CONSTRUCTION CONTRACT

THIS CONSTRUCTION CONTRACT ("Contract") is made and entered into on the date of the last signature set forth below, by and between the City of Littleton, a municipal corporation within the State of Colorado ("City"), and FNF Construction, Inc., a foreign corporation ("Contractor"). The Contractor and the City are referred to as a "Party" or collectively the "Parties."

1.1 **Contract Documents and Exhibits**. The term "Contract Documents" consist of this Contract together with the following:

Exhibit A	Scope of Work
Exhibit B	Bid Schedule
Exhibit C	Performance and Payment Bond
Exhibit D	Littleton Engineering Design Standards *("Standards and Specifications") (Incorporated by Reference Only) (Exhibit D Available online)*
Exhibit E	Drawings and Specifications
Exhibit F	Special Conditions
Exhibit G	Federal-Aid Construction Contracts Required Contract Provisions

All exhibits referred to in this Contract are attached hereto and are, by reference, incorporated herein for all purposes. Any forms provided within the Contract are not intended to be considered final, and the City expressly reserves the right to modify said contract forms, in its sole discretion. In the event any matter, term, provision, or condition that is the subject of this Contract requires clarification or is in dispute, or is the subject of a difference of opinion, the purpose and intent of the Contract shall be first ascertained by reference to the Contract Documents in their entirety. In the event of any dispute or differences between the respective documents that constitute the Contract Documents, then the Contractor shall secure the written instructions from the City before proceeding with the performance of the services affected by such conflicts, omissions or discrepancies.

For Colorado Department of Transportation ("CDOT")-funded Work, in the event of any inconsistency or discrepancy amongst the provisions of this Contract and CDOT requirements, such shall be resolved by giving precedence in the following order:

1. This Construction Contract
2. Special Provisions
    a. Project Special Provisions
    b. Standard Special Provisions

3. Plans
    a. Detailed Plans
    b. Standard Plans
    c. Calculated dimensions will govern over scaled dimensions
4. Supplemental Specifications
    a. Exhibit D Littleton Engineering Design Standards and Specifications
    b. Exhibit F Special Conditions
5. Standard Specifications 105.10. The Contractor shall not take advantage of any apparent error or omission in the Contract. If the Contractor discovers an error or omission, the Contractor shall immediately notify the City in writing within three (3) days of discovering said error or omission. The City will make corrections and interpretations as necessary to fulfill the intent of the Contract and shall provide a written determination as soon as reasonably possible.

For CDOT-funded Work, Section 119.0 of the Littleton Engineering Design Standards, "Control of Materials", is hereby deleted in its entirety and replaced with the following:

"Standards regarding control of materials shall be in accordance with the CDOT Field Materials Manual, as amended."

1.2 **Project.**

1.2.1 The Contractor shall commence and complete the Scope of Work ("Work"), **Exhibit A**, in accordance with the Contract Documents, as defined herein. The Contractor agrees to perform and complete the Work in a proper and workmanlike manner, consistent with the highest standards of professional and construction practices and in full compliance with, and as required by or pursuant to, this Contract, and with the greatest economy, efficiency, and expedition consistent therewith. The Contractor shall, at its own expense, furnish all labor, materials, tools, supplies, machinery, utilities, permits, licenses, and other equipment that may be necessary for the completion of the Work, as outlined in the Contract Documents. The Contractor shall have no property right in materials after they have been attached, affixed or incorporated in the Work or the soil.

1.2.2 Further, the Contractor acknowledges that all reasonably necessary steps were taken to ascertain the nature and location of the Work, and the general and local conditions which can affect the Work or the cost of the Work. Failure by the Contractor to do so will not relieve it from responsibility for successfully performing Work without additional expense to the City. The City will not be responsible for any understanding or representations concerning conditions unless such understanding or representations are expressly stated in the Contract.

1.2.3 The City shall furnish all lands and rights-of-way required for completion of the Work. In acquiring rights-of-way, the City will proceed as expeditiously as possible, but in the event all rights-of-way or easements are not acquired prior to the beginning of construction, the Contractor shall begin Work on such lands and rights-of-way as have been acquired. No claim for damage will be allowed or shall be made by reason of the City's delay in obtaining lands, easements or rights-of-way. In the event of litigation or other delays in acquiring rights-of-way, the time allowed herein for completion will be extended to compensate for the time actually lost by such delay.

1.3 **Commencement and Completion of the Project**. The Contractor understands and agrees that all Work required under this Contract shall not commence until a Notice to Proceed is issued and shall be fully completed **within 80 (eighty) working days of receiving the Notice to Proceed from the City**. The Contractor acknowledges and understands that it is an essential term of this Contract that Contractor maintain a rate of progress in the Work that will result in completion of the Work in accordance with the Contract Documents, and to that end, Contractor agrees to proceed with all due diligence to complete the Work in a timely manner in accordance with the Contract Documents.

1.4 **Contract Price**. The City accepts the Contractor's bid as set forth in the Bid Schedule, **Exhibit B**, in the total amount of **one million seven hundred thirty-seven thousand seventy-seven dollars and no cents ($1,737,077.00).** The City shall make payment(s) to Contractor in the manner and at such times as set forth in the Standards and Specifications. Should the Contract price exceed one-hundred and fifty-thousand dollars ($150,000.00), the City shall deduct and retain five (5) percent from the total amount of each approved invoice, including Change Orders. The City may also deduct in addition to retainage as stated above, the additional amount(s) of any and all outstanding claims pursuant to Colorado Revised Statute ("C.R.S.") §38-26-107 from each approved invoice.

1.5 **Payments to Constitute Current Expenditures.**

1.5.1 Notwithstanding any other term, provision, or condition herein, all financial obligations of the City are contingent on funds for that purpose being appropriated, budgeted and otherwise made available by the City Council. The City's obligations under the Contract shall not constitute a multiple-fiscal year direct or indirect debt or other financial obligation of the City within the meaning of Article X, Section 20 of the Colorado Constitution.

1.5.2 Further, pursuant to 103.6(2) of Article 91, Title 24, C.R.S., no Change Order, Amendment, or other form of order or directive by the City which requires additional compensable work to be performed, and which work causes the aggregate amount payable under this Contract to exceed the

amount appropriated for the original Contract, shall be executed, or shall work be performed by the Contractor, unless the City provides written assurances to the Contractor that lawful appropriations to cover the costs of such additional work have been made or unless such work is covered under a remedy-granting provision of this Contract. For purposes of this paragraph, "remedy-granting provision" shall be defined as set forth in C.R.S. §24-91-103.6(4).

1.6 **Confidentiality.** Notwithstanding any provision in the Contract Documents to the contrary, the City is obligated to comply with the Colorado Open Records Act (C.R.S. §§24-72-101 *et seq.*), which may require the City to disclose all or a portion of communications relating to the Contract, or terms of same, or of any transaction under the Contract, and other related matters. The Contractor shall familiarize itself with the Colorado Open Records Act. In no event shall the City be liable to the Contractor for the disclosure of all or a portion of communications, or relating documents, or electronic imaging, including all documents and exhibits that may be included as part of this Contract.

1.7 **Bonds**.

1.7.1 Contemporaneous with the Contractor's execution of this contract, the Contractor shall provide a Performance Bond and a Labor and Material Payment Bond as security for the faithful performance and payment of all the Contractor's obligations under the Contract Documents. All bonds shall be in the form prescribed by the City, executed by a surety company i) licensed to do business in the State of Colorado; ii) with a general rating of A and a financial size category of Class X or better in Best's Insurance Guide, each in the penal sum of the contract price; and iii) in conformance with C.R.S. §§ 38-26-105 and 106 ("Bonds"). All Bonds signed by an agent or attorney-in-fact shall be accompanied by a certified copy of the signatory's authority to act. The Contractor shall, at all times while providing, performing, or completing the Work including without limitation at all times while correcting any failure pursuant to the Littleton Engineering Design Standards, maintain and keep in force the Bonds at the Contractor's expense.

1.7.2 If the Surety for any Bond furnished by the Contractor is placed in a receivership or declared bankrupt, or its rights to do business in Colorado are terminated, or it ceases to meet the requirements specified herein, the Contractor shall within five (5) days thereafter substitute another Bond and Surety, both of which shall be acceptable to the City.

1.8 **Insurance.**

1.8.1 The Contractor shall not commence work, and shall not allow any

subcontractor to commence work, until it has obtained all insurance required herein and such insurance has been approved by City. For the duration of the Contract, the Contractor must maintain the insurance coverage required in this section. The City's acceptance of a certificate of insurance or other proof of insurance that does not comply with all insurance requirements set forth in this Contract shall not act as a waiver of the Contractor's breach of Contract or of any of the City's rights or remedies under this Contract.

1.8.2 The Contractor shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to the Contract Documents by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

1.8.3 The Contractor shall procure and maintain at its own cost and shall cause each subcontractor of the Contractor to procure and maintain at its own cost (or shall insure the activity of Contractor's subcontractors in Contractor's own policy with respect to), the minimum insurance coverages listed below. Such coverages shall be procured and maintained with forms and insurers acceptable to the City. All coverages shall be continuously maintained from the date of commencement of the Work. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

i. Workers' Compensation and Employers' Liability insurance with minimum limits of FIVE HUNDRED THOUSAND DOLLARS ($500,000) each accident, FIVE HUNDRED THOUSAND DOLLARS ($500,000) disease - policy limit, and FIVE HUNDRED THOUSAND DOLLARS ($500,000) disease - each employee. The policy shall cover obligations imposed by the Workers' Compensation Act of Colorado and any other applicable laws for any employee engaged in the performance of Work.

ii. Commercial General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS ($1,000,000) each occurrence and TWO MILLION DOLLARS ($2,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, independent contractors, products, and both ongoing and completed operations. The policy shall include coverage for explosion, collapse, and underground hazards ("XCU"). The policy shall contain a severability of interests provision.

iii. Comprehensive Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of ONE MILLION DOLLARS ($1,000,000) with respect to each of Contractor's owned, hired and/or non-owned vehicles assigned to or used in performance of the Work. The policy shall contain a severability of interests provision.

iv. Professional Liability insurance with minimum limits of not less than ONE MILLION DOLLARS ($1,000,000) each claim and ONE MILLION DOLLARS ($1,000,000) annual aggregate for both the Contractor or any subcontractors when:

a. CDOT items 625, 629, or both are included in the CDOT Standard Specifications.
b. Contractor's engineer electronically seals plans, specifications and submittals, including but not limited to:
    i. Shop drawings and working drawings as described in CDOT Standard Specifications subsection 105.02.
    ii. Mix designs.
    iii. Design work as required by the plans and specifications.
    iv. Change orders.
    v. Approved value engineering change proposals.

The Contractor and any included subcontractor shall renew and maintain Professional Liability insurance as outlined above for a minimum of one year following final acceptance of Work.

v. Umbrella or Excess Liability insurance with minimum limits of ONE MILLION DOLLARS ($1,000,000). This policy shall become primary (drop down) in the event the primary liability policy limits are impaired or exhausted. The policy shall be written on an occurrence form and shall be following form of the primary. The following form excess liability shall include CDOT as an additional insured.

vi. Installation Floater/Inland Marine insurance with minimum limits of not less than the insurable value of the work to be performed at completion. The value shall include the aggregate value of any City-furnished equipment and materials to be erected or installed by the Contractor not otherwise insured. The policy shall protect the Contractor and

the City from all insurable risks of physical loss or damage to materials and equipment not otherwise covered, while in warehouses or storage areas, during installation, during testing, and after the Work under this Contract is completed. The policy shall be of the "all risks" type, with coverages designed for the circumstances which may occur in the particular Work to be performed under this Contract. The policy shall provide for losses to be payable to the Contractor and the City as their interests may appear. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the Contractor or the City.

1.8.4 Commercial General Liability and Automobile Liability policies shall name both the City of Littleton and CDOT as additional insured. The City of Littleton shall be included as additional insured or loss payee for Installation Floater/Inland Marine insurance. All policies of insurance providing additional insured status shall be primary insurance, and any insurance carried by the City, its officers, or its employees, shall be excess and not contributory insurance to that provided by Contractor. The additional insured endorsement for the Commercial General Liability insurance required above shall not contain any exclusion for bodily injury or property damage arising from completed operations. The Contractor shall be solely responsible for any deductible losses under each of the policies required above.

1.8.5 Completed operations additional insured coverage shall be on endorsements CG 2010 11/85, CG 2037, or equivalent. Coverage required of the Contract will be primary over any insurance or self-insurance program carried by the State of Colorado.

1.8.6 Each insurance policy shall include provisions preventing cancellation or non-renewal without at least 30 days' prior notice to Contractor. The Contractor shall forward to the City any such notice received within seven (7) days of the Contractor's receipt of such notice.

1.8.7 The Contractor shall require all insurance policies in any way related to the Contract and secured and maintained by the Contractor to include clauses stating that each carrier will waive all rights of recovery, under subrogation or otherwise, against the City and against CDOT, its agencies, institutions, organizations, officers, agents, employees and volunteers.

1.8.8 All policies evidencing the insurance coverages required hereunder shall be issued by insurance companies satisfactory to the City and CDOT.

1.8.9 The Contractor shall provide certificates showing insurance coverage required by this Contract to the City before execution of the Contract. No later than fifteen (15) days before the expiration date of any such coverage, the Contractor shall deliver to the City certificates of insurance evidencing renewals thereof. At any time during the term of this Contract, the City or CDOT may request in writing, and the Contractor shall thereupon within ten (10) days, supply to the City or CDOT, evidence satisfactory to the City or CDOT of compliance with the provisions of this Section 1.8.9.

1.8.10 When the Contractor requires a subcontractor to obtain insurance coverage, the types and minimum limits of this coverage may be different than those required, as stated above, for the Contractor, except for the Commercial General Liability additional insured endorsement and those that qualify as needing Professional Liability insurance.

1.8.11 Failure on the part of the Contractor to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of Contract upon which the City may immediately terminate the Contract, or at its discretion may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by Contractor to the City upon demand, or the City may offset the cost of the premiums against any monies due to Contractor from the City.

1.8.12 The Parties hereto understand and agree that the City is relying on, and does not waive or intend to waive by any provision of this Contract, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101 et seq., as from time to time amended, or otherwise available to the City, its officers, or its employees.

1.9 **Patented Devises, Materials and Processes**. If the Contractor is required or desires to use any design, device, material or processes covered by patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the patentee or patent owner. The Contractor shall warrant that the materials, equipment or devices used on or incorporated in the Work shall be delivered free of any rightful claim of any third-party for infringement of any United States patent or copyright. If notified promptly in writing and given authority, information and assistance, the Contractor shall defend, or may settle, at its expense, any suit or proceeding against the City so far as based on a claimed patent or copyright infringement which would result in a breach of this warranty, and the Contractor shall pay all damages and costs awarded therein against the City due to such breach. In case any use of any materials, equipment or devices is in such suit held to constitute an infringement and such use is enjoined, the Contractor shall, at its expense and option, either procure for the City the right to continue using said materials, equipment or devices, or replace same with non-infringing materials,

equipment or devices, or modify the same so it becomes non-infringing. The Contractor shall report to the City promptly and in reasonable written detail each notice or claim of patent or copyright infringement based on the performance of this Contract of which the Contractor has knowledge. In the event of any claim or suit against the City as a result of any alleged patent or copyright infringement arising out of the performance of this Contract or out of the use of any supplies furnished or Work or services performed hereunder, the Contractor shall furnish to the City when requested by the City, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the City except where the Contractor has agreed to indemnify the City. This clause shall be included in all subcontracts.

1.10 **Taxes.** The City of Littleton is not subject to taxation. The Contractor shall not invoice the City for any state, federal or local taxes whatsoever. Upon written notification by the City, the Contractor shall reimburse the City in a timely manner for any taxes erroneously paid by the City.

1.11 **Termination for Convenience of City.** This Contract and the performance of the Work hereunder may be terminated at any time, in whole or in part, for convenience. Any such termination shall be effected by delivery to the Contractor of a written notice ("Notice of Termination") specifying the extent to which performance of Work is terminated, the date upon which termination becomes effective, and any necessary actions to be taken by the Contractor to effectuate termination and close-out the Contract. If the Contract is terminated, the Contractor shall be paid on a prorated basis of Work satisfactorily completed, under the Work. The portion of Work satisfactorily completed but not yet accepted by the City shall be determined by the City.

1.12 **Cooperation with Other Contractors.** In connection with the improvements under this Contract, the right is reserved by the City to award any Work not included in the Contract to another contractor for performance during the progress of this Contract, or to perform such Work with the City's forces, and the Contractor shall cooperate and so conduct its operation as to minimize the interference therewith, as directed by the Project Manager.

1.13 **Termination of Contractor's Responsibility**. This Contract will be considered complete when all Work and final cleanup has been finished, the Work has been accepted by the City, and all claims for payment of labor, materials, or services of any kind used in connection with the Work have been settled for by the Contractor or its Surety. The Contractor will then be released from further obligation except as set forth in the Bond and for its responsibility for injury to persons or property arising from its duties and obligations under the Standards and Specifications. The Bond executed for performance of this Contract shall be in full effect for a period of one (1) year following acceptance of the Work; except with regard to the representation regarding copyright infringement found in Section 1.9 where the Bond shall remain in effect for three (3) years, and except with regard to the

representation regarding patent infringement found in Section 1.9, where the Bond shall remain in effect for six (6) years. Neither the final payment nor any provision in the Contract Documents shall relieve the Contractor of the responsibility for negligence or faulty materials or workmanship. Payment to the Contractor will not relieve the Contractor of any obligation under this Contract.

1.14 **Subcontracting or Assignment of Work.** No contractual relationship will be recognized under the Contract other than the contractual relationship between the City and Contractor. No portion of the Contract shall be subcontracted, assigned or otherwise disposed of except with the written consent of the City, which consent shall not be unreasonably withheld. Requests for permission to subcontract, assign or otherwise dispose of any portion of the Contract shall be in writing to the Project Manager and shall be accompanied by documents demonstrating the organization which will perform the Work is particularly experienced and equipped for such Work. Consent to subcontract, assign or otherwise dispose of any portion of the Contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the Contract.

1.15 **Waiver of Breach.** A waiver by any Party to the Contract or the breach of any term or provision of the Contract shall not operate or be construed as a waiver of any subsequent breach by either Party.

1.16 **No Third-Party Beneficiaries.** It is expressly understood and agreed that enforcement of the terms and conditions of this Contract, and all rights of action relating to such enforcement, shall be strictly reserved to the City and the Contractor and nothing contained in this Contract shall give or allow any such claim or right of action to any other third-party on this Contract. It is the express intention of the City and the Contractor that any person other than the City or the Contractor receiving services or benefits under this Contract shall be deemed to be an incidental beneficiary only.

1.17 **Independent Contractor.** The Contractor shall perform the Work as an independent contractor and shall not be deemed by virtue of this Contract to have entered into any partnership, joint venture, employer/employee or other relationship with the City other than as a contracting party and independent contractor.

1.18 **Accessibility Standards.** The Contractor shall comply with the accessibility standards for an individual with a disability adopted by the Colorado Office of Information Technology, in accordance with C.R.S. § 24-85-103 and its implementing regulations. Notwithstanding the foregoing, this requirement shall not be applicable to contracts or agreements for professional services, as defined by C.R.S. § 24-30-1402, or to any portion or part of the contract or agreement that is providing professional services. Further, the contractor shall indemnify, hold harmless, and assume liability on behalf of the city and the city's officers, employees, and agents, for all costs, expenses, claims, damages, liabilities, court

awards, attorney fees and related costs, and any other amounts incurred by the city in relation to the contractor's noncompliance with the accessibility standards for an individual with a disability adopted by the Colorado Office of Information Technology, in accordance with C.R.S. § 24-85-103, and its implementing regulations.

1.19 **Non-Discrimination.** In connection with the performance of the Work, the Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ethnicity, citizenship, immigration status, sex, gender, age, sexual orientation, gender identity or gender expression, marital status, source of income, military status, protective hairstyle, genetic information, pregnancy, or disability, or any other status protected by applicable law. The Contractor will take affirmative action to ensure applicants are employed, and employees are treated during employment, without regard to their race, color, religion, national origin, ethnicity, citizenship, immigration status, sex, gender, age, sexual orientation, gender identity or gender expression, marital status, source of income, military status, protective hairstyle, genetic information, pregnancy, disability, or any other status protected by applicable law. Such action shall include, but not be limited to the following: 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.

1.20 **Indemnification.** The Contractor agrees to investigate, defend, indemnify and hold harmless the City and CDOT, their officers, employees, insurers, and self-insurance pool, from and against all liability, claims and demands on account of any losses, injuries, and damages, including but not limited to, alleged personal injury claims, and/or death claims, or property damage claims, or errors and omissions, which arise solely out of the Contractor’s and/or any of its agents' officers or employees performance of the Contractor’s obligations under this Contract. The City and CDOT are prohibited by Article XI, Section 1, Colorado Constitution, from indemnifying any individual or entity. Therefore, the City and CDOT do not indemnify the Contractor, successors, or assigns under this Contract. Notwithstanding the foregoing, nothing herein is intended to constitute a covenant, promise, or agreement to indemnify and hold harmless the City or CDOT from any liability or damages directly caused by or attributable to the City's or CDOT’s own negligence, nor is anything herein intended to be nor may be construed as a waiver of the immunities, protections, or limitations on damages provided to the City or CDOT by the Colorado Governmental Immunity Act, C.R.S. §§24-10-101 et seq., as it may from time to time be amended.

1.21 **Governing Law and Venue.** The Contract shall be governed by the laws of the State of Colorado. Venue for any action arising under the Contract or for the enforcement of the Contract shall be in the appropriate court for Arapahoe County, Colorado.

1.22 **Additional Documents or Action**. The Parties agree to execute any additional documents and to take any additional action that is necessary to carry out this Contract.

1.23 **Binding Effect.** This Contract shall inure to the benefit of, and be binding upon, the Parties, their respective legal representatives, successors, heirs, and assigns; provided, however, that nothing in this paragraph shall be construed to permit the assignment of this Contract except as otherwise expressly authorized herein.

1.24 **Integration, Amendment, and Severability.** This Contract represents the entire agreement between the Parties and there are no oral or collateral agreements or understandings. This Contract may be amended only by an instrument in writing signed by the Parties or as otherwise provided herein. If any other provision of this Contract is held invalid or unenforceable, no other provision shall be affected by such holding, and all of the remaining provisions of this Contract shall continue in full force and effect.

1.25 **Binding Authority.** The Contractor represents and affirms that the signature page hereof accurately states the full legal name of Contractor (whether as a corporation, partnership, limited liability company, sole proprietorship, or other), contains all requisite signature(s) on behalf of Contractor, has been properly acknowledged by attestation, notary acknowledgment, or both, and in all other respects is effective to bind Contractor, in accordance with all applicable statutes, regulations, resolutions, rules, bylaws, agreements, or similar sources of authority or limitation. This Contract may be executed in counterpart(s), each of which shall be deemed to be an original, and all of which, taken together, shall constitute one instrument.

1.26 **Subject to Legislative Approval and Compliance with Law.** The Contractor acknowledges and agrees that if a Change Order is required under the terms of the Contract, the City shall not incur any liability whatsoever for claims of payment, compensation, damages, or adjustment of any kind by the Contractor due to any delays for the required approvals and execution under the City's Purchasing Ordinance. The Contractor further acknowledges and agrees that this Contract's execution may be contingent upon approval by the City Council, in compliance with all applicable provisions of the City Charter and City Code. The City shall not incur any liability whatsoever if this Contract is not approved by City Council.

1.27 **Notices.** All notices required under this Contract shall be in writing and shall be sent by registered or certified mail, return receipt requested, to the addresses of the Parties herein set forth. A Party may change its mailing address by giving written notice of such change of address to other Party.

Notice to City:	City of Littleton City Manager 2255 West Berry Avenue Littleton, CO 80120
Notice to Contractor:	FNF Construction, Inc. 115 S 48th St Tempe, AZ 85281

1.28 **Force Majeure.** Neither Party shall be responsible for a delay in its respective performance under this Contract, other than a delay in payment for Work already performed, if such delay is caused by extraordinary weather conditions or other natural catastrophes, war, terrorist attacks, sabotage, computer viruses, riots, strikes, lockouts or other industrial disturbances, epidemics, pandemics, acts of governmental agencies or authorities, discovery of hazardous materials or differing and unforeseeable site conditions, or other events beyond the reasonable control of the claiming Party. Contractor shall be entitled to an equitable adjustment to the project schedule in accordance with the Standards and Specifications. When a delay on any aspect of the Work occurs, the Contractor, to the maximum extent possible, shall utilize its resources elsewhere in the Work.

1.29 **Electronic Signatures and Electronic Records.** The Contractor consents to the use of electronic signatures by the City. The Contract, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Contract solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Contract in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.

[signatures to follow]

CITY OF LITTLETON, COLORADO

_____
Kyle Schlachter
MAYOR

ATTEST

_____
Colleen Norton
CITY CLERK

APPROVED AS TO FORM:

_____
Reid Betzing
CITY ATTORNEY

CONTRACTOR

_____
Robert W. Bottcher
PRESIDENT

_____
Date

Exhibit A
Scope of Work

The Contractor shall make improvements to the deteriorating infrastructure at the intersection of Prince Street and Church Avenue. As described in the Plans and Specifications, this project includes improvements to sidewalks, ramps and pedestrian and vehicular signals to ensure compliance with Americans with Disabilities Act (“ADA”) guidelines. Work includes removal and replacement of concrete and asphalt through the intersection, upgrade guardrails, and improvement of the landscaped shoulders.

This project is funded by Federal grants.

Exhibit B
Bid Schedule

Code	Description	UOM	Price	Quantity	Total Cost
202-00010	Removal of Tree	Each	$653.00	4	$2,612.00
202-00200	Removal of Sidewalk	Square Yard	$33.00	480	$15,840.00
202-00203	Removal of Curb and Gutter	Linear Foot/Feet	$11.00	497	$5,467.00
202-00206	Removal of Concrete Curb Ramp	Square Yard	$29.00	90	$2,610.00
202-00207	Removal of Brick Pavers	Square Yard	$24.00	42	$1,008.00
202-00210	Removal of Concrete Pavement	Square Yard	$38.00	212	$8,056.00
202-00220	Removal of Asphalt Mat	Square Yard	$38.00	1,213	$46,094.00
202-00240	Removal of Asphalt Mat (Planing)	Square Yard	$65.00	201	$13,065.00
202-00250	Removal of Pavement Markings	Square Foot/Feet	$3.50	2,922	$10,227.00
202-00299	Removal of Sidewalk Drain	Linear Foot/Feet	$77.50	8	$620.00
202-00453	Removal of Portions of Present Structure (Class 2)	Square Yard	$885.00	21	$18,585.00
202-00460	Removal of Portions of Present Structure (Class 3)	Square Yard	$3,500.00	2	$7,000.00
202-00495	Removal of Portions of Present Structure	Lump-Sum	$103,505.00	1	$103,505.00
202-00821	Removal of Sign Panel	Each	$99.00	2	$198.00
202-00828	Removal of Traffic Signal Equipment	Lump-Sum	$22,000.00	1	$22,000.00
202-01002	Removal of Fence (Metal)	Linear Foot/Feet	$70.00	6	$420.00
202-01003	Removal of Fence (Special)	Linear Foot/Feet	$35.00	18	$630.00
202-01130	Removal of Guardrail Type 3	Linear Foot/Feet	$7.50	518	$3,885.00
202-04010	Clean Inlet	Each	$500.00	4	$2,000.00
203-00010	Unclassified Excavation (Complete In Place)	Cubic Yard	$68.00	376	$25,568.00
203-01597	Potholing	Hour	$385.00	80	$30,800.00
207-00702	Topsoil (Offsite)	Cubic Yard	$110.00	12	$1,320.00
208-00002	Erosion Log Type 1 (12 Inch)	Linear Foot/Feet	$5.00	165	$825.00
208-00035	Aggregate Bag	Linear Foot/Feet	$21.00	100	$2,100.00
208-00046	Pre-fabricated Concrete Washout Structure (Type 1)	Each	$10,000.00	1	$10,000.00
208-00052	Storm Drain Inlet Protection (Type II)	Each	$400.00	4	$1,600.00
208-00053	Storm Drain Inlet Protection (Type I) (84 Inch)	Each	$450.00	1	$450.00
208-00057	Storm Drain Inlet Protection (Type I)(144 Inch)	Each	$500.00	1	$500.00
208-00070	Vehicle Tracking Pad	Each	$10,000.00	1	$10,000.00
208-00103	Removal and Disposal of Sediment (Labor)	Hour	$46.00	20	$920.00
208-00105	Removal and Disposal of Sediment (Equipment)	Hour	$91.00	20	$1,820.00
208-00106	Sweeping (Sediment Removal)	Hour	$96.00	20	$1,920.00
208-00107	Removal of Trash	Hour	$46.00	10	$460.00
210-00479	Reset Radio Communication Antenna	Each	$1,752.00	1	$1,752.00
210-00760	Reset Luminaire	Each	$405.00	3	$1,215.00
210-00810	Reset Ground Sign	Each	$301.00	8	$2,408.00
210-00815	Reset Sign Panel	Each	$136.00	5	$680.00
210-00867	Reset Fire Preemption Unit	Each	$661.00	2	$1,322.00
210-04050	Adjust Valve Box	Each	$576.00	2	$1,152.00
210-04060	Adjust Water Meter	Each	$576.00	2	$1,152.00
212-00050	Sod	Square Foot/Feet	$3.15	960	$3,024.00
212-01200	Landscape Restoration	Lump-Sum	$1,840.00	1	$1,840.00
217-00020	Herbicide Treatment	Hour	$146.50	8	$1,172.00
240-00000	Wildlife Biologist	Hour	$200.00	8	$1,600.00
304-06000	Aggregate Base Course (Class 6)	Cubic Yard	$150.00	255	$38,250.00
403-00720	Hot Mix Asphalt (Patching) (Asphalt)	Ton	$437.00	41	$17,917.00
403-34741	Hot Mix Asphalt (Grading SX) (75) (PG 64-22)	Ton	$394.00	23	$9,062.00
408-01100	Joint Sealant	Linear Foot/Feet	$40.00	115	$4,600.00
412-00600	Concrete Pavement (6 Inch)	Square Yard	$145.00	50	$7,250.00
412-01000	Concrete Pavement (10 Inch)	Square Yard	$190.00	1,210	$229,900.00
412-01020	Concrete Pavement (10 Inch) (Fast Track)	Square Yard	$257.00	131	$33,667.00
503-00018	Drilled Shaft (18 Inch)	Linear Foot/Feet	$300.00	18	$5,400.00
503-00036	Drilled Shaft (36 Inch)	Linear Foot/Feet	$700.00	42	$29,400.00
515-00120	Waterproofing Membrane	Square Yard	$27.00	265	$7,155.00
601-03040	Concrete Class D (Bridge)	Cubic Yard	$790.00	35	$27,650.00
601-03057	Concrete Class DR	Cubic Yard	$3,000.00	3	$9,000.00
601-51005	Galvanic Anodes	Each	$40.00	105	$4,200.00
602-00020	Reinforcing Steel (Epoxy Coated)	Pound	$7.50	2,700	$20,250.00
606-00302	Guardrail Type 3 (31 Inch Midwest Guardrail System)	Linear Foot/Feet	$45.00	38	$1,710.00
606-01370	Transition Type 3G	Each	$3,500.00	2	$7,000.00
606-01407	Transition Type BR9-GR3	Each	$7,655.00	2	$15,310.00
606-02003	End Anchorage (Nonflared)	Each	$3,600.00	1	$3,600.00
606-02005	End Anchorage (Flared)	Each	$3,700.00	1	$3,700.00
608-00000	Concrete Sidewalk	Square Yard	$139.00	665	$92,435.00
608-00010	Concrete Curb Ramp	Square Yard	$240.00	144	$34,560.00
608-10019	Sidewalk Drain (Install Only)	Linear Foot/Feet	$314.00	9	$2,826.00
609-21020	Curb and Gutter Type 2 (Section II-B)	Linear Foot/Feet	$65.00	496	$32,240.00
610-00030	Median Cover Material (Concrete)	Square Foot/Feet	$35.00	79	$2,765.00
612-00010	Delineator Curb	Each	$500.00	8	$4,000.00
613-07198	Pull Box (Medium) (12x18x12) (Install Only)	Each	$1,100.00	4	$4,400.00
613-07199	Pull Box (Large) (18x30x12) (Install Only)	Each	$1,400.00	1	$1,400.00

613-00200	2 Inch Electrical Conduit	Linear Foot/Feet	$20.00	146	$2,920.00
613-00206	2 Inch Electrical Conduit (Bored)	Linear Foot/Feet	$29.00	206	$5,974.00
613-00300	3 Inch Electrical Conduit	Linear Foot/Feet	$29.00	250	$7,250.00
613-00306	3 Inch Electrical Conduit (Bored)	Linear Foot/Feet	$32.00	412	$13,184.00
613-10000	Wiring	Lump-Sum	$25,000.00	1	$25,000.00
613-80199	Service Meter Cabinet (Install Only)	Each	$4,400.00	1	$4,400.00
614-00011	Sign Panel (Class I)	Square Foot/Feet	$30.00	98	$2,940.00
614-00216	Steel Signpost (2x2 Inch Tubing)	Linear Foot/Feet	$30.25	40	$1,210.00
614-70201	Accessible Pedestrian Signal (Install Only)	Each	$401.00	2	$802.00
614-70337	Traffic Signal Face (12-12-12) (Install Only)	Each	$801.00	7	$5,607.00
614-70450	Traffic Signal Face (12-12-12-12) (Install Only)	Each	$1,330.00	5	$6,650.00
614-72861	Pedestrian Push Button (Install Only)	Each	$405.00	2	$810.00
614-72869	Pedestrian Push Button Post Assembly (Install Only)	Each	$931.00	1	$931.00
614-72896	Intersection Detection System (Camera) (Install Only)	Each	$2,150.00	1	$2,150.00
614-75216	Pedestrian Signal Face (16) (Countdown) (Install Only)	Each	$651.00	4	$2,604.00
614-75855	Traffic Signal Controller Cabinet (Install Only)	Each	$5,780.00	1	$5,780.00
614-81301	Traffic Signal-Light Pole (1 Mast Arm) (Install Only)	Each	$3,630.00	3	$10,890.00
614-84450	Traffic Signal Pedestal Pole Steel (Install Only)	Each	$805.00	3	$2,415.00
620-00020	Sanitary Facility	Each	$4,000.00	1	$4,000.00
621-00450	Detour Pavement	Square Yard	$135.00	91	$12,285.00
625-00000	Construction Surveying	Lump-Sum	$50,000.00	1	$50,000.00
626-00000	Mobilization	Lump-Sum	$172,600.00	1	$172,600.00
627-00001	Pavement Marking Paint	Gallon	$114.00	17	$1,938.00
627-00008	Modified Epoxy Pavement Marking	Gallon	$251.00	48	$12,048.00
627-30407	Preformed Thermoplastic Pavement Marking (Word-Symbol) (Special)	Square Foot/Feet	$21.00	806	$16,926.00
627-30411	Preformed Thermoplastic Pavement Marking (Xwalk-Stopline) (Special)	Square Foot/Feet	$21.00	718	$15,078.00
630-00000	Flagging	Hour	$54.00	700	$37,800.00
630-00007	Traffic Control Inspection	Day	$264.00	30	$7,920.00
630-00012	Traffic Control Management	Day	$1,500.00	90	$135,000.00
630-80335	Barricade (Type 3 M-A) (Temporary)	Each	$46.00	5	$230.00
630-80340	Pedestrian Barricade (ADA)	Linear Foot/Feet	$33.00	100	$3,300.00
630-80341	Construction Traffic Sign (Panel Size A)	Each	$46.00	58	$2,668.00
630-80342	Construction Traffic Sign (Panel Size B)	Each	$60.00	8	$480.00
630-80344	Construction Traffic Sign (Special)	Square Foot/Feet	$16.00	53	$848.00
630-80350	Vertical Panel	Each	$33.00	40	$1,320.00
630-80355	Portable Message Sign Panel	Each	$10,000.00	3	$30,000.00
630-80360	Drum Channelizing Device	Each	$40.00	60	$2,400.00
630-80380	Traffic Cone	Each	$6.00	75	$450.00
630-86810	Traffic Signal (Temporary)	Each	$15,000.00	2	$30,000.00
700-70010	F/A Minor Contract Revisions				$69,000.00
700-70023	F/A On-The-Job Trainee				$3,200.00
700-70082	F/A Furnish and Install Electrical Service				$5,000.00
700-70320	F/A Sprinklers				$2,000.00

TOTAL: $1,737,077.00

EXHIBIT C
PERFORMANCE, LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that FNF CONSTRUCTION, INC. (Contractor), as Principal (the "Principal") and Travelers Casualty and Surety Company of America, a corporation organized under the laws of the State of Connecticut, and authorized to transact business in the State of Colorado, as "Surety," jointly and severally, including their heirs, personal representatives, successors and assigns, are held and firmly bound unto the City of Littleton as Obligee, hereinafter called Owner, for the use and benefit of claimants as herein below defined, in the amount of one million seven hundred thirty-seven thousand seventy-seven dollars and no cents ($1,737,077.00), for the payment and interest as provided by law for the performance of the Contract between the Principal and the Owner, dated _____, 2026, for the Prince Street and Church Avenue Intersection Reconstruction project in accordance with drawings and specifications; which the Contract is made a part hereof, and is hereinafter referred to as the Contract, and incorporated by this reference.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal, at all times, shall promptly and faithfully perform said Contract, and shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contact, any authorized modifications thereof during the original term of the Contract, any extensions thereof that may be granted by the Owner and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense when the Owner may incur in making good any default, then the Principal and Surety shall have no obligation under this Bond, otherwise it shall remain in full force and effect for a period of one (1) year following execution of the Contract. Upon expiration, this Bond shall be extended by a continuation certificate for an additional one (1) year, and extended thereafter.

The Surety, for value received, agrees that no extension of time, change in, addition to, or other alteration or modification of the terms of the Contract or work to be performed there under or any other forbearance on the part of either the Owner or the Principal to the other shall in any way release or impact the Surety's liability or obligation on this Bond, and the Surety hereby waives notice of any extension of time, change in, addition to, or other alteration or forbearance.

Whenever the Owner terminates the Contract in accordance with the terms thereof, the Surety shall, within fifteen (15) calendar days after written notice of such termination, notify the Owner in writing of its election to complete the Contract in accordance with its terms and conditions, or notify the Owner that the Surety elects not to complete the Contract. If the Surety fails to provide the written notice within the fifteen (15) calendar day period, then it will have deemed to have not elected to complete the Contract. Should the Surety elect to complete the Contract, then it shall, within fifteen (15) additional calendar days, following written notice of such election, obtain a bid or bids for submission to Owner for completing the Contract in accordance with its terms and conditions. The Surety shall arrange for a contract between bidder and Owner, and make available as work progresses (even though there should be a default or a succession of

defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs, attorneys fees of the Owner and damages for which the Surety shall be liable hereunder, the amount set forth in the first paragraph hereof. In the event of termination, the Surety may not engage the Principal to complete the Contract, without prior written consent of the Owner, which consent may be withheld in the Owner's sole discretion. If the Surety elects to complete the Contract, then it shall be entitled to receive the balance of the Contract price, less i) any amounts paid by the Owner to the Principal; ii) costs incurred by the Owner in correcting the defective work; iii) any additional legal, design professional or other costs incurred by the Owner resulting from Principal's default; and iv) any liquidated damages caused by the delayed performance or nonperformance of the Principal. Any progress payments, less retainage, due but not paid at the date of termination shall be paid to the Surety so long as the Surety has agreed to indemnify the Owner for the amount thereof and no other claims have been made to such funds by subcontractors or suppliers in accordance with the Contract or any applicable law. In the event that the Surety elects not to complete the Contract, the Owner may then have work completed by such means and in such manner, as it may deem advisable. The Surety, in such event, shall at all times make available, as work progresses under the Contract between the Owner and new contractor, sufficient funds to pay the cost of completion of the Contract pursuant to the its terms together with the other amounts set forth above, but in no event shall the Surety be responsible for the payment of any sums to the Owner until the Owner has paid in full its total obligation under the terms of the original Contract, plus Change Orders or amendments less deductions and claims chargeable by law or by the Contract, if any, and less the retainage which will be disbursed as provided by the Contract and any applicable law.

Any proceeding, whether legal or equitable, under this Bond, except for claims for payment of labor and material, or copyright or patent infringement, must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

Further, the above named Principal and Surety hereby jointly and severally agree with the Owner that the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such Contract ("claimant"), and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, repairs or machinery, equipment and tools, consumed or used in connection with the construction of such work, whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

The above-named Principal and Surety hereby jointly and severally agree with the Owner that every claimant, who has not been paid in full at any time up to and including the time of final settlement for the work contracted to be done, file with the Owner, a verified statement of the amount due and unpaid in accordance with Section 38-26-107, C.R.S. Provided, further, that no final settlement between the Owner and the Principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied. The Owner shall not be liable for the payment of any costs, attorney fees, or other expenses of any such legal remedies a claimant may have against the Principal or Surety.

SIGNED this 29th day of May 2026.

In the presence of:

FNF Construction, Inc.

(Contractor / Principal) Robert W. Bottcher, President

Travelers Casualty and Surety Company of America

(Surety) Sokha Evans, Attorney-in-Fact

(Accompany this Bond with Attorney in-fact's authority from the Surety to execute the Bond, certified to include the date of the Bond.)

APPROVED FOR THE OWNER:

BRENT SODERLIN
DIRECTOR OF PUBLIC WORKS AND UTILITIES

TRAVELERS

Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Sokha Evans** of **SAN FRANCISCO** , **California** , their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **21st** day of **April**, **2021**.

HARTFORD, CONN. HARTFORD, CONN. CORPORATE SEAL

State of Connecticut

By: _____
Robert L. Raney, Senior Vice President

City of Hartford ss.

On this the **21st** day of **April, 2021**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, **2026**

ANNA P. NOWIK NOTARY PUBLIC CONNECTICUT

_____
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 29th day of May ,2026

HARTFORD, CONN. HARTFORD, CONN. CORPORATE SEAL

_____
Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.

MARSH

Sokha Evans
Sr. Fulfillment Specialist

Marsh Risk & Insurance Services
sokha.evans@marsh.com
www.marsh.com

May 29, 2026

City of Littleton
2255 West Barry Avenue
Littleton, CO 80120

Subject: New Bond

Principal: FNF Construction, Inc.
Obligee: City of Littleton
Bond Description: Prince Street and Church Avenue Intersection Reconstruction
Contract Amount: $1,737,077.00
Performance Amount: $1,737,077.00
Payment Amount: $1,737,077.00
Bond Number: 108491421
Surety Name: Travelers Casualty and Surety Company of America

To whom it may concern:

Please find attached performance and payment bonds for the Prince Street and Church Avenue Intersection Reconstruction IFB 7-26. This letter authorizes the City of Littleton to date the bond upon contract execution.

If you have any questions, please feel free to contact me.

Sincerely,

Sokha Evans
Sr. Fulfillment Specialist
Enclosure

This document and any recommendations, analysis, or advice provided by Marsh (collectively, the "Marsh Analysis") are not intended to be taken as advice regarding any individual situation and should not be relied upon as such. The information contained herein is based on sources we believe reliable, but we make no representation or warranty as to its accuracy. Marsh shall have no obligation to update the Marsh Analysis and shall have no liability to you or any other party arising out of this publication or any matter contained herein. Any statements concerning actuarial, tax, accounting, or legal matters are based solely on our experience as insurance brokers and risk consultants and are not to be relied upon as actuarial, tax, accounting, or legal advice, for which you should consult your own professional advisors. Any modeling, analytics, or projections are subject to inherent uncertainty, and the Marsh Analysis could be materially affected if any underlying assumptions, conditions, information, or factors are inaccurate or incomplete or should change. Marsh makes no representation or warranty concerning the application of policy wording or the financial condition or solvency of insurers or reinsurers. Marsh makes no assurances regarding the availability, cost, or terms of insurance coverage. Although Marsh may provide advice and recommendations, all decisions regarding the amount, type or terms of coverage are the ultimate responsibility of the insurance purchaser, who must decide on the specific coverage that is appropriate to its particular circumstances and financial position.

Exhibit D
Littleton Engineering Design Standards

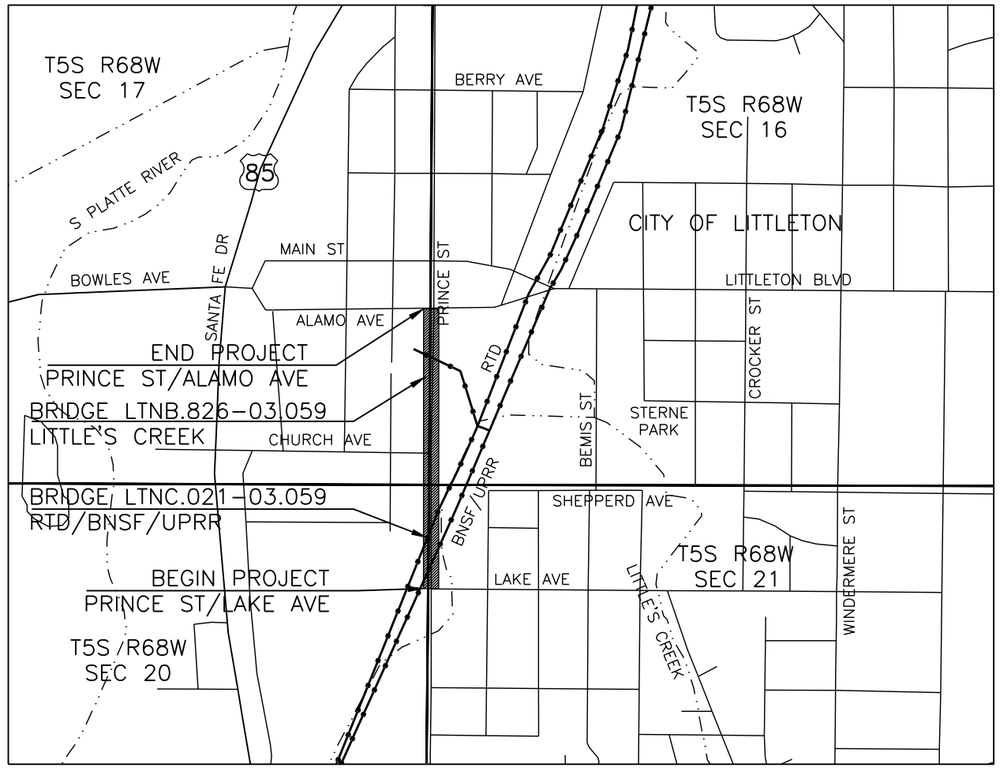
available online

Exhibit E

PoDI / NHS		
FHWA PROJECT OF DIVISION INTEREST (PoDI)?	☒ NO	☐ YES
NATIONAL HIGHWAY SYSTEM?	☒ NO	☐ YES

CITY OF LITTLETON, COLORADO
PUBLIC WORKS

PRINCE ST & CHURCH AVE
INTERSECTION RECONSTRUCTION
LITTLETON PROJECT NO. 18-14
CDOT PROJECT NO. STU M810-018
PROJECT CODE 24290
ARAPAHOE COUNTY



VICINITY MAP

TABULATION OF LENGTH & DESIGN DATA

STATION	LINEAR FEET ROADWAY	LINEAR FEET MAJOR STR.
PRINCE STREET		
LAKE AVENUE		
BEGIN PROJECT	472.46	
BRIDGE # LTNC.021-03.059		286.32
BRIDGE # LTNB.826-03.059		45.06
ALAMO AVENUE	992.52	
END PROJECT		
TOTAL	1,464.98	331.38
SUMMARY OF PROJECT LENGTH	FEET	MILES
ROADWAY	1,464.98	0.28
MAJOR STRUCTURE	331.38	0.06
PROJECT GROSS LENGTH	1,796.36	0.34

DESIGN DATA	PRINCE ST
MINIMUM RADIUS OF CURVE	N/A
MAXIMUM GRADE	6.25%
MINIMUM S.S.D. HORIZONTAL	> 200'
MINIMUM S.S.D. VERTICAL	N/A
DESIGN SPEED	30 MPH
AADT (2019)	12,600
TRUCK %	

811
FOR BURIED UTILITY INFORMATION
THREE (3) BUSINESS DAYS
BEFORE YOU DIG
CALL 811
(or 1-800-922-1987)
UTILITY NOTIFICATION
CENTER OF COLORADO (UNCC)
www.uncc.org

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	M&S STANDARD PLANS LIST
3 - 4	GENERAL NOTES
5	TYPICAL SECTIONS AND DETAILS
6 - 8	SUMMARY OF APPROXIMATE QUANTITIES
9 - 14	TABULATIONS
15	SUBSURFACE UTILITY ENGINEERING PLAN
16 - 20	ROADWAY REMOVALS
21 - 25	ROADWAY PLAN
26	ROADWAY PROFILE
27 - 28	JOINTING PLAN
29 - 37	PHASING PLAN
38	GRADING PLAN
39 - 41	CURB RAMP & DRIVEWAY DETAILS
42 - 46	STORMWATER MANAGEMENT NOTES
47 - 51	INTERIM STORMWATER MANAGEMENT PLAN
52 - 56	FINAL STORMWATER MANAGEMENT PLAN
57 - 61	BRIDGE PLANS
62	BRIDGE RAIL TRANSITION DETAIL
63	TRAFFIC CONTROL TABULATION
64 - 74	DETOUR & TRAFFIC CONTROL PLAN
75	TRAFFIC SIGNAL REMOVALS
76	TRAFFIC SIGNAL NOTES
77	TRAFFIC SIGNAL PLANS
78 - 84	SIGNING & STRIPING PLAN
85	SIGNAL FOUNDATION DETAILS
86	ELECTRICAL ONE-LINE DIAGRAM
87 - 89	CROSS SECTIONS
90 - 96	RIGHT-OF-WAY AND LAND SURVEY PLANS

100% PLANS
DECEMBER 1, 2025

Computer File Information	
Creation Date:	11/15/2017 Initials: BPM
Last Modification Date:	11/20/2025 Initials: BPM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings
Drawing File Name:	PC01 PRINCECHURCH-TITLE.dwg
Acad Ver.	Scale: Units: English

Sheet Revisions		

Littleton
Public Works
2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION TITLE SHEET			
Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	TITLE	Subset Sheets:	1 of 1

Project No./Code	
STU M810-018	
24290	
Sheet Number	1

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Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC02 PRINCECHURCH-MSPLANS.dwg - Current tab: 02 M&S STANDARD PLANS LIST - Print Time: Mon, 01 Dec 2025 - 8:22am By: mslek Last Save: Tue, 18 Nov 2025 - 1:58pm

PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
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COLORADO
DEPARTMENT OF TRANSPORTATION

M&S STANDARD PLANS LIST

July 31, 2019

Revised on October 22, 2025

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

THE M&S STANDARD PLANS USED TO DESIGN THIS PROJECT ARE INDICATED BY A MARKED BOX ■, AND WILL BE ATTACHED TO THE PLANS. ALL OTHER M&S STANDARD PLANS ARE STILL ELIGIBLE FOR USE IN CONSTRUCTION IF APPROVED BY THE LITTLETON CITY ENGINEER.

COLORADO REGISTERED
MATTHEW E. SLEK
38960
PROFESSIONAL ENGINEER
5/6/2026

My responsibility for this sheet is limited to selecting the standards applicable to the project. The standards were designed by others.

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GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2025 EDITION, CITY OF LITTLETON SPECIFICATIONS, THE PROJECT SPECIAL PROVISIONS, AND CDOT M&S STANDARD PLANS.

2. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND ACCEPTANCE BY THE ENGINEER.

3. ALL WORK SHALL BE DONE TO THE LINES, GRADES, SECTIONS, AND ELEVATIONS SHOWN ON THE PLANS UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.

4. ALL STATIONS ARE ALONG THE PROJECT CONTROL LINE UNLESS OTHERWISE NOTED.

5. UNLESS OTHERWISE NOTED, CURB & GUTTER STATION/OFFSET AND ELEVATION CALLOUTS ARE TO FLOWLINE.

6. ALL RANGE POINTS, TIES, BENCHMARKS, OR OTHER SURVEY CONTROL POINTS WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION SHALL BE PRESERVED.

7. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPE AS SHOWN ON THE PLANS AND CROSS SECTIONS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS AT THE CONTRACTOR'S EXPENSE. CONSTRUCTION ACTIVITIES, IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES, SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS, WHERE APPROVED.

8. THE CONTRACTOR'S ATTENTION IS DIRECTED TO PARAGRAPH 105.11 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS CONCERNING UTILITIES. THE CONTRACTOR SHALL CALL 811 FOR UTILITY LOCATIONS AT LEAST 3 WORKING DAYS PRIOR TO ANY DIGGING, NOT INCLUDING THE DAY OF ACTUAL CONTACT.

9. UTILITIES ARE DEPICTED ON THESE PLANS IN ACCORDANCE WITH THEIR ACHIEVED QUALITY LEVEL AS DEFINED IN THE AMERICAN SOCIETY OF CIVIL ENGINEER'S DOCUMENT ASCE 38, "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

10. RELIANCE UPON THESE DATA FOR RISK MANAGEMENT PURPOSES DURING BIDDING DOES NOT RELIEVE THE EXCAVATOR OR UTILITY OWNER FROM ALL APPLICABLE UTILITY DAMAGE PREVENTION STATURES, POLICIES, AND/OR PROCEDURES DURING EXCAVATION.

11. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL UTILITIES AND STRUCTURES AFFECTED BY THE WORK AND ANY DAMAGE SHALL BE REPAIRED AND RESTORED TO THE SATISFACTION OF THE ENGINEER AT NO COST TO THE PROJECT.

12. THE CONTRACTOR SHALL NOTIFY ALL BUSINESSES AND RESIDENTS, IN WRITING, 72 HOURS PRIOR TO ANY INTERRUPTION IN UTILITY SERVICE. THE NOTICE MUST BEAR ALL APPROPRIATE CONTACT INFORMATION, AND AN EMERGENCY NUMBER FOR AFTER HOURS CALLS.

13. THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE AT REMOVAL LIMITS BY FULL DEPTH SAWING. ALL SAW CUTS SHALL BE SQUARED OFF WITH 90 DEGREE CORNERS. SAWING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK FOR PAVEMENT REMOVAL.

14. AT LOCATIONS WHERE CURB AND GUTTER WILL BE REPLACED BUT EXISTING PAVEMENT IS TO REMAIN, THE CONTRACTOR SHALL NOT SAW CUT INTO THE EXISTING PAVEMENT. THE CONTRACTOR WILL ONLY BE PERMITTED TO SAW CUT AT THE GUTTER PAN LINE.

15. DETECTABLE WARNINGS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE CURB RAMP. DETECTABLE WARNINGS SHALL CONSIST OF 2'x2' EMBEDDED CAST IRON PLATES. DETECTABLE WARNINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND CONFORM TO THE REQUIREMENTS OF M-608-1.

GENERAL NOTES (CONT'D):

16. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN TEMPORARY TRAFFIC CONTROL DEVICES NECESSARY THROUGHOUT THE DURATION OF CONSTRUCTION IN CONFORMANCE WITH TRAFFIC CONTROL PLANS AND APPROVED MHT'S. THE CONTRACTOR SHALL SUBMIT MHT'S FOR CONSTRUCTION ACCORDING TO THE REQUIREMENTS OF SECTION 630. OVERNIGHT DEVICES SHALL COMPLY WITH MUTCD REQUIREMENTS, INCLUDING LIGHTING.

17. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED TO REDUCE MIGRATION OF AIR BORNE SOIL PARTICLES. CONTRACTOR SHALL PROVIDE WATER AS DUST PALLIATIVE AS DIRECTED BY THE ENGINEER. WATER AS DUST PALLIATIVE WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

18. DEPTH OF MOISTURE CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:

    FULL DEPTH OF ALL EMBANKMENTS.
    BASES OF CUTS AND FILLS: 1 FOOT.

19. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

20. FINAL GRADING OF PAVING SHALL PROVIDE POSITIVE DRAINAGE. WATER POCKETS AND POOLING OF WATER ON THE ROADWAY WILL NOT BE ACCEPTED, AND SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

21. THE CONTRACTOR SHALL PROVIDE A SITE SPECIFIC STAGING PLAN FOR ACCESS TO THE WORK AREAS, FIELD FACILITIES AND LOTS REQUIRING ACCESS FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE CONSTRUCTION OF TEMPORARY INGRESS/EGRESS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK. EARTHWORK, DRAINAGE, EROSION CONTROL AND RESTORATION OF THE TEMPORARY INGRESS/EGRESS AREAS TO ORIGINAL CONDITION SHALL BE INCLUDED IN THE WORK.

22. TO PROVIDE FOR ADEQUATE SULFATE RESISTANCE IN ALL CONCRETE SUPPLIED, SEVERITY OF POTENTIAL EXPOSURE SHALL BE CLASS 2 FOR THIS PROJECT. THE CONTRACTOR MAY AT THEIR OWN EXPENSE HAVE A CERTIFIED LABORATORY TEST THE SUBGRADE AS PER THE FIELD MATERIALS MANUAL. TESTING SHALL BE AT THE SAME SCHEDULE AND FREQUENCY AS REQUIRED FOR A PRELIMINARY SOIL SURVEY. THE CONTRACTOR MAY PROPOSE A DIFFERENT CLASS OF EXPOSURE FOR THE PROJECT BASED ON THOSE TEST RESULTS.

23. EMBANKMENT MATERIAL IMPORTED ONTO THE PROJECT SHALL BE TESTED TO CONFIRM THAT ITS WATER SOLUBLE SULFATE CONTENT IS NOT GREATER THAN THAT CORRESPONDING TO SULFATE EXPOSURE CLASS 2.

24. ALL LANDSCAPING WITHIN THE PROJECT AREA THAT IS DAMAGED, NOT SPECIFIED FOR REMOVAL, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

25. IT IS ESTIMATED THAT THE FOLLOWING FIELD FACILITIES WILL BE REQUIRED:

    SANITARY FACILITY: 1 EACH

26. ALL SURVEYING NECESSARY TO COMPLETE THE PROJECT WILL BE PAID FOR AS CONSTRUCTION SURVEYING 1 LUMP SUM. THE CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY MONUMENTATION DESIGNATED TO REMAIN FROM DAMAGE DURING CONSTRUCTION OPERATIONS. ANY MONUMENTS DISTURBED BY THE CONTRACTOR THAT ARE NOT DESIGNATED FOR RELOCATION SHALL BE RESET AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR AND THE PROJECT ENGINEER SHALL NOTE THOSE MONUMENTS IN THE FIELD PRIOR TO CONSTRUCTION.

27. DEWATERING SHALL BE INCLUDED IN THE WORK IF ENCOUNTERED.

28. ALL CONCRETE SHALL UTILIZE MIXES FROM THE CDOT APPROVED MIX DESIGN LIST.

29. COLORED CONCRETE WHERE THE COLORANT IS ADDED TO THE CONCRETE MIX ITSELF SHALL REQUIRE A CONCRETE MIX DESIGN WITH THE SPECIFIC COLORANT ADDED.

30. ALL COMPACTION SHALL BE PER SECTION 203 OF THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION CURRENT AT THE TIME OF PROJECT AWARD.

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

COLORADO 811 KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

31. FOR PRELIMINARY PLAN QUANTITIES OF PAVEMENT MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:
    AGGREGATE BASE COURSE (CLASS 6) @ 133 LBS/FT3
    HMA @ 110 LBS/SQ. YD./INCH
    TACK COAT DILUTED EMULSIFIED ASPHALT (SLOW SETTING) @ 0.10 GAL/SQ. YD. (DILUTED)

32. THE CONTRACTOR SHALL MAINTAIN CONTINUITY FOR USERS OF THE LITTLETON COMMUNITY TRAIL WHICH CROSSES PRINCE ST AT LAKE AVE. IF A REASONABLE DETOUR ROUTE IS NOT AVAILABLE, ACCESS ALONG THE EXISTING TRAIL CROSSING SHALL BE MAINTAINED WITH THE USE OF SIGNS AND FLAGGERS, AND PHASING THE WORK AS NEEDED. FULL CLOSURES OF LONGER THAN 10 MINUTES AT A TIME SHALL NOT BE PERMITTED.

33. IT IS ESTIMATED 80 HOURS OF POTHOLING WILL BE REQUIRED.

34. DUE TO THE PROJECT'S PROXIMITY TO THE COLORADO SCHOOL FOR THE BLIND, ALL PEDESTRIAN CLOSURES AND DETOURS SHALL BE DIRECTLY COMMUNICATED TO THE CSB. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER REGARDING THE COMMUNICATIONS.

35. FAST TRACK CONCRETE PAVEMENT SHALL UTILIZE CLASS PRS CONCRETE AND SHALL ACHIEVE 2,500 PSI COMPRESSIVE STRENGTH IN 12 HOURS.

36. THE NOMINAL MAXIMUM AGGREGATE SIZE FOR THE SMA SHALL BE ½".

37. ALL REFERENCES TO HMA SHALL BE TAKEN TO BE HOT MIX ASPHALT.

38. HOT MIX ASPHALT SHALL NOT CONTAIN ANY RECLAIMED ASPHALT PAVEMENT.

39. APPLICATION RATE OF TACK COAT FOR HMA IS 0.05 GAL/SY (DILUTED).

40. CONCRETE PAVEMENT SMOOTHNESS SHALL BE EVALUATED PER SECTION 105.07(a)2 OF THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION CURRENT AS OF TIME OF PROJECT AWARD OR AS DIRECTED BY THE ENGINEER.

41. PORTLAND CEMENT CONCRETE PAVEMENT SHALL UTILIZE COMPRESSIVE STRENGTH CRITERIA.

42. PCCP SHALL HAVE A COMPRESSIVE STRENGTH OF 2,500 PSI BEFORE BEING OPENED TO TRAFFIC.

43. THE TRANSVERSE AND LONGITUDINAL JOINTS OF PROPOSED PORTLAND CEMENT CONCRETE PAVEMENT (PCCP) SHALL LINE UP THE TRANSVERSE AND LONGITUDINAL JOINTS OF EXISTING PCCP AS DIRECTED BY THE ENGINEER.

44. A MINIMUM OF ONE MONTH BEFORE ANY CONCRETE PAVING WORK THE CONTRACTOR SHALL PREPARE A JOINTING PLAN PER STANDARD SHEET 3 OF M-412-1 AND SUBMIT IT TO THE ENGINEER FOR APPROVAL. WORK SHALL NOT COMMENCE UNTIL THE JOINTING PLAN HAS BEEN APPROVED.

45. HMA PATCHING SHALL BE TO THE DEPTH OF THE SURROUNDING EXISTING PAVEMENT AS DIRECTED BY THE ENGINEER. ALL LIFTS SHALL CONFORM TO THE REQUIREMENTS OF HMA (GRADING SX) (75) (PG 64-22). THE MINIMUM AND MAXIMUM LIFT THICKNESSES SHALL BE 2 AND 3 INCHES, FOR HMA (GRADING SX) (75) (PG 64-22). THE THICKNESS OF EACH LIFT SHALL BE LESS THAN OR EQUAL TO THE THICKNESS OF LIFT DIRECTLY BENEATH IT. ALL PATCHING SHALL BE PER THE ENGINEER.

46. PLACED ASPHALT SHALL NOT BE SUBJECT TO INCENTIVE AND ASPHALT CEMENT COST ADJUSTMENT. PORTLAND CEMENT CONCRETE PAVEMENT (PCCP) SHALL NOT BE SUBJECT TO INCENTIVE. THE CONTRACTOR SHALL BID THE ASPHALT AND PCCP ITEMS ACCORDINGLY.

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
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ENVIRONMENTAL NOTES:

HAZARDOUS MATERIALS

1. WORKERS ON THIS PROJECT MUST FOLLOW CDOT SPECIFICATION 250 – ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT. ALTHOUGH ENCOUNTERING IMPACTED SOIL OR GROUNDWATER IS NOT EXPECTED, WORKERS SHALL BE ALERT DURING EXCAVATION FOR ANY VISUAL OR OLFACTORY SIGNS OF IMPACTS. IF IMPACTED SOIL AND/OR GROUNDWATER IS ENCOUNTERED, WORK WILL STOP IMMEDIATELY, AND THE PROCEDURES OUTLINED IN THE CDOT SPECIFICATION 250 AND SUBSECTION 107.25.8 SHALL BE FOLLOWED. IF OBSERVED, GROUNDWATER PRODUCED DURING CAISSON DRILLING WILL BE CONTAINED, SAMPLED, AND ANALYZED PRIOR TO DISPOSAL OR DISCHARGE.

2. IN THE UNLIKELY EVENT THAT SUSPECTED ASBESTOS–CONTAINING MATERIALS ARE ENCOUNTERED, INCLUDING WITH BURIED UTILITIES, WORKERS MUST FOLLOW CDOT SPECIFICATION 250.07 – ASBESTOS–CONTAINING MATERIAL (ACM) MANAGEMENT AND CDOT REGULATED ASBESTOS–CONTAMINATED SOIL MANAGEMENT STANDARD OPERATING PROCEDURE. ADDITIONALLY, DEPENDING ON THE TYPE OF ACM, THIS MATERIAL MUST ALSO BE ABATED IN ACCORDANCE WITH EITHER SECTION 5.5 OF THE SOLID WASTE REGULATIONS, OR REGULATION NO. 8 OF THE AIR QUALITY CONTROL COMMISSION REGULATIONS. WORKERS ON THIS PROJECT MUST FOLLOW CDOT SPECIFICATION 250 – ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT.

AIR QUALITY

1. THE CONTRACTOR SHALL CONTROL FUGITIVE DUST THROUGH IMPLEMENTATION OF SECTIONS 107.24, 209, AND 250 OF CDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE AIR POLLUTION CONTROL DIVISION'S AIR POLLUTANT EMISSION NOTIFICATION (APEN) REQUIREMENTS.

2. THE FOLLOWING BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED DURING CONSTRUCTION:
   a. MAINTAIN ENGINES AND EXHAUST SYSTEMS ON CONSTRUCTION EQUIPMENT AND VEHICLES IN GOOD WORKING ORDER. PROHIBIT TAMPERING WITH EQUIPMENT TO INCREASE HORSEPOWER OR DISABLING EMISSION CONTROL DEVICES. EQUIPMENT IS SUBJECT TO INSPECTION BY THE PROJECT MANAGER TO ENSURE MAINTENANCE IS CONDUCTED REGULARLY.
   b. USE ALTERNATIVES TO DIESEL ENGINES AND/OR DIESEL FUELS, SUCH AS BIODIESEL, LIQUEFIED NATURAL GAS, OR COMPRESSED NATURAL GAS, FUEL CELLS, AND ELECTRIC ENGINES, IF APPLICABLE.
   c. REQUIRE HEAVY CONSTRUCTION EQUIPMENT TO USE THE CLEANEST AVAILABLE ENGINES OR BE RETROFITTED WITH DIESEL PARTICULATE CONTROL TECHNOLOGY.
   d. PROHIBIT UNNECESSARY IDLING OF CONSTRUCTION EQUIPMENT AND VEHICLES.
   e. LOCATE STAGING AREAS AND STATIONARY CONSTRUCTION EQUIPMENT/DIESEL ENGINES AS FAR AS POSSIBLE FROM RESIDENCES AND OTHER SENSITIVE RECEPTORS.
   f. COVER, WET, COMPACT, OR USE CHEMICAL STABILIZATION TO CONTROL DUST FROM DISTURBED AREAS AND EXCAVATED MATERIALS DURING CONSTRUCTION. MINIMIZE DISTURBED AREAS, PARTICULARLY DURING DRY WEATHER CONDITIONS, AND USE WIND BARRIERS AS APPROPRIATE.
   g. USE STREET SWEEPERS TO REMOVE SOIL TRACKED ONTO ADJACENT ROADWAYS.
   h. USE CONSTRUCTION VEHICLES AND EQUIPMENT WITH THE MINIMUM PRACTICAL ENGINE SIZE FOR THE INTENDED JOB.
   i. HAVE A WHEEL WASH STATION AND/OR CRUSHED STONE APRON AT EGRESS/INGRESS AREAS TO PREVENT DIRT BEING TRACKED ONTO STREETS. COVER ALL DUMP TRUCKS LEAVING SITES TO PREVENT DIRT FROM SPILLING ONTO STREETS.

ENVIRONMENTAL NOTES (CONT'D):

NOISE

1. THE CONTRACTOR SHOULD BE AWARE OF AND COMPLY WITH ALL LOCAL AGENCY NOISE ORDINANCES AND/OR OTHER RESTRICTIONS APPLICABLE TO DAYTIME AND NIGHTTIME CONSTRUCTION ACTIVITIES FOR PROJECTS WITHIN THE LOCAL MUNICIPAL COVERAGE AREA.

2. WHEN CONDITIONS APPLY, THE CONTRACTOR SHOULD BE AWARE THAT A NOISE VARIANCE SUBMITTAL MAY BE REQUIRED IN SPECIFIC INSTANCES, SUCH AS WHEN NIGHTTIME WORK WILL BE PART OF THE PROJECT. ALL NIGHTTIME CONSTRUCTION ACTIVITIES SUBJECT TO NOISE LEVEL RESTRICTIONS CANNOT BEGIN UNTIL THE NECESSARY DOCUMENTATION AND NOTIFICATIONS HAVE BEEN APPROVED BY THE APPROPRIATE AGENCIES.

3. THE CONTRACTOR IS DIRECTED TO THE PROJECT SPECIFICATIONS REGARDING WORKING HOURS BEING 7AM TO 7PM. THESE HOURS MAY BE LIMITED DURING SPECIAL EVENTS IN THE CITY.

ARCHAEOLOGICAL RESOURCES

1. IF ANY SUBSURFACE ARCHAEOLOGICAL RESOURCES ARE FOUND, WORK WILL BE IMMEDIATELY HALTED IN THE VICINITY OF THE FIND. IF BONES OF POTENTIAL HUMAN ORIGIN ARE DISCOVERED DURING CONSTRUCTION, GROUND–DISTURBING WORK MUST BE STOPPED NEAR THE DISCOVERY, AND THE COUNTY SHERIFF, AND THE COLORADO STATE ARCHAEOLOGIST (303–866–2736) SHALL BE PROMPTLY NOTIFIED. WORK CANNOT RESUME IN THE VICINITY OF THE FIND UNTIL CLEARANCE IS GRANTED. THE CONTRACTOR SHALL COMPLY WITH A REVISION OF CDOT STANDARD SPECIFICATION 107.23 (ARCHAEOLOGICAL AND PALEONTOLOGICAL DISCOVERIES).

BIOLOGICAL RESOURCES

1. IN COLORADO, MOST NESTING AND REARING ACTIVITIES FOR MIGRATORY BIRDS OCCUR BETWEEN APRIL 1 AND AUGUST 31, BUT RAPTORS MAY NEST AS EARLY AS FEBRUARY 15. THESE DATES ARE GUIDELINES AND BIRDS ARE PROTECTED AT ALL TIMES. DUE TO THE POTENTIAL FOR MBTA CONSTRAINTS, THE CONTRACTOR SHALL COMPLY WITH MBTA NEST SURVEY GUIDELINES DURING THE NESTING SEASON, WHICH ARE OUTLINED IN CDOT'S REVISION OF SECTION 240–PROTECTION OF MIGRATORY BIRDS. IT IS ESTIMATED 8 HOURS OF ITEM 240 WILDLIFE BIOLOGIST WILL BE REQUIRED.

2. DURING CONSTRUCTION, THE PROJECT IS REQUIRED TO MINIMIZE THE SPREAD OF NOXIOUS WEEDS. BY FOLLOWING GENERAL BEST MANAGEMENT PRACTICES (BMPS) OUTLINED IN SECTION 217 OF THE PROJECT SPECIFICATIONS, THE POTENTIAL FOR INTRODUCING AND SPREADING NOXIOUS WEEDS IN THE STUDY AREA WILL BE REDUCED. IT IS ESTIMATED 8 HOURS OF ITEM 217 HERBICIDE TREATMENT WILL BE REQUIRED.

COLORADO 811
KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

RTD NOTES:

1. CONTRACTOR TO SUBMIT A CONSTRUCTION–WORK–METHOD–STATEMENT FOR REGIONAL TRANSPORTATION DISTRICT REVIEW/APPROVAL PRIOR TO BEGINNING ANY WORK ON RTD ROW. THE METHOD MUST ADDRESS MEASURES THAT WILL BE APPLIED TO PREVENT DAMAGE TO AND DEGRADATION OF THE SLOPE AND TO RTD TRACKWAY/TRAINS (AT THE BOTTOM OF THE SLOPE) DURING CONSTRUCTION.

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

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Sheet Revisions		

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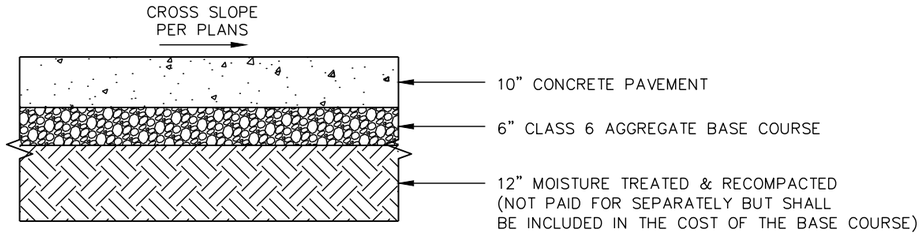
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
GENERAL NOTES

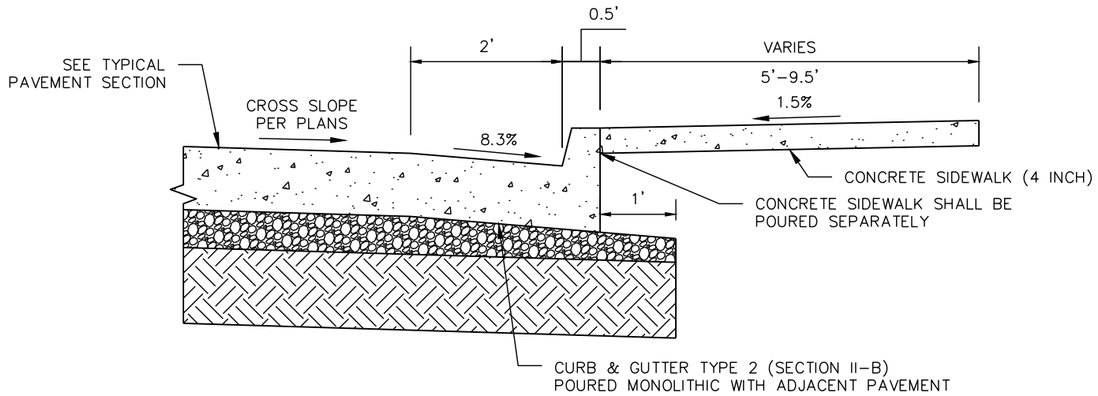
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Detailer:	BPM		
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STU M810–018	
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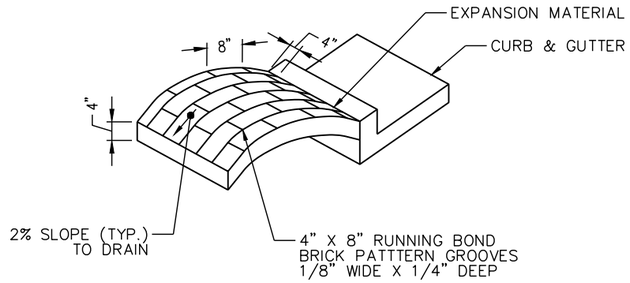
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TYPICAL PAVEMENT SECTION



TYPICAL CURB, GUTTER, AND SIDEWALK SECTION



MEDIAN COVER MATERIAL (PATTERNED CONCRETE) DETAIL

MEDIAN COVER MATERIAL NOTES:

1. MEDIAN COVER MATERIAL SHALL BE 4" (MIN) THICK PATTERNED CONCRETE. CONCRETE SHALL BE OF THE SAME CLASS AS FOR CURB & GUTTER.
2. INSTALL 1/2" WIDE X 4" DEEP EXPANSION MATERIAL ALONG BACK OF CURB AT MEDIAN NOSES, FIXED OBJECTS, AND AT TRANSVERSE JOINTS AT 50' INTERALS (MAX.) ALONG MEDIAN.
3. MEDIAN COVER CONCRETE SHALL BE COLORED DAVIS COLOR "BAJA RED 160" OR AN APPROVED EQUAL.
4. PRIOR TO MEDIAN PAVING, APPLY A HERBICIDE TREATMENT TO THE MEDIAN SUBGRADE AREA FOR WEED CONTROL.



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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION TYPICAL SECTIONS AND DETAILS			
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Project No./Code	
STU M810-018	
24290	
Sheet Number	5

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC04 PRINCECHURCH-TYPSEC.dwg - Current tab: 04 TYPICAL SECTIONS AND DETAILS - Print Time: Mon, 01 Dec 2025 - 8:22am By: msalek Last Save: Tue, 18 Nov 2025 - 1:00pm

CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY		BRIDGE LTNC.021-03.059		BRIDGE LTNB.826-03.059				PROJECT TOTALS	
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
202-00010	Removal of Tree	EA	4								4	
202-00200	Removal of Sidewalk	SY	480								480	
202-00203	Removal of Curb and Gutter	LF	497								497	
202-00206	Removal of Concrete Curb Ramp	SY	90								90	
202-00210	Removal of Concrete Pavement	SY	212								212	
202-00220	Removal of Asphalt Mat	SY	1213								1,213	
202-00246	Removal of Asphalt Mat (Planing)(Special)	SY					201				201	
202-00250	Removal of Pavement Markings	SF	2922								2,922	
202-00207	Removal of Brick Pavers	SY	42								42	
202-00299	Removal of Sidewalk Drain	LF	8								8	
202-00453	Removal of Portions of Present Structure (Class 2)	SY					21				21	
202-00460	Removal of Portions of Present Structure (Class 3)	SY					2				2	
202-00495	Removal of Portions of Present Structure	L S			1						1	
202-00821	Removal of Sign Panel	EA	2								2	
202-00828	Removal of Traffic Signal Equipment	LS	1								1	
202-01002	Removal of Fence (Metal)	LF	6								6	
202-01003	Removal of Fence (Special)	LF	18								18	
202-01130	Removal of Guardrail Type 3	LF	518								518	
202-04010	Clean Inlet	EA	4								4	
203-00010	Unclassified Excavation (Complete In Place)	CY	376								376	
203-01597	Potholing	HOUR	80								80	
207-00702	Topsoil (Offsite)	CY	12								12	
208-00002	Erosion Log Type 1 (12 Inch)	LF	165								165	
208-00035	Aggregate Bag	LF	100								100	
208-00046	Pre-fabricated Concrete Washout Structure (Type 1)	EA	1								1	
208-00052	Storm Drain Inlet Protection (Type II)	EA	4								4	
208-00053	Storm Drain Inlet Protection (Type I) (84 Inch)	EA	1								1	
208-00057	Storm Drain Inlet Protection (Type I)(144 Inch)	EA	1								1	
208-00070	Vehicle Tracking Pad	EA	1								1	
208-00103	Removal and Disposal of Sediment (Labor)	HOUR	20								20	
208-00105	Removal and Disposal of Sediment (Equipment)	HOUR	20								20	
208-00106	Sweeping (Sediment Removal)	HOUR	20								20	
208-00107	Removal of Trash	HOUR	10								10	
210-00479	Reset Radio Communication Antenna	EA	1								1	
210-00760	Reset Luminaire	EA	3								3	
210-00810	Reset Ground Sign	EA	8								8	
210-00815	Reset Sign Panel	EA	5								5	
210-00867	Reset Fire Preemption Unit	EA	2								2	
210-04050	Adjust Valve Box	EA	2								2	
210-04060	Adjust Water Meter	EA	2								2	
212-00050	Sod	SF	960								960	
212-01200	Landscape Restoration	L S	1								1	
217-00020	Herbicide Treatment	HOUR	8								8	
240-00000	Wildlife Biologist	HOUR	8								8	
304-06000	Aggregate Base Course (Class 6)	CY	255								255	
403-00720	Hot Mix Asphalt (Patching) (Asphalt)	TON	20		21						41	
403-34741	Hot Mix Asphalt (Grading SX) (75) (PG 64-22)	TON					23				23	
408-01100	Joint Sealant	LF			115						115	

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
SUMMARY OF APPROXIMATE QUANTITIES

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	SOAQ	Subset Sheets:	1 of 3

Project No./Code	STU M810-018
	24290
Sheet Number	6

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CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY		BRIDGE LTNC.021-03.059		BRIDGE LTNB.826-03.059				PROJECT TOTALS	
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
412-00600	Concrete Pavement (6 Inch)	SY	50								50	
412-01000	Concrete Pavement (10 Inch)	SY	1210								1,210	
412-01020	Concrete Pavement (10 Inch) (Fast Track)	SY	131								131	
503-00018	Drilled Shaft (18 Inch)	LF	18								18	
503-00036	Drilled Shaft (36 Inch)	LF	42								42	
515-00120	Waterproofing Membrane	SY			64		201				265	
601-03040	Concrete Class D (Bridge)	CY			35						35	
601-03057	Concrete Class DR	CY					3				3	
601-51005	Galvanic Anodes	EA					105				105	
602-00020	Reinforcing Steel (Epoxy Coated)	LB			2200		500				2,700	
606-00302	Guardrail Type 3 (31 Inch Midwest Guardrail System)	LF	38								38	
606-01370	Transition Type 3G	EA	2								2	
606-01407	Transition Type BR9-GR3	EA	2								2	
606-02003	End Anchorage (Nonflared)	EA	1								1	
606-02005	End Anchorage (Flared)	EA	1								1	
608-00000	Concrete Sidewalk	SY	665								665	
608-00010	Concrete Curb Ramp	SY	144								144	
608-10019	Sidewalk Drain (Install Only)	LF	9								9	
609-21020	Curb and Gutter Type 2 (Section II-B)	LF	496								496	
610-00020	Median Cover Material (Patterned Concrete)	SF	79								79	
612-00010	Delineator Curb	EA	8								8	
613-07198	Pull Box (Medium) (17" x 30") (Install Only)	EA	4								4	
613-07199	Pull Box (Large) (24" x 36") (Install Only)	EA	1								1	
613-00200	2 Inch Electrical Conduit	LF	146								146	
613-00206	2 Inch Electrical Conduit (Bored)	LF	206								206	
613-00300	3 Inch Electrical Conduit	LF	250								250	
613-00306	3 Inch Electrical Conduit (Bored)	LF	412								412	
613-10000	Wiring	LS	1								1	
613-80199	Service Meter Cabinet (Install Only)	EA	1								1	
614-00011	Sign Panel (Class I)	SF	98								98	
614-00216	Steel Signpost (2x2 Inch Tubing)	LF	40								40	
614-70201	Accessible Pedestrian Signal (Install Only)	EA	2								2	
614-70337	Traffic Signal Face (12-12-12) (Install Only)	EA	7								7	
614-70450	Traffic Signal Face (12-12-12-12) (Install Only)	EA	5								5	
614-72861	Pedestrian Push Button (Install Only)	EA	2								2	
614-72869	Pedestrian Push Button Post Assembly (Install Only)	EA	1								1	
614-72896	Intersection Detection System (Camera) (Install Only)	EA	1								1	
614-75216	Pedestrian Signal Face (16) (Countdown) (Install Only)	EA	4								4	
614-75855	Traffic Signal Controller Cabinet (Install Only)	EA	1								1	
614-81301	Traffic Signal-Light Pole (1 Mast Arm) (Install Only)	EA	3								3	
614-84450	Traffic Signal Pedestal Pole Steel (Install Only)	EA	3								3	
620-00020	Sanitary Facility	EA	1								1	
621-00450	Detour Pavement	SY	91								91	
625-00000	Construction Surveying	LS	1								1	
626-00000	Mobilization	LS	1								1	
627-00001	Pavement Marking Paint	GAL	17								17	
627-00008	Modified Epoxy Pavement Marking	GAL	48								48	

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
SUMMARY OF APPROXIMATE QUANTITIES

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	SOAQ	Subset Sheets:	2 of 3

Project No./Code	
STU M810-018	
24290	
Sheet Number	7

CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY		BRIDGE LTNC.021-03.059		BRIDGE LTNB.826-03.059				PROJECT TOTALS	
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
627-30407	Preformed Thermoplastic Pavement Marking (Word-Symbol) (Special)	SF	806								806	
627-30411	Preformed Thermoplastic Pavement Marking (Xwalk-Stopline) (Special)	SF	718								718	
630-00000	Flagging	HOUR	700								700	
630-00007	Traffic Control Inspection	DAY	30								30	
630-00012	Traffic Control Management	DAY	90								90	
630-80335	Barricade (Type 3 M-A) (Temporary)	EA	5								5	
630-80340	Pedestrian Barricade (ADA)	LF	100								100	
630-80341	Construction Traffic Sign (Panel Size A)	EA	58								58	
630-80342	Construction Traffic Sign (Panel Size B)	EA	8								8	
630-80344	Construction Traffic Sign (Special)	SF	53								53	
630-80350	Vertical Panel	EA	40								40	
630-80355	Portable Message Sign Panel	EA	3								3	
630-80360	Drum Channelizing Device	EA	60								60	
630-80380	Traffic Cone	EA	75								75	
630-86810	Traffic Signal (Temporary)	EA	2								2	
700-70010	F/A Minor Contract Revisions	FA	1								1	
700-70023	F/A On-The-Job Trainee	FA	1								1	
700-70082	F/A Furnish and Install Electrical Service	FA	1								1	
700-70320	F/A Sprinklers	FA	1								1	

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
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SUMMARY OF EARTHWORK QUANTITIES

PAY QUANTITIES:	
UNCLASSIFIED EXCAVATION (COMPLETE IN PLACE)	**CUBIC YARDS**
ROADWAY REGULAR UNCLASSIFIED EXCAVATION QUANTITY (EXCAVATION BELOW EXISTING PAVEMENT FOR NEW ADDITIONAL PAVEMENT DEPTH AND ABC)	358
ADDITIONAL UNCLASSIFIED EXCAVATION QUANTITY FOR CUT SLOPE TREATMENT (ASSUMED 5% OF REGULAR ROADWAY UNCLASSIFIED EXCAVATION)	18
TOTAL QUANTITY FOR UNCLASSIFIED EXCAVATION MATERIAL (COMPLETE IN PLACE) PAY QUANTITY	376

TOPSOIL	**CUBIC YARDS**
TOTAL TOPSOIL PAY QUANTITY	12

FOR INFORMATION ONLY:	
EMBANKMENT MATERIAL (COMPLETE IN PLACE)	**CUBIC YARDS**
ROADWAY REGULAR EMBANKMENT QUANTITY	5
ADDITIONAL EMBANKMENT QUANTITY FOR GUARDRAIL AND GUARDRAIL END ANCHORAGES	70
TOTAL FOR EMBANKMENT MATERIAL (COMPLETE IN PLACE)	**75**

FOR INFORMATION ONLY - EARTHWORK BALANCE

UNCLASSIFIED EXCAVATION (COMPLETE IN PLACE) (CUT)	**CUBIC YARDS**
TOTAL UNCLASSIFIED EXCAVATION	376
TOTAL MATERIAL AVAILABLE FROM EXCAVATION	**376**

EMBANKMENT MATERIAL (COMPLETE IN PLACE) (FILL)	**CUBIC YARDS**
EMBANKMENT MATERIAL	75
TOTAL MATERIAL NEEDED FOR EMBANKMENTS	**75**

EMBANKMENT MATERIAL EXPANDED	
TOTAL EMBANKMENT MULTIPLIED BY COMPACTION FACTOR (EMBANKMENT COMPACTION FACTOR= 1.15 (SEE NOTE 1))	86

BALANCE

TOTAL EXCESS MATERIAL	
TOTAL MATERIAL AVAILABLE FROM EXCAVATIONS LESS TOTAL MATERIAL NEEDED FOR EMBANKMENT	**290**

NOTES:

1. THE COMPACTION FACTOR FOR ONSITE MATERIALS WAS NOT VERIFIED IN DESIGN.
2. OVERBUILD REQUIRED TO MEET THE EARTHWORK SPECIFICATIONS IS REQUIRED BUT IS NOT INCLUDED OR CALCULATED IN THIS TABULATION.
3. TOPSOIL WILL BE REQUIRED TO A DEPTH OF 4 INCHES IN AREAS TO BE SODDED. EXISTING TOPSOIL WITHIN THE LIMITS OF DISTURBANCE MAY BE STRIPPED AND REUSED. STRIPPING AND STOCKPILING OF EXISTING TOPSOIL IS NOT PAID FOR SEPARATELY SHALL BE INCLUDED IN THE WORK.
4. HAULING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
5. THERE IS NO DESIGNATED BORROW SITE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE EMBANKMENT AND STRUCTURE BACKFILL BORROW SOURCE.
6. THE CONTRACTOR IS ADVISED ONSITE EXCAVATED MATERIAL MAY NOT BE SUITABLE FOR REUSE ON THE PROJECT.
7. EXCESS MATERIAL SHALL BE DISPOSED OF OFFSITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
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Sheet Revisions		

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION TABULATION OF EARTHWORK			
Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	TAB	Subset Sheets:	1 of 6

Project No./Code	
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24290	
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TABULATION OF REMOVALS

LOCATION	ROADWAY	SIDE	REMOVAL OF TREE	REMOVAL OF ASPHALT MAT	REMOVAL OF CONCRETE PAVEMENT	REMOVAL OF CONCRETE CURB RAMP	REMOVAL OF CURB AND GUTTER	REMOVAL OF SIDEWALK	REMOVAL OF SIDEWALK DRAIN	REMOVAL OF GUARDRAIL TYPE 3	REMOVAL OF FENCE (METAL)	REMOVAL OF FENCE (SPECIAL)	REMOVAL OF BRICK PAVERS
			EA	SY	SY	SY	LF	SY	LF	LF	LF	LF	SY
STA. 2+81.35 TO 3+22.46	PRINCE ST	LT				21	22	25					
STA. 3+03.97 TO 3+25.96	PRINCE ST	RT					22	20					
STA. 5+88.07 TO 7+63.75	PRINCE ST	RT						95		151		9	
STA. 7+20.34 TO 7+63.75	PRINCE ST	RT		9			44						
STA. 9+49.12 TO 11+14.81	PRINCE ST	LT					166	139					
STA. 9+52.27 TO 12+60.06	PRINCE ST	BOTH		1204									
STA. 10+59.83 TO 11+10.31	PRINCE ST	LT											
STA. 11+20.04	PRINCE ST	LT				13		21					
STA. 11+28.40 TO 11+78.04	PRINCE ST	LT			152		43						
STA. 11+78.55 TO 12+60.06	PRINCE ST	LT					88						
STA. 11+85.28	PRINCE ST	LT				12		9					
STA. 11+90.39 TO 12+24.39	PRINCE ST	LT						20					20
STA. 12+24.40 TO 12+50.52	PRINCE ST	LT			35								
STA. 12+50.52 TO 14+13.06	PRINCE ST	LT						75					22
STA. 12+64 TO 12+92	PRINCE ST	LT	2										
STA. 13+81 TO 14+06	PRINCE ST	LT	2										
STA. 10+59.83 TO 12+00.13	PRINCE ST	RT					111			367		9	
STA. 10+59.83 TO 11+98.55	PRINCE ST	RT						51					
STA. 11+24.62	PRINCE ST	RT				12							
STA. 11+84.64	PRINCE ST	RT				12							
STA. 11+88.64	PRINCE ST	RT									6		
STA. 12+08.41	PRINCE ST	RT			2	15	1	19					
STA. 12+81.30	PRINCE ST	RT				5		2					
STA. 14+24.75	PRINCE ST	LT			23								
STA. 14+39.09	PRINCE ST	LT						4	8				
PROJECT TOTALS			4	1,213	212	90	497	480	8	518	6	18	42

NOTE: REMOVAL OF FENCE (METAL) SHALL INCLUDE REPAIR OF REMAINING POST. SEE REMOVAL PLAN SHEET ADDITIONAL NOTES.

TABULATION OF GUARDRAIL

LOCATION	ROADWAY	SIDE	GUARDRAIL TYPE 3 (31 INCH M.G.S.)	TRANSITION TYPE 3G	TRANSITION TYPE BR9-GR3	END ANCHORAGE (NONFLARED)	END ANCHORAGE (FLARED)
			LF	EACH	EACH	EACH	EACH
STA. 7+42.38	PRINCE ST	RT		1	1	1	
▼ STA. 10+98.03 TO 11+35.53	PRINCE ST	RT	38	1	1		1
PROJECT TOTALS			38	2	2	1	1

▼ PORTION OF GUARDRAIL RUN SHALL HAVE NESTED W-BEAM RAIL AND 3'-1½" POST SPACING. SEE ROADWAY PLAN SHEET.



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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
TABULATION OF REMOVALS AND GUARDRAIL

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	TAB	Subset Sheets:	2 of 6

Project No./Code	
STU M810-018	
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TABULATION OF SURFACING

LOCATION	ROADWAY	SIDE	ADJUST WATER METER		ADJUST VALVE BOX		AGGREGATE BASE COURSE (CLASS 6)		HOT MIX ASPHALT (PATCHING) (ASPHALT)		MEDIAN COVER MATERIAL (PATTERNED CONCRETE)	
			EACH		EACH		CY		TON		SF	
STA. 11+93.04	PRINCE ST	RT			1							
STA. 11+99.41	PRINCE ST	RT			1							
STA. 12+01.64	PRINCE ST	LT	1									
STA. 12+55.08	PRINCE ST	LT	1									
STA. 9+49.12 TO 12+60.06	PRINCE ST	BOTH					255					
STA. 10+91.05 TO 11+24.84	PRINCE ST	LT									54	
STA. 11+81.16 TO 11+85.90	PRINCE ST	LT									25	
AS NEEDED									20			
PROJECT TOTALS			2		2		255		20		79	

TABULATION OF CONCRETE

LOCATION	ROADWAY	SIDE	CONCRETE PAVEMENT (6 INCH)		CONCRETE PAVEMENT (10 INCH)		CONCRETE PAVEMENT (10 INCH) (FAST TRACK)		CONCRETE SIDEWALK		CONCRETE CURB RAMP		SIDEWALK DRAIN (INSTALL ONLY)		CURB AND GUTTER TYPE 2 (SECTION II-B)	
			SY		SY		SY		SY		SY		LF		LF	
STA. 2+81.40 TO 3+00.46	PRINCE ST	LT							16		33				19	
STA. 3+14.96	PRINCE ST	RT									28					
STA. 5+88.07 TO 7+58.41	PRINCE ST	RT							140						38	
STA. 9+49.12 TO 12+60.06	PRINCE ST	BOTH			1210		131									
STA. 9+49.12 TO 11+14.47	PRINCE ST	LT							125						178	
STA. 11+24.45	PRINCE ST	LT							17		16				38	
STA. 10+44.71 TO 11+85.12	PRINCE ST	RT							108						135	
STA. 11+80.62	PRINCE ST	LT							3		11				9	
STA. 11+87.29	PRINCE ST	LT									19				9	
STA. 11+88.64	PRINCE ST	RT									12					
STA. 11+95.95 TO 12+60.06	PRINCE ST	LT													62	
STA. 11+95.95 TO 14+13.07	PRINCE ST	LT							211							
STA. 11+96.99 TO 11+99.48	PRINCE ST	RT							14						3	
STA. 12+08.41	PRINCE ST	RT							8		16					
STA. 12+36.71	PRINCE ST	LT	20													
STA. 12+81.30	PRINCE ST	RT							16		9				5	
STA. 14+24.75	PRINCE ST	LT	30													
STA. 14+39.09	PRINCE ST	LT							7				9			
PROJECT TOTALS			50		1,210		131		665		144		9		496	

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

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Sheet Revisions		

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
TABULATION OF SURFACING AND CONCRETE

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	TAB	Subset Sheets:	3 of 6

Project No./Code	
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TABULATION OF SIGNING

SIGN CODE	SIGN MESSAGE	LOCATION	PANEL SIZE W X H (IN)	BACK-GROUND COLOR	LEGEND COLOR	STEEL SIGN SUPPORT 2 X 2 INCH TUBING LF	SIGN PANEL CLASS I SF	REMOVE SIGN PANEL EA	RESET GROUND SIGN EA	RESET SIGN PANEL EA	DELINEATOR CURB EA
	PED XING / DIAGONAL ARROW	STA 3+18 SB							1		8
24R3-17	BIKE LANE	STA 3+29 NB	24 X 18	WHITE	BLACK	10	3				
12R7-9a	NO PARKING BIKE LANE		12 X 18	WHITE	RED		1.5				
	LITTLETON COMMUNITY TRAIL (X2)									2	
	TRAIL XING / 100 FT	STA 4+21 SB							1		
	SPEED LIMIT 25	STA 6+17 NB							1		
	(LT) ONLY / (ST) ONLY	STA 7+52 NB							1		
24R3-17	BIKE LANE	STA 10+87 SB	24 X 18	WHITE	BLACK	10	3				
12R7-9a	NO PARKING BIKE LANE		12 X 18	WHITE	RED		1.5				
	COLORADO GALLERY OF THE ARTS ACC (LT)	STA 11+00 NB							1		
	DOUBLE ARROW	STA 11+44 EB							1		
	COLORADO GALLERY OF THE ARTS ACC (RT)	STA 12+04 SB							1		
12R7-1	NO PARKING ANY TIME (BOTH)	STA 12+72 SB	12 X 18	WHITE	RED		1.5	1			
24R3-17	BIKE LANE	STA 13+20 NB	24 X 18	WHITE	BLACK		3				
	SPEED LIMIT 25	STA 13+45 SB							1		
12R7-1	NO PARKING ANY TIME (BOTH)		12 X 18	WHITE	RED		1.5				
R4 SPECIAL	RIGHT TURNS / YIELD TO BIKES / SHARED LANE	NB BEFORE ALAMO	30 X 36	WHITE	BLACK		7.5				
24R3-17	BIKE LANE	SB AFTER ALAMO	24 X 18	WHITE	BLACK		3				
12R7-9a	NO PARKING BIKE LANE		12 X 18	WHITE	RED		1.5				
24R3-17	BIKE LANE	WB AFTER PRINCE	24 X 18	WHITE	BLACK	10	3				
12R7-9a	NO PARKING BIKE LANE		12 X 18	WHITE	RED		1.5				
30R3-8 SPEC	(LT) ONLY / (RT) ONLY	EB BEFORE PRINCE	30 X 30	WHITE	BLACK		6.25	1			
R4 SPECIAL	RIGHT TURNS / YIELD TO BIKES / SHARED LANE	EB AFTER NEVADA	30 X 36	WHITE	BLACK	10	7.5				
SUBTOTAL GROUND SIGNS						40	45.25	2	8	2	8
SUBTOTAL SIGNAL SIGNS							52			3	
PROJECT TOTALS						40	98	2	8	5	8

SIGNING NOTES

1. SIGNPOSTS SHALL BE 2" X 2" GALVANIZED PERFORATED STEEL TUBING. SIGNPOST BASES SHALL BE 2-1/4" X 2-1/4" GALVANIZED SQUARE STEEL TUBING 3 FOOT IN LENGTH. BASES SHALL BE INCLUDED IN THE COST OF THE SIGNPOSTS.
2. TOP OF SIGNPOST BASES SHALL BE 3"± ABOVE FINISHED GRADE. THE SIGN POSTS SHALL BE INSTALLED 4" INTO THE BASE AND BOLTED.
3. NEW SIGN POST BASES, IF REQUIRED, SHALL BE INCLUDED IN THE COST OF RESET GROUND SIGN.
4. SIGNING SHALL BE INSTALLED ACCORDING TO THE MUTCD AND FINAL LOCATIONS ARE SUBJECT TO APPROVAL BY THE ENGINEER.

STRIPING NOTES

1. STRIPING SHALL BE INSTALLED ACCORDING TO THE MUTCD AND CDOT S-627-1.
2. FOR THE PURPOSES OF EPOXY QUANTITY CALCULATIONS A RATE OF 85 SF/GAL WAS USED.
3. LAYOUT OF STRIPING IS INCLUDED IN THE COST OF PAVEMENT MARKING.
4. CROSSWALK BARS SHALL BE 2' X 9' PREFORMED THERMOPLASTIC.
5. STOP BARS SHALL BE 24" WIDE.
6. LANE USE ARROWS SHALL HAVE BLACK OUTLINE WHEN ON CONCRETE SURFACE.

TABULATION OF STRIPING

LOCATION	ROADWAY	SIDE	REMOVAL OF PAVEMENT MARKING	MODIFIED EPOXY PAVEMENT MARKING					PREFORMED THERMOPLASTIC PAVEMENT MARKING (SPECIAL)																
									WORD-SYMBOL																
				DOUBLE YELLOW SOLID 4 INCH	EDGE LINE WHITE SOLID 4 INCH	WHITE DOTTED 4 INCH	DOUBLE YELLOW DOTTED 4 INCH	CHANNELIZING WHITE SOLID 8 INCH	LT TURN ARROW		THRU ARROW		RT TURN ARROW		BIKE SYMBOL & ARROW		GREEN BIKE BOX		BIKE CHEVRON CLUSTER		SPEED HUMP		24"X36" YIELD TRIANGLE		XWALK-STOPLINE
			SF	LF	LF	LF	LF	LF	EA	SF	EA	SF	EA	SF	EA	SF	EA	SF	EA	SF	EA	SF	EA	SF	SF
PRINCE ST/LAKE AVE INTERSECTION		BOTH	112		111	146									1	20	2	48	2	15					234
STA. 2+82 TO 11+18	PRINCE ST	BOTH	1046	936	3333										4	80	1	24							
STA. 10+33 TO 11+18	PRINCE ST	NB						102	2	40															56
THROUGH INTERSECTION	PRINCE ST	SB		29		146	64												3	23					
THROUGH INTERSECTION	PRINCE ST	NB				64									1	20									
WEST OF INTERSECTION	CHURCH AVE	BOTH	238	226	542	278		126	2	40			2	40	4	80	1	24							144
STA. 11+92 TO ALAMO	PRINCE ST	BOTH	1211	990	2583	786	81	100			1	15	1	20	8	160	1	24	9	67					252
RAISED CROSSWALK	PRINCE ST	BOTH																			2	24	14	42	32
TEMPORARY PHASING			300																						
SUBTOTALS			2,907	2,181	6,569	1,420	145	328	4	80	1	15	3	60	18	360	5	120	14	105	2	24	14	42	718
PROJECT TOTAL SQ. FT.			2,907																						718
PROJECT TOTAL GALLONS						48																			



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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION TABULATION OF SIGNING & STRIPING			
Designer:	MES	Structure Numbers	
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Sheet Subset:	TAB	Subset Sheets:	4 of 6

Project No./Code	
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24290	
Sheet Number	12

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TABULATION OF SIGNALS

ITEM NO.	ITEM	UNIT	QUANTITY
202	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	L S	1
210	RESET LUMINAIRE	EA	3
210	RESET RADIO COMMUNICATION ANTENNA	EA	1
210	RESET FIRE PREEMPTION UNIT	EA	2
503	DRILLED SHAFT (18 INCH)	LF	18
503	DRILLED SHAFT (36 INCH)	LF	42
613	2 INCH ELECTRICAL CONDUIT	LF	146
613	3 INCH ELECTRICAL CONDUIT	LF	250
613	2 INCH ELECTRICAL CONDUIT (BORED)	LF	206
613	3 INCH ELECTRICAL CONDUIT (BORED)	LF	412
613	PULL BOX (LARGE) (24" X 36") (INSTALL ONLY)	EA	1
613	PULL BOX (MEDIUM) (17" X 30") (INSTALL ONLY)	EA	4
613	SERVICE METER CABINET (INSTALL ONLY)	EA	1
613	WIRING	L S	1
614	PEDESTRIAN SIGNAL FACE (16) (COUNTDOWN) (INSTALL ONLY)	EA	4
614	TRAFFIC SIGNAL FACE (12-12-12) (INSTALL ONLY)	EA	7
614	TRAFFIC SIGNAL FACE (12-12-12-12) (INSTALL ONLY)	EA	5
614	PEDESTRIAN PUSH BUTTON (INSTALL ONLY)	EA	2
614	PEDESTRIAN PUSH BUTTON POST ASSEMBLY (INSTALL ONLY)	EA	1
614	ACCESSIBLE PEDESTRIAN SIGNAL (INSTALL ONLY)	EA	2
614	INTERSECTION DETECTION SYSTEM (CAMERA) (INSTALL ONLY)	EA	1
614	TRAFFIC SIGNAL-LIGHT POLE (1 MAST ARM) (INSTALL ONLY)	EA	3
614	TRAFFIC SIGNAL PEDESTAL POLE STEEL (INSTALL ONLY)	EA	3
614	TRAFFIC SIGNAL CONTROLLER (INSTALL ONLY) *	EA	1

* INCLUDES P44 CABINET AND ECONOLITE COBALT CONTROLLER

TABULATION OF SIGNAL SIGNS

SIGN CODE	SIGN MESSAGE	LOCATION	PANEL SIZE W X H (IN)	BACK-GROUND COLOR	LEGEND COLOR	SIGN PANEL CLASS I SF	RESET SIGN PANEL EA
18R9-3	NO PEDESTRIANS	SW POLE	18 X 18	WHITE	RED	2.25	
18R9-3BP(R)	USE CROSSWALK (RT)		18 X 12	WHITE	BLACK	1.5	
	CHURCH AVE 5900S	SB MAST ARM					1
30R10-15(R)	TURNING VEHICLES (RT) YIELD TO PEDS	SB MAST ARM	30 X 30	WHITE	BLACK	6.25	
9R10-3(R)	PUSH BUTTON FOR PED SIGNAL (RT)	SW PED POST	9 X 12	WHITE	BLACK	0.75	
9R10-3(L)	PUSH BUTTON FOR PED SIGNAL (LT)	NW PED POST SB	9 X 12	WHITE	BLACK	0.75	
9R10-3(R)	PUSH BUTTON FOR PED SIGNAL (RT)	NW PED POST EB	9 X 12	WHITE	BLACK	0.75	
30R3-5(L)	LEFT ONLY	NB MAST ARM	30 X 36	WHITE	BLACK	7.5	
30R10-15(L)	TURNING VEHICLES (LT) YIELD TO PEDS	NB MAST ARM	30 X 30	WHITE	BLACK	6.25	
	CHURCH AVE 5900S	NB MAST ARM					1
9R10-3(L)	PUSH BUTTON FOR PED SIGNAL (LT)	NE POLE	9 X 12	WHITE	BLACK	0.75	
30R3-5(L)	LEFT ONLY	EB MAST ARM	30 X 36	WHITE	BLACK	7.5	
30R10-15(L)	TURNING VEHICLES (LT) YIELD TO PEDS	EB MAST ARM	30 X 30	WHITE	BLACK	6.25	
30R3-5(R)	RIGHT ONLY	EB MAST ARM	30 X 36	WHITE	BLACK	7.5	
	PRINCE ST 2400W	EB MAST ARM					1
18R9-3	NO PEDESTRIANS	SE POLE	18 X 18	WHITE	RED	2.25	
18R9-3BP(L)	USE CROSSWALK (LT)		18 X 12	WHITE	BLACK	1.5	
PROJECT TOTALS						52	3



QUANTITIES CARRIED FORWARD TO TABULATION OF SIGNING.

