

Exhibit E & Exhibit F

City of Littleton

State of Colorado



TECHNICAL SPECIFICATIONS

Mineral Mobility East Improvements Phase 1 Project

Project No. C M810-019 (24364)

**CITY OF LITTLETON
CDOT SUBACCOUNT 24364**

STANDARD CONSTRUCTION SPECIFICATIONS

The following Project Special Provisions and Standard Special Provisions take precedence over specifications, plans and supplemental or amended referenced” Standard Specifications for Road and Bridge Construction” adopted in the ***2023 Standard Specifications for Road and Bridge Construction*** by the Colorado Department of Transportation, or other required specifications which is to be used to control construction of this Project.

The Contractor shall not take advantage of any apparent error or omission in the Contract. If the Contractor discovers an error or omission, the Engineer shall immediately be notified. The Engineer will make corrections and interpretations as necessary to fulfill the intent of the Contract.

**COLORADO DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISIONS
MINERAL MOBILITY IMPROVEMENTS
BID PACKAGE 1**

All construction work required for the project shall be in accordance with the 2023 edition of the Colorado Department of Transportation (CDOT) Standard Specifications for Road and Bridge Construction and the CDOT M&S Standards (latest edition).

The following special provisions supplement or modify the Standard Specifications and take precedence over the Standard Specifications and plans.

PROJECT SPECIAL PROVISIONS

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NOTICE TO BIDDERS

Pursuant to subsections 102.04 and 102.05, it is recommended that bidders on this project review the work site and plan details prior to submitting a bid.

The City of Littleton Procurement Manager is the Designated Contact; all inquiries and questions must be submitted in writing to the City of Littleton Procurement Manager. From the date of issuance of the IFB through completion of the selection process, any bidder who contacts city employees other than the Designated Contact may be disqualified from further participation in the selection process, at the city's sole discretion. This supersedes any other subsections containing conflicting instructions regarding who to contact during the bid process.

The city will not be responsible for any oral instructions or interpretations given by or to anyone. It shall be conclusively presumed that the bidder did, before submitting a bid, closely review the IFB, all exhibits/ attachments, and other items relevant to the IFB.

COMMENCEMENT AND COMPLETION OF WORK (CALENDAR DAY)

The Contractor shall commence work under the Contract on or before the 15th day following Contract execution or the 30th day following the date of award, whichever comes later, unless such time for beginning the work is changed by the Chief Engineer in the "Notice to Proceed." The Contractor shall complete all work within 144 calendar days in accordance with the "Notice to Proceed."

These minimum salient features shall be shown on the Contractor's Critical Path Schedule:

1. Mobilization/ Erosion Control
2. Tree and landscaping protection
3. Removal of Asphalt Mat (Planing) along Jackass Hill Road
4. Removal of existing Mineral Avenue trail
5. Grading and installation of proposed Mineral Avenue trail
6. Curb Ramp Construction
7. Signal Relocation at the intersection of Mineral Avenue and Peninsula Drive
8. Modular Curb and Median installation along Jackass Hill Road
9. Final Signing and Striping along both Mineral Avenue and Jackass Hill Road

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:

10 Percent DBE participation

ON THE JOB TRAINING CONTRACT GOAL

The Department has determined that on-the-job training shall be provide to trainees with the goal of developing full journey workers in the types of trade or classifications 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 hours required: 300 hours

**REVISION OF SECTION 101
DEFINITIONS AND TERMS**

Section 101 of the Standard Specifications is hereby revised for this project as follows:

Add the following in subsection 101.01:

Department. Refers to the City of Littleton.

Engineer. References to the “Engineer” within the Project Special Provisions and plans will refer to the City of Littleton Project Manager.

**REVISION OF SECTION 103
AWARD AND EXECUTION OF CONTRACT**

Delete Subsection 103.02.

Delete Subsection 103.03.

Delete Subsection 103.04.

REVISION OF SECTION 105 CONTROL OF WORK

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

Subsection 105.10 shall include the following:

The Contractor shall conduct the work so as not to interfere with or hinder the progress or completion of the work being performed by other agencies or Contractors. Traffic Control conflicts that arise between the needs of the various construction Contractors and other agencies, shall be brought to the attention of the City Engineer.

The City Engineer will decide the method of resolution. It is agreed that the Contractors shall coordinate their respective Traffic Control subcontractor resources, Method of Handling Traffic (MHT)'s and Phasing elements to assure the most efficient, direct, safe and smooth flow of traffic throughout the entire project work zone(s).

Subsection 105.12 shall include the following:

The Contractor shall coordinate with the City and its contractor for the adjacent Jackass Gulch project. Construction access and phasing shall be communicated and coordinated to limit impact to both projects and to trail users to the maximum extent possible.

Subsection 105.14 shall include the following:

The Contractor shall include the City in all correspondence with other agencies and shall not act on any direction from such agencies without concurrence from the City.

Work performed by the Contractor, outside the scope of the project plans and specifications as determined by the City, and not directed by the City, will not be compensated by the City.

Subsection 105.17 Removal of Unacceptable Work and Unauthorized Work shall include the following:

Contractor will verify all items to be removed and replaced with the Engineer. The contractor shall verify, with the Engineer, any marked locations not included within the contract documents prior to any removal of concrete. Any removal NOT listed in the contract or otherwise verified and approved by the Engineer will be at the contractor's expense.

Existing damage to any adjacent infrastructure and/or structures shall be the responsibility of the contractor to fully document prior to the removal of any concrete. The contractor shall notify the Engineer of any existing damage and to confirm the various locations, and their limits, of existing damage prior to the removal of the adjacent concrete.

Damage observed following the removal of the adjacent concrete, not previously documented and confirmed by the Engineer as existing, will be the responsibility of the contractor to repair at no cost to the property owner or the City of Littleton.

Contractor shall not chip or crack adjacent concrete panels or stones. If damage occurs, contractor will saw beyond the damaged area as approved by the Engineer, remove and replace (potentially with fast track concrete) at no additional expense to the City. If repair is larger than a single panel, saw cutting of control joints is required after proper cure time.

**REVISION OF SECTION 105
HOT MIX ASPHALT INCENTIVE AND DISINCENTIVE PAYMENT**

Section 105 of the Standard Specifications, as modified by the standard special revisions, is hereby revised for this project as follows:

Delete 105.05 (h), 105.05 (i), and 105.05 (j).

Replace subsection 105.05 (g) Process I/DP Computation with the following:

105.05 (g) Process I/DP Computation. Hot Mix Asphalt for this project shall not be subject to incentive/disincentive. The Contractor shall reflect this in their bid.

**REVISION OF SECTION 106
CONTROL OF MATERIAL**

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

Subsection 106.03 shall include the following:

1. The City of Littleton will employ and pay an independent agency to perform the specified Quality Assurance services at the frequencies outlined in the CDOT 2023 Field Materials Manual.
2. Retesting: The Contractor shall be responsible for the costs of retesting where results of required inspections, tests, or similar services prove unsatisfactory and do not indicate compliance with the Contract Document requirements.
 - a. Cost of retesting all construction that has been revised, corrected, or replaced by the Contractor shall be the Contractor's responsibility. Such re-tests shall be performed by the City of Littleton's representative, and the costs will be deducted from payment due on the following payment application.
3. Associated Services: The Contractor shall cooperate with all agencies performing inspections, tests, and similar services and provide reasonable auxiliary services as requested. Auxiliary services required include, but are not limited to:
 - a. Providing safe access to the work, furnishing incidental facilities necessary to safely facilitate inspections and tests, and providing operators and equipment as needed to assist the City of Littleton's representative in performing tests or inspections.

**REVISION OF SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

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

Delete the first paragraph of **Subsection 107.02** and replace with the following:

Unless otherwise specified, the Contractor shall procure all permits and licenses; pay all charges, fees, and taxes, including permits procured for this project by others; and give all notices necessary and incidental to the due and lawful prosecution of the work. The costs of these permits will not be paid for separately but shall be included in the work.

The Contractor shall obtain at a minimum, but not limited to, the following permits:

1. State Department of Revenue Tax Exempt Permit (See Boilerplate)
2. City of Littleton Right-of-way Permit (No Cost to the Contractor)

Subsection 107.07 Public Convenience and Safety shall include the following:

All construction activities shall be completed Monday through Friday between the hours of 7:00 am and 7:00 pm. Construction activities that impact arterial roadways shall be completed Monday through Thursday between the hours of 8:30 am and 3:30 pm and Friday between the hours of 8:30 am and 2:00 pm, unless otherwise approved by the Engineer. The Contractor shall not perform any work on Saturdays, Sundays, Holidays and non-working hours on all other days, unless approved by the Engineer. A change in the working hours must be submitted 48 hours in advance for approval by the Engineer. Nighttime construction work will be considered, provided that the Contractor submits request a minimum of 2 weeks prior to the nighttime activities. The submittal shall include a noise mitigation plan identifying the measures to be implemented by the Contractor to mitigate construction noise. Noise mitigation measures will not be measured and paid for separately but shall be included in the Work.

Work that interferes with traffic on holidays or the day before any holiday or holiday weekend will not be permitted. Holidays on which this restriction applies shall be those holidays recognized by the State of Colorado listed in the first paragraph of subsection 101.36.

The Contractor shall provide the following services on an ongoing basis throughout the duration of the project:

- a. A contact person for the project shall be designated by the Contractor at the preconstruction conference. This individual shall be primarily responsible for maintaining communications with the Engineer and businesses; provide information on a regular basis to private individuals, local organizations interested in the project and the affected agencies.

The following agencies shall be coordinated with on an ongoing basis:

- City of Littleton
- City of Littleton Police Department
- South Metro Fire Department

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**REVISION OF SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

- RTD
 - Homeowners/HOAs
 - Adjacent Businesses
- b. A letter of introduction and notice of work shall be delivered to all adjacent landowners prior to mobilization and the commencement of work.
- c. Updates shall be on a weekly basis after mobilization and 1 (one) week prior to any major traffic switches.
- d. The letter shall include the following as a minimum:
- Contractor - Name, Address, Direct Phone Number
 - Field Superintendent - Name, Mobile Phone Number
 - Schedule and description of work
 - Information regarding private property and repair procedures
- e. The contractor shall notify each adjacent property owner in writing a minimum of Seventy-Two (72) hours prior to the commencement of construction activities at the corresponding address or location.
- f. Payment for the above requirements will not be made separately but shall be included in the work.

Subsection 107.18 Barricades and Signs shall include the following:

Construction traffic control signs or devices not in use shall be removed from the roadway and pedestrian walkway (sidewalk & trails). Laying the sign down in a horizontal position or turning the sign parallel is not permitted on the sidewalk and/or within private property such as residential yards.

Portable Message Sign Panels shall be on site at all times during construction to provide information to traveling public related to changing traffic patterns. Specific messages to be displayed shall be included in the MHT and approved by the City.

Any missing or defaced signs shall be replaced within twenty-four (24) hours.

For locations that do not have sufficient right-of-way available to store the sign(s) or device(s), they must be picked up or moved to an approved storage area. Signs that are placed in the medians must be dismantled, laid down, or relocated to the approved storage area.

Subsection 107.12 Protection and Restoration of Property and Landscape Shall include the following:

The contractor shall replace and/or repair all damaged landscaping within seven (7) days of completion of the adjacent removal and replacement.

Sod damage resulting from concrete removal and replacement shall be cleanly cut to the limits of the damaged area(s) and parallel to the sidewalk or curb and gutter and replaced at a minimum removal and replacement width of 18" wide for the full length of the damaged area(s).

Landscape rock, mulch and other miscellaneous landscaping and all other related materials shall be cleared and replaced in a condition equal to or better than before construction.

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REVISION OF SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

The contractor shall repair and/or replace any damaged irrigation pipes. The repairs or replacement must be completed within twenty-four (24) hours of the damage.

Damage to adjacent asphalt paved roadways from removal and replacement shall be repaired full depth or by mill and overlay as determined necessary by the Engineer. Surface damage shall be milled and filled to a minimum depth of two inches (2"), minimum width of twenty- four inches (24"), and length as determined by the Engineer. The roadway repairs must be completed within five (5) days of the completion of the adjacent removal and replacement.

Property pins and service location marks such as "V" for water and "X" for sanitary sewer services within the concrete work shall be replaced as the work progresses. Property pins, water and sewer service marks shall be restored to their original locations. This restorative work shall be incidental to any bid item where these locations occur throughout the project area.

All work listed above will not be measured and paid for separately but shall be included in the work.

**REVISION OF SECTION 107
PERFORMANCE OF SAFETY CRITICAL WORK**

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

Subsection 107.061 is hereby added to this project as follows:

107.061 Performance of Safety Critical Work. The following work elements are considered safety critical work for this project:

(1) Work requiring the use of cranes or other heavy lifting equipment when construction materials are being lifted that may fall onto active traffic lanes.

(2) Excavation and embankment adjacent to the roadway, especially if it requires shoring,

The Contractor shall submit, for review, an initial, detailed construction plan that addresses safe construction methods for each of the safety critical elements applicable to this project. The Engineer will submit the plans to CDOT Local Agency Coordinator for a concurrent review. The Engineer's review will be for general conformance with the plans, specifications, best management practices regarding safety of the operation and industry standards. When the specifications already require an erection plan, a bridge removal plan, or a removal of portion of bridge plan, it shall be included as a part of this plan. The detailed construction plan shall be submitted two weeks prior to the safety critical element conference described below. The construction plan shall be stamped "Approved for Construction" and signed by the Contractor. The construction plan will be reviewed for acceptance by the Engineer.

The Construction Plan shall include the following:

- (1) Safety Critical Element for which the plan is being prepared and submitted.
- (2) Contractor or subcontractor responsible for the plan preparation and the work.
- (3) Schedule, procedures, equipment, and sequence of operations, that comply with the working hour limitations.
- (4) Temporary work required: falsework, bracing, shoring, etc.
- (5) Underground, above grade, and overhead utilities identification and protective steps taken.
- (6) Communication plan as necessary with stakeholders, media, and the public.
- (7) Additional actions that will be taken to ensure that the work will be performed safely.
- (8) Names and qualifications of workers who will be in responsible charge of the work:
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
- (9) Names and qualifications of workers operating cranes or other lifting equipment
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
- (10) The construction plan shall address how the Contractor will handle contingencies such as:
 - A. Unplanned events (storms, traffic accidents, work accidents, etc.)

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REVISION OF SECTION 107
PERFORMANCE OF SAFETY CRITICAL WORK

- B. Structural elements that don't fit or line up
- C. Work that cannot be completed in time for the roadway to be reopened to traffic
- D. Replacement of workers who don't perform the work safely
- E. Unexpected absence of critical management team
- F. Equipment failure
- G. Other potential difficulties inherent in the type of work being performed

(11) Name and qualifications of Contractor's person designated to determine and notify the Engineer in writing when it is safe to open a route to traffic after it has been closed for safety critical work.

(12) Erection plan or bridge removal plan when submitted as required elsewhere by the specifications. Plan requirements that overlap with above requirements may be submitted only once.

A safety critical element conference shall be held two weeks prior to beginning construction on each safety critical element. The Engineer, the Contractor, the safety critical element subcontractors, and the Contractor's Engineer shall attend the conference. Required pre-erection conferences or bridge removal conferences may be included as a part of this conference. Communications staff (Contractor or City of Littleton) shall also attend in order to address any public/media needs.

After the safety critical element conference, and prior to beginning work on the safety critical element, the Contractor shall submit a final construction plan to the Engineer for record purposes only. The final construction plan shall be stamped "Approved for Construction" and signed by the Contractor.

The Contractor shall perform safety critical work only when the Engineer, or an authorized representative, is on the project site. The Contractor's Engineer shall be onsite to inspect and provide written approval of safety critical work for which he provided signed and sealed construction details. Unless otherwise directed or approved, the Contractor's Engineer need not be onsite during the actual performance of safety critical work, but shall be present to conduct inspection for written approval of the safety critical work.

When ordered by the Engineer, the Contractor shall immediately stop safety critical work that is being performed in an unsafe manner or which will result in an unsafe situation for the traveling public. Prior to stopping work, the Contractor shall make the situation safe for work stoppage. The Contractor shall submit an acceptable plan to correct the unsafe process before the Engineer will authorize resumption of the work.

When ordered by the Engineer, the Contractor shall remove workers from the project that are performing the safety critical work in a manner that creates an unsafe situation for the public in accordance with subsection 108.06.

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REVISION OF SECTION 107
PERFORMANCE OF SAFETY CRITICAL WORK

Should an unplanned event occur or the safety critical operation deviate from the submitted plan, the Contractor shall immediately cease operations on the safety critical element, except for performing any work necessary to ensure worksite safety, and provide proper protection of the work and the traveling public. If the Contractor intends to modify the submitted plan, he shall submit a revised plan to the Engineer prior to resuming operations.

All costs associated with the preparation and implementation of each safety critical element construction plan will not be measured and paid for separately but shall be included in the work.

The Contractor shall not be relieved from ultimate liability for unsafe or negligent acts or receive a waiver of the Colorado Governmental Immunity Act on behalf of the Department.

**REVISION OF SECTION 201
CLEARING AND GRUBBING**

Section 201 of the Standard Specifications is hereby revised for this project as follows:

Subsection 201.02 shall include the following:

The removal of trees with trunks less than 6 inches in diameter shall be included in this section and will not be paid separately.

It is the responsibility of the Contractor to visit the site and determine the resources necessary to clear and grub the project limits, per the design specifications, and no additional compensation will be allowed therefore.

Subsection 201.04 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Clearing and Grubbing	Acre

**REVISION OF SECTION 202
REMOVAL OF CONCRETE PAVEMENT**

Section 202 of the Standard Specifications is hereby revised for this project as follows:

In **Subsection 202.02** delete the sixth paragraph and replace with the following:

The areas of concrete pavement to be removed shall be isolated in both the longitudinal and transverse directions by the double saw cut method of sawing in accordance with FHWA's publication entitled "Guide for Full-Depth Repairs". Sawing shall be accomplished with the use of a diamond blade saw or approved equivalent. Sawing of the concrete pavement shall be done to a true line, with a vertical face, unless otherwise specified. Sawing shall be full depth and shall go through the existing tie-bars and dowel bars, leaving free vertical edges at the limits of the removal.

After sawing has been completed, the deteriorated concrete shall be lifted vertically from its position unless otherwise approved by the Engineer. Pavement breakers or jackhammers shall be used in the removal process where lifting is not possible. All loose materials shall be removed from the repair area. Removed concrete slabs and excavated soils shall become the property of the Contractor and shall be disposed of in accordance with subsection 202.07.

After concrete pavement is removed, the underlying material will be evaluated by the Engineer. Unsuitable material shall be removed in accordance with subsection 206.03. Unsuitable base course and subgrade that has a classification of A-5 or better, shall be replaced with aggregate base course (Class 6). Aggregate base course (Class 6) shall be placed with moisture and density control in accordance with Section 304.

The subsequent aggregate base course shall be placed with moisture and density control in accordance with Section 304.

Subsection 202.11 shall include the following:

Removal of concrete pavement will be measured by the square yard, completed to the required depth, and accepted.

Subsection 202.12 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Removal of Concrete Pavement	Square Yard

Payment for Removal of Concrete Pavement will be full compensation for all work and materials required to complete the item, including sawing, removing, and disposal of the concrete pavement.

Structure excavation for removal of unsuitable material will be measured and paid for in accordance with subsection 206.07.

Aggregate base course will be measured and paid for in accordance with Section 304.

REVISION OF SECTION 202 REMOVAL OF ASPHALT MAT (PLANING)

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Delete **Subsection 202.09** and replace it with the following:

202.09 Removal of Asphalt Mat (Planing). Before beginning planing operations, the Contractor shall submit a planing plan and a Process Control Plan (PCP) for approval by the Engineer. The planing plan shall include at a minimum:

- (1) The number, types and sizes of planers to be used.
- (2) The width and location of each planing pass.
- (3) The number and types of brooms to be used and their locations with respect to the planers.
- (4) The proposed method for planing and wedging around existing structures such as manholes, valve boxes, and inlets.
- (5) The longitudinal and transverse typical sections for tie-ins at the end of the day.
- (6) If requested by the Engineer, a plan sheet showing the milling passes.

The PCP shall include as a minimum:

- (1) The schedule for replacing the cutting teeth.
- (2) The daily preventive maintenance schedule and checklist.
- (3) Proposed use of automatic grade controls.
- (4) The surface testing schedule for smoothness.
- (5) The process for filling distressed areas.
- (6) The schedule for testing macrotexture of the milled surface.
- (7) Corrective procedures if the milled surface does not meet the minimum macrotexture specification.
- (8) Corrective procedures if the milled surface does not meet the minimum transverse or longitudinal surface finish when measured with a 10 foot straightedge.

The Contractor shall not start the planing operation until the hot mix asphalt (HMA) mix design has been approved and a Form 43 has been signed by the Engineer.

The existing pavement shall be milled to the cross-slope as shown on the plans and shall have a surface finish that does not vary longitudinally or transversely more than $\frac{3}{8}$ inch from a 10 foot straightedge. A 10 foot straightedge shall be supplied by the Contractor.

All milled surfaces shall be broomed with a pick-up broom, unless otherwise specified, before being opened to traffic. A sufficient number of brooms shall be used immediately after planing to remove all milled material remaining in the roadway.

If the Contractor fails to adequately clean the roadway, work shall cease until the Engineer has approved the Contractor's revised written proposal to adequately clean the roadway.

The milled surface shall have a macrotexture equal to or less than 0.170 inches for single-lift overlays and 0.215 inches for multiple-lift overlays as tested per CP 77. Milled surfaces that do not meet these criteria shall require corrective action per the PCP. The Contractor shall be responsible for testing the macrotexture of the milled surface at the location directed by the Engineer per CP 77 at a stratified random frequency of one test per 10,000 square yards or a minimum of once per work day.

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REVISION OF SECTION 202
REMOVAL OF ASPHALT MAT (PLANING)

At the completion of each day's work, longitudinal vertical edges greater than 1 inch shall be tapered. No transverse vertical edges will be allowed. Longitudinal milled surface tie-ins to existing pavement shall be tapered to not less than a 3:1 slope, transverse milled surface tie-ins to existing pavement shall be tapered to not less than a 50:1 slope. Transverse tapered joints may be tapered with the planing machine, a temporary asphalt ramp, or other methods approved by the Engineer. No longitudinal joint between the milled and existing surfaces shall fall between 1 to 5 feet of any lane line.

If the transverse joint is tapered with a temporary asphalt ramp, the milled surface at the joint shall be constructed as a butt joint the full depth of the lift of asphalt to be placed on the milled surface. The Contractor shall be responsible for maintaining this asphalt ramp until all corresponding HMA is placed. All work associated with this joint will not be paid for separately but shall be included in the cost of planing.

If the transverse joint is tapered with a planing machine, a butt joint shall be cut into the taper the full depth of the lift of asphalt to be placed on the milled surface before commencement of resurfacing. All work associated with this joint will not be paid for separately but shall be included in the cost of planing.

Other approved transverse joint tapers shall be maintained at the expense of the Contractor, and at a minimum shall incorporate a butt joint the full depth of the lift of asphalt to be placed on the milled surface before commencement of resurfacing.

Distressed or irregular areas identified in the planed surface by the Engineer shall be patched.

The roadway shall be left in a safe and usable condition at the end of each work day. The Contractor shall take appropriate measures to ensure that the milled surface does not trap or hold water. All required pavement markings removed by the planing shall be restored before the roadway is opened to traffic.

All milled surfaces to be overlaid with HMA shall be covered with new asphalt within the same working day. All areas on this project that are not overlaid within the specified working days will be assessed a lane rental fee of \$100,000 per occurrence for each day or fraction thereof and any required surface repairs shall be paid for by the Contractor.

All planing shall be completed full width and parallel to the travel lanes before resurfacing commences unless otherwise directed by the Engineer.

All material generated by the planing operation shall become the property of the Contractor unless otherwise noted in the Contract.

Each planer shall conform to the following:

The planer shall have sufficient power, traction and stability to maintain an accurate depth of cut. The propulsion and guidance system of the planer shall be maintained in such condition that the planer may be operated to straight and true lines.

The planer shall be capable of operating with automatic grade controls (contact or non-contact) on both sides of the machine using a 30 foot averaging system or other approved grade control systems. The use of such controls shall be described in the Contractor's PCP.

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REVISION OF SECTION 202
REMOVAL OF ASPHALT MAT (PLANING)

The planer shall be capable of picking up the removed material in a single operation. A self-loading conveyor shall be an integral part of the planer. Windrows will not be allowed.

Subsection 202.12 shall include the following:

Macrotexture testing, macrotexture corrective actions, planers, brooms, and all other work necessary to complete the item, Removal of Asphalt Mat (Planing), will not be measured and paid for separately, but shall be included in the work.

**REVISION OF SECTION 202
REMOVAL OF PAVEMENT MARKING**

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Subsection 202.05 shall include the following:

Pavement markings designated for removal and replacement shall be removed using water blasting. The contractor shall create a smooth application surface to the satisfaction of the project engineer and shall control sediment from the removal of the markings.

The contractor shall not perform any more removals than can be applied by the pavement marking truck during the same working day or working period.

If a rain event occurs during removal and marking application, the contractor shall halt the removal operation, and raised flexible pavement markers shall be placed at locations that have been removed but not marked while the pavement is drying prior to the marking application. Marking application shall resume when pavement is dry and has had no moisture for a minimum of 24 hours. Raised flexible pavement markers shall be installed with one marker at 40-foot centers.

Grooves shall be clean, dry and free of laitance, oil, dirt, grease, paint or other foreign contaminants. The Contractor shall prevent traffic from traversing the grooves and shall re-clean grooves, as necessary, prior to application of the permanent pavement markings.

Subsection 202.12 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Removal of Pavement Marking	Square Foot

The work to groove the asphalt or concrete and clean the grooving residual or debris will not be measured and paid for separately but shall be included in the work.

Unless otherwise specified in the Contract, temporary markings will not be measured and paid for separately but shall be included in the work.

Sediment control and disposal of all removed material will not be measured and paid for separately but shall be included in the work.

**REVISION OF SECTION 203
EMBANKMENT MATERIAL**

Revise Section 203 of the Standard Specifications for this project as follows:

Subsection 203.03, first paragraph, shall include the following:

Embankment material shall meet the following requirements for Atterberg limits and gradation:

- (1) Maximum liquid limit of 40
- (2) Maximum plasticity index of 10
- (3) A maximum of 35 percentage of material by dry weight passing the No. 200 sieve.

The upper 12 inches of embankment material below the subgrade elevation shall have a resistance value of at least 40 when tested by the Hveem Stabilometer or the equivalent resilient modulus.

**REVISION OF SECTION 203
POTHOLING**

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

Subsection 203.05(f) shall include the following:

(f) Potholing. Backfilling of potholes will not be measured and paid for separately but shall be included in the cost of the work.

Delete **Subsection 203.11(e)** and replace with the following:

Water for potholing will not be measured and paid for separately but shall be included in the work. Potholing will be measured by the number of hours that potholing is actually prosecuted, as directed by the Engineer. Assembly of equipment, refilling of water tanks, and other activities not directly related to potholing shall not be measured and paid for separately but shall be included in the cost of the work.

Subsection 203.12 shall include the following:

Compaction of material used to fill pothole will not be measured and paid for separately but shall be included in the work.

Payment for Potholing shall be full compensation for all labor, equipment, materials, and incidentals required to complete the work including excavation, backfill, water, water truck, surveying, compaction, refilling water tanks, disposal of excess material, and any other item to complete the work.

REVISION OF SECTION 207 TOPSOIL

Subsection 207.01 shall include the following:

This work consists of importing offsite topsoil to place on designated areas. Placing of topsoil upon constructed cut and fill slopes after grading operations are completed is included.

(a) Definitions

1. Finish Grade: Elevation of finished surface of planting soil.
2. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
3. Planting Area: Areas to be planted.
4. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
5. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
6. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

(b) Submittals. Soil Analysis Report: See Quality Control

(c) Quality Control

1. Imported Topsoil:
 - a. Submit source location for topsoil to be imported to site for approval by Project Manager.
 - b. Submit soil analysis report for topsoil imported to site, from the State University Agricultural Extension Service or other approved soil testing laboratory. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter) and shall include additive recommendations and recommended amendments shall be at the expense of the Contractor.
 - (1) One 1-quart sample per five hundred (500) cubic yards of imported soil is required, with individual tests completed for each sample;
 - (2) Follow instructions from soil testing laboratory when collecting samples
 - c. Testing will be at the expense of the Contractor.
 - d. Submit a one (1) quart sample along with analysis results.
2. Manufactured Topsoil:
 - a. Submit source of manufactured topsoil to be imported to site for approval by Project Manager.
 - b. Submit soil analysis report for stockpiled on-site topsoil from the State University Agricultural Extension Service or other approved soil testing laboratory. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter). Recommended amendments shall be at the expense of the Contractor.
 - (1) Test is to be completed within sixty (60) days preceding delivery to site. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter).
 - (2) Submit a one (1) quart sample along with analysis results

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REVISION OF SECTION 207
TOPSOIL

(d) Delivery, Storage, and Handling

1. Do not deliver or place topsoil in a frozen, wet, or muddy condition.
2. Protect stored and placed topsoil from vehicular traffic, equipment storage, material storage, or from contaminants or pollution sources. Topsoil that is compacted or tainted during construction is to be removed from site and disposed of at a licensed landfill at no additional cost to the City.

MATERIALS

Subsection 207.02 shall include the following:

The material for topsoil shall conform to the following:

(a) Imported Topsoil

1. All topsoil shall be a loam or sandy loam conforming to ASTM D 5268. At least ten (10) days prior to topsoil delivery, notify Project Manager of the source(s) from which topsoil is to be furnished. Topsoil shall be furnished by the Contractor and shall be a natural, friable soil representative of productive soils and shall meet the following conditions.
2. It shall be obtained from the top four-inches (4") of well-drained areas.
3. Fertile, friable, loamy soil, reasonably free from subsoil, refuse, roots, heavy or stiff clay, stones larger than one-inch (1"), coarse sand, noxious seeds, sticks, brush, litter, and other deleterious substances; suitable for the germination of seeds and the support of vegetative growth. The pH value shall be between 6.5 and 7.5.
4. Soil Texture:
 - a. Sand: Thirty percent (30%) – Fifty percent (50%)
 - b. Silt: Thirty percent (30%) – Fifty percent (50%)
 - c. Clay: Five percent (5%) – Thirty percent (30%)
5. Additives: As determined by soil fertility tests.
6. Organic Content:
 - a. Native grass shall be one to three percent (1-3%) maximum after amending or conditioning.
7. Soluble Salts: Electric conductivity (EC) shall be less than 2 (2.0) mmhos/cm for turfgrass areas, dryland areas, and planting beds.

- (b) Manufactured Topsoil.* "Amended Topsoil" as manufactured by A1 Organics, 16350 WCR 76, Eaton, CO 80615 Ph: (970) 454-3492, (800) 776-1644 Fax: (970) 454-3232 <http://www.a1organics.com>, or substitution as approved by Project Manager.

CONSTRUCTION REQUIREMENTS

Subsection 207.03 shall include the following:

(a) Examination

1. Examine areas where the Work of this Section will be performed for compliance with requirements and conditions affecting installation and performance.

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REVISION OF SECTION 207
TOPSOIL

- A. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within the work area.
- B. Verify that final grades are completed in accordance with the Contract Drawings.
2. Proceed with installation only after unsatisfactory conditions have been corrected and approved by Project Manager.

(b) Placing Topsoil

1. Scarify compacted subgrade to a four-inch (6") depth to bond topsoil to subsoil. Place topsoil to a minimum depth of four-inches (6") after settlement within proposed area.
2. Topsoil shall be free from weeds, sod, and material larger than 1-inch, toxic substances, litter or other deleterious material. Spread evenly and grade to elevations and slopes shown on Contract Drawings. Hand rake areas inaccessible to machine grading.
3. Utilize salvaged topsoil as the top layer to the extent available. If sufficient on-site material is not available, the Contractor shall furnish and install imported topsoil in the manner described above. Topsoil shall be mixed thoroughly with the salvaged topsoil prior to placement.

(c) Protection and Repair. Protect completed areas where topsoil has been spread from traffic which will compact the soil volume. Any areas that, as determined by Project Manager, become compacted due to Contractor's construction traffic shall be reconstructed to specified requirements and approved by Project Manager.

BASIS OF PAYMENT

Subsection 207.05 shall include the following:

The accepted quantities measured as provided above will be paid for at the contract unit price per cubic yard for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Topsoil (Onsite)	Cubic Yard

**REVISION OF SECTION 210
RESET LUMINAIRE**

Section 210 of the Standard Specifications is hereby revised as follows:

Subsection 210.01 shall include the following:

This work consists of removing, storing, and resetting the existing luminaire from the signal pole to be replaced at the High Line Canal Trail crossing of Mineral Avenue.

Subsection 210.02 shall include the following:

Luminaire and its wiring, appurtenances, connection hardware, and all other elements required for reset shall be removed from the existing signal pole. If luminaire will not be reset immediately, the Contractor shall store the luminaire in a secure location and prohibit damage to it.

Luminaire shall be reset on the new signal pole complete with appurtenances, wiring, connection hardware, and all other items required for a complete reset. Orientation of luminaire shall be in accordance with standard details for luminaire placement on a signal pole.

Subsection 210.13 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Reset Luminaire	Each

Payment for Reset Luminaire will be full compensation for all work and materials required to complete the item including removal, storage, resetting, wiring, and connecting the luminaire in its new location.

**REVISION OF SECTION 215
TRANSPLANT TREE**

Section 215 of the Standard Specifications is hereby revised for this project as follows:

Subsection 215.03 shall include the following:

Prior to commencement of any activity (pruning, spading, or other) of an existing tree noted for transplant, the Contractor shall review the methodology and requirements for transplant with the Engineer, City Forester, and others as needed. Contractor shall stake new tree locations for approval by the Engineer and City Forester prior to removal of tree from its existing location.

The Contractor shall follow all planting requirements from the City of Littleton's Tree Manual (2023) for planting, irrigation, monitoring, pruning, inspection, and documentation. The Contractor shall be responsible for maintenance of the transplanted trees until final project acceptance.

Subsection 215.05 shall include the following:

Transplant Tree shall include all consultation, labor, materials, water, and equipment required to complete the work. All consultation, labor, materials, water, and equipment will not be measured and paid for separately but shall be included in the work.

REVISION OF SECTION 217 NOXIOUS WEED MANAGEMENT

Section 217 of the Standard Specifications is hereby deleted and replaced with the following:

217.01 This work consists of furnishing and applying herbicides, providing mechanical and cultural controls to prevent or control plant growth in areas as shown on the plans or designated.

MATERIALS

217.02 All herbicide labels shall be currently registered with the Colorado Department of Agriculture and the U.S. Environmental Protection Agency. All herbicides shall be supplied to the project in labeled containers. The labels shall show the product name, chemical composition, expiration date, and directions for use.

CONSTRUCTION REQUIREMENTS

217.03 All herbicides shall be applied by a qualified applicator who is commercial pesticide applicators licensed by the Colorado Department of Agriculture as a qualified applicator. The Contractor shall furnish documentation of such licensing prior to herbicide application to the Engineer. Herbicide mixing and application shall be done in accordance with instructions on the registered product label. The Contractor shall furnish the Engineer such label information prior to mixing or application.

The Contractor shall notify the Engineer at least 24 hours prior to each herbicide application and shall indicate the time and location application will begin. Application will not be allowed on Saturdays, Sundays, or holidays unless otherwise approved by the Engineer.

Clean all construction-related equipment thoroughly before off-loading at the project site and after working with weed-contaminated soils.

Noxious weeds observed in and near the construction area will be spot treated with herbicides or mechanically removed prior to the start of construction to minimize spread.

Monitor all areas treated for noxious weeds during construction and re-treat, if necessary, to prevent reestablishment of noxious weeds

Herbicides shall not be applied when weather conditions, including wind conditions, are unsuitable for such work. Herbicides shall not be applied when soil is extremely dry.

Herbicide treatments shall avoid native flowering plants to minimize impacts to pollinators.

Herbicides can be used immediately adjacent to wetlands, riparian areas, and/or water bodies only if the label indicates its use is appropriate for such areas.

Herbicide application method shall be such that plant growth outside the designated treatment areas will not be damaged. All damage caused by improper herbicide application shall be repaired at the Contractor's expense.

Noxious weed treatments shall target observed species and species listed in the in the Project Weed Management Plan Table 217.04. Additional recommended treatments for noxious weeds including those not listed in the table below, be found on the Colorado Department of Agriculture's website at <https://www.colorado.gov/pacific/agconservation/noxious-weed-species>

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**REVISION OF SECTION 217
NOXIOUS WEED MANAGEMENT**

**Project Weed Management Plan
Table 217.04**

Noxious Weed	Plant Growth Characteristics	State List ¹	Recommended Treatments
Canada thistle (<i>Cirsium arvense</i>)	Aggressive rhizomatous perennial of moist/wet sites; seeds and plant parts easily transported by construction equipment.	B	Mechanical Control: Due to the species' extensive root system, hand-pulling and tilling stimulate the growth of new plants and are not recommended. Mowing every 10 to 21 days during the growing season can be effective. Herbicide Control: Aminopyralid (Milestone), Clopyralid + Triclopyr, Amiocyclopyrachlor + chlorosulfur, or Picloram applied in spring before flowering and/or during fall regrowth. Cultural Control: Reseed with native seed mix and prevent bare ground.
Cheatgrass/ Downy brome (<i>Bromus tectorum</i>)	Prolific seed producing winter annual; becomes a fire hazard upon maturity. Seeds easily transported by construction equipment.	C	Mechanical Control: Mowing and chopping is not recommended. Herbicide Control: Fall application of Plateau, prior to hard freeze is optimum. Can also make application during early spring growth. Or, apply Panoramic 2 SL pre-or post-emergent in later summer or early fall. Cultural Control: Reseed with native seed mix. Check seed mix for cheatgrass contaminant.
Field bindweed (<i>Convolvulus arvensis</i>)	Long-lived perennial; Construction could increase the plants abundance due to its ability to spread rapidly on disturbed sites and to grow from root fragments.	C	Mechanical Control: Cutting, mowing, or pulling is generally not effective. Herbicide Control: Clarity + 2,4-D Amine or Roundup Ultra applied at full-bloom and/or fall. Cultural Control: Reseed with native seed mix.
Russian olive (<i>Elaeagnus angustifolia</i>)	Deciduous tree with a deep tap root.	B	Herbicide and Mechanical Control: Cut the trunks and apply herbicide applications of Triclopyr or Glyphosate to cut trunks or cut stems. Treat seedlings in spring with picloram, dicamba or glyphosphate in combination with mechanical control. Triclopyr + Aminopyralid can be use as foliar treatment ay to September. Cultural Control: Replant with native cottonwoods or willows with native grasses.

¹**List A** Species in Colorado that are designated by the Commissioner for eradication.

List B Species are species for which the Commissioner, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, develops and implements state noxious weed management plans designed to stop the continued spread of these species.

List C Species are species for which the Commissioner, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, will develop and implement state noxious weed management plans designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands.

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REVISION OF SECTION 217
NOXIOUS WEED MANAGEMENT

Watch List Species have been determined to pose a potential threat to the agricultural productivity and environmental values of the lands of the state. The Watch List is intended to serve advisory and educational purposes only. Its purpose is to encourage the identification and reporting of these species to the Commissioner in order to facilitate the collection of information to assist the Commissioner in determining which species should be designated as noxious weeds.

Topsoil sources shall only have herbicides applied by the spot spray method.

METHOD OF MEASUREMENT

217.05 Herbicide Treatment shall be measured by the number of person-hours required to apply herbicide, as approved by the Engineer.

Reapplication of herbicide required due to inappropriate timing of the original application will not be measured or paid for.

BASIS OF PAYMENT

217.06 The accepted quantities of herbicide treatment will be paid for at the contract unit price per square yard or per hour.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Herbicide Treatment	Hour

Water will not be measured and paid for separately but shall be included in the work.

Mowing, pulling, and bagging will not be measured and paid for separately but shall be included in the work.

Seeding shall be paid for according to 212 Seeding.

**REVISED SECTION 240
PROTECTION OF MIGRATORY BIRDS
BIOLOGICAL WORK PERFORMED BY THE CONTRACTOR'S BIOLOGIST**

Section 240 is hereby added to the Standard Specifications for this project as follows:

DESCRIPTION

240.01 This work consists of protecting migratory birds during construction work on structures.

MATERIALS AND CONSTRUCTION REQUIREMENTS

240.02 The Contractor shall schedule construction activity, including clearing and grubbing operations and work on structures, to avoid taking (pursue, hunt, take, capture, or kill; attempt to take, capture, kill or possess) migratory birds or their nests protected by the Migratory Bird Treaty Act (MBTA). If construction activity is to occur between February 15 and August 31, then the following specifications must be followed and the Contractor shall retain a qualified wildlife biologist to determine where nest removal may occur or will be required during construction. The wildlife biologist shall have a minimum of three years' experience conducting migratory bird surveys and implementing the requirements of the MBTA. The Contractor shall submit documentation of the biologists' education and experience to the Engineer for acceptance. A biologist with less experience may be used by the Contractor subject to the approval of the Engineer based on review of the biologist's qualifications. If all construction activities occur after August 31 and before February 15, then the requirements set forth in this specification are not required. In Colorado, most nesting and rearing activities occur between April 1 and August 31, but raptors may nest as early as February 15.

The wildlife biologist shall record the location of each protected nest, bird species, the protection method used, and the date installed. A copy of these records will be submitted to the Engineer.

(A) *Raptor Nest Survey.* A wildlife biologist shall conduct raptor nest surveys within 0.5 mile of the construction site prior to the start of construction and prior to each construction phase. This survey can be done with binoculars or other optics. If construction activities are located within Colorado Parks and Wildlife (CPW) recommended buffer zone for specific raptors, "NO WORK" zones shall be established around active sites during construction according to the CPW standards or as recommended by the wildlife biologist in consultation with CPW. The "NO WORK" zone shall be marked with either fencing or signing. Work shall not proceed within a "NO WORK" zone until the wildlife biologist has determined that the young have fledged or the nest is unoccupied.

(B) *Vegetation Removal.* When possible, vegetation shall be cleared prior to the time when active nests are present. Vegetation removal activities shall be timed to avoid the migratory bird breeding season which begins on April 1 and runs to August 31 (raptors may nest as early as February 15). All areas scheduled for clearing and grubbing between February 15 and August 31 shall first be surveyed by the wildlife biologist within 50 feet of the work limits for active migratory bird nests, including raptors. Contractor personnel shall enter areas to perform surveys only if a written, signed document granting permission to enter the property has been obtained from the property owner. The Contractor shall document all denials of permission to enter property. The Contractor shall avoid all migratory bird nests. The Contractor shall avoid the area within 50 feet of the active nests or the area within the distance recommended by the biologist until all nests within that area have become inactive. Inactive nest removal and other necessary measures shall be incorporated into the work as follows.

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REVISED SECTION 240
PROTECTION OF MIGRATORY BIRDS
BIOLOGICAL WORK PERFORMED BY THE CONTRACTOR'S BIOLOGIST

1. *Tree and Shrub Removal or Trimming.* Tree and shrub removal or trimming shall occur before February 15 or after August 31 if possible. If tree and shrub removal or trimming will occur between February 15 and August 31, a survey for active nests shall be conducted by the wildlife biologist within the seven days immediately prior to the beginning of work in each area of tree and shrub removal or trimming. The survey shall be conducted for each phase of any tree or shrub removal or trimming.

If an active nest containing eggs or young birds is found, the tree or shrub containing the active nest shall remain undisturbed and protected until the nest becomes inactive. The nest shall be protected by placing fence (plastic) a minimum distance of 50 feet from each nest to be undisturbed. This buffer dimension may be changed if determined appropriate by the wildlife biologist and approved by the Engineer. Work shall not proceed within the fenced buffer area until the young have fledged or the nests have become inactive. If the fence is knocked down or destroyed by the Contractor, the Engineer will suspend the work, wholly or in part, until the fence is satisfactorily repaired at the Contractor's expense. Time lost due to such suspension will not be considered a basis for adjustment of time charges, but will be charged as contract time.

2. *Grasses and Other Vegetation Management.* Due to the potential for encountering ground nesting birds' habitat, if work occurs between April 1 and August 31, the area shall be surveyed by a wildlife biologist within the seven days immediately prior to ground disturbing activities. The undisturbed ground cover to 50 feet beyond the planned disturbance, or to the right-of-way line, whichever is less, shall be maintained at a height of 6 inches or less beginning April 1 and continuing until August 31 or until the end of ground disturbance work, whichever comes first.

If birds establish a nest within the survey area, an appropriate buffer of 50 feet will be established around the nest by the wildlife biologist. This buffer dimension may be changed if determined appropriate by the wildlife biologist and approved by the Engineer. The Contractor shall install fence (plastic) at the perimeter of the buffer. Work shall not proceed within the buffer until the young have fledged or the nests have become inactive.

If the fence is knocked down or destroyed by the Contractor, the Engineer will suspend the work, wholly or in part, until the fence is satisfactorily repaired at the Contractor's expense. Time lost due to such suspension will not be considered a basis for adjustment of time charges, but will be charged as contract time.

- (C) *Work on Structures.* The Contractor shall conduct work on structures in a manner that does not result in a taking of migratory birds protected by the Migratory Bird Treaty Act (MBTA). The Contractor shall not conduct the work on structures during the primary birding season, April 1 through August 31, unless the Contractor takes the following actions:

1. The Contractor shall remove existing inactive nests prior to April 1.
2. During the time that the birds are trying to build or occupy their nests, between April 1 and August 31, the Contractor shall monitor the structures at least once every three days for any nesting activity.

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**REVISED SECTION 240
PROTECTION OF MIGRATORY BIRDS
BIOLOGICAL WORK PERFORMED BY THE CONTRACTOR'S BIOLOGIST**

3. If the birds have started to build any nests, the nests shall be removed before they are completed. Water shall not be used to remove the nests if nests are located within 50 feet of any surface waters.
4. Installation of netting may be used to prevent nest building. The netting shall be monitored and repaired or replaced as needed. Netting shall consist of a mesh with openings that are $\frac{3}{4}$ inch by $\frac{3}{4}$ inch or less.

