



DATE: June 14, 2021
 TO: Members of the CDOT/CCA Specifications Committee
 FROM: Michele Kayen, Specifications Engineer
 SUBJECT: June 17, 2021 Specifications Committee Meeting Agenda

CDOT Specifications Committee meeting begins at 9:00 am.

CDOT Meeting Time: 9:00 am
 Location: Google Meet

The Joint CDOT/CCA Committee meeting begins at 1:00 pm.

CDOT/CCA Meeting Time: 1:00 pm
 Location: Google Meet

Agenda	
Topics	Presenters
1. Introductions	Atamo/Yu
2. Recently Issued Specs – See attached	Kayen
3. 108.09 Liquidated Damages	Kinder
4. Payroll spec	Mariotti
5. 105, 106, and 401 Longitudinal Joints	Stanford
6. 106.11 Buy America	Wieden
7. List of Standard Special Provisions to go into 2021 Spec Book	Kayen
8. Standard Special Provisions remaining with the issuance of 2021 SB	Kayen
9. Move meetings to first Thursday of the month, starting with September 2021 – push back from July 1	Kayen



STANDARD SPECIAL PROVISIONS
Issued since March 2021 Spec Committee

Name	Date	No. of Pages
Revision of Section 105 – Control of Work (105.22) <i>All projects.</i>	(May 18, 2021)	2
Revision of Section 105 – Control of Work (Audit) <i>All projects.</i>	(May 18, 2021)	2
Revision of Section 107 – Performance of Safety Critical Work <i>Projects with safety critical work including bridge removal and girder placement operations.</i>	(March 30, 2021)	3
Revision of Section 202 – Removal of Bridge <i>Projects with bridge removal operations. Always use with Revision of Section 107 - Safety Critical Work.</i>	(March 30, 2021)	5
Revision of Section 601 – Concrete Mix Designs <i>Projects with structural concrete.</i>	(March 30, 2021)	1
Revision of Section 710 – Fence and Guardrail <i>Projects with cable barrier and/or fencing.</i>	(March 30, 2021)	1

COLORADO DEPARTMENT OF TRANSPORTATION SUBMITTAL OF NEW SPECIFICATION OR SPECIFICATION CHANGE		Log No. (Assigned by Standards and Specifications Unit) 108-1-fy20
TO: Standards & Specifications Unit Project Development Branch		FROM: Frank Kinder, Assistant Area Engineer (Region, Branch or Technical Committee)
SPECIFICATION SECTION NO. 108.09	ITEM Liquidated Damages	Priority Routine <input checked="" type="checkbox"/> Fast <input type="checkbox"/>
Reason for this new or changed specification: Liquidated damages are re-calculated and adjusted accordingly every two years. The revised amounts shown in the attached have been reviewed and approved by FHWA.		
New or Revised Specification: See attached.		
NOTE: See Procedural Directive 513.1 for a description of appropriate specification development procedures.		

REVISION OF SECTION 108
LIQUIDATED DAMAGES

Revise Section 108.09 of the Standard Specifications as follows:

In subsection 108.09 delete the schedule of liquidated damages and replace with the following:

Original Contract Amount (\$)		Liquidated Damages per Calendar Day (\$)
From More Than	To And Including	
0	500,000	800
500,000	1,000,000	1,600 <u>1,500</u>
1,000,000	2,000,000	2,200 <u>2,500</u>
2,000,000	5,000,000	3,200 <u>4,300</u>
5,000,000	15,000,000	5,400 <u>7,800</u>
15,000,000	-----	9,800 <u>10,700</u>

**COLORADO DEPARTMENT OF TRANSPORTATION
SUBMITTAL OF NEW SPECIFICATION
OR SPECIFICATION CHANGE**

Log No. (Assigned by Standards and Specifications Unit)

TO: Standards & Specifications Unit
Project Development Branch

FROM:
Civil Rights and Business Resource Center
(Region, Branch or Technical Committee)

SPECIFICATION SECTION NO.

ITEM

Priority

Revisions to Miscellaneous Section

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION

Routine

Fast

Reason for this new or changed specification:

Senate Bill 19-196 was recently passed and signed into law. The Senate Bill requires that all Department of Transportation projects regardless of amount or funding type to adhere to the federal Davis Bacon Act. In reviewing the existing certified payroll specification, it was found that the FHWA 1273 and certified payroll requirements were combined into one specification titled "Required Contract Provisions Federal-Aid Construction Projects". It was important for the FHWA 1273 requirement to be separated from the certified payroll requirements as the FHWA 1273 only applies to projects with federal-aid while the passing of Senate Bill 19-196 results in certified payroll requirements applying to both federal-aid and state funded projects.

The end result of this is an update to the specification titled "Required Contract Provisions Federal-Aid Construction Projects" to be simplified to only include the FHWA 1273 requirements and the paragraph in it has remained unchanged. A separate specification was developed to address certified payroll and will be titled "Certified Payroll Requirements for Construction Contracts". This draft language was reviewed by internal and external stakeholders for comment over the past several weeks.

New or Revised Specification:

NOTE: See Procedural Directive 513.1 for a description of appropriate specification development procedures.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

Attached is Form FHWA 1273 titled *Required Contract Provisions Federal-Aid Construction Contracts*. As described in Section I. General, the provisions of Form FHWA 1273 apply to all work performed under the Contract and are to be included in all subcontracts with the following modification:

For TAP (Transportation Alternatives Program) funded Recreational Trails projects, Section I (4) regarding convict labor and all of Section IV of the FHWA 1273 do not apply.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt.

Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

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(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm>

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or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or

the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable

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predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to

journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As

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used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

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evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more

places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA

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approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering

into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

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b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of

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Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

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**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the

use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

CERTIFIED PAYROLL REQUIREMENTS
FOR CONSTRUCTION CONTRACTS

All applicable contractors subject to Davis-Bacon and Related Acts (DBRA) requirements shall submit all payrolls weekly (at least every seven days), related to Form FHWA 1273, *Required Contract Provisions for Federal-Aid Construction Contracts*, and the Colorado Senate Bill 19-196. The Contractor, all subcontractors, and applicable suppliers required to submit certified payrolls shall follow all DBRA requirements, including sections 5.5, 3.5, and 3.6 of the 29 CFR. Contractors shall upload a completed Contractor Fringe Benefit Statement (CFBS) into LCPtracker at least once per project, utilizing the following web link:

<https://prod-cdn.lcptracker.net/login/login>

The CFBS shall include benefit details for employees who perform work on the project. The CFBS shall provide an overview of the bona fide benefits provided by the employer. If a contractor's fringe benefits change during the project's life, a revised CFBS must be submitted to reflect the changes accurately. Note other deductions by type and amount. Attach required supporting documentation in the LCPtracker system. Contractors, subcontractors, and applicable suppliers shall establish and utilize a process that allows all employees to verify the number of hours and classifications submitted to pay wages and benefits.

The Contractor, subcontractors, and applicable suppliers shall submit payrolls directly into LCPtracker for approval by the Contractor. The prime approver for the Contractor shall approve or reject payrolls within seven days after submission into LCPtracker.

COLORADO DEPARTMENT OF TRANSPORTATION SUBMITTAL OF NEW SPECIFICATION OR SPECIFICATION CHANGE		Log No. (Assigned by Standards and Specifications Unit) 105-7-fy21
TO: Standards & Specifications Unit Project Development Branch		FROM: Michael Stanford / MAC (Region, Branch or Technical Committee)
SPECIFICATION SECTION NO. 105, 106 & 401	ITEM Longitudinal Joint Density	Priority Routine <input checked="" type="checkbox"/> Fast <input type="checkbox"/>
Reason for this new or changed specification: This Pilot Project Specification will increase the requirements for Longitudinal Joint Density for HMA and SMA Pavements. This specification was a collaboration between CDOT and the Asphalt Industry. This Pilot Project Specification is intended to be used on a minimum of two projects per Region, in the 2021 and 2022 construction season. At the end of 2022, the test data for the Pilot Projects will be evaluated, with the intent of have this specification become the new standard for Longitudinal Joint Density. The change to this Longitudinal Joint Density Specification was presented to the Asphalt Industry in the Spring of 2021 and approved by the Materials Advisory Committee in May of 2021.		
New or Revised Specification: See Attached		
NOTE: See Procedural Directive 513.1 for a description of appropriate specification development procedures.		

REVISION OF SECTION 105 CONTROL OF WORK

Revise Section 105 of the Standard Specifications as follows:

Delete subsection 105.05 and replace with the following:

105.05 Conformity to the Contract of Hot Mix Asphalt. Conformity to the Contract of all Hot Mix Asphalt, Item 403, except Hot Mix Asphalt (Patching) and temporary pavement will be determined by tests and evaluations of elements that include asphalt content, gradation, in-place density, and joint density in accordance with the following: All work performed and all materials furnished shall conform to the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown in the Contract.

When the Engineer finds the materials or work furnished, work performed, or the finished product are not in conformity with the Contract and has resulted in an inferior or unsatisfactory product, the work or material shall be removed and replaced or otherwise corrected at the expense of the Contractor.