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
TABULATION OF TRAFFIC SIGNAL ITEMS

Designer:	MES	Structure Numbers	
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Sheet Subset:	TAB	Subset Sheets:	5 of 6

Project No./Code	
STU M810-018	
24290	
Sheet Number	13

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

	Format *
■ Horizontal Control	Plan Sheet or CAD File
■ Vertical Control	Plan Sheet or CAD File
■ Roadway Alignment	Plan Sheet or CAD File
☐ Original Terrain Data	
☐ Other:	

* Specify the information format, ie., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

- ☐ Landscaping
- ☐ Signalization
- ☐ Safety Improvement
- ☐ Asphalt Overlay
- ☐ Concrete Overlay
- ☐ Minor Widening
- ■ Major Reconstruction
- ☐ New Roadway Construction
- ☐ Bridge Replacement
- ☐ Bridge Widening
- ☐ New Bridge
- ☐ Other: _____

SURVEY WORK TO BE PERFORMED BY OTHERS: _____

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- ___ ■ A complete passing Base Line report (completed within 6 months prior to the start of the project)
- ___ ■ An instrument calibration Certification (completed within 6 months prior to the start of the project)
- ___ ■ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- ___ ■ Verification and Maintenance of Horizontal and Vertical Control
- ___ ☐ Verify or Determine existing grades and alignments
- ___ ☐ Verify or Determine existing topography
- ___ ☐ Clearing and Grubbing Limits (Section 201)
- ___ ■ Removal Limits (Section 202)
- ___ ■ Reset Items (Section 210)
- ___ ■ Excavation and Embankment (Section 203)
  - ___ ■ Excavation
    - ___ ■ Unclassified
    - ___ ☐ Stripping
    - ___ ☐ Muck
    - ___ ☐ Rock
    - ___ ☐ Borrow
    - ___ ☐ Other: _____
    - ___ ☐ Potholing
  - ___ ■ Embankment
  - ___ ☐ Site Grading
  - ___ ☐ Erosion Control (Perm)
  - ___ ☐ Other: _____
  - ___ ☐ As Staked Earthwork Quantities (See General Notes)

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Excavation	YES	–	YES	25'
	–	–	–	–
	–	–	–	–
	–	–	–	–
	–	–	–	–
	–	–	–	–
Embankment	YES	–	YES	25'
	–	–	–	–
	–	–	–	–
	–	–	–	–

- ___ ☐ Landscaping
  - ___ ☐ Top Soil (Section 207)
  - ___ ☐ Seeding (Section 212)
  - ___ ☐ Mulching (Section 213)
  - ___ ☐ Planting (Section 214)
  - ___ ☐ Herbicide (Section 217)
  - ___ ☐ Other: _____
- ___ ☐ Erosion Control (Section 208)
  - ___ ☐ Seeding (Temp)
  - ___ ☐ Silt Fence
  - ___ ☐ Erosion Bales
  - ___ ☐ Erosion Logs
  - ___ ☐ Riprap (Temp)
  - ___ ☐ Other: _____
- ___ ■ Roadway Bases
  - ___ ☐ Untreated Subgrade
  - ___ ☐ Treated Subgrade
  - ___ ■ Aggregate Base Course (Section 304)
  - ___ ☐ Reconditioning
  - ___ ☐ PMBB – Plant Mix Bituminous Base
  - ___ ☐ Other: _____

	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
Roadway Bases	–	–	–	–
	–	–	–	–
	–	YES	25'	–
	–	–	–	–
	–	–	–	–
	–	–	–	–

- ___ ■ Pavements
  - ___ ☐ HMA – Hot Mix Asphalt (Section 403)
  - ___ ■ Concrete (Section 412)
  - ___ ☐ Heating & Scarifying Treatment
  - ___ ☐ Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
  - ___ ☐ Seal Coat or Chip Seal (Section 409)
  - ___ ☐ Other: _____
- ___ ■ Roadway Elements
  - ___ ■ Curb and Gutter (Section 609)
  - ___ ☐ Drop inlets – alignment and grades (Section 604)
  - ___ ☐ Retaining Walls
  - ___ ■ Guard Rail (Section 606)
  - ___ ■ Sidewalk (Section 608)
  - ___ ☐ Overlay Stationing
  - ___ ■ Other: Curb Ramps
- ___ ☐ Riprap (Perm) (Section 506)
- ___ ☐ Slope and Ditch Paving (Section 507)
- ___ ☐ Minor Structures
  - ___ ☐ Structure Excavation limits (Section 206)
  - ___ ☐ Culverts (Section 603)
  - ___ ☐ Culverts w/ Headwalls and Wingwalls (Section 601)
  - ___ ☐ Concrete Box Culverts w/ Headwalls and Wingwalls
  - ___ ☐ Pipes (Section 603)
    - ___ ☐ Sanitary Sewer
    - ___ ☐ Storm Sewer
    - ___ ☐ Water
    - ___ ☐ Irrigation
    - ___ ☐ Miscellaneous
  - ___ ☐ Manholes (Section 604)
  - ___ ☐ Inlets (Section 604)
  - ___ ☐ Other: _____
- ___ ☐ Major Structures – Overhead Signs (Section 614), Concrete Box Culverts, Bridges – and all other structures assigned a structure number
  - ___ ☐ Structure Excavation limits (Section 206)
  - ___ ☐ Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
  - ___ ☐ Piling locations and cut off elevations (Section 502)
  - ___ ☐ Caisson locations and elevations (Section 503)
  - ___ ☐ Footing locations, alignment, and elevations
  - ___ ☐ Abutment/Pier locations, alignment, and elevations
  - ___ ☐ Wingwall skew angles/offsets
  - ___ ☐ Structural concrete form locations
  - ___ ☐ Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
  - ___ ☐ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
  - ___ ☐ Deck grades at Girder 10th or "n" th point locations and elevations
  - ___ ☐ Slope and Ditch Paving (Section 507)
  - ___ ☐ Other: _____
- ___ ■ Fencing (Section 607)
  - ___ ☐ Temporary
  - ___ ■ Permanent
  - ___ ☐ Sound Barrier
  - ___ ☐ Other: _____
- ___ ☐ Delineators (Section 612)
  - ___ ☐ Temporary
  - ___ ☐ Permanent
- ___ ■ Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)
  - ___ ■ Signal pole locations and elevations
  - ___ ☐ Light pole locations and elevations
  - ___ ■ Sign locations
  - ___ ☐ Field verify sign post locations, elevations, and lengths before fabrication.
  - ___ ☐ Other: _____

	Grid (Y/N)	Special Interval	Special Offset
Pavements	–	–	–
	–	25'	–
	–	–	–
	–	–	–
	–	–	–
	–	–	–

	Tangent Interval	Curve Interval	Special Offset
Curb & Gutter	–	–	–

	Left Interval	Center Interval	Right Interval
Stationing	–	–	–

- ___ ■ Pavement Marking (Section 627)
  - ___ ☐ Striping (Temp)
  - ___ ■ Striping (Perm)
  - ___ ■ Symbols
  - ___ ☐ Other: _____
- ___ ☐ Temporary Lighting and Construction Traffic Control Devices (Section 630)
  - ___ ☐ Signal pole locations and elevations (Temp)
  - ___ ☐ Light pole locations and elevations (Temp)
  - ___ ☐ Sign Locations (Temp)
  - ___ ☐ Other: _____
- ___ ☐ All Easements (Temp Staking by P.L.S. Only)
- ___ ☐ Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

- ___ ☐ Monumentation (Section 629)
  - ___ ☐ Control
  - ___ ☐ Right of Way
  - ___ ☐ Land corners, Aliquot corners
  - ___ ☐ Easements
  - ___ ☐ Reference the specified existing monuments: ** _____
  - ___ ☐ Replace the specified existing monuments: ** _____
  - ___ ☐ Locate monuments. It is estimated ___ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

1. Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDOT Survey Manual.
2. Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
3. The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer __3__ days prior to the Presurvey Conference – Construction Survey.
4. Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
5. The Contractor shall furnish an As Staked (or 3D Design Modeling Electronic Files) Earthwork Quantity report to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual. A printed copy of the As Staked (or 3D Design Modeling Electronic Files) Earthwork data report and a computer disk with that information on it, in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
6. Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
7. The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
8. The Contractor shall coordinate construction staking on the project with any utility work.
9. Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
10. The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
    - ■ Horizontal Control (Primary & Secondary)
    - ■ Vertical Control (i.e. Benchmarks)
    - ☐ Property Pin Ties
    - ■ Horizontal Alignment
    - ■ Grading
    - ■ Slope Staking
    - ■ Minor Structures
    - ☐ Major Structures
    - ■ One fieldbook for each work category shown on this sheet
    - ☐ Other Fieldbook(s): _____
11. The Contractor's surveyor shall submit the following (prior to surveying on the project) to the Engineer:
    - ■ All required Instrument Calibrations

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 5/6/2026 PROFESSIONAL ENGINEER

Computer File Information			
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Drawing File Name:	PC08 PRINCECHURCH-SURVEYTAB.dwg		
Acad Ver.	Scale:	Units:	English

Sheet Revisions		

Littleton
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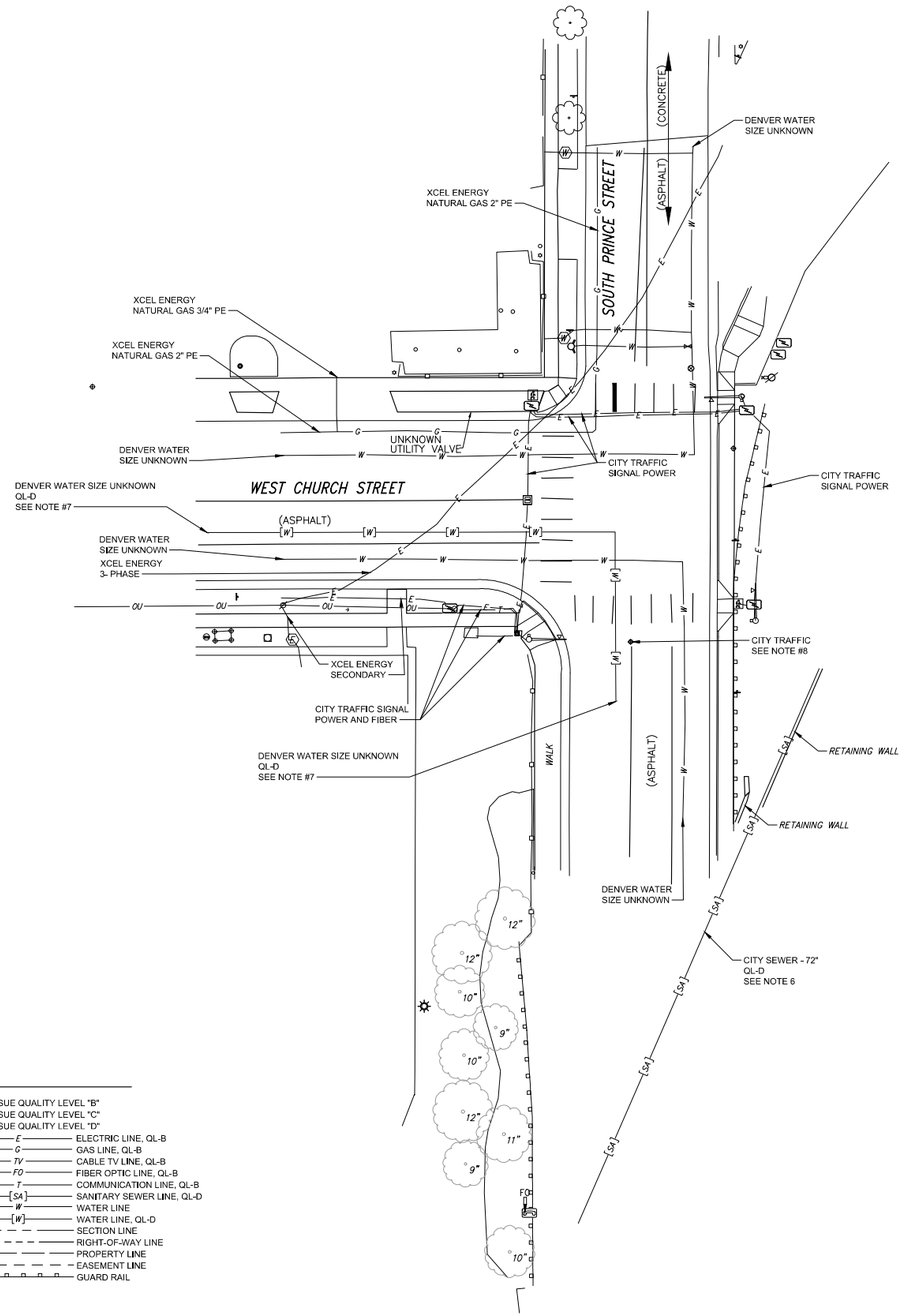
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303-771-6868 Job No. 151496.00.5

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION TABULATION OF SURVEY			
Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	TAB	Subset Sheets:	6 of 6

Project No./Code	
STU M810-018	
24290	
Sheet Number	14

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LEGEND

CAMERA ON POLE	QL-B	SUE QUALITY LEVEL "B"	
TRAFFIC LIGHT POLE	QL-C	SUE QUALITY LEVEL "C"	
TRAFFIC WALK BUTTON	QL-D	SUE QUALITY LEVEL "D"	
TRAFFIC PULL BOX		E	ELECTRIC LINE, QL-B
WATER VALVE		G	GAS LINE, QL-B
FIRE HYDRANT		TV	CABLE TV LINE, QL-B
WATER METER		FO	FIBER OPTIC LINE, QL-B
COMMUNICATION VAULT		T	COMMUNICATION LINE, QL-B
ELECTRICAL METER		SA	SANITARY SEWER LINE, QL-D
SIGN		W	WATER LINE
POWER POLE		W	WATER LINE, QL-D
			SECTION LINE
			RIGHT-OF-WAY LINE
			PROPERTY LINE
			EASEMENT LINE
			GUARD RAIL

SUBSURFACE UTILITY ENGINEERING (SUE) NOTES:

1. THIS SURVEY INCLUDES INFORMATION TO SUPPORT THE CREATION OF A DESIGN PLANS DEPICTING EXISTING UTILITIES AND PROPOSED EXCAVATIONS PREPARED UNDER THE RESPONSIBLE CHARGE OF A LICENSED PROFESSIONAL ENGINEER.
2. UTILITY RESEARCH WAS PERFORMED PER ASCE 38-02 SUE QUALITY LEVEL D (QL-D) SPECIFICATIONS. THIS INCLUDED CONTACTING COLORADO 811 FOR A LIST OF KNOWN UTILITIES IN THE AREA, MARKING A SURFACE REVIEW OF THE SITE FOR EVIDENCE OF OTHER UTILITIES, AND CONTACTING ANY APPARENT UTILITY OWNERS. UTILITY SYSTEMS MAPS, GIS DATA, AND ORAL EVIDENCE OF UTILITIES WAS OBTAINED FOR ALL FOUND EVIDENCE OF UTILITIES AND KNOWN SERVICES TO ADJACENT PROPERTIES.
3. ALL UNDERGROUND UTILITY LINES, AS NOTED IN THE LEGEND, ARE QUALITY LEVEL B (QL-B) EXCEPT FOR THOSE DEPICTED OTHERWISE AND AS NOTED BELOW:
   a. ALL STORM AND SANITARY SEWERS ARE QUALITY LEVEL A (QL-A) AT MANHOLES/OUTFALLS THAT COULD BE MEASURED WITHOUT ENTRY AND HAVE NOTED INVERT ELEVATIONS.
   b. ALL STORM AND SANITARY SEWER LINES BETWEEN MANHOLES/OUTFALLS ARE QUALITY LEVEL C (QL-C).
4. UTILITY TRACING WAS PERFORMED BY KINETIC ENERGY SERVICES, LLC. FIELD SURVEY PERFORMED BY FARNSWORTH GROUP ON MARCH 29, 2021 UTILITY DEPICTIONS AND QUALITY LEVEL DESIGNATIONS APPLY ONLY TO THE AREA WITHIN THE SUE BOUNDARY.
5. CAUTION SHOULD BE USED BY CONTRACTOR WHEN EXCAVATION WITHIN PROJECT AREA. GROUND PENETRATING RADAR AND OTHER DETECTION METHODS WHICH DO NOT REQUIRE TRACING OF UTILITIES HAVE NOT BEEN ATTEMPTED AT THIS TIME.
6. UNKNOWN MANHOLE WAS OBSERVED ROUGHLY 200 FT. SOUTH OF THE CENTER OF THE INTERSECTION. THE MANHOLE WAS BOLTED DOWN AND NOT ACCESSIBLE AT THE TIME OF THE SITE VISIT. THE PROVIDED CITY OF LITTLETON OWNER MAPS POSSIBLY INDICATE A 72" SEWER LINE IS TIED INTO THE INACCESSIBLE MANHOLE. THE SEWER LINE IS MARKED AS QL-D AND IS DRAWN IN THE APPROXIMATE LOCATION BASED ON PROVIDED OWNER MAPS.
7. SURVEY DATA FROM OTHERS INDICATED THE DENVER WATER LINE WAS LOCATED UP TO ROUGHLY 20 FT. AWAY FROM THE LOCATES KINETIC HAD SHOWN. THIS DENVER WATER LINE IS MARKED AS QL-D AND IS SHOWN IN THE LOCATION AS DETERMINED BY OTHERS.
8. OBSERVED A TRAFFIC SIGNAL LOOP COVER SOUTH OF THE INTERSECTION. KINETIC WAS UNABLE TO LOCATE ANY LINES FROM THE TRAFFIC COVER.

SUBSURFACE UTILITY ENGINEERS'S CERTIFICATE:

A PRAGMATIC EFFORT HAS BEEN MADE TO SYSTEMATICALLY DESIGNATE AND DEPICT BURIED UTILITIES WITHIN THE CORRIDOR TO THE EXTENT PRACTICAL FOR THE AUTHORIZED PROJECT BUDGET. THESE PLANS ARE FOR DESIGN PURPOSES ONLY AND REFLECT SUBSURFACE UTILITY CONDITIONS AT THE TIME SURVEYED. EXISTING UTILITY LOCATIONS DEPICTED ON THE PLANS DO NOT SUPERSEDE COLORADO STATE ONE CALL DEMARCATIONS OF BURIED UTILITIES OR RELIEVE THE CONTRACTOR FROM LEGAL REQUIREMENT TO CALL ONE CALL TWO WORKING DAYS PRIOR TO CONSTRUCTION. FARNSWORTH GROUP, KINETIC ENERGY SYSTEMS, AND ALFRED BENESCH & COMPANY SHOULD BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE UTILITY DESIGNATING / LOCATING SURVEY AND ONE CALL MARKINGS, AND THE CONTRACTOR SHALL USE CAUTION UNTIL DISCREPANCIES ARE RESOLVED. EXISTING UTILITIES ARE LOCATED TO A QUALITY LEVEL B, EXCEPT WHERE NOTED HEREIN, ACCORDING TO ASCE 38-02.

CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION SERVICE BEFORE EXCAVATING AS REQUIRED BY LAW.

I HEREBY CERTIFY THAT THIS UTILITY SUBSURFACE UTILITY ENGINEERING PLAN WAS PREPARE UNDER MY DIRECT SUPERVISION AND IT ACCURATELY DEPICTS THE KNOWN SUBSURFACE UTILITY CONDITIONS AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE SATE OF COLORADO.

GREGORY D KISHIYAMA, PE
LICENSE NUMBER

UNCC UTILITY NOTIFICATION CENTER OF COLORADO Know what's below. Call before you dig.
811
CALL 811 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR MARKING OF UNDERGROUND MEMBER UTILITIES

Farnsworth GROUP
5613 DTC PARKWAY, SUITE 1100
GREENWOOD VILLAGE, COLORADO 80111
(303) 692-8838 / info@f-w.com
www.f-w.com
Engineers | Architects | Surveyors | Scientists

ISSUE:

#	DATE:	DESCRIPTION:

Project Status
NOT FOR CONSTRUCTION

PROJECT:
ALFRED BENESCH & COMPANY

LITTLETON SIDEWALKS REPLACEMENT PROJECT

LITTLETON, CO

DATE:	04/14/2021
DESIGNED:	JAN/JBF
DRAWN:	JAN
REVIEWED:	GDK
FIELD BOOK NO.:	2543

SHEET TITLE:

SUE EXHIBIT

S. PRINCE ST. & W. CHURCH ST.

SHEET NUMBER:

1
OF 1

PROJECT NO.: 0191608.00

J:\wd | J:\2019\0191608.00 - Littleton Sidewalks\Survey\07_Drawings\SUE - PRINCE & CHURCH\SH_SUE - PRINCE & CHURCH_SUE - 0191608.00.dwg | 4/15/2021 8:37 AM |

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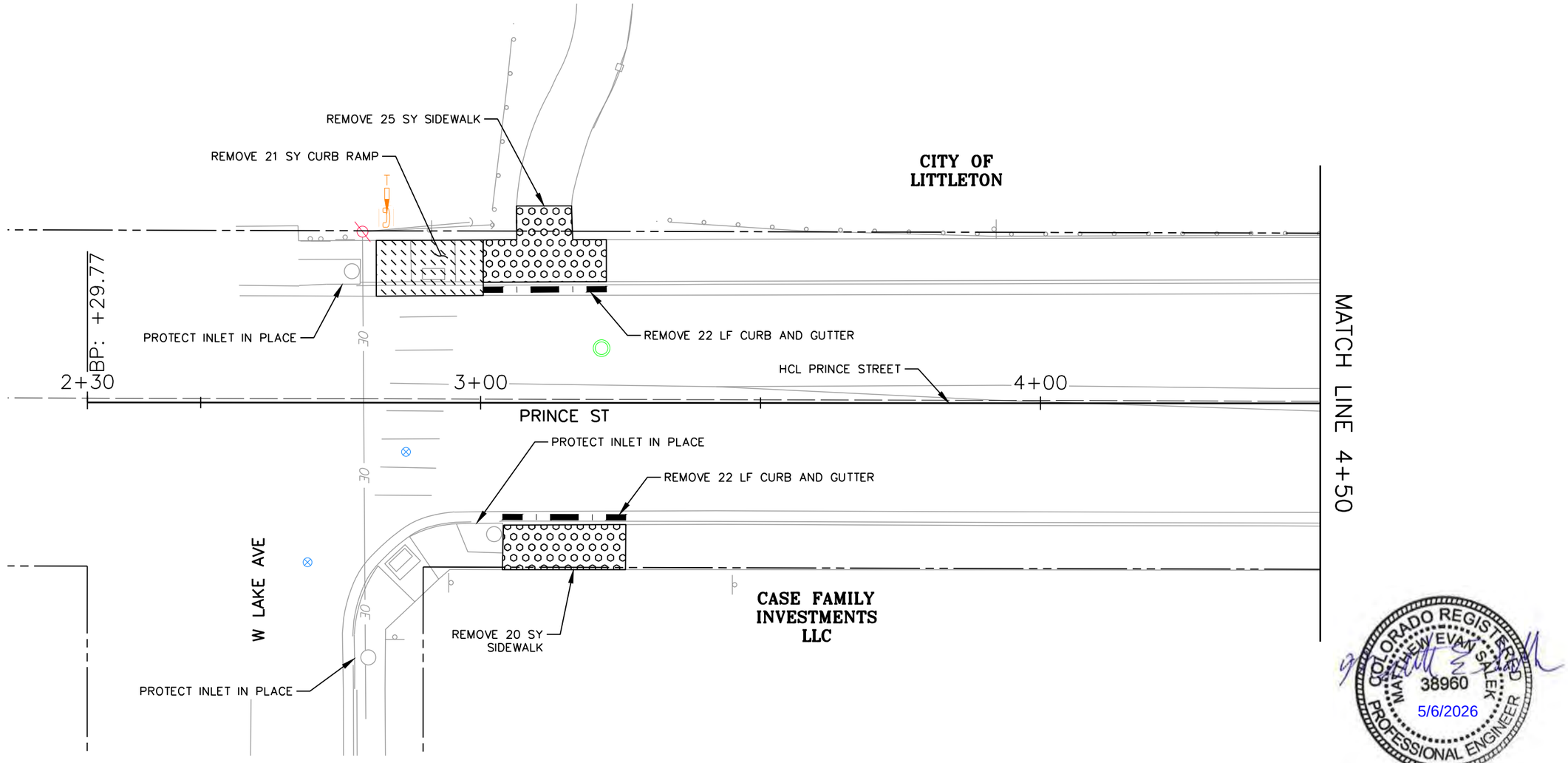
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- REMOVAL OF GUARDRAIL TYPE 3
- SAWCUT EXISTING PAVEMENT
- REMOVAL OF CONCRETE SIDEWALK
- REMOVAL OF CONCRETE CURB RAMP
- REMOVAL OF CONCRETE PAVEMENT
- REMOVAL OF ASPHALT PAVEMENT (FULL DEPTH)
- REMOVAL OF BRICK PAVERS

NOTES:

1. EXISTING PAVEMENT AND SIDEWALK SHALL BE SAWCUT AT REMOVAL LIMITS TO EXPOSE A CLEAN, FLAT FACE.
2. REFER TO SIGNAL PLANS FOR SIGNAL REMOVALS.
3. AT LOCATIONS WHERE CURB AND GUTTER WILL BE REPLACED BUT EXISTING PAVEMENT IS TO REMAIN. THE CONTRACTOR SHALL NOT SAW CUT INTO THE EXISTING PAVEMENT. THE CONTRACTOR WILL ONLY BE PERMITTED TO SAW CUT AT THE GUTTER PAN LINE.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
Creation Date:	11/13/2017 Initials: BPM
Last Modification Date:	03/17/2021 Initials: NFJ
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Drawing File Name:	PC09 PRINCECHURCH-REMOVALS.dwg
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Sheet Revisions		

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benesch
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7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION ROADWAY REMOVAL PLAN			
Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	REM	Subset Sheets:	1 of 5

Project No./Code
STU M810-018
24290
Sheet Number 16

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LEGEND

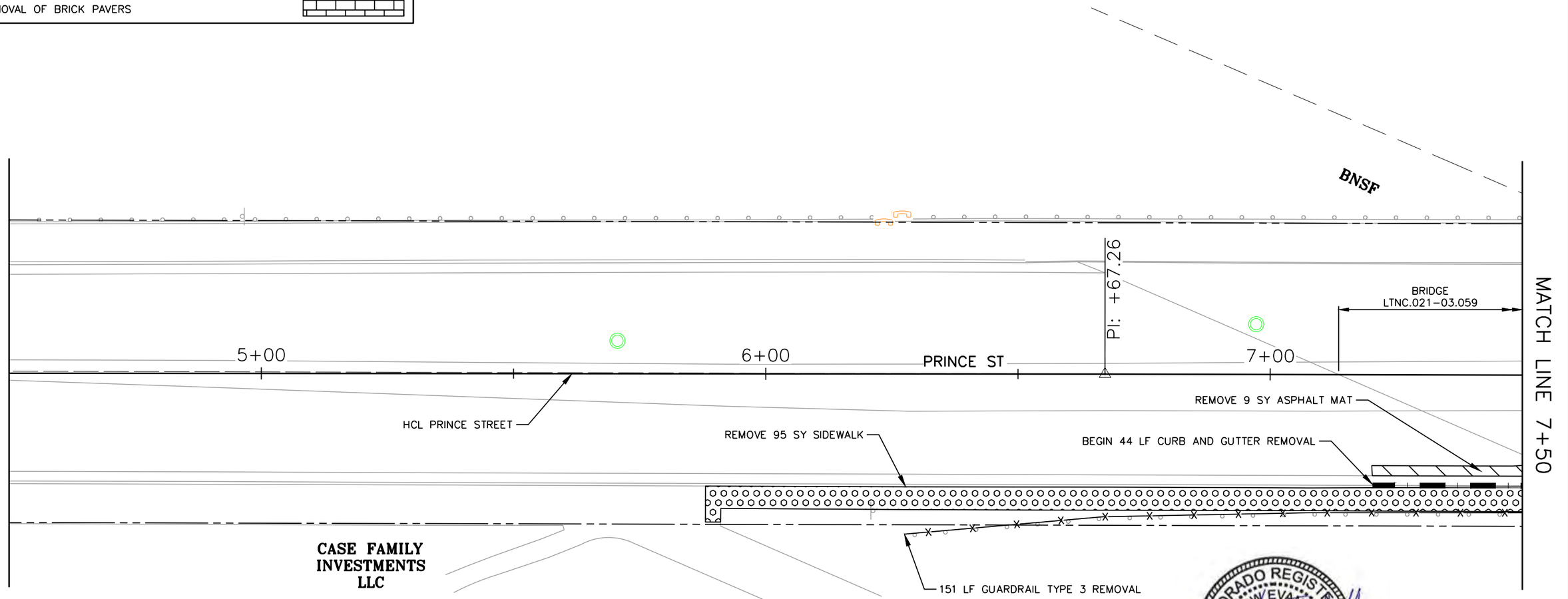
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- REMOVAL OF GUARDRAIL TYPE 3
- SAWCUT EXISTING PAVEMENT
- REMOVAL OF CONCRETE SIDEWALK
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- REMOVAL OF ASPHALT PAVEMENT (FULL DEPTH)
- REMOVAL OF BRICK PAVERS

NOTES:

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0 20 40
HORIZONTAL SCALE: 1"=20'

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COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
ROADWAY REMOVAL PLAN

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	REM	Subset Sheets:	2 of 5

Project No./Code	
STU M810-018	
24290	
Sheet Number	17

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LEGEND

- REMOVAL OF CONCRETE CURB AND GUTTER
- REMOVAL OF GUARDRAIL TYPE 3
- SAWCUT EXISTING PAVEMENT
- REMOVAL OF CONCRETE SIDEWALK
- REMOVAL OF CONCRETE CURB RAMP
- REMOVAL OF CONCRETE PAVEMENT
- REMOVAL OF ASPHALT PAVEMENT (FULL DEPTH)
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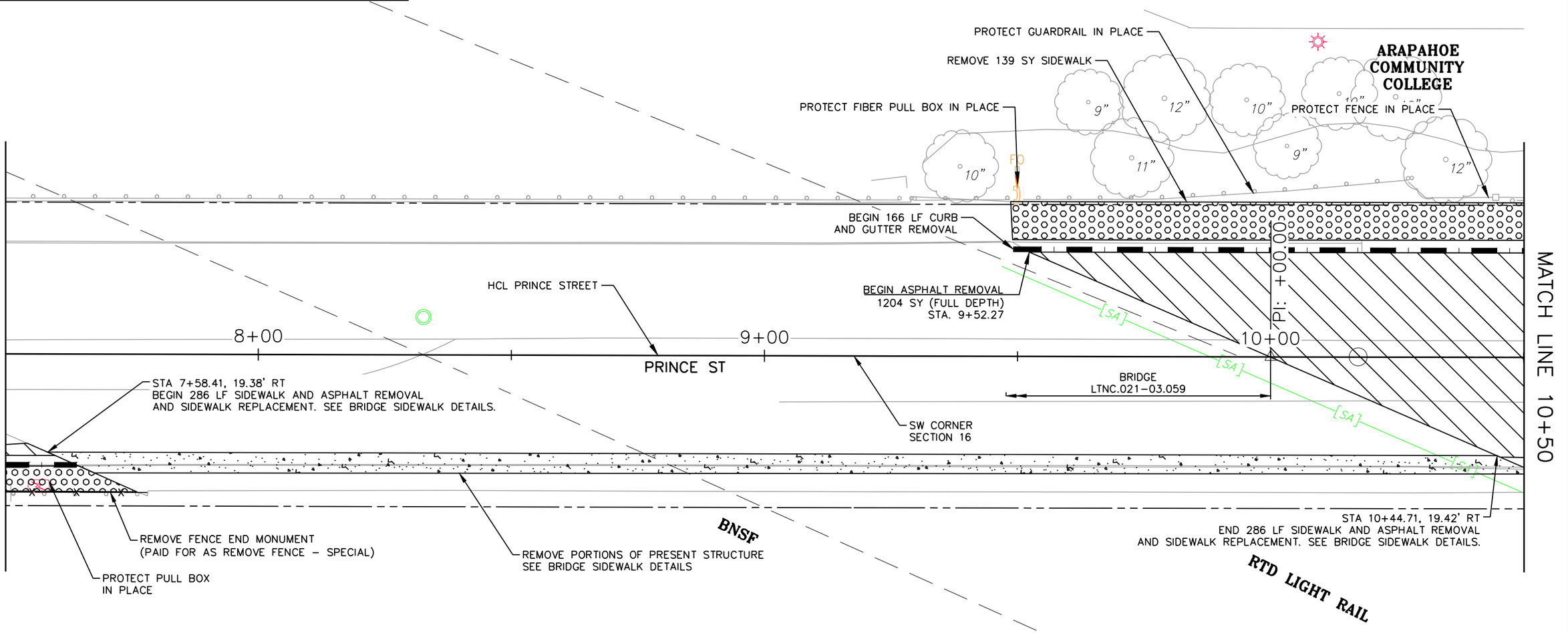
NOTES:

1. EXISTING PAVEMENT AND SIDEWALK SHALL BE SAWCUT AT REMOVAL LIMITS TO EXPOSE A CLEAN, FLAT FACE.
2. REFER TO SIGNAL PLANS FOR SIGNAL REMOVALS.
3. AT LOCATIONS WHERE CURB AND GUTTER WILL BE REPLACED BUT EXISTING PAVEMENT IS TO REMAIN. THE CONTRACTOR SHALL NOT SAW CUT INTO THE EXISTING PAVEMENT. THE CONTRACTOR WILL ONLY BE PERMITTED TO SAW CUT AT THE GUTTER PAN LINE.

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

10
0 20 40
HORIZONTAL SCALE: 1"=20'

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Computer File Information	
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Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
ROADWAY REMOVAL PLAN

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	REM	Subset Sheets:	3 of 5

Project No./Code	
STU M810-018	
24290	
Sheet Number	18

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LEGEND

- REMOVAL OF CONCRETE CURB AND GUTTER
- REMOVAL OF GUARDRAIL TYPE 3/FENCE
- SAWCUT EXISTING PAVEMENT
- REMOVAL OF CONCRETE SIDEWALK
- REMOVAL OF CONCRETE CURB RAMP
- REMOVAL OF CONCRETE PAVEMENT
- REMOVAL OF ASPHALT PAVEMENT (FULL DEPTH)
- REMOVAL OF BRICK PAVERS

NOTES:

1. EXISTING PAVEMENT AND SIDEWALK SHALL BE SAWCUT AT REMOVAL LIMITS TO EXPOSE A CLEAN, FLAT FACE.
2. REFER TO SIGNAL PLANS FOR SIGNAL REMOVALS.
3. AT LOCATIONS WHERE CURB AND GUTTER WILL BE REPLACED BUT EXISTING PAVEMENT IS TO REMAIN. THE CONTRACTOR SHALL NOT SAW CUT INTO THE EXISTING PAVEMENT. THE CONTRACTOR WILL ONLY BE PERMITTED TO SAW CUT AT THE GUTTER PAN LINE.

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0 20 40
HORIZONTAL SCALE: 1"=20'

N

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

ARAPAHOE COMMUNITY COLLEGE

VINCENT L CISSELL SPOUSAL LIMITED ACCESS TRUST

PARKING LOT

REGIONAL TRANSPORTATION DISTRICT (RTD)

STATE OF COLORADO

CHURCH AVE

HCL PRINCE STREET

MATCH LINE 10+50

MATCH LINE 13+00

11+00

12+00

13

REMOVE 152 SY CONCRETE PAVEMENT

SAWCUT AT EXISTING JOINT; DO NOT DISTURB EXISTING CURB RAMP

REMOVE 21 SY SIDEWALK

NO WORK AREA UNTIL NOTIFIED BY ENGINEER

REMOVE 43 LF CURB AND GUTTER

REMOVE 13 SY CURB RAMP

BEGIN 88 LF CURB AND GUTTER REMOVAL

REMOVE 9 SY SIDEWALK

REMOVE 12 SY CURB RAMP

DO NOT DISTURB FIRE HYDRANT; ADJUST WATER METER; REMOVE AND RESET STREET SIGN

REMOVE 20 SY SIDEWALK

REMOVE 35 SY CONC. PAVEMENT

ADJUST WATER METER

REMOVE AND RESET GROUND SIGN

REMOVE 75 SY SIDEWALK

REMOVE 20 SY BRICK PAVERS

REMOVE TREES

REMOVE 22 SY BRICK PAVERS

BEGIN 111 LF CURB AND GUTTER REMOVAL

REMOVE FENCE END MONUMENT (PAID FOR AS REMOVE FENCE – SPECIAL)

END ASPHALT REMOVAL FULL DEPTH STA. 12+60.06

REMOVE 2 SY SIDEWALK

ADJUST VALVE BOXES

REMOVE 2 SY CONCRETE PAVEMENT

BEGIN 1 LF CURB AND GUTTER REMOVAL

REMOVE 15 SY CURB RAMP

DO NOT DISTURB GROUND SIGN

REMOVE 5 SY CURB RAMP

REMOVE 12 SY CURB RAMP

REMOVE AND RESET GROUND SIGN

REMOVE 23 SY SIDEWALK

REMOVE 19 SY SIDEWALK

REMOVE 1 SECTION (APPROX. 6 LF) OF METAL FENCE. THE FENCE PANEL SHALL BE REMOVED FLUSH TO THE REMAINING POST. THE POST SHALL HAVE RESULTING HOLES COVERED WITH WELDED METAL PLATES. THE REPAIRED PORTIONS OF THE POST SHALL BE PAINTED DARK GREEN TO MATCH THE EXISTING POST. REPAIR WORK AND PAINTING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN FENCE REMOVAL.

REMOVE 12 SY CURB RAMP

REMOVE 367 LF GUARDRAIL TYPE 3

REMOVE 28 SY SIDEWALK

DO NOT DISTURB GROUND SIGN

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC09 PRINCECHURCH-REMOVALS.dwg – Current tab: 09 ROADWAY REMOVALS 4 – Print Time: Mon, 01 Dec 2025 – 8:24am By: msalek Last Save: Tue, 18 Nov 2025 – 1:42pm

Computer File Information	
Creation Date:	11/13/2017 Initials: BPM
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Drawing File Name:	PC09 PRINCECHURCH-REMOVALS.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

Littleton
Public Works
2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
ROADWAY REMOVAL PLAN

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	REM	Subset Sheets:	4 of 5

Project No./Code	
STU M810-018	
24290	
Sheet Number	19

LEGEND

- REMOVAL OF CONCRETE CURB AND GUTTER
- REMOVAL OF GUARDRAIL TYPE 3
- SAWCUT EXISTING PAVEMENT
- REMOVAL OF CONCRETE SIDEWALK
- REMOVAL OF CONCRETE CURB RAMP
- REMOVAL OF CONCRETE PAVEMENT
- REMOVAL OF ASPHALT PAVEMENT (FULL DEPTH)
- REMOVAL OF BRICK PAVERS

NOTES:

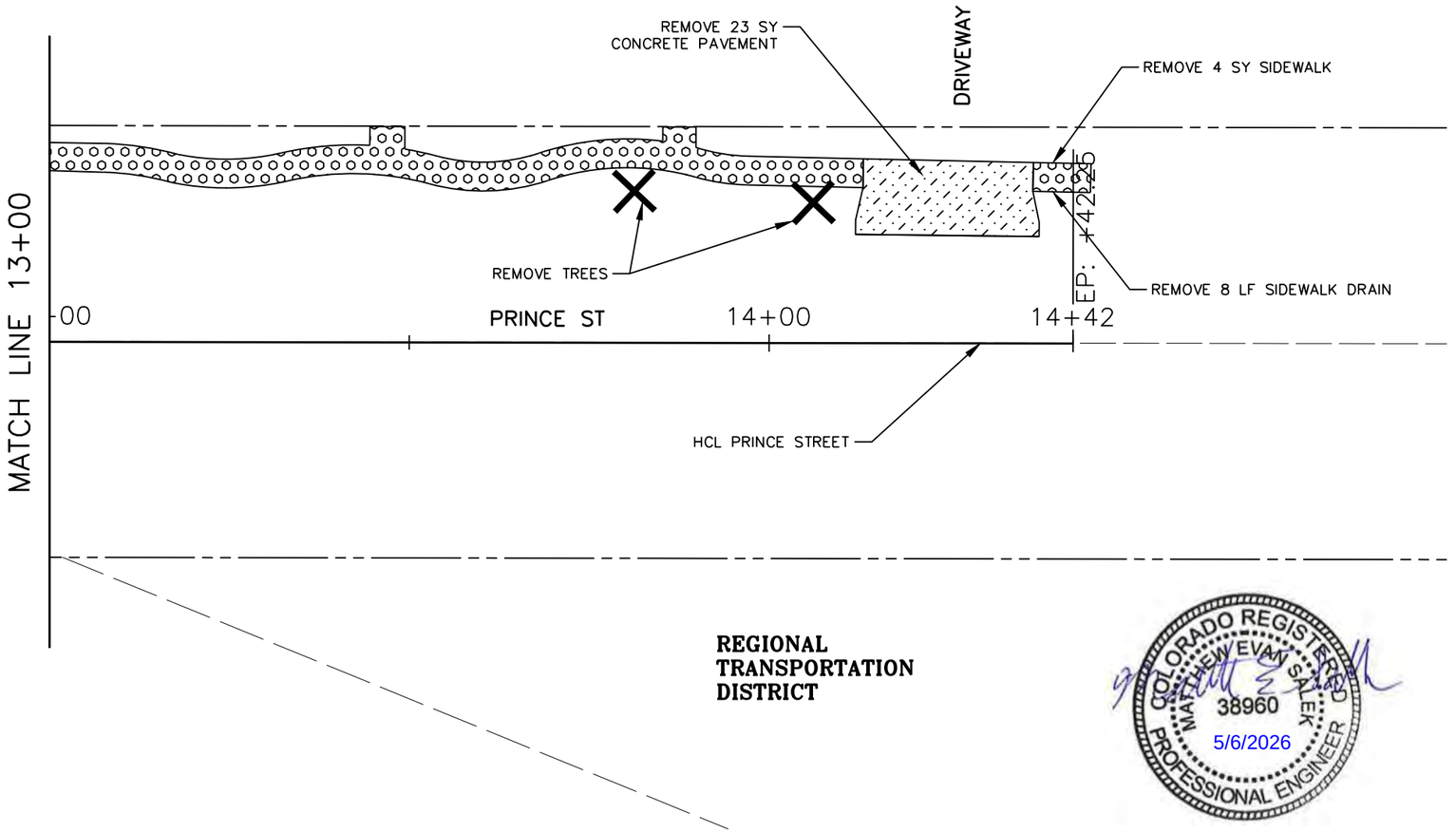
1. EXISTING PAVEMENT AND SIDEWALK SHALL BE SAWCUT AT REMOVAL LIMITS TO EXPOSE A CLEAN, FLAT FACE.
2. REFER TO SIGNAL PLANS FOR SIGNAL REMOVALS.
3. AT LOCATIONS WHERE CURB AND GUTTER WILL BE REPLACED BUT EXISTING PAVEMENT IS TO REMAIN. THE CONTRACTOR SHALL NOT SAW CUT INTO THE EXISTING PAVEMENT. THE CONTRACTOR WILL ONLY BE PERMITTED TO SAW CUT AT THE GUTTER PAN LINE.

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0 20 40
HORIZONTAL SCALE: 1"=20'

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COTTONWOOD COURT CONDOMINIUMS AMENDMENT NO. 1

ARAPAHOE COMMUNITY COLLEGE



REGIONAL TRANSPORTATION DISTRICT

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
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Last Modification Date:	03/17/2021 Initials: NFJ
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION ROADWAY REMOVAL PLAN

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	REM	Subset Sheets:	5 of 5

Project No./Code
STU M810-018
24290
Sheet Number 20

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC09 PRINCECHURCH-REMOVALS.dwg - Current tab: 09 ROADWAY REMOVALS 5 - Print Time: Mon, 01 Dec 2025 - 8:24am By: msalek Last Save: Tue, 18 Nov 2025 - 1:42pm

LEGEND

- CONCRETE PAVEMENT/CURB
- MEDIAN COVER MATERIAL (PATTERNED CONCRETE)
- SOD
- CONCRETE SIDEWALK/CURB RAMP

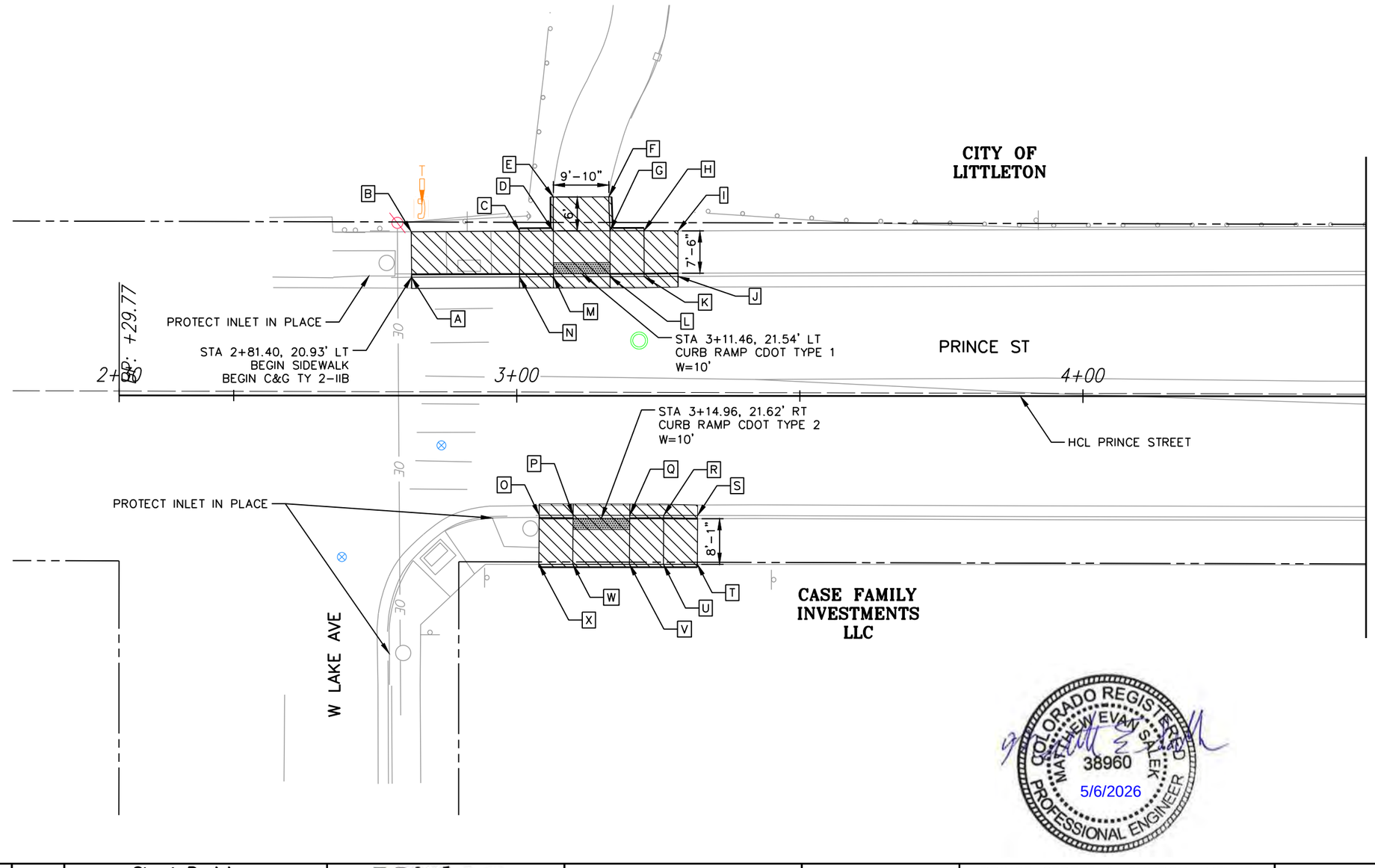
NOTES:

1. ROADWAY CROSS SLOPES ARE MEASURED FROM PROPOSED CROWNLINE TO LIP OF GUTTER.
2. CONCRETE CURB AND GUTTER SHALL BE INTEGRAL WITH ADJACENT PAVEMENT. ATTACHED SIDEWALK SHALL BE POURED SEPARATELY.
3. TRAFFIC SIGNALS AND STRIPING NOT SHOWN. SEE TRAFFIC PLANS FOR MORE DETAILS.
4. MEDIAN COVER MATERIAL SHALL BE PATTERNED COLORED CONCRETE. SEE PROJECT SPECIFICATIONS.