If an active nest becomes established, i.e., there are eggs or young in the nest, all work that could result in abandonment or destruction of the nest shall be avoided until the young have fledged or the nest is unoccupied as determined by the Contractor's biologist and approved by the Engineer. The Contractor shall prevent construction activity from displacing birds after they have laid their eggs and before the young have fledged. If the project continues into the following spring, this cycle shall be repeated. When work on the structure is complete, the Contractor shall remove and properly dispose of netting used on the structure. The taking of a migratory bird shall be reported to the Engineer. The Contractor shall be

METHOD OF MEASUREMENT

240.03 Wildlife Biologist will be full compensation for all work and materials required to complete the item, including wildlife biologist, wildlife survey, and documentation (record of nest location and protection method).

Clearing and grubbing will be measured and paid for in accordance with Section 201. Mowing will not be measured and paid for separately, but shall be included in the work. Removal and trimming of trees will be measured and paid for in accordance with Section 202.

Fence needed to protect migratory birds and nests will be measured and paid for in accordance with Section 607.

BASIS OF PAYMENT

240.04 The accepted quantities measured as provided above will be paid for at the contract unit price for each of the pay items listed below that appear in the bid schedule.

<u>Pay Item</u>	<u>Pay Unit</u>
Wildlife Biologist	Hour

**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.

Reclaimed asphalt pavement (RAP), asphalt millings, or asphalt in any form whatsoever shall not be substituted for ABC Class 6.

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					
				S (75)	SX (75)		Patching
Air Voids, percent at: N (design)	CPL 5115			3.5 – 4.5	3.5 – 4.5		3.5 – 4.5
Lab Compaction (Revolutions): N (design)	CPL 5115			75	75		75
Stability, minimum	CPL 5106			28	28		28
Aggregate Retained on the 4.75 mm (No. 4) Sieve for S, SX and SG, and on the 2.36mm (No. 8) Sieve for ST and SF with at least 2 Mechanically Induced fractured faces, % minimum*	CP 45			60	60		60
Accelerated Moisture Susceptibility Tensile Strength Ratio (Lottman), minimum	CPL 5109 Method B			80	80		80
Minimum Dry Split Tensile Strength, kPa (psi)	CPL 5109 Method B			205 (30)	205 (30)		205 (30)
Grade of Asphalt Cement, Top Layer				-	PG 64-22		PG 64-22
Grade of Asphalt Cement, Layers below Top				PG 64-22	-		PG 64-22
Voids in the Mineral Aggregate (VMA) % minimum	CP 48			See Table 403-2	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	0.6 – 1.2 0.8 – 1.6		0.6 – 1.2 0.8 – 1.6
<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.</p> <p>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.</p> <p>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> <p>*Fractured face requirements for SF may be waived by RME depending on project conditions.</p>							

2
REVISION OF SECTION 403
HOT MIX ASPHALT

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)	***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
	<p>* The Nominal Maximum Size is defined as one sieve larger than the first sieve to retain more than 10%.</p> <p>** Interpolate specified VMA values for design air voids between those listed.</p> <p>*** Extrapolate specified VMA values for production air voids beyond those listed.</p>			

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.

Hot mix asphalt for top lifts of paving or all lifts of patching used on the roadway surface shall conform to the gradation requirements for Hot Mix Asphalt (Grading SX) (75) (64-22).

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.

3
REVISION OF SECTION 403
HOT MIX ASPHALT

Contractors proposing to use WMA shall supply detailed design, production and acceptance testing requirements prior to completion of the Form 43. Approved WMA submittals shall contain all of this information prior to CDOT approval. Only CDOT Approved WMA incorporating additives from the Approved Products List (APL) will be allowed for use on the project.

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 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:

<u>Pay Item</u>	<u>Pay Unit</u>
Hot Mix Asphalt (Grading S) (75) (PG 64-22)	Ton
Hot Mix Asphalt (Grading SX) (75) (PG 64-22)	Ton
Hot Mix Asphalt (Patching) (Asphalt)	Ton

Aggregate, asphalt recycling agent, additives, hydrated lime, and all other work 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, the asphalt cement will not be measured and paid for separately, but shall be included in the work. 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) (Asphalt) will not be measured and paid for separately, but shall be included in the work.

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 503 DRILLED SHAFTS

Section 503 of the Standard Specifications is hereby revised for this project as follows:

Section 503.01 is hereby revised to include the following:

This work consisted of constructing the Pedestal Pole Foundations and Traffic Signal Pole Foundations using either a drill or vacuum method at the locations as shown on the plans and as directed by the Engineer. The placing of reinforcing steel and concrete in the excavated holes must in accordance with these specifications, the details shown on the plans, and in conformity with the lines and grades on the plans or established.

For this project, Pedestal Pole Foundations and Traffic Signal Pole Foundations shall conform to the requirements of the following CDOT S-Standard Plans:

- **Littleton Pedestal Poles**
 - Use S-614-44 Pedestal Pole Signals sheet 2 of 2
- **Littleton Single Mast Arm Poles 25'-55'**
 - use S-614-40A Alternate Traffic Signal 25'-55' Single Mast Arms sheet 4 of 4.
- **Littleton Mast Arm Poles 60'-65'**
 - use S-614-40 Typical Traffic Signal 30'-70' Double Mast Arms / 65'-75' Single Mast Arms sheet 5 of 5.

Refer to the geotechnical report prepared for this project for more information.

Section 503.03, delete the first paragraph and replace with the following:

Drilled shaft excavations performed with a vacuum pothole machine will be to prevent drilling through existing utilities. The locations where vacuum method is employed shall be per the approved plans or at the discretion of the Engineer.

Section 503.08 is hereby revised to include the following:

Drilled Shaft items will be measured by the linear foot from the top of caisson to the bottom of the hole excavated.

Section 503.09 is hereby revised to include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Drilled Shaft (12 Inch)	Linear Foot
Drilled Shaft (42 Inch)	Linear Foot

The unit price of drilled shaft shall be full compensation for making all excavations; hauling and disposal of excavated material; performing all necessary pumping; furnishing and placing required concrete and anchor bolts and reinforcement steel, including the reinforcement projecting above the tops of the caissons necessary for splicing; all backfilling; removing casings; and for furnishing all tools, labor, equipment, and incidentals necessary to complete the work. No extra payment will be made for casing left in place.

REVISION OF SECTION 504 MASONRY LANDSCAPE WALL (DRY STACK)

Section 504 of the Standard Specifications is hereby revised for this project as follows:

Subsection 504.01 shall include the following:

This work consists of furnishing all materials and labor required for the design and construction of a low, dry stack gravity wall(s) at the locations and to the lines and grades shown on the plans.

The Masonry Landscape Walls (Dry Stack) shall conform to the geometry defined in the plans, to the performance criteria related to settlement performance, and to the architectural requirements. Masonry Landscape Walls (Dry Stack) systems requirements:

- **External stability** shall conform to the external stability design and global stability design according to the *AASHTO LRFD Bridge Design Specifications, 9th Edition*, using the Load and Resistance Factor Design (LRFD) method for Strength Limit States and Service Limit States; and
- **Internal stability** shall conform to this Project Special Provision and the *AASHTO LRFD Bridge Design Specifications*, as described herein. Internal stability design must consider that external stability considerations may control the vertical depth of embedment.

Internal stability, External stability and global stability shall be provided by the Landscape Wall supplier in conformance to these specifications.

Subsection 504.02 shall include the following:

- (n) *Masonry Landscape Walls (Dry Stack)*. Masonry Landscape Walls (Dry Stack) shall consist of a concrete masonry unit (CMU) weighing at least 50 pounds but no more than 100 pounds. Units shall be interlocking with a back-drop tail component (or other connection to be approved in the shop drawings) which holds the units together as well as creates a natural batter to the wall. CMU blocks shall conform to the requirements of Subsection 704.03 and any mortar, if required, shall conform to requirements of Subsection 704.04.

Subsection 504.06 shall be replaced with the following:

Concrete Masonry Units. The concrete masonry units shall conform to the requirements in the plans, these specifications, and any architectural requirements, including the color, texture, dimensions and pattern.

All units for the project shall be obtained from the same manufacturer.

The blocks shall be Regal Stone Pro – Rockface blocks. The Contractor shall submit samples of colors and patterns for Approval prior to selection of wall units. Wall 1 shall match the existing retaining block color, texture, and block size.

Existing masonry units within existing wall near Wall 1 may be re-used within Wall 1 if they meet the requirements of this specification, meet the Contractor's design, have no defects, and Contractor obtains written approval from the Engineer.

2
REVISION OF SECTION 504
MASONRY LANDSCAPE WALL (DRY STACK)

Masonry Landscape Walls shall have a matching precast concrete cap stone.

Samples of cap stone and wall unit of all size and color proposed shall be submitted to the Engineer for Approval prior to placing order. All blocks and cap stones shall be inspected upon arrival to the job site.

All concrete masonry units shall be sound and free of cracks or other defects that would interfere with the proper installation of the unit, impair the strength or performance of the constructed wall. CMU units to be used in exposed wall construction shall not exhibit chips or cracks in the exposed face. CMU units that exhibit cracks that are continuous through any solid element of the CMU unit shall not be incorporated in the work regardless of the width or length of the crack.

Subsection 504.14, Paragraph 3, Sentence 6 shall be removed and replaced with the following:

Each compacted layer of backfill shall be in even increments up to 6 inches thick.

Subsection 504.18 shall include the following:

Masonry Landscape Walls shall be horizontal and level, sloped walls shall not be allowed. The base course units shall be placed over a leveling pad, as shown in the plans, and shall have a minimum of 1 course of wall unit buried. Steps in leveling pad and bottom course as well as top course and cap shall be laid out in the field where necessary for grade changes. Vertical steps shall be spaced to average out vertical change in the top of wall for short distances. Cap Stone on Masonry Landscape Walls shall be adhered to top course using adhesive per the manufacturer's recommendations.

Drainage system behind walls shall be placed behind walls as shown in the plans. Geotextile shall be placed behind walls as shown in the plans. Geotextile shall be overlapped a minimum of 1 foot at all seam locations behind wall.

The Contractor shall anticipated the need for cutting or splitting units at ends of walls and corners. Cap Stones shall be cut with a masonry wet saw to fit top of wall as needed.

Subsection 504.20 shall include the following:

Masonry Landscape Walls (Dry Stack) will not be measured for payment in the field, but will be paid for by the calculated quantities shown on the retaining wall plans. The Contractor's construction of a system that requires increased or decreased quantities of any of the components to complete the wall to the dimensions shown will not result in a change in pay quantities. Exceptions will be made when field changes are ordered or when it is determined that there are discrepancies on the plans in an amount of at least plus or minus five percent of the plan quantity.

The Masonry Landscape Wall (Dry Stack) quantity is calculated for the square foot of wall front face area from Bottom of Wall (top of leveling pad) as shown on the plans to the Top of Wall. The square foot quantities computed for payment are the wall plan quantities based on station and elevation points provided in the plan set.

3
REVISION OF SECTION 504
MASONRY LANDSCAPE WALL (DRY STACK)

Subsection 504.21 shall include the following:

The accepted quantity will be paid for at the contract unit price per unit of measurement for the pay items listed below:

Payment will be made under:

Pay Item

Masonry Landscape Wall (Dry Stack)

Pay Unit

Square Foot

Payment will be full compensation for all work and materials required to construct the Masonry Landscape Wall (Dry Stack). Filter Material, Weep Holes, color samples, texture samples, block samples, cap samples, and Geotextile will not be measured and paid for separately but shall be included in the work.

Miscellaneous items, if required, such as grout, pins, shimming material, expansion joint material, concrete coating and drainage items will not be measured and paid for separately but shall be included in the work.

REVISION OF SECTION 608 SIDEWALKS AND BIKEWAYS

Section 608 of the Standard Specifications is hereby revised as follows:

Subsection 608.01 shall include the following:

This work includes the installation of detectable warnings on concrete curb ramps as shown on the plans.

Subsection 608.02 shall include the following:

Detectable warnings on curb ramps shall be truncated domes of the dimensions shown on the plans. Domes shall be prefabricated by the manufacturer as a pattern on embeddable surface plates. Plates shall meet all Americans with Disabilities Act (ADA) requirements for truncated domes, and when installed, shall be capable of producing the pattern of domes shown on the plans.

Plates used shall be one of the products approved for use as detectable warnings listed on CDOT's Approved Products List.

The domes and their underlying surface shall have a discernible contrast of color from the adjacent surface. The contrasting colors shall not be black and white.

When plates are used, prior to the start of work, the Contractor shall submit appropriate documentation from the manufacturer verifying that the contrast has been met, along with a sample plate, to the Engineer for approval.

Welded wire fabric shall meet the requirements, dimensions, and gauge as shown on the plans and shall meet the requirements of Section 602 of the Standard Specifications.

Subsection 608.03 shall include the following:

(d) Finishing.

One-foot buffer area on concrete sidewalk installation for Mineral Trail shall be treated with a heavy rake finish, perpendicular to the direction of travel as shown on the plans. The intent of this finish treatment in the buffer area is to provide a roughened surface that can be detected by the cane of a visually-impaired pedestrian.

(e) Joints.

Newly constructed curb and gutter shall not be poured monolithically with adjacent curb ramps or sidewalks unless otherwise approved or directed by the Engineer.

Expansion joints meeting the requirements of this section shall be installed at the end of each concrete pour and at intervals of no more than 500 feet.

(g) Detectable Warnings for curb ramps.

Plates. Prior to installation of the plates, concrete conforming to subsection 608.02 shall be installed and consolidated as a base for the plates. The concrete shall be placed to a thickness that will allow the base surface of the plates to be at the same elevation as the adjacent concrete. The plates shall be embedded into the plastic concrete in accordance with the manufacturer's specifications.

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**REVISION OF SECTION 608
SIDEWALKS AND BIKEWAYS**

(h) Pre-placement Conference.

A minimum of five (5) days prior to construction of concrete sidewalk, the Contractor shall conduct a Pre-placement Conference for the concrete sidewalk. This conference shall include the Engineer and City staff as required, and the conference agenda shall be provided with supporting information to the conference attendees a minimum of five (5) days ahead of time.

The conference agenda shall include a review of a document detailing the Contractor's means and methods for concrete sidewalk placement, including equipment, materials, phasing, staging, construction access, and jointing plan. The jointing and reinforcement of the concrete sidewalk shall be approved by the Engineer prior to construction of the concrete sidewalk. The agenda shall also include discussion of the Contractor's planned method to construct the raked finish in the buffer area.

Subsection 608.04 shall include the following:

To provide temporary construction access for the adjacent Jackass Gulch project, the Contractor shall provide a minimum 20' length (for the full concrete sidewalk width) of temporary bituminous sidewalk at a location to be defined by the Engineer. The bituminous sidewalk shall be 6" in depth and shall be placed on the prepared subgrade as defined in the plans.

Subsection 608.05 shall include the following:

Detectable warnings on curb ramps including plates, and all other work and materials necessary for fabrication, transport, and installation will not be measured and paid for separately but shall be included in the work.

Section 608.06 is hereby revised to include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Concrete Sidewalk (6 Inch)	Square Yard
Concrete Curb Ramp	Square Yard

Payment shall be full compensation for labor and materials including but not limited to prep work, reconditioning, forms, grading, bed course, backfill, curing compound, control and expansion joint material, detectable warning plates, welded wire fabric, raking/finishing, and sealant as required to complete these Pay Items.

Proposed subgrade will not be paid for separately but shall be included in the work. All labor and materials required for placement of bituminous sidewalk shall be paid for as Hot Mix Asphalt (Patching) (Asphalt).

Preparation for the Pre-placement Conference and all labor and materials required to provide the requested method statement for the concrete sidewalk construction will not be paid for separately but shall be included in the work.

**REVISION OF SECTION 609
CURB (MEDIAN) (SPECIAL)**

Section 609 of the Standard Specifications is hereby revised for this project as follows:

Subsection 609.01 shall include the following:

This work includes the procurement and installation of modular median at locations shown in the plans. Installation of these materials will be in accordance with manufacturer's specifications and the plans. Curb (Median) (Special) shall provide low-profile physical separation between vehicular lanes.

Subsection 609.02 shall include the following:

Curb (Median) (Special) shall meet the requirements of RediPave Modular Median™ or an equivalent, approved by the City's engineer. The Contractor shall obtain approval from the City for the product to be utilized prior to purchase. Curb (Median) (Special) shall include interior and exterior components, fasteners, anchors, and other elements in accordance with manufacturer's recommendations and shall allow for MUTCD-compliant sign placement on top of or through the median material.

The edges of Curb (Median) (Special) shall be yellow in accordance with centerline striping.

Subsection 609.03 shall include the following:

Curb (Median) (Special) shall be installed on finished grade pavement surface. Materials which require setting Curb (Median) (Special) into the pavement surface will not be accepted.

Subsection 609.06 shall include the following:

Curb (Median) (Special) will be measured by square foot.

Subsection 609.07 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Curb (Median) (Special)	Square Foot

Payment for Curb (Special) will include all materials, labor, hardware, and equipment required to complete the item.

**REVISION OF SECTION 609
CURB (SPECIAL)**

Section 609 of the Standard Specifications is hereby revised for this project as follows:

Subsection 609.01 shall include the following:

This work includes the procurement and installation of modular curb at locations shown in the plans. Installation of these materials will be in accordance with manufacturer's specifications and the plans. Curb (Special) shall provide low-profile physical separation between vehicular lanes and bicycle lanes.

Subsection 609.02 shall include the following:

Curb (Special) shall meet the requirements of Tuff Curb ® or an equivalent, approved by the City's engineer. The Contractor shall obtain approval from the City for the product to be utilized prior to purchase. Curb (Special) shall include the separator curb as well as flexible posts installed as part of the modular curb in accordance with manufacturer's recommendations.

Curb (Special) and associated flex posts shall be white. Flex posts shall include a reflective element.

Subsection 609.03 shall include the following:

Curb (Special) shall be installed on finished grade pavement surface. Materials which require setting Curb (Special) into the pavement surface will not be accepted.

Subsection 609.06 shall include the following:

Curb (Special) will be measured by linear foot along the centerline of the section at the finished grade elevation.

Subsection 609.07 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Curb (Special)	Linear Foot

Payment for Curb (Special) will include all materials, labor, hardware, and equipment required to complete the item, including curb section and flex posts.

**REVISION OF SECTION 610
MEDIAN COVER MATERIAL (PATTERNED CONCRETE)**

Section 610 of the Standard Specifications is hereby revised for this project as follows:

Subsection 610.02 shall be revised to include the following:

Patterned concrete shall be colored concrete and meet the requirements of Section 601 with the following exceptions:

Field Compressive Strength, 28 days, psi (Not a specification requirement)	3000
Cement Content, lbs/cu yd minimum	610
Max. water/cement ratio, lbs water/lbs cement and Entrapped Air, percent	0.55 5 to 8
Slump, AASHTO T 119, inches	2 to 5
Aggregate, AASHTO M 43	Size 2.36 mm (No. 8)
Fine Aggregate, AASHTO M 6, percent of the total aggregate	50 to 78

An approved water reducing admixture shall be used in the mix.

Median cover will be colored concrete. Color to be coordinated with the City upon award.

The coloring agent shall be either integral to the concrete mixture or applied by the dry shake method. Color shall be in accordance with table provided and samples shall be provided to CDOT and City of Littleton for review, then approved by the Engineer prior to application. Colored wax curing membrane shall be as recommended by the supplier of the coloring agent.

Subsection 610.03 shall be revised to include the following:

Physical color samples shall be submitted for approval prior to beginning mock-up. Submit manufacturer's technical data for the surface retarder, sealer and integral color.

(d) Concrete construction requirements shall conform to the requirements of subsection 608.03. Prior to final setting of concrete, an alternating pattern of 2 foot by 2 foot panels shall be troweled into the concrete surface, with brush strokes alternating in a direction perpendicular to that of adjacent panels.

When the color is added by the dry shake method, the coloring agent shall be uniformly sifted over the plastic concrete. Curing shall include application of two coats of colored wax curing membrane. The first coat shall be applied within two hours of finishing. The second coat shall be applied between 10 and 20 days following the first application.

Subsection 610.04 shall be revised to include the following:

Median Cover Material (Concrete) will be measured by the square foot of surface placed and accepted.

Ancillary items, including subgrade preparation, aggregate base, herbicide treatment, plastic sheeting, expansion joints, joint sealer, curing membrane, sleeves for signs, metal stamps, and all other labor, equipment, materials, and incidentals necessary to complete the work in accordance with the plans and specifications, shall not be measured and paid for separately, but shall be included in the work.

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REVISION OF SECTION 610
MEDIAN COVER MATERIAL (PATTERNED CONCRETE)

Subsection 610.05 shall be revised to include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Median Cover Material (Patterned Concrete)	Square Feet

Payment for Median Cover Material (Patterned Concrete) shall include subgrade preparation, aggregate base, herbicide treatment, plastic sheeting, expansion joints, joint sealer, curing membrane, coloring agent, sleeves for signs, metal stamps, and all other labor, equipment, materials, and incidentals necessary to complete the work in accordance with the plans and specifications.

REVISION OF SECTION 613 ELECTRICAL CONDUIT

Section 613 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

Subsection 613.01 shall include the following:

This work consists of furnishing and installing underground conduit by trenched (plastic) and bored methods.

MATERIALS

Subsection 613.02 shall include the following:

The Contractor shall furnish Conduit materials in accordance with the requirements of the CDOT Standard Specifications and Standard Plans.

Where HDPE conduit is installed, and two (2) proposed conduits in a segment are specified in the plans, one conduit shall be orange in color, and the other shall be blue in color. Where one (1) HDPE conduit in a segment is specified in the plans, the conduit shall be orange in color.

CONSTRUCTION REQUIREMENTS

Subsection 613.07 shall include the following:

The Contractor shall install proposed conduit identified as plastic in the plans by open trenching method, unless otherwise approved by the Engineer at a minimum depth of 48 inches.

The Contractor shall install proposed conduit identified in the plans as bored by directional boring method, unless otherwise approved by the Engineer, at a minimum depth of 48 inches.

When bored conduit is specified on the plans, disruption of highway traffic will not be permitted.

METHOD OF MEASUREMENT

Subsection 613.13 shall include the following:

Conduit will be measured by the actual linear feet of trench installed and shall include all labor and materials required for installation.

BASIS OF PAYMENT

Subsection 613.14 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
2 Inch Electrical Conduit (Bored)	Linear Foot
3 Inch Electrical Conduit (Bored)	Linear Foot
2 Inch Electrical Conduit (Plastic)	Linear Foot
3 Inch Electrical Conduit (Plastic)	Linear Foot

REVISION OF SECTION 613 PULL BOXES

Section 613 of the Standard Specifications is hereby revised for this project as follows:

Subsection 613.01 is hereby revised to include the following:

This work consists of furnishing and installing fiberglass reinforced polymer concrete pull boxes at locations shown on the plans.

At locations noted on the plans Type One and Type Four pull boxes will be Install Only. The Contractor shall install the pull boxes provided by the City of Littleton at these locations.

Subsection 613.02 is hereby revised to include the following:

Type One and Type Four pull boxes will be provided to the Contractor for installation at locations noted on the plans as Pull Box (Install Only). The Contractor shall inspect the material after receiving to verify it is suitable for installation.

Pull boxes shall be verified by a 3rd Party Nationally Recognized Independent Testing Laboratory as meeting all test provisions of the latest American National Standards Institute/Society of Cable Telecommunications Engineers (ANSI/SCTE) 77, Specification for Underground Enclosure Integrity, Tier 22 rating. Pull boxes shall be Underwriters Laboratories (UL) listed. Certification documents shall be submitted with material submittals.

Pull box removable lids shall be provided with a skid-resistant surface and have the words "TRAFFIC" for traffic signal pull boxes. Painting of words shall not be accepted. The cover shall be attached to the pull box body by means of 3/8 inch x 7 inch Unified National Course (UNC) lag thread hex head stainless steel bolts.

One-piece lids shall have a minimum of two lift slots per lid.

Subsection 613.07 is hereby revised as follows:

A minimum of 12 inches of . inch granite-gravel shall be installed as a base for the pull box. The granite-gravel shall be free of dirt and debris and spread evenly to facilitate a level base for the pull box. The Contractor shall ensure that sufficient compacting is met prior to the installation of granite-gravel to alleviate future settling.

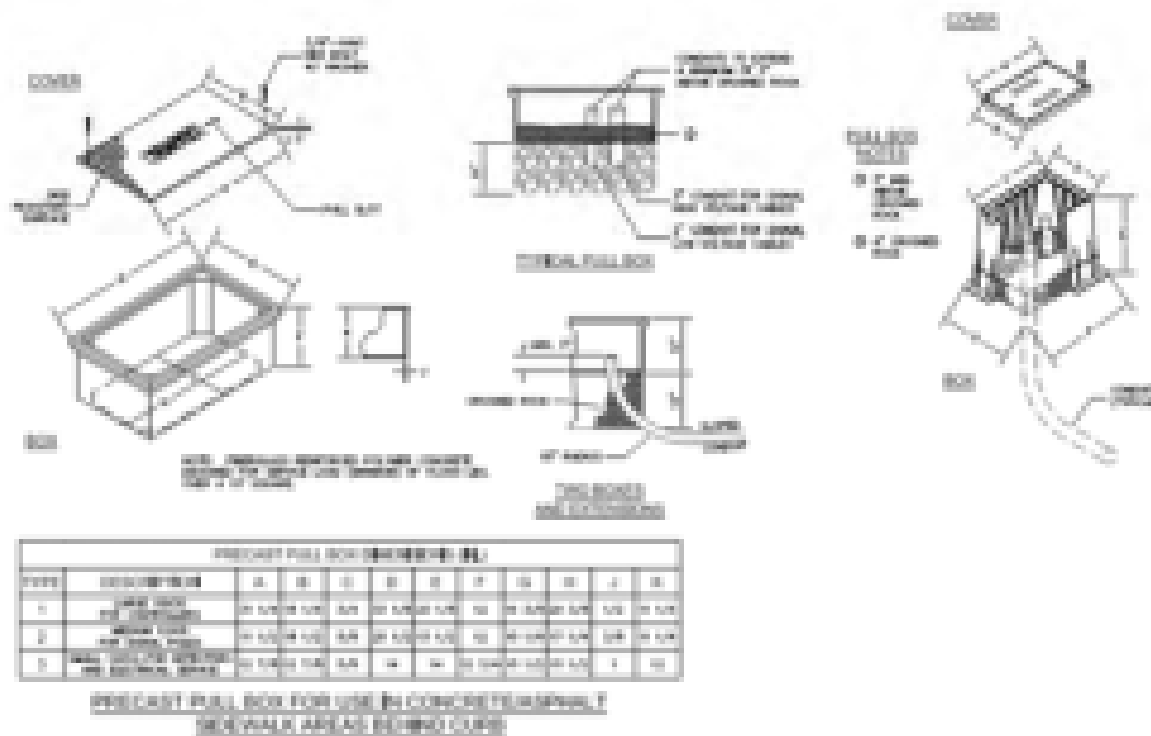
Pull boxes shall be installed in areas that are easily accessible by maintenance personnel. The slope around the pull box in all directions shall not be steeper than 1:6. If pull boxes are in open spaces or not in sidewalks, they shall have a minimum of a 12-inch wide by 6-inch thick concrete collar placed around the top formed and finished.

All concrete collars, footings, and location marker supports shall be Portland Cement Concrete Class B and shall be in accordance with Section 601.

Pull boxes that are to be in traveled ways shall be outfitted with traffic bearing lids rated for HS 20-44 loads.

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REVISION OF SECTION 613
PULL BOXES

Pull boxes shall not be installed in ADA ramps. The Contractor shall remove and re-construct ADA ramps damaged by the work.



The Contractor shall restore all landscaping and other disturbed surface materials impacted by the work.

The Contractor is referred to Section 107.12 Protection and Restoration of Property and Landscape, of the Standard Specifications.

Subsection 613.13 is hereby revised to as follows:

Pull Boxes will be measured by the actual number installed and accepted, and will include base, lid, lift slots, support beam, arrow symbols, excavation, backfill, concrete apron, wire mesh, ground rod, and $\frac{3}{4}$ inch granite-gravel. Pull Boxes shall also include the removal and patching of pavement, sidewalks, curb and gutters and their replacement in kind to match existing grade.

Subsection 613.14 is hereby revised to include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Type Three Pull Box	Each

Payment shall be full compensation for all work and materials necessary to complete this item including, but not limited to documentation of existing equipment, stockpiling of equipment and fasteners, as required.

REVISION OF SECTION 614 TRAFFIC CONTROL DEVICES

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Subsection 614.01 shall include the following:

This work includes the procurement and installation of Class I and II sign panels, tubular steel sign posts, and tubular socket supports at locations shown in the plans. Installation of these materials will be in accordance with the latest revision of the "Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways".

Subsection 614.02 shall include the following:

All signs will be installed on Telespar posts with Telespar anchors, or an equivalent approved by the City's traffic engineer. The Contractor is required to get approval from the City for all sign mounting hardware (nuts, bolts, and washers) prior to installation.

Approved posts and anchors shall meet or exceed the following: (All posts shall be attached to anchors with 3/8-inch corner bolt with nut. Rivets will not be allowed)

- a) Post – 1 3/4" x 1 3/4" x 10' – 11' – 12' = 14-gauge, ASTM Specification No. A446, Grade A, drilled on 1" centers.
- b) Anchors – 2" x 2" x 3', 12-gauge, ASTM Specification No. A446, drilled on 1" centers.
- c) Post – 2" x 2" x 10' – 11' – 12' = 14-gauge, ASTM Specification No. A446, Grade A, drilled on 1" centers.
- d) Anchors – 2 1/4" x 2 1/4" x 3', 12-gauge, ASTM Specification No. A446, drilled on 1" centers.
- e) All posts and anchors shall be galvanized to ASTM Specification A525 coating designation G90.

Signs placed in existing concrete will have a 4-inch hole drilled to the full depth of the concrete. With the sign post installed true and level, new concrete shall be placed and flush with the top of existing concrete.

Signs or combined signs which have an area greater than 30" x 30" shall use a 2" x 2" 14-gauge post with a 2 1/4" x 2 1/4" x 3' anchor.

Subsection 614.04 shall include the following:

Sign material shall be as follows:

- a) 36" x 36" or less shall be .080 gauge aluminum with pre-punched holes.
- b) 48" x 48" or larger shall be .100 gauge aluminum with pre-punched holes.

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REVISION OF SECTION 614
TRAFFIC CONTROL DEVICES

All signs shall be High Intensity Prismatic (HIP) or Diamond Grade Reflective (DG) Type 11 sheeting with at least a ten-year guarantee or of equal quality approved by the City's traffic engineer. Legends and symbols shall be made with Electro Cut (EC) Flim. The Contractor may also use traffic grade inks with approved laminate. The City reserves the right to request material changes to signs.

Subsection 614.13 shall include the following:

Steel sign posts will be measured by the actual linear foot of posts that are installed and accepted. Sign support bases that are required to complete the assembly as shown on the plans will not be measured and paid for separately but shall be included in the work.

Sign panels shall include background, message, date of manufacture, and necessary hardware.

Subsection 614.14 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Sign Panel (Class I)	Square Foot
Sign Panel (Class II)	Square Foot
Steel Sign Post (2x2 Inch Tubing)	Linear Foot
Steel Sign Support (2-1/2 Inch Round NP-40) (Post & Slip Base)	Linear Foot

**REVISION OF SECTION 614
PEDESTRIAN SIGNAL FACE (16) (COUNTDOWN)**

Section 614 of the Standard Specifications is hereby revised as follows:

Subsection 614.01 shall include the following:

This work includes the installation of LED Pedestrian Signal Faces with countdown timers as shown in the plans.

Subsection 614.08 (h) shall include the following:

Pedestrian signal faces with countdown timers shall meet the following requirements:

- a) The dimensions of the signal housing and the LED symbols, as well as moisture and dust resistance requirements shall be in accordance with the current ITE PTCSI Standards.
- b) Signal housing shall be aluminum, “clam-shell” mounted.
- c) The signal shall have user-selectable modes for countdown for walk cycle only, pedestrian cycle only, or both walk and pedestrian clearance.
- d) The countdown module shall have an internal conflict monitor to prevent any possible conflicts between the Hand/Person signal indications and the time display. The display shall not countdown during a Solid Hand indication.
- e) LED symbols shall be solid icons and shall provide uniform light dispersion such that the “pixel” effect is minimized. Lettered or outline symbol styles will not be permitted.
- f) The Person/Hand configuration shall provide clear and distinct lamination where either symbol is in use.
- g) The LED module shall be rated for use in an ambient operating temperature range -40° F to 165° F.
- h) The signal shall meet NEMA Standard TS2 for voltage surge protection and shall have an automatic reset in case of a power outage.

Subsection 614.13 shall include the following:

LED Pedestrian Signal Face (16) (Countdown) will be measured by the actual number of units that are installed and accepted.

Subsection 614.14 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Pedestrian Signal Face (16) (Countdown)	Each

**REVISION OF SECTION 614
PEDESTRIAN PUSH BUTTON**

Section 614 of the Standard Specification is hereby revised for this project as follows:

Subsection 614.08 (f) shall include the following:

Pedestrian push buttons shall be Polara Bull Dog model BDL3-B, or an equivalent approved by the City's traffic engineer.

The frame for the pedestrian push button instruction sign shall be Polara model PBF2-5x7, or an equivalent approved by the City's traffic engineer.

Pedestrian push button instruction signs shall be 5" x 7" Type R10-4b (L or R) as specified in the specifications and design plans.

Subsection 614.13 shall include the following:

Pedestrian push buttons will be measured by the number of units installed and accepted and shall include the pedestrian push button instructions sign and frame and all work and materials required to complete the item.

Subsection 614.14 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Pedestrian Push Button	Each

**REVISION OF SECTION 614
TRAFFIC SIGNAL – LIGHT POLE STEEL (1 MAST ARM) (INSTALL ONLY)**

Section 614 of the Standard Specifications is hereby revised as follows:

Subsection 614.08 (g) shall include the following:

This work is for the installation of the traffic signal pole, 50-foot mast arm, and luminaire extension. The City will furnish the signal pole, and anchor bolts. The Contractor will be responsible for installing traffic signal and pedestrian equipment at the locations shown in the plans. All traffic signal poles will be galvanized steel.

The traffic signal poles design standards will be in accordance with the City's 2020 Traffic Signal Structures Design Details.

Storage and pickup:

Traffic signal pole, mast arm, luminaire extension, and anchor bolts furnished by the City will be stored at the City of Littleton Public Works Street Maintenance located at 1800 W. Bellevue Ave, Littleton, Colorado 80120. The Contractor is required to give the City a minimum of 48 hour notification prior to picking up traffic signal equipment.

Handling:

Traffic poles shall be handled in a manner that preserves the overall appearance and prevent damage to the coating. A nonabrasive nylon rope with a minimum diameter of $\frac{3}{4}$ inch, or an equivalent nylon belting, will be used for loading, unloading, and installation. The use of chains, cables, or any other material that may damage the coating will not be permitted. During transit, the traffic signal equipment shall have adequate hold-downs, and appropriate blocking to prevent load movement and damage.

Subsection 614.14 shall include the following:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Traffic Signal-Light Pole Steel (1 Mast Arm) (Install Only)	Each

**REVISION OF SECTION 626
PUBLIC INFORMATION MANAGEMENT
(TIER IV)**

Section 626 of the Standard Specifications for this project to include the following:

DESCRIPTION

This work consists of providing Public Information Management for the duration of the project. The Contractor shall submit all documentation associated with the Public Information Management item to the Project Engineer. Before approval, the Engineer will coordinate review and approval with the Region Communications Manager (RCM).

Anticipated communications issues on this project include:

- Lane Closures for mill and overlay
- Sidewalk/Trail Closures
- Signal communications
- Construction Phasing

CONSTRUCTION REQUIREMENTS

- (a) *Public Information Manager (PIM)*. The PIM shall perform all activities associated with Public Information Management for this project. In the event the PIM is not available, the Backup PIM shall perform the required activities. The PIM may be a Contractor Staff member with limited other duties.

Within ten days of the Notice to Proceed date or five days before the Pre-construction Conference, whichever is later, and at least 14 days before the start of PIM work, the Contractor shall submit the name, contact information, and resume of the PIM and the Backup PIM to the Engineer. The PIM and Backup PIM shall have a minimum of five years of professional experience in public or media relations, marketing, or other related field and appropriate verbal and written communication skills. Experience in administrative or business office duties is not a related field.

- (b) *Activities of the PIM*. From the Notice to Proceed through the Final Acceptance of the project, the PIM shall be responsible for the following:
1. *On-Call*. The PIM shall be available or on-call each day there is work on the project and shall be available upon the Engineer's request outside of normal working hours. The PIM and the Contractor shall participate with CDOT on all meetings requested by the Engineer.
 2. *Public Information Office*. The Contractor shall establish a public information office equipped with a telephone, a local telephone number with voicemail, a computer, and an email address. The public information office may be located within the project office, off-site, or within the PIM's office. The telephone line will be the Project Hotline and shall be included on the Project Information signs. The voicemail greeting shall be updated at least weekly. The greeting will include the project's completion date and forthcoming activities for the update period, and will allow the caller to leave a voice message. The PIM shall answer calls, check voicemail and email messages, and respond to messages throughout each day that construction operations are in effect. The PIM, and when necessary the Engineer, shall respond to all inquiries with a phone call, a voice message, or an email within one work day. The PIM shall document the name, contact information, either a phone number or email address, and the action taken.

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REVISION OF SECTION 626
PUBLIC INFORMATION MANAGEMENT
(TIER IV)

Within two days of receiving the message, the PIM shall enter message details and follow-up action into the electronic reporting system.

3. *Project Meetings.* The PIM shall participate in the weekly project meetings, discuss communication issues, and provide a status on the items in this specification.
4. *Lane Closure Reporting.*
 - i. *Weekly Lane and/or Trail Closures.* The Superintendent or PIM shall notify the Engineer one week in advance of all planned “no work” periods and planned lane and /or trail closures. The PIM shall coordinate all required messaging with the City’s Communications staff.
 - ii. *Real-Time Lane and/or Trail Closure Changes.* The Superintendent shall notify the PIM and the Engineer at least 24 hours in advance on approved Lane and/or Trail Closure changes.
5. *Public Information Collateral.* The PIM shall develop a variety of Public Information Collateral to share project information with the public as necessary for major project milestones such as long-term closures or impactful construction activities. Collateral includes the following:
 - i. *Photographs and Video Recordings.* The PIM shall take photographs and video recordings on regular intervals and submit them to the Engineer. A cell phone camera is permitted. Photographs and video recordings may capture traffic control, paving, slope repair, erosion control, and other work activities. Photographs and video recordings may also include other key areas of work as identified by the Contractor or the Engineer and will be used in Public Information Collateral. The Contractor shall submit a minimum of two digital photographs or video recordings each month to the Engineer. Each photograph and video recording shall include project number, project code, date, time, location, and name of person taking the picture or video recording.
 - ii. *Maps and Graphics.* The PIM shall develop maps, detour maps, and graphics for use in Public Information Collateral.
 - iii. *Web Page Updates.* The PIM shall work with the City to develop the latest project information for the internet web page content. The PIM shall supply information for the web page using the City web page template(s) as applicable. When applicable, the updates shall contain all appropriate web page links to and from other sites. The PIM shall provide updated information at least weekly. The City will update the web page.
 - iv. *Stakeholder List.* The PIM shall submit a Stakeholder List as part of the PIP. The PIM shall include name, telephone number, email, and notes on communication needs for the project and project impacts.
 - v. *Public Information Management Contact Sheet.* The PIM shall prepare and update a Public Information Management Contact Sheet with the names and contact information of the individuals pertinent to the project’s public information. At a minimum, the Contact Sheet shall include the Resident Engineer, Project Engineer, PIM, Backup PIM, Contractor Superintendent, and Traffic Control Supervisor. The Public Information Plan shall include the Public Information Management Contact Sheet.

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**REVISION OF SECTION 626
PUBLIC INFORMATION MANAGEMENT
(TIER IV)**

- vi. *Traffic Advisories and Project Updates.* The PIM shall develop weekly traffic advisories and project updates developed from the weekly Lane and/or Trail Closure Report, including lane and/or trail closures and project update information. The Engineer will approve traffic advisories and project updates before distribution. The PIM shall email the traffic advisory and project updates to the stakeholder list by Friday of each week to announce the following week's upcoming project activity. The emailed advisory may come from the project email box or an automated distribution platform.
 - vii. *Media Relations.* At least 14 days before the start of work or a milestone, the PIM shall prepare media releases. The PIM shall allow the Engineer at least three days to review and approve the media release before distribution. The City will distribute media releases. The City will address all media inquiries and media requests. The PIM shall immediately notify the Engineer of any project and on-site situations involving the media. When the media contacts the PIM or Contractor staff, the PIM shall provide the media the City's contact information. The PIM shall prepare a media release announcing the project, summarizing the project scope, construction phasing, construction activities that affect traffic, the project end date, and a summary of project benefits. The PIM shall develop additional media releases for major construction milestones, traffic control or lane shifts, closures, project completion, and as directed by CDOT. The releases shall also include maps or other graphics.
6. *Public Information Plan.* The PIM shall submit a Public Information Plan (PIP) within five days of the Pre-construction Conference. The PIP shall be specific to the project. The PIP shall include public information strategies for affected road and trail users using the Public Information Collateral, the expected work zone impacts and closure details, commuter alternatives, community, government and business relations, media relations, identification of public information issues, proposed outreach strategies, approach to crisis communications, the Stakeholder List, and the Public Information Management Contact Sheet. The PIM shall update the plan when necessary and as directed by the Engineer. The PIP is a component of subsection 630.10 Transportation Management Plan.
7. *Limited English Proficient (LEP) Individuals.* A LEP is an individual for whom English is not their primary language and who has a limited ability to read, write, speak, or understand English. The PIM shall provide language assistance of the Public Information Collateral when the project is located in a community that has greater than five percent LEP individuals. Project-related language assistance includes translation, interpretation services, or communication in a form the LEP person understands. The PIM shall document all measures taken to communicate with LEP persons, record all requests for language assistance, and submit the documentation to the Engineer.

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**REVISION OF SECTION 626
PUBLIC INFORMATION MANAGEMENT
(TIER IV)**

(c) *Response Protocol to the City and the Public.* The PIM shall follow Table 626-1 in responding to correspondence from stakeholders and the public.

Table 626-1 - Response Timing

Type	Timing
Project Hotline calls and voice messages	Answer calls and check messages throughout each day. Respond within one day. Enter details into the electronic reporting system within two days.
Email messages	Respond within one day. For high volume situations, respond within two days. Enter details into the electronic reporting system within two days.
Calls from City Staff	Respond as soon as possible, and within 24 hours.
Web page inquiries	Respond within one day. For high volume situations, respond within two days.

METHOD OF MEASUREMENT

Public Information Management will be measured as the number of days elapsed from the project Notice to Proceed date up to the Final Acceptance date.

Failure to provide acceptable Public Information Management will result in withholding of payment for the days affected.

BASIS OF PAYMENT

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Public Information Management (Tier IV)	Day

Payment for Public Information Management will be full compensation for each measured day where the work, materials, and equipment to provide public information as per this specification.

If the Contractor fails to complete construction within the approved contract time, CDOT will not pay for Public Information Management for the period after expiration of the approved contract time. The Contractor shall continue to provide Public Information Management through Final Acceptance at its expense.

REVISION OF SECTION 626 MOBILIZATION

Section 626 of the Standard Specifications is hereby revised as follows:

Subsection 626.01 shall be deleted and replaced by the following:

Mobilization includes the mobilization of personnel, equipment, and materials at the project site in preparation for work on the project. This item includes the establishment of required facilities and all other costs incurred in labor and operations which must be performed prior to commencement of contract work. Also included in this item are costs of the required bonds and insurance.

The Contractor shall be responsible for securing, at his expense, the use of any private land for storage of materials and equipment. The Contractor shall provide to the Project Manager written permission from the land's owner for such use.

The Contractor shall install, at a minimum, plastic construction fence around his staging area, and shall maintain the area in as neat and orderly a manner as possible, allowing no accumulation of waste materials or disposal piles. Construction fence will not be measured and paid for separately but shall be included in the work. All gasoline, oil, fuel, hydraulic fluids, and other contaminating fluids shall be properly removed and disposed of off-site. No objectionable materials shall be allowed to blow from, wash off or drain off of the staging area on to adjacent property.

Upon completion of the project, the Contractor shall promptly and neatly clean up the area and reestablish the ground to the contours and conditions "as before."

All costs required to set up, fence, operate, maintain, and restore the staging area, including revegetation shall be borne by the Contractor.

The Contractor should anticipate small production rates associated with phasing, which will require multiple mobilizations for subcontractors. No additional compensation will be made for subcontractor mobilizations, specifically for striping and paving operations.

**REVISION OF SECTION 627
PREFORMED THERMOPLASTIC PAVEMENT MARKING**

Section 627 of the Standard Specifications is hereby revised for this project as follows:

CONSTRUCTION REQUIREMENTS

In subsection 627.09, first paragraph, delete the first sentence and replace with the following:

The markings shall consist of a resilient white, yellow, or other color thermoplastic product with glass beads and anti-skid elements uniformly distributed throughout the entire cross-sectional area to ensure that skid resistance and retroreflectivity are maximized.

Section 627 of the Standard Specifications is hereby revised for this project to include the following:

Subsection 627.09 (c) is hereby added to the Standard Specifications for this project as follows:

(c) Inlaid (Word-Symbol) (X-walk/Stop-bar) (Shield)

All Preformed Thermoplastic Pavement Marking surfaces shall be ground before placement of proposed marking. Depth of grinding shall be such as to completely remove any existing pavement markings and to have a nominal depth of 125 milliinches (mils) +/- 10 mils. The inlaid area for the new Preformed Thermoplastic Pavement Marking shall be in the same shape or pattern as the Preformed Thermoplastic Pavement Marking that is being installed. Grinding of existing preformed thermoplastic pavement marking and existing asphalt shall not be measured and paid for separately, but shall be included in the work.

Colorado epoxy glass beads and anti-skid elements applied to the surface of the material to ensure the required skid resistance and retroreflectivity will not be measured and paid for separately, but shall be included in the work.

Surface shall be dry and free of dirt, dust, chemicals, and significant oily substances. Existing pavement markings shall be removed prior to installation of Preformed Thermoplastic Pavement Marking in areas where markings overlap. Application procedures for Portland concrete pavement shall be as described above except a compatible primer sealer shall be applied before application of marking to ensure proper adhesion.