Materials will be sampled randomly and tested by the Department in accordance with subsection 106.05 and with the applicable procedures contained in the Department's Field Materials Manual. The approximate maximum quantity represented by each sample will be as set forth in subsection 106.05. Additional samples may be selected and tested as set forth in subsection 106.05 at the Engineer's discretion.

A process will consist of either a single test value or a series of values resulting from related tests of an element of the Contractor's work and materials. An element is a material or workmanship property that can be tested and evaluated for quality level by the Department approved sampling, testing, and analytical procedures. All materials produced will be assigned to a process. A change in process is defined as a change that affects the element involved. For any element, with the exception of the joint density element, a process normally will include all produced materials associated with that element prior to a change in the job mix formula (Form 43). For joint density, a new process will be established for each new layer of pavement or for changes in joint construction. Density measurements taken within each compaction test section will be a separate process. The Engineer may separate a process in order to accommodate small quantities or unusual variations.

Evaluation of materials for pay factors (PF) will be done using only the Department's acceptance test results. Each process will have a PF computed in accordance with the requirements of this Section. Test results determined to have sampling or testing errors will not be used.

Except for density measurements taken within a compaction test section, any test result for an element greater than the distance 2 times V (see Table 105-2) outside the tolerance limits will be designated as a separate process and the pay factor will be calculated in accordance with subsection 105.05(a). A pay factor less than zero shall be zero. The calculated PF will be used to determine the Incentive or Disincentive Payment (I/DP) for the process.

In the case of in-place density or joint density, the Contractor will be allowed to core the exact location (or immediately adjacent location for joint density) of a test result more than 2 times V outside the tolerance limit. The core must be taken and furnished to the Engineer within eight hours after notification by the Engineer of the test result. The result of this core will be used in lieu of the previous test result. Cores not taken within eight hours after notification by the Engineer will not be used in lieu of the test result. All costs associated with coring shall be at the Contractor's expense.

(a) *Representing Small Quantities.* When it is necessary to represent a process by only one or two test results, PF will be the average of PFs resulting from the following:

If the test result is within the tolerance limits then

$$\text{PF} = 1.00$$

If the test result is above the maximum specified limit, then

$$\text{PF} = 1.00 - [0.25(T_O - T_U)/V]$$

If the test result is below the minimum specified limit, then

$$PF = 1.00 - [0.25(T_L - T_O)/V]$$

Where: PF = pay factor.

V = V factor from Table 105-2.

T_O = the individual test result.

T_U = upper specification limit.

T_L = lower specification limit.

The calculated PF will be used to determine the I/DP for the process.

- (b) *Determining Quality Level.* Each process with three or more test results will be evaluated for a quality level (QL) in accordance with Colorado Procedure 71.
- (c) *Gradation Element.* Each specified sieve, with the exception of 100 percent passing sieves, will be evaluated for QL separately. The lowest calculated QL for a sieve will be designated as the QL for gradation element for the process.
- (d) *Joint Density Element.* Joint Density will be tested according to subsection 401.17.

If the Joint Density test result is 88.0%-89.9% then

$$PF=1.00$$

If the Joint Density test result is 90.0% or above, then PF follows Table 105-3

- (e) *Process Pay Factor.* Using the calculated QL for the process, compute the PF as follows: The final number of random samples (P_n) in each process will determine the final pay factor. As test values are accumulated for each process, P_n will change accordingly. When the process has been completed, the number of random samples it contains will determine the computation of PF, based on Table 105-3 and formula (1) below. When P_n is from 3 to 9, or greater than 200, PF will be computed using the formulas designated in Table 105-3. Where P_n is equal to or greater than 10 and less than 201, PF will be computed by Formula (1):

$$PF = \frac{PF_1 + PF_2}{2} + \left[\frac{PF_2 + PF_3}{2} - \frac{PF_1 + PF_2}{2} \right] \cdot \frac{(Pn_2 - Pn_x)}{(Pn_2 - Pn_3)}$$

Formula (1)

Where, when referring to Table 105-3:

PF₁= PF determined at the next lowest P_n formula using process QL

PF₂= PF determined using the P_n formula shown for the process QL

PF₃= PF determined at the next highest P_n formula using process QL

P_{n2}= the lowest P_n in the spread of values listed for the process P_n formula

P_{n3}= the lowest P_n in the spread of values listed for the next highest P_n formula

P_{n_x}= the actual number of test values in the process

When evaluating the item of Furnish Hot Mix Asphalt, the PF for the element of In-Place Density shall be 1.0.

Regardless of QL, the maximum PF in relation to P_n is limited in accordance with Table 105-3.

As test results become available, they will be used to calculate QL and PF numbers for each process. The process I/DPs will then be calculated and accumulated for each element and for the item. The test results and the accumulated calculations will be made available to the Contractor upon request.

Numbers from the calculations will be carried to significant figures and rounded according to AASHTO Standard Recommended Practice R-11, Rounding Method.

- (f) *Evaluation of Work.* When the PF of a process is 0.75 or greater, the finished quantity of work represented by the process will be accepted at the appropriate pay factor. If the PF is less than 0.75, the Engineer may:
- (1) Require complete removal and replacement with specification material at the Contractor's expense; or

- (2) Where the finished product is found to be capable of performing the intended purpose and the value of the finished product is not affected, permit the Contractor to leave the material in place.

If the material is permitted to remain in place, the PF for the process will not be greater than 0.75. When condition red, as described in subsection 106.05(g), exists for any element, resolution and correction will be in accordance with Section 106. Material which the Engineer determines is defective may be isolated and rejected without regard to sampling sequence or location within a process.

If removal and replacement is required because the joint density PF for a process is below 0.75, the Contractor shall remove and replace the full lane width adjacent to and including at least 6 inches beyond the visible joint line for the entire length of joint representing the process. If the lane removed is adjacent to another joint, that joint shall also be removed to a point 6 inches beyond the visible joint line. When a single joint density core is more than 2V outside the tolerance limits, the removal and replacement limits shall be identified by coring the failing joint at 25 foot intervals until two successive cores are found to be 1V or less below the minimum tolerance limit. If removal and replacement is required, the Contractor shall submit documentation identifying the process to be used to correct the area in question in writing. The process will be approved by the Engineer before commencing the corrective work.

Table 105-2
“W” and “V” Factors For Various Elements

Hot Mix Asphalt		
Element	V Factor	W Factor
2.36 mm (No. 8) mesh and larger sieves	2.80	N/A
600 µm (No. 30) mesh sieve	1.80	N/A
75 µm (No. 200) mesh sieve	0.80	N/A
Gradation	N/A	15
Asphalt Content	0.20	25
In-place Density	1.10	45
Joint Density [‡]	1.60	15
[‡] 2V will be evaluated off of the 88% Joint Density.		

Table 105-3
Formulas For Calculating PF Based on Pn

Pn	When Pn as shown at left is 3 to 9, or greater than 200, use designated formula below to calculate Pay Factor, PF = ..., when Pn is 10 to 200, use formula (1) above:	Maximum PF
3	$0.31177 + 1.57878 (QL/100) - 0.84862 (QL/100)^2$	1.025
4	$0.27890 + 1.51471 (QL/100) - 0.73553 (QL/100)^2$	1.030
5	$0.25529 + 1.48268 (QL/100) - 0.67759 (QL/100)^2$	1.030
6	$0.19468 + 1.56729 (QL/100) - 0.70239 (QL/100)^2$	1.035
7	$0.16709 + 1.58245 (QL/100) - 0.68705 (QL/100)^2$	1.035
8	$0.16394 + 1.55070 (QL/100) - 0.65270 (QL/100)^2$	1.040
9	$0.11412 + 1.63532 (QL/100) - 0.68786 (QL/100)^2$	1.040
10 to 11	$0.15344 + 1.50104 (QL/100) - 0.58896 (QL/100)^2$	1.045
12 to 14	$0.07278 + 1.64285 (QL/100) - 0.65033 (QL/100)^2$	1.045
15 to 18	$0.07826 + 1.55649 (QL/100) - 0.56616 (QL/100)^2$	1.050
19 to 25	$0.09907 + 1.43088 (QL/100) - 0.45550 (QL/100)^2$	1.050
26 to 37	$0.07373 + 1.41851 (QL/100) - 0.41777 (QL/100)^2$	1.055
38 to 69	$0.10586 + 1.26473 (QL/100) - 0.29660 (QL/100)^2$	1.055
70 to 200	$0.21611 + 0.86111 (QL/100)$	1.060
≥ 201	$0.15221 + 0.92171 (QL/100)$	1.060