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0 20 40
HORIZONTAL SCALE: 1"=20'

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CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	
			SIDEWALK	FLOWLINE
A	1647119.56	3137149.19	5365.69	5365.19
B	1647119.5	3137141.16	5365.80	N/A
C	1647138.61	3137141.04	5365.72	N/A
D	1647144.61	3137141.00	5365.70	N/A
E	1647144.6	3137135.01	5365.99	N/A
F	1647154.4	3137134.99	5366.05	N/A
G	1647154.61	3137140.99	5365.82	N/A
H	1647160.61	3137140.98	5366.08	N/A
I	1647166.61	3137141.01	5366.34	N/A
J	1647166.62	3137149.05	5366.25	5365.79
K	1647160.62	3137149.07	5366.02	5365.73
L	1647154.62	3137149.09	5365.68	5365.67
M	1647144.62	3137149.12	5365.58	5365.57
N	1647138.62	3137149.14	5365.63	5365.43
O	1647142.09	3137191.25	5365.71	5365.14
P	1647148.09	3137191.26	5365.50	5365.49
Q	1647158.09	3137191.27	5365.60	5365.59
R	1647164.09	3137191.28	5365.86	5365.62
S	1647170.08	3137191.29	5366.14	5365.65
T	1647170.04	3137199.93	5366.33	N/A
U	1647164.04	3137199.93	5366.01	N/A
V	1647158.03	3137199.93	5365.72	N/A
W	1647148.03	3137199.93	5365.64	N/A
X	1647142.04	3137199.93	5366.06	N/A



ALIGNMENT CONTROL INFORMATION

BEGIN ALIGNMENT:	STA. 2+29.77 N: 1647067.91 E: 3137170.08
PI:	STA. 6+67.26 N: 1647505.40 E: 3137170.42
PI:	STA. 10+00.00 N: 1647838.14 E: 3137171.24
END ALIGNMENT:	STA. 14+42.25 N: 1648280.39 E: 3137171.79

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Sheet Revisions		

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As Constructed	
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Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION ROADWAY PLAN			
Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PLAN	Subset Sheets:	1 of 5

Project No./Code	
STU M810-018	
24290	
Sheet Number	21

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC10 PRINCECHURCH-PLAN.dwg - Current tab: 10 ROADWAY PLAN 1 - Print Time: Mon, 01 Dec 2025 - 8:24am By: msolek Last Save: Tue, 18 Nov 2025 - 1:48pm

LEGEND

- CONCRETE PAVEMENT/CURB
- MEDIAN COVER MATERIAL (PATTERNED CONCRETE)
- SOD
- CONCRETE SIDEWALK/CURB RAMP

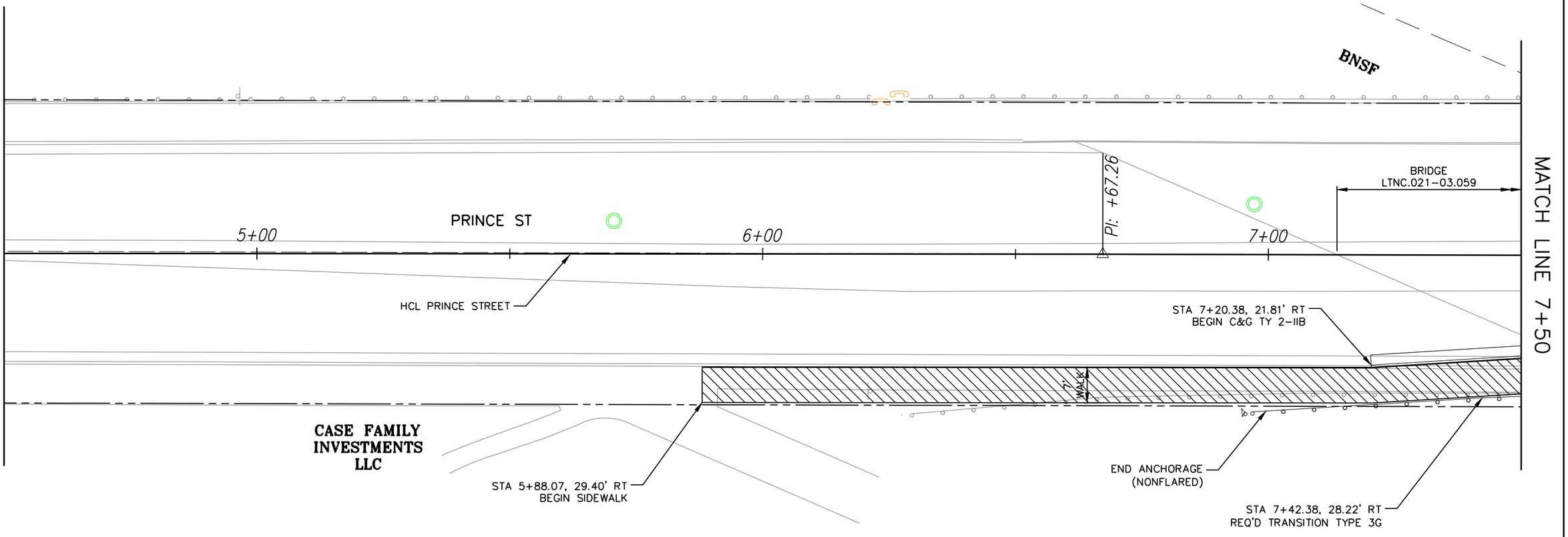
NOTES:

1. ROADWAY CROSS SLOPES ARE MEASURED FROM PROPOSED CROWNLINE TO LIP OF GUTTER.
2. CONCRETE CURB AND GUTTER SHALL BE INTEGRAL WITH ADJACENT PAVEMENT. ATTACHED SIDEWALK SHALL BE POURED SEPARATELY.
3. TRAFFIC SIGNALS AND STRIPING NOT SHOWN. SEE TRAFFIC PLANS FOR MORE DETAILS.
4. MEDIAN COVER MATERIAL SHALL BE PATTERNED COLORED CONCRETE. SEE PROJECT SPECIFICATIONS.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION ROADWAY PLAN			
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Detailer:	BPM		
Sheet Subset:	PLAN	Subset Sheets:	2 of 5

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LEGEND

- CONCRETE PAVEMENT/CURB
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- CONCRETE SIDEWALK/CURB RAMP

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ROADWAY CROSS SLOPE TRANSITIONS

POINT	STATION	REMARKS
(A)	9+92.99, LT	END TRANSITION, BEGIN 3%
(B)	10+44.71, RT	END TRANSITION, BEGIN 1.5%

10 0 20 40
HORIZONTAL SCALE: 1"=20'

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COLORADO REGISTERED MATTHEW EVAN SALEK 38960 5/6/2026 PROFESSIONAL ENGINEER

ARAPAHOE COMMUNITY COLLEGE

PROTECT GUARDRAIL IN PLACE
PROTECT FENCE IN PLACE
9" 12" 10" 11" 9" 12" 10" 12"
FO

MATCH LINE 7+50

HCL PRINCE STREET
8+00
9+00
10+00
PRINCE ST

STA. 9+49.12, 22.46' LT
BEGIN SIDEWALK
BEGIN C&G TY 2-IIB
BEGIN 10" CONCRETE PAVEMENT
MATCH BRIDGE

PROPOSED CROWNLINE (TYP.)
3'
5' WALK
[SA]
+00.00

SECTION LINE (TYP.)
SW CORNER SECTION 16
BRIDGE LTNC.021-03.059

STA 7+58.41, 19.38' RT
END SIDEWALK
END C&G TY 2-IIB
MATCH BRIDGE

BRIDGE RAIL TRANSITION SEE DETAIL SHEET
PULL BOX TO REMAIN
TRANSITION TYPE 3G
SEE BRIDGE SIDEWALK DETAILS

BNSF
RTD LIGHT RAIL

STA. 10+44.71, 19.42' RT
BEGIN SIDEWALK
BEGIN C&G TY 2-IIB
MATCH BRIDGE

MATCH LINE 10+50

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As Constructed
No Revisions:
Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
ROADWAY PLAN

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PLAN	Subset Sheets:	3 of 5

Project No./Code
STU M810-018
24290
Sheet Number 23

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC10 PRINCECHURCH-PLAN.dwg - Current tab: 10 ROADWAY PLAN 3 - Print Time: Mon, 01 Dec 2025 - 8:25am By: msalek Last Save: Tue, 18 Nov 2025 - 1:48pm

ROADWAY CROSS SLOPE TRANSITIONS

POINT	STATION	REMARKS
A	11+05.05, LT	END 3%, BEGIN TRANSITION
B	12+05.53, LT	END TRANSITION, BEGIN 6%
C	12+50.21, LT	END 6%, BEGIN TRANSITION
D	11+32.05, RT	END 1.5%, BEGIN TRANSITION
E	11+55.33, RT	1% CROSS SLOPE
F	11+78.15, RT	END TRANSITION, BEGIN 0.5%
G	12+00.11, RT	SLOPE TO MATCH EXISTING
H	12+50.21, RT	SLOPE TO MATCH EXISTING

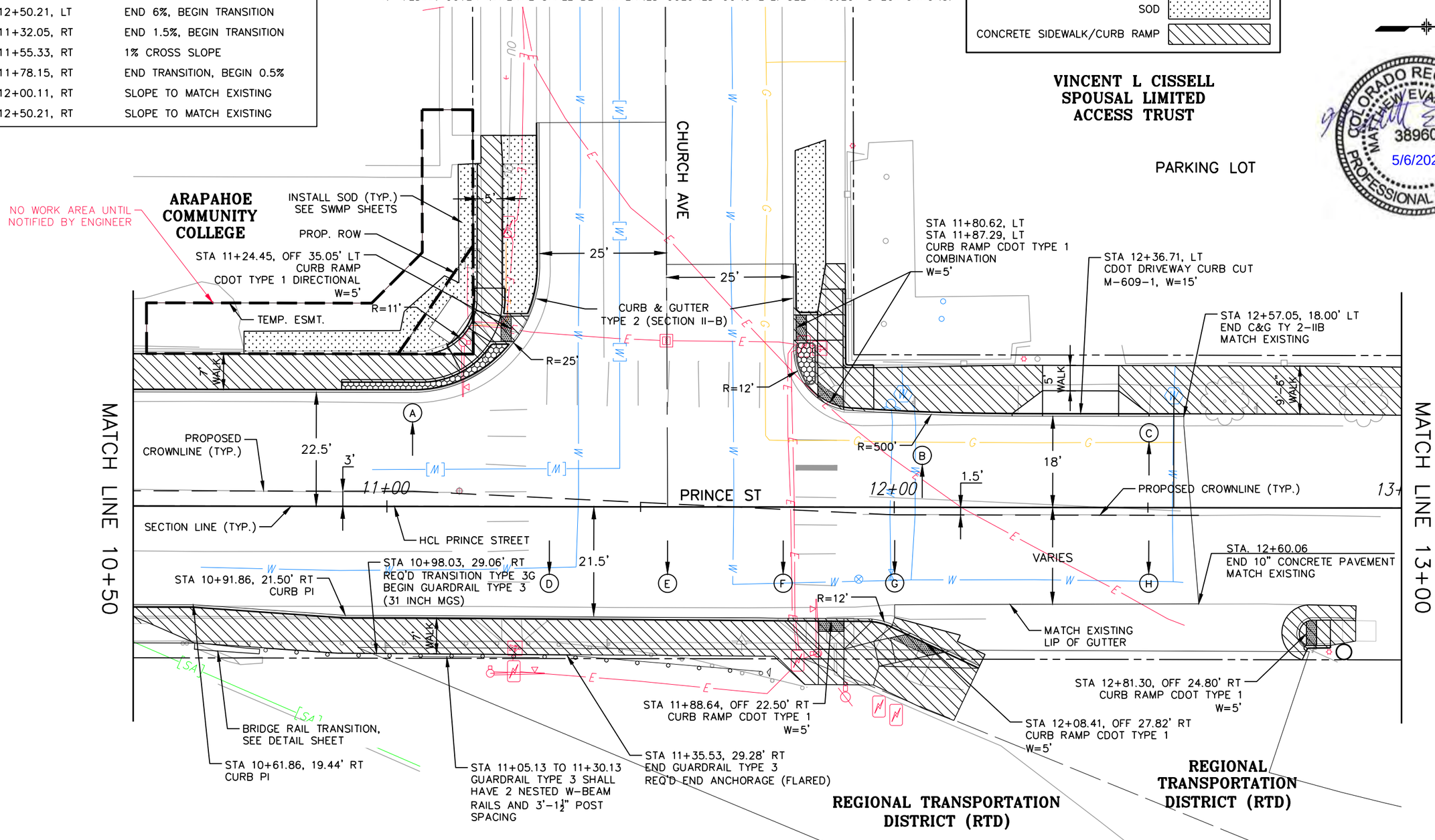
NOTES:

1. ROADWAY CROSS SLOPES ARE MEASURED FROM PROPOSED CROWNLINE TO LIP OF GUTTER.
2. CONCRETE CURB AND GUTTER SHALL BE INTEGRAL WITH ADJACENT PAVEMENT. ATTACHED SIDEWALK SHALL BE POURED SEPARATELY.
3. TRAFFIC SIGNALS AND STRIPING NOT SHOWN. SEE TRAFFIC PLANS FOR MORE DETAILS.
4. MEDIAN COVER MATERIAL SHALL BE PATTERNED COLORED CONCRETE. SEE PROJECT SPECIFICATIONS.

LEGEND

- CONCRETE PAVEMENT/CURB
- MEDIAN COVER MATERIAL (PATTERNED CONCRETE)
- SOD
- CONCRETE SIDEWALK/CURB RAMP

10 0 20 40
HORIZONTAL SCALE: 1"=20'



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COLORADO REGISTERED MATTHEW EVAN SALEK 38960 5/6/2026 PROFESSIONAL ENGINEER

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Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION ROADWAY PLAN

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PLAN	Subset Sheets:	4 of 5

Project No./Code	
STU M810-018	
24290	
Sheet Number	24

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC10 PRINCECHURCH-PLAN.dwg - Current tab: 10 ROADWAY PLAN 4 - Print Time: Mon, 01 Dec 2025 - 8:25am By: msalek Last Save: Tue, 18 Nov 2025 - 1:48pm

LEGEND

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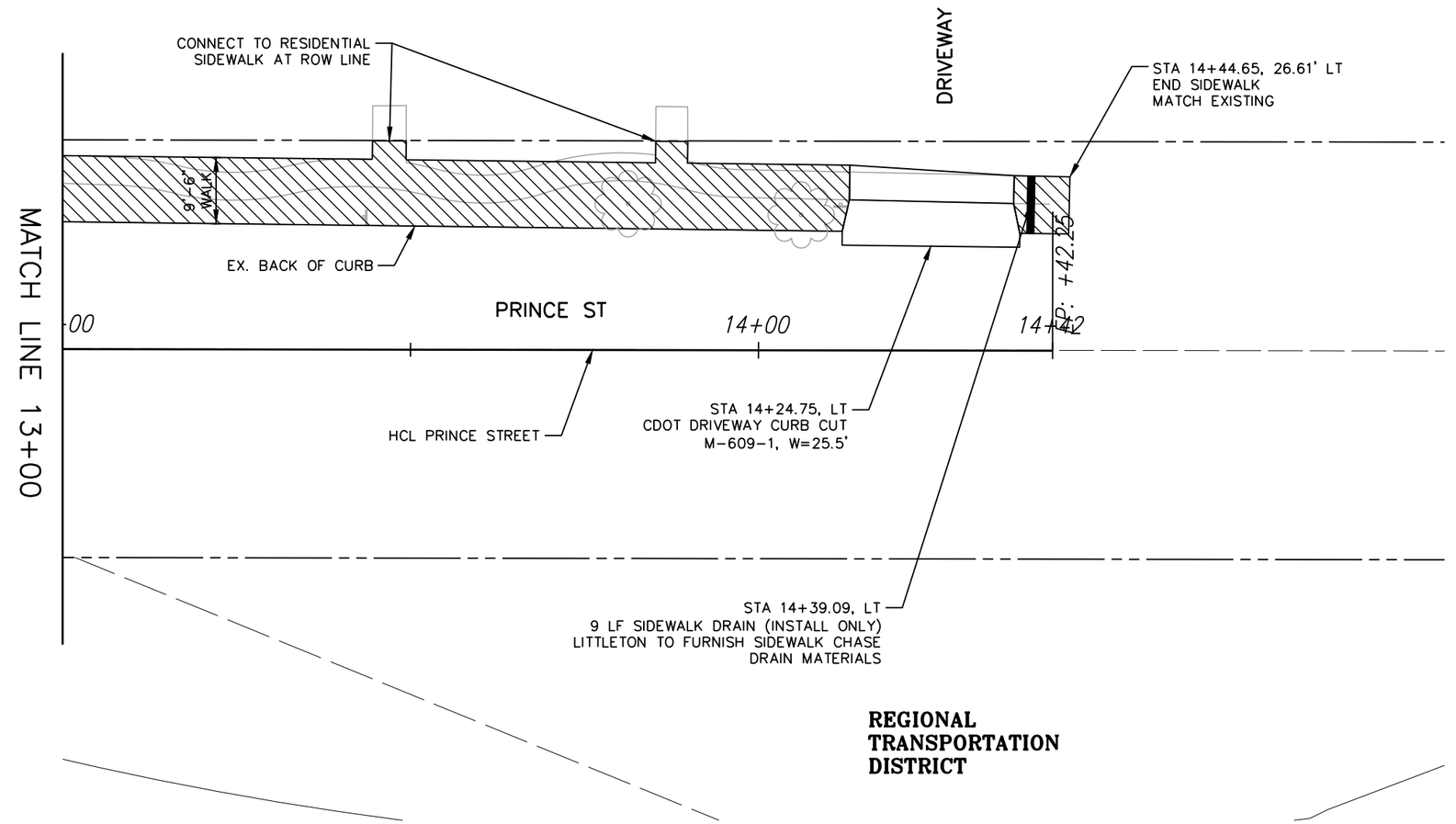
10
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COTTONWOOD COURT CONDOMINIUMS AMENDMENT NO. 1

ARAPAHOE COMMUNITY COLLEGE

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
ROADWAY PLAN

Designer:	BPM	Structure Numbers	
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Project No./Code
STU M810-018
24290
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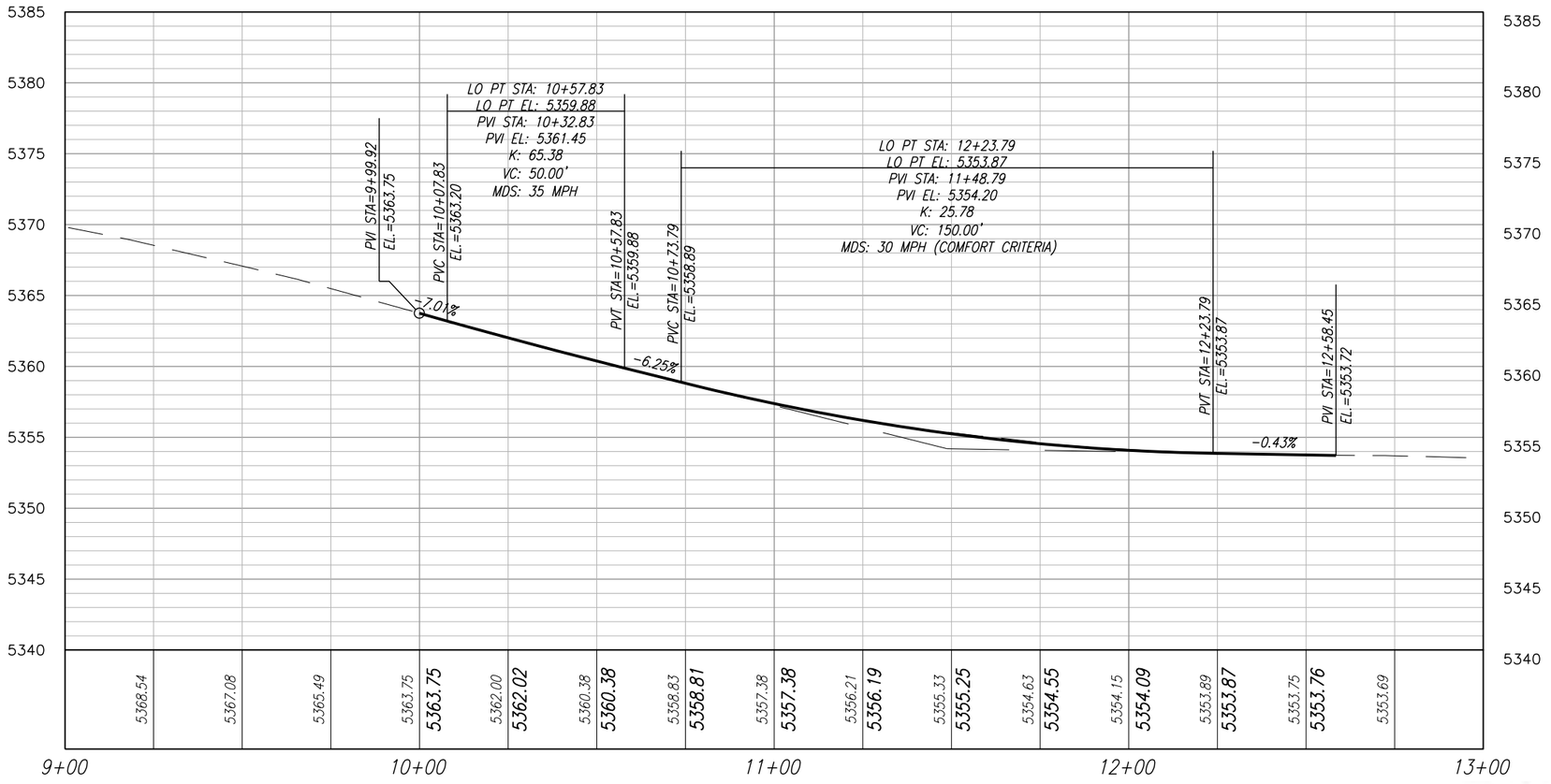
Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC10 PRINCECHURCH-PLAN.dwg - Current tab: 10 ROADWAY PLAN 5 - Print Time: Mon, 01 Dec 2025 - 8:25am By: msalek Last Save: Tue, 18 Nov 2025 - 1:48pm

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC11 PRINCECHURCH-PROFILE.dwg - Current tab: 11 ROADWAY PROFILE - Print Time: Mon, 01 Dec 2025 - 8:25am By: msalek Last Save: Fri, 03 Dec 2021 - 12:44pm

20

0 40 80

HORIZONTAL SCALE: 1"=40'



PRINCE STREET PROFILE

COLORADO REGISTERED
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5/6/2026

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION ROADWAY PROFILE

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Sheet Subset:	PROF	Subset Sheets:	1 of 1

Project No./Code	
STU M810-018	
24290	
Sheet Number	26

JOINTING LEGEND

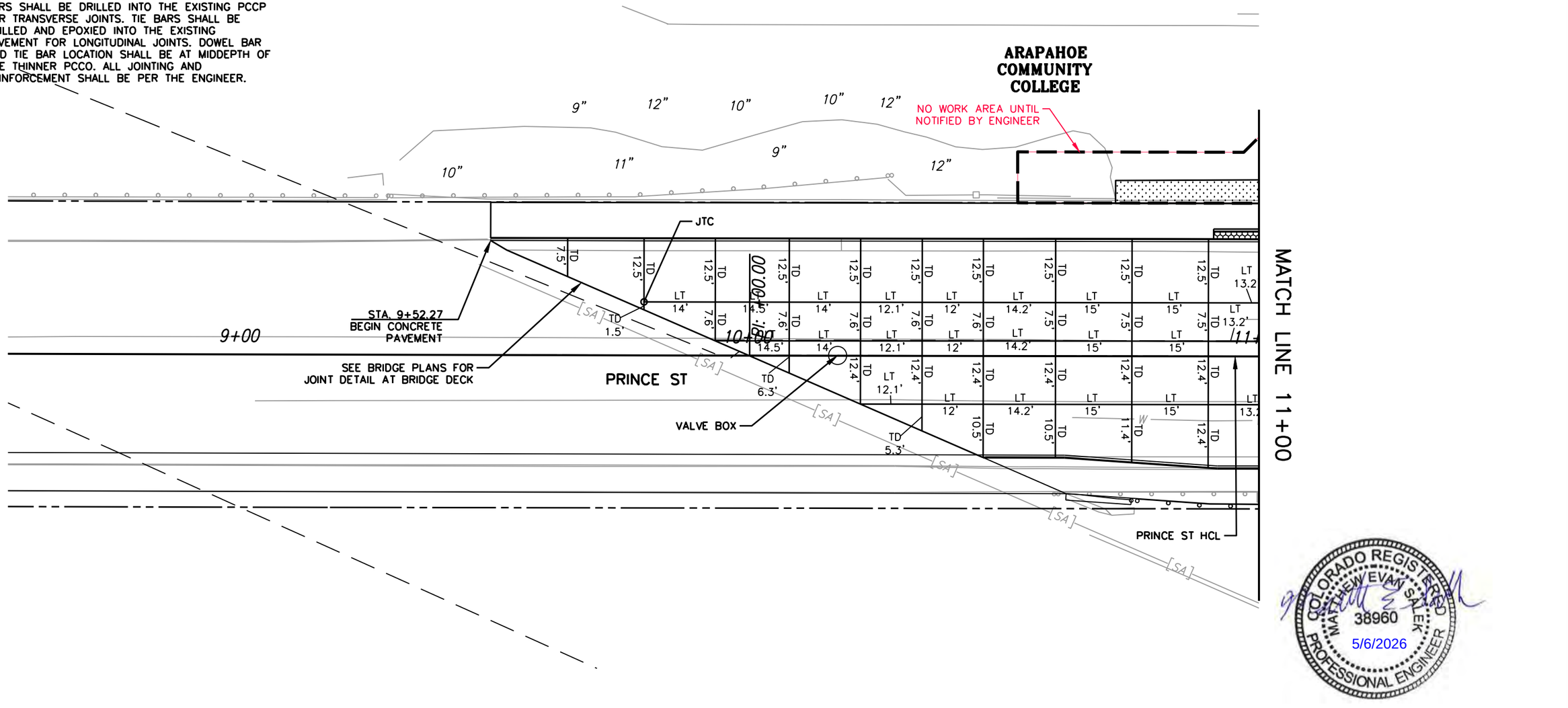
SYMBOL	JOINT TYPE
EJ	EXPANSION
DE	DOWELED EXPANSION
TD	TRANSVERSE CONTRACTION
LT	LONGITUDINAL CONSTRUCTION
JTC	JOINT TERMINATION CORE

* DENOTES JOINT WILL REQUIRE DRILLING AND EPOXYING TIE BARS INTO ADJACENT EXISTING SLAB. WHERE PROPOSED PAVEMENT IS PLACED NEXT TO EXISTING PAVEMENT (AT CHURCH AVENUE AND ON S PRINCE STREET), THE CONTRACTOR SHALL VERIFY THE EXISTING PCCP THICKNESS. DOWEL BARS SHALL BE DRILLED INTO THE EXISTING PCCP FOR TRANSVERSE JOINTS. TIE BARS SHALL BE DRILLED AND EPOXIED INTO THE EXISTING PAVEMENT FOR LONGITUDINAL JOINTS. DOWEL BAR AND TIE BAR LOCATION SHALL BE AT MIDDEPTH OF THE THINNER PCCO. ALL JOINTING AND REINFORCEMENT SHALL BE PER THE ENGINEER.

NOTES:

1. SIDEWALK SHALL BE POURED SEPARATELY FROM THE ROADWAY PAVEMENT.
2. SIDEWALK JOINTING SHALL FOLLOW CDOT SPECIFICATION 608.03.
3. ROADWAY JOINTING SHALL FOLLOW CDOT STANDARD M-412-1.
4. REFER TO PHASING SHEETS FOR LOCATIONS OF FASTTRACK CONCRETE PAVEMENT.
5. THE CONCRETE PAVEMENT JOINTING PLANS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE A JOINTING PLAN FOLLOWING THE M&S STANDARDS AND THE CDOT PAVEMENT DESIGN MANUAL (AS REVISED BY ANY UPDATES) CURRENT AT THE TIME OF PROJECT ADVERTISEMENT AS WELL AS INDUSTRY BEST PRACTICES. THE PCCP JOINTING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AT THE PRE-PAVING MEETING AND AT LEAST ONE MONTH BEFORE THE COMMENCEMENT OF PAVING OPERATIONS. CONCRETE WORK AND PCCP PAVING SHALL NOT BEGIN UNTIL THE PAVEMENT JOINTING PLAN HAS BEEN APPROVED BY THE ENGINEER.

10
0 20 40
HORIZONTAL SCALE: 1"=20'



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information			
Creation Date:	11/21/2017	Initials:	BPM
Last Modification Date:	03/17/21	Initials:	NFJ
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings		
Drawing File Name:	PC12 PRINCECHURCH-JOINT.dwg		
Acad Ver.	Scale: 1"=20'	Units:	English

Sheet Revisions		

Littleton
Public Works
2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION JOINTING PLAN

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	JOINT	Subset Sheets:	1 of 2

Project No./Code	
STU M810-018	
24290	
Sheet Number	27

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC12 PRINCECHURCH-JOINT.dwg - Current tab: 12 JOINTING PLAN 1 - Print Time: Mon, 01 Dec 2025 - 8:25am By: msolek Last Save: Wed, 09 Aug 2023 - 9:43am

JOINTING LEGEND

SYMBOL	JOINT TYPE
EJ	EXPANSION
DE	DOWELED EXPANSION
TD	TRANSVERSE CONTRACTION
LT	LONGITUDINAL CONSTRUCTION
JTC	JOINT TERMINATION CORE

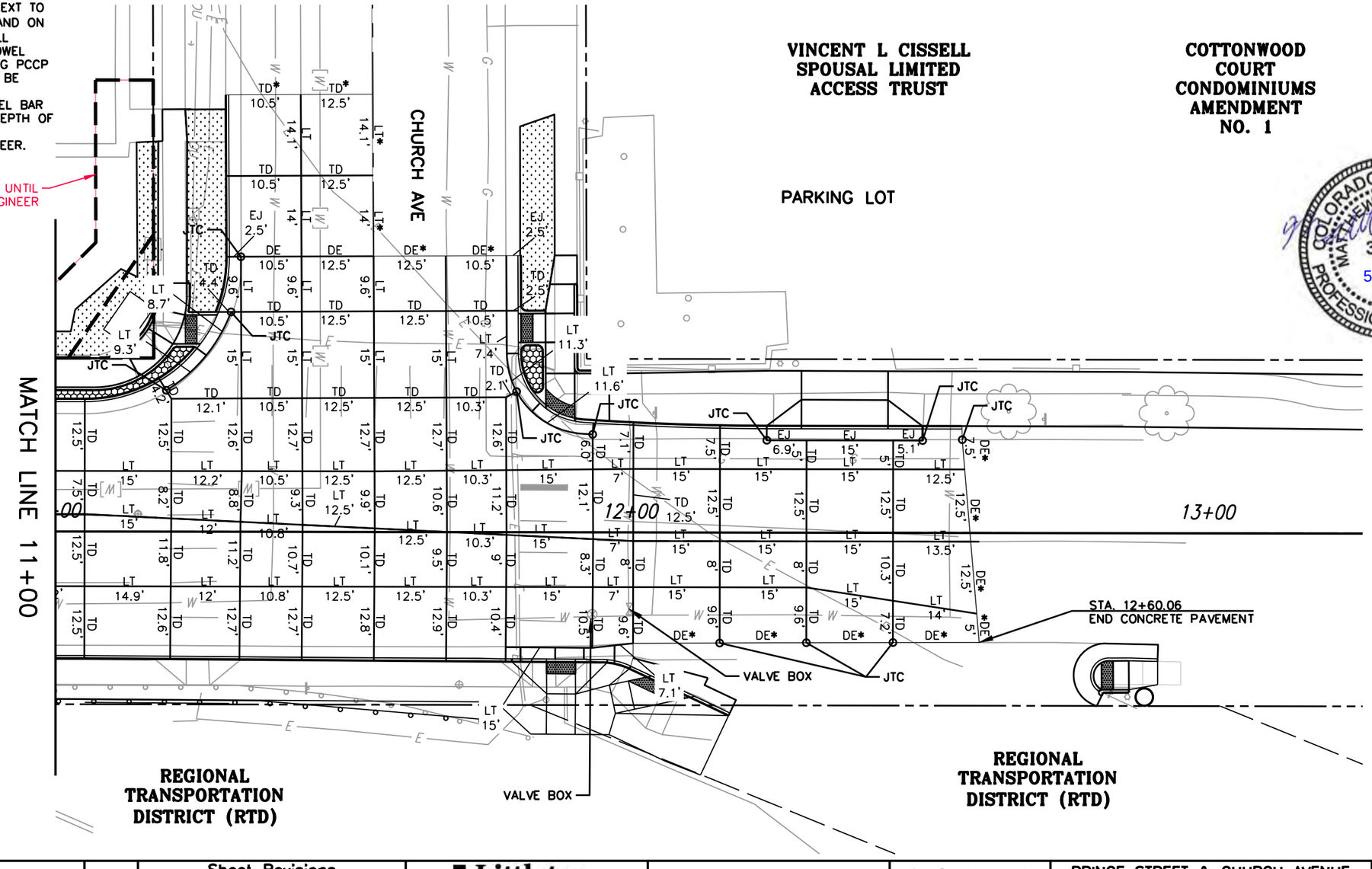
* DENOTES JOINT WILL REQUIRE DRILLING AND EPOXYING TIE BARS INTO ADJACENT EXISTING SLAB. WHERE PROPOSED PAVEMENT IS PLACED NEXT TO EXISTING PAVEMENT (AT CHURCH AVENUE AND ON S PRINCE STREET), THE CONTRACTOR SHALL VERIFY THE EXISTING PCCP THICKNESS. DOWEL BARS SHALL BE DRILLED INTO THE EXISTING PCCP FOR TRANSVERSE JOINTS. TIE BARS SHALL BE DRILLED AND EPOXIED INTO THE EXISTING PAVEMENT FOR LONGITUDINAL JOINTS. DOWEL BAR AND TIE BAR LOCATION SHALL BE AT MIDDEPTH OF THE THINNER PCCP. ALL JOINTING AND REINFORCEMENT SHALL BE PER THE ENGINEER.

NOTES:

1. SIDEWALK SHALL BE POURED SEPARATELY FROM THE ROADWAY PAVEMENT.
2. SIDEWALK JOINTING SHALL FOLLOW CDOT SPECIFICATION 608.03.
3. ROADWAY JOINTING SHALL FOLLOW CDOT STANDARD M-412-1.
4. REFER TO PHASING SHEETS FOR LOCATIONS OF FASTTRACK CONCRETE PAVEMENT.
5. THE CONCRETE PAVEMENT JOINTING PLANS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE A JOINTING PLAN FOLLOWING THE M&S STANDARDS AND THE CDOT PAVEMENT DESIGN MANUAL (AS REVISED BY ANY UPDATES) CURRENT AT THE TIME OF PROJECT ADVERTISEMENT AS WELL AS INDUSTRY BEST PRACTICES. THE PCCP JOINTING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AT THE PRE-PAVING MEETING AND AT LEAST ONE MONTH BEFORE THE COMMENCEMENT OF PAVING OPERATIONS. CONCRETE WORK AND PCCP PAVING SHALL NOT BEGIN UNTIL THE PAVEMENT JOINTING PLAN HAS BEEN APPROVED BY THE ENGINEER.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N



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MATTHEW EVAN SALEK
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PROFESSIONAL ENGINEER
5/6/2026

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Drawing File Name:	PC12 PRINCECHURCH-JOINT.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

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No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION JOINTING PLAN

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	JOINT	Subset Sheets:	2 of 2

Project No./Code	
STU M810-018	
24290	
Sheet Number	28

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC12 PRINCECHURCH-JOINT.dwg - Current tab: 12 JOINTING PLAN 2 - Print Time: Mon, 01 Dec 2025 - 8:25am By: msolek Last Save: Wed, 09 Aug 2023 - 9:43am

NOTES:

1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

PHASE 1A NOTES:

1. FASTTRACK CONCRETE PAVEMENT SHALL BE USED FOR THIS PHASE.
2. MAINTAIN ALL EXISTING TURNING MOVEMENTS.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N

LEGEND (ALL PHASING SHEETS)

- DESIGNATED WORK ZONE FOR PHASE
- COMPLETED CONSTRUCTION
- TEMPORARY ASPHALT
- SIGN PANEL
- CHANNELIZING DEVICE
- TEMPORARY SIGNAL
- TYPE III BARRICADE
- PEDESTRIAN MOVEMENT

ARAPAHOE COMMUNITY COLLEGE

CHURCH AVE

VINCENT L CISSELL SPOUSAL LIMITED ACCESS TRUST

PARKING LOT

COTTONWOOD COURT CONDOMINIUMS AMENDMENT NO. 1

NO WORK AREA UNTIL NOTIFIED BY ENGINEER

R3-2
24x24

R4-7
24x30

R4-7
24x30

PRINCE ST

11+00

12+00

13+00

REGIONAL TRANSPORTATION DISTRICT (RTD)

REGIONAL TRANSPORTATION DISTRICT (RTD)

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC13-21 PRINCECHURCH-PHASING.dwg - Current tab: 13 PHASING PLAN - PHASE 1A - Print Time: Mon, 01 Dec 2025 - 8:25am By: msolek Last Save: Wed, 01 Oct 2025 - 1:45pm

Computer File Information	
Creation Date:	11/14/2017 Initials: BPM
Last Modification Date:	10/1/2025 Initials: BPM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings
Drawing File Name:	PC13-21 PRINCECHURCH-PHASING.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

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Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

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No Revisions:
Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
13 PHASING PLAN – PHASE 1A

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	1 of 9

Project No./Code	
STU M810-018	
24290	
Sheet Number	29

NOTES:

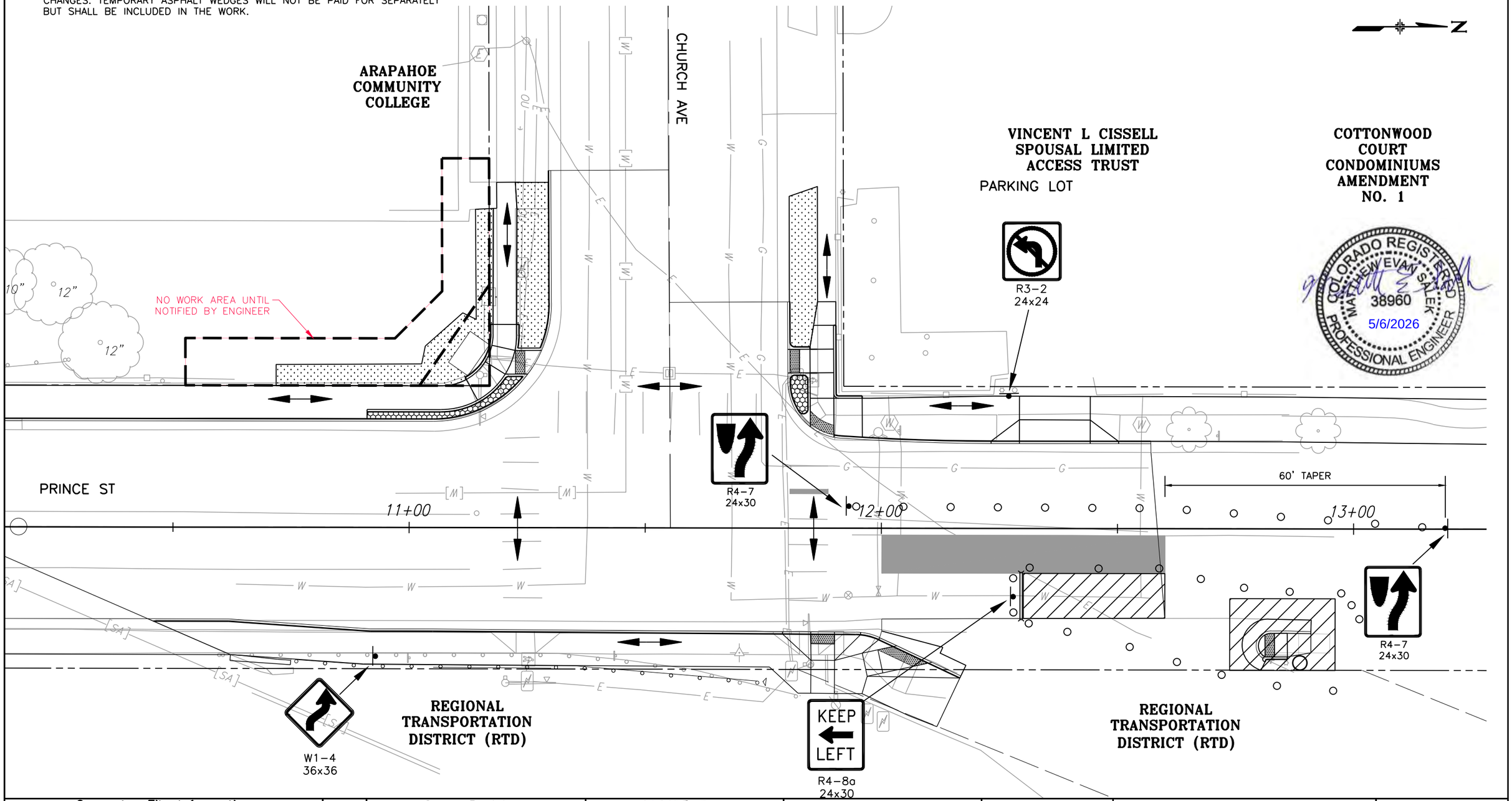
1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

PHASE 1B NOTES:

1. FASTTRACK CONCRETE PAVEMENT SHALL BE USED FOR THIS PHASE.
2. MAINTAIN ALL EXISTING TURNING MOVEMENTS.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
Creation Date:	11/14/2017 Initials: BPM
Last Modification Date:	10/1/2025 Initials: BPM
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Drawing File Name:	PC13-21 PRINCECHURCH-PHASING.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

Littleton
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303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
14 PHASING PLAN - PHASE 1B

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	2 of 9

Project No./Code	
STU M810-018	
24290	
Sheet Number	30

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC13-21 PRINCECHURCH-PHASING.dwg - Current tab: 14 PHASING PLAN - PHASE 1B - Print Time: Mon, 01 Dec 2025 - 8:25am By: msalek Last Save: Wed, 01 Oct 2025 - 1:45pm

NOTES:

1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
2. MEASUREMENTS TO TEMPORARY STOP BARS ARE FROM EXISTING CURB RETURNS.

PHASE 2A NOTES:

1. FASTTRACK CONCRETE PAVEMENT SHALL BE USED FOR THIS PHASE.
2. TEMPORARY STOP BARS (AS SHOWN) ARE TO BE REMOVED AFTER THE PHASE IS COMPLETE.
3. NORTHBOUND PRINCE ST. LEFT TURN TO CHURCH AVE. NOT PERMITTED DURING THIS PHASE. SEE DETOUR SHEET_ FOR ADDITIONAL DETAILS AND SIGNAGE.
4. TRAFFIC SIGNAL PHASING WILL NEED ADJUSTMENT FOR THIS CONSTRUCTION PHASE.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N

ARAPAHOE COMMUNITY COLLEGE

CHURCH AVE

TEMPORARY STOP BAR PAVEMENT MARKING
12 LF, EASTBOUND LEFT TURN LANE ONLY

STOP HERE ON RED
R10-6 (MODIFIED)
24x36

VINCENT L CISSELL SPOUSAL LIMITED ACCESS TRUST
PARKING LOT

COTTONWOOD COURT CONDOMINIUMS AMENDMENT NO. 1

28'

NO WORK AREA UNTIL NOTIFIED BY ENGINEER

PROVIDE PEDESTRIAN PASS-THROUGH AREA W/ BARRIERS; MIN. 4' WIDE WALKWAY

10" 12" 12"

R4-8
24x30

STOP HERE ON RED
R10-6
24x36

NO TURN ON RED
R10-11
24x30

R3-2
24x24

W24-1
36x36

W13-1
18x18

15 M.P.H.

90' TAPER

PRINCE ST

11+00

12+00

13+00

17'

TEMPORARY STOP BAR PAVEMENT MARKING, 18 LF

32' TAPER

30' TAPER

11'

12'

CLOSE LEFT TURN LANE
CONTINUE BARRELS ENTIRE LENGTH

TEMPORARY DOUBLE YELLOW CENTERLINE (4")
CONTRACTOR SHALL NOT PLACE MARKING ON NEW PAVEMENT

REGIONAL TRANSPORTATION DISTRICT (RTD)

REGIONAL TRANSPORTATION DISTRICT (RTD)

TEMPORARY SOLID WHITE EDGE LINE (4")

REMOVE EXISTING SIDEWALK AND CURB
PLACE TEMPORARY ASPHALT IN REMOVAL LIMITS FOR TRAFFIC

R3-2
24x24

R4-7
24x30

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC13-21 PRINCECHURCH-PHASING.dwg - Current tab: 15 PHASING PLAN - PHASE 2A - Print Time: Mon, 01 Dec 2025 - 8:26am By: msalek Last Save: Wed, 01 Oct 2025 - 1:45pm

Computer File Information			
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Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings		
Drawing File Name:	PC13-21 PRINCECHURCH-PHASING.dwg		
Acad Ver.	Scale: 1"=20'	Units:	English

Sheet Revisions		

Littleton
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2255 W. Berry Ave.
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benesch
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7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
15 PHASING PLAN - PHASE 2A

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	3 of 9

Project No./Code	
STU M810-018	
24290	
Sheet Number	31

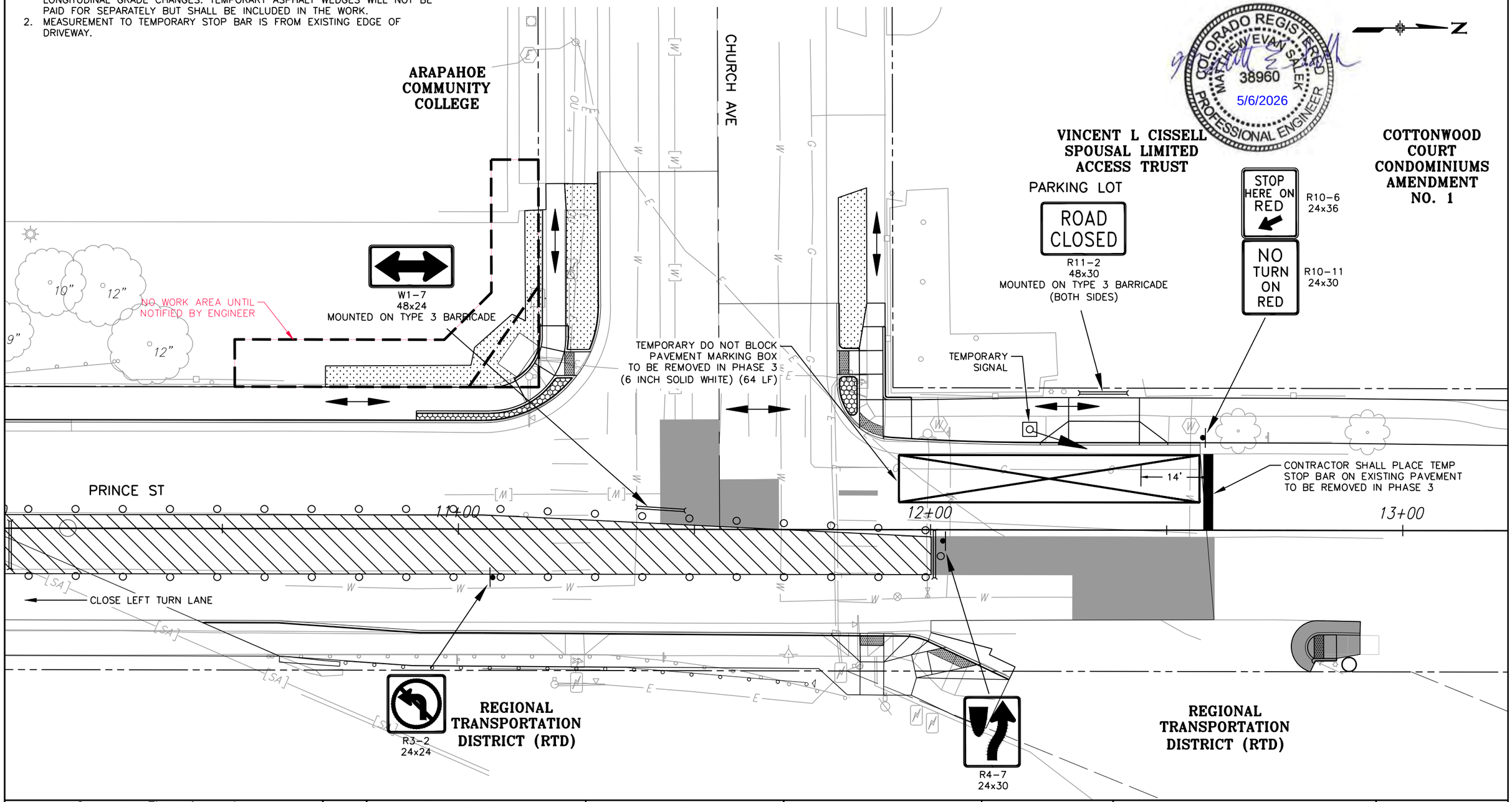
NOTES:

1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
2. MEASUREMENT TO TEMPORARY STOP BAR IS FROM EXISTING EDGE OF DRIVEWAY.

PHASE 2B NOTES:

1. NB TEMPORARY TRAFFIC SIGNAL SHALL BE INSTALLED BEFORE PHASE 2B BEGINS. SIGNAL PLACEMENT SHALL NOT INTERFERE WITH PEDESTRIAN TRAFFIC. SIGNAL SHALL CONSIST OF AT LEAST ONE 12"-12"-12" R-Y-G HEAD, TRAILER OR POLE MOUNTED. SIGNAL SHALL BE WIRED TO THE NB SIGNAL PHASE.
2. NORTHBOUND PRINCE ST LEFT TURNS ONTO WESTBOUND CHURCH AVE WILL NOT BE PERMITTED. SEE DETOUR SHEETS.

