

Standard Contract
REV 04/13



PROJECT DOCUMENTS

**KIPLING MULTI-USE TRAIL
PROJECT #S-03-11
ITB-15-01
January 2015**

Prepared by:
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

CITY OF WHEAT RIDGE
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WHEAT RIDGE, CO 80033
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The engineering material and data contained in these Project Documents were prepared under the supervision and direction of Mark A Westberg, PE, Projects Supervisor.

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**CITY OF WHEAT RIDGE
SOLICITATION # ITB-15-01**

BID DUE DATE: TUESDAY, FEBRUARY 24, 2015 BY 1:00 PM OUR CLOCK

**KIPLING MULTI-USE TRAIL
PROJECT #S-03-11**

SEALED BIDS MUST BE MAILED OR DELIVERED TO:

City of Wheat Ridge Municipal Building
Attention: Jennifer Nellis, CPPB
7500 West 29th Avenue, Purchasing & Contracting Division
Wheat Ridge, CO 80033
303-235-2811

IMPORTANT: PLEASE READ ENTIRE DOCUMENT
Per the attached specifications, terms and conditions.

FEIN/SSN (Required) _____
Federal I.D. Number

COMPANY NAME _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE _____ FAX _____

TYPED/PRINTED NAME _____

AUTHORIZED SIGNATURE _____
This is required. Must be in ink.

TITLE _____

ACKNOWLEDGE ADDENDAS, MUST INITIAL _____ NUMBER OF ADDENDA _____
(Bidder is responsible for following up on all addendums)

DO YOU ACCEPT VISA FOR PAYMENT? IT IS THE PREFERRED METHOD _____

DO NOT CONTACT THE REQUESTING DEPARTMENT OR MEMBER OF THE EVALUATION COMMITTEE.

Signature acknowledges that Bidder: has read the bid documents thoroughly before submitting a bid, will fulfill the obligations in accordance to the scope of work or specifications, terms, and conditions, and is submitting without collusion with any other individual or firm. Do not submit more than one bid from your firm or both bids will be disqualified. Submit bid with authorized signature.

Point of Contact: Jennifer Nellis, Purchasing Agent, jnellis@ci.wheatridge.co.us or fax 303-234-5924

MUST SUBMIT PAGE THREE / SIGNATURE PAGE WITH BID

**INVITATION TO BID
ITB-15-01, PROJECT # S-03-11
KIPLING MULTI-USE TRAIL**

Bid Due Date: TUESDAY, FEBRUARY 24, 2015 by 1:00 pm our clock. Public Opening: Municipal Building, 7500 W. 29th Avenue, Wheat Ridge, CO.

Scope of Work: Construction of the missing segments of a 10 foot wide multi-use trail along the east side of Kipling Street from 32nd Avenue to 44th Avenue, including the installation of pedestrian lighting, benches, and trash cans along the trail, and the placement of bike racks and a bike shelter. Provide all labor, equipment and materials: Approximate quantities include: 4,000 square yards of concrete pavement and sidewalk, 47 LED pedestrian lights, a 160-foot pedestrian bridge, and 950 square feet of retaining wall. Cost Range is \$1.75 – 2.25 million. Anticipated start date is April 6, 2015; the City will allow a delayed start date of up to 90 days. Completion time is 175 working days. A mandatory pre-bid conference will be held on February 4, 2015 @ 10:30 am in the PD Training Room at the Municipal Building.

Bidders Note: The project is funded through federal funds. The UDBE is set at 12%. The minimum On the Job Training goal is set at 320 hours. All work completed on the project will be performed in compliance with the Davis-Bacon Act and Federal Labor Standards Provisions (HUD 4010). All workers employed on this project shall receive at least the minimum Davis-Bacon wage requirements.

Deadline for Questions: February 9, 2015 by 5:00 pm

Contractor Qualification: Bidder must complete and submit the Contractor Qualification Form provided with the bid document. Failure to complete this form and submit with bid may result in the disqualification of the contractor. The City's acceptance of this bid shall be based on information provided by the contractor in this form. Bid amount and qualifications are evaluated subsequent to bid opening to determine the successful bidder. The City does not pre-qualify contractors. EPLS/SAM at www.sam.gov

Disadvantaged Businesses: Disadvantaged business enterprises are afforded full opportunity to submit bids and will not be discriminated against on the grounds of race, color or national origin in consideration for an award.

Illegal Alien Compliance: Contractors shall comply with the amended provisions of CRS 8-17.5-101 regarding employment of illegal aliens to perform on public contracts.

Bid Bond: A 5% bid bond is required to be submitted with the bid. Payment and performance bonds for 100% of the contract price and insurance will be required for the successful bidder.

Submit Sealed Bids to: City of Wheat Ridge Municipal Building
Attn: Jennifer Nellis, CPPB
7500 W 29th Avenue, Purchasing Division
Wheat Ridge, CO 80033

Mark Sealed Envelopes: ITB-15-01, KIPLING MULTI-USE TRAIL

Comments: All bids will be validated. No bids will be accepted after the bid due time. Bids received after the bid opening time will be filed unopened. The City of Wheat Ridge reserves the right to reject any and all bids or any part and to waive any formalities or informalities to make an award in the best interest of the City.

Bid Documents: Available on the RMEPS/Bidnet at www.govbids.com (1-800-677-1997 x 214) and the City website at www.ci.wheatridge.co.us or <ftp://ftp.ci.wheatridge.co.us/outbox/> username: cowrftp, password: cowrftp2012, file name: ITB-15-01 Kipling Multi-Use Trail. Limited hard copies are available in the Purchasing Office for a non-refundable and non- returnable cost of \$100.00. Cash or checks only. Visit the City website for bid tab sheets and project updates.

Point of Contact: Jennifer Nellis, Purchasing Agent, jnellis@ci.wheatridge.co.us or fax 303-234-5924 or phone 303-235-2811. Do not contact the requesting department.

Publish Dates: **January 26, 2015**
Daily Journal: January 26, 2015
 February 2, 2015

INFORMATION FOR BIDDERS

1.0 BID SUBMISSION REQUIREMENTS

- 1.1 Sealed Bids for **ITB-15-01, KIPLING MULTI-USE TRAIL, PROJECT #S-03-11** will be received by the City of Wheat Ridge, Office of the Purchasing Agent, 7500 W. 29th Avenue, Wheat Ridge, CO 80033, as stated in the Advertisement. BID OPENING DATE IS SET FOR TUESDAY, FEBRUARY 24, 2015 BY 1:00 PM OUR CLOCK at which time bids will be publicly opened and read aloud.

Questions about this bid shall be referred to Jennifer Nellis, Purchasing Agent, 303- 235-2811, or by fax 303-234-5924 or by email jnellis@ci.wheatridge.co.us

- 1.2 Bid Documents: available on the RMEPS/Bidnet at www.govbids.com (1-800-677-1997 x 214) and the City website at www.ci.wheatridge.co.us Limited hard copies are available in the Purchasing Office for a non-refundable and no returnable cost of \$100.00. Cash or check only.

The City does not assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of bidding documents.

The City in making copies of the bidding documents available on the terms in this Project Manual does so only for the purpose of obtaining bids on the Work and does not confer a license of grant for use.

- 1.3 Two **(2) copies** of the Project Document/Proposal must be submitted and signed. Single copies of the original bid bond will be accepted. All blank spaces for prices must be filled in, in ink or typewritten, and the Proposal Form must be fully completed and executed when submitted. In the case of discrepancies, the unit price shall govern the extension and subsequent total. No alteration in bid prices by erasures, deletions or strike-outs, will be acceptable unless each alteration is signed or initialed by the Bidder. A conditional or qualified Bid will not be accepted.

The Project Documents contain an affidavit certifying that the Bidder has not participated in any collusion or taken any action in restraint of free competitive bidding. This form must be signed and submitted with the Bid.

Names of all subcontractors and the amounts of their subcontract work shall be provided on the List of Subcontractors, as provided in this bid. If none, state "none".

- 1.4 Bids may be mailed or delivered in person, but must be in a sealed envelope. The envelope should bear on the outside the name of the project for which the Bid is submitted. No bids will be accepted after the date and time established above, except by written addendum.
- 1.5 Each Bid must be accompanied by a Bid Bond payable to the City for five percent (5%) of the total amount of the Bid. A certified check or cashier's check payable to the City of Wheat Ridge may be used in lieu of a Bid Bond. Securities may not be substituted for Bid Bonds.

Attorneys-in-Fact who sign Bid Bonds must file with each Bond a certified and effective dated copy of their Power of Attorney.

Surety companies executing bid and performance bonds must appear on the Treasury Departments most current list (Circular 570 as amended) and be authorized to transact business in the State of Colorado.

- 1.6 A bidder may withdraw or revise a proposal after it has been deposited with the City. Withdrawal of bids may be made either in writing or in person; however, any bid withdrawn for purpose of revision must be re-deposited with the City before the time set for opening of bids. Bids may not be withdrawn after the time set for opening of bids.
- 1.7 The City assumes no responsibility for late deliveries of mail on behalf of the United States Post Office. Only sealed bids received by the Purchasing Department will be accepted. Bids submitted by telephone, facsimile machine, or by other electronic means are not acceptable.

In the event of a situation severe enough to cause the City Council to close its offices for any reason, the Purchasing Agent has the prerogative of rescheduling the bid opening time and date. No bidder will be

considered above all other bidders by having met the bid opening time and date requirements to the exclusion of those who were unable to present their bid due to the closing of City offices.

- 1.8 Issuance of this Request for Bid does not commit The City of Wheat Ridge to award any contract or to procure or contract for any equipment, materials, or services. The City further reserves the right to waive informalities or irregularities, and the right to accept or reject any and all bids, including but not limited to, any bid which does not meet bonding requirements, or bids which do not furnish the quality, or offer the availability of materials, equipment or services as required by the specifications, description or scope of services, or bids from bidders who lack experience or financial responsibility, or bids which are not to form, or to award bids to the lowest and most responsive and responsible bidder, or to require new bids.

No award will be made to any person, firm, or corporation that is in arrears upon any obligation to the City.

- 1.9 The City of Wheat Ridge is exempt from City, County, State and Federal Sales/Excise Taxes. Certificates will be issued upon request.

2.0 BID DOCUMENTS

- 2.1 The Contract Documents consist of the Contract Bid Documents including construction specifications, if any. The Contract Bid Documents contain the provisions required for the bidding and construction of the Project. The Owner shall provide to Bidders, prior to Bidding, all information that is pertinent to, and delineates and describes, the Work. This may occur on the plans or on a separate document.

- 2.2 Each Bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents, including Addenda. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to his Bid. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of Work or of nature of the Work to be done or any materials specified for the Work.

- 2.3 If it should appear to a Bidder that the work to be done or matters relative thereto are not sufficiently described or explained in the Contract Documents or that the Contract Documents are not definite and clear, the Bidder may make written inquiry regarding same to the Purchasing Agent at least five (5) working days or a designated date set by the Purchasing Agent, before the scheduled closing time for filing Bids. Then, if in the judgment of the Purchasing Agent, additional, information or interpretation is necessary, such information will be supplied in the form of an Addendum, and will be delivered to all individuals, firms and corporations who have received the Contract Documents. Such Addendum shall have the same binding effect as though contained in the main body of the Contract Documents. **Oral instructions or information concerning the contract documents or the project given out by officers, employees or agents of the owner to prospective bidders shall not bind the owner.** If no request is made in the five working days or the designated time, Bidder waives right to any conflict in the Contract Documents.

- 2.4 All applicable laws, ordinances and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout. Further, the Bidder agrees to abide by the following federal requirements: Executive Order No. 11246 as amended, including specifically the provisions of the Equal Opportunity Clause, the Immigration Reform and Contract Act of 1986 and the Americans with Disabilities Act of 1991.

As a recipient of Federal funds, subject to United States Department of Transportation Title VI Regulations at 49 CFR Part 21 the Civil Rights Act of 1964, the City of Wheat Ridge, and its responsible agents, contractors and consultants assure that no person shall on the grounds of race, color, or national origin be excluded from participation in the opportunity to bid, or be discriminated against in consideration of award of this project. Disadvantaged business enterprises will be afforded full opportunity to submit bids in response to all invitations subject to the Regulations. The United States has a right to seek judicial enforcement with regard to any matter arising under Title VI, 49 CFR Part 21 and assurances.

- 2.5 **Contractor Qualification:** Bidder must complete and submit the Contractor Qualification Form provided with the bid document. Failure to complete this form and submit with bid may result in the disqualification

of the contractor. The City's acceptance of this bid shall be based on information provided by the contractor in this form. Bid amount and qualification shall be evaluated subsequent to bid opening to determine the successful bidder. The City does not pre-qualify contractors.

3.0 CONTRACT AWARD

3.1 The Owner may make such investigations as deemed necessary to determine the ability of the Bidder and Subcontractors to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted, or investigation fails to satisfy the Owner that such Bidder or any Subcontractor is properly qualified to carry out the obligations of the Agreement. If the owner rejects any Subcontractor as unqualified, the Bidder may substitute another Subcontractor for approval by the Owner but no change to the Bid Price will be allowed.

3.2 The Award of Contract is anticipated, within 60 calendar days after the opening of bids to the lowest most responsive, responsible qualified bidder whose bid complies with all the requirements of this request for bids. Evaluation and award will only include the alternate if the base bid and the alternate price combined are within the advertised cost range. If more than one alternate, the order or the selection of the alternates for award is at the discretion of the City. Award is in the best interest of the City.

3.3 The successful bidder shall be notified of the recommendation for award and to provide two (2) signed agreements, insurance and bonds. A Performance Bond and Payment Bond, each in the amount of 100 percent (100%) of the Contract Price, with a corporate surety approved by the Owner, will be required for the faithful performance of the Contract. Securities may not be substituted for Payment or Performance Bonds. Attorneys-in-Fact who sign Payment and Performance Bonds must file with each Bond a certified and effective dated copy of their Power of Attorney.

3.4 The successful bidder shall return the two copies of the executed Agreement and one acceptable Performance and Payment Bonds by a designated date. In case the Bidder fails to comply by the designated date or if the Bidder fails to provide acceptable bonds, the Owner may, at its option, consider the Bidder in default, in which case the Bid Bond accompanying the Proposal (Bid) shall become the property of the Owner.

3.5 The Owner, within 14 calendar days of receipt of the requirement stated in 3.3 above, shall execute the Agreement and issue the Notice to Proceed at a pre-construction meeting with the Contractor. If the Owner cannot issue the Notice to Proceed within such time period, the time period will be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the 14 calendar day period or within the period mutually agreed upon, the Contractor may terminate the Agreement, by Written Notice, without further liability on the part of either party.

3.6 Upon receiving notice of award, the Contractor may obtain from the City three sets of documents at no cost. Additional sets of drawings and specifications may be purchased on a cash sale basis from the City. The Contractor and the Owner will agree on the date that Work will commence which shall be within 14 calendar days of the date of the Notice to Proceed, unless a time extension is approved by the Owner.

3.7 Section 2-3 Of the City's Code of Laws is presented in part below:

(a) FISCAL YEAR. Fiscal year for the City shall commence on January 1 and end on December 31st.

(b) BUDGET CONTAINS APPROPRIATIONS. The City Council shall annually adopt a budget in a manner consistent with the provisions of Chapter X of the Home Rule Charter of the City of Wheat Ridge. Upon the annual adoption by the City Council of each year's budget, levels of authorized expenditures from the funds indicated within the annual budget itself and/or the adopting resolution shall constitute the appropriate of the amounts specified therein for the purposes specified therein. During the course of each fiscal year, approval by the City Council of contracts for goods or services, and/or approval of bids for the provision of specified goods or services, shall likewise constitute appropriations of the amounts specified therein for the purposes specified therein.

(c) NO CONTRACT TO EXCEED APPROPRIATION. During each and any fiscal year, no contract entered into by or on behalf of the City shall expend or contract to expend any money, or incur any liability, nor shall any contract be entered into nor any bid be awarded by on behalf of the City which, by its terms, involves the expenditure of money for any of the purposes for which provision is made either in

the adopted budget or adopting resolution is made either in the adopted budget or adopting resolution, including any legally authorized amendments thereto, in excess of the amount appropriated in the budget or the approved contract or bid amount. Any contract or bid award, either verbal or written, made in violation of the provisions of this Section shall be void as to the City and no monies from any source whatsoever shall be paid thereon.

(d) AMENDMENTS AND AUTHORIZED EXPENDITURES. Nothing contained herein shall preclude the City Council from adopting supplemental appropriation in a manner consistent with the provisions of Section 10.12 of the Home Rule Charter of the City of Wheat Ridge. Further, nothing contained in this Section shall prevent the making of contracts for governmental services or for capital outlay for a period exceeding one year if such contracts are otherwise allowed by the Home Rule Charter of the City; provided, however, any contract so made shall be executory only for the amounts agreed to be paid for such services to be rendered in succeeding fiscal years.

(e) NOTICE TO PARTIES CONTRACTING WITH THE CITY. All persons contracting with or selling goods or services to, the City are hereby placed on notice of the provisions of this Section. The provisions of this Section shall become a part of the Merit System Personnel Rules and Regulations of the City of Wheat Ridge; shall be referred to specifically in all public works bid documents and contracts; and shall be incorporated into, or specifically noted within, all other contracts entered into by or on behalf of the City wherein City funds are used to pay for said contract.

3.8 Section 2-4 of the City Code of Laws is presented in part below:

(a) The City may, by contract, require the contractor awarded a public works contract to waive, release, or extinguish its rights to recover costs or damages, or to obtain an equitable adjustment, for delays in performing such contract, if such delay is caused, in whole or in part, by acts or omissions of the City or its agents, if the contract provides that an extension of time for completion of the work is the Contractors remedy for such delay. Such a clause is valid and enforceable, any provision of State Law to the contrary not withstanding.

(b) The City Council, by this ordinance, declares its local contracting powers to be a matter of purely local concern, and further specifically intends to supersede, pursuant to its powers under Article XX of the Colorado Constitution, the provisions of Sections 24-91-101 and 103.5 C.R.S., insofar as they conflict with the provisions of this Section of the Code of Laws of the City of Wheat Ridge, Colorado.

4.0 ANTICIPATED PROJECT SCHEDULE

ITB Issued/Advertised	January 26, 2015 & February 2, 2015
Mandatory Pre-bid Meeting	February 4, 2015 @ 10:30 am
Deadline for Questions	February 9, 2015 by 5:00 pm
Final Addendum Issued	February 13, 2015
Bid Due Date	February 24, 2015 @ 1:00 pm
Submit CAF for City Council	March 10, 2015
City Council Award	March 23, 2015
Anticipated Start Date	April 6, 2015 – up to 90 day delay allowed
Completion Time	175 Working Days

IMPORTANT: THIS FORM MUST BE COMPLETED AND SUBMITTED WITH YOUR BID BY THE CONTRACTOR AND ANY SUB-CONTRACTORS PERFORMING WORK EQUALING 20% OR MORE OF THE TOTAL COST.

CONTRACTOR'S AND SUB-CONTRACTOR'S QUALIFICATION FORM

Your Bid Will Not Be Processed If Incomplete

SECTION I - IDENTIFICATION

1. Identification of Applicant Firm

A. _____

Exact Legal Name of Applicant Firm

DUNS # _____

B. _____

Address

City

State

Zip Code

C. _____

(Mailing Address, if different from above)

D. Primary Company Telephone No. () _____ Fax No. () _____

E. Applicant Firm's Contact Person for Public Works Office follow-up:

Print or Type Name

Position

Telephone Number

F. Has the Applicant Firm changed its address or has the Firm or its Owner(s) operated under any other name(s) including other DBAs in the past five years? If yes, explain fully on a separate sheet of paper.

No

Yes

G. Type of business organization: _____

YEAR organization established: _____ NUMBER of current full time employees: _____

Sole Proprietor

Corporation

[Date and State of Incorporation _____]

Limited Partnership

General Partnership

[Date and State of Partnership filing _____]

Limited Liability Company

Limited Liability Partnership

[Date and State of filing _____]

Other (describe) _____

Type of service(s) to be provided to the City of Wheat Ridge.

- | | |
|---|--|
| <input type="checkbox"/> General Contractor | <input type="checkbox"/> Concrete Flatwork |
| <input type="checkbox"/> Storm Sewer | <input type="checkbox"/> Concrete Structures |
| <input type="checkbox"/> Traffic Signals | <input type="checkbox"/> Slurry Seal |
| <input type="checkbox"/> Grading | <input type="checkbox"/> Fog Seal |
| <input type="checkbox"/> Asphalt Paving | <input type="checkbox"/> Crack Sealing |
| <input type="checkbox"/> Concrete Paving | <input type="checkbox"/> Landscaping |
| <input type="checkbox"/> Signing | <input type="checkbox"/> Striping |
| <input type="checkbox"/> Traffic Control | <input type="checkbox"/> Other (describe)_____ |

SECTION II - OWNERSHIP/MANAGEMENT, PROJECT MANAGEMENT, SUPERVISORS, AND RELATED ENTITIES

1. Owners

List Owners of Applicant Firm.

Full Legal Name	Title	Years of Related Experience	% Of Ownership

[Use additional sheets if necessary]

2. Project Management Team, Supervisors and Employees Who Will Be Working Directly On The Project(s).

List the full names of the primary employees of the proposed Project Team.

Full Legal Name	Present Position	Years of Related Experience	% of Time Devoted to Project	Professional Licenses

[Use additional sheets if necessary]

3. Resume

Attach resumes of the Project Management Team showing the last five years of employment in this field. Resumes must be comprehensive and include of Firms worked for and dates of employment. (RESUMES are not required from Materials Suppliers (Vendors).

4. Contractor's License(s)

The awarded Contractor must obtain or have a current City of Wheat Ridge Municipal Contractor's License within 7 days of Council approval of bid award.

SECTION III - CONTRACTING HISTORY

1. Contracting History

A. List the applicant Firm's six largest contracts in the last three years.

1. Company Name _____ Contact Name _____
Street Address _____
City _____ State _____ Zip Code _____
Phone No: _____ Fax No: _____
Contract Name & Number _____
Contract Amount _____ Start/Completion Dates _____
Description of Work _____

Prime or Subcontractor _____

2. Company Name _____ Contact Name _____
Street Address _____
City _____ State _____ Zip Code _____
Phone No: _____ Fax No: _____
Contract Name & Number _____
Contract Amount _____ Start/Completion Dates _____
Description of Work _____

Prime or Subcontractor _____

SECTION III - CONTRACTING HISTORY – (Continued)

3. Company Name _____ Contact Name _____
Street Address _____
City _____ State _____ Zip Code _____
Phone No: _____ Fax No: _____
Contract Name & Number _____
Contract Amount _____ Start/Completion Dates _____
Description of Work _____

Prime or Subcontractor _____

4. Company Name _____ Contact Name _____
Street Address _____
City _____ State _____ Zip Code _____
Phone No: _____ Fax No: _____
Contract Name & Number _____
Contract Amount _____ Start/Completion Dates _____
Description of Work _____

Prime or Subcontractor _____

5. Company Name _____ Contact Name _____
Street Address _____
City _____ State _____ Zip Code _____
Phone No: _____ Fax No: _____
Contract Name & Number _____
Contract Amount _____ Start/Completion Dates _____
Description of Work _____

Prime or Subcontractor _____

SECTION III - CONTRACTING HISTORY – (Continued)

6. Company Name _____ Contact Name _____
Street Address _____
City _____ State _____ Zip Code _____
Phone No: _____ Fax No: _____
Contract Name & Number _____
Contract Amount _____ Start/Completion Dates _____
Description of Work _____

Prime or Subcontractor _____

In the past five years has the Applicant Firm or any Affiliate been the subject of any of the following actions?

- A. Been suspended, debarred, disqualified, or otherwise declared ineligible to bid?
 No Yes
- B. Failed to complete a contract for a commercial, private owner or Government agency?
 No Yes
- C. Been denied a low-bid contract in spite of being the low bidder?
 No Yes
- D. Had a contract terminated for any reason, including default?
 No Yes
- E. Had liquidated damages assessed against it during or after completion of a contract?
 No Yes

If "Yes" to Sections IV, V or VI, provide details including a brief summary of cause(s) of action, indicate if Applicant Firm, Owner or Affiliate Firms were plaintiffs (P) or defendants (D); define charges explicitly, by what authority, court or jurisdiction, etc. Complete details are required!

NOTE: For Sections IV and V below, the definition of an "investigation" includes: an appearance before a grand jury by representatives of the Firm; any oral or written inquiry or review of the Firm's documents by a governmental or law enforcement agency or investigative agency; or questioning of employees concerning the general operation or a specific project or activities of the Firm

SECTION IV - CIVIL ACTIONS

1. Violations Of Civil Law

In the past five years has Applicant Firm, any of its Owners, or any Affiliate been the subject of an investigation of any alleged violation of a civil antitrust law, or other federal, state or local civil law?
 No Yes

2. Lawsuits With Public Agencies

At the present time is, or during the past five years has the Applicant Firm, any of its Owners, or any Affiliate been a plaintiff or defendant in any lawsuit regarding services or goods provided to the City of Wheat Ridge or to a public agency?
 No Yes

3. Bankruptcy

During the past five years, has the Applicant Firm or any Affiliate filed for bankruptcy or reorganization under the bankruptcy laws?

No

Yes

4. Judgments, Liens And Claims

During the past five years, has the Applicant Firm been the subject of a judgment, lien or claim of \$10,000 or more by a subcontractor or supplier?

No

Yes

5. Tax Liens

During the past five years, has the Applicant Firm been the subject of a tax lien by federal, state or any other tax authority?

No

Yes

SECTION V - COMPLIANCE WITH LAWS AND OTHER REGULATIONS

1. Criminal

In the past five years has the Applicant Firm, any of its Owners, or Affiliates:

A. Been the subject of an investigation involving any alleged violation of criminal law?

No

Yes

B. Been arrested, indicted or named as an unindicted co-conspirator in any indictment or other accusatory instrument?

No

Yes

C. Been convicted, after trial or by plea, of any felony under state or federal law?

No

Yes

D. Been convicted of any misdemeanor involving business-related crimes?

No

Yes

E. Entered a plea of nolo contendere to a charge of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or a violation of any antitrust laws?

No

Yes

F. Entered into a consent decree?

No

Yes

G. Been granted immunity from prosecution for any business-related conduct constituting a crime under state or federal law?

No

Yes

H. Taken the Fifth Amendment in testimony on any business-related crime?

No

Yes

I. Paid a fine or settlement to resolve any criminal or civil violations or allegations involving a business activity?

No

Yes

J. Do any Owners in Applicant Firm have any felony charges pending against them that were filed either before, during, or after their employment with the Applicant Firm?

No

Yes

2. Regulatory Compliance

In the past five years, has Applicant Firm, any of its Owners, or Affiliates been cited for:

A. A violation of any labor law or regulation, including prevailing wage rates and fair labor practices?

No

Yes

B. An OSHA violation?

No

Yes

C. A violation of federal, state or local environmental laws or regulations?

No

Yes

- D. Any other administrative, statutory or regulatory violations?
 No Yes

SECTION VI - ETHICS

1. False Statements, Bribes, Collusion

In the past five years has the Applicant Firm, any of its Owners, or Affiliates:

- A. Filed with a government body (including City of Wheat Ridge) or submitted to a government employee (including City of Wheat Ridge employee) any form of document known by the Applicant Firm, any of its Owners, or by the person submitting the document, to contain false information?
 No Yes
- B. Created or maintained false business records?
 No Yes
- C. Given, or offered to give, money or any other benefit to a public official or employee with intent to influence that person regarding any of their official acts, duties or decisions?
 No Yes
- D. Given, or offered to give, money or other benefit to an official or employee of a private business with intent to induce that official or employee to engage in unethical or illegal business activities (including but not limited to improper gratuities, and/or violations of lobbying regulations)?
 No Yes
- E. Agreed with another to bid below prevailing market rate?
 No Yes
- F. Agreed with another to submit identical or complimentary bids or otherwise not to bid competitively?
 No Yes
- G. Agreed with another not to submit competitive bids in another's territory established either by geography or customers?
 No Yes
- H. Agreed with another to take turns in obtaining contracts by pre-determining which Firm shall submit the lowest bid?
 No Yes

2. Conflict Of Interest

- A. Does the Applicant Firm, any of its Owners or Project Team Members have any existing relationships that could be construed as either personal or organizational conflicts of interest, or which would give rise to a conflict if Applicant Firm should be a recipient of a contract with the City of Wheat Ridge?
 No Yes
- B. Has any Owner or Project Team member of Applicant Firm ever (if yes explain fully):
1. Been an employee of the City of Wheat Ridge, or served as a Member of Wheat Ridge City Council?
 No Yes
 2. Been related by blood or marriage to a City of Wheat Ridge employee or Council Member?
 No Yes

SECTION VII - ADDITIONAL DOCUMENTATION REQUIRED

Additional document copies to be submitted with this application:

Letter of Reference from your Firm's Surety, which states current available aggregate and single project bonding capacity (This Application will not be processed without this letter)

List of Major Equipment by number and type available for the Project(s).

Certification of all IMSA certified personnel, if applying for traffic signal project(s). A minimum of two full time employees must be certified at Level II or higher.

**PROPOSAL FORM
ITB-15-01
KIPLING MULTI-USE TRAIL
PROJECT #S-03-11**

This is the Proposal (Bid) of _____ (hereinafter called "BIDDER") or organized and existing under the laws of the State of _____ doing business as a _____ (Insert "a corporation", "a partnership", or "an individual" as applicable.)

To the CITY OF WHEAT RIDGE (hereinafter called "Owner").

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Contract Bid Documents, to complete all Work as specified or indicated in the Contract Bid Documents for the Contract Sum and within the Contract time indicated in accordance with the Contract Bid Documents.

Bidder accepts all of the terms and conditions of the Instructions to Bidders. The Bid will remain open for sixty days after the day of Bid opening. Bidder will sign the Agreement and submit any documents required by the Contract documents within seven (7) calendar days after notification or the designated date.

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid, each party thereto certifies as to his own organization, that this Bid has been arrived at independently without consultation, or communication with any competitor. Every bid submitted to the City shall contain a statement certifying that the Bidder has not participated in any collusion or taken any action in restraint of free competitive bidding. This statement shall be in the form of an affidavit provided by the City and included in the Bid Proposal. The Bidders proposal will be rejected if it does not contain the completed Non-collusion Affidavit.

Bidder agrees to abide by the following federal requirements:

Executive Order No. 11246 as amended, including specifically, the provisions of the Equal Opportunity Clause, the Immigration Reform and Contract Act of 1986, and the Americans with Disabilities Act of 1991.

United States Department of Transportation Title VI Regulations at 49 CFR Part 21 the Civil Rights Act of 1964, assuring that no person shall on the grounds of race, color, or national origin be excluded from participation in the opportunity to bid, or be discriminated against in consideration of award of this project.

Bidder hereby agrees to commence Work under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the Project within **175 working days**.

The Notice to Proceed shall be issued within fourteen (14) days of the execution of the Agreement by the Owner. Should there be reason why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Agreement.

Bidder has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress, or performance of the Work and has made such independent investigation as Bidder deems necessary.

Bidder will complete the Work for all accepted bid items.

PROPOSAL FORM, CONTINUED
ITB-15-01
PRICING SCHEDULE

Provide all materials, labor, and equipment to complete the work as per the specifications. It is the Owner's intent to award a single contract to the lowest qualified bidder.

Project: KIPLING MULTI-USE TRAIL, PROJECT #S-03-11

Company Name Date

Authorized Signature Title

Printed Name

Title

License No. Type Expiration Date

ATTEST:

Printed Name

Signature Title

SEAL
(If bid is by corporation)

ADDENDA

Bidder acknowledges receipt of the following Addenda:

BID SCHEDULE COMPANY SUBMITTING BID _____
ITB-15-01
PROJECT #S-03-11

Bidder agrees to perform all the work described in the Contract Documents for the following unit prices or lump sums.

ITEM NO.	PAY ITEM	ESTIMATED QUANTITY	UNIT	UNIT PRICE	EXTENSION
201	Clearing and Grubbing	1	LS	\$ _____	\$ _____
202a	Removal of Asphalt Mat (Full Depth)	265	SY	\$ _____	\$ _____
202b	Removal of Concrete Pavement	441	SY	\$ _____	\$ _____
202c	Removal of Concrete Sidewalk	933	SY	\$ _____	\$ _____
202d	Removal of Curb & Gutter	656	LF	\$ _____	\$ _____
202e	Removal of Concrete Trickle Channel	90	SY	\$ _____	\$ _____
202f	Removal of Fence (Wood)	234	LF	\$ _____	\$ _____
202g	Removal of Fence (Chain link)	7	LF	\$ _____	\$ _____
202h	Removal of Tree (<12")	11	EA	\$ _____	\$ _____
202i	Removal of Tree (>12")	11	EA	\$ _____	\$ _____
202j	Removal of Sprinkler Head	4	EA	\$ _____	\$ _____
202k	Removal of Guard Rail (Type 3)	115	LF	\$ _____	\$ _____
202l	Removal of Sound Wall	90	LF	\$ _____	\$ _____
202m	Removal of Modular Block Wall	17	LF	\$ _____	\$ _____
202n	Removal of Utility Pole	9	EA	\$ _____	\$ _____
202o	Removal of Bollards	3	EA	\$ _____	\$ _____
202p	Removal of Pavement Markings	2,528	SF	\$ _____	\$ _____
202q	Clean Culvert Special	14	SF	\$ _____	\$ _____
203a	Unclassified Excavation	500	CY	\$ _____	\$ _____
203b	Unclassified Excavation (Waste)	500	CY	\$ _____	\$ _____
203c	Embankment Material	400	CY	\$ _____	\$ _____
SUBTOTAL THIS PAGE				\$ _____	\$ _____

COMPANY SUBMITTING BID _____

ITEM NO.	PAY ITEM	ESTIMATED QUANTITY	UNIT	UNIT PRICE	EXTENSION
203d	Earthwork – Rough Grade	7,208	SY	\$ _____	\$ _____
203e	Earthwork – Fine Grade	7,208	SY	\$ _____	\$ _____
203f	Potholing	32	HR	\$ _____	\$ _____
208a	Silt Fence	1,484	LF	\$ _____	\$ _____
208b	Erosion Control Supervisor	150	DAY	\$ _____	\$ _____
208c	Sweeping	100	HR	\$ _____	\$ _____
208d	Sediment Removal & Disposal	100	HR	\$ _____	\$ _____
208e	Storm Drain Inlet Protection	16	EA	\$ _____	\$ _____
208f	Aggregate Bags	500	LF	\$ _____	\$ _____
208g	Concrete Washout Structure	4	EA	\$ _____	\$ _____
208h	Vehicle Tracking Pad	4	EA	\$ _____	\$ _____
210a	Reset Fence (Wood Split Rail)	165	LF	\$ _____	\$ _____
210b	Reset Water Meter Pit	5	EA	\$ _____	\$ _____
210c	Adjust Manhole Rim	3	EA	\$ _____	\$ _____
210d	Reset Utility Box	5	EA	\$ _____	\$ _____
210e	Reset Mailbox (Type 1)	2	EA	\$ _____	\$ _____
210f	Reset Traffic Sign	10	EA	\$ _____	\$ _____
210g	Reset Bench	2	EA	\$ _____	\$ _____
210h	Reset Trash Receptacle	2	EA	\$ _____	\$ _____
210i	Reset Street Light Luminaire	1	EA	\$ _____	\$ _____
211a	Landscape Rock (Cobble)	172	SY	\$ _____	\$ _____
212a	Seeding (Native)	1,297	SY	\$ _____	\$ _____
212b	Soil Conditioning	1,649	SY	\$ _____	\$ _____
212c	Sod	1,159	SY	\$ _____	\$ _____
214	Deciduous Tree	22	EA	\$ _____	\$ _____
216	Soil Retention Blanket (Excelsior) (Biodegradable Class)	1,297	SY	\$ _____	\$ _____
304	Aggregate Base Course (Class 6)	100	TON	\$ _____	\$ _____
SUBTOTAL THIS PAGE				\$ _____	\$ _____

COMPANY SUBMITTING BID _____

306	Reconditioning & Proofrolling	5,559	SY	\$	\$
403	Hot Mix Asphalt (Patching – 9”)	9	SY	\$	\$
412	Concrete Pavement (8”) (Fast Track)	401	SY	\$	\$
503	Drilled Caissons (36”)	44	LF	\$	\$
506	Rip Rap (18”)	10	CY	\$	\$
511	Concrete Pilaster	4	EA	\$	\$
514	Hand Railing	369	LF	\$	\$
601a	Concrete (Class B)	38	CY	\$	\$
601b	Concrete (Class D Special)	26	CY	\$	\$
601c	Concrete Retaining Wall	80	SY	\$	\$
602	Reinforcing Steel	3,900	LB	\$	\$
603a	18” RCP	133	LF	\$	\$
603b	10” PVC pipe burst	650	LF	\$	\$
603c	24” PVC	40	LF	\$	\$
603d	Concrete Headwall	1	EA	\$	\$
603e	Trench Foundation Material	10	TON	\$	\$
604a	Inlet (Type R) (10 Foot)	2	EA	\$	\$
604b	Manhole Slab Base (15 Foot)	1	EA	\$	\$
604c	Irrigation Box (5 Foot)	1	EA	\$	\$
607	Fence (Wood)	327	LF	\$	\$
608a	Concrete Sidewalk (6”)	3,517	SY	\$	\$
608b	Curb Ramp (Type 1B Modified)	7	EA	\$	\$
608c	Curb Ramp (Type 1B Modified) (Special)	5	EA	\$	\$
608d	Perpendicular Curb Ramp within Sidewalk	2	EA	\$	\$
608e	Curb Ramp (Midblock)	2	EA	\$	\$
609a	Vertical Curb & Gutter (Type 2)	718	LF	\$	\$
609b	Concrete Trickle Channel	54	SY	\$	\$
609b	Forebay Channel	97	SY	\$	\$
613a	Pedestrian Light Concrete Base	47	EA	\$	\$
SUBTOTAL THIS PAGE				\$	\$

COMPANY SUBMITTING BID _____

613b	Pedestrian Light Standard	47	EA	\$	\$
613c	Pedestrian Light Luminaire	47	EA	\$	\$
613d	Street Light Concrete Base	7	EA	\$	\$
613e	Street Light Standard	7	EA	\$	\$
613f	Street Light Luminaire	7	EA	\$	\$
613g	Electrical Distribution System	7	EA	\$	\$
613h	Electrical Meter Housing	7	EA	\$	\$
613i	Electrical Meter	7	EA	\$	\$
613j	Electrical Box	47	EA	\$	\$
613k	Electrical Conduit (2")	3,505	LF	\$	\$
613l	Electrical Conduit – Bored (2")	160	LF	\$	\$
614a	Steel Sign Support (2-1/2 Inch Round NP-40) (Slipbase)	1	EA	\$	\$
614b	Pedestrian Push Button Post Assembly	8	EA	\$	\$
615	Reset Headgate	1	EA	\$	\$
617a	Ornamental Benches	9	EA	\$	\$
617b	Ornamental Trash Receptacle	9	EA	\$	\$
617c	Ornamental Bollard	3	EA	\$	\$
617d	Wheel Stops (Concrete)	12	EA	\$	\$
617e	Bike Shelter	1	EA	\$	\$
617f	Bike Rack	10	EA	\$	\$
620a	Field Office	1	EA	\$	\$
620b	Sanitary Facility	4	EA	\$	\$
623	4 Inch Pop-up Spray Sprinkler	4	EA	\$	\$
625	Construction Surveying	1	LS	\$	\$
626	Mobilization	1	LS	\$	\$
627a	Pavement Marking Tape (24")	970	LF	\$	\$
627b	Pavement Marking Paint (Low VOC Solvent Base) 1500	SF		\$	\$
627c	Modified Epoxy Pavement Marking	15	GAL	\$	\$
627d	Preformed Plastic Pavement Marking (Type 1)	1,166	SF	\$	\$
SUBTOTAL THIS PAGE				\$	\$

COMPANY SUBMITTING BID _____

628	Pedestrian Bridge	1	EA	\$		\$	
630a	Flagging	640	HR	\$		\$	
630b	Uniformed Traffic Control	24	HR	\$		\$	
630c	Traffic Control Inspection	100	DAY	\$		\$	
630d	Traffic Control Management	160	DAY	\$		\$	
630e	Construction Traffic Sign (Panel Size A)	26	EA	\$		\$	
630f	Construction Traffic Sign (Panel Size B)	8	EA	\$		\$	
630g	Advance Warning Flashing Arrow Panel	1	EA	\$		\$	
630h	Portable Message Sign Panel	2	EA	\$		\$	
630i	Vertical Panel (with Light)(Flashing)	50	EA	\$		\$	
631	Modular Concrete Retaining Wall	926	SF	\$		\$	
632a	Sound Walls	90	LF	\$		\$	
700a	Erosion Control	1	FA	\$	5,000.00	\$	5,000.00
700b	Environmental, Health & Safety	1	FA	\$	10,000.00	\$	10,000.00
700c	Landscape Restoration	1	FA	\$	20,000.00	\$	20,000.00
700d	On the Job Training	1	FA	\$	1,500.00	\$	1,500.00
700e	Partnering Program	1	FA	\$	1,000.00	\$	1,000.00
700f	Minor Contract Revisions	1	FA	\$	240,000.00	\$	240,000.00
720	Materials Sampling & Testing	1	LS	\$		\$	

SUBTOTAL THIS PAGE \$ _____

TOTAL AMOUNT OF BID \$ _____

WRITTEN OUT AMOUNT OF BID _____

CITY OF WHEAT RIDGE, CO
NON-DISCRIMINATION ASSURANCE FORM
TITLE VI REGULATIONS AT 49 CFR PART 21

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color or national origin by any entity receiving federal financial assistance.

The City of Wheat Ridge is a recipient of Federal financial assistance and as such, it—as well as all of its responsible agents, contractors and consultants—is required by the United States Department of Transportation Title VI Regulations at 49 CFR Part 21 (the Regulations) to assure nondiscrimination. The City of Wheat Ridge assures that no person shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination on the grounds of race, color, or national origin under any program or activity conducted by the City.

All bidders are hereby notified that the City of Wheat Ridge will affirmatively ensure that disadvantaged business enterprises will be afforded full opportunity to submit bids in response to all invitations and will not be discriminated against on the grounds of race, color or national origin in consideration for an award. This applies to all solicitations for bids for work or material subject to the Regulations, and for all proposals for negotiated agreements.

The bidder, whose name and signature appear below, certifies and agrees as follows:

1. The bidder shall comply with the provisions of Title VI of the Civil Rights Act of 1964.
2. The bidder assures the City of Wheat Ridge that disadvantaged business enterprises are afforded full opportunity to submit bids as sub-contractors or sub-consultants and will not be discriminated against on the grounds of race, color or national origin in consideration for award.
3. The bidder shall comply with all reasonable requests made in the course of an investigation of Title VI, the Regulations and this assurance by the Colorado Department of Transportation, the US Department of Transportation or the City of Wheat Ridge, as a sub-recipient of Federal financial assistance.
4. The bidder agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under Title VI, the Regulations and this assurance.

FIRM: _____

(Print full legal name of company)

AUTHORIZED SIGNATURE: _____

Printed Name and Title: _____

Date Certified and Agreed: _____

Attestation: (A corporate attestation is required)

Place corporate seal below:

BY: _____

Corporate Secretary or Equivalent

Bidder must complete and SUBMIT this form with your bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.

CITY OF WHEAT RIDGE, CO
CERTIFICATION STATEMENT FOR
ILLEGAL ALIENS, COMPLIANCE TO HB 1343

The Vendor, whose name and signature appear below, certifies and agrees as follows:

1. The Vendor shall comply with the provisions of CRS 8-17.5-101 et seq.
2. The Vendor shall not knowingly employ or contract with an illegal alien to perform work under this purchase order or enter into a contract with a subcontractor that knowingly employs or contracts with an illegal alien.
3. The Vendor represents, warrants, and agrees that it (i) has verified that it does not employ any illegal aliens, through participation in the Basic Pilot Employment Verification Program administered by the Social Security Administration and Department of Homeland Security, or (ii) otherwise shall comply with the requirements of CRS 8-17.5-102(2)(b)(I).
4. The Vendor shall comply with all reasonable requests made in the course of an investigation by the Colorado Department of Labor and Employment. If the Vendor fails to comply with any requirement of this provision or CRS 8-17.5-101 et seq., the City may terminate the above referenced purchase order for breach and the Vendor shall be liable for actual and consequential damages to the City of Wheat Ridge.

CERTIFIED and AGREED to this _____ day of _____, 2015

BID NUMBER: _____

FIRM: _____
(Print Full Legal Name)

Authorized Signature: _____

Print Name: _____

Print Title: _____ Date: _____

Attestation: (A corporate attestation is required.)

BY: _____ Place corporate seal here, if applicable
Corporate Secretary or Equivalent

Bidder must complete and SUBMIT this form with your bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.

**NON-COLLUSION AFFIDAVIT
ITB-15-01
KIPLING MULTI-USE TRAIL
PROJECT #S-03-11**

COMPANY SUBMITTING BID _____

STATE OF: _____

COUNTY OF: _____

_____ of lawful age, being duly sworn, on oath says that (s)he is the agent authorized by the Bidder to submit the attached bid. Affidavit further states that the Bidder has not been a party of any collusion among Bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or any Federal, State or Municipal official or employees as to quantity, quality, or price in the prospective Contract, or any other items of said prospective Contract; or in any discussions between bidders and any Federal, State or Municipal official concerning exchange of money or other thing of value for special consideration in the letting of a Contract.

NAME _____

TITLE _____

Subscribed and sworn to before me this ____ day of _____, 2015

NOTARY PUBLIC SIGNATURE

My Commission Expires:

Bidder must complete and SUBMIT this form with your bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.

BID BOND FORM

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

(name and address of Contractor)

as Principal, and

(name and address of surety)

as Surety, are hereby held and firmly bound unto the City of Wheat Ridge as Owner in the penal sum of

_____ for the payment of which, well and truly to be made,
we

hereby jointly and severally bind ourselves, successors, and assigns.

Signed this _____ day of _____, 2015.

The condition of the above obligation is such that whereas the Principal has submitted to the City of Wheat Ridge a certain BID, attached hereto and hereby made a part hereof, to enter a contract in writing for the Project titled **ITB-15-01, KIPLING MULTI-USE TRAIL, PROJECT #S-03-11**

NOW, THEREFORE,

- (a) If said Bid shall be rejected or,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with the said Bid) and shall furnish a Bond for his faithful performance of said Contract, and for the payment for all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid.

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its Bond shall be in no way impaired or affected by an extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

(Principal/Contractor)

(Surety)

By: _____

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

**CITY OF WHEAT RIDGE
ITB-15-01
KIPLING MULTI-USE TRAIL
PROJECT #S-03-11
SAMPLE AGREEMENT**

THIS AGREEMENT, made this ____ day of _____ 2015 by and between the City of Wheat Ridge, Colorado, hereinafter called "Owner" and _____, doing business as an individual, whose business address is _____, hereinafter called "Contractor".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned the parties agree as follows:

1. The Contractor agrees to furnish all materials, supplies, tools, equipment, labor and other services necessary to complete the construction of the Project titled, **ITB-15-01, KIPLING MULTI-USE TRAIL, PROJECT #S-03-11** in accordance with the Contract Bid Documents.
2. The Contractor agrees to perform all the Work described in the Contract Bid Documents and comply with the terms therein for the Total Contract amount of _____ **DOLLARS (\$_____)** which includes any alternates.
3. The Contractor agrees to commence the Work required by the Contract Documents within **Fourteen (14)** calendar days after the date of the Notice to Proceed and to complete the same within **# OF WORKING DAYS WORKING DAYS** after the date of the Notice to Proceed unless the time for completion is extended otherwise by written changes to the Contract Bid Documents.
4. The term "CONTRACT BID DOCUMENTS" means and includes the following:

<ul style="list-style-type: none"> A Signature Page B Advertisement for Bids C Information for Bidders D Contractor Qualification E Bid Form F Bid Schedule G List of Subcontractors H Non-Discrimination Assurance I Illegal Alien Certification J Non-Collusion Affidavit 	<ul style="list-style-type: none"> K Bid Bond L Agreement M Payment Bond N Performance Bond O Notice to Proceed P Final Receipt Q Project Special Provisions R General Provisions Q Addenda S Drawings/Exhibits
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5. The Owner will pay to the Contractor in the manner and at such times as set forth in the General Conditions, such amounts as required by the Contract Documents.
6. Section 2-3 of the City's Code of Laws is presented below:
 - (a) **FISCAL YEAR.** Fiscal year for the City shall commence on January 1 and end on December 31.
 - (b) **BUDGET CONTAINS APPROPRIATIONS.** The City Council shall annually adopt a budget in a manner consistent with the provisions of Chapter X of the Home Rule Charter of the City of Wheat Ridge. Upon the annual adoption by City Council of each year's budget, levels of authorized expenditures from the funds indicated within the annual budget itself and/or the adopting resolution shall constitute the appropriation of the amounts specified therein for the purposes specified therein. During the course of each fiscal year, approval by the City Council of contracts for goods or services, and/or approval of bids for the provision of specified goods or services, shall likewise constitute appropriations of the amounts specified therein for the purposes specified therein.
 - (c) **NO CONTRACT TO EXCEED APPROPRIATION.** During each and any fiscal year, no contract entered into by or on behalf of the City shall expend or contract to expend any money, or incur any liability, nor shall any contract be entered into nor any bid be awarded by on behalf of the City which, by its terms, involves the expenditure of money for any of the purposes for which provision is made either in the adopted budget or adopting resolution is made either in the adopted budget

or adopting resolution, including any legally authorized amendments thereto, in excess of the amount appropriated in the budget or the approved contract or bid amount. Any contract or bid award, either verbal or written, made in violation of the provisions of this Section shall be void as to the City and no City monies from any source whatsoever shall be paid thereon.

- (d) **AMENDMENTS AND AUTHORIZED EXPENDITURES.** Nothing contained herein shall preclude the City Council from adopting supplemental appropriation in a manner consistent with the provisions of Section 10.12 of the Home Rule Charter of the City of Wheat Ridge. Further, nothing contained in this Section shall prevent the making of contracts for governmental services or for capital outlay for a period exceeding one year if such contracts are otherwise allowed by the Home Rule Charter of the City; provided, however, any contract so made shall be executory only for the amounts agreed to be paid for such services to be rendered in succeeding fiscal years.

The City Manager is authorized to review and approve change orders and modifications up to ten (10%) percent of the original contract amount.

- (e) **NOTICE TO PARTIES CONTRACTING WITH THE CITY.** All persons contracting with, or selling goods or services to, the City are hereby placed on notice of the provisions of this Section. The provisions of this Section shall become a part of the Merit System Personnel Rules and Regulations of the City of Wheat Ridge; shall be referred to specifically in all public works bid documents and contracts; and shall be incorporated into, or specifically noted within, all other contracts entered into by or on behalf of the City wherein City funds are used to pay for said contract.
- (f) The City may, by contract, require the contractor awarded a public works contract to waive, release or extinguish it rights to recover costs or damages, or obtain an equitable adjustment, for delays in performing such contract, if such delay is caused, in whole or part, by acts or omissions of the City or its agents, if the contract provides that an extension of time for completion of the work is the Contractor's remedy for such delay. Such a clause is valid and enforceable, any provision of State Law to the contrary notwithstanding.
- (g) The City Council, by this ordinance, declares its local contracting powers to be a matter of purely local concern, and further specifically intends to supersede, pursuant to its powers under Article XX of the Colorado Constitution, the provisions of Sections 24-91-101 and 103.5, C.R.S., insofar as they conflict with the provisions of this Section of the Code of Laws of the City of Wheat Ridge, Colorado.

7. NOTICES

Any notice or communication given pursuant to this Agreement to the City shall be made in writing:

City Contact:	Contractor Contact:
Name:	Name:
Address:	Address:
E-mail:	Fax:
Phone:	Phone:
Fax:	Fax:

- 8. The Contractor agrees to abide by the requirements under EXECUTIVE ORDER NO. 11246 as amended, including specifically the provisions governed by the Equal Opportunity Commission and also to abide by the requirements of the IMMIGRATION REFORM AND CONTRACT ACT OF 1986 and the requirements of the AMERICANS WITH DISABILITIES Act of 1991; and the United States Department of Transportation Title VI Regulations at 49 CFR Part 21 requirements under the Civil Rights Act of 1964, assuring that no person shall on the grounds of race, color, or national origin be excluded from participation in the opportunity to bid, or be discriminated against in consideration of award of this project.
- 9. In accordance with CRS Title 24, Article 91, Section 103.6, Paragraph 2, Subparagraph a, the City of Wheat Ridge hereby states that funds have been appropriated for this Project in an amount equal to or in excess of the Original Contract Amount.

10. Illegal Aliens – Public Contracts for Services. CRS 8-17.5-101 and Public Law 208, 104th Congress, as amended and expanded in Public Law 156, 108th Congress, as amended:

The Contactor certifies that he/she shall comply with the provisions of CRS 8-17.5-101 et seq. The Contractor shall not knowingly employ or contract with an illegal alien to perform work under this contract or enter into a contract with a subcontractor that knowingly employs or contracts with an illegal alien. The Contractor represents, warrants, and agrees that it (i) has verified that it does not employ any illegal aliens, through participation in the Basic Pilot Employment Verification Program administered by the Social Security Administration and Department of Homeland Security, or (ii) otherwise will comply with the requirements of CRS 8-17.5-101 (2)(b)(I). The Contractor shall comply with all reasonable requests made in the course of an investigation by the CO Department of Labor and Employment. If the Contractor fails to comply with any requirement of this provision or CRS 8-17.5-101 et seq., the City may terminate this contract for breach and the Contractor shall be liable for actual and consequential damages to the City.

11. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in **Two (2) copies**, each of which shall be deemed an original on the date first above written.

ATTEST:

 JANELLE SHAVER, CITY CLERK

 DATE

(Seal)

APPROVED AS TO FORM:

 GERALD DAHL, CITY ATTORNEY

ATTEST TO CONTRACTOR:

 NAME

 TITLE

 DATE

OWNER

**CITY OF WHEAT RIDGE
 7500 WEST 29TH AVENUE
 WHEAT RIDGE, CO 80033
 303-234-5900**

 JOYCE JAY, MAYOR

CONTRACTOR

 COMPANY NAME

 ADDRESS

 PRINT NAME

 TITLE

 DATE

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

A _____ hereinafter called "PRINCIPAL", and

(Name of Surety)

(Address of Surety)

hereinafter called "Surety", are held and firmly bound unto the City of Wheat Ridge, 7500 West 29th Avenue, Wheat Ridge, Colorado 80033, hereinafter called "Owner", in the penal sum of _____ **DOLLARS (\$ _____)** in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the _____ day of _____ 2015, a copy of which is hereto attached and made a part hereof for the Project titled, **ITB-15-01, KIPLING MULTI-USE TRAIL, PROJECT #S-03-11.**

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, Subcontractors and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such Work, and all insurance premiums on said WORK, and for all labor performed in such work whether by Subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Work to be performed or the Specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications.

*Insert "a corporation", "a partnership", or "an individual" as applicable.

IN WITNESS WHEREOF, this instrument is executed in **ONE** part, each of which shall be deemed an original, this the

_____ day of _____, 2015

ATTEST:

PRINCIPAL

CORPORATE SECRETARY

PRINCIPAL

ADDRESS

BY

ADDRESS

(SEAL)

ATTEST:

SURETY

SURETY

ADDRESS

BY (ATTORNEY IN FACT)

ADDRESS

(SEAL)

Note: Date of Bond must not be prior to date of Contract. If Contractor is partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the State of Colorado.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a (*) _____, hereinafter called "PRINCIPAL", and

(Name of Surety)

(Address of Surety)

hereinafter called "Surety", are held and firmly bound unto the City of Wheat Ridge, 7500 West 29th Avenue, Wheat Ridge, Colorado 80033, hereinafter called "Owner", in the penal sum of _____ **DOLLARS (\$_____)** in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the _____, a copy of which is hereto attached and made a part hereof for the Project titled, **ITB-15-01, KIPLING MULTI-USE TRAIL, PROJECT #S-03-11**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety and during the one year guarantee period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said SURETY for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the Work to be performed or the Specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or the Specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

*Insert "a corporation", "a partnership", or "an individual" as applicable.

IN WITNESS WHEREOF, this instrument is executed in **ONE** part, each of which shall be deemed an original, this

the _____ day of _____, 2015.

ATTEST:

PRINCIPAL

CORPORATE SECRETARY

PRINCIPAL

ADDRESS

BY

ADDRESS

(SEAL)

ATTEST:

SURETY

SURETY

ADDRESS

BY (ATTORNEY IN FACT)

ADDRESS

(SEAL)

Note: Date of Bond must not be prior to date of Contract. If Contractor is partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the State of Colorado.

NOTICE TO PROCEED

TO:

FROM: **CITY OF WHEAT RIDGE, CO**

RE: **ITB-15-01, KIPLING MULTI-USE TRAIL, PROJECT #S-03-11**

You are hereby notified to commence Work in accordance with the Agreement dated _____,

2015, on or before _____, 2015, and you are to complete the work within **175 WORKING DAYS**.
The date of completion of all work is _____, 2015

Dated this ____ day of _____ 2015.

By: _____
Title: Engineering Manager

RECEIPT OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged by

_____ on this ____ of _____, 2015.

Printed Name _____

Signature _____

Title _____

FINAL RECEIPT

DATE: _____

TO: _____
(Contractor)

(Address)

FROM: **CITY OF WHEAT RIDGE, CO**

RE: **ITB-15-01, KIPLING MULTI-USE TRAIL, PROJECT #S-03-11**

Received this date, of the Owner, as full and final payment of the cost of the improvements provided for in the Project Contract Documents, the amount of \$ _____ in cash, being the remainder of the full amount accruing to the undersigned by virtue of said contract.

Said cash also covers and includes full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto.

The undersigned hereby releases said Owner from all claims whatsoever which may develop from said contract.

These presents are to certify that all persons doing work upon or furnishing materials for said improvements under the foregoing contract have been paid in full.

Printed Name _____

Signature _____

Title _____

Date _____

**CITY OF WHEAT RIDGE
GENERAL PROVISIONS**

1. DEFINITIONS:

"City" (also sometimes referred to as "Owner") means the City of Wheat Ridge, Colorado. The City is represented by employees who will assume Project administration, oversight, and inspection responsibilities as further defined in the Contract, the General and Special provisions, and the current edition of CDOT Standard Specifications for Road and Bridge Construction. At the time of the preconstruction meeting, or when requested by the Contractor, the City shall provide an official list of City representatives and their titles as applies to the Project.

"Contractor" means the person, partnership, firm or corporation responsible for the physical accomplishment of the project.

"Subcontractor" means only those having a direct contract with the Contractor and includes one who furnished materials worked to a special design according to the plans or specifications for the work under the Contract, but does not include one who merely furnishes material not so worked.

"Notice" means written demand, instruction or order duly served. Written notice shall be deemed to have been duly served if delivered in person to the Contractor, or if delivered in person or sent by registered mail to the address given in the Contract and shall have been duly served upon the City if delivered to the City Clerk of the City of Wheat Ridge, Municipal Building, Wheat Ridge, Colorado, either in person or by registered mail.

"Work" means performance of the Contractor or Subcontractor including labor and materials and all services incidental thereto.

"Cost" means all charges and expenditures of every kind applicable to the accomplishment of the work.

"Final Completion" means when all items are one hundred percent (100%) complete and when all known defective work has been corrected as certified by the City Representative.

"Substantial Completion Date" is the date on which the City Representative certifies the readiness of the work for beneficial occupancy or use, and is the date for terminating liability for liquidated damages and for determining incentive payments due for early completion.

2. MATERIALS, SERVICES, AND FACILITIES:

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish and pay for all labor, superintendence, material, utilities, machinery, equipment, tools, transportation, facilities, temporary construction of every nature and all other services and facilities of every nature, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work, within the time stated, in accordance with the plans, drawings and specifications covered by the Contract, and any and all supplemental plans, drawings and specifications. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required. It will be the responsibility of the Contractor to locate/negotiate a staging area. The City will not provide a staging area on City owned property. Any work necessary to be performed after regular working hours, on Saturdays, Sundays, or Legal Holidays, shall be performed without additional expense to the City.

3. CONTRACTOR'S TITLE TO MATERIALS:

No materials or supplies for the work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the work, free from all liens, claims or encumbrances.

4. OBSERVATION AND TESTING:

All work performed and all workmanship, equipment and materials used in the construction shall be subject to Observation, examination and test, at any and all times during construction.

5. WEATHER CONDITIONS:

In the event of temporary suspension of work, or during inclement weather or whenever the City shall direct, the Contractor will, and will cause his Subcontractors to, protect carefully his and their work and materials against damage or injury from weather. If, in the opinion of the City, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his Subcontractors to so protect his work, such materials shall be removed and replaced at the expense of the Contractor.

6. EMERGENCY - PROTECTION OF LIFE AND PROPERTY:

In case of an emergency which threatens loss of injury or property, and/or safety of life, the Contractor is hereby permitted to act at his own discretion and in a diligent manner without prior instructions from the City to prevent the threatened loss or injury. He shall notify the City immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted in writing to the City for approval. The amount of any reimbursement claimed by the Contractor shall be determined in the manner provided in Article 9 of this Contract.

7. REPORTS, RECORDS, AND DATA:

The Contractor shall submit to the City such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as may be requested concerning work performed or to be performed under this Contract.

8. SUPERINTENDENCE BY CONTRACTOR:

At the site of the work, the Contractor shall employ a construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such Representative shall be acceptable to the City and shall be one who can be continued in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll. All directions given to such Representative in the Contractor's absence shall be as binding as if given to the Contractor.

9. CHANGES IN THE WORK:

The City may, at any time, by written order and without notice to the sureties, require the performance of extra work or make changes by altering, adding to, or deducting from the work. The amount of compensation to be paid to the Contractor shall be adjusted accordingly without invalidating the Contract and in accordance with whichever of the following plans the City elects: (1) a price agreed upon, (2) a price based on unit prices of the Contract; or (3) a price determined by adding fifteen percent (15%) to the reasonable cost of the extra work, addition, alteration, or deduction; provided however, that no additions to the Contract Price shall be agreed upon by, or shall be binding upon the City if the effect of said price increase is to increase the Contract amount beyond the amount of money appropriated by the City Council, as specified in Section 2-3 of the Code of Laws of the City of Wheat Ridge.

In giving instructions, the City may authorize minor changes in the work, not involving extra cost and not inconsistent with the purpose of the project. Otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written approved Change Order or RFI response by the City.

10. COMPLETION TIME; INCENTIVE PAYMENTS; LIQUIDATED DAMAGES:

-----DELETE THIS SECTION-----

11. TIME EXTENSIONS:

The Contractor shall, within seven (7) days from the beginning of any delay, notify the City, in writing, of the causes thereof and the City shall ascertain the facts, the extent of the delay and notify the Contractor of the decision in the matter.

The completion time shall be extended when delay in completion of the work by the Contractor is due to unforeseeable causes beyond his control and without his fault or negligence, including, but not restricted to, acts of God or the public enemy, acts or neglect of the City, acts of neglect of any other contractor, fires, floods,

epidemics, quarantine restrictions, strikes, riots, civil commotions or freight embargoes. The time of completion of his work shall be extended by such time as shall be fixed by the City.

No such extension of time shall be deemed a waiver by the City of its right to terminate the Contract for abandonment or delay by the Contractor as herein provided or relieve the Contractor from full responsibility for performance of his obligations hereunder. The City's liability for delay shall be limited pursuant to the provisions of Section 2-4 of the Code of Laws of the City of Wheat Ridge and shall be limited to granting a time extension to the Contractor.

12. DEFECTIVE WORK:

The observation of the work by the City shall not relieve the Contractor of any of his obligations to fulfill his Contract as herein prescribed, and defective work shall be made good, and unsuitable materials may be rejected, notwithstanding that such work and material have been previously overlooked by City representative(s) and accepted or estimated for payment or paid for. If the work or any part thereof shall be found defective or at any time before the final acceptance of the whole work, or the final payment therefore, the Contractor shall forthwith make good such defect in a manner satisfactory to the City and if any material brought upon the ground for use in the work, or selected for the same, shall be condemned by the City as unsuitable, the Contractor shall forthwith remove such materials from the vicinity of the work and shall replace, at his own expense, damaged or unsuitable materials with the new materials of satisfactory quality.

Neither the foregoing nor any provision of these Contract Documents, nor any special guarantee time limit, shall be held to limit the Contractor's liability for defects to less than the legal limit of liability in accordance with the law of the place of the construction.

The Contractor shall pay the City all expenses, losses, and damages as determined by the City incurred in consequence of any defect, omission, or mistake of the Contractor or his employees or the making good thereof.

13. UNEXPECTED UNDERGROUND STRUCTURES; CHANGE OF CONDITIONS:

Should the Contractor encounter underground structures at the site materially differing from those shown on the Plans or indicated in the Specifications, he shall immediately give notice to the City of such conditions before they are disturbed. The City will thereupon promptly investigate the conditions, and if it is determined that they materially differ from those shown on the Plans, may authorize changes to be made to the Plan and/or Specifications as may be necessary.

It is understood and agreed that the Contractor has considered in his bid all of the permanent and temporary utility appurtenances in their present or relocated position as shown on the plans and that additional compensation will not be allowed except for any unreasonable delays, or damage sustained by him due to any interference from the said utility appurtenances. Unreasonable delays shall constitute delays caused by a complete shut down of all operations. It is understood that utilities are not owned, operated or controlled or subject to control by the City of Wheat Ridge. Relocations of facilities owned by said utilities are not a matter over which the City has control. The Contractor shall adjust his schedule in anticipation of such delays so that work in other areas may be completed away from the area of utility conflict.

The locations of all utilities shown on the Project plans should be considered approximate. It is therefore the responsibility of the Contractor to notify the appropriate utility and obtain more precise locations. No compensation will be made to the Contractor for any damage, delay or additional cost incurred as a result of failure to obtain utility locations.

Information on the Plans in the Contract Documents referring to the existence of utilities or other underground structures is not guaranteed to be correct or to be a complete representation of all existing data. Every effort has been made, however, to make this information complete and accurate on the basis of all data and information which could be procured by the City. The Contractor shall make his own examination and shall draw his own conclusions as to the underground facilities which will be encountered, and he shall have no claim for damages of any kind on account of any errors, inaccuracies or omission that may be found.

There shall be no adjustment in Contract Price based on changed site conditions. The Contractor is required hereby to make an on-site inspection and investigation, which includes determination of location of utilities and said and other natural conditions. Representations regarding site and soil conditions and utility locations are based on the best information available to the Owner and final determination as to both site and soil conditions

and utility locations is left to the Contractor, without recourse to the City. The City shall allow reasonable and necessary access to the site to Contractor and his representatives to make such determination and site review.

14. CLAIMS FOR EXTRA COSTS:

No claim for extra work or cost shall be allowed unless the same was done in pursuance of written order of the City, as provided for in Article 9, and the claim was presented prior to the issuance of the final payment. When work is performed under the "reasonable cost" method as outlined in Article 9 of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost, and when requested by the City, give the City access to accounts relating thereto.

15. RIGHT OF CITY TO TERMINATE CONTRACT:

If (1) the Contractor or any of his Subcontractors shall be adjudged bankrupt or (2) if he shall make a general assignment for the benefit of his creditors or (3) if a receiver shall be appointed of his property, or (4) if the work to be done under this Contract shall be abandoned, or (5) if this Contract or any part hereof shall be sublet, without the previous written consent of the City, or (6) if the Contract or any claim thereunder shall be assigned by the Contractor otherwise than as herein specified, or (7) at any time the City shall certify in writing that the rate of progress of the work or any part thereof is unsatisfactory or (8) that the work or any part thereof is unnecessarily or unreasonably delayed, or (9) that the Contractor, his subcontractors, agents or employees have violated any of the provisions of this Contract, or of the plans and specifications, or construction schedule, the City shall notify Contractor and the Surety, and shall be entitled immediately to terminate the Contract. The Surety shall have the right to take over and perform the Contract, provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the City may take over the work and prosecute the same to completion by contract or by force account for the account and at the expense of the Contractor, and the Contractor and his Surety shall be liable to the City for any excess cost occasioned the City thereby, and in such event the City may take possession of and utilize in completing the work, such materials, machinery, appliances and plant as may be on the site of the work and necessary therefore. The Contractor, by signing this Contract, gives to the City in the event of default, right to use such aforesaid articles to the full extent which they could be used by the Contractor. The City shall not be liable to the Contractor for trespass or conversion.

All expenses charged under this article shall be deducted and paid for by the City out of money then due to become due the Contractor under this Contract or any part thereof, and in such account the City shall not be held to obtain the lowest figures for the work of completing the Contract or any part thereof or for insuring its proper completion, but all sums actually paid hereafter shall be charged to the Contractor and his Surety. In case the expenses so charged are less than the sum which would have been payable under this Contract if the same had been completed by the Contractor, the City shall be entitled to retain the difference and in case such expenses shall exceed the said sum, the Contractor and his Surety shall pay the amount of the excess to the City upon completion of the work without further demand being made therefore.

16. CONSTRUCTION SCHEDULE:

Before any work is begun, the Contractor shall provide to the City a written schedule detailing the order and manner of doing the work. Before the first partial payment is made, the Contractor shall deliver to the City an estimated construction progress schedule in form satisfactory to the City, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract. The Contractor shall provide an updated schedule every two weeks.

17. PAYMENTS TO THE CONTRACTOR:

During the course of construction, the Contractor shall request payment of work actually performed during the preceding month. The City will once each month make a progress payment to the Contractor on the basis of an evaluation of the claim by the City as to amount of work done and that the City has received full value thereof. In accordance with House Bill 11-1115, the City shall retain five percent (5%) of the value of the completed work. Retainage shall be held until final completion and acceptance of all work, as part security for the fulfillment of the Contract by the Contractor. The amount of the progress payments shall be the balance not retained as aforesaid, after deducting all previous payments and all other sums to be kept or retained under the provisions of this Contract. The Contractor shall have no right to either terminate the Contract or to claim damages if he considers partial payments inadequate.

