMA pavement, underlying base, and subbase material. Protect data cores and surrounding pavement from damage.

Take 4- or 6-inch-diameter data cores:

1. At the beginning, end, and every 1/2 mile within the paving limits of each route on the project
2. After all paving is complete
3. From the center of the specified lane

On a 2-lane roadway, take data cores from either lane. On a 4-lane roadway, take data cores from each direction in the outermost lane. On a roadway with more than 4 lanes, take data cores from the median lane and the outermost lane in each direction.

Each core must include the stabilized materials encountered. You may choose not to recover unstabilized material, but you must identify the material. Unstabilized material includes:

1. Granular material
2. Crumbled or cracked stabilized material
3. Sandy or clayey soil

After submitting the data core summary and photograph, dispose of cores.

Replace section 39-1.19 with:

39-1.19 HOT MIX ASPHALT AGGREGATE LIME TREATMENT—SLURRY METHOD

39-1.19A General

39-1.19A(1) Summary

Treat HMA aggregate with lime using the slurry method and place it in stockpiles to marinate.

39-1.19A(2) Submittals

Determine the exact lime proportions for treated aggregate stockpiles and resulting combined aggregate. Submit them as part of the proposed JMF.

Submit the averaged aggregate quality test results to the Engineer within 24 hours of sampling.

Submit a treatment data log from the slurry proportioning device in the following order:

1. Treatment date
2. Time of day the data is captured
3. Aggregate size being treated
4. Wet aggregate flow rate collected directly from the aggregate weigh belt
5. Moisture content of the aggregate just before treatment, expressed as a percent of the dry aggregate weight
6. Dry aggregate flow rate calculated from the wet aggregate flow rate
7. Lime slurry flow rate measured by the slurry meter
8. Dry lime flow rate calculated from the slurry meter output
9. Authorized lime ratio for each aggregate size being treated
10. Actual lime ratio calculated from the aggregate weigh belt and the slurry meter output, expressed as a percent of the dry aggregate weight
11. Calculated difference between the authorized lime ratio and the actual lime ratio
12. Dry lime and water proportions at the slurry treatment time

Every day during lime treatment, submit the treatment data log on electronic media in tab delimited format on a removable CD-ROM storage disk. Each continuous treatment data set must be a separate record using a line feed carriage return to present the specified data on 1 line. The reported data must include data titles at least once per report.

39-1.19A(3) Quality Control and Assurance

The QC plan must include aggregate quality control sampling and testing during aggregate lime treatment. Sample and test in compliance with frequencies in the following table:

Quality characteristic	Test method	Minimum sampling and testing frequency
Sand equivalent	California Test 217	Once per 1,000 tons of aggregate treated with lime
Course durability index (D_c) (min) ^e	California Test 229	1 per 3,000 tons of aggregate treated with lime
Fine durability index (D_f) (min)	California Test 229	
Percent of crushed particles	California Test 205	As necessary and as designated in the QC plan
Los Angeles Rattler	California Test 211	
Fine aggregate angularity	California Test 234	
Flat and elongated particles	California Test 235	

Note: During lime treatment, sample coarse and fine aggregate from individual stockpiles. Combine aggregate in the JMF proportions. Run tests for aggregate quality in triplicate and report test results as the average of 3 tests.

^eRequirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

For any of the following, the Engineer orders proportioning operations stopped if you:

1. Do not submit the treatment data log
2. Do not submit the aggregate quality control data
3. Submit incomplete, untimely, or incorrectly formatted data
4. Do not take corrective actions
5. Take late or unsuccessful corrective actions
6. Do not stop treatment when proportioning tolerances are exceeded
7. Use malfunctioning or failed proportioning devices

If you stop treatment, notify the Engineer of any corrective actions taken and conduct a successful 20-minute test run before resuming treatment.

For the aggregate to be treated, determine the moisture content at least once during each 2 hours of treatment. Calculate moisture content under California Test 226 or 370 and report it as a percent of dry aggregate weight. Use the moisture content calculations as a set point for the proportioning process controller.

39-1.19B Materials

High-calcium hydrated lime and water must comply with section 24-2.02.

Before virgin aggregate is treated, it must comply with the aggregate quality specifications. Do not test treated aggregate for quality control except for gradation. The Engineer does not test treated aggregate for acceptance except for gradation.