10
0 20 40
HORIZONTAL SCALE: 1"=20'



COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

Computer File Information			
Creation Date:	11/14/2017	Initials:	BPM
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Drawing File Name:	PC13-21 PRINCECHURCH-PHASING.dwg		
Acad Ver.	Scale: 1"=20'	Units:	English

Sheet Revisions		

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As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
16 PHASING PLAN – PHASE 2B

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	4 of 9

Project No./Code	
STU M810-018	
24290	
Sheet Number	32

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC13-21 PRINCECHURCH-PHASING.dwg – Current tab: 16 PHASING PLAN – PHASE 2B – Print Time: Mon, 01 Dec 2025 – 8:26am By: msalek Last Save: Wed, 01 Oct 2025 – 1:45pm

NOTES:

1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

PHASE 2C NOTES:

1. SEE DETOUR SHEET _ FOR PEDESTRIAN DETOUR DETAILS.
2. NORTHBOUND PRINCE ST LEFT TURNS WILL BE PERMITTED AND MAY REQUIRE THE EXISTING SIGNAL PHASING TO BE TEMPORARILY MODIFIED.
3. EB TEMPORARY TRAFFIC SIGNAL SHALL BE INSTALLED BEFORE PHASE 2C BEGINS. SIGNAL SHALL CONSIST OF AT LEAST TWO 12"-12"-12" R-Y-G HEADS, ONE OF WHICH SHALL BE OVERHEAD, TRAILER OR POLE MOUNTED. SIGNAL SHALL BE WIRED TO THE EB SIGNAL PHASE.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

N

ARAPAHOE COMMUNITY COLLEGE

CHURCH AVE

VINCENT L CISSELL SPOUSAL LIMITED ACCESS TRUST

PARKING LOT

COTTONWOOD COURT CONDOMINIUMS AMENDMENT NO. 1

NO WORK AREA UNTIL NOTIFIED BY ENGINEER

10" 12" 9" 12"

ROAD CLOSED
R11-2
48x30
MOUNTED ON TYPE 3 BARRICADE
(BOTH SIDES)

STOP HERE ON RED
R10-6
24x36

NO TURN ON RED
R10-11
24x30

TEMPORARY SIGNAL

R3-6
30x36

PRINCE ST

11+00

12+00

13+00

14'

60' TAPER

REGIONAL TRANSPORTATION DISTRICT (RTD)

TEMPORARY SIGNAL

TEMPORARY DOUBLE YELLOW CENTERLINE; CONTRACTOR SHALL PLACE TEMPORARY STRIPING ONLY ON PAVEMENT TO BE REMOVED IN PHASE 3

KEEP RIGHT
R4-7
24x30

REGIONAL TRANSPORTATION DISTRICT (RTD)

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC13-21 PRINCECHURCH-PHASING.dwg - Current tab: 17 PHASING PLAN - PHASE 2C - Print Time: Mon, 01 Dec 2025 - 8:26am By: msalek Last Save: Wed, 01 Oct 2025 - 1:45pm

Computer File Information			
Creation Date:	11/14/2017	Initials:	BPM
Last Modification Date:	10/1/2025	Initials:	DRL
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings		
Drawing File Name:	PC13-21 PRINCECHURCH-PHASING.dwg		
Acad Ver.	Scale: 1"=20'	Units:	English

Sheet Revisions		

Littleton
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7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed
No Revisions:
Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
17 PHASING PLAN - PHASE 2C

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	5 of 9

Project No./Code
STU M810-018
24290
Sheet Number 33

NOTES:

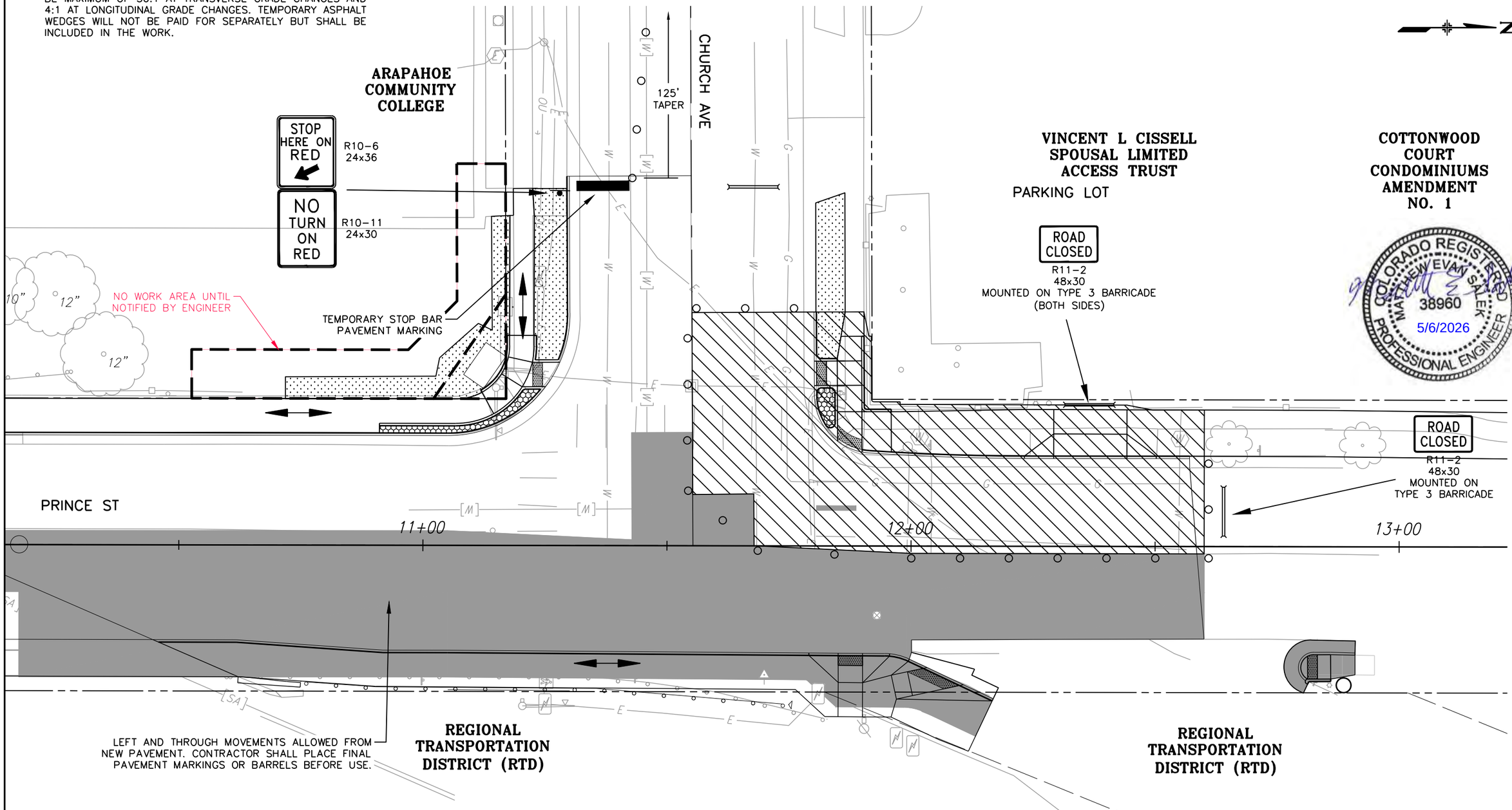
1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

PHASE 3 NOTES:

1. SOUTHBOUND PRINCE ST CLOSED AT ALAMO AVE. SEE DETOUR SHEETS FOR MORE INFORMATION.
2. EASTBOUND CHURCH AVE RIGHT AND LEFT TURNS WILL SHARE A LANE DURING THIS PHASE. THIS WILL REQUIRE EXISTING SIGNAL PHASING MODIFICATIONS.
3. REFER TO DETOUR SHEETS FOR PEDESTRIAN DETOURS.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
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No Revisions:
Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
18 PHASING PLAN – PHASE 3

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	6 of 9

Project No./Code
STU M810-018
24290
Sheet Number 34

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC13-21 PRINCECHURCH-PHASING.dwg – Current tab: 18 PHASING PLAN – PHASE 3 – Print Time: Mon, 01 Dec 2025 – 8:26am By: msalek Last Save: Wed, 01 Oct 2025 – 1:45pm

NOTES:

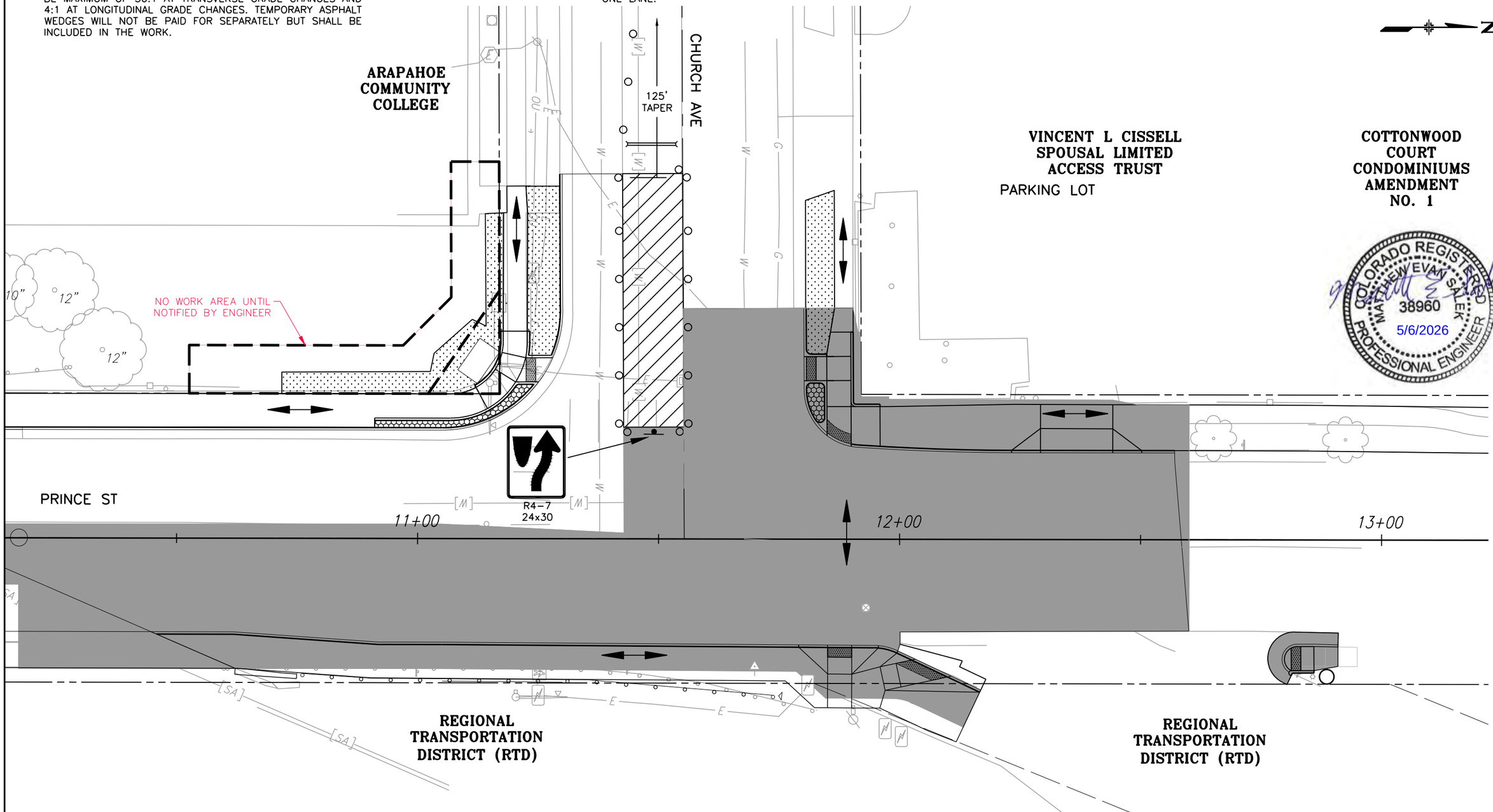
1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

PHASE 4A NOTES:

1. ALL TURNING MOVEMENTS ALLOWED DURING THIS PHASE.
2. WESTBOUND CHURCH AVE RIGHT AND LEFT TURNS WILL SHARE RIGHT TURN LANE. SIGNAL PHASING MODIFICATIONS MAY BE NEEDED DURING THIS PHASE.
3. CONTRACTOR SHALL BARREL SOUTHBOUND PRINCE RIGHT TURN LANE AND HAVE RIGHT TURN AND THROUGH MOVEMENTS SHARE ONE LANE.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

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MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

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Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

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benesch
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Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
19 PHASING PLAN - PHASE 4A

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	7 of 9

Project No./Code	
STU M810-018	
24290	
Sheet Number	35

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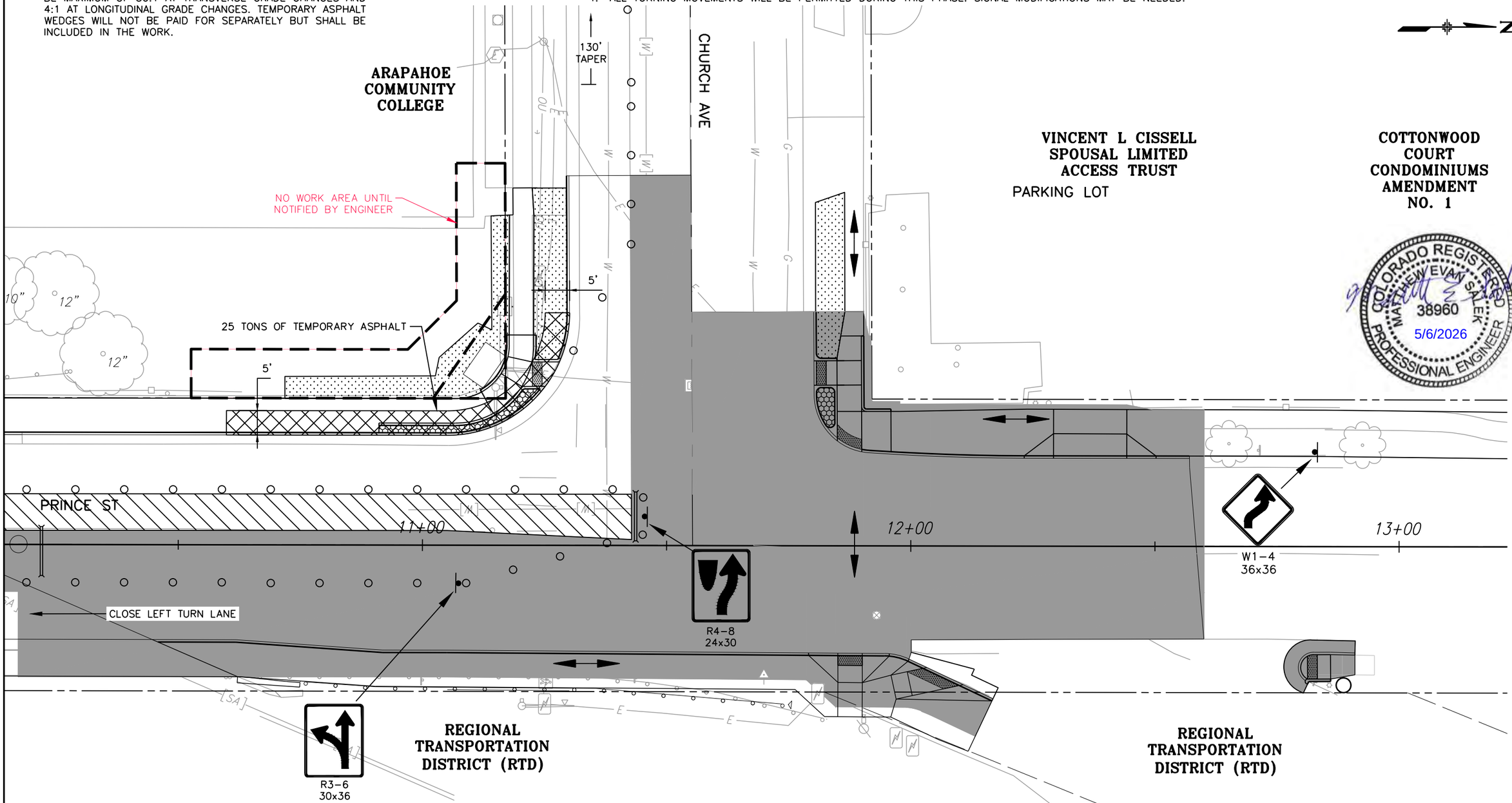
1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

PHASE 4B NOTES:

1. NORTHBOUND PRINCE ST LEFT TURNS AND THROUGH MOVEMENTS WILL SHARE A LANE DURING THIS PHASE.
2. EASTBOUND CHURCH AVE RIGHT TURNS WILL SHARE LEFT TURN LANE.
3. EXISTING CURB, GUTTER AND SIDEWALK SHALL BE REMOVED ON SW CORNER AND REPLACED WITH TEMPORARY ASPHALT TO ALLOW FOR LARGE VEHICLE RIGHT TURNS. SEE SHEET _ FOR PEDESTRIAN DETOUR.
4. ALL TURNING MOVEMENTS WILL BE PERMITTED DURING THIS PHASE. SIGNAL MODIFICATIONS MAY BE NEEDED.

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0 20 40
HORIZONTAL SCALE: 1"=20'

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Drawing File Name:	PC13-21 PRINCECHURCH-PHASING.dwg		
Acad Ver.	Scale: 1"=20'	Units:	English

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
20 PHASING PLAN – PHASE 4B

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	8 of 9

Project No./Code
STU M810-018
24290
Sheet Number 36

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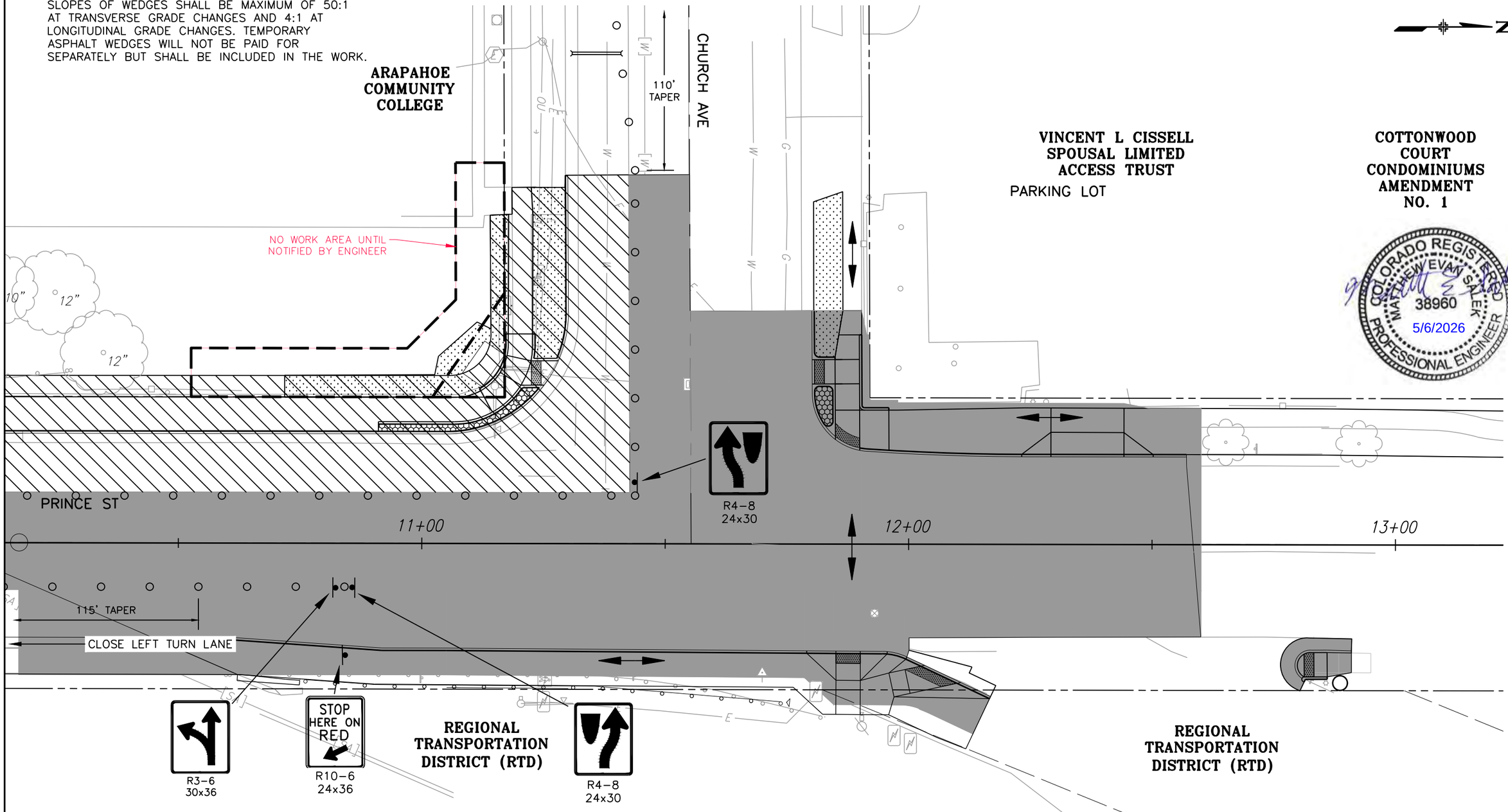
NOTES:

1. TEMPORARY ASPHALT WEDGE SHALL BE PLACED WHERE DIFFERENCES IN GRADE OCCUR BETWEEN EXISTING AND NEW PAVEMENT PRIOR TO ALLOWING SHIFTS IN TRAFFIC MOVEMENTS BETWEEN PHASES. SLOPES OF WEDGES SHALL BE MAXIMUM OF 50:1 AT TRANSVERSE GRADE CHANGES AND 4:1 AT LONGITUDINAL GRADE CHANGES. TEMPORARY ASPHALT WEDGES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

PHASE 4C NOTES:

1. EASTBOUND CHURCH AVE RIGHT AND LEFT TURNS WILL SHARE ONE LANE. SIGNAL MODIFICATIONS MAY BE NEEDED DURING THIS PHASE. EASTBOUND RIGHT TURNS AND NORTHBOUND TRAFFIC ON PRINCE STREET WILL NOT OPERATE UNDER THE SAME PHASE TO AVOID OVERLAP.

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0 20 40
HORIZONTAL SCALE: 1"=20'



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Drawing File Name:	PC13-21 PRINCECHURCH-PHASING.dwg
Acad Ver.	Scale: 1"=20' Units: English

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
21 PHASING PLAN – PHASE 4C

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	PHASE	Subset Sheets:	9 of 9

Project No./Code
STU M810-018
24290
Sheet Number 37

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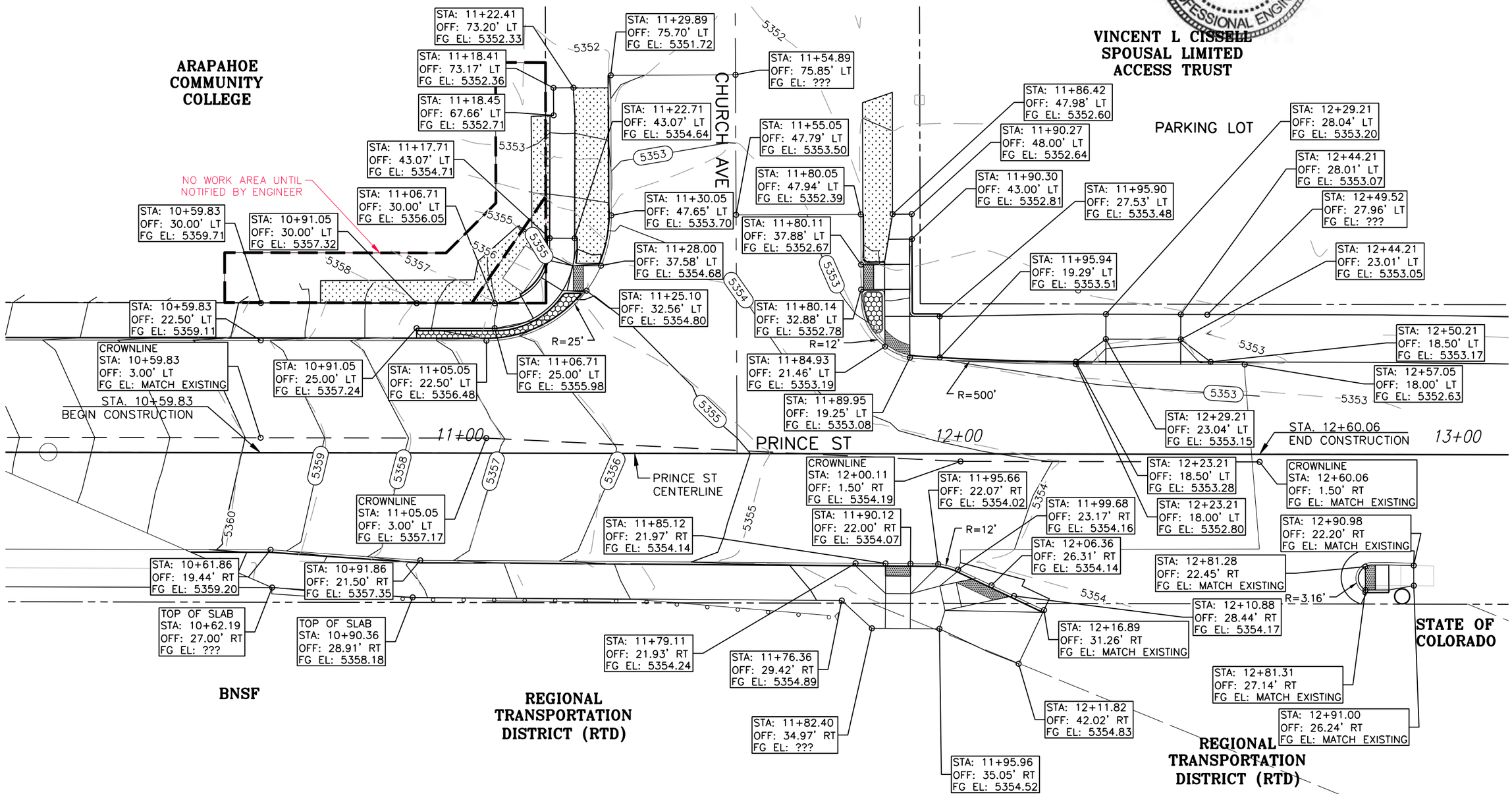
NOTES:

1. SEE SHEET CURB RAMP DETAIL SHEETS FOR ADDITIONAL INFORMATION.
2. SEE SHEET ROADWAY SHEETS FOR ROADWAY CROSS SLOPE LOCATIONS AND DETAILS.

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5/6/2026

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HORIZONTAL SCALE: 1"=20'

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION GRADING PLAN

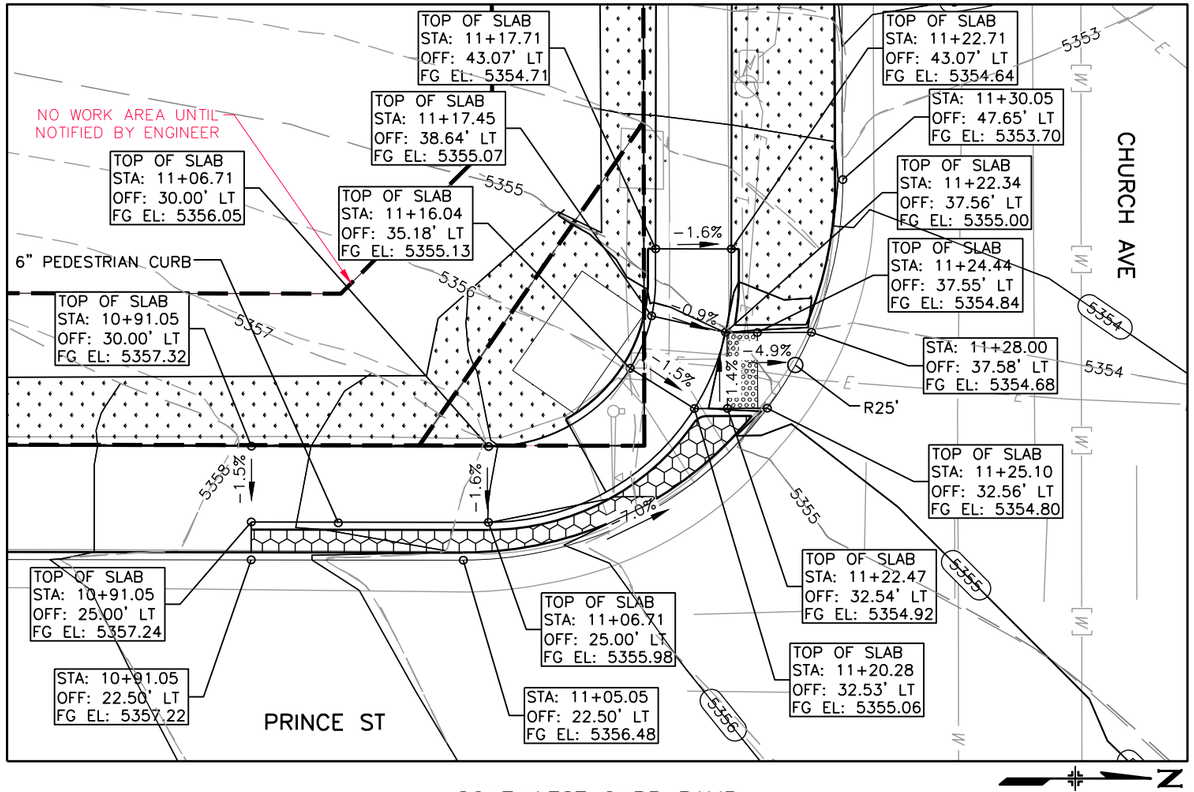
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Project No./Code
STU M810-018
24290
Sheet Number 38

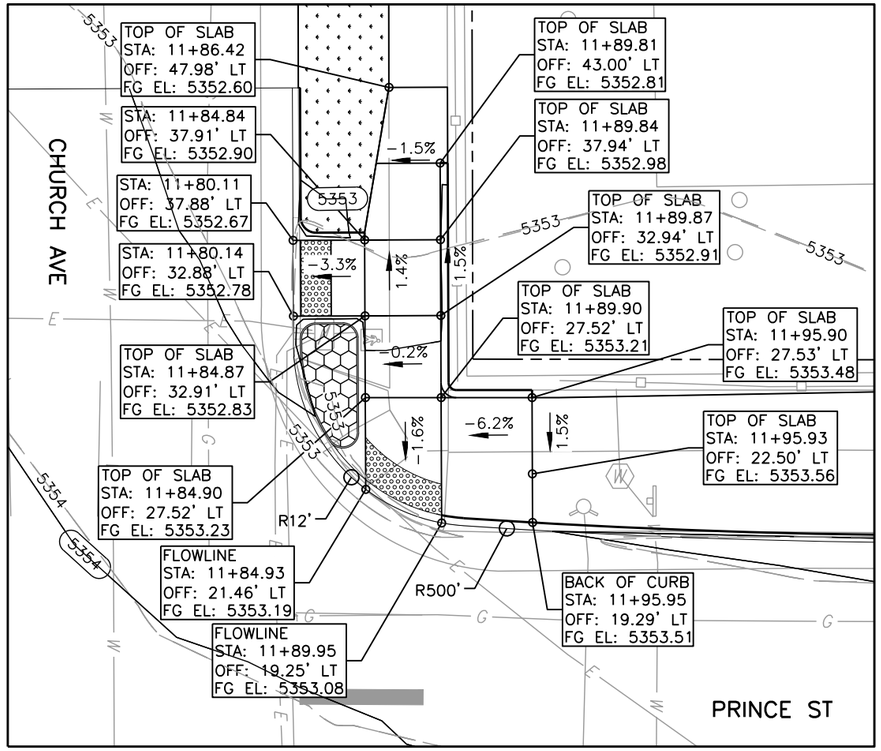
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NOTES:

1. SEE ROADWAY PLAN SHEETS FOR ROADWAY CROSS SLOPE LOCATIONS AND DETAILS.



SOUTHWEST CURB RAMP
SCALE: 1" = 10'



NORTHWEST CURB RAMP
SCALE: 1" = 10'



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Last Modification Date:	10/2/2025	Initials:	BPM
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Acad Ver.	Scale: 1"=20'	Units:	English

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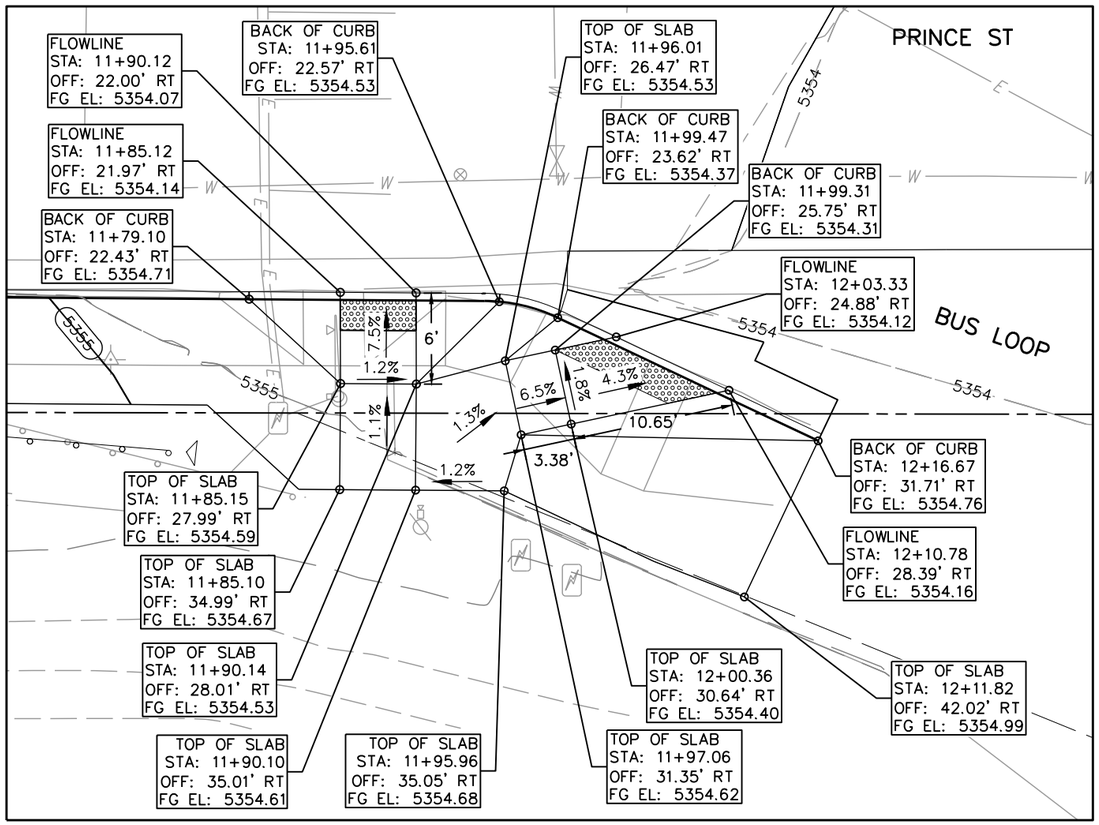
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Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	CURB	Subset Sheets:	1 of 3

Project No./Code
STU M810-018
24290
Sheet Number 39

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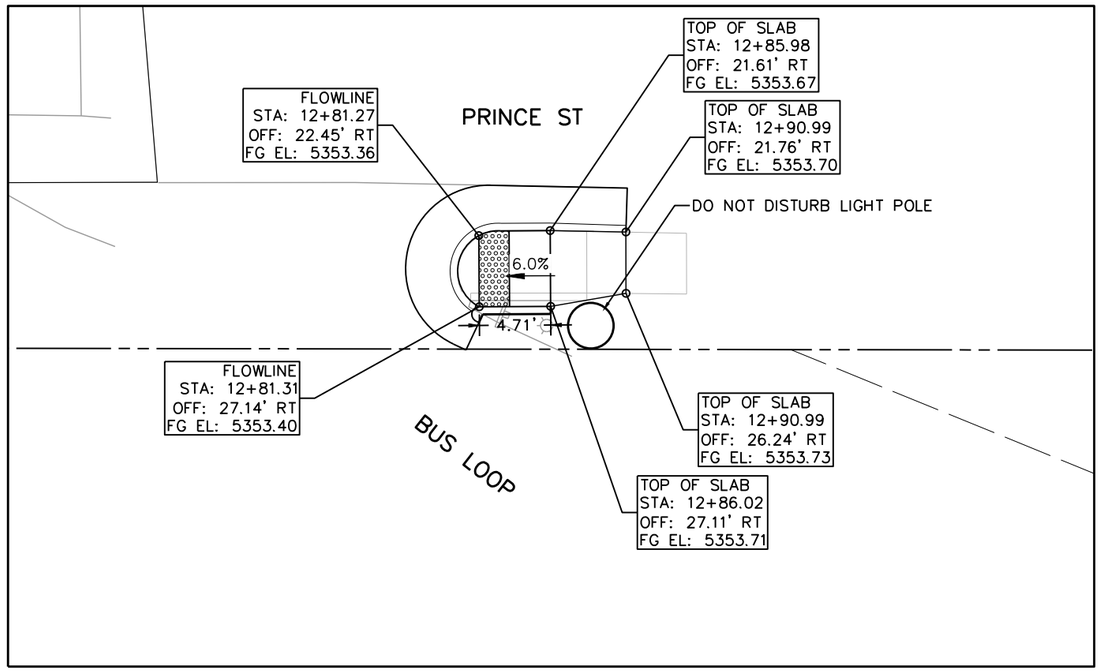
NOTES:

1. SEE ROADWAY PLAN SHEETS FOR CROSS SLOPE LOCATIONS AND DETAILS.



SOUTHEAST CURB RAMP

SCALE: 1" = 10'



SOUTHEAST CURB RAMP

SCALE: 1" = 10'

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5/6/2026
PROFESSIONAL ENGINEER

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Acad Ver.	Scale: 1"=20'	Units:	English

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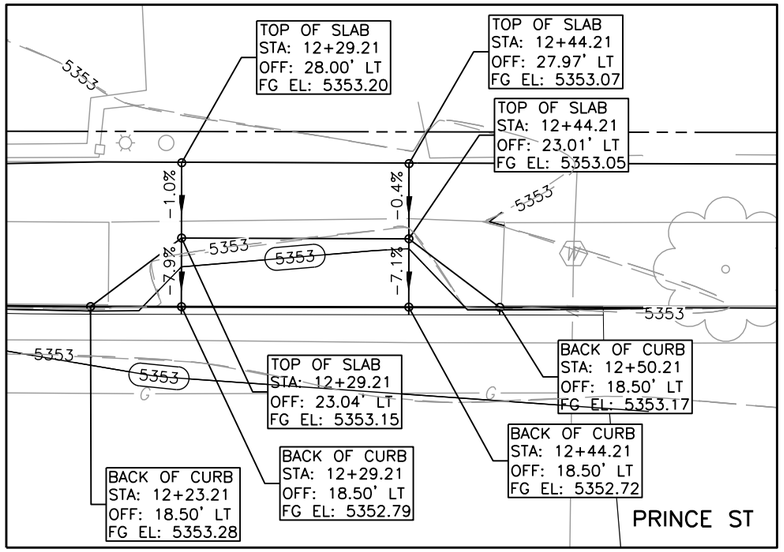
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Designer:	BPM	Structure Numbers	
Detailer:	SGF		
Sheet Subset:	CURB	Subset Sheets:	2 of 3

Project No./Code	
STU M810-018	
24290	
Sheet Number	40

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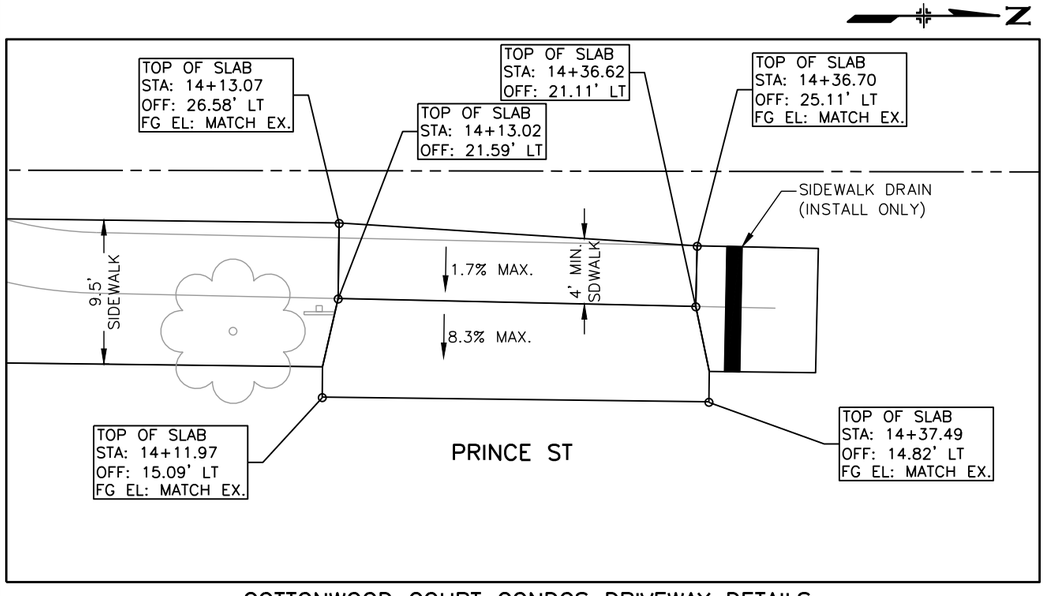
NOTES:

1. SEE ROADWAY PLAN SHEETS FOR CROSS SLOPE LOCATIONS AND DETAILS.



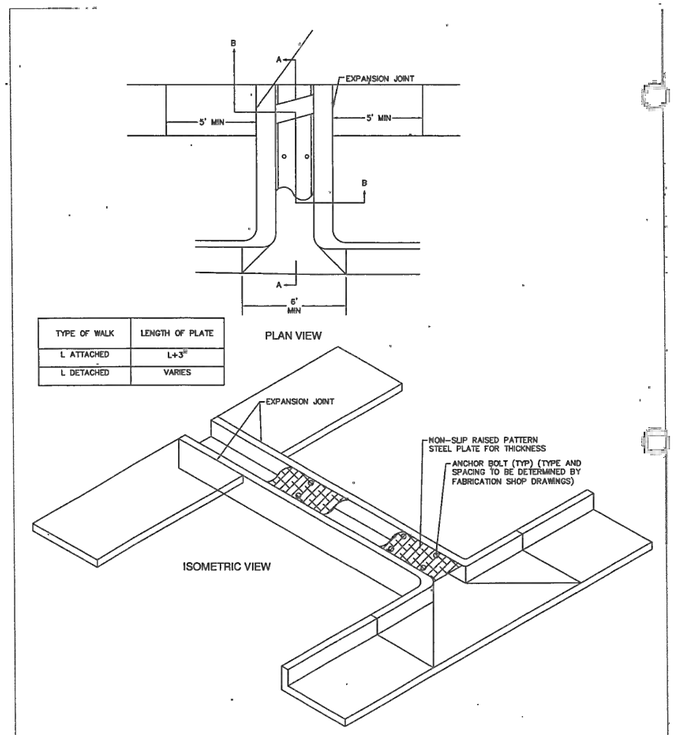
CISSELL DRIVEWAY DETAILS

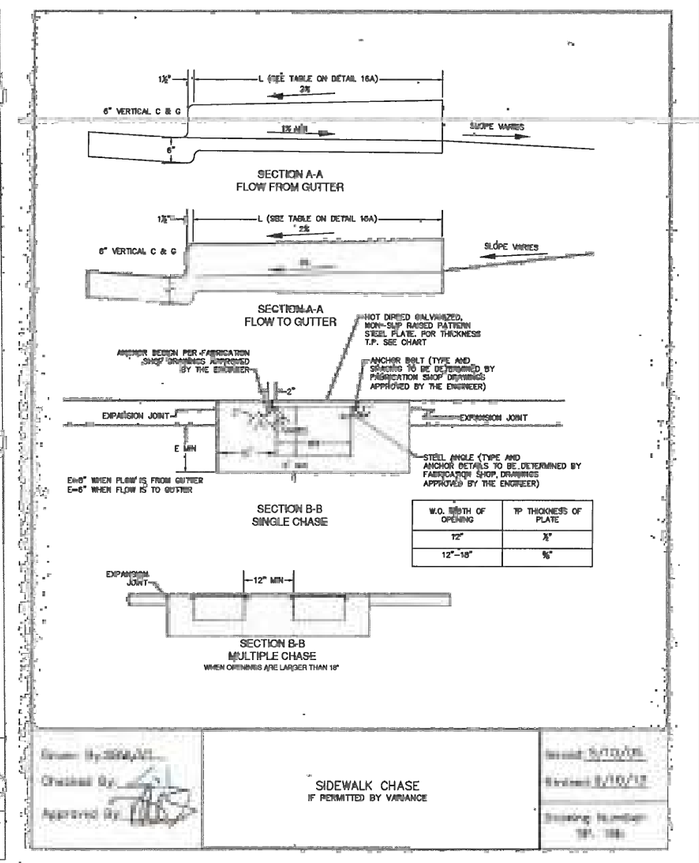
SCALE: 1" = 10'



COTTONWOOD COURT CONDOS DRIVEWAY DETAILS

SCALE: 1" = 10'





ARAPAHOE COUNTY SIDEWALK DRAIN STANDARD DETAILS



My responsibility for this sheet is limited to the grading details to the left.

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Creation Date:	11/15/2017	Initials:	BPM
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Drawing File Name:	PC23 PRINCECHURCH-RAMPS.dwg		
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
CURB RAMP AND DRIVEWAY DETAILS

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	CURB	Subset Sheets:	3 of 3

Project No./Code
STU M810-018
24290
Sheet Number 41

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Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC24 PRINCECHURCH-SWMP01.dwg - Current tab: 24 STORMWATER MANAGEMENT NOTES - Print Time: Mon, 01 Dec 2025 - 8:27am By: msalek Last Save: Wed, 26 Jan 2022 - 7:51am

SWMP TEMPLATE (PLAN SHEETS) FOR PROJECTS WITH LESS THAN 1 ACRE OF DISTURBANCE

1. SITE DESCRIPTION

The Contractor shall comply with all CDOT contractual requirements. The SWMP Administrator for Construction shall update to reflect current project site conditions.

A. PROJECT SITE LOCATION: Prince Street from Church Avenue to Lake Avenue, Littleton, CO

B. PROJECT SITE DESCRIPTION: Site is located at Prince Street and Church Avenue in Littleton. The intersection pavement will be replaced, including removal of sidewalk, curb and asphalt; installation of new concrete pavement, curb, sidewalk and curb ramps; removal and replacement of traffic signal poles. Restriping will continue south from Church Ave along Prince St to Lake Ave.

C. PROPOSED SEQUENCING FOR MAJOR CONSTRUCTION ACTIVITIES:

1. Removals of Existing Concrete Pavement, Asphalt, Sidewalk, and Curb & Gutter
2. Install New Concrete Pavement, Curb Ramps, Fence, Curb & Gutter, and signals.
3. Striping, signing, sod.

D. ACRES OF DISTURBANCE:

1. Total area of construction site (LOC): 1.69 acres
2. Total area of proposed disturbance (LDA): 0.73 acres
3. Total area of seeding: 0.00 acres

E. EXISTING SOIL DATA: Soils in the area consist of sandy loam (hydrologic group B).
Data Source(s): USDA Web Soil Survey

F. EXISTING VEGETATION, INCLUDING PERCENT OF VEGETATIVE COVER: During design, the SWMP Administrator for Design in consultation with the Engineer will determine if the SWMP Administrator for Design or the SWMP Administrator for Construction will conduct the Vegetation Transects. If the site is disturbed, an Adequate Reference Site(s) may be utilized, refer to the permit.

Pre-Construction Date of survey: Percent Existing Vegetative Cover:
Description of existing vegetation:
Method for determining percent vegetative cover:
Include a map or table showing transect locations, photos documenting pre-Construction vegetative cover, and methodology used to determine existing vegetative cover to SWMP tab 17:

Post-Construction Date of survey: _____ Percent Vegetative Cover: _____
Description of vegetation:
The method used to determine pre-construction percent cover shall be used to determine post construction percent cover.
Include map or table showing transect locations, photos documenting post-Construction vegetative cover, and methodology used to determine existing vegetative cover to SWMP tab 17:

2. STORMWATER MANAGEMENT CONTROLS FOR FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. POTENTIAL POLLUTANT SOURCES

1. Refer to Potential Pollutant Sources in SWMP Section 4A. Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place any Control Measures required to contain potential pollutants.

B. OFFSITE DRAINAGE (RUN ON WATER)

1. Place Control Measures to address run-on water in accordance with subsection 208.03.

C. CONSTRUCTION DEWATERING:

1. Obtain a CDPS Dewatering Permit from CDPHE if conditions of their Low Risk Guidance for Discharges of Uncontaminated Groundwater to Land are not met; see subsections 107.02 and 107.25.
   Refer to CDPHE Low Risk Discharge Guidance Document of Uncontaminated Groundwater to Land. https://www.colorado.gov/pacific/sites/default/files/WQ%20LOW%20RISK%20GW.pdf

D. VEHICLE TRACKING CONTROL

1. Control Measures shall be implemented in accordance with subsection 208.04.

E. PERIMETER CONTROL

1. Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters.
2. Perimeter control may consist of berms, silt fence, erosion logs, existing landforms, or other Control Measures as approved.

3. QUALIFIED STORMWATER MANAGERS:

A. SWMP ADMINISTRATOR FOR DESIGN: CDOT Certified Individual responsible for developing SWMP Plan Sheets and SWMP Site Maps during the design phase.

Name/Title	Contact Information	Certification #
Noelle Beegle, P.E.	Alfred Benesch & Co., 303-771-6868, nbeegle@benesch.com	89C319CF

B. SWMP ADMINISTRATOR FOR CONSTRUCTION: (As defined in Subsection 208) The Contractor shall designate a SWMP Administrator for Construction. The SWMP Administrator for Construction shall become the operator for the SWMP and assume responsibility for all design changes to the SWMP implementation and maintenance in accordance to 208.03, the SWMP shall remain the property of CDOT. The SWMP Administrator for Construction shall be responsible for implementing, maintaining and revising SWMP, including the title and contact information. The activities and responsibilities of the SWMP Administrator for Construction shall address all aspects of the project's SWMP. (Update the information below for each new SWMP Administrator for Construction) (Copy of TECS Certification must also be included in the SWMP.)

Name/Title	Contact Information (phone & email)	TECS Certification #	Start Date	Engineer Approval

C. PERMANENT STABILIZATION SUBJECT MATTER EXPERT: This qualified individual will be either a Regional Environmental Staff member, or an Independent Contractor Controller (Independent Assurance Program). This expert is a project team leader responsible for ensuring project adherence to requirements of the 207 and 212 Project Special Provisions as follows, and will be available for questions regarding permanent stabilization requirements.

1. Review the Topsoil Management Plan and the Permanent Stabilization Site Maps.
2. Attend the Environmental Pre-construction Conference.
3. Coordinate the Site Pre-vegetation Conference.
4. Review and recommend approval of products.
5. Review and recommend approval of the Quantities Verification Prerequisite.
6. Attend the Substantial Landscape Completion Walkthrough.
7. Attend the Final Landscape Completion Walkthrough.

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER 5/6/2026

Name/Title	Contact Information
Susie Hagie/CDOT R1 Landscape Architect & Water Quality Program Manager	303-757-9932; susie.hagie@state.co.us

4. DURING CONSTRUCTION

The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the Contractor in accordance with Section 208

Template Revised: 2/x/2021

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Creation Date:	11/15/2017	Initials:	MES
Last Modification Date:	3/30/2021	Initials:	NFJ
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Drawing File Name:	PC24 PRINCECHURCH-SWMP01.dwg		
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Sheet Revisions		

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
STORMWATER MANAGEMENT NOTES

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SWNT	Subset Sheets:	1 of 5

Project No./Code	
STU M810-018	
24290	
Sheet Number	42

A. MATERIALS HANDLING AND SPILL PREVENTION: prior to construction commencing the Contractor shall submit a Spill Prevention, Control and Countermeasure Plan, see subsection 208.06. Materials handling shall be in accordance with subsection 208.06.

B. OTHER CDPS PERMITS: List applicable CDPS permits associated with the permitted site and activities.

C. STOCKPILE MANAGEMENT: shall be done in accordance with subsections 107.25 and 208.07

D. CONCRETE WASHOUT: Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.

E. SAW CUTTING: shall be done in accordance with subsections 107.25, 208.04, 208.05

F. STREET SWEEPING: shall be done in accordance with subsection 208.04

5. CONTROL MEASURE MAINTENANCE

A. Maintenance shall be in accordance with subsection 208.04 (f).

6. INTERIM AND PERMANENT STABILIZATION

The Contractor shall comply with all interim stabilization and permanent stabilization requirements in accordance with subsection 208.04(e).

A. SEEDING PLAN: N/A

B. SEEDING APPLICATION: N/A

C. MULCHING APPLICATION: N/A

D. SPECIAL REQUIREMENTS: N/A

E. SOIL AMENDMENT REQUIREMENTS: N/A

F. SOIL RETENTION COVERING: N/A

G. Permanent Stabilization Application Under Structures: N/A

H. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION: N/A

7. PRIOR TO PROJECT FINAL ACCEPTANCE

A. When directed by the Engineer, removal and disposal of temporary control measures shall be included in the cost of work.
B. At the end of the project, all ditch checks shall consist of either temporary erosion logs (or equivalent) or permanent riprap.
C. All storm drains shall be cleaned prior to the Final Acceptance of the project. If required, include work in 202 Clean Inlet.
D. Refer to Specification 208.10 for Items to be completed prior to requesting partial acceptance of water quality work.

8. NARRATIVES:

Control Measure Matrixes During Construction:

1. Control measure narratives have been included for the CDOT Standard Specifications and Standard Plan M-208 and M-216 along with any non-standard control measures approved during the design process. If a Non-Standard Control Measure not included in the SWMP is proposed and approved by the Engineer the SWMP Administrator for Construction shall do the following: Place an "X" in the column for non-standard and complete a Non-Standard Control Measure Specification and Narrative covering the what, when, where and why the control measure is being used shall be add to the SWMP. The appropriate "X" shall also be added to the implementation phase(s).
2. The SWMP Administrator for Construction shall place an "X" in the column In Use On Site when the control measure has been installed.
3. A "B" in the Initial Activities Column indicates that the control measure shall be installed **before** construction activity starts. Locations and quantities will be discussed during the Environmental Pre-Construction Conference with the Regional Water Pollution Control Manager.

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5/6/2026

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
STORMWATER MANAGEMENT NOTES

Designer:	MES	Structure Numbers	
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STRUCTURAL Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

APPLICATION, CONTROL MEASURE	NARRATIVE	M- 208 STANDARD or "X" for NON-STANDARD	IN USE ON SITE	CONTROL MEASURE IMPLEMENTATION PHASE		
				INITIAL ACTIVITIES	INTERIM ACTIVITIES	PERMANENT STABILIZATION
PROTECTION OF EXISTING WETLANDS *Fence (plastic) and erosion logs*	Fence (plastic) shall be placed in combination with erosion logs to prevent encroachment of construction traffic and sediment into state waters prior to start of construction disturbances. Fence (plastic) shall be placed adjacent to the wetlands; erosion logs shall be placed between the plastic fence and disturbance area. Logs shall be placed to direct flows away from or filter water running into wetlands from disturbance areas.					
PROTECTION OF EXISTING TREES/LANDSCAPING *Fence (plastic)*	Fence (plastic) shall be used in areas indicated in the plans to prevent encroachment of construction traffic and sediment for the protection of mature trees and/or existing landscaping prior to start of construction disturbances.					
CHECK DAM/DITCH CHECK *Erosion log, silt berm, silt dike, rock check dam*	Placed in ditches immediately upon completion of ditch grading to reduce velocity of runoff in ditch. For existing ditches, place prior to start of construction disturbances.	M-208				
Storm Drain Inlet Protection In Paved Roadways (Type 1, 2 and 3 as shown on M-208-1, sheet 5 of 11)	Manufactured storm drain inlet protection placed prior to construction disturbances as detailed in M-208-1, to protect existing inlets or immediately upon completion of new inlets to prevent sediment from entering the inlet throughout construction.	M-208		X	X	
Storm Drain Inlet Protection In Native Seed Areas (M-604 Standard Inlets Type C and D)	Erosion logs or aggregate bags placed around inlet grate to prevent sediment from entering inlet. Place prior to construction disturbances to protect existing inlets or immediately upon completion of new inlets.	M-208				
CULVERT INLET/OUTLET PROTECTION *Erosion logs, aggregate bags*	Placed at mouth of culvert inlets and over top of culvert at inlet and outlet where disturbance may be occurring adjacent to pipe to prevent sediment laden water from entering pipe or drainage. Place prior to start of construction disturbances.	M-208				
TYPE C, TYPE D AND TYPE 13 PROTECTION *Erosion logs, aggregate bags, erosion bales*	Placed around inlet grate or slope and ditch paving to prevent sediment from entering inlet. Place prior to start of construction disturbances.	M-208		X	X	
STOCKPILE PROTECTION *Temporary berm, erosion logs, aggregate bags**	Placed within specified distance, in accordance with subsection 208.06, from toe to contain sediment around stockpile. *Aggregate bags are easily moved and replaced for access during the work day. Place prior to start of stockpile, increase control as stockpile increases size.	M-208			X	
TOE OF FILL PROTECTION *Erosion logs, temporary berm, silt fence, topsoil windrow**	Place prior to slope/embankment work to capture sediment and protect and delineate undisturbed areas. *Can be used to stockpile topsoil for salvage.	M-208		X	X	
PERIMETER CONTROL *Erosion logs, silt fence, temporary berm, topsoil windrow**	Placed prior to construction commencing to address potential run-on water from off site, and to divert around disturbed area. *Can be used to stockpile topsoil for salvage.	M-208		X	X	
SEDIMENT CONTROL/ *SLOPE CONTROL* *Silt fence, erosion logs*	Placed on the contour of a slope to contain and slow down construction runoff. Place prior to start of construction disturbances.	M-208				
TEMPORARY SEDIMENT TRAP	Used to capture sediment laden runoff from disturbed areas < 5 acres during construction. Place prior to start of construction disturbances. Outlets that withdraw water from or near the surface may be installed when discharging from basins and impoundments.	M-208				
EMBANKMENT PROTECTION OR TEMPORARY SLOPE DRAIN	Placed as a conduit or chute to drain runoff down slope and to prevent erosion of slope.	M-208				
OUTLET PROTECTION *Riprap, or approved other*	Material placed as energy dissipater to prevent erosion at outlet structure.	M-601-12				
CONCRETE WASHOUT *In-ground or fabricated*	Construction control, used for waste management of concrete and concrete equipment cleaning. Place prior to start of concrete activities.	M-208			X	
VEHICLE TRACKING PAD	Source control, placed to prevent tracking of sediment from disturbed area to offsite surface. Place prior to start of construction disturbances.	M-208		X	X	
Engineered SEDIMENT BASIN	Constructed early in project, prior to storm sewer/ditches and in accordance with 208.05(p) to capture storm flow. Outlet structure and/or outfall shall be modified for temporary sediment control using an approved non-standard detail. Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless infeasible					
DEWATERING	Shall be done in such a manner to prevent potential pollutants from entering state waters.				X	

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
STORMWATER MANAGEMENT NOTES

Designer:	MES	Structure Numbers	
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(Contractor is responsible for obtaining a permit from Colorado Department of Health and Environment.)						
TEMPORARY STREAM CROSSING	Constructed over stream or drainage to prevent discharge of pollutants from construction equipment into water.					
CLEAN WATER DIVERSION	Placed to divert clean surface or ground water around disturbance area to prevent it from mixing with construction runoff.					
OTHER						

NON-STRUCTURAL Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:
Erosion control devices are used to limit the amount of soil loss on site. Sediment control devices are designed to capture sediment on the project site.