The Contractor shall require the stencil manufacturer to provide on-site training prior to installation of the first stencil. All crew members on the work site shall be certified by the stencil manufacturer. The training shall include surface preparation and stencil installation for both hot bituminous pavement and concrete pavement. The training shall be coordinated with and attended by Colorado Department of Transportation (CDOT) project engineers and inspectors. Training shall be incidental to the work.

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**REVISION OF SECTION 627
PREFORMED THERMOPLASTIC PAVEMENT MARKING**

1. The Contractor shall use a durable, high skid resistant, retroreflective pavement marking material suitable for use as interstate shields; route shields; and bike path, roadway, intersection, airport, commercial, or private pavement delineation and markings.
 - A. The markings shall be a resilient white, yellow, or other color thermoplastic product, the surface of which shall contain glass beads and abrasives in an alternating pattern. The markings shall be resistant to the detrimental effects of motor fuels, lubricants, hydraulic fluids, etc. Lines, legends, and symbols shall be capable of being affixed to bituminous or Portland cement concrete pavements by the use of the normal heat of a propane torch.
 - B. The markings shall be capable of conforming to pavement contours, breaks, and faults through the action of traffic at normal pavement temperatures. The markings shall have resealing characteristics, such that it is capable of fusing with itself and previously applied thermoplastic when heated with the torch.
 - C. The markings shall not have minimum ambient and road temperature requirements for application, without any preheating of the pavement or special storage, handling, preheating, or treatment of the material before application.
2. Manufacturing Location, Control and International Standards Organization (ISO) Certification: The marking material must be produced in the United States, and the manufacturer must be ISO 9001:2015 certified for design, development, and manufacturing of preformed thermoplastic pavement markings, and provide proof of current certification.
3. Material: The marking material shall be composed of an ester modified rosin resistant to degradation by motor fuels, lubricants, etc. in conjunction with aggregates, pigments, binders, abrasives, and glass beads which have been factory produced as a finished product. The marking material shall meet the requirements of the current edition of the Manual on Uniform Traffic Control Devices for Streets and Highways. The thermoplastic material shall conform to American Association of State Highway and Transportation Officials (AASHTO) designation M249, with the exception of the relevant differences due to the material being supplied in a preformed state.
 - A. Graded Glass Beads
 - (1) The material shall contain a minimum of 30 percent intermixed graded glass beads by weight. The intermixed beads shall conform to AASHTO designation M247, with minimum 80 percent true spheres and minimum refractive index of 1.50.

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REVISION OF SECTION 627
PREFORMED THERMOPLASTIC PAVEMENT MARKING

- (2) The material shall have factory applied coated surface beads and abrasives at a rate of 1/2 pound (0.23 kilogram) [\pm 20 percent] per 11 square feet (1 square meter) each in addition to the intermixed beads. The surface beads and abrasives shall be applied evenly across the surface of the material so that the surface is covered completely with glass beads and abrasive materials. The abrasive material shall have a minimum hardness of 9 (Mohs scale). The factory applied coated surface beads shall have a minimum of 80 percent true spheres, have a minimum refractive index of 1.50, and meet the following gradation:

Size Gradation		Retained, %	Passing, %
US Mesh	Um		
12	1700	0 - 2%	98 – 100%
14	1400	0 - 6%	94 – 100%
16	1180	1 – 21%	79 – 99%
18	1000	28 - 62%	38 – 72%
20	850	62 - 71%	29 – 38%
30	600	67 - 77%	23 – 33%
50	300	86 - 95%	5 – 14%
80	200	97-100%	0 – 3%

B. Pigments

- (1) White: The material shall be manufactured with sufficient titanium dioxide pigment to meet Federal Highway Administration (FHWA) Docket_No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected.
- (2) Red, Blue, and Yellow: The material shall be manufactured with sufficient pigment to meet FHWA Docket_No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected. The yellow pigments shall be organic and shall be heavy-metal-free.
- (3) Other Colors: The pigments shall be heavy-metal-free.

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**REVISION OF SECTION 627
PREFORMED THERMOPLASTIC PAVEMENT MARKING**

- C. Heating indicators: The top surface of the material (same side as the factory applied surface beads/abrasives) shall have regularly spaced indents. The closing of these indents during application shall act as a visual cue that the material has reached a molten state allowing for satisfactory adhesion and proper bead embedment, and as a post-application visual cue that the application procedures have been followed.
- D. Skid Resistance: The surface of the preformed thermoplastic (anti-skid material) items shall contain factory applied anti-skid material with a minimum hardness of 9 (Mohs scale). Upon application the material shall provide a minimum skid resistance value of 60 British Pendulum Number (BPN) when tested according to American Society for Testing and Materials (ASTM) E303. The surface beads and abrasives shall be applied evenly across the surface of the material so that the surface is covered completely with glass beads and abrasive materials.
- E. Thickness: The material shall be supplied at a minimum thickness of 125 mils (3.15 millimeters (mm)).
- F. Retroreflectivity: The material, when applied in accordance with manufacturer's guidelines, shall demonstrate a uniform level of sufficient nighttime retroreflection when tested in accordance to ASTM E1710. The applied material shall have an initial minimum intensity reading of 275 millicandelas per square meter per lux ($\text{mcd} \cdot \text{m}^{-2} \cdot \text{lx}^{-1}$) for white, as measured with a pavement marking retroreflectometer.
- G. Environmental Resistance: The material shall be resistant to deterioration due to exposure to sunlight, water, salt, or adverse weather conditions and impervious to oil and gasoline.

Only Preformed Thermoplastic Pavement Marking material listed on the Department's approved products list may be used.

BASIS OF PAYMENT

Subsection 627.13 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Preformed Thermoplastic Pavement Marking (Word-Symbol)	Square Foot
Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	Square Foot

**REVISION OF SECTION 627 AND 713
PREFORMED THERMOPLASTIC PAVEMENT MARKING (SPECIAL)**

Section 627 of the Standard Specifications is hereby revised as follows:

Subsection 627.01 is revised to include the following:

This work shall consist of the installation of green crosswalk markings for bicycle route facilities in conformity to the lines, grades, dimensions, and details shown on the plans or established.

In subsection 627.09, first paragraph, delete the first sentence and replace with the following:
The markings shall utilize an anti-skid formulation. They shall consist of a resilient green thermoplastic product with glass beads and anti-skid elements uniformly distributed throughout the entire cross sectional area to ensure that skid resistance and retroreflectivity are maximized.

Subsection 627.12 shall include the following:
Green crosswalk symbols for bicycle route facilities will be measured by the square foot of marking installed and accepted.

BASIS OF PAYMENT

Subsection 627.13 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)(Special)	Square Foot

**REVISION OF SECTION 630
UNIFORMED TRAFFIC CONTROL (LOCAL AGENCY)**

Section 630 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of furnishing a uniformed police agency officer from the City of Littleton to perform uniformed traffic control. Requests for uniformed traffic control may be made through the Secondary Employment Office of the Littleton Police Department, at least five days before needed.

When called for in the Contract, this work includes furnishing a vehicle for the officer to use in performing uniformed traffic control.

MATERIALS

- (a) *Qualifications.* The local agency officer shall have completed “The Safe and Effective Use of Law Enforcement Personnel in Work Zones” Training Course. The Contractor shall provide copies of documentation certifying the officer’s successful completion of this course.
- (b) *Traffic Control Vehicles.* When called for in the Contract, the Contractor shall furnish white sedans to be used by uniformed police agency officers in the performance of Uniformed Traffic Control duties. The Contractor shall be responsible for licensing, insuring, servicing, and fueling the vehicle.

For each Traffic Control Vehicle furnished by the Contractor, the Contractor shall furnish Class 1 SAE certified light bar and control panel for exclusive use by uniformed police agency officers while performing Uniformed Traffic Control. The light bar shall have the following configuration:

- (1) minimum of 44 inches in length, and shall be either permanently or temporarily attached to the top of the vehicle.
- (2) flash red on the driver side and blue on the passenger side
- (3) equipped with an amber-colored directional device in the rear of the bar.
- (4) have alley and takedown lights.
- (5) The control panel shall be capable of controlling the front of the bar and the rear of the bar separately.
- (6) The traffic advisor shall be controlled separately.

The light bars shall be mounted on traffic control vehicles and shall be maintained in good operating condition at all times. The Contractor shall obtain a permit from the police or sheriff department, as appropriate, for the use of the light bars. The Contractor shall keep the light bars covered at all times when the traffic control vehicle is being used by someone other than the authorized uniform police agency officer.

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REVISION OF SECTION 630
UNIFORMED TRAFFIC CONTROL (LOCAL AGENCY)

METHOD OF MEASUREMENT

Uniformed Traffic Control will be measured by the total number of hours that are required for uniformed traffic control including minimum shift hours required by the agency.

Traffic Control Vehicle will be measured by the actual number of vehicles provided by the Contractor and used as authorized by the Engineer, and will include maintenance of each vehicle, light bars, licensing, insurance and fueling.

BASIS OF PAYMENT

The accepted number of hours of Uniformed Traffic Control will be paid for at the contract unit price per hour.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Flagging	Hour
Uniformed Traffic Control	Hour
Uniformed Traffic Control (Vehicle)	Hour

Hours for Uniformed Traffic Control that are not authorized or approved will not be paid for. Scheduling of traffic control will not be measured and paid for separately but shall be included in the work.

Payment for the item Uniformed Traffic Control (Vehicle) will be full compensation for all work, light bars, other equipment, and other items necessary to complete the item. Licensing, insuring, servicing, and fueling the vehicle will not be paid separately, but shall be included in the work.

REVISION OF SECTION 630 IMPACT ATTENUATOR (TEMPORARY)

Section 630 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of furnishing, installing, certifying, moving, repairing, maintaining, and removing temporary impact attenuators in accordance with these specifications and in conformity with the lines and details shown on the plans or established.

MATERIALS

Each impact attenuator shall be selected from the Crash Cushion and End Treatment Application Chart as listed in the *Safety Selection Guide* on the CDOT Design and Construction Project Support web site. Impact attenuators shall conform to the requirements of the manufacturer and be capable of bi-directional shielding of the objects detailed and located on the plans. Filler materials shall be treated according to the manufacturer's recommendations to prevent freezing to a temperature of -50 °F.

If the posted speed limits of the construction zone are 45 miles per hour or less, the impact attenuator shall comply with the crash test requirements contained in NCHRP Report 350 (only applicable for impact attenuators developed prior to 2011) or MASH (acceptable for all impact attenuators), TL-2. For posted speed limits in the construction zone greater than 45 miles per hour, the attenuator shall meet the requirements of TL-3.

CONSTRUCTION REQUIREMENTS

If sand barrel arrays are used, the Contractor shall paint, with white epoxy paint, an outline and the weight of each barrel on the pavement prior to final placement. All numbers shall be a minimum of 6 inches high. Barrel type shall be one of those listed in the *Safety Selection Guide*.

The site shall be prepared to receive the impact attenuator by filling, excavating, smoothing, constructing the paved foundation pad, installing approved transition and anchoring, and all other work necessary for the proper installation of the attenuator.

The impact attenuator shall be fabricated and installed in accordance with the manufacturer's recommendations. The Contractor shall provide a copy of the manufacturer's installation instructions and parts list to the Engineer prior to installation of the device.

Each installation shall be supervised and certified as correct upon completion by a representative of the device manufacturer or by an employee of the Contractor who is a certified installer. The certified installer shall have completed device training and shall be registered with the manufacturer as a certified installer. The Contractor shall submit all appropriate documentation to validate that the certified installer has completed device training and has been registered with the manufacturer as a certified installer.

2
REVISION OF SECTION 630
IMPACT ATTENUATOR (TEMPORARY)

METHOD OF MEASUREMENT

Impact Attenuator (Temporary) will be measured by the number of attenuators shown on the plans, installed, certified, and accepted; or the actual number of authorized 24-hour periods that the attenuator is used.

BASIS OF PAYMENT

If the pay unit is “day” there will be no incremental payment for the device. If the pay unit is “each” the item will be paid incrementally in accordance with subsection 630.16.

The accepted quantities will be paid for at the contract unit price for the pay item listed below:

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Impact Attenuator (Truck Mounted Attenuator)(Temporary)	Each

Payment will be full compensation for all work and materials required to furnish, install, certify, move, repair, maintain, and remove the impact attenuator. Site preparation, foundation pad, epoxy painting, and all necessary hardware including anchors and transitions will not be paid for separately, but shall be included in the work.

**REVISION OF SECTION 630
PORTABLE MESSAGE SIGN PANEL**

Section 630 of the Standard Specifications is hereby revised for this project as follows:

Subsection 630.01 shall include the following:

This work shall consist of furnishing, operating, and maintaining portable message sign panels, to be on the project site at least two weeks prior to the start of active roadway construction.

Subsection 630.03 shall include the following:

Portable message sign panels shall be furnished as a device, fully self-contained on a portable trailer, capable of being licensed for normal highway travel, and shall include leveling and stabilization jacks. The panel shall display a minimum of three – eight-character lines. The panel shall be a dot-matrix type LED legend or approved alternate, on a flat black background. LED signs shall have a pre-default message that activates before power failure.

The sign shall have its own separate power source with independent back-up battery power. The sign shall be capable of 360 degrees horizontal rotation and be able to be elevated to a height of at least five feet above the ground surface as measured to the bottom of the sign. The sign should be visible from one-half mile under both day and night conditions. The message should be legible from a minimum of 650 feet. The sign shall automatically adjust its light source to meet legibility requirements during the hours of darkness. The sign enclosure shall be watertight and provide a clear polycarbonate front cover.

Each sign shall include an operating and parts manual, wiring diagrams, and troubleshooting guide. Message signs that are diesel generator powered shall be provided with a 20-gallon minimum capacity fuel tank. Solar powered message signs shall be capable of operating continuously for ten days without sun. All instrumentation and controls shall be contained in a lockable enclosure. The sign shall be capable of changing and displaying sign messages and other sign features such as flash rates, moving arrows, etc.

Flip disk legends shall have fluorescent ultraviolet black-light bulbs.

In addition to the onboard solar/generator power operation with battery back-up, each sign shall be capable of operating via hard-wire, 100-110 VAC external power source. All electrical wiring including connectors and switch controls needed to allow all sign functions required by the specification shall be provided with each sign.

The portable message sign shall be capable of maintaining all required operations under Colorado mountain/winter weather conditions. Each sign shall be furnished with an attached license plate and mounting bracket. Each sign shall be wired with a 7-prong male electric plug for the brake light warning system. NAPA Part TC 6215 Trailer Connection or equivalent will be suitable to meet the requirements of this specification.

Subsection 630.13 shall include the following:

The portable message sign panel shall be on the project site at least 7 days prior to the start of active roadway construction. Maintenance, storage, operation, relocation to different sites during the project, and all repairs of portable message sign panels shall be the responsibility of the Contractor.

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REVISION OF SECTION 630
PORTABLE MESSAGE SIGN PANEL

Subsection 630.15 shall include the following:

Maintenance, storage, operation, relocation to different sites during the project, and all repairs of portable message signs shall be the responsibility of the Contractor and will not be measured and paid separately.

Portable message sign panels will be measured one of the two following ways:

- (1) By the actual number of days each portable message sign is used on the project as approved by the Engineer.
- (2) By the maximum number of approved units in use on the project at any one time.

Subsection 630.16 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Portable Message Sign Panel	Each

REVISION OF SECTION 630 CONSTRUCTION ZONE TRAFFIC CONTROL

Section 630 of the Standard Specifications is hereby revised as follows:

Subsection 630.01 shall be revised to include the following:

The Contractor shall submit the proposed Method of Handling Traffic (MHT) to the City for review and approval by the Project Engineer. The MHT shall be developed according to this section and the construction plans.

The following documents shall control the preparation of the MHT Plans and are listed in the order of precedence:

- 1) Plans and Special Provisions for this project
- 2) Colorado Department of Transportation Standard Specifications
- 3) Colorado Department of Transportation M&S Standards
- 4) Current version of the *Manual on Uniform Traffic Control Devices* (MUTCD)

Subsection 630.02 General shall include the following:

The flagger's STOP/SLOW sign paddle shall be 18 inches with letters six inches high.

Subsection 630.05 Traffic Cones shall include the following:

Steel drum channelizing devices shall not be used for traffic control

Subsection 630.06 Channelizing Device (fixed) shall include the following:

Non-metallic drums or tubular markers may be substituted for vertical panel channelizing devices.

Subsection 630.10(a), shall include the following:

Traffic control throughout the construction area is the responsibility of the Contractor. Before starting construction, the Contractor shall submit, in writing, the proposed Method of Handling Traffic (MHT) for the initial phase of construction prior to the preconstruction conference. When a different MHT is required for a subsequent construction phase, it must be submitted at least two weeks prior to starting that phase. All proposed methods of handling traffic shall be approved, in writing, by the Project Engineer.

Approval of the proposed MHT does not relieve the Contractor of liability specifically assigned to him under the contract. The Contractor shall erect and maintain warning lights, signs, barricades, and sufficient safeguards around all excavations, embankments, stockpiles, equipment, and obstructions.

The contractor shall notify the Project Engineer by Thursday at 3:00 P.M. which streets they intend to work on the following week. This notification will be made for all phases of construction.

Construction work shall not begin until all advance construction signs are in place and approved by the engineer.

The proposed methods shall include, as a minimum, the following:

A detailed diagram which shows the location of all sign placements, including advance construction signs (if not previously approved) and speed limit signs; method length and time duration for lane closures; and location of flag persons.

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REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL

The Contractor shall, at the preconstruction conference, designate one of their employees, other than the Superintendent, to be responsible for traffic control management. This responsibility shall include management for the contractor's signing and all other details covered by the specifications which contribute to the convenience, safety, and orderly movement of traffic and to the comfort of the traveling public. The designated employee will have the Certification of the Traffic Control Supervisor as a Worksite Traffic Supervisor by the American Traffic Safety Services Association (ATSSA) in lieu of completion of the CDOT minimum training requirements.

Traffic control management shall be maintained on a 24-hour per day basis. The contractor shall make arrangements so that the Traffic Control supervisor or their approved representative will be available on every working day, "on call" at all times and available upon the Engineer's request at other than normal working hours. The Traffic Control Supervisor shall have an up-to-date copy of Part VI of the MUTCD, pertaining to traffic controls for street and highway constructions, and the approved MHT available at all times. The contractor shall apply for and receive a City of Littleton right-of-way use permit (at no cost to the contractor) prior to commencing operations.

Special Traffic Control Plan requirements for this project are as follows:

- 1) During the construction of this project, traffic shall use the present traveled roadway.
- 2) Work that interferes with traffic will only be permitted during the following hours:
 - The Contractor shall perform all the work between the hours of 8:30 AM and 3:30 PM or as approved by the Project Engineer. Weekend and nighttime work will be allowed with the prior written approval of the Project Engineer. During this time, only one lane can be closed on each approach.
 - Work will not be permitted that directly or indirectly interferes with the flow of traffic between the hours of 5:30 AM and 8:30 AM Monday through Friday; between the hours of 3:30 PM to 6:30 PM Monday through Thursday; and after 2:00 PM on Fridays unless otherwise authorized by the Project Engineer.
 - No work on Holidays
 - Contractor shall not close lanes during special events.
 - Contractor shall coordinate lane closures with adjacent projects.
 - Contractor shall maintain business access during business hours.
 - The Contractor shall coordinate all of the work on the roadway during any special event with the City of Littleton.
- 3) The Contractor shall install construction traffic control devices where they do not block or impede other existing traffic control devices or sidewalks for pedestrians, disabled persons or bicyclists. The Contractor is restricted from storing any materials, construction traffic control devices, signs, etc. in any median area or park area.
- 4) Vertical cuts or fills greater than 1 inch resulting from construction operations adjacent to traffic lanes, or within the clear zone shall be temporarily sloped at a 6:1 or flatter slope and delineated at 35-foot intervals immediately after removal operations to safeguard the traveling public.
- 5) Construction equipment used on this project shall meet the same minimum exhaust requirements as those specified by the manufacturer of the equipment.

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REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL

- 6) The Contractor and subcontractors shall equip their construction vehicles with flashing amber lights. Equipment to be used at night shall also be equipped with flashing amber lights. Flashing amber lights on vehicles and equipment shall be visible from all directions.
- 7) The Contractor shall maintain access to all roadways, side streets, walkways, alleyways, driveways, and hike/bike paths at all times unless otherwise directed by the Engineer. Parking areas temporarily disturbed by construction activities shall be restored to a useable condition during non-working hours. Such temporary parking shall utilize an all-weather surface. The Contractor shall develop an Access Maintenance Plan in coordination with, and based on the requirements of, the affected property owners and tenants, and submit it to the Engineer for approval prior to commencement of work. This plan shall detail all barricades, ramps, signs, and temporary means of access required by the property owners or tenants. Prior to commencing any work which affects access to a property, the Access Maintenance Plan for that property must be submitted and approved by the Engineer.
- 8) The Access Maintenance Plan shall be coordinated with all affected owners and tenants. The Access Maintenance Plan shall include documentation of this coordination, including the approval signature of each affected owner or tenant. Should the Contractor be unable to obtain approval and signatures, documentation of the efforts made to obtain said approval and signatures must be submitted.
- 9) All access shall be maintained on surfaces equal to or better than those existing at the time the access is first disturbed. For short periods of time only as allowed by the Engineer, access may be maintained on an aggregate base course surface.
- 10) The Contractor shall maintain continuous access throughout the project for pedestrians, bicyclists, and disabled persons. When the existing access route is disturbed by construction, a temporary all-weather access shall be provided. All temporary access shall be a minimum of 5 feet wide and meet Americans with Disabilities Act (ADA) requirements. Acceptable all-weather surfacing shall be concrete or asphalt surface, or as approved by the Engineer. Delineation of pedestrian access through the work area shall be accomplished using temporary plastic fencing.
- 11) The costs of maintaining access will not be paid for separately, unless otherwise provided, but shall be included in the work. Utilization of materials to be incorporated into the work may be permitted. However, any degradation or other contamination or destruction shall be corrected at the Contractor's expense prior to acceptance.
- 12) During non-construction periods (evenings, weekends, holidays, etc.) all work shall be adequately protected to ensure the safety of vehicular and pedestrian traffic, as detailed in the Contractor's MHT. Excavations or holes shall be filled in or fenced when unattended.
- 13) Whenever the Contractor removes, obliterates, or overlays any pavement markings, he /she shall replace them on a daily basis prior to opening the affected areas to traffic. All temporary pavement markings shall fully comply with the Standard Specifications and Special Provisions.
- 14) The Contractor shall not have construction equipment or materials in the lanes open to traffic any time unless directed by the Engineer.
- 15) All personal vehicle and construction equipment parking is prohibited where it conflicts with safety, access, or the flow of traffic. Landscaped areas, public park areas, and roadway shoulders shall be kept clear of parking and storage of all personal and construction equipment except where approved by the Engineer.
- 16) The Contractor shall not place tack coat on any surface to be paved where traffic will be forced to travel upon fresh bituminous materials.

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**REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL**

- 17) The Contractor shall be required to make arrangements with the Regional Transportation District (RTD) prior to closing any existing bus stops within the project limits. Temporary stops will be required as directed by the Engineer and as required by RTD. For bus stop/route conflicts Regional Transportation District, RTD / 1560 Broadway, Suite 700, Denver, CO 80202 shall be contacted two business days prior to start of construction.
- 18) The Contractor shall coordinate temporary trail detours with regional projects, including but not limited to the US 85/C-470 improvement project.
- 19) The Contractor shall be required to maintain temporary drives at any existing establishment that has singular access off of the roadways, unless otherwise approved in writing by the property owner.
- 20) No work that interferes with traffic will be allowed on holidays or any day of a three-day or four-day weekend that includes a holiday. Holidays on which this restriction applies consist of those holidays recognized by the State of Colorado as listed in subsection 101.36
- 21) All lane or trail closures shall be subject to the approval of the Engineer. Request for each closure shall be made at least 24 hours in advance of the time the lane closure is to be implemented. Lane or trail closures will not be allowed to remain unless being utilized in continuum for the intended purpose for which they were set up.
- 22) During no-working hours, the roadways and trails shall be restored to a safe travel condition for the free flow of traffic. Any maintenance required restoring the roadways to this condition, including the pavement patching and grading, shall be done prior to opening the areas to traffic or completing work for the day.
- 23) The Contractor shall clean the roadway or trail of all construction debris before opening it to traffic.
- 24) All flagging stations used at night shall be illuminated with floodlights. Street, highway lights and “high mast lighting” may be used for flagging station illumination when approved by the Engineer. Floodlights shall be located and directed so as not to interfere with the sight of any motorists, and the cost to be included in the work.
- 25) Prior to removal and resetting of any sign the Contractor and Engineer shall prepare an inventory. Any signs damaged due to the Contractor’s operations shall be replaced in kind or repaired by the Contractor at no additional cost to the project.
- 26) Unless noted otherwise, all costs incidental to the foregoing requirements shall be included in the original contract prices for the project, including any additional traffic control items required for haul routes into the project.

Subsection 630.10 (11) shall be added as follows:

All lane closures require an arrow board to be installed.

All streets that will be reduced in the number of travel lanes should have variable message boards installed for a minimum of 3 days starting once the striping change is in operation to inform drivers of the lane reduction.

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REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL

Subsection 630.17 shall include the following:

Temporary pavement markings for traffic control will not be measured and paid for separately but shall be included in the work.

Subsection 630.18 shall include the following:

All costs incidental to maintenance of access will not be paid for separately but shall be included in the work.

All costs incidental to the foregoing requirements shall be included in the original Contract prices for the project.

**REVISION OF SECTION 704
MASONRY UNITS**

Revise Section 704 of the Standard Specifications as follows:

Delete **Subsection 704.03** and replace it with the following:

Concrete masonry blocks may be rectangular or segmented and, when specified, shall have ends shaped to provide interlock at vertical joints. The blocks shall conform to the requirements of ASTM C1372. Dimensions and tolerances shall conform to the above applicable requirements or those specified on the plans.

Cementitious materials and aggregates for modular blocks shall conform to the requirements of ASTM C1372. The concrete used for modular blocks shall have a compressive strength meeting or exceeding 4500 psi at 28 days, a maximum water cement ratio of 0.45, and an air content of 5% to 8%

FORCE ACCOUNTS

DESCRIPTION

This special provision contains the City of Littleton's estimate for force account items included in the Contract. The estimated amounts marked with an asterisk will be added to the total bid to determine the amount of the performance and payment bonds. Force Account work shall be performed as directed by the Engineer.

BASIS OF PAYMENT

Payment will be made in accordance with subsection 109.04. Payment will constitute full compensation for all work necessary to complete the item.

Force account work valued at \$5,000 or less, that must be performed by a licensed journeyman in order to comply with federal, state, or local codes, may be paid for after receipt of an itemized statement endorsed by the Contractor.

Estimated Force Account Item	Quantity	Amount
F/A Minor Contract Revisions	FA	\$200,000
F/A Fuel Cost Adjustment	FA	\$3,000
F/A Asphalt Cement Cost Adjustment	FA	\$7,000
F/A On-The-Job Trainee	FA	\$3,000
F/A Interim Surface Repair	FA	\$10,000
F/A Install Electrical Service	FA	\$10,000
F/A Erosion Control	FA	\$25,000
F/A Sprinklers	FA	\$25,000

Force Account Item Descriptions:

F/A Minor Contract Revisions- Consists of minor work authorized and approved by the Engineer, which is not included in the contract plans or specifications and is necessary to accomplish the scope of work of this contract.

F/A Fuel Cost Adjustment- Adjustment will be made in accordance with Subsection 109.06(i).

F/A Asphalt Cement Cost Adjustment – Adjustment will be made in accordance with Subsection 109.06(j).

F/A On-The-Job Trainee – Cost of maintaining on-the-job pilot training program in accordance with the Standard Special Provision.

F/A Interim Surface Repair– This work consists of placing and compacting a machine scratch course in locations as directed by the Engineer. The machine scratch course may be used once the Contractor meets all the specification requirements for the Revision of Section 202, Removal of Asphalt Mat (Planing) and irregularities such as, but not limited to, delamination and raveling exceeding 10 percent within any ½ mile segment that are encountered prior to the specified time of the overlay.

2
FORCE ACCOUNTS

F/A Install Electrical Service – This work shall consist of all cost charges and all necessary materials, labor, and coordination required to maintain existing power source and extend said power source to new pole locations as required for permanent operation of equipment as shown in the plans.

F/A Erosion Control - Supplemental erosion control measures suggested by the Erosion Control Supervisor, but not provided for in the contract plans or specifications. All items shall be approved by the Engineer prior to installation or they will be at no cost to the project.

F/A Sprinklers – This work shall consist of removing, replacing, and testing landscape sprinkler equipment to remove, reset, and/or restore landscape irrigation to the existing and transplanted trees along the Mineral Trail. All materials to be utilized shall meet the requirements of the City of Littleton. Reimbursement under this force account will include labor, materials, and equipment at cost and with Engineer and City approval for removal, reset, and/or replacement as required.

TRAFFIC CONTROL PLAN GENERAL

The key elements of the Contractor's method of handling traffic (MHT) are outlined in CDOT 2023 Standard Specifications Subsection 630.10(a).

The components of the TCP for this project are included in the following:

- (1) CDOT 2023 Standard Specifications Subsection 104.04 and Section 630.
- (2) CDOT Standard Plan S-630-1, Traffic Controls for Highway Construction, Case 19 and 38 and Standard Plan S-630-2.
- (3) Schedule of Construction Traffic Control Devices.

Unless otherwise approved by the Engineer, the Contractor's equipment shall follow normal and legal traffic movements. The Contractor's ingress and egress of the work area shall be accomplished with as little disruption to traffic as possible. Traffic control devices shall be removed by picking up the devices in a reverse sequence to that used for installation. This may require moving backwards through the work zone. When located behind barrier or at other locations shown on approved traffic control plans, equipment may operate in a direction opposite to adjacent traffic.

City of Littleton may have entered into operating agreements with one or more law enforcement organizations for cooperative activities. Under such agreements, at the sole discretion of the City, law enforcement personnel may enter the work zone for enforcement purposes and may participate in the Contractor's traffic control activities. The responsibility under the Contract for all traffic control resides with the Contractor and any such participation by law enforcement personnel in Contractor traffic control activities will be on the Contractor to hire local law enforcement uniformed traffic control. Nothing in this Contract is intended to create an entitlement, on the part of the Contractor, to the services or participation of the law enforcement organization.

Special Traffic Control Plan requirements for this project are as follows:

During the construction of this project, traffic shall use the present traveled roadway unless identified on the plans or approved by the Engineer.

The Contractor shall not have construction equipment or materials in the lanes open to traffic at any time, unless approved by the Engineer.

The Contractor shall not perform any work requiring lane closure on the roadway between the hours of 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM or as directed.

At least one week before starting construction, the Contractor shall notify the City of Littleton Engineer of the date the Contractor intends to start construction.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project.

UTILITIES

The known utilities within the limits of this project are:

UTILITY	CONTACT/EMAIL	PHONE/FAX
City of Littleton 2255 Berry Ave, Littleton, CO 80120	Aaron Heumann Aheumann@littletongov.org	303-795-3768
Comcast 6850 S Tucson Way, Englewood, CO 80112	Jason Mollo Jason_Mollo@Comcast.com	303-241-1964
Denver Water Department 1600 W. 12 th Avenue Denver, CO 80204	Paul Peloquin Paul.Peloquin@denverwater.org	303 628-6620
Lumen 1855 S Flatiron Ct. Boulder, CO 80301	Robert McLeod RMCleod@terratechllc.net	303-949-2187
Lumen National 1855 S Flatiron Ct. Boulder, CO 80301	Robert McLeod RMCleod@terratechllc.net	303-949-2187
MCI/Verizon 10000 Park Meadows Dr Lone Tree, CO 80124	Lane Grady Lane.grady@verizon.com	303 827-9756
Xcel Energy Application for Gas & Electric Services	BCLCO@xcelenergy.com	1-800-628-2121 1-800-628-2521 Fax
Xcel Energy – Electric/Gas 5460 West 60 th Ave Arvada, CO 80002	Robert Cook Robert.Cook@xcelenergy.com	303-519-7831

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.

All new underground facilities, including laterals up to the structure or building being served, installed as part of this project must be electronically locatable when installed, in compliance with Colorado Revised Statutes, Title 9, Article 1.5.

All utility installations, within CDOT Right of Way (ROW), shall be collected using CDOT's mobile application (PointMan). Please contact CDOT at cdotpointman@gmail.com in order to obtain new login and password information, if required. Download PointMan mobile application through the Apple Store (iOS) or Google Play (Android). Finally, please watch the following quick start guide, the video can be found at the following link: <https://youtu.be/X-tMvnK7vZw>.

2 UTILITIES

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 weekly updates to the schedule. Conduct detailed utility coordination meetings prior to each construction phase to coordinate all requirements and schedules, 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 with 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. Obtain written acceptance from the utility owner for work performed by Contractor. The Contractor shall provide the utility owner written notice at least thirty days immediately prior to each utility work element expected to be coordinated with construction.

Project Limits – All Utility Owners

Prior to Excavating, the Contractor shall identify existing utilities (by potholing if necessary) and protect the existing buried utilities when constructing the project, including sub excavation work and storm sewer installation. If existing utilities are within close proximity horizontally or vertically, the Contractor shall alter the sub excavation work limits, storm sewer design, construction methods or equipment to avoid impacting the existing utilities. For relocations/adjustments that are expected to be done prior to construction, the Contractor shall coordinate with the utility owner regarding the status of the work and receive as-built information from the utility owner upon completion.

The Contractor shall confirm and coordinate with all of the utility owners the status of abandoned facilities located within the project area prior to the Contractor removing abandoned facilities.

The Contractor shall follow the utility standards of the Colorado Department of Transportation (CDOT), as applicable.

All Utility Companies

The Contractor will contact each utility company a minimum of 2 business days, unless otherwise noted, prior to working in the utility company's area so that the utility company can provide an inspector and/or complete any necessary adjustments or relocations.

3 UTILITIES

The Contractor shall be responsible for coordinating the adjustment of utilities on this project. The Contractor shall keep each utility company advised of any work being performed in the vicinity of their facilities, so that each utility company can coordinate any needed locates, adjustments or inspections. Contractor shall provide the appropriate utility company ample notice, but not less than two (2) working days, prior to commencing activities in the vicinity of their facilities. Any additional work performed by the Contractor on behalf of the impacted utility company shall not be paid for by the Colorado Department of Transportation (CDOT) but shall be paid by the utility company requiring the work.

City Of Littleton

The Contractor shall coordinate with the City of Littleton on any town owned facilities. The Contractor shall maintain access to existing sanitary manholes at all times during construction.

The Contractor shall adjust the existing City of Littleton Sanitary manhole at approximately STA 203+80 RT to final grade, as shown in the plans. The adjustment shall be to ¼-in to ½-in below final grade of the roadway surface. All work shall include all items necessary to complete the work. All work will be completed in accordance with City of Littleton Standards. The Contractor shall coordinate inspections with City of Littleton.

Timing: The Contractor shall notify the City of Littleton two weeks before construction operations commence near City of Littleton facilities. The Contractor shall coordinate inspections with the City of Littleton. The Contractor shall provide the utility owner with written notice five days before the required inspections.

Comcast

The Contractor shall notify Comcast two weeks in advance of construction operations commencing near Comcast facilities.

The Contractor shall coordinate with Comcast if any facility is found to be in conflict with the proposed roadway improvements. If a relocation or adjustment is necessary, The Contractor shall coordinate with Comcast to schedule and facilitate the work by Comcast forces at no cost to the project. If no conflict is identified, the Contractor shall protect the facility in place while work is being conducted in the immediate area.

Timing: The Contractor shall notify Comcast two weeks in advance of commencing construction activities in the vicinity of any Comcast facilities. It is expected to take up to one week per location to complete any necessary adjustments at cost to Comcast.

Comcast

The Contractor shall notify Comcast two weeks in advance of construction operations commencing near Comcast facilities.

4 UTILITIES

The Contractor shall coordinate with Comcast if any facility is found to be in conflict with the proposed roadway improvements. If a relocation or adjustment is necessary, The Contractor shall coordinate with Comcast to schedule and facilitate the work by Comcast forces at no cost to the project. If no conflict is identified, the Contractor shall protect the facility in place while work is being conducted in the immediate area.

Timing: The Contractor shall notify Comcast two weeks in advance of commencing construction activities in the vicinity of any Comcast facilities. It is expected to take up to one week per location to complete any necessary adjustments at cost to Comcast.

Denver Water

The Contractor shall notify Denver Water two weeks in advance of construction operations commencing near Denver Water facilities. The Contractor shall maintain access to existing water manholes at all times during construction.

The Contractor shall coordinate with Denver Water for the adjustment of multiple water valves and one manhole, at approximately STA 206+20 RT, STA 206+30 LT, STA 217+20 RT, STA 218+40 LT, STA 218+45 LT, STA 218+55 RT, STA 218+60 RT, STA 205+65 LT, and STA 205+70 RT.

The Contractor shall adjust all manholes 1/4"- 1/2" below final grade. Clean and adjust valve boxes 1/4"- 1/2" below final grade.

The Contractor shall verify clearances for all waterline crossings, meet the requirements specified in the Denver Water Standards, and notify the Engineer and Denver Water of any conflicts.

The Contractor shall coordinate standbys and inspections with Denver Water forces. The Contractor shall provide the utility owner written notice 5 days immediately prior to required stand by requests or inspections.

All adjustments and shall be completed by the contractor, at cost to the project.

Timing: The Contractor shall notify Denver Water two weeks in advance of commencing construction activities in the vicinity of any Denver Water facilities. The Contractor shall provide the utility owner written notice five days immediately prior to each required inspection or standby request.

Lumen

The Contractor shall notify Lumen two weeks in advance of construction operations commencing near Lumen facilities.

The Contractor shall coordinate with Lumen if any facility is found to be in conflict with the proposed roadway improvements. If a relocation or adjustment is necessary, The Contractor shall coordinate with Lumen to schedule and facilitate the work by Lumen forces and at no cost to the project. If no conflict is identified, the Contractor shall protect the facility in place while work is being conducted in the immediate area.

5 UTILITIES

Timing: The Contractor shall provide Lumen written notice 30 days immediately prior to each utility work element expected to be coordinated with construction. It is expected to take up to one week per location to complete any necessary adjustments.

Lumen National

The Contractor shall notify Lumen National one week in advance of construction operations commencing near Lumen facilities.

The Contractor shall coordinate with Lumen National if any facility is found to be in conflict with the proposed roadway improvements. If a relocation or adjustment is necessary, The Contractor shall coordinate with Lumen National to schedule and facilitate the work by Lumen National forces at no cost to the project. If no conflict is identified, the Contractor shall protect the facility in place while work is being conducted in the immediate area.

Timing: The Contractor shall provide Lumen National written notice 30 days immediately prior to each utility work element expected to be coordinated with construction. It is expected to take up to one week per location to complete any necessary adjustments.

MCI/Verizon

The Contractor shall notify MCI/Verizon two weeks in advance of construction operations commencing near MCI/Verizon facilities.

The Contractor shall coordinate with MCI/Verizon if any facility is found to be in conflict with the proposed roadway improvements. If a relocation or adjustment is necessary, The Contractor shall coordinate with MCI/Verizon to schedule and facilitate the work by MCI/Verizon forces at no cost to the project. If no conflict is identified, the Contractor shall protect the facility in place while work is being conducted in the immediate area.

Timing: The Contractor shall provide MCI/Verizon written notice 30 days immediately prior to each utility work element expected to be coordinated with construction. It is expected to take up to one week per location to complete any necessary adjustments.

Xcel Energy – Electric and Gas

The Contractor shall coordinate the gas work performed by Xcel Energy. The Contractor shall contact the Xcel Energy Builder's Call Line at 1-800-628- 2121 or BCLCO@xcelenergy.com to request and process to completion of the required coordination to establish the gas distribution work as shown on the plans.

The Contractor shall coordinate with Xcel Energy if any facility is found to be in conflict with the proposed roadway improvements. If a relocation or adjustment is necessary, The Contractor shall coordinate with Xcel Energy to schedule and facilitate the work by Xcel Energy forces at no cost to the project. If no conflict is identified, the Contractor shall protect the facility in place while work is being conducted in the immediate area.

6 UTILITIES

The Contractor shall coordinate the support of Xcel Energy's gas lines by Xcel forces when they are exposed for work to be conducted beneath them if the length of the exposed pipe exceeds the maximum allowable unsupported pipe span shown in Table 7.6.1 below from Xcel.

Table 7.6.1 – Maximum Unsupported Pipe Span					
COATED STEEL PIPE (see notes 1, 2, & 4)			PLASTIC PIPE (see notes 1, 3, & 4)		
Nominal Pipe Diameter (in)	Pipe Wall Thickness (in)	Allowable Unsupported Length (ft)	Nominal Pipe Diameter (in)	SDR	Allowable Unsupported Length (ft)
3/4	.113	11	1/2 CTS	7.0	4
1	.130	13	3/4 IPS	11.0	5
			1 CTS	11.0	5
1 1/4	.140	14	1 IPS	11.0	5
1-1/2	.145	15	1-1/4 IPS	10.0	6
2	.164	18	1-1/2 IPS	11.0	7
3	.198	22	3 IPS	11.5	9
	.218	21			
4	.198	25	4 IPS	11.5	10
	.237	24			
6	.188	30	6 IPS	11.5	12
	.250	30			
8	.218	35	8 IPS	11.5	14
	.250	35			
10	.218	39			
	.250	39			
12	.250	42			
16	.250	48			
18	.250	51			
20	.250	54			
24	.312	58			
26	.375	61			
30	.375	66			

Timing: The Contractor shall notify Xcel Energy two weeks before construction operations commence near Xcel Energy gas facilities. It is expected to take up to one week per location to complete any necessary adjustments.

PART 2 UTILITY OWNERS SHALL PERFORM THE WORK LISTED BELOW:

Although the Contractor shall provide traffic control for utility work expected to be coordinated with construction, 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 Engineer a Method of Handling Traffic for utility work to be performed outside typical project work hours. The utility owner shall obtain acceptance of the Method of Handling Traffic from the Engineer prior to beginning the utility work to be performed outside typical project work hours.

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UTILITIES

City of Littleton

The City of Littleton shall inspect the work performed by the Contractor listed in Part 1 above.

Timing: The Contractor shall notify the City of Littleton two weeks before construction operations commence near City of Littleton facilities. The Contractor shall coordinate inspections with the City of Littleton. The Contractor shall provide the utility owner with written notice five days before the required inspections.

Comcast

Comcast shall coordinate with the Contractor if any additional facility is found to be in conflict. If a relocation or adjustment is necessary, Comcast shall coordinate with the Contractor to schedule and facilitate the work by Comcast forces.

Timing: The Contractor shall notify Comcast two weeks in advance of commencing construction activities in the vicinity of any Comcast facilities. It is expected to take up to one week per location to complete any necessary adjustments.

Denver Water

Denver Water shall inspect utility work performed by the Contractor listed in Part 1 above.

Timing: The Contractor shall notify Denver Water two weeks in advance of commencing construction activities in the vicinity of any Denver Water facilities. The Contractor shall provide the utility owner written notice five days immediately prior to each required inspection or standby request.

Lumen

Lumen shall coordinate with the Contractor if any additional facility is found to be in conflict. If a relocation or adjustment is necessary, Lumen shall coordinate with the Contractor to schedule and facilitate the work by Lumen forces.

Timing: The Contractor shall notify Lumen two weeks in advance of commencing construction activities in the vicinity of any Lumen facilities. It is expected to take up to one week per location to complete any necessary adjustments.

Lumen National

Lumen National shall coordinate with the Contractor if any additional facility is found to be in conflict. If a relocation or adjustment is necessary, Lumen National shall coordinate with the Contractor to schedule and facilitate the work by Lumen National forces.

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Timing: The Contractor shall notify Lumen National two weeks in advance of commencing construction activities in the vicinity of any Lumen National facilities. It is expected to take up to one week per location to complete any necessary adjustments.

MCI/Verizon

MCI/Verizon shall coordinate with the Contractor if any additional facility is found to be in conflict. If a relocation or adjustment is necessary, MCI/Verizon shall coordinate with the Contractor to schedule and facilitate the work by MCI/Verizon forces.

Timing: The Contractor shall notify MCI/Verizon two weeks in advance of commencing construction activities in the vicinity of any MCI/Verizon facilities. It is expected to take up to one week per location to complete any necessary adjustments.

Xcel Energy – Electric and Gas

Xcel shall coordinate with the Contractor if any facility is found to be in conflict with the proposed project improvements. If a relocation or adjustment is necessary, Xcel shall coordinate with the Contractor to schedule and facilitate the work by Xcel Energy forces.

Timing: The Contractor shall notify Xcel Energy two weeks in advance of construction operations commencing near Xcel Energy gas facilities. It is expected to take up to one week per location to complete any necessary adjustments.

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 business days, not including the actual day of notice, prior to commencing such operations. The Contractor shall contact Colorado 811 at phone number 811, or co811.org to have locations of Colorado 811-registered lines marked by member companies. All other underground facilities shall be located by contacting the respective owner. Utility service laterals shall be located prior to beginning excavation or grading.

The locations of utility facilities as shown on the plan and profile sheets were obtained from the best available information. No warranty is made for the adequacy or accuracy of subsurface information provided. The Contractor shall cooperate with the utility owners in their relocation operations as provided in subsection 105.11 of the Standard Specifications for Road and Bridge Construction. No guarantee is made that utility conflicts will be resolved prior to construction activities and any delays resulting from utility relocation work shall be dealt with in accordance with subsection 108.08 of the Standard Specifications for Road and Bridge Construction as amended.

The location of utility facilities as shown on the plan and profile sheets, and herein described, were obtained from the best available information.

STANDARD SPECIAL PROVISIONS

Revision Of Sections
101 - Definitions
106 - Control of Materials

Revise Section 101 of the Standard Specifications as follows:

Delete and replace the following definitions in subsection 101.02:

Subcontractor. An individual, firm, corporation, or other legal entity at any tier to whom the Contractor sublets part of the Contract. A subcontractor shall include an individual, firm, corporation, or other legal entity who meets one or both of the following criteria:

- (a) Establishes a fabricating process or facility exclusively for the use of the Project, whether on or off the site of work per 29 CFR 5.2 Site of Work (1)(i)(ii)(iii).
- (b) Performs work that is incorporated within the Project limits.