18. CERTIFICATE OF COMPLETION:

Upon completion of all work whatsoever required including completion of all known defective work, the City shall file a written certificate with the Contractor as to the entire amount of work performed and compensation earned by the Contractor including Extra Work and compensation therefore, and including the date of completion.

19. FINAL PAYMENT:

After the filing of the Certificate of Completion, the City shall pay to the Contractor in accordance with applicable Colorado laws (Article 38, Chapter 26, Section 101 Et. Seq. Colorado Revised Statutes) and upon authorization of funds disbursement by the City Council the amount therein stated, less all prior payments and advances whatsoever, to or for the Account of the Contractor. All prior estimates and payments including those relating to extra work shall be subject to correction by this payment.

20. PAYMENT WITHHELD:

The City, as a result of subsequent discovered evidence, may withhold or nullify the whole or a part of any payment to such extent as may be necessary to protect the City from loss on account of:

- (a) Defective work not remedied.
- (b) Claims filed or reasonable evidence indicating probable filing of claim.
- (c) Failure of the Contractor to make payments properly to Subcontractor or for material or labor, or to comply with laws relative thereto.
- (d) A reasonable doubt that the Contract can be completed for the balance then unpaid.
- (e) Damage to another Contractor.
- (f) Damage to the real or personal property of another and failure to repair or replace the same.

When the grounds for withholding payment have been corrected to the satisfaction of the City, the City shall proceed to process any amounts due.

21. FINAL PAYMENT TO TERMINATE LIABILITY OF CITY:

The acceptance by the Contractor of the last payment made as aforesaid under the provisions of Article 19 shall operate as and shall be a release to the City, its officers, or agents from all claims and liability to the Contractor, his vendors, laborers or Subcontractors for anything done or furnished for, relating to, or for any act or neglect of the City or of any persons relating to, or affecting the work, except the claim against the City for the remainder, if any there be, of the amounts kept or retained as provided in Article 17, 19 and 20 of these. Said acceptance shall also operate as a general release of the City by the Contractor.

22. EFFECT OF CERTIFICATION AND PAYMENT:

Neither the certification nor payment made to the Contractor, not partial or entire use or occupancy of the work by the City shall be an acceptance of any work or materials not in accordance with the Contract. The making and acceptance of the final payment shall constitute a bar of all claims by the Contractor, except those previously made in writing and still unsettled.

23. NOT USED.

24. INSURANCE:

The Contractor, sub-contractors, and consultants shall maintain general liability and property damage insurance (the "Liability Policy") to protect the Contractor and the City from any and all claims for damages including but not limited to claims for property damage and bodily injury, including death, which may arise from operations under this Contract, including the operations of subcontractors. The Liability Policy shall state that it is the primary insurance for such claims and shall not contain any "excess" or "other insurance" clauses which limit its application as the primary coverage for those claims. The Contractor shall be individually liable for any and all defects in the Liability Policy. The Liability Policy shall not be terminated or cancelled prior to the completion of this Contract without at least 45 days prior written notice to the City.

For bodily injury	\$1,000,000 each person/ \$1,000,000 each accident/ \$1,000,000 each disease
For property damage	\$1,000,000 for each occurrence
For automobile liability	\$1,000,000 combined single limit

In lieu of the foregoing, a single limit public liability policy for personal injury, property and/or vehicle damage will be accepted in the amount of \$2,000,000.00.

Such insurance shall be without prejudice to coverage otherwise existing, and shall name as additional insured, the City of Wheat Ridge, its officers and employees, and the State of Colorado.

Notwithstanding the naming of additional insured, the said policy shall protect each insured in the same manner as though a separate policy had been issued to each, but nothing herein shall operate to increase the insurer's liability as set forth elsewhere in the policy beyond the amount or amounts for which the insurer would have been liable if only one person or interest had been named as insured. A certificate evidencing such insurance, together with the proper endorsement, shall be filed, subject to approval as to the adequacy of protection.

Fire and Standard Extended Coverage Insurance -- The Contractor shall insure the work for 100 percent (100%) of the replacement value thereof for the life of the Contract against all loss or damage covered by the Standard Extended Coverage Insurance endorsement, including theft, vandalism, and malicious mischief, with an insurance company or companies acceptable to the City. The amount of the insurance may vary with the extent of the work completed but shall at all times be at least equal to the replaceable value of the amount paid for the work and materials installed and delivered plus the replaceable value of the work or materials furnished or delivered, but not yet paid for by the City. The insurance policy or policies shall be held jointly in the name of the City and Contractor as their respective interest may appear.

The issue, if any, shall be made adjustable with and payable to the City as a trustee for whom it may concern. Any payments made under such policy shall insure to the benefit of the City to the extent of balance for replacement of the loss suffered. The policy of insurance shall provide that it shall not be terminated or be canceled prior to the completion of this Contract. The Contractor shall be responsible for all damage to the work under construction, whether from fire, water, high winds or other cause during construction and until final completion and acceptance, even though partial payments or progress payments have been made under the Contract.

Workers' Compensation Insurance -- The Contractor shall provide workers' compensation insurance coverage for all persons employed on the work to be done under the Contract and assure that all workers will receive the compensation for compensable injuries.

Certificates of Insurance shall be attached to the executed Contract Documents and shall become a part of the Contract. These Certificates shall include a provision that forty five (45) days prior to insurance cancellation, written notice shall be given to the City of Wheat Ridge.

Indemnification of City -- Contractor hereby indemnifies and agrees to hold the City and its representatives and agents harmless for and on account of any act or omission in the completion and execution of the project specified herein, which indemnification shall extend to and include any damage of whatever sort or description, suffered by any person or entity, and shall include compensatory, punitive or special damages; and Contractor agrees to defend City hereunder, at Contractor's sole expense and if he fails to do so, to thereafter indemnify City, in addition to the above indemnification, for all court costs and attorneys fees incurred in any defense required to be undertaken by the City.

Notwithstanding the foregoing, nothing contained herein shall be deemed a waiver by the City of any of the protections afforded the City by virtue of the provisions of the Colorado Governmental Immunity Act (Colo. Rev. Stat. 24-10-101).

25. RESPONSIBILITY FOR WORK; PRIORITY OF DOCUMENTS:

- a) Debts and claims: The Contractor shall pay all debts for labor and materials contracted for by him on account of the work herein contemplated. The Contractor shall assume the defense of, and indemnify and save harmless, the City and its officers and agents, from all claims relating to labor and materials furnished for the work; to infringement or alleged infringement of invention patents and patent rights used in, or in connection with the work or however originating from any of the work under this Contractor from conditions created thereby; to injuries to any persons or corporation caused by the acts or negligence of the Contractor or any of his agents or employees, or of any Subcontractor or any agents or employees of any Subcontractors, in doing the work or in consequence of any improper materials, implements or labor used therein; and shall fully reimburse and repay to the City all outlay and expense which the City may incur by reason of his failure to do so. The Contractor shall satisfy all suits and claims against the City arising from the

violation of any law, ordinance, regulation, order, or decree on the part of the Contractor or any of his agents or employees, or any Subcontractor, or agent or employees of any Subcontractor; shall fully indemnify and save harmless the City against and from all cost, loss, and damage which the City may suffer by reason of his failure to do so; and shall fully reimburse and repay to the City all outlay and expense which the City may incur in making good any such default. The Contractor shall fully complete the work required to be done under this Contract, free from all liens and claims of any kind whatsoever.

- b) Plans and Specifications: It shall be the duty of the Contractor to carefully study and compare all drawings, specifications and instructions, visit the project site and acquaint himself with all conditions, and call to the attention of the City any discrepancy, error, omission or inconsistency that may exist in the plans or specifications, or between the plans and specifications, or any conflict between existing conditions and requirements of the plans and specifications. The execution or work in accordance with the plans, specifications or other instructions will be considered as evidence that the Contractor is thoroughly familiar with the true intent of the plans, specifications or other instructions. Change orders will not be issued to cover any cost, loss, or expense for additional labor or material required to rectify any discrepancies discovered or reported to the City after the execution of the work, unless the discrepancies are errors in structural, mechanical or electrical design as determined by the City.
- c) Priority of Documents: In case of discrepancy or inconsistency in the terms or conditions of any documents, the Contract Documents shall have the following order of priority such that a statement appearing in the document with the higher priority shall control any inconsistent statement in a document of lower priority. (The following are listed from the highest priority to the lowest priority):
 - 1. The Agreement
 - 2. Drawings and any notes appearing on the drawings
 - 3. Project Special Provisions
 - 4. Current edition of CDOT Standard Specifications for Road and Bridge Construction and all supplements thereto (English Version).
 - 5. General Provisions of the Contract for construction.

26. NOT USED

27. CARE AND PROTECTION OF PROPERTY:

The Contractor expressly undertakes at his own expense:

To assume full responsibility for the preservation of all public and private property, and use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property or on account of any act, omission, neglect or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the City. No representations are made by or on behalf of the City concerning the conditions, locations or state of repair or existing sewers, drains, water mains and other underground structures;

To store his apparatus, materials, supplies, and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work on any other Contractor;

To provide suitable storage facilities for all materials which are liable to injury or exposure to weather, theft, breakage, or otherwise;

To place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work;

To clean up frequently all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;

To fully and completely remove all utility markings generated by or as a result of the project from public rights-of-way utilizing a method that is least destructive to the existing improvements, and which method has been approved by the City. Should the contractor propose to remove the markings with pressure washing, all pressure washing runoff and residue shall be contained and collected in accordance with Best Management Practices and Wheat Ridge Ordinance Chapter 20, Stormwater Quality and Control. Removal of all markings shall occur no later than twenty (20) days after completion of work.

To remove all surplus material, false-work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition before final payment;

To affect all cutting, fitting or patching of his work required to make the same to conform to the Plans and Specifications and, except with the consent of the City, not to cut or otherwise alter the work of any other Contractor. The Contractor shall not, except after written consent from proper parties enter or occupy with men, tools, materials or equipment, any privately owned land except on easements provided herein.

28. LANDS FOR WORK AND RIGHT-OF-WAY:

The City will provide land, right-of-way, and easements for all work specified in the Contract.

29. NO DAMAGES FOR CERTAIN DELAYS:

The City may delay the commencement of the work, or any part thereof, if the City shall deem it for the best interest of the City to do so. The Contractor shall have no claim for damages on account of such delay, but he shall be entitled to so much additional time in which to complete the whole or any portion of the work required under this Contract as the City shall certify in writing to be just. The Contractor shall have no claim for damages on account of any delay on the part of another Contractor. Contractor expressly acknowledges and accepts the provisions of Section 2-4 of the Code of Laws of the City of Wheat Ridge as controlling this Project.

30. REQUIRED PROVISIONS DEEMED INSERTED:

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the applications of either party, the Contract shall forthwith be physically amended to make such insertion.

31. PROTECTION OF LIVES AND HEALTH:

The Contractor shall take all necessary precautions for the safety of employees of the work, and shall comply with all applicable provisions of Federal, State, and Municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. He shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workmen and the public and shall post danger signs warning against the hazards created by the construction such as protruding nails, hod hoists, well holes, elevator hatchways, scaffolding, window openings, stairways, and falling materials.

The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL-91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL-19-54).

32. WAGE RATES:

The attention of the bidder is called to the requirements and provisions of all applicable laws and any amendments thereof or additions thereto as to the employment of labor, and to the schedule of any minimum wage rates established in compliance with such laws. If, after the award of the Contract, it becomes necessary to employ any person in a trade or occupation not classified in the wage determinations, such person shall be paid at not less than such rate as shall be determined by the officials administering the laws mentioned above.

The Contract is subject to the applicable provisions of the Contract Work Hours Standards Act. Public Law 87-581, 87th Congress. No Contractor or Subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight (8) hours in any calendar day or in excess of forty (40) hours in any work week unless such laborer or mechanic received compensation at a

rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight (8) hours in any calendar day or in excess of forty (40) hours in such work week, as the case may be.

33. EMPLOYMENT OF LABOR:

The Contractor and each of his Subcontractors shall hire qualified workers for the project who are citizens of the United States or legal resident aliens with first preference being given, insofar as practicable, to those having served in the armed forces of the United States and having been honorably discharged or released from active duty therein.

The Contractor shall employ only competent persons to do the work, and whenever requested in writing by the City Representative, the Contractor shall discharge any person who commits trespass or is, in the opinion of the City Representative, disorderly, dangerous, unfaithful, insubordinate, incompetent or otherwise unsatisfactory.

34. SANITARY PRECAUTIONS:

Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such points as shall be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committal of nuisances within, on, or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the City Representative.

The Contractor shall supply sufficient drinking water from approved sources to all of his employees.

The sanitary convenience specified above shall be the obligation and responsibility of the General Contractor until the completion of the work. The facilities shall be made available to all other Contractors and Subcontractors.

35. SALES AND USE TAXES:

Do not include sales or use taxes in your bid. House Bill 1451 provides that Contractors shall make application with the Colorado State Department of Revenue for a tax exempt number which will be issued for the duration of the project. This tax exempt number is for State taxes only. The City of Wheat Ridge will issue its own tax exempt number for local sales tax purposes. An affidavit must be signed by the General Contractor for such project before the City tax exempt number can be issued. Please be advised that a supplier is allowed by Colorado law (C.R.S. 39-26-703 (1) to disallow any exemption because the seller is ultimately responsible for the tax. When a supplier exercises this right, please seek a refund of sales taxes paid from the appropriate jurisdiction (city or state).

36. BUSINESS LICENSE:

A business license is required for all Contractors performing work in the City prior to beginning work. Please contact the City Sales Tax Division to obtain a license.

CDOT STANDARD SPECIFICATIONS

All work required for the project shall be in accordance with the latest edition of the COLORADO DEPARTMENT OF TRANSPORTATION (CDOT), Standard Specifications for Road and Bridge Construction, 2011 Edition, unless modified by these Specifications.

CDOT STANDARD SPECIAL PROVISIONS

The CDOT Standard Specifications are modified with the following CDOT Standard Special Provisions.

July 31, 2014

REVISION OF SECTION 105 CONSTRUCTION SURVEYING

Section 105 of the Standard Specifications is hereby revised for this project as follows:

In subsection 105.13, delete (a) and replace with the following:

- (a) *Contractor Surveying.* When the bid schedule contains pay item 625, Construction Surveying, the Department will provide control points and bench marks as described in the Contract. The Contractor shall furnish and set construction stakes establishing lines and grades in accordance with the provisions of Section 625. The Engineer may order extra surveying which will be paid for at a negotiated rate not to exceed \$150 per hour.

In subsection 105.13 (b), delete the sixth paragraph and replace with the following:

The Contractor shall be held responsible for the preservation of all stakes and marks, and if any are destroyed, disturbed or removed by the Contractor, subcontractors, or suppliers, the cost of replacing them will be charged against the Contractor and will be deducted from the payment for the work at a negotiated rate not to exceed \$150 per hour.

November 6, 2014

REVISION OF SECTION 105 DISPUTES AND CLAIMS FOR CONTRACT ADJUSTMENTS

Section 105 of the Standard Specifications is hereby revised for this project as follows:

Delete subsections 105.22, 105.23 and 105.24 and replace with the following:

105.22 Dispute Resolution. Subsections 105.22, 105.23, and 105.24 detail the process through which the parties (CDOT and the Contractor) agree to resolve any issue that may result in a dispute. The intent of the process is to resolve issues early, efficiently, and as close to the project level as possible. Figure 105-1 in the standard special provisions outlines the process. Specified time frames may be extended by mutual agreement of the Engineer and the Contractor. In these subsections, when a time frame ends on a Saturday, Sunday or holiday, the time frame shall be extended to the next scheduled work day.

A dispute is a disagreement concerning contract price, time, interpretation of the Contract, or all three between the parties at the project level regarding or relating to the Contract. Disputes include, but are not limited to, any disagreement resulting from a delay, a change order, another written order, or an oral order from the Project Engineer, including any direction, instruction, interpretation, or determination by the Project Engineer, interpretations of the Contract provisions, plans, or specifications or the existence of alleged differing site conditions.

The term "merit" refers to the right of a party to recover on a claim or dispute, irrespective of quantum, based on the substance, elements, and grounds of that claim or dispute. The term "quantum" refers to the quantity or amount of compensation or time deserved when a claim or dispute is found to have merit.

Disputes from subcontractors, material suppliers, or any other entity not party to the Contract shall be submitted through the Contractor. Review of a pass-through dispute does not create privity of Contract between CDOT and the subcontractor.

If CDOT does not respond within the specified timelines, the Contractor may advance the dispute to the next level.

When the Project Engineer is a Consultant Project Engineer, actions, decisions, and determinations specified herein as made by the Project Engineer shall be made by the Resident Engineer.

The dispute resolution process set forth in this subsection shall be exhausted in its entirety prior to initiation of litigation or arbitration. Failure to comply with the requirements set forth in this subsection shall bar either party from any further administrative, equitable, or legal remedy. If a deadline is missed that does not prejudice either party, further relief shall be allowed.

All disputes and claims shall be submitted within 30 days of the date of the certified letter submitting the CDOT Form 96, Contractor Acceptance of Final Estimate, to the Contractor.

When a project has a landscape maintenance period, the Project Engineer will grant partial acceptance in accordance with subsection 105.21(a). This partial acceptance will be project acceptance of all the construction work performed prior to this partial acceptance. All disputes and claims related to the work in which this partial acceptance is granted shall be submitted within 30 days of the Project Engineer's partial acceptance.

Failure to provide notification of a dispute or claim within the time periods listed above releases the State of Colorado from all disputes and claims for which notice has not already been submitted in accordance with the Contract.

All disputes and claims seeking damages calculated on a Total Cost or Modified Total Cost basis will not be considered unless the party asserting such damages establishes all the legal requirements therefore, which include:

- (1) The nature of the particular losses makes it impossible or highly impractical to determine them with a reasonable degree of accuracy.
- (2) The Contractor's bid or estimate was realistic.
- (3) The Contractor's actual costs were reasonable.
- (4) The Contractor was not responsible for the cost overrun.

Should the Contractor's dispute use the Total Cost approach for calculating damages, damages will be determined by subtracting the contract amount from the total cost of performance. Should the Contractor's dispute use the Modified Total Cost approach for calculating damages, if the Contractor's bid was unrealistic in part, and/or some of its costs were unreasonable and/or some of its damages were caused by its own errors, those costs and damages will be deducted from the total cost of performance to arrive at the Modified Total Cost. The Total Cost or Modified Total Cost basis for calculating damages shall not be available for any disputes or claims seeking damages where the Contractor could have kept separate cost records at the time the dispute arose as described in subsection 105.22(a).

- (a) *Document Retention.* The Contractor shall keep full and complete records of the costs and additional time incurred for each dispute for a period of at least three years after the date of final payment or until dispute is resolved, whichever is more. The Contractor, subcontractors, and lower tier subcontractors shall provide adequate facilities, acceptable to the Engineer, for an audit during normal business hours. The Contractor shall permit the Engineer or Department auditor to examine and copy those records and all other records required by the Engineer to determine the facts or contentions involved in the dispute. The Contractor shall identify and segregate any documents or information that the Contractor considers particularly sensitive, such as confidential or proprietary information.

Throughout the dispute, the Contractor and the Project Engineer shall keep complete daily records of extra costs and time incurred, in accordance with the following procedures:

1. Daily records shall identify each operation affected, the specific locations where work is affected, and the potential effect to the project's schedule. Such records shall also reflect all labor, material, and equipment applicable to the affected operations.
2. On the first work day of each week following the date of the written notice of dispute, the Contractor shall provide the Project Engineer with the daily records for the preceding week. If the Contractor's records indicate costs greater than those kept by the Department, the Project Engineer will meet with the Contractor and present his records to the Contractor at the meeting. The Contractor shall notify the Engineer in writing within three work days of any inaccuracies noted in, or disagreements with, the Department's records.

- (b) *Initial Dispute Resolution Process.* To initiate the dispute resolution process the Contractor shall provide a written notice of dispute to the Project Engineer upon the failure of the Parties to resolve the issue through negotiation. Disputes will not be considered unless the Contractor has first complied with specified issue resolution processes such as those specified in subsections 104.02, 106.05, 108.08(a), and 108.08(d).

The Contractor shall supplement the written notice of dispute within 15 days with a written Request for Equitable Adjustment (REA) providing the following:

- (1) The date of the dispute
- (2) The nature of the circumstances which caused the dispute
- (3) A statement explaining in detail the specific provisions of the Contract and any basis, legal or factual, which support the dispute.
- (4) If any, the estimated quantum, calculated in accordance with methods set forth in subsection 105.24(b)12., of the dispute with supporting documentation
- (5) An analysis of the progress schedule showing the schedule change or disruption if the Contractor is asserting a schedule change or disruption.

The Contractor shall submit as much information on the quantum and impacts to the Contract time as is reasonably available with the REA and then supplement the REA as additional information becomes available. If the dispute escalates to the DRB process the DRB shall not hear any issue or consider any information that was not contained in the Request for Equitable Adjustment and fully submitted to the Project Engineer and Resident Engineer during the 105.22 process.

- (c) *Project Engineer Review.* Within 15 days after receipt of the REA, the Project Engineer will meet with the Contractor to discuss the merits of the dispute. Within seven days after this meeting, the Project Engineer will issue a written decision on the merits of the dispute.

The Project Engineer will either deny the merits of the dispute or notify the Contractor that the dispute has merit. This determination will include a summary of the relevant facts, Contract provisions supporting the determination, and an evaluation of all scheduling issues that may be involved.

If the dispute is determined to have merit, the Contractor and the Project Engineer will determine the adjustment in payment, schedule, or both within 30 days. When a satisfactory adjustment is determined, it shall be implemented in accordance with subsections 106.05, 108.08, 109.04, 109.05 or 109.10 and the dispute is resolved.

If the Contractor accepts the Project Engineer's denial of the merits of the dispute, the dispute is resolved and no further action will be taken. If the Contractor does not respond in seven days, it will be assumed he has accepted the denial. If the Contractor rejects the Project Engineer's denial of the merits of the dispute or a satisfactory adjustment of payment or schedule cannot be agreed upon within 30 days, the Contractor may further pursue resolution of the dispute by providing written notice to the Resident Engineer within seven days, according to subsection 105.22(d).

- (d) *Resident Engineer Review.* Within seven days after receipt of the Contractor's written notice to the Resident Engineer of unsatisfactory resolution of the dispute, the Project Engineer and Resident Engineer will meet with the Contractor to discuss the dispute. Meetings shall continue weekly for a period of up to 30 days and shall include a Contractor's representative with decision authority above the project level.

If these meetings result in resolution of the dispute, the resolution will be implemented in accordance with subsections 108.08, 109.04, 109.05, or 109.10 and the dispute is resolved.

If these meetings do not result in a resolution or the participants mutually agree that they have reached an impasse, the dispute shall be presented to the Dispute Review Board in accordance with subsection 105.23.

105.23 Dispute Review Board. A Dispute Review Board (DRB) is an independent third party that will provide specialized expertise in technical areas and administration of construction contracts. The DRB will assist in and facilitate the timely and equitable resolution of disputes between CDOT and the Contractor in an effort to avoid animosity and construction delays, and to resolve disputes as close to the project level as possible. The DRB shall be established and operate as provided herein and shall serve as an independent and impartial board.

There are two types of DRBs: the "On Demand DRB" and the "Standing DRB". The DRB shall be an "On Demand DRB" unless a "Standing DRB" is specified in the Contract. An On Demand DRB shall be established only when

the Project Engineer initiates a DRB review in accordance with subsection 105.23(a). A Standing DRB, when specified in the Contract, shall be established at the beginning of the project.

(a) *Initiation of Dispute Review Board Review.* When a dispute has not been resolved in accordance with subsection 105.22, the Project Engineer will initiate the DRB review process within 5 days after the period described in subsection 105.22(d).

(b) *Formation of Dispute Review Board.* DRBs will be established in accordance with the following procedures:

1. CDOT, in conjunction with the Colorado Contractors Association, will maintain a statewide list of suggested DRB candidates experienced in construction processes and the interpretation of contract documents and the resolution of construction disputes. The Board members shall be experienced in highway and transportation projects. After December 31, 2013 only individuals who have completed training (currently titled DRB Administration & Practice Training) through the Dispute Resolution Board Foundation or otherwise approved by CDOT can be a DRB member. When a DRB is formed, the parties shall execute the agreement set forth in subsection 105.23(l).
2. If the dispute has a value of \$250,000 or less, the On Demand DRB shall have one member. The Contractor and CDOT shall select the DRB member and execute the agreement within 30 days of initiating the DRB process. If the parties do not agree on the DRB member, each shall select five candidates. Each party shall numerically rank their list using a scale of one to five with one being their first choice and five being their last choice. If common candidates are listed, but the parties cannot agree, that common candidate with the lowest combined numerical ranking shall be selected. If there is no common candidate, the lists shall be combined and each party shall eliminate three candidates from the list. Each party shall then numerically rank the remaining candidates, with No. 1 being the first choice. The candidate with the lowest combined numerical ranking shall be the DRB member. The CDOT Project Engineer will be responsible for having all parties execute the agreement.
3. If the dispute has a value over \$250,000, the On Demand DRB shall have three members. The Contractor and CDOT shall each select a member and those two members shall select a third. Once the third member is approved the three members will nominate one of them to be the Chair and execute the agreement within 45 days of initiating the DRB process.
4. The Standing DRB shall always have three members. The Contractor and CDOT shall each select a member and those two members shall select a third member. Once the third member is approved the three members will nominate one of them to be the Chair. The Contractor and CDOT shall submit their proposed Standing DRB members within 5 days of execution of the Contract. The third member shall be selected within 15 days of execution of the Contract. Prior to construction starting the parties shall execute the Three Party Agreement. The CDOT Project Engineer will be responsible for having all parties execute the agreement. The Project Engineer will invite the Standing DRB members to the Preconstruction and any Partnering conferences.
5. DRB members shall not have been involved in the administration of the project under consideration. DRB candidates shall disclose to the parties the following relationships:
 - (1) Prior employment with either party
 - (2) Prior or current financial interests or ties to either party
 - (3) Prior or current professional relationships with either party
 - (4) Anything else that might bring into question the impartiality or independence of the DRB member
 - (5) Prior to agreeing to serve on a DRB, members shall notify all parties of any other CDOT DRB's they are serving or that they will be participating in another DRB.

If either party objects to the selection of a potential DRB member based on the disclosures of the potential member, that potential member shall not be placed on the Board.

6. There shall be no ex parte communications with the DRB at any time.
7. The service of a Board member may be terminated only by written agreement of both parties.
8. If a Board member resigns, is unable to serve, or is terminated, a new Board member shall be selected within four weeks in the same manner as the Board member who was removed was originally selected.

(c) *Additional Responsibilities of the Standing Disputes Review Board*

1. General. Within 120 days after the establishment of the Board, the Board shall meet at a mutually agreeable location to:
 - (1) Obtain copies of the Contract documents and Contractor's schedules for each of the Board members.
 - (2) Agree on the location of future meetings, which shall be reasonably close to the project site.
 - (3) Establish an address and telephone number for each Board member for the purposes of Board business.
2. Regular meetings. Regular meetings of the Board shall be held approximately every 120 to 180 days throughout the life of the Contract, except that this schedule may be modified to suit developments on the job as the work progresses. Regular meetings shall be attended by representatives of the Contractor and the Department.
3. The Board shall establish an agenda for each meeting which will cover all items that the Board considers necessary to keep it abreast of the project such as construction status, schedule, potential problems and solutions, status of past claims and disputes, and potential claims and disputes. Copies of each agenda shall be submitted to the Contractor and the Department at least seven days before the meeting date. Oral or written presentations or both shall be made by the Contractor and the Department as necessary to give the Board all the data the Board requires to perform its functions. The Board will prepare minutes of each meeting, circulate them to all participants for comments and approval, and issue revised minutes before the next meeting. As a part of each regular meeting, a field inspection trip of all active segments of the work at the project site may be made by the Board, the Contractor, and the Department.
4. Advisory Opinions
 - (1) Advisory opinions are typically used soon after the parties find they have a potential dispute and have conducted preliminary negotiations but before expenditure of additional resources and hardening their positions. Advisory opinions provide quick insight into the DRB's likely assessment of the dispute. This process is quick and may be entirely oral and does not prejudice the opportunity for a DRB hearing.
 - (2) Both parties must agree to seek an advisory opinion and so notify the chairperson. The procedure for requesting and issuing advisory opinions should be discussed with the DRB at the first meeting with the parties.
 - (3) The DRB may or may not issue a written opinion, but if a written advisory opinion is issued, it must be at the specific request of both parties.
 - (4) The opinion is only advisory and does not require an acceptance or rejection by either party. If the dispute is not resolved and a hearing is held, the oral presentations and advisory opinion are completely disregarded and the DRB hearing procedure is followed.
 - (5) Advisory opinions should be limited to merit issues only.

(d) *Arranging a Dispute Review Board Hearing.* When the Project Engineer initiates the DRB review process, the Project Engineer will:

1. Contact the Contractor and the DRB to coordinate an acceptable hearing date and time. The hearing shall be held at the Resident Engineer's office unless an alternative location is agreed to by both parties. Unless otherwise agreed to by both parties the DRB hearing will be held within 30 days after the DRB agreement is signed by the CDOT Chief Engineer.
2. Ensure DRB members have copies of all documents previously prepared by the Contractor and CDOT pertaining to the dispute, the DRB request, the Contract documents, and the special provisions at least two weeks before the hearing.

(e) *Pre-Hearing Submittal:* At least fifteen days prior to the hearing, CDOT and the Contractor shall submit by e-mail to the DRB Chairperson their parties pre-hearing position paper. The DRB Chairperson shall simultaneously distribute by e-mail the pre-hearing position papers to all parties and other DRB members, if any. At the same time, each party shall submit a copy of all its supporting documents to be used at the hearing to all DRB Members and the other party unless the parties have agreed to a common set of documents as discussed in #2 below. In this case, CDOT shall submit the common set of documents to the Board and the Contractor. The pre-hearing position paper shall contain the following:

1. A joint statement of the dispute, and the scope of the desired decision. The joint statement shall summarize in a few sentences the nature of the dispute. If the parties are unable to agree on the wording of the joint statement, each party's position paper shall contain both statements, and identify the party authoring each statement. The parties shall agree upon a joint statement at least 20 days prior to the hearing and submit it to the DRB or each party's independent statement shall be submitted to the DRB and the other party at least 20 days prior to the hearing.
2. The basis and justification for the party's position, with reference to specific contract language and other supporting documents for each element of the dispute. To minimize duplication and repetitiveness, the parties may identify a common set of documents that will be referred to by both parties and submit them in a separate package to the DRB. The engineer will provide a hard copy of the project plans and Project and Standard Special Provisions, if necessary, to the DRB. Other standard CDOT documents such as Standard Specifications and M&S Standards are available on the CDOT website.
 - (1) If any party contends that they are not necessary to the proceedings, the DRB shall determine that issue in the first instance. Should the DRB determine that a dispute does not involve a party, that party shall be relieved from participating in the DRB hearing and paying any further DRB costs.
 - (2) When the scope of the hearing includes quantum, the requesting party's position paper shall include full cost details, calculated in accordance with methods set forth in subsection 105.24(b)12. The Scope of the hearing will not include quantum if CDOT has ordered an audit and that audit has not been completed.
3. A list of proposed attendees at the hearing. In the event of any disagreement, the DRB shall make the final determination as to who attends the hearing.
4. A list of any intended experts including their qualifications and a summary of what their presentation will include and an estimate of the length of the presentation.

The number of copies, distribution requirements, and time for submittal shall be established by the DRB and communicated to the parties by the Chairperson.

A pre-hearing phone conference with all DRB members and the parties shall be conducted as soon as a hearing date is established but no later than 10 days prior to the hearing. The DRB Chairperson shall explain the specifics of how the hearing will be conducted including how the two parties will present their information to the DRB (Ex: Each party makes a full presentation of their position or presentations will be made on a "point by point" basis with each party making a presentation only on an individual dispute issue before moving onto to the next issue). If the pre-hearing position papers and documents have been received by the Board prior to the conference call, the DRB Chairperson shall at this conference discuss the estimated hours of review and research activities for this dispute (such as time spent evaluating and preparing recommendations on specific issues presented to the DRB). If the pre-hearing position papers and documents have not been received by the Board prior to the conference call, another conference call will be scheduled during the initial conference call to discuss the estimated hours of review. Compensation for time agreed to in advance by the parties will be made at an agreed rate of \$125 per hour in accordance with subsection 105.23 (k) 2. Compensation for the phone conference time will also be made at an agreed to rate of \$125 per hour in accordance with subsection 105.23 (k) 2. The Engineer shall coordinate the phone conference.

(f) *Dispute Review Board Hearing.* The DRB shall preside over a hearing. The chairperson shall control the hearing and conduct it as follows:

1. An employee of CDOT presents a brief description of the project and the status of construction on the project.
2. The party that requested the DRB presents the dispute in detail as supported by previously submitted information and documentation in the pre-hearing position paper. No new information or disputes will be heard or addressed by the DRB.
3. The other party presents its position in detail as supported by previously submitted information and documentation in the pre-hearing position paper. No new information or disputes will be heard or addressed by the DRB.
4. Employees of each party are responsible for leading presentations at the DRB hearing.
5. Attorneys shall not participate in the hearing unless the DRB specifically addresses an issue to them or unless agreed to by both parties. Should the parties disagree on attorney participation, the DRB shall

decide on what, if any, participation will be permitted. Attorneys representing the parties are permitted to attend the hearing, provided their presence has been noted in the pre-hearing submittal.

6. Either party may use experts. A party intending to offer an outside expert's analysis at the hearing shall disclose such intention in the pre-hearing position paper. The expert's name and a general statement of the area of the dispute that will be covered by his presentation shall be included in the disclosure. The other party may present an outside expert to address or respond to those issues that may be raised by the disclosing party's outside expert.
 7. If both parties approve, the DRB may retain an outside expert. The DRB chairperson shall include the cost of the outside expert in the DRB's regular invoice. CDOT and the Contractor shall equally bear the cost of the services of the outside expert employed by the DRB.
 8. Upon completion of their presentations and rebuttals, both parties and the DRB will be provided the opportunity to exchange questions and answers. All questions shall be directed to the chairperson first. Attendees may respond only when board members request a response.
 9. The DRB shall hear only those disputes identified in the written request for the DRB and the information contained in the pre-hearing submittals. The board shall not hear or address other disputes. If either party attempts to discuss a dispute other than those to be heard by the DRB or attempts to submit new information, the chairperson shall inform such party that the board shall not hear the issue and shall not accept any additional information. The DRB shall not hear any issue or consider any information that was not contained in the Request for Equitable Adjustment and fully submitted to the Project Engineer and Resident Engineer during the 105.22 process.
 10. If either party fails to timely deliver a position paper, the DRB may reschedule the hearing one time. On the final date and time established for the hearing, the DRB shall proceed with the hearing using the information that has been submitted.
 11. If a party fails to appear at the hearing, the DRB shall proceed as if all parties were in attendance.
- (g) *Dispute Review Board Recommendation.* The DRB shall issue a Recommendation in accordance with the following procedures:
1. The DRB shall not make a recommendation on the dispute at the meeting. Prior to the closure of the hearing, the DRB members and the Contractor and CDOT together will discuss the time needed for analysis and review of the dispute and the issuance of the DRB's recommendation. The maximum time shall be 30 days unless otherwise agreed to by both parties. At a minimum, the recommendation shall contain all the elements listed in Rule 35, Form of Award, of the Arbitration Regular Track Provisions listed at the end of subsection 105.24.
 2. After the meeting has been closed, the DRB shall prepare a written Recommendation signed by each member of the DRB. In the case of a three member DRB, where one member dissents that member shall prepare a written dissent and sign it.
 3. The chairperson shall transmit the signed Recommendation and any supporting documents to both parties.
- (h) *Clarification and Reconsideration of Recommendation.* Either party may request clarification or reconsideration of a decision within ten days following receipt of the Recommendation. Within ten days after receiving the request, the DRB shall provide written clarification or reconsideration to both parties unless otherwise agreed to by both parties.

Requests for clarification or reconsideration shall be submitted in writing simultaneously to the DRB and to the other party.

The Board shall not accept requests for reconsideration that amount to a renewal of a prior argument or additional argument based on facts available at the time of the hearing. The Board shall not consider any documents or arguments which have not been made a part of the pre-hearing submittal other than clarification and data supporting previously submitted documentation.

Only one request for clarification or reconsideration per dispute from each party will be allowed.

- (i) *Acceptance or Rejection of Recommendation.* CDOT and the Contractor shall submit their written acceptance or rejection of the Recommendation, in whole or in part, concurrently to the other party and to the DRB within 14 days after receipt of the Recommendation or following receipt of responses to requests for clarification or reconsideration.

If the parties accept the Recommendation or a discreet part thereof, it will be implemented in accordance with subsections 108.08, 109.04, 109.05, or 109.10 and the dispute is resolved.

If either party rejects the Recommendation in whole or in part, it shall give written explanation to the other party within 14 days after receiving the Recommendation. When the Recommendation is rejected in whole or in part by either party, the other party may either abandon the dispute or pursue a formal claim in accordance with subsection 105.24.

If either party fails to submit its written acceptance or rejection of the Dispute Board's recommendation, according to these specifications, such failure shall constitute that party's acceptance of the Board's recommendation.

- (j) *Admissibility of Recommendation.* Recommendations of a DRB issued in accordance with subsection 105.23 are admissible in subsequent proceedings but shall be prefaced with the following paragraph:

This Recommendation may be taken under consideration with the understanding that:

1. The DRB Recommendation was a proceeding based on presentations by the parties.
2. No fact or expert witnesses presented sworn testimony or were subject to cross-examination.
3. The parties to the DRB were not provided with the right to any discovery, such as production of documents or depositions.
4. There is no record of the DRB hearing other than the Recommendation.

- (k) *Cost and Payments.*

1. **General Administrative Costs.** The Contractor and the Department shall equally share the entire cost of the following to support the Board's operation:
 - (1) Copies of Contract and other relevant documentation
 - (2) Meeting space and facilities
 - (3) Secretarial Services
 - (4) Telephone
 - (5) Mail
 - (6) Reproduction
 - (7) Filing
2. The Department and the Contractor shall bear the costs and expenses of the DRB equally. Each DRB board member shall be compensated at an agreed rate of \$1,200 per day if time spent on-site per meeting is greater than four hours. Each DRB board member shall be compensated at an agreed rate of \$800 per day if time spent on-site per meeting is less than or equal to four hours. The time spent traveling to and from each meeting shall be reimbursed at \$50 per hour if the travel distance is more than 50 miles. The agreed daily and travel time rates shall be considered full compensation for on-site time, travel expenses, transportation, lodging, time for travel of more than 50 miles and incidentals for each day, or portion thereof that the DRB member is at an authorized DRB meeting. No additional compensation will be made for time spent by DRB members in review and research activities outside the official DRB meetings unless that time, (such as time spent evaluating and preparing recommendations on specific issues presented to the DRB), has been specifically agreed to in advance by the Department and Contractor. Time away from the project that has been specifically agreed to in advance by the parties will be compensated at an agreed rate of \$125 per hour. The agreed amount of \$125 per hour shall include all incidentals. Members serving on more than one DRB, regardless of the number of meetings per day, shall not be paid more than the all inclusive rate per day or rate per hour for an individual project.
3. **Payments to Board Members and General Administrative Costs.** Each Board member shall submit an invoice to the Contractor for fees and applicable expenses incurred each month following a month in which the Board members participated in Board functions. Such invoices shall be in the format established by the Contractor and the Department. The Contractor shall submit to the Department copies of all invoices. No markups by the Contractor will be allowed on any DRB costs. The Department will split the cost by authorizing 50 percent payment on the next progress payment. The Contractor shall make all payments in full to Board members within seven calendar days after receiving payment from the Department for this work.

(l) *Dispute Review Board Three Party Agreement.*

DISPUTE REVIEW BOARD
THREE PARTY AGREEMENT
COLORADO PROJECT NO. _____

THIS THREE PARTY AGREEMENT, made as of the date signed by the Chief Engineer below, by and between:
the Colorado Department of Transportation, hereinafter called the "Department"; and

hereinafter called the "Contractor"; and

and

hereinafter called the "Dispute Review Board" or "Board".

WHEREAS, the Department is now engaged in the construction of the _____

[Project Name]

and

WHEREAS, the Contract provides for the establishment of a Board in accordance with subsections 105.22 and 105.23 of the specifications.

NOW, THEREFORE, it is hereby agreed:

ARTICLE I
DESCRIPTION OF WORK AND SERVICES

The Department and the Contractor shall form a Board in accordance with this agreement and the provisions of subsection 105.23.

ARTICLE II
COMMITMENT ON PART OF THE PARTIES HERETO

The parties hereto shall faithfully fulfill the requirements of subsection 105.23 and the requirements of this agreement.

ARTICLE III
COMPENSATION

The parties shall share equally in the cost of the Board, including general administrative costs (meeting space and facilities, secretarial services, telephone, mail, reproduction, filing) and the member's individual fees. Reimbursement of the Contractor's share of the Board expenses for any reason is prohibited.

The Contractor shall make all payments in full to Board members. The Contractor will submit to the Department an itemized statement for all such payments, and the Department will split the cost by including 50 percent payment on the next progress payment. The Contractor and the Department will agree to accept invoiced costs prior to payment by the Contractor.

Board members shall keep all fee records pertaining to this agreement available for inspection by representatives of the Department and the Contractor for a period of three years after the termination of the Board members' services.

Payment to each Board member shall be at the fee rates established in subsection 105.23 and agreed to by each Board member, the Contractor, and the Department. In addition, reimbursement will be made for applicable expenses.

DISPUTE REVIEW BOARD
THREE PARTY AGREEMENT PAGE 2
COLORADO PROJECT NO. _____

Each Board member shall submit an invoice to the Contractor for fees incurred each month following a month in which the members participated in Board functions. Such invoices shall be in the format established by the Contractor and the Department

Payments shall be made to each Board member within 60 days after the Contractor and Department have received all the applicable billing data and verified the data submitted by that member. The Contractor shall make payment to the Board member within seven calendar days of receipt of payment from the Department.

ARTICLE IV
ASSIGNMENT

Board members shall not assign any of the work to be performed by them under this agreement. Board members shall disclose any conflicts of interest including but not limited to any dealings with the either party in the previous five years other than serving as a Board member under other contracts.

ARTICLE V
COMMENCEMENT AND TERMINATION OF SERVICES

The commencement of the services of the Board shall be in accordance with subsection 105.23 of the specifications and shall continue until all assigned disputes under the Contract which may require the Board's services have been heard and a Recommendation has been issued by the Board as specified in subsection 105.23. If a Board member is unable to fulfill his responsibilities for reasons specified in subsection 105.23(b)7, he shall be replaced as provided therein, and the Board shall fulfill its responsibilities as though there had been no change.

ARTICLE VI
LEGAL RELATIONS

The parties hereto mutually agree that each Board member in performance of his duties on the Board is acting as an independent contractor and not as an employee of either the Department or the Contractor. Board members will guard their independence and avoid any communication about the substance of the dispute without both parties being present.

The Board members are absolved of any personal liability arising from the Recommendations of the Board. The parties agree that members of the dispute review board panel are acting as mediators for purposes of C.R.S. § 13-22-302(4) and, as such, the liability of any dispute review board member shall be limited to willful and wanton misconduct as provided for in C.R.S. § 13-22-305(6)

IN WITNESS HEREOF, the parties hereto have caused this agreement to be executed the day and year first written above.

BOARD MEMBER: _____.

BY: _____.

BOARD MEMBER: _____.

BY: _____.

BOARD MEMBER: _____.

BY: _____.

CONTRACTOR: _____.

BY: _____.

TITLE: _____.

DISPUTE REVIEW BOARD
THREE PARTY AGREEMENT PAGE 3
COLORADO PROJECT NO. _____

COLORADO DEPARTMENT OF TRANSPORTATION

BY: _____ Date: _____
TITLE: CHIEF ENGINEER

105.24 Claims for Unresolved Disputes. The Contractor may file a claim only if the disputes resolution process described in subsections 105.22 and 105.23 has been exhausted without resolution of the dispute. Other methods of nonbinding dispute resolution, exclusive of arbitration and litigation, can be used if agreed to by both parties.

This subsection applies to any unresolved dispute or set of disputes between CDOT and the Contractor with an aggregate value of more than \$15,000. Unresolved disputes with an aggregate value of more than \$15,000 from subcontractors, materials suppliers or any other entity not a party to the Contract shall be submitted through the Contractor in accordance with this subsection as a pass-through claim. Review of a pass-through claim does not create privity of Contract between CDOT and any other entity.

Subsections 105.22, 105.23 and 105.24 provide both contractual alternative dispute resolution processes and constitute remedy-granting provisions pursuant to Colorado Revised Statutes which must be exhausted in their entirety.

Merit-binding arbitration or litigation proceedings must commence within 180-calendar days of the Chief Engineer's decision, absent written agreement otherwise by both parties.

The venue for all unresolved disputes with an aggregate value \$15,000 or less shall be the County Court for the City and County of Denver.

Non-binding Forms of alternative dispute resolution such as Mediation are available upon mutual agreement of the parties for all claims submitted in accordance with this subsection.

The cost of the non-binding ADR process shall be shared equally by both parties with each party bearing its own preparation costs. The type of nonbinding ADR process shall be agreed upon by the parties and shall be conducted within the State of Colorado at a mutually acceptable location. Participation in a nonbinding ADR process does not in any way waive the requirement that merit-binding arbitration or litigation proceedings must commence within 180-calendar days of the Chief Engineer's decision, absent written agreement otherwise by both parties.

(a) *Notice of Intent to File a Claim.*

Within 30 days after rejection of the Dispute Resolution Board's Recommendation issued in accordance with subsection 105.23, the Contractor shall provide the Region Transportation Director with a written notice of intent to file a claim. The Contractor shall also send a copy of this notice to the Resident Engineer. For the purpose of this subsection Region Transportation Director shall mean the Region Transportation Director or the Region Transportation Director's designated representative. CDOT will acknowledge in writing receipt of Notice of Intent within 7 days.

(b) *Claim Package Submission.* Within 60 days after submitting the notice of intent to file a claim, the Contractor shall submit five copies of a complete claim package representing the final position the Contractor wishes to have considered. All claims shall be in writing and in sufficient detail to enable the RTD to ascertain the basis and amount of claim. The claim package shall include all documents supporting the claim, regardless of whether such documents were provided previously to CDOT.

If requested by the Contractor the 60 day period may be extended by the RTD in writing prior to final acceptance. As a minimum, the following information shall accompany each claim.

1. A claim certification containing the following language, as appropriate:

A. For a direct claim by the Contractor:

CONTRACTOR'S CLAIM CERTIFICATION
Under penalty of law for perjury or falsification, the undersigned, _____ (name) _____, (title) _____, of _____ (company) _____, hereby certifies that the claim of \$ _____ for extra compensation and ____ Days additional time, made herein for work on this contract is true to the best of my knowledge and belief and supported under the Contract between the parties. This claim package contains all available documents that support the claims made herein and I understand that no additional information, other than for clarification and data supporting previously submitted documentation, may be presented by me.
Dated _____ /s/ _____
Subscribed and sworn before me this ____ day of _____.

NOTARY PUBLIC
My Commission Expires: _____

B. For a pass-through claim:

PASS-THROUGH CLAIM CERTIFICATION
Under penalty of law for perjury or falsification, the undersigned, _____ (name) _____, (title) _____, of _____ (company) _____, hereby certifies that the claim of \$ _____ for extra compensation and ____ Days additional time, made herein for work on this Project is true to the best of my knowledge and belief and supported under the contract between the parties. This claim package contains all available documents that support the claims made herein and I understand that no additional information, other than for clarification and data supporting previously submitted documentation, may be presented by me.
Dated _____ /s/ _____
Subscribed and sworn before me this ____ day of _____.

NOTARY PUBLIC
My Commission Expires: _____
Dated _____ /s/ _____
The Contractor certifies that the claim being passed through to CDOT is passed through in good faith and is accurate and complete to the best of my knowledge and belief.
Dated _____ /s/ _____
Subscribed and sworn before me this ____ day of _____.

NOTARY PUBLIC
My Commission Expires: _____

2. A detailed factual statement of the claim for additional compensation, time, or both, providing all necessary dates, locations, and items of work affected by the claim. The Contractor's detailed factual statement shall expressly describe the basis of the claim and factual evidence supporting the claim. This requirement is not satisfied by simply incorporating into the claim package other documents that describe the basis of the claim and supporting factual evidence.
3. The date on which facts were discovered which gave rise to the claim.
4. The name, title, and activity of all known CDOT, Consultant, and other individuals who may be knowledgeable about facts giving rise to such claim.
5. The name, title, and activity of all known Contractor, subcontractor, supplier and other individuals who may be knowledgeable about facts giving rise to such claim.

6. The specific provisions of the Contract, which support the claim and a statement of the reasons why such provisions support the claim.
 7. If the claim relates to a decision of the Project Engineer, which the Contract leaves to the Project Engineer's discretion, the Contractor shall set out in detail all facts supporting its position relating to the decision of the Project Engineer.
 8. The identification of any documents and the substance of all oral communications that support the claim.
 9. Copies of all known documents that support the claim.
 10. The Dispute Review Board Recommendation.
 11. If an extension of contract time is sought, the documents required by subsection 108.08(d).
 12. If additional compensation is sought, the exact amount sought and a breakdown of that amount into the following categories:
 - A. These categories represent the only costs that are recoverable by the Contractor. All other costs or categories of costs are not recoverable:
 - (1) Actual wages and benefits, including FICA, paid for additional labor
 - (2) Costs for additional bond, insurance and tax
 - (3) Increased costs for materials
 - (4) Equipment costs calculated in accordance with subsection 109.04(c) for Contractor owned equipment and based on certified invoice costs for rented equipment
 - (5) Costs of extended job site overhead
 - (6) Salaried employees assigned to the project
 - (7) Claims from subcontractors and suppliers at any level (the same level of detail as specified herein is required for all such claims)
 - (8) An additional 16 percent will be added to the total of items (1) through (7) as compensation for items for which no specific allowance is provided, including profit and home office overhead.
 - (9) Interest shall be paid in accordance with CRS 5-12-102 beginning from the date of the Notice of Intent to File Claim
 - B. In adjustment for the costs as allowed above, the Department will have no liability for the following items of damages or expense:
 - (1) Profit in excess of that provided in 12.A.(8) above
 - (2) Loss of Profit
 - (3) Additional cost of labor inefficiencies in excess of that provided in A. above
 - (4) Home office overhead in excess of that provided in A. above
 - (5) Consequential damages, including but not limited to loss of bonding capacity, loss of bidding opportunities, and insolvency
 - (6) Indirect costs or expenses of any nature in excess of that provided in A. above
 - (7) Attorney's fees, claim preparation fees, and expert fees
- (c) *Audit.* An audit may be performed by the Department for any dispute or claim, and is mandatory for all disputes and claims with amounts greater than \$250,000. All audits will be complete within 60 days of receipt of the complete claim package, provided the Contractor allows the auditors reasonable and timely access to the Contractor's books and records. For all claims with amounts greater than \$250,000 the Contractor shall submit a copy of certified claim package directly to the CDOT Audit Unit at the following address:

Division of Audit
4201 E. Arkansas Ave
Denver, Co. 80222

- (d) *Region Transportation Director Decision.* When the Contractor properly files a claim, the RTD will review the claim and render a written decision to the Contractor to either affirm or deny the claim, in whole or in part, in accordance with the following procedure.

The RTD may consolidate all related claims on a project and issue one decision, provided that consolidation does not extend the time period within which the RTD is to render a decision. Consolidation of unrelated claims will not be made.

The RTD will render a written decision to the Contractor within 60 days after the receipt of the claim package or receipt of the audit whichever is later. In rendering the decision, the RTD: (1) will review the information in the Contractor's claim; (2) will conduct a hearing if requested by either party; and (3) may consider any other information available in rendering a decision.

The RTD will assemble and maintain a claim record comprised of all information physically submitted by the Contractor in support of the claim and all other discoverable information considered by the RTD in reaching a decision. Once the RTD assembles the claim record, the submission and consideration of additional information, other than for clarification and data supporting previously submitted documentation, at any subsequent level of review by anyone, will not be permitted.

The RTD will provide a copy of the claim record and the written decision to the Contractor describing the information considered by the RTD in reaching a decision and the basis for that decision. If the RTD fails to render a written decision within the 60 day period, or within any extended time period as agreed to by both parties, the Contractor shall either: (1) accept this as a denial of the claim, or (2) appeal the claim to the Chief Engineer, as described in this subsection.

If the Contractor accepts the RTD decision, the provisions of the decision shall be implemented in accordance with subsections 108.08, 109.04, 109.05, or 109.10 and the claim is resolved.

If the Contractor disagrees with the RTD decision, the Contractor shall either: (1) accept the RTD decision as final, or (2) file a written appeal to the Chief Engineer within 30 days from the receipt of the RTD decision. The Contractor hereby agrees that if a written appeal is not properly filed, the RTD decision is final.

- (e) *Chief Engineer Decision.* When a claim is appealed, the RTD will provide the claim record to the Chief Engineer. Within 15 days of the appeal either party may submit a written request for a hearing with the Chief Engineer or duly authorized Headquarters delegates. The Chief Engineer or a duly authorized Headquarters delegate will review the claim and render a decision to affirm, overrule, or modify the RTD decision in accordance with the following.

The Contractor's written appeal to the Chief Engineer will be made a part of the claim record.

The Chief Engineer will render a written decision within 60 days after receiving the written appeal. The Chief Engineer will not consider any information that was not previously made a part of the claim record, other than clarification and data supporting previously submitted documentation.

The Contractor shall have 30 days to accept or reject the Chief Engineer's decision. The Contractor shall notify the Chief Engineer of its acceptance or rejection in writing.

If the Contractor accepts the Chief Engineer's decision, the provisions of the decision will be implemented in accordance with subsections 108.08, 109.04, 109.05, or 109.10 and the claim is resolved.

If the Contractor disagrees with the Chief Engineer's decision, the Contractor shall either (1) pursue an alternative dispute resolution process in accordance with this specification or (2) initiate litigation or merit binding arbitration in accordance with subsection 105.24(f).

If the Chief Engineer does not issue a decision as required, the Contractor may immediately initiate either litigation or merit binding arbitration in accordance with subsection 105.24(f).

For the convenience of the parties to the Contract it is mutually agreed by the parties that any merit binding arbitration or De Novo litigation shall be brought within 180-calendar days from the date of the Chief Engineer's decision. The parties understand and agree that the Contractor's failure to bring suit within the time period provided, shall be a complete bar to any such claims or causes of action.

- (f) *De Novo Litigation or Merit Binding Arbitration.* If the Contractor disagrees with the Chief Engineer's decision, the Contractor may initiate de novo litigation or merit binding arbitration to finally resolve the claim that the Contractor submitted to CDOT, depending on which option was selected by the Contractor on Form 1378 which shall be submitted at the preconstruction conference. Such litigation or arbitration shall be strictly limited to those claims that were previously submitted and decided in the contractual dispute and claims

processes outlined herein. This does not preclude the joining in one litigation or arbitration of multiple claims from the same project provided that each claim has gone through the dispute and claim process specified in subsections 105.22 through 105.24. The parties may agree, in writing, at any time, to pursue some other form of alternative dispute resolution.

Any offer made by the Contractor or the Department at any stage of the claims process, as set forth in this subsection, shall be deemed an offer of settlement pursuant to Colorado Rule of Evidence 408 and therefore inadmissible in any litigation or arbitration.

If the Contractor selected litigation, then de novo litigation shall proceed in accordance with the Colorado Rules of Civil Procedure and the proper venue is the Colorado State District Court in and for the City and County of Denver, unless both parties agree to the use of arbitration.

If the Contractor selected merit binding arbitration, or if both parties subsequently agreed to merit binding arbitration, arbitration shall be governed by the modified version of AAA's Construction Industry Arbitration Rules which follow. Pursuant to the modified arbitration rules (R35 through R39), the arbitrators shall issue a binding decision with regard to entitlement and a non-binding decision with regard to quantum. If either party disagrees with the decision on quantum, the disagreeing party may seek a trial de novo in Denver District Court with regard to quantum only.

AMERICAN ARBITRATION ASSOCIATION CONSTRUCTION INDUSTRY ARBITRATION RULES MODIFIED FOR USE WITH CDOT SPECIFICATION SUBSECTION 105.24

REGULAR TRACK PROCEDURES

R-1. Agreement of Parties

- (a) The parties shall be deemed to have made these rules a part of their Contract. These rules and any amendments shall apply in the form in effect at the time the administrative requirements are met for a demand for arbitration. The parties, by written agreement, may vary the procedures set forth in these rules. After appointment of the arbitrator, such modifications may be made only with the consent of the arbitrator.
- (b) Unless the parties determine otherwise, the Fast Track Procedures shall apply in any case in which aggregate claims do not exceed \$75,000, exclusive of interest and arbitration fees and costs. Parties may also agree to use these procedures in larger cases. Unless the parties agree otherwise, these procedures will not apply in cases involving more than two parties except for pass-through claims. The Fast Track Procedures shall be applied as described in Sections F-1 through F-13 of these rules, in addition to any other portion of these rules that is not in conflict with the Fast Track Procedures.
- (c) Unless the parties agree otherwise, the Procedures for Large, Complex Construction Disputes shall apply to all cases in which the disclosed aggregate claims of any party is at least \$500,000, exclusive of claimed interest, arbitration fees and costs. Parties may also agree to use these procedures in cases involving claims under \$500,000, or in nonmonetary cases. The Procedures for Large, Complex Construction Disputes shall be applied as described in Sections L-1 through L-4 of these rules, in addition to any other portion of these rules that is not in conflict with the Procedures for Large, Complex Construction Disputes.
- (d) All other cases shall be administered in accordance with Sections R-1 through R-45 of these rules.

R-2. Independent Arbitration Provider and Delegation of Duties

When parties agree to arbitrate under these rules, or when they provide for arbitration by an independent third-party (Arbitration Provider) and arbitration is initiated under these rules, they thereby authorize the Arbitration Provider to administer the arbitration. The authority and duties of the Arbitration Provider are prescribed in the parties' Contract and in these rules, and may be carried out through such of the Arbitration Provider's representatives as it may direct. The Arbitration Provider will assign the administration of an arbitration to its Denver office

R-3. Initiation of Arbitration

Arbitration shall be initiated in the following manner.

- (a) The Contractor shall, within 30 days after the Chief Engineer issues a decision, submit to the Chief Engineer written notice of its intention to arbitrate (the "demand"). The demand shall indicate the appropriate qualifications for the arbitrator(s) to be appointed to hear the arbitration.
- (b) CDOT may file an answering statement with the Contractor within 15 days after receiving the demand. If a counterclaim is asserted, it shall contain a statement setting forth the nature of the counterclaim, the amount involved, if any, and the remedy sought.
- (c) The Chief Engineer shall retain an Arbitration Provider, such as the American Arbitration Association, which will administer an arbitration pursuant to these Rules, except to the extent that such rules conflict with the specifications, in which case the specifications shall control.
- (d) The Arbitration Provider shall confirm its retention to the parties.

R-4. Consolidation or Joinder

If the parties' agreement or the law provides for consolidation or joinder of related arbitrations, all involved parties will endeavor to agree on a process to effectuate the consolidation or joinder.

If they are unable to agree, the Arbitration Provider shall directly appoint a single arbitrator for the limited purpose of deciding whether related arbitrations should be consolidated or joined and, if so, establishing a fair and appropriate process for consolidation or joinder. The Arbitration Provider may take reasonable administrative action to accomplish the consolidation or joinder as directed by the arbitrator.

R-5. Appointment of Arbitrator

An arbitrator shall be appointed in the following manner:

- (a) Immediately after the Arbitration Provider is retained, the Arbitration Provider shall send simultaneously to each party to the dispute an identical list of 10 names of potential arbitrators. The parties are encouraged to agree to an arbitrator from the submitted list and to advise the AAA of their agreement. Absent agreement of the parties, the arbitrator shall not have served as the mediator in the mediation phase of the instant proceeding.
- (b) If the parties cannot agree to arbitrator(s), each party to the dispute shall have 15 calendar days from the transmittal date in which to strike names objected to, number the remaining names in order of preference, and return the list to the Arbitration Provider. If a party does not return the list within the time specified, all persons named therein shall be deemed acceptable. From among the persons who have been approved on both lists, and in accordance with the designated order of mutual preference, the Arbitration Provider shall invite an arbitrator to serve.
- (c) Unless both parties agree otherwise one arbitrator shall be used for claims less than \$250,000 and three arbitrators shall be used for claims \$250,000 and greater. Within 15 calendar days from the date of the appointment of the last arbitrator, the Arbitration Provider shall appoint a chairperson.
- (d) The entire claim record will be made available to the arbitrators by the Chief Engineer within 15 calendar days from the date of the appointment of the last arbitrator.

R-6. Changes of Claim

The arbitrator(s) will not consider any information that was not previously made a part of the claim record as transmitted by the Chief Engineer, other than clarification and data supporting previously submitted documentation.

R-7. Disclosure

- (a) Any person appointed or to be appointed as an arbitrator shall disclose to the Arbitration Provider any circumstance likely to give rise to justifiable doubt as to the arbitrator's impartiality or independence, including

any bias or any interest in the result of the arbitration or any relationship with the parties or their representatives. Such obligation shall remain in effect throughout the arbitration.

- (b) Upon receipt of such information from the arbitrator or another source, the Arbitration Provider shall communicate the information to the parties and, if it deems it appropriate to do so, to the arbitrator and others.
- (c) In order to encourage disclosure by arbitrators, disclosure of information pursuant to this Section R-6 is not to be construed as an indication that the arbitrator considers that the disclosed circumstances are likely to affect impartiality or independence.
- (d) In no case shall an arbitrator be employed by, affiliated with, or have consultative or business connection with the claimant Contractor or CDOT. An arbitrator shall not have assisted either in the evaluation, preparation, or presentation of the claim case either for the Contractor or the Department or have rendered an opinion on the merits of the claim for either party, and shall not do so during the proceedings of arbitration.

R-8. Disqualification of Arbitrator

- (a) Any arbitrator shall be impartial and independent and shall perform his or her duties with diligence and in good faith, and shall be subject to disqualification for: (i) partiality or lack of independence, (ii) inability or refusal to perform his or her duties with diligence and in good faith; and/or (iii) any grounds for disqualification provided by applicable law.
- (b) Upon objection of a party to the continued service of an arbitrator, or on its own initiative, the Arbitration Provider shall determine whether the arbitrator should be disqualified under the grounds set out above, and shall inform the parties of its decision, which decision shall be conclusive.

R-9. Communication with Arbitrator

No party and no one acting on behalf of any party shall communicate *ex parte* with an arbitrator or a candidate for arbitrator concerning the arbitration.

R-10. Vacancies

- (a) If for any reason an arbitrator is unable to perform the duties of the office, the Arbitration Provider may, on proof satisfactory to it, declare the office vacant. Vacancies shall be filled in accordance with the applicable provisions of these rules.
- (b) In the event of a vacancy in a panel of neutral arbitrators after the hearings have commenced, the remaining arbitrator or arbitrators may continue with the hearing and determination of the controversy, unless the parties agree otherwise.
- (c) In the event of the appointment of a substitute arbitrator, the panel of arbitrators shall determine in its sole discretion whether it is necessary to repeat all or part of any prior hearings.

R-11. Jurisdiction

- (a) The arbitrator shall have the power to rule on his or her own jurisdiction, including any objections with respect to the existence, scope or validity of the arbitration agreement.
- (b) The arbitrator shall have the power to determine the existence or validity of a contract of which an arbitration clause forms a part. Such an arbitration clause shall be treated as an agreement independent of the other terms of the contract. A decision by the arbitrator that the contract is null and void shall not for that reason alone render invalid the arbitration clause.
- (c) A party must object to the jurisdiction of the arbitrator or to the arbitrability of a claim or counterclaim no later than 15 days after the Arbitration Provider confirms its retention to the parties. The arbitrator may rule on such objections as a preliminary matter or as part of the final award.

R-12. Administrative Conference

At the request of any party or upon the Arbitration Provider's own initiative, the Arbitration Provider may conduct an administrative conference, in person or by telephone, with the parties and/or their representatives. The conference may address such issues as arbitrator selection, potential exchange of information, a timetable for hearings and any other administrative matters.

R-13. Preliminary Hearing

- (a) At the request of any party or at the discretion of the arbitrator or the Arbitration Provider, the arbitrator may schedule as soon as practicable a preliminary hearing with the parties and/or their representatives. The preliminary hearing may be conducted by telephone at the arbitrator's discretion.
- (b) During the preliminary hearing, the parties and the arbitrator should discuss the future conduct of the case, including clarification of the issues and claims, a schedule for the hearings and any other preliminary matters.

R-14. Exchange of Information

- (a) At the request of any party or at the discretion of the arbitrator, consistent with the expedited nature of arbitration, the arbitrator may direct: (i) the production of documents and other information; (ii) short depositions, particularly with regard to experts; and/or (iii) the identification of any witnesses to be called.
- (b) At least five business days prior to the hearing, the parties shall exchange copies of all exhibits they intend to submit at the hearing.
- (c) The arbitrator is authorized to resolve any disputes concerning the exchange of information.
- (d) Additional discovery may be ordered by the arbitrator in extraordinary cases when the demands of justice require it.

R-15. Date, Time, and Place of Hearing

- (a) The arbitrator shall set the date, time, and place for each hearing and/or conference. The parties shall respond to requests for hearing dates in a timely manner, be cooperative in scheduling the earliest practicable date, and adhere to the established hearing schedule.
- (b) The parties may mutually agree on the locale where the arbitration is to be held. Absent such agreement, the arbitration shall be held in the City and County of Denver
- (c) The Arbitration Provider shall send a notice of hearing to the parties at least ten calendar days in advance of the hearing date, unless otherwise agreed by the parties.

R-16. Attendance at Hearings

The arbitrator and the Arbitration Provider shall maintain the privacy of the hearings unless the law provides to the contrary. Any person having a direct interest in the arbitration is entitled to attend hearings. The arbitrator shall otherwise have the power to require the exclusion of any witness, other than a party or other essential person, during the testimony of any other witness. It shall be discretionary with the arbitrator to determine the propriety of the attendance of any person other than a party and its representative.

R-17. Representation

Any party may be represented by counsel or other authorized representative. A party intending to be so represented shall notify the other party and the Arbitration Provider of the name and address of the representative at least three calendar days prior to the date set for the hearing at which that person is first to appear.

R-18. Oaths

Before proceeding with the first hearing, each arbitrator may take an oath of office and, if required by law, shall do so. The arbitrator may require witnesses to testify under oath administered by any duly qualified person and, if it is required by law or requested by any party, shall do so.

R-19. Stenographic Record

Any party desiring a stenographic record shall make arrangements directly with a stenographer and shall notify the other parties of these arrangements at least three days in advance of the hearing. The requesting party or parties shall pay the cost of the record. If the transcript is agreed by the parties, or determined by the arbitrator to be the official record of the proceeding, it must be provided to the arbitrator and made available to the other parties for inspection, at a date, time, and place determined by the arbitrator.

R-20. Interpreters

Any party wishing an interpreter shall make all arrangements directly with the interpreter and shall assume the costs of the service.

R-21. Postponements

The arbitrator for good cause shown may postpone any hearing upon agreement of the parties, upon request of a party, or upon the arbitrator's own initiative.

R-22. Arbitration in the Absence of a Party or Representative

Unless the law provides to the contrary, the arbitration may proceed in the absence of any party or representative who, after due notice, fails to be present or fails to obtain a postponement. An award shall not be made solely on the default of a party. The arbitrator shall require the party who is present to submit such evidence as the arbitrator may require for the making of an award.

R-23. Conduct of Proceedings

- (a) The Contractor shall present evidence to support its claim. CDOT shall then present evidence supporting its defense. Witnesses for each party shall also submit to questions from the arbitrator and the adverse party. The arbitrator has the discretion to vary this procedure; provided that the parties are treated with equality and that each party has the right to be heard and is given a fair opportunity to present its case.
- (b) The arbitrator, exercising his or her discretion, shall conduct the proceedings with a view to expediting the resolution of the dispute and may direct the order of proof, bifurcate proceedings, and direct the parties to focus their presentations on issues the decision of which could dispose of all or part of the case. The arbitrator shall entertain motions, including motions that dispose of all or part of a claim or that may expedite the proceedings, and may also make preliminary rulings and enter interlocutory orders.
- (c) The parties may agree to waive oral hearings in any case.

R-24. Evidence

- (a) The arbitrators shall consider all written information available in the claim record and all oral presentations in support of that record by the Contractor and CDOT. Conformity to legal rules of evidence shall not be necessary.
- (b) The arbitrators shall not consider any written documents or arguments which have not previously been made a part of the claim record, other than clarification and data supporting previously submitted documentation. The arbitrators shall not consider an increase in the amount of the claim, or any new claims.
- (c) The arbitrator shall determine the admissibility, relevance, and materiality of any evidence offered. The arbitrator may request offers of proof and may reject evidence deemed by the arbitrator to be cumulative,

unreliable, unnecessary, or of slight value compared to the time and expense involved. All evidence shall be taken in the presence of all of the arbitrators and all of the parties, except where: (i) any of the parties is absent, in default, or has waived the right to be present, or (ii) the parties and the arbitrators agree otherwise.

- (d) The arbitrator shall take into account applicable principles of legal privilege, such as those involving the confidentiality of communications between a lawyer and client.
- (e) An arbitrator or other person authorized by law to subpoena witnesses or documents may do so upon the request of any party or independently.

R-25. Evidence by Affidavit and Post-hearing Filing of Documents or Other Evidence

- (a) The arbitrator may receive and consider the evidence of witnesses by declaration or affidavit, but shall give it only such weight as the arbitrator deems it entitled to after consideration of any objection made to its admission.
- (b) If the parties agree or the arbitrator directs that documents or other evidence be submitted to the arbitrator after the hearing, the documents or other evidence, unless otherwise agreed by the parties and the arbitrator, shall be filed with the Arbitration Provider for transmission to the arbitrator. All parties shall be afforded an opportunity to examine and respond to such documents or other evidence.