APPLICATION, CONTROL MEASURE	NARRATIVE	M-STANDARD or "For NON-STANDARD	IN USE ON SITE	CONTROL MEASURE IMPLEMENTATION PHASE		
				INITIAL ACTIVITY	INTERIM ACTIVITIES	PERMANENT STABILIZATION
VEGETATIVE BUFFER STRIP *Fence (plastic)*	Finishing component for filtering sediment-laden runoff from disturbance area. Area within CDOT ROW or temporary easement to be identified on SWMP prior to construction starting.					
GRADING APPLICATIONS (LANDFORM)	Existing or created landforms may be used as a control measure if they prevent sediment from entering or leaving the disturbance area. If a landform directs flow of water to a concentrated outfall point, the outfall point shall be protected to prevent erosion. Area to be identified on SWMP prior to construction starting.	M-208				
TOPSOIL MANAGEMENT STOCKPILE/SALVAGE *Windrow or stockpile*	Prior to any site disturbance work commencing, existing topsoil shall be scraped to a depth four inches or as specified, and placed in stockpiles or windrows. Upon completion of final grading, topsoil shall be evenly distributed over embankment to a depth of four inches or as specified.	M-208				
SURFACE ROUGHENING / GRADING TECHNIQUES	Temporary stabilization of disturbance and to minimize wind and erosion.					
SEEDING (TEMPORARY)	Temporary stabilization used for over wintering of disturbance or used to control erosion for areas scheduled for future construction.					
BONDED FIBER MATRIX or MULCHING (HYDRAULIC)	Not to be used in areas of concentrated flows, i.e. ditch lines. To be for either Interim or Permanent Stabilization placed as a surface cover for erosion control. May be used as surface cover when work is temporarily halted and as approved by the Engineer for stockpiles.					
Straw or Hay MULCH/MULCH TACKIFIER	Interim or Permanent Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as Interim Stabilization as a surface cover when work is temporarily halted and as approved by the Engineer					
SPRAY-ON MULCH BLANKET (Not to be used in areas of concentrated flows, i.e. ditch lines.)	Interim or Permanent Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as temporary surface cover when work is temporarily halted and as approved by the Engineer					
SEEDING PERMANENT (NATIVE)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.					
SOIL RETENTION BLANKET (SRB)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.	M-216				
TURF REINFORCEMENT MAT (TRM)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas. Placed in channels or on slopes for erosion control, channel liner and seeding establishment.	M-216				
Sweeping	Source control, used to remove sediment tracked onto paved surfaces and to prevent sediment from entering drainage system. Sweep daily and at the end of the construction shift as needed. Kick brooms shall not be permitted.				X	X
OTHER *SOD*	Permanent Stabilization of grass turf areas.					X

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
STORMWATER MANAGEMENT NOTES

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9. TABULATION OF STORMWATER QUANTITIES

A. Control Measure sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other control measure maintenance shall be included in the cost of the control measure.

PSP Spec.	Pay Item	Description	Pay Unit	Initial Const	Interim Const.	Permanent Stabilization	*Total Quantity
	202-04010	Clean Inlet	Each			4	4
	207-00702	Topsoil (Offsite)	CY			12	12
	208-00002	Erosion Log Type 1 (12 inch)	LF	165			165
	208-00035	Aggregate Bag	LF		100		100
	208-00046	Pre-fabricated Concrete Washout Structure (Type 1)	Each		1		1
	208-00053	Storm Drain Inlet Protection (Type I)(84 Inch)	Each		1		1
	208-00054	Storm Drain Inlet Protection (Type II)	Each		4		4
	208-00057	Storm Drain Inlet Protection (Type I)(144 Inch)	Each		1		1
	208-00070	Vehicle Tracking Pad	Each		1		1
	208-00103	Removal and Disposal of Sediment (Labor)	Hour				20
	208-00105	Removal and Disposal of Sediment (Equipment)	Hour				20
	208-00106	Sweeping (Sediment Removal)	Hour				20
	208-00107	Removal of Trash	Hour				10
	212-00050	Sod	SF			960	960

*It is anticipated that additional control measures and control measure quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsections 208.03 and 208.04. **Quantities for all control measures shown above are estimated, and have been increased for unforeseen conditions and normal control measure life expectancy.** Quantities shall be adjusted according to the conditions encountered in the field as directed and approved by the Engineer. Payment shall be for the actual work completed and material used.

10. BIOLOGICAL IMPACTS and DEWATERING

A. ENVIRONMENTAL IMPACTS:
   1. Wetland Impacts: NO
   2. Stream Impacts: NO
   3. Threatened and Endangered Species: No impacts

B. DEWATERING: (Not covered under the *CDPHE* guidance document *Low Risk Discharge Guidance Discharges of Uncontaminated Groundwater to Land*):
https://www.colorado.gov/pacific/sites/default/files/WQ%20LOW%20RISK%20GW.pdf
   1. Dewatering: Refer to other environmental permits in accordance with subsection 107.02 and the permits contained in Tab 16 of the SWMP.
   2. If groundwater does not meet water quality standards for receiving water a separate CDPS Dewatering Permit shall be obtained by the Contractor from CDPHE in accordance with subsections 107.02 and 107.25.

11. NOTES

Erosion Control Management (or SWMP Administrator For Construction or Erosion Control Inspector) is included in the cost of the work.

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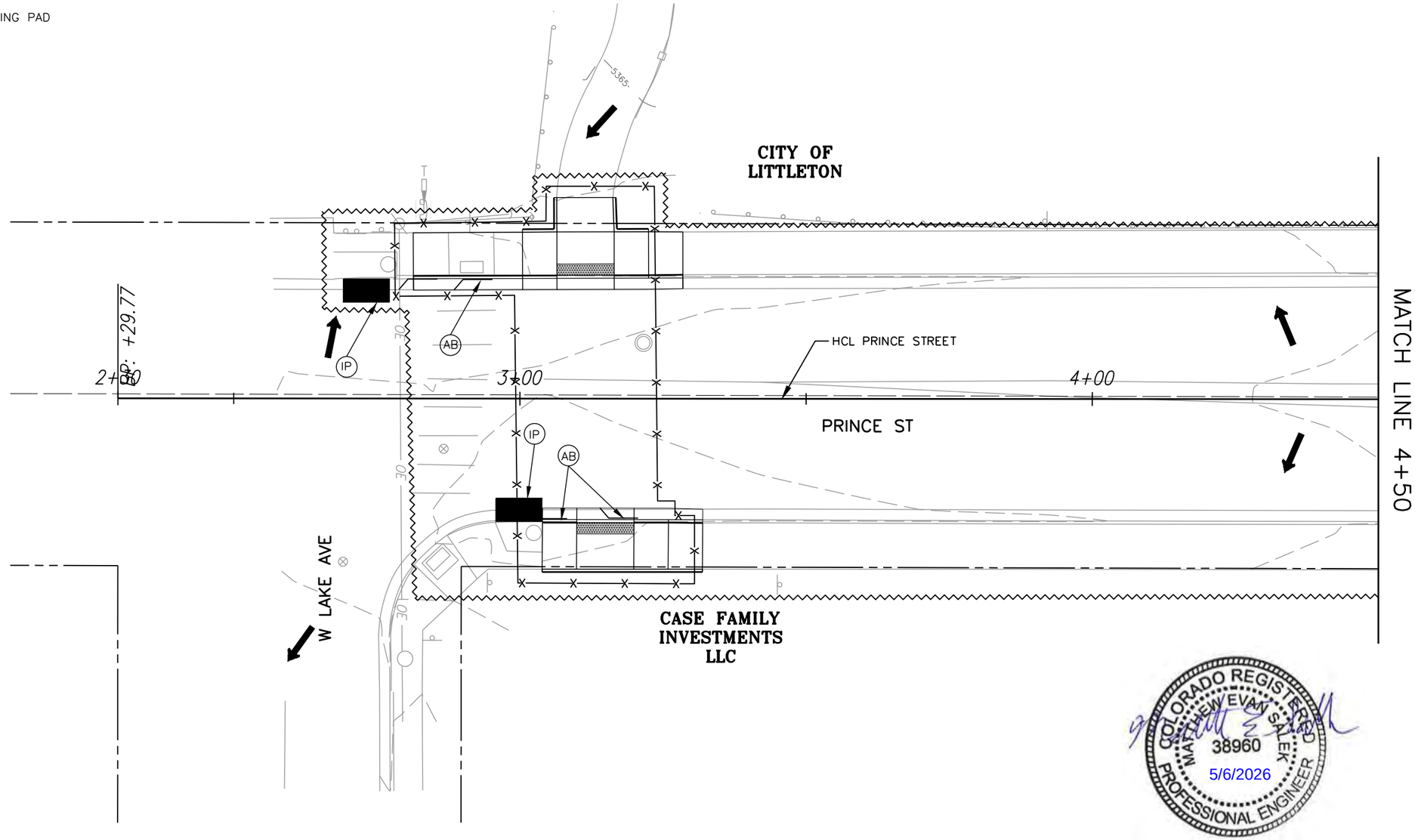
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- LIMITS OF DISTURBED AREA
- (AB) AGGREGATE BAG
- (EL) EROSION LOG
- (IP) INLET PROTECTION
- (VT) VEHICLE TRACKING PAD

NOTES:

1. LOCATION OF VEHICLE TRACKING PAD IS SCHEMATIC AND SHALL BE LOCATED AND ADJUSTED BY THE CONTRACTOR AS REQUIRED BY CONSTRUCTION OPERATIONS.
2. CONCRETE WASHOUT STRUCTURE LOCATION IS NOT SHOWN AND SHALL BE LOCATED BY THE CONTRACTOR AS REQUIRED BY CONSTRUCTION OPERATIONS.

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
INTERIM STORMWATER SITE MAP

Designer: MES
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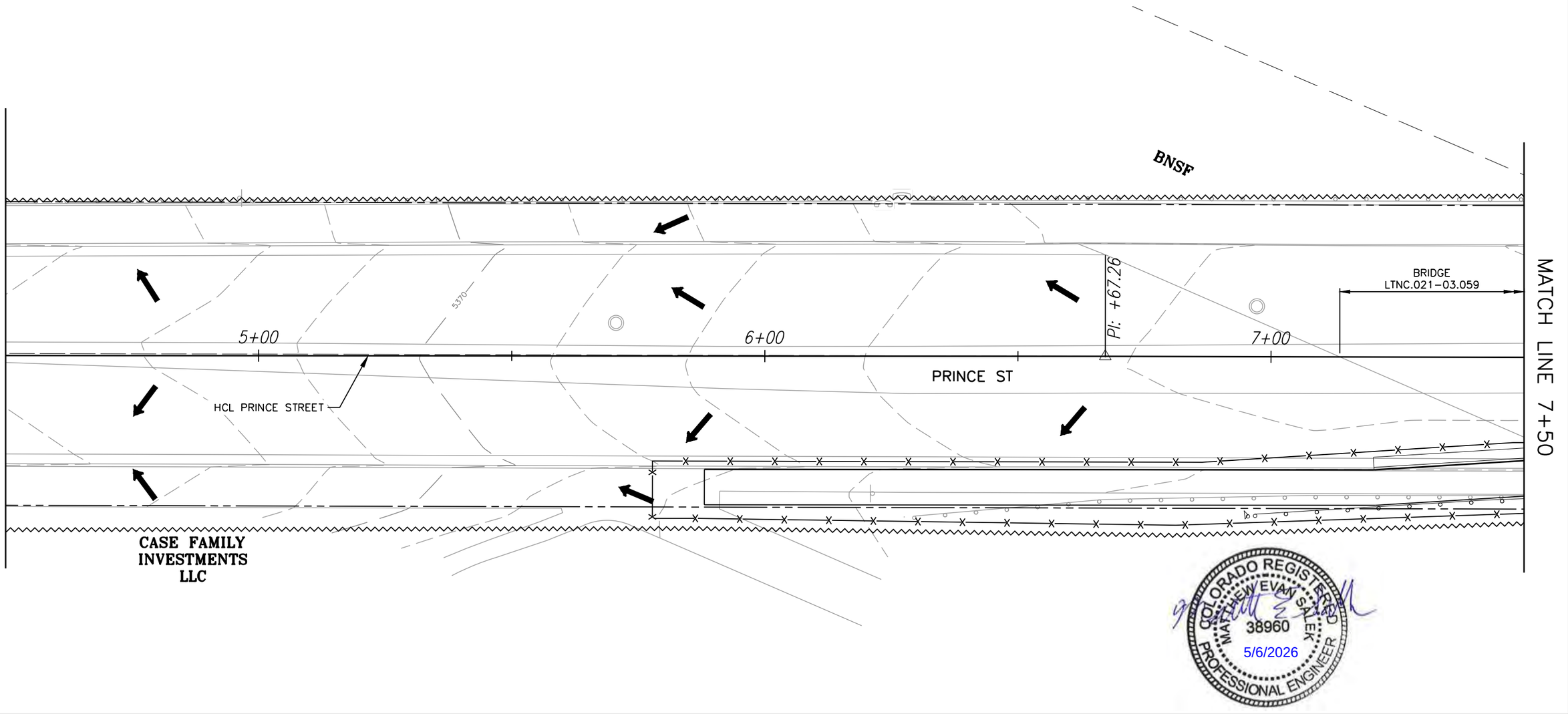
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INTERIM STORMWATER SITE MAP

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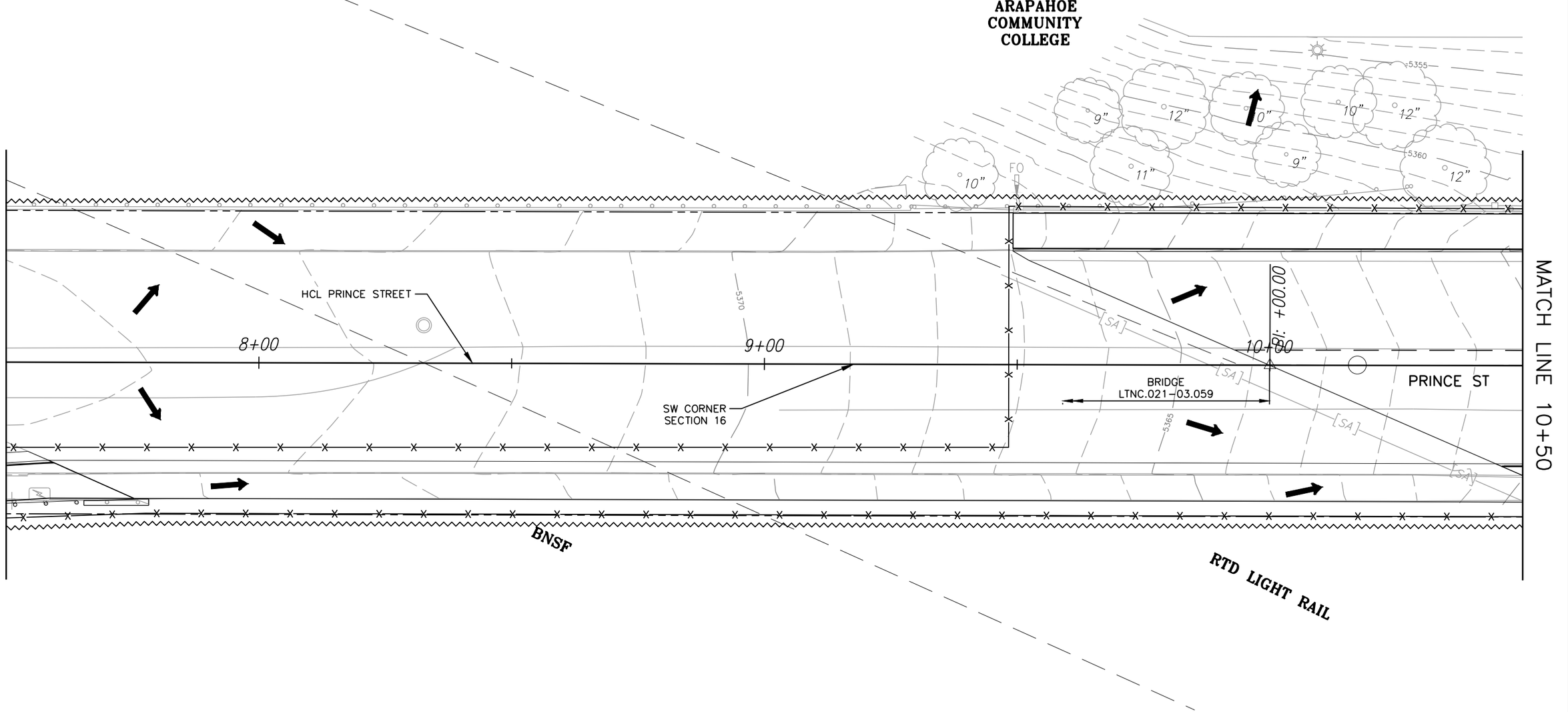
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
INTERIM STORMWATER SITE MAP

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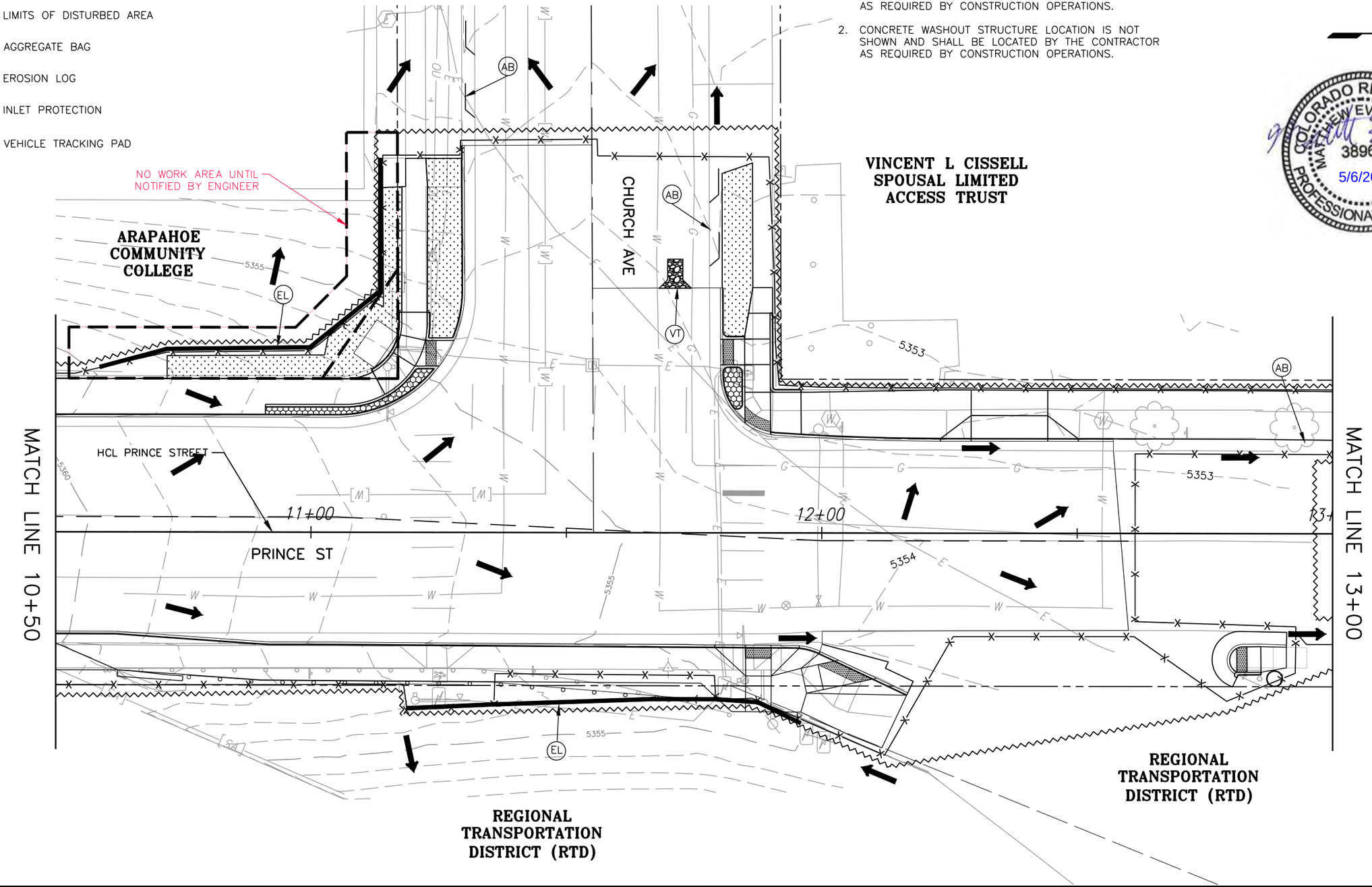
NOTES:

1. LOCATION OF VEHICLE TRACKING PAD IS SCHEMATIC AND SHALL BE LOCATED AND ADJUSTED BY THE CONTRACTOR AS REQUIRED BY CONSTRUCTION OPERATIONS.
2. CONCRETE WASHOUT STRUCTURE LOCATION IS NOT SHOWN AND SHALL BE LOCATED BY THE CONTRACTOR AS REQUIRED BY CONSTRUCTION OPERATIONS.

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HORIZONTAL SCALE: 1"=20'

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COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER



Computer File Information	
Creation Date:	11/15/2017 Initials: MES
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Sheet Revisions		

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benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

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No Revisions:
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
INTERIM STORMWATER SITE MAP

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SWMP	Subset Sheets:	4 of 10

Project No./Code
STU M810-018
24290
Sheet Number 50

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LEGEND

- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBED AREA
- (AB) AGGREGATE BAG
- (EL) EROSION LOG
- (IP) INLET PROTECTION
- (VT) VEHICLE TRACKING PAD

NOTES:

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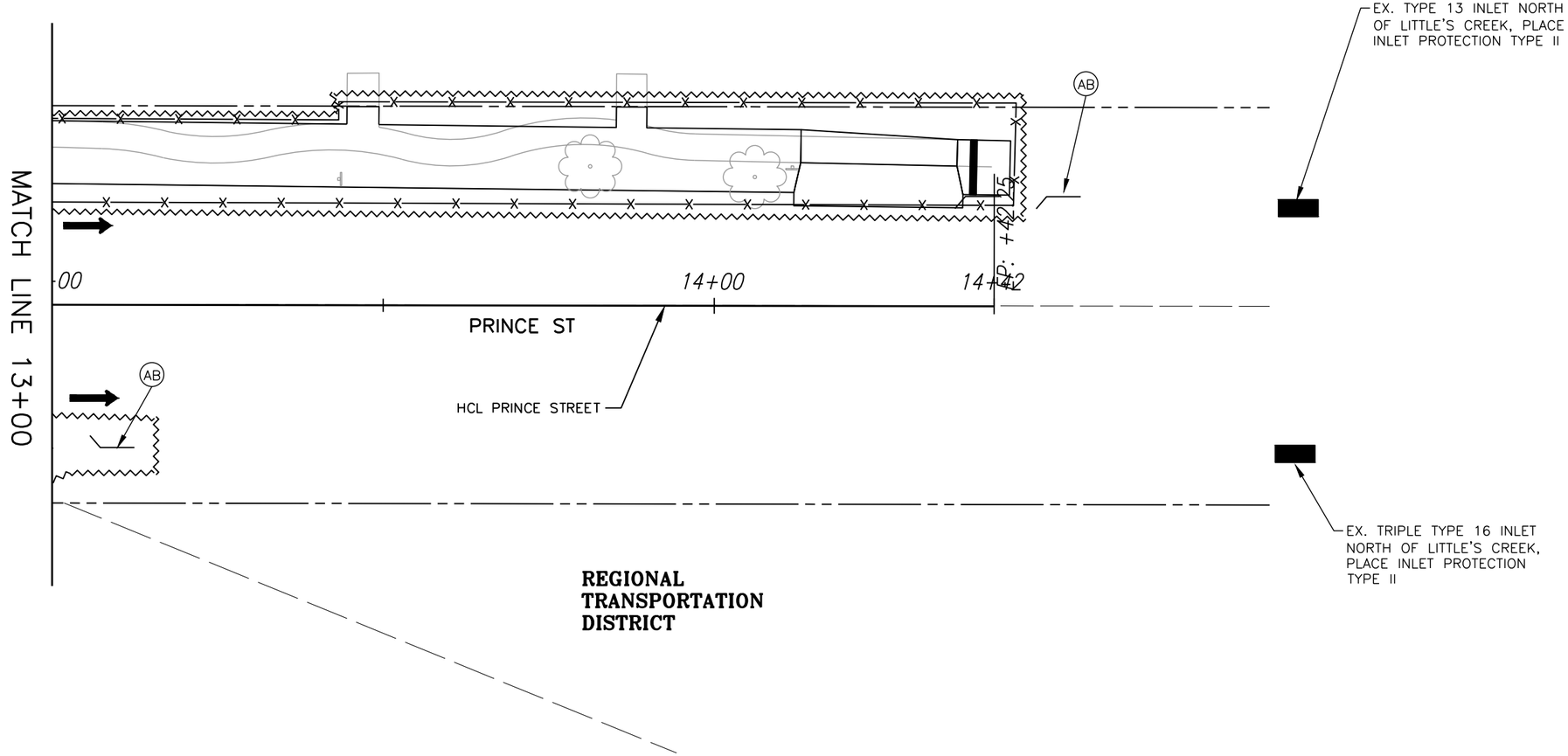
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COTTONWOOD COURT CONDOMINIUMS AMENDMENT NO. 1

ARAPAHOE COMMUNITY COLLEGE



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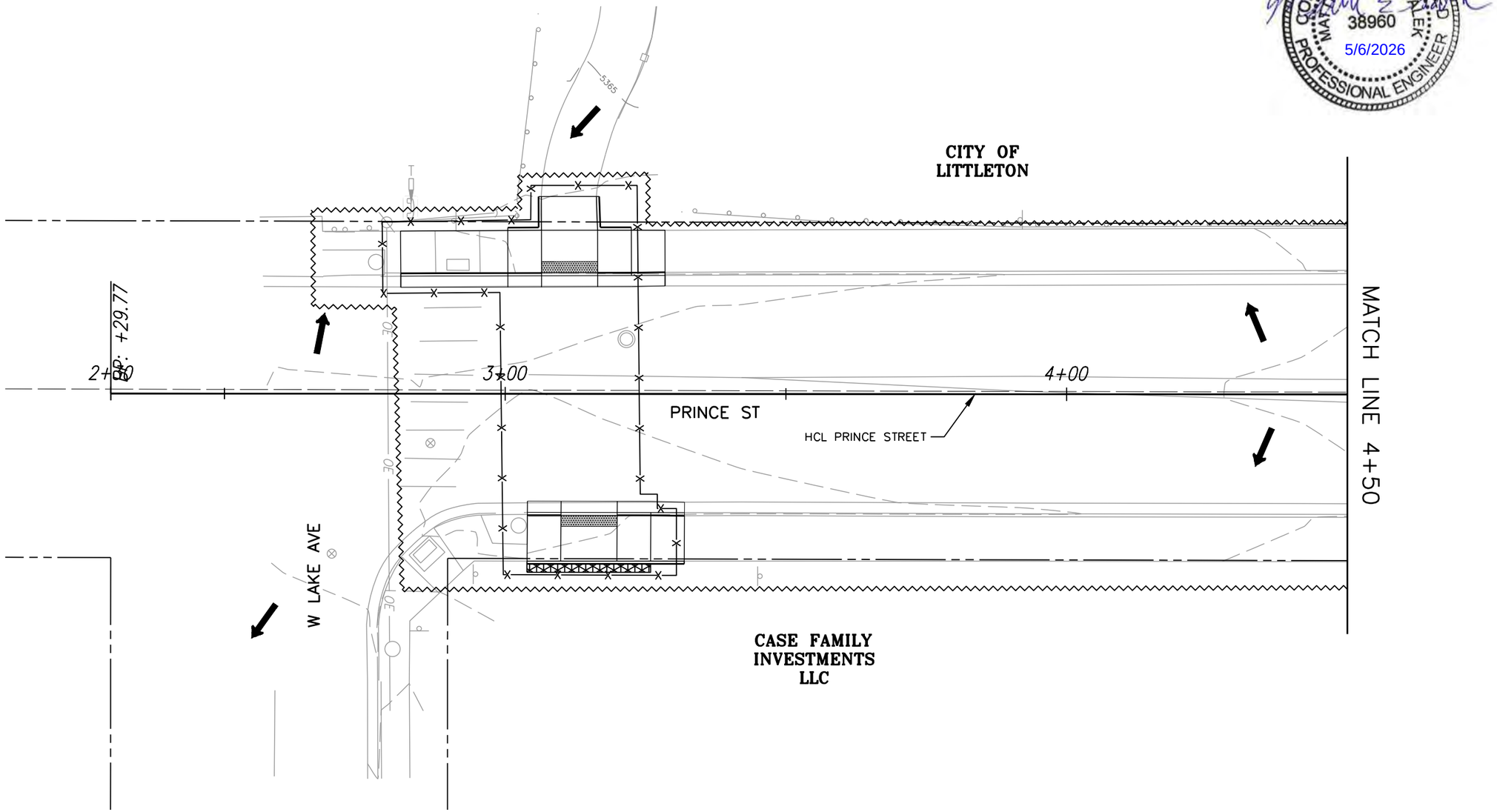
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LEGEND

- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBED AREA
- TOPSOIL AND SOD
- MEDIAN COVER MATERIAL (CONCRETE)

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HORIZONTAL SCALE: 1"=20'

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COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
FINAL STORMWATER SITE MAP

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Detailer:	MES		
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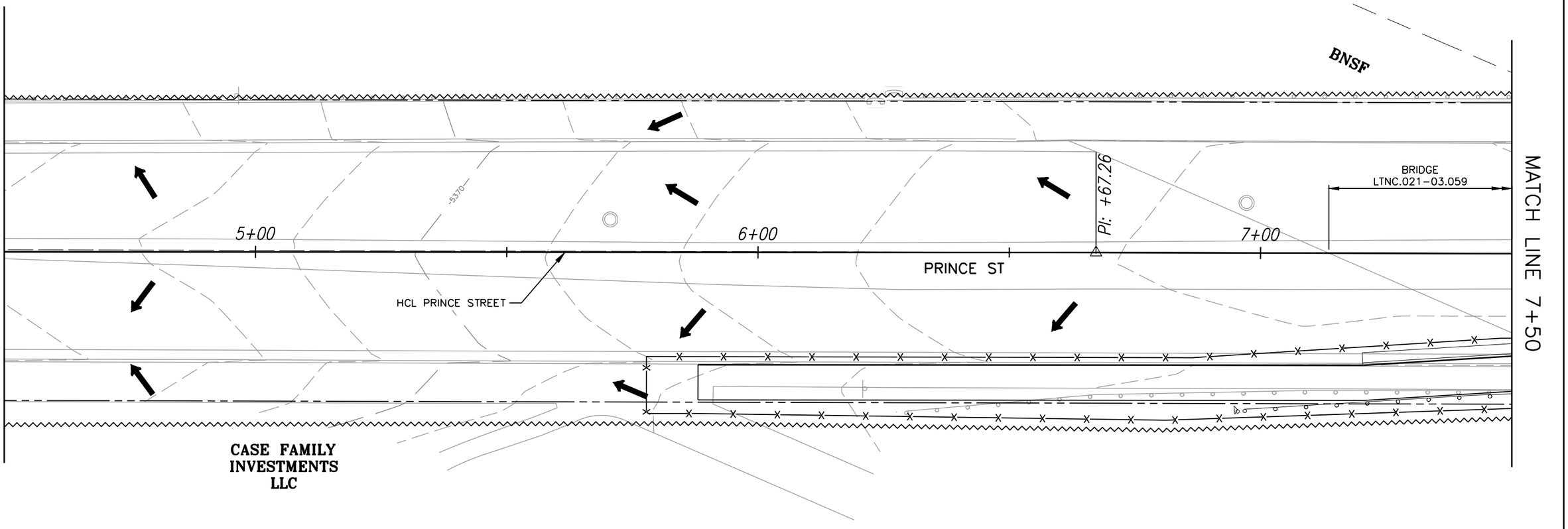
LEGEND

- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBED AREA
- TOPSOIL AND SOD
- MEDIAN COVER MATERIAL (CONCRETE)

10
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HORIZONTAL SCALE: 1"=20'

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COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026



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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
FINAL STORMWATER SITE MAP

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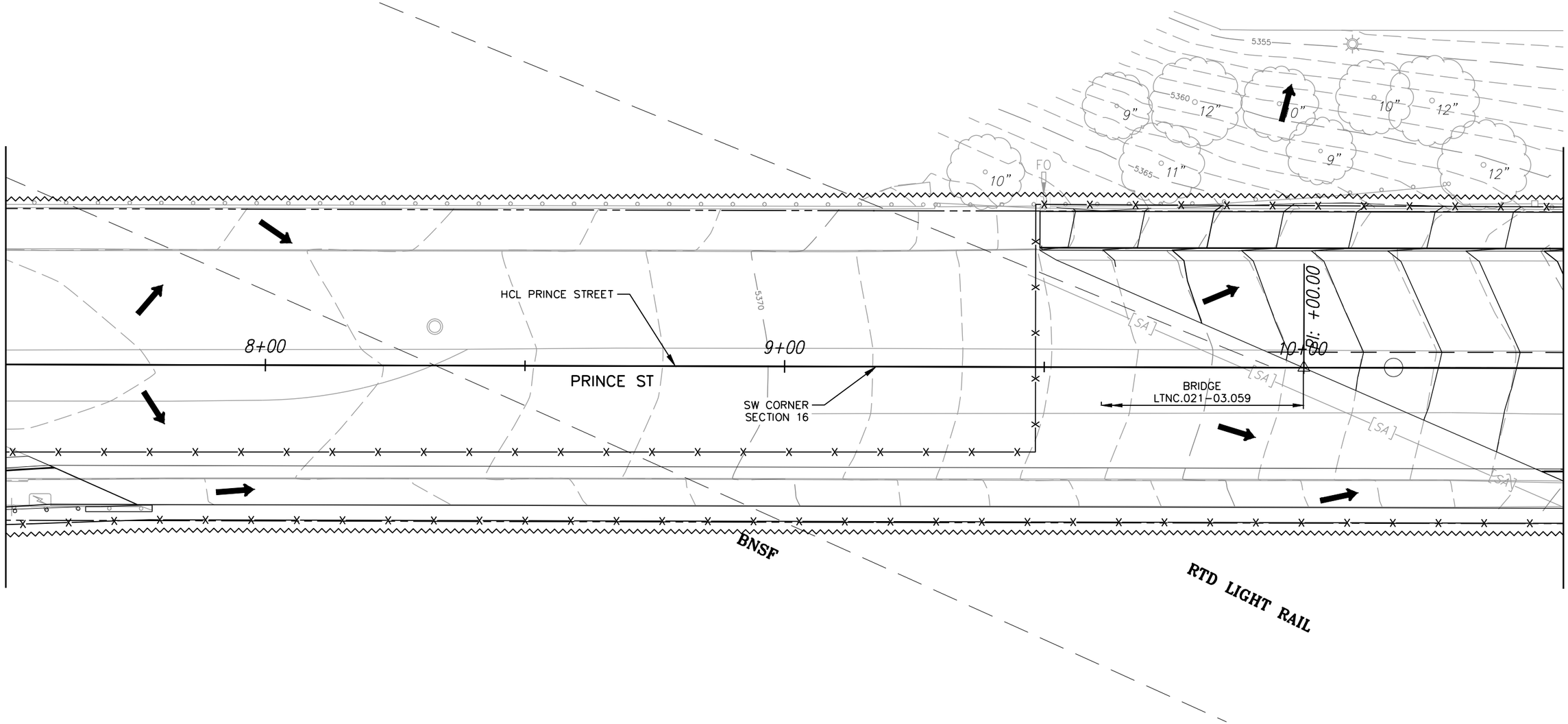
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- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBED AREA
- TOPSOIL AND SOD
- MEDIAN COVER MATERIAL (CONCRETE)

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

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HORIZONTAL SCALE: 1"=20'

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Computer File Information	
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
FINAL STORMWATER SITE MAP

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SWMP	Subset Sheets:	8 of 10

Project No./Code	
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24290	
Sheet Number	54

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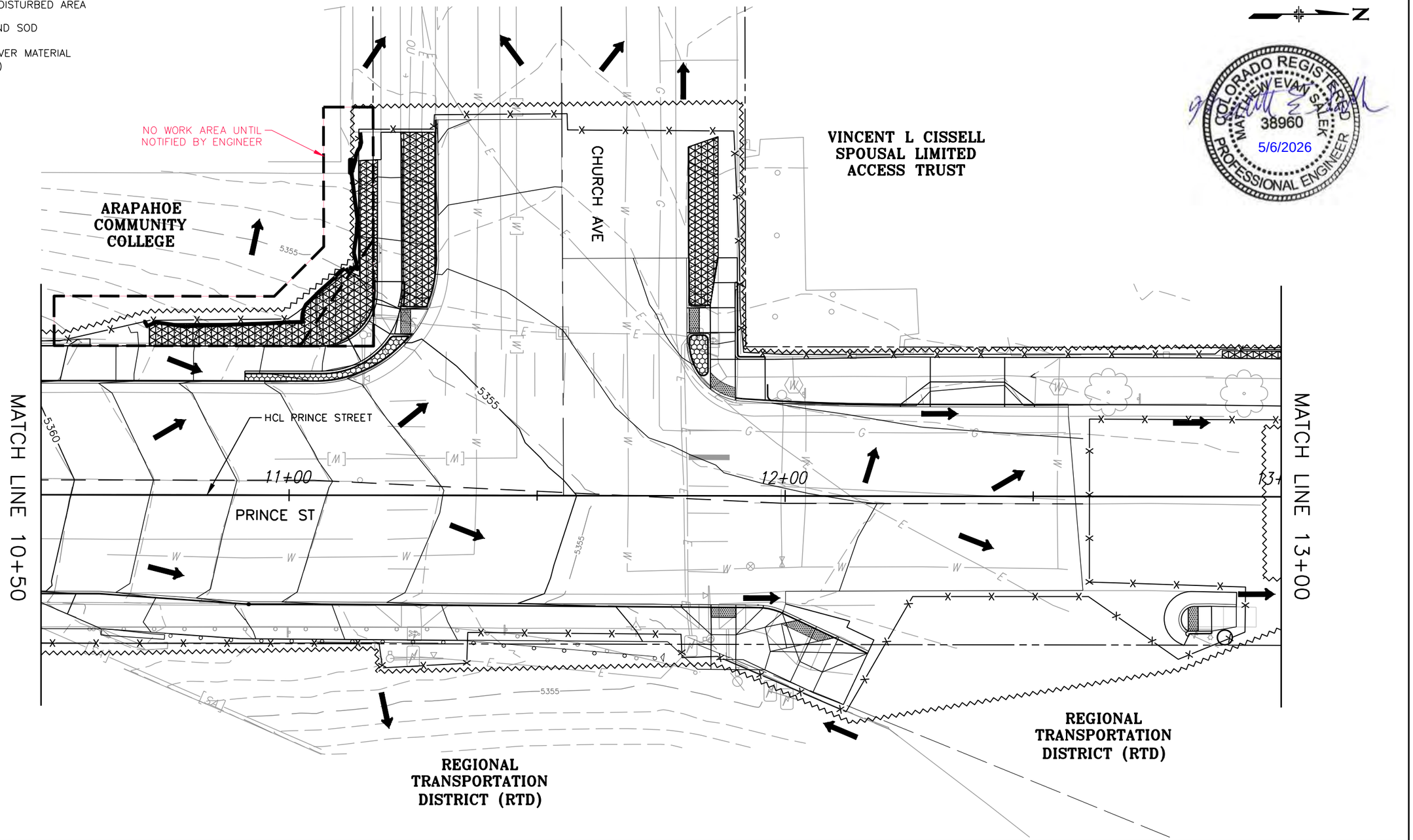
LEGEND

- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBED AREA
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COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER



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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
FINAL STORMWATER SITE MAP

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SWMP	Subset Sheets:	9 of 10

Project No./Code
STU M810-018
24290
Sheet Number 55

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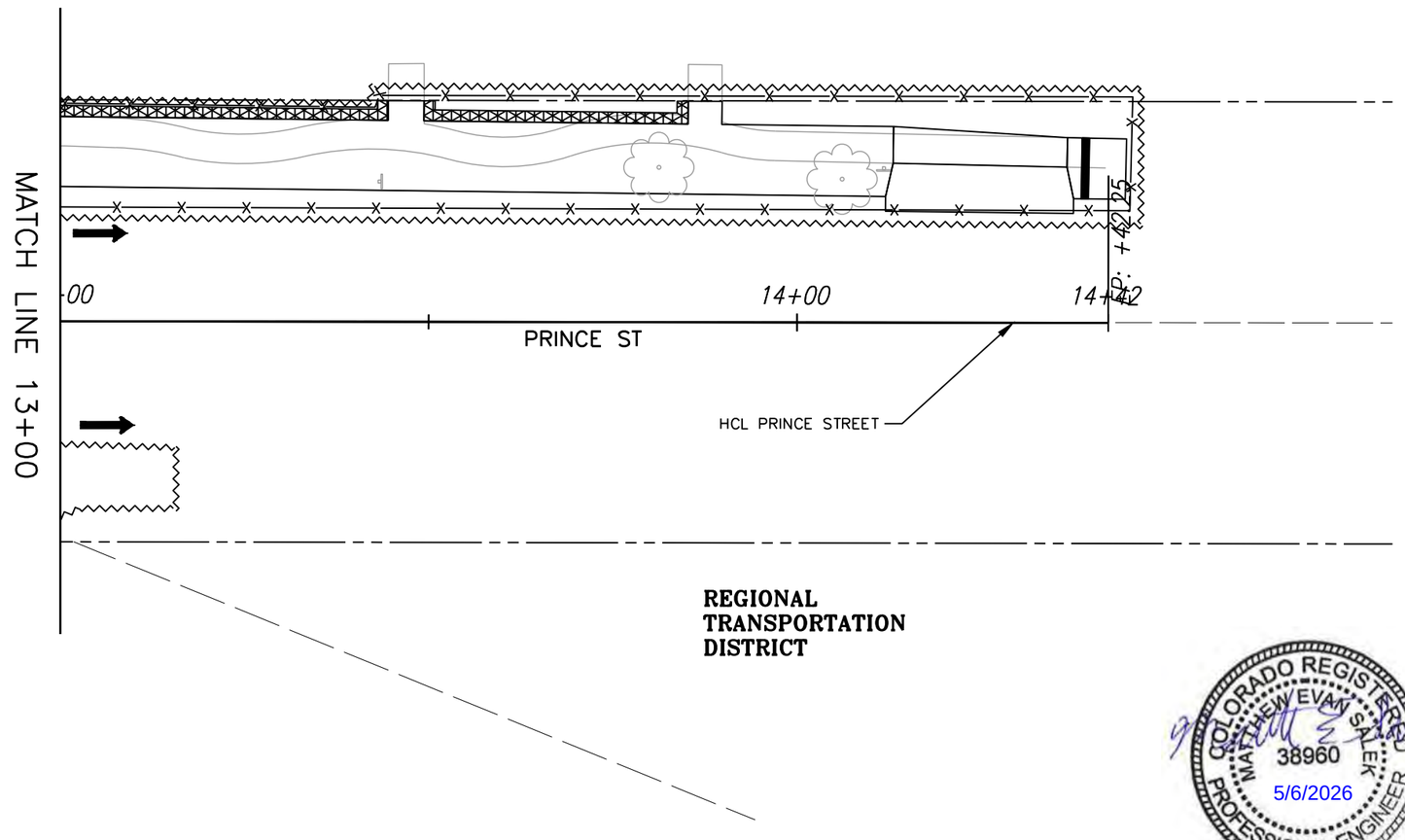
- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBED AREA
- TOPSOIL AND SOD
- MEDIAN COVER MATERIAL (CONCRETE)

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HORIZONTAL SCALE: 1"=20'

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COTTONWOOD COURT CONDOMINIUMS AMENDMENT NO. 1

ARAPAHOE COMMUNITY COLLEGE



REGIONAL TRANSPORTATION DISTRICT

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
Creation Date:	11/15/2017 Initials: MES
Last Modification Date:	8/9/2023 Initials: BPM
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION FINAL STORMWATER SITE MAP

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SWMP	Subset Sheets:	10 of 10

Project No./Code	
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24290	
Sheet Number	56

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STRUCTURAL GENERAL NOTES

EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M213.

GRADE 60 REINFORCING STEEL IS REQUIRED.

ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED.

Ⓝ DENOTES NON COATED REINFORCING STEEL.

CONCRETE SULFATE EXPOSURE IS CLASS 2. THE CONTRACTOR MAY AT THEIR OWN EXPENSE HAVE CERTIFIED LABORATORY TEST THE SUBGRADE AS PER THE FIELD MATERIALS MANUAL. TESTING SHALL BE AT THE SAME SCHEDULE AND FREQUENCY AS REQUIRED FOR A PRELIMINARY SOIL SURVEY. THE CONTRACTOR MAY PROPOSE A DIFFERENT CLASS OF EXPOSURE FOR THE PROJECT BASED ON THOSE TEST RESULTS.

NON-SHRINK GROUT WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE CONCRETE CLASS D (BRIDGE).

DRILLING AND EPOXY GROUTING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF REINFORCING.

SAW CUTTING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN REMOVAL OF PORTIONS OF PRESENT STRUCTURE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

DESIGN DATA

AASHTO, 9TH EDITION LRFD WITH CURRENT INTERIMS

REINFORCED CONCRETE:

CLASS D&DR CONCRETE: f'c = 4,500 psi
REINFORCING STEEL: fy = 60,000 psi

SIDEWALK, DECK REPAIR AND JOINT NOTES

1. EQUIPMENT USED TO REMOVE EXISTING CONCRETE SHALL BE LIMITED TO 15 LB JACKHAMMERS TO REDUCE THE CHANCE OF CAUSING MICROFRACTURING TO THE EXISTING DECK.
2. DAMAGE TO THE EXISTING BRIDGE DECK, CONSEQUENT TO THE CONTRACTOR'S OPERATIONS, SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE PROJECT.
3. ALL RETAINED EXISTING REINFORCING BARS THAT ARE EXPOSED BY CONCRETE REMOVAL SHALL BE CLEANED AND CAREFULLY INCORPORATED INTO THE NEW WORK, EXCEPT BADLY DETERIORATED EXISTING REINFORCING WHICH SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.
4. DRILLING EQUIPMENT USED TO DRILL HOLES FOR GROUTED REINFORCING SHALL BE LIMITED TO HAMMER DRILLS. USE OF HAMMER DRILLS WOULD NOTIFY THE OPERATOR WHEN THE DRILL BIT HITS STEEL REINFORCING. THIS REQUIREMENT WILL REDUCE THE CHANCE OF DAMAGING EXISTING REINFORCEMENT IN THE TOP FLANGE OF THE POST-TENSIONED GIRDERS.
5. AS NECESSARY, THE CONTRACTOR MAY ADJUST THE PLACEMENT OF THE GROUTED REINFORCING BARS BY UP TO 2" WHILE MAINTAINING REQUIRED CLEARANCES TO AVOID HITTING OR DAMAGING THE EXISTING TRANSVERSE REINFORCEMENT.
6. SEE CDOT APPROVED PRODUCT LIST FOR ACCEPTABLE OPTIONS.
7. REMOVAL OF PORTIONS OF PRESENT STRUCTURE SHALL INCLUDE THE REMOVAL OF ASPHALT (INCLUDING SAW CUTTING), REMOVAL OF CONCRETE (INCLUDING SAW CUTTING), AND ALL LABOR, TOOLS AND EQUIPMENT REQUIRED FOR REMOVALS SHOWN HEREIN.
8. EPOXY GROUT SHALL BE SPECIFICALLY FORMULATED TO ANCHOR REINFORCING IN CONCRETE. ACCEPTABLE EPOXY GROUTS INCLUDE THE FOLLOWING:
   A. SIKA ANCHORFIX-2, AS MANUFACTURED BY THE SIKA CORPORATION
   B. HILTI HIT-RE 500 V3, AS MANUFACTURED BY THE HILTI CORPORATION
   C. RED HEAD A7+, MANUFACTURED BY THE RED HEAD CORPORATION
   D. ENGINEER APPROVED ALTERNATE
9. DRILLING AND EPOXY GROUTING REINFORCING SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST FOR REINFORCING.