Supplier: An individual, firm, or corporation who meets all of the following criteria:

- (a) Sells manufactured materials as a broker, distributor, dealer, manufacturer, or wholesaler who may or may not deliver the materials to the site of work.
- (b) The manufacturing of the materials, articles, supplies, or equipment used for the contract that is being supplied shall come from a facility or facilities that:
 - (1) Is not located on, nor does itself constitute, the project or contract's primary construction site or secondary construction site as defined in 29 CFR 5.2; and
 - (2) Either was established before opening of bids on the contract, or is not dedicated exclusively, or nearly so, to the performance of the contract.
- (c) The supplier's only obligations for activity on the contract is the delivery of materials, articles, supplies, or equipment, which may include pickup of the same in addition to, but not exclusive of, delivery, and which may also include activities incidental to such delivery and pickup, such as loading, unloading, or waiting for materials to be loaded or unloaded; and
- (d) If an entity, in addition to being engaged in the activities specified in paragraph (c) of this definition, also engages in other construction, prosecution, completion, or repair on the site of the work, then this entity is not a supplier but a contractor.

Revision Of Sections
101 - Definitions
106 - Control of Materials

Revise Section 106 of the Standard Specifications as follows:

Delete and replace subsection 106.01 with the following:

106.01 Source of Supply and Quality Requirements. All materials used shall meet all quality requirements of the Contract. The Contractor shall comply with the requirements of the special notice to contractors contained in the Department's Field Materials Manual, including notifying the Engineer of the proposed sources of materials at least two weeks before delivery.

When alternative materials are permitted for an item in the Contract, the Contractor shall state at the Pre-construction Conference the material that will be furnished for that item.

Reference in the Contract to a particular product or to the product of a specific manufacturer, followed by the phrase "or approved equal", is intended only to establish a standard of quality, durability, and design, and shall not be construed as limiting competition. Products of other manufacturers will be acceptable provided such products are equal to that specified.

All rental equipment companies and all entities who meet the Supplier definition, as outlined in 101.02, in which the written agreement exceeds \$10,000, shall have the following requirements for the Contract:

- (a) Rental equipment companies and Suppliers shall create an account in the B2GNow software system.
- (b) The Contractor shall submit a completed Form 1425 in the B2GNow software system at such time that the \$10,000 amount is known to be exceeded and/or before the following occurs on the Contract:
 - the Supplier's upper tier begins work, or
 - rental equipment is being used, or
 - incorporating materials into the Contract

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

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- (2) Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material.

Cost of Components for Manufactured Products: In determining whether the cost of components for manufactured products is greater than 55 percent of the total cost of all components, use the following instructions:

- (i) or components purchased by the manufacturer, the acquisition cost, including transportation costs to the place of incorporation into the manufactured product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or
- (ii) or components manufactured by the manufacturer, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (i) of this section, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the manufactured product.

Infrastructure Project: Includes, at a minimum, the structures, facilities, and equipment for, in the United States, roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property. Infrastructure includes facilities that generate, transport, and distribute energy.

Iron or Steel Product: Articles, materials, or supplies that consists wholly or predominantly of iron or steel or a combination of both. Typical iron and steel products subject to Buy America preferences include, but is not limited to, structural and reinforcing steel incorporated into pavements, bridges, and buildings (such as maintenance facilities); steel rail; and other equipment.

Manufactured Product:

- (1) Articles, materials, or supplies that have been:
- i. Processed into a specific form and shape; or
 - ii. Combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.

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- (2) If an item is classified as an iron or steel product, a construction material, or a section 70917(c) material under the definitions set forth in this section, then it is not a manufactured product. However, an article, material, or supply classified as a manufactured product under paragraph (1) of this definition may include components that are construction materials, iron or steel products, or section 70917(c) materials.

Manufacturer: The entity that performs the final manufacturing process that produces a manufactured product.

Predominantly of iron or steel or a combination of both: Means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron or steel components.

Produced in the United States:

- (1) Steel or Iron Products: All manufacturing processes, from the initial melting/smelting stage through the application of coatings, occurred in the United States.
- (2) Manufactured Products:
- i. The product was manufactured in the United States; and
 - ii. The cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard that meets or exceeds this standard has been established under applicable law or regulation for determining the minimum amount of domestic content of the manufactured product.
- (3) Construction materials: All manufacturing processes for the construction material occurred in the United States per 106.11(f) of this specification.

Section 70917(c) Materials: Cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives. See section 70917(c) of the Build America, Buy America Act.

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Delete Section 106.11 of the Standard Specifications and replace with the following:

106.11 Buy America (BA) and Build America, Buy America (BABA) Requirements

- (a) *Contractual Documents.* This specification shall be used in conjunction with the applicable version of the Special Notice to Contractors Section of the CDOT Field Materials Manual (FMM), and the requirements therein, in effect at the time of bidding. The Special Notice to Contractors Section of the FMM, and the requirements therein, shall be considered a contractual document when this specification is included.
- (b) *Categorization of articles, materials, and supplies.*
- (1) An article, material, or supply should only be classified into one of the following categories:
 - i. Iron or steel products;
 - ii. Manufactured products;
 - iii. Construction materials; or
 - iv. Section 70917(c) materials.
 - (2) An article, material, or supply should not be considered to fall into multiple categories. In some cases, an article, material, or supply may not fall under any of the categories listed in paragraph (b)(1) of this section. The classification of an article, material, or supply as falling into one of the categories listed in paragraph (b)(1) must be made based on its status at the time it is brought to the work site for incorporation into an infrastructure project. In general, the work site is the location of the infrastructure project at which the iron, steel, manufactured products, and construction materials will be incorporated.
 - (3) An article, material, or supply incorporated into an infrastructure project must meet the Buy America Preference for only the single category in which it is classified.
- (c) *Steel or Iron Products.* All manufacturing processes, including the application of a coating, for all steel or iron products permanently incorporated in the work shall have occurred in the United States of America. All manufacturing processes include the processes that change the raw ore or scrap metal into a finished steel or iron product.

The Contractor shall obtain and maintain on file Buy America certifications that every process from either the original smelting or melting operation, including

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the application of a coating, performed on steel or iron products either has or has not been carried out in the United States of America. These Buy America certifications apply to every steel and iron product that requires pre-inspection, pretesting, certified test results, or a certificate of compliance. Shipping invoices, bar lists, and mill test reports shall accompany the Buy America certifications. These Buy America certifications shall be obtained from each supplier, distributor, fabricator, and manufacturer that has handled each steel or iron product. These Buy America certifications shall create a chain of custody trail for every supplier, distributor, fabricator, and manufacturer that handled the steel or iron product and shall include certified mill test reports with heat numbers from either the original smelting or melting operation. Prior to the permanent incorporation or payment for the steel or iron products, the Contractor shall also provide a copy of these certifications to the Project Engineer. The Contractor shall allow the State, FHWA, and their representatives access to the Buy America certifications including supporting documentation upon request. The lack of these certifications will be justification for rejection of the steel or iron product.

Before the permanent incorporation into the project and before payment for steel or iron products, the Contractor shall also provide the following for every iron or steel product that is delivered:

- (i) *Contractor Compliance Certification.* The compliance certification document shall certify in writing that the Contractor has received and reviewed the Buy America certifications and supplied them to the Project Engineer; the certification(s) and supporting documentation is on file and complies with the Buy America requirements; and when requested, the Contractor has submitted the required documentation to FHWA or other CDOT representatives.
- (ii) *Monthly Summary of Buy America Certifications.* The Contractor shall also maintain a document that summarizes the date and quantity of all steel and iron material delivered to the project. This summary document shall include the pay item, quantity of material delivered to the project, delivered cost of the pay item, and the quantity of material installed by the monthly progress payment cutoff date. The summary document shall reconcile the pay item for the material delivered to the project to the Buy America certifications. The summary document shall also include the delivered cost of all foreign steel or iron delivered and permanently incorporated into the project, if applicable. The Contractor shall also submit a summary document for each month that no steel or iron products

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are incorporated into or delivered to the project. The Contractor shall submit the summary document to the Engineer by the monthly progress payment cutoff date.

The Contractor shall obtain and maintain on file Buy America certifications that every process from either the original smelting or melting operation, including the application of a coating, performed on steel or iron products either has or has not been carried out in the United States of America. These Buy America certifications apply to every steel and iron product that requires pre-inspection, pretesting, certified test results, or a certificate of compliance. Shipping invoices, bar lists, and mill test reports shall accompany the Buy America certifications. These Buy America certifications shall be obtained from each supplier, distributor, fabricator, and manufacturer that has handled each steel or iron product. These Buy America certifications shall create a chain of custody trail for every supplier, distributor, fabricator, and manufacturer that handled the steel or iron product and shall include certified mill test reports with heat numbers from either the original smelting or melting operation. Prior to the permanent incorporation or payment for the steel or iron products, the Contractor shall also provide a copy of these certifications to the Project Engineer. The Contractor shall allow the State, FHWA, and their representatives access to the Buy America certifications including supporting documentation upon request. The lack of these certifications will be justification for rejection of the steel or iron product.

This requirement will not prevent a minimal use of foreign steel or iron, provided the total cost, including delivery to the project, of all such steel and iron products does not exceed 1/10 of one percent (i.e., 0.1%) of the total contract cost or \$2,500, whichever is greater. When there is foreign steel or iron permanently incorporated into the project, the Contractor shall provide documentation of the project delivered cost of that foreign steel or iron to the Project Engineer.

- (d) *Manufactured Products.* The FHWA's 1983 Buy America Final Rule, (see <https://www.fhwa.dot.gov/construction/contracts/831125.cfm>) waive the application of Build America, Buy America requirements for manufactured products that do not include steel and iron components. However, Buy America requirements apply to steel or iron components of manufactured products (i.e. steel wire mesh or steel reinforcing components of precast reinforced concrete products).

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- (e) *Glass Beads for Pavement Marking.* All post-consumer and industrial glass beads for pavement marking shall have been manufactured from North American glass waste streams in the United States of America. The bead manufacturer shall submit a COC in accordance with subsection 106.12 confirming that North American glass waste streams were used in the manufacture of the glass beads.
- (f) *Construction Materials.* Build America, Buy America (BABA) requirements apply to the following construction materials incorporated into infrastructure projects. Each listed construction material is followed by material-specific manufacturing process criteria that is necessary to be considered “produced in the United States.”
1. Non-ferrous metals. All manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States;
 2. Plastic and polymer-based products (including polyvinylchloride [PVC], composite building materials, and polymers used in fiber optic cables). All manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or, where applicable, constituent composite materials, until the item is in its final form, occurred in the United States;
 3. Glass (including optic glass). All manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States. See section 106.11(d) of the CDOT Specifications for additional requirements related to glass beads for pavement marking;
 4. Fiber optic cable (including drop cable). All manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic and polymer-based products, or any others;
 5. Optical fiber. All manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States;
 6. Lumber. All manufacturing processes, from initial debarking through treatment and planing, occurred in the United States;
 7. Engineered wood. All manufacturing processes from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States; and
 8. Drywall. All manufacturing processes, from initial blending of mined or

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synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.

Except as specifically provided, only a single standard under paragraph (f) of this section should be applied to a single construction material.

Before the permanent incorporation into the project and before payment for all eligible construction materials, the Contractor shall obtain a certification from each supplier, distributor, fabricator, and manufacturer that has handled the construction material and submit it to the Project Engineer. This certification shall identify that every material-specific manufacturing process as listed above either has or has not been carried out in the United States of America and shall attest specifically to Build America, Buy America compliance.

In the case that eligible construction materials are permanently incorporated into the project, the Contractor shall maintain and submit on a monthly basis, CDOT Form #1600, Contractor's Certificate of Compliance summarizing the Item Description, CDOT Bid Item Number, Manufacturer Name, Date, and Quantity Received, Date and Quantity Installed, Bid Item Unit, and delivered cost of all eligible construction materials. The completed Form #1600(s) shall be kept in the project files and shall be submitted as part of the material final documentation package.

In the case that no eligible construction materials are permanently incorporated into the project, the Contractor shall maintain and submit on a monthly basis, CDOT Form #1610, Non-Applicable Projects: Build America, Buy America (BABA), certifying that no construction materials subject to Build America, Buy America requirements as defined in this section will be permanently incorporated into the project. The completed Form #1610(s) shall be kept in the project files and shall be submitted as part of the material final documentation package.

Form #1600 or Form #1610 does not relieve the Contractor of providing the necessary Build America, Buy America supplier certifications prior to permanent incorporation into the project or before payment for the material. The Contractor shall allow the State, FHWA, and their representatives access to the Buy America and Build America, Buy America certifications and supporting documentation upon request. The lack of these certifications will be justification for rejection of the construction material.

- (i) This requirement will not prevent a minimal use of foreign construction

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materials, provided the total cost of non-compliant materials, including delivery to the project, of all such construction materials does not exceed \$1,000,000 or five percent of the total applicable project costs, whichever is lesser. Total applicable project costs are defined as the cost of materials (including the cost of any manufactured products) used in the project that are subject to Buy America and/or Build America, Buy America requirements. When there are foreign construction materials permanently incorporated into the project, the Contractor shall provide documentation of the project delivered cost of the non-compliant materials to the Project Engineer before permanent incorporation or payment. Form #1600 shall be used to track the total applicable project cost of all materials subject to Buy America and/or Build America, Buy America requirements. The foreign construction material minimal use threshold percentage of five percent shall not be exceeded in any given month.

- (g) Section 70917(c) materials including cement and cementitious materials; aggregates such as stone, sand, or gravel; and aggregate binding agents or additives are not subject to Build America, Buy America requirements.
- (h) *Project Level Waivers.* The Federal Highway Administration is responsible for processing and approving all waivers, including waivers requested by recipients and on behalf of subrecipients. More information on Buy America waivers can be found in the Field Materials Manual Special Notice to Contractors.

If a Contractor desires to pursue a waiver they shall notify the CDOT Project Engineer in writing who will then submit it to the CDOT Materials & Geotechnical Services Unit, Pavement Design and Documentation Services Program. The Pavement Design and Documentation Services Program will review it and forward it to the FHWA Division Office for consideration.

A Contractor's decision to pursue any waivers on the project shall not waive or otherwise nullify any provisions of the Contract. In addition, the time to obtain a waiver shall be considered a non-excusable, non-compensable delay and Liquidated Damages (per Subsection 108.09) will be enforced should the Contract Time (original or as amended) expire due to the approval or non-approval of a waiver.

The Contractor will not be entitled to an extension of contract time due to the approval or non-approval of a waiver and no such claim will be considered.

**Revision of Section 105
Control Of Work**

Revise Section 105 of the Standard Specifications as follows:

Revise Paragraphs 4, 5 and 6 of Subsection 105.20 as follows:

If damage occurs to an existing structure through improper maintenance per 105.19, the Contractor shall submit a repair procedure to the Engineer to repair the defect(s).

The repair categories and requirements are defined as follows:

- a) *“In-kind” repairs*. In-kind repairs are repairs where the As-Built or Advertised plans are utilized to replace or repair damaged components with identical dimensions and materials used plans and where no plan modifications are made. In-kind repair procedures shall be reviewed and accepted by the Engineer before any repair. The use of approved repair grouts or doweled reinforcing with epoxy adhesive is permitted in in-kind repairs. Doweled reinforcing shall meet or exceed the strength requirements of the original design.
- b) *“Modified repairs”*. Modified repairs are those which deviate in dimensions and/or materials from the As-Built or Advertised plans or where plans are not available. Modified repair procedure submittals shall include calculations, independent design calculations, shop drawings, and/or working drawings per 105.02, and any other applicable section of the specifications for the needed repair. The Contractor’s Engineer shall electronically seal Modified repair submittals.

Damage to new structures or modified structures, shall be repaired per the contract documents.

The Engineer of Record shall be notified and review all corresponding submittals before any repairs.

**REVISION OF SECTIONS OF 105
DISPUTE REVIEW BOARD AND
CLAIMS FOR UNRESOLVED DISPUTES**

processes and constitute remedy- granting provisions pursuant to Colorado Revised Statutes (CRS) which must be exhausted in their entirety.

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 per 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 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 per subsection 105.23, the Contractor shall provide the Region Transportation Director (RTD) 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 seven days.

(b) Claim Package Submission. Within 60 days after submitting the notice of intent to file a claim, the Contractor shall submit to the RTD 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 before final acceptance. At a minimum, the following information shall accompany each claim:

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

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**REVISION OF SECTIONS OF 105
DISPUTE REVIEW BOARD AND
CLAIMS FOR UNRESOLVED DISPUTES**

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 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 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 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 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: _____

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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, if applicable, 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 per subsection 109.04(c) for Contractor owned equipment and based on certified invoice costs for rented equipment.
 - (5) Costs of extended job site overhead (only applies if the dispute also includes a time extension).
 - (6) Salaried employees assigned to the project (only applies if the dispute also includes a time extension or if the dispute required salaried employee(s) to be added to the Project).
 - (7) Claims from subcontractors and suppliers at any level (the same level of detail as specified is required for all such claims).

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- (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 per 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) *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, per 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 90 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

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described in this subsection.

If the Contractor accepts the RTD decision, the provisions of the decision shall be implemented per 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.

- (d) *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 per the following.

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 per 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 per this specification or (2) initiate litigation per subsection 105.24(f).

If the Chief Engineer does not issue a decision as required, the Contractor may immediately initiate litigation per subsection 105.24(f).

For the convenience of the parties to the Contract it is mutually agreed by the parties that any merit binding 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.

- (e) *De Novo Litigation* If the Contractor disagrees with the Chief Engineer's decision, the Contractor may initiate de novo litigation to finally resolve the claim that the Contractor submitted to CDOT. Such litigation shall be strictly limited to those claims that were previously submitted and decided in the contractual dispute and claims processes outlined. This does not preclude the joining in one litigation 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,

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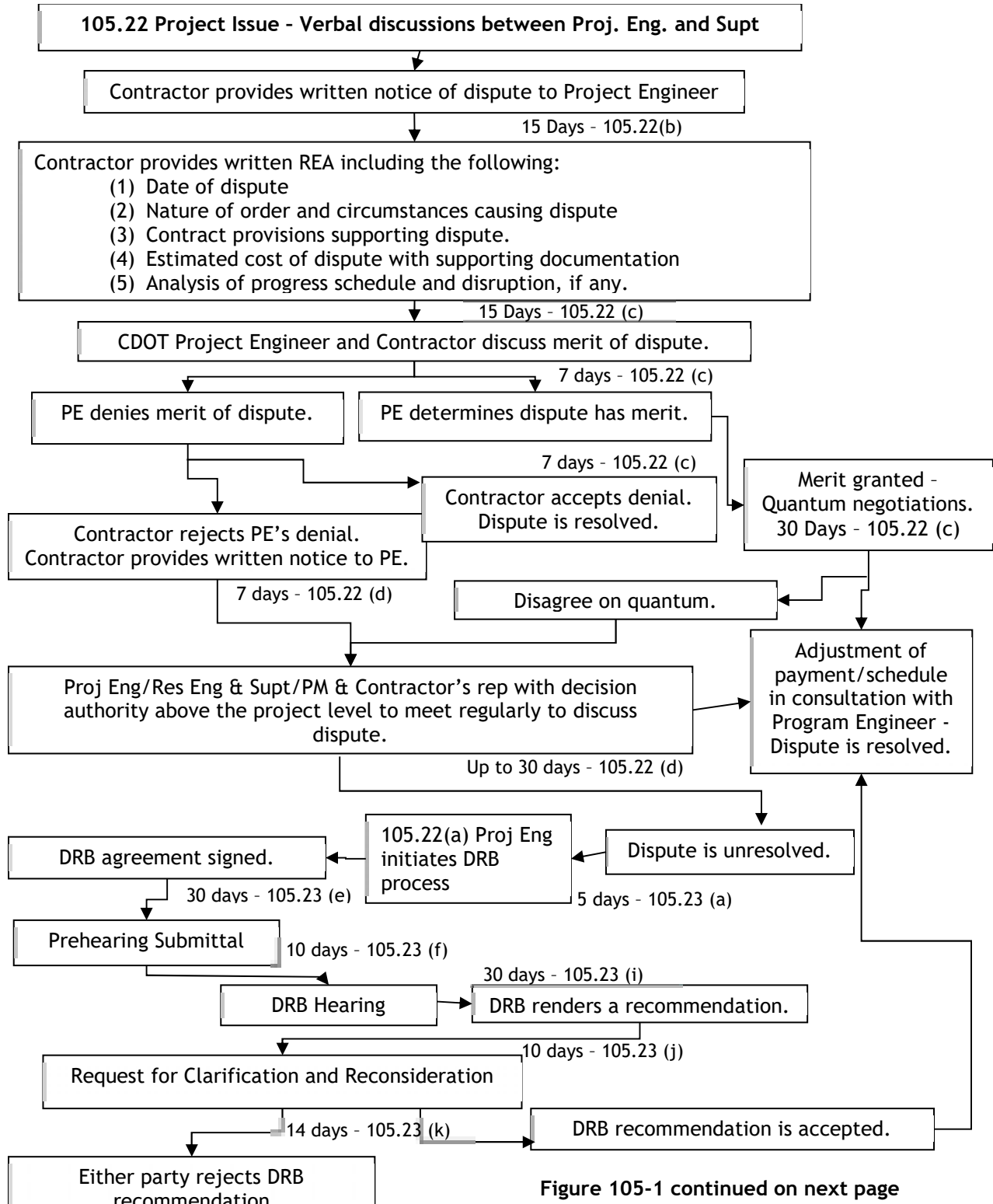
as set forth in this subsection, shall be deemed an offer of settlement pursuant to Colorado Rule of Evidence 408 and therefore inadmissible in any litigation.

If the Contractor selected litigation, then de novo litigation shall proceed per 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.

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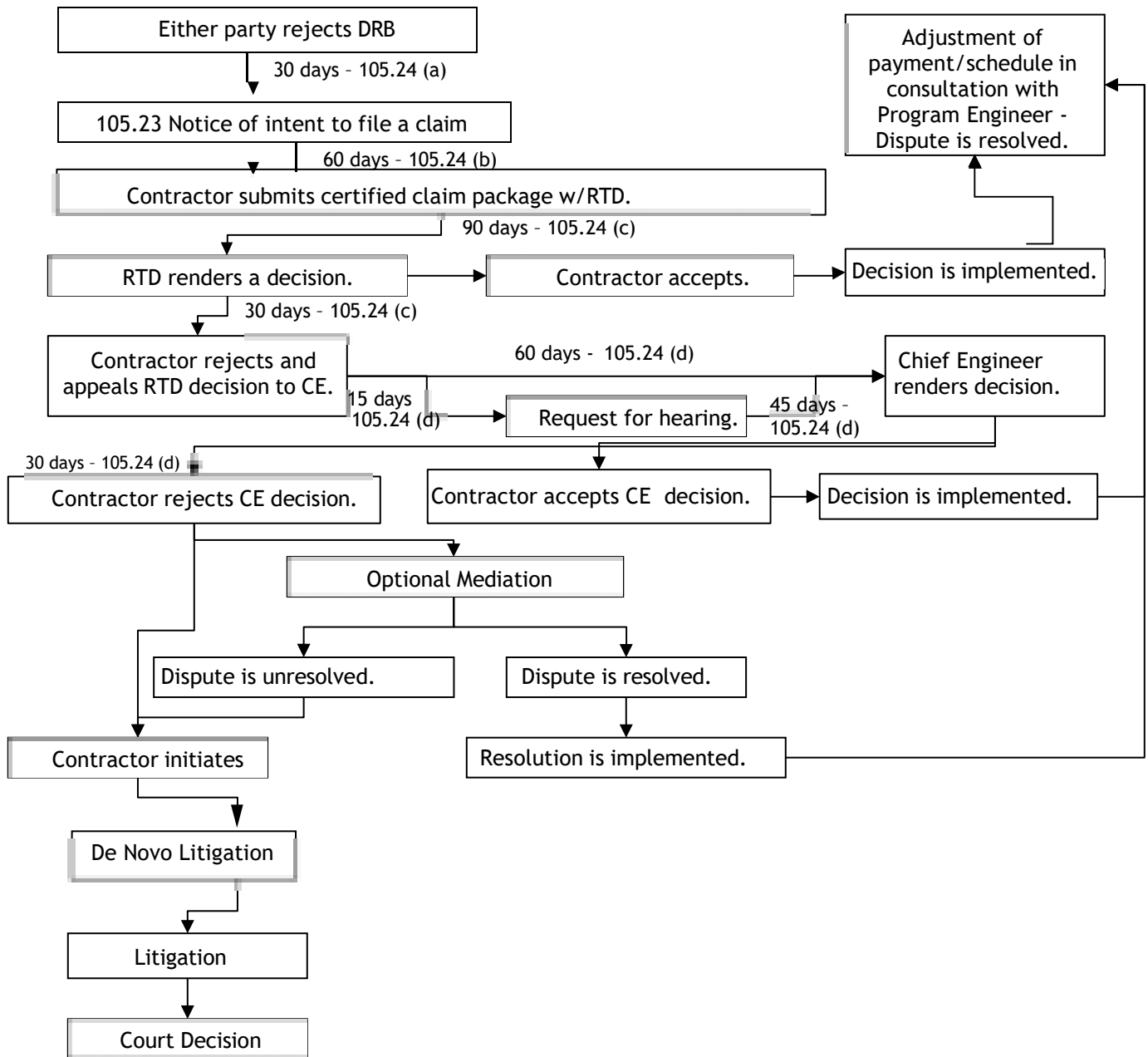
Figure 105-1 DISPUTES AND CLAIMS FLOW CHART

(Note: If an audit is to be performed, durations in this flow chart are extended accordingly)



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Figure 105-1
(continued)



January 8, 2024

1

Revision Of Section 105 E-Signature

Revise Section 105 of the Standard Specifications as follows:

Add the following to Subsection 105.08:

105.08 Document Management and Professional Engineer and Professional Land Surveyor Electronic Seals. Where the specifications require the Contractor to submit or return documents either in writing or the format is not specified, an electronic file is preferred. The Contractor shall submit the schedule native file, video recordings, photographs, image files, and other media formats in their native file formats. When the document format is not specified, the contractor shall submit electronic documents in PDF. When a submittal requires multiple copies, one electronic document shall satisfy the requirement.

Where a signature is needed, an electronic signature is acceptable. An original signature is a signature signed in ink. Where original signatures or original documents are required a scan shall satisfy the requirement.

The Department will issue Contract Modification Orders (Form 90) and Form 105s that authorize additional work for signature via AdobeSign.

CDOT forms and records shall be signed with an electronic signature that includes the signer's name, date, and time the document was signed, in addition to locking the appropriate portions after signing. This guidance does not change the approval process or the content requirements for Buy America, COC, and CTR documentation, rather it allows the documentation to either be all electronically signed or a Scanned Original Wet Signature.

An electronic seal is when a Contractor's Engineer, a Professional Engineer or a Professional Land Surveyor affix their electronic signature and seal to plans or documents prepared under their responsible charge or control. The electronic seal needs to meet State of Colorado Architects, Professional Engineers, and Professional Land Surveyors Rules and Regulations, 4 CCR 730-1 requirements, lock the document after signature and shall have a non-expiring transaction identification number that can be used to view the final locked and signed document online.

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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 per the following:

When the Engineer finds that the materials furnished, the work performed, or the finished product does not conform to 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 per 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, Table 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.

The QL will be calculated for the elements of compressive strength and pavement thickness on a process basis. 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. Changes in mix design, design pavement thickness, or a break of more

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than 120 working days between placements will create a new 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 for the compressive or flexural strength element, when the mix design does not change and there is not a break of more than 120 days between placements.
2. Construction of mainline pavement, including the shoulders if placed with the mainline, is a single process for the thickness element when the planned thickness does not change and there is not a break of more than 120 days between placements.
3. Construction of ramps, acceleration and deceleration lanes and shoulders placed separately are considered separate processes.
4. Changes in paving equipment, changes in placement method, changes in hauling equipment, adjustments to mix designs that do not require a new mix design, changes in weather conditions, and changes in production rate shall not create a new process in the strength or thickness elements.

The Contractor and Engineer will determine element processes and what distinguishes them as processes during the Pre-pave meeting before concrete placement.

- (b) When it is necessary to represent material by one or two tests, each test shall have a PF computed per 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:

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

Where PF = pay factor.

V = V factor from Tables 105-10

T₀ = the individual test value.

TL = 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.

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2. Compute the PF for the process. When the process has been completed, the number of tests (Pn) it includes shall determine the formula to be used to compute the final pay factor per the following:

A. For pavement thickness:

When $3 \leq Pn \leq 5$

If $QL \geq 85$, then $PF = 1.00 + (QL - 85)0.001333$

If $QL < 85$, then $PF = 1.00 + (QL - 85)0.005208$

When $6 \leq Pn \leq 9$

If $QL \geq 90$, then $PF = 1.00 + (QL - 90)0.002000$

If $QL < 90$, then $PF = 1.00 + (QL - 90)0.005682$

When $10 \leq Pn \leq 25$

If $QL \geq 93$, then $PF = 1.00 + (QL - 93)0.002857$

If $QL < 93$, then $PF = 1.00 + (QL - 93)0.006098$

When $Pn \geq 26$

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 compressive strength:

When $3 \leq Pn \leq 5$

If $QL \geq 85$, then $PF = 1.00 + (QL - 85)0.002000$

If $QL < 85$, then $PF = 1.00 + (QL - 85)0.005208$

When $6 \leq Pn \leq 9$

If $QL \geq 90$, then $PF = 1.00 + (QL - 90)0.003000$

If $QL < 90$, then $PF = 1.00 + (QL - 90)0.005682$

When $10 \leq Pn \leq 25$

If $QL \geq 93$, then $PF = 1.00 + (QL - 93)0.004286$

If $QL < 93$, then $PF = 1.00 + (QL - 93)0.006098$

When $Pn \geq 26$

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.

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- (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 per subsection 412.24(a). During production, interim I/DP will be computed for information only. The Pn will change as production continues and test results accumulate. The Pn at the time and 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 that is defective may be isolated and rejected without regard to sampling sequence or location within a process.
- (f) The Contractor may take cores at his own expense and per Colorado Procedure 65 to provide an alternative determination of strength to replace acceptance test results with a compressive strength less than TL. The core compressive strength shall be used for I/DP regardless of the result.

Table 105-10
"V" Factors and Incentive Payments

Element	V factor	Maximum Incentive Payment	Lower Tolerance Limit, TL	Plan Value
Compressive Strength	400 psi	3.00 %	4200 psi	4500 psi
Pavement Thickness	0.4 inch	2.00 %	Plan Thickness -0.4 inch	Plan Thickness

- (g) *Sand Equivalence.* 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

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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.

- (h) *Pavement Surface Texture*. The Contractor shall perform process control (PC) testing for the pavement surface texture depth per CP 77 Method B. All PC results for surface texture depth measurements shall be included in the Contractor's QC notebook. The start of PC testing for texturing depth shall be completed within 24 hours after the first 500 linear feet of textured pavement is placed for each lane. Paving shall not proceed until results are accepted by the Engineer.

Surface texture will be considered acceptable when the average texture depth (ATD) of the panel is greater than 0.05 inch. When the ATD is less than 0.05 inches, the Contractor shall determine the area represented by this test. The area shall be determined by taking additional tests at 15-foot intervals parallel to the centerline in each direction from the affected location until two consecutive tests are found to be within the specified limits. Any surface with unacceptable texturing exceeding 25 linear feet in any lane or shoulder greater than 8 feet wide shall be diamond ground full width of the lane. Upon the second unacceptable test result, the Contractor shall notify the Engineer, in writing, of the action taken to provide an acceptable surface texture.

The Department will perform surface texture acceptance testing per CP 77 Method B. The Department will determine the panel locations where acceptance test measurements are to be taken. One stratified random acceptance test per 2,500 linear feet or fraction thereof in each lane and shoulder wider than 8 feet shall be taken with a minimum of one test per day when the Contractor is paving.

When the Department locates areas of surface texture that do not meet the minimum ATD, the Contractor will be notified, and the Contractor shall identify the limits of the deficient texture depth. After the Engineer approves the limits, the Contractor shall correct the deficient surface texture by diamond grinding full lane width to provide an ATD greater than 0.05 inch at no additional cost to the project. The Contractor shall correct surface texture deficiencies before pavement smoothness testing and pavement thickness determinations.

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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 per the following process control and acceptance testing procedures:

(a) *Process Control Testing.* The Contractor shall be responsible for process control testing of all elements listed in Table 106-3. Process control testing shall be performed at the expense of the Contractor. The Contractor shall develop a process control plan (PCP) per the following:

1. Process Control Plan. For each element listed in Table 106-3, the PCP must provide adequate details to ensure that the Contractor will perform process control. The Contractor shall submit the PCP to the Engineer at the Pre-construction Conference. The Contractor shall not start any work on the project until the Engineer has approved the PCP in writing.
 - A. Frequency of Tests or Measurements. The PCP shall indicate a random sampling frequency, which shall be equal to or more frequent than that shown in Table 106-3. The process control tests shall be independent of acceptance tests.
 - B. Test Result Chart. For each process control test result, the appropriate area, volume, and 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 106-3 shall be plotted. The QL shall be calculated per 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, and then thereafter the last five consecutive test results. The area of material represented by the last test result shall correspond to the QL.
2. Point of Sampling. The material for process control testing shall be sampled by the Contractor using CP 61. The location where material samples will be taken shall be indicated in the PCP.
3. Testing Standards. The PCP shall indicate which testing standards will be followed. Acceptable standards are Colorado Procedures, AASHTO and ASTM. The order of precedence is Colorado Procedures, AASHTO procedures and then ASTM procedures.

The compressive strength test for process 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.

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4. Testing Supervisor Qualifications. The person in charge of and responsible for the process control testing shall be identified in the PCP. 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 process control testing shall conform to the standards specified in the test procedures and be in good working order., For projects with greater than 50,000 SY of PCCP or projects that do not have a certified lab within 40 miles of the project limits 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 of 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 the compressive strength of concrete specimens. The machine shall meet the requirements of ASTM C39 and shall have a minimum capacity of 250,000 lbs. The machine shall have a digital monitor capable of displaying load rate and total load. The following or an approved equal by the Region Materials Engineer

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may be used:

- (1) Forney 250 series compression machine with digital monitor.
- (2) Humboldt HCM-2500 series with an i7 Digital Indicator.
- (3) Gilson MC-250 series with a Pro Controller.
- (4) Test Mark Industries CM-2500 series with an i720 Digital Indicator.

Both the Contractor and the Engineer may use this machine for testing concrete specimens. After the machine has been certified and accepted by the Engineer it shall not be moved until all portland cement concrete paving and compressive strength acceptance tests have been completed.

- C. The Contractor shall supply an MIT Scan T2 or MIT Scan T3 and the associated test plates when pavement thickness acceptance is based on magnetic pulse induction (MPI).
7. Reporting and Record Keeping. The Contractor shall report the results of the tests to the Engineer electronically at least once per day.

The Contractor shall assemble a process control (PC) notebook and update it daily. This notebook shall contain all worksheets, test results forms, test results charts and quality level charts for each of the elements listed in Table 106-3. The Contractor shall submit examples of worksheets, test result forms and test results charts per CP 12B as part of the Contractor's Process Control Plan (PCP). The Contractor shall submit the PC notebook electronically to the Engineer for review once a month on the date agreed to at the Pre-construction Conference.

A list of recognized deficiencies will be returned to the Contractor within two workdays 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 that deficiencies are identified, the PC notebook will be submitted for review two weeks after the PC 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 of 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 PCP to address these issues. Once the Engineer has reviewed and approved the revised PCP the estimate may be paid. Upon submittal of the PC notebook for the semi-final estimate, the PC notebook

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shall become the property of the Department. The Contractor shall make provisions such that the Engineer can inspect process control work in progress, including PC notebook, sampling, testing, plants, and the Contractor's testing facilities at any time.

8. **PC Stockpile Management.** For Projects greater than 25,000 SY of PCCP, the contractor shall perform PC Testing for each aggregate source. All aggregates furnished for the project shall conform to the range of tolerances listed in Table 106-2 when compared to the approved mix design gradations. Individual gradation testing shall be at a minimum frequency of 1/day or 1/1,000 tons, whichever is greater, as aggregate is delivered to the batch plant and incorporated into the stockpile. If material does not meet the listed tolerances, the area of the stockpile represented by the sample may be remixed and retested. If material fails to meet the tolerances a second time, it shall be rejected. If multiple batch plants are being utilized, aggregates at each plant shall be tested separately. Testing and Tracking methods shall be included in the Contractor's Process Control Plan.

Table 106-2
Individual Aggregate Gradation Tolerances

Sieve Size	Tolerance (%)
≥No. 4	±6
No.8 - No. 30	±4
No. 50	±3
No. 100	±2
No. 200	±1

9. **Optimized Gradation.** The Contractor shall perform PC testing of the combined aggregate gradation (CAG) when an Optimized Gradation (OG) is used for Class P Concrete. A sample of the combined aggregate from the first 100 cubic yards of concrete shall be tested; then one test per 750 cubic yards shall be performed. The frequency shall be a minimum of one per day if production is less than 750 cubic yards per day.

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

The Contractor's gradation test data will be used to evaluate the gradation optimization based on the mix design optimization.

When the Contractor's gradation test results fail to meet their

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optimization range, the Contractor shall immediately make corrections to bring the aggregate gradation optimization into range 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 optimization range, the Contractor shall immediately suspend production and provide a written corrective plan to the Engineer for approval before resuming production.

Upon being allowed to resume production, the Contractor shall follow the daily sampling frequency. If the next two consecutive gradation tests indicate that they meet the optimization range, the Contractor may continue production. If the first two aggregate samples do not meet the optimization range, production shall be suspended.

Before resuming production, the Contractor shall 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 optimization range is met.

Production can resume if the optimization range is met. Production will continue to be suspended for additional evaluation of stockpiles and aggregate feed rates until gradation sampling and testing indicate the optimization range is met.

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.

10. Aggregate Moisture Content. An aggregate moisture content sample from the first 100 cubic yards of concrete shall be tested; then one test per 750 cubic yards shall be performed. The frequency shall be a minimum of one per day if production is less than 750 cubic yards per day. The moisture content sample maybe the same sample used for gradation PC testing. Moisture content of each aggregate shall be tested per CP 33. As they become available, results shall be immediately input into the batching computer and reflected on batch tickets.

When Recycled Concrete Aggregate (RCA) is used, the moisture content of the RCA shall be at or above the absorption of the RCA. When the moisture content of the RCA is lower than the absorption of the RCA, the Contractor

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shall immediately suspend production and provide a written corrective plan to the Engineer for approval before resuming production

11. Box Test. When the Contractor is using a slipform paver, the Contractor shall perform a Box Test in accordance with CP-63 at the beginning of each day's paving. The Box Test shall show no more than 30 percent surface voids and an edge slump less than 1/4 inch. When the Box Test results fail to meet these requirements, the Contractor shall immediately make corrections and notify the Engineer. After corrective actions have been completed, the Contractor shall perform a Box Test. The Box Test shall show no more than 30 percent surface voids and an edge slump less than 1/4 inch. If two or more consecutive Box Test results fail to meet these requirements, the Contractor shall immediately suspend production and provide a written corrective plan to the Engineer for approval before resuming production.

12. Concrete Test Reports. The Contractor shall distribute electronically to the concrete supplier all compressive- strength PC data for the concrete supplied to the project. The Contractor shall distribute the PC compressive strength data within two business days of the 7-day and 28-day compressive strength testing. The data shall include the compressive strength and batch ticket number at a minimum.

(b) *Acceptance Testing.* Acceptance testing frequencies will follow the Schedule (Owner Acceptance) in the Department's Field Materials Manual. Acceptance sampling and testing procedures will be per 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 process control test. The Engineer will designate the location where samples are to be taken. Samples shall be taken by the Contractor per 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 or magnetic pulse induction (MPI).

Acceptance tests for thickness using MPI shall be the Contractor's process control tests. MPI testing shall be per AASHTO T359.

When compressive strength testing is specified, the Engineer will distribute electronically to the concrete supplier all compressive strength Owner Acceptance (OA) data for the concrete supplied to the project. The Engineer will distribute the OA compressive strength data within two business days of

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the 7-day and 28-day compressive strength testing. The data will include the compressive strength and batch ticket number at a minimum. The Contractor shall not have a valid dispute or claim as a result of any action or inaction by the Department related to the distribution of test results.

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 before 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.

- (c) *Check Testing.* The Contractor and the Engineer shall conduct a check testing program (CTP) before 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 strength testing. Check testing shall be completed before any portland cement concrete pavement (PCCP) is placed. A set of three cylinders will be molded by both the Contractor's 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 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, 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 are 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 process 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

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be continued until the acceptance and process 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 process control and acceptance testing persons to ensure the test results are within the permissible ranges shown in Table 13-1 of CP 13. Check test results shall not be included in process control testing. The Region Materials Engineer shall be called upon to resolve differences if a CTP shows unresolved differences beyond the ranges shown in Table 13-1 of CP 13.

- (d) *Independent Assurance Testing.* The sample for the IAT will be a split sample of the Contractor's process control test. The Department's representative performing verification tests shall also use a split sample of the Contractor's process control test and participate in the IAT.
- (e) *Testing Schedule.* All samples used to determine Incentive or Disincentive payment by quality level formulas per Section 105 will be selected by a stratified random process.

Table 106-3
PC Testing Schedule - Item 412 Portland Cement Concrete Pavement

Element	Minimum Testing Frequency Contractor's Process Control
Aggregate Gradation each source or combined gradation	Minimum of 1/day, then 1 per 2500 cu. yds. When an OG is used, follow 106.06(a) 9
Slump and Air Content	First three loads each day, then as needed for control
Compressive Strength, Slump Air Content, Yield, and Sand Equivalent	Minimum of 1/day, then 1/2500 sq. yds.
Pavement Thickness	Per subsection 412.21
Pull Test Joints	Minimum of six transverse and six longitudinal joint locations for the first 2,500 linear feet, then three transverse and three longitudinal joints thereafter

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Load Transfer Dowel Bar Placement	Per subsection 412.13(b)2
Average Texture 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.
Box Test	Minimum of 1/day when a slipform paver is used at the beginning of each day's paving.
Aggregate Moisture Content	Per subsection 106.06(a) 10

In Subsection 412.05, add the following to the last paragraph:

- (10) When RCA is to be used in the concrete mix the following items shall be included in the contractor's process control plan:
- (a) Type of crusher to be utilized.
 - (b) Method of removing steel and other deleterious materials
 - (c) Method of controlling fines and crusher dust on the RCA
 - (d) Method of monitoring and accommodating variation in absorption capacity
 - (e) Method for measuring and controlling moisture content prior to incorporation into the concrete mix.
 - (f) Method for ensuring stockpiles that are homogeneous when multiple sources of RCA are to be used.

In Subsection 412.24, delete:

"All costs associated with developing correlation curves used to evaluate low flexural strength results per the Contract, or as requested by the Engineer, shall be included in the work. This shall include all materials, forms, testing, equipment and labor."

In Subsection 601.02 Class P, delete:

"(1) The Required Field Flexural Strength shall be 650 psi."

Subsection 601.02 shall include the following:

When an optimized gradation is used for any class of concrete, the Shilstone, Tarantula or Power-45 optimization method shall be used.

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Subsection 601.05 shall include the following:

When on-site generated RCA is to be used, an additional mix design shall be submitted that does not use on-site generated RCA.

**Revision of Section 106
Control of Material**

Revise Section 106 of the Standard Specifications as follows:

Revise Subsection 106.05 (c), first paragraph of the Standard Specifications as shown:

(c) *Check Testing Program (CTP)*. Prior to, or in conjunction with, placing the first 500 tons of asphalt pavement, under the direction of the Engineer, a CTP will be conducted between acceptance testing and process control testing programs. The CTP will consist of testing for asphalt content, theoretical maximum specific gravity, HMA 4.75 mm (#4) sieve, HMA 2.36 mm (#8) sieve, HMA 0.075 mm (#200) sieve, in-place density, and joint density per CP 13. If the Contractor intends to test to determine air voids and VMA, check testing for these tests is recommended. The CTP will be continued until the acceptance and process control tests are within the acceptable limits shown in Table 13-1 of CP 13. **An additional set of split samples from this CTP shall be retained and used in the event of third-party testing per CP-17.** For joint density, the initial check test will be a comparison of the seven cores tested by CDOT and the seven cores tested by the Contractor. These are the cores from the compaction test section used for nuclear gauge calibration and test section payment.

Revision of Section 107 Water Quality Control

Revise Subsection 107.25 of the Standard Specifications as follows:

107.25 Water Quality Control. The project work shall be performed using practices that minimize water pollution during construction. All the practices listed in (b) below shall be followed to minimize the pollution of any state waters, including wetlands.

(a) Definitions.

1. Areas of Disturbance (AD). Locations where any activity has altered the existing soil cover or topography, including vegetative and non-vegetative activities during construction.
2. Limits of Construction (LOC). The project area defined by the Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP). The LOC is typically the same as the construction site boundary or project limits.
3. Discharge of Pollutants. One or more pollutants leaving the LOC or entering state waters or other conveyances.
4. Limits of Disturbed Area (LDA). Proposed limits of ground disturbance as shown on the Plans.
5. Pollutant. Dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal, or agricultural waste, as defined in the Colorado Code of Regulations (CCR) [5 CCR 1002-61, 2(76)].
6. Pollution. Man-made, man-induced, or natural alteration of the physical, chemical, biological, and radiological integrity of water [25-8-103 (16), CRS].
7. State waters. Defined in section 101.
8. Owner. The party that has overall control of the activities and that has funded the implementation of the construction plans and specifications. This is the party with ownership of, a long-term lease of, or easements on the property where the construction activity is occurring (CDOT).
9. Operator. The party that has operational control over day-to-day activities at a project site that are necessary to ensure compliance with the CDPS-SCP. This party is authorized to direct individuals at a site to carry out activities required by the CDPS-SCP (Contractor).
10. Construction Activities Associated with Water Quality. Per the CDPS-SCP, construction activities are defined as ground surface disturbing and associated activities (land disturbance), which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas.

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(b) Construction Requirements.

1. The Contractor shall comply with the “Colorado Water Quality Control Act” (Title 25, article 8, CRS), the “Protection of Fishing Streams” (Title 33, Article 5, CRS), the “Clean Water Act” (33 USC 1344), regulations promulgated, certifications or permits issued, and to the requirements listed below. In the event of conflicts between these requirements and water quality control laws, rules, or regulations of other Federal, or State agencies, the more restrictive laws, rules, or regulations shall apply.
2. If the Contractor determines construction of the project will result in a change to the permitted activities or LDA, the Contractor shall detail the changes in a written report to the Engineer. Within five days after receipt of the report, the Engineer, after coordination with Region Planning and Environmental Manager (RPEM), will approve or reject in writing the request for change, or detail a course of action including revision of existing permits or obtaining new permits.
3. If construction activities result in noncompliance of any permit requirement, the project will be suspended and the permitting agency notified, if required. The project will remain suspended until the Engineer receives written approval by the permitting agency.