(g) *Process I/DP Computation.*

$$I/DP = (PF - 1)(QR)(UP)(W/100)$$

Where: I/DP = Incentive or Disincentive Payment

PF = Pay Factor

QR = Quantity in Tons of HMA Represented by the Process

UP = Unit Bid Price of Asphalt Mix

W = Element factor from Table 105-2

When AC is paid for separately, UP shall be:

$$UP = [(Ton_{HMA})(UP_{HMA}) + (Ton_{AC})(UP_{AC})] / Ton_{HMA}$$

Where: Ton_{HMA} = Tons of Asphalt Mix

UP_{HMA} = Unit Bid Price of Asphalt Mix

Ton_{AC} = Tons of Asphalt Cement

UP_{AC} = Unit Bid Price of Asphalt Cement

For the joint density element:

$$UP = UP_{HMA}$$

Where: UP_{HMA} is as defined above

When AC is paid for separately, UP shall be:

$$UP = [(BTon_{HMA})(BUP_{HMA}) + (BTon_{AC})(BUP_{AC})] / (BTon_{HMA})$$

Where: $BTon_{HMA}$ = Bid Tons of Asphalt Mix

BUP_{HMA} = Unit Bid Price of Asphalt Mix

$BTon_{AC}$ = Bid Tons of Asphalt Cement

BUP_{AC} = Unit Bid Price of Asphalt Cement

- (h) *Element I/DP.* The I/DP for an element shall be computed by accumulating the process I/DPs for that element.
- (i) *I/DP for a Mix Design.* The I/DP for a mix design shall be computed by accumulating the process I/DPs for the asphalt content, in-place density, and gradation elements for that mix design. The accumulated quantities of materials for each element must be the same at the end of I/DP calculations for a mix design.
- (j) *Project I/DP.* The I/DP for the project shall be computed by accumulating the mix design I/DPs and the joint density I/DPs. The accumulated quantities of materials for each element must be the same at the end of I/DP calculations for the project.

REVISION OF SECTION 106 CONTROL OF MATERIAL

Revise Section 106 of the Standard Specifications as follows:

Delete subsection 106.05 and replace with the following:

106.05 Sampling and Testing of Hot Mix Asphalt. All HMA, Item 403, except HMA (Patching) and temporary pavement shall be tested in accordance with the following program of process control testing and acceptance testing:

- (a) *Process Control Testing.* The Contractor shall be responsible for process control testing on all elements listed in Table 106-1. Process control testing shall be performed at the expense of the Contractor. The Contractor shall develop a process control plan (PCP) in accordance with the following:
1. **Process Control Plan.** For each element listed in Table 106-1, the PCP must provide adequate details to ensure that the Contractor will perform process control. The Contractor shall submit the PCP to the Engineer at the Pre-construction Conference. The Contractor shall not start any work on the project until the Engineer has approved the PCP in writing.
 - A. **Frequency of Tests or Measurements.** The PCP shall indicate a random sampling frequency, which shall not be less than that shown in Table 106-1. The process control tests shall be independent of acceptance tests.
 - B. **Worksheets, Forms, and Charts.** The Contractor shall submit examples of worksheets, test result forms, and test results charts in accordance with CP 12 as part of the PCP.
 - C. **Test Result Chart.** Each process control test result, the appropriate tonnage and the tolerance limits shall be plotted. For in place density tests, only results after final compaction shall be shown. The chart shall be posted daily at a location convenient for viewing by the Engineer.
 - D. **Quality Level Chart.** The Quality Level (QL) for each element used to calculate incentive or disincentive in Table 106-1 and each required sieve size shall be plotted. The QL will be calculated in accordance with the procedure in CP 71 for Determining Quality Level (QL). The QL will be calculated on tests 1 through 3, then tests 1 through 4, then tests 1 through 5, then thereafter the last five consecutive test results. The tonnage of material represented by the last test result shall correspond to the QL. For in place density tests, only results after final compaction shall be shown. The chart shall be posted daily at a location convenient for viewing by the Engineer.
 2. **Elements Not Conforming to Process Control.** The QL of each discrete group of five test results, beginning with the first group of five test results, shall be a standard for evaluating material not conforming to process control. When the group QL is below 65, the process shall be considered as not conforming to the PCP. In this case, the Contractor shall take immediate action to bring the process back into control. Except where the cause of the problem is readily apparent and corrected without delay, production shall be suspended until the source of the problem is determined and corrected. A written explanation of actions taken to correct control problems shall accompany the test data and be submitted to the Engineer on the day the actions are taken.
 3. **Point of Sampling.** The material for process control testing shall be sampled by the Contractor using approved procedures. Acceptable procedures are Colorado Procedures, AASHTO and ASTM. The order of precedence is Colorado Procedures, AASHTO procedures and then ASTM procedures. The location where material samples will be taken shall be indicated in the PCP.
 4. **Testing Standards.** The PCP shall indicate which testing standards will be followed. Acceptable standards are Colorado Procedures, AASHTO and ASTM. The order of precedence is Colorado Procedures, AASHTO procedures and then ASTM procedures.
 5. **Testing Supervisor Qualifications.** The person responsible for the process control sampling and testing shall be identified in the PCP and be qualified according to the requirements of CP 10

6. **Technician Qualifications.** Technicians taking samples and performing tests must be qualified according to the requirements of CP 10.
 7. **Testing Equipment.** All of the testing equipment used to conduct process control testing shall conform to the standards specified in the test procedures and be in good working order. Nuclear testing devices used for process control testing of in-place density do not have to be calibrated on the Department's calibration blocks.
 8. **Reporting and Record Keeping.** The Contractor shall report the results of the process control tests to the Engineer in writing at least once per day. The Contractor shall assemble a process control (PC) notebook and update it daily. This notebook shall contain all worksheets, test results forms, test results charts and quality level charts for each of the elements listed in Table 106-1. The Contractor shall submit the PC notebook to the Engineer for review once a month on the date agreed to at the Pre-Paving Conference. The PC notebook will be returned to the Contractor within one working day after submittal. The Engineer will notify the Contractor in writing of any deficiencies in the PC notebook, including the failure to submit the notebook on time or an absence of the required reports. Upon the second failure to submit the complete PC notebook on time or with an absence of the required reports, the Engineer will notify the Contractor, and the pay estimate will be withheld until the Contractor submits, in writing, a report detailing the cause for the failure to submit the complete PC notebook on time or the cause for the absence of required reports. The report shall include how the Contractor plans to resolve the failures. Additional failures to submit the PC notebook on time or absent the required reports will result in a delay of the pay estimate until the Contractor has identified and resolved the failure along with revising and resubmitting his PCP to address these issues. Once the Engineer has reviewed and approved the revised PCP the estimate may be paid. Upon submittal of the PC notebook for the semi-final estimate, the PC notebook shall become the property of the Department. The Contractor shall make provisions such that the Engineer can inspect process control work in progress, including PC notebook, sampling, testing, plants, and the Contractor's testing facilities at any time.
- (b) *Acceptance Testing.* Acceptance testing is the responsibility of the Department and shall not be addressed in the PCP. The Department will determine the locations where samples or measurements are to be taken. The maximum quantity of material represented by each test result and the minimum number of test results will be in accordance with Table 106-1. The location or time of sampling will be based on a stratified random procedure as described in CP 75. Acceptance sampling and testing procedures will be in accordance with the Schedule for Minimum Materials Sampling, Testing and Inspection in the Department's Field Materials Manual. Samples for project acceptance testing shall be taken by the Contractor in accordance with the designated method. The samples shall be taken in the presence of the Engineer. Where appropriate, the Contractor shall reduce each sample to the size designated by the Engineer. The Contractor may retain a split of each sample which cannot be included as part of the PCP.

If the Contractor elects to question the Hot Mix Asphalt (HMA) acceptance test results, the steps outlined in CP 17 shall be followed. The results from the CP 17 resolution process shall be binding on both the Department and the Contractor. Requests for CP 17 process for all elements except density shall be submitted in writing to the Engineer within five work days from the date the Contractor receives acceptance test data from the Engineer. The specific element questioned shall be identified in writing. All requests for the CP 17 process for the density element shall be submitted in writing to the Engineer within 24 hours of receiving test data from the Engineer.

The Contractor shall choose either the CDOT Materials and Geotechnical Branch or a consultant laboratory not associated with the project to perform the third party testing. The Contractor shall document his choice in writing at the Pre-Paving Conference. If a consultant laboratory is chosen, the CDOT Materials and Geotechnical Branch will determine the consultant that will be used from a pre-established list and ensure there is no conflict of interest.

If third party testing is required, the responsibility for the testing expenses shall be assigned in accordance with CP 17. The costs for testing are shown in CP 17, Table 17-2.

All materials being used are subject to inspection and testing at any time prior to, during, or after incorporation

into work. Acceptance tests will be made by and at the expense of the Department, except when otherwise provided.

- (c) *Check Testing Program (CTP)*. Prior to, or in conjunction with, placing the first 500 tons of asphalt pavement, under the direction of the Engineer, a CTP will be conducted between acceptance testing and process control testing programs. The CTP will consist of testing for asphalt content, theoretical maximum specific gravity, HMA 4.75 mm (#4) sieve, HMA 2.36 mm (#8) sieve, HMA 0.075 mm (#200) sieve, in-place density, and joint density in accordance with CP 13. If the Contractor intends to test to determine air voids and VMA, check testing for these tests is recommended. The CTP will be continued until the acceptance and process control tests are within the acceptable limits shown in Table 13-1 of CP 13. For joint density, the initial check test will be a comparison of the seven cores tested by CDOT and the seven cores tested by the Contractor. These are the cores from the compaction test section used for nuclear gauge calibration and test section payment.