INDEX OF DRAWINGS

B1 GENERAL INFORMATION
B2 GENERAL LAYOUT (LTNC.021)
B3 BRIDGE SIDEWALK/JOINT DETAILS
B4 GENERAL LAYOUT (LTNB.826)
B5 DECK REPAIR DETAILS

BRIDGE SUMMARY OF QUANTITIES (FOR INFORMATION ONLY)

STRUCTURE# LTNC.021-03.059

ITEM #	DESCRIPTION	UNIT	TOTAL
202-00495	REMOVAL OF PORTIONS OF PRESENT STRUCTURE	LS	1
403-00720	HOT MIX ASPHALT (PATCHING)(ASPHALT)	TON	21
408-01100	JOINT SEALANT	LF	115
515-00120	WATERPROOFING (MEMBRANE)	SY	64
601-03040	CONCRETE CLASS D (BRIDGE)	CY	35
602-00020	REINFORCING STEEL (EPOXY COATED)	LB	2200

COLORADO REGISTERED DANIEL J. BECKSTEAD 29485 PROFESSIONAL ENGINEER
5/11/2026

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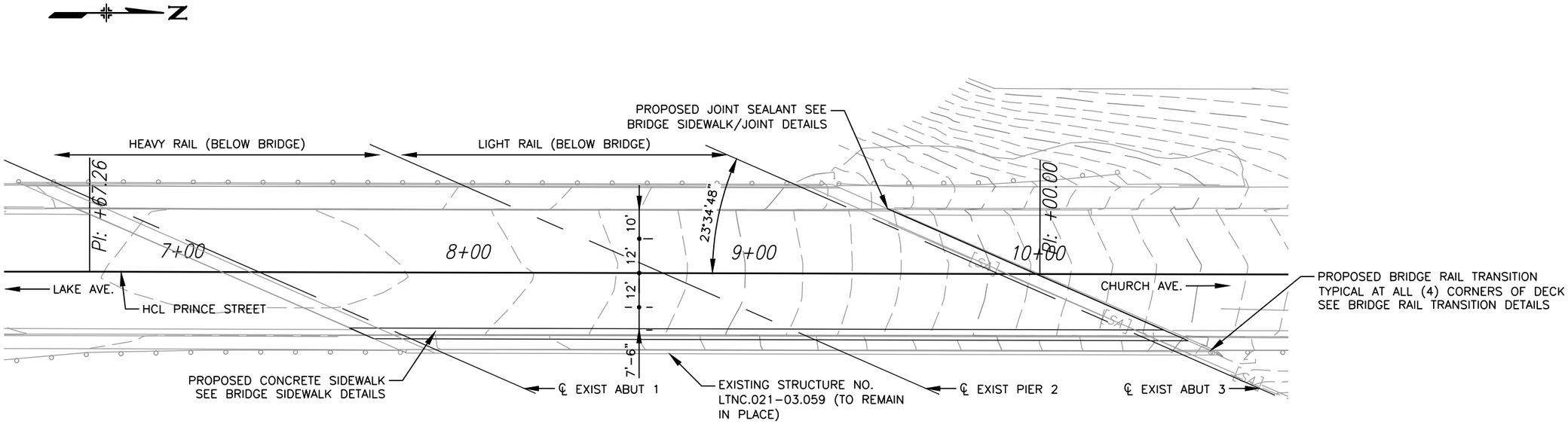
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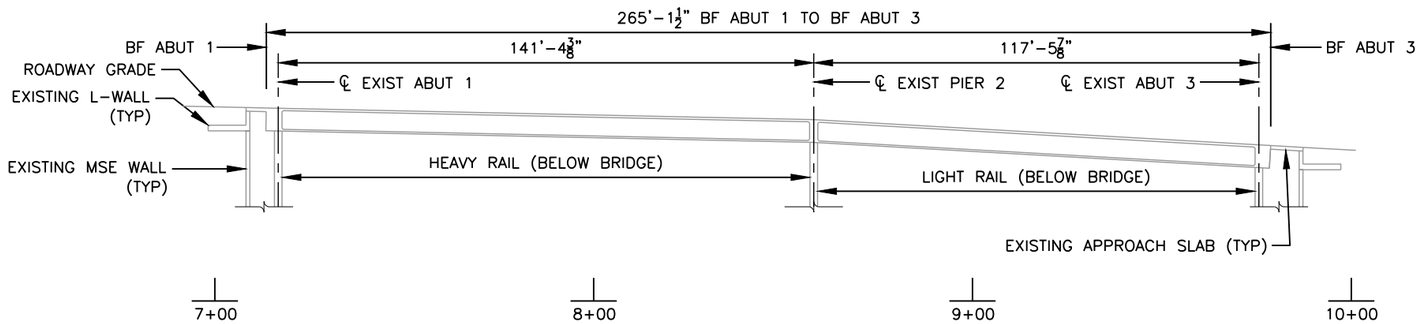
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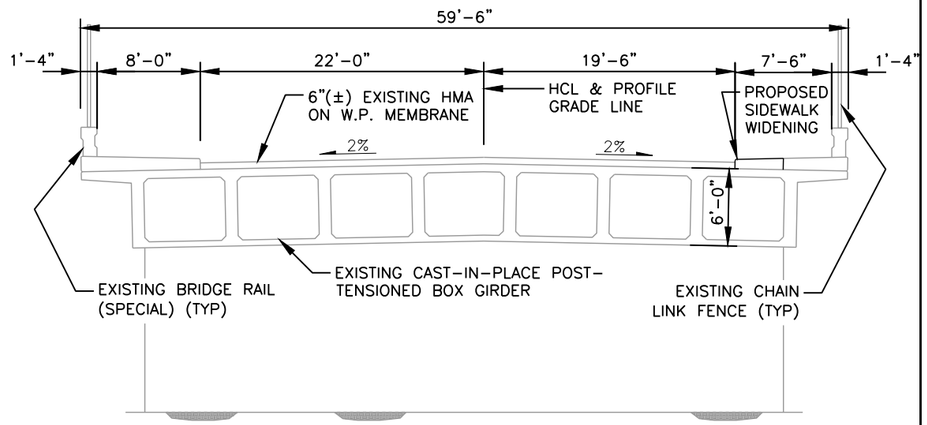
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PLAN



ELEVATION
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TYPICAL SEC
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COLORADO REGISTERED DANIEL J. BECKHOFF 29485 PROFESSIONAL ENGINEER

5/11/2026

Computer File Information			
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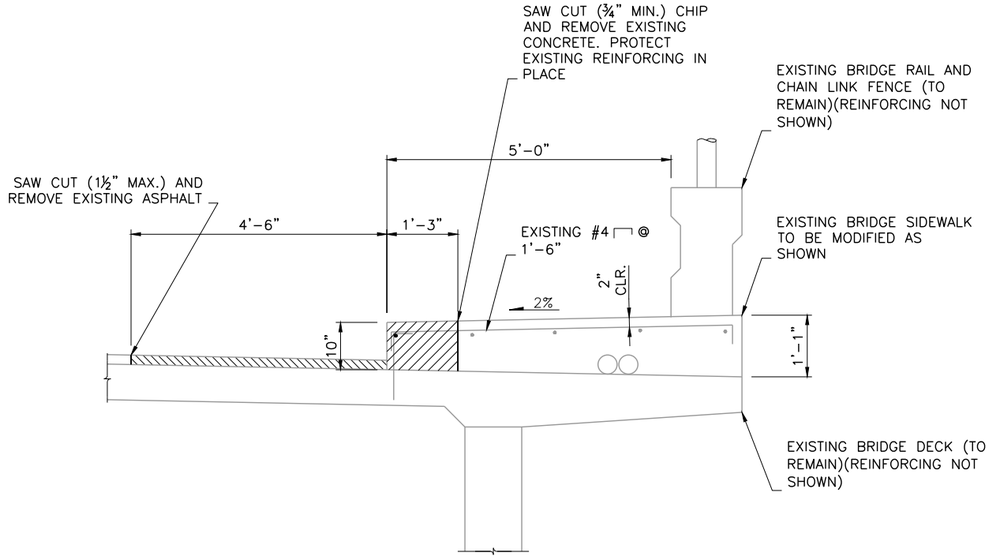
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION GENERAL LAYOUT

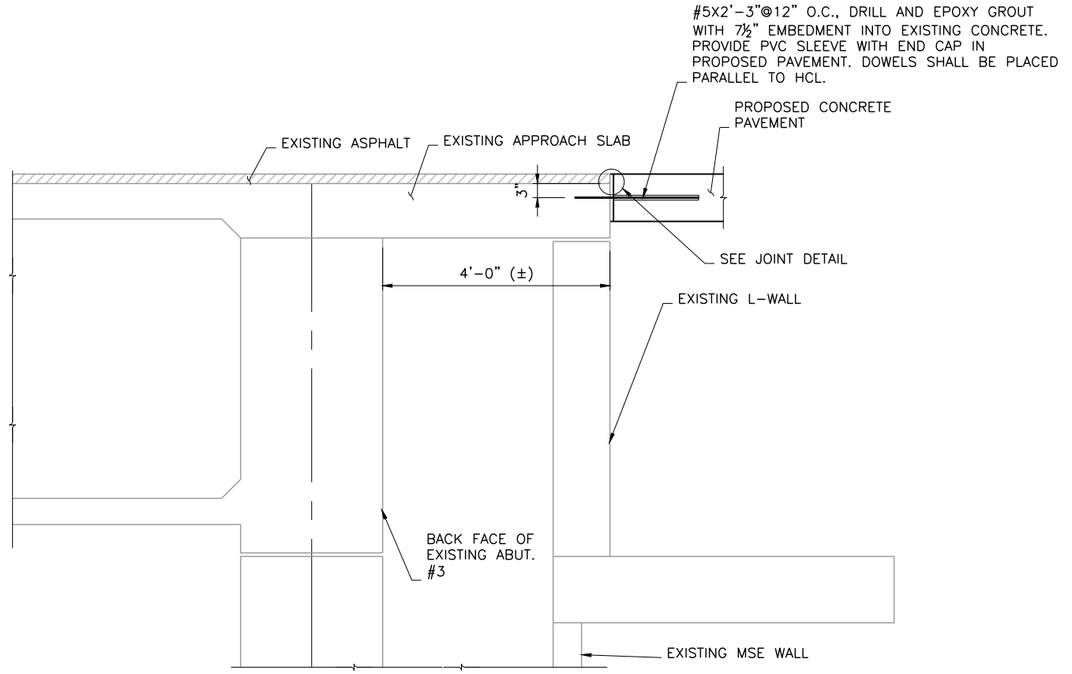
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EXISTING EAST SIDEWALK SECTION



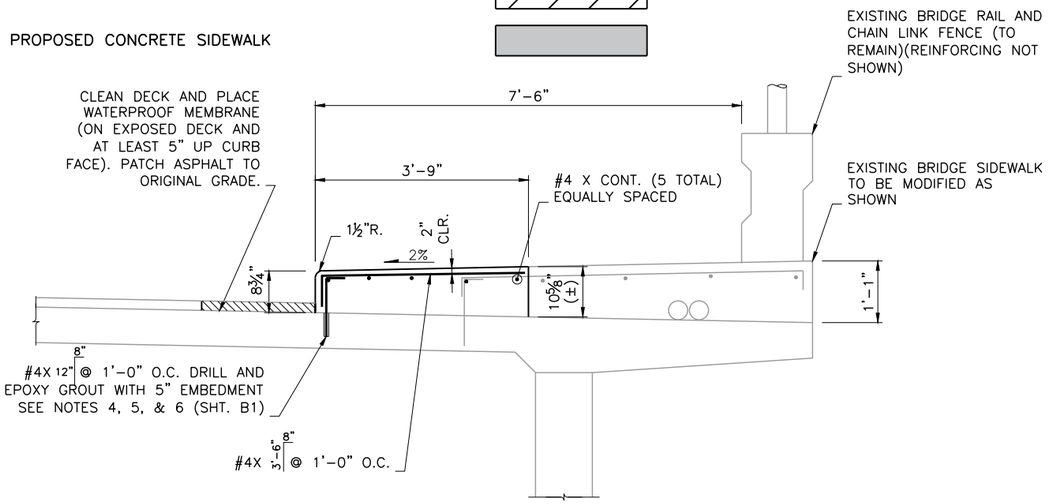
JOINT AT ABUTMENT 3

LEGEND

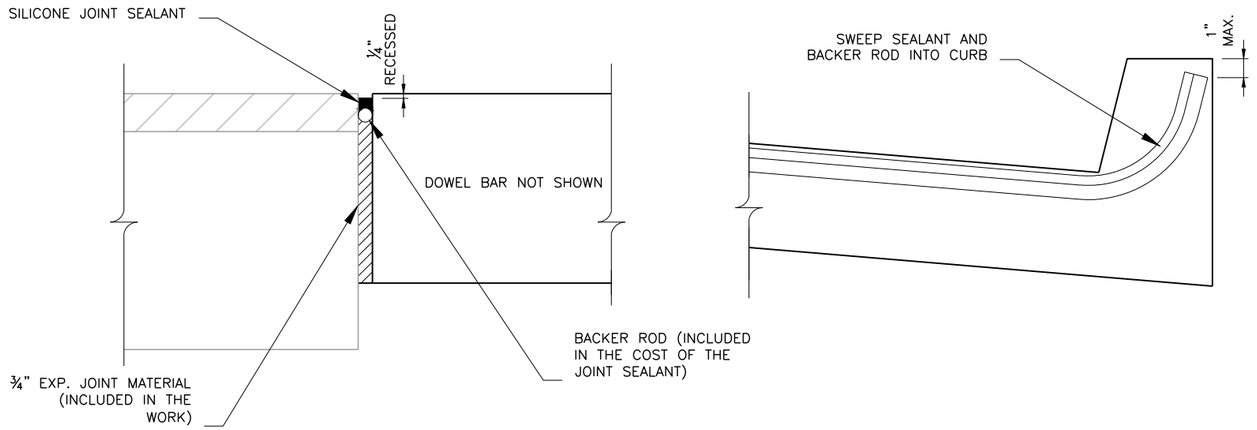
REMOVAL OF ASPHALT PAVEMENT (FULL DEPTH)

REMOVAL OF CONCRETE SIDEWALK

PROPOSED CONCRETE SIDEWALK



PROPOSED EAST SIDEWALK SECTION



JOINT DETAIL

JOINT AT CURB

COLORADO REGISTERED DANIEL J. BECKSTEAD 29485 PROFESSIONAL ENGINEER

5/11/2026

Computer File Information			
Creation Date:	01/26/2022	Initials:	DJB
Last Modification Date:	10/18/2024	Initials:	DJB
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Acad Ver.	Scale:	Units:	English

Sheet Revisions		

Littleton
Public Works
2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

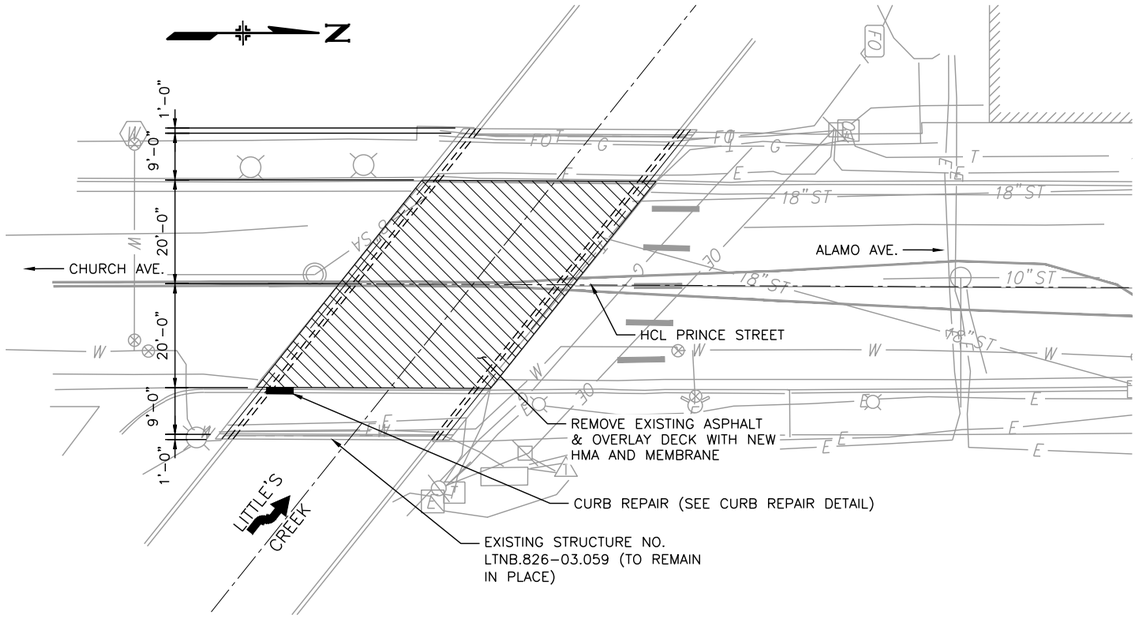
benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
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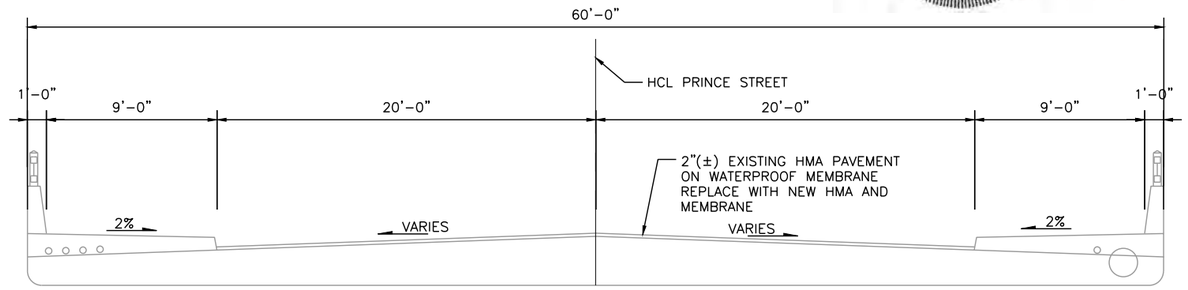
PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION BRIDGE SIDEWALK/JOINT DETAILS			
Designer:	DJB	Structure Numbers	LTNC.021-03.059
Detailer:	DJB		
Sheet Subset:	BRIDGE	Subset Sheets:	B3 of B5

Project No./Code	
STU M810-018	
24290	
Sheet Number	59

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PLAN



TYPICAL SECTION
NORMAL TO HCL

SECTION
TAKEN AT HCL

BRIDGE SUMMARY OF QUANTITIES

STRUCTURE# LTNB.826-03.059

ITEM #	DESCRIPTION	UNIT	TOTAL
202-00246	REMOVAL OF ASPHALT MAT (PLANING)(SPECIAL)	SY	201
202-00453	REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 2)	SY	21
202-00460	REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 3)	SY	2
403-34741	HOT MIX ASPHALT (GRADING SX) (75) (PG 64-22)	TON	23
515-00120	WATERPROOFING MEMBRANE	SY	201
601-03057	CONCRETE CLASS DR	CY	3
601-51005	GALVANIC ANODES	EA	105
602-00020	REINFORCING STEEL (EPOXY COATED)	LB	500

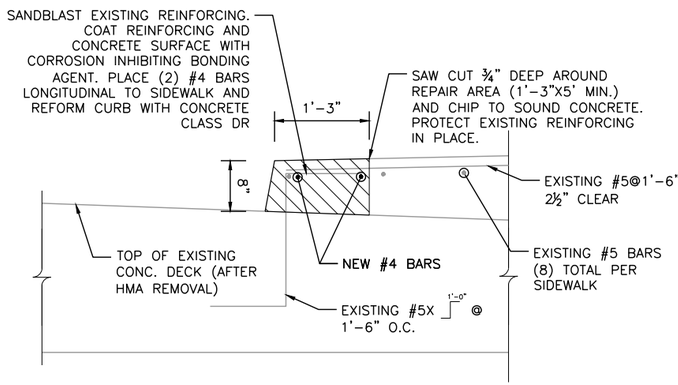
TRAFFIC PHASING

1. SEE DETOUR AND TC PLAN – PHASE 5 SHEET FOR PHASING REQUIREMENTS. THE BRIDGE SHALL BE OPENED TO TRAFFIC EXCEPT AS NOTED.
2. DURING FLAGGING OR SHIFTED TRAFFIC, MILL AND REMOVE EXISTING ASPHALT FROM BRIDGE DECK. REMOVAL SHALL BE TO A BARE DECK, TO THE SATISFACTION OF THE ENGINEER (COST TO BE INCLUDED IN REMOVAL OF ASPHALT). PROVIDE TEMPORARY ASPHALT RAMPS AT ENDS OF THE BRIDGE PER SPECIFICATION REQUIREMENTS.
3. DECK AND CURB REPAIR SHALL BE COMPLETED IN ONE OF THE PHASES SHOWN IN A MANNER THAT DOES NOT DISRUPT TRAFFIC IN ADJACENT LANES.
4. BRIDGE DECK SHALL BE PREPARED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 515.04(a) PRIOR TO MEMBRANE PLACEMENT.
5. DURING AN OVERNIGHT OR WEEKEND CLOSURE AS APPROVED BY THE ENGINEER, PLACE WATERPROOF MEMBRANE IN ACCORDANCE WITH THE STANDARD SPECIFICATION SECTION 515.04.
6. PLACE HMA.

SCOPE / SEQUENCE OF WORK

1. VERIFY ASPHALT THICKNESS ON DECK. MILL AND REMOVE EXISTING ASPHALT FROM BRIDGE DECK.
2. CHAIN DRAG DECK AND MARK AREAS OF DELAMINATED CONCRETE. CHAIN DRAG SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER.
3. QUANTITIES FOR DECK REMOVAL, REINFORCING AND CONCRETE CLASS DR ARE ESTIMATED. CONTRACTOR SHALL MAINTAIN THE UNIT PRICE FOR UP TO TWICE THE QUANTITIES SHOWN.
4. SAW CUT (¾" DEEP) PERIMETER OF MARKED AREAS AND REMOVE TO SOUND CONCRETE. REPLACE EXISTING DETERIORATED REINFORCING WITH NEW EPOXY COATED REINFORCING AS DIRECTED BY THE ENGINEER.
5. SPRAY REMOVAL AREA WITH A CORROSION INHIBITING BONDING AGENT (NOT TO BE PAID FOR SEPARATELY) AND SCRUB INTO ROUGH SURFACE.
6. FILL TO ORIGINAL GRADE WITH CONCRETE CLASS DR.
7. REPAIR CURB AND SIDEWALK AT LOCATIONS NOTED. REMOVAL OF CURB AND SIDEWALK SHALL BE INCLUDED IN REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 2).
8. PREPARE DECK IN ACCORDANCE WITH SECTION 515.04(a) OF THE STANDARD SPECIFICATION.
9. PLACE WATERPROOF MEMBRANE (4" MIN. UP FACE OF CURB) IN ACCORDANCE WITH SECTION 515.04 OF THE STANDARD SPECIFICATION.
10. PLACE HOT MIX ASPHALT (2" MIN.) TO MATCH EXISTING GRADES.

REINFORCING NOTE:
EXISTING REINFORCING IS ASSUMED TO BE UNCOATED. IF EPOXY COATED REINFORCING IS ENCOUNTERED, CONTACT THE ENGINEER FOR CLARIFICATION OF SANDBLASTING REQUIREMENTS.



CURB REPAIR DETAIL
NORMAL TO HCL

COLORADO REGISTERED DANIEL J. BECHTOLD 29485 PROFESSIONAL ENGINEER
5/11/2026

Computer File Information			
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Drawing File Name:	PCLCB2 PRINCECHURCH-BRIDGEGENLAYOUT.dwg		
Acad Ver.	Scale: X"=X'	Units:	English

Sheet Revisions		

Littleton
Public Works
2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

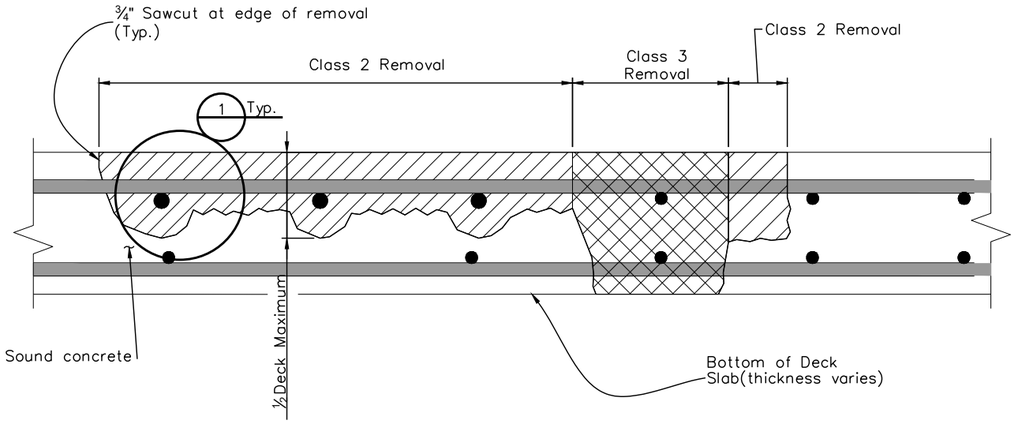
benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

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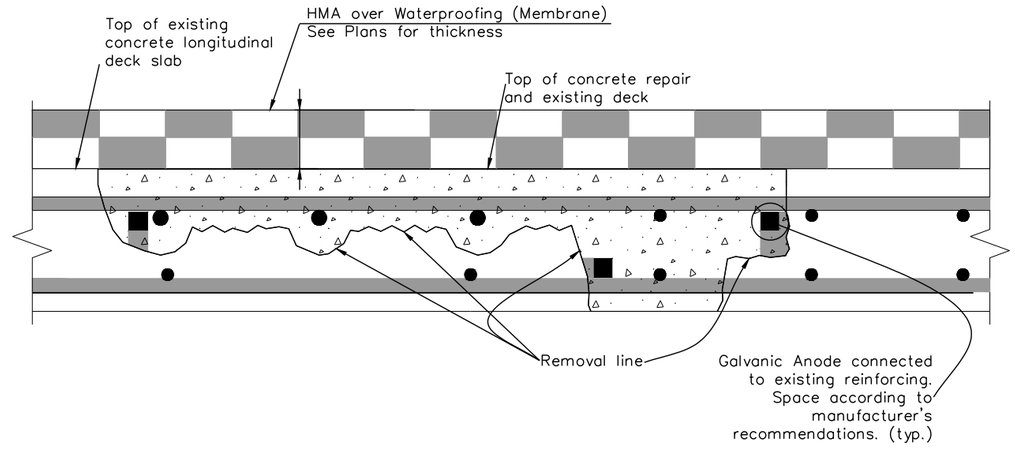
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Designer:	DJB	Structure Numbers	LTNB.826-03.059
Detailer:	DJB		
Sheet Subset:	BRIDGE	Subset Sheets:	B4 of B5

Project No./Code	
STU M810-018	
24290	
Sheet Number	60

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REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 1, 2, & 3)



CONCRETE REPLACEMENT

LEGEND

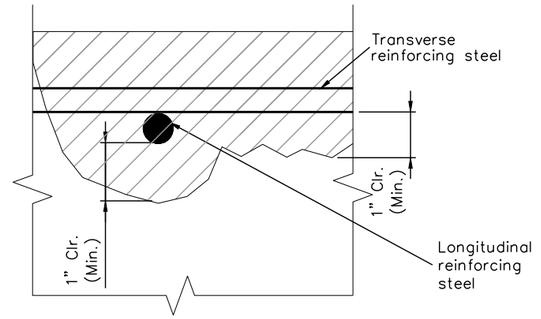
Class 2 Removal: From top of deck to sound concrete, but not less than 1" clear below the top mat of reinforcing steel. If the bottom mat of reinforcing steel is exposed, then Class 3 removal shall be performed at these locations.

Class 3 Removal: From top to bottom of deck, full depth removal.

Patching Material: Concrete Class DR. Polyester concrete, polymer modified bag mixes, or other approved product from the APL shall be used for Class 1 repairs only. Class 1 repairs shall only be performed at isolated locations, not adjacent to Class 2 or 3 repairs.

HMA: HMA design and thickness as designated in the plans.

Grout Beds: Required if the clear distance between anodes and existing concrete substrate is less than 1". Grout encapsulation of anodes may be required for certain patching materials. See Revision of Section 601 Galvanic Anodes.



DETAIL 1

NOTES

These details reflect the scope and the nature of the work. They are not intended to represent the actual structure.

The applicable classes of removal shall be as designated by the summary of quantities in the plans.

Plan quantities are estimates. Actual concrete removal and replacement shall be as needed to reach sound concrete or as directed by the Engineer.

Removal operations shall be coordinated with the Engineer and performed in a manner as required to ensure the structural integrity of the bridge.

If Class 3 removal is performed immediately adjacent to, and on both sides of a Cast in Place concrete girder simultaneously within the middle half of a span, that girder shall be shored from the ground at the third points of that span.

If Class 2 or 3 removal is performed on both sides of a Cast in Place concrete girder simultaneously within the quarter of a span on either side of the pier, that girder shall be shored at the third point each side of that pier. This note is not intended to require shoring for "pothole" type repairs of limited extent where at least one half of the longitudinal deck reinforcing is anchored on both sides of the removal area.

If falsework is required, the falsework load capacity required to support the girders shall be determined by the Contractor and approved by the Engineer unless specified otherwise on the plans.

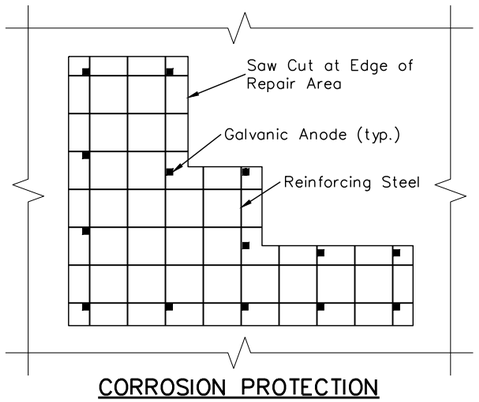
Care shall be taken in removing concrete from around structural steel elements and reinforcing steel to prevent damage to the steel.

All damaged or corroded non-epoxy coated reinforcing steel requires new non-epoxy coated reinforcing steel to be added per Revision of Section 202 Removal of Portions of Present Structure. All exposed non-epoxy coated reinforcing steel shall be cleaned with hand tools, straightened and sandblasted prior to placing concrete.

Galvanic Anode Corrosion protection is required on all areas of exposed non-epoxy or corroded epoxy coated reinforcing prior to placing Concrete. Galvanic Anodes shall be installed per manufacturer's recommendations in accordance with Revision of Section 601 Galvanic Anodes.

Patched deck may be opened to traffic as soon as new concrete has attained required strength.

HMA and Waterproofing membrane shall not be placed until the new concrete has cured for five full days, or has a moisture meter reading of 5 percent or less based on a moisture meter approved by the Engineer. At contractor's option a repair mortar may be submitted (for review by the Engineer) to be used instead of concrete to reduce cure time.



CORROSION PROTECTION

COLORADO REGISTERED DANIEL J. BECHTOLD 29485 PROFESSIONAL ENGINEER

5/11/2026

Computer File Information			
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Sheet Revisions		

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Public Works
2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

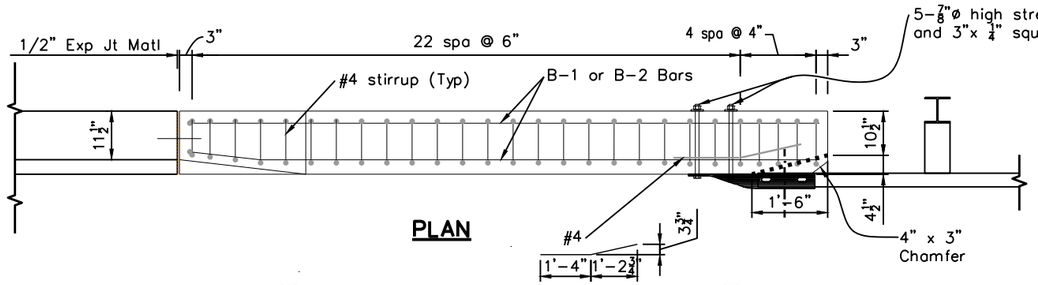
benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

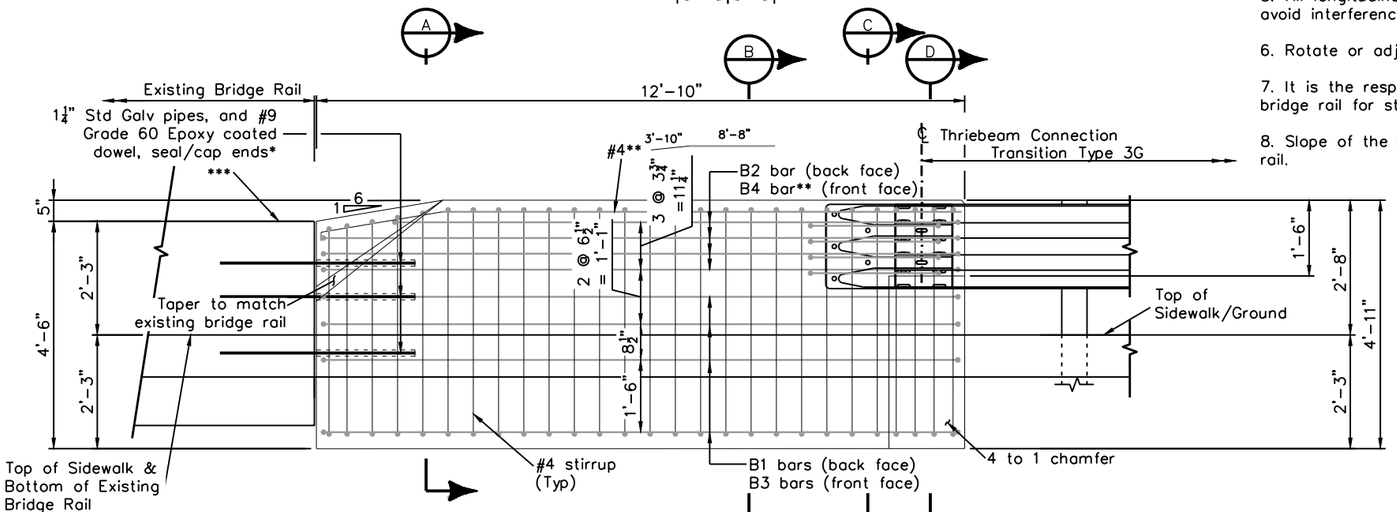
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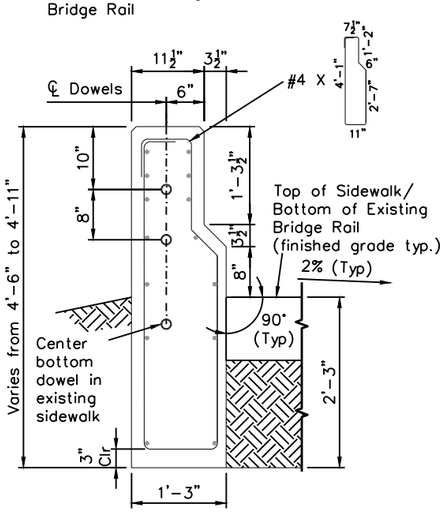
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Detailer:	DJB		
Sheet Subset:	BRIDGE	Subset Sheets:	B5 of B5

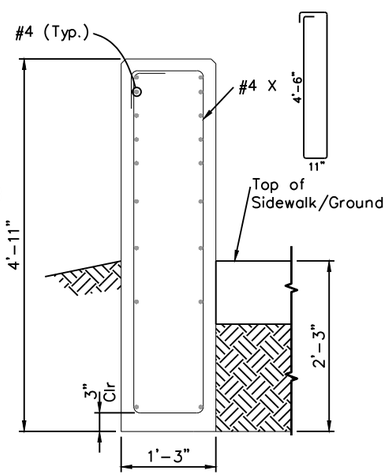
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STU M810-018	
24290	
Sheet Number	61

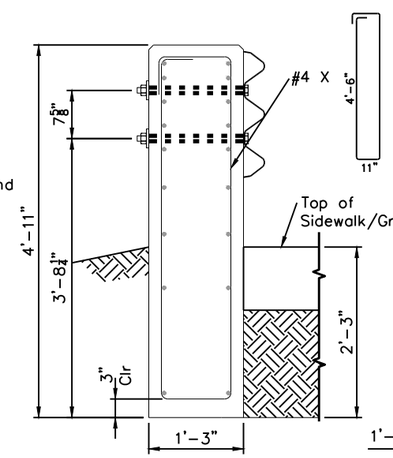
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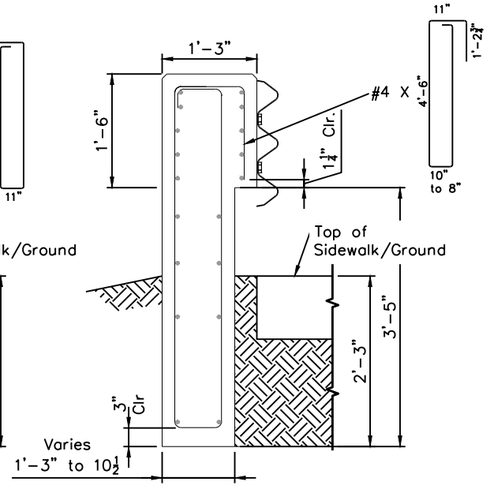












NOTES:

1. Payment will be made under item 606, Transition Type BR9–GR3, consisting of Concrete (Class DF), reinforcing steel, standard galvanized pipes, dowels, concrete sealer, bolts, nuts, washers, and expansion joint material.

2. Transitions shall be constructed to plumb (not perpendicular to cross slope).

3. The top, end and inside face of the transition rail shall receive a coating conforming to Item 515, Concrete Sealer.

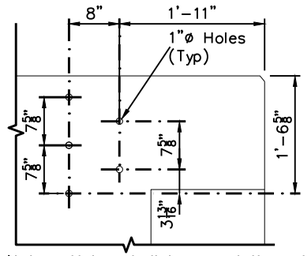
4. Concrete and reinforcing steel shall conform to the requirements of Sections 601 & 606 and 602 respectively unless otherwise noted. All reinforcement shall have 2" minimum clear cover unless otherwise shown or noted.

5. All longitudinal reinforcement shall terminate with standard stirrup hooks as shown. Rotate or adjust reinforcing hooks to avoid interferences as required.

6. Rotate or adjust rebars at backface to avoid interference as required.

7. It is the responsibility of the contractor to ensure the embedded dowels avoid the existing reinforcing bar in the existing bridge rail for structure LTNC.021–03.059. Dowels can be adjusted 2" max. vertically to avoid existing reinforcing bar.

8. Slope of the bridge rail transition not shown for simplicity. All bridge rail transitions must match slope of existing bridge rail.



Note: Holes shall be cored through concrete or 1" inside diameter full depth inserts placed before concrete placement.

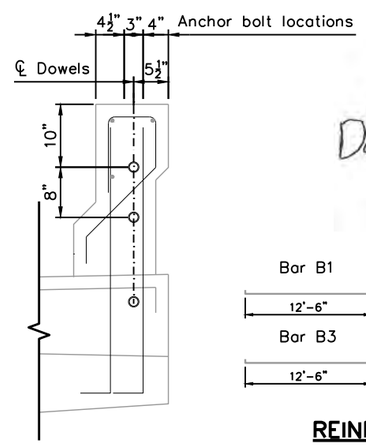
* Dowels and pipes shall project a minimum of 2'–0" into the proposed transition. Dowels shall be anchored into the existing bridge rail and sidewalk concrete per manufacturer specifications. The embedment shall be sufficient to develop the full capacity of the dowel.

** Bars may be field bent and field cut.

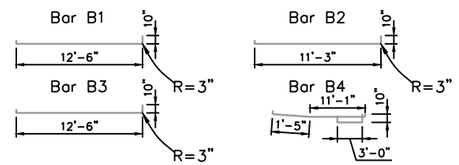
*** Top of Str. LTNC.021–03.059 existing bridge rail.

**** Locations of anchor bolts and reinforcing bar in the existing bridge rail are approximate and must be confirmed by the contractor prior to reconstruction.

DETAIL 1



EXISTING BRIDGE RAIL
REINFORCING PLAN****



REINFORCING DIMENSIONS



DESIGN DATA:

Reinforcing Steel: fy = 60 ksi Min

Concrete: Class DF = 4.5 ksi

All reinforcing bends shown shall use a 4D pin diameter.

Computer File Information			
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Last Modification Date:	8/28/2023	Initials:	KNM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings		
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Sheet Revisions		

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2255 W. Berry Ave.
Littleton, Colorado 80120
303–795–3863

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303-771-6868 Job No. 151496.00.5

As Constructed
No Revisions:
Revised:
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
BRIDGE RAIL TRANSITION DETAIL

Designer:	KNM	Structure Numbers	LTNC.021–03.059
Detailer:	KNM		
Sheet Subset:	RAILTR	Subset Sheets:	1 of 1

Project No./Code
STU M810–018
24290
Sheet Number 62

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SUMMARY OF CONSTRUCTION TRAFFIC CONTROL SIGNS
(FOR INFORMATION ONLY)

SIGN CODE	SIGN LEGEND	DIMENSION W X H (IN)	PANEL SIZE	PANEL SIZE TOTALS					
				A		B		SPECIAL	
				EACH		EACH		SF	
24M4-8a	END DETOUR	24X18	A	1					
30M4-9L	DETOUR LEFT	30X24	A	3					
30M4-9R	DETOUR RIGHT	30X24	A	1					
30M4-9bL	PEDESTRIAN DETOUR LEFT	30X24	A	7					
30M4-9bR	PEDESTRIAN DETOUR RIGHT	30X24	A	8					
48M4-10R	DETOUR ARROW RIGHT	48X18	A	1					
36G20-5a	WORK ZONE	36X12	A	3					
36R2-1	SPEED LIMIT 25	36X48	B			3			
24R3-2	NO LEFT TURN	24X24	A	2					
30R3-6	THROUGH AND LEFT	30X36	A	1					
24R4-7	KEEP RIGHT	24X30	A	2					
24R4-8a	KEEP LEFT	24X30	A	1					
24R9-9	SIDEWALK CLOSED	24X12	A	2					
24R9-11	SIDEWALK CLOSED AHEAD CROSS HERE	24X18	A	3					
24R10-6	STOP HERE ON RED	24X36	A	2					
24R10-11	NO TURN ON RED	24X30	A	1					
48R11-2	ROAD CLOSED	48X30	B			3			
60R11-3a	ROAD CLOSED X MILE AHEAD LOCAL TRAFFIC ONLY	60X30	B			1			
60R11-4	ROAD CLOSED TO THRU TRAFFIC	60X30	B			1			
36W1-4R	REVERSE CURVE RIGHT	36X36	A	1					
48W1-6	LARGE ARROW	48X24	A	1					
48W1-7	DOUBLE ARROW	48X24	A	1					
36W8-1	BUMP	36X36	A	3					
18W13-1	15 MPH PLAQUE	18X18	A	1					
36W20-1	ROAD WORK AHEAD	36X36	A	3					
36W20-2	DETOUR AHEAD	36X36	A	1					
36W20-4	ONE LANE ROAD AHEAD	36X36	A	3					
36W20-7	FLAGGER SYMBOL	36X36	A	3					
36W24-1L	DOUBLE REVERSE CURVE LEFT	36X36	A	1					
36W24-1R	DOUBLE REVERSE CURVE RIGHT	36X36	A	2					
SPECIAL	CHURCH AVE	30X12						20	
SPECIAL	RTD	30X12						5	
SPECIAL	PRINCE ST	30X12						12.5	
SPECIAL	COMMUNITY TRAIL	30X12						15	
PROJECT TOTALS				58		8		53	

TABULATION OF CONSTRUCTION TRAFFIC CONTROL DEVICES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
621	DETOUR PAVEMENT	SY	91
627	PAVEMENT MARKING PAINT	GAL	5
630	FLAGGING	HOUR	700
630	TRAFFIC CONTROL INSPECTION	DAY	32
630	TRAFFIC CONTROL MANAGEMENT	DAY	80
630	PEDESTRIAN BARRICADE (ADA)	LF	100
630	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)	EACH	58
630	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	EACH	8
630	CONSTRUCTION TRAFFIC SIGN (SPECIAL)	SF	53
630	BARRICADE (TYPE 3 M-A) (TEMPORARY)	EACH	5
630	PORTABLE MESSAGE SIGN PANEL	EACH	3
630	VERTICAL PANEL	EACH	40
630	DRUM CHANNELIZING DEVICE	EACH	60
630	TRAFFIC CONE	EACH	75
630	TRAFFIC SIGNAL (TEMPORARY)	EACH	2

TRAFFIC CONTROL PLAN GENERAL NOTES

1. FINAL DEVICE PLACEMENT SHALL BE ACCORDING TO THE MUTCD AND STANDARD S-630-1 OF THE COLORADO STANDARD PLANS. THE CONTRACTOR IS DIRECTED TO CASE 19.
2. DEVICES SHOWN ON THE TRAFFIC CONTROL PLAN SHEETS ARE SHOWN SCHEMATICALLY ONLY AND FINAL PLACEMENT IS DEPENDENT ON CONTRACTOR PHASING AND FIELD CONDITIONS.
3. ALL LANES SHALL BE A MINIMUM OF 11' WIDE FOR EACH PHASE OF CONSTRUCTION, UNLESS OTHERWISE INDICATED IN THE PLANS.
4. ALL SIGNS, INCLUDING EXISTING SIGNS AND CONSTRUCTION SIGNS FROM OTHER PHASES, WHICH CONFLICT WITH CONDITIONS OF THE CURRENT PHASE SHALL BE COVERED, TURNED OR REMOVED. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCIDENTAL TO OTHER TRAFFIC CONTROL ITEMS.
5. MODIFICATIONS TO THE EXISTING OR NEW SIGNAL SYSTEM REQUIRED BY PHASING, INCLUDING BUT NOT LIMITED TO COVERING HEADS AND TIMING CHANGES, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
6. ALL TRAFFIC CONTROL ITEMS SHALL BE CRASH TESTED IN ACCORDANCE WITH FHWA MASH REQUIREMENTS. DEVICES TESTED ACCORDING TO NCHRP 350 AND STILL WITHIN THEIR USEFUL SERVICE LIFE MAY BE USED.
7. VERIFY BURIED UTILITIES PRIOR TO PLACING ANY BELOW-GROUND POSTS.

COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

Computer File Information	
Creation Date:	Initials: MES
Last Modification Date: 10/1/2025	Initials: DRL
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings
Drawing File Name:	PC30A PRINCECHURCH-TCPTAB.dwg
Acad Ver.	Scale: Units: English

Sheet Revisions		

Littleton
Public Works
2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

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7979 E. Tufts Avenue, Suite 800
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303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
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Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION TRAFFIC CONTROL TABULATION			
Designer: MES	Structure Numbers		
Detailer: MES			
Sheet Subset: TCP	Subset Sheets: TCT1 of 1		

Project No./Code
STU M810-018
24290
Sheet Number 63

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC30A PRINCECHURCH-TCPTAB.dwg - Current tab: Page Setups - Print Time: Mon, 01 Dec 2025 - 8:30am By: msalek Last Save: Wed, 01 Oct 2025 - 1:45pm

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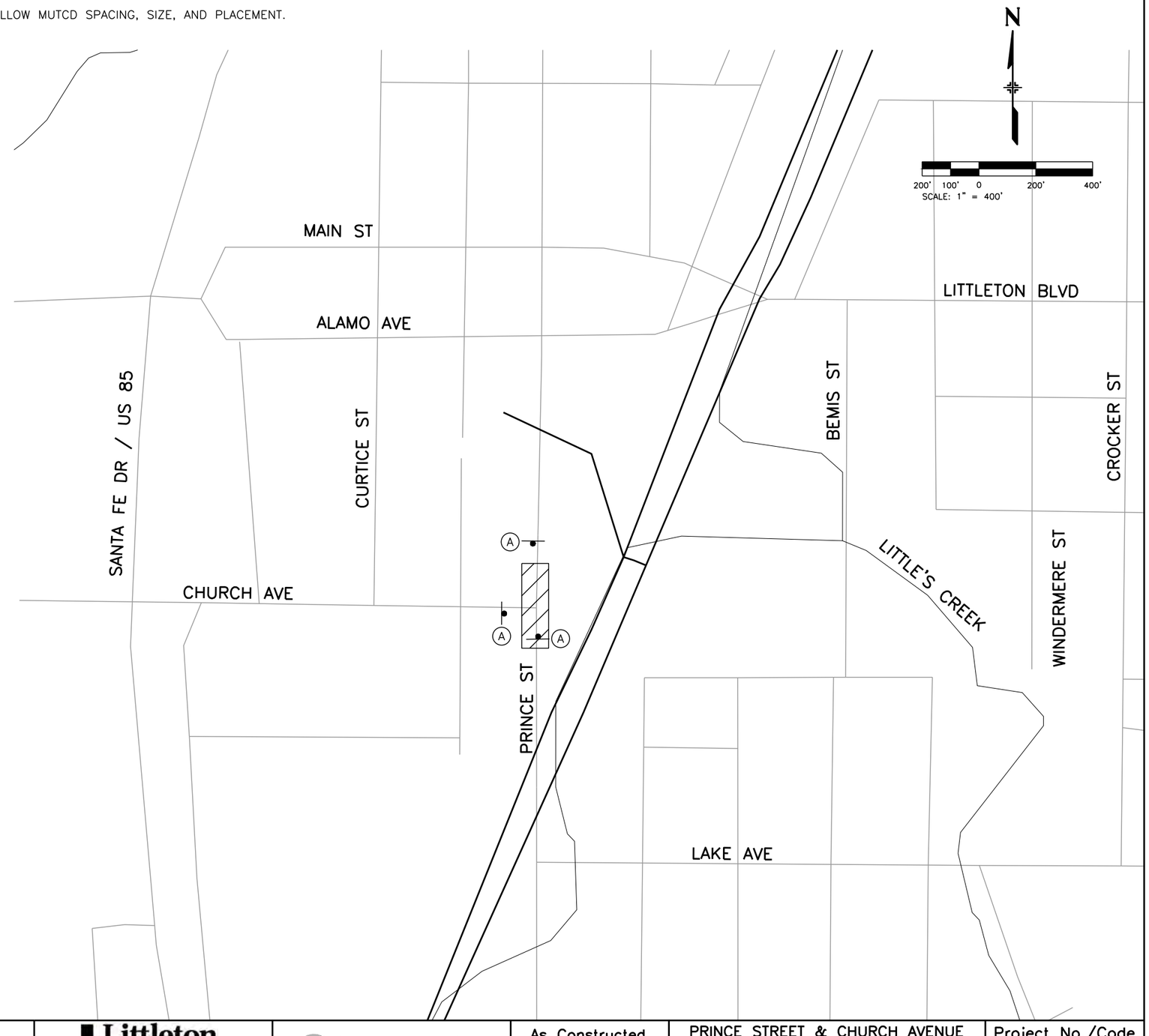
WORK AREA

CONSTRUCTION SIGN PANEL

(A) ROAD WORK AHEAD — W20-1

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.



COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
Creation Date:	11/15/2017 Initials: BPM
Last Modification Date:	10/26/2022 Initials: BPM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings
Drawing File Name:	PC31-39 PRINCECHURCH-DETOUR.dwg
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Sheet Revisions		

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN - PHASE 1A

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	DETOUR	Subset Sheets:	1 of 11

Project No./Code	
STU M810-018	
24290	
Sheet Number	64

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC31-39 PRINCECHURCH-DETOUR.dwg - Current tab: 31 DETOUR AND TC PLAN - PHASE 1A - Print Time: Mon, 01 Dec 2025 - 8:30am By: msalek Last Save: Wed, 26 Oct 2022 - 9:19am

LEGEND:

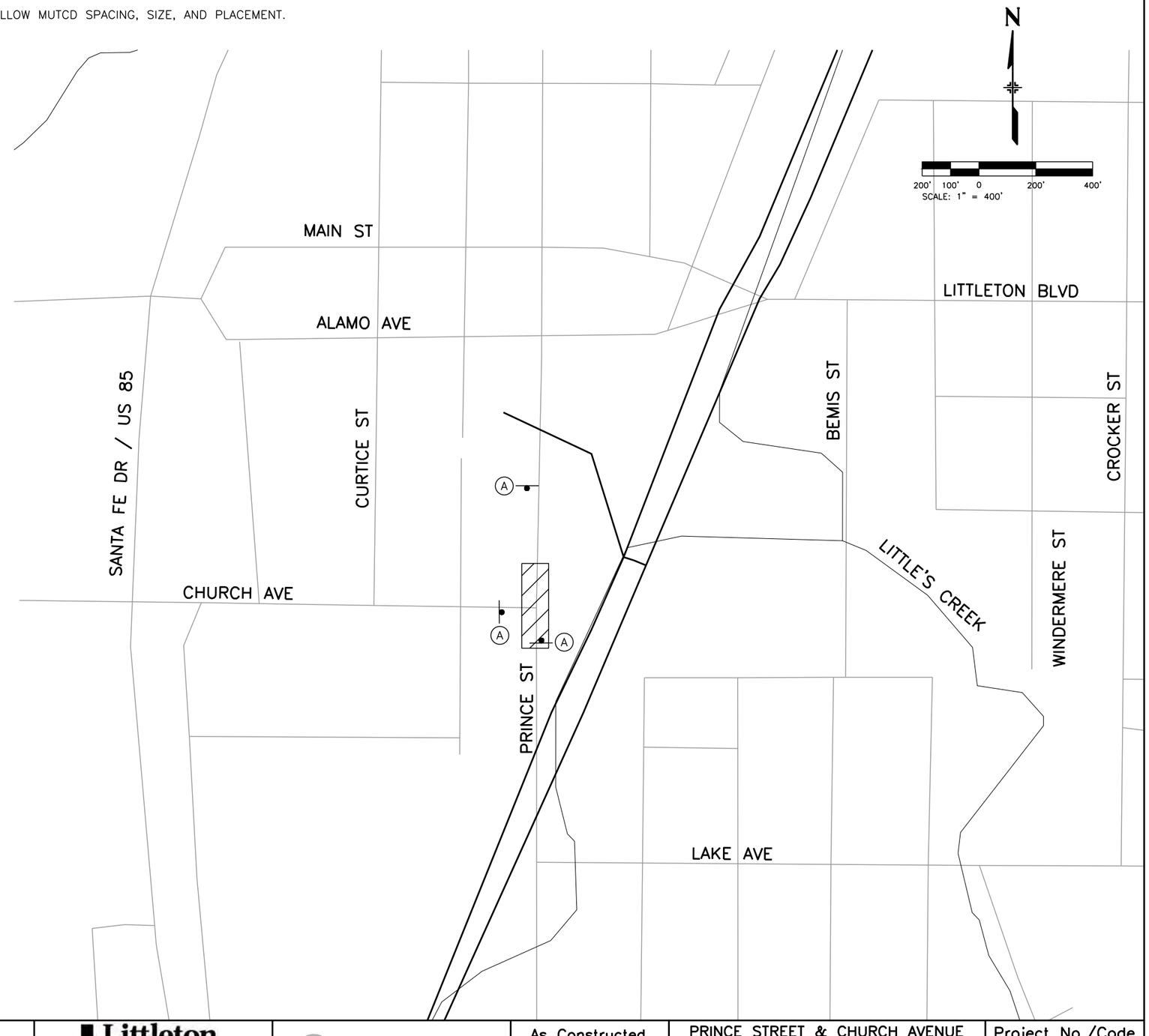
WORK AREA

CONSTRUCTION SIGN PANEL

(A) ROAD WORK AHEAD — W20-1

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.



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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION DETOUR AND TC PLAN - PHASE 1B			
Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	DETOUR	Subset Sheets:	2 of 11

Project No./Code	
STU M810-018	
24290	
Sheet Number	65

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC31-39 PRINCECHURCH-DETOUR.dwg - Current tab: 32 DETOUR AND TC PLAN - PHASE 1B - Print Time: Mon, 01 Dec 2025 - 8:30am By: msalek Last Save: Wed, 26 Oct 2022 - 9:19am

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LEGEND:

WORK AREA

CONSTRUCTION SIGN PANEL

(A) ROAD WORK AHEAD — W20-1

(B) CHURCH AVE / DETOUR ← — SPECIAL M4-9bL

(C) CHURCH AVE / DETOUR → — SPECIAL M4-9bR

(D) CHURCH AVE / DETOUR ← — SPECIAL M4-9L

(E) CHURCH AVE / DETOUR → — SPECIAL M4-9R

(F) CHURCH AVE / END DETOUR — SPECIAL M4-8a

(G) DETOUR AHEAD — W20-2

(H) PRINCE ST / DETOUR ← — SPECIAL M4-9bL

(I) PRINCE ST / DETOUR → — SPECIAL M4-9bR

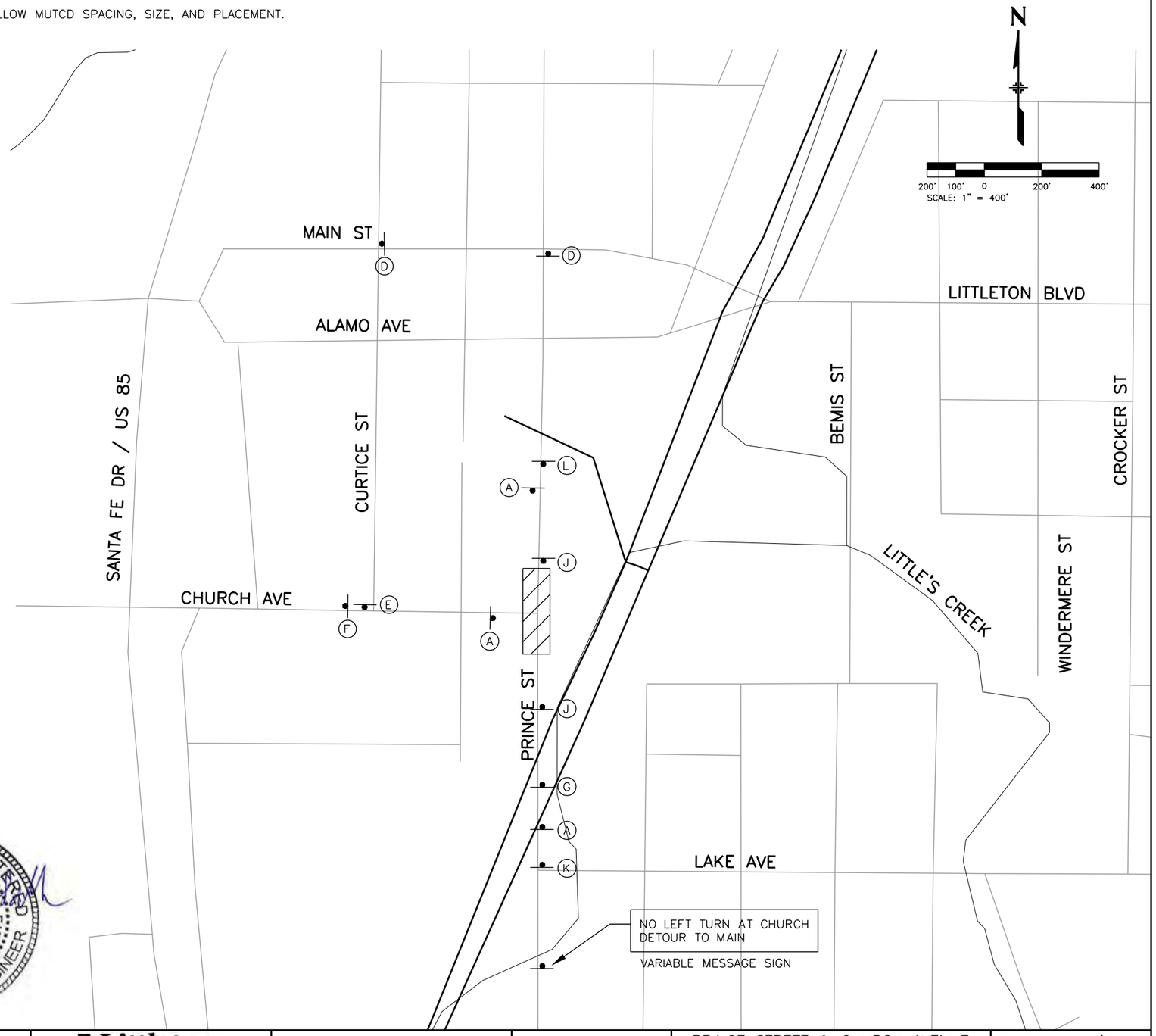
(J) SIDEWALK CLOSED — R9-9

(K) SIDEWALK CLOSED AHEAD / CROSS HERE ← — R9-11

(L) SIDEWALK CLOSED AHEAD / CROSS HERE → — R9-11

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.