R-26. Inspection or Investigation

An arbitrator finding it necessary to make an inspection or investigation in connection with the arbitration shall direct the Arbitration Provider to so advise the parties. The arbitrator shall set the date and time and the Arbitration Provider shall notify the parties. Any party who so desires may be present at such an inspection or investigation. In the event that one or all parties are not present at the inspection or investigation, the arbitrator shall make an oral or written report to the parties and afford them an opportunity to comment.

R-27. Interim Measures

- (a) The arbitrator may take whatever interim measures he or she deems necessary, including injunctive relief and measures for the protection or conservation of property and disposition of perishable goods.
- (b) A request for interim measures addressed by a party to a judicial authority shall not be deemed incompatible with the agreement to arbitrate or a waiver of the right to arbitrate.

R-28. Closing of Hearing

When satisfied that the presentation of the parties is complete, the arbitrator shall declare the hearing closed.

If documents or responses are to be filed as provided in Section R-24, or if briefs are to be filed, the hearing shall be declared closed as of the final date set by the arbitrator for the receipt of documents, responses, or briefs. The time limit within which the arbitrator is required to make the award shall commence to run, in the absence of other agreements by the parties and the arbitrator, upon the closing of the hearing.

R-29. Reopening of Hearing

The hearing may be reopened on the arbitrator's initiative, or by direction of the arbitrator upon application of a party, at any time before the award is made. If reopening the hearing would prevent the making of the award within the specific time agreed to by the parties in the arbitration agreement, the matter may not be reopened unless the parties agree to an extension of time. When no specific date is fixed by agreement of the parties, the arbitrator shall have 15 calendar days from the closing of the reopened hearing within which to make an award.

R-30. Waiver of Rules

Any party who proceeds with the arbitration after knowledge that any provision or requirement of these rules has not been complied with and who fails to state an objection in writing shall be deemed to have waived the right to object.

R-31. Extensions of Time

The parties may modify any period of time by mutual agreement. The Arbitration Provider or the arbitrator may for good cause extend any period of time established by these rules, except the time for making the award. The Arbitration Provider shall notify the parties of any extension.

R-32. Serving of Notice

- (a) Any papers, notices, or process necessary or proper for the initiation or continuation of an arbitration under these rules; for any court action in connection therewith, or for the entry of judgment on any award made under these rules, may be served on a party by mail addressed to the party or its representative at the last known address or by personal service, in or outside the state where the arbitration is to be held, provided that reasonable opportunity to be heard with regard thereto has been granted to the party.
- (b) The Arbitration Provider, the arbitrator and the parties may also use overnight delivery, electronic facsimile transmission (fax), or electronic mail (email) to give the notices required by these rules.
- (c) Unless otherwise instructed by the Arbitration Provider or by the arbitrator, any documents submitted by any party to the Arbitration Provider or to the arbitrator shall simultaneously be provided to the other party or parties to the arbitration.

R-33. Majority Decision

When the panel consists of more than one arbitrator, unless required by law or by the arbitration agreement, a majority of the arbitrators must make all decisions.

R-34. Time of Award

The award shall be made promptly by the arbitrator and, unless otherwise agreed by the parties or specified by law, no later than 30 calendar days from the date of closing the hearing, or, if oral hearings have been waived, from the date of the Arbitration Provider's transmittal of the final statements and proofs to the arbitrator.

R-35. Form of Award

After complete review of the facts associated with the claim, the arbitrators shall render a written explanation of their decision. When three arbitrators are used, and only two arbitrators agree then the award shall be signed by the two arbitrators. The arbitrator's decision shall include:

- (a) A summary of the issues and factual evidence presented by the Contractor and the Department concerning the claim;
- (b) Decisions concerning the validity of the claim;
- (c) Decisions concerning the value of the claim as to cost impacts if the claim is determined to be valid;
- (d) The contractual and factual bases supporting the decisions made including an explanation as to why each and every position was accepted or rejected;
- (e) Detailed and supportable calculations which support any decisions.

R-36. Scope of Award

- (a) The arbitrator may grant any remedy or relief that the arbitrator deems just and equitable and within the scope of the agreement of the parties, including, but not limited to, equitable relief and specific performance of a contract.
- (b) In addition to the final award, the arbitrator may make other decisions, including interim, interlocutory, or partial rulings, orders, and awards.
- (c) The award of the arbitrator may include interest at the statutory rate and from such date as the arbitrator may deem appropriate.

R-37. Delivery of Award to Parties

Parties shall accept as notice and delivery of the award the placing of the award or a true copy thereof in the mail addressed to the parties or their representatives at the last known address, personal or electronic service of the award, or the filing of the award in any other manner that is permitted by law.

R-38. Modification of Award

Within 10 calendar days after the transmittal of an award, the arbitrator on his or her initiative, or any party, upon notice to the other parties, may request that the arbitrator correct any clerical, typographical, technical or computational errors in the award. The arbitrator is not empowered to redetermine the merits of any claim already decided.

If the modification request is made by a party, the other parties shall be given 10 calendar days to respond to the request. The arbitrator shall dispose of the request within 25 calendar days after transmittal by the Arbitration Provider to the arbitrator of the request.

If applicable law provides a different procedural time frame, that procedure shall be followed.

R-39. Appeal of Award

Appeal of the arbitrators' decision concerning the merit of the claim is governed by the Colorado Uniform Arbitration Act, C.R.S. §§ 13-22-202 to -230. Either party may appeal the arbitrator's decision on the value of the claim to the Colorado State District Court in and for the City and County of Denver for trial de novo.

R-40. Release of Documents for Judicial Proceedings

The Arbitration Provider shall, upon the written request of a party, furnish to the party, at its expense, certified copies of any papers in the Arbitration Provider's possession that may be required in judicial proceedings relating to the arbitration.

R-41. Applications to Court and Exclusion of Liability

- (a) No judicial proceeding by a party relating to the subject matter of the arbitration shall be deemed a waiver of the party's right to arbitrate.
- (b) Neither the Arbitration Provider nor any arbitrator in a proceeding under these rules is a necessary or proper party in judicial proceedings relating to the arbitration.
- (c) Parties to these rules shall be deemed to have consented that judgment upon the arbitration award may be entered in any federal or state court having jurisdiction thereof.
- (d) Parties to an arbitration under these rules shall be deemed to have consented that neither the Arbitration Provider nor any arbitrator shall be liable to any party in any action for damages or injunctive relief for any act or omission in connection with any arbitration under these rules.

R-42. Administrative Fees

The Arbitration Provider shall prescribe filing and other administrative fees and service charges to compensate it for the cost of providing administrative services. The fees in effect when the fee or charge is incurred shall be applicable. Such fees and charges shall be borne equally by the parties

The Arbitration Provider may, in the event of extreme hardship on the part of any party, defer or reduce the administrative fees.

R-43. Expenses

The expenses of witnesses for either side shall be paid by the party producing such witnesses. All other expenses of the arbitration, including required travel and other expenses of the arbitrator, Arbitration Provider representatives, and any witness and the cost of any proof produced at the direct request of the arbitrator, shall be borne equally by the parties.

R-44. Neutral Arbitrator's Compensation

Arbitrators shall be compensated a rate consistent with the arbitrator's stated rate of compensation.

If there is disagreement concerning the terms of compensation, an appropriate rate shall be established with the arbitrator by the Arbitration Provider and confirmed to the parties.

Such compensation shall be borne equally by the parties.

R-45. Deposits

The Arbitration Provider may require the parties to deposit in advance of any hearings such sums of money as it deems necessary to cover the expense of the arbitration, including the arbitrator's fee, if any, and shall render an accounting to the parties and return any unexpended balance at the conclusion of the case.

R-46. Interpretation and Application of Rules

The arbitrator shall interpret and apply these rules insofar as they relate to the arbitrator's powers and duties by a majority vote. If that is not possible, either an arbitrator or a party may refer the question to the Arbitration Provider for final decision. All other rules shall be interpreted and applied by the Arbitration Provider.

R-45. Suspension for Nonpayment

If arbitrator compensation or administrative charges have not been paid in full, the Arbitration Provider may so inform the parties in order that the parties may advance the required payment. If such payments are not made, the arbitrator may order the suspension or termination of the proceedings. If no arbitrator has yet been appointed, the Arbitration Provider may suspend the proceedings.

FAST TRACK PROCEDURES

F-1. Limitations on Extensions

In the absence of extraordinary circumstances, the Arbitration Provider or the arbitrator may grant a party no more than one seven-day extension of the time in which to respond to the demand for arbitration or counterclaim as provided in Section R-3.

F-2. Changes of Claim

The arbitrator will not consider any information that was not previously made a part of the claim record as transmitted by the Chief Engineer, other than clarification and data supporting previously submitted documentation

F-3. Serving of Notice

In addition to notice provided above, the parties shall also accept notice by telephone. Telephonic notices by the Arbitration Provider shall subsequently be confirmed in writing to the parties. Should there be a failure to confirm in writing any such oral notice, the proceeding shall nevertheless be valid if notice has, in fact, been given by telephone.

F-4. Appointment and Qualification of Arbitrator

Immediately after the retention of the Arbitration Provider, the Arbitration Provider will simultaneously submit to each party a listing and biographical information from its panel of arbitrators knowledgeable in construction who are available for service in Fast Track cases. The parties are encouraged to agree to an arbitrator from this list, and to advise the Arbitration Provider of their agreement, or any factual objections to any of the listed arbitrators, within 7 calendar days of the transmission of the list. The Arbitration Provider will appoint the agreed-upon arbitrator, or in the event the parties cannot agree on an arbitrator, will designate the arbitrator from among those names not stricken for factual objections.

The parties will be given notice by the Arbitration Provider of the appointment of the arbitrator, who shall be subject to disqualification for the reasons specified above. Within the time period established by the Arbitration Provider, the parties shall notify the Arbitration Provider of any objection to the arbitrator appointed. Any objection by a party to the arbitrator shall be for cause and shall be confirmed in writing to the Arbitration Provider with a copy to the other party or parties.

F-5. Preliminary Telephone Conference

Unless otherwise agreed by the parties and the arbitrator, as promptly as practicable after the appointment of the arbitrator, a preliminary telephone conference shall be held among the parties or their attorneys or representatives, and the arbitrator.

F-6. Exchange of Exhibits

At least 2 business days prior to the hearing, the parties shall exchange copies of all exhibits they intend to submit at the hearing. The arbitrator is authorized to resolve any disputes concerning the exchange of exhibits.

F-7. Discovery

There shall be no discovery, except as provided in Section F-4 or as ordered by the arbitrator in extraordinary cases when the demands of justice require it.

F-8. Date, Time, and Place of Hearing

The arbitrator shall set the date and time, and place of the hearing, to be scheduled to take place within 30 calendar days of confirmation of the arbitrator's appointment. The Arbitration Provider will notify the parties in advance of the hearing date. All hearings shall be held within the City and County of Denver.

F-9. The Hearing

- (a) Generally, the hearing shall not exceed 1 day. Each party shall have equal opportunity to submit its proofs and complete its case. The arbitrator shall determine the order of the hearing, and may require further submission of documents within two business days after the hearing. For good cause shown, the arbitrator may schedule 1 additional hearing day within 7 business days after the initial day of hearing.
- (b) Generally, there will be no stenographic record. Any party desiring a stenographic record may arrange for one pursuant to the provisions above.

F-10. Time of Award

Unless otherwise agreed by the parties, the award shall be rendered not later than 14 calendar days from the date of the closing of the hearing or, if oral hearings have been waived, from the date of the Arbitration Provider's transmittal of the final statements and proofs to the arbitrator.

F-11. Time Standards

The arbitration shall be completed by settlement or award within 60 calendar days of confirmation of the arbitrator's appointment, unless all parties and the arbitrator agree otherwise or the arbitrator extends this time in extraordinary cases when the demands of justice require it.

F-12. Arbitrator's Compensation

Arbitrators will receive compensation at a rate to be suggested by the Arbitration Provider regional office.

PROCEDURES FOR LARGE, COMPLEX CONSTRUCTION DISPUTES

L-1. Large, Complex Construction Disputes

The procedures for large, complex construction disputes shall apply to any claim with a value exceeding \$500,000 or as agreed to by the parties.

L-2. Administrative Conference

Prior to the dissemination of a list of potential arbitrators, the Arbitration Provider shall, unless the parties agree otherwise, conduct an administrative conference with the parties and/or their attorneys or other representatives by conference call. The conference call will take place within 14 days after the retention of the Arbitration Provider. In the event the parties are unable to agree on a mutually acceptable time for the conference, the Arbitration Provider may contact the parties individually to discuss the issues contemplated herein. Such administrative conference shall be conducted for the following purposes and for such additional purposes as the parties or the Arbitration Provider may deem appropriate:

- (a) To obtain additional information about the nature and magnitude of the dispute and the anticipated length of hearing and scheduling;
- (b) To discuss the views of the parties about the technical and other qualifications of the arbitrators;
- (c) To obtain conflicts statements from the parties; and
- (d) To consider, with the parties, whether mediation or other non-adjudicative methods of dispute resolution might be appropriate.

L-3. Arbitrators

- (a) Large, Complex Construction Cases shall be heard and determined by three arbitrators.
- (b) The Arbitration Provider shall appoint arbitrator(s) in the manner provided in the Regular Construction Industry Arbitration Rules.

L-4. Preliminary Hearing

As promptly as practicable after the selection of the arbitrator(s), a preliminary hearing shall be held among the parties and/or their attorneys or other representatives and the arbitrator(s). Unless the parties agree otherwise, the preliminary hearing will be conducted by telephone conference call rather than in person.

At the preliminary hearing the matters to be considered shall include, without limitation:

- (a) Service of a detailed statement of claims, damages and defenses, a statement of the issues asserted by each party and positions with respect thereto, and any legal authorities the parties may wish to bring to the attention of the arbitrator(s);
- (b) Stipulations to uncontested facts;
- (c) The extent to which discovery shall be conducted;
- (d) Exchange and premarking of those documents which each party believes may be offered at the hearing;
- (e) The identification and availability of witnesses, including experts, and such matters with respect to witnesses including their biographies and expected testimony as may be appropriate;
- (f) Whether, and the extent to which, any sworn statements and/or depositions may be introduced;
- (g) The extent to which hearings will proceed on consecutive days;
- (h) Whether a stenographic or other official record of the proceedings shall be maintained;
- (i) The possibility of utilizing mediation or other non-adjudicative methods of dispute resolution; and
- (j) The procedure for the issuance of subpoenas.

By agreement of the parties and/or order of the arbitrator(s), the pre-hearing activities and the hearing procedures that will govern the arbitration will be memorialized in a Scheduling and Procedure Order.

L-5. Management of Proceedings

- (a) Arbitrator(s) shall take such steps as they may deem necessary or desirable to avoid delay and to achieve a just, speedy and cost-effective resolution of Large, Complex Construction Cases.
- (b) Parties shall cooperate in the exchange of documents, exhibits and information within such party's control if the arbitrator(s) consider such production to be consistent with the goal of achieving a just, speedy and cost effective resolution of a Large, Complex Construction Case.
- (c) The parties may conduct such discovery as may be agreed to by all the parties provided, however, that the arbitrator(s) may place such limitations on the conduct of such discovery as the arbitrator(s) shall deem appropriate. If the parties cannot agree on production of document and other information, the arbitrator(s), consistent with the expedited nature of arbitration, may establish the extent of the discovery.
- (d) At the discretion of the arbitrator(s), upon good cause shown and consistent with the expedited nature of arbitration, the arbitrator(s) may order depositions of, or the propounding of interrogatories to such persons who may possess information determined by the arbitrator(s) to be necessary to a determination of the matter.
- (e) The parties shall exchange copies of all exhibits they intend to submit at the hearing 10 business days prior to the hearing unless the arbitrator(s) determine otherwise.
- (f) The exchange of information pursuant to this rule, as agreed by the parties and/or directed by the arbitrator(s), shall be included within the Scheduling and Procedure Order.
- (g) The arbitrator is authorized to resolve any disputes concerning the exchange of information.
- (h) Generally hearings will be scheduled on consecutive days or in blocks of consecutive days in order to maximize efficiency and minimize costs.

The following flow chart provides a summary of the disputes and claims process described in subsections 105.22, 105.23, and 105.24

**Figure 105-1
DISPUTES AND CLAIMS FLOW CHART**

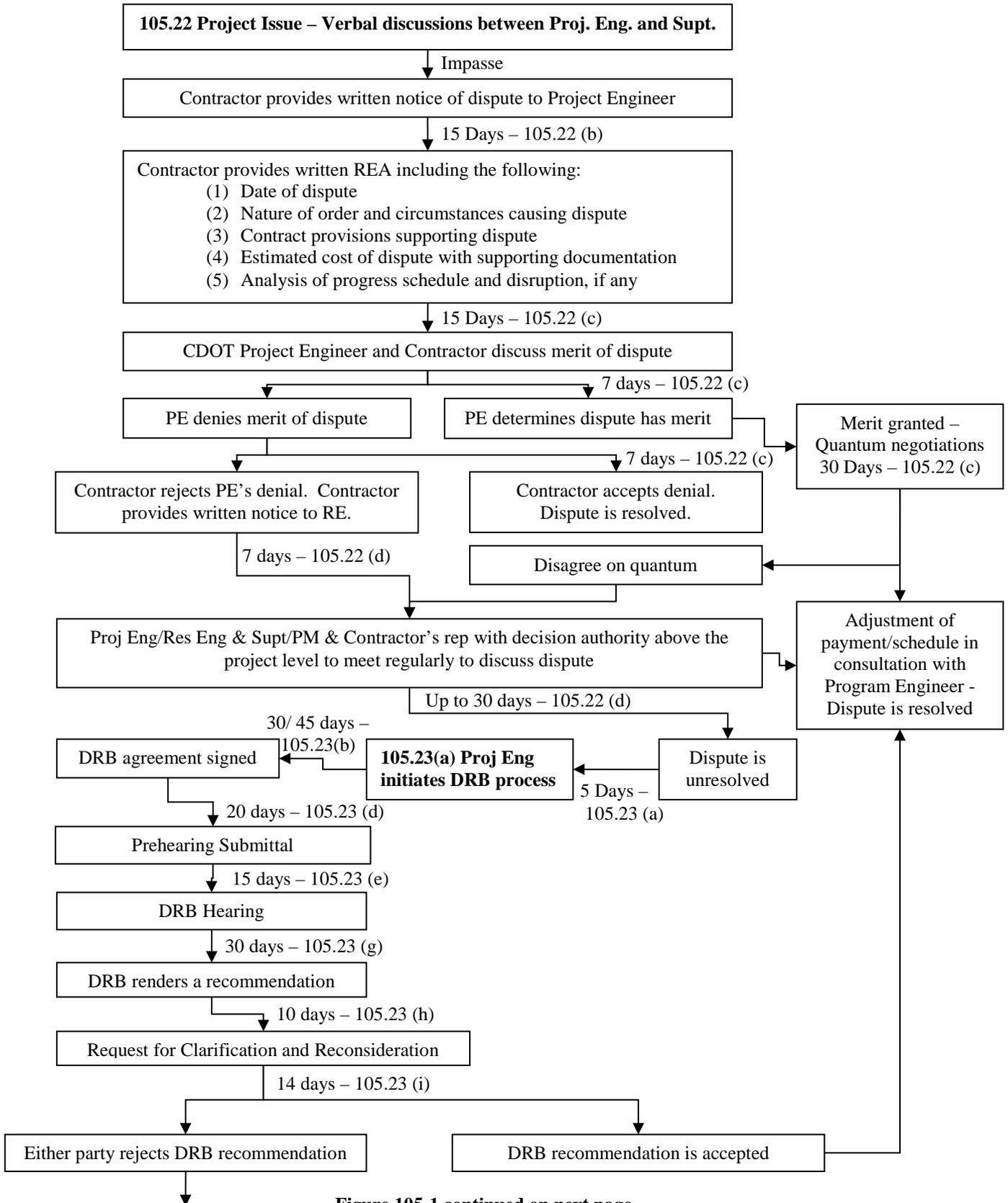
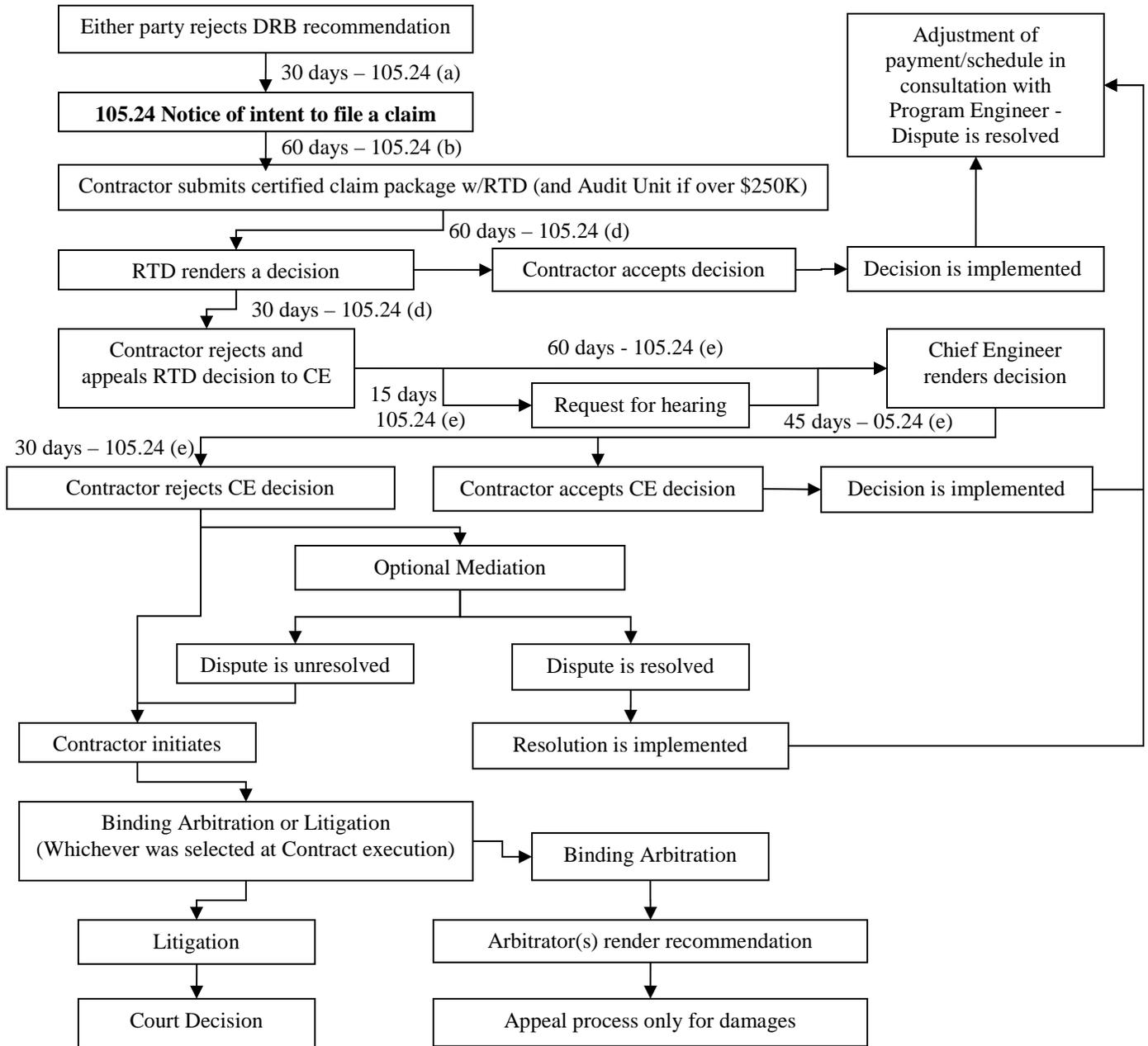


Figure 105-1 continued on next page

Figure 105-1 (continued)



**REVISION OF SECTION 105
VIOLATION OF WORKING TIME LIMITATION**

Section 105 of the Standard Specifications is hereby revised for this project as follows:

Subsection 105.03 shall include the following:

If there is a violation of the working time limitations for traffic control as set forth in the special provisions, a written notice to stop work will be imposed on the Contractor at the start of the next working day. Work shall not resume until the Contractor assures the Engineer, in writing, that there will not be a reoccurrence of the working time violation. If more violations take place, the Engineer will notify the Contractor in writing that there will be a price reduction charge for each incident in accordance with this specification. This incident price reduction charge will be deducted from any money due the Contractor. This price reduction will not be considered a penalty but will be a price reduction for failure to perform traffic control in compliance with the Contract.

An incident is any violation up to 30 minutes in duration. Each 30 minutes or increment thereof will be considered as an incident. A price reduction will be assessed for each successive or cumulative 30 minute period in violation of the working time limitations, as determined by the Engineer. The price reduction for each incident will increase at a progressive rate starting with \$150 for the second incident and increasing to \$1200 for the fifth and subsequent incidents in accordance with the following schedule. A 15 minute grace period will be allowed at the beginning of the second incident on the project before the price reduction is applied. This 15 minute grace period applies only to the second incident.

The number of incident charges will be accumulative throughout the duration of the Contract.

PRICE REDUCTION SCHEDULE

Incident	Incident Rate	Total Price Reduction
1 st	Notice to Stop Work	----
2 nd	\$150	\$150
3 rd	300	450
4 th	600	1,050
5 th	1,200	2,250
6 th	1,200	3,450
Etc.	1,200	4,650
	Etc.	Etc.

May 8, 2014

**REVISION OF SECTIONS 105, 106, 412, 601 AND 709
CONFORMITY TO THE CONTRACT OF PORTLAND CEMENT CONCRETE
PAVEMENT AND DOWEL BARS AND TIE BARS FOR JOINTS**

Sections 105, 106, 412, 601 and 709 of the Standard Specifications are hereby revised for this project as follows:

Delete subsection 105.06 and replace with the following:

105.06 Conformity to the Contract of Portland Cement Concrete Pavement. Conformity to the Contract of all Portland Cement Concrete Pavement, Item 412, will be determined in accordance with the following:

When the Engineer finds that the materials furnished, the work performed, or the finished product does not conform with the Contract, or the Pay Factor (PF) for an element's process is less than 0.75 but that reasonably acceptable work has been produced, the Engineer will determine the extent of the work that will be accepted and remain in place. The Engineer will use a Contract Modification Order to document the justification for allowing the work to remain in place and the price adjustment that will be applied.

When the Engineer finds the materials furnished, work performed, or the finished product is not in conformity with the Contract, or the PF for an element's process is less than 0.75 and has resulted in an inferior or unsatisfactory product, the work or material shall be removed and replaced or otherwise corrected by and at the expense of the Contractor. When the PF for any process is 0.75 or greater, the finished quantity of work represented by the process will be accepted at the calculated pay factor.

Materials will be sampled and tested by the Contractor and the Department in accordance with subsection 106.06 and with procedures contained in the Department's Field Materials Manual. The approximate quantity represented by each sample will be as set forth in subsection 106.06, Tables 106-2 and 106-3. Additional samples may be selected and tested at the Engineer's discretion.

- (a) Incentive and Disincentive Payments (I/DP) will be made based on a statistical analysis that yields Pay Factors (PF) and Quality Levels (QL). The PF and QL will be made based on test results for the elements of compressive strength and pavement thickness (compressive strength criteria) or the elements of flexural strength and pavement thickness (flexural strength criteria). The Department will indicate in the plans whether compressive strength or flexural strength criteria will be used.

Incentive or Disincentive payment will not be made for thickness of concrete pavement furnished by the Contractor and placed by others.

When compressive strength criteria is indicated, then the QL will be calculated for the elements of compressive strength and pavement thickness on a process basis. When flexural strength criteria is indicated, then the QL will be calculated for the elements of flexural strength and pavement thickness on a process basis. A separate process will be established for an element when a change in the process affects that element. A process will consist of the test results from a series of random samples. Test results determined to have sampling or testing errors will not be used. All materials produced will be assigned to a process. A change in process is defined as a change that affects the element involved. Changes in mix design, material source, design pavement thickness, or the method being utilized to place the pavement are considered changes in process. The following is provided to clarify changes in processes for each element:

1. Construction of mainline pavement, including the shoulders if placed with the mainline, is a single process, providing there are no changes in process as described above.
2. Construction of ramps, acceleration and deceleration lanes, shoulders placed separately, and areas requiring hand work are considered separate processes.
3. A change in the mix design is a process change for the compressive strength element or the flexural strength element, but is not a process change for the pavement thickness element.

- (b) When it is necessary to represent material by one or two tests, each individual test shall have a PF computed in accordance with the following:

If the value of the test is at or above the lower tolerance limit, then $PF = 1.000$. If the value of the test is below the lower tolerance limit, then:

$$PF = 1.00 - [0.25(T_L - T_0)/V]$$

where: PF = pay factor.

V = V factor from Tables 105-4 or 105-5.

T_0 = the individual test value.

T_L = lower tolerance limit.

- (c) The following procedures will be used to compute Incentive and Disincentive Payments (I/DP), quality levels (QL), and pay factors (PF) for processes represented by three or more tests:

1. Quality Level (QL) will be calculated according to CP-71.
2. Compute the PF for the process. When the process has been completed, the number of tests (P_n) it includes shall determine the formula to be used to compute the final pay factor in accordance with the following:
 - A. For compressive strength and pavement thickness:
When $3 \leq P_n \leq 5$
If $QL \geq 85$, then $PF = 1.00 + (QL - 85)0.001333$
If $QL < 85$, then $PF = 1.00 + (QL - 85)0.005208$

When $6 \leq P_n \leq 9$
 If $QL \geq 90$, then $PF = 1.00 + (QL - 90)0.002000$
 If $QL < 90$, then $PF = 1.00 + (QL - 90)0.005682$
 When $10 \leq P_n \leq 25$
 If $QL \geq 93$, then $PF = 1.00 + (QL - 93)0.002857$
 If $QL < 93$, then $PF = 1.00 + (QL - 93)0.006098$
 When $P_n \geq 26$
 If $QL \geq 95$, then $PF = 1.00 + (QL - 95)0.004000$
 If $QL < 95$, then $PF = 1.00 + (QL - 95)0.006757$

B. For flexural strength:

When $3 \leq P_n \leq 5$
 If $QL \geq 85$, then $PF = 1.00 + (QL - 85)0.002000$
 If $QL < 85$, then $PF = 1.00 + (QL - 85)0.005208$
 When $6 \leq P_n \leq 9$
 If $QL \geq 90$, then $PF = 1.00 + (QL - 90)0.003000$
 If $QL < 90$, then $PF = 1.00 + (QL - 90)0.005682$
 When $10 \leq P_n \leq 25$
 If $QL \geq 93$, then $PF = 1.00 + (QL - 93)0.004286$
 If $QL < 93$, then $PF = 1.00 + (QL - 93)0.006098$
 When $P_n \geq 26$
 If $QL \geq 95$, then $PF = 1.00 + (QL - 95)0.006000$
 If $QL < 95$, then $PF = 1.00 + (QL - 95)0.006757$

3. Compute the I/DP for the process:

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

where: QR = Quantity Represented by the process.

UP = Unit Price bid for the Item.

The total I/DP for an element shall be computed by accumulating the individual I/DP for each process of that element.

(d) As acceptance test results become available, they will be used to calculate accumulated QL and Incentive and Disincentive Payments (I/DP) for each element and for the item. The Contractor's test results and the accumulated calculations shall be made available to the Engineer upon request. The Engineer's test results and the calculations will be made available to the Contractor as early as reasonably practical. Numbers from the calculations shall be carried to significant figures and rounded according to AASHTO Standard Recommended Practice R-11, Rounding Method.

I/DP will be made to the Contractor in accordance with subsection 412.24(a). During production, interim I/DP will be computed for information only. The P_n will change as production continues and test results accumulate. The P_n at the time an I/DP is computed shall determine the formula to be used.

(e) The Contractor shall not have the option of accepting a price reduction or disincentive in lieu of producing specification material. Continued production of non-specification material will not be permitted. Material which is obviously defective may be isolated and rejected without regard to sampling sequence or location within a process.

**Table 105-4
 "V" FACTORS AND INCENTIVE PAYMENTS
 COMPRESSIVE STRENGTH CRITERIA**

Element	V factor	Maximum Incentive Payment	Lower Tolerance Limit, T_L
Compressive Strength	400 psi	2.00 percent	4,500 psi
Pavement Thickness	0.4 inch	2.00 percent	Plan Thickness -0.4 inch

Table 105-5
"V" FACTORS AND INCENTIVE PAYMENTS
FLEXURAL STRENGTH CRITERIA

Element	V factor	Maximum Incentive Payment	Lower Tolerance Limit, T _L
Flexural Strength	50 psi	3.00%	570 psi
Pavement Thickness	0.4 inch	2.00%	Plan Thickness -0.4"

Sand Equivalence. If compressive strength criteria is indicated then the sand equivalence (SE) as determined by CP 37 will be considered acceptable when the running average of three consecutive tests is greater than 80 percent and no individual test result is less than 75 percent. When the running average of three consecutive SE tests falls below 80 percent or an individual SE test result falls below 75 percent, paving operations shall be suspended. The Contractor shall submit a written plan to correct the low SE test results to the Engineer for approval. The Contractor shall not continue paving operations until the Engineer approves the plan in writing and three SE test results from random samples in the stockpile are above 80 percent.

Delete subsection 106.06 and replace with the following:

106.06 Sampling and Testing of Portland Cement Concrete Paving. All Portland Cement Concrete Pavement, Item 412, shall be tested in accordance with the following quality control and acceptance testing procedures:

- (a) *Quality Control Testing.* The Contractor shall be responsible for quality control testing of all elements listed in Table 106-2 or 106-3. Quality control testing shall be performed at the expense of the Contractor. The Contractor shall develop a quality control plan (QCP) in accordance with the following:
1. **Quality Control Plan.** For each element listed in Tables 106-2 or 106-3, the QCP must provide adequate details to ensure that the Contractor will perform quality control. The Contractor shall submit the QCP to the Engineer at the preconstruction conference. The Contractor shall not start any work on the project until the Engineer has approved the QCP in writing.
 - A. **Frequency of Tests or Measurements.** The QCP shall indicate a random sampling frequency, which shall be equal to or more frequent than that shown in Table 106-2 or 106-3. The quality control tests shall be independent of acceptance tests.
 - B. **Test Result Chart.** Each quality control test result, the appropriate area, volume, and the tolerance limits shall be plotted. The chart shall be posted daily at a location convenient for viewing by the Engineer.
 - C. **Quality Level Chart.** The QL for each element in Table 106-2 or 106-3 shall be plotted. The QL shall be calculated in accordance with the procedure in CP 71 for Determining Quality Level. The QL shall 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 area of material represented by the last test result shall correspond to the QL.
 - D. **F-test and t-test Charts.** If flexural strength criteria is indicated, then the results of F-test and t-test analysis between the Department's verification tests of flexural strength and the Contractor's quality control tests of flexural strength shall be shown on charts. The F-test and t-test shall be calculated in accordance with standard statistical procedures using all verification tests and quality control tests completed to date. When a verification test is completed, the F-test and t-test calculations shall be redone. The area of material represented by the last test result shall correspond to the F-test and t-test. A warning value of 5 percent and an alert value of 1 percent shall be shown on each chart. The chart shall be posted daily at a location convenient for viewing by the Engineer.
 2. **Point of Sampling.** The material for quality control testing shall be sampled by the Contractor using CP 61. The location where material samples will be taken shall be indicated in the QCP.
 3. **Testing Standards.** The QCP 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.

The compressive strength test for quality control will be the average strength of two test cylinders cast in plastic molds from a single sample of concrete, cured under standard laboratory conditions, and tested three to seven days after molding.

4. Testing Supervisor Qualifications. The person in charge of and responsible for the quality control testing shall be identified in the QCP. This person shall be present on the project and possess one or more of the following qualifications:
 - A. Registration as a Professional Engineer in the State of Colorado.
 - B. Registration as an Engineer in Training in the State of Colorado with two years of paving experience.
 - C. A Bachelor of Science in Civil Engineering or Civil Engineering Technology with three years of paving experience.
 - D. National Institute for Certification in Engineering (NICET) certification at level III or higher in the subfields of Transportation Engineering Technology, Highway Materials, or Construction Materials Testing Engineering Technology, Concrete and four years of paving experience.
5. Technician Qualifications. Technicians performing tests shall meet the requirements of Colorado Procedure 10.
6. Testing Equipment. All of the testing equipment used to conduct quality control testing shall conform to the standards specified in the test procedures and be in good working order. If flexural strength criteria is indicated, then the Contractor shall provide the following equipment and supplies which will not be paid for separately but shall be included in the work:
 - A. A separate, temperature controlled facility of at least 300 square feet usable space. This facility shall be used exclusively for the molding, storage and testing of concrete test specimens as required. This facility shall be provided in addition to other facilities required in Section 620. The storage facility shall have sufficient water storage capacity for curing all required test specimens. The storage facility shall provide separate storage tanks for each type of required testing. Each storage tank shall have a continuously recording thermometer and sufficient blank charts for the project. Temperatures of each storage tank shall be recorded for the duration of the project.
 - B. A machine for testing flexural strength of concrete specimens. The machine shall be used only for flexural strength tests. The machine shall be model number FX-250 manufactured by Forney with a DR2001 digital monitor or an approved equal. Both the Contractor and the Engineer will use this machine for testing concrete specimens. The machine shall meet the requirements of AASHTO T 97 and T 22 and the following: The machine and the flexural strength assembly shall be of a rigid construction. The applied vertical load shall be uniformly distributed to the third points and uniformly across the width of the beam (transverse distribution). Uniform distribution of the load is defined as less than a 3 percent variation in the load between each of the nine strain gages placed in the middle third section of the tension face for loads from 1,000 to 10,000 pounds. One firm that can evaluate and assess the ability of the machine to distribute the load evenly is KPFF Consulting Engineers, Chicago Illinois 847-859-7790 (Paul Okamoto). Other firms may be capable of evaluating and assessing the load distribution of the machine. The Engineer must approve the firm prior to assessing the machine. The machine shall be ready for use and certified two days before paving begins. After the machine has been certified and accepted by the Engineer it shall not be moved until all portland cement concrete paving and flexural strength acceptance tests have been completed.
 - C. Beam molds for molding all test specimens required. This shall include all testing described in subsection 106.06.
7. Reporting and Record Keeping. The Contractor shall report the results of the tests to the Engineer in writing at least once per day.

The Contractor shall assemble a Quality Control (QC) 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 106-2 or 106-3. The Contractor shall submit examples of worksheets, test result forms and test results charts in accordance with CP 12B as part of the Contractor's Quality Control Plan (QCP). The Contractor shall submit the QC notebook to the Engineer for review once a month on the date agreed to at the Pre-Construction Conference.

The QC notebook will be returned to the Contractor with a list of recognized deficiencies within two working days after submittal. Deficiencies may include, but are not limited to, the failure to submit the notebook on time or an absence of the required reports. For any month in which deficiencies are

identified, the QC notebook will be submitted for review two weeks after the QC notebook is returned. Upon the second recognized deficiency the Engineer will notify the Contractor, and the pay estimate shall be withheld until the Contractor submits, in writing, a report detailing the cause for the recognized deficiency. The report shall include how the Contractor plans to resolve the deficiencies. Additional recognized deficiencies will result in a delay of the pay estimate until the Contractor has identified and resolved the deficiency along with revising and resubmitting his QCP to address these issues. Once the Engineer has reviewed and approved the revised QCP the estimate may be paid. Upon submittal of the QC notebook for the semi-final estimate, the QC notebook shall become the property of the Department. The Contractor shall make provisions such that the Engineer can inspect quality control work in progress, including QC notebook, sampling, testing, plants, and the Contractor's testing facilities at any time.

8. **Optimized Gradation.** The Contractor will be required to perform quality control testing of the combined aggregate gradation (CAG) when an Optimized Gradation (OG) is used for Class E or P Concrete. The combined aggregate gradation testing frequency shall be three per day. Test one shall be sampled and tested after full production begins but before production reaches 100 cubic yards. Test two shall be sampled and tested after four hours of continuous production or production reaches 1000 cubic yards, whichever comes first. Test three shall be sampled and tested after seven hours of continuous production or production reaches 1750 cubic yards, whichever comes first. The frequency shall be a minimum of one per day if production is less than 750 cubic yards.

The Department will perform one gradation each day that may be a split of one of the three daily QC samples. This data will not be used to determine acceptability of the material but as information only.

The Contractor's gradation test data will be used to calculate the coarseness factor (CF) and workability factor (WF) and must plot within the workability box. No corrective action shall be required if the data falls within the workability box.

When the Contractor's gradation test results and the CF and WF fall outside the workability box, the Contractor shall immediately make corrections to bring the aggregate gradation within the workability box and notify the Engineer. If two or more consecutive test results for any single day or two successive days are found to fall outside the workability box, the Contractor shall immediately suspend production and provide a written corrective plan to the Engineer for approval prior to resuming production.

Upon being allowed to resume production, the Contractor shall follow the daily sampling frequency. If the next two consecutive gradation tests indicate the CF and WF plot inside the workability box, the Contractor may continue production. If the first two aggregate samples do not have CF and WF that fall inside the workability box, production shall be suspended.

Prior to resuming production the Contractor shall be required to sample the individual aggregate stockpiles at two or more locations to determine the range of variability within each stockpile, make appropriate adjustments to the percentages for each aggregate component, and discharge and sample the combined aggregates. The combined aggregate gradation shall be tested to determine if the CF and WF fall inside the workability box. Production can resume if the CF and WF plot within the workability box. Production will continue to be suspended for additional evaluation of stockpiles and aggregate feed rates until gradation sampling and testing indicate the CF and WF fall inside the workability box.

All gradation test information during production shall be provided to the Engineer daily. The Contractor shall immediately report all gradation test data to the Engineer for evaluation during periods when production is suspended or upon resuming production. The Contractor will be notified in writing in all cases when production may resume or shall remain suspended.

- (b) **Acceptance Testing.** Acceptance testing frequencies shall be in accordance with the Schedule (Quality Assurance) in the Department's Field Materials Manual. Except for flexural strength, acceptance tests will be conducted by and at the expense of the Department. Acceptance sampling and testing procedures will be in accordance with the Department's Field Materials Manual with the following exceptions and inclusions:

A split sample from an acceptance test shall not be used for a quality control test. The Engineer will designate the location where samples are to be taken. Samples shall be taken by the Contractor in accordance with CP 61. The Engineer will be present during the sampling and take possession of all acceptance samples. Samples transported in different containers will be combined and mixed before molding specimens. All materials are subject to inspection and testing at all times.

Pavement thickness acceptance will be determined by cores.

The compressive strength test for acceptance will be the average compressive strength of three test cylinders cast in plastic molds from a single sample of concrete and cured under standard laboratory conditions prior to testing. If the compressive strength of any one specimen differs from the average by more than 10 percent, that specimen will be deleted and the average strength will be determined using the remaining two specimens. If the compressive strength of more than one specimen differs from the average by more than 10 percent the average strength will be determined using all three specimens. Each set of three cylinders will be tested at 28 days after molding.

Acceptance tests for flexural strength shall be the Contractor's quality control tests. The flexural strength tests shall be the average flexural strength of four test beams. The test beams shall be prepared according to AASHTO T 23 with the following additional requirements: Specimens shall be consolidated by internal vibration without the vibrator being inserted in the center six inches of the specimen's long dimension. The flexural strength of each specimen shall be measured according to AASHTO T 97 with the following additional requirements: If the flexural strength of only one specimen differs from the average by more than 10 percent, that specimen shall be deleted and the average strength shall be determined using the remaining three specimens. If the flexural strength of more than one specimen differs from the average by more than 10 percent, the test value shall be the average of all four specimens. Each set of four beams shall be tested at 28 days after molding. Leather shims shall be used in each test.

- (c) *Verification Testing.* Verification testing will be used only when flexural strength criteria is indicated and is the responsibility of the Department. The Department will determine the locations where samples or measurements are to be taken. The location of sampling shall be based on a stratified random procedure.

Verification sampling and testing procedures will be in accordance with Sections 105, 106, 412, the Schedule for Minimum Materials Sampling, Testing and Inspection in the Department's Field Materials Manual, and CP 13. Samples for verification testing shall be taken by the Contractor in accordance with CP 61 in the presence of the Engineer.

An analysis of test results will be performed after all test results are known using the t-test and F-test statistical methods with an alpha value set at 0.05. If either the above t-test and F-test analysis shows a significant difference, then the following items shall be checked: comparison of beam fracture locations and types, computations and flexural testing machine outputs, curing tank temperature charts, slump and air contents, plant batch tickets for major changes, review of sampling, molding, testing procedures, along with IAT check tests and any other investigations that may clarify the significant differences. If after a review of the data no reasons can be determined for the significant difference, the Department's test data shall be used for determining Quality Levels and Incentive or Disincentive according to the methods in this Section.

- (d) *Check Testing.* The Contractor and the Engineer shall conduct a check testing program (CTP) prior to the placement of any concrete pavement. The check testing program will include a conference directed by the Region Materials Engineer, the Contractor's testers and the Department's testers concerning methods, procedures and equipment for compressive or flexural strength testing. Check testing shall be completed before any portland cement concrete pavement is placed. A set of three cylinders or four beams will be molded by both the Contractor and the Department's project testers from a split sample. The specimens will be sampled, molded and cured for seven days and tested for compressive or flexural strength according to the procedures of Section 106. The Department's Independent Assurance Tester will also mold, cure and test a set of three cylinders or four beams, but the Independent Assurance Test results will not be entered in the check testing analysis. If the results of the check tests do not meet the following criteria, then the check testing will be repeated until the following criteria are met:

- (1) The average of the Contractor's test results and the average of the Department's test results shall be within 10 percent of the average of all test results.
- (2) Each specimen test result shall be within 15 percent of the average of all test results.

When compressive strength criteria is indicated, a check test must also be conducted on the sand equivalent test. A set of 5 sand equivalents will be run by both the Contractor's and the Department's project tester, from a split sample. The average of the absolute differences between tests taken by the quality control personnel and the acceptance testing personnel will be compared to the acceptable limits shown in Table 13-1 of CP 13. The CTP will be continued until the acceptance and quality control test results are within the permissible ranges shown in Table 13-1 of CP 13.

During production, split samples of randomly selected acceptance tests will be compared to the permissible ranges shown in Table 13-1 of CP 13. The minimum frequency will be as shown in Table 106-3.

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

- (e) *Independent Assurance Testing.* Independent Assurance Tests (IAT) for flexural strength will be performed at a frequency of 1 per 50,000 sq. yds. The sample for the IAT will be a split sample of the Contractor's quality control test. The Department's representative performing verification tests shall also use a split sample of the Contractor's quality control test and participate in the IAT. The IAT for flexural strength will be the average flexural strength of four test beams prepared according to the requirements of Section 106 and cured for seven days.
- (f) *Testing Schedule.* All samples used to determine Incentive or Disincentive payment by quality level formulas in accordance with Section 105, will be selected by a stratified random process.

**Table 106-2
TESTING SCHEDULE - ITEM 412
PORTLAND CEMENT CONCRETE
PAVEMENT, FLEXURAL STRENGTH CRITERIA**

Element	Minimum Testing Frequency Contractor's Quality Control
Aggregate Gradation and Sand Equivalent	For the first five days, minimum of 1/day, then 1/10,000 sq. yds. After 5 days, 1/40,000 sq. yds.
Slump	First three loads each day, then as needed for control.
Water Cement Ratio	First three loads each day, then 1/500 cu. yds.
Air Content and Yield	Minimum of 1/day, then 1/2,500 sq. yds.
Flexural Strength	Minimum of 1/day, then 1/2,500 sq. yds.
Compressive Strength	1/10,000 sq. yds.
Pavement Thickness	In accordance with subsection 412.21.
Pull Test Joints	Minimum of six transverse and six longitudinal joint locations for the 1 st 2500 linear feet, then three transverse and three longitudinal joints thereafter
Load Transfer Dowel Bar Placement	In accordance with subsection 412.13 (b) 2
Tining Depth	1 per 528 linear feet in each lane and shoulder wider than 8 feet.

**Table 106-3
TESTING SCHEDULE - ITEM 412
PORTLAND CEMENT CONCRETE
PAVEMENT, COMPRESSIVE STRENGTH CRITERIA**

Element	Minimum Testing Frequency Contractor's Quality Control
Aggregate Gradation	Minimum of 1/day, then 1/10,000 sq. yds.
Slump	First three loads each day, then as needed for control.
Compressive Strength, Air Content, Yield, and Sand Equivalent	Minimum of 1/day, then 1/2,500 sq. yds.
Pavement Thickness	In accordance with subsection 412.21.
Pull Test Joints	Minimum of six transverse and six longitudinal joint locations for the 1 st 2500 linear feet, then three transverse and three longitudinal joints thereafter
Load Transfer Dowel Bar Placement	In accordance with subsection 412.13 (b) 2
Tining Depth	1 per 528 linear feet in each lane and shoulder wider than 8 feet.
Water Cement Ratio	First three loads each day, then 1/500 cu. yds.

Subsection 412.10 shall include the following:

The Contractor shall provide a MIT-Scan-2 which is manufactured by MIT GmbH.

The Contractor shall ensure the MIT-Scan-2 is calibrated for the specific dowel bar size or load transfer device being placed, and is operating within the manufacturer's tolerances. The Contractor shall also ensure that the operator of the MIT-Scan-2 is fully competent in the use of the device. The Contractor shall supply the serial number of the device to be utilized on the project.

In subsection, 412.13 (a) 3rd paragraph, delete the first sentence and replace with the following:

Holes with a diameter 1/4 inch greater than the bar diameter shall be drilled laterally into the hardened concrete slabs at one half the slab depth, 36 inches on center, 15 to 16 inches deep.

In subsection 412.13 (a), delete the 5th paragraph and replace with the following:

When tie bars are placed in plastic state concrete or drilled and epoxied into a construction joint, and if required by the Engineer, the Contractor shall demonstrate by testing at least 15 of the tie bars that the bar pullout resistance is at least 11,250 pounds with slippage of 1/16 inch or less. If two or more tie bars do not meet the required pullout resistance, then another 15 tie bars shall be tested. If any of the second 15 do not meet the required pullout resistance, then all remaining tie bars shall be tested. The Contractor shall perform additional pullout tests and take corrective action when and as directed. All steps taken to test bars, and to correct, repair or replace failed tie bars and the surrounding failed area shall be at the Contractor's expense. Concrete strength shall have a compressive strength of at least 2500 psi before testing. ASTM E488 shall be used for performing pullout testing.

Delete subsection 412.13 (b) 1 and 412.13 (b) 2 and replace with the following:

1. Longitudinal Weakened Plane Joints. Epoxy coated deformed steel tie bars shall be inserted into the plastic state concrete after the auger. In the event the tie bars are placed behind the machine paving mold, vibration will be required during placement. Other methods of bar placement may be acceptable if the Contractor can demonstrate satisfactory performance of the alternate method. Proposals of alternate methods or additional costs associated with other methods shall be at the Contractor's expense. Tie bars shall be placed according to a method approved by the Engineer. The Contractor shall use an MIT Scan-2 to evaluate the location of tie bars that cannot be visually inspected. Each longitudinal joint located within the dowel bar test locations described in subsection 412.13 (b) 2 that were not visually inspected shall be evaluated with the MIT Scan-2. The MIT Scan-2 shall be calibrated for the tie bar size placed. The tie bars shall be located within the middle third of the slab, and a minimum of 1/2 inch below the saw cut. Tie bars shall have a minimum embedment of 12 inches on each side of the joint. The weakened plane joint shall be made by sawing in hardened concrete in accordance with the plan details.

Tie bars that are cut during sawing operations shall be replaced at the contractor's expense. Tie bars that are located less than 2 inches above the bottom of the slab shall be replaced at the contractor's expense. Tie bars that are not embedded a minimum of 12 inches on each side of the joint shall be replaced. When the spacing between two in-place tie bars exceeds 40 inches but less than 72 inches, a tie bar will be installed halfway between the two tie bars, unless this installation location is within 12 inches of a transverse weakened plane joint. When the spacing between two in-place tie bars exceeds 72 inches, tie bars will be installed at an even spacing not to exceed 36 inches, but shall not be installed within 12 inches of a transverse weakened plane joint. The Contractor shall submit to the Engineer a method for replacing the tie bars. The Contractor shall not proceed to replace the tie bars until the method for replacement has been approved by the Engineer.

2. Transverse Weakened Plane Joints. When dowel bars are specified in the Contract, they shall be installed within the tolerances and of the size, grade, and spacing specified. Horizontal support wires or shipping braces shall be non-deformed bars or wires with a diameter less than or equal to 0.307 inches (gauge 0 wire). The number of horizontal support wires or shipping braces shall be limited to five per assembly. The horizontal support wires or shipping braces shall not be cut prior to concrete placement. The center of the dowel assembly or the insertion location shall be marked on both sides of the pavement slab for reference in sawing the joint. Dowel bars shall be furnished in a rigid welded assembly or placed by a dowel bar insertion (DBI) machine.

When a DBI is used, the Contractor shall submit details and specifications of the proposed slip-form paver and DBI to the Engineer a minimum of 14 calendar days prior to the Concrete Pavement Pre-Paving Conference. The

Contractor shall detail his methodology for ensuring correct marking of dowel bar insertion points and correct sawing of the joints. The Contractor shall ensure that the slip-form paver is compatible with the DBI.

The rigid assembly shall be fabricated from number 1/0 wire or heavier with vertical support wires every 1 foot. Assembly shall be securely fastened to the sub-base and constructed to firmly hold all the dowel bars at T/2 depth, parallel to each other and to the pavement grade and alignment.

See Standard Plan M-412-1 for schematic describing the measurement of each tolerance.

.A weighted-score system will be used to conduct a joint-by-joint evaluation of rotational misalignments of the dowel bars. The Joint Score is a measure of the combined effects of rotational misaligned dowel bars at a joint. A Joint Score is determined by summing the product of the weights (given in Table 412-1) and the number of bars in each misalignment category and adding 1. For example, if a joint has four misaligned bars in the 0.6 to 0.8 inch range, the joint score is 9; if a joint has one misaligned bar in the range 0.6 to 0.8 inch and one bar in the 1 to 1.5 inch range, the score is 8. A Joint Score of 10 is the critical level, above which the risk of joint locking is considered high.

**Table 412-1
WEIGHTING FACTORS USED TO DETERMINE JOINT SCORE**

Range of Rotational Misalignment	Weight
< 0.6 in.	0
≥ 0.6 in and < 0.8 in.	2
≥ 0.8 in and < 1 in.	4
≥ 1 in	5

Individual Dowel Bar Rejection Criteria:

Rotational Alignment:

Any bar with a misalignment greater than 1.5 in.

Longitudinal (side) shift:

Any bar that is not embedded at least 6 inches on each side of the joint

Depth:

Any bar within the top 3 inches of the pavement or at a depth less than the saw-cut depth.

Any bar within the bottom 3 inches of the pavement

When rigid assemblies are used to install dowel bars and the bars are rejected for depth, the Contractor may core the pavement to verify the MIT Scan depth results.

Joint Rejection Criteria:

Any joint with a Joint Score greater than 10. An individual joint may be allowed if the two longitudinally adjacent joints each have a joint score less than or equal to 10

Any joint that does not have at least three acceptable dowel bars in each wheel path.

Corrective Measures: The following corrective measures will be allowed for the bars or joints that are rejected.

Rotational misalignment.

Saw-cut the misaligned bars. Joints with less than three un-cut bars in each wheel path will require the addition of dowel bars using an approved dowel bar retrofit method.

Longitudinal (side) Shift and missing bars.

Addition of dowel bars using an approved dowel bar retrofit method.

Depth.

Inadequate cover above the bar—Remove the bar and install a replacement bar using an approved dowel bar retrofit method.

Inadequate cover below the bar— Addition of dowel bars using an approved dowel bar retrofit method.

Retrofitted dowel bars shall not exceed the dowel bar rejection criteria.

In addition to the above procedures, the Contractor may propose removal and replacement of the affected slabs.

The Contractor shall submit his method of repair to the Engineer for approval.

The Contractor shall demonstrate his ability to place dowel bars in conformance with the specifications by placement of a test section.

The test section shall be a minimum of 300 feet in length. Upon completion of the test section, the Contractor shall shut down paving operations. During the shutdown period, the Contractor shall evaluate all joints in the test section using the MIT-Scan-2, analyze the results and submit the results to the Engineer. Paving operations shall not be restarted until the Engineer approves the test section results. The test section will be found acceptable if 85% of the dowel bars placed are found to be within the rejection criteria. All dowel bars exceeding the Rejection Criteria must be addressed using the above corrective measures. The Contractor may continue paving at his own risk before the test section evaluation is complete.

If the Project has less than 500 linear feet of pavement, the test section will not be required. If a Project does not have sections of continuous pavement greater than 45 linear feet, the test section will not be required.

Upon completion of the test section(s) and for each week of production, the Contractor shall prepare an electronic report generated using MagnoProof software and submit it to the Engineer at the start of each working week during production for the previous weeks work. All data shall be submitted in the manufacturer's native file format, along with the calibration files.

The electronic report shall include the following:

- (1) Contract number, date, highway number and direction of traffic.
- (2) Joint number, lane number and station.
- (3) Bar number and x-location of dowel bar.
- (4) Horizontal and vertical misalignment of each bar in inches.
- (5) Overall misalignment of each bar in inches of each bar
- (6) Side shift of each bar in inches.
- (7) Depth to center of each bar in inches.
- (8) Joint Score
- (9) All measurements exceeding the rejection criteria shall be highlighted in red.

Due to potential magnetic interference from tie bars, dowel bars located within 15 inches of a tied joint shall not be included in the evaluation.

When the test section is found to be unacceptable, the Contractor shall perform corrective actions and place a second test section. If the second test section is found to be unacceptable, the Contractor shall pave no more than 500 feet per day until an acceptable test section has been achieved.

Once a test section is successfully completed, Dowel Bar Placement testing frequency shall be a minimum of one location per 1,250 linear feet of each continuous lane including climbing lanes, passing lanes, acceleration and deceleration lanes and ramps. Sections greater than 45 linear feet and less than 1,250 linear feet require a minimum one of test location. Testing locations shall be determined by a random procedure so that each area has a randomly selected transverse joint location. At each location, five consecutive joints shall be tested.

Sections of continuous pavement constructed by the project less than 45 linear feet will not require Dowel Bar Placement Testing.

When any joint score is greater than 10 or any one bar in a single joint exceeds the rejection criteria, joints shall be tested in each direction from the rejected joint, until two consecutive joints in each direction are found to be within the rejection criteria.

All delays or costs associated with equipment being rejected for use by the Engineer will not be paid for by the Department, and will be considered a Non-excusable Delay in accordance with subsection 108.08 (c) 2.

When concrete shoulders or widenings are constructed subsequent to the driving lanes, transverse weakened plane joints shall immediately be formed in the plastic concrete of these widenings to create an extension of the existing transverse joint. This tooled joint shall be formed in such a manner that it controls the cracking and shall be sawed and sealed in accordance with the above requirements.

In subsection 412.21, delete the first sentence in the sixth paragraph.

In subsection 601.02, delete Class E and P Concrete from Table 601-1 and replace with the following:

Concrete Class	Required Field Compressive Strength (psi)	Cementitious Material Content: Minimum or Range (lbs/yd ³)	Air Content: % Range (Total)	Water /Cementitious Material Ratio: Maximum or Range
E	4500 at 28 days	520	4 – 8	0.44
P	4500 at 28 days	520	4 – 8	0.44

In subsection 601.02, delete the sixth and ninth paragraphs and replace with the following:

Class E concrete is used for fast track pavements needing early strength in order to open a pavement to service soon after placement. Class E concrete shall meet the requirements of Class P concrete. ASTM C150 Type III or ASTM C1157 Type HE cement may be used.

Class P concrete is used in pavements. Additional requirements are: The laboratory trial mix shall produce a minimum average 28 day flexural strength 700 psi. Two aggregate gradation options are available:

- (a) *Standard Gradation (SG)*. The concrete mix shall consist of a minimum 55 percent AASHTO M 43 size No. 357 or No. 467 coarse aggregate by weight of total aggregate. If all transverse joints are doweled, the concrete mix shall consist of a minimum 55 percent AASHTO M 43 sizes No. 57, No. 6, No. 67, No. 357, or No. 467 coarse aggregate by weight of total aggregate.
- (b) *Optimized Gradation (OG)*. Aggregate proportions must be a result of an optimized combined aggregate gradation (CAG) developed by an approved mix design technique such as Shilstone or KU Mix. The amount of aggregate in the CAG passing the 19 mm (¾ inch) sieve and retained on the 12.5 mm (½ inch) sieve shall be a minimum of 8 percent for the trial mix design. The coarseness factor (CF) and workability factor (WF) must plot within the workability box (ABCD) depicted graphically by the following 4 coordinate points:
 - a. Point A > (CF,WF) 72, 31
 - b. Point B > (CF,WF) 44.5, 35
 - c. Point C > (CF,WF) 44.5, 43.5
 - d. Point D > (CF,WF) 72, 40

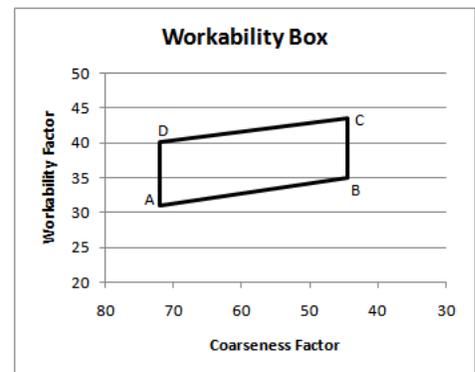


Figure 601-1

$$CF = (S / T) \times 100$$

Where:

S = Percent Cumulative Retained on 9.5 mm (3/8 inch) Sieve

T = Percent Cumulative retained on 2.36 mm (No. 8) Sieve

WF is the percent passing the 2.36 mm (No. 8) sieve. Increase workability factor by 2.5 percentage points for every 94 pounds per cubic yard of cementitious material used in excess of 564 pounds per cubic yard in the mix design. Decrease workability factor by 2.5 percentage points for every 94 pounds per cubic

yard of cementitious material used below 564 pounds per cubic yard in the mix design. Do not adjust the workability factor if the amount of cementitious material is 564 pounds per cubic yard.

Subsection 601.05 shall include the following in the second paragraph:

- (8) Class P concrete with an OG shall indicate the gradation proportions that results in a combined aggregate gradation corresponding to compliance within the specified CF and WF box and shall include the following charts used to perform aggregate gradation analysis:
- (i) Coarseness Factor
 - (ii) Workability Factor
 - (iii) 0.45 power
 - (iv) Combined gradation

Delete Subsection 601.06 (10) and (11) and replace with the following:

- (10) Weights of fine and coarse aggregates or combined weight when an OG is pre-blended
(11) Moisture of fine and coarse aggregates or combined moisture when an OG is pre-blended

Subsection 601.06 (c) shall include the following:

Aggregates for Class P concrete using an OG, a combination of aggregates (stockpiled separately) shall be combined prior to the stationary charging drum to meet the approved CAG.

In subsection, 709.03, delete the first paragraph and replace with the following:

709.03 Dowel Bars and Tie Bars. Tie bars for longitudinal and transverse joints shall conform to AASHTO M 284 and shall be grade 60, epoxy-coated, and deformed. Bar size shall be as designated on the Standard Plan M-412-1.

November 6, 2014

REVISION OF SECTION 106 BUY AMERICA REQUIREMENTS

Section 106 of the Standard Specifications is hereby revised for this project as follows:

Subsection 106.11 shall include the following:

The Contractor shall maintain a document summarizing the date and quantity of all steel and iron material delivered to the project. The document shall show the pay item, quantity of material delivered to the project, along with the quantity of material installed by the cutoff date for the monthly progress payment. The summary shall also reconcile the pay item quantities to the submitted Buy America certifications. The Contractor shall also maintain documentation of the project delivered cost of all foreign steel or iron 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 required even if no steel or iron products are incorporated into the project during the month. The summary document does not relieve the Contractor of providing the necessary Buy America certifications of steel and or iron prior to permanent incorporation into the project.

February 3, 2011

REVISION OF SECTION 106 CERTIFICATES OF COMPLIANCE AND CERTIFIED TEST REPORTS

Section 106 of the Standard Specifications is hereby revised for this project as follows:

In subsection 106.12, delete the second paragraph and replace it with the following:

The original Certificate of Compliance shall include the Contractor's original signature as directed above. The original signature (including corporate title) on the Certificate of Compliance, under penalty of perjury, shall be of a person having legal authority to act for the manufacturer. It shall state that the product or assembly to be incorporated into the project has been sampled and passed all specified tests in conformity to the plans and specifications for this project. One legible copy of the fully signed Certificate of Compliance shall be furnished to

the Engineer prior to installation of material. The original shall be provided to the Engineer before payment for the represented item will be made.

In subsection 106.13, delete the second paragraph and replace it with the following:

The Certified Test Report shall be a legible copy or an original document and shall include the Contractor's original signature as directed above. The signature (including corporate title) on the Certified Test Report, under penalty of perjury, shall be of a person having legal authority to act for the manufacturer or the independent testing laboratory. It shall state that the test results show that the product or assembly to be incorporated into the project has been sampled and passed all specified tests in conformity to the plans and specifications for this project. One legible copy or original document of the fully signed Certified Test Report shall be furnished to the Engineer prior to installation of material. Failure to comply may result in delays to the project or rejection of the materials.

October 31, 2013

**REVISION OF SECTION 106
MATERIAL SOURCES**

Section 106 of the Standard Specifications is hereby revised for this project as follows:

In subsection 106.02 (a), delete the third paragraph and replace with the following:

The Contract will indicate whether the Department has or has not obtained the necessary County or City Zoning Clearance and the required permit from Colorado Department of Natural Resources needed to explore and remove materials from the available source. If the Department did not obtain the necessary clearances or permits, the Contractor shall obtain them. Any delays to the project or additional expenses that are incurred while these clearances or permits are being obtained shall be the responsibility of the Contractor. The Contractor shall ensure that the requirements of the permits do not conflict with the pit construction and reclamation requirements shown in the Contract for the available source.

In subsection 106.02 (b), delete the first paragraph and replace with the following:

(b) *Contractor Source.* Sources of sand, gravel, or borrow other than available sources will be known as contractor sources. The contractor source will be tested by the Department and approved by the Engineer prior to incorporation of the material into the project. If the submitted materials do not meet the contract specifications it will become the Contractor's responsibility to re-sample and test the material. The Contractor will supply the Department with passing test results from an AASHTO accredited laboratory and signed and sealed by a Professional Engineer. If requested by the Engineer, the Department will then re-sample and re-test the material for compliance to the contract specifications. The Contractor shall produce material which meets contract specifications throughout construction of the project.

The cost of sampling, testing, and corrective action by the Contractor will not be paid for separately but shall be included in the work.

January 30, 2014

**REVISION OF SECTION 106
SUPPLIER LIST**

Section 106 of the Standard Specifications is hereby revised for this project as follows:

Subsection 106.01 shall include the following:

Prior to beginning any work the Contractor shall submit to the Engineer a completed Form 1425, Supplier List. During the performance of the Contract, the Contractor shall submit an updated Form 1425 when requested by the Engineer.

Failure to comply with the requirements of this subsection shall be grounds for withholding of progress payments.

**REVISION OF SECTION 107
PROJECT PAYROLLS**

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Subsection 107.01 shall include the following:

As related to the Form FHWA 1273, Required Contract Provisions Federal-Aid Construction Contracts, the Contractor shall check all Contractor and subcontractor project payrolls regarding accuracy of pay classification, pay hours, and pay rates. The Contractor shall sign and date all payrolls signifying this check has been performed.

February 3, 2011

**REVISION OF SECTION 107
RESPONSIBILITY FOR DAMAGE CLAIMS, INSURANCE TYPES AND COVERAGE LIMITS**

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 107.15(c) and replace it with the following:

- (c) Each insurance policy shall include provisions preventing cancellation or non-renewal without at least 30 days prior notice to Contractor. The Contractor shall forward to the Engineer any such notice received within seven days of the Contractor's receipt of such notice.

January 30, 2014

**REVISION OF SECTION 107
WARNING LIGHTS FOR WORK VEHICLES AND EQUIPMENT**

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Subsection 107.06 (b) shall include the following:

All work vehicles and mobile equipment shall be equipped with one or more functioning warning lights mounted as high as practicable, which shall be capable of displaying in all directions one or more flashing, oscillating, or rotating lights for warning roadway traffic. The lights shall be amber in color. The warning lights shall be activated when the work vehicle or mobile equipment is operating within the roadway, right of way or both. All supplemental lights shall be SAE Class 1 certified.

May 2, 2013

**REVISION OF SECTION 108
LIQUIDATED DAMAGES**

Section 108 of the Standard Specifications is hereby revised for this project 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	250,000	400
250,000	500,000	700
500,000	1,000,000	1,100
1,000,000	2,000,000	1,600
2,000,000	4,000,000	2,500
4,000,000	10,000,000	3,300
10,000,000	-----	3,300 plus 200 Per Each Additional 1,000,000 Contract Amount or Part Thereof Over 10,000,000

**REVISION OF SECTION 108
NOTICE TO PROCEED**

Section 108 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 108.02 and replace with the following:

108.02 Notice to Proceed. The Contractor shall not commence work prior to the issuance of a Notice to Proceed. The "Notice to Proceed" will stipulate the date on which contract time commences. When the Contractor proceeds with work prior to that date, contract time will commence on the date work actually begins. The Contractor shall commence work under the Contract on or prior to the 15th day following Contract execution or the 30th day following the date of award, whichever comes later, or in accordance with the selected start date allowed in the special provisions.

July 31, 2014

**REVISION OF SECTION 108
PROJECT SCHEDULE**

Section 108 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 108.03 and replace with the following:

108.03 Project Schedule.

(a) *Definitions.*

Activity. An activity is a project element on a schedule that affects completion of the project. An activity has a description, start date, finish date, duration, and one or more logic ties.

Activity ID. A unique, alphanumeric, identification code assigned to an activity and remains constant throughout the project.

Bar Chart. A simple depiction of a Project Schedule without relationships or supporting logic of the schedule.