The Engineer determines the combined aggregate gradation during HMA production after you have treated the aggregate. If RAP is used, the Engineer determines combined aggregate gradations containing RAP under Laboratory Procedure LP-9.

Treated aggregate must not have lime balls or clods.

39-1.19C Construction

39-1.19C(1) General

Notify the Engineer at least 24 hours before the start of aggregate treatment.

Treat aggregate separate from HMA production.

Do not treat RAP.

Add lime to the aggregate as slurry consisting of mixed dry lime and water at a ratio of 1 part lime to from 2 to 3 parts water by weight. The slurry must completely coat the aggregate.

Lime treat and marinate coarse and fine aggregate stockpiles separately.

Immediately before mixing lime slurry with the aggregate, water must not visibly separate from the aggregate.

Treat the aggregate and stockpile for marination only once.

The lime ratio is the pounds of dry hydrated lime per 100 lb of dry virgin aggregate expressed as a percentage. Water content of slurry or untreated aggregate must not affect the lime ratio.

The following aggregate gradations must have the lime ratio ranges shown in the following table:

Aggregate gradation	Lime ratio percent
Coarse virgin stockpiles ^a	0.4–1.0
Fine virgin stockpiles ^a	1.5–2.0
Combined virgin aggregate	1.0–1.5

^a Stockpiles containing predominately coarse aggregate are coarse aggregate stockpiles. Stockpiles containing predominately fine aggregate are fine aggregate stockpiles.

For OGFC, you may reduce the combined virgin aggregate lime ratio to 0.5–1.0 percent.

The lime ratio for fine and coarse virgin aggregate stockpiles must be within ± 0.2 percent of the lime ratio in the accepted JMF. The lime ratio must be within ± 0.2 percent of the authorized lime ratio when you combine the individual aggregate sizes in the JMF proportions. The lime ratio must be determined before the addition of RAP.

If 3 consecutive sets of recorded treatment data indicate deviation more than 0.2 percent above or below the lime ratio in the accepted JMF, stop treatment.

If a set of recorded treatment data indicates a deviation of more than 0.4 percent above or below the lime ratio in the accepted JMF, stop treatment and do not use the material represented by that set of data in HMA.

If 20 percent or more of the total daily treatment indicates deviation of more than 0.2 percent above or below the lime ratio in the accepted JMF, stop treatment and do not use the day's total treatment in HMA.

If you stop treatment for noncompliance, you must implement corrective action and successfully treat aggregate for a 20-minute period. Notify the Engineer before beginning the 20-minute treatment period.

39-1.19C(2) Lime Slurry Proportioning

Proportion lime and water with a continuous or batch operation.

The device controlling slurry proportioning must produce a treatment data log. The log consists of a series of data sets captured at 10-minute intervals throughout daily treatment. The data must be a treatment activity register and not a summation. The material represented by the data set is the quantity produced 5 minutes before and 5 minutes after the capture time. For the Contract's duration, collected data must be stored by the controller.

39-1.19C(3) Proportioning and Mixing Lime Slurry Treated Aggregate

Treat HMA aggregate by proportioning lime slurry and aggregate by weight in a continuous operation.

Marinate treated aggregate in stockpiles from 24 hours to 60 days before using in HMA. Do not use aggregate marinated longer than 60 days.

39-1.19D Payment

Payment for treating aggregates with lime slurry is included in payment for the HMA involved.

Replace section 39-1.21 with:

39-1.21 REPLACE ASPHALT CONCRETE SURFACING

39-1.21A General

Remove existing asphalt concrete surfacing and underlying base and replace with HMA. The Engineer determines the exact limits of replaced asphalt concrete surfacing.

39-1.21B Materials

HMA for replace asphalt concrete surfacing must be Type A.

Asphalt binder for the HMA must be PG 70-10.

The aggregate for the HMA must comply with the 3/4 grading.

39-1.21C Construction

Place replacement HMA under section 39-3.

Replace asphalt concrete in a lane before the lane is specified to be opened to traffic under section 12-4.

Before removing asphalt concrete, outline the replacement area and cut neat lines with a saw or grind to full depth of the existing asphalt concrete. Do not damage asphalt concrete and base remaining in place.