The Contractor is legally required to obtain all permits associated with specific activities within, or off the right of way, such as borrow pits, concrete or asphalt plant sites, waste disposal sites, or other facilities. It is the Contractor’s responsibility to obtain these permits. The Contractor shall consult with the Engineer and contact the Colorado Department of Public Health and Environment Water Quality Control Division (CDPHE-WQCD) or other appropriate federal, state, or local agency to determine the need for any permit.

4. The Contractor shall conduct the work in a manner that prevents pollution of any adjacent state waters. Erosion control work shall be performed per Section 208, this subsection, and all other applicable parts of the Contract.
5. Before the Environmental Pre-construction Conference, the SWMP Administrator, identified in subsection 208.03(c), shall identify and describe all potential pollutant sources, including materials and activities, and evaluate them for the potential to contribute pollutants to stormwater discharges associated with construction activities. The list of potential pollutants shall be continuously updated during construction. At a minimum, each of the following shall be evaluated for the potential for contributing pollutants to stormwater discharges and identified in the SWMP, if found to have such potential:
 - (1) All exposed and stored soils.
 - (2) Vehicle tracking of sediments.
 - (3) Management of contaminated soils.
 - (4) Vehicle and equipment maintenance and fueling.
 - (5) Outdoor storage activities (building materials, fertilizers, chemicals, etc.).
 - (6) Significant dust or particle generating processes.

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- (7) Routine maintenance involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.
- (8) On-site waste management practices (waste piles, dumpsters, etc.).
- (9) Dedicated asphalt and concrete batch plants.
- (10) Concrete and masonry equipment wash water, including byproducts from the concrete truck chute and associated fixtures and equipment.
- (11) Concrete and masonry placement and finishing tool cleaning.
- (12) Non-industrial waste sources that may be significant, such as worker trash and portable toilets.
- (13) Loading and unloading operations.
- (14) Reclaimed and potable water used in construction activities, including water used as a dust palliative.
- (15) Other areas or procedures where spills could occur.

The SWMP Administrator shall record the location of potential pollutants on the site map. Descriptions of the potential pollutants shall be added to the SWMP.

At or before the Environmental Pre-construction Conference the Contractor shall submit a Spill Response Plan for any petroleum products, chemicals, solvents, or other hazardous materials in use, or in storage, at the work site. See subsection 208.06(c) for Spill Response Plan requirements. Work shall not be started until the plan has been submitted to and approved by the Engineer.

On-site above ground bulk storage containers with a cumulative storage shell capacity greater than 1,320 U.S. gallons, or storage containers having a “reasonable expectation of an oil discharge” to state waters, are subject to the Spill Prevention, Control and Countermeasure Plan (SPCC) Rule. Oil of any type and in any form is covered, including, but not limited to petroleum; fuel oil; sludge; oil refuse; oil mixed with wastes other than dredged spoil. EPA Region 8 is responsible for administering and enforcing the SPCC plan requirements in Colorado. Before start of work, the Contractor shall submit an SPCC Form that has been approved by the EPA for the project.

- 6. The Contractor shall obtain a Construction Dewatering (CDW) Permit from CDPHE-WQCD anytime uncontaminated groundwater, including groundwater that is commingled with stormwater or surface water, is encountered during construction activities and the groundwater or commingled water needs to be discharged to state waters. If contaminated groundwater is encountered, a Remediation permit may be needed from CDPHE-WQCD per Section 250.

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7. Water from dewatering operations shall not be directly discharged into any state waters, unless allowed by a permit. Water from dewatering shall not be discharged into a ditch unless:

- (1) Written permission is obtained from the owner of the ditch.
- (2) It is covered in the approved CDW or Remediation Permit that allows the discharge.
- (3) A copy of this approval is submitted to the Engineer. A copy of the CDW or Remediation Permit shall be submitted to the Engineer before dewatering operations commence.

Construction Dewatering may be discharged to the ground on projects where CDPHE-WQCD's Low Risk Guidance Document for Discharges of Uncontaminated Groundwater to Land are met. The conditions of this guidance are:

- i. The source of the discharge is solely uncontaminated groundwater or uncontaminated groundwater combined with stormwater and does not contain pollutants in concentrations that exceed water quality standards for groundwater referenced above.
- ii. Discharges from vaults or similar structures shall not be contaminated. Potential sources of contamination include process materials used, stored, or conveyed in
- iii. the structures or introduced surface water runoff from outside environments that may contain oil, grease, and corrosives.
- iv. The groundwater discharge does not leave the LOC where construction is occurring.
- v. Land application is conducted at a rate and location that does not allow for any runoff into state waters or other drainage conveyance systems, including but not limited to streets, curb and gutter, inlets, borrow ditches, open channels, etc.
- vi. Land application is conducted at a rate that does not allow for any ponding of the groundwater on the surface, unless the ponding is a result of implementing control measures that are designed to reduce velocity flow. If the control measures used result in ponding, the land application shall be done in an area with a constructed containment, such as an excavation or berm area with no outfall. The constructed containment shall prevent the discharge of the ponding water offsite as runoff.
- vii. A visible sheen is not evident in the discharge.
- viii. Control measures are implemented to prevent any sediment deposited during land application from being transported by stormwater runoff to surface waters or other conveyances.

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- ix. All control measures used shall be selected, installed, implemented, and maintained according to good engineering, hydrologic, and pollution control practices. The selected control measures shall provide control for all potential pollutant sources associated with the discharge of uncontaminated groundwater to land. The discharge shall be routed in such a way that it will not cause erosion to land surface. Energy dissipation devices designed to protect downstream areas from erosion by reducing the velocity of flow (such as hose attachments, sediment and erosion controls) shall be used when necessary to prevent erosion.

All dewatering operations shall be recorded in the SWMP as follows:

- (1) The source is identified in the SWMP and updated by the SWMP Administrator.
- (2) The SWMP describes and locates the practices implemented at the site to control stormwater pollution from the dewatering of groundwater or stormwater.
- (3) The SWMP describes and locates the practices to be used that will ensure that no groundwater from construction dewatering is discharged from the LOC as surface runoff or to surface waters or storm sewers.
- (4) Groundwater and groundwater combined with stormwater do not contain pollutants in concentrations exceeding the State groundwater standards in Regulations 5 CCR 1002-41 and 42.

If surface waters are diverted around a construction area and no pollutants are introduced during the diversion, a CDW Permit is not required. If the diverted water enters the construction area and contacts pollutant sources (e.g., disturbed soil, concrete washout, etc.), the Contractor shall obtain a CDW Permit for the discharge of this water to state waters or to the ground.

8. At least 15 days before commencing dredging or fill operations in a watercourse, the Contractor shall provide written notification to owners or operators of domestic or public water supply intakes or diversion facilities, if these facilities are within 20 miles downstream from the dredging or fill operations. Notification shall also be given to Owners or operators of other intakes or diversions that are located within five miles downstream from the site of the project. Identities of downstream owners and operators can be obtained from Colorado Division of Water Resources, Office of the State Engineer.
9. Temporary fill into wetlands or streams will not be allowed, except as specified in the Contract and permits. If such work is allowed, upon completion of the work all temporary fills shall be removed in their entirety and disposed of in an upland location outside of flood plains unless otherwise specified in the Contract.
10. Construction operations in waters of the United States as defined in 33 CFR Part 328.3, including wetlands, shall be restricted to areas and activities authorized by the U.S. Army Corps of Engineers as shown in the Contract. Fording waters will be allowed only as authorized by the U.S. Army Corps of Engineers 404 Permit.

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11. Wetland areas outside of the permitted limits of disturbance shall not be used for storage, parking, waste disposal, access, borrow material, or any other construction support activity.
12. Pollutant byproducts of highway construction, such as concrete, asphalt, solids, sludges, pollutants removed in the course of treatment of wastewater, excavation or excess fill material, and material from sediment traps shall be handled, stockpiled, and disposed of in a manner that prevents entry into state waters, including wetlands. Removal of concrete and masonry waste and washout water from mixer trucks, concrete and masonry finishing tools, concrete saw, and all concrete and masonry materials removed in the course of construction operations or cleaning shall be performed in a manner that prevents waste material from entering state waters and shall not leave the site as surface runoff. A minimum of 10 days before the start of the construction activity, the Contractor shall submit in writing a Method Statement for Containing Pollutant Byproducts to the Engineer for approval.

The use of chemicals such as soil stabilizers, dust palliatives, herbicides, growth inhibitors, fertilizers, deicing salts, etc., shall be per the manufacturer's recommended application rates, frequency, and instructions.
13. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with the original manufacturer's label. Materials shall not be stored in a location where they may be carried into state waters at any time.
14. Spill prevention and containment measures conforming to subsection 208.06 shall be used at storage and equipment fueling and servicing areas to prevent the pollution of any state waters, including wetlands. All spills shall be cleaned up immediately after discovery or contained until appropriate cleanup methods can be employed. Manufacturer's recommended methods for spill cleanup shall be followed, along with proper disposal methods. When required by the Colorado Water Quality Control Act, Regulation 5 CCR 1002-61, spills shall be reported to the Engineer and CDPHE-WQCD in writing.
15. The Contractor shall prevent construction activities from causing grass or brush fires.
16. The construction activities shall not impair Indian tribal rights, including, but not limited to, water rights, and treaty fishing and hunting rights.
17. Before start of work, the Contractor shall certify in writing to the Engineer that construction equipment has been cleaned before initial site arrival. Vehicles and equipment shall be free of soil and debris capable of transporting noxious weed seeds or invasive species onto the site. Additional equipment required for construction shall also be certified before being brought onto the project site.
18. Vehicles that have been certified by the Contractor as having been cleaned before arrival on site may be cleaned on site at an approved area where wash water can be properly contained. Vehicles leaving and reentering the project site shall be recertified.

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19. At the end of each day, the Contractor shall collect all trash and dispose of it in appropriate containers.
20. Construction waste that is considered a pollutant or contaminant shall be collected and disposed of in appropriate containers. This material may be stockpiled on the project when it is contained or protected by an appropriate control measure.
21. Contractors are authorized to discharge stormwater associated with construction activity and specified non-stormwater associated with construction activity to state waters.
 - A. Allowable Stormwater Discharges:
 - (1) Stormwater discharges associated with construction activity.
 - (2) Stormwater discharges associated with producing earthen materials, such as soils, sand, and gravel dedicated to providing material to a single contiguous site, or within 1/4 mile of a construction site (i.e., borrow or fill areas).
 - (3) Stormwater discharges associated with dedicated asphalt, concrete batch plants and masonry mixing stations. (Coverage under the CDPS-SCP is not required if alternative coverage has been obtained.)
 - B. Allowable Non-Stormwater Discharges if identified in the SWMP with appropriate control measures:
 - (1) Discharges from uncontaminated springs that do not originate from an area of land disturbance.
 - (2) Discharges to the ground of concrete and masonry washout water associated with the washing of concrete and masonry tools or mixer chutes. Discharges of concrete and masonry washout water shall not leave the site as surface runoff or reach receiving waters.
 - (3) Discharges of landscape irrigation return flow.
 - (4) Discharges to the ground of water used to wash vehicles, equipment, and external buildings. Wash waters with added soaps, solvents, and detergents shall be contained and disposed of properly.
 - (5) Discharges resulting from emergency firefighting activities.

Discharges authorized by the CDPS-SCP shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality.

All construction site wastes shall be properly managed to prevent potential pollution of state waters. The CDPS-SCP does not authorize on-site waste disposal.

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22. The Contractor shall reclaim pollutants that discharge outside of the LOC. If discharging outside CDOT ROW, the Contractor shall coordinate access with the Project Engineer.

(c) *Stormwater Construction Permit.* A Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) will be obtained from CDPHE-WQCD by CDOT. The Contractor and CDOT will be co-permittees. The Contractor shall coordinate with CDOT to become the Operator permittee of the respective CDPS-SCP upon award of the Contract. The Contractor shall provide a copy of CDPS-SCP certification as the Operator to the Engineer before or at the Environmental Pre-construction Conference. No work shall begin until the CDPS-SCP with Owner and Operator has been approved by CDPHE-WQCD. A copy of the CDPS-SCP and permit certification shall be placed in the project SWMP.

The Contractor is legally required to obtain all other permits associated with specific activities within or outside of the right of way, such as borrow pits, concrete or asphalt plant sites, waste disposal sites, or other facilities. Staging areas within a quarter mile, but not within CDOT right of way shall be considered a common plan of development and permits for these facilities require permitting in the Contractor's name as Owner and Operator. These permits include local agency, federal, or other stormwater permits. The Contractor shall consult with the Engineer and contact CDPHE-WQCD or other appropriate federal, state, or local agency to determine the need for any permit.

When a Utility Company has obtained a CDPS-SCP within a CDOT project area, before the Contractor being on-site, the Contractor shall coordinate with the Engineer and the Utility Company to transfer or reassign the permit area within the project's Limits of Construction to the Contractor and CDOT before work commencing. The Contractor shall not commence construction until CDPHE-WQCD issues a new CDPS-SCP identifying the Contractor as the Operator, and the CDPS-SCP is put in the SWMP.

To initiate acceptance of the stormwater construction work (including seeding and planting required for erosion control), the Contractor shall request in writing a Stormwater Completion Walkthrough. The Engineer will set up the walkthrough. It will include the Engineer or designated representative, Superintendent or designated representative, Stormwater Management Plan (SWMP) Administrator, Region Water Pollution Control Manager (RWPCM), Landscape Architect, and CDOT Maintenance. Unsatisfactory and incomplete stormwater and sediment/erosion control work will be identified in this walkthrough and will be summarized by the Engineer in a punch list.

The completed action items associated with the corrective work will be shown as completed on the punch list. Upon completion of all items shown, the Contractor shall notify the Engineer. Upon written agreement that the punch list is completed from the Engineer, the Contractor shall submit the appropriate form to CDPHE-WQCD such that CDOT Maintenance becomes the Operator permittee of the CDPS-SCP.

Until the transfer of the CDPS-SCP has been approved by CDPHE-WQCD, the Contractor shall continue to adhere to all CDPS-SCP requirements. Requirements shall include

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erosion control inspections, control measure installation, control measure maintenance, control measure repair including seeded areas, and temporary control measure removal. All documentation shall be submitted to the Engineer and placed in the SWMP.

All costs associated with the Contractor applying for, holding, and transferring the CDPS-SCP between parties will not be measured and paid for separately, but shall be included in the work per subsection 107.02.

(d) Measurement and Payment.

1. All the work listed in 107.25(b) and 107.25(c), including but not limited to dewatering, erosion control for dewatering, and disposal of water resulting from dewatering operations, including all costs for CDPHE-WQCD concurrences and permits, will not be measured and paid for separately, but shall be included in the work.
2. The Contractor shall be liable for any penalty (including monetary fines) applied to the Department caused by the Contractor's noncompliance with any water quality permit or certification. Monetary fines shall be deducted from any money due to the Contractor. If the monetary fine is in excess of all the money due to the Contractor, then the Contractor shall pay to the Department the amount of such excess.
3. The Contractor will not receive additional compensation, or time extensions, for any disruption of work or loss of time caused by any actions brought against the Contractor for failure to comply with good Engineering, hydrologic and pollution control practices.
4. If a spill occurs as a direct result of the Contractor's actions or negligence, the cleanup of such spill shall be performed by the Contractor at the Contractor's expense.
5. Areas exposed to erosion by fire resulting from the Contractor's operations shall be stabilized per Section 208 by the Contractor and at the Contractor's expense.

**Revision of Section 109
Asphalt Cement Cost Adjustment
(Asphalt Cement Included in the Work)**

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

Delete subsection 109.06 (j) and replace with the following:

- (j) *Asphalt Cement Cost Adjustments.* Contract cost adjustments will be made to reflect increases or decreases in the monthly average price of asphalt cement from the average price for the month preceding the month in which bids were received for the Contract. These cost adjustments are not a change 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 the 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 asphalt cement cost adjustment is accepted by the Contractor, the adjustment will be made in accordance with the following criteria:

Abbreviations and Terms

1. Estimate Price for asphalt (EP) - Average Asphalt Cement price index for the calendar month prior to the calendar month in which the partial estimate pay period ends.
 - A. On the first Monday of each month, the Department determines the EP using price values from the most recent **Poten & Partners Asphalt Weekly** and the **Argus Americas Asphalt Report**. The Department averages values for the following, eliminating the single highest and single lowest values, before averaging.

The high reported selling price (per ton) of typical non-modified paving grades of asphalt from the **Poten and Partners Asphalt Weekly Monitor**.

Colorado

Colorado Springs Area

Montana

Eastern markets

Western markets

Nebraska

Western markets

New Mexico

Northern

Southern

Utah

Salt Lake City area

Wyoming

Northern markets

Southern markets

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Asphalt Cement Cost Adjustment
(Asphalt Cement Included in the Work)**

The high reported selling price (per ton) of typical non-modified paving grades of asphalt from the **Argus Americas Asphalt Report**.

Denver

Kansas City

Omaha

Salt Lake City

Wyoming

This average value is then averaged with values obtained in the same manner for the previous three weekly reports to establish the EP.

B. The EP remains in effect until the first Monday of the following month and is used for regular partial estimates closed before the first Monday of the following month.

(1) Base Price for asphalt (BP) - Average Asphalt Cement price index for the calendar month prior to the calendar month in which bids are opened.

(2) Asphalt cost adjustment (ACCA) - Asphalt Cement Cost Adjustment.
<https://www.codot.gov/business/designsupport/cdot-construction-specifications/2022-construction-specifications/acca>

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 the following two pay items when measured by the ton and asphalt cement is included in the pay items:

Item No.	Item	Pay Unit
403*	Hot Mix Asphalt (Grading __) (Asphalt)	Ton
403	Stone Matrix Asphalt (Grading __) (Asphalt)	Ton

*Hot Mix Asphalt (Patching) is not subject to asphalt cement cost adjustment.

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Asphalt Cement Cost Adjustment
(Asphalt Cement Included in the Work)**

- B. A cost adjustment will be made only when the EP asphalt cement price index varies by more than 10 percent from the BP asphalt cement price index, and only for that portion of the variance in excess of 10 percent. Cost adjustments may be either positive or negative dollar amounts. The maximum allowable monthly and final price adjustment to the Contractor or rebate to The Department is limited to a (EP/BP) ratio of 1.6 and 0.4, respectively.
- C. Asphalt cement 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:

$$ACCA = (EP - 1.10 BP) (PA) (Q)$$

EP less than BP:

$$ACCA = (EP - 0.90 BP) (PA) (Q)$$

Where:

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

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

ACCA = Asphalt Cement Cost Adjustment

PA = Percent of the paving mixture that is asphalt cement. Asphalt Cement content will be determined by the weighted average of all asphalt cement content percentages obtained from the field acceptance tests for that item (Use decimal in formula, e.g.: 0.053). If Reclaimed Asphalt Pavement (RAP), Reclaimed Asphalt Shingles (RAS), or both is used, the percent of Virgin Asphalt Cement added to the mix will be determined by subtracting the percent of asphalt cement in the RAP, RAS, or both from the percent of asphalt cement in the mix as calculated from Revision of Section 401, Reclaimed Asphalt Pavement and Revision of Section 401 Reclaimed Asphalt Shingles.

Q = Pay quantity for all 403 items shown above on the monthly partial pay estimate in Tons.

Example: Bids are opened on July 16. The BP will be the average of the weekly 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 measured from the 21st of January through the 20th of February, and the EP index used to calculate ACCA will be the average of the weekly

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Asphalt Cement Cost Adjustment
(Asphalt Cement Included in the Work)**

prices for January 1 through January 31 as established by CDOT.

- E. Cost adjustment will not be made for the quantity of any item that is left in place at no pay or for material removed and replaced at the Contractor's expense.
- F. Cost adjustments will not be made to items of work added to the Contract by Change Order after the award of the Contract.
- G. The asphalt cement cost adjustment will be the sum of the individual adjustments for each of the pay items shown above. No adjustment will be made for asphalt cement costs on items other than those shown above.
- H. Asphalt cement cost adjustments resulting in an increased payment to the Contractor will be paid for under the planned force account item: Asphalt Cement Cost Adjustment. Asphalt cement cost adjustments resulting in a decreased payment to the Contractor will be deducted from monies owed the Contractor.

Revision of Section 207 Topsoil

Delete Section 207 of the Standard Specifications for this project and replace it with the following:

Description

207.01 This work consists of salvaging topsoil from onsite locations, stockpiling, maintaining, and preparing the subsoils for the placement of the topsoil at locations shown on the plans. It also includes creating seeding media by amending subsoils, and importing offsite topsoil when shown on the plans.

Substitutions from this specification will not be allowed unless submitted in writing to the Engineer and approved by the Region or Headquarters Landscape Architect.

Materials

207.02 General. Topsoil shall be salvaged onsite, imported, or produced as shown on the plans. Topsoil shall be free of refuse and litter along with noxious weed seed and reproductive plant parts, as listed in current State of Colorado A and B Noxious Weed List and local agency weed lists. Topsoil shall not include heavy clay, hard clods, toxic substances, pathogens, or other material, which would be detrimental to growing native vegetation. All required amendments shall be thoroughly incorporated to parent material, onsite. All amendments shall conform to Section 212. Topsoil and parent material shall be free of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension for all material used within the designed clear zone for the project. Topsoil outside of the clear zone may contain rock larger than 4 inches in any dimension. For slopes with no structures being used to protect areas from falling rocks the Contractor shall remove or secure any rocks deemed unstable and could pose a safety hazard.

Topsoil shall be generated from one or more of the following as shown on the plans:

- (a) *Topsoil (Onsite).* Topsoil shall consist of the upper 6-inch layer of the A horizon, as defined by the Soil Science Society of America, or at the depths and locations shown on the Stormwater Management Plan (SWMP). It shall consist of loose friable soil, salvaged from onsite and stockpiled or windrowed. Litter and duff (layer of partially decomposed plant material) shall be collected as part of the salvaging of topsoil unless specified to be removed and hauled offsite on the plans.
- (b) *Topsoil (Wetland).* Wetland topsoil shall consist of moist, organic soil obtained from delineated wetlands, including any existing wetland vegetation and seeds. Wetland topsoil shall be extracted from the project site at locations shown on the plans or as directed, to a minimum depth of 12 inches or at the depths as shown on the plans.

**Revision of Section 207
Topsoil**

- (c) *Seeding Media*. Seeding Media shall consist of one or all of the following approved materials: sub-soil, overburden, or material generated from rock. Contractor shall select onsite or offsite locations to generate material that meet the requirements of Table 207-1. The Contractor shall provide a Certified Test Report (CTR) in accordance with subsection 106.13, excluding lot, heat, and batch confirming that the excavated material conforms to Table 207-1.
- (d) *Topsoil (Offsite)*. The Contractor shall submit a CTR for Topsoil (Offsite) for approval a minimum of 60 days prior to import in accordance with subsection 106.13. The Contractor shall include with the CTR a complete Soil Nutrient Analysis for the properties listed in Table 207-2 from an independent laboratory that participates in the National Association for Proficiency Testing (NAPT). If topsoil nutrient analysis is deficient, an Amendment Protocol shall be submitted by the Contractor for approval. The Amendment Protocol shall contain a complete list of amendments and associated quantities to produce topsoil that conforms to Table 207-2.

The Contractor shall submit a Certificate of Compliance (COC) for Topsoil (Offsite) for approval a minimum of 60 days prior to import that the source has controlled noxious weeds in accordance with the State of Colorado Noxious Weed Act 35-5.5-115.

Revision of Section 207 Topsoil

**Table 207-1
Physical Properties of Seeding Media**

Property	Range	Test
Soil pH (s.u.)	5.6 - 7.5	ASA Mono. #9, Part 2, Method 10-3.2 or TMECC 04.11-A
Soil Electrical Conductivity (EC) (mmhos/cm or ds/m)	< 5.0	ASA Mono. #9, Part 2, Method 10-3.3
Soil SAR (s.u.)	0 - 10	ASA Mono. #9, Part 2, Method 10-3.4
Rock Content (%)	≤ 25	USDA NRCS Rock Fragment Modifier Usage
Trace Contaminants (Arsenic, Cadmium, Copper, Mercury, Selenium, Zinc, Nickel, and Lead)	Meets US EPA, 40 CFR 503 Regulations	TMECC 04.06 or EPA6020/ASA (American Society of Agronomy)
Rock Content (%) greater than 3" diameter	≤ 25	USDA NRCS Rock Fragment Modifier Usage
USDA Soil Texture	No more than 70% clay, silt, and sand by percentage volume of topsoil.	ASA Monograph #9, Part 1, Method 15-4 or ASA 1 43-5
All Particle Sizes	< 6 Inches	
Physical contaminants (man-made inerts) (%)	< 1	TMECC 03.08-C
C:N ratio	<20	TMECC 05.02-A
* Fines % when manufacturing material from rock	>25% material passing through #4 sieve	ASTM D6913

Amendments to the base imported material shall have the quantities of material verified onsite prior to incorporation into parent material, either at the stockpiles or after placement of parent material. Topsoil amended at the stockpiles shall be distributed to the site within seven days. * Substitute this requirement for USDA Soil Texture requirement when project are approved to use material manufactured from native rock material on site.

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**Table 207-2
Topsoil (Offsite) Properties**

Property	Range	Test Methods
Soil pH (s.u)	5.6 - 7.5	ASA Mono. #9, Part 2, Method 10-3.2 or TMECC 04.11-A
Salt by Electrical Conductivity (EC) (mmhos/cm or ds/m)	< 2.0	ASA Mono. #9, Part 2, Method 10-3.3
Soil SAR (s.u.)	0 - 10	ASA Mono. #9, Part 2, Method 10-3.4
Soil OM (%)	3 - 5	Methods of Soil Analysis, Part 3, Method 34
Soil N (NO ₃ -n, ppm)	≥ 20.0	Methods of Soil Analysis, Part 3. Chemical Methods. Ch. 38 Nitrogen - Inorganic Forms
Soil P (ppm)	≥ 13.0	ASA Mono. #9, Part 2, Method 24-5.4 or others as required based on soil pH
Soil K (ppm)	≥ 80	ASA Mono. #9, Part 2, Method 13-3.5
Rock Content (%) greater than 3" diameter	≤ 25	USDA NRCS Rock Fragment Modifier Usage
Bioassay (seedling emergence and relative vigor)	> 80% of control	TMECC 05.05-A or Approved Germination Test
Soil Texture	No more than 70% clay, silt and sand by percentage volume of topsoil	ASA Mono. #9, Part 1, Method 15-4
Physical contaminants (man-made inerts) (%)	< 1	TMECC 03.08-C
Trace Contaminants (Arsenic, Cadmium, Copper, Mercury, Selenium, Zinc, Nickel, and Lead)	Meets US EPA, 40 CFR 503 Regulations	TMECC 04.06 or EPA6020/ASA (American Society of Agronomy)
All Particle Sizes	< 6 Inches	
C:N ratio	<20	TMECC 05.02-A

Revision of Section 207 Topsoil

The Contractor shall utilize a rod penetrometer for determining subgrade soil preparation and determining looseness of soil after ripping. The penetrometer shall have a psi pressure gage, and shall meet the following requirements:

- (1) Steel rod with a minimum diameter of ½ inch with graduations (tick marks) every 6 inches.
- (2) The rod shall be made of stainless steel or other metal that will not bend when weight is applied.
- (3) The end of the rod shall have a 30-degree cone tip.
- (4) The diameter of the cone at its tip shall be no more than 0.1 inch.
- (5) The top of the rod shall be a T-handled configuration.

CONSTRUCTION REQUIREMENTS

207.03 Site Pre-vegetation Conference. Prior to the start of the initial Subgrade Soil Preparation for the project, the Contractor shall request a Site Pre-vegetation Conference. The Engineer will set up the conference and will include: the Engineer or designated representative, the Superintendent or designated representative, the sub-contractor(s) performing the subgrade soil preparation and soil amendments, and the CDOT Landscape Architect representing the Region. Only one meeting is required for the project unless a new sub-contractor is brought on that did not attend the previous meeting.

The Agenda of the Pre-vegetation Conference can be found in Appendix A of the Construction Manual and includes the following:

- (1) Final review of the Topsoil (Offsite) Amendment Protocol
- (2) Review of the Method Statement detailing the equipment which will be used for the subgrade soil preparation operations
- (3) Review of rod penetrometer which will be used to determine subgrade soil preparation of topsoil
- (4) Permanent Stabilization Phasing Plan (identify strategies and site management measures to protect de-compacted, topsoil amended, seeded, and blanketed areas from foot, vehicle loads, and other disturbances).
- (5) Seeding. See subsection 212.03 for submittal requirements.
- (6) Meeting attendee sign-in log

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207.04 Topsoil Stockpiling. Stockpiles of topsoil shall be created as shown on the plans or as approved by the Engineer. All Stockpiles of topsoil which are scheduled to remain in place for 14 days or more shall receive interim stabilization in accordance with subsection 208.04. All topsoil stockpiles shall be identified using white pin flags with "TOPSOIL" printed in black letters and shall have their locations shown on the SWMP Plans. Each individual stockpile shall require at least one flag, and one additional flag for each 10 cubic yards of salvaged topsoil. The contractor shall provide only perimeter flags for stockpile larger than 100 cubic yards with a minimum spacing of 25 feet.

Topsoil may be placed in stockpiles or windrowed at the edge of the disturbance. Windrowed topsoil shall not be used as perimeter erosion control or extensively compacted. When topsoil is windrowed, all stockpile requirements still apply.

(1) Upland Topsoil. If included on the plans, stockpiles shall be treated with herbicide, in accordance with Section 217, or as directed.

(2) Wetland Topsoil. Wetland stockpiles shall not be treated with herbicide. Weeds shall be hand pulled.

Wetland topsoil shall be placed within 24 hours from excavation, unless otherwise approved by the Engineer. Wetland topsoil shall not be stockpiled for more than six months.

207.05 Subgrade Soil Preparation. Before placement of topsoil, the subgrade shall be ripped to a minimum depth of 14 inches. Subgrade shall be mostly dry and friable. Subgrade shall crumble without sticking together, yet not be so dry and hard that it does not break apart easily.

Underground utilities shall be located prior to soil preparation.

Subgrade soil preparation equipment shall meet the requirements for either winged tip or parabolic shanks. Operation shall be performed to fracture the soil uniformly without lifting or furrowing the surface excessively. The Contractor shall submit a method statement for subgrade soil preparation other equipment will be considered.

1. Winged tip shanks (dozer equipment) shall be a minimum of 6 inches wide and have 2 inches of vertical profile change on the blade with a 40 - 60-degree sweep angle.

The Contractor shall calibrate the subgrade soil preparation equipment using a minimum 30 linear feet of the initial pass. The Contractor shall utilize the rod penetrometer to verify that that de-compaction was successfully done. The Contractor shall take penetration measurements every 6 inches across a transect perpendicular to the direction of the tractor and spanning the width of the subgrade soil preparation. Depths of penetration shall confirm that a minimum of 12 inches can be achieved without reaching 300 psi on the rod penetrometer pressure gage (approximately 30 pounds of pressure on the T-handle).

Existing subgrade shall be de-compacted to a depth of 14 inches. If multiple passes are needed, the subsequent passes shall be positioned so that the ripping equipment (subsoilers)

Revision of Section 207 Topsoil

from the previous pass are split by the subsequent pass. Following ripping, the Contractor shall remove all sticks, stones, debris, clods, and all other substances greater than 6 inches in diameter. The Contractor shall restrict motorized vehicle and foot traffic from passing over the ripped area since this would recompact the areas that received subgrade soil preparation.

The first 4 feet from the edge of pavement shall be ripped to a depth of 6 inches. If the project is going to use aggregate base course or recycled asphalt as a shouldering technique, those areas will not require subgrade soil preparation. Depth of soil ripping for the subgrade soil preparation shall be checked with the rod penetrometer.

The Contractor shall verify adequate de-compaction of the entire area to have topsoil placed using a rod penetrometer in the presence of the Engineer. Tests shall be performed at a minimum of ten random locations per each acre as selected by the Engineer. The Test shall verify that a depth of 12 inches of penetration into the soil can be achieved without reaching 300 psi on the rod penetrometer pressure gage (approximately 30 pounds of pressure on the T-handle). If this depth cannot be achieved for 80 percent of the penetrations, the Contractor shall re-rip the area at no additional cost to the Department.

207.06 Placement of Topsoil and Seeding Media. Topsoil and Seeding Media shall be hauled and placed at the locations disturbed and will be re-vegetated or as shown on the plans. The contractor shall place a minimum thickness of 6 inches and should only be handled when it is dry enough to work without damaging soil structure. Topsoil and Seeding Media shall be placed a minimum depth of twelve (12) inches when placed over riprap as required on the plans. No Topsoil or Seeding Media shall be placed below ordinary high water mark except as otherwise specified in bio-stabilization bank treatments.

Salvaged topsoil placement deeper than 6 inches is allowed if additional approved material is on-site.

Contractor shall place topsoil in a method that does not re-compact subgrade material using low ground-contact pressure equipment, or by excavators and/or backhoes operating adjacent to it.

The final grade shall be free of all materials greater than 4 inches in diameter within the designed clear zone for the project. Equipment not required for revegetation work will not be permitted in the areas of placed topsoil.

Soil amendments, seedbed preparation, and permanent stabilization mulching shall be accomplished within four working days of placing the topsoil on the de-compacted civil subgrades. If placed topsoil is not mulched with permanent stabilization mulch within four working days, the Contractor shall complete interim stabilization methods in accordance with subsection 208.04(e), at no additional cost to the Department. Time to perform the work may be extended for delays due to weather.

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Method of Measurement

207.07 Topsoil material will be measured by the actual number of cubic yards of topsoil placed and accepted.

Subgrade soil preparation will be measured by the square yards of subgrade which is ripped and accepted for adequate de-compaction.

Basis of Payment

207.08 The accepted quantities measured will be paid for at the Contract unit price for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

Pay Item	Pay Unit
Topsoil (Onsite)	Cubic Yard
Seeding Media	Cubic Yard
Topsoil (Offsite)	Cubic Yard
Topsoil (Wetland)	Cubic Yard
Subgrade Soil Preparation	Square Yard

Amendments for Topsoil (Onsite) and Seeding Media will be measured and paid for in accordance with Section 212.

Amendments for Topsoil (Offsite) will not be measured and paid for separately, but shall be included in the work.

Noxious Weed Management will be measured and paid for in accordance with Section 217.

Stockpiling or windrowing of topsoil will not be measured and paid for separately, but shall be included in the work.

Testing of Seeding Media and Topsoil (Offsite) will not be measured and paid for separately but shall be included in the work.

Rod penetrometer and associated verification testing of random locations will not be measured and paid for separately, but shall be included in the work.

The Site Pre-vegetation Conference will not be paid for separately, but shall be included in the work.

Additional passes with the ripping equipment to achieve the desired de-compaction will not be measured and paid for separately, but shall be included in the work.

**Revision of Section 207
Topsoil**

Removing of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension for all topsoil and Seeding Media used within the designed clear zone for the project will not be measured and paid for separately, but shall be included in the work.

**Revision of Sections 208, 213, and 216
Construction Permit Water Quality**

Revise Section 208 of the Standard Specifications as follows:

Revise 208.01, in the first and second paragraph as follows:

208.01 This work consists of constructing, installing, maintaining, and removing when required, control measures during the life of the Contract to prevent or minimize erosion, sedimentation, and pollution of any state waters as defined in subsection 101, including wetlands.

Stormwater runoff from all disturbed areas and soil storage areas, must flow to at least one control measure to minimize sediment in the discharge. This shall be accomplished through filtering, settling, or straining. The control measure shall be selected, designed, installed, and adequately sized per good engineering, hydrologic, and pollution control practices. The control measures shall contain or filter flows in order to prevent the bypass of flows without treatment and shall be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions (i.e., sheet or concentrated flow).

The Contractor shall coordinate the construction of temporary control measures with the construction of permanent control measures to assure economical, effective, and continuous erosion and sediment control throughout the construction period.

When a provision of Section 208 or an order by the Engineer requires that an action be immediate or taken immediately, it shall be understood that the Contractor shall at once begin affecting completion of the action and pursue it to completion in a manner acceptable to the Engineer, and per the Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) requirements.

Revise 208.02 (i), first paragraph, as follows:

(i) *Erosion Logs*. Erosion logs, also known as sediment control logs, shall be one of the following types unless otherwise shown on the plans:

Revise 208.02 (k), as follows:

(k) *Concrete Washout Structure*. The Contractor shall construct a washout structure that will contain washout from concrete and masonry placement, construction equipment

**Revision of Sections 208, 213, and 216
Construction Permit Water Quality**

Revise 208.02 (l) 1, as follows:

(l) Prefabricated Concrete Washout Structure. Prefabricated Concrete Washout Structures shall be one of the following types unless otherwise shown on the plans:

1. Prefabricated Concrete Washout Structure (Type 1). Type 1 portable bins shall be used only when specified in the Contract. It shall consist of a watertight multi-use container designed to contain liquid concrete and masonry washout wastewater, solid residual concrete waste from washout operations, and residue from saw cutting, coring, grinding, grooving, and hydro-concrete demolition. Minimum capacity including freeboard shall be 440 gallons. Prefabricated Concrete Washout Structure (Type 2). Type 2 portable bins shall be used only when specified in the Contract. It shall consist of a watertight one-time use container designed to contain liquid concrete washout wastewater, solid residual concrete waste from washout operations, and residue from saw cutting, coring, grinding, grooving, and hydro-concrete demolition. The structure shall have a system to secure to the ground. Minimum capacity including freeboard shall be 50 gallons.

Revise 208.03, in the second paragraph, under the list, as follows:

208.03 Project Review, Schedule, and Erosion Control Management. Before construction, an on-site Environmental Preconstruction conference shall be held. The conference shall be attended by:

- (1) The Engineer.
- (2) The Superintendent.
- (3) The Contractor's Stormwater Management Plan (SWMP) Administrator. The SWMP Administrator is equivalent to the CDPS-SCP Qualified Stormwater Manager.
- (4) Supervisors or Foremen of subcontractors working on the project.
- (5) The Region Water Pollution Control Manager (RWPCM).
- (6) CDOT personnel (e.g., CDOT Landscape Architect) who prepared or reviewed the Stormwater Management Plan (SWMP).

At this conference, the attendees shall discuss the SWMP, CDPS-SCP, sensitive habitats on-site, wetlands, other vegetation to be protected, and the enforcement mechanisms for not meeting the requirements of this specification.

Revise 208.03, in the fifth, sixth and seventh paragraphs, as follows:

The SWMP Administrator shall review existing inlets and culverts to determine if inlet protection is needed due to water flow patterns. Before beginning construction, inlets and culverts needing protection shall be protected and the location of the implemented control measure added to the SWMP Site Map (Site Map).

Revision of Sections 208, 213, and 216 Construction Permit Water Quality

Before construction, the Contractor shall implement appropriate control measures for protection of wetlands, sensitive habitat, and existing vegetation (vegetative buffers) from ground disturbance and other pollutant sources, per the approved project schedule as described in subsection 208.03(b). Upgradient control measures shall be installed immediately adjacent to vegetative buffers.

When additional control measures are required and approved by the Engineer, the Contractor shall implement the additional control measures and the SWMP Administrator shall record and describe them on the Site Map. The approved control measures will be measured and paid for per subsections 208.11 and 208.12.

Revise 208.03, (b), Erosion and Sediment Control Activities, (c) Erosion Control Management, (d) Documentation Available on the Project, and (e) Weekly meetings, as follows:

(b) Erosion and Sediment Control Activities. The erosion and sediment control activities shall be included in the weekly meeting update. The project schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent erosion control features and stabilization. Temporary control measures shall be installed prior to commencing construction activities associated with water quality. The project schedule shall include erosion and sediment control work for haul roads, borrow pits, storage and asphalt or concrete batch sites, and all areas within the LOC. If during construction the Contractor proposes changes that would affect the Contract's control measures, the Contractor shall propose revised control measures to the Engineer for approval in writing. If necessary, the SWMP Administrator shall update proposed sequencing of major activities in the SWMP. Revisions shall not be implemented until the proposed measures have been approved in writing by the Engineer.

(c) Erosion Control Management (ECM). Erosion Control Management for this project shall consist of SWMP administration and assessment of site conditions. All ECM staff shall have working knowledge and experience in construction and shall hold a current Transportation Erosion Control Supervisor Certification (TECS) as provided by the Department. The Superintendent cannot serve in an ECM role. The Erosion Control Inspector (ECI) and the SWMP Administrator may be the same person in projects with not more than 40 acres of disturbed area. The ECI and the SWMP Administrator are equivalent to the CDPS-SCP Qualified Stormwater Manager.

ECM staff shall implement and maintain control measures in effective operating condition. At any time, regardless of the inspection schedule, CDOT or the Contractor shall identify control measures requiring corrective action. Identified noncompliance shall be corrected immediately, but no later than 2 calendar days from the time of observation. Discharges outside of the LOC or spills occurring within the project shall be addressed upon observation.

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Construction Permit Water Quality**

1. SWMP Administration. The SWMP Administrator shall maintain the SWMP. Record the name of the SWMP Administrator on the SWMP. The SWMP Administrator shall have full responsibility to maintain and update the SWMP and identify to the Superintendent critical action items needed to conform to the CDPS-SCP as follows:
 - A. Complete the SWMP as described in subsection 208.03(d). Initial and date changes to the SWMP.
 - B. Participate in the Environmental Pre-construction Conference.
 - C. Attend weekly meetings.
 - D. Attend all Department-led Monthly Audit Reports (MARs). The Contractor and the Contractor's SWMP Administrator will be notified a minimum of five days in advance of each MAR.
 - E. Coordinate with the Superintendent to implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities.
 - F. Coordinate with the Superintendent to ensure that all labor, material, and equipment needed to install, maintain, and remove control measures are available as needed.
 - G. During construction, update the Site Map to reflect current site conditions, initial, date, and describe changes. Site Maps shall include, at a minimum, the following:
 - (1) Limits of Construction (LOC).
 - (2) Areas of Disturbance (AD), including areas of borrow and fill.
 - (3) Limits of Disturbed Area (LDA).
 - (4) Areas used for storage of construction materials, equipment, soils, or wastes.
 - (5) Location of dedicated asphalt, concrete batch plants, and masonry mixing machines.
 - (6) Location of field offices and staging areas.
 - (7) Location of work access routes during construction.
 - (8) Location of waste storage areas, including areas for liquid, concrete, masonry, and asphalt.
 - (9) Location of daily, temporary, and permanent stabilization.
 - (10) Location of outfalls.
 - (11) Flow arrows that depict stormwater flow directions on-site and runoff direction.
 - (12) Location of structural and non-structural control measures.
 - (13) Location of springs, streams, wetlands, diversions, and other state waters, within or bordering the site, including areas that require pre-existing vegetation be maintained within 50 horizontal feet of a receiving water, unless infeasible.
 - (14) Location of stream crossings located within the LOC.

**Revision of Sections 208, 213, and 216
Construction Permit Water Quality**

- (15) A clear and legible map legend or control measure key with symbology that applies uniformly across all Site Maps.
- (16) Protected trees, shrubs, mature vegetation, and cultural resources.
- (17) Locations of pumped stormwater including intake and discharge points.
- (18) Locations of dewatering activities covered under the CDPs-SCP, low risk guidance, or other dewatering permit.
- H. The SWMP shall reflect the site conditions and shall be amended to reflect control measures, including the following:
 - (1) A change in design, construction, operation, or maintenance of the site that would require the implementation of new or revised control measures; or
 - (2) Changes when the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity.
 - (3) Changes when control measures are no longer necessary and are removed.
- I. Complete vegetative survey transects when required per CDOT Erosion Control and Stormwater Quality Guide.
- J. Start a new Site Map before the current one becomes illegible. All Site Maps shall remain as part of the SWMP.
- K. Document all inspections and corrective actions. Keep the SWMP and documentation on the project site.
- L. Add a narrative when adding or revising control measures in the SWMP, including drawings, dimensions, installation information, materials, implementation processes, control measure-specific inspection expectations, and maintenance requirements of the control measure. Non-standard details must be approved by the Engineer prior to installation.
- M. If using existing topography (landform), vegetation, etc. as a control measure, label it as such on the Site Map; add a narrative as to when, where, why, and how the control measure is being used.
- N. Indicate control measures in use or not in use by recording them on Standard Plans M-208-1 and M-216-1 in the SWMP.
- O. Record on the SWMP the approved Method Statement for Containing Pollutant Byproducts.
- P. Update the potential pollutants list in the SWMP and Spill Response Plan throughout construction.

Revision of Sections 208, 213, and 216 Construction Permit Water Quality

2. Erosion Control Inspector.

One ECI is required for every 40 acres of total disturbed area that is currently receiving daily and temporary stabilization as defined in subsection 208.04(e). An ECI shall not be responsible for more than 40 acres in the project. Accepted permanent stabilization methods as defined in subsection 208.04(e) will not be included in the 40 acres.

Coordinate with the SWMP Administrator on the results of Form 1176 Inspections.

The ECI duties include the following inspection responsibilities:

A. Form 1176 Inspections

The ECI shall conduct Form 1176 Inspections every seven days at a minimum. Form 1176 Inspections shall be conducted before commencing construction activities associated with water quality. Inspection types include:

- (1) Routine Form 1176 Inspection. Conduct with the Superintendent and the Engineer, or their designated representatives, all areas noted in subsection 208.03(c)2.B.

When a MAR is conducted that meets all requirements of subsection 208.03(c)2.B, it may be counted as a Routine Form 1176 Inspection. If any portion of the requirements listed in subsection 208.03(c)2.B are not met by the MAR, a Routine Form 1176 Inspection shall be conducted to address the remaining requirements. The ECI shall document in the Corrective Action Log of the Form 1176 that a MAR occurred.

- (2) Winter Conditions. Routine Form 1176 Inspections are not required at sites when all of the following conditions are met:

- i Construction activities associated with water quality are temporarily halted
- ii Snow cover exists over the entire site for an extended period (i.e. high-elevation winter season)
- iii Melting conditions posing a risk of surface erosion do not exist.

The winter conditions exception is applicable only during the period where melting conditions do not exist and applies to the Form 1176 Inspections. When this inspection exclusion is implemented, the following information must be documented on Form 1176: dates when snow cover existed, date when construction activities ceased, and date melting conditions began.