Calendar. Defined work periods and no work periods that determine when project activities can occur. Multiple calendars may be used for different activities; e.g., a 5-day work-week and a 7-day work-week calendar.

Constraint. A restriction imposed in a schedule, which fixes a value that would otherwise be calculated within the schedule. Examples of values that can be fixed by a constraint include start date, end date, and completion date.

Critical Path. The sequence of activities that determines the duration of the project.

Critical Path Method Scheduling. (CPM Scheduling) is a logic-based planning technique using activity durations and relationships between activities to calculate a schedule determining the minimum total project duration.

Data Date. The starting point from which to schedule all remaining work.

Duration. The estimated amount of time needed to complete an activity.

Float. The amount of time between the earliest date an activity can start and the latest date when an activity must start, or the earliest date an activity can finish and latest date when an activity can finish before the activity becomes critical. The time between the Project Schedule completion date and the Contract completion date is not considered float.

Gantt Chart. A time-scaled graphical display of the project's schedule.

Lag. A time-value assigned to a relationship.

Logic. Relationships between activities defining the sequence of work (See also predecessor activity and successor activity).

Milestone. An activity, with no duration used to represent an event.

Open-Ended Activity. An activity that does not have both a predecessor activity and a successor activity.

Predecessor Activity. An activity that is defined by schedule logic to precede another activity.

Relationship. The interdependence between activities.

Salient Feature. An item of work that is of special interest for CDOT in coordinating the project schedule but may not affect the overall completion of the project.

Successor Activity. An activity that is defined by schedule logic to follow another activity.

Time-Scaled Logic Diagram. Gantt chart that illustrates logic links depicting both schedule logic and the time at which activities are performed.

(b) *Project Schedule - General*

The Contractor shall use either Microsoft Project or Primavera Scheduling software to develop and manage a CPM Project Schedule to plan, schedule, and report the progress of the work. Prior to, or at the Pre-construction Conference, the Contractor shall notify the Engineer in writing, which scheduling software the Contractor shall use to manage the project. The Contractor's selection and use of particular scheduling software cannot be changed after the first schedule submittal. If the Contractor selects Primavera, the Contractor shall calculate the schedule using the Retained Logic scheduling option. The Department will not allow use of bar charts for the Project Schedule.

The Contractor shall submit schedules for approval by the Engineer. The purpose of these schedules is to allow the Contractor and the Department to jointly manage the work and evaluate progress. The schedules also serve to evaluate the effect of changes and delays to the scheduled project completion. Either party may require a formal schedule review meeting.

The Contractor's schedule shall consist of a time-scaled logic diagram and shall show the logical progression of all activities required to complete the work.

The Contractor shall use activity descriptions that ensure the work is easily identifiable. The Contractor shall show the no-work days in the schedule calendars.

The Contractor shall use durations for individual construction activities that do not exceed 15 calendar days unless approved by the Engineer. The Contractor may group a series of activities with an aggregate duration of five days or less into a single activity. Non-construction activities may have durations exceeding 15 working days, as approved by the Engineer.

The Contractor may include summary bars in the schedule as long as the detailed activities to complete the work are displayed.

The Contractor shall not use the following:

- (1) Negative lags
- (2) Lags in excess of 10 working days without approval by the Engineer. The Contractor's written request shall justify the need for the lag. Lags shall be identified.
- (3) Start-to-finish relationships.
- (4) Open-ended activities - every activity shall have at least one predecessor activity and at least one successor activity, except for the first and last activities in the network. If the contractor uses a start-to-start relationship to link two activities, then both of those two activities should also have successor activities linked by either a finish-to-start or a finish-to-finish relationship.
- (5) Constraints without approval by the Engineer. The Contractor's written request shall explain why the use of constraints in the schedule is necessary.

The Project Schedule shall show all activities required by all parties to complete the work. The Project Schedule shall include subcontracted work, delivery dates for critical material, submittal and review periods, permits and governmental approvals, milestone requirements, utility work by others and no work periods. The

Contractor, its subcontractors, suppliers, and engineers, at any tier, shall perform the work according to the approved Project Schedule.

Float within the Baseline Schedule or any other Project Schedule is not for the exclusive use or benefit of either party, but is a project resource available to both parties as needed until it is depleted.

For any schedule submittal that shows completion in less than 85 percent of the Contract Time, the Contractor shall submit planned production rates in the schedule for all activities with float of 10 days or less. The Engineer may require additional methods statements for activities with float of 10 days or less.

The Engineer's review of the schedule will not exceed 10 calendar days. The Engineer will provide the Contractor with one of the following responses within 10 days after receipt of the Project Schedule:

- (1) Approved, no exceptions taken;
- (2) Approved-as-Noted; or
- (3) Revise and Resubmit within 10 days.

The Contractor shall not assume that approval of the Project Schedule relieves the Contractor of its obligation to complete all work within the Contract Time.

(c) *Schedule Submittals.* The Contractor shall include a time-scaled logic diagram with all schedule submittals that:

- (1) Is plotted on a horizontal time-scale in accordance with the project calendar.
- (2) Uses color to clearly identify the critical path.
- (3) Is based on early start and early finish dates of activities.
- (4) For Schedule Updates and Schedule Revisions, shows actual completion dates up to but not including the data date.
- (5) Clearly shows the sequence and relationships of all activities necessary to complete the contract work.
- (6) Includes an activity block for each activity with the following information:

Activity ID	Activity Description
Original Duration	Total Float
Early start date	Early finish date
Late start date*	Late finish date*
Actual Start date^	Actual Finish date^
Calendar used on the activity	Activity Responsibility
Remaining Duration^	Duration Percent Complete^
Gantt chart (time-scaled logic diagram)	
*Required with the Preliminary and Baseline Schedule.	
^Required with the Project Schedule Update and Schedule Revision.	

The Contractor shall include the following with all schedule submittals:

- (1) A Job Progress Narrative Report that includes the following:
 - (i) A description of the work performed since the previous month's schedule update.
 - (ii) A description of problems encountered or anticipated since the previous month's schedule submission.
 - (iii) A description of unusual labor, shift, equipment, or material conditions or restrictions encountered or anticipated.
 - (iv) The status of all pending items that could affect the schedule.
 - (v) Explanations for milestones forecasted to occur late.
 - (vi) Scheduled completion date status and any change from the previous month's submission.
 - (vii) An explanation for a scheduled completion date forecasted to occur before or after the contract completion date or contract time.
 - (viii) Schedule Delays:
 - 1. A description of current and anticipated delays including: Identification of the delayed activity or activities by Activity ID(s) and description(s).
 - 2. Delay type with reference to the relevant specification subsection.
 - 3. Delay cause or causes.

4. Effect of the delay on other activities, milestones, and completion dates.
 5. Identification of the actions needed to avoid a potential or mitigate an actual delay.
 6. A description of the critical path impact and effect on the scheduled completion date in the previous month's schedule update.
- (ix) A list of all added and deleted activities along with an explanation for the change.
- (x) All logic and duration changes along with an explanation for the change.
- (2) A Predecessor Activity and Successor Activity report that defines all schedule logic and clearly indicates all logical relationships and constraints.
 - (3) An Early Start report listing all activities, sorted by actual start/early start date.
 - (4) A Float report listing all activities sorted in ascending order of available float.
 - (5) A Critical Path report listing all activities not yet complete with the percent complete, sorted by float and then by early start.
 - (6) A listing of all non-work days.

For all required schedule submittals, the Contractor shall submit two electronic copies on two compact disk, USB flash drive, or other media as directed by the Engineer. Electronic copies of CPM schedules shall be submitted both in the native schedule format and in "PDF" format. The Contractor shall also provide two printed copies of the CPM Schedule and all reports.

Each schedule submittal shall be appropriately labeled as a Preliminary Schedule, Baseline Schedule, Project Schedule Update, or Schedule Revision. The title bar shall include the CDOT project number, subaccount, project name, contractor name, schedule data date. If an originally submitted schedule is revised during review, the title bar shall also include a revision number (REV1, REV2, etc.) and revision date.

- (d) *Preliminary Schedule.* Within 14 days of award of the Contract, the Contractor may submit a Preliminary Schedule showing all planned activities from the Notice to Proceed through the first 60 days of the project. If the Contractor elects not to submit a Preliminary Schedule, then the Contractor shall submit a complete Baseline Schedule within 14 days of award of the Contract, which will be subject to all requirements of a Baseline submittal. The Preliminary Schedule shall not show any progress and it will be approved by the Engineer before work can commence. The Preliminary Schedule shall be used as the basis for the Baseline Schedule.
- (e) *Baseline Schedule.* If the Contractor elects to submit a Preliminary Schedule, within 45 days of the award of Contract, the Contractor shall submit a Baseline Schedule that includes all work activities completed within Contract Time. The Contractor shall not show progress in the Baseline Schedule. Further partial payments will not be made beyond 60 days after the start of Contract Time unless the Baseline Schedule is approved. When approved, the Baseline Schedule shall become the Project Schedule.

The Contractor shall use all information known by the Contractor at the time of bid submittal to develop the Baseline Schedule.

If the Contractor elects to submit a Baseline Schedule in lieu of a Preliminary Schedule, the Baseline Schedule shall be approved before work can commence.

- (f) *Methods Statements.* The Contractor shall submit a Methods Statement for each salient feature or as directed by the Engineer that describes all work necessary to complete the feature. The Contractor shall include the following information in the Methods Statement:
- (1) Salient feature name;
 - (2) Responsibility for the salient feature work;
 - (3) Planned work procedures;
 - (4) The planned quantity of work per day for each salient feature using the same units of measure as the applicable pay item;
 - (5) The anticipated labor force by labor type;
 - (6) The number, types, and capacities of equipment planned for the work;
 - (7) The planned time for the work including the number of work days per week, number of shifts per day, and the number of hours per shift.
- (g) *Project Schedule Update.* The Contractor shall submit a monthly update of the Project Schedule updated through the cut-off date for the monthly progress pay estimate, and a projection for completing all remaining activities. A schedule update may show a completion date that is different than the Contract completion date, after the baseline schedule is approved. Approval of this schedule shall not relieve the Contractor of its obligation to complete the work within the Contract Time. In this case, the contractor shall provide an

explanation for a late scheduled completion date in the Job Progress Narrative Report included with the schedule submittal.

When approved, the Project Schedule Update will become the Project Schedule. The Engineer will not issue a monthly progress payment if the Engineer has not received the Project Schedule Update. The Engineer will not make monthly progress payments for the months following the Project Schedule Update submission until the Engineer approves the Project Schedule Update.

When the project has a maintenance or landscape establishment period, the Engineer may waive the monthly update requirement. The Contractor shall submit a final Project Schedule Update that shows all work through the final acceptance date.

- (h) *Weekly Planning Schedule.* The Contractor shall submit, in writing, a Weekly Planning Schedule that shows the Contractor's and all Subcontractor's planned activities for a minimum of two weeks immediately following the date of submittal and actual days worked versus planned for the week prior to the date of submittal. This schedule shall include the description, duration and sequence of work activities and anticipated lane closures for the upcoming two weeks. The Weekly Planning Schedule may be a time-scaled logic diagram or other standard format as approved by the Engineer. Subsection 108.03(c) Schedule Submittal requirements for reports do not apply to the Weekly Planning Schedule.
- (i) *Schedule Revision.* A Schedule Revision is required in the event of any major change to the work. Examples of major changes are:
- (1) Significant changes in logic or methods of construction or changes to the critical path;
 - (2) Addition, deletion, or revision of activities required by contract modification order;
 - (3) Approval of a Contractor submitted Value Engineering Change Proposal;
 - (4) Delays in milestones or project completion;
 - (5) Phasing revisions, or;
 - (6) If the Engineer determines that the schedule does not reflect the actual work.

This revision shall include a description of the measures necessary to achieve completion of the work within the Contract Time. The Contractor may also need to submit revised Methods Statements. The Contractor shall provide a Schedule Revision within 10 days of written notification and shall include the diagrams and reports as described in subsection 108.03 (b) Schedule - General and (c) Schedule Submittals. In this case, the Contractor shall provide an explanation for a late scheduled completion date in the Job Progress Narrative Report included with the schedule.

Once approved, the Schedule Revision becomes the Project Schedule.

- (j) *Payment.* All costs relating to the requirements of this subsection will not be paid for separately, but shall be included in the work.

January 31, 2013

REVISION OF SECTION 108 SUBLETTING OF CONTRACT

Section 108 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 108.01 and replace with the following:

108.01 Subletting of Contract. The Contractor shall not sublet, sell, transfer, assign, or dispose of the Contract or Contracts, or any portion thereof without written permission of the Engineer. Prior to beginning any work by subcontractor, the Contractor shall request permission from the Engineer by submitting a completed Sublet Permit Application, CDOT Form No. 205. The subcontract work shall not begin until the Contractor has received the Engineer's written permission. The Contractor shall make all project related written subcontracts, agreements, and purchase orders available to the Engineer for viewing, upon request and at a location convenient to the Engineer.

The Contractor will be permitted to sublet a portion of the Contract, however, the Contractor's organization shall perform work amounting to 30 percent or more of the total original contract amount. Any items designated in the contract as "specialty items" may be performed by subcontract. The cost of "specialty items" so performed by subcontract may be deducted from the total original contract amount before computing the amount of work

required to be performed by the Contractor's own organization. The original contract amount includes the cost of material and manufactured products which are to be purchased or produced by the Contractor and the actual agreement amounts between the Contractor and a subcontractor. Proportional value of a subcontracted partial contract item will be verified by the Engineer. When a firm both sells material to a prime contractor and performs the work of incorporating the materials into the project, these two phases shall be considered in combination and as constituting a single subcontract.

The calculation of the percentage of subcontracted work shall be based on subcontract unit prices.

Subcontracts or transfer of Contract shall not release the Contractor of liability under the Contract and Bond.

May 5, 2011

REVISION OF SECTION 109 COMPENSATION FOR COMPENSABLE DELAYS

In subsection 109.10, delete the first two paragraphs and replace with the following:

109.10 Compensation for Compensable Delays. If the Engineer determines that a delay is compensable in accordance with either subsection 105.22, 105.23, 105.24, or 108.08, monetary compensation will be determined in accordance with this subsection.

- (a) These categories represent the only costs that are recoverable by the Contractor. All other costs or categories of costs are not recoverable:
- (1) Actual wages and benefits, including FICA, paid for additional labor not otherwise included in (5) below;
 - (2) Costs for additional bond, insurance and tax;
 - (3) Increased costs for materials;
 - (4) Equipment costs calculated in accordance with subsection 109.04(c) for Contractor owned equipment and based on invoice costs for rented equipment;
 - (5) Costs of extended job site overhead;
 - (6) Costs of salaried employees not otherwise included in (1) or (5) above incurred as a direct result of the delay;
 - (7) Claims from subcontractors and suppliers at any level (the same level of detail as specified herein is required for all such claims);
 - (8) An additional 16 percent will be added to the total of items (1) through (7) as compensation for items for which no specific allowance is provided, including profit and home office overhead.

February 3, 2011

REVISION OF SECTION 109 FUEL COST ADJUSTMENT

Section 109 of the Standard Specifications is hereby revised for this project as follows:

Subsection 109.06 shall include the following:

- (h) *Fuel Cost Adjustments.* Contract cost adjustments will be made to reflect increases or decreases in the monthly average prices of gasoline, diesel and other fuels from the average price for the month preceding the month in which bids were received for the Contract. These cost adjustments are not changes to the Contract unit prices bid. When bidding, the Contractor shall specify on the Form 85 whether the cost adjustment will apply to the Contract. After bids are submitted, the Contractor will not be given any other opportunity to accept or reject this adjustment. If the Contractor fails to indicate a choice on the Form 85, the cost adjustment will not apply to the Contract. If the fuel cost adjustment is accepted by the Contractor, the adjustment will be made in accordance with the following criteria:

1. Cost adjustments will be based on the fuel price index established by the Department and calculated as shown in subsection 109.06(h)2.D below. The index will be the monthly average of the rates posted by the Oil Price Information Service (OPIS) for Denver No. 2 Diesel. The rate used will be the *OPIS Average*

taken from the OPIS Standard Rack table for *Ultra-Low Sulfur w/Lubricity Gross Prices* (ULS column), expressed in dollars per gallon and rounded to two decimal places.

2. Cost adjustments will be made on a monthly basis subject to the following conditions:

A. Adjustment will be based on the pay quantities on the monthly partial pay estimate for each of the pay items listed in the table below for which fuel factors have been established. Adjustment will be made only when the pay item is measured by the pay unit specified in the table:

Item	Pay Unit	Fuel Factor (FF)
202-Removal of Asphalt Mat (Planing)	Square Yard	0.006 Gal/SY/Inch depth
203-Excavation (muck, unclassified) Embankment, Borrow	Cubic Yard	0.29 Gal/CY
203-Rock Excavation	Cubic Yard	0.39 Gal/CY
206-Structure Excavation and Backfill [applies only to quantities paid for by separate bid item; no adjustment will be made for pay items that include structure excavation & backfill, such as RCP(CIP)]	Cubic Yard	0.29 Gal/CY
304-Aggregate Base Course (Class ___)	Cubic Yard	0.85 Gal/CY
304-Aggregate Base Course (Class ___)	Ton	0.47 Gal/Ton
307-Processing Lime Treated Subgrade	Square Yard	0.12 Gal/SY
310-Full Depth Reclamation	Square Yard	0.06 Gal/SY
403-Hot Mix Asphalt (HMA) (Grading ___) *	Ton	2.47 Gal/Ton
403-Stone Matrix Asphalt (Grading ___)	Ton	2.47 Gal/Ton
405-Heating and Scarifying Treatment	Square Yard	0.44 Gal/SY
405-Heating and Repaving Treatment	Square Yard	0.44 Gal/SY
405-Heating and Remixing Treatment	Square Yard	0.44 Gal/SY
406-Cold Bituminous Pavement (Recycle)	Square Yard	0.01 Gal/SY/Inch depth
412- Concrete Pavement (___ Inch)	Square Yard	0.03 Gal/SY/Inch thickness
412-Place Concrete Pavement**	Square Yard	0.03 Gal/SY/Inch thickness
*Hot Mix Asphalt (Patching) is not subject to fuel cost adjustment.		
**Use the thickness shown on the plans.		

B. A fuel cost adjustment will be made only when the current fuel price index varies by more than 5 percent from the price index at the time of bid, and only for that portion of the variance in excess of 5 percent. Fuel cost adjustments may be either positive or negative dollar amounts.

C. Fuel cost adjustments will not be made for any partial estimate falling wholly after the expiration of contract time.

D. Adjustment formula:

EP greater than BP:

$$FA = (EP - 1.05 BP)(Q)(FF)$$

EP less than BP:

$$FA = (EP - 0.95 BP)(Q)(FF)$$

Where:

BP = Average fuel price index for the calendar month prior to the calendar month in which bids are opened

EP = Average fuel price index for the calendar month prior to the calendar month in which the partial estimate pay period ends

FA = Adjustment for fuel costs in dollars

FF = Fuel usage factor for the pay item

Q = Pay quantity for the pay item on the monthly partial pay estimate

Note: When the pay item is based on area, and the rate of fuel use varies with thickness, Q should be determined by multiplying the area by the thickness. For example: for 1000 square yards of 8-inch concrete pavement Q should be 8000.

Example: Bids are opened on July 16. The BP will be the average of the daily postings for June 1 through June 30. For an estimate cut-off date selected by the Contractor at the Pre-

Construction Conference of the 20th of the month a February estimate will include HMA quantities (Q) measured from the 21st of January through the 20th of February, the FF will be 2.47 Gal/Ton, and the EP index used to calculate FA will be the average of the daily postings for January 1 through January 31 as established by CDOT.

- E. Fuel cost adjustment will not be made for the quantity of any item that is left in place at no pay.
- F. Fuel cost adjustments will not be made to items of work added to the Contract by Change Order after the award of the Contract.

The fuel cost adjustment will be the sum of the individual adjustments for each of the pay items shown. No adjustment will be made for fuel costs on items other than those shown. The factors shown are aggregate adjustments for all types of fuels used, including but not limited to gasoline, diesel, propane, and burner fuel. No additional adjustments will be made for any other type of fuel.

Fuel cost adjustments resulting in an increased payment to the Contractor will be paid for under the planned force account item: Fuel Cost Adjustment. Fuel cost adjustments resulting in a decreased payment to the Contractor will be deducted from monies owed the Contractor.

February 3, 2011

REVISION OF SECTION 109 MEASUREMENT OF QUANTITIES

Section 109 of the Standard Specifications is hereby revised for this project as follows:

In subsection 109.01, delete the 17th paragraph and replace it with the following:

Vehicles used to haul material being paid for by weight shall bear a plainly legible identification mark. Each of these vehicles shall be weighed empty daily at times directed by the Engineer. The Contractor shall furnish to the Engineer, in writing, a vehicle identification sheet that lists the following for each delivery vehicle to be used on the project:

- (1) identification mark
- (2) vehicle length
- (3) tare weight
- (4) number of axles
- (5) the distance between extreme axles
- (6) information related to legal weight, including the Permit No. and permitted weight of each vehicle for which the State has issued an overweight permit.

This information shall be furnished prior to time of delivery of the material and at any subsequent time the Contractor changes vehicles, combination vehicles, axle length relationships, or overweight permitting of vehicles.

January 6, 2012

REVISION OF SECTION 109 MEASUREMENT OF WATER

Section 109 of the Standard Specifications is hereby revised for this project as follows:

In subsection 109.01, delete the twenty-sixth paragraph and replace with the following:

Water may be measured either by volume or weight. Water meters shall be accurate within a range of ± 3 percent. When water is metered, the Contractor shall use an approved metering device and shall furnish the Engineer a certificate showing the meter has been accurately calibrated within the time allowed in the following schedule:

2 inch	4 years
4 inch to 6 inch	2 years
8 inch to 10 inch	1 year

**REVISION OF SECTION 109
PROMPT PAYMENT**

Section 109 of the Standard Specifications is hereby revised to include the following:

Subsection 109.06 (e) shall include the following:

The Contractor shall submit the Form 1418, Monthly Payment Report, along with the project schedule updates, in accordance with subsections 108.03 (b) or 108.03 (c) (3). Failure to submit a complete and accurate Form 1418 shall be grounds for CDOT to withhold subsequent payments or retainage to the Contractor.

February 3, 2011

**REVISION OF SECTION 203
IMPORTED MATERIAL FOR EMBANKMENT**

Section 203 of the Standard Specifications is hereby revised for this project as follows:

Subsection 203.03 (a) shall include the following:

Imported Material used for backfilling pipes (storm sewer, cross culverts, side drains, etc) shall be tested for compatibility with the selected pipe material.

When Non-reinforced Concrete Pipe or Reinforced Concrete Pipe is used, the imported material shall be tested for sulfate and pH

When Corrugated Steel Pipe, Bituminous Coated Corrugated Steel Pipe or Pre-coated Corrugated Steel Pipe is used, the imported material shall be tested for sulfates, chlorides, pH and resistivity.

When Aramid Fiber Bonded Corrugated Steel Pipe or Corrugated Aluminum Pipe is used, the imported material shall be tested for pH and resistivity.

When Plastic pipe is selected, the imported material does not need to be tested for sulfates, chlorides, pH and resistivity.

Sulfates, chlorides, pH and resistivity shall be determined by the following procedures:

- (1) Water soluble sulfates using CP-L 2103 Method B.
- (2) Chlorides using CPL 2104
- (3) Resistivity using ASTM G57
- (4) pH using ASTM G51.

The average of three consecutive tests shall show the imported material's sulfate, chloride, pH and resistivity is not greater than the limits corresponding to the Pipe Class in Table 203-1 or 203-2 for the pipe class specified on the plans. No single test shall have a result more than 20 percent greater than that corresponding to the limit in Table 203-1 or Table 203-2 for sulfates, chlorides and resistivity. No single test shall have a result more than 5 percent outside the limit in Table 203-1 for pH. The remaining sample material from a single failing test shall be split into three equal portions. CDOT shall receive one portion, the Contractor shall receive one portion and the remaining portion shall be retained by the Project. CDOT and the Contractor's Lab shall retest the failed sample; if the results from those tests are within 10 percent of each other, the results will be averaged. The averaged result will be used for Contract compliance. If the results from the Labs are not within 10 percent of each other, the remaining sample portion will be sent to an independent laboratory for testing using the testing requirements specified above. The independent laboratory will be mutually agreed upon by the Department and the Contractor. The Independent Lab's test result will be used for Contract compliance.

If the imported material's sulfates, chlorides, and resistivity are less than the limits and the pH is within the limits in Table 203-1 or 203-2, CDOT will bear all costs associated with the independent lab test. If the imported material's sulfates, chlorides, and resistivity is greater than the limits and the pH is outside the limits in Table 203-1 or 203-2, all costs associated with independent lab testing shall be at the Contractor's expense.

Embankment represented by failing tests shall be removed from the project and replaced at the Contractor's expense.

**Table 203-1
SULFATE, CHLORIDE AND PH OF IMPORTED MATERIAL**

Pipe Class	SOIL		
	Sulfate	Chloride	pH
	(SO ₄)	(Cl)	
% max	% max		
0, 7	0.05	0.05	6.0-8.5
1, 7	0.10	0.10	6.0-8.5
2, 8	0.20	0.20	6.0-8.5
3, 9	0.50	0.50	6.0-8.5
4, 9	1.00	1.00	5.0-9.0
5, 10	2.00	2.00	5.0-9.0
6, 10	>2.00	>2.00	<5 or >9

**Table 203-2
RESISTIVITY AND PH OF IMPORTED MATERIAL**

SOIL SIDE	
Resistivity, R (Ohm – cm)	pH
≥1,500	5.0-9.0
≥250	3.0-12.0

July 19, 2012

**REVISION OF SECTIONS 203, 206, 304 AND 613
COMPACTION**

Sections 203, 206, 304 and 613 of Standard Specifications are hereby revised for this project as follows:

In subsection 203.03 (a), delete the fifth paragraph and replace with the following:

1. *Soil Embankment.* Soil embankment consists of materials with 50 percent or more of the material passing the 4.75 mm (No. 4) sieve.

A soil embankment may also have more than 50 percent of the material retained on the 4.75 mm (No. 4) sieve, but no more than 30 percent of the material retained on the 19 mm (3/4 inch) sieve.

Soil embankment shall be constructed with moisture density control in accordance with the requirements of subsection 203.07.

2. *Rock Embankment.* Rock embankment consist of materials with 50 percent or more of the material retained on the 4.75 mm (No. 4) sieve and with more than 30 percent of the material retained on the 19 mm (3/4 inch) sieve. All material shall be smaller than 6 inches. Rock embankments shall be constructed without moisture density control in accordance with the requirements of subsection 203.08.

Delete Subsection 203.07 and replace with the following:

203.07 Construction of Embankment and Treatment of Cut Areas with Moisture and Density Control. Soil embankments shall be constructed with moisture and density control and the soil upon which the embankments are to be constructed shall be scarified to a depth of 6 inches and compacted with moisture and density control. The moisture content of the soil at the time of compaction shall be as specified or directed.

The material shall be removed from the full width of roadbed in all cut sections to the designated depth. The soil below the designated depth shall be thoroughly scarified to a depth of 6 inches and the moisture content increased or reduced, as necessary, to obtain the moisture content specified. This scarified layer shall then be compacted to the relative compaction specified.

All embankment material shall be compacted to not less than 95 percent relative compaction. Maximum dry density of all soil types encountered or used will be determined in accordance with AASHTO T 99 as modified by CP 23.

Soils shall be compacted at ± 2 percent of Optimum Moisture Content (OMC) as determined by AASTHO T 99. Soils having greater than 35 percent passing the 75 μm (No. 200) sieve shall be compacted to 0 to 3 percent above OMC. Soils which are unstable at the above moisture content shall be compacted at lower moisture content to the specified density.

Additional work involved in drying embankment material to the required moisture content shall be included in the contract price paid for excavating or furnishing the material with no additional compensation.

Density requirements will not apply to materials which cannot be tested in accordance with the above procedures for determining maximum dry density. Compaction for materials which cannot be tested shall be in accordance with subsection 203.08.

Claystone or soil-like non-durable shale shall be pulverized and compacted to the specified moisture and percent of relative compaction and shall be compacted with a heavy tamping foot roller, weighing at least 30 tons. Each tamping foot roller shall protrude from the drum a minimum of 4 inches. Each embankment layer shall receive a minimum of three or more coverages with the tamping foot roller to obtain density. One coverage consists of one pass over the entire surface designated. One pass consists of the passing of an acceptable tamping foot roller over a given spot. The roller shall be operated at a uniform speed not exceeding 3 miles per hour. No additional compensation will be made for additional roller coverages to achieve specified density requirements.

In subsection 206.03, delete the fourth and fifth paragraphs and replace with the following:

Backfill shall consist of approved materials uniformly distributed in layers brought up equally on all sides of the structure. Each layer of backfill shall not exceed 6 inches before compacting to the required density and before successive layers are placed. Structure backfill (Class 1) shall be compacted to a density of not less than 95 percent of maximum dry density determined in accordance with AASHTO T 180 as modified by CP 23. Backfill shall be compacted at ± 2 percent of Optimum Moisture Content (OMC).

Structure backfill (Class 2) shall be compacted to a density of not less than 95 percent of maximum dry density. The maximum dry density and OMC for A-1, A-2-4, A-2-5 and A-3 materials will be determined in accordance with AASHTO T 180 as modified by CP 23. The maximum dry density and OMC for all other materials will be determined in accordance with AASHTO T 99 as modified by CP 23. Materials shall be compacted at ± 2 percent of Optimum Moisture Content (OMC). Materials having greater than 35 percent passing the 75 μm (No. 200) sieve shall be compacted at 0 to 3 percent above OMC.

In subsection 304.06, delete the first paragraph and replace with the following:

304.06 Shaping and Compaction. Compaction of each layer shall continue until a density of not less than 95 percent of the maximum density determined in accordance with AASHTO T 180 as modified by CP 23 has been achieved. The moisture content shall be at ± 2 percent of optimum moisture content. The surface of each layer shall be maintained during the compaction operations so that a uniform texture is produced and the aggregates are firmly keyed. Moisture conditioning shall be performed uniformly during compaction.

In subsection 613.07, delete the 15th paragraph and replace with the following:

Trenching shall be backfilled and compacted as follows: Backfill shall be deposited in uniform layers. The thickness of each layer shall be 6 inches or less thick prior to compaction. The space under the conduit shall be completely filled. The remainder of the trench and excavation shall be backfilled to the finished grade. The backfill material shall be compacted to the density of not less than 95 percent of maximum dry density. The maximum dry density and optimum moisture content (OMC) for A-1, A-2-4, A-2-5 and A-3 materials will determined in accordance with AASHTO T 180 as modified by CP 23. The maximum dry density and OMC for all other materials will determined in accordance with AASHTO T 99 as modified by CP 23. Materials shall be compacted at \pm 2percent of Optimum Moisture Content (OMC). Materials having greater than 35 percent passing the 75 μ m (No. 200) sieve shall be compacted at 0 to 3 percent above OMC. Each layer shall be mechanically compacted by tamping with power tools approved by the Engineer. Compaction methods or equipment that damage the conduit shall not be used.

July 19, 2012

REVISION OF SECTION 206 IMPORTED MATERIAL FOR STRUCTURE BACKFILL

Section 206 of the Standard Specifications is hereby revised for this project as follows:

Subsection 206.02 (a) shall include the following:

Imported Material used as structure backfill for pipes (storm sewer, cross culverts, side drains, etc) shall be tested for compatibility with the selected pipe material.

When Nonreinforced Concrete Pipe or Reinforced Concrete Pipe is used, the imported material shall be tested for sulfate and pH.

When Corrugated Steel Pipe, Bituminous Coated Corrugated Steel Pipe or Precoated Corrugated Steel Pipe is used, the imported material shall be tested for sulfates, chlorides, pH and resistivity.

When Aramid Fiber Bonded Corrugated Steel Pipe or Corrugated Aluminum Pipe is used, the imported material shall be tested for pH and resistivity.

When Plastic pipe is selected, the imported material does not need to be tested for sulfates, chlorides, pH and resistivity.

Sulfates, chlorides, pH and resistivity shall be determined by the following procedures:

- (5) Water soluble sulfates using CP-L 2103 Method B.
- (6) Chlorides using CPL 2104
- (7) Resistivity using ASTM G57
- (8) pH using ASTM G51.

The average of three consecutive tests shall show the imported material's sulfate, chloride, pH and resistivity is not greater than the limits corresponding to the Pipe Class in Table 206-1 or 206-2 for the pipe class specified on the plans. No single test shall have a result more than 20 percent greater than that corresponding to the limit in Table 206-1 or Table 206-2 for sulfates, chlorides and resistivity. No single test shall have a result more than 5 percent outside the limit in Table 206-1 for pH. The remaining sample material from a single failing test shall be split into three equal portions. CDOT shall receive one portion, the Contractor shall receive one portion and the remaining portion shall be retained by the Project. CDOT and the Contractor's Lab shall retest the failed sample; if the results from those tests are within 10 percent of each other, the results will be averaged. The averaged result will be used for Contract compliance. If the results from the Labs are not within 10 percent of each other, the remaining sample portion will be sent to an independent laboratory for testing using the testing requirements specified above. The independent laboratory will be mutually agreed upon by the Department and the Contractor. The Independent Lab's test result will be used for Contract compliance.

If the imported material's sulfates, chlorides, and resistivity are less than the limits and the pH is within the limits in Table 203-1 or 203-2, CDOT will bear all costs associated with the independent lab test. If the imported material's

sulfates, chlorides, and resistivity is greater than the limits and the pH is outside the limits in Table 206-1 or 206-2, all costs associated with independent lab testing shall be at the Contractor's expense. Embankment represented by failing tests shall be removed from the project and replaced at the Contractor's expense.

**Table 206-1
SULFATE, CHLORIDE AND PH OF IMPORTED MATERIAL**

Pipe Class	SOIL		
	Sulfate	Chloride	
	(SO ₄)	(Cl)	pH
	% max	% max	
0, 7	0.05	0.05	6.0-8.5
1, 7	0.10	0.10	6.0-8.5
2, 8	0.20	0.20	6.0-8.5
3, 9	0.50	0.50	6.0-8.5
4, 9	1.00	1.00	5.0-9.0
5, 10	2.00	2.00	5.0-9.0
6, 10	>2.00	>2.00	<5 or >9

**Table 206-2
RESISTIVITY AND PH OF IMPORTED MATERIAL**

SOIL SIDE	
Resistivity, R (Ohm – cm)	pH
≥1,500	5.0-9.0
≥250	3.0-12.0

April 26, 2012

**REVISION OF SECTION 206
STRUCTURE BACKFILL (FLOW-FILL)**

Section 206 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 206.02 (a) and replace with the following:

- (a) *Structure Backfill.* Class 1 and Class 2 structure backfill shall be composed of non-organic mineral aggregates and soil from excavations, borrow pits, or other sources. Material shall conform to the requirements of subsection 703.08. Class of material shall be as specified in the Contract or as designated.

Structure backfill (Flow-Fill) meeting the following requirements shall be used to backfill bridge abutments. The Contractor may substitute structure backfill (Flow-Fill) for structure backfill (Class 1) or structure backfill (Class 2) to backfill culverts and sewer pipes.

Flow-Fill is a self-leveling low strength concrete material composed of cement, fly ash, aggregates, water, chemical admixtures and/or cellular foam for air-entrainment. Flow-fill shall have a slump of 7 to 10 inches, when tested in accordance with ASTM C143 or a minimum flow consistency of 6 inches when tested in accordance with ASTM D6103. Flow-Fill shall have a minimum compressive strength of 50 psi at 28 days, when tested in accordance with ASTM D4832. Flash Fill shall not be used in lieu of Flow Fill.

Flow-Fill placed in areas that require future excavation, such as utility backfill shall have a Removability Modulus (RM) of 1.5 or less.

Removability Modulus, RM, is calculated as follows:

$$RM = \frac{W^{1.5} \times 104 \times C^{0.5}}{10^6}$$

where: W = unit weight (pcf)
C = 28-day compressive strength (psi)

Materials for structure backfill (Flow-Fill) shall meet the requirements specified in the following subsections:

Fine Aggregate ^{1, 4}	703.01
Coarse Aggregate ^{2, 4}	703.02
Portland Cement	701.01
Fly Ash ^{3, 4}	701.02
Water	712.01
Air Entraining Admixture	711.02
Chemical Admixtures	711.03

¹ Fine aggregate not meeting the requirements of subsection 703.01 may be used if testing indicates acceptable results for strength and air content.

² Coarse aggregate not meeting the requirements of subsection 703.02 may be used if testing indicates acceptable results for strength and air content.

³ Fly ash not meeting the requirements of subsection 701.02 may be used if testing indicates acceptable results for strength and air content.

⁴ Industrial by-product aggregates (foundry sand, bottom ash, etc.) and fly ash not meeting the requirements of subsection 701.02 shall submit a report from the supplier documenting the results of testing in accordance with the Toxicity Characteristic Leaching Procedure (TCLP) described in 40 CFR 261. The report shall include the results of TCLP testing for heavy metals and other contaminants. Materials shall not exceed the TCLP limits of 40 CFR 261.24 for heavy metals

Cellular foam shall conform to ASTM C869 and ASTM C796

Recycled broken glass (glass cullet) is acceptable as part or all of the aggregate. Aggregate including glass must conform to the required gradations. All containers used to produce the cullet shall be empty prior to processing. Chemical, pharmaceutical, insecticide, pesticide, or other glass containers containing or having contained toxic or hazardous substances shall not be allowed and shall be grounds for rejecting the glass cullet. The maximum debris level in the cullet shall be 10 percent. Debris is defined as any deleterious material which impacts the performance of the structure backfill (Flow-Fill) including all non-glass constituents.

The Contractor may use aggregate which does not meet the above specifications if the aggregate conforms to the following gradation:

Sieve Size	Percent Passing
25.0 mm (1 inch)	100
75 µm (No. 200)	0-10 ¹

¹ The amount of material passing the 75 µm (No. 200) screen may exceed 10 percent if testing indicates acceptable results for strength and air content.

The Contractor shall submit a structure backfill (Flow-Fill) mix design for approval prior to placement. The mix design shall include the following laboratory test data:

- (1) ASTM C231, Air content
- (2) ASTM D6023, Unit Weight
- (3) ASTM C143, Slump or ASTM D6103 flow consistency
- (4) ASTM D4832 28-day Compressive Strength
- (5) Removability Modulus (RM)

In subsection 206.03, delete the thirteenth through fifteenth paragraphs and replace with the following:

Compaction of structure backfill (Flow-Fill) shall not be performed.

The maximum layer thickness for structure backfill (Flow-Fill) shall be 3 feet unless otherwise approved by the Engineer. The Contractor shall not place structure backfill (Flow-Fill) in layers that are too thick to cause damage to culverts, pipes and other structures, or that will cause formwork or soil failures during placement. Structure backfill (Flow-Fill) shall have an indentation diameter less than 3 inches and the indentation shall be free of visible water when tested in accordance with ASTM D6024 by the Contractor prior to placing additional layers of structure backfill (Flow-Fill). Testing structure backfill (Flow-Fill) in accordance with ASTM D6024 will be witnessed by the Engineer. Damage resulting from placing structure backfill (Flow-Fill) in layers that are too thick or from not allowing sufficient time between placements of layers shall be repaired at the Contractor's expense.

The Contractor shall secure culverts, pipes and other structures to prevent floating and displacement of these items during the placement of the structure backfill (Flow-Fill).

Prior to the placement of structure backfill (Flow-Fill), the Contractor shall sample the structure backfill (Flow-Fill) in accordance with ASTM D5971. The Contractor shall test the structure backfill (Flow-Fill) unit weight in accordance with ASTM D6023. The Contractor shall test the structure backfill (Flow-Fill) for slump in accordance with ASTM C143 or flow consistency according to ASTM D6103.

The Contractor shall sample and test the first three loads of structure backfill (Flow-Fill) for each placement and then randomly once every 50 cubic yards. Sampling and testing will be witnessed by the Engineer

When structure backfill (Flow-Fill) is placed in areas that require future excavation, the unit weight of the placed structure backfill (Flow-Fill) shall not exceed the unit weight of the approved mix design by more than 2.0 pcf.

Structure backfill (Flow-Fill) shall not be allowed to freeze during placement and until it has set sufficiently according to ASTM D6024. Frozen structure backfill (Flow-Fill) shall be removed and replaced at the Contractor's expense.

When the Contractor substitutes Structure Backfill (Flow-Fill) for Structure Backfill (Class 1) or (Class 2), the trench width may be reduced to provide a minimum 6 inch clearance between the outside diameter of the culvert and the trench wall.

January 30, 2014

REVISION OF SECTION 206 STRUCTURE BACKFILL AT BRIDGE ABUTMENTS

Section 206 of the Standard Specifications is hereby revised for this project as follows:

In subsection 206.02 (a), delete the first sentence of the second paragraph and replace with the following:

Structure backfill (Class 1) with mechanical reinforcement shall be used to backfill bridge abutments, unless otherwise shown on the Plans. When structure backfill (flow-fill) is called for, it shall meet the following requirements.

July 29, 2011

REVISION OF SECTIONS 206 AND 601 BACKFILLING STRUCTURES THAT SUPPORT LATERAL EARTH PRESSURES

Sections 206 and 601 of the Standard Specifications are hereby revised for this project as follows:

In subsection 206.03, delete the ninth paragraph and replace with the following:

Backfill material shall not be deposited against newly constructed masonry or concrete structures, until the concrete has developed a compressive strength of 0.8 f 'c, except in cases where the structures support lateral earth pressure. Concrete compressive strength for structures supporting lateral earth pressure shall conform to subsection 601.12 (o).

Subsection 601.12 shall include the following:

- (o) *Backfilling Structures that Support Lateral Earth Pressure.* Concrete compressive strengths shall reach f'c before backfilling operations can begin with heavy equipment, such as skid-steers or self-powered riding compactors. Concrete compressive strengths shall reach 0.8 f'c before backfilling operations can begin with hand operated equipment.

January 31, 2013

**REVISION OF SECTION 208
AGGREGATE BAG**

Section 208 of the Standard Specifications is hereby revised for this project as follows:

In subsection 208.02 delete (l) and replace with the following:

- (l) *Aggregate Bag.* Aggregate bags shall consist of crushed stone or recycled rubber filled fabric with the following properties:

Diameter (inches)	Weight (minimum) (pounds per foot)
6-8	6
10	10
12	15

Rubber used in bags shall be clean, 95 percent free of metal and particulates.

Crushed stone contained in the aggregate bags shall conform to subsection 703.09, Table 703-7 for Class C.

The aggregate bag shall consist of a woven geotextile fabric with the following properties:

Property	Requirement	Test Method
Grab Tensile Strength	90 lbs. min.	ASTM D 4632
Trapezoid Tear Strength	25 lbs. min.	ASTM D 4533
Mullen Burst	300 psi	ASTM D 3786
Ultraviolet Resistance	70%	ASTM D 4355

Subsection 208.12 shall include the following:

Pay Item	Pay Unit
Aggregate Bag	Linear Foot

April 26, 2012

**REVISION OF SECTION 212
SEED**

Section 212 of the Standard Specifications is hereby revised for this project as follows:

In subsection 212.02 (a), delete the first paragraph and replace with the following:

- (a) *Seed.* All seed shall be furnished in bags or containers clearly labeled to show the name and address of the supplier, the seed name, the lot number, net weight, origin, the percent of weed seed content, the guaranteed percentage of purity and germination, pounds of pure live seed (PLS) of each seed species, and the total pounds of PLS in the container. All seeds shall be free from noxious weed seeds in accordance with current state and local lists and as indicated in Section 213. The Contractor shall furnish to the Engineer a signed statement certifying that the seed is from a lot that has been tested by a recognized laboratory for seed testing within thirteen months prior to the date of seeding. The Engineer may obtain seed samples from the

seed equipment, furnished bags or containers to test seed for species identification, purity and germination. Seed tested and found to be less than 10 percent of the labeled certified PLS and different than the specified species will not be accepted. Seed which has become wet, moldy, or damaged in transit or in storage will not be accepted.

- (b) Preparation of seedbed, fertilizing, and seeding will be measured and paid for in accordance with Section 212.
- (c) TRM and its associated blanket will be measured and paid for separately. Placing and preparation of seedbed, fertilizing, and seeding of soil under the TRM layer will be measured and paid for in accordance with Section 212. Topsoil or amended soil and seed placed on the TRM will be measured and paid for in accordance with Section 207 and 212.

January 30, 2014

REVISION OF SECTION 216 SOIL RETENTION COVERING

Section 216 of the Standard Specifications is hereby deleted for this project and replaced with the following:

DESCRIPTION

216.01 This work consists of furnishing, preparing, applying, placing, and securing soil retention blankets and turf reinforcement mats for erosion control on roadway slopes or channels as designated in the Contract.

MATERIALS

216.02 Soil retention covering shall be either a soil retention blanket or a turf reinforcement mat as specified in the Contract. It shall be one of the products listed on CDOT's Approved Products List and shall conform to the following:

- (a) *Soil Retention Blanket*. Soil retention blanket shall be composed of degradable natural fibers mechanically bound together between two slowly degrading synthetic or natural fiber nettings to form a continuous matrix and shall conform to the requirements of Table 216-1 and 216-2. The blanket shall be of consistent thickness with the fiber evenly distributed over the entire area of the mat.

When biodegradable blanket is specified, the thread shall be 100 percent biodegradable; polypropylene thread is not allowed.

When photodegradable netting is specified the thread shall be polyester, biodegradable or photodegradable.

Blankets and nettings shall be non-toxic to vegetation and shall not inhibit germination of seed. The materials shall not be toxic or injurious to humans. Class 1 blanket shall be an extended term blanket with a typical 24 month functional longevity. Class 2 blanket shall be a long term blanket with a typical 36 month functional longevity. The class of blanket is defined by the physical and performance characteristics.

1. *Soil Retention Blanket (Straw-Coconut)*. Soil Retention Blanket (Straw-Coconut) shall be a machine produced mat consisting of 70 percent agricultural straw and 30 percent coconut fiber. It shall be either biodegradable or photodegradable. When specified lightweight polypropylene netting shall be 1.5 pounds per 1000 square feet; heavyweight netting shall be 2.9 pounds per 1000 square feet. Blankets shall be sewn together on 1.50 inch to 2 inch centers.

Netting shall be as follows:

When biodegradable netting is specified, the top and bottom netting shall be 100 percent biodegradable organic jute fiber. Netting shall be constructed using a weave unattached at intersections which allows the strands of the net to move independently of each other.

When photodegradable netting is specified, the bottom side shall be lightweight polypropylene. The top side shall be heavyweight or lightweight polypropylene.

2. *Soil Retention Blanket (Excelsior)*. Soil Retention Blanket (Excelsior) blanket shall consist of a machine produced mat of 100 percent curled wood excelsior, 80 percent of which shall be 6 inches or longer in fiber length. It shall be either biodegradable or photodegradable. When specified, lightweight polypropylene netting shall be fastened on both sides of the blanket and shall be 1.5 pounds per 1000 square feet. Blankets shall be sewn together at a maximum of 4 inch centers.

Netting shall be as follows:

When biodegradable netting is specified, the top and bottom netting shall be 100 percent biodegradable organic jute fiber. Netting shall be constructed using a weave unattached at intersections which allows the strands of the net to move independently of each other.

When photodegradable netting is specified, the bottom side shall be lightweight polypropylene. The top side shall be heavyweight or lightweight polypropylene.

3. *Soil Retention Blanket (Coconut)*. Soil Retention Blanket (Coconut) shall be a machine produced mat consisting of 100 percent coconut fiber. It shall be either biodegradable or photodegradable.

Netting shall be as follows:

When biodegradable netting is specified, the top and bottom netting shall be 100 percent biodegradable organic jute fiber. Netting shall be constructed using a weave which is unattached at the intersections, and which allows the strands of the net to move independently of each other.

When photodegradable netting is specified, the bottom and top side shall be heavyweight polypropylene.

**Table 216-1
PHYSICAL REQUIREMENTS FOR SOIL RETENTION BLANKET –
PHOTODEGRADABLE OR BIODEGRADABLE BLANKETS**

Product Class	Minimum Roll Width	Minimum Thickness ASTM D 6525	Acceptable Matrix Fill Material	Min. Mass per Unit Area ASTM D 6475	Size of Net Opening	
					Photo-degradable	Bio-degradable
1	6.5'	0.25"	Straw/Coconut	8 oz/sy	Minimum: 0.50"x0.50" Maximum: 0.75"x0.75"	Minimum: 0.50"x0.50" Maximum: 0.5"x1.0"
1	6.5'	0.25"	Excelsior	8 oz/sy	Minimum: 0.50"x0.50" Maximum: 1.0"x2.0"	NONE
2	6.5'	0.20"	Coconut Fibers	8oz/sy	Minimum: 0.50" x0.5" Maximum: 0.75"x0.75"	Minimum: 0.50"x0.50" Maximum: 0.5"x1.0"

**Table 216-2
PERFORMANCE REQUIREMENTS FOR SOIL RETENTION BLANKET –
PHOTODEGRADABLE OR BIODEGRADABLE BLANKETS**

Product Class	Slope Application "C" Factor ¹ ASTM D 6459	Channel Application Permissible Shear Stress ² (Un-vegetated) ASTM D 6460	Minimum Tensile Strength ASTM D 6818
1	≤ 0.10@3:1	2.00 lbs/sf	100 lbs/ft
2	≤ 0.10@3:1	2.25 lbs/sf	125 lbs/ft
Notes: ¹ "C" Factor calculated as ratio of soil loss from soil retention blanket protected slope (tested at specified or greater gradient, h:v) to ratio of soil loss from unprotected (control) plot in large-scale testing. ² Permissible shear stress is the minimum shear stress that a product must be able to sustain without physical damage or excess soil loss when it is installed on a bare soil channel. Failure is defined as ½ inch of soil loss during a 30 minute flow event in large scale testing.			

Blankets shall be tested for physical properties and have published data from a pre-approved independent testing facility.

Large scale testing of Permissible Shear Stress and Slope Erosion Protection ("C" factor) shall be performed by a pre-approved independent testing facility.

A sample of the staples and a copy of the manufacturer's product data showing that the product meets the Contract requirements shall be submitted for approval at the environmental preconstruction conference. Installation of the blanket will not begin until approval has been received from the Engineer in writing.

- (b) *Turf Reinforcement Mat*. Turf reinforcement mat (TRM) shall be a rolled mat consisting of UV stabilized, corrosion resistant, non-degradable synthetic fibers, filaments, or nets processed into a permanent three-dimensional matrix of the thickness specified in Table 216-3 and 216-4. TRMs shall provide sufficient thickness, strength and void space to permit soil filling and retention, and the development of vegetation within the matrix. The class of TRM is defined by the physical and performance characteristics as specified in the following tables.

**Table 216-3
PHYSICAL REQUIREMENTS¹ FOR TURF REINFORCEMENT MAT**

Product Class	Minimum Roll Width	Minimum Thickness ASTM D 6525	Acceptable Matrix Fill Material ²	Size of Net Opening ²
1	6.5'	0.25"	Excelsior, Straw/Coconut, Coconut, or Polymer fibers	Minimum: 0.50"x0.50" Maximum: 0.75"x0.75"
2	6.5'	0.25"	100% UV Stabilized Synthetic or Coconut Fibers	0.50"x 0.50"
3	6.5'	0.25"	100% UV Stabilized Synthetic Fibers	0.50"x 0.50"
Notes:				
1 For TRMs containing degradable components, all property values shall be obtained on the non-degradable portion of the matting alone.				
2 For TRMs with nets and fill material. Netted TRMs shall be sewn together on 1.5 inch to 2 inch centers.				

**Table 216-4
PERFORMANCE REQUIREMENTS FOR TURF REINFORCEMENT MAT**

Product Class	Tensile Strength MD ASTM D 6818	UV Stability @ 500 Hours ASTM D 4355	Maximum Permissible Shear Stress ¹ (Vegetated) ASTM D 6460	Maximum Permissible Shear Stress ¹ (Unvegetated) ASTM D 6460
1	125 lbs/ft	80%	6.0 lbs/sf	4.0 lbs/sf
2	150 lbs/ft	80%	8.0 lbs/sf	6.0 lbs/sf
3	175 lbs/ft	80%	10.0 lbs/sf	8.0 lbs/sf
Notes:				
1 Permissible shear stress is the minimum shear stress that a product must be able to sustain when placed on a fully vegetated channel or unvegetated without physical damage or excess soil loss. Failure is defined as ½ inch of soil loss during a 30 minute flow event in large scale testing.				

TRMs shall be tested for physical properties and have published data from a pre-approved independent testing facility.

Large scale testing of Permissible Shear Stress will be performed by a pre-approved independent testing facility.

A sample of the staples and a copy of the manufacturer's product data showing that the product meets the Contract requirements shall be submitted for approval at the environmental preconstruction conference.

- (c) *Staples*. Staples shall be made of ductile steel wire, 0.165 inches in diameter, 8 inches long and have a 1 inch crown. "T" shaped staples will not be permitted.

CONSTRUCTION REQUIREMENTS

216.03 The Contractor shall install soil retention coverings in accordance with Standard Plan M-208-1 and the following procedure:

- (1) Prepare soil in accordance with subsection 212.06 (a).
- (2) Apply topsoil or soil conditioning as directed in the Contract to prepare seed bed.
- (3) Place seed in accordance with the Contract.
- (4) Unroll the covering parallel to the primary direction of flow.
- (5) Ensure that the covering maintains direct contact with the soil surface over the entirety of the installation area.
- (6) Do not stretch the material or allow it to bridge over surface inconsistencies.
- (7) Staple the covering to the soil such that each staple is flush with the underlying soil.
- (8) Ensure that staples are installed full depth to resist pull out. No bent over staples will be allowed. Install anchor trenches, seams, and terminal ends as shown on the plans.

The Contractor shall install TRMs using the following procedure:

- (1) Place 3 inches of topsoil or soil amended with soil conditioning.
- (2) Apply half of the specified seed at the broadcast rate and rake into soil.
- (3) Install TRM
- (4) Place 1 inch of topsoil or soil amended with soil conditioning into the matrix to fill the product thickness.
- (5) Apply the remaining half of the specified seed at the broadcast rate and rake into soil.
- (6) Install soil retention blanket (Class 1) over the seeded area and TRM.

When applicable, the covering shall be unrolled with the heavyweight polypropylene netting on top and the lightweight polypropylene netting shall be in contact with the soil.

216.04 Slope Application. Soil retention coverings shall be installed on slopes as follows:

The upslope end shall be buried in a trench 3 feet beyond the crest of the slope. When specified by the manufacturer, trench depth shall be increased up to 12 inches in depth. Before backfilling begins, staples shall be placed across the width of the trench. The trench shall then be backfilled to grade with soil amended with soil conditioning or topsoil, compacted by foot tamping, and seeded. Fabric shall be brought back over trench and stapled at 1 foot on center.

There shall be an overlap wherever one roll of fabric ends and another begins with the uphill covering placed on top of the downhill covering. Staples shall be installed in the overlap.

There shall be an overlap wherever two widths of covering are applied side by side. Staples shall be installed in the overlap.

Staple checks shall be applied on the slope every 35 feet. Each staple check shall consist of two rows of staggered staples.

The down slope end shall be buried in a trench 3 feet beyond the toe of slope. Before backfilling begins, staples shall be placed across the width of the trench. The trench shall then be backfilled to grade with soil amended with soil conditioning or topsoil, compacted by foot tamping, and seeded. Fabric shall be brought back over trench and stapled. If a slope runs into State waters or cannot be extended 3 feet beyond the toe of slope, the end of covering shall be secured using a staple check as described above.

Coverings shall be securely fastened to the soil by installing staples at the minimum rate shown on the plans. Staple spacing shall be reduced where required due to soil type or steepness of slope.

216.05 Channel Application. Soil retention coverings shall be installed as follows on a channel application:

Coverings shall be anchored at the beginning and end of the channel across its entire width by burying the end in a trench. When specified by the manufacturer, trench depth shall be increased up to 12 inches in depth. Before backfilling begins, staples shall be placed across the width of the trench. The trench shall then be backfilled to

grade with soil amended with soil conditioning or topsoil and compacted by foot tamping, and seeded. Fabric shall be brought back over the trench and stapled.

Covering shall be unrolled in the direction of flow and placed in the bottom of the channel first. Seams shall not be placed down the center of the channel bottom or in areas of concentrated flows when placing rolls side by side.

There shall be an overlap wherever one roll of covering ends and another begins with the upstream covering placed on top of the downstream covering. Two rows of staggered staples shall be placed.

There shall be an overlap wherever two widths of covering are applied side by side. Staples shall be placed in the overlap.

The covering shall be anchored every 30 feet with a check slot. Check slots shall extend the entire width of the channel. The covering shall be buried in a trench. Before backfilling begins, staples shall be placed across the width of the trench. The trench shall then be backfilled to grade with soil amended with soil conditioning or topsoil, compacted by foot tamping, and seeded. Fabric shall be brought back over trench and continued down the channel.

Coverings shall be securely fastened to the soil by installing staples at the minimum rate shown on the plans. Staple spacing shall be reduced where needed due to soil type or high flows.

216.06 Maintenance. The Contractor shall maintain the soil retention coverings until all work on the Contract has been completed and accepted. Maintenance shall consist of the repair of areas where damage is due to the Contractor's operations. Maintenance shall be performed at the Contractor's expense. Repair of those areas damaged by causes not attributable to the Contractor's operations shall be repaired by the Contractor and will be paid for at the contract unit price. Areas shall be repaired to reestablish the condition and grade of the soil and seeding prior to application of the covering.

METHOD OF MEASUREMENT

216.07 Soil retention coverings, including staples, complete in place and accepted, will be measured by the square yard of finished surface. Allowance will not be made for overlap.

BASIS OF PAYMENT

216.08 The accepted quantities of soil retention coverings will be paid for at the contract unit price per square yard.

Payment will be made under:

Pay Item	Pay Unit
Soil Retention Blanket (____) (Photodegradable Class _)	Square Yard
Soil Retention Blanket (____) (Biodegradable Class _)	Square Yard
Turf Reinforcement Mat (Class _)	Square Yard

April 26, 2012

**REVISION OF SECTION 401
COMPACTION OF HOT MIX ASPHALT**

Section 401 of the Standard Specifications is hereby revised for this project as follows:

In subsection 401.17, delete the first paragraph and replace with the following:

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.

In subsection 401.17, delete the third paragraph and replace with the following:

SMA shall be compacted to a density of 93 to 97 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 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.

In subsection 401.17, second to last paragraph, delete the first sentence and replace with the following:

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

February 3, 2011

REVISION OF SECTION 401 PLANT MIX PAVEMENTS

Section 401 of the Standard Specifications is hereby revised for this project as follows:

Subsection 401.02(b) shall include the following:

After the Form 43 is executed, and all ingredients are available on the project, the Contractor shall notify the Engineer a minimum of one working day in advance of beginning production of the hot mix asphalt. Any changes in the Form 43 will require the same notification unless otherwise approved by the Engineer.

February 3, 2011

REVISION OF SECTION 401 TEMPERATURE SEGREGATION

Section 401 of the Standard Specifications is hereby revised for this project as follows:

In subsection 401.16 delete the twelfth (last) paragraph and replace it with the following:

The Engineer may evaluate the HMA for low density due to temperature segregation any time 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.

February 3, 2011

REVISION OF SECTION 412 PORTLAND CEMENT CONCRETE PAVEMENT FINISHING

Section 412 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 412.12(a) and replace it with the following:

- (a) *Hand Finishing.* Hand finishing should be minimized wherever possible. The Engineer shall be notified prior to hand finishing work and the proposed hand finished work shall be addressed in the Quality Control Plan for concrete finishing. Unless otherwise specified, hand finishing methods will be permitted only under the

following conditions. Hand finished concrete shall be struck off and screeded with a portable screed that is at least 2 feet longer than the maximum width of the slab to be struck off. It shall be sufficiently rigid to retain its shape. Concrete shall be thoroughly consolidated by hand vibrators. Hand finishing shall not be allowed after concrete has been in-place for more than 30 minutes or when initial set has begun unless otherwise approved by the Engineer. Finishing tools made of aluminum shall not be used.

The Contractor shall provide a Quality Control Plan (QCP) to ensure that proper hand finishing is accomplished in accordance with current Industry standards in the concrete pavement placement. It shall also identify the Contractor's method for ensuring that the provisions of the QCP are met. The QCP shall be submitted to the Engineer at the Preconstruction Conference. Paving operations shall not begin until the Engineer has approved the QCP. The QCP shall identify and address issues affecting the quality of finished concrete pavement including but not limited to:

- (1) Timing of hand finishing operations
- (2) Methodology to place and transport concrete
- (3) Equipment and tools to be utilized
- (4) Qualifications and training of finishers and supervisors

When the Engineer determines that any element of the approved QCP is not being implemented or that hand finished concrete is unacceptable, work shall be suspended. The Contractor shall supply a written plan to address improperly placed material and how to remedy future hand finishing failures and bring the work into compliance with the QCP. The Engineer will review the plan for acceptability prior to authorizing the resumption of operations.

May 5, 2011

**REVISION OF SECTIONS 412, 601 AND 711
LIQUID MEMBRANE-FORMING COMPOUNDS
FOR CURING CONCRETE**

Sections 412, 601 and 711 of the Standard Specifications are hereby revised for this project as follows:

In subsection 412.14, first paragraph, delete the second sentence and replace with the following:

The impervious membrane curing compound shall meet the requirements of ASTM C 309, Type 2 and shall be volatile organic content (VOC) compliant.

In subsection 601.13 (b), first paragraph, delete the second sentence and replace with the following:

A volatile organic content (VOC) compliant curing compound conforming to ASTM C 309, Type 2 shall be used on surfaces where curing compound is allowed, except that Type 1 curing compound shall be used on exposed aggregate or colored concrete, or when directed by the Engineer.

In subsection 601.16 (a) 1., delete the first sentence and replace with the following:

1. Membrane Forming Curing Compound Method. A volatile organic content (VOC) compliant curing compound conforming to ASTM C 309, Type 2 shall be uniformly applied to the surface of the deck, curbs and sidewalks at the rate of 1 gallon per 100 square feet.

Delete subsection 711.01 and replace with the following:

711.01 Curing Materials. Curing materials shall conform to the following requirements:

Burlap Cloth made from Jute or Kenaf	AASHTO M 182
Liquid Membrane-Forming Compounds for Curing Concrete	ASTM C 309
Sheet Materials for Curing Concrete	AASHTO M 171*
*Only the performance requirements of AASHTO M171 shall apply.	

Straw used for curing shall consist of threshed straw of oats, barley, wheat, or rye. Clean field or marsh hay may be substituted for straw when approved by the Engineer. Old dry straw or hay which breaks readily in the spreading process will not be accepted.

February 3, 2011

REVISION OF SECTIONS 412 AND 705 PERFORMED COMPRESSION SEALS

Sections 412 and 705 of the Standard Specifications are hereby revised for this project as follows:

Subsection 412.13 shall include the following:

Transverse and untied longitudinal joints shall be sawed and sealed as shown in the following diagram for preformed compression seals. Installation shall conform to subsection 412.18, as revised for this project, and the compression seal and lubricant materials shall conform to subsection 705.01, as revised for this project.

Subsection 412.18 shall include the following:

Before installation of the preformed compression seal the following shall be completed:

- (1) Repair of defective pavement slabs and repair and proper curing of cracks or spalls in accordance with subsection 412.16.
- (2) Corrective work for tining.
- (3) Corrective work for smoothness in accordance with subsection 412.17(c).

Air temperature at the time of installation shall be from 40 to 80 °F or as recommended by the manufacturer. The joint shall be air cleaned with oil free air at 100 psi minimum just before seal installation. The preformed compression seal shall have an uncompressed width of $1\frac{1}{16}$ inch. Installation shall be in conformance with the following diagram and shall follow the manufacturer's recommendations. A machine shall be used for installation which results in proper depth of the seal without damage or twisting of the seal. Elongation during installation shall not exceed 5 percent.

Subsection 705.01 shall include the following:

- (c) *Preformed Compression Seals.* Preformed compression seals shall conform to AASHTO M 220. The lubricant adhesive used for installation of the preformed compression seal shall conform to ASTM D 2835. The Contractor shall provide the Engineer with certified test reports that indicate conformance of the preformed compression seals and lubricant adhesive with these specifications before installation begins.

February 3, 2011

REVISION OF SECTION 601 CONCRETE BATCHING

Section 601 of the Standard Specifications is hereby revised for this project as follows:

In subsection 601.06, delete (13) and (17) and replace with the following:

- (13) Gallons of water added by truck operator, the time the water was added and the quantity of concrete in the truck each time water is added.
- (17) Water to cementitious material ratio.

February 3, 2011

REVISION OF SECTIONS 601 CONCRETE FINISHING

Section 601 of the Standard Specifications are hereby revised for this project as follows:

In subsection 601.12 (a) delete the fifth paragraph and replace it with the following:

Water shall not be added to the surface of the concrete to assist in finishing operations.

Hand finishing should be minimized wherever possible. The hand finishing methods shall be addressed in the Quality Control Plan for concrete finishing. Hand finished concrete shall be struck off and screeded with a portable screed that is at least 2 feet longer than the maximum width of the surface to be struck off. It shall be sufficiently rigid to retain its shape. Concrete shall be thoroughly consolidated by hand vibrators. Hand finishing shall not be allowed after concrete has been in-place for more than 30 minutes or when initial set has begun. Finishing tools made of aluminum shall not be used.

The Contractor shall provide a Quality Control Plan (QCP) to ensure that proper hand finishing is accomplished in accordance with current Industry standards. It shall identify the Contractor's method for ensuring that the provisions of the QCP are met. The QCP shall be submitted to the Engineer at the Preconstruction Conference. Concrete placement shall not begin until the Engineer has approved the QCP. The QCP shall identify and address issues affecting the quality finished concrete including but not limited to:

- (5) Timing of hand finishing operations
- (6) Methodology to place and transport concrete
- (7) Equipment and tools to be utilized
- (8) Qualifications and training of finishers and supervisors

When the Engineer determines that any element of the approved QCP is not being implemented or that hand finished concrete is unacceptable, work shall be suspended. The Contractor shall supply a written plan to address improperly placed material and how to remedy future hand finishing failures and bring the work into compliance with the QCP. The Engineer will review the plan for acceptability prior to authorizing the resumption of operations.

In subsection 601.14(a) delete the fourth paragraph.

July 28, 2011

REVISION OF SECTION 601 CONCRETE FORM AND FALSEWORK REMOVAL

Section 601 of the Standard Specifications is hereby revised for this project as follows:

In subsection 601.09, delete (h) and replace with the following:

(h) *Removal of Forms.* The forms for any portion of the structure shall not be removed until the concrete is strong enough to withstand damage when the forms are removed.

Unless specified in the plans, forms shall remain in place for members that resist dead load bending until concrete has reached a compressive strength of at least 80 percent of the required 28 day strength, $0.80f'_c$. Forms for columns shall remain in place until concrete has reached a compressive strength of at least 1,000 psi. Forms for sides of beams, walls or other members that do not resist dead load bending shall remain in place until concrete has reached a compressive strength of at least 500 psi.

Forms and supports for cast-in-place concrete box culverts (CBCs) shall not be removed until the concrete compressive strength exceeds $0.6 f'_c$ for CBCs with spans up to and including 12 feet, and $0.67 f'_c$ for CBCs with spans exceeding 12 feet but not larger than 20 feet. Forms for CBCs with spans larger than 20 feet shall not be removed until after all concrete has been placed in all spans and has attained a compressive strength of at least $0.80f'_c$.

Concrete compressive strength shall be determined using information concrete cylinders or by maturity meters. At the pre-pour conference, the Contractor shall submit the method of determining the structure's strength and the location where information cylinders will be taken or maturity meters placed.

If information cylinders are used they shall be cast by the Contractor and cured in the same manner as the structure. A set of information cylinders shall be taken for each concrete placement on the structure. A set of information cylinders shall be taken for any load of concrete that is being placed at the mid-span of beams and at support locations and other locations as directed by the Engineer. Casting of the information cylinders will be witnessed by the Engineer. The information cylinders shall remain in the molds and cured in the same manner as the structure until they are tested in the laboratory by the Engineer. Compressive strength shall be determined using the compressive strength of at least two information cylinders. The contractor shall be responsible for protecting the information cylinders from damage.

Prior to placement of concrete whose strength will be determined with maturity meters, the Contractor shall provide the Engineer a report of maturity relationships in accordance with CP 69. The Contractor shall provide maturity meters and all necessary wires and connectors. The Contractor shall be responsible for the placement and maintenance of the maturity meter and wire. At a minimum a maturity meter will be placed at the mid-span of beams and at support locations. Placement shall be as directed by the Engineer.

For structures with multiple sets of information cylinders or maturity meters, the lowest compressive strength shall determine when the forms can be removed.

Acceptance cylinders shall not be used for determining compressive strength to remove forms.

When field operations are controlled by information cylinder tests or maturity meter, the removal of forms, supports and housing, and the discontinuance of heating and curing may begin when the concrete is found to have the required compressive strength.

Forms for median barrier, railing or curbs, may be removed at the convenience of the Contractor after the concrete has hardened.

All forms shall be removed except permanent steel bridge deck forms and forms used to support hollow abutments or hollow piers when no permanent access is available into the cells. When permanent access is provided into box girders, all interior forms and loose material shall be removed, and the inside of box girders shall be cleaned.

In subsection 601.11, delete (e) and replace with the following:

(e) Falsework Removal. Unless specified in the plans or specifications, falsework shall remain in place until concrete has attained a minimum compressive strength of 0.80f'c.

Falsework supporting any span of a simple span bridge shall not be released until after all concrete, excluding concrete above the bridge deck, has attained a compressive strength of at least 0.80f'c.

Falsework supporting any span of a continuous or rigid frame bridge shall not be released until after all concrete, excluding concrete above the bridge deck, has been placed in all spans and has attained the compressive strength of at least 0.80f'c.

Falsework for arch bridges shall be removed uniformly and gradually, beginning at the crown, to permit the arch to take its load slowly and evenly.