Dispose of removed material.

If the base is excavated beyond the specified plane, replace it with HMA. The Department does not pay for this HMA.

39-1.21D Payment

Replace asphalt concrete surfacing is measured based on the specified dimensions and any adjustments ordered.

You may request authorization to leave rejected replacement HMA in place. If authorized, you must accept a reduction in the payment for the rejected replacement HMA.

Replace section 39-1.30 with:

39-1.30 EDGE TREATMENT, HOT MIX ASPHALT PAVEMENT

39-1.30A General

Section 39-1.30 includes specifications for constructing the edges of HMA pavement as shown.

39-1.30B Materials

For the safety edge, use the same type of HMA used for the adjacent lane or shoulder.

39-1.30C Construction

The edge of roadway where the safety edge treatment is to be placed must have a solid base, free of debris such as loose material, grass, weeds, or mud. Grade areas to receive the safety edge as required.

The safety edge treatment must be placed monolithic with the adjacent lane or shoulder and shaped and compacted with a device attached to the paver.

The device must be capable of shaping and compacting HMA to the required cross section as shown. Compaction must be by constraining the HMA to reduce the cross sectional area by 10 to 15 percent. The device must produce a uniform surface texture without tearing, shoving, or gouging and must not leave marks such as ridges and indentations. The device must be capable of transition to cross roads, driveways, and obstructions.

For safety edge treatment, the angle of the slope must not deviate by more than ± 5 degrees from the angle shown. Measure the angle from the plane of the adjacent finished pavement surface.

If paving is done in multiple lifts, the safety edge treatment can be placed either with each lift or with the final lift.

Short sections of hand work are allowed to construct transitions for safety edge treatment.

For more information on the safety edge treatment, go to:

http://safety.fhwa.dot.gov/roadway_dept/pavement/safedge/

You can find a list of commercially available devices at the above Web site under "Frequently Asked Questions" and "Construction Questions."

39-1.30D Payment

Not Used

Add to the first table of the RSS for section 39-2.02B:

Minimum Quality Control—Standard Construction Process

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA type			
			A	B	RHMA-G	OGFC
Coarse durability index (min) ^{k,m}	California Test 229	1 per 3,000 tons during production,	65	65	65	65
Fine durability index (min) ^k	California Test 229	but not less than 1 per paving day	50	50	50	50

^k Obtain sample from stockpile before lime treatment.

^l Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r , and absorption of fine aggregate.

^m Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 7th, 10th, 14th, 18th and 19th rows of the first table of the RSS for section 39-2.02B with:

Minimum Quality Control—Standard Construction Process						
Quality characteristic	Test method	Minimum sampling and testing frequency	HMA type			
			A	B	RHMA-G	OGFC
Air void content (%) ^{c, f}	California Test 367	1 per 4,000 tons or 2 per 5 business days, whichever is greater	4 ± 2	4 ± 2	3.5 ± 1.5	--
Los Angeles Rattler (% max) ^k Loss at 100 rev. Loss at 500 rev.	California Test 211	1 per 3,000 tons during production, but not less than 1 per paving day	12 25	-- 25	12 25	12 25
Voids in mineral aggregate (% min) ^l No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367 ^l		17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 18.0–23.0	-- --
Moisture susceptibility (minimum dry strength, psi)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	100	100	100	--
Moisture susceptibility (tensile strength ratio, %)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	80	80	80	--

Add to the first table of the RSS for section 39-2.03A:

HMA Acceptance—Standard Construction Process					
Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Coarse durability index (min) ^{k, m}	California Test 229	65	65	65	65
Fine durability index (min) ^k	California Test 229	50	50	50	50

^k Obtain sample from stockpile before lime treatment.

^l Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r , and absorption of fine aggregate.