During production, a split sample check will be conducted at the frequency shown in Table 106-1. Except for joint density, the split samples will be from an acceptance sample obtained in accordance with subsection 106.05(b). The acceptance test result will be compared to the process control test result obtained by the Contractor using the acceptable limits shown in Table 13-1 of CP 13. For joint density, the comparison sample for testing by the Contractor will be obtained by taking a second core adjacent to the joint density acceptance core. The acceptance test result will be compared to the process control test result obtained by the Contractor using the acceptable limits as shown in Table 13-1 of CP 13 and following the check testing procedure given in CP 13.

If production has been suspended and then resumed, the Engineer may order a CTP between process control and acceptance testing persons to assure the test results are within the acceptable limits shown in Table 13-1 of CP 13. Check test results shall not be included in process control testing. The Region Materials Engineer shall be called upon to resolve differences if a CTP shows unresolved differences beyond the values shown in Table 13-1 of CP 13.

- (d) *Stability Verification Testing*. After the mix design has been approved and production commences, the Department will perform a minimum of three stability verification tests to verify that the field produced HMA conforms to the approved mix design:

The test frequency shall be one per day unless otherwise directed by the Engineer.

The test results will be evaluated and the Contractor shall make adjustments if required in accordance with the following:

1. The minimum value for stability will be the minimum specified in Table 403-1 of the specifications. There will be no tolerance limit.
2. Quality Level. Calculate a QL for stability.
 - (b) If the QL for stability is less than 65, then production shall be halted and the Contractor shall submit a written proposal for a mix design revision to the Engineer. The Engineer shall give written approval to the proposed mix design revision before production continues.
 - (c) After a new or revised mix design is approved, three additional stability tests will be performed on asphalt produced with the new or revised mix design. The test frequency shall be one per day unless altered by the Engineer.
 - (d) If the stability QL is less than 65, then production shall be halted until a new mix design has been completed and approved using plant produced material or the Contractor shall submit a written proposal for a mix design revision to the Engineer. The Engineer shall give written approval to the proposed mix design revision before production continues.
3. New or Revised Mix Design. Whenever a new or revised mix design is used and production resumes, three additional stability field verification tests shall be performed and the test results evaluated in accordance with the above requirements. The test frequency shall be one per day unless altered by the Engineer.
4. Field Verification Process Complete. When the field verification process described above is complete and production continues, the sample frequency will revert back to 1 per 10,000 tons.

(e) *Mix Verification Testing.* After the mix design has been approved and production commences, the Department will perform a minimum of three volumetric verification tests for each of the following elements to verify that the field produced Hot Mix Asphalt (HMA) conforms to the approved mix design:

- (1) Air Voids.
- (2) Voids in Mineral Aggregate (VMA).
- (3) Asphalt Content (AC).

The test frequency shall be one per day unless altered by the Engineer.

The test results will be evaluated and the Contractor shall make adjustments if required in accordance with the following:

1. **Target Values.** The target value for VMA will be the average of the first three volumetric field test results on project produced hot mix asphalt or the target value specified in Table 403-1 and Table 403-2 of the specifications, whichever is higher. The target value for VMA will be set no lower than 0.5 percent below the VMA target on Form 43 prior to production. The target values for the test element of air voids and AC shall be the mix design air voids and mix design AC as shown on Form 43.

2. **Tolerance Limits.** The tolerance limits for each test element shall be:

AC	± 0.3 percent
Air Voids	± 1.2 percent
VMA	± 1.2 percent

3. **Quality Levels.** Calculate an individual QL for each of the elements using the volumetric field verification test results. If the QL for VMA or AC is less than 65 or if the QL for air voids is less than 70, the production shall be halted and the Contractor shall submit a written proposal for a mix design revision to the Engineer. Production shall only commence upon receipt of written approval from the Engineer of the proposed mix design revision.

After a new or revised mix design is approved, three additional volumetric field verification tests will be performed on asphalt produced with the new or revised mix design. The test frequency shall be one per day unless altered by the Engineer.

If the QL for VMA or AC is less than 65 or the QL for the test element of air voids is less than 70, then production shall be halted until a new mix design has been completed in accordance with CP 52 or CP 54, a new Form 43 issued, and the Contractor demonstrates that he is capable of producing a mixture meeting the verification requirements in accordance with A or B below:

- A. The Contractor shall produce test material at a site other than a CDOT project. The Contractor shall notify the Engineer a minimum of 48 hours notice prior to the requested test. The location and time of the test are subject to the approval of the Engineer, prior to placement. Three samples will be tested for volumetric properties. If the QL for VMA or AC is equal or greater than 65 and the QL for the element of air voids is equal or greater than 70, full production may resume or;
- B. The Contractor may construct a 500 ton test strip on the project. Three samples in the last 200 tons will be tested for volumetric properties. After construction of the test section, production shall be halted until the testing is complete and element QLs are calculated. If the QL for VMA or AC is equal to or greater than 65 or the QL for the element of air voids is equal to or greater than 70, full production may resume. If the QL for VMA or AC is less than 65 or the QL for the element of air voids is less than 70, the material shall be removed and replaced at no cost to the Department. The time count will continue, and any delay to the project will be considered to have been caused by the Contractor and will not be compensable.

The costs associated with mix designs shall be solely at the Contractor's expense.

If the Contractor fails to verify the new mix design in accordance with A or B, then production shall be halted until a new mix design has been completed in accordance with CP 52 or CP 54, a new Form 43 issued, and the Contractor demonstrates they are capable of producing a mixture meeting the verification

requirements in accordance with A or B.

4. New or Revised Mix Design. Whenever a new or revised mix design is used and production resumes, three additional volumetric field verification tests shall be performed and the test results evaluated in accordance with the above requirements. The test frequency shall be one per day unless altered by the Engineer.
 5. Field Verification Process Complete. When the field verification process described above is complete and production continues, the sample frequency will revert back to a minimum of 1/10,000 tons. The Engineer has the discretion to conduct additional verification tests at any time.
- (f) *Testing Schedule.* Process control and project acceptance testing frequency shall be in accordance with Table 106-1.
- (g) *Reference Conditions.* Three reference conditions can exist determined by the Moving Quality Level (MQL). The MQL will be calculated in accordance with the procedure in CP 71 for Determining Quality Level (QL). The MQL will be calculated using only acceptance tests. The MQL will be calculated on tests 1 through 3, then tests 1 through 4, then tests 1 through 5, then thereafter on the last five consecutive test results. The MQL will not be used to determine pay factors. The three reference conditions and actions that will be taken are described as follows:
1. Condition green will exist for an element when an MQL of 90 or greater is reached, or maintained, and the past five consecutive test results are within the specification limits.
 2. Condition yellow will exist for all elements at the beginning of production or when a new process is established because of changes in materials or the job-mix formula, following an extended suspension of work, or when the MQL is less than 90 and equal to or greater than 65. Once an element is at condition green, if the MQL falls below 90 or a test result falls outside the specification limits, the condition will revert to yellow or red as appropriate.
 3. Condition red will exist for any element when the MQL is less than 65. The Contractor shall be notified immediately in writing and the process control sampling and testing frequency increased to a minimum rate of 1 per 250 tons for that element. The process control sampling and testing frequency shall remain at 1 per 250 tons until the process control QL reaches or exceeds 78. If the QL for the next five process control tests is below 65, production will be suspended.

If gradation is the element with MQL less than 65, the Department will test one randomly selected sample in the first 1250 tons produced in condition red. If this test result is outside the tolerance limits, production will be suspended. (This test result will not be included as an acceptance test.)

After condition red exists, a new MQL will be started. Acceptance testing will stay at the frequency shown in Table 106-1. After three acceptance tests, if the MQL is less than 65, production will be suspended.

Production will remain suspended until the source of the problem is identified and corrected. Each time production is suspended, corrective actions shall be proposed in writing by the Contractor and approved in writing by the Engineer before production may resume.

Upon resuming production, the process control sampling and testing frequency for the elements causing the condition red shall remain at 1 per 250 tons. If the QL for the next five process control tests is below 65, production will be suspended again. If gradation is the element with MQL less than 65, the Department will test one randomly selected sample in the first 1250 tons produced in condition red. If this test result is outside the tolerance limits, production will be suspended.

**Table 106-1
SCHEDULE FOR MINIMUM SAMPLING AND
TESTING FOR HMA**

Element	Process Control	Acceptance^{1,2}	Check (CTP)
Asphalt Content	1/500 tons	1/1000 tons	1/10,000 tons
Gradation	1/Day	1/2000 tons	1/20,000 tons
Theoretical Maximum Specific Gravity	1/1000 tons, minimum 1/Day	1/1000 tons, minimum 1/Day	1/10,000 tons
In-place Density	1/500 tons	1/500 tons	1/5000 tons
Joint Density	1 core/2500 linear feet of joint	1 core/5000 linear feet of joint	1 core/50,000 linear feet of joint
Aggregate Percent Moisture ³	1/2000 tons, minimum 1/Day	1/2000 tons	Not applicable
Percent Lime ^{3,4}	1/Day	Not applicable	Not applicable

¹ The minimum number of acceptance tests will be: 5 asphalt content, 3 gradation, 10 in-place density and 5 joint density for all projects.