Falsework supporting overhangs and deck slabs between girders shall not be released until the deck concrete has attained a compressive strength of at least 0.80f'c.

Falsework for pier caps which will support steel or precast concrete girders shall not be released until the concrete has attained a compressive strength of at least 0.80f'c. Girders shall not be erected onto such pier caps until the concrete in the cap has attained the compressive strength of at least 0.80f'c.

Falsework for cast-in-place prestressed portions of structures shall not be released until after the pre-stressing steel has been tensioned.

Concrete compressive strength shall be determined using information concrete cylinders or by maturity meters. At the pre-pour conference, the Contractor shall submit the method of determining the structure's strength and the location that information cylinders will be taken or maturity meters placed.

If information cylinders are used they shall be cast by the Contractor and cured in the same manner as the structure. A set of information cylinders shall be taken for each concrete placement on the structure. A set of information cylinders shall be taken for any load of concrete that is being placed at the mid-span of beams and at support locations and other locations as directed by the Engineer. Casting of the information cylinders will be witnessed by the Engineer. The information cylinders shall remain in the molds and cured in the same manner as the structure until they are tested in the laboratory by the Engineer. Compressive strength shall be determined using the compressive strength of at least two information cylinders. The Contractor shall be responsible for protecting the information cylinders from damage.

Prior to placement of concrete whose strength will be determined with maturity meters, the Contractor shall provide the Engineer a report of maturity relationships in accordance with CP 69. The Contractor shall provide maturity meters and all necessary wires and connectors. The Contractor shall be responsible for the placement and maintenance of the maturity meters and wires. At a minimum a maturity meter will be placed at the mid-span of beams and at support locations. Placement shall be as directed by the Engineer.

For structures with multiple sets of information cylinders or maturity meters, the lowest compressive strength shall determine when the falsework can be removed.

Acceptance cylinders shall not be used for determining compressive strength to remove falsework.

July 29, 2011

REVISION OF SECTION 601 CONCRETE SLUMP ACCEPTANCE

Section 601 of the Standard Specifications is hereby revised for this project as follows:

Delete the fifth paragraph of Subsection 601.05 and replace with the following:

Except for Class BZ concrete, the slump of the delivered concrete shall be the slump of the approved concrete mix design plus or minus 2.0 inch. The laboratory trial mix must produce an average compressive strength at least 115 percent of the required field compressive strength specified in Table 601-1. When entrained air is specified in the Contract for Class BZ concrete, an air entraining admixture may be added to an approved Class BZ mix design. A new trial mix will not be required.

Delete Subsection 601.17 (b), 601.17 (d) and Table 601-3 and replace with the following:

- (b) *Slump.* Slump acceptance, but not rejection, may be visually determined by the Engineer. Any batch that exceeds the slump of the approved concrete mix design by 2.0 inches will be retested. If the slump is exceeded a second time, that load is rejected. If the slump is greater than 2 inches lower than the approved concrete mix design, the load can be adjusted with a water reducer, or by adding water (if the w/cm allows) and retested.

Portions of loads incorporated into structures prior to determining test results which indicate rejection as the correct course of action shall be subject to reduced payment or removal as determined by the Engineer.

- (d) *Pay Factors.* The pay factor for concrete which is allowed to remain in place at a reduced price shall be according to Table 601-3 and shall be applied to the unit price bid for Item 601, Structural Concrete.

If deviations occur in air content and strength within the same batch, the pay factor for the batch shall be the product of the individual pay factors.

**Table 601-3
PAY FACTORS**

Percent Total Air		Strength		
Deviations From Specified Air (Percent)	Pay Factor (Percent)	Below Specified Strength (psi) [< 4500 psi Concrete]	Pay Factor (Percent)	Below Specified Strength (psi) [≥ 4500 psi Concrete]
0.0-0.2	98	1-100	98	1-100
0.3-0.4	96	101-200	96	101-200
0.5-0.6	92	201-300	92	201-300
0.7-0.8	84	301-400	84	301-400
0.9-1.0	75	401-500	75	401-500
Over 1.0	Reject	Over 500	Reject	
			65	501-600
			54	601-700
			42	701-800
			29	801-900
			15	901-1000
			Reject	Over 1000

May 8, 2014

**REVISION OF SECTION 601
QC TESTING REQUIREMENTS FOR STRUCTURAL CONCRETE**

Section 601 of the Standard Specifications is hereby revised for this project as follows:

Delete the first paragraph of subsection 601.17 and subsection 601.17(a) and replace with the following:

601.17 Acceptance and Pay Factors. These provisions apply to all concrete. The Contractor shall sample 601 pay items for both QC and QA in accordance with CP 61. The Engineer will witness the sampling and take possession of the QA samples at a mutually agreed upon location. The Contractor shall be responsible for Quality Control (QC) testing for 601 pay items. QC testing shall be performed at least once per day and then once per 50 cubic yards for concrete slump, unit weight and concrete temperature for each 601 pay item.

- (a) *Air Content.* The first three batches at the beginning of each day's production for each 601 pay item shall be tested by the Contractor's QC and CDOT's QA for air content. When the QC and QA air content measurements differ by more than 0.5 percent, both the QC and QA air meters shall be checked in accordance with ASTM C 231. When air content is below the specified limit, it may be adjusted in accordance with subsection 601.08. Successive batches shall be tested by the Contractor's QC and witnessed by the Engineer until three consecutive batches are within specified limits. After the first three batches, CDOT will follow the random minimum testing schedule. After the first three batches the Contractor shall perform QC testing at a frequency of one random sample per 50 cubic yards. Air content shall not be adjusted after a CDOT QA test.

Subsection 601.19 shall include the following:

The Contractor's QC testing will not be measured and paid separately, but shall be included in the work.

**REVISION OF SECTIONS 601 AND 701
CEMENTS AND POZZOLANS**

Sections 601 and 701 of the Standard Specifications are hereby revised for this project as follows:

In subsection 601.03, first paragraph, the following shall be added to the table:

High-Reactivity Pozzolans	701.04
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Subsection 601.03 shall include the following:

Pozzolans shall consist of Fly Ash, Silica Fume and High-Reactivity Pozzolan.

In subsection 601.04, delete the third and fourth paragraphs and replace with the following

Cementitious material requirements are as follows:

Class 0 requirements for sulfate resistance shall be one of the following:

- (1) ASTM C 150 Type I, II or V
- (2) ASTM C 595 Type IL, IP, IP(MS), IP(HS) or IT
- (3) ASTM C 1157 Type GU, MS or HS
- (4) ASTM C 150 Type III cement if it is allowed, as in Class E concrete

Class 1 requirements for sulfate resistance shall be one of the following:

- (1) ASTM C 150 Type II or V; Class C fly ash shall not be substituted for cement.
- (2) ASTM C 595 Type IP(MS) or IP(HS).
- (3) ASTM C 1157 Type MS or HS; Class C fly ash shall not be substituted for cement.
- (4) When ASTM C 150 Type III cement is allowed, as in Class E concrete, it shall have no more than 8 percent C₃A. Class C fly ash shall not be substituted for cement.
- (5) ASTM C 595 Type IL; having less than 0.10 percent expansion at 6 months when tested according to ASTM C 1012. Class C fly ash shall not be substituted for cement.
- (6) ASTM C 595 Type IT; having less than 0.10 percent expansion at 6 months when tested according to ASTM C 1012.

Class 2 requirements for sulfate resistance shall be one of the following:

- (1) ASTM C 150 Type V with a minimum of a 20 percent substitution of Class F fly ash by weight
- (2) ASTM C 150 Type II or III with a minimum of a 20 percent substitution of Class F fly ash by weight. The Type II or III cement shall have no more than 0.040 percent expansion at 14 days when tested according to ASTM C 452
- (3) ASTM C 1157 Type HS; Class C fly ash shall not be substituted for cement.
- (4) ASTM C 150 Type II, III, or V plus High-Reactivity Pozzolan where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012
- (5) ASTM C 1157 Type MS plus Class F fly ash or High-Reactivity Pozzolan where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012

- (6) A blend of portland cement meeting ASTM C 150 Type II or III with a minimum of 20 percent Class F fly ash by weight, where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012.
- (7) ASTM C 595 Type IP(HS).
- (8) ASTM C 595 Type IL plus Class F fly ash or High-Reactivity Pozzolan where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012
- (9) ASTM C 595 Type IT; having less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012.

Class 3 requirements for sulfate resistance shall be one of the following:

A blend of portland cement meeting ASTM C 150 Type II, III, or V with a minimum of a 20 percent substitution of Class F fly ash by weight, where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.

- (1) ASTM C 1157 Type HS having less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012. Class C fly ash shall not be substituted for cement.
- (2) ASTM C 1157 Type MS or HS plus Class F fly ash or High-Reactivity Pozzolan where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
- (3) ASTM C 150 Type II,III, or V plus High-Reactivity Pozzolan where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
- (4) ASTM C 595 Type 1L plus High-Reactivity Pozzolan where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
- (5) ASTM C 595 Type IP(HS) or IT having less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
- (6) ASTM C 595 Type IL with a minimum of a 20 percent substitution of Class F fly ash by weight, where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.

When fly ash or High-Reactivity Pozzolan is used to enhance sulfate resistance, it shall be used in a proportion greater than or equal to the proportion tested in accordance to ASTM C1012, shall be the same source and it shall have a calcium oxide content no more than 2.0 percent greater than the fly ash or High-Reactivity Pozzolan tested according to ASTM C 1012.

In subsection 601.05 delete the first paragraph and replace with the following:

601.05 Proportioning. The Contractor shall submit a Concrete Mix Design for each class of concrete being placed on the project. Concrete shall not be placed on the project before the Concrete Mix Design Report has been reviewed and approved by the Engineer. The Concrete Mix Design will be reviewed and approved following the procedures of CP 62. The Concrete Mix Design will not be approved when the laboratory trial mix data are the results from tests performed more than two years in the past or aggregate data are the results from tests performed more than two years in the past. The concrete mix design shall show the weights and sources of all ingredients including cement, pozzolan, aggregates, water, additives and the water to cementitious material ratio (w/cm). When determining the w/cm, the weight of cementitious material (cm) shall be the sum of the weights of the cement, fly ash, silica fume and High-Reactivity Pozzolan.

In subsection 601.05, delete the 12th, 13th, 14th, 15th, and 16th paragraphs and replace with the following:

The Concrete Mix Design Report shall include Certified Test Reports showing that the cement, fly ash, High-Reactivity Pozzolan and silica fume meet the specification requirements and supporting this statement with actual test results. The certification for silica fume shall state the solids content if the silica fume admixture is furnished as slurry.

For all concrete mix designs with ASTM C150 cements, up to a maximum of 20 percent Class C, 30 percent Class F or 30 percent High-Reactivity Pozzolan by weight of total cementitious material may be substituted for cement.

For all concrete mix designs with ASTM C595 Type IL cements, up to a maximum of 20 percent Class C, 30 percent Class F or 30 percent High-Reactivity Pozzolan by weight of total cementitious material may be substituted for cement.

For all concrete mix designs with ASTM C595 Type IP, IP(MS), IP(HS) or IT cements; fly ash or High-Reactivity Pozzolan shall not be substituted for cement.

For all concrete mix designs with ASTM C1157 cements, the total pozzolan content including pozzolan in cement shall not exceed 30 percent by weight of the cementitious material content.

When the Contractor's use of fly ash or High-Reactivity Pozzolan results in delays to the project, when it is necessary to make changes in admixture quantities, the source, or the Contractor performs, the cost of such delays and corrective actions shall be borne by the Contractor.

The Contractor shall submit a new Concrete Mix Design Report meeting the above requirements when a change occurs in the source, type, or proportions of cement, fly ash, High-Reactivity Pozzolan, silica fume or aggregate. When a change occurs in the source of approved admixtures, the Contractor shall submit a letter stamped by the Concrete Mix Design Engineer approving the changes to the existing mix design. The change will need to be approved by the Engineer prior to use.

In subsection 601.06, second paragraph, delete (9) and replace with the following:

(9) Type, brand, and amount of cement, fly ash and High-Reactivity Pozzolan

In subsection 601.06, delete (a) and replace with the following:

(a) *Portland Cement, Fly Ash, High-Reactivity Pozzolan and Silica Fume.* These materials may be sacked or bulk. No fraction of a sack shall be used in a batch of concrete unless the material is weighed.

All bulk cement shall be weighed on an approved weighing device. The bulk cement weighing hopper shall be sealed and vented to preclude dusting during operation. The discharge chute shall be so arranged that cement will not lodge in it or leak from it.

Separate storage and handling equipment shall be provided for the fly ash, silica fume and High-Reactivity Pozzolan. The fly ash, silica fume, and High-Reactivity Pozzolan may be weighed in the cement hopper and discharged with the cement.

In subsection 701.01 delete and replace the second paragraph with the following:

All concrete, including precast, prestressed and pipe shall be constructed with one of the following hydraulic cements, unless permitted otherwise.

ASTM C 150 Type I

ASTM C 150 Type II

ASTM C 150 Type V

ASTM C 595 Type IL

ASTM C 595 Type IP

ASTM C 595 Type IP(MS)

ASTM C 595 Type IP(HS)

ASTM C 595 Type IT

ASTM C 1157 Type GU, consisting of no more than 15 percent limestone

ASTM C 1157 Type MS, consisting of no more than 15 percent limestone

ASTM C 1157 Type HS, consisting of no more than 15 percent limestone

In subsection 701.02 add the following after the first paragraph:

Blending of pozzolans according to ASTM D5370 is permitted to meet the requirements of ASTM C 618.

Add subsection 701.04 immediately following subsection 701.03 as follows:

701.04 High-Reactivity Pozzolans. High-Reactivity Pozzolans (HRP) shall conform to the requirements of AASHTO M321. HRPs are but not limited to metakaolin, rice hull ash, zirconium fume, ultra-fine fly ash, and fume from the production of 50 percent ferrosilicon (with SiO₂ less than 85 percent).

HRPs shall meet the following optional requirement of AASHTO M321: The sulfate expansion at 14 days shall not exceed 0.045 percent

HRP shall be from a preapproved source listed on the Department's Approved Products List. The HRP intended for use on the project shall have been tested and accepted prior to its use. Certified Test Reports showing that the HRP meets the specification requirements and supporting this statement with actual test results shall be submitted to the Engineer.

The HRP shall be subject to sampling and testing by the Department. Test results that do not meet the physical and chemical requirements may result in the suspension of the use of HRP until the corrections necessary have been taken to ensure that the material conforms to the specifications.

October 2, 2014

REVISION OF SECTION 603 CULVERT PIPE INSPECTION

Section 603 of the Standard Specifications is hereby revised for this project as follows:

Delete the first paragraph of subsection 603.09 and replace with the following:

603.09 Backfilling. After the conduit or section of conduit is placed, it shall be inspected before any backfill is placed. Reinforced concrete pipe (RCP) shall be visually inspected in accordance with AASHTO LRFD Bridge Construction Specifications, Section 27.6. Conduit found to be damaged shall be replaced, and conduit found to be out of alignment or unduly settled shall be taken up and relaid. The trench shall then be backfilled with material in accordance with Section 206.

In subsection 603.09, delete the fifth paragraph.

Add subsection 603.091 immediately following subsection 603.09 as follows:

603.091 Deflection Testing of Metal and Plastic Pipe. After a metal or plastic pipe is backfilled and earthwork over the pipe is complete to the top of the subgrade, the pipe deflection shall be measured in the presence of the Engineer. The maximum allowable deflection shall be 5 percent. Deflection is a reduction in the nominal diameter of the pipe measured in any direction. Measurement shall be made using a mandrel, laser profile, or other method approved by the Engineer. Measurement shall be made 30 days or more following the pipe installation. Pipe having any deflections in excess of 5 percent at any location within the pipe shall be removed and reinstalled at the Contractor's expense. Pipe that is permanently deformed or damaged in any way shall be replaced at the Contractor's expense. Replaced pipe shall be retested 30 days or more after the installation in accordance with the method described above.

**REVISIONS OF SECTIONS 603, 624, 705, 707 AND 712
DRAINAGE PIPE**

Sections 603, 624, 705, 707 and 712 of the Standard Specifications are hereby revised for this project as follows:

Subsection 603.07 shall include the following:

Joint systems for siphons, irrigation systems, and storm drains shall be watertight.

Subsection 603.07(c) shall include the following:

Watertight joint systems for plastic pipe shall conform to subsection 705.03.

Subsection 624.02 shall include the following material type and requirement:

Abbreviation	Description	Subsection
ALT2 CSP	Aluminized Corrugated Steel Pipe Type 2	707.11
Plastic	Polyvinyl Chloride (PVC), Polyethylene (PE) and Polypropylene (PP)	712.13

In subsection 624.02 delete the third paragraph and replace it with the following:

Connecting bands shall receive the same corrosion protection as the pipe with which they are used. Coatings conforming to the requirements of Sections 706 and 707 will be permitted as applicable. Connecting bands and pipe extensions shall be of similar metal, or of non-metallic material, to avoid galvanic corrosion.

End sections for concrete or metal pipe shall be the same material as the pipe and meet the requirements for the same class as that specified for the pipe in accordance with Table 624-1.

Plastic end sections shall not be used. When plastic pipe is to be installed with end sections, steel or concrete end sections meeting the same class as that specified for the pipe in accordance with Table 624-1 shall be used.

In subsection 624.02 delete the fourth paragraph and replace it with the following:

The Contractor may furnish any pipe material allowed in Table 624-1 for the class of pipe specified in the Contract except for storm drains. The Contractor may furnish RCP, PVC or PP allowed in Table 624-1 for the class of pipe specified in the Contract for storm drains. The Contractor shall state at the preconstruction conference the pipe materials intended to be furnished.

In subsection 624.02 delete Table 624-1 and replace it with the following:

**TABLE 624-1
Materials Allowed for Class of Pipe**

Material Allowed**	Class of Pipe*										
	0	1	2	3	4	5	6 ⁴	7	8	9	10 ⁴
CSP	Y	N	N	N	N	N	N	N	N	N	N
ALT2 CSP	Y	Y	Y	Y	Y	N	N	N	N	N	N
Bit. Co. CSP	Y	Y ¹	N	N	N	N	N	N	N	N	N
A.F. Bo. CSP	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
CAP	Y	Y ²	Y ²	Y ²	Y ²	Y	N	N	N	N	N
PCSP - both sides	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
PVC ⁶	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PE ⁶	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PP ⁶	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
RCP (SP0) ^{3,5}	Y	Y	N	N	N	N	N	Y	N	N	N
RCP (SP1) ^{3,5}	Y	Y	Y	N	N	N	N	Y	Y	N	N
RCP (SP2) ^{3,5}	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N
RCP (SP3) ^{3,5}	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

* As determined by the Department in accordance with the CDOT *Pipe Selection Guide*. Determination is based on abrasion and corrosion resistance.

** Y=Yes; N=No.

¹ Coated Steel Structural Plate Pipe of equal or greater diameter, conforming to Section 510, may be substituted for Bit. Co. CSP at no additional cost to the project.

² Aluminum Alloy Structural Plate Pipe of equal or greater diameter, conforming to Section 510, may be substituted for CAP at no additional cost to the project.

³ SP= Class of Sulfate Protection required in accordance with subsection 601.04 as revised for this project. RCP shall be manufactured using the cementitious material required to meet the SP class specified.

⁴ For pipe classes 6 and 10, the RCP shall be coated in accordance with subsection 706.07 when the pH of either the soil or water is less than 5. The Contract will specify when RCP is to be coated.

⁵ Concrete shall have a compressive strength of 4500 psi or greater.

⁶ In accordance with subsection 712.13.

Subsection 624.03 shall include the following:

Joint systems for siphons, irrigation systems, and storm drains shall be watertight. Watertight joint systems for plastic pipe shall conform to subsection 705.03.

Installation for Aluminized Corrugated Steel Pipe Type 2 shall conform to all requirements for Corrugated Steel Pipe (CSP) including the fill height tables and requirements in Standard Plan M-603-1.

Subsection 705.03 shall include the following:

Watertight joint systems for plastic pipe shall be in accordance with ASTM D3212.

Add subsection 707.11 as follows:

707.11 Aluminized Corrugated Steel Pipe Type 2. Aluminized Corrugated Steel Pipe Type 2 shall conform to the requirements of AASHTO M 274.

In subsection 712.13 (b), delete (1) and (2) and replace with the following:

- (1) AASHTO M 304 (Profile) for nominal pipe sizes of 4 to 36 inches.
- (2) ASTM F794 (Profile) for nominal pipe sizes 4 to 36 inches with 46 psi minimum pipe stiffness

Add subsection 712.13(c) as follows:

(a) *Polypropylene (PP) Pipe.*

AASHTO M330 for nominal pipe sizes of 12 to 60 inches with the following exceptions: Type S and Type SP are acceptable (Type C, Type CP and Type D will not be accepted).

The Contractor shall provide a polypropylene (PP) pipe product that is prequalified under the AASHTO National Transportation Product Evaluation Program (NTPEP). Only products from suppliers whose manufacturing plant and PP pipe products comply with this specification shall be placed by the Contractor. The current list of plants and PP pipe products that meet these requirements is located at: www.ntpep.org. The Contractor shall use plants listed as compliant and a size listed in the NTPEP reports on PP Thermoplastic Pipe. Every Certificate of Compliance (COC) on each diameter PP pipe product delivered to the project shall include a statement that the product has been manufactured at a NTPEP inspected plant, has been tested by NTPEP, has a NTPEP product number, and is currently on the NTPEP website. The COC shall confirm that the supplied pipe meets the applicable specification limits in subsection 712.13. Manufacturers shall remain acceptable to CDOT as long as the results of verification samples and performance in the field are satisfactory. Any changes in the PP pipe formulation will require re-submittal for prequalification testing by NTPEP.

January 30, 2014

**REVISION OF SECTIONS 613 AND 715
LED ROADWAY LUMINAIRE**

Sections 613 and 715 of the Standard Specifications are hereby revised for this project as follows:

In subsection 613.02, delete (e) and replace with the following:

- (e) *Luminaire.* A complete luminaire includes the housing, lens, Light Emitting Diode (LED) luminaire, luminaire housing, driver or power generator, slip-fitting clamp or approved manufacturer mounting, all necessary internal wiring, and photoelectric control. Luminaires shall operate at either 120 VAC, 60 Hz or 277 VAC, 60 Hz. Luminaires shall meet electrical utility company requirements.

In subsection 613.02 (i), delete (4), (6), (7) and (8) and replace with the following:

- (4) Luminaire manufacturer's product information including data in Illuminating Engineering Society of North America (IESNA) format, IESNA photometric distribution type for vertical and lateral distribution (example: B2-U0-G1, Type III), and a photograph or line drawing
- (6) Luminaire Lumen Range
- (7) LED Driver or Power Supply
- (8) Lighting Control Centers and Photoelectric Control Devices

Subsection 613.02 shall include the following:

- (j) *LED Luminaire Warranty.* The Contractor shall ensure that the LED Roadway Luminaire has a minimum warranty of 10 years for all parts, materials and shipping required to repair or replace the luminaire. The Contractor shall provide the manufacturer's warranty to the Engineer prior to installing the luminaire.

The warranty shall cover all failures including:

- (1) Failure in luminaire housing, wiring, connections, drivers and photoelectric control devices.
- (2) More than 10 percent decrease in lumen output
- (3) Significant change in color

The warranty shall begin upon the date the Contractor receives the luminaire. The bill of lading shall be provided to the Engineer prior to final payment of the lighting.

(k) *Technical Support.* During the warranty period, technical support shall be available from the manufacturer via telephone within 24 hours of the time the call is made from the Contractor, and this support shall be made available from factory certified personnel or factory certified installers at no additional charge to the Department.

In subsection 613.06, delete the first paragraph and replace with the following:

613.06 Luminaires and Lamps. Roadway Luminaires shall be mounted on the mast arm by a slip-fitter clamp or other approved device. Luminaires shall be adjusted vertically and horizontally to provide the required orientation and maximum light distribution on the roadway and to meet Illuminating Engineering Society of North America (IESNA) TM-15 uplight rating of U0.

In subsection 613.06, delete the fourth paragraph and replace with the following:

Luminaires of the specified type and lumen output shall be installed as shown on the plans. The type and lumen output shall be marked on each luminaire or pole in accordance American National Standards Institute (ANSI) specifications. ANSI approved tags shall be provided and installed by the Contractor.

Subsection 613.12 shall include the following:

Pay Item	Pay Unit
Luminaire (LED) (___ Lumens)	Each

In subsection 715.04 (a), delete 2. and 4. and replace with the following:

2. Optical Chamber. The luminaire distribution shall be equal to or less than an Illuminating Engineering Society of North America (IES) TM15-11 Backlight Uplight and Glare (BUG) ratings listed below in Table 715-1 based on initial lumens or Light Loss Factor (LLF) = 1.0. Roadway luminaires with a U value greater than U0 shall not be accepted. The optical chamber shall be completely sealed from the housing, or the housing shall be completely sealed. A seamless one piece memory-retentive gasket shall seal the optical chamber or housing against the luminaire lens door. All wires entering the optical chamber shall be gasketed at their point of entry. Socket mountings, rivets used in the construction or support of the reflector system, and all other penetrations into the optical chamber shall be completely sealed. The optical chamber shall be water tight when the luminaire door is closed.

**Table 715-1
BACKLIGHT, UPLIGHT AND GLARE (BUG) VALUES**

Luminaire Mounting Location	Minimum Initial Luminaire Lumen Range	Backlight (B) Rating Maximum	Uplight (U) Rating Maximum	Glare (G) Rating Maximum
Non median-mounted	Less than 5,000	B2	U0	G1
	5,000 – 22,000	B3	U0	G2
	Above 22,000*	B3	U0	G3
Median-mounted	Less than 5,000	B3	U0	G1
	5,000 – 22,000	B4	U0	G2
	Above 22,000*	B4	U0	G3
*By special application only.				

3. Electrical Components. All components shall be Underwriters Laboratory (UL) listed for wet locations or by an Occupational Safety & Health Administration Nationally Recognized Testing Laboratories (OSHA NRTL). Luminaires shall operate from 120 to 277 VAC as specified on the plans or adaptable to the type of power distribution system to be used. All internal wiring and quick disconnects shall be rated for at least 600 VAC and insulated for 302°F. The dimmable driver shall be easily removable from the luminaire housing without the use of tools. The following components shall be in accordance with corresponding sections of ANSI C136.37:

- (1) Wiring and grounding.
- (2) Terminal blocks for incoming AC lines.

- (3) Photocontrol receptacle.
- (4) Latching and hinging

In subsection 715.04, delete (b) through (e) and replace with the following:

- (b) *Roadway Luminaires*. Roadway luminaires shall be LED type with integral driver, flat lens, aluminum housing, and be UL Listed for wet locations. All luminaires for the project shall be the same type and design unless the plans specify otherwise.
 - (1) The luminaire and all components shall be UL or Intertek Testing Services (ETL) listed for Wet Location and shall have minimum Ingress Protection Rating of IP66.
 - (2) Light source shall be comprised of LED modules connected to a non-integrated driver and ready for connection to a production line luminaire. Luminaires utilizing integrated driver LED light sources, screw-based or panel retrofit products shall not be accepted.
 - (3) The luminaire shall have a Type II or III distribution for non-median mounted luminaires, and Type II, III, IV or V for median mounted luminaires.
 - (4) Transmissive optical components shall be applied in accordance with LED manufacturer's Original Equipment Manufacturer (OEM) design guidelines to ensure suitability for the environment in which the luminaire is installed.
 - (5) Luminaires shall utilize an adjustable slipfitter-type mounting system for installation on 1.25-inch (1.66-inch o.d.) to 2-inch (2.375-inch o.d.) outside diameter pipe tenons. Slipfitter shall consist of a two-piece clamp and four 9/16-inch hex bolts. Slipfitter shall allow for a vertical tilt adjustment of ± 5 percent in order to mount luminaire plumb for a U0 rating. Luminaires shall be equipped with integrated leveling bubble.
 - (6) Access to all internal parts requiring replacement shall not require tools (i.e. "tool-less entry").
 - (7) The luminaire housing shall be constructed of aluminum alloy.
 - (8) Power Supply/Driver shall be provided in compliance with subsection 715.05(a). Driver must be internal and thermally separated from LED compartment.
 - (9) Dimming photocell receptacle shall conform to (d) below.
 - (10) Luminaire finish shall be corrosion resistant Super triglycidyl isocyanurate (TGIC) polyester powdercoat. Color shall be gray.
 - (i) Powder coat: Super TGIC polyester powder coat 2.5 mil nominal thickness.
 - (ii) Finish shall exceed a rating of 6 per ASTM D1654 after 1000hrs of testing per ASTM B117.
 - (iii) The coating shall exhibit no greater than 30% reduction of gloss per ASTM D523, after 500 hours of QUV testing at ASTM G154 Cycle 6.
 - (11) Effective Projected Area (EPA) for wind-loading calculations shall be no greater than 1.2 square feet.
 - (12) Luminaire weight shall not exceed 45 pounds.
 - (13) Luminaire shall be tested in accordance with IES LM79 and TM21 certifying photometric performance and rated life, respectively. LM79 (performance) and TM21 (predicted life at 55°C) testing shall both be for the same luminaire's operating drive current as specified.
 - (14) Luminaire shall have a maximum Backlight rating as shown in Table 715-1, an Uplight rating of U0, and a maximum Glare rating as shown in Table 715-1.
 - (15) Luminaire system efficacy shall be no less than 68 luminaire lumens per input watt.
 - (16) Luminaire shall have an external label per ANSI C136.15 and internal label per ANSI C136.22.
- (c) *Light Sources*. LED luminaires shall not be retrofit to existing luminaire housing; the Contractor shall replace housing along with the luminaire as a single unit. Light sources shall be compatible with dimmable drivers supplied with the luminaires in which they are to be installed. All light sources of a similar type shall be provided by the same manufacturer.

LED light sources shall meet or exceed the following requirements:

- (1) CCT, CRI and Flux:
 - (i) Correlated Color Temperature (CCT) – All LED light sources shall emit white light and have a CCT no less than 2700K nominal and no greater than 4000K nominal in accordance with ANSI C78.277.
 - (ii) Color Rendering Index (CRI) – All LED light sources shall have a minimum Color Rendering Index (CRI) of 70 per the LM79 test results.

- (iii) Luminous Flux – LED light sources shall not exceed the junction temperature recommended by the LED manufacturer. Luminous flux differences between LEDs shall not exceed 10 percent.
- (2) LEDs shall have a minimum rated life of 70,000 hours per IES TM-21 at 55°C at the normal operating driver current for the specific luminaire. The lumen output shall be maintained at 70 percent of initial rated lumens (L70) or greater at the rated life of the luminaire.
- (3) LEDs shall be temperature rated for operation and storage within the range of -40°C to +50°C, and shall withstand low and high frequency vibration (ANSI C136.31 Vibration Level 3G) over the rated life of the light source.
- (4) Cooling System
 - (i) Mechanical design of protruding external surfaces (e.g. heat sink fins) shall facilitate hose-down cleaning and discourage debris accumulation.
 - (ii) The cooling system must be passive utilizing heat sinks, convection or conduction.
 - (iii) Fans, diaphragms, pumps, or liquids shall not be acceptable.

(d) *Photocontrol Receptacle.*

Each roadway luminaire shall be furnished with a multi-contact twist-lock outdoor lighting dimming receptacle per ANSI C136.41.

Delete subsection 715.05 and replace with the following:

715.05 LED Drivers. Led drivers shall conform to the following:

- (1) Dimming signal protocols are 0-10VDC or Digital Addressable Lighting Interface (DALI).
- (2) Operating voltage shall be 120/277-volt at 50/60 Hz, and shall operate normally with input voltage fluctuations of ±10 percent, consistent with NEMA SSI-1-2010, Electronic Drivers for LED Devices, Arrays or Systems.
- (3) Minimum Power Factor (PF) shall be 0.90 at full input power and across specified voltage range.
- (4) Maximum Total Harmonic Distortion (THD) shall be 20 percent at full input power and across specified voltage range.
- (5) Factory-set drive current shall be 530mA or less unless approved by Engineer. If higher drive currents are proposed, the submittal must be accompanied with IES LM79 and TM21 test results for higher operating drive current.
- (6) Drivers shall be Restriction of Hazardous Substances (RoHS) compliant.
- (7) Rated case temperature shall conform to subsection 715.04 (c) 3.
- (8) All electronics of the power supply and the LEDs shall be protected from all electrical surges with an elevated electrical immunity rating, including but not limited to lightning strikes and stray current in rebar and concrete. Surge protection shall be integral to the LED power supply.
- (9) Luminaire, including driver, shall consume no more than 4 watts in the off state power.
- (10) Electrical immunity (including surge protection)
 - (i) Luminaire shall meet the “Elevated” requirements per IEEE C62.41.2 -2002. Manufacturer shall indicate whether failure of the electrical immunity system can possibly result in disconnect of power to luminaire.
- (11) Electromagnetic interference: Shall comply with Federal Communications Commission (FCC) 47 Code of Federal Regulations (CFR) part 15 non-consumer radio frequency interference (RFI) and/or electromagnetic interference (EMI) standards.

July 19, 2012

**REVISION OF SECTION 614
PEDESTRIAN PUSH BUTTON POST ASSEMBLY**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.01 shall include the following:

This work consists of the installation of a pedestrian push button and steel post assembly at locations as shown on the plans.

Subsection 614.02 shall include the following:

Post for pedestrian push button shall be tubular steel, Schedule 80.

Concrete for foundation shall be Class B.

Pedestrian push button and sign shall meet all ADA requirements.

Wiring for pedestrian push button shall conform to manufacturer recommendations.

Subsection 614.02 shall include the following:

Steel posts and slip base assembly shall be galvanized in accordance with Section 509, unless painting is called for on the plans. Painting shall be in accordance with Section 522, Duplex Coating System. The post and slip base shall be constructed as shown on the plans.

Subsection 614.13 shall include the following:

Pedestrian Push Button Post Assembly will be measured as the actual number that are installed and accepted.

614.14 shall include the following:

Pay Item	Pay Unit
Pedestrian Push Button Post Assembly	Each

Wiring will not be measured and paid for separately, but shall be included in the work.

January 31, 2013

**REVISION OF SECTIONS 627 AND 708
PAVEMENT MARKING PAINT**

Sections 627 and 708 of the Standard Specifications are hereby revised for this project as follows:

In subsection 627.04, delete the first paragraph and replace with the following:

627.04 Pavement Marking with Waterborne, Low Volatile Organic Compound (VOC) Solvent Base, and High Build Acrylic Waterborne Paint (High Build). Striping shall be applied when the air and pavement temperatures are no less than 45 °F for waterborne and high-build paint, and no less than 40 °F for low VOC solvent base paint on asphalt or portland cement concrete pavements. The pavement surface shall be dry and clean. Surface cleaning shall be required when there is deicing material on the road. Weather conditions shall be conducive to satisfactory results.

In subsection 627.04 delete the table and replace it with the following

	Description	Paint		
		Waterborne	Low VOC	High Build
Alignment	Lateral Deviation	2.0 inch per 200 foot Max		
Coverage Rate	Sq. Ft. per Gallon	90-100	90-100	67-73
Thickness	Mil	16-18	16-18	22-24
Width	Inches	Per Plans +/- 0.25		
Dry Time	Minutes	5-10	5-10	5-10
Beads	Application Rate, lbs/gal	7-8		9-10

Subsection 627.13 shall include the following:

Pay Item	Pay Unit
Pavement Marking Paint (High Build)	Gallon

Delete subsection 708.05 and replace with the following:

708.05 Pavement Marking Materials. Except for pavement marking paint, pavement marking materials shall be selected from the Department's Approved Products List (APL). Prior to start of work, a Certified Test Report (CTR) for all pavement marking materials shall be submitted in accordance with subsection 106.13.

For white paint, the color after drying shall be a flat-white, free from tint, and shall provide the maximum amount of opacity and visibility under both daylight and artificial light. For yellow paint, the Federal Standard 595B shall be used to designate colors and the ASTM E308 shall be used to quantitatively define colors. After drying, the yellow paint shall visually match Federal Standard 595B color chip number 33538, and shall be within 6 percent of central color, PR-1 Chart, where $x = 0.5007$ and $y = 0.4555$ (The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 Standard Colorimetric System measured with Standard Illuminant D65.)

- (a) *Low VOC Solvent Base Paint.* Low VOC Paint shall be ready mixed, and shall be capable of being applied to Asphalt or Portland Cement Concrete Pavements.
- (b) *Acrylic Waterborne Paint.* Acrylic waterborne paint shall be a lead-free, 100 percent Acrylic resin polymer waterborne *product*. The finished product shall maintain its consistency during application at temperatures compatible with conventional equipment.
- (c) *High Build Acrylic Waterborne Paint.* High build acrylic waterborne paint binder (nonvolatile portion of vehicle) shall be 100 percent HD 21 acrylic cross linking polymer, by weight, as determined by infrared analysis or other chemical analysis available to the Department.

Waterborne and High Build Acrylic Waterborne paint shall meet the following requirements:

Performance Requirements: The paint shall be water resistant and shall show no softening or blistering.

**Table 708-1
WATERBORNE AND HIGH BUILD ACRYLIC WATERBORNE PAINT**

Property	White	Yellow	Test Method
Nonvolatile portion of vehicle (white and yellow), %	43.0	43.0	ASTM D 2205
Pigment Composition			
Percent by weight♦	60.0	60.0	ASTM D 4451 ASTM D 3723
Paint			
Titanium Dioxide Content, lb/gal	1.0	0.2	ASTM D 5381
Properties of the Finished Paint			
Total Non-volatiles, (solids) % by weight	77.0	77.0	FTMS 141C - Method 4053.1, ASTM D 2369, or ASTM D 4758
Density, lbs/gal ■	14.0-14.6	14.0-14.6	ASTM D 2205
Consistency (Viscosity) White and Yellow, Krebs-Stormer Units	85-95	85-95	ASTM D 562
Freeze Thaw Stability	Shall complete 5 or more test cycles successfully		ASTM D 2243
Fineness of Grind, Cleanliness Rating B, minimum	3	3	ASTM D 1210
Scrub Resistance	800	800	ASTM D2486
Directional Reflectance: [5 mil Wet Film]	90	50	ASTM E 1347
Dry Opacity (Contrast Ratio): [5 mil Wet Film]	0.95	0.95	ASTM D 2805
♦Percent by weight shall include percent of organic yellow pigment.			
■Density shall not vary more than 0.3 lbs. /gal between batches.			

February 17, 2012

**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

Section 630 of the Standard Specifications is hereby revised for this project as follows:

In subsection 630.16 delete the fifth paragraph.

May 8, 2014

**REVISION OF SECTION 630
RETROREFLECTIVE SIGN SHEETING**

Section 630 of the Standard Specifications is hereby revised for this project as follows:

In subsection 630.02, delete the sixth and seventh paragraphs, including Table 630-1, and replace them with the following:

Retroreflective sheeting for all signs requiring an orange background shall be Type VI or Type Fluorescent.

Retroreflective sheeting for all signs requiring a yellow background shall be Type Fluorescent.

**Table 630-1
RETROREFLECTIVE SHEETING TYPES**

Sheeting	Type IV	Type VI (Roll-up sign material)	Type Fluorescent¹
Application	Work Zone	Work Zone	Work Zone
All Orange Construction Signs			X
Orange Construction Signs that are used only during daytime hours for short term or mobile operations		X ⁴	X
Barricades (Temporary)	X		X
Vertical Panels	X		X
Flaggers Stop/Slow Paddle	X		X
Drums ²	X		X
Non-orange Fixed Support signs with prefix "W"	X		
Special Warning Signs			X
STOP sign (R1-1) YIELD sign (R1-2) WRONG WAY sign (R5-1a) DO NOT ENTER sign (R5-1) EXIT sign (E5-1a)	X		
DETOUR sign (M4-9) or (M4-10)			X
All other fixed support signs ³	X		X
All other signs used only during working hours	X		X
All other signs that are used only during daytime hours for short term or mobile operations	X	X ⁵	X
<p>1 Fluorescent Sheeting shall be of a brand that is on the CDOT Approved Products List.</p> <p>2 Drum Sheeting shall be manufactured for flexible devices.</p> <p>3 Fixed support signs are defined as all signs that must remain in use outside of working hours. They shall be mounted in accordance with Standard Plan S-630-1.</p> <p>4 RS 24 only.</p> <p>5 White only.</p>			

January 31, 2013

**REVISION OF SECTION 630
SIGNS AND BARRICADES**

Section 630 of the Standard Specifications is hereby revised for this project as follows:

In subsection 630.02, delete the second paragraph, and replace with the following:

Temporary sign support assembly shall be timber, perforated square metal tubing inserted into a larger base post or slip base or perforated metal U-channel with a slip base. The temporary sign support assembly shall conform to NCHRP and AASHTO requirements regarding temporary sign supports during construction.

Subsection 630.02 shall include the following:

If a timber post is selected, it shall conform to the requirements of subsection 614.02.

**REVISION OF SECTION 703
AGGREGATE FOR BASES (WITHOUT RAP)**

Section 703 of the Standard Specifications is hereby revised for this project as follows:

In subsection 703.03, delete the first paragraph and replace with the following:

703.03 Aggregate for Bases. Aggregates for bases except Aggregate Base Course (RAP) shall be crushed stone, crushed slag, crushed gravel, natural gravel, or crushed reclaimed concrete. Aggregate Base Course (RAP) shall be 100 percent crushed recycled asphalt pavement material. All materials except Aggregate Base Course (RAP) shall conform to the quality requirements of AASHTO M 147 except that the requirements for the ratio of minus 75 μm (No. 200) sieve fraction to the minus 425 μm (No. 40) sieve fraction, stated in 3.2.2 of AASHTO M 147, shall not apply.

The requirements for the Los Angeles wear test (AASHTO T 96 & ASTM C535) shall not apply to Class 1, 2, and 3. Aggregates for bases shall meet the grading requirements of Table 703-3 for the class specified for the project, unless otherwise specified.

November 1, 2012

**REVISION OF SECTION 703
AGGREGATES FOR HOT MIX ASPHALT**

Section 703 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 703.04 and replace with the following:

703.04 Aggregates for Hot Mix Asphalt. Aggregates for hot mix asphalt (HMA) shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, natural gravel, or crushed slag. Excess of fine material shall be wasted before crushing. A percentage of the aggregate retained on the 4.75 mm (No. 4) sieve for Gradings S, SX and SG— and on the 2.36 mm (No. 8) sieve for Gradings SF and ST—shall have at least two mechanically induced fractured faces when tested in accordance with Colorado Procedure 45. This percentage will be specified in Table 403-1, as revised for the project in Section 403. The angularity of the fine aggregate shall be a minimum of 45.0 percent when determined according to AASHTO T 304. Grading SF mixes, when determined by RME, may not require fine aggregate angularity of 45.0 percent. Aggregate samples representing each aggregate stockpile shall be non-plastic if the percent of aggregate passing the 2.36 mm (No. 8) sieve is greater than or equal to 10 percent by weight of the individual aggregate sample. Plasticity will be determined in accordance with AASHTO T 90. The material shall not contain clay balls, vegetable matter, or other deleterious substances.

The aggregate for Gradings ST, S, SX and SG shall have a percentage of wear of 45 or less when tested in accordance with AASHTO T 96.

**Table 703-4
MASTER RANGE TABLE FOR HOT MIX ASPHALT**

Sieve Size	Percent by Weight Passing Square Mesh Sieves				
	Grading SF**	Grading ST	Grading SX	Grading S	Grading SG
37.5 mm					100
25.0 mm (1")				100	90 – 100
19.0 mm (¾")			100	90 – 100	
12.5 mm (½")		100	90 – 100	*	*
9.5 mm (⅜")	100	90 – 100	*	*	*
4.75 mm (#4)	90 – 100	*	*	*	*
2.36 mm (#8)	*	28 – 58	28 – 58	23 – 49	19 – 45
1.18 mm (#16)	30 – 54				
600 µm (#30)	*	*	*	*	*
300 µm (#50)					
150 µm (#100)					
75 µm (#200)	2 – 12	2 – 10	2 – 10	2 – 8	1 – 7

* These additional Form 43 Specification Screens will initially be established using values from the As Used Gradation shown on the Design Mix.
 **SF applications are limited and the CDOT Pavement Design Manual should be referenced, prior to use.

Aggregates for stone matrix asphalt (SMA) shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, or crushed slag. A minimum of 90 percent of the particles retained on the 4.75 mm (No. 4) sieve shall have at least two mechanically induced fractured faces when tested in accordance with Colorado Procedure 45. The particles passing the 4.75 mm (No. 4) sieve shall be the product of crushing rock larger than 12.5 mm (½ inch) and shall be non-plastic when tested in accordance with AASHTO T 90.

Additionally, each source of aggregate for SMA shall meet the following requirements:

- (1) No more than 30 percent when tested in accordance with AASHTO T 96 Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- (2) No more than 12 percent when tested in accordance with AASHTO T 104 Soundness of Aggregate by Use of Sodium Sulfate.

The aggregate for Hot Mix Asphalt (HMA) shall meet the requirements of Table 703-4A when tested in accordance with CP-L 4211 Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus. The Contractor shall be assessed a price reduction of \$1000 for each production sample of the combined aggregate with a value greater than 20 according to CP-L 4211.

**Table 703-4A
AGGREGATE DEGRADATION BY ABRASION
IN THE MICRO-DEVAL CP-L 4211**

	Not to exceed
Combined Aggregate (Mix Design)	18
Combined Aggregate (1/10,000 tons, or fraction thereof during production)	20

**REVISION OF SECTION 703
CONCRETE AGGREGATES**

Section 703 of the Standard Specifications is hereby revised for this project as follows:

Delete the second paragraph of subsection 703.00 and Table 703-1.

Delete subsections 703.01 and 703.02 and replace with the following:

703.01 Fine Aggregate for Concrete. Fine aggregate for concrete shall conform to the requirements of AASHTO M 6, Class A. The minimum sand equivalent, as tested in accordance with Colorado Procedure 37 shall be 80 unless otherwise specified. The fineness modulus, as determined by AASHTO T 27, shall not be less than 2.50 or greater than 3.50 unless otherwise approved.

703.02 Coarse Aggregate for Concrete. Coarse aggregate for concrete shall conform to the requirements of AASHTO M 80, Class A aggregates, except that the percentage of wear shall not exceed 45 when tested in accordance with AASHTO T 96.

February 3, 2011

**REVISION OF SECTION 712
WATER FOR MIXING OR CURING CONCRETE**

Section 712 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 712.01 and replace it with the following:

712.01 Water. Water used in mixing or curing concrete shall be reasonably clean and free of oil, salt, acid, alkali, sugar, vegetation, or other substance injurious to the finished product. Concrete mixing water shall meet the requirements of ASTM C1602. The Contractor shall perform and submit tests to the Engineer at the frequencies listed in ASTM C1602. Potable water may be used without testing. Where the source of water is relatively shallow, the intake shall be so enclosed as to exclude silt, mud, grass, and other foreign materials.

November 6, 2014

**REVISION OF SECTION 713
SIGN PANEL BACKGROUNDS**

Section 713 of the Standard Specifications is hereby revised for this project as follows:

In subsection 713.04, delete the third paragraph and replace with the following:

The aluminum sign blanks shall receive a chemical treatment conforming to ASTM B 449, Class 2 or ASTM B921 prior to placement of reflective sheeting.

February 3, 2011

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

A. AFFIRMATIVE ACTION REQUIREMENTS

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area are as follows:

Goals and Timetable for Minority Utilization

Timetable - Until Further Notice			
Economic Area	Standard Metropolitan Statistical Area (SMSA)	Counties Involved	Goal
157 (Denver)	2080 Denver-Boulder	Adams, Arapahoe, Boulder, Denver, Douglas, Gilpin, Jefferson.....	13.8%
	2670 Fort Collins	Larimer.....	6.9%
	3060 Greeley	Weld.....	13.1%
	Non SMSA Counties	Cheyenne, Clear Creek, Elbert, Grand, Kit Carson, Logan, Morgan, Park, Phillips, Sedgwick, Summit, Washington & Yuma.....	12.8%
158 (Colo. Spgs. - Pueblo)	1720 Colorado Springs	El Paso, Teller.....	10.9%
	6560 Pueblo	Pueblo.....	27.5%
	Non SMSA Counties	Alamosa, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Lake, Las Animas, Lincoln, Mineral, Otero, Prowers, Rio Grande, Saguache.....	19.0%
159 (Grand Junction)	Non SMSA	Archuleta, Delta, Dolores, Eagle, Garfield, Gunnison, Hinsdale, La Plata, Mesa, Moffat, Montezuma, Montrose, Ouray, Pitkin, Rio Blanco, Routt, San Juan, San Miguel	10.2%
156 (Cheyenne - Casper WY)	Non SMSA	Jackson County, Colorado.....	7.5%
GOALS AND TIMETABLES FOR FEMALE UTILIZATION			
Until Further Notice.....			6.9% -- Statewide

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Par 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
4. As used in this specification, and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the Invitation for Bids and on the plans. In cases where the work is in two or more counties covered by differing percentage goals, the highest percentage will govern.

B. STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these Specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - d. "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractor toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any office of Federal Contract Compliance Programs Office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and maintain a record of the organization's responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source of community organization and of what action was taken with respect to each individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
 - f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees at least once a year, and by posting the Contractor's EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - g. Review, at least annually, the Contractor's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
 - j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc. such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and Contractor's activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligation.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goal and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing

regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

- 13 The Contractor in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form, however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

C. SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES.

1. General.

- a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract. Provisions (Form FHWA 1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract provisions.
- b. The Contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.
- c. The Contractor and all his/her subcontractors holding subcontracts not including material suppliers, of \$10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The Contractor will include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. *Equal Employment Opportunity Policy.* The Contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program;

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, or national origin. 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.

3. *Equal Employment Opportunity Officer.* The Contractor will designate and make known to the State highway agency contracting officers and equal employment opportunity officer (herein after referred to as the EEO

Officer) who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. *Dissemination of Policy.*

- a. 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 equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity 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:
 - (1) 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 equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
 - (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official, covering all major aspects of the Contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the Contractor.
 - (3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the Contractor's procedures for locating and hiring minority group employees.
- b. In order to make the Contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:
 - (1) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - (2) The Contractor's equal employment opportunity 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.

5. *Recruitment.*

- a. When advertising for employees, the Contractor will include in all advertisements for employees the notation; "An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
- b. 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 minority group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the Contractor will, through his EEO Officer, identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the Contractor for employment consideration.

In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where implementation of such agreements has the effect of discriminating against minorities or women, or obligates the Contractor to do the same, such implementation violates Executive Order 11246, as amended.)

- c. The Contractor will encourage his present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.
6. *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, or national origin. 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.
 - d. The Contractor will promptly investigate all complaints of alleged discrimination made to the Contractor in connection with his 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 his avenues of appeal.
7. *Training and Promotion.*
- a. The Contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
 - 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. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.
 - 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 minority group and women employees and will encourage eligible employees to apply for such training and promotion.
8. *Unions.* If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women with the unions, and to effect referrals by such unions of minority and female employees. 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 best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
 - b. The Contractor will use best efforts to incorporate an equal employment opportunity 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, or national origin.
 - 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 State highway department 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 minority and women 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 or national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) 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 State highway agency.

9. *Subcontracting.*

- a. The Contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from State highway agency personnel.
- b. The Contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. *Records and Reports.*

- a. The Contractor will keep such records as are necessary to determine compliance with the Contractor's equal employment opportunity obligations. The records kept by the Contractor will be designed to indicate:
 - (1) The number of minority and nonminority group members and women employed in each work classification on the project.
 - (2) The Progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to contractors who rely in whole or in part on unions as a source of their work force).
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and
 - (4) The progress and efforts being made in securing the services of minority group subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the State highway agency and the Federal Highway Administration.
- c. The Contractors will submit an annual report to the State highway 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 PR 1391.

December 26, 2013

DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS

1. Overview

The Disadvantaged Business Enterprise (DBE) Program is a federally-mandated program that seeks to ensure non-discrimination in the award of U.S. Department of Transportation (DOT)-assisted contracts and to create a level playing field on which DBEs can compete fairly for DOT-assisted contracts. To such end, CDOT sets a contract goal for DBE participation for each DOT-assisted Contract.

In order to be awarded the Contract, the bidder shall show that it has committed to DBE participation sufficient to meet the goal or has otherwise made good faith efforts to do so. CDOT will amend the goal prior to award if the lowest apparent bidder demonstrates that good faith efforts were made but sufficient commitments to meet the goal could not be obtained.

CDOT will monitor the progress of the Contractor throughout the project to ensure that the Contractor's DBE commitments are being fulfilled. Modifications to the commitments must be approved by CDOT. CDOT may withhold payment or seek other contractual remedies if the Contractor is not complying with the requirements of this special provision. Upon completion of the Contract, CDOT may reduce the final payment to the Contractor if the Contractor has failed to fulfill the commitments or made good faith efforts to meet the contract goal.

For general assistance regarding the DBE program and compliance, contact CDOT's Civil Rights and Business Resource Center (CRBRC) at (303)757-9234. For project specific issues, contact the Engineer.

All forms referenced herein can be found on the CDOT website in the forms library:
<http://www.coloradodot.info/library/forms/cdot-forms-by-number>

2. Contract Assurance

By submitting a proposal for this Contract, the bidder agrees to the following assurance and shall include it verbatim in all (including non-DBE) subcontracts:

The contractor, subrecipient 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 CDOT deems appropriate.

3. Definitions

Terms not defined herein shall have the meaning provided in the CDOT Standard Specifications for Road and Bridge Construction.

- A. *Commitment*. A commitment is a portion of the Contract, identified by dollar amount and work area, designated by the bidder or Contractor for participation by a particular DBE. Commitments are submitted to CDOT via Form 1414, Anticipated DBE Participation Plan, or via Form 1420, DBE Plan Modification Request. Once approved, commitments are obligations of the Contract that are enforceable by CDOT.
- B. *Commercially Useful Function (CUF)*. Responsibility for the execution of the work and carrying out such responsibilities by actually performing, managing and supervising the work as further described in Section 8 below.
- C. *Contract Goal*. The percentage of the contract designated by CDOT for DBE participation. The contract goal for this contract is provided in the Project Special Provision Disadvantaged Business Enterprise Contract Goal.
 - (1) The bidder/Contractor shall make good faith efforts to fulfill the contract goal with eligible DBE participation. For determining whether the contract goal was met prior to award, the contract goal shall be based upon the proposal amount excluding force account items. For determining whether the contract goal was met during and upon completion of the project, the contract goal shall be based upon the total earnings amount.
 - (2) If the lowest apparent bidder demonstrates that it was unable to meet the contract goal but made good faith efforts to do so, the contract goal will be amended and the revised contract goal will be provided on Form 1417, Approved DBE Participation Plan.
- D. *Disadvantaged Business Enterprise (DBE)*. A Colorado-certified Disadvantaged Business Enterprise listed on the Colorado Unified Certification Program (UCP) DBE Directory at www.coloradodbe.org.

- E. *DBE Program Manual.* The manual maintained by the CRBRC which details CDOT's policies and procedures for administering the DBE program. A copy of the DBE Program Manual is available on the CRBRC webpage.
- F. *Eligible Participation.* Work by a DBE that counts toward fulfillment of the contract goal as described in Section 4 below.
- G. *Good Faith Efforts.* All necessary and reasonable steps to achieve the contract goal which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if not fully successful. Good faith efforts are evaluated prior to award and throughout performance of the Contract. For guidance on good faith efforts, see 49 CFR Part 26, Appendix A.
- H. *Joint Check.* A check issued by the Contractor or one of its subcontractors to a DBE firm and a material supplier or other third party for materials or services to be incorporated into the work.
- I. *Reduction.* A reduction occurs when the Contractor reduces a commitment to a DBE. A reduction constitutes a partial termination.
- J. *Subcontractor.* An individual, firm, corporation or other legal entity to whom the Contractor sublets part of the Contract. For purposes of this special provision, the term subcontractor includes suppliers.
- K. *Substitution.* Substitution occurs when a Contractor seeks to find another DBE to perform work on the contract as a result of a reduction or termination.
- L. *Termination.* A termination occurs when a Contractor no longer intends to use a DBE for fulfillment of a commitment.
- M. *Total Earnings Amount:* Amount of the Contract earned by the Contractor, including approved changes and approved force account work performed, but not including any deductions for liquidated damages, price reduced material, work time violations, overweight loads or liens. The amount of the Contract earned does not include plan force account items (i.e. OJT, pavement incentives, etc).
- N. *Work Code.* A code to identify the work that a DBE is certified to perform. A work code includes a six digit North American Industry Classifications System code plus a descriptor. Work codes are listed on a firm's profile on the UCP DBE Directory. The Contractor may contact the CRBRC to receive guidance on whether a work code covers the work to be performed.

4. Eligible Participation

The following rules will be used to determine whether work performed by a DBE qualifies as eligible participation on the Contract:

- A. *Work Must be Identified in Commitment.* The work performed by the DBE must be reasonably construed to be included in the work area and work code identified by the Contractor in the approved commitment.
 - (1) If the Contractor intends to use a DBE for work that was not listed in the commitment, the Contractor shall submit Form 1420, DBE Participation Plan Modification for approval of the modification. Unapproved work will not count toward the contract goal.
 - (2) A DBE commitment cannot be modified to include work for which the DBE was not certified at the time of the approval of the original commitment.
- B. *DBE Must be Certified to Perform the Work.* The DBE must be certified to perform the work upon submission of the commitment and upon execution of the DBE's subcontract.
 - (1) When a commitment has been made, but upon review of Form 205 or 205B, Sublet Permit, CDOT determines that the DBE is no longer certified in the work code which covers the work to be performed, the Contractor may not use the DBE's participation toward the contract goal. The Contractor shall terminate the DBE commitment and seek substitute DBE participation in accordance with Section 9 below.

- (2) A DBE's work will continue to count as eligible participation if the DBE was certified upon approval of Form 205 or 205B, Sublet Permit and the certification status changes during the performance of the work.
 - (3) Suppliers must be certified upon execution of the purchase order.
- C. *DBE Performs the Work.* Eligible participation will only include work actually performed by the DBE with its own forces.
- (1) Work performed by the DBE includes the cost of supplies and materials obtained by the DBE for its work on the Contract, including any equipment leased by the DBE, provided that such supplies or equipment are not purchased or leased from the Contractor or a subcontractor that is subletting to the DBE.
 - (2) If CDOT determines that a DBE has not performed a CUF on the project, no participation by such DBE shall count toward the contract goal.
- D. *DBE Subcontracts to Another Firm.* When a DBE subcontracts part of the work, the value of the subcontracted work may only be counted toward the goal if the subcontractor is a DBE. Performance by non-DBE subcontractors, including non-DBE trucking firms and owner-operators, shall be deducted from the DBE's participation.
- E. *DBE Received Payment for the Work.* Eligible participation only includes work for which the DBE has received payment, including the release of its retainage.
- F. *Special Calculations for Suppliers.* When a DBE supplies goods on a project, the DBE may be classified as a manufacturer, dealer or broker. The DBE's status as a manufacturer, dealer or broker is determined on a contract-by-contract basis and is based upon the actual work performed.
- (1) When a DBE is deemed to be acting as a manufacturer, one hundred percent of the commitment will count as eligible participation.
 - (2) When a DBE is deemed to be acting as a regular dealer (i.e. non-manufacturer supplier), only sixty percent of the commitment will count as eligible participation.
 - (3) When a DBE is deemed to be acting as a broker, only the reasonable brokerage fee will count as eligible participation.
- G. *Reasonable Fee for Contract-Specific Services.* Services shall count toward the contract goal only if they are specifically required for the performance of the Contract. Non-contract specific expenses may not be counted toward the contract goal. Fees for services must be reasonable. Services include but are not limited to professional services, public involvement, etc. In the case of temporary employment placement agencies, only the placement fee for an individual to be specifically and exclusively used for work on the contract shall count as eligible participation.
- H. *Pre-Approval for Joint Venture Participation.* When a DBE is a participant in a joint venture, the DBE must apply to CDOT to determine how much of the work performed by the joint venture will count toward the contract goal. The DBE shall complete Form 893, Information for Determining DBE Participation when a Joint Venture Includes a DBE. Form 893 shall be submitted to CDOT no less than ten days before the submission of the Proposal to ensure sufficient time for review.

5. Proposal Requirements

In order to be eligible for award, the following shall be submitted with the proposal, or, for electronic bidders, via email to cdot_hq_dbefirms@state.co.us by the proposal submission deadline. In order to avoid an error within the electronic bidding system, electronic bidders shall also enter the total percentage of anticipated eligible DBE participation into the Form 714 and electronically sign the form.

- A. *Form 1413, Bidders List.* The bidder shall list each subcontractor (including both DBE and non-DBE subcontractors) that submitted a quote for participation on the project. Failure to submit a signed Form 1413 will result in rejection of the proposal.

- B. *Form 1414, Anticipated DBE Participation Plan.* If the Contract Goal is greater than zero, the bidder shall submit Form 1414 to document anticipated DBE participation.
- (1) If the Bidder has not obtained any DBE commitments, it shall still submit Form 1414 documenting zero anticipated participation. If the Contract Goal is greater than zero, failure to submit a signed Form 1414 shall result in rejection of the proposal.
 - (2) The bidder shall list the DBE, work area(s), commitment amount and estimated eligible participation for each commitment. Once Form 1414 is submitted, a commitment may only be terminated or reduced in accordance with Section 9 below. The bidder is responsible for ensuring that commitments, and the estimated eligible participation resulting therefrom, have been properly calculated prior to submitting its proposal.
 - (3) If the bidder is a DBE, the bidder must include itself in Form 1414 and list the work area(s) and amount that it intends to self-perform and count as eligible participation on the contract.
 - (4) Commitments may be made to second tier or lower DBE subcontractors; however, the Contractor is ultimately responsible for the fulfillment of the commitment and shall sign the Form 1415, Commitment Confirmation.

6. Additional Forms Due Prior to Award.

If the contract goal is greater than zero, or if the bidder has voluntarily made commitments, the Bidder shall submit the following forms within five calendar days of selection as the lowest apparent bidder:

- A. *Form 1415, Commitment Confirmation.* A Form 1415, Commitment Confirmation shall be obtained from each DBE listed on Form 1414. The bidder shall complete Section 1 and the DBE shall complete Section 2 of Form 1415. Form 1415s shall be consistent with the commitments listed on Form 1414. The bidder shall not modify commitments listed on Form 1414 without good cause and approval from CDOT. The bidder shall contact CDOT if any issues arise which may require the bidder to alter or terminate a commitment.
- B. *Form 1416, Good Faith Effort Report.* If the total eligible participation listed on Form 1414 does not meet the contract goal, the lowest apparent bidder shall also submit Form 1416, Good Faith Effort Report and any supporting documentation that the bidder would like considered by CDOT as evidence of good faith efforts.

7. Commitment and Good Faith Effort Review

- A. *Commitment Review.* CDOT will evaluate the Form 1414 and each Form 1415 to ensure that the commitment is valid and has been properly calculated. CDOT may investigate or request additional information in order to confirm the accuracy of a commitment. If CDOT determines that the total estimated eligible participation of the commitments does not meet the contract goal, within two business days of notice from CDOT or within the original five calendar day deadline, whichever is later, the bidder shall submit Form 1416 to CDOT.
- B. *Good Faith Effort Review.* If the total eligible participation of Form 1414 and all supporting Form 1415s does not meet the contract goal, CDOT will review Form 1416 and all supporting documentation submitted by the bidder in order to determine whether the bidder has demonstrated good faith efforts to obtain DBE participation. CDOT will use 49 CFR Part 26, Appendix A as a guide for determining whether the bidder made good faith efforts to meet the contract goal. A bidder will be deemed to not have made good faith efforts if the bidder lists a DBE for a work area for which the DBE is not certified and the bidder cannot establish a reasonable basis for its determination. CDOT may consider and approve commitments made after submission of the bid if the Bidder demonstrates that (1) good faith efforts were made prior to submission of the bid and (2) there is a reasonable justification for not obtaining the commitments prior to submission of the bid.
- C. *Administrative Reconsideration.* If CDOT determines that the bidder did not demonstrate good faith efforts to meet the contract goal, it will provide the bidder with written notice of its determination and an opportunity to appeal. The process for reconsideration is set forth in the *Good Faith Effort Appeal Process*, which is an Appendix I to the DBE Program Manual. A copy of the *Good Faith Effort Appeal Process* will be included in the written notice from CDOT.

- D. *Form 1417, Approved DBE Participation Plan.* If CDOT determines that the bidder has met the contract goal or made good faith efforts to do so, CDOT will issue Form 1417, Approved DBE Participation Plan, documenting the approved commitments. If CDOT determines that the bidder did not meet the contract goal but made good faith efforts to do so, via the Form 1417 CDOT will amend the contract goal in accordance with the commitments that were obtained and attach an explanation of its determination.

8. Ongoing Oversight of DBE Participation

- A. *Consistency Review.* CDOT will review Form 205 or 205B, Sublet Permit Application to determine whether the work being sublet is consistent with the DBE commitments. CDOT may withhold approval of the sublet or stop performance of the work if the Contractor has reduced, terminated, or otherwise modified the type or amount of work to be performed by a DBE without seeking prior approval.
- B. *Form 1419, DBE Participation Report.* The Contractor shall submit Form 1419, DBE Participation Report to the Engineer on a quarterly basis (January 15, April 15, July 15, and October 15) and upon completion of the Contract. CDOT may withhold progress payments if the quarterly Form 1419 is not received on time. CDOT will not provide final payment on the Contract in accordance with subsection 109.09 of CDOT's *Standard Specifications for Road and Bridge Construction* until the final Form 1419 has been reviewed and approved.
- C. *Joint Checks.* All joint checks must be approved by CDOT before they are used in payment to a DBE. Joint checks used in payments to DBEs will be monitored closely to ensure (1) the DBE is performing a CUF and (2) the joint checks are not being used in a discriminatory manner. The Contractor shall request approval for the use of a joint check in a written letter signed by the DBE and the Contractor, stating the reason for the joint checks and the approximate number of checks that will be needed.
- D. *Commercially Useful Function.* CDOT will monitor performance during the Contract to ensure each DBE is performing a CUF. If CDOT determines that a DBE is not performing a CUF, no work performed by such DBE shall count as eligible participation. The DBE, Contractor, and any other involved third parties may also be subject to additional enforcement actions.
- (1) When determining whether a DBE is performing a CUF, CDOT will consider the amount of work subcontracted, industry practices, the amount the firm is to be paid compared to the work performed and eligible participation claimed, and any other relevant factors.
 - (2) With respect to material and supplies used on the Contract, in order to perform a CUF the DBE must be responsible for negotiating price, determining quality and quantity, ordering the material, installing the material, if applicable, and paying for the material itself.
 - (3) With respect to trucking, in order to perform a CUF, the DBE trucking firm must own and operate at least one fully licensed, insured and operational truck used on the Contract. Additionally, the DBE trucking firm must be responsible for the management and supervision of the entire trucking operation for which it is responsible on the Contract.
 - (4) A DBE does not perform a CUF when its role is limited to that of an extra participant in a transaction, contract or project through which funds are passed in order to obtain the appearance of DBE participation. CDOT will evaluate similar transactions involving non-DBEs in order to determine whether a DBE is an extra participant.
 - (5) If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work than would be expected on the basis of normal industry practice for the type of work involved, CDOT will presume that the DBE is not performing a CUF. The DBE may present evidence to rebut this presumption.
 - (6) If the Contractor disagrees with CDOT's determination regarding CUF, in accordance with 49 CFR 26.55 the Contractor may seek review of the determination by the applicable USDOT operating administration, however, CUF determination is not subject to administrative appeal.

9. DBE Participation Plan Modifications

- A. *Form 1420, DBE Participation Plan Modification Request.* During the performance of the Contract, the Contractor shall use Form 1420, DBE Participation Plan Modification Request to communicate all

requests for *termination*, reduction, substitution, and waivers to CDOT. One Form 1420 may include multiple requests and must be submitted at the time of the occurrence or, if that is not possible, within a reasonable time of the occurrence requiring termination, reduction, substitution or waiver.

B. *Commitment Terminations and Reductions*. No commitment shall be terminated or reduced without CDOT's approval. Terminations and reductions include, but are not limited to, instances in which a Contractor seeks to *perform* work originally designated for a DBE subcontractor with its own forces, those of an affiliate, a non-DBE firm or with another DBE firm. In order to receive approval, the Contractor shall:

(1) Have good cause for termination or reduction. Good cause may include:

- (i) the DBE fails or refuses to execute a written contract;
- (ii) the DBE fails or refuses to perform the work of its subcontract consistent with normal industry standards, provided that such failure is not the result of bad faith or discriminatory actions of the Contractor or one of its subcontractors;
- (iii) the DBE fails to meet reasonable, nondiscriminatory bond requirements;
- (iv) the DBE becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (v) the DBE is ineligible to work because of suspension or debarment proceedings or other state law;
- (vi) the DBE is not a responsible contractor;
- (vii) the DBE voluntarily withdraws from the project and provides written notice to CDOT,
- (viii) the DBE is ineligible to receive DBE credit for the work required;
- (ix) the DBE owner dies or becomes disabled and is unable to complete the work;
- (x) the DBE ceases business operations or otherwise dissolves;
- (xi) or other documented good cause that compels termination. Good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

(2) Provide the DBE notice of the Contractor's intent to terminate or reduce the commitment and the reason for such termination or reduction, with a copy to CDOT;

(3) In the notice of intent, provide the DBE at least five calendar days to respond to the notice and inform CDOT and the Contractor of the reasons, if any, why it objects to the proposed termination or reduction and any reasons that it shall not be approved. The Contractor is not required to provide the five calendar days written notice in cases where the DBE in question has provided written notice that it is withdrawing from the subcontract or purchase order. The notice period may be reduced by CDOT if required by public necessity.

(4) Following the notice period, if the Contractor decides to proceed, submit Form 1420 requesting approval of the termination or reduction.

(5) When a commitment is terminated or reduced (including when a DBE withdraws), make good faith efforts to find another DBE to substitute. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the participation that was terminated or reduced up to the contract goal.