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B. Form 1176 Inspection Points

(1) Form 1176 Inspections and post-storm inspections shall include inspection of the following areas for evidence of, or the potential for, pollutants leaving the LOC, entering the stormwater drainage system, or discharging to state waters:

- i Construction site perimeter.
- ii All disturbed areas, including areas that are temporarily stabilized.
- iii Designated haul routes.
- iv Material and waste storage areas exposed to precipitation.
- v Locations where stormwater has the potential to discharge offsite.
- vi Locations where vehicles exit the site.
- vii Locations of pumped stormwater, including all intake and discharge points.
- viii Staging Areas.

(2) While inspecting, evaluate and document on the Form 1176:

- i Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.
- ii Determine if there are new potential sources of pollutants.
- iii Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.
- iv Identify all areas of non-compliance with the CDPS-SCP requirements and, if necessary, implement corrective action per the CDPS-SCP.
- v When pumped stormwater discharges offsite, assess the adequacy of control measures for pumped stormwater (for example, sediment plume, suspended solids, unusual color, decreased clarity, presence of odor or foam, or other evidence of pollutants).

C. Inspection Documentation

Form 1176 (Stormwater Field Inspection Report - Active Construction) shall be used for all Form 1176 Inspections. The ECI shall fill out the Form 1176 in full.

During inspection, the ECI shall note any findings on the Form 1176's Corrective Action Log. The Corrective Action Log shall note in the appropriate column: findings, location, control measure being assessed, finding type (additional, repair, or remove), and a description of the corrective action needed. When additional line items for multiple findings are needed, print out additional Correction Actions Logs from the Form 1176.

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Any finding not completed from the previous Form 1176 Inspection shall be noted on the current Form 1176 as a current action item.

Compliance Certification on Form 1176 shall be signed when all corrective actions are noted as corrected or if no findings are noted on the Form 1176 Inspection.

D. Corrective Actions and Interim Responses

When addressing findings noted in section 208.03(c)2.C, note all corrective actions on the Form 1176 Corrective Action Log.

- (1) Corrective Action Response Time. All findings noted on Form 1176 shall be corrected immediately, but no later than 2 calendar days from the time of observation. Findings associated with discharges outside of the LOC or spills occurring within the project shall be addressed immediately upon observation. The ECI shall document the completion date of each corrective action on the Form 1176 Corrective Action Log.
- (2) When a finding cannot be completed immediately within the Corrective Action Response Time of 2 calendar days, an Interim Action Response Plan shall be submitted to the Engineer for each finding under consideration. The Interim Action Response Plan shall include:
 - i Individual finding that is being requested for Interim Action Response
 - ii Reason why each finding cannot be corrected within the Corrective Action Response Time
 - iii Additional control measures to be implemented until each finding is corrected and accepted.
 - iv Milestones to measure progress toward completion and projected corrective completion dates for each finding.

The Department will discuss the Interim Action Response Plan request and may meet with the Superintendent to recommend modifications to the plan. The Engineer will initial and date each line item on the Form 1176's Corrective Action Log when the plan is accepted.

Preparation of Interim Action Response Plan documentation and additional materials, including additional control measures, required to complete the plan shall be at the Contractor's expense. The Corrective Action Response Time in 208.03(c)2.D.1 must be met unless the Interim Action Response Plan is approved.

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E. Noncompliance Reporting. The Contractor shall immediately report the following circumstances to the CDOT Project Engineer. The Department will notify the Contractor if the incident requires reporting to CDPHE-WQCD. When directed by the Department to report, the Contractor shall notify CDPHE-WQCD immediately, but no later than 24 hours from the time of observation. The Contractor shall be responsible for all follow-up correspondence, requirements, and timelines noted within the CDPS-SCP. Reportable circumstances include:

- (1) Noncompliance that may endanger health or the environment, regardless of the cause of the incident.
- (2) Unanticipated bypass that exceeds any effluent limitations per the CDPS-SCP.
- (3) Upset conditions that causes an exceedance of any effluent limitation per the CDPS-SCP.
- (4) Daily maximum violations for any of the pollutants limited by the CDPS-SCP. This includes any toxic pollutant or hazardous substance, or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

F. Upon observation, spills, leaks, or overflows must immediately be contained and disposed of properly. Document spills, leaks, or overflows that result in the discharge of pollutants. The ECI shall record the time and date, weather conditions, reasons for spill, and how it was remediated.

(d) *Documentation Available on the Project.* The following Contract documents and references will be made available for reference at the CDOT field office during construction:

1. SWMP. The Engineer will provide an approved SWMP design at the Pre-construction Conference, which shall remain the property of CDOT. The SWMP shall be available upon request to CDPHE-WQCD, EPA, or CDOT. Before construction, CDOT will provide the documentation for SWMP Tabs (1) through (4), and (18) as listed below. The Contractor shall provide the contents required for items (5) through (17). The SWMP shall be stored in the CDOT field office or at another on-site location approved by CDPHE-WQCD. The SWMP Administrator shall modify and update the SWMP as needed to reflect actual site conditions, within two calendar days of the change. The following Contract documents and reports shall be kept, maintained, and updated in the SWMP under the appropriate items by the SWMP Administrator:

A. (Tab 1) SWMP Plan Sheets - Notes, tabulation, site description. The SWMP site description shall include, at a minimum, the following:

- (1) The nature of the construction activity at the site, including if it is a public emergency related site.
- (2) The proposed schedule for the sequence for major construction activities and the planned implementation of control measures for each phase (clearing, grading, utilities, vertical, etc.).

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- (3) Estimates of the total acreage of the site, and the acreage expected to be disturbed by clearing, excavation, grading, or any other construction activities.
- (4) A description of the erodibility of identified soil types and a summary of any existing data used in the development of the construction site plans or SWMP that describe the soil or existing potential for soil erosion.
- (5) A description of the percent of existing vegetative ground cover relative to the entire site and the method for determining the percentage, per CDOT Erosion Control and Stormwater Quality Guide.
- (6) A description of any allowable non-stormwater discharges at the site, including those being discharged under a CDPHE-WQCD low risk discharge guidance policy.
- (7) A description of areas receiving discharge from the site. Including a description of the immediate source receiving the discharge. If the stormwater discharge is to a municipal separate storm sewer system (MS4), the name of the entity owning the system, the location of the storm sewer discharge, and the ultimate receiving water(s).
- (8) A description of all stream crossings located within the LOC.
- B. (Tab 2) Site Maps and Project Plan Title Sheet.
- C. (Tab 3) Specifications - Standard and project special provisions related to stormwater and erosion control.
- D. (Tab 4) Standard Plans M-208-1 and M-216-1.
- E. (Tab 5) Control Measure Details not in Standard Plan M-208-1 or M-216-1- Non-standard details.
- F. (Tab 6) Weekly meeting sign-in sheet and weekly meeting notes.
- G. (Tab 7) Calendar of Inspections - Calendar of inspections marking when all Form 1176 Inspections and MARs take place.
- H. (Tab 8) Contractor Stormwater Field Inspection Reports (Forms 1176 and 1177).
- I. (Tab 9) All Monthly Audit Reports (MAR) and Form 105(s) relating to Water Quality.
- J. (Tab 10) Description of Inspection and Maintenance Methods - Description of inspection and maintenance methods implemented at the site to maintain all control measures identified in the SWMP and items not addressed in the design.
- K. (Tab 11) Spill Response Plan - Reports of reportable spills submitted to CDPHE-WQCD.
- L. (Tab 12) List and Evaluation of Potential Pollutants - List of potential pollutants as described in subsection 107.25 and approved Method Statement for Containing Pollutant Byproducts.

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- M. (Tab 13) Other Correspondence including agreements with other MS4s, approved deferral request, CDPHE-WQCD audit documentation, Water Quality Permit Transfer to Maintenance Punch List, and other miscellaneous documentation such as documented use agreements for areas outside of the permitted area.
- N. (Tab 14) TECS Certifications of the SWMP Administrator and all ECIs, kept current through the life of the project.
- O. (Tab 15) Environmental Pre-construction Conference - Conference agenda with a certification of understanding of the terms and conditions of the CDPS-SCP and SWMP. All attendees shall sign the certification. A certification shall also be signed by all attendees of meetings held for new subcontractors beginning work on the project that could adversely affect water quality after the Environmental Pre-construction Conference has been held.
- P. (Tab 16) Project Environmental Permits - All project environmental permits and associated applications and certifications, including: CDPS-SCP, USACE 404, temporary stream crossings, dewatering, biological opinions, emergency projects, low risk discharge guidance, and all other permits applicable to the project, including any separate CDPS-SCP obtained by the Contractor for staging areas on private property, asphalt or concrete batch plants.
- Q. (Tab 17) Photographs Documenting Existing Vegetation - Project photographs shall include the following information with the record: project number, project code, name of the person who took the picture, date and time the picture was taken, and location and approximate station number or mile marker. The Contractor shall submit photographs documenting existing vegetation, before construction commencing, on paper with a maximum of four colored images per side of 8 1/2 inch by 11-inch sheet or a digital copy on CD-ROM/Flash Drive (JPG format) as directed by the Engineer.
- R. (Tab 18) Permanent Water Quality Plan Sheets - Plan sheets and specifications for permanent water quality structures and riprap.

The Engineer will incorporate the documents and reports available at the time of award. The Contractor shall provide and insert all other documents and reports as they become available during construction. The SWMP Administrator shall finalize the SWMP for CDOT Maintenance use upon completion of the project. The Engineer shall approve SWMP completeness. Corrections to the SWMP shall be made at the Contractor's expense.

- 2. Reference Materials. The following Reference materials shall be used:
 - (1) CDOT Erosion Control and Stormwater Quality Guide.
 - (2) CDOT Erosion Control and Stormwater Quality Field Guide.

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(e) *Weekly Meetings*: The Engineer, the Superintendent, and the SWMP Administrator shall conduct a weekly meeting with supervisors involved in construction activities associated with water quality. The meeting shall follow an agenda prepared by the Engineer, or a designated representative, and have a sign-in sheet recording the names of all attendees. The SWMP Administrator shall take notes of water quality comments and action items at each weekly meeting and place the agenda and sign-in sheet in the SWMP. At this meeting the following shall be discussed and recorded in Tab 6 of the SWMP:

- (1) Recalcitrant, chronic, and severe MAR findings.
- (2) Unresolved issues from previous Form 1176 Inspections and/or MARs.
- (3) Requirements of the SWMP.
- (4) Problems that may have arisen in implementing the site specific SWMP or maintaining control measures.
- (5) Control measures that are to be installed, removed, modified, or maintained, and associated SWMP modifications.
- (6) Planned activities that will affect stormwater in order to proactively phase control measures.

All subcontractors not in attendance at the Environmental Pre-construction Conference shall be briefed on the project by the Engineer, Superintendent, and the SWMP Administrator before start of work. The SWMP Administrator shall record the names of these subcontractors as an addendum to the list of attendees and add it to the SWMP.

Revise 208.04, in the second, third and fourth paragraphs, and in (b), (c), (e), and (f) third paragraph, as follows:

208.04 Control Measures for Stormwater. The SWMP Administrator shall modify the SWMP to clearly describe and locate all control measures implemented at the site to control potential sediment discharges.

Vehicle tracking pads shall be used at all vehicle and equipment exit points from the site to prevent sediment exiting the LOC of the project site. Access shall be provided only at locations approved by the Engineer. The SWMP Administrator shall record vehicle tracking pad locations on the Site Map.

New inlets and culverts shall be protected during their construction. Appropriate protection of each culvert and inlet shall be installed immediately. When riprap is called for at the outlet of a culvert, it shall be installed within 24 hours of completion of each pipe. The Contractor shall remove sediment, millings, debris, and other pollutants from within the newly constructed drainage system per the CDPS-SCP, before use, at the Contractor's expense. All removed sediment shall be disposed of outside the LOC per all applicable regulations.

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Concrete or masonry products wasted on the ground during construction including, but not limited to, excess concrete removed from forms, spills, slop, and all other unused concrete or masonry are potential pollutants that shall be removed from the site or contained at a preapproved containment area that has been identified in the SWMP. The concrete or masonry shall be picked up and recycled per 6 CCR 1007-2 (CDPHE Regulations Pertaining to Solid Waste Sites and Facilities) at regular intervals, as needed, or as directed by the Engineer. The uses of recycled concrete from permitted recycling facilities shall be per Section 203.

- (b) *Other Agencies.* If CDPHE-WQCD, US Army Corps of Engineers (USACE), the Environmental Protection Agency (EPA), or a Local Agency reviews the project site and requires additional measures to prevent and control erosion, sediment, or pollutants, the Contractor shall cease and desist activities resulting in pollutant discharge and immediately implement these measures. If the work may negatively affect another MS4, the Contractor shall cease and desist activities resulting in the discharge and shall implement appropriate measures to protect the neighboring MS4, including installing additional measures. Implementation of these additional measures will be paid for at contract unit prices.
- (c) *Work Outside the Right of Way.* Disturbed areas, including staging areas, that are outside CDOT ROW and outside easements acquired by CDOT for construction, are the responsibility of the Contractor. These areas shall be subject to a separate CDPS-SCP and all other necessary permits, as they are considered a common plan of development if within a 1/4 mile of the construction site. The Contractor shall acquire these permits and submit copies to the Engineer before any disturbance. These permits shall be acquired, and all erosion and sediment control work performed at the Contractor's expense. These areas are subject to audits by CDOT or any other agency, as agreed upon in writing. A documented use agreement between the permittee and the owner or operator of any control measures located outside of the LOC that are utilized by the permittee's construction site for compliance with the CDPS-SCP, but not under the direct control of the permittee shall be placed in the project's SWMP.
- (e) *Stabilization.* Once earthwork has started, the Contractor shall maintain erosion control measures until permanent stabilization of the area has been completed and accepted. Failure to properly maintain erosion control and stabilization methods, either through improper phasing or sequencing will require the Contractor to repair or replace sections of earthwork at the Contractor's expense. The Contractor shall schedule and implement the following stabilization measures during the course of the project:
1. *Daily Stabilization.* At the end of each working day, the Contractor shall stabilize disturbed areas by surface roughening, vertical tracking, or a combination thereof. Disturbed areas are locations where actions have been taken to alter the existing vegetation or underlying soil of a site, such as clearing, grading, roadbed preparation, soil compaction, and movement and stockpiling of sediment and materials. Designated topsoil distributed on the surface or in stockpiles shall not receive daily stabilization.

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Other stabilization measures may be implemented, as approved. The maximum area of daily stabilization (excluding areas of designated topsoil) shall not exceed 20 acres.

2. **Temporary Stabilization.** Temporary stabilization shall be implemented for earth disturbing activities on any portion of the site where construction activities associated with water quality have permanently or temporarily ceased for more than 14 calendar days. These areas shall be stabilized using one or more of the following methods:
 - A. Application of 1.5 tons per acre of mechanically crimped certified weed free hay or straw in combination with an approved organic mulch tackifier.
 - B. Placement of bonded fiber matrix per Section 213.
 - C. Placement of mulching (hydraulic) wood cellulose fiber mulch with tackifier, per Section 213.
 - D. Application of spray-on mulch blanket per Section 213. Magnesium Chloride, Potassium Chloride, and Sodium Chloride or other salt products shall not be used as a stabilization method.
 - E. Topsoil stockpiles shall receive temporary stabilization unless specified per Section 207 as a different material than the other disturbed areas on-site.
3. **Summer and Winter Stabilization.** Summer and winter stabilization is defined as stabilization during months when seeding is not permitted. As soon as the Contractor knows shutdown is to occur, temporary stabilization shall be applied to the disturbed area. Protection of the temporary stabilization method is required. Reapplication of temporary stabilization may be required as directed.
4. **Permanent Stabilization.** Permanent stabilization is defined as the covering of disturbed areas with topsoil, seeding, mulching with tackifier, soil retention coverings, and such non-erodible methods as riprap, road shouldering, etc., or a combination as required by the Contract. Other permanent stabilization techniques may be proposed by the Contractor, in writing, and shall be used if approved in writing by the Engineer. Permanent stabilization requirements shown on the plans shall be completed within four working days of the placement of the topsoil per Section 207.
5. **Final Stabilization.** Final stabilization is achieved when all ground-disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70 percent of predisturbance levels, or equivalent permanent physical erosion reduction methods have been employed.

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(f) Maintenance.

Second Paragraph:

Maintenance of erosion and sediment control devices shall include replacement of such devices upon the end of their useful service life as recommended by the Contractor and approved by the Engineer. Maintenance of rock check dams and vehicle tracking pads shall be limited to removal and disposal of sediment or addition of aggregate. Damages resulting from failure to maintain control measures shall be repaired at the Contractor's expense.

Third paragraph:

Complete site assessment shall be performed as part of comprehensive inspection and maintenance procedures to assess the adequacy of control measures at the site and the necessity of changes to those control measures to ensure continued effective performance. Where site assessment results in the determination that new or replacement control measures are necessary, the control measures shall be installed to ensure continuous effectiveness. When identified, control measures shall be maintained, added, modified or replaced per 208.03(c)2.D.

Revise 208.05 (e), (g), (l), ((n), (o), and (q) as follows:

208.05 Construction of Control Measures. Control measures shall be constructed per Standard Plans M-208-1 and M-216-1, and with the following:

- (e) Temporary Diversion.* Diversions shall be constructed to the dimensions shown in the Contract and graded to drain to a designated outlet. The berm shall be sufficiently compacted to prevent erosion or failure. If the diversion erodes or fails, it shall be repaired or replaced upon observation at the Contractor's expense.
- (g) Silt Berm.* Before installation of silt berms, the Contractor shall prepare the surface of the areas where the berms are to be installed such that they are free of materials greater than 2 inches in diameter and are suitably smooth for the installation of the silt berms, as approved. Silt berms shall be secured with spikes. The Contractor shall install the silt berm in a manner that will prevent water from going around or under the silt berm. Silt berms shall be installed on top of soil retention blanket or turf reinforcement mat.

the trap and shall be disposed of per subsection 208.04(f).

- (l) Erosion Logs.* Erosion logs, also known as sediment control logs, shall be embedded 2 inches into the soil. Stakes shall be embedded so that the top of the stake does not extend past the top of the erosion log more than 2 inches, at the discretion of the Engineer, a shallower stake depth may be permitted if adverse site conditions are encountered, such as rock or frozen ground.

The Contractor shall maintain the erosion logs during construction to prevent sediment from passing over or under the logs.

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(n) *Concrete Washout Structure.* The concrete washout structure shall meet or exceed the dimensions shown on the plans. Work on this structure shall not begin until the Engineer provides written acceptance of location.

Implement control measures designed for concrete and masonry washout waste. If the bottom of the excavated structure is within 5 feet of anticipated high ground water elevation or the soil does not have adequate buffering capacity to meet water quality standards, an impermeable synthetic liner shall be installed with the minimum properties shown in Table 208-8 or use a prefabricated washout.

Meet the following requirements:

1. The structure shall contain all washout water.
2. Stormwater shall not carry wastes from washout and disposal locations.
3. The structure shall be located a minimum of 50 horizontal feet away from state waters and shall meet all requirements for containment and disposal as defined in subsection 107.25.
4. The structure shall be signed as "Concrete Washout."
5. The structure shall be accessible to appropriate vehicles.
6. Freeboard capacity shall be included in the structure design to reasonably ensure the structure will not overtop during or because of a precipitation event.
7. The Contractor shall prevent tracking of washout material out of the washout structure.
8. Do not add soaps, solvents, detergents, flocculants, and acid to wash water.
9. Surround the structure on three sides by a compacted berm.
10. The structure shall be fenced with orange plastic construction fencing to provide a barrier to construction equipment and to aid in identification of the concrete washout structure.
11. Concrete and masonry waste, liquid and solid, shall not exceed $\frac{2}{3}$ the storage capacity of the washout structure.

(o) *Prefabricated concrete washout structures (Type 1 and Type 2).* Structures and sites shall meet the following requirements:

1. Structure shall contain concrete and masonry washout water. If bins are determined to be leaking, the Contractor shall replace the bin onsite and clean up the spilled material.
2. Structure shall be located a minimum of 50 horizontal feet away from state waters and shall be confined so that no potential pollutants will enter state waters and other sensitive areas as defined in the Contract. Locations shall be as approved by the Engineer. Sign the prefabricated structure as "Concrete Washout". Sign can be on portable bin.
3. The structure shall be accessible to appropriate vehicles.

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4. Washout bins shall be covered with a tarp tied down to the structure or staked to the ground when a storm event is anticipated.
 5. Do not add soaps, solvents, detergents, flocculants, and acid to wash water.
 6. Concrete and masonry waste, liquid and solid, shall not exceed $\frac{2}{3}$ the storage capacity of the washout structure.
 7. Do not move prefabricated structures when they contain liquid, unless otherwise approved.
 8. The concrete washout structure shall be installed and ready for use before concrete placement operations.
 9. Check and maintain washout areas as required. Do not allow on-site permanent disposal of concrete washout waste.
 10. All liquid and solid wastes, including contaminated sediment and soils generated from concrete washout shall be hauled away from the site and disposed of properly at the Contractor's expense.
 11. Delivery to the site shall not occur until written acceptance is provided by the Engineer for both the product and the concrete waste disposal facility.
- (q) *Detention Pond*. Permanent detention ponds shown on the plans may be used as temporary control measures if the following conditions are met:
1. The pond is designated as a construction control measure in the SWMP.
 2. The pond outfall and outlet are designed and implemented for use as a control measure during construction per good engineering, hydrologic, and pollution control practices. The stormwater discharges from the outfall shall not cause degradation or pollution of state waters and shall have control measures as appropriate.
 3. All silt shall be removed, and the pond returned to the design grade and contour, before project acceptance.

Add 208.05 (u), as follows:

- (u) *Topographical (Landform) Controls*. Topographical controls consist of existing or created landforms that minimize sediment from entering or leaving the areas of disturbance. If a landform directs flow of water to a concentrated outfall point, the outfall point shall be protected to prevent erosion and withdraw water from or near the surface.

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Revise 208.06 as follows:

208.06 Materials Handling and Spill Prevention. The SWMP Administrator shall clearly describe and record on the SWMP, all practices implemented at the site to minimize impacts from procedures or significant material that could contribute pollutants to runoff. Areas or procedures where potential spills can occur shall have a Spill Response Plan in place as specified in subsections 107.25(b) or 208.06(c). Any spilled materials shall be cleaned using dry cleanup methods. Construction equipment, fuels, lubricants, and other petroleum distillates shall not be stored or stockpiled within 50 horizontal feet of any state waters or more if the Contractor determines necessary. Equipment fueling and servicing shall occur only within approved designated areas.

- (a) *Bulk Storage Structures.* Bulk storage structures for petroleum products and other chemicals shall have impervious secondary containment or equivalent adequate protection to contain all spills and prevent any spilled material from entering state waters. Secondary containment shall be capable of containing the combined volume of all the storage containers plus at least 10 percent freeboard. For secondary containment that is used and may result in accumulation of stormwater within the containment, a plan shall be implemented to properly manage and dispose of all accumulated stormwater deemed to be contaminated (has an unusual odor or sheen).
- (b) *Lubricant Leaks.* The Contractor shall inspect equipment, vehicles, and repair areas daily to ensure petroleum, oils, and lubricants (POL) are not leaking onto the soil or pavement. Absorbent material or containers approved by the Engineer shall be used to prevent leaking POL from reaching the soil or pavement. The Contractor shall have onsite approved absorbent material or containers of sufficient capacity to contain any POL leak that can reasonably be foreseen. The Contractor shall inform Spill Response Coordinators per the Spill Response Plan if unforeseen leakage is encountered. All materials resulting from POL leakage control and cleanup shall become the property of the Contractor and shall be removed from the site. Control, cleanup, and removal of by-products resulting from POL leaks shall be performed at the Contractor's expense.
- (c) *Spill Response Plan.* A Spill Response Plan shall be developed and implemented to establish operating procedures for handling potential pollutants and preventing spills.
- The Response Plan shall contain the following information:
1. Identification and contact information of each Spill Response Coordinator.
 2. Locations of areas on the project site where equipment fueling and servicing operations are permitted.
 3. Location of clean-up kits.
 4. Quantities of chemicals and locations stored on-site.
 5. Label system for chemicals and Safety Data Sheets (SDS) for products.

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6. Clean-up procedures to be implemented in the event of a spill that does not enter state waters or ground water.
7. Procedures for spills of any size that enter surface waters or ground water or have the potential to do so.
8. A summary of the employee training provided.

Information in items (1) through (8) shall be updated in the SWMP when they change.

(d) Equipment Washing. When washing applicators and containers used for paint, form release oils, curing compounds, or other similar construction materials, the wash water must be directed into a leak-proof container. Liquid and hardened wastes shall be removed from the site and disposed of properly.

Revise 208.07, first paragraph, as follows:

208.07 Stockpile Management. Material stockpiles shall be located 50 horizontal feet away from state waters and shall be confined so that no potential pollutants will enter state waters and other sensitive areas as defined in the Contract. Locations shall be approved by the Engineer.

Revise 208.08 as follows:

208.08 Limits of Disturbed Area (LDA). The Contractor shall limit construction activities to those areas within the LDA shown on the plans and cross-sections. Construction activities, in addition to the Contract work, shall include the on-site parking of vehicles or equipment, on-site staging, on-site batch plants, haul roads or work access, and all other activities that would disturb existing soil conditions. Staging areas within the LDA shall be as approved by the Engineer. Construction activities beyond the LDA due to Contractor negligence shall be restored to the original condition by the Contractor at the Contractor's expense. The SWMP Administrator shall tabulate additional disturbances not identified in the CDPS-SCP application and indicate changes to locations and quantities on the SWMP. The Contractor shall report the changes and additional disturbances to the Engineer, CDPHE-WQCD, and all other involved agencies.

The Contractor shall pursue stabilization of all disturbances to completion.

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Revise 208.09 as follows:

208.09 Regulatory Mechanism for Water Quality The Department will identify and document findings not in compliance with the Water Quality Specifications, as specified in subsection 208.09(a)7, during MARs. The Engineer will immediately notify the Contractor of these findings by issuing Form 105, which will be tracked in ESCAN/CARL software. Failure by the Contractor to clarify a finding location with the Engineer shall not interrupt the timelines noted in subsection 208.09(b).

Timelines noted in subsection 208.09(b) do not indemnify the Contractor from failing to comply with CDPs-SCP timelines for corrective actions. Corrective actions must be addressed in accordance with subsection 208.03(c).

(a) Definitions.

1. **Compliance Assistance.** A low-risk event as determined by the Region Water Pollution Control Manager (RWPCM). Compliance assistance events are not considered Findings and not subject to the Regulatory Mechanism noted in subsection 208.09(b).
2. **Deferment.** A request from the Contractor to the Engineer to delay implementation of corrective actions for Regular Findings pertaining to Water Quality Specifications. Deferments may only be granted due to extraordinary circumstances. However, it is at the Department's discretion to approve or reject these requests.
3. **Finding.** An incident discovered through a MAR, which is noncompliant with the Water Quality Specifications. A Finding will be classified as one of the following:
 - A. **Regular Finding.** A situation upon inspection that is in noncompliance with the Water Quality Specifications.
 - B. **Severe Finding.** A discharge outside the project's Limits of Construction (LOC), subsection 107.25(a), to state waters or to a live inlet where the pollutant cannot be reclaimed.
 - C. **Chronic Finding.** A Chronic Finding is assessed when the same Regular Finding at the same location is documented twice in the last three MARs. Engineer observed findings outside these MARs will not apply.
4. **Inspection Form 105.** The Form 105 issued by the Engineer documenting findings from the MAR.

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Revise 208.09 (b) Liquidated Damages and Stop Work Orders, 2. A. and B., as follows:

2. Severe Finding. In response to a Severe Finding, the Engineer will issue Inspection Form 105 and immediately assess Liquidated Damages of \$3,500 per Severe Finding. Severe Findings shall not be eligible for the seven-day grace period (subsection 208.09(b)1). Liquidated damages will accrue at \$3,500 per Severe Finding per calendar day beginning at 11:59 PM of day the Inspection Form 105 is issued.
 - A. If the Severe Finding is a discharge to state waters, the Contractor shall prevent any further discharge and shall reclaim discharge that has not yet entered state waters. The Contractor shall report the discharge to CDPHE-WQCD per CDPS-SCP requirements.
 - B. If the Severe Finding is a discharge outside the LOC that does not enter state waters, the Contractor shall fully reclaim the discharge before it enters state waters and implement relevant CDPS-SCP noncompliance notification procedures.

Revise 208.09 (e) 1., 2., 3., and 4. as follows:

- (e) Exemptions.* The Engineer will exempt from subsection 208.09(b) situations of Compliance Assistance, Documented Upset Conditions, Documented Reportable Spills and Documented Winter Exemptions. Release from subsection 208.09(b) does not exempt the Contractor from compliance with the CDPS-SCP.
1. Documented Upset Condition. The Contractor shall report, both verbally and in writing, the Upset Condition to CDPHE-WQCD per CDPS-SCP Part II.N and subsection 208.03(c) and provide written documentation to the Engineer. The Engineer will issue a Form 105 and recognize the exemption to the Regulatory Mechanism. The Contractor shall also update the SWMP with the Form 105 and the documented Upset Condition.
 2. Documented Reportable Spills. The Contractor shall report, both verbally and in writing, the Reportable Spill to CDPHE-WQCD per subsection 107.25(b) and provide written documentation to the Engineer. The Engineer will issue a Form 105 and recognize the exemption to the Regulatory Mechanism. The Contractor shall also update the SWMP with the Form 105 and the documented Reportable Spill.
 3. Winter Exemptions. The Contractor is unable to address findings noted on the MAR due to:
 - A. Snow covers the entire site for an extended period,
 - B. No construction activity, and

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C. Melting conditions posing a risk of surface erosion do not exist.

The Contractor shall request a Winter Exemption to the Department. If approved, the Engineer will issue a Form 105 and recognize the exemption to subsection 208.09(b). The Contractor shall also update the SWMP with the Form 105 and the documented Winter Exemption. Liquidated Damages, if assessed, will only accrue up to the point where the Winter Exemptions are approved.

4. Compliance assistance during MARs. The RWPCM will record compliance assistance in ESCAN/CARL software.

Revise 208.10 (c), second paragraph, as follows:

(c) Locations of Temporary Control Measures. The Engineer will identify locations where modification, cleaning, or removal of temporary control measures are required and will provide these in writing to the Contractor. Upon completion of work required, the SWMP Administrator shall modify the SWMP to provide an accurate depiction of control measures to remain on the project site.

Complete and approve all punch list and walkthrough items by the Engineer and CDOT Maintenance.

Revise 208.11 first paragraph, as follows:

208.11 Erosion Control Management will be measured as the actual number of days of ECM work performed, regardless of the number of personnel required for SWMP Administration and Form 1176 Inspection, including Form 1176 Inspections, documentation, meeting participation, SWMP Administration, and the preparation of the SWMP. If the combined hours of SWMP Administration and Form 1176 Inspection is four hours or less in a day, the work will be measured as a half day. If the combined hours of SWMP Administration and Form 1176 Inspection is more than four hours in a day, the work will be measured as one day. Pay the total combined hours of ECM work exceeding eight hours in a day as one day.

Revise 208.12, in the details under the Pay Item table, as follows:

First paragraph:

Payment for Erosion Control Management (ECM) will be full compensation for all labor, materials and equipment necessary for the SWMP Administrator and Erosion Control Inspectors to perform all the work described in this specification. This includes assembling Tabs 5 to 18 in subsection 208.03(d)1 and required updates to the SWMP.

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Fourth paragraph:

Surface roughening and vertical tracking (daily stabilization) will not be measured and paid for separately but shall be included in the work. Payment for each control measure item will be full compensation for all work and materials required to furnish, install, maintain, and remove the control measure when directed.

Ninth paragraph:

Spray-on mulch blankets required by the Contract, including those used in both temporary and final stabilization, will be measured and paid for per Section 213.

Revise Section 213 of the Standard Specifications as follows:

Revise 213.01, in the second paragraph as follows:

213.01 This work consists of mulching the seeded areas, furnishing and placing wood chip mulch in the planting beds and plant saucers, furnishing and applying hydromulch with tackifier on roadway ditches and slopes, furnishing and placing tackifier on mulch or soil on roadway ditches or slopes, and furnishing and installing metal landscape border for the separation of planting beds, per the Contract or as directed. Mulching may be accomplished by the crimping method using straw or hay, by the hydraulic method using wood cellulose fiber mulch, or by other approved methods with approved materials. When a specific mulching method is required, it will be designated in the Contract.

This work includes furnishing and applying spray-on mulch blanket or bonded fiber matrix on top of rock cuts and slopes after seeding or as daily stabilization as shown on the plans or as directed by the Engineer.

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Revise Section 216 of the Standard Specifications as follows:

Revise 216.01 as follows:

216.01 This work consists of furnishing, preparing, applying, placing, and securing soil retention blankets and turf reinforcement mats (TRM) for erosion control on roadway slopes or channels as designated in the Contract.

Revise 216.02 first paragraph, as follows:

216.02 Soil retention covering shall be either a soil retention blanket or a TRM 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:

Revise 216.04, under Slope Application, fifth paragraph, as follows:

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 if possible. Trench depth shall be a minimum of 6 inches unless required by the manufacture to be deeper. 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 secured with staples or earth anchors 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 installed on the slope length at a maximum of 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 the trench and secured with staples or earth anchors. 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.

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Delete Section 212 of the Standard Specifications for this project and replace it with the following:

Description

212.01 This work consists of application of fertilizer, soil amendments, seedbed preparation, and placing seed and sod.

Substitutions from this specification will not be allowed unless submitted in writing to the Engineer and approved by the Region or Headquarters Landscape Architect.

Materials

212.02 Seed, Fertilizers, Soil Conditioners, Mycorrhizae, Elemental Sulfur, and Sod.

(a) *Seed.* Seed shall be delivered to the project site in sealed bags tagged by a registered seed supplier conforming to the requirements of the Colorado Seed Act, CRS 35-27-111(1). Seed used on the project shall not be in the Contractor's possession for more than 30 days from the date of pickup or delivery on the seed vendors packing slip. Bags which have been opened or damaged before Engineer inspection will be rejected. The State required legal tags shall remain on the bag until opened and the seed is placed in either the drill or hydraulic seeders in the presence of the Engineer. The Engineer shall remove all tags after seed has been planted. Each seed tag shall clearly show the following:

- (1) Name and address of the supplier
- (2) Botanical and common name for each species
- (3) Lot numbers
- (4) Percent by weight of inert ingredients
- (5) Guaranteed percentage of purity and germination
- (6) Pounds of Pure Live Seed (PLS) of each seed species
- (7) Total net weight in pounds of PLS in the sealed bag
- (8) Calendar month and year of test date

Seeds shall be free from all noxious weed seeds per Colorado Seed Act (CRS 35-17)

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prohibited noxious weed seed list.

Weed seed content shall not exceed the requirements in part 7.2 of the Colorado Department of Agriculture's Seed Act Rules and Regulations.

Seed which has become wet, moldy, or damaged in transit or in storage will not be accepted.

Seed and seed labels shall conform to all current State regulations and to the testing provisions of the Association of Official Seed Analysis. Computations for quantity of seed required on the project shall include the percent of purity and percent of germination.

The Contractor shall store seed under dry conditions, at temperatures between 35°F to 90°F, under low humidity and out of direct sunlight. The Contractor shall provide the location of where seed is stored and access to stored seed locations to the Engineer. Seed stored by the Contractor for longer than 30 days will be rejected.

- (b) *Organic Fertilizer*. Fertilizer derived directly from plant or animal sources shall conform to Colorado Revised Fertilizer Rules 8 CCR 1202-4. Fertilizer shall be uniform in composition and shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's name, address, and nutrient analysis. Fertilizer bags (containers) which arrive at the project site opened, damaged, or lacking a label will be rejected. The Contractor shall only use bulk shipments such as tote bags or super sacks that have a manufacturer's original label and sealed at the manufacturing facility. Fertilizer which becomes caked or damaged will not be accepted. Fertilizer shall be stored according to manufacturer's recommendations in a dry area where the fertilizer will not be damaged.

Organic fertilizer formulation being submitted for use must be registered with the Colorado Department of Agriculture.

Verification tests may be conducted by CDOT on grab samples of organic fertilizer delivered to the site to determine the reliability of bag label analysis and for ingredients which are injurious to plants. If a product of any supplier is found to consistently deviate from the bag level analysis, the acceptance of that product will be discontinued. Copies of the failing test reports will be furnished to the Colorado State Board of Agriculture for appropriate action under the "Colorado Fertilizer Law".

Fertilizer shall be supplied in one of the following physical forms:

- (1) A dry free-flowing granular fertilizer, suitable for application by agricultural fertilizer spreader.
- (2) A homogeneous pellet, suitable for application by agricultural fertilizer spreader.

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Pellet size shall be 2-3 mm. Smaller may be allowed when Seeding (Native) Hydraulic is shown on the plans.

- (3) A soluble form that will permit complete suspension of insoluble particles in water, suitable for application by power sprayer.

The application rate of the organic fertilizer shall be either as high or low nitrogen (N) fertilizer as shown on the plans.

High N organic fertilizer chemical analysis shall conform to Table 212-1.

**Table 212-1
Chemical Analysis for High N Fertilizer**

Ingredient	Range	Test Method
Nitrogen (N) (%)	6 - 10	AOAC Official Method 993.13 Nitrogen (Total) in Fertilizers Combustion Method
Phosphorus (P) (%)	1 - 8	AOAC Official Method 960.03 Phosphorus (Available) in Fertilizers
Potassium (K) (%)	1 - 8	AOAC Official Method 983.02 Potassium in Fertilizers

Low N organic fertilizer chemical analysis shall conform to Table 212-2.

**Table 212-2
Chemical Analysis for Low N Fertilizer**

Ingredient	Range	Test Method
Nitrogen (N) (%)	2 - 5	AOAC Official Method 993.13 Nitrogen (Total) in Fertilizers Combustion Method
Phosphorus (P) (%)	3 - 8	AOAC Official Method 960.03 Phosphorus (Available) in Fertilizers
Potassium (K) (%)	1 - 8	AOAC Official Method 983.02 Potassium in Fertilizers

Organic fertilizers shall conform to Table 212-3.

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**Table 212-3
Organic Fertilizer Properties**

Criteria	Range
Moisture content by weight	< 6%

(c) *Compost (Mechanically Applied)*. Compost shall be suitable for use in Erosion Log (Type 2) and permanent seeding applications. Compost shall not contain visible refuse, other physical contaminants, or substances considered harmful to plant growth. Compost shall be used per all applicable EPA 40 CFR 503 standards for Class A biosolids including the time and temperature standards. Materials that have been treated with chemical preservatives as a compost feedstock will not be permitted.

The Contractor shall provide material that has been aerobically composted in a commercial facility. Compost shall be from a producer that participates in the United States Composting Council's (USCC) Seal of Testing Assurance (STA) program. The Department will only accept STA approved compost that is tested per the USCC Test Methods for Examining of Composting and Compost (TMECC) manual.

Verification tests may be conducted by CDOT on grab samples of compost delivered to the site to determine the gradation and physical properties. Testing may be done for indication of ingredients which are injurious to plants. Sampling procedures will follow the STA 02.01 Field Sampling of Compost Materials and 02.01-B Selection of Sampling Locations for Windrows and Piles. If a product is found to consistently deviate from the gradation and property analysis, the acceptance of that product will be discontinued. Copies of the failing test reports will be furnished to the USCC.

Compost for permanent seeding soil conditioner locations onsite and application rates shall be as shown on the plans.

Organic matter in compost shall be no more than 2 inches in length.

Compost (Mechanically Applied) for permanent seeding shall meet the gradation and physical properties as shown in Table 212-4 and Table 212-5. The Contractor shall provide a written explanation for compost tested parameters not within the acceptable requirements for review and consideration.

The Contractor shall provide documentation from the composting facility confirming that the material has been tested per USCC TMECC.

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**Table 212-4
Gradation for Permanent Seeding Compost
(Test Method TMECC 02.02-B,
“Sample Sieving for Aggregate Size Classification”)**

Sieve Size	Minimum, Percent Passing	Maximum, Percent Passing
25.0 mm (1")	100	
19.0 mm (3/4")	90	100
6.25 mm (1/4")	70	100

Note: Compost shall be from a producer that participates in the USCC STA program.

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Table 212-5
Properties for Permanent Seeding Compost

Compost Parameters	Reported as	Requirements	Test Method
pH	pH units	6.0 - 8.5	TMECC 04.11-A
Soluble Salts (Electrical Conductivity)	dS/m (mmhos/cm)	< 5.0	TMECC 04.10-A
Moisture Content	%, wet weight basis	25% - 50%	TMECC 03.09-A
Organic Matter Content	%, dry weight basis	20% - 50%	TMECC 05.07-A
Organic Matter Content	pounds per cubic yard	>240	
Carbon to Nitrogen Ratio (C:N)		< 15:1	
Manufactured Inert Contamination (Plastic, concrete, ceramics, metal)	%, dry weight basis	< 1%	TMECC 03.08-A
Stability (respirometry)	mg CO ₂ -C per g TS per day mg CO ₂ -C per g OM per day	8 or below	TMECC 05.08-B
Select Pathogens and weed free	(PASS/FAIL) Limits: Salmonella < 3 MPN/4 grams of TS, or Coliform Bacteria < 1000 MPN/gram	Pass	TMECC 07.01-B Fecal Coliforms, or 07.02 Salmonella
Trace Metals	(PASS/FAIL) Limits (mg kg ⁻¹ , dw basis): Arsenic (As) 41, Cadmium (Cd) 39, Copper (Cu)1500, Lead (Pb) 300, Mercury (Hg) 17, Nickel (Ni) 420, Selenium (Se) 100, Zinc (Zn) 2800	Pass	TMECC 04.06

Use the STA Lab bulk density lb/cu ft as received, multiplied by organic matter % as received, multiplied by 27 to calculate pounds per cubic yard of organic matter.

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1. Compost for Erosion Log (Type 2) shall meet the gradation and physical properties as shown in Table 212-6 and Table 212-7.

**Table 212-6
Gradation for Erosion Log (Type 2) Compost
(Using Test Method TMECC 02.02-B,
“Sample Sieving for Aggregate Size Classification”)**

Sieve Size	Percent Passing, Minimum	Percent Passing, Maximum
75.0 mm (3")	100	
25.0 mm (1")	90	100
9.5 mm (3/8")	10	50

Note: Organic matter for erosion log compost shall be no more than 4 inches in length. Compost shall be from a producer that participates in the USCC STA program.

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Table 212-7
Properties for Erosion Log (Type 2) Compost

Compost Parameters	Reported as	Requirements	Test Method
pH	pH units	6.0 - 8.5	TMECC 04.11-A
Soluble Salts (Electrical Conductivity)	dS/m (mmhos/cm)	< 5.0	TMECC 04.10-A
Moisture Content	%, wet weight basis	< 60%	TMECC 03.09-A
Organic Matter Content	%, dry weight basis	25% - 100%	TMECC 05.07-A
Manufactured Inert Contamination (plastic, concrete, ceramics, metal)	%, dry weight basis	< 0.5%	TMECC 03.08-A
Stability (respirometry)	mg CO ₂ -C per g TS per day mg CO ₂ -C per g OM per day	N/A	TMECC 05.08-B
Select Pathogens and weed free	(PASS/FAIL) Limits: Salmonella < 3 MPN/4 grams of TS, or Coliform Bacteria < 1000 MPN/gram	Pass	TMECC 07.01-B Fecal Coliforms, or 07.02 Salmonella
Trace Metals	(PASS/FAIL) Limits (mg kg ⁻¹ , dw basis): Arsenic (As) 41, Cadmium (Cd) 39, Copper (Cu) 1500, Lead (Pb) 300, Mercury (Hg) 17, Nickel (Ni) 420, Selenium (Se) 100, Zinc (Zn) 2800	Pass	TMECC 04.06

(d) *Biotic Soil Amendments (Hydraulically Applied)*. Soil amendments shall be a combination of natural fibers, growth stimulants, and other biologically active material designed to improve seed germination and vegetation establishment as shown in Table 212-8. Biotic soil amendments shall be pre-packaged in ultraviolet and weather resistant packaging and labeled from the manufacturer. Bags (containers) which arrive at the project site opened, damaged, or lacking a label will be rejected. Bulk shipments such as tote bags will be rejected. Biotic soil amendments shall be stored in locations not exceeding 80 °F. Acceptance of material shall be subject to the requirements of the Department's Approved Product List (APL).

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The application rate of the biotic soil amendments shall be per the rates shown on the plans. Use of mulch tackifier (*Plantago Insularis* or pre-gelatinized corn starch polymer) shall be per Section 213. It shall be used as a wetting agent at a rate of 30 pounds per acre. Biotic soil amendments shall provide a continuous and uniform cover and shall consist of one of the components in Table 212-8 and all of the performance and physical properties in Table 212-9.

**Table 212-8
Required Percentage Ranges of Biotic Soil Amendments**

Components	Units	Requirement
Professional grade sphagnum peat moss, professional grade reed sedge peat moss or compost that meets the Seal of Testing Assurance Program of the US Composting Council	%, dry weight basis	> 41%
Mechanically processed straw consisting of weed free agricultural straw, flexible flax fiber or rice hulls	%, dry weight basis	< 57%

**Table 212-9
Performance and Physical Requirements of Biotic Soil Amendments**

Parameters	Reported as	Requirement	Test Method
pH	pH units	5.0 - 7.5	ASTM D1293
Moisture Content	%, wet weight basis	10% - 50%	ASTM D 2974
Organic matter content	%, dry weight basis	> 85%	ASTM D586
Carbon Nitrogen Ratio	Ratio C:N	< 38:1	ASTM E1508
Manufactured inert contamination	%, dry weight basis	< 1.0%	
Acute Toxicity	(Pass/Fail)	Pass (non-toxic)	ASTM E729-96(2014) or EPA Method 2021.0 or EPA Method 2002.0
Vegetative Minimum		> 400%	ASTM 7322

The Contractor shall provide a CTR with independent laboratory analysis for the required

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parameters per subsection 106.13.

(e) *Humate*. The Contractor shall provide a screened dry granular form of organic humic and fulvic acid substance. Humate shall be pre-packaged and labeled from the manufacturer. Bags (containers) which arrive at the project site opened, damaged, or lacking label will be rejected. The Contractor shall only use bulk shipments such as tote bags or super sacks that have a manufacture's original label and sealed at the manufacturing facility. Humate shall be stored in locations not exceeding 80°F. Humate shall be provided per the rates shown on the plans. Product shall conform to the parameters in Table 212-10 and Table 212-11.