² When unscheduled job mix formula changes are made (Form 43) acceptance of the elements, except for in-place density, will be based on the actual number of samples that have been selected up to that time, even if the number is below the minimum listed in the schedule. At the Engineer's discretion, additional random in-place density tests may be taken in order to meet scheduled minimums, provided the applicable pavement layer is available for testing under safe conditions. Beginning with the new job mix formula, the quantity it will represent shall be estimated. A revised schedule of acceptance tests will be based on that estimate.

³ Not to be used for incentive or disincentive pay. Test according to CP 60B and report results from Form 106 or Form 565 on Form 6.

⁴ Verified per Contractor's PC Plan

SECTION 401
PLANT MIX PAVEMENTS–GENERAL

Revise Section 401 of the Standard Specifications as follows:

Delete subsection 401.16 & 401.17 and replace with the following:

401.16 Spreading and Finishing. Asphalt pavers shall be used to distribute the mixture to the established grade and required thickness over the entire width or partial width as practicable.

The longitudinal joint in both a new pavement and an overlay pavement layer shall offset the joint in the layer immediately below by 6 inches. In every pavement layer the longitudinal joints shall not be constructed in the wheel paths. The Contractor shall submit a longitudinal joint and pavement marking plan three days prior to the Pre-Paving Conference. The plan shall show the location and configuration of the proposed longitudinal joints and pavement markings, and shall detail the methods to be used to field establish a control line. The Contractor shall use a continuous string line to delineate every longitudinal joint during paving operations. All exposed string line shall be picked up and disposed of at the end of each day's paving. Paving shall not commence until the plan has been approved in writing by the Engineer. The joints in the top layer of pavement shall be located as follows unless otherwise approved in writing by the Engineer:

- (1) For 2-lane roadways, offset 6 to 12 inches from the center of pavement and from the outside edge of travel lanes.
- (2) For roadways of more than 2 lanes, offset 6 to 12 inches from lane lines and outside edge of travel lanes.

Longitudinal joints shall not cross the centerline, lane line, or edge line unless approved by the Engineer.

Where paving operations are on the present traveled roadway, the Contractor shall arrange paving operations so there will be no exposed longitudinal joints between adjacent travel lanes at the end of a day's run. With the approval of the Engineer, the Contractor may leave an exposed longitudinal joint conforming to the following:

- (1) When the thickness of the pavement course being placed is 1.5 inches or less a vertical exposed longitudinal joint may be constructed.
- (2) When the thickness of the pavement course being placed is greater than 1.5 inches the joint shall be constructed according to one of the following:
 - (i) The entire joint shall be tapered 3:1 or flatter. A Taper steeper than 3:1 shall be considered vertical.
 - (ii) The top portion of the longitudinal joint may be vertical. The vertical portion shall be a maximum of 1.5 vertical inches. The remainder of the joint, below the vertical portion, shall be tapered 3:1 or flatter.

On areas where the use of mechanical spreading and finishing equipment is impracticable, the mixture shall be dumped, spread, raked, screeded, and luted by hand tools to the required compacted thickness and grades.

Production of the mixture shall be maintained so pavers can be used in echelon to place the wearing course in adjacent lanes.

The asphalt mixture shall be transported and placed on the roadway without segregation. All segregated areas behind the paver shall be removed immediately upon discovery. The segregated material shall be replaced with specification material before the initial rolling has taken place. If more than 50 square feet of segregated pavement is ordered removed and replaced in any continuous 500 linear feet of paver width laydown, operations shall be discontinued until the source of the segregation has been found and corrected.

If at any time, the Engineer observes segregated areas of pavement, he will notify the Contractor immediately.

After rolling, segregated areas will be delineated by the Engineer and evaluated as follows:

- (1) The Engineer will delineate the segregated areas to be evaluated and inform the Contractor of the location and extent of these areas within two calendar days, excluding weekends and holidays, of placement.
- (2) In each segregated area or group of areas to be evaluated, the Contractor shall take five 10 inch cores at random locations designated by the Engineer. In accordance with CP 75, the Contractor shall also take five 10 inch cores at random locations designated by the Engineer in non-segregated pavement adjacent to the segregated area. These cores shall be within 30 feet of the boundary of the segregated area and in the newly placed pavement. The coring shall be in the presence of the Engineer and the Engineer will take immediate possession of the cores. The Contractor may take additional cores at the Contractor's expense.
- (3) Gradation of the aggregate of the cores will be determined by CDOT in accordance with CP 46.
- (4) The core aggregate gradations from the segregated area will be compared to the core aggregate gradations of the corresponding non-segregated area.
- (5) Two key sieves of the core gradations from the segregated area will be compared to the core gradations from the corresponding non-segregated area to determine the difference. If differences for both key sieves exceed the allowable difference specified in the table below, the area is segregated.

SEGREGATION DETERMINATION

Mix Grading	Key Sieves	Allowable Difference, %
SX	2.36 mm (#8), 4.75 mm (#4)	9
S	2.36 mm (#8), 4.75 mm (#4)	9

- (6) Segregated areas in the top lift shall be removed and replaced, full lane width, at the Contractor's expense. The Engineer may approve a method equivalent to removal and replacement that results in a non-segregated top lift. Segregated areas, in lifts below the top lift that are smaller than 50 square feet per 100 linear feet of lane width shall be corrected by the Contractor at the Contractor's expense in a manner acceptable to the Engineer. Segregated areas larger than 50 square feet per 100 linear feet of lane width in any lift shall be removed and replaced, full lane width, by the Contractor at the Contractor's expense.

If the area is determined to be segregated, the coring shall be at the expense of the Contractor. If the area is determined to be non-segregated, the Engineer will reimburse the Contractor \$2,000 for obtaining the ten cores.

The Engineer will perform a systematic segregation check in accordance with CP 58 as early in the project as is feasible to determine if temperature segregation problems exist. Temperature segregation will be of concern on the project if, across the width of the mat, temperatures vary by 25 °F or more. Densities will not need to be taken in the systematic segregation check. The Engineer will discuss the temperature findings of the systematic segregation check with the Contractor.

The Engineer may evaluate the HMA for low density due to temperature segregation whenever industry best practices, as detailed on Form 1346, are not being followed or the Engineer suspects temperature segregation is occurring. The Engineer will first meet with the Contractor to discuss the paving practices that are triggering the temperature investigation. Areas across the mat, excluding the outside 1 foot of both edges of the mat, that are more than 25 °F cooler than other material across the width may be marked for density testing. Material for temperature comparison will be evaluated in 3-foot intervals behind the paver across the width of the mat. The material shall be marked and tested in accordance with CP 58. If four or more areas within a lot of 500 tons have densities of less than 93 percent of the material's maximum specific gravity for SMA mixes or less than 92 percent of the material's maximum specific gravity for all other HMA mixes, a 5 percent price disincentive will be applied to the 500 ton lot. The 500 ton count begins when the Engineer starts looking for cold areas, not when the first cold area is detected. This price disincentive will be in addition to those described in Sections 105 and 106. Only one area per delivered truck will be counted toward the number of low density areas. Temperature segregation checks will be performed

only in areas where continuous paving is possible.

401.17 Compaction. The hot mix asphalt shall be compacted by rolling. Both steel wheel and pneumatic tire rollers will be required. The number, weight, and type of rollers furnished shall be sufficient to obtain the required density while the mixture is in a workable condition. Compaction shall begin immediately after the mixture is placed and be continuous until the required density is obtained. When the mixture contains unmodified asphalt cement (PG 58 28 or PG 64 22) or modified (PG 58 34), and the surface temperature falls below 185 °F, further compaction effort shall not be applied unless approved, provided the Contractor can demonstrate that there is no damage to the finished mat. If the mixture contains modified asphalt cement (PG 76 28, PG 70-28 or PG 64 28) and the surface temperature falls below 230 °F, further compaction effort shall not be applied unless approved, provided the Contractor can demonstrate that there is no damage to the finished mat.

Warm Mix Asphalt compaction requirements shall conform to CP 59.

All roller marks shall be removed with the finish rolling. Use of vibratory rollers with the vibrator on will not be permitted during surface course final rolling and will not be permitted on any rolling on bridge decks covered with waterproofing membrane.

SMA shall be compacted to a density of 93 to 97-98 percent of the daily theoretical maximum specific gravity, determined according to CP 51. All other HMA shall be compacted to a density of 92 to 96-98 percent of the daily theoretical maximum specific gravity, determined according to CP 51. If more than one theoretical maximum specific gravity test is taken in a day, the average of the theoretical maximum specific gravity results will be used to determine the percent compaction. Field density determinations will be made in accordance with CP 44 or 81.