^m Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 7th, 9th, 13th, 17th and 18th rows of the first table of the RSS for section 39-2.03A with:

HMA Acceptance—Standard Construction Process

Quality characteristic	Test method	HMA type				
		A	B	RHMA-G	OGFC	
Air void content (%) ^{d, g}	California Test 367	4 ± 2	4 ± 2	3.5 ± 1.5	--	
Los Angeles Rattler (% max) ^k	California Test 211	12	--	12	12	
Loss at 100 rev.		25	25	25	25	
Voids in mineral aggregate (% min) ^l	California Test 367 ^l	No. 4 grading	17.0	17.0	--	--
		3/8" grading	15.0	15.0	--	--
		1/2" grading	14.0	14.0	18.0–23.0	--
		3/4" grading	13.0	13.0	18.0–23.0	--
		Moisture susceptibility (minimum dry strength, psi)	California Test 371	100	100	100
Moisture susceptibility (tensile strength ratio, %)	California Test 371	80	80	80	--	

Add to the first table of the RSS for section 39-3.02A:

HMA Acceptance—Method Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Coarse durability index (min) ^{h, j}	California Test 229	65	65	65	65
Fine durability index (min) ^h	California Test 229	50	50	50	50

^h Obtain sample from stockpile before lime treatment.

ⁱ Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r, and absorption of fine aggregate.

^j Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 7th, 12th, 16th and 17th rows of the first table of the RSS for section 39-3.02A with:

HMA Acceptance—Method Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Los Angeles Rattler(% , max) ^h	California Test 211				
Loss at 100 rev.		12	--	12	12
Loss at 500 rev.		25	25	25	25
Voids in mineral aggregate (% min) ^f	California Test 367 ⁱ				
No. 4 grading		17.0	17.0	--	--
3/8" grading		15.0	15.0	--	--
1/2" grading		14.0	14.0	18.0-23.0	
3/4" grading		13.0	13.0	18.0-23.0	
Moisture susceptibility (minimum dry strength, psi)	California Test 371	100	100	100	--
Moisture susceptibility (tensile strength ratio, %)	California Test 371	80	80	80	--

Add to the first table of the RSS for section 39-4.02C:

Minimum Quality Control—QC/QA Construction Process

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA Type			Location of sampling	Maximum reporting time allowance
			A	B	RHMA-G		
Coarse durability index(min) ^{k, m}	California Test 229	1 per 3,000 tons during production, but not less than 1 per paving day	65	65	65	Stockpile	48 hours
Fine Durability index (min) ^k	California Test 229		50	50	50	Stockpile	48 hours

^k Obtain sample from stockpile before lime treatment.

ⁱ Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r, and absorption of fine aggregate.

^m Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 8th, 10th, 14th, 18th and 19th rows of the first table of the RSS for section 39-4.02C with:

Minimum Quality Control—QC/QA Construction Process							
Quality characteristic	Test method	Minimum sampling and testing frequency	HMA Type			Location of sampling	Maximum reporting time allowance
			A	B	RHMA-G		
Air void content (%) ^{f, g}	California Test 367	1 per 4,000 tons or 2 per 5 business days, whichever is greater	4 ± 2	4 ± 2	3.5 ± 1.5	Loose Mix Behind Paver See California Test 125	48 hours
Los Angeles Rattler (% max) ^k : Loss at 100 rev. Loss at 500 rev.	California Test 211	1 per 3,000 tons during production, but not less than 1 per paving day	12 25	-- 25	12 25	Stockpile	48 hours
Voids in mineral aggregate (% min.) ⁱ No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367 ¹	As designated in QC plan. At least once per project.	17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 18.0–23.0	California Test 367 ¹	48 hours
Moisture susceptibility (minimum dry strength, psi)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	100	100	100	--	
Moisture susceptibility (tensile strength ratio, %)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	80	80	80	--	

Delete the "i" from the footnote in the quality characteristic column of the 16th row of the 1st table of the RSS for section 39-4.02C.

Add to the first table of the RSS for section 39-4.02C:

Minimum Quality Control—QC/QA Construction Process

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA Type			Location of sampling	Maximum reporting time allowance
			A	B	RHMA-G		
Coarse durability index(min) ^{k, m}	California Test 229	1 per 3,000 tons during production	65	65	65	Stockpile	48 hours
Fine Durability index (min) ^k	California Test 229	, but not less than 1 per paving day	50	50	50	Stockpile	48 hours

^k Obtain sample from stockpile before lime treatment.

^l Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r, and absorption of fine aggregate.