**Table 212-10
Screened Size Requirements for Humate**

Seeding Method	Reported as	Requirement
Seeding (Native) Drill, Hydraulic and Broadcast	inches	< 1/4

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Table 212-11
Performance and Physical Requirements of Humate

Parameters	Reported as	Requirement	Test Method
Organic Matter	%, dry weight basis	>70%	
Fines (material that is finer than the No. 200 (75-µm) sieve)	%, dry weight basis	<2%	ASTM D7928
pH	pH units	3.0 - 4.5	ASTM D1293
Acute Toxicity	Pass / Fail	Non Toxic	ASTM 7101 or EPA Method 2021 or 2002
Humic and Fulvic Acids	%, dry weight basis	> 70%	A & L Western method; total alkali extractable
Carbon Content	%, dry weight basis	40% - 50%	
Moisture Content	%, dry weight basis	< 20%	
Heavy Metal / Ash Content	%, dry weight basis	< 15%	

The Contractor shall provide a CTR with independent laboratory analysis for the required parameters per subsection 106.13.

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(f) *Mycorrhizae*. Mycorrhizae shall arrive onsite in original and undamaged packaging. Handling of this material shall follow manufacturer's safety recommendations. Mycorrhizae shall be stored onsite in such a way as to avoid exposure to direct sunlight for more than four hours and to prevent package temperatures to rise above 85 °F. The endo mycorrhizal inoculum shall provide at least 60,000 propagules per pound and shall contain all of the following species and conform to the parameters in Table 212-12:

- (1) *Glomus intraradices* (a.k.a. *Rhizophagus intraradices*)
- (2) *Glomus mosseae* (a.k.a. *Funneliformis mosseae*)
- (3) *Glomus aggregatum* (a.k.a. *rhizophagus aggregatus*)
- (4) *Glomus etunicatum* (a.k.a. *Claroideoglomus etunicatum*)

**Table 212-12
Physical Requirements of Endo Mycorrhizae**

Parameters	Reported as	Requirement	Test Method
Acute Toxicity	Pass or Fail	Non Toxic	ASTM 7101 or EPA Method 2021 or 2002

The Contractor shall provide a CTR with independent laboratory analysis for the required parameters per subsection 106.13.

The following rates shall be used for Seeding Methods:

- (1) For Seeding (Native) Drill, the mycorrhizae product shall be provided as a dry free-flowing granular material, suitable for application by agricultural drill seeder. Application rate shall be 8 pounds per acre.
- (2) For Seeding (Native) Hydraulic, the mycorrhizae product shall be provided as a fine granular (< 2 mm) or powdered form (particle size less than 300 microns) that will permit complete suspension and used with hydro-seeder equipment. Application rate shall be 20 pounds per acre.
- (3) For Seeding (Native) Broadcast, the mycorrhizae product shall be provided as a dry free-flowing granular material, suitable for application by fertilizer spreader. Application rate shall be 20 pounds per acre.

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- (g) *Elemental Sulfur*. The Contractor shall provide a free-flowing granular material consistent in size suitable for application by agricultural spreader and conform to the parameters in Table 212-13. Elemental sulfur shall arrive onsite in original and undamaged packaging.

**Table 212-13
Physical Requirements of Elemental Sulfur**

Parameters	Reported as	Requirement
Guaranteed Analysis of Elemental Sulfur (S)	%	> 90
Bulk Density	Lb per cu. ft.	> 75

- (h) *Sod*. Sod shall be nursery grown and 99 percent weed free. Species shall be as shown on the plans. The 1 percent allowable weeds shall not include undesirable perennial or annual grasses or plants defined as noxious by current State statute or county noxious weed list. Soil thickness of sod cuts shall not be less than $\frac{3}{4}$ inch or more than 1 inch. Sod shall be cut in uniform strips with minimum dimensions of 18 inches in width and 48 inches in length. The Contractor shall submit a sample of the sod proposed for use, which shall serve as a standard if approved. Sod furnished, whether in place or not, that is not up to the standard of the sample will be rejected. CDOT will reject all sod that was cut more than 72 hours before installation.

Each load of sod shall be accompanied by a certificate from the grower stating the type of sod and the date and time of cutting. The Contractor shall submit the certificate to the Engineer before application of the sod. Only sod that is accompanied by the certificate from the grower will be accepted and paid for.

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212.03 Submittals. The Contractor shall provide the name and contact information of the seeding contractor 30 days before start of seeding work. The Contractor shall provide two copies of items (1) - (14) listed below to the Pre-vegetation Conference per Section 207. When the Contractor provides resubmittals to meet Contract requirements, the Region or Headquarters Landscape Architect shall be copied on all correspondence.

- (1) Written confirmation from the registered seed supplier, on the Contractor's letterhead, that the Contract specified seed has been secured. No substitutions of the contract specified seed will be permitted unless evidence is submitted, from one of the registered seed suppliers that the Contract specified seed is not available and will not become available during the anticipated construction period.

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- (2) Seed vendor's "seed dealer" endorsement.
- (3) A copy of each seed species germination report of analysis that verifies the lot has been tested by a recognized laboratory for seed testing within 13 months before the date of seeding.
- (4) A copy of each seed species purity laboratory report of analysis that verifies that the lot has been tested by a recognized laboratory for seed testing. The report shall list all identified species, seed count, and date of test.
- (5) Manufacturer's documentation stating that the fertilizer meets the Contract requirements.
- (6) Organic fertilizer documentation showing manufacturer and chemical analysis.
- (7) Permit issued from CDPHE confirming that the vendor can produce or sell compost per House Bill (HB) 1181.
- (8) Documentation from the compost manufacturer that it is a participating member of in the U.S. Composting Council's Seal of Testing Assurance Program (STA).
- (9) Results of compost testing on an STA Compost Technical Data Sheet confirming all required test methods are met using the STA Program.
- (10) Sample of physical compost (at least one cubic foot of material).
- (11) Manufacturer's documentation confirming that biotic soil amendment meets the required physical and performance criteria based on independent testing by the manufacturer.
- (12) Manufacturer's documentation confirming that humate meets the required physical and performance criteria based on independent testing by the manufacture.
- (13) Manufacturer's documentation confirming that mycorrhizae meet the physical criteria based on independent testing and that the minimum required species is provided.
- (14) Pictures and descriptions of seeding equipment proposed to be used on the project. Based on the seeding methods required at a minimum this should include the drill seeder, hydraulic seeder, cultipacker or seed bed roller implements.
- (15) Instructions and documentation on how seeders will be calibrated onsite, per subsection 212.05(a).

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212.04 Seeding Seasons. Seeding in areas that are unirrigated shall be restricted according to the parameters in Table 212-14.

Table 212-14
Seeding Seasons

Areas other than the Western Slope

Zone	Spring Seeding	Fall Seeding
Below 6000'	Spring thaw to June 1	September 15 until consistent ground freeze
6000' - 7000'	Spring thaw to June 1	September 1 until consistent ground freeze
7000' - 8000'	Spring thaw to July 15	August 1 until consistent ground freeze
Above 8000'	Spring thaw to consistent ground freeze	

Western Slope

Zone	Spring Seeding	Fall Seeding
Below 6000'	Spring thaw to May 1	August 1 until consistent ground freeze
6000' - 7000'	Spring thaw to June 15	September 1 until consistent ground freeze
Above 7000'	Spring thaw to consistent ground freeze	

- (1) "Spring thaw" is the earliest date in a new calendar year in which seed can be buried 1/2 inch into the surface soil (topsoil) through normal drill seeding methods.
- (2) "Consistent ground freeze" is the time during the fall months in which the surface soil (topsoil), due to freeze conditions, prevents burying the seed 1/2 inch through normal drill seeding operations. Seed shall not be sown, drilled, or planted when the surface soil or topsoil is in a frozen or crusted state.

Seeding accomplished outside the time periods listed above will be allowed only when the Contractor's request is approved by the Engineer in writing, with coordination from the Region Landscape Architect. If requested by the Contractor, the Contractor must agree to perform the following work at no cost to the Department: reseed, remulch, and

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repair areas which fail to produce species indicated in the Contract.

If seeding is ordered by the Engineer outside the time periods listed above, the cost to repair areas that fail to produce species will be paid for by the Department.

212.05 Native Seeding Methods. Areas to be seeded shall be installed per SWMP Permanent Stabilization Plan.

All amendments and seeding shall be applied based on the seeding method and rates specified on the plans.

The Contractor shall complete the Amendments Verification Prerequisite for each of the seeding methods described herein. This shall be done by completing a Seed and Amendment Quantities Worksheet for each work area. This worksheet shall have a list of all amendments and the seed labels for each of the areas to be worked on. The State required legal tags shall remain on the bag until opened and the seed placed in either the drill or hydraulic seeders in the presence of the Engineer. Seeding work shall not begin until written approval of the worksheet has been received from the Engineer.

In determining the weight of seed required for each work area, the Contractor shall use the Pure Live Seed (PLS) weight shown on each bag of seed. Calculations based on net weight will not be accepted.

The Contractor shall submit a proposed Permanent Stabilization Phasing Plan to the Engineer before the Pre-revegetation Conference for approval showing how the SWMP Permanent Stabilization Plans will be implemented to minimize traffic loading damage to subgrade soil prepared and seeded areas. The proposed sequencing shall consider and identify strategies and site management control measures to protect seeded areas from foot, vehicle, and other disturbances. The strategic planning of the permanent seeding and mulch shall consider all other phasing of construction activities including traffic management and utility work. Areas damaged due to the Contractor's failing to protect the seeded areas shall be repaired at no cost to the Department. Seeded areas damaged due to circumstances beyond the Contractor's control shall be repaired and reseeded as ordered. Payment for corrective work, when ordered, shall be at the Contract prices shown and per subsection 109.04.

The following seeding application methods shall not be implemented during winds which are consistently higher than 20 MPH, or when the ground is frozen, excessively wet, or otherwise untillable. The Engineer may test to see if the moisture level in the soil is acceptable to work the soil by performing a Soil Plasticity Test as described in the Construction Manual. Multiple seeding operations shall be anticipated, based on acceptable seeding conditions. The seeding methods to be implemented shall be one or more of the following, as shown on the plans:

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(a) Seeding (Native) Drill.

1. Fertilizer, Compost, Humates and Elemental Sulfur. The Contractor shall uniformly apply compost and elemental sulfur on the surface of the topsoil using an agricultural spreader at the rate of application specified on the plans. All competitive, non-native vegetation shall be uprooted and hauled offsite before spreading amendments. Before starting incorporation of compost and elemental sulfur, the Contractor shall receive written acceptance from the Engineer on the Seed and Amendment Quantities Worksheet. Verification Prerequisite for this method also requires documentation on the Permanent Stabilization SWMP Site Maps with the approved areas outlined, signed, and dated by the Engineer to track progress. If SWMP Site Maps are not included in the Contract, the Contractor shall use the Contract grading or roadway plan sheets.

Once the Quantities Verification Prerequisite is completed for an area, the Contractor shall homogenously incorporate the compost and elemental sulfur into the top 6 inches of topsoil. Tillage of the amendments shall be completed using a disc and harrow, field cultivator, vibra-shank, or other method suitable to site conditions. For small areas tillage shall be completed using rotary tillers. No measurable depth of organic amendment shall be present on the surface.

The shanks on the back of a grader or dozer shall not be used for tillage. Tillage may take multiple passes to achieve the desired harmonious incorporation. If multiple passes are required, the Contractor shall cross till the soil with the second pass occurring at a 30-degree angle to the first pass. On slope areas, all tillage shall be parallel to the contour. For project that will utilize aggregate or recycled asphalt shouldering material amendments, tillage is not required under shouldering material. Projects seeding up to the edge of pavement, tillage is not required for first 12 inches from the edge of pavement.

Once incorporation of compost and elemental sulfur is approved, the Contractor shall uniformly apply fertilizer and humates on the surface of the topsoil using an agricultural spreader, as shown in the Contract documents.

2. Seedbed Preparation. Amended topsoil shall be cultivated to a firm but friable seedbed using cultipacker or seed bed roller implements. Crusted hard soils shall be broken up and all areas shall be free of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension per Section 207. Areas shall be left in a rough and uncompacted condition with a surface variance of 2 to 4 inches.
3. Seed and Mycorrhizae. Before seeding, the finished grade of the soil shall be 1 inch below the top of all curbs, junction and valve boxes, walks, drives and other structures. Seeding shall be done within two days of seedbed preparation efforts (tilling or scarifying). If a rain event occurs that compacts or erodes the seedbed before performing seeding, the seedbed shall be re-prepared as directed by the

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Engineer.

Areas shall be seeded by mechanical power drawn drills suitable for area soils, topography, and size followed by packer wheels. Mechanical power drawn drills shall have furrow openers and depth bands set to maintain a planting depth of at least 1/4 inch and not more than 1/2 inch and shall be set to space the rows not more than 8 inches apart. Seeding equipment shall have a double disk opener, seed box agitator, and seed metering device.

The seeder shall be calibrated by collecting seed from a single drop tube in the presence of the Engineer based on the following procedure. The Contractor shall provide the tape measure, scale, collection cup, and seed bag with complete label from the supplier. The Contractor may submit an alternative method for approval at the site Pre-vegetation Conference.

- A. Measure the total width (W) of the drill seeder in feet.
- B. Count the number of drill rows (N) on the seeder.
- C. On drill seeders that the tire drives the seeding mechanism, measure the tire circumference (C) in feet.
- D. Calculate the number of rotations the tire will complete per acre using the following equation:

$$A = \text{one acre or } 43,560 \text{ square feet (SF)}$$

$$A / W = \text{feet (F) the drill seeder needs to travel for each acre}$$

$$F / C = \text{number of rotations (R) of the tire per acre}$$
- E. Reduce the amount of tire rotations by one tenth.

$$.90R = \text{\# Tire rotations to calibrate seeder (RCS)}$$
- F. Find the seeding rate (LBS PLS / Acre) on the Stormwater Management Plan.
- G. Using the information from the seed tag, convert the PLS seed rate to a bulk seeding rate using the following equations:

$$\% \text{ PLS} = (\% \text{ purity (in decimal form) from seed label}) \times (\% \text{ germination (in decimal form) from seed label})$$

$$(\text{LBS PLS} / \text{Acre}) \text{ from the SWMP} / \% \text{ PLS} = \text{Required bulk seed per acre in LBS}$$
- H. Reduce the required bulk seed per acre based on the number of seeder tubes.

$$\text{Required bulk seed per acre} / N = \text{Weight in LBS of bulk seed from one tube}$$
- I. Reduce the required bulk seed rate from the tube by one tenth.

$$0.90 \times \text{Weight of bulk seed from one tube} = \text{Collected bulk seed weight (CBS) in LBS}$$
- J. Set the drill seeder to the correct seeding rate using the manufacturer's recommendation.
- K. With the collection cup under one tube and the driving wheel jacked up, rotate the tire the RCS number of times. Use the value stem to count the rotations.
- L. Using the scale, weigh the seed in the collection cup.
- M. Adjust the drill calibration until the weight of bulk seed in the collection cup equals the CBS in LBS.

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Drill seeders shall be recalibrated every time the drill is mobilized onsite. The Contractor shall submit a written statement that the equipment is calibrated and shall provide the correct depth based on conditions before seeding actions are initiated. The Contractor shall continuously monitor equipment to ensure that it is providing a uniform seed application.

If mycorrhizae are called for on the plans, the granules shall be included with the seed in the drill seeder such that the mycorrhizae are placed at or below the seed.

The distance between furrows produced using the drill shall not be more than 8 inches. If rows on the drill exceed 8 inches, the Contractor shall drill the areas twice (if achievable at 30-degree angles to each other) at no additional cost to the Department.

After seeding, the furrows that were created by the drill shall be maintained in place. Construction traffic, other than what is needed to mulch the areas, shall not be permitted on the areas completed.

Permanent stabilization mulching shall be accomplished within 24 hours of drill seeding.

(b) Seeding (Native) Hydraulic.

This method utilizes water as the carrying agent and mixes biotic soil amendments, seed, organic fertilizer, humates, mycorrhizae and elemental sulfur into a single slurry for hydraulic application. The Contractor shall furnish and place combined slurry with a hydro-seeder that will maintain a continuous agitation and apply homogenous mixture through a spray nozzle. The pump shall produce enough pressure to maintain a continuous, non-fluctuating spray that will reach the extremities of the seeding area. Water tanks shall have a means of measuring volume in the tank. Seed shall be added to the slurry onsite, no more than 60 minutes before starting application. Slurry shall be applied from a minimum of two opposing directions to achieve complete soil coverage.

The application of the single slurry shall be applied within four hours of adding Mycorrhizae.

The Contractor shall prevent seed, fertilizer, and mulch from falling or drifting onto areas occupied by rock base, rock shoulders, plant beds, or other areas where grass is detrimental. The Contractor shall remove material that falls on plants, roadways, gravel shoulders, structures, and other surfaces where material is not specified.

- A. *Seedbed Preparation.* All areas shall be loosened to at least 6 inches, leaving the surface in rough condition with a surface variance of 6 to 8 inches. On steep slopes, tillage shall be accomplished with appropriate equipment as the slope is constructed.

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Soil areas shall be tilled to produce loose and friable surfaces with crusted hard soils broken up. All slopes shall be free of clods, sticks, stones, debris, concrete, asphalt and all other materials in excess of 4 inches in any dimension. All competitive, non-native vegetation shall be uprooted and hauled offsite before spreading amendments. Under no circumstances shall the ground surface be smooth and compacted.

- B. *Biotic Soil Amendment, Fertilizer, Humate, Mycorrhizae and Seed.* The Contractor shall assemble all materials for proposed areas to hydro-seed and review quantities with area of coverage with the Engineer as the Quantities Verification Prerequisite for this method. Before mixing in the tank, the Contractor shall receive written acceptance from the Engineer on the Seed and Amendment Quantities Worksheet that the correct quantities are onsite. This quantities verification prerequisite also requires documentation on the Permanent Stabilization SWMP Site Maps with the approved areas outlined, signed, and dated by the Engineer to track progress. If SWMP Site Maps were not included in the Contract, grading or roadway plan sheets shall be used. For the verification process, the Contractor shall provide the Engineer with all documentation for materials in unopened packaging.

After the Quantities Verification Prerequisite has been approved, the hydro-seeder shall be filled with water to 1/3 of its required volume. Following this, water and biotic soil amendments shall be added to the hydro-seeder at a consistent rate. The ratio of water to Biotic Soil Amendments shall be per manufacturer's recommendations. Fertilizer, humates and mycorrhizae shall then be added until the tank has reached 3/4 of its required volume. The tank shall then be filled with water to the required volume. Uniform slurries shall be agitated or mixed for a minimum of ten minutes after all water and materials are in the tank.

Hydraulic seeding equipment shall include a pump capable of being operated at 100 gallons per minute and at 100 pounds per square inch pressure. The equipment shall have a nozzle adaptable to hydraulic seeding requirements. Storage tanks shall have a means of estimating the volume used or remaining in the tank.

Seed shall be added to the slurry onsite no more than 60 minutes before starting application. The Contractor shall increase the Seed Plan rates (LBS PLS / Acre) as shown on the plans by 1.5 times at no additional cost to the Department. The Contractor may be required to apply slurry using multiple hoses to ensure uniform application to all areas of the site. Coverage rates shall be based on the volume of material in the tank, as verified by the Engineer. Areas of lighter applications (covering more area than what is calculated) will require additional application, as directed.

An appropriate curing period shall be per manufacturer's recommendations and shall consider forecasted weather conditions.

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Permanent stabilization mulching shall be accomplished within 24 hours of hydraulic application of native seed.

(c) Seeding (Native) Broadcast.

This method utilizes hand equipment to broadcast spread amendments and seed over prepared seedbeds.

- A. *Fertilizing, Compost, Humate and Elemental Sulfur.* The Contractor shall uniformly apply compost and elemental sulfur on the surface of the placed topsoil using an agricultural spreader at the rate of application specified on the plans. All competitive non-native vegetation shall be uprooted and hauled offsite before spreading amendments. Before starting incorporation, the Contractor shall receive written acceptance from the Engineer on the Seed and Amendment Quantities Worksheet that the correct quantities will be applied. The Quantities Verification Prerequisite for this method also requires documentation on the Permanent Stabilization SWMP Site Maps with the approved areas outlined, signed, and dated by the Engineer to track progress. If SWMP Site Maps are not included in the Contract, the grading or roadway plan sheets shall be used.

Once the Quantities Verification Prerequisite is completed for an area, the Contractor shall homogenously incorporate the Compost into the top 6 inches of soil. Tillage of the amendments shall be completed using appropriate tools depending on the size of the area to be worked. Contractor shall use hand tillers or approved small space implements.

Once incorporation of compost and elemental sulfur is approved, the Contractor shall uniformly apply organic fertilizer and humates on the surface of the topsoil using an agricultural spreader.

- B. *Seedbed Preparation.* Amended topsoil shall be cultivated to a firm but friable seedbed using tractor implements. Crusted hard soils shall be broken up and all areas shall be free of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension per Section 207. Areas shall be left in a rough condition with a surface variance of 2 to 4 inches. Under no circumstances shall the ground surface be smooth and compacted.
- C. *Seed and Mycorrhizae.* Before seeding, the finished grade of the soil shall be 1 inch below the top of all curbs, junction and valve boxes, walks, drives and other structures. Seeding shall be accomplished within two days of seedbed preparation efforts (tilling or scarifying) to make additional seedbed preparation unnecessary. If a rain event occurs that compacts or erodes the seedbed before performing seeding, the seedbed shall be re-prepared as directed.

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Areas shall be seeded by broadcast-type seeders (cyclone or approved mechanical seeders). The Contractor shall increase the Seed Plan rates (LBS PLS / Acre) as shown on the plans by 1.5 times at no additional cost to the Department.

After seeding, mycorrhizae shall be evenly hand-distributed across the area. Seed and mycorrhizae shall be covered by hand raking and covering with $\frac{1}{4}$ to $\frac{1}{2}$ inch of topsoil. To ensure seeds have a firm contact with the soil the Contractor shall use a heavy roller as approved in the Site Pre-vegetation Conference. Mycorrhizae shall not be exposed to sunlight for more than four hours. Using equipment with continuous cleat tracks (cat-tracking) to cover seed is not permitted.

Permanent stabilization mulching shall be accomplished within 24 hours of broadcast seed application of native seed.

212.06 Seeding (Temporary). Areas of topsoil shall be seeded with annual grasses per SWMP Interim Site Maps or as directed by the Engineer.

Seeding may take place at any time during the year as long as the ground is not covered in snow and topsoil is not frozen. Topsoil may be placed in a stockpile or distributed on-grade after receiving subgrade soil preparation.

Interim stabilization for areas that receive temporary seeding shall be per subsection 208.04(e)2. Seed shall not be included with interim hydraulic mulch applications.

The Contractor shall wait to amend topsoil until the area is ready for permanent seeding with native seed mix shown on the SWMP. The Contractor shall use either the drill, hydraulic, or broadcast method of seeding. Seeding rates (LBS PLS / Acre) shall be increased by 1.5 times for hydraulic and broadcast methods at no additional cost to the Department.

Seed shall meet the requirements of 212.02(a) and shall be selected from Table 212-1 based on the application time.

**Table 212-15
Temporary Seed Mixes**

Common Name	Botanical Name	Application Time	Seeding Rates (LBS PLS / Acre)	Planting Depth (inches)
Oats	Avena sativa	October 1 - May 1	35	1 - 2
Foxtail Millet	Setaria italica	May 2 - September 30	30	1/2 - 3/4

The Contractor shall restrict motorized vehicle and foot traffic from areas that have received temporary seeding.

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Soil Amendments, Seeding, and Sodding**

212.07 Seeding (Lawn). Lawn grass seeding shall be accomplished in the seeding seasons per subsection 212.03.

(a) *Fertilizing and Soil Conditioning.* The first application of fertilizer, soil conditioner, or both shall be incorporated into the soil immediately before seeding, and shall consist of a soil conditioner, commercial fertilizer, or both as designated in the Contract. Fertilizer called for on the plans shall be worked into the top 4 inches of soil at the rate specified in the Contract. Biological nutrient, culture, or humate based material called for on the plans shall be applied in a uniform application onto the soil service. Organic amendments shall be applied uniformly over the soil surface and incorporated into the top 6 inches of soil.

The second application of fertilizer shall consist of a fertilizer having an available nutrient analysis of 20-10-5 applied at the rate of 100 pounds per acre. It shall be uniformly broadcast over the seeded area three weeks after germination or emergence. The area shall then be thoroughly soaked with water to a depth of 1 inch.

Fertilizer shall not be applied when the application will damage the new lawn.

(b) *Seedbed Preparation.* In preparation of seeding lawn grass, irregularities in the ground surface, except the saucers for trees and shrubs, shall be removed. Measures shall be taken to prevent the formation of low places and pockets where water will stand.

Immediately before seeding, the ground surface shall be tilled or hand worked into an even and loose seedbed to a depth of 6 inches, free of clods, sticks, stones, debris, concrete, and asphalt in excess of 2 inches in any dimension and brought to the desired line and grade.

(c) *Seeding.* Seed shall be drilled with mechanical landscape type drills. Broadcast type seeders or hydraulic seeding will be permitted only on small areas not accessible to drills. Seed shall not be drilled or broadcast during windy weather or when the ground is frozen or untillable.

212.08 Sodding.

(a) *Fertilizing and Soil Conditioning.* Before laying sod, the 4 inches of subsoil underlying the sod shall be treated by tilling in fertilizer, compost, or humates as specified on the plans. Amendments shall be applied uniformly over the soil surface and incorporated into the top 6 inches of soil.

After laying the sod, it shall be fertilized with a fertilizer having a nutrient analysis of 20-10-5 at the rate of 200 pounds per acre. Fertilizer shall not be applied when the application will damage the sod.

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(b) *Soil Preparation.* Before sodding, the ground shall be tilled or hand worked into an even and loose sod bed to a depth of 6 inches, and irregularities in the ground surface shall be removed. Sticks, stones, debris, clods, asphalt, concrete, and other material more than 2 inches in any dimension shall be removed. Depressions or variances from a smooth grade shall be corrected. Areas to be sodded shall be smooth before sodding occurs.

(c) *Sodding.* Sod shall be placed by staggering joints with all edges touching. On slopes, the sod shall run approximately parallel to the slope contours. Where the sod abuts a drop inlet, the subgrade shall be adjusted so that the sod shall be 1-½ inches below the top of the inlet.

Within one hour after the sod is placed and fertilized it shall be watered. After watering, the sod shall be permitted to dry to the point where it is still wet enough for effective rolling. The Contractor shall roll the sod in two directions with a lawn roller capable of applying between 50 - 80 pounds per square inch of surface pressure to eliminate air pockets.

Method of Measurement

212.09 The quantities of lawn seeding, and the three native seeding types will not be measured but shall be the quantities designated in the Contract, except that measurements will be made for revisions requested by the Engineer, or for discrepancies of plus or minus five percent of the total quantity designated in the Contract.

The quantity of sod will be by the actual number of square feet, including soil preparation, water, fertilizer, and sod, completed and accepted.

Organic Fertilizer, Compost (Mechanically Applied), Humates, Mycorrhizae soil amendments for Seeding (Native) methods drill, hydraulic, and broadcast will be measured by the actual quantity of material applied and accepted.

Measurement for acres will be by slope distances.

Basis of Payment

212.10 The accepted quantities of lawn seeding, native seeding, soil conditioning, and sod will be paid for at the contract unit price for each of the pay items listed below that appear in the bid schedule. Rejected seed that has been stored longer than 30 days shall be re-ordered at the expense of the Contractor.

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Payment will be made under:

Pay Item	Pay Unit
Organic Fertilizer	Pound
Compost (Mechanically Applied)	Cubic Yard
Biotic Soil Amendments (Hydraulic Applied)	Pound
Humate	Pound
Mycorrhizae	Pound
Elemental Sulfur	Pound
Seeding (Native) Drill	Acre
Seeding (Native) Hydraulic	Acre
Seeding (Native) Broadcast	Acre
Seeding (Wetland) Drill	Acre
Seeding (Wetland) Hydraulic	Acre
Seeding (Wetland) Broadcast	Acre
Seeding (Temporary)	Acre
Seeding (Lawn)	Acre
Sod	Square Foot

Topsoil preparation including incorporating and applying amendments, seedbed preparation, water, and seed mix (LBS PLS / Acre) will not be measured and paid for separately but shall be included in the work.

Calibrating, adjusting, or readjusting seeding or fertilizing equipment will not be measured and paid for separately but shall be included in the work.

No additional cost will be accepted for approved substitution of specified seed mix.

No payment will be made for areas seeded using one of the seeding methods without receiving signed Seed and Amendment Quantities Worksheet from the Engineer.

Additional seedbed preparation before seeding to correct compaction or erosion from storm events will not be measured and paid for separately but shall be included in the work.

Additional mobilizations as needed to complete seeding within allowed seeding seasons will not be measured and paid for separately but shall be included in the work.

Removal of all competitive, non-native vegetation before spreading amendments will not be measured and paid for separately but shall be included in the work.

September 30, 2024

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Revision of Section 213
Mulching

Revise Section 213 of the Standard Specifications as follows:

In subsection 213.02, Remove 2 extra spaces between marsh and hay in the first sentence of (a).

213.02 Materials shall conform to the following requirements.

(a) *Mulching*. Materials for mulching shall consist of Certified Weed Free field or marsh hay or straw of oats, barley, wheat, rye, or triticale certified under the Colorado Department of .
..

Add the following sentence to the second to last paragraph:

Straw or hay mulch shall be a minimum of 10 inches in length. Straw or hay in a stage of decomposition (discolored, brittle, rotten, or moldy) or old, dry mulch that breaks in the crimping process will not be accepted.

In subsection 213.03, Revise (a) with the following:

(a) *Hay or Straw Mulching*. After seeding has been completed or when required for erosion control, hay or straw shall be uniformly applied, at a minimum rate of 2 tons hay or 2.5 tons straw per acre with no bare soil showing, at the rate designated in the Contract or as directed. It shall be crimped to a depth of 2 to 3 inches with a crimper or other approved equipment. The Engineer may order hand-crimping on areas where mechanical methods cannot be used. The seeded area shall be mulched and crimped, and tackifier applied at a rate in Subsection (c) within four hours after seeding. Areas not mulched and crimped within four hours after seeding or before precipitation or damaging winds on site shall be reseeded with the specified seed mix at the Contractor's expense, before mulching and crimping.

When tackifier is required in the Contract it shall be applied in the following order:
(1) mulching, (2) mulch tackifier.

Revision Of Section 401 Plant Mix Pavements - General

Section 401 of the Standard Specifications shall be revised as follows:

Delete Subsection 401.17 of the Standard Specifications 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.

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

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

The longitudinal joints shall be compacted to a density of 90 to 98 percent of the theoretical maximum specific gravity. The theoretical maximum specific gravity used to determine the joint density will be the average of the daily theoretical maximum specific gravities for the material that was placed on either side of the joint. Density (percent relative compaction) will be determined per CP 44.

The Contractor shall obtain one 6-inch diameter core at a random location within each longitudinal joint sampling section for determination of the joint density. The Contractor shall mark and drill the cores at the location directed by the Engineer and in the presence of the Engineer. The Engineer will take possession of the cores for

**Revision Of Section 401
Plant Mix Pavements - General**

testing. The Contractor may take additional cores at his own expense. Coring locations shall be centered on the visible line where the joint between the two adjacent lifts abuts the surface. The center of all joint cores shall be within 1 inch of this visible joint line. Core holes shall be repaired by the Contractor using materials and methods approved by the Engineer. PC and OA joint coring shall be completed within five calendar days of joint construction.

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

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

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

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

The Contractor shall construct a compaction pavement test section (CTS) for each job mix where 2,000 or more tons are required for the project. The CTS will be used to evaluate the number of rollers and the most effective combination of rollers and rolling patterns for achieving the specified densities. Factors to be considered include, but are not limited to, the following:

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

The CTS shall be constructed according to the following procedures:

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

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production and placement rates for the remainder of the Contract.

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

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

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

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

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

When the Quality level is less than 75 the Contractor shall construct an additional test

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section, utilizing different rollers, or roller positions, or roller patterns as required. A written proposal detailing the changes in methods and procedures that will be used to obtain density is to be submitted to the Engineer for review before constructing the additional test section.

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

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

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

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

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

After production paving work has begun, a new CTS shall be required for different layers of pavement, unless otherwise approved by the Engineer. Each additional CTS shall be constructed and documented as specified herein, and shall be sampled, tested, and accepted or rejected as described herein.

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

If the Contractor requests changes to the roller pattern that was established during the CTS, the Contractor must perform a Roller Pass Study to demonstrate that the specified density is obtained with the new roller pattern before proceeding with the paving operation with Engineer Approval.

September 30, 2024

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**Revision of Section 401
Plant Mix Pavements - General**

Revise Section 401 of the Standard Specifications as follows:

Revise Subsection 401.10, eighth paragraph, of the Standard Specifications as shown:

The following specific requirements shall apply to the identified asphalt pavers:

- (1) Blaw-Knox asphalt pavers manufactured prior to 2007 shall be equipped with the Blaw-Knox Materials Management Kit (MMK).
- (2) Cedarapids asphalt pavers shall be those that were manufactured in 1989 or later.
- (3) Caterpillar asphalt pavers manufactured prior to 2007 shall be equipped with deflector plates as identified in the December 2000 Service Magazine entitled “New Asphalt Deflector Kit {6630, 6631, 6640}”.

April 9, 2024

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**Revision of Section 601
Concrete Acceptance**

Revise Section 601 of the Standard Specifications for this project as follows:

Delete Sub-Sections 601.17 (c) and 601.17 (d) and replace with the following:

(c) Strength (When Specified).

The concrete will be considered acceptable when the running average of three consecutive strength tests per mix design for an individual structure is equal to or greater than the specified strength and no single test falls below the specified strength by more than 450 psi. A test is defined as the average strength of three test cylinders cast in plastic molds from a single sample of concrete and cured under standard laboratory conditions before testing. If the compressive strength of any one test cylinder differs from the average by more than 10 percent, that compressive strength will be deleted and the average strength will be determined using the compressive strength of the remaining two test cylinders.

When the average of three consecutive strength tests is below the specified strength, the individual low tests will be used to determine the pay factor per Table 601-3. If less than three strength tests are available the individual low tests, if any, will be used to determine the pay factor per Table 601-3. The pay factor will be applied to the quantity of concrete represented by the individual low test.

When the compressive strength test is below the specified strength by more than 450 psi but not more than 1,000 psi, the concrete represented will be evaluated by the Department for removal, corrective action, or acceptance at a reduced price. All costs of the evaluation shall be at the Contractor's expense.

When the compressive strength test is below the specified strength by more than 1,000 psi, the concrete represented will be rejected.

The Contractor may take cores at its own expense and per Colorado Procedure 65 within 10 working days of being notified of a price reduction or up to 45 days after placement, whichever is later, to provide an alternative determination of strength. When cored, price reduction for strength will be based on the corresponding cores' strength. If the core compressive strength is at least 90 percent of the specified field compressive strength, the concrete represented by the cores will be accepted with no price reduction.

**Revision of Section 601
Concrete Acceptance**

When the Contractor fails to provide proper curing or cold weather protection, the Engineer may use cores to determine acceptance or rejection of a part of the structure instead of acceptance cylinders with the following procedure:

1. The Engineer will notify the Contractor in writing that CDOT will core the structure. The location of the coring will be directed by the Engineer. Coring and testing will be performed at the expense of the Department regardless of the result. Cores will be taken and tested per AASHTO T24 between 28 days and 45 days after concrete placement. Cores will be a minimum of 4 inches in diameter unless otherwise approved by the Engineer. A minimum of three cores in a two-square-foot area will be obtained for locations of the structure that are suspect. If the compressive strength of any one core differs from the average by more than 10 percent, that compressive strength will be deleted and the average strength will be determined using the compressive strength of the remaining two cores. If the compressive strength of more than one core differs from the average by more than 10 percent, the average strength will be determined using all three compressive strengths of the cores. If the average core compressive strength is greater than or equal to 85 percent of the specified 28-day compressive strength, the concrete represented by the cores will be accepted.
2. If the average core compressive strength is less than 85 percent of the specified 28-day compressive strength, the structure will be evaluated by the Department according to subsection 105.03 for removal and replacement. Pay factors will not be based on cores taken by the Engineer. If the concrete represented by the cores is accepted, all costs associated with the repair of the core holes, including preparation and submittal of the repair method, will be measured, and paid for separately.
3. After the Department performs additional core testing as described above, the Contractor may make one request that the structure be cored by the Contractor, tested, and re-evaluated by the Department within 45 days after concrete placement. Coring and testing costs will be at the expense of the Contractor regardless of the result. Cores shall be taken at the same area of the structure as those obtained by the Engineer. The Engineer will approve the location of the cores before the Contractor coring the structure. All costs associated with the repair of these core holes including preparation and

**Revision of Section 601
Concrete Acceptance**

submittal of the repair method, will not be measured, and paid for separately but shall be included in the work.

If the concrete in the structure is found to be sufficient resulting time delays will be considered excusable. If the concrete in the structure is still found to be deficient, resulting time delays will be considered non-excusable for this evaluation. Compensation for time delays will be evaluated by the Engineer per subsection 108.08.

The Contractor shall submit a proposed repair method for the core holes for approval before coring. The method shall use an approved non-shrink concrete patching material with a minimum compressive strength of 4,500 psi. The Contractor shall submit the manufacturer's recommendations along with the repair method. The Engineer will review and approve the proposed methodology before patching.

The Engineer will distribute electronically to the concrete supplier all compressive strength Owner Acceptance (OA) data for the concrete supplied to the project. The Engineer will distribute the OA compressive strength data within two business days of the 7-day and 28-day compressive strength testing. The data will include the compressive strength and batch ticket number at a minimum. The Contractor shall not have a valid dispute or claim as a result of any action or inaction by the Department related to the distribution of test results.

(d) *Pay Factors.* The pay factor for concrete that is allowed to remain in place at a reduced price shall be determined according to Table 601-3 and shall be applied to the unit price bid for the Item.

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.

**Revision of Section 601
Concrete Acceptance**

Table 601-3
PAY FACTORS FOR DEVIATIONS ON
CONCRETE AIR CONTENT AND STRENGTH

Below Specified Strength (psi)	Pay Factor (Percent) *See Note
1 - 100	98
101 - 200	96
201 - 300	92
301 - 400	84
401 - 450	75
451-1000	Evaluate by Department
451 - 600	65***
601 - 700	54***
701 - 800	42***
801 - 900	29***
901 - 1000	15***
Over 1000**	Reject

Deviations From Specified Air (Percent)	Pay Factor (Percent) *See Note
0.0 - 0.2	98
0.3 - 0.4	96
0.5 - 0.6	92
0.7 - 0.8	84
0.9 - 1.0	75
Over 1.0	Reject

* Concrete represented by out-of-spec tests will only be priced reduced with the lowest pay factor, not for each pay factor.

** After coring.

*** Concrete represented by this set is rejected for being more than 450 psi below specification. The concrete represented by this set can only be price reduced and left in place if a structural evaluation by the Structural Engineer of Record is completed and the structural evaluation indicates the structure is structurally sound.

**Revision of Section 601
Pigment in Concrete**

Revise Section 601 of the Standard Specifications as follows:

In subsection 601.05, Add a new paragraph, three paragraphs before the end, as follows:

601.05 Mix Design Submittal Requirements.

When a change occurs in the source or type of approved admixtures or the addition of approved accelerating, retarding, or hydration stabilizing admixtures to existing mix designs, the Contractor shall submit a letter stamped by the Concrete Mix Design Engineer approving the changes to the existing mix design. The change shall be approved by the Engineer before use.

Addition or removal of pigments to an approved mix shall require a new mix design. Pigment color may be adjusted in an approved mix design so long as the brand and product line of the pigment remains the same.

Unless otherwise permitted by the Engineer, the product of only one type of hydraulic cement from one source of any one brand shall be used in a concrete mix design.

Approval of the concrete mix design by the Engineer does not constitute acceptance of the concrete. Acceptance will be based solely on the test results of concrete placed on the project.

Once approved for a project, the mix design may be used for the duration of the project.

601.06 Batching.

Revision of Section 613
Lighting Pull Box

Revise Section 613 of the Standard Specifications for this project as follows:

Add new Subsection 613.02 (d) and renumber the existing subsections 613.02 (d) through (n) as follows:

613.02

- (d) *Pull box.* Pull boxes shall be verified by a 3rd Party Nationally Recognized Independent Testing Laboratory as meeting all test provisions of the American National Standard Institute/Society of Cable Telecommunications Engineers (ANSI/SCTE) 77 Specifications for Underground Enclosure Integrity, including magnesium chloride testing. Pull boxes shall be rated at the Tier 22 level and this rating shall be stenciled or cast on the inside and outside of the box and on the underside of the cover. Pull boxes shall be non-conductive and resistant to ultraviolet (UV) radiation, moisture, and chemicals. Pull boxes shall be Underwriters Laboratories (UL) listed. Certification documents shall be submitted with material submittals.

Type Six pull boxes shall be a water valve stem type pull box made of cast iron or steel. Type six pull boxes shall have the capability of accepting riser rings. A Type Six pull box shall have 3/4-inch to 1-inch diameter holes drilled or torched 3 inches from the top to accept a 4-inch to 6-inch long rubber tube (3/4 inch garden hose). The number of holes shall be as per plans or as directed by the engineer.

1. *Lids.* Removable pull box lids shall be provided with a skid-resistant surface and have the words "CDOT COMM", "CDOT ELECT", or "CDOT TRAFFIC" cast into the surface. Painting of the words shall not be accepted. The removable lid shall be included in the cost of the pull box.

A removable split lid with a removable center support beam shall be provided for pull boxes 24-inches by 36-inches or larger. Lid segment weight shall not exceed 120 pounds.

**Revision of Section 613
Lighting Pull Box**

An Electrical Marker System (EMS) locator disk manufactured into all Type B lids for communication line locating. The locator disk shall be compatible with a CDOT cable locator and utilize the APWA uniform color code standard for visual reference if the disk is observable on the exterior of the Type B lid. The locator disk shall utilize the proper locate frequency for the pull box type. The words “EMS MARKER EMBEDDED IN COVER” shall be cast into the surface. Painting of the words shall not be accepted.

Type B one-piece lids shall have a minimum of two lift slots per lid, while Type B split lids shall have a minimum of one lift slot per lid. Test point locations shall be integrated into the pull box Type B lids to provide attachment of test leads of various connector types for underground conduit tracing. The minimum number of test point locations shall equal the number of conduit banks entering the pull box, up to a maximum of five test points. Pull boxes with Type B split lids shall have test points on one lid section only. Type B lids shall be furnished with 3/8-inch by 1/16-inch-deep recesses at locations adjoining each test point for the application of direction arrow symbols indicating the direction of underground conduit exiting the pull box. Recesses shall be thoroughly cleaned with alcohol prior to applying the arrow symbol.

Type 6 pull box lids shall have “CDOT TRAF” cast into the surface.

2. Wire Mesh. When wire mesh is included, it shall be installed in a manner to completely surround the pull box. The wire mesh shall meet the material standard American National Standard Institute/American Society of Testing and Materials (ANSI/ASTM) A555-79 and made of T-304 stainless steel, 0.025-inch wire diameter minimum and shall have a spacing of 4 mesh per inch.
3. Apron. Pull boxes installed in dirt of landscaped areas shall have a pre-cast polymer concrete apron. Class B concrete shall be in accordance with Section 601. The pre-cast polymer concrete apron shall be skid-resistant, non-metallic, non-conductive, UV resistant, and shall include two lifting slots for placement in the field. The pre-cast polymer concrete apron shall be similar nominal dimensions of the concrete apron shown on the plans. The gap between the pre-cast polymer concrete apron and outer wall of the pull box shall be a maximum of 1/4 inch.
4. Ground Rod. When a ground rod is provided, it shall be a 5/8-inch by 8-foot long copper-coated steel rod.

**Revision of Section 613
Lighting Pull Box**

- (e) Electrical Warning Tape.*
- (f) Luminaire.*
- (g) Lighting Control Center.*
- (h) Meter Power Pedestal.*
- (i) Secondary Service Pedestal.*
- (j) Heavy Duty Safety Switch.*
- (k) Wiring.*
- (l) Material List.*
- (m) LED Luminaire Warranty.*
- (n) Technical Support.*
- (o) Temporary Lighting.*

Add new Subsection 613.08 and renumber existing Subsections 613.08 through 613.14 as follows:

613.08 Pull Box. A minimum of 12 inches of 3/4-inch angular granite-gravel shall be installed at the base of the pull box. The granite-gravel shall be free of dirt and debris and spread evenly to facilitate a level base for the pull box. The Contractor shall compact to the same density of the in-situ soil prior to the installation of the granite-gravel to alleviate future settling.

When provided, wire mesh shall be installed to completely surround the pull box as shown on the plans. The wire mesh shall be gently cut to allow only the entrance of the conduit at the bottom of the pull box. All openings cut in the wire mesh that are larger than the diameter of the conduit shall be covered with additional wire mesh in a manner to completely surround the pull box with wire mesh.

Tracer wire shall be attached to the trace test points on the underside of the Type B pull box lid. Each tracer wire shall be attached to an individual trace point; no two wires shall be attached to the same point. The Contractor shall coil an additional 6 feet of tracer wire inside the pull box to ensure that the trace wire will not disconnect from the test points when the lid is removed.

**Revision of Section 613
Lighting Pull Box**

Pull boxes shall be installed in areas that are easily accessible by maintenance personnel. The slope around the pull box shall not be steeper than 5:1.

Pull boxes installed with concrete aprons or pre-cast polymer concrete shall not be installed above the grade of the apron. The concrete apron shall have a 1 percent slope away from the top of the pull box to allow for drainage. Pre-cast concrete aprons shall be installed per the manufacturer's recommendations. Unless otherwise shown on the plans, pull and splice boxes shall be installed so that the covers are level with the curb or sidewalk grade. Covers shall be level with the surrounding ground when no grade is established.

Pull or splice boxes shall be installed at a maximum distance of 400 feet or less. Boxes shall be placed at conduit ends, at all wiring splices, at all conduit angle points, and at all other locations shown on the plans. The Contractor may install additional pull or splice boxes to facilitate the work.

Where practical, pull and splice boxes near curbs shall be placed adjacent to the back of the curb. Pull boxes adjacent to light standards shall be placed along the side of the foundations as shown on the plans.