C. *Contract Changes*. In the event of a contract change:

(1) If CDOT eliminates or reduces work committed to a DBE, such change shall be considered good cause for termination or reduction in accordance with Section 9.B above. The Contractor shall follow

the processes outlined in Section 9.B but is not required to substitute. If the change reduces the Contractor's DBE participation to below the contract goal, the Contractor shall indicate so on a Form 1420 and request a waiver of the unmet participation.

- (2) If CDOT issues a change which increases or adds new work items, the Contractor shall ensure that it has obtained sufficient DBE participation to meet the Contract Goal, or has made good faith efforts to do so.

D. *Process for Substitution or Increase in Participation to Meet the Contract Goal.* When the Contractor must obtain additional DBE participation to meet the Contract Goal, whether resulting from an approved termination or reduction or a change to the Contract, the Contractor shall:

- (1) Increase the participation of a DBE for any work items previously identified in an approved commitment without seeking CDOT approval; provided, however, that at its discretion, CDOT may request a Form 1420 documenting such additional participation; or
- (2) If the Contractor needs to add new work to a commitment or obtain additional participation from a DBE that is not already participating on the contract pursuant to an approved commitment, submit a Form 1420 and Form 1415 requesting approval of the additional participation; or
- (3) If the Contractor determines that additional DBE participation cannot be obtained, submit a Form 1420 requesting waiver of the participation. The Contractor shall include its justification for not obtaining additional participation and, at its discretion, CDOT may require additional information regarding the efforts of the Contractor.

10. Payment Reduction

The Contractor's retainage will not be released until CDOT has determined whether the Contractor will be subject to a payment reduction. Payment reductions will be calculated as follows:

- A. *Failure to Fulfill Commitments.* If the Contractor terminated or reduced a commitment, the Contractor will be subject to a payment reduction for any termination or reduction which was not approved via a Form 1420.
- B. *Failure to Meet Contract Goal.* If the Contractor failed to meet the contract goal, the Contractor will be subject to a payment reduction for the portion of the contract goal that was not met and was not waived via an approved Form 1420.
- C. *Duplication.* The contractor will not be subject to duplicate reduction for the same offense.
- D. *Adjustments.* CDOT may adjust the payment reduction wherein the Contractor demonstrates that its failure to obtain DBE participation was due to circumstances outside of its control.

11. Other Enforcement

- A. *Investigations.* As it determines necessary, CDOT may conduct reviews or investigations of participants. All participants, including, but not limited to, DBE firms and applicants for DBE certification, complainants, and contractors using DBE firms to meet contract goals, are required to cooperate fully and promptly with compliance reviews, certification reviews, investigations, and other requests for information.
- B. *Intimidation and retaliation.* Participants shall not intimidate, threaten, coerce, or discriminate against any individual or firm for the purpose of interfering with any right or privilege secured by the DBE program or because the individual or firm has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under the DBE program.
- C. *Consequences of Non-Compliance.* Failure to comply with subsections 11 A. or 11 B. shall be a ground for appropriate action against the party involved (e.g., with respect to recipients, a finding of noncompliance; with respect to DBE firms, denial of certification or removal of eligibility and/or suspension and debarment; with respect to a complainant or appellant, dismissal of the complaint or appeal; with respect to a contractor which uses DBE firms to meet goals, findings of non-responsibility for future contracts and/or suspension and debarment).

D. *Fraud and Misrepresentation.* If CDOT determines that a Contractor or subcontractor was a knowing and willing participant in any intended or actual subcontracting arrangement contrived to artificially inflate DBE participation or any other business arrangement determined by CDOT to be unallowable, or if the Contractor engages in repeated violations, falsification or misrepresentation, CDOT may:

- (1) refuse to count any fraudulent or misrepresented DBE participation;
- (2) withhold progress payments to the Contractor commensurate with the violation;
- (3) suspend or reduce the Contractor's prequalification status;
- (4) refer the matter to the Office of Inspector General of the US Department of Transportation for investigation; or
- (5) seek any other available contractual remedy.

January 2, 2015

**U.S. DEPT. OF LABOR DAVIS BACON MINIMUM WAGES, COLORADO
HIGHWAY CONSTRUCTION, GENERAL DECISION NUMBER - CO150016**

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of \$10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Decision Nos. CO150016 dated January 02, 2015 supersedes Decision Nos. CO140016 dated January 03, 2014.		<u>Modifications</u>			<u>ID</u>
		<u>MOD Number</u>	<u>Date</u>	<u>Page Number(s)</u>	
When work within a project is located in two or more counties and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.					
General Decision No. CO150016 applies to the following counties: Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, and Park counties.					
General Decision No. CO150016 The wage and fringe benefits listed below reflect collectively bargained rates.					
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod	
	ELECTRICIAN (Traffic Signalization Only):				
1000	Clear Creek	26.42	4.75% + 8.68		
	POWER EQUIPMENT OPERATOR:				
	Drill Rig Caisson				
1001	Smaller than Watson 2500 and similar	24.73	9.15		
1002	Watson 2500 similar or larger	25.04	9.15		
	Crane (50 tons and under)				
1003	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	24.88	9.15		
	Crane (51 - 90 tons)				
1004	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	25.04	9.15		

	Crane (91 - 140 tons)			
1005	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	25.19	9.15	
1006	Scraper			
1007	Single bowl under 40 cubic yards	24.88	9.15	
1008	40 cubic yards and over	25.04	9.15	
	CARPENTER:			
	Excludes Form Work			
1009	Adams	16.61	3.88	
1010	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, Park	19.27	5.08	
	Form Work Only			
1011	Adams	16.78	3.57	
1012	Broomfield, Clear Creek, Elbert, Gilpin	19.11	5.46	
1013	Jefferson	16.88	3.81	
1014	Park	17.28	5.38	
	CEMENT MASON/CONCRETE FINISHER:			
1015	Adams	16.05	3.00	
1016	Arapahoe	18.70	3.85	
1017	Broomfield, Clear Creek, Elbert, Gilpin	18.37	3.00	
1018	Jefferson	18.02	3.42	
1019	Park	17.09	2.85	
	ELECTRICIAN:			
	Excludes Traffic Signal Installation			
1020	Adams	31.00	14.01	
1021	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, Park	35.13	6.83	
	Traffic Signalization Electrician			
1022	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	27.25	7.10	
1023	Jefferson	26.78	5.44	
	Traffic Signalization Groundsman			
1024	Adams	13.96	2.80	
1025	Arapahoe, Broomfield, Elbert, Gilpin, Park	15.24	3.81	
1026	Clear Creek	15.70	2.14	
1027	Jefferson	15.19	4.72	
1028	FENCE ERECTOR	13.02	3.20	

1029	FORM WORKER – Arapahoe	15.30	3.90	
	GUARDRAIL INSTALLER:			
1030	Adams	12.89	3.45	
1031	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, Park	12.89	3.20	
	HIGHWAY/PARKING LOT STRIPING:			
	Painter			
1032	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	12.62	3.21	
1033	Jefferson	14.21	3.21	
	IRONWORKER:			
	Reinforcing			
1034	Adams	22.14	0.77	
1035	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson	16.69	5.45	
1036	Park	19.98	2.89	
1037	Structural	18.22	6.01	
	LABORER:			
	Asphalt Raker			
1038	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson	16.29	4.25	
1039	Park	17.41	1.86	
1040	Asphalt Shoveler	21.21	4.25	
1041	Asphalt Spreader	18.58	4.65	
	Common or General			
1042	Adams	16.29	4.25	
1043	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	16.67	4.27	
1044	Jefferson	16.51	4.27	
1045	Park	15.64	2.46	
	Concrete Saw (Hand Held)			
1046	Adams	16.29	5.20	
1047	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, Park	16.29	6.14	
	Landscape and Irrigation			
1048	Adams, Arapahoe, Broomfield, Elbert, Gilpin, Jefferson, Park	12.26	3.16	
1049	Clear Creek	14.98	3.16	

	Mason Tender - Cement/Concrete			
1050	Adams	17.71	2.83	
1051	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	16.96	4.04	
1052	Jefferson	16.29	4.25	
1053	Park	15.08	3.10	
1054	Pipelayer	13.55	2.41	
	Traffic Control (Flagger)			
1055	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	9.55	3.05	
1056	Jefferson	9.73	3.05	
1057	Park	9.42	3.21	
	Traffic Control (Sets Up/Moves Barrels, Cones, Install Signs, Arrow Boards and Place Stationary Flags)			
1058	Adams, Arapahoe, Broomfield, Elbert, Gilpin, Jefferson	12.43	3.22	
1059	Clear Creek	13.14	3.20	
1060	Park	12.76	3.20	
1061	PAINTER (Spray Only)	16.99	2.87	
	POWER EQUIPMENT OPERATOR:			
	Asphalt Laydown			
1062	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson	22.67	8.75	
1063	Park	22.67	8.72	
1064	Asphalt Paver	24.97	6.13	
	Asphalt Roller			
1065	Adams	24.20	7.70	
1066	Arapahoe	22.68	8.72	
1067	Broomfield, Clear Creek, Elbert, Gilpin	23.41	7.67	
1068	Jefferson	22.84	7.69	
1069	Park	22.84	8.72	
	Asphalt Spreader			
1070	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	22.67	8.67	
1071	Jefferson	23.34	8.06	

1072	Backhoe/Trackhoe			
1073	Adams	20.31	4.24	
1074	Arapahoe	24.59	6.24	
1075	Broomfield, Clear Creek, Elbert, Gilpin	22.19	6.48	
1076	Jefferson	21.99	5.60	
1077	Park	20.81	6.58	
	Bobcat/Skid Loader			
1078	Adams, Broomfield, Clear Creek, Elbert, Gilpin	15.37	4.28	
1079	Arapahoe	18.23	4.28	
1080	Jefferson	16.85	4.28	
1081	Park	22.46	0.00	
1082	Boom	22.67	8.72	
	Broom/Sweeper			
1083	Adams, Broomfield, Clear Creek, Elbert, Gilpin, Park	22.70	8.07	
1084	Arapahoe	22.67	8.73	
1085	Jefferson	22.18	8.36	
	Bulldozer			
1086	Adams	25.20	6.72	
1087	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, Park	26.90	5.59	
1088	Concrete Pump	21.60	5.21	
	Crane			
1089	Adams, Park	22.82	8.72	
1090	Jefferson	23.55	6.68	
	Drill			
1091	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	20.48	4.71	
1092	Jefferson	20.65	5.74	
1093	Forklift	15.91	4.68	
	Grader/Blade			
1094	Adams	23.94	8.23	
1095	Arapahoe	22.67	8.72	
1096	Broomfield, Clear Creek, Elbert, Gilpin, Park	23.90	7.93	
1097	Jefferson	23.28	7.73	
1098	Guardrail/Post Driver	16.07	4.41	

	Loader (Front End)			
1099	Adams	23.09	8.72	
1100	Arapahoe	26.80	4.84	
1101	Broomfield, Clear Creek, Elbert, Gilpin	23.20	8.33	
1102	Jefferson	23.06	7.76	
1103	Park	22.67	8.72	
	Mechanic			
1104	Adams	22.82	8.72	
1105	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	24.04	7.35	
1106	Jefferson	23.56	8.72	
	Oiler			
1107	Adams, Jefferson	21.97	8.72	
1108	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	23.73	8.41	
	Roller/Compactor (Dirt and Grade Compaction)			
1109	Adams	16.70	3.30	
1110	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson	20.30	5.51	
1111	Park	16.52	3.13	
1112	Rotomill	16.22	4.41	
	Screed			
1113	Adams	27.89	3.50	
1114	Arapahoe	22.67	8.72	
1115	Broomfield, Clear Creek, Elbert, Gilpin	24.67	6.02	
1116	Jefferson	22.64	8.43	
1117	Park	20.36	3.04	
1118	Tractor	13.13	2.95	
	TRUCK DRIVER:			
	Distributor			
1119	Adams	15.80	5.27	
1120	Arapahoe	19.62	5.27	
1121	Broomfield, Clear Creek, Elbert, Gilpin, Park	18.19	5.27	
1122	Jefferson	19.46	6.04	

	Dump Truck			
1123	Adams	16.68	5.27	
1124	Arapahoe	18.94	5.27	
1125	Broomfield, Clear Creek, Elbert, Gilpin	16.47	5.27	
1126	Jefferson	16.97	4.78	
1127	Park	15.40	3.21	
	Lowboy Truck			
1128	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	17.25	5.27	
1129	Jefferson	19.80	6.42	
1130	Mechanic	26.48	3.50	
	Multi-Purpose Speciality and Hoisting Truck			
1131	Adams, Broomfield, Clear Creek, Elbert, Gilpin, Park	17.49	3.17	
1132	Arapahoe	15.79	2.48	
1133	Jefferson	15.13	3.89	
	Semi/Trailer Truck (Includes Pickup and Pilot Car)			
1134	Adams, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, Park	18.39	4.13	
1135	Arapahoe	16.00	2.60	
	Single Axle (Includes Pickup and Pilot Car)			
1136	Adams, Jefferson	13.93	3.68	
1137	Arapahoe	15.10	3.77	
1138	Broomfield, Clear Creek, Elbert, Gilpin, Park	14.74	3.68	
1139	Truck Mounted Attenuator	12.43	3.22	
	Water Truck			
1140	Adams	17.50	5.19	
1141	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	19.36	4.07	
1142	Jefferson	17.57	5.27	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program.

If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

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

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

Write to:

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

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

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

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

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

END OF GENERAL DECISION NO. CO150016

July 29, 2011

ON THE JOB TRAINING

This training special provision is an implementation of 23 U.S.C. 140 (a). The Contractor shall meet the requirements of the FHWA 1273 for all apprentices and trainees.

As part of the Contractor's Equal Employment Opportunity Affirmative Action Program, training shall be provided on projects as follows:

1. The Contractor shall provide on the job training aimed at developing full journey workers in the skilled craft identified in the approved training plan. The Contractor shall provide at a minimum, required training hours listed in the Project Special Provisions for each project.
2. The primary objective of this specification is to train and upgrade women and minority candidates to full journey worker status. The Contractor shall make every reasonable effort to enroll and train minority and

women workers. This training commitment shall not be used to discriminate against any applicant for training whether or not the applicant is a woman or minority.

3. The Contractor may employ temporary workers from CDOT supportive services providers to meet OJT requirements. Information pertaining to supportive services providers may be obtained by calling the CDOT OJT Coordinator at the number shown on the link <http://www.coloradodot.info/business/equal-opportunity/training.html>
4. An employee shall not be employed or utilized as a trainee in a skilled craft in which the employee has achieved journey status.
5. The minimum length and type of training for each skilled craft shall be as established in the training program selected by the Contractor and approved by the Department and the Colorado Division of the Federal Highway Administration (FHWA), or the U. S Department of Labor (DOL), Office of Apprenticeship or recognized state apprenticeship agency. To obtain assistance or program approval contact:

CDOT Center for Equal Opportunity
4201 East Arkansas Avenue
Denver, CO 80222
eo@dot.state.co.us
1-800-925-3427

6. The Contractor shall pay the training program wage rates and the correct fringe benefits to each approved trainee employed on the project and enrolled in an approved program. The minimum trainee wage shall be no less than the wage for the Guardrail Laborer classification as indicated in the wage decision for the project.
7. The CDOT Regional Civil Rights Manager must approve all proposed apprentices and trainees for the participation to be counted toward the project goal and reimbursement. Approval must occur before training begins. Approval for the apprentice or trainee to begin work on a CDOT project will be based on:
 - A. Evidence of the registration of the trainee or apprentice into the approved training program.
 - B. The completed Form 838 for each trainee or apprentice as submitted to the Engineer.
8. Before training begins, the Contractor shall provide each trainee with a copy of the approved training program, pay scale, pension and retirement benefits, health and disability benefits, promotional opportunities, and company policies and complaint procedures.
9. Before training begins, the Contractor shall submit a copy of the approved training program and CDOT Form 1337 to the Engineer. Progress payments may be withheld until this is submitted and approved and may be withheld if the approved program is not followed.
10. On a monthly basis, the Contractor shall provide to the Engineer a completed On the Job Training Progress Report (Form 832) for each approved trainee or apprentice on the project. The Form 832 will be reviewed and approved by the Engineer before reimbursement will be made. The Contractor will be reimbursed for no more than the OJT Force Account budget. At the discretion of the Engineer and if funds are available, the Engineer may increase the force account budget and the number of reimbursable training hours through a Change Order. The request to increase the force account must be approved by the Engineer prior to the training.
11. Upon completion of training, transfer to another project, termination of the trainee or notification of final acceptance of the project, the Contractor shall submit to the Engineer a "final" completed Form 832 for each approved apprentice or trainee.
12. All forms are available from the CDOT Center for Equal Opportunity, through the CDOT Regional Civil Rights Manager, or on CDOT's website at <http://www.coloradodot.info/business/bidding/Bidding%20Forms/Bid%20Winner%20Forms>
13. Forms 838 and 832 shall be completed in full by the Contractor. Reimbursement for training is based on the number of hours of on the job training documented on the Form 832 and approved by the Engineer.

The Contractor shall explain discrepancies between the hours documented on Form 832 and the corresponding certified payrolls.

14. The OJT goal (# of training hours required) for the project will be included in the Project Special Provisions and will be determined by the Regional Civil Rights Manager after considering:

- A. Availability of minorities, women, and disadvantaged for training;
- B. The potential for effective training;
- C. Duration of the Contract;
- D. Dollar value of the Contract;
- E. Total normal work force that the average bidder could be expected to use;
- F. Geographic location;
- G. Type of work; and
- H. The need for additional journey workers in the area
- I. The general guidelines for minimum total training hours are as follows:

Contract dollar value	Minimum total training hours to be provided on the project
Up to 1 million	0
>1 - 2 million	320
>2 - 4 million	640
>4 - 6 million	1280
>6 - 8 million	1600
>8 - 12 million	1920
>12 - 16 million	2240
>16 - 20 million	2560
For each increment of \$5 million, over \$20 million	1280

15. The number of training hours for the trainees to be employed on the project shall be as shown in the Contract. The trainees or apprentices employed under the Contract shall be registered with the Department using Form 838, and must be approved by the Regional Civil Rights Manager before training begins for the participation to be counted toward the OJT project goal. The goal will be met by an approved trainee or apprentice working on that project; or, if a Contractor's apprentice is enrolled in a DOL approved apprenticeship program and registered with CDOT using Form 838 and working for the Contractor on a non-CDOT project. The hours worked on the non-CDOT project may be counted toward the project goal with approved documentation on Form 832. Training hours will be counted toward one project goal.

16. Subcontractor trainees who are enrolled in an approved Program may be used by the Contractor to satisfy the requirements of this specification.

17. The Contractor will be reimbursed \$2.00 per hour worked for each apprentice or trainee working on a CDOT project and whose participation toward the OJT project goal has been approved.

18. The Contractor shall have fulfilled its responsibilities under this specification if the CDOT Regional Civil Rights Manager has determined that it has provided acceptable number of training hours.

19. Failure to provide the required training will result in the following disincentives: A sum representing the number of training hours specified in the Contract, minus the number of training hours worked as certified on Form 832, multiplied by the journey worker hourly wages plus fringe benefits [(A hours – B hours worked) x (C dollar per hour + D fringe benefits)] = Disincentives Assessed. Wage rate will be determined by averaging the wages for the crafts listed on Form 1337. The Engineer will provide the Contractor with a written notice at Final Acceptance of the project informing the Contractor of the

noncompliance with this specification which will include a calculation of the disincentives to be assessed.

February 3, 2011

PARTNERING PROGRAM

The Colorado Department of Transportation actively encourages partnering and invites the Contractor and his subcontractors and suppliers to participate in a voluntary partnering agreement for this project.

The following information summarizes the partnering process. More information is available through the Resident Engineer listed in the project special provisions.

This partnership will be structured to draw on the strengths of each organization to identify and achieve mutual goals. The objectives are effective and efficient Contract performance with reciprocal cooperation, and completion within budget, on schedule, and in accordance with the Contract.

This partnership will be bilateral in make-up and all costs associated with this partnership will be agreed to by both parties and will be shared equally. The Contractor shall assume full responsibility for all costs associated with partnering during the implementation of the partnering process. CDOT will reimburse the Contractor for the agreed amount.

The CDOT Program Engineer or the Resident Engineer will contact the Contractor within ten days after the award of this project to ask if the Contractor wants to implement this partnership initiative. If the Contractor agrees, the Contractor's on-site project manager shall meet with CDOT's Resident Engineer to plan a partnering development and team building workshop. At this planning session, arrangements shall be made to determine the facilitator and the workshop, attendees, agenda, duration, and location.

The workshop shall be held prior to the commencement of any major work item and preferably before the preconstruction conference. The following persons shall attend the workshop: CDOT's Resident Engineer, Project Engineer, and key project personnel; the Contractor's on-site project manager and key project supervision personnel; and the subcontractors' key project supervision personnel. The following personnel shall also be invited to attend as needed: project design engineer, key local government personnel, suppliers, design consultants, CDOT maintenance foreman, CDOT environmental manager, key railroad personnel, and key utility personnel. The Contractor and CDOT shall also have Regional or District managers and Corporate or State level managers on the partnering team.

Follow-up workshops may be held periodically throughout the duration of the Contract as agreed by the Contractor and the Engineer at the initial workshop. A closeout workshop shall be held to evaluate the effectiveness of the partnership.

The establishment of a partnership charter, which identifies the workshop participants' mutual goals on the project, will not change the legal relationship of the parties to the Contract or relieve either party from any terms of the Contract.

October 31, 2013

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**

- 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

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 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.

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 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.

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.

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
- (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> 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 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 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 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 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 to 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.

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 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.

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.

CDOT PROJECT SPECIAL PROVISIONS

The CDOT Standard Specifications and Standard Special Provisions are modified with the following CDOT Project Special Provisions.

REVISION OF SECTION 106 CONFORMITY TO THE CONTRACT OF HOT MIX ASPHALT

Section 106 of the Standard Special Provisions is hereby revised for this project as follows:

Subsection 106.05 shall include the following:

For this project, Contractor process control testing of hot mix asphalt is mandatory.

REVISION OF SECTION 107 WATER QUALITY CONTROL PERMITS

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Subsection 107.25 shall include the following:

- (d) *Transfer of Stormwater Permits to the Contractor.* This project is covered by a Colorado Department of Public Health and Environment (CDPHE) Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP). The Contractor shall coordinate with Wheat Ridge on transferring the respective Permit to the Contractor upon award of the Contract. The Contractor shall submit the "Application of Transfer of Ownership" for the CDPHE Permit, a minimum of 30 days prior to commencement of construction. The Contractor shall also transfer those locations within the project limits that have CDPS-SCP permits that were pulled by Utility Companies. The Contractor shall inspect the proposed locations and coordinate with the Utility Companies on what condition the site should be left in at the time of transfer. The Contractor shall not commence construction until the CDPS-SCP has been transferred and written confirmation has been received from CDPHE that the Permit has been transferred into the name of the Contractor and a copy has been placed in the project SWMP notebook. The cost of holding this Permit shall not be paid for separately but shall be included in the cost of the work.

Prior to final acceptance, a project walk through shall be conducted in accordance with subsection 208.10 (c). The walk through shall take place upon sufficient completion of the project, as determined by the Engineer.

Only after obtaining written concurrence from the City of Wheat Ridge on water quality issues, shall the City give Final Acceptance (after the Landscape Establishment Period) to the Contractor. The transfer forms will only be signed if the project is in an acceptable state as determined by the City of Wheat Ridge. Upon receipt of written final acceptance of the water quality work from the City, the Contractor shall transfer the CDPS-SCP to the City of Wheat Ridge. Wheat Ridge will submit the appropriate transfer forms to the CDPHE. Under no circumstances shall the Contractor inactivate the Permit.

Until the transfer has been completed and a copy of the transferred Permit has been submitted to the City, the Contractor shall continue to adhere to all Permit requirements. This shall include inspections, BMP installation, BMP maintenance and BMP repair, including seeded areas.

All costs associated with the Contractor holding the CDPS-SCP, including transferring the Permit between parties, will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 202 CLEAN CULVERT

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Subsection 202.01 shall include the following:

This work consists of cleaning, maintaining, removing and disposing of sediment and other debris in the storm drain inlets and culverts at locations shown on the plans.

Subsection 202.02 shall include the following:

Prior to beginning any work other than traffic control, dirt and debris in all existing inlets, culverts, and storm drains, within project limits, shall be dislodged and removed to the greatest extent possible. Cleaning shall be paid for as 202 Clean Culvert (Special), Each. Cleaning shall be done by vacuum truck removal methods. The contractor shall document how much sediment is removed and provide the volume quantity to the Engineer. The contractor shall remove and fully re-secure all grates per CDOT Standards. The Contractor shall treat the bolts with anti-seize compound prior to re-installation. All work, including drilling out of broken bolts, re-tapping bolt holes, replacement bolts, anti-seize treatment, and providing missing bolts, necessary to re-secure the grates shall be included in the cost of the work.

If construction - related sediment or debris has accumulated in the inlet or culvert after initial cleaning and during construction, the Contractor shall clean, remove and dispose of the sediment and debris at the Contractor's expense. In case of work suspension longer in duration than one month, due to unsuitable weather, the Contractor shall re-clean the storm drain inlets and culverts as directed by the Engineer.

Subsection 202.11 shall include the following:

Clean Culvert will be measured by the actual number of units of existing inlets to be cleaned within the project limits. Drainage pipe between inlets, and barrier drain holes and flaps will not be paid for separately, but included in the cost of the work.

Subsection 202.12 shall include the following:

Pay Item	Pay Unit
Clean Culvert (Special)	Each

Payment will be full compensation for all work, materials and equipment required to clean, maintain, remove and dispose of sediment and other debris from the storm drain inlets and culverts prior to construction.

REVISION OF SECTION 202 REMOVAL OF ASPHALT MAT

Section 202 of the Standard Specifications is hereby revised for this project as follows:

In subsection 202.02 delete the seventh paragraph and replace with the following:

The existing asphalt mat, which varies in thickness, shall be removed in a manner that minimizes contamination of the removed mat with underlying material. The removed mat shall become the property of the Contractor and be disposed of by any one or more of the following described methods:

1. Use in embankment construction in accordance with subsection 203.06.
2. Place material in bottom of fills as approved by the Engineer.
3. Place material in subgrade soft spots outside of the roadway prism as directed by the Engineer.
4. Recycled into the Hot Mix Asphalt.

Subsection 202.11 shall include the following:

The removal of the existing asphalt mat will be measured by the area, in square yards, completed to the required depth and accepted.

Subsection 202.12 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Removal of Asphalt Mat (Full Depth)	Square Yard

**REVISION OF SECTION 208
PERMANENT WATER QUALITY BMP
AS CONSTRUCTED SURVEY**

Section 208 of the Standard Specifications is hereby revised for this project as follows:

Subsection 208.10(b) shall include the following:

The permanent BMPs to be surveyed will be discussed at the Environmental Preconstruction Conference. The results of the survey shall be provided on an electronic drawing of each BMP in AutoCAD format showing the information specified in section 6.13 of the CDOT Survey Manual.

The survey shall be performed in accordance with the Section 6.13 of the CDOT Survey Manual. The Contractor may request copies of the AutoCAD electronic design files for the permanent BMPs if available. A draft of the printed copy of the AutoCAD format drawing shall be provided 14 days in advance of the final water quality project walkthrough. At the final water quality walkthrough the as constructed BMP survey shall be reviewed and any necessary revisions determined. The Contractor shall make the requested revisions as needed within 5 days of the final water quality walkthrough and submit final copies of the electronic files on a CD to the Project Engineer.

Listed below are the permanent water quality BMPs to be surveyed:

- Full Spectrum Stormwater Basin

Subsection 208.12 shall include the following:

All work and materials required to perform the permanent BMP survey and furnish the three electronic files shall be included in the original unit price bid for surveying. Surveying will be measured and paid for in accordance with Section 625.

**REVISION OF SECTION 210
VALVE BOX AND MANHOLE ADJUSTMENTS**

Section 210 of the Standard Specifications is hereby revised for this project as follows:

Subsection 210.10 shall include the following:

The Contractor shall notify each utility company (Owner) prior to any construction that will involve the adjustment of its valve boxes or manholes.

Each Owner will mark all of its valve boxes and manholes that will be involved in the specified construction area.

Prior to commencing construction, the Contractor shall coordinate and conduct, with the Engineer and each Owner, an inspection of all impacted manholes and valve boxes. The purpose of this inspection will be to account for all valve boxes and manholes involved in the construction and determine their accessibility and condition. The Contractor shall provide traffic control for this inspection and for the final inspection. The Contractor shall coordinate construction with the Owner to allow sufficient time for the Owner to make all necessary repairs to valve boxes and manholes before construction begins in the area of the valve boxes and manholes. All parties shall agree on the condition of each valve box and manhole prior to construction.

The Contractor shall replace all valve box sections damaged or misplaced during construction with new valve box sections complying with the requirements of the Owner's specifications. The Contractor shall set each valve box to be adjusted so that it is ¼ inch to ½ inch below the final grade of the paved surface, or to the satisfaction of the Owner, and so that it is plumb over the operating nut of the valve.

The Contractor shall adjust all manholes that require adjustment with materials conforming to the Owner's specifications. Some adjustments may require the addition, removal, or replacement of a manhole or cone section. If manhole adjustment requires a manhole cone or barrel section to be added, removed, or replaced, this work will not be considered as "Adjust Manhole", but shall be performed in accordance with the Section 210 requirements for the item "Modify Manhole".

The Contractor shall prevent tools, concrete, dirt, or debris of any kind from falling into the channel of the existing manhole. The Contractor shall clean or remove debris from downstream sewer that enters as a result of the Contractor's work.

When the project includes planing prior to resurfacing, the Contractor shall first lower all valve boxes and manholes below the surface to be planed and then adjust them up to final grade after the paving operation is complete.

Prior to the final inspection, the Contractor shall thoroughly clean all valve boxes designated for cleaning. This work shall be performed in accordance with the Section 202 requirements for the item "Clean Valve Box".

The Contractor shall coordinate and conduct, with the Engineer and each Owner, a final inspection upon completion of construction. This inspection shall assure that all valve boxes and manholes are in compliance with these requirements. The Engineer will obtain the Owner's written approval before accepting the work.

Subsection 210.12 shall include the following:

The Contractor will be paid separately for each valve box or manhole adjustment completed down and for each adjustment completed up.

Subsection 210.13 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Adjust Valve Box/ Manhole	Each

Adjustments that include adding, removing, or replacing a manhole cone or barrel section will be paid for under the Section 210 pay item, Modify Manhole.

Cleaning designated valve boxes will be paid for under the Section 202 pay item, Clean Valve Box.

REVISION OF SECTION 304 AGGREGATE BASE COURSE

Section 304 of the Standard Specifications is hereby revised for this project as follows:

Subsection 304.02 shall include the following:

Materials for the base course shall be Aggregate Base Course (Class 6) as shown in subsection 703.03.

The aggregate base course (Class 6) must meet the gradation requirements and have a resistance value of at least 78 when tested by the Hveem Stabilometer method.

Subsection 304.08 shall include the following:

Pay Item	Pay Unit
Aggregate Base Course (Class 6)	Ton

Compaction, water, impervious membrane, excavation, and removal of unsuitable material and all other work necessary to complete this item will not be measured and paid for separately but shall be included as part of the work.

**REVISION OF SECTION 403
HOT MIX ASPHALT**

Section 403 of the Standard Specifications is hereby revised for this project as follows:

Subsection 403.02 shall include the following:

The design mix for hot mix asphalt shall conform to the following:

Table 403-1			
Property	Test Method	Value For Grading	
		SX(100)	Patching
Air Voids, percent at: N (design)	CPL 5115	3.5 – 4.5	3.5 – 4.5
Lab Compaction (Revolutions): N (design)	CPL 5115	100	100
Stability, minimum	CPL 5106	30	30
Aggregate Retained on the 4.75 mm (No. 4) Sieve with at least 2 Mechanically Induced fractured faces, % minimum*	CP 45	60	60
Accelerated Moisture Susceptibility Tensile Strength Ratio (Lottman), minimum	CPL 5109 Method B	80	80
Minimum Dry Split Tensile Strength, kPa (psi)	CPL 5109 Method B	205 (30)	205 (30)
Grade of Asphalt Cement, Top Layer		PG 76-28	PG 76-28
Grade of Asphalt Cement, Layers below Top		PG 76-28	PG 76-28
Voids in the Mineral Aggregate (VMA) % minimum	CP 48	See Table 403-2	See Table 403-2
Voids Filled with Asphalt (VFA), %	AI MS-2	65 – 75	65 – 75
Dust to Asphalt Ratio Fine Gradation Coarse Gradation	CP 50	0.6 – 1.2 0.8 – 1.6	0.9 – 2.0 1.1 – 2.2
<p>Note: AI MS-2 = Asphalt Institute Manual Series 2</p> <p>Note: Mixes with gradations having less than 40% passing the 4.75 mm (No. 4) sieve shall be approached with caution because of constructability problems.</p> <p>Note: Gradations for mixes with a nominal maximum aggregate size of one-inch or larger are considered a coarse gradation if they pass below the maximum density line at the #4 screen. Gradations for mixes with a nominal maximum aggregate size of 3/4" to 3/8" are considered a coarse gradation if they pass below the maximum density line at the #8 screen. Gradations for mixes with a nominal maximum aggregate size of #4 or smaller are considered a coarse gradation if they pass below the maximum density line at the #16 screen.</p>			

All mix designs shall be run with a gyratory compaction angle of 1.25 degrees and properties must satisfy Table 403-1. Form 43 will establish construction targets for Asphalt Cement and all mix properties at Air Voids up to 1.0 percent below the mix design optimum. CDOT will establish the production asphalt cement and volumetric targets based on the Contractor's mix design and the relationships shown between the hot mix asphalt mixture volumetric properties and asphalt cement contents on the Form 429. CDOT may select a different AC content other than the one shown at optimum on the Contractor's mix design in order to establish the production targets as contained on the Form 43. Historically, Air Voids adjustments typically result in asphalt cement increases from 0.1 to 0.5 percent. Contractors bidding the project should anticipate this change and factor it into their unit price bid.

Table 403-2

Nominal Maximum Size*, mm (inches)	Minimum Voids in the Mineral Aggregate (VMA)			
	***Design Air Voids **			
	3.5%	4.0%	4.5%	5.0%
37.5 (1½)	11.6	11.7	11.8	N/A
25.0 (1)	12.6	12.7	12.8	
19.0 (¾)	13.6	13.7	13.8	
12.5 (½)	14.6	14.7	14.8	
9.5 (⅜)	15.6	15.7	15.8	
4.75 (No. 4)	16.6	16.7	16.8	16.9
	* The Nominal Maximum Size is defined as one sieve larger than the first sieve to retain more than 10%. ** Interpolate specified VMA values for design air voids between those listed. *** Extrapolate specified VMA values for production air voids beyond those listed.			

The Contractor shall prepare a quality control plan outlining the steps taken to minimize segregation of HMA. This plan shall be submitted to the Engineer and approved prior to beginning the paving operations. When the Engineer determines that segregation is unacceptable, the paving shall stop and the cause of segregation shall be corrected before paving operations will be allowed to resume.

CDOT approved Warm Mix Asphalt (WMA) may be allowed on this project in accordance with CP 59. Unique requirements for WMA design, production and acceptance testing as documented during CDOT WMA approval shall be submitted and approved prior to creation of the Form 43 and before any WMA production on the project. Delays to the project due to WMA submittal and review will be considered within the Contractor's control and will be non-excusable.

Hot mix asphalt for patching shall conform to the gradation requirements for Hot Mix Asphalt (Grading SX) (100) (PG 76-28) and is acceptable for all pavement lifts. All patching shall be per the Engineer.

A minimum of 1 percent hydrated lime by weight of the combined aggregate shall be added to the aggregate for all hot mix asphalt.

Subsection 403.03 shall include the following:

The Contractor shall use an approved anti-stripping additive. The amount of additive used shall be a minimum of 0.5 percent by weight of the asphalt cement. The additive shall be added at the refinery or at the hot plant. If liquid anti-stripping additive is added at the plant, an approved in-line blender must be used. The blender shall be in the line from the storage tank to the drier drum or pugmill. The blender shall apply sufficient mixing action to thoroughly mix the asphalt cement and anti-stripping additive.

The Contractor shall construct the work such that all roadway pavement placed prior to the time paving operations end for the year, shall be completed to the full thickness required by the plans. The Contractor's Progress Schedule shall show the methods to be used to comply with this requirement.

Delete subsection 403.05 and replace with the following:

403.05 The accepted quantities of hot mix asphalt will be paid for in accordance with subsection 401.22, at the contract unit price per ton for the bituminous mixture.

Payment will be made under:

Pay Item	Pay Unit
Hot Mix Asphalt (Grading SX) (100)(PG 76-28)	Ton
Hot Mix Asphalt (Patching)(Asphalt)	Ton

Aggregate, asphalt recycling agent, asphalt cement, additives, hydrated lime, and all other work and materials necessary to complete each hot mix asphalt item will not be paid for separately, but shall be included in the unit price bid. When the pay item includes the PG binder grade, any change to the submitted mix design optimum asphalt cement content to establish production targets on the Form 43 will not be measured and paid for separately, but shall be included in the work. No additional compensation will be considered or paid for any additional asphalt cement, plant modifications and additional personnel required to produce the HMA as a result in a change to the mix design asphalt cement content.

Historically, typical asphalt cement increases reflected on the Form 43 are from 0.1 to 0.5 percent. However, the Contractor should anticipate the AC increases typical of his mixes. Contractors bidding the project should anticipate this change and factor it into their unit price bid.

When the pay item does not include the PG binder grade, asphalt cement will be measured and paid for in accordance with Section 411. Asphalt cement used in Hot Mix Asphalt (Patching) will not be measured and paid for separately, but shall be included in the work.

Excavation, preparation, and tack coat of areas to be patched will not be measured and paid for separately, but shall be included in the work.

**REVISION OF SECTION 627 AND 713
MODIFIED EPOXY PAVEMENT MARKING**

Sections 627 and 713 of the Standard Specifications are hereby revised for this project as follows:

Section 627.05 shall include the following:

Modified Epoxy Pavement Marking shall conform to subsection 713.17.

Subsection 627.13 shall include the following:

Pay Item	Pay Unit
Modified Epoxy Pavement Marking	Gallon

In subsection 713.17, delete (f) and (k), and replace with the following:

(f) *Color*. The epoxy material, without drop-on beads, shall correspond following requirements:

White – Federal Standard No. 595B-17925. The Yellowness Index (YI) of white shall not exceed 8.0 per ASTM E-313-10 initially.

After 72 QUV exposure per ASTM G-154 with a UVA-340 Lamp at an irradiance of 0.89 W/m²/nm with alternating cycles of 4 hours U.V @ 140° F, and 4 hours humidity @ 122° F the YI shall not exceed 15 when measured per ASTM E-313.

The YI, after 500-hour QUV testing as above, shall not exceed 27.

Yellow – Materials for pavement markings shall meet the initial daytime chromaticity that fall within the box created by the following corner points:

Initial Daytime Chromaticity Coordinates (Corner Points)

	1	2	3	4
x	0.530	0.510	0.455	0.472
y	0.456	0.485	0.444	0.400

After 72-hour QUV exposure per ASTM G-154 with a UVA-340 Lamp at an irradiance of 0.89 W/m²/nm with alternating cycles of 4 hours U.V @ 140° F, and 4 hours humidity @ 122° F the Yellow shall fall within the initial chromaticity coordinates stated above.

- (k) *Abrasion Resistance.* The abrasion resistance shall be evaluated on Taber Abrader with a 1000 gram load and CS-17 wheels. The duration of the test shall be 1000 cycles. The wear index shall be calculated based on ASTM test method C-501 and the wear index for the catalyzed material shall not be more than 60. The tests shall be run on cured samples of material which have been applied at film thickness of 15 ± ½ mils to code S-16 stainless steel plates. The samples shall be allowed to cure at 75 ± 2 °F for a minimum of 72 hours prior to performing the indicated tests.

UTILITIES

The known utilities within the limits of this project are:

UTILITY / ADDRESS	CONTACT / EMAIL	PHONE / FAX
Xcel Energy	Builders Call Line BCLCO@XCELENERGY.COM	1-800-628-2121off 1-800-628-2521 fax
Xcel Energy-Electric Distribution 5460 West 60 th Avenue Arvada CO 80003-5708	Scott Gomer Scott.gomer@xcelenergy.com	303-425-3811 303-425-3888
Xcel Energy-Gas Operations 1123 W. 3 rd Avenue Denver CO 80223	Duane Purcell Duane.Purcell@xcelenergy.com	303-571-3111 303-571-3166
Century Link Communications 5325 Zuni Street, Suite 728 Denver CO 80221	Jodie Leonard Jodie.Leonard@CenturyLink.com	720-578-3722 303-946-7495 cell 303-451-3205 fax
Comcast Cable 8490 Umatilla Street Lakewood CO 80260	Patrick Peck Pat_Peck@cable.comcast.com	303-603-5441 720-636-3922 cell 303-450-0015 fax
Rock Mountain Water Company 311 10 th Street, Suite 400 Golden CO 80401	Nate McCoy Nate.McCoy@molsoncoors.com	303-927-3687 303-927-3700 fax
Oulette Ditch Company	Dale Pierce Dale.Pierce@deltacogroup.com	303-289-4483 303-546-2265 cell
Consolidated Mutual Water Company 12700 W 27 th Avenue Lakewood CO 80215	Mike Queen mqueen@cmwc.net	303-238-0451 303-237-5560 fax
Valley Water District 12101 W 52 nd Avenue Wheat Ridge CO 80034	Kathy Kadnuck v.waterdst Kathy@comcast .net	303-424-9661
Westridge Sanitation District 3705 Kipling Street, Suite 101 Wheat Ridge CO 80033	Kim Dahlin kdahlin@westridgesan.comcastbiz.net	303-424-9467
Clear Creek Valley Sanitation District 5420 Harlan Street Arvada CO 80002	Kevin Ramirez ccsrk@aol.com	303-424-4194 720-422-3488 emer 303-424-0632 fax
Metro Wastewater Reclamation District 6450 York Street Denver, CO 80229	David Owens Dowens@mwrdd.dst.co.us	303-286-3372 720-245-5713 cell
CDOT Region 1 Traffic 2000 South Holly Denver, CO 80222	Jeff Lancaster jeffrey.lancaster@state.co.us	303-757-9950

The work described in these plans and specifications requires full cooperation between the Contractor and the utility owners in accordance with Subsection 105.11 in conducting their respective operations, to complete the utility work with minimum delay to the project.

PART 1 - CONTRACTOR SHALL PERFORM THE WORK LISTED BELOW:

Coordinate project construction with the performance by the utility owner of each utility work element listed in Part 2 below. Perform preparatory work specified in Part 2 for each utility work element. Provide an accurate construction schedule that includes all utility work elements to the owner of each impacted utility. Provide each utility owner with periodic updates to the schedule. Conduct necessary utility coordination meetings, and provide other necessary accommodations as directed by the Engineer. Notify each utility owner in writing, with a copy to the Engineer, prior to the time each utility work element is to be performed by the utility owner. Provide the notice the number of days specified in Part 2 immediately prior to the time the utility work must be begun to meet the project schedule.

Provide traffic control, as directed by the Engineer, for any utility work by the utility owner expected to be coordinated with construction. However, traffic control for utility work outside of typical project work hours shall be the responsibility of the utility owner.

Perform each utility work element for every utility owner listed here in Part 1. Notify each utility owner in advance of any work being done by the Contractor to its facility, so that the utility owner can coordinate its inspections for final acceptance of the work with the Engineer.

Project Limits – All Utility Owners

Prior to excavating, the Contractor shall positively locate all potential conflicts with existing underground utilities and proposed construction, as determined by the Contractor according to proposed methods and schedule of construction. The Contractor shall modify construction plans to avoid existing underground facilities as needed, and as approved by the Engineer. Please note that UNCC marks only its members' facilities. Other facilities, such as ditches and drainage pipes may exist, and it is the Contractor's responsibility to investigate, locate and avoid such facilities.

XCEL ENERGY

When the CDOT Contractor is working near or under the high voltage transmission line, it shall be assumed the transmission line is energized and the CDOT Contractor shall not be closer than twenty feet (20') in any direction from the energized conductors. If work will be within twenty feet (20') of energized conductors, CDOT Contractor shall call Paul Urban at 303-273-4669 a minimum of 48 hours in advance to arrange for a Xcel Energy representative (Patrolman) to be on site during the work. An outage will be arranged if it is determined to be necessary. The outage will be a day-by-day situation. The Patrolman shall be on the job site at all times during outages of the line at this location.

The CDOT Contractor shall submit a BCL request when connecting power sources 30 days in advance to allow Xcel Energy forces adequate administration and processing of the new pump house and billing. The CDOT Contractor shall be responsible for the coordination of power source work to be performed by Xcel Energy. The CDOT Contractor shall contact the Xcel Energy Builder's Call Line at 1-800-628-2121 to request, and process to completion, the required coordination to establish the power sources for powering of the new pump house, as shown on the plans. The CDOT Contractor shall perform all work necessary to maintain existing or establish a new power source for the roadway elements called for in the plans. All cost charges from the power service provider, and all necessary materials, labor and coordination required to maintain existing or establish new power sources required for permanent operation of roadway elements as shown in the plans shall be reimbursed from the Force Account Furnish and Install Electrical Service.

Under no circumstances shall work be started within twenty feet (20') in any direction of the transmission lines without clearance from Xcel Energy's Patrolman. The CDOT Contractor shall notify the Patrolman whenever it is going to be starting and ending work. If an outage has been arranged and the Patrolman has given approval, the CDOT Contractor shall not be closer than three feet (3') in any direction from the de-energized conductors.

XCEL ENERGY, CENTURY LINK COMMUNICATIONS, AND COMCAST CABLE

Between 32nd and 35th Avenues

After Century Link and Comcast have completed their undergrounding work and removed their aerial facilities, the Contractor shall remove the utility poles that will be abandoned.

Coordinate the work by Xcel Energy, Century Link, and Comcast forces as listed below in Part 2.

The Contractor shall provide the utility owners written notice 5 days immediately prior to required inspections.

ROCKY MOUNTAIN WATER COMPANY

Between 32nd and 35th Avenues

The Contractor shall construct a structural slab on top of the existing concrete box culvert (CBC) that carries the Rocky Mountain Ditch beneath Kipling Street. The Contractor shall contact the Rocky Mountain Water Company 48 hours prior to beginning work. The Contractor shall not disturb irrigation water flowing in the ditch between April 15 and October 15. The Contractor shall coordinate required inspections on the work by the Rocky Mountain Water Company.

The Contractor shall provide the Rocky Mountain Water Company written notice 5 days immediately prior to required inspections.

OULETTE DITCH COMPANY

Between 41st and 44th Avenues

The Contractor shall construct a 10 foot wide trail on top of the existing culvert that carries the Oulette Ditch beneath Kipling Street. The portion of the Oulette Ditch that parallels the proposed trail shall be avoided by the construction. The Contractor shall contact the Oulette Ditch Company 48 hours prior to beginning work. The Contractor shall not disturb irrigation water flowing in the ditch between April 15 and October 15.

The Contractor shall coordinate required inspections on the work by the Oulette Ditch Company.

The Contractor shall provide the Oulette Ditch Company written notice 5 days immediately prior to required inspections.

CONSOLIDATED MUTUAL WATER COMPANY

Between 32nd and 35th Avenues

The Contractor shall reset two water meter pits, per Consolidated Mutual Water Company specifications and details, so that they are located outside of the new sidewalk. Meter pit materials will be provided by Consolidated Mutual Water Company, excluding the copper piping

Between 38th and 39th Avenues

The Contractor shall reset one water meter pit, per Consolidated Mutual Water Company specifications and details, so that it is located outside of the new sidewalk. Meter pit materials will be provided by Consolidated Mutual Water Company, excluding the copper piping

Between 41st and 44th Avenues

The Contractor shall reset two water meter pits, per Consolidated Mutual Water Company specifications and details, so that they are located outside of the new sidewalk. Meter pit materials will be provided by Consolidated Mutual Water Company, excluding the copper piping

The Contractor shall provide Consolidated Mutual Water Company written notice 5 days immediately prior to required inspections.

PART 2 - UTILITY OWNERS SHALL PERFORM THE WORK LISTED BELOW:

The Contractor shall provide traffic control for any utility work expected to be coordinated with construction, as directed by the Engineer. However, traffic control for utility work outside of typical project work hours shall be the responsibility of the utility owner. The utility owner shall prepare and submit to the City a Method of Handling Traffic for utility work to be performed outside typical project work hours. The utility owner shall obtain approval of the Method of Handling traffic from the Engineer prior to beginning the utility work to be performed outside typical project work hours.

The Contractor shall provide location and grade information so that the utility companies can properly locate their facilities.

XCEL ENERGY

Between 32nd and 35th Avenues

Xcel Energy shall remove the utility pole at the northeast corner of W 32nd Avenue and Kipling Street. This work is expected to be completed prior to construction and take 5 working days to complete.

Between 38th and 39th Avenues

Xcel Energy shall relocate the utility poles and aerial electrical facilities to the east outside of the limits of the new sidewalk. This work is expected to be completed prior to construction and take 20 working days to complete.

Between 41st and 44th Avenues

Xcel Energy shall relocate the utility poles and aerial electrical facilities to the east outside of the limits of the new sidewalk. The utility pole that is just north of the existing Clear Creek Bridge can remain in its current location. This work is expected to be completed prior to construction and take 20 working days to complete.

After the Contractor has completed the foundations for the pedestrian bridge over Clear Creek, Xcel Energy shall drop the span of overhead electrical facilities across Clear Creek to accommodate the installation of the pedestrian bridge. This work is expected to be coordinated with construction and take 1 working day to complete.

The Contractor shall provide the utility owner written notice 5 days immediately prior to required inspections.

The Contractor shall provide Xcel Energy written notice 30 days immediately prior to each utility work element expected to be coordinated with construction.

CENTURY LINK COMMUNICATIONS

Between 32nd and 35th Avenues

After the Contractor has completed the retaining wall construction to achieve the proposed subgrade, Century Link shall underground its facilities by directional bore along Kipling Street in this segment. Century Link shall remove the aerial cable, terminals, guy wires, anchors, and aerial service wires.

Century Link shall bore new cable across Kipling Street to the distribution pole on the west side of the street. Century Link shall intercept existing buried cables and route cable into seven new pedestals. Century Link shall bore new service wire to the homes at 9985 W 32nd Avenue, 10001 W 32nd Avenue, 3280 Kipling Street, 3290 Kipling Street, and 3300 Kipling Street.

All of this work shall be coordinated with the Contractor to utilize the project's traffic control and permits. This work is expected to be coordinated with construction and take 30 working days to complete.

Between 38th and 39th Avenues

Century Link shall relocate the cable and the pedestal at 3850 Kipling Street to the east outside of the limits of the new sidewalk. This work is expected to be completed prior to construction and take 15 working days to complete.

Between 41st and 44th Avenues

Century Link shall replace the cable and relocate five pedestals between 4240 Kipling Street and 4392 Kipling Street. This work is expected to be completed prior to construction and take 15 working days to complete.

The Contractor shall provide Century Link written notice 30 days immediately prior to each utility work element expected to be coordinated with construction.

COMCAST CABLE

Between 32nd and 35th Avenues

After the Contractor has completed the retaining wall construction to achieve the proposed subgrade, Comcast Cable shall underground its aerial facilities by directional bore along Kipling Street in this segment. Comcast Cable shall remove the aerial facilities.

Comcast Cable will bore new laterals as needed to restore service lines.

All of this work shall be coordinated with the Contractor to utilize the project's traffic control and permits. This work is expected to be coordinated with construction and take 30 working days to complete.

Between 38th and 39th Avenues

After Xcel Energy has completed installation of the utility poles for the relocated overhead electrical facilities, Comcast Cable shall relocate their aerial facilities to the new poles. This work is expected to be completed prior to construction and take 20 working days to complete.

Between 41st and 44th Avenues

After Xcel Energy has completed installation of the utility poles for the relocated overhead electrical facilities, Comcast Cable shall relocate their aerial facilities to the new poles. This work is expected to be completed prior to construction and take 20 working days to complete.

The Contractor shall provide Comcast Cable written notice 30 days immediately prior to each utility work element expected to be coordinated with construction.

CONSOLIDATED MUTUAL WATER COMPANY

Between 32nd and 35th Avenues

After the Contractor has completed the retaining wall construction to achieve the proposed subgrade, Century Link shall underground its facilities by directional bore along Kipling Street in this segment. Century Link shall remove the aerial cable, terminals, guy wires, anchors, and aerial service wires.

Century Link shall bore new cable across Kipling Street to the distribution pole on the west side of the street. Century Link shall intercept existing buried cables and route cable into seven new pedestals. Century Link shall bore new service wire to the homes at 9985 W 32nd Avenue, 10001 W 32nd Avenue, 3280 Kipling Street, 3290 Kipling Street, and 3300 Kipling Street.

All of this work shall be coordinated with the Contractor to utilize the project's traffic control and permits. This work is expected to be coordinated with construction and take 30 working days to complete.

Between 38th and 39th Avenues

Century Link shall relocate the cable and the pedestal at 3850 Kipling Street to the east outside of the limits of the new sidewalk. This work is expected to be completed prior to construction and take 15 working days to complete.

Between 41st and 44th Avenues

Century Link shall replace the cable and relocate five pedestals between 4240 Kipling Street and 4392 Kipling Street. This work is expected to be completed prior to construction and take 15 working days to complete.

The City's Contractor shall provide Consolidated Mutual Water Company written notice 30 days immediately prior to each utility work element expected to be coordinated with construction.

GENERAL:

The Contractor shall comply with Article 1.5 of Title 9, CRS ("Excavation Requirements") when excavating or grading is planned in the area of underground utility facilities. The Contractor shall notify all affected utilities at least two (2) business days, not including the actual day of notice, prior to commencing such operations. The Contractor shall contact the Utility Notification Center of Colorado (UNCC) at phone no. **811**, to have locations of UNCC registered lines marked by member companies. All other underground facilities shall be located by contacting the respective owner. Utility service laterals shall also be located prior to beginning excavation or grading.

The locations of utility facilities as shown on the plan and profile sheets, and herein described, were obtained from the best available information.

All costs incidental to the foregoing requirements will not be paid for separately but shall be included in the work.

ON THE JOB TRAINING CONTRACT GOAL

The Department has determined that On the Job Training shall be provided to trainees with the goal of developing full journey workers in the types of trade or classification involved. The contract goal for On the Job Trainees working in an approved training plan in this Contract has been established as follows:

Minimum number of total On the Job Training required 320 hours

Disadvantaged Business Enterprise (DBE) Contract Goal

This is a federally-assisted construction project. As described in the CDOT DBE Standard Special Provision, the Bidder shall make good faith efforts to meet the following contract goal:

12 Percent DBE participation.

CITY SPECIAL PROVISIONS

The CDOT Standard Specifications, Standard Special Provisions, Project Special Provisions are modified with the following City Special Provisions.

REVISION OF SECTION 101 DEFINITIONS AND TERMS

Section 101 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 101.10 and replace with the following:

101.10 Director of Public Works. The Director of Public Works for the City, or his duly authorized representative, who is responsible for public works activities within the City. The Director of Public Works is responsible for final decisions relating to Contractor claims for change orders, additional compensation, or extensions of contract time. All references to "CDOT Resident Engineer" shall be replaced by "Director of Public Works".

In subsection 101.17 delete the first paragraph and replace with the following:

The written agreement between the City and the Contractor setting forth the obligations of the parties for the performance of the work and the basis of payment.

Delete subsection 101.23 Contractor.

Delete subsection 101.28 and replace with the following:

101.28 Department. Department of Public Works. A department with the City.

Delete subsection 101.29 and replace with the following:

101.29 Engineer. The Engineering Manager of the Department acting directly or through an authorized representative, who is responsible for engineering and administrative supervision of the project. For the purpose of these specifications, the Engineer is responsible for initial decisions relating to Contractor claims for additional compensation or additional time. The Engineer is the sole City representative who may approve modifications to Contract documents or drawings.

Delete subsection 101.36 and replace with the following:

101.36 Holidays. Holidays recognized by the City are:

- New Years Day
- Martin Luther King, Jr. Day
- Presidents' Day
- Memorial Day
- Independence Day
- Labor Day
- Veterans' Day
- Thanksgiving Day
- Day after Thanksgiving Day
- Christmas Day

When New Year's Day, Independence Day, or Christmas Day fall on Sunday, the following Monday shall be considered a holiday.

When New Year's Day, Independence Day, or Christmas Day fall on Saturday, the previous Friday shall be considered a holiday.

Additional legal holidays, when designated by the Governor or the President of the United States will also be recognized by the City.

Delete subsection 101.37 and replace with the following:

101.37 Inspector. The Project Engineer's authorized representative assigned to make detailed inspections of contract performance and is responsible for coordinating administration and satisfactory completion of the project with the Project Engineer.

Delete subsection 101.48 and replace with the following:

101.48 Preconstruction Conference. A meeting of City project personnel, Contractor project personnel, and other stake holders held prior to the beginning of construction at which topics pertinent to the successful prosecution of the work are discussed.

Delete subsection 101.51 and replace with the following:

101.51 Project Engineer. The Engineer's duly authorized representative who may be a City employee or an employee of a consulting engineer (consultant) under contract to the City as defined below:

- (a) *City Project Engineer.* The City employee who is the Engineer's duly authorized representative. The City Project Engineer is in direct charge of the work and is responsible for the administration and satisfactory completion of the project under contract.
- (b) *Consultant Project Engineer.* The consultant employee under the responsible charge of the consultant's Professional Engineer who is in direct charge of the work and is responsible for the administration and satisfactory completion of the project. The Consultant Project Engineer's duties are delegated by the Engineer in accordance with the scope of work in the consultant's contract with the City. The Consultant Project Engineer is not authorized to sign or approve Contract Modification Orders.

Delete subsection 101.58 and replace with the following:

101.58 Region Transportation Director. All references to "Region Transportation Director" shall be replaced by "Director of Public Works".

Delete subsection 101.59 and replace with the following:

101.59 Right of Way. A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to a highway, street, alley, or other access.

Delete subsection 101.81 Subcontractor.

Add subsections 101.96 – 101.105 as follows:

101.96 Approved Equal. A product, component or process whose use in or on a particular project is specified as a standard for comparison purposes only. The "equal" product, component or process shall be the same or better than that named in function, performance, reliability, quality, and general configuration. Determination of equality in reference to the project design requirements will be made by the Engineer. It is the responsibility of the supplier to provide all necessary information for determining equality.

101.97 Bid Bond. The security required to be submitted with each proposal as described in Section 101.52 as a Proposal Guaranty.

101.98 Contract Change Order. Same as Contract Modification Order, subsection 101.19.

101.99 Easement. The right to use a defined area of property for a specific purpose or purposes as set forth in a document which has been made a part of the Contract Documents.

101.100 Lump Sum. A method of payment providing for one all inclusive cost for the work or for a particular portion of the work; including any incidental costs necessary to perform that item of work.

101.101 Notice of Award. A written notice of acceptance of the bid from the City to the successful bidder.

101.102 Owner. The legal entity or contracting agency for which the work is being performed, herein defined as the City. The words City and Owner are used interchangeably within this document.

101.103 Payment Bond. Same as Contract Payment Bond, subsection 101.20.

101.104 Performance Bond. Same as Contract Performance Bond, subsection 101.21

101.105 Utility. Tracks, overhead or underground wires, pipelines, conduits, pipes, ducts or structures, owned, operated or maintained in or across a public right-of-way or easement.

REVISION OF SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS

Subsection 102 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 102.01 and replace with the following:

102.01 Prequalification of Bidders. The City does not prequalify bidders. Each Contractor is required to complete the Contractors Qualification Form included in the Bid Package.

Delete subsection 102.04 and replace with the following:

102.04 Interpretation of Plans and Specifications. If it should appear to a Bidder that the work to be done or matters relative thereto are not sufficiently described or explained in the Contract Documents or that the Contract Documents are not definite and clear, the Bidder may make written inquiry regarding same to the City Purchasing Agent at least five (5) days before the scheduled closing time for filing bids.

Then, if in the judgment of the City, additional information or interpretation is necessary, such information will be supplied in the form of an addendum. Each addendum will be delivered where possible by FACSIMILE MACHINE (FAX) or ELECTRONIC MAIL (EMAIL) to all individuals, firms and corporations who have acknowledged receipt of Bid Document Sets. Such addendum shall have the same binding effect as though contained in the main body of the Contract Documents. **ORAL INSTRUCTIONS OR INFORMATION CONCERNING THE CONTRACT DOCUMENTS OR THE PROJECT GIVEN OUT BY OFFICERS, EMPLOYEES OR AGENTS OF THE OWNER TO PROSPECTIVE BIDDERS SHALL NOT BIND THE OWNER.** If no request is made in the five days, Bidder waives right to any conflict in the Contract Documents.

Subsection 102.05 shall include the following:

Final determination of underground or other conditions is left to the Bidder without recourse to the City.

Delete subsection 102.06 and replace with the following:

102.06 Preparation of Proposal. The bidder shall submit his proposal upon the forms supplied by the Owner. The bidder shall specify a unit price in words or figures, or both if required, for each pay item for which a quantity is given and shall also show the products to the respective unit prices and quantities written in figures in the column provided for that purpose and the total amount of the proposal obtained by adding the amounts of the separate items. All the words and figures shall be in ink or type. In case of a mathematical error, the unit price shall govern.

When an item in the proposal contains a choice to be made by the bidder, the bidder shall indicate his choice in accordance with the specifications for that particular item, and thereafter no further choice will be permitted.

The bidder's proposal must be signed in ink by the individual, by one or more members of the partnership, by two officers of a corporation or by an agent of the contractor legally qualified and acceptable to the City.

If the proposal is made by an individual, his name and post office address must be shown, by a partnership, the name and address of each partner must be shown, by a corporation, the name of the corporation and the business address of its corporate officials must be shown.

In subsection 102.07 delete paragraphs (7) and (9)

Delete subsection 102.09 and replace with the following:

102.09 Anti-Collusion Affidavit. Every Proposal (bid) submitted to the City shall contain a statement certifying that the Bidder has not participated in any collusion or taken any action in restraint of free competitive bidding. This statement shall be in the form of an affidavit provided by the City and included in the Bid Form. **The Bidder's Proposal will be rejected if it does not contain the completed Non-collusion Affidavit.**

Add subsections 102.11 – 102.14 as follows:

102.11 Disqualification of Bidders. Any of the following reasons may be considered as being sufficient for the disqualification of a bidder and the rejection of his proposal or proposals:

- (1) More than one proposal for the same work from an individual, firm, or corporation under the same or different name.
- (2) Evidence of collusion among Bidders. Participants in such collusion will not receive recognition as Bidders for any future work of the City until any such participant shall have been reinstated as a qualified Bidder.
- (3) If, during a Contract with the City, a Contractor or Subcontractor incurs liquidated damages as described in subsection 108.09, he shall be disqualified for a period of one (1) year from the date of final acceptance of that Contract.

102.12 Bid Prices. Bidders must include, in their bid prices, the entire cost of each item of the work set forth in the proposal, and it is understood and agreed that there is included, in each lump sum or unit price bid, the entire cost of materials and labor incidental or necessary to the completion of that portion of the work covered, unless such work is expressly included in other lump sum or unit price bids in the proposal. Since the bid information cannot be guaranteed, the Contractor shall have assumed the risks attendant to successful performance of the work at the amount of the bid.

102.13 Rejection of Bids. The Owner reserves the right to reject any or all bids and waive irregularities not affecting substantial rights.

102.14 City Contract Laws. Section 2-3 of the City's Code of Laws is presented below:

- (a) FISCAL YEAR. Fiscal year for the City shall commence on January 1 and end on December 31.
- (b) BUDGET CONTAINS APPROPRIATIONS. The City Council shall annually adopt a budget in a manner consistent with the provisions of Chapter X of the Home Rule Charter of the City of Wheat Ridge. Upon the annual adoption by City Council of each year's budget, levels of authorized expenditures from the funds indicated within the annual budget itself and/or the adopting resolution shall constitute the appropriation of the amounts specified therein for the purposes specified therein. During the course of each fiscal year, approval by the City Council of contracts for goods or services, and/or approval of bids for the provision of specified goods or services, shall likewise constitute appropriations of the amounts specified therein for the purposes specified therein.
- (c) NO CONTRACT TO EXCEED APPROPRIATION. During each and any fiscal year, no contract entered into by or on behalf of the City shall expend or contract to expend any money, or incur any liability, nor shall any contract be entered into nor any bid be awarded by on behalf of the City which, by its terms, involves the expenditure of money for any of the purposes for which provision is made either in the adopted budget or adopting resolution is made either in the adopted budget or adopting resolution, including any legally authorized amendments thereto, in excess of the amount appropriated in the budget or the approved contract or bid amount. Any contract or bid award, either verbal or written, made in violation of the provisions of this Section shall be void as to the City and no City monies from any source whatsoever shall be paid thereon.
- (d) AMENDMENTS AND AUTHORIZED EXPENDITURES. Nothing contained herein shall preclude the City Council from adopting supplemental appropriation in a manner consistent with the provisions of Section 10.12 of the Home Rule Charter of the City of Wheat Ridge. Further, nothing contained in this Section shall prevent the making of contracts for governmental services or for capital outlay for a period exceeding one year if such contracts are otherwise allowed by the Home Rule Charter of the City; provided, however, any contract so

made SHALL be executory only for the amounts agreed to be paid for such services to be rendered in succeeding fiscal years.

- (e) NOTICE TO PARTIES CONTRACTING WITH THE CITY. All persons contracting with, or selling goods or services to, the City are hereby placed on notice of the provisions of this Section. The provisions of this Section shall become a part of the Merit System Personnel Rules and Regulations of the City of Wheat Ridge; shall be referred to specifically in all public works bid documents and contracts; and shall be incorporated into, or specifically noted within, all other contracts entered into by or on behalf of the City wherein City funds are used to pay for said contract.

Section 2-4 of the City Code of Laws is presented below:

- (a) The City may, by contract, require the contractor awarded a public works contract to waive, release or extinguish its rights to recover costs or damages, or obtain an equitable adjustment, for delays in performing such contract, if such delay is caused, in whole or part, by acts or omissions of the City or its agents, if the contract provides that an extension of time for completion of the work is the Contractor's remedy for such delay. Such a clause is valid and enforceable, any provision of State Law to the contrary notwithstanding.
- (b) The City Council, by this ordinance, declares its local contracting powers to be a matter of purely local concern, and further specifically intends to supersede, pursuant to its powers under Article XX of the Colorado Constitution, the provisions of Sections 24-91-101 and 103.5, C.R.S., insofar as they conflict with the provisions of this Section of the Code of Laws of the City of Wheat Ridge, Colorado.

REVISION OF SECTION 103 AWARD AND EXECUTION OF CONTRACT

Section 103 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 103.01 and replace with the following:

103.01 Consideration of Proposals. After the proposals are opened and read, they will be compared on the basis of the summation of the products of the approximate quantities shown in the bid schedule by the unit prices.

The Owner reserves the right to settle bid discrepancies that occur in the low Bidder's proposal at the time the Contract is awarded. Bid discrepancies will be settled with the understanding that the low Bidder waives any claims against the City because of Bidder's mistakes in the Bid Proposal.

In subsection 103.02 change the time of award from 30 calendar days to 60 calendar.

Subsection 103.04 shall include the following:

Failure to execute the Contract and file acceptable bonds within 14 days after the date of award shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of the City.

The Director of Public Works may elect to waive forfeiture of the proposal guaranty only if it is determined that the bidder has made a good faith remedial error and that no damages were sustained by the City as a result of the failure by the successful bidder to execute the Contract and file acceptable bonds within the time prescribed. Award may then be made to the next lowest responsible bidder, or the work may be readvertised and constructed under Contract or otherwise as the City may decide.

Add subsections 103.05 – 103.06 as follows:

103.05 Cancellation of Award. The City reserves the right to cancel the award of any Contract at any time before the execution of said Contract by all parties without liability against the City.

103.06 Return of Proposal Guaranty. All proposal guaranties consisting of bid bonds will be retained by the City. All proposal guaranties in the form of certified checks or cashiers checks will be treated as follows:

For the three lowest Bidders, the proposal guarantee will be held until the Contract is awarded to the successful bidder. Proposal guaranty will then be returned to the other Bidders. The proposal guaranty of the successful Bidder will be returned upon receipt of executed Contract and approved payment and performance bonds.

In subsection 103.02 change all time period references from 15 days to 14 days in Sec. 103.04 Execution and Approval of Contract.

REVISION OF SECTION 104 SCOPE OF WORK

Section 104 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 104.04 shall include the following:

The Contractor shall be responsible for maintaining access to all residences and businesses along the Project areas during construction. Lane widths during construction shall not be less than 10 ft and a minimum clearance of two feet shall be maintained between traffic and the construction work zone.

The Contractor will not be permitted to have construction equipment or materials in the lane(s) open to traffic at any time unless permitted by the Engineer.

The Contractor is cautioned that all personal vehicle and construction equipment parking will be prohibited where it conflicts with safety, access, or the flow of traffic.

REVISION OF SECTION 105 CONTROL OF WORK

Section 105 of the CDOT Standard Specifications is hereby revised for this project as follows:

In subsection 105.02 (b) 4. change the base number of submission sets of shop drawings from six to four.

Subsection 105.02 (f) shall include the following:

1. All Contractors who construct public storm drainage systems, bike paths, sidewalks, streets, or other items within Public property to be maintained by the City must submit an "As Constructed" set of construction drawings for approval as a part of the City's acceptance process. The initial submittal shall be one set of "red-lined" marked up prints, which should be delivered to the Department of Public Works counter at City Hall, attention "Engineering Manager". Written City acceptance of the final As Constructed plan is a condition for final acceptance and release of retainage.

As Constructed plans for construction of irrigation systems within public property to be maintained by the City shall be submitted per subsection 623.25.