^m Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 8th, 10th, 14th, 18th and 19th rows of the first table of the RSS for section 39-4.02C with:

Minimum Quality Control—QC/QA Construction Process							
Quality characteristic	Test method	Minimum sampling and testing frequency	HMA Type			Location of sampling	Maximum reporting time allowance
			A	B	RHMA-G		
Air void content (%) ^{f, g}	California Test 367	1 per 4,000 tons or 2 per 5 business days, whichever is greater	4 ± 2	4 ± 2	3.5 ± 1.5	Loose Mix Behind Paver See California Test 125	48 hours
Los Angeles Rattler (% max) ^k : Loss at 100 rev. Loss at 500 rev.	California Test 211	1 per 3,000 tons during production, but not less than 1 per paving day	12 25	-- 25	12 25	Stockpile	48 hours
Voids in mineral aggregate (% min.) ⁱ No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367 ^l	As designated in QC plan. At least once per project.	17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 18.0–23.0	California Test 367 ^l	48 hours
Moisture susceptibility (minimum dry strength, psi)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	100	100	100	--	
Moisture susceptibility (tensile strength ratio, %)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	80	80	80	--	

Delete the "l" from the footnote in the quality characteristic column of the 16th row of the 1st table of the RSS for section 39-4.02C.

Add to the first table of the RSS for section 39-4.04A:

HMA Acceptance—QC/QA Construction Process

Index (i)	Quality characteristic	Weighting factor (w)	Test method	HMA type		
				A	B	RHMA-G
	Coarse durability index (min) ^{k, m}		California Test 229	65	65	65
	Fine durability index (min) ^k		California Test 229	50	50	50

^k Obtain sample from stockpile before lime treatment.

^l Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r, and absorption of fine aggregate.

^m Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 6th, 9th, 12th, 17th and 18th rows of the first table of the RSS for section 39-4.04A with:

HMA Acceptance—QC/QA Construction Process

Index (i)	Quality characteristic	Weighting factor (w)	Test method	HMA type		
				A	B	RHMA-G
	Air void content (%) ^{l, g}		California Test 367	4 ± 2	4 ± 2	3.5 ± 1.5
	Los Angeles Rattler (% max) ^k		California Test 211			
	Loss at 100 rev.			12	--	12
	Loss at 500 rev.			25	25	25
	Voids in mineral aggregate (% min) ^l		California Test 367 ^l			
	No. 4 grading			17.0	17.0	--
	3/8" grading			15.0	15.0	--
	1/2" grading			14.0	14.0	18.0–23.0
	3/4" grading			13.0	13.0	18.0–23.0
	Moisture susceptibility (minimum dry strength, psi)		California Test 371	100	100	100
	Moisture susceptibility (tensile strength ratio %)		California Test 371	80	80	80

Add to section 39-6:

The Department does not adjust the unit price for an increase or decrease in the prepaving grinding day-quantity.

If the Engineer determines more time is required for prepaving grinding than the Contract allows for and if prepaving grinding is a controlling activity, the Engineer makes a time adjustment.

BID ITEM LIST
02-3C0724

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	070030	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
2	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
3	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
4	128652	PORTABLE CHANGEABLE MESSAGE SIGN (LS)	LS	LUMP SUM	LUMP SUM	
5	130100	JOB SITE MANAGEMENT	LS	LUMP SUM	LUMP SUM	
6	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	LUMP SUM	LUMP SUM	
7	141120	TREATED WOOD WASTE	LB	18,200		
8	150662	REMOVE METAL BEAM GUARD RAILING	LF	3,840		
9	150715	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	1,310		
10	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	2,190		
11	190185	SHOULDER BACKING	TON	2,140		
12	390010	PREPAVING PROFILOGRAPH	LS	LUMP SUM	LUMP SUM	
13	390020	PREPAVING GRINDING DAY	EA	1		
14	390095	REPLACE ASPHALT CONCRETE SURFACING	CY	1,340		
15	390136	MINOR HOT MIX ASPHALT	TON	86		
16	390140	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	TON	17,300		
17	394053	SHOULDER RUMBLE STRIP (HMA,GROUND-IN INDENTATIONS)	STA	438		
18	025522	CENTERLINE RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)	STA	237		
19	394060	DATA CORE	LS	LUMP SUM	LUMP SUM	
20	394073	PLACE HOT MIX ASPHALT DIKE (TYPE A)	LF	180		