Where a conduit stub-out is called for on the plans, a sweeping elbow shall be installed in the direction indicated. The stub-out shall be terminated in a box. All conduit stub-outs shall be capped.

613.09 Wiring.

613.10 Lighting Control Center, Meter Power Pedestal, and Secondary Service Pedestals.

613.11 Heavy Duty Safety Switch.

613.12 Temporary Lighting.

613.13 Testing.

**Revision of Section 613
Lighting Pull Box**

Method of Measurement

613.14 Concrete Foundation Pads and Light Standard Foundations will be measured by the actual number installed and accepted.

**Revise Subsection 613.14 as shown (renumbered as 613.15)
613.15**

The following items will not be measured and paid for separately, but shall be included in the work:

- (1) Soil testing for foundations.
- (2) Junction boxes, pull wire, weatherheads, adaptors, and expansion joints for conduit.
- (3) Pull boxes installed for overhead lighting.
- (4) Additional pull or splice boxes installed at the Contractor's option.
- (5) Saw cutting; trenching; excavation; backfill; jacking; drilling pits; underground electrical warning tape; removal of pavement, sidewalks, gutters, and curbs and their replacement in kind to match existing grade; and all other work necessary to complete conduit and pull box installation.
- (6) Electrical conductor tagging.
- (7) Direct burial cable in conduit.
- (8) Testing of the lighting installation, including temporary power and all required cable connections.

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			

AFFIRMATIVE ACTION REQUIREMENTS EQUAL EMPLOYMENT OPPORTUNITY

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 Part 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.

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

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

AFFIRMATIVE ACTION REQUIREMENTS EQUAL EMPLOYMENT OPPORTUNITY

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

**AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**

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.

**AFFIRMATIVE ACTION REQUIREMENTS
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- 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 non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

**AFFIRMATIVE ACTION REQUIREMENTS
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- 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.

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- 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

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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,

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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 have 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

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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.

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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 thorough 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 he 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.

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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.

October 1, 2023

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CERTIFIED PAYROLL REQUIREMENTS FOR CONSTRUCTION CONTRACTS

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

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

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

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

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1. Definitions.

Terms not defined in this special provision shall have the meaning provided in the *CDOT Standard Specifications for Road and Bridge Construction*.

- A. *CDOT Form 1414 Anticipated DBE Participation Plan*. Document that lists all of the bidder's DBE Commitments and submitted with the bid.
- B. *CDOT Form 1415 Commitment Confirmation*. Document confirming the bidder's Commitments and submitted post-bid.
- C. *CDOT Form 1416 Good Faith Effort Report*. Document that details the actions taken to meet the Contract Goal.
- D. *CDOT Form 1417 Approved DBE Participation Plan*. Document that lists the bidder's approved Commitments at the time of Contract award.
- E. *CDOT Form 1432 Commercially Useful Function Questionnaire*. Document that records and verifies each DBE's CUF for Eligible Participation.
- F. *Commitment*. 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 initially submitted to CDOT via Form 1414 and/or Form 1415.
- G. *Commercially Useful Function (CUF)*. Responsibility for the execution of the work and carrying out such responsibilities by actually performing, managing and supervising the work per Section 8 of this special provision.
- H. *Contract Goal*. The percentage of the Contract designated by CDOT for DBE participation as specified by the Project Special Provision *Disadvantaged Business Enterprise (DBE) Contract Goal*. For determining whether the Contract Goal was met before award, the Contract Goal will be based upon the proposal amount excluding force account items. In the event a Contract Modification Order increases the amount of the Contract, as described in Section 6 of this special provision, the Contract Goal shall be based on the Total Earnings Amount.
- I. *DBE Program Manual*. The manual maintained by the Civil Rights & Business Resource Center (CRBRC) detailing CDOT's policies and procedures for administering the DBE program.
- J. *Disadvantaged Business Enterprise (DBE)*. A Colorado-certified Disadvantaged Business Enterprise listed on the Colorado Unified Certification Program (UCP) DBE Directory.

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- K. *Eligible Participation.* Work by a DBE which counts as valid DBE participation on the Contract and may be used towards fulfillment of a Commitment.
- L. *Good Faith Efforts.* All necessary and reasonable steps to meet 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 before award and throughout performance of the Contract. For guidance on Good Faith Efforts, see Section 4 of this special provision below.
- M. *Joint Check.* A check issued by the Contractor or one of the Contractor's subcontractors to a DBE firm and a material supplier or other third party for materials or services to be incorporated into the work.
- N. *Race-Neutral.* DBE Participation on the Contract obtained through customary competitive procedures.
- O. *Reduction.* Lessening the Commitment amount to a DBE. A Reduction constitutes a partial termination and includes, but is not limited to, instances in which a Contractor seeks to perform work originally designated for a DBE with the Contractor's own forces or to have that work performed by a business entity other than the committed DBE.
- P. *Subcontractor.* An individual, firm, corporation or other legal entity to whom the Contractor sublets part of the Contract, as per Section 101 in the *Standard Specifications for Road and Bridge Construction*. For purposes of this special provision, the term Subcontractor includes suppliers.
- Q. *Substitution.* When a Contractor seeks to find another DBE to perform work on the Contract as a result of a Reduction or Termination.
- R. *Termination.* When a Contractor no longer intends to use a DBE for fulfillment of a Commitment.
- S. *Total Earnings Amount:* Amount of the Contract earned by the Contractor, including approved Contract Modification Orders and approved force account work performed, but not including 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).
- T. *Work Code.* A code to identify the work that a DBE is certified to perform as a DBE. A work code includes a six digit North American Industry Classification System (NAICS) number 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.

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2. **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. When a Contract Goal for DBE participation is set pursuant to the U.S. Department of Transportation's DBE Program, the apparent low responsible bidder must show that they have committed to DBE participation sufficient to meet the Contract Goal or has otherwise made Good Faith Efforts to do so in order to be awarded the Contract.

The Contractor's progress towards the Contract Goal will be monitored throughout the Contract to ensure the fulfillment of the Contractor's DBE Commitments. Modifications to the Commitments must receive prior approval. If the amount of the Contract increases during the performance of the Contract, the Contractor must make Good Faith Efforts to obtain additional DBE participation to meet the Contract Goal. Final payment to the Contractor may be reduced if the Contractor has failed to fulfill Commitments and/or make Good Faith Efforts to meet the Contract Goal following an increase in the amount of the Contract. The Contractor may be subject to the withholding of payment and/or other contractual remedies if the Contractor does not comply with the requirements of this special provision.

For general assistance regarding the DBE program and compliance, contact CDOT's CRBRC or the CDOT Region Civil Rights Office overseeing the project. For project specific issues, contact the Engineer or CDOT Regional Civil Rights Office.

All forms referenced by this special provision can be found on the CDOT website in the CDOT Forms Catalog: <http://www.codot.gov/library/forms>.

3. **Contract Assurance.** By submitting a proposal for this Contract, the bidder agrees to the following assurance and shall include the following paragraph verbatim in all subcontracts including those with non-DBE firms:

The Contractor, subrecipients of DOT-assistance through CDOT, 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, which may include, but is not limited to: (1) Withholding monthly progress payments; (2) Assessing sanctions; (3) Liquidated damages; and/or (4) Disqualifying the contractor from future bidding as non-responsible.

4. **Good Faith Efforts.** Good Faith Efforts may be required before award and/or during Contract performance. Good Faith Efforts should include, but are not limited to, reaching out to DBEs that could perform subcontracting opportunities on the Contract, breaking out contract work items into economically feasible units (e.g., smaller tasks or

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quantities) to facilitate DBE participation even when the bidder/Contractor might otherwise self-perform these items, negotiating in good faith with DBEs and not refusing to utilize a DBE for price alone, and other efforts to obtain DBE participation on the Contract. For additional guidance on making Good Faith Efforts see 49 CFR Part 26 Appendix A.

(a) *Bidding Requirements.* When a Contract Goal is established, the Contract may not be awarded until the apparent low responsible bidder has demonstrated Good Faith Efforts to meet the Contract Goal by either

- Documenting sufficient Commitments to meet the Contract Goal, or
- Documenting adequate Good Faith Efforts to meet the Contract Goal even though they did not obtain enough Commitments to do so.

A Commitment may be made to a firm at any tier. The apparent low responsible bidder must have received a quote from a DBE in order to claim a Commitment to a DBE.

(1) *Anticipated Participation Plan.* All bidders shall submit Form 1414 listing Commitments obtained from DBEs, with their proposal, even if such Commitments do not meet the Contract Goal. If the apparent low responsible bidder has not obtained any Commitments or if the Contract Goal is 0% and the apparent low responsible bidder is electing not to make voluntary Commitments, they shall still submit Form 1414 documenting zero anticipated participation. Failure to submit a signed Form 1414 shall result in rejection of the proposal and the apparent low responsible bidder deemed non-responsive. The apparent low responsible bidder shall ensure that Commitments, and the resulting estimated Eligible Participation, have been properly calculated before submitting their proposal. If the apparent low responsible bidder is a DBE seeking Eligible Participation credit for self-performance, the apparent low responsible bidder shall include themselves in Form 1414, list the work to be self-performed, and the amount that the bidder intends to count as Eligible Participation.

(2) *Utilization Plan.*

- a. *CDOT Advertised Projects.* These projects will require the submission of a DBE Utilization Plan (UP) via B2GNow. The apparent low responsible bidder shall submit the UP within five days of bid opening. In order to complete the UP, the apparent low responsible bidder shall obtain and upload in B2GNow a completed Form 1415 for each DBE listed on Form 1414. If the total Eligible Participation submitted on the Form 1414 and/or confirmed on Form 1415 did not meet the Contract Goal, the

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apparent low responsible bidder shall also submit Form 1416 with the UP in B2GNow. The Form 1416 should include any supporting documentation which the apparent low responsible bidder would like to be considered as evidence of their Good Faith Efforts. If a non-DBE was selected in lieu of a DBE, the apparent low responsible bidder shall include all quotes from the non-DBE and DBE firms.

The apparent low responsible bidder shall complete Section 1 of the Form 1415 and the DBE shall complete Section 2 of Form 1415. The Commitment in Form 1415 shall be consistent with the Commitment listed on Form 1414. If a Commitment is made to second tier or lower DBE subcontractor, the apparent low responsible bidder maintains responsibility for the fulfillment of the Commitment and shall sign the Form 1415. The apparent low responsible bidder shall not Terminate, Reduce, or Substitute a Commitment listed on Form 1414 without following the procedures outlined in Section 5 below. Increases in the Commitment amount do not require CDOT approval per the procedures in Section 5 below.

- b. *Projects Not Advertised by CDOT.* The apparent low responsible bidder shall submit to the project owner a completed Form 1415 for each DBE listed on the Form 1414 by 4:30 pm on the fifth day after bid opening. If the total Eligible Participation submitted on the Form 1414 and/or Form 1415 does not meet the Contract Goal, the apparent low responsible bidder shall also submit Form 1416 along with any supporting documentation of the apparent low responsible bidder's Good Faith Efforts. If a non-DBE was selected in lieu of a DBE, the apparent low responsible bidder shall include all quotes from the non-DBE and DBE firms.

The apparent low responsible bidder shall complete Section 1 of the Form 1415 and the DBE shall complete Section 2 of Form 1415. The Commitment in Form 1415 shall be consistent with the Commitment listed on Form 1414. If a Commitment is made to second tier or lower DBE subcontractor, the apparent low responsible bidder maintains responsibility for the fulfillment of the Commitment and shall sign the Form 1415. The apparent low responsible bidder shall not Terminate, Reduce, or Substitute a Commitment listed on Form 1414 without following the

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procedures outlined in Section 5 below. Increases in the Commitment amount do not require approval per the procedures in Section 5 below.

- (3) *Good Faith Effort Review Before Award.* The Forms 1414, 1415, and UP (for CDOT advertised projects) will be evaluated to ensure that each Commitment is valid and all Eligible Participation has been properly calculated. The apparent low responsible bidder may be required to provide additional information in order to confirm the accuracy of a Commitment.

If the apparent low responsible bidder's Forms 1414, 1415, and UP (for CDOT advertised projects) claimed that the Contract Goal was met but the total estimated Eligible Participation of the Commitments does not meet the Contract Goal, the apparent low responsible bidder will be given two working days to amend their Commitments by submitting amended Form(s) 1415 and UP (for CDOT advertised projects). If the total Eligible Participation on the amended Commitments do not meet the Contract Goal, the apparent low responsible bidder shall submit Form 1416 and provide documentation of their Good Faith Efforts.

When the total estimated Eligible Participation of the Commitments does not meet the Contract Goal, the Form 1416 and all supporting documentation will be evaluated per Appendix A of 49 CFR Part 26. The apparent low responsible bidder will be deemed to not have made Good Faith Efforts if a Commitment lists a DBE for a work area for which the DBE is not certified and the apparent low responsible bidder cannot establish a reasonable basis for the error. Commitments made after submission of the bid will only be considered for acceptance if the bidder demonstrates that (1) Good Faith Efforts were made before submission of the bid, and (2) there is reasonable justification for not obtaining sufficient Commitments before submission of the bid.

The apparent low responsible bidder will be notified in writing if CRBRC determines that Good Faith Efforts to meet the Contract Goal were not demonstrated. The apparent low responsible bidder may request administrative reconsideration as outlined in subsection 4(a)(4) of this special provision. CDOT will include instructions on how to request administrative reconsideration in the written Good Faith Effort determination.

- (4) *Administrative Reconsideration.* The apparent low responsible bidder will be provided an opportunity to request administrative

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reconsideration if the CRBRC determines that the apparent low responsible bidder did not demonstrate Good Faith Efforts to meet the Contract Goal. The independent Administrative Reconsideration Official is the CDOT Chief Engineer or designee, provided that such designee did not participate in the original determination. The CRBRC will provide the Administrative Reconsideration Official with a copy of the Good Faith Effort notice issued to the apparent low responsible bidder. The apparent low responsible bidder shall have five working days from the date of the Good Faith Effort determination notice to submit a written request for administrative reconsideration. The written request shall include the apparent low responsible bidder's basis for reconsideration, including any supporting documentation which they would like to be considered. The written request shall also include a statement as to whether the apparent low responsible bidder would like an in-person or telephonic hearing before the Administrative Reconsideration Official. If the apparent low responsible bidder does not specify a hearing request, the right to a hearing will be waived and administrative reconsideration will be based on the available record, as well as any written documentation provided by the apparent low responsible bidder. If the apparent low responsible bidder requests a hearing, the Administrative Reconsideration Official will establish a date and time for the hearing and send written notice at least two working days in advance of the hearing. The Administrative Reconsideration Official may waive the two-day requirement if holding the hearing sooner is determined to be in the public interest. The Administrative Reconsideration Official may request additional documentation. A copy of all requests and responses shall be provided to all parties. The Administrative Reconsideration Official will issue the final determination as to whether the apparent low responsible bidder demonstrated Good Faith Efforts to meet the Contract Goal. The determination of the Administrative Reconsideration Official is final.

(5) *Approval*. Upon a determination that the apparent low responsible bidder has demonstrated Good Faith Efforts to meet the Contract Goal, the apparent low responsible bidder will be issued Form 1417 or an approved UP in B2GNow (for CDOT advertised projects), documenting the approved Commitments on the Contract.

5. **Commitment Modifications.** The Contractor shall fulfill Commitments unless the Contractor obtains approval for Termination, Reduction, or Substitution. Unless approved, the Contractor will not be entitled to payment for the work or materials

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pertaining to an unapproved Termination, Reduction, or Substitution. During the performance of the Contract, the Contractor shall use Form 1420, *DBE Participation Plan Modification Request* to communicate all requests for Termination, Reduction, and/or Substitution. One Form 1420 may include multiple Commitment modification requests and must be submitted to CDOT at the time of the occurrence or, if that is not possible, within a reasonable time of the occurrence requiring Termination, Reduction, and/or Substitution. Failure by the Contractor to carry out the requirements of this section is a material breach of the Contract and may result in the termination of the Contract or other established remedies.

(a) *Good Cause Requirement.* Termination, Reduction, and/or Substitution will not be approved unless the Contractor has Good Cause to modify the Commitment. Good Cause includes, but is not limited to

- i. The DBE fails or refuses to execute a written contract;
- ii. The DBE fails or refuses to perform the work of their 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 their 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;
- 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; or
- xi. Other documented Good Cause that compels termination.

Good Cause does not exist if the Contractor seeks Termination so that the Contractor can self-perform the work for which the DBE was engaged or solely so that the Contractor can Substitute another DBE or non-DBE contractor after Contract award. When work Committed to a DBE is eliminated or reduced and such change is not due to and/or initiated by the Contractor, the change shall be Good Cause for Termination or Reduction. Upon approval of a Termination and/or Reduction, the Contractor will be subject to the Substitution requirements of subsection 5(d) of this special provision.

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- (b) *Notice to the DBE.* The Contractor shall notify the DBE in writing of the Contractor's intent to Terminate, Reduce, or Substitute, and the underlying reason(s) before submitting the Form 1420 requesting the proposed Commitment modification. In the notice of intent, the Contractor shall provide the DBE at least five days to respond to the notice and inform the Contractor of the reasons, if any, why the DBE objects to the proposed Commitment modification. The Contractor is not required to provide the five days written notice in cases where the DBE in question has provided written notice they are withdrawing from their subcontract or purchase order. The notice period may be reduced if determined to be in the public interest by the project owner.

Following the notice period, the Contractor shall submit a Form 1420 to request approval of the proposed Commitment modification, along with written documentation of the notice given to the DBE.

- (c) *Determination.* The Contractor will be notified in writing of the Good Cause determination and whether the modification request is approved or denied.
- (d) *Substitution Requirement.* When a Commitment is Terminated or Reduced (including when a DBE withdraws), the Contractor shall make Good Faith Efforts to find another DBE to Substitute for the original DBE. These Good Faith Efforts shall be directed at finding another DBE to perform at least the same amount, but not necessarily the same type, of work under the Contract as the participation that was Terminated or Reduced up to the Contract Goal. To make a Substitution, the Contractor may:
- i. Make a new Commitment to any unperformed work on the Contract by providing a completed Form 1415, *Commitment Confirmation* for each new DBE Commitment;
 - ii. Increase the amount of an existing Commitment for any unperformed work on the Contract by submitting a revised Form 1415 for that Commitment; or
 - iii. Utilize any Race-Neutral Eligible Participation on the Contract performed before the Form 1420 submission as part of their Good Faith Efforts pursuant to this subsection by submitting a completed Form 1420.

If the Contractor has not obtained sufficient Substitutions up to the Contract Goal, the Contractor shall submit evidence of Good Faith Efforts to Substitute via the Form 1416 *Good Faith Effort Report*. The Contractor shall have seven days from the submission date of the Commitment modification request (Form 1420) to submit documentation of Substitutions and/or Form 1416 evidencing

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Good Faith Efforts to obtain sufficient Substitutions despite failing to do so.
This period may be extended at the discretion of CDOT.

6. **Contract Modification Orders.** When one or more Contract Modification Orders, as defined in CDOT's *Standard Specifications for Road and Bridge Construction*, adds new work items or increases the total dollar amount of the Contract, the Contractor is required to make Good Faith Efforts to obtain additional Eligible Participation sufficient to meet the Contract Goal on the Total Earnings Amount. Under this section, the Contractor may obtain additional Eligible Participation by:
- i. Making a new Commitment to any unperformed work on the Contract by providing a completed Form 1415, *Commitment Confirmation* for each new DBE Commitment;
 - ii. Increasing the amount of an existing Commitment for any unperformed work on the Contract by submitting a revised Form 1415 for that Commitment;
 - iii. Utilizing other Eligible Participation on the Contract as part of Good Faith Efforts pursuant to this Section by submitting a completed Form 1420.

When the Contractor elects to obtain additional Eligible Participation under subpart (iii), such Eligible Participation does not need to be included as part of an approved Commitment. However, the Contractor is responsible to provide a completed Form 1420 documenting all additional Eligible Participation obtained under subpart (iii) before, or at the time of, Contract finalization.

If the Contractor determines they will be unable to obtain additional Eligible Participation sufficient to meet the Contract Goal on the Total Earnings Amount following a Contract Modification Order(s), the Contractor shall provide documentation of Good Faith Efforts to obtain additional DBE participation by submitting a completed Form 1416, along with any supporting documentation which they would like considered as evidence of Good Faith Efforts. The Form 1416 must be submitted within a reasonable time of the Contractor's initial determination that they will be unable to obtain additional Eligible Participation sufficient to meet the Contract Goal on the Total Earnings Amount. The Contractor may be required to provide additional documentation. The Contractor's Good Faith Efforts to obtain additional Eligible Participation, or lack thereof, will be considered when assessing any potential payment reductions to the Contractor per Section 9 of this special provision.

When one or more Contract Modification Orders, as defined under subsection 101.18 of CDOT's *Standard Specifications for Road and Bridge Construction*, reduces work items or decreases the total dollar amount of the Contract, any approved Commitments on the

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Contract continue to be binding on the Contractor unless Good Cause is established to Substitute, Terminate, and/or Reduce the Commitment per Section 5 of this special provision.

7. **Counting.** In order for work performed by a DBE to count as Eligible Participation, the following criteria must be met:

- (a) *DBE Certified to Perform the Work.* The DBE must be certified by the Colorado UCP in the work to be performed. DBEs are certified in particular areas of work which are designated by a Work Code. Each DBE's Work Codes can be found on their profile on the Colorado UCP DBE Directory.

The DBE must be certified to perform the work, and not under suspension, upon submission of the Commitment and upon execution of the DBE's subcontract. When a Commitment has been made, but upon review of the Form 205, *Sublet Permit Application*, or Form 1425, *Supplier Application Approval Request*, 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 as Eligible Participation. The Contractor shall Terminate the DBE Commitment and seek Substitution(s) per subsection 5(d) of this special provision. However, a DBE's work will continue to count as Eligible Participation if the DBE was certified upon approval of the Form 205 or Form 1425 but the certification status changes during the performance of the work. Suppliers must be certified upon execution of the purchase order.

- (b) *Work Included in Commitment and/or Verified via Form 205 or Form 1425.* 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 an approved Commitment or verified via Form 205 or Form 1425. The work identified on a Form 1425 shall not count against the Contractor's 30 percent as required under CDOT's *Standard Specifications for Road and Bridge Construction*.

If the Contractor intends to use a DBE for work in order to fulfill an existing Commitment to that DBE but the work was not listed in the original Commitment (Form 1415), the Contractor shall submit a request for modification per Section 5 of this special provision to include the new area of work to be performed. Unapproved work may count as Eligible Participation on the Contract but may not be used towards the fulfillment of the original Commitment to the DBE. 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 unless such work is in addition to the original Commitment.

Form 205 will be reviewed to determine whether the work being sublet is consistent with the Contractor's Commitments. Approval of the sublet request may be withheld if the Contractor has Reduced, Terminated, or otherwise modified the

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type or amount of work to be performed by a DBE without seeking advanced approval.

- (c) *Work Performed by DBE.* The work must be actually performed by the DBE with their own forces. For purposes of this specification, work performed by the DBE with their own forces includes work by temporary employees, provided such employees are under the control of the DBE; the cost of supplies and materials obtained by the DBE for their work on the Contract, provided that such supplies are not purchased or leased from the Contractor or a subcontractor that is subletting to the DBE; the cost of any equipment leased by the DBE, provided that such equipment is not leased from the Contractor or a subcontractor that is subletting to the DBE.

When a DBE subcontracts part of the work, the value of the subcontracted work shall be counted as Eligible Participation only if the subcontractor is a DBE and meets the criteria of this special provision. Performance of subcontracted work by non-DBE subcontractors, including non-DBE trucking firms and owner-operators, is not Eligible Participation and may not be used towards the fulfillment of a Commitment, the Substitution requirements under Section 5(d) of this special provision, and/or additional Eligible Participation under Section 6 of this special provision.

- (d) *Payment Received for Work.* The DBE must receive payment, including the release of their retainage, in order for the work to count as Eligible Participation.
- (e) *Special Calculations for Suppliers.* When a DBE supplies goods or materials for 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, based upon the actual work performed, per 49 CFR Part 26.55(e). When a DBE is deemed to be acting as a manufacturer, 100 percent of the cost of the materials and/or supplies will count as Eligible Participation. When a DBE is deemed to be acting as a regular dealer (non-manufacturer supplier), only 60 percent of the cost of the materials and/or supplies will count as Eligible Participation. When a DBE is deemed to be acting as a broker, only the reasonable brokerage fee will count as Eligible Participation.
- (f) *Service Fees.* For a DBE firm providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, the fees and commissions charged by the DBE shall count as Eligible Participation, provided the fees are not excessive as compared with fees customarily allowed for similar services. In the case of DBE temporary employment placement agencies, only the placement fee for a temporary employee that will be specifically and exclusively used for work on the contract shall count as Eligible Participation; the hourly fee

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does not count as Eligible Participation unless the firm is also certified in the work to be performed.

- (g) *Joint Venture Calculation.* When a DBE is a participant in a joint venture, the DBE must submit Form 893, *Information for Determining DBE Participation when a Joint Venture Includes a DBE*, to determine how much of the work performed by the joint venture may be considered Eligible Participation. To ensure sufficient time for review, Form 893 shall be submitted to CDOT no less than ten days before the submission of the bid or, if requested during the Contract, the point at which the DBE will begin work.
- (h) *Commercially Useful Function.* Upon a determination that a DBE has not performed a Commercially Useful Function (CUF) on the project, no participation by such DBE is Eligible Participation. DBE performance on the Contract will be monitored to ensure each DBE is performing a CUF. The DBE, Contractor, and any other involved third parties may also be subject to additional enforcement actions as described in Section 9 of this special provision.

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 will be considered in evaluating whether a DBE is performing a CUF. With respect to material and supplies used on the Contract, 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 in order to perform a CUF.

With respect to trucking, the DBE trucking firm must own and operate at least one fully licensed, insured, and operational truck used on the Contract in order to perform a CUF. Additionally, the DBE trucking firm must be responsible for the management and supervision of their entire trucking operation on the Contract. Work by a DBE trucking firm will count as Eligible Participation only if the work was performed (i) with trucks owned and insured by the DBE trucking firm and those trucks were operated by drivers employed by the DBE trucking firm or (ii) with trucks leased by the DBE trucking firm from another DBE firm including owner operators who are certified DBEs. The DBE who leases trucks from another DBE receives credit for the transportation services the lessee DBE provides on the contract.

A DBE does not perform a CUF when their 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. Similar transactions involving non-DBEs will be evaluated in order to determine whether a DBE is an extra participant. If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of their contract or subcontract with their own work force, or the DBE subcontracts a greater portion of the work than would be

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expected on the basis of normal industry practice for the type of work involved, CDOT will presume the DBE is not performing a CUF. The DBE may present evidence to rebut this presumption.

CUF will be evaluated using Form 1432 per Section 8(a) below.

- (i) *Joint Checks.* All Joint Checks must be approved before they are used in payment to a DBE. Joint Checks used in payments to DBEs will be monitored closely to ensure the DBE is performing a CUF and 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. Failure to receive approval of a Joint Check may result in not counting such payment as Eligible Participation.

8. Contract Finalization

- (a) *Form 1432.* In order to have work performed and/or supplies provided by a DBE on the Contract count as Eligible Participation, the Contractor must submit a Form 1432 for that DBE. The Form 1432 must be signed by the DBE, Contractor and Project Engineer. Work performed and/or supplies provided on the Contract by a DBE Commitment will not count as Eligible Participation without a corresponding Form 1432 and the Contractor may be subject to a payment reduction as described in subsection 8(b) of this special provision.
- (b) *Payment Reduction.* The Contractor's retainage will not be released until a determination is made as to whether the Contractor will be subject to a payment reduction. The Contractor will be subject to a payment reduction for any unapproved Termination, Reduction, and/or Substitution. Additionally, the Contractor will be subject to a payment reduction for any portion of a Commitment that was not fulfilled. The Contractor will not be subject to duplicate payment reductions for the same offense. The amount of the payment reduction may be adjusted if the Contractor demonstrates that a failure to fulfill a Commitment or otherwise meet their obligations under this special provision was due to circumstances outside of their control.

- 9. **Other Enforcement.** As necessary, participants may be reviewed or investigated. 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.

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

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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. Failure to comply with this paragraph shall be a ground for appropriate action against the party involved (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).

Upon a determination 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 impermissible business arrangement, or if the Contractor engages in repeated violations, falsification or misrepresentation, any fraudulent or misrepresented DBE participation shall not count as Eligible Participation, progress payments may be withheld from the Contractor commensurate with the violation, the Contractor's prequalification status may be suspended, the matter may be referred to the Office of Inspector General of the U.S. Department of Transportation for investigation and/or any other available contractual remedy may be sought.

Decision Nos. CO20240006 dated January 5, 2024 supersedes Decision Nos. CO20230006 dated January 6, 2023.		Modifications			ID
		Mod Number	Date	Page Number(s)	
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.		1	7/5/24	1	1
		2	8/2/94	1	2
General Decision No. CO20240006 applies to the following counties: Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, and Park counties.					
General Decision No. CO20240006 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	37.65	13.75%+7.55	1	
	POWER EQUIPMENT OPERATOR:				
	Drill Rig Caisson				
1001	Smaller than Watson 2500 and similar	35.03	15.20	2	
1002	Watson 2500 similar or larger	35.41	15.20	2	
	Crane (50 tons and under)				
1003	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	35.78	15.20	2	
	Crane (51 - 90 tons)				
1004	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	36.09	15.20	2	
	Crane (91 - 140 tons)				
1005	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	37.54	15.20	2	
1006	Scraper				
1007	Single bowl under 40 cubic yards	35.20	15.20	2	
1008	40 cubic yards and over	35.41	15.20	2	

General Decision No. CO20240006				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
	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, 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	

General Decision No. CO20240006				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
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	

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The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	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	

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The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	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	
	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	

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The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATOR (con't):			
	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	

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The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATOR (con't):			
	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	

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The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATOR (con't):			
	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	
1812	Broomfield, Clear Creek, Elbert, Gilpin, Park	18.19	5.27	
1121	Jefferson	19.46	6.04	
	Dump Truck			
1122	Adams	16.68	5.27	
1123	Arapahoe	18.94	5.27	
1124	Broomfield, Clear Creek, Elbert, Gilpin	16.47	5.27	
1125	Jefferson	16.97	4.78	
1126	Park	15.40	3.21	
	Lowboy Truck			
1127	Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	17.25	5.27	
1128	Jefferson	19.80	6.42	
1129	Mechanic	26.48	3.50	
	Multi-Purpose Speciality and Hoisting Truck			
1130	Adams, Broomfield, Clear Creek, Elbert, Gilpin, Park	17.49	3.17	
1131	Arapahoe	15.79	2.48	
1132	Jefferson	15.13	3.89	

General Decision No. CO20240006				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	TRUCK DRIVER (con't.):			
	Semi/Trailer Truck (Includes Pickup and Pilot Car)			
1133	Adams, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, Park	18.39	4.13	
1134	Arapahoe	16.00	2.60	
	Single Axle (Includes Pickup and Pilot Car)			
1135	Adams, Jefferson	13.93	3.68	
1136	Arapahoe	15.10	3.77	
1137	Broomfield, Clear Creek, Elbert, Gilpin, Park	14.74	3.68	
1138	Truck Mounted Attenuator	12.43	3.22	
	Water Truck			
1139	Adams	17.50	5.19	
1140	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Park	19.36	4.07	
1141	Jefferson	17.57	5.27	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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

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

Wage Determination Appeals Process

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program.

If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

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

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

Write to:

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

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

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

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

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

End of General Decision No. CO20240006

On The Job Training

This On-the-Job Training (OJT) special provision is an implementation of 23 U.S.C, 140(a), a federal requirement to provide equal opportunity and training on federal-aid construction projects. The Contractor shall meet the requirements of the FHWA 1273 for all apprentices and trainees. For additional guidance, please look at the OJT Contractor Manual.

1. Goal Setting

CDOT will set OJT goals for every federally-assisted project. Goals for the projects will be set based on the criteria that is outlined in the 23 CFR Part 230, Appendix B to Subpart (A):

- A. Availability of minorities, women, and disadvantaged persons for training;
- B. The potential for effective training;
- C. Duration of the contract;
- D. Dollar value of the contract;
- E. Total normal workforce that the average bidder could be expected to use;
- F. Geographic location;
- G. Type of work;
- H. The need for journey-level workers in the area;
- I. Recognition of the state's goal;
- J. A satisfactory ratio of trainees to journeymen expected to be on the workforce.

The number of required training hours will be identified in the Contract. The following chart provides guidelines based on contract value, but the required number of hours will be determined by CDOT after consideration of the aforementioned variables.

Contract dollar value	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

2
On The Job Training

2. Training Plan Options

CDOT accepts the following training programs:

- A. CDOT's pre-approved classifications utilization program (PAC-UP);
- B. A registered U.S. Department of Labor training program or apprenticeship program;
- C. Approved programs through workforce centers and through specific groups like Colorado Contractors Association (CCA) and Western Colorado Contractors Association (WCCA);
- D. A Contractor specific plan approved by CDOT and the Federal Highway Administration (FHWA).

The minimum length and type of training for each skilled craft shall be as established in the training program selected by the Contractor.

When one or more approved plans are chosen, the Contractor shall submit the OJT Contractor Commitment to Meet OJT Requirements, CDOT Form 1337 to the Engineer. Additional pre-approved training programs and/or additional apprentices/trainees may be utilized at any point throughout the project. The plan option(s) that the Contractor chooses will be effective for the duration of the project.

3. Journey-Level Worker to Apprentice/Trainee Ratio

The OJT goal requirement shall be met through approved trainee(s)/apprentice(s) working on the CDOT project under the supervision of a journey-level worker. For the CDOT Pre-Approved Classification Training Programs (PAC-UP), the apprentice/trainee ratio to journey-level worker shall not exceed a one to one ratio for all classifications, and the Contractor shall not exceed 25 percent of the workforce as trainees/apprentices at any time. Furthermore, it is at CDOT's discretion that a stricter ratio guideline may be imposed as outlined in the specific training classification. For all other approved programs, the apprentice/trainee ratio shall be as outlined in the specific program. When apprentices/trainees are on the job without proper supervision as outlined above, they shall be paid full Davis-Bacon wages.

4. Trainee Selection

Two components must be considered when choosing a trainee:

- A. The intent of this program is for Contractors to recruit and train entry-level individuals or individuals who will be working within new classifications and guide them toward journey-level status in that specific classification. A trainee will not be approved in any classification for which they have already obtained journey-level status.
- B. Another intent of the OJT program is the primary consideration for the Contractor to use minorities, women, and disadvantaged persons to fulfill the trainee roles, and as such, the Contractor shall make every effort to enroll such individuals in the program by using "systematic and direct recruitment through public and private sources."

On The Job Training

The consideration to include women and minorities is based on the regulation; however, it will not be used to systematically deny any one person or group from the opportunity to be a part of the OJT program. CDOT may reject non-minority male trainees for entry into the program if it is determined that a Contractor failed to make sufficient good faith efforts (GFE) to hire minorities or female trainees and/or the Contractor failed to document or submit evidence of its GFE to do so. CDOT will consider a Contractor's documentation of all GFE on a case-by-case basis and will take into account the items listed in the goal setting section of this specification. For more information, please see Section 11 of this specification.

5. OJT Apprentice/Trainee Approval

As a condition of the OJT program, the Contractor will:

- A. Notify all employees at the start of employment and at a minimum of at least once per year regarding the available training programs, positions, and eligibility requirements. The Contractor shall document that this information was conveyed to and received by employees.
- B. Provide each trainee with a copy of his or her enrollment form (if applicable) and the training program within a month of starting the chosen plan.

The OJT submittals (CDOT Form 1337, Contractor Commitment to Meet OJT Requirements; CDOT Form 832, Trainee Status and Evaluation; CDOT Form 838, OJT apprentice/trainee Record) shall be filled out completely and approved or rejected by CDOT. If the apprentice/trainee is working within the proposed classification before approval is granted, full Davis-Bacon prevailing wages shall be paid to the individual.

The Regional Civil Rights Office must approve the CDOT Form 838 prior to any of the hours counting toward the OJT goal. If there is a CDOT delay that is completely outside of the Contractor's responsibility for approval of the apprentices/trainees, and if approval is ultimately granted, the date that will be utilized will be ten business days after the date that the CDOT Form 838 was submitted.

The Contractor shall retain full responsibility for meeting the training requirements imposed by this special provision.

6. Eligible Work Activities that Count Toward the Training Goal

The work hours that are completed on the site of work and per the training documents for approved apprentices/trainees in approved classifications and programs will apply toward the project goal. Hours for work performed outside the individual's approved training classification will not count toward the project OJT goal and the individual shall be paid full applicable prevailing wage.

Job shadowing can apply toward the project goal if it is written into the specific training plan. If the Contractor is using CDOT's PAC-UP training program, job shadowing can apply toward the project goal when the approved employee is performing within the "Observation" component of the plan (hours vary by classification). Non-CDOT project hours will not be accepted toward the project goal.

Although US DOL apprenticeship programs can use the reduced wages for any CDOT job (with or without an OJT goal) with approval, none of these "additional" hours may be

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banked or included for use as part of the required special provisions on any project other than that for which it was approved.

The Contractor may count OJT hours accomplished by a subcontractor with an approved plan. The subcontractor's trainee or apprentice, who is enrolled in any of the approved OJT programs and is contributing toward meeting a project's OJT goal hours, can count toward the project's OJT goal to satisfy the requirement of this specification. A subcontractor who chooses to participate in meeting the OJT goal shall follow the same process as the Contractor in terms of approving apprentices/trainees, submitting forms, etc. The Contractor retains the full responsibility for meeting the training requirements imposed by this special provision.

7. Contractor Training and Trainee Monitoring

The Contractor's representative (supervisor, manager, or other designee) will evaluate progress for the apprentice/trainee monthly and will provide a copy to the apprentice/trainee of the submitted CDOT Form 832 within 30 calendar days. This evaluation will include documentation of the apprentice/trainee's performance including what was done well and what needs to be improved. The Contractor training and monitoring will be evaluated through CDOT's use of the CDOT Form 200 Interview.

8. Wages

The Contractor may pay apprentice/trainee wages at a reduced rate for those that are in an approved program according to the following guidelines:

US DOL Apprenticeship Programs

Rates (at minimum) will be paid according to the scaled adjustments for a registered US DOL Apprentice. Fringe benefits (either in cash and/or bona fide benefits in lieu of cash) will be paid in full and as outlined by the bargained agreement. If fringe benefits are not mentioned as part of a bargained agreement or if there is no collectively bargained agreement, full fringe benefits will be paid as outlined through the US DOL wage decision. Approved US DOL apprenticeship programs can use the reduced wages for any CDOT project.

If the project does not have a training goal and the Contractor is seeking to pay apprenticeship rates as part of a registered US DOL Apprenticeship Program, the following documentation is required to ensure wages are being paid correctly: apprenticeship program registration, OA (formerly BAT) certificates, and collective bargaining agreement including the wage sheet.

Other Approved Programs

For all other OJT wage reductions, reduced percentages are allowed for the project if there is a goal greater than zero as outlined in the 23 CFR Appendix B to Subpart A of Part 230 (as described in this section), in the collectively bargained agreement, or as outlined in the specific plans. If the Contractor chooses to pay the trainee rates, the reduced percentage shall be based only on the base rate of pay. Fringe benefits shall be paid at 100 percent of the journey-level wage. If the apprentice/trainee is working

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within the proposed classification before approval is granted, full Davis-Bacon prevailing wages shall be paid to the apprentice/trainee.

The minimum trainee wage (base and fringe) shall be no less than \$13.00 per hour.

Trainees shall be paid at minimum:

First half of the training period -- at least 60 percent of the appropriate minimum journey-level rate

Third quarter of the training period - at least 75 percent of the appropriate minimum journey-level rate

Last quarter of the training period -- at least 90 percent of the appropriate minimum journey-level rate

9. Contractor Reporting

The Contractor shall keep all data associated with the trainees and the project for a period of at least three years from the closing date of the Contract.

10. Reimbursement to Contractors

For the purposes of reimbursement, the Contractor will have satisfied its responsibilities under this specification if CDOT has determined that it has fulfilled the acceptable number of training hours. Contractors will be reimbursed at a rate of \$10.00 per hour per (approved) trainee for all OJT hours worked in approved classifications up to the project goal.

The Contractor will be reimbursed for no more than the amount outlined in the OJT Force Account budget.

11. OJT Good Faith Efforts (GFE)

CDOT recognizes two explanations of good faith efforts: (1) The Contractor will be required to prove an effort has been made to achieve a diversified workforce, but it has not yet been accomplished, or (2) The attempt has been made to meet the number of required OJT hours by using approved trainees or apprentices in approved classification(s) utilizing approved plans, but the Contractor cannot meet the required number of hours. In either case, a GFE will be required, and the Region Civil Rights Office will make the determination.

- A. If the Contractor does not meet its OJT project goal with the inclusion of some female and/or minority trainees, the Contractor may be requested to produce documentation of adequate good faith efforts taken to fill that position with a minority or female applicant. Good faith efforts are designed to achieve equal opportunity through positive, assertive, and continuous result-oriented measures. Good faith efforts should be taken as hiring opportunities arise.
- B. If the Contractor does not meet its OJT project goal, the Contractor may submit a CDOT Form 1336, Waiver Request for Contract's OJT Hours. On the form, the Contractor shall outline and submit all good faith efforts made when it is believed that the required number of training hours will not be met. If GFE is not demonstrated and approved, The Contractor will be subject to payment reductions outlined in the Disincentive Section.

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If a good faith effort has been denied by CDOT, the Contractor may ask for reconsideration by the Region Civil Rights Manager and the Resident Engineer for the region where work is being performed. Additionally, if requested by the Contractor, the Region Civil Rights Office and the Project Engineer will meet with the Contractor to discuss the Contractor's initial Good Faith Effort determination.

12. Disincentive

A failure to provide the required training without the demonstration and approval of GFE to meet the project OJT goal may result in the Region Civil Rights Office assigning the following disincentive: A sum representing the total number of hours not met in the contract shall be multiplied by the journey worker hourly wages plus fringe benefits [(hours not met) x (dollar per hour + fringe benefits) = disincentive amount].

In order to obtain the disincentive amount, the journey worker wages will be figured using the prevailing wages for the classifications outlined on the CDOT Form 1337. If a single classification is noted on the submitted CDOT Form 1337, then that one wage will be used to figure the monetary amount owed. If multiple classifications are used, then the journey worker wages of all classifications will be used to determine an average wage rate. If the Contractor does not submit any documentation toward the OJT goal, the disincentive rate will be calculated at \$30.00 per hour. CDOT will provide the Contractor a written notice at the final acceptance stage of the project informing them of the noncompliance with this specification which will include a calculation of the disincentive(s) to be assessed.

October 23, 2023

**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. Non-segregated 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. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

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, United States Code, as required in 23 CFR 633.102(b) (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). 23 CFR 633.102(e).

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. 23 CFR 633.102(e).

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) in accordance with 23 CFR 633.102. 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 solicitation-for-bids or request-for-proposals 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). 23 CFR 633.102(b).

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. 23 CFR 633.102(d).

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. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A 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 Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 230, Subpart A, 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 (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 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 Part 35 and 29 CFR Part 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. 23 CFR 230.409 (g)(4) & (5).

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, sexual orientation, gender identity, 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 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 or other knowledgeable company official.

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, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure 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. 23 CFR 230.409. 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, sexual orientation, gender identity, 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, sexual orientation, gender identity, 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 thereunder. 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, sexual orientation, gender identity, 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, 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. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. 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 the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

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 more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, 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, sexual orientation, gender identity, 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), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

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 (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

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

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate 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 used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to DBAconformance@dol.gov. 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.

(4) 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 will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.* 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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its procurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. Basic record requirements (1) Length of record retention. All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) Information required. Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) Additional records relating to fringe benefits. Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must 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.

(4) Additional records relating to apprenticeship. Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. Certified payroll requirements (1) Frequency and method of submission. The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) Information required. The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHDL/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) Statement of Compliance. Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working 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 [29 CFR part 3](#); and

(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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

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

(5) *Signature*. The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification*. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention*. The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents*. The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers*. The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements*. If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures*. Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay*. Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits*. Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio*. The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates*. Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity*. The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. 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. 23 CFR 230.111(e)(2). 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 journeyworkers 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 as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 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 as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, 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 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 [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), 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 watchpersons 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. 29 CFR 5.5.

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 and interest from the date of the underpayment. 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 watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* 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.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

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" in paragraph 1 of Section VI 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: (based on longstanding interpretation)

- (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. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), 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. Pursuant to 23 CFR 635.116(c), 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. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

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 Part 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. 23 CFR 635.108.

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 Part 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). 29 CFR 1926.10.

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 Part 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 11, 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 (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

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. 2 CFR 180.220 and 1200.220.

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. 2 CFR 180.320.

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. 2 CFR 180.325.

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. 2 CFR 180.345 and 180.350.

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, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient 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 recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

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. 2 CFR 180.220 and 180.300.

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. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. 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 System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

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 CFR 180.325.

* * * * *

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 CFR 180.335;.

(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, 2 CFR 180.800;

(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, 2 CFR 180.700 and 180.800; 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. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. 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). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant 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. 2 CFR 180.365.

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, Subpart I, 180.900 – 180.1020, 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 recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "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 recipient or subrecipient 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. 2 CFR 1200.220 and 1200.332.

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. 2 CFR 180.220 and 1200.220.

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 System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

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. 2 CFR 180.325.

* * * * *

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

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should 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 Part 20, App. A.

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.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

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.

**Required Contract Statements
Federal American Rescue Plan ACT / State
and Local Fiscal Recovery Funds (ARPA /SLFRF) Construction Contracts**

The Contractor shall insert the following statements in each construction contract, subcontract and purchase order funded with Federal American Rescue Plan Act / State and Local Fiscal Recovery Funds (a.k.a. "ARPA/SLFRF").

- *On this construction project, in accordance with 2 CFR 200.322 - Domestic preference for procurements, to the greatest extent practicable, a preference is indicated for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products).*
- *The sub-grantee, Contractor, Subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits Subrecipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this Agreement (or agreement). Title VI also includes protection to persons with "Limited English Proficiency" in any program or activity receiving federal financial assistance, 42 U.S.C. § 2000d et seq., as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this Agreement or agreement.*

The Contractor shall further require the inclusion of these statements in all lower-tier subcontracts.