2. All As Constructed information shall be red-lined and shown on the original construction drawings. The As Constructed drawings shall clearly show any changes or variations from the approved design. Horizontal variations greater than 1.0 foot should be shown dimensionally or through plus stations. Horizontal variations greater than 10.0 feet should also show the graphic relocation of the object. For construction of public storm drainage systems, vertical elevation variations greater than 0.1 feet shall be provided for all shown design elevations. For construction of all remaining project features, vertical elevation variations greater than 0.25 feet shall be provided for all shown design elevations.
3. The As Constructed Certificate (shown below) shall be signed and sealed by a CO professional land surveyor and shall appear on the cover sheet of the As Constructed plan set. All sheets included in the Contract Drawings set must be submitted in the final As Constructed plan set.

AS CONSTRUCTED CERTIFICATE

I hereby certify that the information shown on this as constructed drawing is an accurate and complete representation of data established from field information obtained under the direction of a Professional Engineer or Professional Land Surveyor, and that the physical dimensions or elevations shown are as-built information and the facility was constructed according to the approved plans, except as otherwise noted hereon.

Name	License #
Title	Date

In subsection 105.03 change the first sentence of the seventh paragraph as follows:

Materials may be sampled and tested at the discretion of the City in accordance with the City Permit Testing and Inspection Requirements Document, available at the City Public Works counter, and CDOT's Field Materials Manual.

In subsection 105.09 (a) change the order of precedence as follows:

1. City General Provisions
2. City Special Provisions
3. Project Special Provisions
4. Standard Special Provisions

Subsection 105.09 shall include the following:

Any discrepancy or error discovered in the Drawings, Specifications, or during field construction shall be immediately called to the attention of the Engineer through submission of a "Request for Information" (RFI) document. Only the Engineer may authorize a modification to the project drawings or specifications via written response to an RFI. Neither the Inspector or Project Engineer may authorize alterations, in-field changes, or modifications to the project, whether orally or written, unless said change is so minor in nature that grades, horizontal geometry, detail, or the original purpose and intent of the drawings are not altered. Concurrence by the Inspector, Project Engineer, or any other City representative in the field or on the daily inspection report does not constitute approval of any element of the project. The Contractor is solely responsible for constructing the project according to the project drawings and specifications.

Subsection 105.10 shall include the following:

Not furnishing a competent superintendence will be grounds for suspension of the Project until such superintendence is furnished by the Contractor. **CONTRACT TIME WILL CONTINUE IN THE EVENT OF A WORK SUSPENSION CAUSED BY LACK OF FURNISHING FULL TIME PROJECT SUPERINTENDENCE SATISFACTORY TO THE CITY.**

During the negotiations to obtain the right-of-way and temporary construction easements, the following conditions were imposed upon the work to be performed at the following properties:

- 3300 Kipling Street – TE-3 and TE-3A – The access to Kipling Street will be closed and a new driveway will be constructed to provide access to Jellison Street.
- 3370 Kipling Street – TE-5 – Three large trees will be completely removed from the TCE, Two trees at the northwest corner of the house and one tree south of the existing driveway. All downed trees, bushes, and fence materials will be removed within three days of their demolition. Prior to the existing fence being demolished, a temporary six foot high chain link fence shall be erected adjacent to the eastern limit of the TCE and be maintained during construction and until completion of erection of a new fence by the property owner. At that time, but no later than July 1, 2015, the temporary fence will be removed. Signs stating "Private Property – Do Not Trespass" shall be attached to the temporary fence. Any disturbed areas shall be planted with sod. Also prior to the initiation of construction, the property owner will be provided a point of contact for resolving construction related issues with a phone number where the point of contact can be contacted seven days a week between the hours of 7 am and 10 pm.
- 3400 Kipling Street – TE-7 – The existing masonry sound wall shall be removed and replaced with a masonry sound wall of substantially the same materials, design, and height on the property owner's property adjacent to the right-of-way line. The lower portion of the sound wall may also function as a retaining wall and shall be designed accordingly.

- 9990 W 35th Avenue – TE-8 – The modular block retaining wall will be placed just east of the right-of-way with the new fence being placed on the right-of-way line. The fence will be six feet high from the front of the house to the south and 42 inches high from the front of the house to the north. The existing sanitary sewer cleanout shall be moved to the east side of the new fence. The private storm drain along the east side of the existing fence shall be relocated to the east side of the new fence. The irrigation system shall also be relocated to the east of the new fence. Any trees that are removed will be replaced with new trees.

Subsection 105.11 shall include the following:

The locations of all utilities shown on the project plans should be considered approximate. It is therefore the responsibility of the Contractor to notify the appropriate utility and/or utility locating service to obtain more precise locations. No compensation will be made to the Contractor for any damage, delay or additional cost incurred as a result of failure to obtain utility locations.

Utilities which are adjusted, removed, or reset for the construction convenience of the Contractor and which would not conflict with the line or grade of the proposed project works, shall be done at the Contractor's expense. This shall include, but not be limited to, sewer service lines, water service lines, telephone, gas and electrical lines.

The Contractor shall coordinate with all affected utility owners for work to be performed on said utility as defined in the Contract documents. Coordination shall include application for permits, licensing, payment of fees, scheduling inspections with each owner, as required. All such costs and/ or time spent for coordination with utility owners shall be paid by the Contractor, and shall not be compensated with a Pay Item or Change Order.

Subsection 105.16 shall include the following:

The Engineering Division of the Public Works Department will provide all inspection during construction. The Inspector will oversee the materials testing.

The Contractor shall keep the Inspector informed of future construction operations to facilitate scheduling of required inspection. The Contractor shall notify the Inspector 24 hours in advance of starting any construction operation that will require inspection. Failure of the Contractor to provide such notice shall relieve the Owner from any responsibility for extra costs or delays caused by such failure.

Inspection of the work or materials by the Owner or conversations made between the Contractor and the Inspector shall not relieve the Contractor of the obligation to fulfill the requirements of the Contract. Work and materials not meeting such requirements shall be made good, and unsuitable work or materials may be rejected, notwithstanding that such work or materials have been previously inspected by the Owner or that payment thereof has been included in a progress estimate.

Inspection and acceptance of work pertaining to utilities not owned by the City shall be made by a representative of the owning utility. The Contractor shall obtain required permits and/ or licenses and notify & schedule an inspection by the owning utility prior to commencing any work so that a representative may be made available to approve the work to be performed.

Subsection 105.21 (a) shall include the following:

The one year guarantee period for the portion or unit of the project partially accepted will not begin until completion of the entire project unless otherwise agreed to by the Engineer.

In subsections 105.22 and 105.24 change all references to CDOT to the City and remove all references to subsection 105.23.

Subsection 105.22 shall include the following:

In accordance with Section 2-4 of the City Code, as provided in subsection 102.14 of the City Special Provisions, the Contractor shall waive, release or extinguish its rights to recover costs or damages, or equitable adjustment, for delays in performing this contract if such delay is caused, in whole or in part, by acts or omissions of the City or its agents unless the Department accepts responsibility. An extension of time for completion of the work shall be the Contractor's remedy for such delay.

The Contractor shall not be entitled to additional monetary compensation for delays caused by the failure of a utility company or special district to relocate its facilities in timely manner. An extension of time for completion of the work shall be the Contractor's remedy for such delay. Relief from failure of utility companies to fulfill their responsibilities is discussed in subsection 105.11 of the Standard Specifications.

In subsection 105.22 (d) delete the last paragraph and replace with the following:

If these meetings do not result in a resolution or the participants mutually agree that they have reached an impasse, the Contractor may file a claim in accordance with subsection 105.24.

Delete subsection 105.23.

In subsection 105.24 change the reference to City and County of Denver and replace with Jefferson County:

In subsection 105.24 (c) delete the reference and address to CDOT Audit Unit and replace with Department:

Add subsections 105.25 and 105.26 as follows:

105.25 Protection of Survey Markers. Survey markers shall be protected as follows:

- (a) *Permanent Survey Markers.* Should the Contractor believe that a survey monument, control point, or benchmark will be disturbed by construction activities, the Contractor shall notify the Engineer not less than seven days prior to starting work in order that the Engineer may take necessary measures to insure the preservation of survey monuments, stakes and bench marks. The Contractor shall notify the Engineer and bear the expense of replacing any that may be disturbed without permission. Replacement shall be done by a Registered Land Surveyor at no expense to the Owner.

When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the monument cover or box shall be adjusted to the new grade.

- (b) *Lot Stakes.* Unless otherwise directed by the Engineer or shown in the plans, the Contractor shall preserve existing survey stakes that mark property lines and corners. Any stakes that become lost or disturbed by his operations shall be replaced at the Contractor's expense by a registered land surveyor. Any lot corners marked on sidewalks that are designated for removal by the Contract Documents or the Engineer are not the responsibility of the Contractor for replacement.

105.26 Maintenance During Free Time. Maintenance during free time, shall meet the requirements of Sec. 105.19 and shall be considered incidental to the work.

REVISION OF SECTION 106 CONTROL OF MATERIAL

Section 106 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 106.03 and replace with the following:

106.03 Samples, Test, Cited Specifications. Materials sampling and testing shall be performed at the expense of the Contractor. The Contractor shall employ an independent materials testing company to sample and test the materials or the finished product in accordance with the City Materials Testing Requirements, and the Frequency Guide Schedule of the CDOT Field Services Manual, per Section 720 of the City Special Provisions. All materials sampling, testing and inspection shall be performed by certified field technicians who work under the supervision of a registered professional engineer in the State of Colorado practicing in this field.

Field technicians shall furnish copies of failed test results to the Engineer within two working days of completion and prior to the next phase of construction. On a weekly basis, the Contractor shall furnish the Engineer with copies of all test results taken that week and a cover letter, signed by the supervising registered professional engineer, which summarizes the results and addresses any failed tests or inconsistencies.

Unless otherwise designated, all specifications, standards or policies referenced in Section 720 shall be the latest edition as revised or updated by approved supplements published and issued prior to the date of the advertisement for bids.

Subsection 106.08 shall include the following:

The Contractor will not receive compensation for storage of topsoil or other materials generated on site that are stored either on site or offsite for later disposal or inclusion into the Work.

Add subsection 106.14 as follows:

106.14 Trade Names, Approved Equals, or Substitutes. In order to establish a basis of quality, certain processes, types of machinery and equipment, or kinds of materials may be specified either by description or process or by designating a manufacturer by name and referring to that brand or product designation, or by specifying a kind of material. It is not the intent of the specifications to exclude other processes, equipment or materials of equal value, utility or merit.

Whenever a process is designated, or a manufacturer's name, brand or item designation is given, or whenever a process or material covered by patent is designated or described, it shall be understood that the words "or approved equal" follow such name, designation, or description, whether in fact they do so or not.

If it is desirable to furnish items of equipment by manufacturers other than those specified, as a substitute after the contract is executed, the Contractor shall secure approval prior to placing a purchase order or furnishing the same.

If the proposal includes a list of equipment, materials, or articles for which the Contractor must name the manufacturer at the time of submission of the bid, no substitutions therefore will be permitted after a proposal has been accepted without the express consent of the Owner.

REVISION OF SECTION 107 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Section 107 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 107.12 shall include the following:

Property pins, right-of-way markers and other survey corners shall remain undisturbed until a method of preserving or perpetuating such markers is approved by Owner. Should any such markers be disturbed, destroyed or removed without obtaining said approval, the Contractor shall be assessed for any costs incurred in resurveying, resetting, and registering said markers.

In subsection 107.15 change all references to CDOT to the City.

Subsection 107.15 shall include the following:

Certificates of Insurance shall be attached to the executed Contract Documents and shall become a part of the contract. These certificates shall include a provision that thirty days prior to insurance cancellation, written notice shall be given to the City.

Indemnification of Owner - Contractor hereby indemnifies and agrees to hold the Owner harmless for and on account of any act or omission in the completion and execution of the project specified herein, which indemnification shall extend to and include any damage of whatever sort or description, suffered by any person or entity, and shall include compensatory, punitive or special damages; and Contractor agrees to defend Owner hereunder, at Contractor's sole expense and if he fails to do so, to thereafter indemnify Owner, in addition to the above indemnification, for all court costs and attorneys fees incurred in any defense required to be undertaken by the Owner.

Add subsection 107.18 as follows:

107.18 Contractor's Responsibility During Warranty. The Contractor shall, at his sole expense and cost, remedy any defects in the work, and pay for any damage to other work resulting therefrom, which shall appear within a period of one

year from the date of final acceptance of work unless a longer period is specified. The Owner will give notice of defects with reasonable promptness upon their discovery.

In subsection 107.25 change all references to Region Environmental to the City.

REVISION OF SECTION 108 PROSECUTION AND PROGRESS

Section 108 of the CDOT Standard Specifications is hereby revised for this project as follows:

In subsection 108.02 delete the last sentence and replace with the following:

The Contractor shall commence work under the Contract within 14 calendar days of the date of the Notice to Proceed.

Subsection 108.05 shall include the following:

Working hours under this Contract shall be between 7:00 am and 5:00 pm. The Contractor shall not operate equipment before 7:00 am and shall schedule all work operations to be completed before 5:00 pm. Work after 5:00 pm will not be allowed except when required for circumstances beyond the Contractor's control and when approved by the Engineer. Work between 5:00 pm and 6:00 pm on more than two consecutive working days will be charged as one-half working day. Work after 6:00 pm on any day will be charged as one-half working day.

Contractor operations in lanes open to traffic are not allowed between the hours of 6:30 am to 8:30 am and 3:30 pm to 6:30 pm, unless otherwise approved by the Engineer. These restrictions apply to temporary delays including ingress and egress of materials, etc.

Subsection 108.08 shall include the following:

An extension of time for completion of the work shall be the Contractor's sole remedy for delays in performing this contract if such delay is caused, in whole or in part, by acts or omissions of the City or its agents unless the Department accepts responsibility.

An extension of time for completion of the work shall be the Contractor's remedy for delays in performing this contract caused by the failure of a utility company or special district to relocate its facilities in timely manner. Relief from failure of utility companies to fulfill their responsibilities is discussed in subsection 105.11 of the Standard Specifications and the City Special Provisions.

Delete subsection 108.09 and replace with the following:

108.09 Failure to Complete Work on Time. A daily charge will be made against the Contractor for each working day, including free time, that any Work shall remain uncompleted after elapse of Contract Time. This daily charge, determined by the original Contract amount for the Project from the table below, will be deducted from any money due the Contractor. This deduction will not be considered a penalty but as liquidated damages.

The schedule of liquidated damages set forth below is an amount, agreed to for purposes of this Contract by the Contractor and the City, as reasonably representing the additional costs incurred by the City, both for its time, labor and expenses, and for those damages and inconveniences suffered by the residents of the City as a result of delay in completion of the Project.

Schedule of Liquidated Damages

Original Amount of Contract		Liquidated Damages per Contract Day
For More Than	Up to & Incl.	
\$ 0	\$ 250,000	\$ 400
\$ 250,000	\$ 500,000	\$ 700
\$ 500,000	\$ 1,000,000	\$ 1,100
\$ 1,000,000	\$ 2,000,000	\$ 1,600
\$ 2,000,000	\$ 4,000,000	\$ 2,500

Due account shall be taken of any adjustments of the Contract Time for completion of the Work granted under the provisions of Subsection 108.07.

Permitting the Contractor to continue and finish the Work or any part thereof after the Contract Time has elapsed shall not be construed as a waiver on the part of the City of any of its rights under the Contract.

Deductions assessed as liquidated damages under this Section shall not relieve the Contractor from liability for any damages or costs resulting from delays to other Contractors on the Project or other Projects caused by a failure of the assessed Contractor to complete the Work according to Contract Time.

**REVISION OF SECTION 109
MEASUREMENT AND PAYMENT**

In subsection 109.01 change all references to CDOT to the City.

In subsection 109.04 (c) 1. delete the formulas for Hourly Rate and Standby Rate (RR and SR respectively). Payment will be made on a flat rate for hourly and standby rental rates plus EOC.

Delete subsection 109.04 (f) and replace with the following:

- (f) The Contractor’s representative and the Inspector shall, on a daily basis, agree in writing on the quantities of labor, equipment and materials used for work, extra work, and/ or force account work.

Subsection 109.04 (h) shall include the following:

Time extension for force account work shall be allowed only if a controlling operation or critical path item of the project is interrupted. Time extension requests shall meet the requirements of subsection 108.08. Force account items shall be completed in a workmanlike manner so as not to cause undue delays.

In subsection 109.06 (a) delete the second sentence and replace with the following:

The amount to be retained will be 5% of the value of the completed work to a maximum of 5% of the total contract amount including change orders and contingency.

Subsection 109.06 (a) shall include the following:

At the time of the Preconstruction meeting, the Contractor shall submit to the City a schedule of partial progress payments. This schedule will show the percentage of Work completed and the date and dollar amount of each anticipated progress payment.

The City will pay any monies due the Contractor within 30 days of approval of a Request for Partial Payment.

Delete subsection 109.06 (b) and replace with the following:

(b) Securities are not acceptable to the City in lieu of standard amount retained.

Add subsection 109.08 as follows:

109.08 Final Guarantee. All work shall be and is guaranteed by the Contractor for a specified period of one year from and after the date of written final acceptance of all work by the City, unless a longer period is specified. All other current applicable State statutes shall apply.

If within the guarantee period, non emergency repairs, changes, or replacements are required in connection with guaranteed work which, as determined by the City, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the contract, the Contractor shall, within 14 calendar days from receipt of notice from the City, and without expense to the City:

- (a) place in satisfactory condition, in every particular, all of such guaranteed work, correct all defects therein, or proceed with replacement of defective or unsatisfactory work where deemed necessary by the Engineer; and
- (b) make good all damage to the building site, equipment or contents thereof which, in the opinion of the Engineer, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with
- (c) the terms of the contract; and make good any work or material disturbed, or the equipment and contents of any building or structure on the site, in fulfilling any such guarantee.

In the case of emergency repairs, changes or replacements, the Contractor shall promptly upon receipt of Notice from the city and without expense to the City, perform the necessary actions to remediate the situation.

REVISION OF SECTION 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Section 202 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 202.02 shall include the following:

Areas within existing asphalt pavement that are designated for removal or patching shall be sawcut to the full depth of the asphalt or cut by a method approved by the Engineer which leaves a vertical face on the existing pavement and no deformation of the surface at the cut. Limits of cutting for patching shall be as directed by the Engineer. Asphalt sawing or other approved cutting methods shall be incidental to the pay items for HBP (Patching), Removal of Asphalt, or pay items which include removal of asphalt pavement.

All street cuts shall be in straight lines. Irregular shaped cuts with more than four (4) sides or cuts within existing patches shall not be allowed. Street cuts shall have no longitudinal joints within the wheel tracks.

Trees with a specified trunk diameter measured one foot above the ground surface and shrubs that are designated for removal under this section shall be removed in accordance with the requirements of Section 201. Removal of remaining vegetation as required by the project will be paid under Section 201.

Subsection 202.03 shall include the following:

All inlet castings, manhole rings and covers and other metal items relating to structures to be removed shall remain the property of the City or the owning utility company. This material shall be reused on the project where possible or as directed by the Engineer. Material not reused on the project shall be delivered to the City or owning utility company unless arrangements have been made for it to be picked up by the City or owning utility company.

Subsection 202.07 shall include the following:

Concrete from curbs, gutters, sidewalks and pavements may not be used in fills unless crushed to meet the gradation requirements for Class 4 Aggregate Base Course.

Subsection 202.09 shall include the following:

Planers shall operate moving against traffic in areas being planed in order to ensure that trucks used in hauling removed materials will be able to arrive and depart with the flow of traffic.

Planing shall result in a surface acceptable to the Engineer. Acceptability shall be based upon the following criteria:

1. Free of surface ridges in excess of ¼ inch.
2. Planed surface parallel to lane lines.
3. Surface area free of excess surface fines.
4. All planed surfaces, especially wheel ruts, show scoring by planer teeth.
5. Specified cut depth attained at edges of roadway appurtenances and curb lips.

Vertical cuts adjacent to traffic lanes from rotomilling over 1" depth shall be delineated at 50 foot intervals immediately after removal operations.

The Contractor shall use caution when planing around manholes, water valve boxes and other roadway appurtenances. Manholes, water valve boxes and other similar structures shall either be adjusted to below the bottom of the cut prior to commencing planing operations or cut around using planing equipment. The maximum deviation between the top of the milled pavement and top of the manhole or water valve box shall be no more than ¾ inch in areas open to traffic. This condition may be achieved by placing a temporary wedge of HBP around the structure. This temporary taper shall be removed prior to placement of paving fabric and new HBP.

Subsection 202.11 shall include the following:

Removal of trees will be measured by the actual number of trees removed with specified diameters measured 4.5 feet above the ground surface. Multiple tree trunks from one root structure with one trunk being the specified diameter will be considered one tree. Trees with a diameter less than 4" or when removal of trees is not included as a separate pay item, removal of trees shall be included in clearing and grubbing.

Removal of existing asphalt pavement for patching, to include asphalt sawing or other approved methods of cutting existing asphalt pavement, will not be measured but shall be incidental to the pay item for HBP (Patching).

Subsection 202.12 shall include the following:

Pay Item	Pay Unit
Removal of Tree (< 12")	Each
Removal of Tree (> 12")	Each

REVISION OF SECTION 203 EXCAVATION AND EMBANKMENT

Section 203 of the CDOT Standard Specifications is hereby revised for this project as follows:

In subsection 203.03 (a) delete the second and third paragraph and replace with the following:

Embankment imported onto the project will be tested for water soluble sulfates using CP-L 2103 Method B. The average of three consecutive tests shall show that the sulfate content is not greater than that corresponding to the sulfate exposure level specified on the plans. No single test shall have a sulfate content more than 20 percent greater than that corresponding to the sulfate exposure level specified on the plans.

Subsection 203.05 (f) shall include the following:

Potholing consists of locating utilities by removal of pavements, excavation of materials of whatever character required to expose the utilities, replacement and compaction of the excavated material and patching the pavement. The Contractor will coordinate survey activities to document utility locations. The Contractor shall use extreme caution during this work. Any damage to existing utility lines or adjacent facilities shall be promptly repaired at the Contractor's expense.

Subsection 203.06 shall include the following:

Contractor shall use material excavated from the project for embankment to the greatest extent possible. The Engineer shall approve excavated material for placement as embankment on the project. Compaction shall be in accordance with AASHTO T99 or T180 as appropriate.

Embankment material imported to the site for inclusion in a pavement structure shall have a resistance value of at least 8 at 300 psi exudation pressure as measured by the Hveem Methodology. The Contractor shall submit test results to the Engineer for approval prior to importing embankment material. Earthen material imported to the site for other fill outside the roadway shall be easily compacted, stable material with zero to less than 2% swell/shrinkage potential, when a surcharge load of 200 psf is applied.

Subsection 203.09 shall include the following:

Proof rolling shall be performed on the finished subgrade and/or the ABC no more than 48 hours prior to placement of the next construction phase. Should inclement weather (any precipitation) occur between the end of the proof rolling and placement of the next construction phase then a second proof rolling shall be required. The Contractor shall notify the City a minimum of 24 hours prior to proof rolling in order to allow the City to observe the proof roll.

Proof rolling of the sub-grades shall be performed with a three axle loaded truck with at least 18,000 pounds per axle load on two of the axles and tire pressures of at least 80 psi. Documentation of these specifications shall be submitted to the City on every truck employed for proof-rolling. The loaded truck shall make a minimum of three complete passes for each area being tested.

Passing density tests shall not constitute passing proof roll. All areas found to be weak and which have failed, as determined by the City, shall be ripped, scarified, moisture conditioned as required, and re-compacted to meet the density specifications. These areas shall be retested for density and re-proof rolled for acceptance. Weak areas shall include, but not be limited to, areas that visually deform under load. All rework and retesting shall be solely at the Contractor's expense.

Delete subsection 203.11 and replace with the following:

203.11 Earthwork – Rough Grade. Rough grading shall consist of earthwork necessary to achieve the approximate grades when the excavation or embankment depth is less than 12 inches.

Delete subsection 203.12 and replace with the following:

203.12 Earthwork – Fine Grade. Fine grading shall consist of earthwork necessary to achieve the final and sub-grade elevations when the excavation or embankment depth is less than 12 inches.

Delete subsection 203.13 (f) and replace with the following:

(f) *Proof rolling.* Proof rolling will not be measured and paid for separately but shall be included in Section 306.

Add subsections 203.13 (g) and (h) as follows:

(g) *Earthwork – Rough Grade.* Earthwork – rough grade will be measured as the area in square yards that is graded.

(h) *Earthwork – Fine Grade.* Earthwork – fine grade will be measured as the area in square yards that is graded.

Subsection 203.12 shall include the following:

Pay Item

Earthwork – Rough Grade
Earthwork – Fine Grade

Pay Unit

Square Yard
Square Yard

**REVISION OF SECTION 206
EXCAVATION AND BACKFILL FOR STRUCTURES**

Section 206 of the CDOT Standard Specifications is hereby revised for this project as follows:

Add subsection 206.02 (d) as follows:

(d) Squeegee material, when approved for application by the Engineer, shall meet the following gradation:

<u>Sieve Designation</u>	<u>Percent by Weight Passing</u>
3/8 inch	100
No. 4	60-90
No. 8	0-45
No. 16	0-25
No. 50	0-6
No. 200	0-2

In subsection 206.03 delete the thirteenth paragraph and replace with the following:

Compaction of structure backfill (flow fill) will not be required except as necessary to ensure complete filling of any voids around structures and pipe.

Subsection 206.03 shall include the following:

Squeegee material shall only be used as bedding for reinforced concrete pipe. Compactive effort shall be used on squeegee material to consolidate the material around the pipe haunches.

Backfill and compaction shall be accomplished immediately upon completion of each item. Open trench length shall not exceed one hundred **(100)** feet during construction. During non-construction periods (evenings, weekends and holidays) all trenches shall be backfilled and compacted, excepting an area not exceeding **400** square feet as the daily pipe terminal, and structures not completed or to adequate strength. The Engineer may require backfilling of the pipe terminus if the terminus is located in an intersection or the remaining street width is inadequate to safely convey two-way traffic around the area of the terminus.

Bracing, shoring, sheeting, etc., shall be in accordance with all applicable State and Federal Occupational Safety and Health requirements. Shoring shall be removed as the work and backfilling operations progress unless ordered by the Engineer to be left in place. The Contractor will be paid for shoring so ordered to be left in place on the basis of invoiced material only. Shoring shall be considered as incidental to construction and all costs incurred, except for materials ordered to be left in place will be considered to be included in the unit price bid for the construction of each section of sewer or associated structure.

The decision to brace, shore or sheet the excavation shall be entirely the Contractor's responsibility. However, if the Engineer is of the opinion that at any point the trench walls are not properly supported, he may order the placement of additional supports by and at the expense of the Contractor, and compliance with such order shall not relieve or release the Contractor from his responsibilities for the safety of the work.

Delete subsection 206.06(c) and replace with the following:

Excavation, bedding, backfill, compaction, disposal of surplus material, haul, water and all other required work for construction of pipe and structures will not be measured and paid for separately but shall be considered incidental to construction of the pipe and/or structure. Pipe and structures will not be considered for payment until all backfill is completed.

Add subsections 206.06 (e) as follows:

Structure Backfill (Flow-fill) used at the direction of the Engineer will be measured in accordance with the lesser of that quantity calculated as shown in M-206-1 or the actual quantity used. Structure Backfill (Flow-fill) not required by the Contract Documents may be used at the Contractor's discretion but will not be measured and paid for.

Subsection 206.07 shall include the following:

Structure Backfill (Class 1, 2 or Flow-fill) will be paid according to the unit prices on the Bid Schedule only when the excavated material is unacceptable for backfill as determined by the Engineer.

Structure Excavation will be paid according to the unit price on the Bid Schedule only when over-excavation is required for removal of unsuitable material and replacement by Structure Backfill (Class 1, 2 or Flow-fill).

REVISION OF SECTION 208 EROSION CONTROL

Section 208 of the CDOT Standard Specifications is hereby revised for this project as follows:

In subsection 208.03 change the following references:

All references to CDOT to City

All references to The Region Water Pollution Control Manager to City Stormwater Coordinator

Add subsection 208.03 (f) as follows:

(f) Stormwater Management Plan & CDPHE Permit

1. Unless notified in writing to the contrary, the Contractor shall prepare SWMP immediately following City Council Approval of the Project. Following Council Approval, the City shall provide the Contractor with a Notice of Intent, authorizing the Contractor to begin work on the SWMP while the Project contract documents are being signed. This expedited process is designed to minimize delays to the Project from SWMP preparation and permitting with the Colorado Department of Public Health and Environment (CDPHE).
2. The SWMP is required for all projects regardless of whether or not an "Erosion and Sediment Control Plan" is shown in the plans. If provided, the "Erosion and Sediment Control Plan" may be made part of (and modified by) the SWMP document. The City shall provide examples of a City approved SWMP document upon request.
3. When necessary, immediately following written approval of the SWMP, the Contractor shall make application to the CDPHE for a "General Permit Application for Stormwater Discharges Associated with Construction Activity". The Contractor shall prepare all application materials and pay the application fee. Typically, the CDPHE issues a stormwater permit within 10 days of application. No land disturbance work may proceed until a Stormwater permit has been received by the Contractor, and a copy of same has been provided to the City.

Subsection 208.04 (f) shall include the following:

Any sediment or debris which may have accumulated as a result of construction in any waterway, swale, stormwater detention area, inlet structure, curb, pipe or any other system of conveyance of water shall be promptly removed by the Contractor to the satisfaction of the Engineer. This includes routine cleaning and maintenance of any BMP that prevents construction sediment from entering a City or CDOT stormwater collection system or directly into a waterway.

Add subsection 208.05 (t)

(t) Street Sweeping

The Contractor shall make every effort to ensure that sediment and construction debris does not leave the construction site and be deposited on surrounding streets. Recognizing that complete prevention of migrating soil and rock material is impossible, the City has provided a reasonable allowance for Street Sweeping mobilizations. Each Street Sweeping unit shall consist of one mobilization and a minimum of 2 hours of Street Sweeping with a mechanized wet sweeping device designed to minimize dust while removing all evidence of construction activity from all surrounding streets. The time during each mobilization may be extended by request of the City, to ensure that all construction debris is removed from existing streets, at no additional cost or pay item charge to the City.

Should the City determine that additional Street Sweeping mobilizations are required during the course of the Project to remove construction debris from the project site or surrounding streets, the City shall notify the Contractor, and the Contractor shall provide these at no additional cost to the City.

All evidence of Construction debris on surrounding streets extending less than 50 feet beyond the Limits of Construction shall be promptly removed by the Contractor by sweeping at the end of each working day, at no additional cost to the City. Significant evidence of Construction debris extending beyond fifty (50) feet from the Limits of Construction shall be removed by the Contractor at the end of each work week, or the last working day before a weekend or holiday, whichever comes sooner. To perform this removal, the Contractor may utilize a Street Sweeping pay item, or remove the debris via conventional sweeping (in a manner to control dust), at no additional cost to the City. Once the Contractor has exhausted his Street Sweeping pay item quantity, the Contractor shall regularly remove (per the requirements of this Section) Construction debris via Street Sweeping or other sweeping method designed to minimize dust (pressure washing or use of only water for purposes of cleaning is not acceptable) to the end of Construction Activity at no additional cost to the City.

REVISION OF SECTION 210 RESET STRUCTURES

Section 210 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 210.02 shall include the following:

Any work performed by the Contractor on a utility facility is subject to inspection and approval by the owning utility company. The Contractor is responsible for coordinating inspection with the owning utility.

The contractor must give written notice to all customers affected by water service outages at least 24 hours before the water is turned off for this work. The Contractor shall give a minimum of 24 hours notice to the owning utility company before any work which will affect their facilities. The Contractor shall not operate any water valves without permission of the owning utility company.

Subsection 210.10 shall include the following:

Any existing manholes, water valves, range boxes, traffic control boxes, etc., which are required to be adjusted shall be adjusted to 1/4 inch below finished grade prior to or immediately following placement of the final lift of asphalt. The intent of this specification is that the freshly placed HMA be compacted around the structure after the structure is adjusted to finish grade. When adjusting valve boxes, the box shall be cleaned of all foreign debris such that the operating nut of the valve is fully accessible to operate. The work shall be subject to inspection by and approval of the owning utility and is incidental to the pay item for adjusting water valves.

Subsection 210.12 shall include the following:

The pay item for resetting, modifying or adjusting meter pits shall include all additional material required to modify, adjust and/or reset the meter pits and curb stops.

Tapping tee, valves, pipe, pipe fittings and other materials required to reset, relocate or extend a fire hydrant assembly will be included in the pay item for Reset Fire Hydrant.

Subsection 210.13 shall include the following:

Pay items shall include, unless otherwise specified, all new hardware and material.

Add subsections 210.14 – 210.16 as follows:

210.14 Fire Hydrants. If required on the drawings, before resetting, relocating or extending fire hydrants, the Contractor shall contact the owning utility for inspection of the removed hydrant. The Contractor may be required to excavate the existing tee and remove any pipe or valves at the tee and place a plug at the tee if required by the owning utility company. The new hydrant lead is to be constructed of all new pipe and other material.

210.15 Water or Sewer Service Line. This work shall be performed where necessary to remove, relocate, or replace a utility service line caused by a grade and/or line conflict with new construction. Adjustment work may entail complete

relocation and replacement of the affected service line. Payment under this item shall include all costs associated with service line relocation. For reset work, the approximate limits of replacement would be the width of the trench. Payment under this item shall include all costs associated with service line restoration within the limits of the excavation.

210.16 Water Meter Pit. Adjustment work shall be performed on existing water meter pits. The Contractor will adjust existing water meter pit structures to grade. Adjustment of associated curb stops shall be included under this pay item. For reset work, the contractor shall remove the existing water meter pit and replace the existing structure with new meter pit structure material. Unless otherwise specified, required material will be supplied by the **CONTRACTOR**. The new meter pit will be relocated along the existing water lateral. This pay item also includes all work and additional material required to complete installation of the new meter pit structure to finish grade. Resetting the curb stop shall be included under this pay item. Modification work shall entail the conversion of the existing water meter pit cover to a heavy duty lid and frame adjusted to grade. This pay item shall also include related work on the associated curb stop. Unless otherwise specified, the heavy duty frame and lid will be furnished by the Contractor.

SECTION 211 LANDSCAPING

Section 211 is hereby added for this project as follows:

DESCRIPTION

211.01 This work shall include all necessary work and material required to restore or provide new landscaping in accordance with the Contract Documents. This work shall be in accordance with the Contract and accepted horticultural practices.

MATERIALS

211.02 Landscape Rock, Fabric, and Steel Edging. Submit four copies of a list of landscape rock, fabric, and steel edging. Submit one sample of rock and mulch.

- (a) *Landscape Rock (Cobble).* Landscape rock (cobble) shall consist of three inch nominal size cobble used for landscape applications.
- (b) *Landscape Fabric.* Landscape fabric shall be Mirafi type 140N, Tytar type 3401 by DuPont, or an approved equal: four (4) ounce per square yard, spun (not woven) polypropylene fabric for weed barrier.
- (c) *Steel Edging.* Steel edging shall be standard, 4" x 3/16", ASTM A569, rolled edge, fabricated in sections with loops stamped or welded to the face 30 inches apart to receive stakes. Provide factory painted steel with tempered steel stakes.

CONSTRUCTION REQUIREMENTS

211.04 Landscape Rock. Landscape rock shall include all necessary work and materials to place landscape fabric and three inch thickness of landscape rock within steel edging as shown on the plans or as directed by the Engineer.

211.06 Landscape Fabric. Install landscape fabric with minimum edge lap of six inches before landscape rock or mulch placement.

211.07 Steel Edging. Install steel edging in accordance with the manufacturer's instruction before landscape rock or mulch placement.

METHOD OF MEASUREMENT

211.08 Excavation, grading, and landscape fabric shall not be measured but will be included in the pay items for landscape rock. Landscape rock will be measured by the square yard of completed and accepted treatment. Steel edging will be measured by the linear foot of completed and accepted treatment.

BASIS OF PAYMENT

211.09 The accepted quantities, measured as provided above, will be paid for at the contract price for each of the pay items listed below that appear in the bid schedule.

Pay Item	Pay Unit
Landscape Rock (Cobble)	Square Yard

**REVISION OF SECTION 212
SEEDING, FERTILIZING AND SODDING**

Section 212 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 212.02 (a) shall include the following:

Lawn seed types and sod species shall match existing grass when restoration or replacement is required by the Contract.

Unless otherwise specified in the drawings, native seed mix shall be as follows:

<u>Seed Common Name</u>	<u>Rate lb./acre</u>
Buffalo grass (Sharps Improved)	16
Crested wheat grass (Fairway)	6
Western wheat grass (Barton)	6
Streambank wheat grass (Sodar)	6
Perennial rye grass (Manhattan)	<u>16</u>
Total lbs/acre seeding	46

Subsection 212.02 (b) 1. shall include the following:

Unless otherwise specified in the drawings, fertilizer types and application rates shall be as follows:

<u>Use</u>	<u>Commercial Fertilizer Analysis</u>	<u>lbs/acre Available N</u>	<u>lbs/acre Available P</u>	<u>lbs/acre Available K</u>	<u>Rate lbs/acre</u>
Native Seeding	(10-6-4)	25	15	10	250
Lawn Seeding	Diammonium phosphate (18-46-0) in top 4" prior to seeding (20-10-5) at 100 lbs/acre three weeks after germination				
Sod	(20-20-10-3)	Per Manufacturer or 50 lbs/ 8,000 SF			

Subsection 212.02 (c) shall include the following:

Provide strongly rooted sod, not less than two years old, free of weeds and undesirable native grasses and machine cut to pad thickness of one inch, excluding top growth and thatch. Provide only sod capable of vigorous growth and development when planted (viable, not dormant). Sod shall be clipped to two inches before it is lifted.

Provide sod of uniform pad sizes with maximum 5% deviation in either length or width. Broken pads or pads with uneven ends will not be acceptable. Sod pads or pads with uneven ends will not be acceptable. Sod pads incapable of supporting their own weight when suspended vertically with a firm grasp on upper 10% of pad will be rejected.

Provide locally grown pure stand of Graff GTF Kentucky Bluegrass Blend or approved equal.

Time delivery so that sod will be placed within 24 hours after stripping. Protect sod against drying and breaking of rolled strips.

Subsection 212.05 (b) shall include the following:

1. Lay sod within 24 hours from time of stripping. Do not plant dormant sod or if ground is frozen.
2. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses, Tamp or roll lightly to ensure contact with sub-grade. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.
3. Water sod thoroughly immediately after planting.
4. *Rolling.* When soil and sod are moist, roll sod lightly as soon as possible after it is laid. Delay rolling until just before the second watering.
5. *Abutting Existing Sod.* Provide a clean cut edge along existing sod where new sod will adjoin. Lay new sod to avoid any gaps, overlap, or unevenness. Final sod elevation shall match existing adjacent sod elevation.
6. *Drainage.* Ensure finished areas of sod are such that positive drainage of storm and irrigation water will occur and ponding of water will be minimized. Coordinate watering schedule with Owner.

Subsection 212.05 (c) shall include the following:

Apply commercial nitrogen fertilizer as specified, within 48 hours before laying sod. Apply after fine grading and prior to topsoil compaction. Lightly water to aid the breakdown of fertilizer.

Apply fertilizer when temperature is fairly cool and lawn is dry. Apply fertilizer with a broadcast type spreader at the correct settings for the fertilizer type used.

Apply second fertilization at one half rate three weeks after sodding is completed.

Add subsection: 212.05 (d) as follows:

212.05 (d) Warranty. Warrant sod for a period of one year from date of completion to be in a healthy, vigorous growing condition. During the original warranty period, replace at once sod areas that die due to natural causes, that settle below the adjacent sod, or which in Owner's Representative's opinion are unhealthy. Replacement will not be required in any season unfavorable for sodding. Install replacement as originally specified and warranted.

In subsections 212.07 and 212.08 change all references to acres and square feet to square yards.

REVISION OF SECTION 214 PLANTING

Section 214 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 214.02 shall include the following:

Materials List: Submit four copies of a list of all materials to be used in the planting operations, together with the source of those materials.

Inspection. All plants shall be subject to inspection by the Engineer prior to delivery. Plants that do not conform to specifications will be rejected and replaced at the expense of the Contractor. Plants that do not appear to conform to the Colorado Standards for Nursery Stock may be subject to official inspection by a representative of the Colorado Department of Agriculture. If any plant or plants are condemned by the Colorado Department of Agriculture, replacement plants that conform to the Colorado Standards for Nursery Stock will be at the expense of the Contractor.

Containers. All plants specified in containers shall be Acontainer-grown@ as defined by the Colorado Nursery Act.

Balled and Burlapped. All plants specified as balled and burlapped (B&B) shall conform to or exceed the minimum sizes specified in the Colorado Nursery Act. No balled and burlapped plant shall be accepted if the ball is broken or the trunk loose in the ball or viable roots exposed.

Size. All plants shall be true to species and of size(s) specified.

1. Deciduous Trees - 2" Ball and Burlap
2. Evergreen Trees - 6' Ball and Burlap
3. Shrubs - Number 5 container
4. Perennials - Number 1 container
5. Annuals - Flats 1804
6. Ornamental Grasses - Number 1 container

All plants shall have well formed buds with size normal for the species. Growth increments of shoots for the previous year shall be of a length that is consistent with normal growth for that season.

The plants supplied under these specifications consist of plants coming from propagating houses, beds, frames or nurseries. A Collected Stock® will not be accepted unless specified or as approved substitute. All plants shall conform to the most current Colorado Standards for Nursery Stock, Colorado Department of Agriculture.

Source Quality Control. Ship landscape materials with certificates of inspection as required by governing authorities. Comply with governing regulations applicable to landscape materials.

Growing Areas. Provide trees and shrubs grown from one of the following areas:

1. Colorado Grown: Trees and shrubs grown in Colorado nursery fields for major portion of plant life.
2. Out of State Container Grown: Plants from USDA Hardiness Zones other than 1 – 5 which have been acclimatized to site conditions at time of planting.
3. Northern Grown: Trees and shrubs grown in nurseries for at least one year in USDA Hardiness Zones 1 – 5.

Inspection. The Engineer reserves the right to inspect trees and shrubs either at the place of growth or at site before planting, for compliance with requirements for name, variety or size. All plant material must be acceptable to the Engineer.

Digging, Storing and Shipping.

1. All plants shall be dug to conform with minimum standards set forth in the most current Rules and Regulations of the Colorado Nursery Act. All plants must be stored and shipped under conditions of temperature, light and moisture sufficient to maintain continuing viability and vigor of the stock so that it will grow in a form characteristic of the species when planted and given appropriate after-planting care.
2. The root system shall be kept moist and plants shall be protected from adverse weather conditions due to climate and transportation, between the time they are dug or otherwise obtained, and actual planting.
3. Schedule and coordinate delivery and planting with other landscape work in such a manner that plants will not be in a site holding area no more than one day prior to planting unless special arrangements are made to care for and secure unplanted materials.

Subsection 214.03 (a) shall include the following:

Unless otherwise agreed by Engineer, balled and burlapped and machine dug trees shall be planted in one of two planting seasons within a calendar year, namely, when plants are dormant in early spring and early fall no later than mid-October. Either of these seasons shall comprise that period of time in spring or fall that favors the recovery of plants from transplanting and encourages that resumption of healthy growth at the planting site.

Subsection 214.03 (b) shall include the following:

During excavation when conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or other obstructions, notify the City before planting. Where rubble fill is encountered, notify the Engineer and prepare planting pits properly by removal of rubble or other acceptable methods. When conditions encountered are severe and extensive (as determined by the Engineer) proceed with additional work at the direction of the Engineer.

Subsection 214.03 (c) shall include the following:

1. **Bare Root Stock:** Set bare root stock on cushion of planting soil mixture. Spread roots and carefully backfill around roots by hand and puddle with water until backfill layers are completely saturated. Plumb before backfilling and maintain plumb while working backfill around roots and placing layers above roots. Remove injured roots by cutting cleanly.
2. **Container Grown Stock:** Set plants as specified for balled and burlapped stock after removal from container.
3. **Mechanical Spade Planting:** Larger trees and shrubs may be planted by means of mechanical spade equipment at the City's option. Larger plants being moved from permanent locations to new locations may be transplanted by this method. Use equipment that will dig, carry, and replant with the same unit. Equipment size must be adequate for size of plant and not less than eight inch of spade diameter at six inch depth per caliper inch of trunk diameter. Refer to details.

Subsection 214.03 (e) shall include the following:

Any injured, dead or broken roots or branches shall be pruned in accordance with current recommended practices published by the International Society of Arboriculture. Unless otherwise specified, no pruning shall be done by the contractor to limb up, thin or shape a plant after planting. Such pruning shall be the sole responsibility of the City. Remove and replace excessively pruned or malformed stock resulting from improper pruning.

Subsection 214.03 (f) shall include the following:

Where guy wires are used, they shall be flagged with a conspicuous material and replaced as required by the City.

Subsection 214.03 (g) shall include the following:

Wrapping of tree trunks is at the discretion of the City depending upon species, age, time of year, plants and exposure. If tree wrap is required, it shall be the standard crepe wrap and applied from the base upward to the second structural branch, overlapping fifty percent. Wrap shall only be applied to late summer and fall plants and removed the following spring by the Contractor.

In subsection 214.04 change all references to CDOT to City.

Add subsections 214.03 (j) – (s) as follows:

- (j) All operations shall conform to the requirements of the Colorado Nursery Act.
- (k) *Contractor Qualifications.* The work in this section shall be performed by an experienced landscape contractor having not less than five years successful experience in landscape projects of similar size and scope.
- (l) *Contractor's Field Supervision.* Maintain an experienced full-time supervisor on the Project site during times landscaping work is in progress, and is able to speak in languages of landscape workers with skill. A Certified Landscape Technician is preferred.
- (m) *Preconstruction.* Prior to any excavation, all underground utilities shall be identified by the proper authority. The Contractor shall be responsible for the location and identification of such utilities and other obstructions.
- (n) *Open holes or pits.* No hole or pit shall remain open without safety devices to protect the City from liability for personal accidental injury.
- (o) *Coordination and Scheduling.* Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to City. If planting trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.
- (p) *Location of Plants.* Location of all plants shall be indicated on the site with marked stakes in accordance with the plan. Staking may be performed by the Engineer, if the City so elects.

(q) *Removal of Containers, Wire, and Rope.* All containers, whether they be metal, plastic or fiber shall be removed from the soil ball prior to planting. B & B plants whose soil balls are wrapped in burlap (treated or not) shall have the burlap pulled away from the trunks and all restraining ropes cut to prevent girdling. B & B trees wrapped in artificial, non-biodegradable Aburlap® or plastic shall not be accepted for planting. Plants in wire baskets shall be planted in such a manner that all twine around the trunks and a minimum of the top one-third (1/3) of the wire is completely removed before backfilling.

(r) *Ground Cover Planting.*

1. Space ground cover as indicated on the drawings.
2. Dig holes large enough to allow for spreading of roots and backfill with planting soil. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around the plants to hold water. Water thoroughly after planting, taking care not to cover crowns of plants with wet soils.
3. Protect from hot sun and wind for several days. Remove protection when plants show evidence of recovery from transplanting shock.
4. Mulch areas between ground cover plants; place not less than two (2) inches thick.

(s) *Mulching.*

1. Dish top of backfill to allow for mulching.
2. Install weed control barriers before mulching following manufacturer's recommendations. Completely cover area to be mulched. Lap edges a minimum of six inches.
3. Mulch pits, trenches and planted areas. Provide two (2) inch thickness of mulch and work into top of backfill and finish level with adjacent finish grades.

(t) During landscape work, store materials and equipment where directed. Keep pavements and work area in an orderly condition. Protect landscape work and materials from damage due to landscape operations, operations by other trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

(u) *Inspection.*

1. When the landscape work is complete, including maintenance, the Engineer will, upon request, make an inspection to determine acceptability. The landscape work may be inspected for acceptance in parts as agreeable to the Engineer, provided the work offered for inspection is complete, including maintenance, and that the area comprises one complete area of substantial size.
2. Where inspected landscape work does not comply with the requirements, replace rejected work and continue specified maintenance until reinspected by the Engineer and found to be acceptable. Replace all such plants at one time and within ten (10) working days of notification whether for acceptance or warranty inspections. Remove rejected plants and materials promptly from the project site.

REVISION OF SECTION 216 SOIL RETENTION COVERING

Section 216 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 216.02 (a) 1. A.

Subsection 216.05 shall include the following:

Soil Retention Blanket shall include removal and replacement of the Blanket up to three times, or until the blanket is significantly damaged or unable to be reinstalled. The Contractor shall make reasonable efforts to ensure that if blanket material is to be removed, that removal is performed with care to avoid damaging blanket material.

**REVISION OF SECTION 306
RECONDITIONING**

Section 306 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 306.01 shall include the following:

This work also consists of proof rolling the subgrade.

Subsection 306.02 shall include the following:

All proof rolling shall also be performed per the requirements of Section 203.

Delete subsection 306.03 and replace with the following:

306.03 Reconditioning and Proof rolling will be measured by the square yard of subgrade and shall include scarifying, compacting, moisture control, finishing, proof rolling, and maintaining the finished surface.

Delete subsection 306.04 and replace with the following:

306.04 The accepted quantities of reconditioning and proof rolling will be paid for at the contract unit price for reconditioning and proof rolling.

Payment will be made under:

Pay Item	Pay Unit
Reconditioning and Proof rolling	Square Yard

Water will not be measured and paid for separately but shall be included in the work.

**REVISION OF SECTION 403
HOT MIX ASPHALT**

In subsection 403.01 the last paragraph shall include the following:

This work consists of constructing one or more courses of bituminous pavement on a prepared base in accordance with these specifications, and in conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established.

Subsection 403.03 shall include the following:

Areas to be patched back shall be saw cut, unless alternative methods of cutting which produce straight lines and vertical cuts are approved by the Engineer. Limits of cutting shall be as specified on the plans or as directed by the Engineer. Jagged edges are unacceptable and shall be replaced at the Contractors expense. Prior to placement of the patch, all exposed sides of the existing pavement shall be thoroughly coated with tack.

All materials excavated from the patch area shall become the property of the Contractor and hauled from the site.

**REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT**

Section 412 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 412.03 shall include the following:

Concrete for cross pan and fillet pavement shall be Class "A", "B" or "D".

Fast Track Concrete shall reach a compressive strength of 3000 psi in 3 days to allow the new concrete pavement may be opened to traffic. Admixtures to decrease curing time shall be non-reactive to steel reinforcement and shall not

include calcium chloride unless approved by the Engineer. All other requirements for the class of concrete specified shall be met.

When not specified or required at the direction of the Engineer, Fast Track Concrete may be used at the option and expense of the Contractor.

In subsection 412.12 delete the paragraph (d)

In subsection 412.14 delete the first sentence of the first paragraph and replace with the following:

Immediately after the finishing operations have been completed, the entire surface, including tined grooves and exposed sides of the newly placed concrete, shall be sprayed uniformly with an impervious membrane curing compound. The impervious membrane compound shall meet the requirements of AASHTO M 148, Type 2 and shall be volatile organic content (VOC) compliant.

Delete subsection 412.17 and replace with the following:

412.17 Surface Smoothness. The roadway surface smoothness shall be tested with a 10 foot straight edge as described in the Ten- Foot Straight Edge Method.

Subsection 412.18 shall include the following:

Mastic joint sealer is not considered suitable for joint material in concrete pavement. Joint material will be silicone based and shall be recommended for this usage by the manufacturer.

Subsection 412.23 shall include the following:

Concrete Pavement (Fast Track) will be paid at the same price as Concrete Pavement unless it is required by the Contract Documents or its use is directed by the Engineer.

Subsection 412.24 shall include the following:

Pay Item	Pay Unit
Concrete Pavement (Fast Track ____ Inch)	Square Yard

REVISION OF SECTION 503 DRILLED CAISSONS

Section 503 of the Standard Specifications is hereby revised for this project as follows:

Subsection 503.03 shall include the following:

If groundwater is encountered during excavation activities, holes containing groundwater shall be dewatered in accordance with Section 211.

Subsection 503.04 shall include the following:

Cross-Hole Sonic Logging

(a) *General Requirements.*

The nondestructive testing method called Cross-hole Sonic Logging (CSL) is not required unless requested by the Department or the Engineer. CSL tubes shall be installed in every caisson.

The testing shall not be conducted until twenty-four hours after the placement of all concrete in a shaft, and must be completed within 7 calendar days after placement on production drilled shafts. The Engineer may specify a longer minimum time if special retarders, mix designs, or other factors result in slower-setting concrete and the contractor can demonstrate debonding will not occur between the concrete and CSL tube.

The CSL tests shall be conducted by an experienced independent testing organization retained by the Contractor and approved by the Engineer prior to testing.

The CSL tests measure the time it takes for an ultrasonic pulse to travel from a signal source in one access tube to a receiver in another access tube. In uniform, good quality concrete, the travel time between equidistant tubes will be relatively constant and correspond to a reasonable concrete pulse velocity from the bottom to the top of the foundation. In uniform, good quality concrete, the CSL test will also produce records with good signal amplitude and energy. Longer travel times and lower amplitude/energy signals indicate the presence of irregularities such as poor quality concrete, voids, honeycomb and soil intrusions. The signal will be completely lost by the receiver and CSL recording system for the more severe defects such as voids and soil intrusions.

Upon completion of CSL testing all water shall be removed from access tubes and any other drilled holes. After the CSL results have been evaluated, required repair of defects has been conducted and the repair has been evaluated with another CSL survey, the CSL tubes shall then be grouted at the direction of the Engineer with an approved grout meeting the requirements of Paragraph (g) below.

(b) Preparation for Testing

For 54-inch diameter shafts, a minimum of four (4) CSL tubes shall be installed in the drilled shafts, equally spaced around the perimeter of the shaft at 90 degrees.

The tubes shall be Schedule 40 steel with an inside diameter of 1 ½ inches to 2 inches. Galvanized steel will not be permitted. No substitution will be permitted. Pipes shall have a round, regular internal diameter free of defects or obstructions, including any at pipe joints (all pipe joints shall be threaded without any couplings), in order to permit the free, unobstructed passage of a 1.35 inch diameter source and receiver probe. Tubes shall be watertight and free from corrosion with clean internal and external faces to ensure passage of the probes, and to provide good bond with the concrete.

CSL pipes shall be fitted with a watertight shoe on the bottom and a removable cap on the top. The pipes shall be securely attached to the interior of the reinforcement cage with a minimum cover of 3 inches.

Pipes shall be installed in each shaft in a regular, symmetric pattern such that each tube is placed the maximum distance possible from each adjacent tube, with a spacing of 90 degrees around the perimeter of the cage as specified above. The tubes shall be as near to parallel as possible, and are typically wire-tied to the reinforcing cage every 3 feet, or are otherwise secured such that the tubes stay in position during placement of the rebar cage and concrete.

The tubes shall extend from ½ foot above the shaft bottoms to at least 3-feet above the shaft tops, or when over open water, at least 3-feet above the water surface. Under no circumstances shall the tubes be allowed to rest on the bottom of the drilled excavation. If the shaft top is sub-surface, the tubes shall extend at least 3 feet above the ground or water surface.

All joints in the tubes required to achieve full-length shall be made watertight. Care shall be taken during reinforcement installation operations in the drilled shaft hole so as not to damage the tubes. After placement of the reinforcement cage, the tubes shall be filled with clean water as soon as possible (no later than 4 hours after placement) and the tube tops capped or sealed to keep debris out of the tubes. Care shall be exercised in the removal of caps or plugs from the pipes after installation so as not to apply excess torque, hammering, or other stresses which could break the bond between the tubes and the concrete.

The Contractor shall submit to the Engineer for review the proposed CSL system including equipment schematics, material specifications, tube size, installation details, testing procedures, and joint connections at least 30 days prior to starting drilled caisson construction.

(c) *Typical CSL Test Equipment.* Typical CSL test equipment consists of the following components:

1. A microprocessor based CSL system for display of individual CSL records, analog-digital conversion and recording of CSL data, analysis of receiver responses and printing of CSL logs.
2. Ultrasonic source and receiver probes for 1-½ inches to 2-inch inside diameter pipe, as appropriate.
3. An ultrasonic voltage pulsar to excite the source with a synchronized triggering system to start the recording system.

4. A depth measurement device to determine and record depths.
5. Appropriate filter/amplification and cable systems for CSL testing.

(d) CSL Logging Procedures

Before the placement of concrete, a minimum of one tube per shaft shall be plumbed and the tube length recorded, including a notation of the tube projection above the shaft tops. Information on the shaft bottom and top elevations and/or length, along with construction dates shall be provided to the Engineer before the CSL tests.

CSL tests shall be conducted between the pairs of tubes encompassing the perimeter and the major diagonals. Additional logs shall be conducted at no additional cost to the Department in the event anomalies are detected.

The CSL tests shall be carried out with the source and receiver probes in the same horizontal plane unless test results indicate potential defects, in which case, the questionable zone may be further evaluated with angled tests (source and receiver vertically offset in the tubes). CSL measurements shall be made at depth intervals of 0.5 feet or less, and shall be done from the bottom of the tubes working upward to the top of each shaft. Probes shall be pulled simultaneously, starting from the bottoms of the tubes, over a depth measuring device.

Any slack shall be removed from the cables prior to pulling to provide for accurate depth measurements of the CSL records. Any defects indicated by longer pulse arrival times and significantly lower amplitude/energy signals shall be reported to the Engineer, and further tests shall be conducted as directed by the Engineer to evaluate the extent of such defects.

Additional NDT methods may be used to evaluate possible shaft defects including Single Hole Sonic Logging, Gamma-Gamma Nuclear Density Logging, 3D Tomography, and/or Surface Sonic Echo and Impulse Response tests. The Contractor shall provide consultants and/or personnel, on an as needed basis, who are experienced and competent performing the above NDT methods. If a defect is found by the additional NDT, then the cost of the additional NDT shall be the responsibility of the Contractor. If no defect is found by the additional NDT, then the cost of the additional NDT will be the responsibility of the Department.

(e) CSL Testing Results

CSL results shall be presented to the Engineer in a report. The test results shall include CSL logs with analyses of:

- Initial pulse arrival time versus depth
- Pulse energy/amplitude versus depth

A CSL log shall be presented for each tube pair tested, with any defect zones indicated on the logs and discussed in the test report as appropriate.

Additional needed NDT results shall also be presented to the Engineer in a report format.

Copies of all data (written, electronic, etc.) obtained from the CSL and NDT inspections shall be submitted to the Department in an expedient manner. These submitted copies shall become the property of the Department.

(f) Evaluation of CSL Test Results

The Engineer will evaluate the CSL and NDT (if needed) results within 30 days of receipt from the Contractor and determine whether or not the drilled shaft construction is acceptable.

The acceptance of each drilled shaft shall be the decision of the Engineer, based on the results of the shaft integrity testing report(s) and other information on the shaft placement. Rejection of a shaft based on the shaft integrity testing shall require conclusive evidence that a defect exists in the shaft which will result in inadequate or unsafe performance under expected loads.

If the NDT records are complex or inconclusive, the Engineer may require coring or excavation of the shaft to verify shaft conditions. If a defect is confirmed, the Contractor shall pay for all coring or excavation costs. If no defect is encountered, the Department shall pay for all coring or excavation costs, including grouting of all core holes.

In the case that any shaft is determined to be unacceptable, the Contractor shall submit a plan for remedial repairs to the Engineer for approval. Any modifications to the foundation shafts and load transfer mechanisms caused by the remedial action will require calculations and working drawings stamped by a Professional Engineer registered in the State of Colorado for all foundation elements affected. All labor and materials required to perform remedial shaft repairs shall be provided at no cost to the Department and with no extension of the contract time.

(g) Core Drilling of Drilled Shaft Concrete

When directed by the Engineer, production drilled shafts that are determined to be unacceptable by the CSL tests shall be cored to determine the quality of the concrete. One core sample shall be taken from each defective shaft for the full depth of the irregularities and for three (3) feet above and below the irregularity.

Because it is desired to obtain a high percentage of core recovery for visual inspection and testing methods, equipment shall be as follows:

1. The core drill shall be in good condition and capable of delivering a smooth flow of power to the bit, both in rotation and down thrust. The pump shall be in good condition and of the positive displacement type. The pump shall be capable of delivering a minimum of 15 gallons of water per minute at 200 psi. It shall be equipped with a relief valve set to release at a maximum of 200 psi. It shall be equipped with a pressure gauge with range from 0 psi to 1,000 psi.
2. The drill shall be size HW or larger. The core barrel shall be size HW or larger, M series, doubletubed, with a chromed inner barrel. The diamond set bit for each hole shall be of best quality, new, and with a minimum of four waterways. The Engineer may require a new bit or replacement of the core barrel at any time inspection indicates excessive wear or loss of diamonds.
3. The core drill machine shall be set so that the drill force will be exactly vertical and so there will be not more than five (5) feet of laterally unsupported drill rod between the bottom of the drill spindle (chuck) and the top of the shaft concrete when the hydraulic feed is in the up position. When longer laterally unsupported sections of drill stem are necessary, braced casing or rigidly braced guides must be used to prevent lateral whip.

An accurate log of cores shall be kept and the cores shall be placed in a suitable wooden crate and properly marked showing the shaft depth at each interval of core recovery. The cores along with two (2) copies of the coring log shall be turned over to the Engineer for inspection and testing.

Construction shall not proceed above the drilled shaft until the quality of the concrete in the shaft, as represented by the core samples, is determined to be acceptable and notification to continue construction is given by the Engineer.

If the quality of the concrete in a drilled shaft is determined to be acceptable, or after shaft remedial repairs are complete and accepted by the Engineer, the Contractor shall grout the core hole in the shaft from the bottom using grout meeting the following requirements:

1. Grout shall consist of Portland Cement Type II and water, and may contain admixtures if approved by the Engineer. Cement used for grouting shall be fresh and shall not contain any lumps or other indication of hydration or "pack set." Water shall be potable, clean and free of injurious quantities of substances known to be harmful to Portland Cement.
2. Admixtures, if used, shall impart the properties of low water content, good flowability, minimum bleed, and expansion if desired. Its formulation shall contain no chemicals in quantities that may have harmful effects on the cement. Admixtures containing chlorides in excess of 0.5 percent by weight of admixture, assuming one pound of admixture per sack (94 pounds) of cement, fluorides, sulfites and nitrates shall not be used.
3. An approved material, well dispersed through the mixture, shall be used to obtain a maximum of five percent (5 %) unrestrained expansion of the grout. Aluminum powder or gas evolving material shall not be used.
4. All admixtures shall be used in accordance with the instructions of the manufacturer.
5. Commercial prepackaged grouts may be proposed.

6. Grout mixes including any proposed commercial prepackaged grouts shall be submitted to the Engineer for review prior to use.

Subsection 503.09 shall include the following:

Cross-Hole Sonic Logging, including but not limited to all preparation, materials, labor, equipment testing, analysis of results, and reporting will not be measured separately, but shall be included in the contract unit price for Drilled Caissons.

Temporary or permanent casing will not be measured and paid for separately, but shall be included in the contract unit price for Drilled Caissons.

Dewatering required during caisson construction will not be measured and paid for separately, but shall be included in the contract unit price for Drilled Caissons.

REVISION OF SECTION 511 CONCRETE PILASTER

Section 511 is hereby added to the Standard Specifications for this project as follows:

DESCRIPTION

511.01 This Section includes the performance criteria, materials, production, and erection of concrete pilasters. The work performed under this Section includes all labor, material, equipment, related services, and supervision required for the design, manufacture and erection of the concrete pilasters shown on the Contract Drawings.

Concrete pilasters shall be precast concrete pilasters. Cast in place concrete pilasters may be substituted for precast concrete pilasters at the Contractors option. The Contractor shall submit the design of cast in place concrete pilasters including reinforcement required for embedment in the abutment to the Engineer for approval. The design of cast in place pilasters shall satisfy the requirements of AASHTO LRFD Bridge Design Specifications for the loads specified in the General Notes of the Contract Drawings.

MATERIALS

511.02 Concrete for precast concrete pilasters shall be Concrete Class D and shall satisfy the requirements of CDOT standard specification 601. Reinforcing steel shall be uncoated grade 60 and shall satisfy the requirements of CDOT standard specification 602. Anchor bolts shall conform to ASTM A 449, headed studs and embeds shall conform to ASTM A 108 in accordance with CDOT standard specification 509 unless noted otherwise in drawings. Non-shrink grout or epoxy grout shall be CDOT-approved grout and strict adherence to the grout manufacturer's instructions shall be followed. Grout shall not be placed when the ambient temperature is 35°F or below or when the temperatures are expected to fall to or below 35°F at any time during the period of 12 hours following placement. Grout shall be placed using a technique to ensure that no voids remain and that grout is fully compacted and bonded with adjacent surfaces for grout pads and fully compacted and bonded to grout holes and dowels.

METHOD OF MEASUREMENT

511.15 Concrete pilasters shall be measured as each, complete in place, for all concrete pilasters shown in the plans.

BASIS OF PAYMENT

511.16 Concrete pilasters will be paid for at the contract unit price.

1. Payment will be full compensation for all work necessary to complete the item, which shall include design, fabrication, transportation to the project site, and erection; furnishing and placing concrete and reinforcing steel; furnishing and placing stone veneer finish and cap blocks; and for furnishing all tools, labor, equipment, and incidentals necessary to complete the work. Anchor bolts, anchor rods, bearing devices, shims, grouting, caulking, embeds, angle clips, dowels and all connection pieces, hardware and stone veneer shall be incidental.

2. The accepted quantities will be paid for at the contract unit price. Price for each pay item listed below that appear in the bid schedule will be made under:

Pay Item	Pay Unit
Concrete Pilaster	Each

**REVISION OF SECTION 514
PEDESTRIAN AND BIKEWAY RAILING**

Section 514 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 514.02 shall include the following:

Pipe sections may be either field or shop cut to size with mechanical means only. Pipe splices shall only be made at fittings shown on the plans. Welds made to attach the pipe to steel plates placed in concrete retaining walls or sidewalks, etc., shall receive 3 coats of zinc rich paint after welding and chipping is completed.

**REVISION OF SECTION 601
STONE VENEER**

Section 601 of the Standard Specifications is hereby revised to include the following:

DESCRIPTION

This work consists of the construction clean new stone veneer masonry including mortar, grout, ties, anchors, accessories, and removal of surplus material and waste in accordance with these specifications, and in conformity the plans.

MATERIALS

Stone veneer shall meet the following requirements:

(a) *Reference Standards:*

- A. ASTM E514: Standard Test Method for Water Penetration and Leakage Through Masonry. Conform to the current requirements of applicable portions of standards, codes and specifications, except where more stringent requirements are shown or specified.
- B. Stone masonry work shall be in accordance with the recommendations and standards of the American Standards Association.
- C. ASTM: American Society of Testing and Materials.
- D. ASTM C144: Standard Specification for Aggregate for Masonry Mortar.
- E. ASTM C150: Standard Specification for Portland Cement.
- F. ASTM C270: Standard Specification for Mortar Mix.
- G. ASTM C476: Standard Specification for Mortar and Grout for Reinforced Masonry.
- H. ASTM E514: Standard Specification for Moisture Resistance in Masonry Assemblies.
- I. PCA, current edition.

(b) *Stone Veneer Units:* Natural stone or cultured stone in accordance with standards of the ASTM.

- A. Finish: provided by City
- B. Color(s): provided by City
- C. Depth Range: 3/4" to 2"
- D. Standard Height Range: 1" to 8"
- E. Length Range: 6" to 20"
- F. Corners: Include corner stones

(c) *Approved Suppliers:*

- A. Summit Brick Company (Harristone LedgeStone distributor)
601 East 13th Street
Pueblo, CO 81001
Phone: 719.542.8278
Fax: 719.542.5243
- B. ProCoat Systems (Boral Drystack LedgeStone distributor)
4343 Holly St
Denver CO 80216
Phone : 303-322-9009
Fax : 303-399-2645
- C. Sunset Stone, Inc.
702 Prairie Hawk Drive
Castle Rock, CO 80109
Toll Free: 1-800-598-8918
Phone: (303) 791-1233
Fax: (303) 791-3796
- D. Western Stone & Tile, Inc. (Coronado LedgeStone distributor)
107 Wilcox St., Suite 104
Castle Rock, CO 80104
303-343-6600 office
303-223-3466 fax

(d) *Mortar and Grout Materials*

- A. Portland Cement: ASTM C150, Type 1, natural.
- B. Hydrated Lime: ASTM C207, Type S for new construction.
- C. Aggregate Sand: ASTM C144.
- D. Coarse Aggregate for Grout: ASTM C404, less than 3/8".
- E. Water: ASTM C270, clean and suitable for domestic consumption.
- F. Mortar Coloring: provided by City
- G. Admixtures: Pozzolan with approval; calcium chloride not permitted.
- H. Integral Water Repellent: Integral polymeric-based water repellent admixture, conforming to ASTM E514 and achieving an E (Excellent) rating, RainBlok for Mortar by ACM Chemistries, Inc., Norcross, GA, (877) 226-1766, or approved equal. Integral water repellent shall be used in all exterior stone masonry construction.

(e) *Mortar and Grout Mixes*

- A. Mortar Mixes for Stone Masonry Veneer: ASTM C270, Type N mortar with hydrated lime for all new veneer masonry construction. Minimum compressive strength of 750 psi at 28 days, or as indicated on the Structural Drawings:
 - a. 1 part Portland cement, Type 1.
 - b. 1/4 to 1/2 part hydrated lime.
 - c. 2-1/4 to 3-1/2 parts damp, loose sand.
 - d. Integral water repellent.
 - e. Mortar coloring.
- B. Masonry Grout Mix: Minimum compressive strength of 3,000 psi at 28 days:
 - a. 1 part Portland cement, Type 1.
 - b. 2-1/4 to 3 parts damp, loose sand.
 - c. 1 to 2 parts coarse aggregate.
 - d. Pozzolan as per manufacturer's recommendations.
 - e. Air entrainment shall be not more than 5% by volume.
- C. Mixtures may change as per manufacturer's recommendations to meet requirements.
- D. Non-Shrink Structural Grout: Refer to Section 05120.

(f) *Stone Masonry Accessories*

- A. Stone Masonry Veneer Ties: per plans and details.
- B. Anchors: Furnish and set all stainless steel anchors, ties and dowels.