The longitudinal joints shall be compacted to a target density of 92-94 percent of the theoretical maximum specific gravity. The tolerance shall be ± 4 percent. The theoretical maximum specific gravity used to determine the joint density will be the average of the daily theoretical maximum specific gravities for the material that was placed on either side of the joint. Density (percent relative compaction) will be determined in accordance with CP 44.

The Contractor shall obtain one 6-inch diameter core at a random location within each longitudinal joint sampling section for determination of the joint density. The Contractor shall mark and drill the cores at the location directed by the Engineer and in the presence of the Engineer. The Engineer will take possession of the cores for testing. The Contractor may take additional cores at his own expense. Coring locations shall be centered on the visible line where the joint between the two adjacent lifts abuts the surface. The center of all joint cores shall be within 1 inch of this visible joint line. Core holes shall be repaired by the Contractor using materials and methods approved by the Engineer. PC and OA joint coring shall be completed within five calendar days of joint construction.

Longitudinal joint coring applies to all pavement layers. When constructing joints in an echelon paving process, the joints shall be clearly marked to ensure consistent coring location. In small areas, such as intersections, where the Engineer prescribes paving and phasing methods, the Engineer may temporarily waive the requirement for joint density testing

Incentive or disincentive payment determined for joint density in accordance with subsection 105.05 will apply to the HMA on each side of the joint. If a layer of pavement has joints constructed on both sides, incentive or disincentive payment for each of those joints will apply to one half of the pavement between the joints.

Along forms, curbs, headers, walls, and all other places not accessible to the rollers, the mixture shall be thoroughly compacted with mechanical tampers.

Any mixture that becomes loose and broken, mixed with dirt, or is in any way defective, shall be immediately removed and replaced with fresh hot mixture, and compacted to conform to the surrounding area.

The Contractor shall construct a compaction pavement test section (CTS) for each job mix for which 2000 or more tons are required for the project. The CTS will be used to evaluate the number of rollers and the most effective combination of rollers and rolling patterns for achieving the specified densities. Factors to be considered include, but are not limited to, the following:

- (1) Number, size, and type of rollers.
- (2) Amplitude, frequency, size and speed of vibratory rollers.
- (3) Size, speed, and tire pressure of rubber tire rollers.
- (4) Temperature of mixture being compacted.
- (5) Roller patterns.

The CTS shall be constructed according to the following procedures:

The CTS shall be constructed to provide the nominal layer thickness specified. The first 500 tons of hot mix asphalt on the project location shall constitute the CTS. The production and placement rates of the CTS shall closely approximate the anticipated production and placement rates for the remainder of the Contract.

Compaction of the CTS shall commence immediately after the hot mix asphalt has been spread, and shall be continuous and uniform over the entire CTS. For the CTS, compaction shall continue until no discernible increase in density is obtained by additional compactive efforts. All compaction shall be completed before the surface temperature of the mixture drops below 185 °F.

Approved types of rollers shall be used to achieve the specified density. The Contractor shall determine what methods and procedures are to be used for the compaction operation. The compaction methods and procedures shall be used uniformly over the entire last 200 tons. The Contractor shall record the following information and a copy of this data shall be furnished to the Engineer.

- (1) Type, size, amplitude, frequency, and speed of roller.
- (2) Tire pressure for rubber tire rollers, and whether the pass for vibratory rollers is vibratory or static.
- (3) Surface temperature of mixture behind the laydown machine and subsequent temperatures and densities after each roller pass.
- (4) Sequence and distance from laydown machine for each roller, and number of passes of each roller to obtain specified density.

Two sets of random cores shall be taken within the last 200 tons of the CTS. Each set shall consist of seven random cores. The Engineer will determine the coring locations using a stratified random sampling process. The locations of these cores will be such that one set can serve as a duplicate of the other. One set of these cores shall be immediately submitted to the Engineer. This set will be used for determining acceptance of the CTS and determining density correction factors for nuclear density equipment. Densities of the random samples will be determined by cores according to CP 44. Density correction factors for nuclear density equipment will be determined according to CP 81. Coring shall be performed under CDOT observation. Coring will not be measured and paid for separately but shall be included in the work. For SMA, a CTS is not used. The Contractor shall follow the requirements for the demonstration control strip in accordance with the Revision of Section 403, Stone Matrix Asphalt Pavement.

The CTS meets requirements if the Quality Level of the random samples is greater than or equal to 75. The Quality Level will be determined according to CP 71. Once constructed and accepted, the CTS shall remain in place and become part of the hot mix asphalt on the project.

When the Quality level is less than 75 the Contractor shall construct an additional test section, utilizing different rollers, or roller positions, or roller patterns as required. A written proposal detailing the changes in methods and

procedures that will be used to obtain density is to be submitted to the Engineer for review before constructing the additional test section.

If the Quality Level of a CTS is less than 75 and greater than or equal to 44, the Engineer may accept the material at a reduced price in accordance with Section 105.

If the Quality Level of a CTS is less than 44, the Engineer may:

- (1) Require complete removal and replacement with specification material at the Contractor's expense.
- (2) Where the finished product is found to be capable of performing the intended purpose and the value of the finished product is not affected, as determined by the Engineer, permit the Contractor to leave the material in place with a pay factor, but not more than 75 percent of the bid price.

Each CTS shall be 500 tons. If in-place densities of the CTS, as determined by nuclear density equipment prior to determining density of the cores, meet the CTS density requirements, the Contractor may begin production paving and continue to place hot mix asphalt pavement under the following conditions:

- (1) The period during which the Contractor continues to pave without test results from cores shall not exceed one work day.
- (2) Construction proceeds at the Contractor's risk. If correlation with the cores reveals that the densities do not meet the CTS requirements, the hot mix asphalt pavement placed subsequently will be subject to price reduction or removal and replacement.

After production paving work has begun, a new Roller Pattern shall be demonstrated when a change in the compaction process is implemented.

All additional costs associated with construction of the CTS shall be at the Contractor's expense. The hot mix asphalt placed in the CTS will be paid for in accordance with subsection 401.22, at the contract price for the hot mix asphalt.

COLORADO DEPARTMENT OF TRANSPORTATION SUBMITTAL OF NEW SPECIFICATION OR SPECIFICATION CHANGE		Log No. (Assigned by Standards and Specifications Unit) 106-1-fy20
TO: Standards and Specifications Unit, Project Development		FROM: Craig Wieden and Melody Perkins Materials and Geotechnical Branch (Region, Branch or Technical Committee)
SPECIFICATION SECTION NO. 106.11 Buy America (a)	ITEM N/A	Priority Routine <input checked="" type="checkbox"/> Fast <input type="checkbox"/>
Reason for this new or changed specification: <p>The changes to (a) Steel and Iron are to clarify what is needed in certifications and monthly submittals to meet the Buy America requirements.</p>		
New or Revised Specification: See attached...		
NOTE: See Procedural Directive 513.1 for a description of appropriate specification development procedures.		

June 17, 2020

SECTION 106
CONTROL OF MATERIAL

Section 106 of the Standard Specifications is revised to include:

Revise 106.11, Buy America Requirements, (a) as follows:

- (a) *Steel and Iron.* All manufacturing processes, including applying a coating, for ~~all~~ steel and iron products permanently incorporated in the work shall have occurred in the United States of America. All manufacturing processes include the processes that change the raw ore or scrap metal into ~~the a finished, in place~~ steel or iron product~~.". This requirement will not prevent a minimal use of foreign steel or iron, provided the total project delivered cost, including delivery to the project, of all such steel and iron products does not exceed one-tenth of one percent of the total contract cost or \$2,500, whichever is greater. #When there is any foreign steel or iron permanently incorporated into the project the Contractor shall provide documentation of the project delivered cost of that foreign steel or iron.~~

The Contractor shall maintain on file Buy America certifications that every process to either the original smelting or melting operation [ZL1], including applying a coating, performed on steel or iron products either has or has not been carried out in the United States of America. ~~This certification applies~~ These certifications apply to every ~~iron or steel and iron~~ product that requires pre-inspection, pretesting, certified test results, or a certificate of compliance. Shipping invoices, bar lists and mill test reports shall accompany the Buy America Certifications. The Contractor shall obtain ~~such~~ a certification from each supplier, distributor, fabricator, and manufacturer that has handled each steel or iron product. These certifications shall create a chain of custody trail ~~that includes for~~ every supplier, distributor, fabricator, and manufacturer that handles the steel or iron product. ~~The lack of these and shall include certified mill test reports with heat numbers to either the original smelting or melting operation. Upon request, the Contractor shall allow the State, FHWA, and their representatives access to the Buy America certifications. When the Contractor does not provide the Buy America certifications at the Engineer's request, tThe Engineer will be justification for rejection of reject the steel or iron product. when the Buy America certifications are not provided upon request.~~