CONSTRUCTION REQUIREMENTS

Submittals

Supplier and Installer: Submit name of installer and supplier from which stone veneer will be received for approval by the Owner.

Contractor Qualifications: Installer shall have five (5) years successful experience installing stone veneer on projects of similar scale and complexity.

Shop Drawings: Submit shop drawings indicating dimensions of stone units, types of cuts, face texture and installation details.

Samples for New Stone Veneer: Submit 24" x 24" x 1" thick minimum sample board of specified stone veneer material for approval before delivery to the site. Alternately, submit multiple individual stone pieces, 12" x 6" x 2" thick minimum. Samples shall include shapes, sizes and kinds in sufficient number to show full range of size, color, cut and texture of each type of stone specified. Final approval shall be by the Owner.

Product Data: Submit manufacturer's product data and specifications for each type of mortar specified, including certification that each type complies with the specifications.

Samples: Submit samples of manufacturer's full range of mortar colors for selection by the City.

Sample Panel: Erect minimum 4'-0" x 4'-0" sample panel consisting of approved stone veneer masonry that satisfactorily shows proposed color range, texture, bond, mortar and workmanship, including special coursing.

- A. Sample panel shall first be laid up as "dry stack" condition for approval of color blend by the Engineer, prior to being mortared.
- B. Sample panel shall show an external corner condition.
- C. Contractor shall not continue work until Engineer has accepted sample panel.
- D. Sample panel shall remain on site until work of this Section is complete and will be used as standard of comparison for balance of work.

Quality Assurance

- A. Installer: Minimum 5 years experience in similar types of work of similar scope and be able to furnish list of previous jobs and references
- B. Fabricator: Manufacturer to have not less than 5 years experience in manufactured veneer stone similar to type specified and 5 million square feet installed
- D. Certifications: Must meet the minimum requirements for adhered, pre-cast veneer stone as set forth under all regulatory agencies including the following:
 - 1. International Building Code 2012
 - 2. Provide documentation that the stone products comply with specified minimum criteria as set forth in the specification

Delivery, Storage and Handling

Deliver stone veneer material to the site on platforms or pallets. Keep stone veneer completely covered and free from frost, ice and snow. Handle stone veneer carefully to avoid chipping, breakage, contact with soil or contaminating materials. Store mortar materials in dry place. Damaged materials shall not be used.

Environmental Conditions

Maintain materials and surrounding air temperature to minimum 50° F prior to, during and 48 hours after completion of stone work.

During freezing or near-freezing weather, provide adequate equipment or cover to maintain a minimum temperature of 50° F and to protect stone work completed or in progress.

Maintain temperature of mortar and grout between 70° F and 100° F.

Contractor shall use only one (1) type mortar to ensure uniform color. Masonry cement is not permitted. Protect partially completed stone masonry against weather when work is not in progress by covering top of walls with strong, waterproof, non-staining membrane. Extend membrane at least 2' down both sides of walls and anchor securely in place.

Cold Weather Installation:

- A. Do not use frozen materials or materials mixed or coated with ice or frost.
- B. Do not use anti-freeze compounds, calcium chloride or substances containing calcium chloride in mortar or grout.
- C. Do not build on frozen work. Remove and replace work damaged by frost or freezing.
- D. Do not heat water above 106° F.
- E. When mortar or grout materials have been combined, temperature of the mixture shall not be less than 70° F or more than 100° F.
- F. Materials shall be preconditioned and protected as follows:
 - 1. When air temperature is below 40° F and above 32° F, heat mixing water. Protect masonry from rain or snow for 24 hours by means of waterproof covers.
 - 2. When air temperature is below 32° F and above 20° F, heat both sand and mixing water. Maintain a temperature of at least 40° F on both sides of walls by means of suitable covers or enclosures for 24 hours.
 - 3. When air temperature is 20° F and below, heat sand, mixing water and block and provide heated enclosures. A temperature of at least 40° F shall be maintained within enclosures for 48 hours.
 - 4. Periods required for protection and maintenance of specified temperatures may be reduced to 1/2 of those specified herein before if Type III Portland cement is used with the Engineer's approval.
- G. Hot Weather Installation:
 - 1. During very hot weather and drying wind, the Engineer may order very light fog spray of mortar bedding areas several times during the first 24 hours to prevent premature drying of mortar.

Masonry Installation

(a) *General:*

- A. Stone Masonry Installer shall check lines and levels and verify existing conditions prior to commencing work of this Section. Notify the Contractor in writing of conditions or discrepancies which may affect the successful installation of the stone masonry work. Do not begin work until conditions are corrected in a manner acceptable to the Installer.
- B. Ensure that wall ties are properly located and installed.
- C. Clean and dry stone veneer units prior to installation.
- D. Remove and replace broken or fractured stone veneer units. Remove excess mortar and smears upon completion of work. Point or replace defective mortar to match adjacent work.

(b) *Joints*

- A. General: Lay coursed modular units per manufacturers recommendations, unless otherwise indicated, except for minor variations required to maintain bond alignment.
- B. Rake out mortar in preparation for application of caulking or sealants at bottom of pilaster.
- C. Remove excess mortar and smears upon completion of work.
- D. Clean soiled surfaces using a non-acidic solution which will not harm adjacent surfaces. Consult masonry manufacturer for acceptable cleaners.

(c) *Installation of Stone Masonry*

- A. Lay, level and align corner units first. Lay stone masonry in ledgerstone pattern.
- B. Ensure that courses are of uniform height. Make vertical and horizontal joints equal and of uniform thickness to match existing.
- C. Tolerances: Maximum variation from stone unit to adjacent stone unit to be in accordance with manufacturers recommendations.

- D. Do not shift or tap stone units after mortar has taken initial set. Where adjustment must be made, remove mortar and replace.

(d) *Field Quality Control*

- A. General: Installation of stone veneer masonry units, mortar and grout, and workmanship of joints shall be in accordance with the standards approved in the sample panel.
- B. Stone veneer masonry units shall be sound and free of cracks or other defects that may interfere with the proper placing of the unit or impair the strength or performance of the construction.
- C. Face or faces that are exposed shall be free of chips, cracks or other imperfections to the satisfaction of the City, except that chips not larger than 1/4" will be considered acceptable on a very limited basis.
- D. Contractor shall promptly remove rejected stone units or portions of the work and replace to match the quality of the approved sample panel.

Subsection 601.20 shall include the following:

Stone Masonry Veneer, cap blocks, mortar, wall anchors, ties, expanded metal lath and all labor required for the furnishment and application of stone masonry veneer on the concrete pilasters will be considered incidental to the concrete pilasters.

**REVISION OF SECTIONS 601 AND 708
STRUCTURAL CONCRETE STAIN**

Section 601 and 708 of the Standard Specifications are hereby revised to include the following:

Subsection 601.01 is revised to include the following:

This work consists of: (1) Class 2 surface finish of concrete to receive Concrete Stain; (2) providing and applying an opaque structural concrete stain to all concrete surfaces previously designated in the Contract to receive a structure concrete stain; and (3) provide up to 5-gallons of pre-mixed touch-up stain.

The color of the structural concrete stain shall be as noted on the plans, and shall be Approved by the Engineer from test panels provided by the Contractor.

The structural concrete stain shall be one of the following products or Approved equals:

1. RAINSTOPPER RS400 - Semi Transparent Stain
Textured Coatings of America
Pro-Coat Systems, Inc.
5775 Stapleton Drive North
Denver, Colorado 80216
303-322-9009
2. "Acrylic" Structural Concrete Stain
Anchor Paint Co. of Denver, Inc.
641 South Jason
Denver, Colorado 80223-2305
303-744-2361
3. Bridge and Highway Concrete Sealer, B97-Series
The Sherwin-Williams Company
543A Santa Fe Drive
Denver, Colorado 80204
303-893-1303

Subsection 601.03 is revised to include the following:

Structural Concrete Stain as specified in subsection 708.08

Subsection 601.09(f) is revised to include the following:

All concrete forms shall be treated with a water based concrete form release agent prior to placing reinforcement for surfaces to which structural concrete stain is to be applied.

Subsection 601.14 (a), third paragraph, is deleted and replaced with the following:

Structural concrete stain shall be the final finish for all concrete surfaces designated on the plans and in these specifications.

Subsection 601 .14(b) 4 is deleted and replaced with the following:

Unless otherwise shown on the plans, the structural concrete stain shall be applied to all exposed concrete elements of the structure above the ground line, and shall extend 1-foot below the finished ground line. Bridge bearing devices, fence, and steel bridge rail components shall be masked or otherwise protected to prevent structural concrete stain from coming into contact with them.

The color of the Structural Concrete Stain shall have the written approval of the Engineer prior to final batching and application on the project. The final color of the approved structural concrete stain shall be determined as follows:

1. 2 foot by 2 foot samples of the colors required by the Contract, shall be submitted to the Engineer for Approval. The Stain samples shall be applied to a surface similar in texture to the concrete surface on which the stain will be applied on the project. The Stain samples shall be applied by the same methods to be used in field application.
2. At least three weeks prior to beginning of the application of the structural concrete stain, 50 sf test panels shall be prepared for final color Approval. The test panels shall be produced on the actual concrete surface on which the final product will be placed, at a location recommended by the Contractor and approved by the Engineer. The stain shall be applied to the test panels by the same methods to be used in the final field application. The Engineer will be allowed three business days for the stain to dry after stain application to the test panels and to issue Approval.

Concrete finishing and curing shall be completed in accordance with the specification prior to the application of the Stain. The concrete finish to which the structural concrete stain is to be applied shall be a Class 2 Finish, except as modified below:

1. Following curing of the concrete in accordance with Subsection 601.13, all projections and bulges shall be removed and the surface sandblasted. Sandblasting shall profile the concrete surface, remove all form release agents, and all other deleterious materials that would inhibit the bond of the Structural Concrete Stain. The profile of the sandblasted concrete surface shall be equivalent to Concrete Surface Profile Three (CSP 3) as defined in Technical Guideline No. 03732, "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays" by the International Concrete Repair Institute. The Contractor shall provide a CSP 3 chip for use on the project.
2. A mortar mix, proportioned by volume, consisting of one part portland cement, two to three parts sand (conforming to the requirements of ASTM C 144), and an approved bonding agent shall be used to patch all holes produced by form ties, honeycombing, voids 1/2 inch or larger in any dimension, broken corners and edges, and other defects. The mortar mix shall include an approved bonding agent. The quantity and application procedure of the bonding agent shall be in accordance with the recommendations of the manufacturer of the bonding agent. Areas to be patched shall be moistened with water before the mortar is applied, and the patched area, shall be float finished and left flush with the concrete surface without checking or cracking of patches. Patching shall be done when the ambient temperature is at least 40°F. Holes deeper than 3/4 inch shall be filled in layers that do not exceed 1/2 inch in thickness.
3. Within 24 hours prior to applying structural concrete stain, the concrete surface to be stained shall be cleaned by water blasting at a minimum pressure of 3,000 psi and at a rate of 4 to 14 gallons/minute, to remove dust, dirt, and other materials that would inhibit penetration of the stain. If the surface is contaminated before application of the stain, it shall be re-cleaned as required prior to application of the stain.

New concrete shall be at least 28 Days old or as approved in writing by the stain manufacturer before the stain is applied.

Two applications of stain are required. Each application shall be applied at a rate of 200 to 250 square feet per gallon. (Approximately 3 mils dry film thickness.) The second application shall not be made within 12 hours of the first application.

If the surface is contaminated between applications, it shall be re-cleaned as stated above prior to the making the second application.

The stain shall be mixed mechanically and applied by spraying. Workmanship shall be such that the final stained surface is colored uniformly and presents a pleasing appearance. Any areas determined by the Engineer to be insufficiently stained shall be re-stained.

The stain shall be applied only when the ambient temperature is between 40°F and 90°F, and is anticipated to remain above 40°F for a minimum of twenty-four hours. The surface to be stained shall be dry and free of frost.

Subsection 601.19 is revised to include the following:

Structural Concrete Stain will not be measured.

Subsection 708.08 is revised to include the following:

708.08 Structural Concrete Stain: The Stain shall be a one-component, non-vapor barrier, solvent based acrylic resin. No sand or other texturing agents will be permitted.

PHYSICAL PROPERTIES

Solid by Weight: 51%, plus or minus 2%

Solids by Volume: 34%, plus or minus 2%

A material safety data sheet (MSDS) prepared in accordance with Federal Standard 313 and a complete set of manufacturers mixing and application instructions shall be submitted to the Engineer before the Contractor begins applying the Stain.

Subsections 601.20 is revised to include the following:

Structural Concrete Stain including but not limited to all preparation, materials, labor, equipment and testing will not be measured or paid for separately, but shall be incidental to the respective concrete elements. Structural Concrete Stain shall be in accordance with Section 601 of the CDOT Standard Specifications for Road and Bridge Construction, and with the Revision to Section 601 and 708 – Structural Concrete Stain.

REVISION OF SECTION 602 REINFORCING STEEL

Section 602 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 602.07

Delete subsection 602.08 and replace with the following:

602.08. Payment for reinforcement will be included in the contract unit price bid for individual structures and no separate payment will be made for reinforcement.

**REVISION OF SECTION 603
CULVERTS AND SEWERS**

Section 603 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 603.02 shall include the following:

Materials for culverts, side drains, storm drains, and storm sewer shall meet the requirements shown on the plans and in the following subsections and other standards and be limited to the following materials:

Reinforced Concrete Pipe	706.02
Ductile iron pipe	707.01, AWWA class C200, joints may be slip on or mechanical
Aluminized corrugated steel pipe, helical corrugations	AASHTO M 274
Smooth wall aluminized steel pipe, Contech "ULTRAFLOW" or equal	AASHTO M 36
Polyvinyl Chloride Pipe Smooth or Ribbed Exterior or Smooth Interior	712.13
Polyethylene Pipe Smooth Interior, Ribbed or Corrugated Exterior	712.13

Pipe sizes on this project have been based upon design for reinforced concrete pipe. If an alternate pipe material size chart is shown on the plans, sizes for alternate pipe materials shall be made in accordance with this chart. In the absence of a pipe material size chart on the plans, the following rules shall apply in bidding alternate pipe materials:

- (1) No decrease in pipe diameter from the pipe material specified on the plans and bid proposal shall be made by the Contractor to allow for changes in N value of the optional pipe material.
- (2) The Contractor shall increase the size of the corrugated steel pipe (CSP) by one standard diameter increment (3 inches or 6 inches) to allow for the increased N value associated with CSP.
- (3) No increase in pipe size is required for smooth wall aluminized steel pipe ("ULTRAFLOW PIPE").

Unlined smooth wall aluminized steel pipe may be used for velocities less than 15 fps.

Unlined aluminized corrugated steel pipe may be used for velocities less than 10 ft per second. A paved invert aluminized steel pipe may be used for velocities in between 10 to 15 fps.

Galvanized pipe shall not be considered for use in any situations other than driveway culverts.

The Engineer may disallow use of corrugated steel pipe in situations where insufficient clearance between the CSP and existing utilities would occur or where there would be insufficient cover on the pipe.

The flow line of the alternate pipe material shall be the same as that shown in the plans. Additional payment will not be made for changes in the pipe size or type or for any increased or decreased quantities, including excavation, backfill, enlarged manholes and inlets, etc., resulting from the optional pipe material selected by the Contractor. Cost for additional relocation of utilities or additional structural design due to optional pipe material selection shall be borne by the Contractor. The Contractor will be responsible for additional engineering services required to verify flow velocities and other structural design efforts related to use of the alternate pipe material.

When a pay item for ___ inch pipe (smooth wall) is present, storm sewer pipe placed in the area shall have a published N value of .015 or less.

Allowable trenches and fill heights for optional pipe will be as shown on the appropriate CDOT M-Standard for the sizes, types and classes of pipe material used.

Concrete conduit shall be Class III minimum.

Profile gaskets conforming to Subsection 705.03 shall be used for all concrete storm sewer pipe joints.

All pipe joints shall be "premium joints" such as CSP hugger band joints, bell and spigot joints, etc., which minimize or eliminate leakage into or out of the storm sewer pipe.

Subsection 603.03 shall include the following:

All sanitary sewer line materials and construction shall be in conformance with the standards and specifications of the owning utility company. Contractor shall notify the utility company at least 48 hours in advance of commencing construction on the utility company's system. All work shall be inspected and approved by the owning utility company.

The Contractor shall notify all sanitary sewer utility customers affected by scheduled construction a minimum of 24 hours in advance of any service disruption.

Subsection 603.04 shall include the following:

The Contractor shall provide and maintain ample means and devices with which to promptly remove and dispose of all water entering the trench excavation during the time the trench is being prepared for the pipe laying, during the laying of the pipe, and until the backfill at the pipe zone has been completed. The Contractor shall dispose of the water in a suitable manner without damage to adjacent property. No ground water is to be discharged into a "State Body of Water" unless permitted by the State to do so. Ground water shall not be discharged into sanitary sewers. Dewatering systems shall be designed and operated so as to prevent removal of the natural soils and so that the groundwater level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property.

De-watering of the trench shall be considered as incidental to, and all costs included in, the various contract pay items in the proposal.

In subsection 603.11 delete the first paragraph and replace with the following:

Measurement for storm sewer or irrigation pipe will be made on a linear foot basis for the various classes, types and sizes of pipe installed as shown. Measurement will be the pipe length along the centerline from end to end of each pipe, including any manholes installed. Measurement through pipe bends will not be made if there is a separate pay item for the bend. Payment shall constitute full compensation for pipe, trench excavation, backfilling, dewatering, bedding, disposal of excess excavated material and compacted backfill.

Subsection 603.12 shall include the following:

The payment for trench excavation, pipe bedding, pipe zone material, trench backfill, embankment and surface removal shall be included in the contract unit price for the various sizes and types of pipe. Surface restoration which involves pavement, sod or seeding shall be paid on the basis of contract unit prices for those items.

Payment for Trench foundation material will be made at the contract unit price for this material. Payment will be for the material complete in place. Payment shall include removal and disposition of excavated muck material. Payment shall be made under:

Pay Item	Pay Unit
Trench Foundation Material	Ton

Add subsections 603.13 – 603.14 as follows:

603.13. Trench Foundation Material. Trench foundation material shall be used when unsuitable or unstable trench bottom is encountered. The material shall consist of 1 1/2 to 2 inch crushed rock to a depth of 1 foot below the invert of the pipe. Payment for unsuitable trench bottom material excavated will be considered incidental to supplying of trench foundation material unless a pay item is otherwise provided.

603.14. Testing. All pipe joints and pipe materials are to be watertight. Joints, joint material, and pipe material shall provide for this. Tests for water tightness, when directed by the Engineer for acceptance, shall be conducted by the Contractor at his own expense in the presence of and under the direction of the Engineer on all new sewer lines. The Contractor shall supply all materials and water required to perform the test. The maximum allowable infiltration or exfiltration of all storm sewer pipe and pipe joints shall not exceed 500 gallons per day per inch diameter per mile of pipe. Should any section of the pipe fail to meet this requirement, it shall be corrected at the Contractor's expense.

The test shall be made so as not to exceed the manufacturer's recommended maximum head (minimum of 15 feet) for the type of joint used. Test section length shall be representative for the size and type of pipe constructed. Generally pipe lengths will be between manholes, stub-outs, pipe laterals or other features which would affect pipe integrity. A minimum of 1 hour period will be allowed to allow for adsorption in concrete pipes. The actual test shall extend for a minimum of 1 hour beyond the time allowed for adsorption. The length of pipe tested and the time of the test shall be prorated to reflect the conditions relating to the maximum leakage rate.

Should the rate of infiltration or exfiltration be found to exceed the prescribed amount, the Contractor shall cease further pipe laying activities, locate the leak(s), make appropriate repairs and then continue to test the conduit until the leakage is within the allowable limits. Before final acceptance, the City reserves the right to require the Contractor to perform one infiltration/exfiltration test two weeks after the line is completed and a second two weeks after the first test. If both tests are the same, or the last test shows a decrease in infiltration or exfiltration and the infiltration or exfiltration is below the maximum acceptable amounts, the line shall be accepted. If the second test shows an increase over the first, the Contractor shall correct the leakage problems and retest to acceptable infiltration/exfiltration limits before the line will be accepted. Unless otherwise specified, infiltration or exfiltration will be measured by the Engineer using measuring devices furnished by the Contractor at his own expense.

When stub-outs are required, the bell end of the stub-out shall face upstream and be plugged with an approved prefabricated plug of the same material as the stub-out with a joint conforming to the same detail as the pipe supplied. The use of concrete or brick as a means of plugging will only be authorized on pipes to be abandoned.

REVISION OF SECTION 607 FENCES

Section 607 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 607.02 shall include the following:

All wood used in stockade fence construction shall be commercial grade cedar material. All 4x4 wood columns shall be pressure treated structural pine.

Fasteners, hinges, nails, screws, etc., are to be galvanized steel or other rust resistant material approved by the Engineer.

Subsection 607.05 shall include the following:

The pay item for gates and fence shall include all lumber, fasteners, concrete and other materials and labor to completely install the item.

REVISION OF SECTION 608 SIDEWALKS AND BIKEWAYS

Subsection 608.01 shall also include the following:

This work also consists of the construction of sidewalk chases, raised crosswalks, and patterned concrete in accordance with the Contract Documents. This work includes the installation of detectable warnings on concrete curb ramps at the locations shown in the plans and in accordance with the plans.

Subsection 608.02 shall include the following:

Frame for sidewalk chase shall meet the requirements of ASTM A36 for Carbon Steel, or ASTM B209, B211, B221, or B241 for Aluminum Alloy 6061-T6 or 6063-T6. Top shall be hot dipped galvanized steel.

Pattern concrete shall be Class B, full depth Davis Color "Brick Red", imprinted "Windsor Cobble" pattern by Brickform (or approved equal). Imprinting forms shall be released with Brickform RA-600 Light Gray Antique Release Agent (or approved equal) in accordance with the Brickform Antique Release Agent Technical Information sheet. All antiqued surfaces shall be broom cleaned, pressure washed, and sealed with 2 coats of Brickform Masterseal Sealer (or approved equal), after a curing period of 28 days. Use and application of all products shall be per manufacturer:

Brickform by Rafoo Products
11061 Jersey Blvd
Rancho Cucamonga, CA 91730
800-483-9628
www.brickform.com

Surface applied and cast in place detectable warnings tiles for the ramps shall be red in color and comply with all Americans with Disabilities Act (ADA) requirements. The detectable warnings nominal tile size shall be determined by the location. In general, the minimum size shall be 24" x 36" surface applied for retrofits and 24" x 60" cast in place for new construction. At locations where a ramp is being constructed or reconstructed and a 24" x 60" tile cannot be installed then a 24" x 36" cast in place shall be allowed. The City has the sole determination as to where and what size tile shall be placed.

The detectable warning tiles shall be constructed per CDOT Standard Plan M-608-1 specifications. The tiles shall be manufactured by Armor-Tile® or a City approved equal, "Brick Red" in color. Unless otherwise stated, all manufactures' recommendations and specifications shall be strictly adhered to.

In subsection 608.03 (b) delete the last sentence.

Subsection 608.03 (f) shall include the following:

Only clear VOC compliant curing compound shall be used to cure colored concrete. Only white VOC compliant curing compound shall be used to cure grey concrete.

Add subsections 608.03 (g) and (h) as follows:

- (g) *Structures.* Meter pits and manholes shall be installed or adjusted such that the frame and cover rest flush with the sidewalk. Cover shall not move within the frame and shall be reinforced as necessary to prevent deflection under light vehicle wheel loads (pickup truck).
- (h) *Cleanup of residual colored concrete or Release Agent.* Release Agent powder or residual colored concrete shall be removed from job site in a manner to avoid the material being washed offsite or into curb flowlines and the City storm drainage system. All materials collected shall be disposed of properly. All residual colored concrete or release agent powder shall be removed from the work area by sweeping & dustpan, vacuuming, and/ or power washing & containment methods. Following the application of patterned concrete, should evidence exist that residual colored concrete or release agent powder has been transported to adjacent curb flowlines or into the City storm drainage system, the Contractor shall clean all affected facilities to the satisfaction of the Engineer. Through actions of the Contractor, should any deleterious construction material reach the City storm drainage system and discharge into local waterways, the Contractor shall perform necessary environmental cleanup per the satisfaction of the Engineer, and the State of Colorado Department of Public Health and Environment.

Delete subsection 608.05 and replace with the following:

608.05. Concrete curb ramps will be measured by the unit. The colored concrete portion (if any) of concrete curb ramps and raised crosswalks will not be measured for payment but shall be included in the price for ramps and crosswalks.

Pattern concrete will be measured by the square yard of finished surface complete in place and accepted.

Sidewalk chase will be measured by each chase installed.

Subsection 608.06 shall also include the following:

Pay Item	Pay Unit
Concrete Curb Ramp (Type ____)	Each

**REVISION OF SECTION 609
CURB AND GUTTER**

Section 609 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 609.03 (b) shall include the following:

All curb, gutter faces shall be formed. The terminal ends of all work shall be formed to maintain a true vertical edge. Forms shall be straight, true and in good condition. The Engineer reserves the right to order forms which he deems unsatisfactory removed from use in the Work. In the event curb and gutter are to be contiguous but not monolithic, and the sidewalk slopes to the curb head, the top of the curb head shall be finished to slope to the street side of the curb.

Subsection 609.03 (d) shall include the following:

All upper edges of each section shall be tooled. Sidewalk joints shall line up with curb and gutter joints when contiguous. Tooled contraction joints shall be placed where form joint templates are placed. In the event the tooled joint and the form joint template do not coincide and a random crack appears outside the tooled joint, the Contractor will be required to remove the improperly cracked joint. Removal limits will be 1/3 the distance to the next joint on either side of the unsatisfactory joint. In the event contiguous joints are unsatisfactory, the entire stone between the joints will be removed to the outside of the unsatisfactory joint. Concrete sawing will be required to provide a clean joint.

Subsection 609.03 (e) shall include the following:

Expansion material or approved bond breaker material shall be installed between curb and gutter type 2 and abutting sidewalk for the full depth and length if the pour is not monolithic.

**REVISION OF SECTION 613
LIGHTING**

Section 613 of the CDOT Standard Specifications is hereby revised for this project as follows:

In subsection 613.02 delete the first paragraph and replace with the following:

Street lighting materials shall conform to Section 715, and shall be compatible with the requirements of the local electrical utility company.

Subsection 613.03 shall include the following:

All equipment which is removed shall remain the property of the City. Such property shall be removed from the work site and returned by the Contractor to the Wheat Ridge Maintenance Facility, 11220 West 45th Place. Work relating to the salvage and delivery of salvage material to the Wheat Ridge Maintenance Facility will be incidental to the Project.

Excavations, other than for conduit, shall be backfilled with Structure Backfill (Class 1). The surface of the backfill material will be placed to the bottom of the pavement repair or to 6 inches below surface in unpaved areas. The final layer of material will be identical to the material surrounding the backfilled section.

When excavations must remain open overnight, they shall be properly marked to warn motorists and/or pedestrians according to the most recent revision of Part VI in the "Manual on Uniform Traffic Control Devices for Streets and Highways".

Subsection 613.04 shall include the following:

The exposed portions shall be formed with "Sonotube" to present a neat appearance. Sonotube forms shall not extend below finished grade more than 1 foot.

Anchor bolts shall conform to the specifications of the manufacturer of the poles and mast arms and each individual bolt shall have 2 flat washers, 1 lock washer and 2 nuts. Threaded portions of the anchor bolts shall be protected from contamination with concrete or other damage.

In subsection 613.07 delete the fifteenth paragraph and replace with the following:

Trench excavations for conduit shall be 2 inches wider than the outside diameter of the conduit. Backfilling of conduit trenches shall be accomplished by placing Structure Backfill (flowfill) up to the bottom surface of the roadway pavement material. The remaining portion of the excavation shall be backfilled with the same type of material used to construct the existing roadway surface. Care shall be taken during placement of multiple conduit runs in one trench to ensure Structure Backfill (flowfill) completely surrounds the conduit.

Subsection 613.07 shall include the following:

The ends of all conduits in structures or terminating at curbs shall be marked by a "Y" at least 3 inches high, cut into the face of the curb, gutter or wall directly above the conduit.

Conduit bends, except factory bends, shall have a radius of not less than 6 times the inside diameter of the conduit. Where factory bends are not used, conduit shall be bent without crimping or flattening, using the longest radius practical.

All conduit runs that exceed 10 feet in length shall have a continuous 1/4 inch diameter nylon line pulled into the conduit along with the specified electrical cables. The line shall be firmly secured at each end of the conduit run with a minimum slack of 3 feet. The purpose of this line is to be able to pull future electrical cable through the existing conduit runs.

Pull boxes installed in finished areas shall be designed for such installations and shall be stackable and manufactured of a pre-cast polymer concrete material such as Quazite or an approved equal. The bottoms of all pull boxes shall be bedded in six (6) inches of crushed rock.

When a new conduit run enters an existing pull box, the Contractor shall remove the pull box or tunnel under the side at no less than 18 inches and enter from the direction of the run. No new conduit will be allowed to enter a new or existing pull box in any other manner than that shown on the standard drawings.

New pull boxes will not be paid for separately, but shall be included in the cost of conduit.

Subsection 613.08 shall include the following:

The contractor shall notify the Engineer 2 weeks prior to turn-on so that orders may be issued to Xcel Energy for power connection on the specified turn-on date.

In no case shall any shellac compounds be used. All connections shall be wire nut connectors. Connections shall be DIAPERED and sealed with non-conducting silicone at all splices. Splices in underground systems shall be waterproofed. A minimum of 12 inches of slack shall be left at each splice except within handholes where 24 inches shall be left.

In subsection 613.11 delete the last paragraph and replace with the following:

All wiring and other equipment necessary for the complete installation for each electrical distribution system for the lighting will be measured by the number of systems installed.

Subsection 613.12 shall include the following:

Pay Item	Pay Unit
Electrical Distribution System	Each

**REVISION OF SECTION 615
WATER CONTROL DEVICES**

Section 615 of the Standard Specifications is hereby revised for this project as follows:

DESCRIPTION

Subsection 615.01 shall include the following:

This work includes the removal and resetting of the headgate attached to the northeast wingwall of the Rocky Mountain Ditch Box Culvert.

MATERIALS

Subsection 615.02 shall include the following:

Bolts shall conform to ASTM A325. Washers shall be installed under nuts of fasteners. Expansion anchors shall have a 3 inch embed.

CONSTRUCTION REQUIREMENTS

Subsection 615.03 shall include the following:

The existing headgate shall be unbolted from the wingwall, cleaned of rust and foreign material, and painted silver as specified in subsection 509.24. The headgate shall be reattached to the wingwall and rotated to clear the pedestrian railing. Embedded anchors and bolts shall be used to attach the headgate to the wingwall. The bolts shall be of the same size as existing and fit in the existing frame holes.

METHOD OF MEASUREMENT

Subsection 615.04 shall include the following:

Reset headgate will be measured as a single lump sum.

BASIS OF PAYMENT

Subsection 615.04 shall include the following:

The accepted quantities will be paid for at the contract unit price per each, which will be full compensation for all labor, equipment, and materials.

Payment will be made under:

Pay Item	Pay Unit
Reset Headgate	Lump Sum

**REVISION OF SECTION 617
MISCELLANEOUS CONSTRUCTION**

Section 617 of the CDOT Standard Specifications is hereby revised for this project as follows:

DESCRIPTION

617.01. This work consists of the installation of the ornamental benches and trash receptacles, bike racks, and the ornamental bollard, as specified on the Construction Drawings. This work will also include the bike shelter.

Design of the bike shelter and preparation of construction details are the sole responsibility of the Contractor. Details are expected to vary depending upon different vendor's products requirements. The design of the bike shelter shall be prepared by a Colorado Registered Professional Engineer proficient and experienced in design work of this nature.

Shop drawings in accordance with Section 105.02 shall be submitted and approved prior to startup of construction items relating to the bike shelter work. The bike shelter shall be compatible with the existing structures and Discovery Park.

CONSTRUCTION REQUIREMENTS

617.02. The ornamental benches and trash receptacles, bike racks, and the Naval Academy Series Cast Iron Bollard shall arrive at the construction site with a factory applied black coated finish. All of the items shall be installed in accordance with the manufacturer's recommendations.

Each bollard shall be anchored in place with 4 each 1/2" diameter by 18" long, hot dipped galvanized L-type anchor bolt in a minimum 18" square concrete foundation that is a minimum of 24" in depth.

METHOD OF MEASUREMENT

617.03 Each feature will be measured by the unit. Concrete foundation and all associated hardware will not be paid for separately (unless a separate pay item is specified or noted), but shall be included in the work.

BASIS OF PAYMENT

617.04 The accepted quantities will be paid for at the contract unit price for each of the pay items listed below:

Pay Item	Pay Unit
Ornamental Bench	Each
Ornamental Trash Receptacle	Each
Ornamental Bollard	Each
Bike Shelter	Each
Bike Rack	Each

REVISION OF SECTION 627 PAVEMENT MARKING

Section 627 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 627.02 shall include the following:

Pavement marking material shall be paint and pre-formed plastic conforming to the requirements of Section 708 and 713 respectively. Contractor shall submit product data for approval by the Engineer.

Subsection 627.08 shall include the following:

Application of pre-formed plastic pavement marking materials shall be in accordance with the manufacturer's written specifications. Contractor shall submit manufacturer's pavement surface preparation and application specifications, for each type of marking material, for approval by the Engineer.

Pre-formed plastic pavement marking materials shall be inlaid into fresh pavement when the pavement temperature is between 135 degrees and 150 degrees.

REVISION OF SECTION 628 PEDESTRIAN BRIDGE

Section 628 is hereby added to the Standard Specifications for this project as follows:

DESCRIPTION

628.01 This work consists of the design, fabrication, and erection of a simple span, welded self-weathering steel, truss pedestrian bridge (with a timber or concrete deck) in accordance with the specifications and plan details.

Potential bridge suppliers are:

1. Contech Engineered Solutions, LLC
8301 State Highway 29 N
Alexandria, Minnesota 56308
1-800-328-2047, FAX 320-852-7067
2. Steadfast Bridges
4021 Gault Avenue South
Fort Payne, Alabama 35967
1-800-749-7515, FAX 256-845-9750
3. Excel Bridge Manufacturing Company
12001 Shoemaker Avenue
Santa Fe Springs, California 90670
562-944-0701, FAX 562-944-4025
4. Big R Bridge, LLC
P.O. Box 1290
Greeley, Colorado 80632-1290
1-800-234-0734, FAX 970-356-9621
5. Wheeler Lumber, LLC
9330 James Avenue South
Bloomington, Minnesota 55431-2317
1-800-328-3986, FAX 952-929-2909

MATERIALS

628.02 Structural Steel. All structural steel shall be new (unused) material. The Contractor shall provide the Engineer and the Staff Bridge Branch Fabrication Inspection Unit with copies of all certified mill test reports for all structural steel and bolts. The Engineer will coordinate fabrication inspections with the Contractor and Staff Bridge. Floor beams, stringers, and members of each Half-through truss (upper and lower chords, diagonals, end posts and vertical posts) utilized in the bridges shall meet a longitudinal Charpy V-notch (CVN) value of 25 ft. lbs. at 40 degrees Fahrenheit. Testing shall be in accordance with AASHTO T 243 (ASTM A 673). The H frequency of heat testing shall be used. The Contractor shall provide the Engineer and the Staff Bridge Branch Fabrication Inspection Unit with certified copies of all CVN test reports.

All square and rectangular structural steel tubing shall conform to the requirements of ASTM A 847, Cold-Formed Welded and Seamless High Strength, Low Alloy Structural Tubing With Improved Atmospheric Corrosion Resistance.

All structural steel shapes and plates shall conform to the requirements of ASTM A 588, High-Strength Low-Alloy Structural Steel, up to 50 ksi Minimum Yield Point, with Atmospheric Corrosion Resistance.

All anchor bolts shall conform to the requirements of Section 509.08 High Strength Bolts as well as ASTM F 1554, Grade 55, Standard Specification for Anchor Bolts, and shall be galvanized in accordance with the requirements of ASTM A 153. Nuts shall conform to the requirements of ASTM A 563 each anchor bolt shall be provided with three nuts for clamping as shown on the plans.

All structural steel field connections shall be bolted with high strength bolts. High strength bolts, including suitable nuts and plain hardened washers, shall conform to the requirements of ASTM A 325. Bolts shall be Type 3.

CONSTRUCTION REQUIREMENTS

628.04 Design. The *AASHTO Guide Specifications for Design of Pedestrian Bridges* and Division I (design) of the *AASHTO Standard Specifications for Bridges* shall govern the design.

The superstructure of the pedestrian bridge shall consist of two parallel Half-through trusses, or Pony trusses, with at least one diagonal per panel. The trusses shall be the main load-carrying members of the bridge.

The members of each Half-through truss, or Pony truss, (upper and lower chords, diagonals, end posts, and vertical posts) shall be fabricated from square and rectangular structural steel tubing.

Floor beams and stringers shall be fabricated from structural steel shapes or square and rectangular structural steel tubing.

The structure shall conform to the clear span, clear width, and railing requirements shown on the plans.

Each pedestrian bridge shall be designed for the following loads and loading conditions:

1. Dead load shall be as defined in Section 3.3 of the AASHTO Standard Specifications.
2. Live load shall be as defined in the AASHTO Guide Specifications. Distribution to the stringer and floor beams shall be in accordance with Section 3 of the AASHTO Standard Specifications. Deflection and vibration limits as per the AASHTO Guide Specifications shall apply.

Pedestrian live load shall be as defined by the AASHTO Guide Specifications for the design of Pedestrian Bridges, Section 3.1.

Vehicle live load shall be as defined by the AASHTO Guide Specifications for the design of Pedestrian Bridges, Section 3.1.

The pedestrian live load and vehicle live load need not be considered concurrently. A dynamic load allowance is required for neither the pedestrian live load nor the vehicle live load.

Distribution of wheel loads shall be in accordance with the AASHTO Bridge Design Specifications.

3. Wind load shall be as defined by the AASHTO Guide Specifications for the design of Pedestrian Bridges, Section 3.4.
4. Connections shall be designed

Allowable loads in the structural steel members and weld metal shall be in accordance with Section 10 of the AASHTO Standard Specifications.

Minimum thickness of structural steel shall be 3/16 of an inch.

½ inch diameter weep holes shall be drilled (flame cut holes will not be allowed) at all low points of all steel tubing members as oriented in the in-place, completed structure. In members that are level, or flat, a total of two weep holes shall be drilled, one at each end. Weep holes and their locations shall be shown on the Shop Drawings.

All welded tubular connections shall be designed in accordance with Section 2, Parts A and D (Delete Subsection 2.36.6), of the Structural Welding Code-Steel ANSI/AWS/D1.1 (Latest Edition).

When used for the deck, concrete and reinforcing steel shall conform to Sections 601 and 602, respectively. Reinforcing steel for the deck shall be epoxy coated.

The Contractor shall submit seven sets of Design Calculations and Shop Fabrication Details (Shop Drawings) to the Engineer for each pedestrian bridge separately. This submittal shall be in accordance with Subsection 105.02. The Design Calculations and Shop Drawings shall contain the endorsement seal of the Professional Engineer registered in the State of Colorado responsible for the design.

628.05 Shop Fabrication. Welding and fabrication of weathering steel pedestrian bridges shall conform to the requirements of the Structural Welding Code-Steel ANSI/AWS D1.1 (Latest Edition) as amended by the following:

1. As required in Subsection 4.7.3, a welding procedure shall be established by qualification in accordance with the requirements of Subsection 3.3 for the ASTM A 847 material used on the bridge. The results of the Procedure Qualification shall be recorded on Form E-1 in Annex E of AWS D 1.1.
2. The Contractor shall submit a Quality Control Plan. The Plan shall include personnel qualifications, certifications, and a Written Practice in accordance with ASNT SNT-TC-1A.
3. The quality of all welds shall be in accordance with Section 6, Table 6.1. In Table 6.1, Undercut 7(B), the criteria for primary members shall apply to the bottom chord members.

4. All Complete Joint Penetration Groove Welds in butt joints in the bottom chord members shall be 100% Magnetic Particle tested in accordance with ASTM E 709. Acceptance shall be determined in accordance with Section 6.10 and Table 6.1, using Alternating Current. In addition, complete joint penetration groove butt welds welded from one side without backing of bottom chord members shall be examined by ultrasonic testing in accordance with Section 6.11.1.
5. Magnetic Particle Testing shall be performed on 100% of all attachment welds to the bottom chord, using Alternating Current, in accordance with Section 6.10 and Table 6.1.
6. All Procedure Qualification Records and Welder Qualification Test Records shall be current within three years of the date of beginning fabrication.
7. A copy of all Procedure Qualification Records, Welder Qualification Test Records, Quality Control Plan and all visual and nondestructive test reports shall be provided to The Project Engineer.

All weathering steel shall be blast cleaned, Steel Structures Painting Council Surface Preparation No. 6 (SSPC-SP6, Commercial Blast Cleaning), to remove mill scale and foreign material which would prohibit rusting to a uniform color.

628.06 Field Construction. The substructure shall be constructed in accordance with the details shown in the plans and the pedestrian bridge shop drawings. Before construction begins on the substructure, the Contractor shall determine the anchor bolt requirements and substructure dimensions needed to properly erect the structure which will be provided. The Engineer shall be provided with two copies of detail sheets delineating these requirements before work begins.

METHOD OF MEASUREMENT

628.07 Pedestrian bridge will be measured by the complete Bridge Truss and Deck Unit installed and accepted.

BASIS OF PAYMENT

628.08 The accepted quantity shall be paid for at the contract unit price for the pay unit listed below. Payment will be made under:

Pay Item	Pay Unit
Pedestrian Bridge	Each

Payment shall be full compensation for all work necessary to complete the item, which shall include design, fabrication, transportation to the bridge site, and erection. The substructure shall be measured and paid for separately, anchor bolts shall be included in Item 628. Payment will not be made for this item until all required reports, certifications, and forms have been submitted to the Engineer.

REVISION OF SECTION 630 CONSTRUCTION ZONE TRAFFIC CONTROL

Section 630 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 630.10 shall include the following:

If the Contract Documents do not include a Traffic Control Plan (TCP), the Contractor shall submit a method for handling traffic (MHT). The MHT must utilize the Manual on Uniform Traffic Control Devices (MUTCD) or Standard Plans S-630-1 and S-630-2 for devices that are proposed. Approval of the MHT does not relieve the Contractor of traffic control liability specifically assigned to him under this Contract. A copy of the approved MHT shall be available at the project site at all times in order that personnel may verify compliance with the specified traffic control requirements.

The Contractor's MHT shall also include the following:

- (1) The number of flag persons to be used.
- (2) The number of authorized 24-hour days a traffic control supervisor will be required.

The Contractor shall erect and maintain warning lights, signs, barricades and sufficient safeguards around all excavations, embankments and obstructions.

Subsection 630.13 shall include the following:

The Contractor shall provide an inventory of all existing pavement marking to be disturbed to the Engineer prior to beginning work.

All warning and construction zone traffic control devices shall bear the name, address and phone number of the barricade company that owns them. The phone number shall be a 24 hour a day dispatched hot line in the event an emergency situation occurs where additional devices are needed or existing devices must be removed.

The Contractor shall install construction zone traffic control devices in locations where they do not block or impede sidewalks for pedestrians, disabled persons, bicyclists or other existing traffic control devices. A minimum four foot wide, unobstructed sidewalk area is to be maintained where possible. In the event that a minimum four foot wide sidewalk area with a minimum overhead clearance of 7 feet 6 inches cannot be maintained, a pedestrian/bicycle detour plan shall be submitted in conjunction with the traffic control plan.

All existing traffic control devices including traffic signals, signs, and pavement markings that are compatible with the construction zone traffic control shall remain visible and fully operational. If these devices are incompatible with the temporary construction, they shall be covered, relocated or removed.

Whenever the Contractor removes, obliterates or covers in any way, any pavement markings including lane lines and crosswalks, he shall replace them on a daily basis. Prior to opening affected areas to traffic, all pavement marking shall be placed in accordance with the Plans and Specifications or as directed by the Engineer.

The Contractor shall equip all vehicles operating within the moving lanes with flashing amber lights visible from all directions.

Subsection 630.15 shall include the following:

Signs, barricades, traffic channelizing devices, flashing beacons (portable), method of handling traffic, traffic control supervisor, flagging, and all other requirements of Subsection 630 are included in the pay item for Traffic Control Management unless they are identified in the Bid Schedule as separate pay items.

Subsection 630.16 shall include the following:

No payment will be made under Section 630 until the method of handling traffic (MHT) has been submitted and accepted.

Pay Item	Pay Unit
Traffic Control Management	Day

**SECTION 631
MODULAR CONCRETE RETAINING WALL**

Section 631 is hereby added for this project as follows:

DESCRIPTION

631.01 This work consists of furnishing and installing modular block retaining wall units to the lines and grades in accordance with these specifications and details shown on the plans. These specifications describe the Allan Block Retaining Wall System supplied by Basalite Concrete Products, 5050 Race Street, Denver, CO 80216. Contractors and suppliers are encouraged to provide other wall modular wall systems of a similar nature for consideration.

Wall drawings and details included in the plan set are conceptual and for informational purposes only. Design of the modular retaining wall and preparation of construction details are the sole responsibility of the Contractor. Details are expected to vary depending upon different vendor's products requirements. The design of the wall, whether reinforced or not or whether modular units are full sized or compact shall be prepared by a Colorado Registered Professional Engineer proficient and experienced in design work of this nature. Shop drawings in accordance with Section 105.02 shall be submitted and approved prior to start up of construction items relating to wall work.

MATERIALS

631.02 Masonry Units. Masonry units shall meet the following:

Masonry units shall be colored precast concrete blocks with sculptured rock face or approved equal. Concrete used in the masonry units shall have a minimum 28 day compressive strength of 3000 psi. The maximum absorption of water shall be 6 to 8 lbs. per cubic foot. Exterior dimensions may vary in accordance with ASTM C90-85. Units shall have angled faces and be capable of fitting a minimum radius of 4 feet. The blocks shall vary in size and color using the 24" high Ashlar Blend pattern.

Base and leveling material shall be compacted Class 6 Aggregate Base Course or otherwise approved equal such as recycled concrete or asphalt.

Filter material shall be Class C in accordance with Subsection 703.09, Table 703-5.

Unit fill for the units shall be a Class C filter material or Class 6 aggregate base course.

Back fill material for geogrid reinforced areas shall be Structure Backfill (Class 1) in accordance with subsection 206. Recycled asphalt or concrete is not acceptable within this area.

Geogrid reinforcing material shall be high density polyethylene expanded sheet as supplied by Mirafi or approved equal.

631.03 Graffiti Blocker. Graffiti blocker shall meet the following:

The Graffiti blocker shall be Sure Klean® Weather Seal Blok-Guard® & Graffiti Control or a City approved equal. The blocker shall be used in its delivered concentrated form. Dilution or altering the material shall not be allowed. The cost of all materials, protecting and application shall be considered incidental to the price of the wall.

CONSTRUCTION REQUIREMENTS

631.04 The Contractor shall excavate to the lines and grades shown on the plans or as directed by the Engineer. The base of the excavation shall be compacted to 95% of AASHTO T99 prior to placement of foundation material. Areas of unsuitable soil shall be excavated as directed by the Engineer and suitable material placed prior to placement of foundation material. Excess material removed to stabilize the foundation shall be paid for at the unit price for unclassified excavation. Over excavated areas caused by the contractor's operations shall be filled with foundation material at the Contractor's expense.

The minimum depth of foundation material shall be 6 inches of free draining granular material compacted to 95% of standard proctor for the material. The material shall be placed and compacted to provide a hard level surface on which to place the first course of wall units and ensure full contact between the surface and the base of each wall unit.

631.05 The first course of wall units shall be placed upon the compacted foundation material. Care shall be taken to ensure complete contact between each unit and the foundation. The units shall be placed side by side for the full length of the wall section. Each unit shall be checked for level and alignment which may be set by a string line or offset line. Maximum deviation from horizontal alignment shall not exceed 1/8 inch. Install the connecting pins and place unit fill in all voids and tamp level with the top of the unit. Strike excess unit fill material and sweep all excess material from the top of the unit prior to placement of the next course of wall units. Batter per course shall be established on the plans.

Cap units shall be secured to the wall units according to manufacturer's written instructions using an approved adhesive.

Geogrid reinforcement shall be placed as required by shop drawings during placement of the individual courses of wall units. Geogrid reinforcement shall be laid horizontally on compacted layers relatively free of vertical deviations. Each section of geogrid shall be connected to the wall units in accordance with the manufacturer's recommendations. The geogrid shall be tightened so there is no slack at the back of the wall units and the back of the geogrid stacked to maintain tension in the geogrid during placement of subsequent fill and wall units. Care shall be taken to place the geogrid material in accordance with manufacturer's recommendations for uniaxial and biaxial grids.

631.06 Material within one foot of the wall shall be Class C filter material. Backfill behind the filter material and within the geogrid reinforced areas shall be Structure Backfill (Class 1). Backfill shall be placed in 8 inch lifts, leveled and

compacted to 95% standard proctor prior to placement of the next lift of material. Backfill shall be placed from the wall backwards to ensure adequate tension in the geogrid material. Tracked or rubber tired equipment shall not be allowed to operate on the geogrid material until at least 6 inches of fill material has been placed. Rubber tired equipment may operate on the geogrid but care shall be taken to prevent damage or displacement of the geogrid. In no event shall non hand operated power equipment or vehicles be allowed within 3 feet of the back surface of the wall units at any time during the life of the project. Repairs to the walls as a result of damage to or displacement of the walls during construction of the project due to any cause are the sole responsibility of the Contractor.

631.07 Graffiti Blocker.

- (1) *Preparation.* The surface shall be clean, dry and absorbent. If cleaning is deemed necessary, then the use of Sure Klean® Cleaner or a City approved equal shall be used. The use of raw acids will not be allowed. The surface shall be allowed to dry completely prior to the application of the Graffiti Blocker. Newly constructed walls shall be allowed to cure for 28 days prior to the application. Sealant and caulking compounds shall be in place and cure prior to the application.
- (2) *Application.* The Graffiti blocker shall be placed when the surface and surrounding air temperature is between 5° - 32° C (40° - 90° F), during application and for the 6 hour cure period. The blocker shall be applied with nylon brush, roller or low-pressure spray (20 psi) with fan style tip. Two (2) full coats shall be applied to all specified surfaces. The application of the second coat shall occur as soon as the first coat is dry to the touch, but not to exceed a maximum of two (2) hour from the application of the first coat. All of the treated surfaces shall be protected from all forms of weather for a minimum of 6 hours from the completion of the second coat.
- (3) *Manufacture Recommendations.* Unless otherwise stated, all manufacturers' recommendations shall be strictly adhered to.

METHOD OF MEASUREMENT

631.08 Modular Retaining Wall shall be measured by the surface foot of exposed surface of wall constructed as shown on the plans or as directed by the Engineer. Surface area shall be measured from the base of the wall to the caps and from end to end. Curved sections shall be measured along the exposed face of the curve.

Excavation and backfill outside the above limits not otherwise shown in the plans or directed by the Engineer shall be the responsibility of the Contractor.

BASIS OF PAYMENT

631.09 The unit price for Modular Retaining Wall shall include all modular wall units, connecting pins, cap unit adhesive, geogrid soil reinforcement, reinforcement area fill, unit fill, structure excavation and backfill, free draining filter material, foundation fill, all unexposed (buried) wall material as shown on drawings, and all other labor, equipment, materials and incidental items required to complete the pay item. Payment will be made under:

Pay Item	Pay Unit
Modular Retaining Wall	Exposed Face Square Foot

**SECTION 632
SOUND WALLS**

Section 632 is hereby added for this project as follows:

DESCRIPTION

632.01 This work consists of constructing a Sound Wall at the location and to the lines and grades in accordance with these specifications and details shown on the plans. The Contractor shall be responsible for adapting the design and construction of the Sound Wall to the site conditions.

MATERIALS

631.02 Masonry Blocks. Masonry blocks may be rectangular or segmented and, when specified, shall have ends shaped to provide interlock at vertical joints. The type, style, size and color shall be specified on the plans. The blocks shall conform to the requirements of ASTM C 139, or, for hollow blocks, to ASTM C 90. Dimensions and tolerances shall conform to the above applicable requirements or those specified on the plans.

- (1) *Physical Requirements.* At the time of delivery to the work site, the units shall conform to the following physical requirements:
 - A. The average compressive strength of three tests shall be equal or greater than 3500 psi with a minimum of 3000 psi for individual test in accordance with ASTM C90. Either a full masonry unit or a saw cut coupon compressive test is acceptable to verify the 28 day concrete strength. The location of the cut for the coupon shall be approved by the City.
 - B. The masonry unit shall have a maximum water absorption rate, by weight, of 6 percent determined in accordance with the requirement of ASTM C140.
 - C. The masonry units shall be placed in the dry condition, wetting will not be allowed.
- (2) *Finish and Appearance.* All units shall be in good condition. Cracks, chips and/or other imperfections shall be cause for rejection, as determined by the City.

The permissible variations in the exterior dimensions of the Masonry block shall not differ more than $\pm 1/8$ ", except the height of the block shall be within $\pm 1/16$ " from the specified dimensions for an individual block.

- (3) *Sampling and Testing.* The City shall be allowed access to the manufacturer's facilities to inspect and sample units from lots ready for delivery to the project.

The City reserves the right to reject any masonry blocks, which do not meet the requirements of these specifications. The Contractor shall notify the City at least 72 hours before beginning the construction of any walls.

- (4) *Brick Material.* When Specified, the color of any brick to be used for walls or monuments shall be color "Red Grain" as specified by the Lakewood Brick Company, (303) 238-5313, Lakewood, CO, or approved equal. The Contractor shall submit to the City a sample no smaller than 4 complete bricks, or with a total surface area no smaller than 10 inches by 10 inches. The Contractor shall obtain approval in writing by the City of any proposed brick material and brick color, prior to placement in the field. Any brick material placed prior to written approval by the City shall be removed and replaced at the Contractor's expense.

632.03 Masonry Mortar. Masonry mortar shall meet the following:

- (1) Masonry mortar shall be Type S conforming to ASTM C 270. All mortar materials shall be obtained from only one manufacturer or source for the entire job.
- (2) The use of admixtures or anti-freeze agent including but not limited to: pigments, air-entraining agents, accelerators, retardeners, water repellent agents, or other admixtures, unless otherwise indicated shall not be allowed.
- (3) The use of calcium chloride in the mortar shall not be allowed.
- (4) The water shall be clean, potable and free of salts or alkalis which could cause efflorescence or other impurities affecting strength or appearance.
- (5) The mortar shall have a minimum compressive strength to its specified strength, but not less than 1,800 psi in 28 days.

632.04 Masonry Grout. Masonry grout shall meet the following:

- (1) Masonry grout shall conform to Portland Cement Types I, II and III of ASTM C150. All grout materials shall be obtained from only one manufacturer or source for the entire job.
- (2) The use of admixtures or anti-freeze agent including pigments, air-entraining agents, accelerators, retardeners, water repellent agents, or other admixtures, unless indicated shall not be allowed.
- (3) The use of calcium chloride in the grout shall not be allowed.
- (4) The water used in mixing shall be clean, potable and free of salts or alkalis which could cause efflorescence or

other impurities affecting strength or appearance.

- (5) Cementitious material and aggregates shall be stored in such a manner as to prevent deterioration or intrusion material or moisture. Any material that has become unsuitable for good construction shall not be used.
- (6) The grout shall have a minimum compressive strength to its specified strength, but not less than 2,000 psi in 28 days.

632.05 Graffiti Blocker. Graffiti blocker shall meet the following:

The Graffiti blocker shall be Sure Klean® Weather Seal Blok-Guard® & Graffiti Control or a City approved equal. The blocker shall be used in its delivered concentrated form. Dilution or altering the material shall not be allowed. The cost of all materials, protecting and application shall be considered incidental to the price of the wall.

CONSTRUCTION REQUIREMENTS

632.06 The Mason must have not less than 5 years experience in masonry and have successfully completed not less than 10 projects of similar size and complexity.

- (1) *Excavation and Backfill.* Should the excavation for the placement of the foundation pad (footing) expose an unsatisfactory bearing material, the City shall require removal and replacement of that material. The removed material shall be replaced with Structural Backfill (Class 1) compacted in conformity to Subsection 206.03. The cost of the excavation, material, backfill and compaction shall be considered incidental to the price of the wall.

The Contractor shall place additional blocks and fill material, properly compacted, to return the finished grade to plan elevations if settlement as determined by the City has occurred. A final inspection shall be made 30 to 45 days after the completion of the top layer of blocks.

If settlement is determined to be the result of the non-conforming backfill or backfill not meeting compaction requirements, the Contractor shall bring the elevation to the finished grade at no extra cost to the project.

- (2) *Pad.* The leveling pad shall be level within the maximum tolerance of ½” for the total length of the wall, not to exceed a ¼” for any two points 10’ apart.

Before starting a new course of blocks, the Contractor shall take steps to ensure matching the elevation at the next leveling pad step.

- (3) *Block Facing.* An overall negative batter (wall face leaning outward) between bottom and top of wall is not allowed. The final wall face shall be vertical, or have a maximum positive batter of 3%. The surface of wall face shall be tested with a 10’ straightedge laid along the surface in all directions. Except as necessary for horizontal alignment of the wall, convex deviation of the wall face from the straightedge (belly wall) shall not be allowed, and concave deviation from the straightedge shall be less than 1/4”.

A dislocated block is an individual block located outward more than 1/8” from the adjacent blocks. In the completed wall, or completed 20’ section of the wall, if the number of dislocated blocks, cracked blocks, and blocks failing the straightedge test equal or exceeds 3% of the total number of blocks in a 20’ horizontal length of wall, a price reduction will be applied for that 20’ section of wall. The price reduction shall be based on the percent of blocks that are judged by the City as defective. Therefore, 3% of defective blocks shall result in a price reduction of 3% to a maximum reduction of 10%. When the number of defective blocks as defined above exceeds 10% of total, the wall, or portion thereof, shall be rejected by the City.

The variation in the cross-sectional dimensions of the wall thickness shall be within the tolerances of - 0.25” to + 0.50”

The wall(s) shall be laid out in advance for accurate spacing of surface bond patterns, with uniform joint widths and to properly locate openings, movement-type joints, returns and offsets. The contractor shall avoid the use of less than half size units.

632.07 Masonry and Grout Work. Masonry and grout work shall meet the following

- (1) *Mixing.* Mix mortar and grout ingredients for a minimum of 5 and not more than 10 minutes in a mechanical batch mixer. The water used in mixing shall be clean, potable and free of salts or alkalis which could cause efflorescence or other impurities affecting strength or appearance. Do not use mortar which has begun to set, or if more than 2.5 hours has elapsed since initial mixing. Re-temper mortar during 2.5 hour period as required to restore workability.

Measure mortar and grout mixes by volume. For aggregates, use dump boxes or correct size for each mix batch. Measurement by shovel count is not permitted.

Mix mortar with the amount of water required for workability and to provide maximum tensile bond strength within the capacity of the mortar.

- (2) *Installation of Masonry.* The masonry units shall be placed in face shell mortar bedding with complete coverage of face shells. Extruded mortar shall be struck. After the mortar has stiffened somewhat, all joints shall be tooled with a rounded tool having a diameter slightly larger than the thickness of the joint. Mortar joints shall be concave tooled an average of 10 mm (3/8") in thickness. Blocks shall be placed in accordance with local standard masonry practice. Reinforcement and wall ties shall be installed as indicated on the plans.

The Contractor shall furnish cap courses, base courses, covings, bull-nosed corners and any special units which are necessary to complete a first class job. Special shapes of masonry units required are shown on the plans.

The City shall supply the Contractor with the forms to cast the City's logo plaques. The plaques shall be inserted within the columns designated on the plans. The Contractor shall return these forms to the City, after completion of the wall, in the same condition as delivered.

Brick shall be rejected if they are cracked or the edges and corners of finished faces have chippage exceeding the following maximum sizes: Edges 8 mm (5/16") (measured in from edge) and corners, 13 mm (1/2") (measured in from edge), or for any other structural or color defect.

Each brick shall be placed in a full bed of mortar and shall be shoved in place. The City may remove brick already placed to ensure that all joints are full. If joints that are not completely filled are found, then the City can order brick removed until City is assured that the joints of all remaining brick are completely filled.

All face surfaces of the face brick work shall be kept clean. After joints are struck, the surface shall be carefully cleaned.

The faces and angles of all walls shall be carefully plumbed and all work carried up true and even, laying all walls to lines.

- (3) *Placement of the Grout.* Once mixed, the grout shall be placed continuously and rapidly into the open cavity created between the two brick faces. The use of concrete vibrators, straps and rods to help move the grout shall be used sparingly. Excessive vibration may cause bleeding and segregation. Grout which exhibits bleeding and/or segregation shall be rejected by the City.
- (4) *Precautions and Protection.* All work and materials shall be protected from the weather. Partially completed masonry work shall be protected from the weather by covering the top of the walls with a strong, waterproof, non-staining plastic membrane. The membrane shall extend down the sides of each wall face a minimum of two (2) feet and shall be securely held in place.

The masonry walls shall be temporarily braced during construction to prevent damage or loss due to wind. All stored masonry units shall be stockpiled on planks to prevent contact with the ground.

- (5) *Masonry Work in Cold Weather.* Masonry shall not be placed when the surrounding air temperature is 5° C (40° F) or less, except when the masonry work is housed in a temporary manner, suitable to the City. The inside air temperature of the housing shall be kept within 5° C to 27° C (40° F to 80° F) for a period of 72 hours after the masonry is placed. Mortar and grout work during cold weather shall have a minimum temperature of 10° C (50° F) and a maximum temperature of 38° C (100° F) at the time it is applied to the masonry. This temperature shall be provided by heating the mixing water or the aggregate or both if necessary, to provide at least a minimum temperature of 5° C (40° F) at the time they are placed.

- (6) *Masonry Work in Hot Weather.* The contractor shall provide artificial shade, wind breaks and/or use cooled material when the ambient temperature is 32° C (90° F) or greater are when temperature and humidity conditions produce excessive evaporation of water from the mortar and/or grout. The contractor shall not apply mortar to substrates with temperature at or above 38° C (100° F).
- (7) *Cleaning.* After completion, all masonry units shall be thoroughly cleaned using Sure Klean® Cleaner or a City approved equal according to the masonry manufacturer's recommendations. The Contractor shall protect adjacent work from damage during the cleaning operations. Cleaning shall start at the top and be continued down until such work is completed. All pointing will be inspected and the Contractor shall completely point up all voids.

632.08 Graffiti Blocker.

- (4) *Preparation.* The surface shall be clean, dry and absorbent. If cleaning is deemed necessary, then the use of Sure Klean® Cleaner or a City approved equal shall be used. The use of raw acids will not be allowed. The surface shall be allowed to dry completely prior to the application of the Graffiti Blocker. Newly constructed walls shall be allowed to cure for 28 days prior to the application. Sealant and caulking compounds shall be in place and cure prior to the application.
- (5) *Application.* The Graffiti blocker shall be placed when the surface and surrounding air temperature is between 5° - 32° C (40° - 90° F), during application and for the 6-hour cure period. The blocker shall be applied with nylon brush, roller or low-pressure spray (20 psi) with fan style tip. Two (2) full coats shall be applied to all specified surfaces. The application of the second coat shall occur as soon as the first coat is dry to the touch, but not to exceed a maximum of two (2) hour from the application of the first coat. All of the treated surfaces shall be protected from all forms of weather for a minimum of 6 hours from the completion of the second coat.
- (6) *Manufacture Recommendations.* Unless otherwise stated, all manufacturers' recommendations shall be strictly adhered to.

METHOD OF MEASUREMENT

632.08 The Sound Wall shall be measured by the linear foot. The linear foot measurement will be along the base of the principal side of the wall facing the street from outside to outside of each end or column for each continuous run of wall and shall include all masonry units, footing, concrete, mortar, grout, hardware, graffiti blocker, coping stones, plaques, reinforcing steel, excavation, backfill, protecting, heating and any other incidentals to the erection of the wall (all sides).

BASIS OF PAYMENT

632.09 The unit price for Sound Wall shall include all items required to complete the pay item. Payment will be made under:

Pay Item	Pay Unit
Sound Wall	Linear Foot

Payment will be full compensation for all materials, equipment and labor necessary to complete the masonry wall, columns and the application of the Graffiti Blocker. Masonry units, mortar, grout, reinforcing steel, concrete, drains, impervious membranes, shoring, earth work and all other work item(s) required for the erection of the masonry wall will not be measured and paid for separately but shall be included in the work.

**SECTION 720
MATERIALS SAMPLING AND TESTING**

Section 720 is hereby added for this project as follows:

DESCRIPTION

720.01 Materials sampling and testing shall be performed under the Contract by an independent materials testing company. This work shall include all necessary labor, equipment and material required for sampling and testing materials or finished products in accordance with the specifications of this section. Unless otherwise designated, all referenced specifications, standards or policies shall be the latest edition as revised or updated by approved supplements published and issued prior to the date of the advertisement for bids

CONSTRUCTION REQUIREMENTS

720.02 All materials sampling and testing shall be performed by certified, experienced and qualified materials testing technicians who work under the supervision of a registered professional engineer in the State of Colorado, practicing in this field. At the request of the Engineer, the Contractor shall require the materials testing company to replace any technician who cannot satisfactorily perform the testing duties.

720.03 All materials sampling and testing equipment shall be serviceable and have been currently calibrated. At the request of the Engineer, the Contractor shall require the materials testing company to replace any testing equipment that is not satisfactory.

720.04 Retesting the density of subgrade and base course materials shall be required at the Contractor's expense, if they are reworked or weather causes the materials to become wet, dry or frozen.

720.05 Materials testing technicians shall furnish copies of failed test results to the Engineer within two working days of completion of testing and prior to the next construction phase. On a weekly basis, the Contractor shall furnish the Engineer with copies of all test results taken during that week and a cover letter, signed by the supervising registered professional engineer, which summarizes the results and discusses any failed tests or inconsistencies.

720.06 The City materials testing requirements are provided in Table 720-1. All testing procedures, point of verification and central lab requirements shall be as specified in the Frequency Guide Schedule of the Colorado Department of Transportation Field Materials Manual. Without increasing the total number of tests or samples required, the Engineer or Inspector may change the test locations from the frequency spacing shown in Table 720-1. One test is required for any fraction of the specified frequency.

**Table 720-1
City of Wheat Ridge Materials Testing Requirements**

Type of Test	Frequency	Remarks
Soil Survey (Classification), AASHTO M 145	1 per 500 feet of roadway or pipe trench	Surveys for roadway and trench may be combined
Moisture-Density Curve, AASHTO T 99	1 per on-site soil type 1 per import material source	AASHTO method determined by soil or materials type
Embankment in-place density, Colorado Procedures	1 per 250 feet per lane per 6 inch loose lift	Minimum density per soil classification, Section 203.07
Roadway subgrade in-place density, Colorado Procedures	1 per 250 feet per lane	Minimum density per soil classification, Section 203.07
Sidewalk subgrade in-place density, Colorado Procedures	1 per 250 feet of sidewalk	Minimum density per soil classification, Section 203.07
Pipe trench in-place density, Colorado Procedures	1 per 200 feet of trench per 18 inch vertical interval	Minimum density per soil classification, Section 203.07
Aggregate base course in-place density, Colorado Procedures	1 per 250 feet per lane	Minimum 95% of maximum density, T 180
Lime treated subgrade in-place density, Colorado Procedures	1 per 250 feet per lane	No less than 95% of standard dry density and optimum moisture, T99
Cement treated base in place density, Colorado Procedures	1 per 250 feet per lane	Density in accordance with contract documents, T 134
Hot Bituminous Pavement asphalt content and gradation	1 per 1000 tons	Within specifications of approved mix design: Binder PG 64-22
Hot Bituminous Pavement in-place density, Colorado Procedures	1 per 100 tons	92 - 96% of maximum density, T 209
Concrete compressive strength, AASHTO Procedures	1 set per 50 cubic yards	PCC pavement, structural concrete, sidewalks, and curbing
Concrete air content and slump, AASHTO Procedures	1 per 25 cubic yards	PCC pavement, structural concrete, sidewalks, and curbing

BASIS OF PAYMENT

720.07 Payments for materials sampling and testing will be lump sum.

FORCE ACCOUNT ITEMS

DESCRIPTION

This special provision contains the project estimate for Force Account items included in the Contract. Force Account work will be performed as directed by the Engineer.

BASIS OF PAYMENT

<u>FORCE ACCOUNT ITEM</u>	<u>QUANTITY</u>	<u>AMOUNT</u>
F/A 01 Erosion Control	1	\$5,000
F/A 02 Environmental, Health, and Safety	1	\$10,000
F/A 03 Landscape Restoration	1	\$20,000
F/A 04 On the Job Training	1	\$1,500
F/A 05 Partnering Program	1	\$1,000
F/A 06 Minor Contract Revisions	1	\$240,000

Payment will be made in accordance with Subsection 109.04. Payment will constitute full compensation for all work necessary to complete the item.

F/A 01 Erosion Control shall include additional work that is provided, at the Engineer's direction, for unforeseen items or changes to the planned erosion control work. Work associated with items identified in the project erosion control plans will not be paid for out of this Force Account.

F/A 02 Environmental, Health and Safety shall include additional work that is provided at the Engineer's direction for the project for any hazardous materials mitigation included in Section 250.

F/A 03 Landscape Restoration shall include additional work that is provided at the Engineer's direction for topsoil, irrigation, and landscape restoration work. All work shall be done in accordance with City Special Provision Section 211.

F/A 04 On the Job Training (OJT). This work consists of the cost of maintaining on-the-job pilot training program in compliance with the provisions of On-the-Job Training in the Standard Special Provisions.

F/A 05 Partnering Program. This work consists of the costs of participating in a partnering program between the Contractor and the Division in accordance with the Standard Special Provisions.

F/A 06 Minor Contract Revisions – Minor Contract Revisions shall include additional work that is provided at the Engineer's direction for unforeseen items or changes to the planned work.