Prior [2] to Before the permanent incorporation into the project and prior to before payment for steel or iron products, the Contractor shall provide an assurance document [ZL3]. that certifies The Assurance document shall certify in writing that the steel or iron products comply with Buy America requirements; the Buy America certifications are on file; and when requested, the Contractor has submitted the required documentation to CDOT. The Contractor shall maintain ~~an assurance~~ document summarizing that summarizes the date and quantity of all steel and iron material delivered to the project. This document shall include the pay item, quantity of material delivered to the project, ~~along mill test reports with heat numbers, and~~ the quantity of material installed by the monthly progress payment cutoff date for the monthly progress payment. ~~The summary.~~ The assurance document shall ~~also reconcile the pay item quantities and certified mill test reports- for the material delivered to the submitted project to the~~ Buy America certifications. The Contractor shall ~~also maintain assurance~~ documentation of shall include the project delivered cost of all foreign steel or iron delivered and permanently incorporated into the project. Both documents shall be submitted to the Engineer within five days of the cutoff date for the monthly progress payment. A monthly summary shall be submitted even if The Contractor shall also submit a summary when for each month that no steel or iron products are incorporated into or delivered to the project during the month. The ~~summary document~~ Contractor shall submit the assurance documentation to

~~the Engineer by the monthly progress payment cutoff date. The assurance documentation does not relieve the Contractor of providing the necessary Buy America certifications for steel or iron products of steel and or iron prior to permanent incorporation into the project. The State, FHWA, and their representatives shall be allowed access to this documentation upon request. Prior to the permanent incorporation into the project of steel or iron products the Contractor shall certify in writing that the documentation is on file and the steel or iron products are in compliance with this requirement.~~

(Clean Version)

106.11 Buy America Requirements

- (a) *Steel and Iron.* All manufacturing processes, including applying a coating, for steel and iron products permanently incorporated in the work shall have occurred in the United States of America. All manufacturing processes include the processes that change the raw ore or scrap metal into a finished steel or iron product. This requirement will not prevent a minimal use of foreign steel or iron, provided the total cost, including delivery to the project, of all such steel and iron products does not exceed one-tenth of one percent of the total contract cost or \$2,500, whichever is greater. When there is foreign steel or iron permanently incorporated into the project, the Contractor shall provide documentation of the project delivered cost of that foreign steel or iron.

The Contractor shall maintain on file Buy America certifications that every process to either the original smelting or melting operation, including applying a coating, performed on steel or iron products either has or has not been carried out in the United States of America. These certifications apply to every steel and iron product that requires pre-inspection, pretesting, certified test results, or a certificate of compliance. Shipping invoices, bar lists, and mill test reports shall accompany the Buy America Certifications. The Contractor shall obtain a certification from each supplier, distributor, fabricator, and manufacturer that has handled each steel or iron product. These certifications shall create a chain of custody trail for every supplier, distributor, fabricator, and manufacturer that handles the steel or iron product and shall include certified mill test reports with heat numbers to either the original smelting or melting operation. Upon request, the Contractor shall allow the State, FHWA, and their representatives access to the Buy America certifications. When the Contractor does not provide the Buy America certifications at the Engineer's request, the Engineer will reject the steel or iron product.

Before the permanent incorporation into the project and before payment for steel or iron products, the Contractor shall provide an assurance document. The Assurance document shall certify in writing that the steel or iron products comply with Buy America requirements; the Buy America certifications are on file; and when requested, the Contractor has submitted the required documentation to CDOT. The Contractor shall maintain an assurance document that summarizes the date and quantity of all steel and iron material delivered to the project. This document shall include the pay item, quantity of material delivered to the project, mill test reports with heat numbers, and the quantity of material installed by the monthly progress payment cutoff date. The assurance document shall reconcile the pay item quantities and certified mill test reports, for the material delivered to the project to the Buy America certifications. The assurance documentation shall include the cost of all foreign steel or iron delivered and permanently incorporated into the project. The Contractor shall also submit a summary for each month that no steel or iron products are incorporated into or delivered to the project. The Contractor shall submit the assurance documentation to the Engineer by the monthly progress payment cutoff date. The assurance documentation does not relieve the Contractor of providing the necessary Buy America certifications for steel or iron products.

**STANDARD SPECIAL PROVISIONS
Included in 2021 DRAFT Spec Book**

Name	Date	No. of Pages
Revision of Section 101 – Holidays <i>All projects.</i>	(Sept. 17, 2020)	1
Revision of Section 101 – Record Set <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 102 – Interpretation of Plans and Specifications <i>All projects.</i>	(Dec. 28, 2020)	1
Revision of Section 103 – Award and Execution of Contract <i>All projects.</i>	(Sept. 18, 2020)	1
Revision of Section 104 – Scope of Work <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 105 – Control of Work (105.02 b) <i>All projects.</i>	(January 20, 2021)	2
Revision of Section 105 – Control of Work (105.02 f) <i>All projects.</i>	(Dec. 28, 2020)	1
Revision of Section 105 – Control of Work (105.03) <i>All projects.</i>	(Dec. 28, 2020)	2
Revision of Section 105 – Control of Work (105.08) <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 105 – Control of Work and Revision of 106 – Control of Material <i>Projects with Portland Cement Concrete Pavement.</i>	(Sept. 25, 2020)	2
Revision of Section 106 – Control of Material <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 107 – Legal Relations and Responsibility to Public <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 107 – Project Safety Management Plan <i>All projects.</i>	(April 13, 2020)	1
Revision of Section 202 – Diamond Grinding Concrete Pavement <i>Projects with diamond grinding of concrete pavement.</i>	(October 4, 2019)	2
Revision of Section 206 – Excavation and Backfill for Structures <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 208 – Erosion Control 208.10 (b) <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 250 – Environmental Safety and Health <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 401 – Plant Mix Pavements <i>Projects as determined by the Region.</i>	(October 1, 2019)	1
Revision of Section 412 – Concrete Pavement Dowel Bar Retrofit <i>Projects with insertion of dowel bars in existing concrete pavement.</i>	(October 4, 2019)	2
Revision of Section 412 – Cross Stitching	(October 4, 2019)	1

**STANDARD SPECIAL PROVISIONS
Included in 2021 DRAFT Spec Book**

Projects with cross stitching of longitudinal cracks and joints in concrete pavement.

Revision of Section 412 – Dowel Bar for Joints <i>Projects with concrete pavement.</i>	(October 19, 2020)	3
Revision of Section 412 – Portland Cement Concrete Pavement <i>Projects with Portland Cement Concrete Pavement.</i>	(September 3, 2020)	1
Revision of Section 412 – Slot Stitching <i>Projects with slot stitching of cracks in concrete pavement.</i>	(October 4, 2019)	2
Revision of Section 502 – Piling <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 503 – Drilled Shafts <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 504 – Walls <i>All projects.</i>	(January 20, 2021)	2
Revision of Section 504 and 606 – Precast Concrete <i>Projects having precast concrete.</i>	(September 3, 2020)	1
Revision of Sections 504 and 641 – Soil Nail Wall <i>Projects having a soil nail wall.</i>	(October 1, 2019)	12
Revision of Section 509 – Steel Structures <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 518 – Polyester Concrete End Dam <i>Projects having polyester concrete end dams.</i>	(October 4, 2019)	7
Revision of Section 518 – Waterstops and Expansion Joints <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 601 – Concrete Deck (Patching) and Expansion Joint Concrete <i>Projects with concrete patching material on existing bridge decks and expansion joint replacements.</i>	(September 3, 2020)	4
Revision of Section 601 – Structural Concrete <i>Projects with structural concrete.</i>	(October 4, 2019)	17
Revision of Section 602 – Reinforcing steel <i>Projects with reinforcing steel.</i>	(September 3, 2020)	4
Revision of Section 613 – Lighting <i>Projects with roadway lighting.</i>	(Sept. 18, 2020)	10
Revision of Section 614 – Blank Out Sign (LED) (Speed Radar) <i>Projects having blank out signs, with speed radar capability.</i>	(October 1, 2019)	5
Revision of Section 614 – Pedestrian Push Buttons <i>Projects with Pedestrian Push Buttons, Accessible Pedestrian Signals, and Pedestrian Push Button Assembly Posts.</i>	(January 23, 2020)	4
Revision of Section 618 – Prestressed Concrete <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 625 – Construction Surveying <i>Projects when 3D modeling data in electronic format is available as stated in the Project Special Provision Worksheet, “Revision of Section 102, Project Plans and Other Data”.</i>	(October 1, 2019)	1

**STANDARD SPECIAL PROVISIONS
Included in 2021 DRAFT Spec Book**

Revision of Section 625 – Construction Surveying (e-sealing) <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 629 – Survey Monumentation <i>All projects.</i>	(January 20, 2021)	1
Revision of Section 630 – Automated Flagger Assistance devices <i>Projects with automated flagger assistance devices.</i>	(September 3, 2020)	1
Revision of Section 630 – Barrier (Temporary) <i>Projects with temporary barrier.</i>	(October 4, 2019)	1
Revision of Section 630 – Construction Zone Traffic Control <i>All projects.</i>	(Dec. 28, 2020)	1
Revision of Section 630 – Mobile Pavement Marking Zone (Group 1 without Attenuator) <i>Use this special provision on long striping projects having a mobile pavement marking zone in which a truck mounted impact attenuator is not required for Group 1 (roadways having AADT less than 2000). The lump sum item is generally used on longer or region-wide projects. The day pay item is generally used on smaller projects.</i>	(October 1, 2019)	1
Revision of Section 630 - Rolling Roadblock <i>Projects having rolling roadblocks.</i>	(October 1, 2019)	2
Revision of Section 705 – Joint, Waterproofing and Bearing Material <i>Projects with Joint Sealant with Backer Rod roadway lighting.</i>	(Sept. 18, 2020)	1
Revision of Section 709 – Reinforcing Steel and Wire Rope <i>Projects with reinforcing steel and wire rope.</i>	(Sept. 3, 2020)	1
Revision of Section 715 – Lighting and Electrical Materials <i>Projects with roadway lighting.</i>	(Sept. 18, 2020)	10
Affirmative Action Requirements – Equal Employment Opportunity <i>All projects.</i>	(October 1, 2019)	10

STANDARD SPECIAL PROVISIONS
Remaining with issuance of 2021 Spec Book

Name	Date	No. of Pages
Revision of Section 103 – Colorado Resident Bid Preference <i>Projects funded without federal aid.</i>	(October 1, 2019)	1
Revision of Section 103 – Escrow of Proposal Documentation <i>Use sparingly on projects approved by the Region Program Engineer that meet the following criteria:</i> (1) <i>Project with contract amount greater than \$3 million; or</i> (2) <i>complex project that has one or more of the following elements:</i> A. <i>tunneling work</i> B. <i>overlap of or proximity to projects that could result in conflicting construction schedules / delays</i> C. <i>complex state of the art structures</i> D. <i>high risk of encountering unknown hazardous materials</i> E. <i>other government or private agency involvement and there is a good possibility that the entity will request major changes to the Contract.</i>	(October 1, 2019)	2
Revision of Section 105 – Construction Drawings <i>Projects where construction drawings maintained by the Contractor are not required.</i>	(October 1, 2019)	1
Revision of Sections 105 and 106 – Conformity to the Contract of Hot Mix Asphalt (Voids Acceptance) <i>Projects with 5000 or more tons of HMA when acceptance is based on asphalt content, voids in the mineral aggregate, air voids, and in-place density.</i> <i>Note: This specification requires a Force Account item for incentive payment.</i>	(October 1, 2019)	10
Revision of Section 106 – Buy America Requirements – Non-Federal Aid <i>Projects which have no federal funding.</i>	(October 1, 2019)	1
Revision of Section 106 – Conformity to the Contract of Hot Mix Asphalt (Less than 5,000 Tons) <i>Projects with less than 5,000 tons of HMA, as determined by the Region Materials Engineer.</i> <i>Note: This specification requires a Force Account item for incentive payment.</i>	(October 1, 2019)	3
Revision of Section 106 – Conformity to the Contract of Hot Mix Asphalt (Less than 5,000 Tons with Volumetric Verification) <i>Projects with less than 5,000 tons of HMA, as determined by the Region Materials Engineer.</i> <i>Note: This specification requires a Force Account item for incentive payment.</i>	(October 1, 2019)	4
Revision of Section 106 – Country of Origin <i>Projects which are solely State funded and have budgets greater than \$500,000.</i>	(October 1, 2019)	1
Revision of Section 107 – Water Quality Control <i>Projects not having a Federal, State or Local Stormwater Construction Permit.</i> <i>[Projects with less than one acre of disturbance and not part of a common plan of development].</i>	(Dec. 29, 2020)	6
Revision of Section 109 – Asphalt Cement Cost Adjustment (Asphalt Cement Included in the Work) <i>Projects having pay items 403 Hot Mix Asphalt and/or 403 Stone Matrix Asphalt in which the cost of AC is included in the work.</i> <i>Note: This specification requires a Force Account item.</i>	(January 27, 2020)	3
Revision of Section 109 – Asphalt Cement Cost Adjustment (Asphalt Cement Paid Separately) <i>Projects having pay item 411 - Asphalt Cement.</i> <i>Note: This specification requires a Force Account item.</i>	(January 27, 2020)	2

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Revision of Section 109 – Prompt Payment (Local Agency) <i>All local agency projects.</i>	(October 1, 2019)	2
Revision of Section 207 – Topsoil <i>Projects having earthwork disturbances that will be stabilized with vegetation.</i>	(July 7, 2020)	6
Revision of Section 208 – Erosion Control <i>Projects not having a Federal, State or Local Stormwater Construction Permit. [Projects with less than one acre of disturbance and not part of a common plan of development].</i>	(Dec. 29, 2020)	26
Revision of Section 212 – Soil Amendments, Seeding, and Sodding <i>Projects having earthwork disturbances that will be stabilized with vegetation.</i>	(July 7, 2020)	18
Revision of Section 214 – Nursery Stock Containers and Uprooted Cuttings <i>Projects having earthwork disturbances that will be stabilized with vegetation.</i>	(July 7, 2020)	10
Revision of Section 401 – Composition of Mixtures – Voids Acceptance <i>Projects having voids acceptance of hot mix asphalt.</i>	(October 1, 2019)	1
Revision of Section 401 – Reclaimed Asphalt Pavement <i>Projects with voids acceptance of hot mix asphalt, and on any other projects as determined by the Region Materials Engineer.</i>	(October 1, 2019)	2
Revision of Section 401 – Thin Lift Compaction Test Section - Density <i>Projects with only one HMA layer placed and with concurrence from the Region Materials Engineer.</i>	(October 4, 2019)	1
Revision of Section 401 – Tolerances for Hot Mix Asphalt (Voids Acceptance) <i>Projects having hot bituminous pavement when acceptance is based on asphalt content, voids in the mineral aggregate, air voids, and in-place density.</i>	(October 1, 2019)	1
Revision of Sections 412 and 705 – Preformed Compression Seals <i>Projects where it is necessary to use preformed compression seals in lieu of silicone sealant in concrete pavement joints, such as projects with fast track concrete.</i>	(October 1, 2019)	2
Revision of Section 504 – Concrete Block Facing MSE Walls <i>Projects having concrete block facing MSE walls. Hybrid walls will be permitted, unless otherwise stated by the Designer in the General Notes for the MSE Wall Work Sheets.</i>	(October 1, 2019)	13
Revision of Section 601 – Concrete Mix Designs <i>Projects with concrete mixes.</i>	(January 13, 2020)	1
Revision of Section 601 – Structural Concrete (601.05) <i>All projects.</i>	(January 20, 2021)	1
Revision of Sections 601 & 701 – Structural Concrete <i>Projects with structural concrete.</i>	(Dec. 28, 2020)	3
Revision of Section 620 – Field Laboratories with Ignition Furnace <i>Projects having Stone Matrix Asphalt (SMA).</i>	(October 1, 2019)	1
Revision of Section 703 - Aggregate for Bases (RAP Allowed) <i>Projects which allow recycled asphalt pavement (RAP) to be incorporated into the aggregate base course mix. The Designer should contact the Region Materials Engineer (RME) to determine use.</i>	(October 1, 2019)	1

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Disadvantaged Business Enterprise (DBE) Requirements	(October 1, 2019)	6
<i>Required on all partially or wholly funded Federal-Aid Design-Bid-Build projects, except local agency projects. This should be used in conjunction with the revised project special provision worksheet, "Disadvantaged Business Enterprise (DBE) Contract Goal".</i>		
Disadvantaged Business Enterprise (DBE) Requirements (Local Agency)	(October 1, 2019)	9
<i>Required on all partially or wholly funded Local Agency administered Federal-Aid Design-Bid-Build projects. This should be used in conjunction with the revised project special provision worksheet, "Disadvantage Business Enterprise (DBE) Contract Goal".</i>		
On the Job Training	(October 1, 2019)	4
<i>Use on all Federal-aid projects, including local agency projects, except for local agency projects where the local agency will not use LCPtracker for reporting. Funding shall be included for the number of hours of OJT Training that is required as a separate force account. Please contact the Region EO Office for details.</i>		
On the Job Training - Local Agency Projects Not Using LCPtracker for Reporting	(October 1, 2019)	3
<i>Use on all Federal-aid local agency projects where the local agency will not use LCPtracker for reporting. Funding shall be included for the number of hours of OJT Training that is required as a separate force account. Please contact the Region EO Office for details.</i>		
Project First Program	(October 1, 2019)	2
<i>Use on all projects with an Engineer's Estimate over \$1 Million. It is optional for smaller projects. Note: This specification requires a Force Account item to pay for CDOT's share of meeting facilitation costs.</i>		
Railroad Insurance	(October 1, 2019)	1
<i>Projects that require railroad insurance.</i>		
Required Contract Provisions – Federal-Aid Construction Contracts	(July 30, 2020)	14
<i>Use this standard special provision on all federal-aid construction projects.</i>		
Special Construction Requirements, Fire Protection Plan	(October 1, 2019)	2
<i>Used in all projects, except those that are in urban areas or located along irrigated farmlands, as determined by the Resident Engineer.</i>		