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5/6/2026

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Drawing File Name:	PC31-39 PRINCECHURCH-DETOUR.dwg		
Acad Ver.	Scale: 1"=20'	Units:	English

Sheet Revisions		

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303-771-6868 Job No. 151496.00.5

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No Revisions:
Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN - PHASE 2A

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	DETOUR	Subset Sheets:	3 of 11

Project No./Code	
STU M810-018	
24290	
Sheet Number	66

LEGEND:

WORK AREA

CONSTRUCTION SIGN PANEL

(A) ROAD WORK AHEAD — W20-1

(B) CHURCH AVE / DETOUR — SPECIAL / M4-9bL

(C) CHURCH AVE / DETOUR — SPECIAL / M4-9bR

(D) CHURCH AVE / DETOUR — SPECIAL / M4-9L

(E) CHURCH AVE / DETOUR — SPECIAL / M4-9R

(F) CHURCH AVE / END DETOUR — SPECIAL / M4-8a

(G) DETOUR AHEAD — W20-2

(H) PRINCE ST / DETOUR — SPECIAL / M4-9bL

(I) PRINCE ST / DETOUR — SPECIAL / M4-9bR

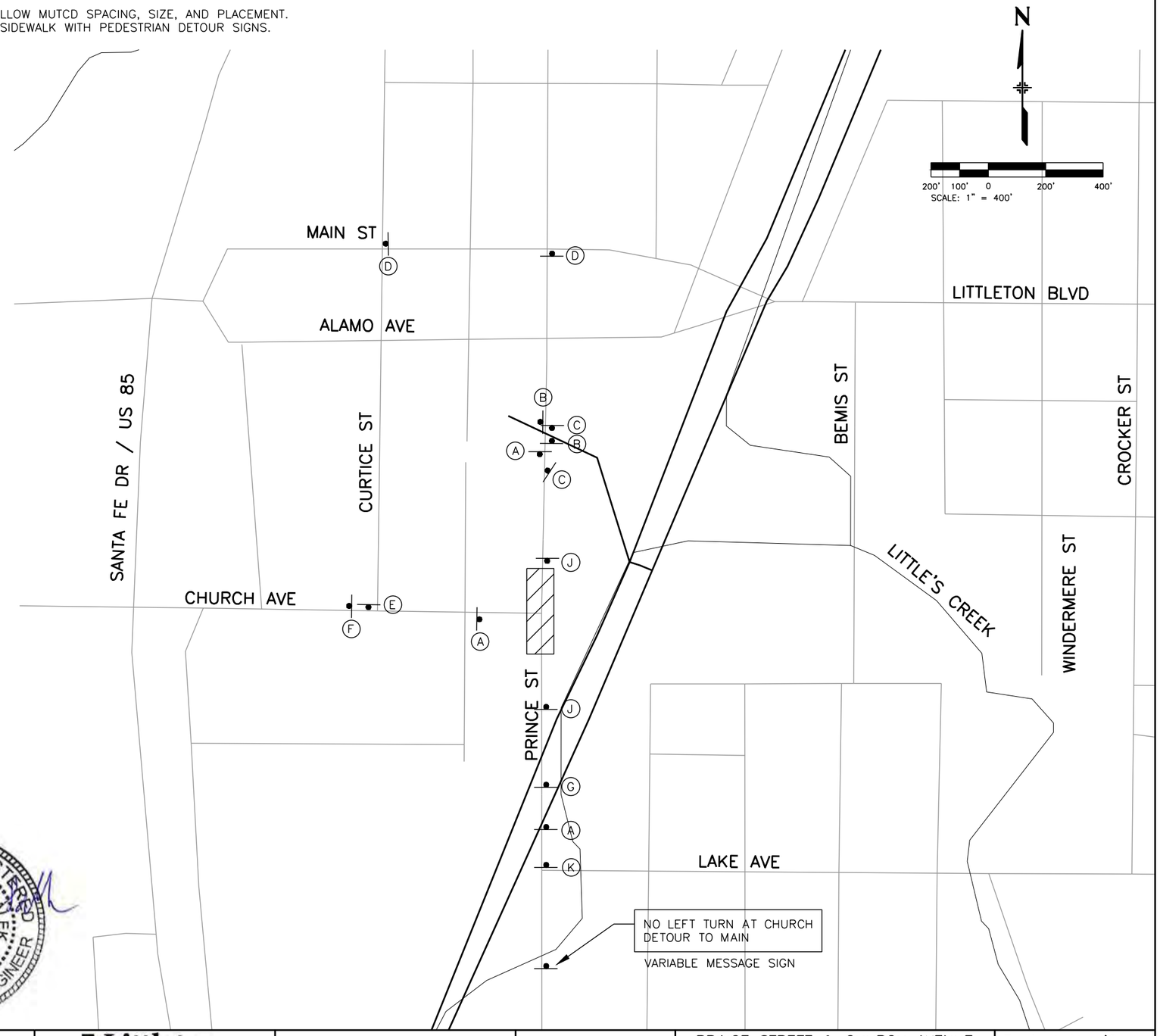
(J) SIDEWALK CLOSED — R9-9

(K) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(L) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.
2. DO NOT FULLY BLOCK SIDEWALK WITH PEDESTRIAN DETOUR SIGNS.



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
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Revised:	
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN - PHASE 2B

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	DETOUR	Subset Sheets:	4 of 11

Project No./Code	
STU M810-018	
24290	
Sheet Number	67

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC31-39 PRINCECHURCH-DETOUR.dwg - Current tab: 34 DETOUR AND TC PLAN - PHASE 2B - Print Time: Mon, 01 Dec 2025 - 8:30am By: msalek Last Save: Wed, 26 Oct 2022 - 9:19am

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LEGEND:

WORK AREA

CONSTRUCTION SIGN PANEL

A — ROAD WORK AHEAD — W20-1

B — CHURCH AVE / DETOUR ← — SPECIAL — M4-9bL

C — CHURCH AVE / DETOUR → — SPECIAL — M4-9bR

D — CHURCH AVE / DETOUR ← — SPECIAL — M4-9L

E — CHURCH AVE / DETOUR → — SPECIAL — M4-9R

F — CHURCH AVE / END DETOUR — SPECIAL — M4-8a

G — DETOUR AHEAD — W20-2

H — PRINCE ST / DETOUR ← — SPECIAL — M4-9bL

I — PRINCE ST / DETOUR → — SPECIAL — M4-9bR

J — SIDEWALK CLOSED — R9-9

K — SIDEWALK CLOSED AHEAD / CROSS HERE ← — R9-11

L — SIDEWALK CLOSED AHEAD / CROSS HERE → — R9-11

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.
2. SIDEWALK CLOSED AHEAD (R9-11) SIGN SHALL NOT BLOCK SIDEWALK.
3. SIDEWALK CLOSED (R9-9) SIGN ALONG NB PRINCE ST SHALL BE PLACED PAST CRUSHER FINES TRAIL AND SHALL BLOCK ENTIRE SIDEWALK.

N

200' 100' 0 200' 400'
SCALE: 1" = 400'



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

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Drawing File Name:	PC31-39 PRINCECHURCH-DETOUR.dwg		
Acad Ver.	Scale: 1"=20'	Units:	English

Sheet Revisions		

Littleton
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303-771-6868 Job No. 151496.00.5

As Constructed
No Revisions:
Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN – PHASE 2C

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	DETOUR	Subset Sheets:	5 of 11

Project No./Code
STU M810-018
24290
Sheet Number 68

LEGEND:

WORK AREA

TYPE 3 BARRICADE

CONSTRUCTION SIGN PANEL

(A) ROAD WORK AHEAD — W20-1

(B) CHURCH AVE / DETOUR — SPECIAL / M4-9bL

(C) CHURCH AVE / DETOUR — SPECIAL / M4-9bR

(F) PRINCE ST / END DETOUR — SPECIAL / M4-8a

(P) PRINCE ST / DETOUR — SPECIAL / M4-9L

(Q) PRINCE ST / DETOUR — SPECIAL / M4-9R

(R) CHURCH AVE / DETOUR — SPECIAL / M4-9R

(S) DETOUR — M4-9L

(T) DETOUR — M4-9R

(G) DETOUR AHEAD — W20-2

(J) SIDEWALK CLOSED — R9-9

(K) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(L) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(M) ROAD CLOSED — R11-2

(N) ROAD CLOSED TO THRU TRAFFIC — R11-4
MOUNT ON TYPE 3 BARRICADE

(O) ROAD CLOSED 0.2 MILES AHEAD LOCAL TRAFFIC ONLY — R11-3a
DETOUR — M4-10R
MOUNT ON TYPE 3 BARRICADE

(U) PRINCE ST / DETOUR — SPECIAL / M4-9bL

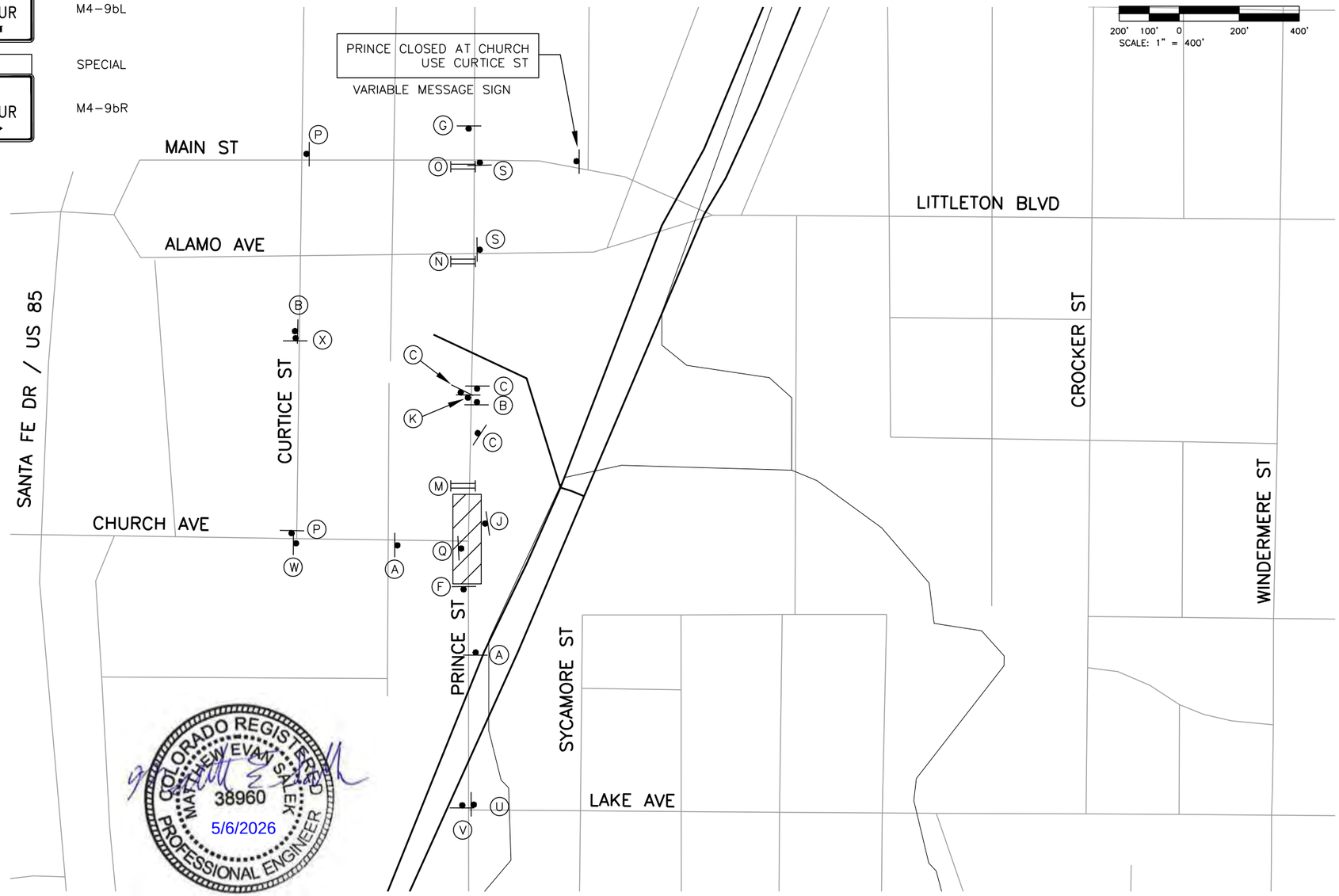
(V) PRINCE ST / DETOUR — SPECIAL / M4-9bR

(W) RTD / DETOUR — SPECIAL / M4-9bL

(X) RTD / DETOUR — SPECIAL / M4-9bR

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.
2. PRINCE ST SIDEWALK DETOUR SIGN SHALL NOT BLOCK NB PRINCE ST SIDEWALK.



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
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Drawing File Name:	PC31-39 PRINCECHURCH-DETOUR.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

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Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN - PHASE 3

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	DETOUR	Subset Sheets:	6 of 11

Project No./Code
STU M810-018
24290
Sheet Number 69

Y:\Denver\151400S\00151496.00\Eng_Docs\Drawings\PC31-39 PRINCECHURCH-DETOUR.dwg - Current tab: 36 DETOUR AND TC PLAN - PHASE 3 - Print Time: Mon, 01 Dec 2025 - 8:30am By: msalek Last Save: Wed, 26 Oct 2022 - 9:19am

LEGEND:

WORK AREA

TYPE 3 BARRICADE

CONSTRUCTION SIGN PANEL

(A) ROAD WORK AHEAD — W20-1

(B) CHURCH AVE / DETOUR — SPECIAL / M4-9bL

(C) CHURCH AVE / DETOUR — SPECIAL / M4-9bR

(F) PRINCE ST / END DETOUR — SPECIAL / M4-8a

(P) PRINCE ST / DETOUR — SPECIAL / M4-9L

(Q) PRINCE ST / DETOUR — SPECIAL / M4-9R

(R) CHURCH AVE / DETOUR — SPECIAL / M4-9R

(S) DETOUR — M4-9L

(T) DETOUR — M4-9R

(G) DETOUR AHEAD — W20-2

(J) SIDEWALK CLOSED — R9-9

(K) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(L) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(M) ROAD CLOSED — R11-2

(N) ROAD CLOSED TO THRU TRAFFIC — R11-4
MOUNT ON TYPE 3 BARRICADE

(O) ROAD CLOSED 0.2 MILES AHEAD LOCAL TRAFFIC ONLY — R11-3a
DETOUR — M4-10R
MOUNT ON TYPE 3 BARRICADE

(U) PRINCE ST / DETOUR — SPECIAL / M4-9bL

(V) PRINCE ST / DETOUR — SPECIAL / M4-9bR

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.
2. ALL SIDEWALK DETOUR SIGNS SHALL NOT BLOCK SIDEWALK.

N

200' 100' 0 200' 400'
SCALE: 1" = 400'



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

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Drawing File Name:	PC31-39 PRINCECHURCH-DETOUR.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

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Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN - PHASE 4A

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	DETOUR	Subset Sheets:	7 of 11

Project No./Code	
STU M810-018	
24290	
Sheet Number	70

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LEGEND:

WORK AREA

TYPE 3 BARRICADE

CONSTRUCTION SIGN PANEL

(A) ROAD WORK AHEAD — W20-1

(B) CHURCH AVE / DETOUR — SPECIAL / M4-9bL

(C) CHURCH AVE / DETOUR — SPECIAL / M4-9bR

(F) PRINCE ST / END DETOUR — SPECIAL / M4-8a

(P) PRINCE ST / DETOUR — SPECIAL / M4-9L

(Q) PRINCE ST / DETOUR — SPECIAL / M4-9R

(R) CHURCH AVE / DETOUR — SPECIAL / M4-9R

(S) DETOUR — M4-9L

(T) DETOUR — M4-9R

(G) DETOUR AHEAD — W20-2

(J) SIDEWALK CLOSED — R9-9

(K) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(L) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(M) ROAD CLOSED — R11-2

(N) ROAD CLOSED TO THRU TRAFFIC — R11-4
MOUNT ON TYPE 3 BARRICADE

(O) ROAD CLOSED 0.2 MILES AHEAD LOCAL TRAFFIC ONLY / DETOUR — R11-3a / M4-10R
MOUNT ON TYPE 3 BARRICADE

(U) PRINCE ST / DETOUR — SPECIAL / M4-9bL

(V) PRINCE ST / DETOUR — SPECIAL / M4-9bR

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.
2. ALL SIDEWALK CLOSED AHEAD SIGNS SHALL BLOCK ENTIRE SIDEWALK.

N

200' 100' 0 200' 400'
SCALE: 1" = 400'



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Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN - PHASE 4B

Designer: BPM
Detailer: BPM
Structure Numbers
Sheet Subset: DETOUR
Subset Sheets: 8 of 11

Project No./Code
STU M810-018
24290
Sheet Number 71

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LEGEND:

WORK AREA

TYPE 3 BARRICADE

CONSTRUCTION SIGN PANEL

(A) ROAD WORK AHEAD — W20-1

(B) CHURCH AVE / DETOUR — SPECIAL / M4-9bL

(C) CHURCH AVE / DETOUR — SPECIAL / M4-9bR

(F) PRINCE ST / END DETOUR — SPECIAL / M4-8a

(P) PRINCE ST / DETOUR — SPECIAL / M4-9L

(Q) PRINCE ST / DETOUR — SPECIAL / M4-9R

(R) CHURCH AVE / DETOUR — SPECIAL / M4-9R

(S) DETOUR — M4-9L

(T) DETOUR — M4-9R

(G) DETOUR AHEAD — W20-2

(J) SIDEWALK CLOSED — R9-9

(K) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(L) SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11

(M) ROAD CLOSED — R11-2

(N) ROAD CLOSED TO THRU TRAFFIC — R11-4
MOUNT ON TYPE 3 BARRICADE

(O) ROAD CLOSED 0.2 MILES AHEAD LOCAL TRAFFIC ONLY / DETOUR — R11-3a / M4-10R
MOUNT ON TYPE 3 BARRICADE

(U) PRINCE ST / DETOUR — SPECIAL / M4-9bL

(V) PRINCE ST / DETOUR — SPECIAL / M4-9bR

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.
2. ALL SIDEWALK CLOSED AHEAD SIGNS SHALL BLOCK ENTIRE SIDEWALK.

N

200' 100' 0 200' 400'
SCALE: 1" = 400'



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Sheet Revisions		

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Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN - PHASE 4C

Designer: BPM
Detailer: BPM
Structure Numbers
Sheet Subset: DETOUR
Subset Sheets: 9 of 11

Project No./Code
STU M810-018
24290
Sheet Number 72

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LEGEND:

WORK AREA

CONSTRUCTION SIGN PANEL

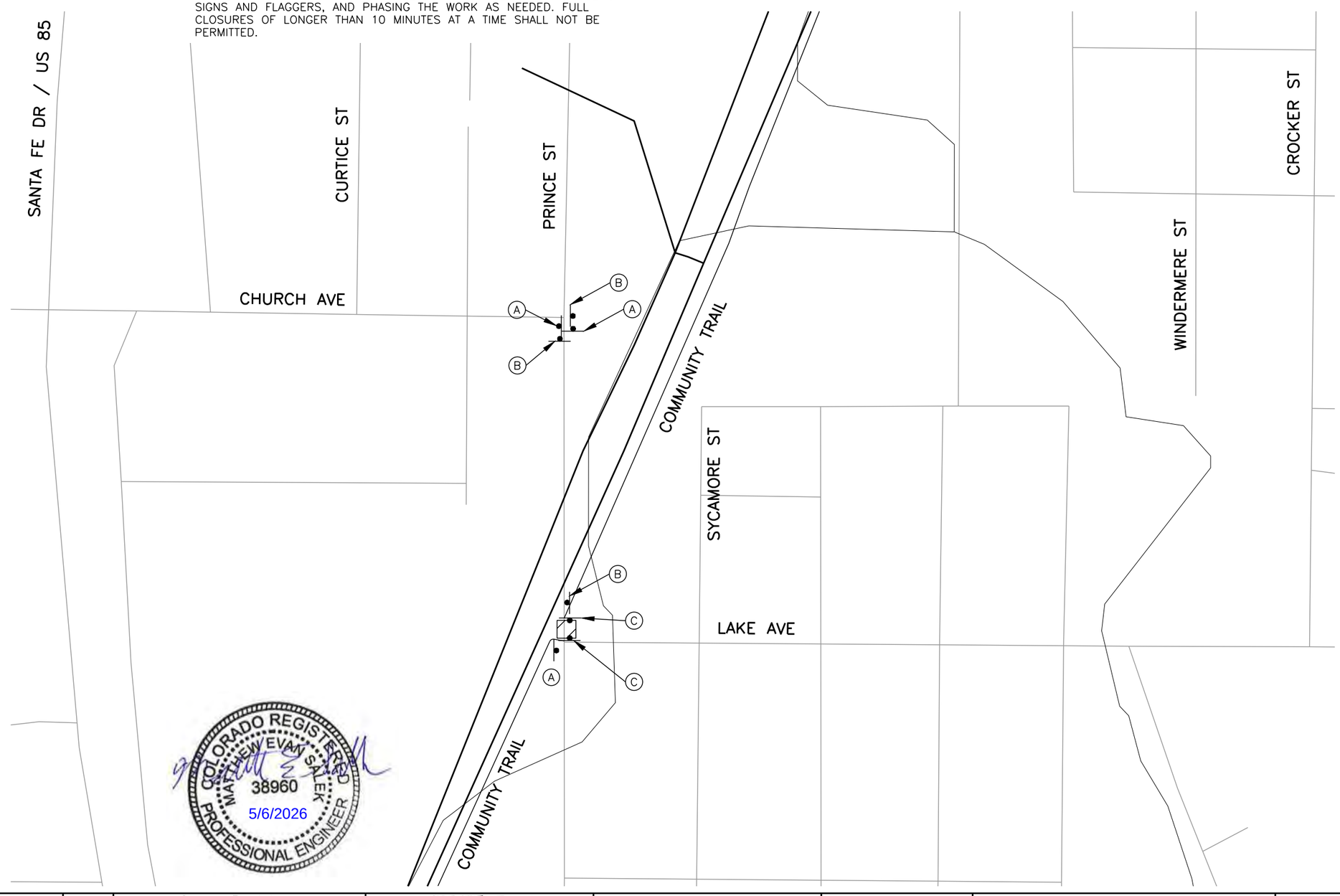
A	COMMUNITY TRAIL DETOUR	SPECIAL M4-9bL
B	COMMUNITY TRAIL DETOUR	SPECIAL M4-9bR
C	SIDEWALK CLOSED	R9-9

NOTES:

1. ALL SIGNAGE SHALL FOLLOW MUTCD SPACING, SIZE, AND PLACEMENT.
2. ALL SIDEWALK CLOSED AHEAD SIGNS SHALL BLOCK ENTIRE SIDEWALK.
3. THE CONTRACTOR SHALL MAINTAIN CONTINUITY FOR USERS OF THE LITTLETON COMMUNITY TRAIL WHICH CROSSES PRINCE ST AT LAKE AVE. IF A REASONABLE DETOUR ROUTE IS NOT AVAILABLE, ACCESS ALONG THE EXISTING TRAIL CROSSING SHALL BE MAINTAINED WITH THE USE OF SIGNS AND FLAGGERS, AND PHASING THE WORK AS NEEDED. FULL CLOSURES OF LONGER THAN 10 MINUTES AT A TIME SHALL NOT BE PERMITTED.

100' 50' 0 100' 200'
SCALE: 1" = 200'

N



COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
Creation Date:	11/15/2017 Initials: BPM
Last Modification Date:	10/26/2022 Initials: BPM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings
Drawing File Name:	PC31-39 PRINCECHURCH-DETOUR.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

Littleton
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benesch
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303-771-6868 Job No. 151496.00.5

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Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN - PHASE 4D

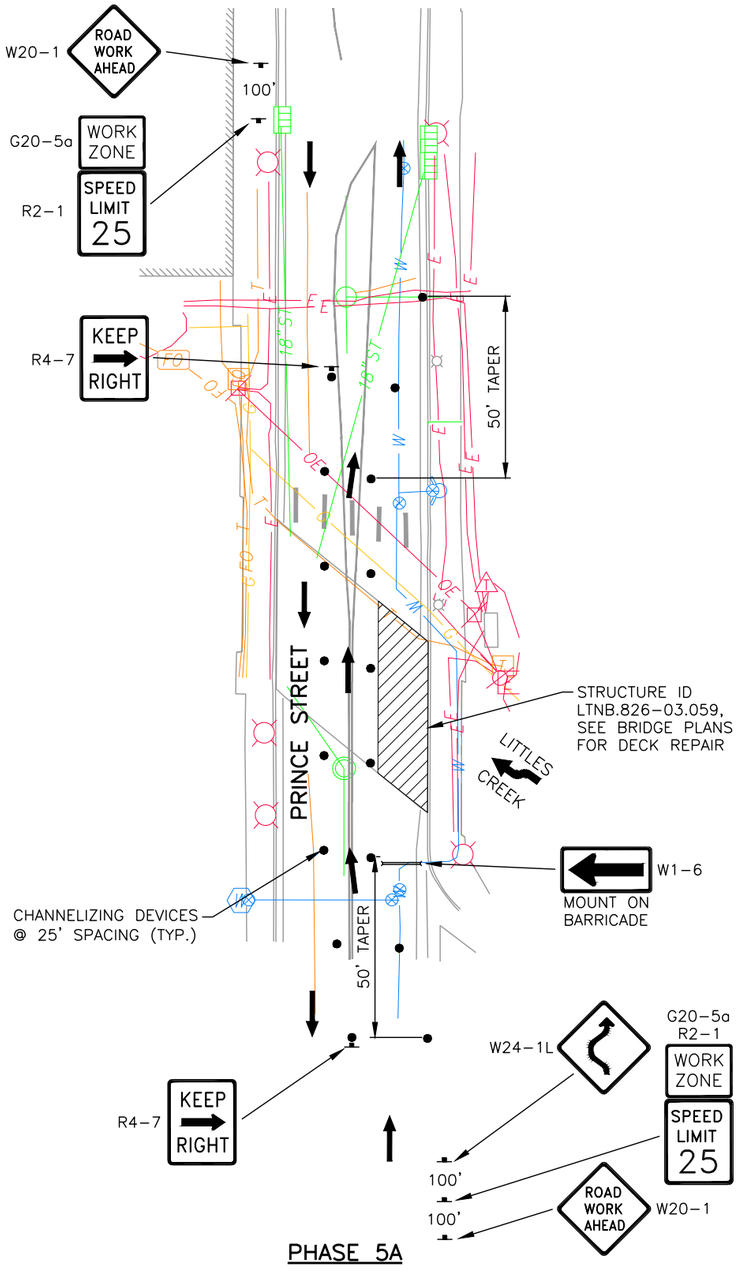
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Detailer:	BPM		
Sheet Subset:	DETOUR	Subset Sheets:	10 of 11

Project No./Code
STU M810-018
24290
Sheet Number 73

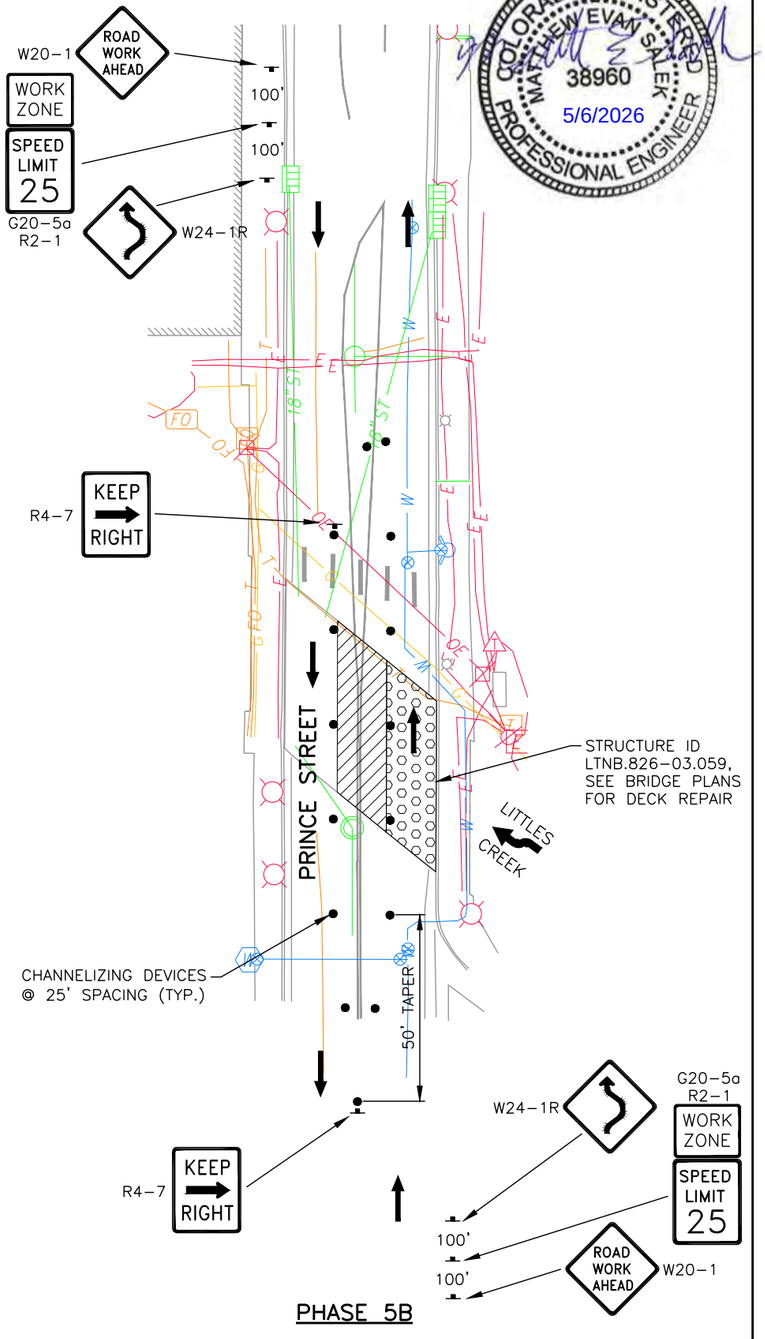
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LEGEND

- SIGN PANEL
- TRAFFIC DIRECTION
- CHANNELIZING DEVICE
- WORK ZONE
- COMPLETED CONSTRUCTION
- TYPE 3 BARRICADE

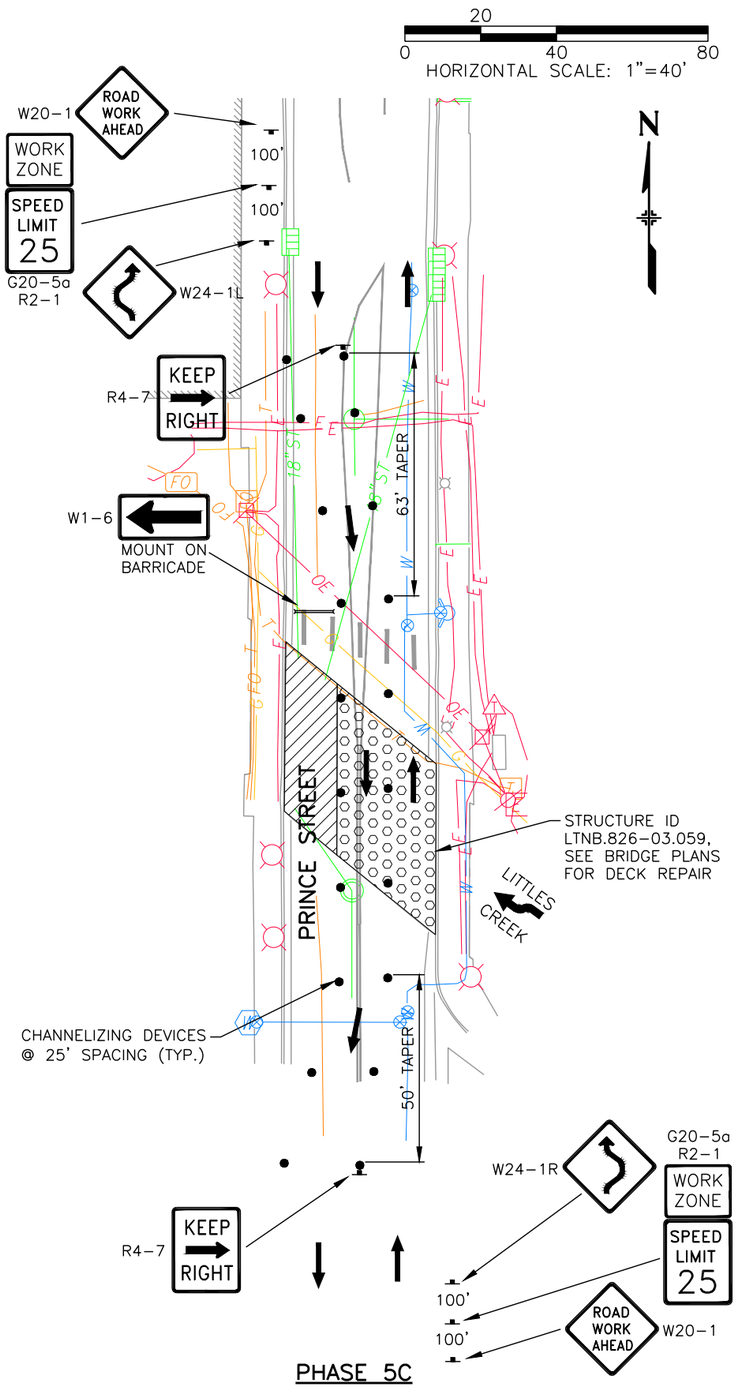


PHASE 5A



PHASE 5B

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 5/6/2026 PROFESSIONAL ENGINEER



PHASE 5C

Computer File Information	
Creation Date:	10/26/2022 Initials: MES
Last Modification Date:	10/26/2022 Initials: MES
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings
Drawing File Name:	PC31A PRINCECHURCH-BRDGTCP.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
DETOUR AND TC PLAN – PHASE 5

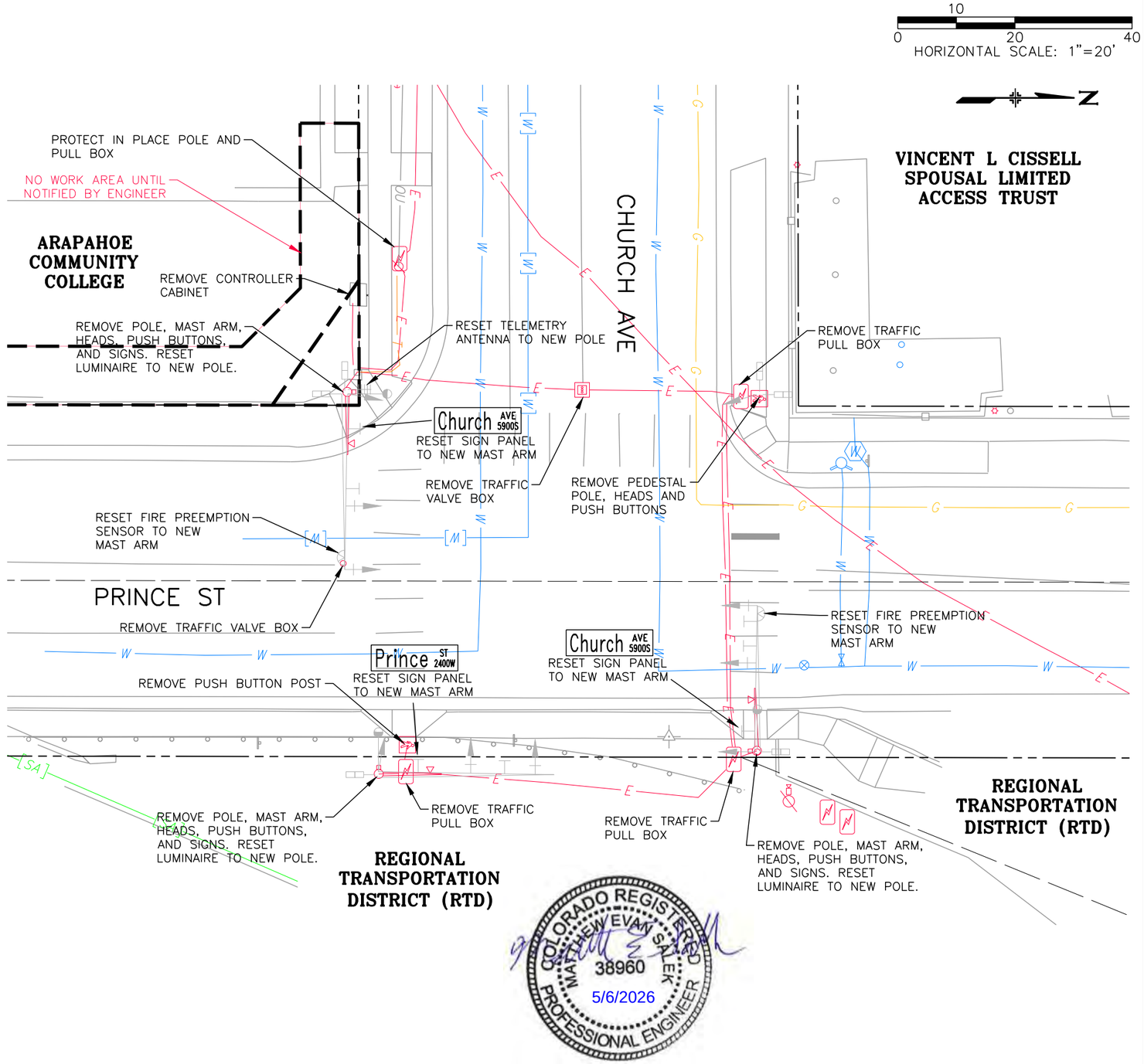
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Detailer:	MES		
Sheet Subset:	DETOUR	Subset Sheets:	11 of 11

Project No./Code	
STU M810-018	
24290	
Sheet Number	74

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SIGNAL REMOVAL NOTES

1. REMOVAL OF ALL SIGNAL COMPONENTS SHALL BE PAID FOR AS REMOVAL OF TRAFFIC SIGNAL EQUIPMENT – 1 LUMP SUM.
2. REMOVAL OF TRAFFIC SIGNAL POLE SHALL INCLUDE POLE, MAST ARMS, SIGNAL HEADS, WIRING, FOOTINGS TO 2' BELOW GRADE, PEDESTRIAN PUSH BUTTONS, AND SIGNS NOT BEING RESET.
3. TELEMETRY ANTENNA SHALL BE RESET FROM EXISTING LOCATION TO NEW POLE AND MOUNTED AS DIRECTED BY THE ENGINEER. WIRING AND CONFIGURING THE RESET ANTENNA SHALL BE INCLUDED IN THE WORK.
4. FIRE PREEMPTION SENSORS SHALL BE RESET FROM EXISTING LOCATIONS TO NEW MAST ARMS. WIRING AND CONFIGURING THE RESET SENSOR SHALL BE INCLUDED IN THE WORK.
5. LUMINAIRES SHALL BE RESET FROM EXISTING LOCATIONS TO NEW POLES.



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 5/6/2026 PROFESSIONAL ENGINEER

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Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings		
Drawing File Name:	PC40-41 PRINCECHURCH-SIGNALRM01.dwg		
Acad Ver.	Scale: 1"=20'	Units:	English

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION TRAFFIC SIGNAL REMOVALS

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SIGNAL	Subset Sheets:	1 of 3

Project No./Code	STU M810-018
	24290
Sheet Number	75

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SIGNAL GENERAL NOTES

1. TRAFFIC SIGNAL MATERIALS AND INSTALLATION SHALL COMPLY WITH ARAPAHOE COUNTY STANDARD SIGNAL DETAILS, THE MUTCD, NATIONAL ELECTRICAL CODE, AND ALL LOCAL ORDINANCES AND REGULATIONS THAT APPLY.
2. ALL QUANTITIES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK NECESSARY TO THE CONSTRUCTION SHOWN ON THESE PLANS.
3. ALL ITEMS NOT SHOWN IN THE SUMMARY OF QUANTITIES SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF TRAFFIC SIGNALS AND WILL NOT BE PAID FOR SEPARATELY.
4. ALL VEHICLE AND PEDESTRIAN INDICATIONS SHALL BE APPROVED SOLID STATE LED TYPE.
5. EACH OVERHEAD VEHICLE SIGNAL HEAD, AS SHOWN IN THE PLANS, SHALL HAVE A LOUVERED BACKPLATE, BLACK IN COLOR, INCLUDED IN THE SIGNAL HEAD COST. BACKPLATES SHALL INCLUDE A 2-INCH REFLECTIVE YELLOW BORDER.
6. SIGNAL HEADS SHALL BE 100% POLYCARBONATE, COLORADO BLACK, WITH BLACK TUNNEL VISORS. SIGNAL HEADS NOT IN OPERATION SHALL BE BAGGED WITH "OUT OF SERVICE" BAGS.
7. MAST ARM LENGTHS SHALL BE FIELD VERIFIED WITH THE ENGINEER PRIOR TO ORDERING.
8. SIGNAL POLES, MAST ARMS, LUMINAIRE ARMS, PEDESTAL POLES AND PUSH BUTTON POSTS SHALL BE GALVANIZED.
9. LUMINAIRES SHALL BE INSTALLED ON 10' EXTENSION ARMS AT 30' MOUNTING HEIGHT.
10. VEHICLE DETECTOR SHALL BE A GRIDSMART "FISH EYE" CAMERA MOUNTED AS DIRECTED BY THE ENGINEER AND MANUFACTURER RECOMMENDATIONS ON THE NORTHEAST SIGNAL POLE.
11. CONDUIT SHALL BE SCHEDULE 80 PVC. NO OPEN CUT ALLOWED WITHIN PAVED AREAS, ALL CONDUIT TO BE DIRECTIONALLY BORED WITHIN/UNDER PAVEMENT AREAS. ALL CONDUIT SHALL HAVE A PULL ROPE LEFT IN THEM WHEN CONSTRUCTION IS COMPLETED. CONDUITS SHALL BE SEALED IN CABINET AND ALL PULL BOXES. CONTRACTOR SHALL SEPARATE HIGH AND LOW VOLTAGE CONDUCTORS.
12. NO EXCAVATION SHALL BE PERMITTED UNTIL UNDERGROUND UTILITIES HAVE BEEN LOCATED TO THE SATISFACTION OF ALL PARTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL AERIAL AND UNDERGROUND UTILITIES. CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 TO HAVE THE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UTILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE COMPANY.
13. BORE DEPTHS ARE TO BE VARIED AS REQUIRED TO AVOID UTILITIES.
14. ALL SIGNAL CABLE SHALL BE CONTINUOUS FROM CONNECTIONS MADE IN THE HANDHOLE COMPARTMENT OF SIGNAL POLE BASE TO THE TERMINAL COMPARTMENT IN THE CONTROLLER CABINET. SPLICING SHALL NOT BE PERMITTED.
15. EXCAVATION OF SPOILS FROM DRILLED CAISSON AND THE CONSTRUCTION OF THE CAISSON SHALL BE COMPLETED WITHIN THE DAY AND SPECIFIED WORKING HOURS. SPOILS SHALL BE REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
16. SHOULD CONTRACTOR INCUR WATER IN CAISSON, DEWATERING WILL BE REQUIRED. DEWATERING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE CAISSON.
17. CONTRACTOR SHALL WORK WITH THE ENGINEER AND CITY STAFF FOR PLACING NEW SIGNALS INTO OPERATION. 24 HOUR ADVANCE NOTICE IS REQUIRED.
18. ALL SIGNALS ARE TO REMAIN ACTIVE DURING CONSTRUCTION UNLESS APPROVED BY THE ENGINEER.
19. PEDESTRIAN PUSH BUTTONS FOR THE CROSSING ACROSS CHURCH AVE SHALL BE POLARA MODEL BULLDOG. PUSH BUTTONS FOR THE CROSSING ACROSS PRINCE STREET SHALL BE ACCESSIBLE TYPE WITH AN AUDIBLE MESSAGE.
20. EXISTING CABINET AND CONTROLLER SHALL BE REMOVED AND REPLACED WITH NEW P44 CABINET AND COBALT ECONOLITE TYPE CONTROLLER. THE CABINET SHALL BE ON A FIBERGLASS BASE.
21. TELEMETRY ANTENNA SHALL BE RESET FROM EXISTING TO NEW POLE AND MOUNTED AS DIRECTED BY THE ENGINEER.
22. ALL PULL BOXES SHALL BE FIBERGLASS REINFORCED POLYMER CONCRETE AND SHALL HAVE A GROUNDING ROD. PULL BOX AT CONTROLLER SHALL BE LARGE (24X36); ALL OTHER PULL BOXES SHALL BE MEDIUM (17X30).
23. AN ELECTRIC METER SHALL BE PROVIDED FOR THE INTERSECTION. COORDINATION WITH UTILITY FOR POWER SOURCE HOOKUP SHALL BE INCLUDED IN THE WORK.



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Drawing File Name:	PC40-41 PRINCECHURCH-SIGNALRM01.dwg		
Acad Ver.	Scale:	Units:	English

Sheet Revisions		

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No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
TRAFFIC SIGNAL NOTES

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SIGNAL	Subset Sheets:	2 of 3

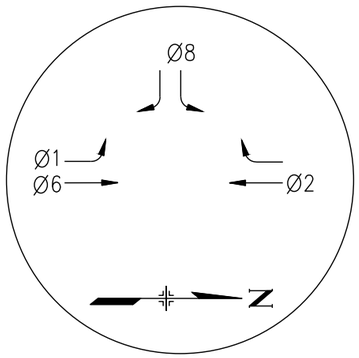
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24290	
Sheet Number	76

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LEGEND

- TRAFFIC SIGNAL HEAD
- TRAFFIC SIGNAL HEAD W/ BACKPLATE
- TRAFFIC SIGNAL POLE W/ MAST ARM
- PEDESTRIAN SIGNAL FACE (COUNTDOWN)
- LUMINAIRE
- PEDESTRIAN PUSH BUTTON & SIGN
- PULL BOX
- SIGNAL CABINET & CONTROLLER
- PEDESTAL POLE OR PUSH BUTTON POST
- METER PEDESTAL
- TR — TRAFFIC CONDUIT
- COMMUNICATION ANTENNA
- FIRE PREEMPTION SENSOR
- DETECTION CAMERA
- SIGN
- (A) SIGNAL POLE I.D.
- (1) SIGNAL HEAD I.D.
- VIDEO DETECTION ZONE

PHASING DIAGRAM

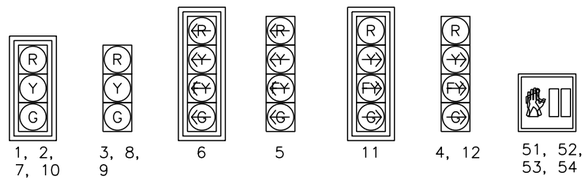


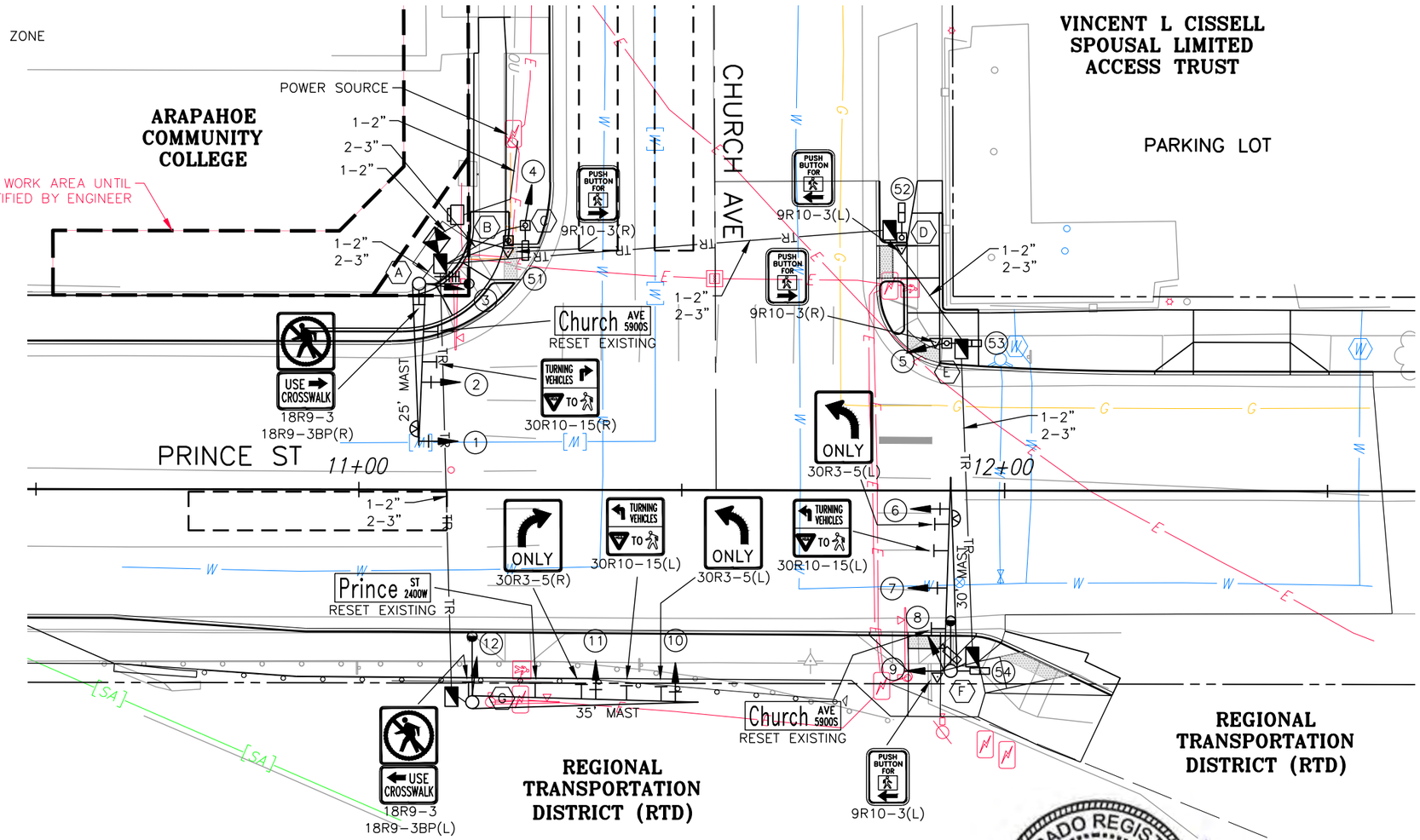
NOTE:

THE FOLLOWING ITEMS WILL BE FURNISHED BY THE CITY TO THE CONTRACTOR FOR INSTALLATION:

- SIGNAL POLES AND MAST ARMS
- PEDESTAL POLES
- TRAFFIC AND PEDESTRIAN SIGNAL HEADS
- PEDESTRIAN PUSH BUTTONS
- PUSH BUTTON POSTS
- DETECTION CAMERA
- PULL BOXES
- SIGNAL CONTROLLER AND CABINET
- SERVICE METER PEDESTAL

SIGNAL HEADS





SIGNAL POLE DATA

POLE I.D.	STATION	OFFSET	POLE TYPE	STANDARD	MAST ARM	CAISSON DIA.	CAISSON DEPTH
A	11+09.28	31.90' LT	SIGNAL POLE W/ MAST ARM & LUMINAIRE	ARAPAHOE COUNTY	25'	36"	14'
B	11+23.10	38.61' LT	PEDESTRIAN PUSH BUTTON POST	CDOT S-614-45	N/A	N/A	N/A
C	11+25.71	40.96' LT	PEDESTAL POLE (16')	ARAPAHOE COUNTY	N/A	18"	6'
D	11+84.00	39.16' LT	PEDESTAL POLE (10')	ARAPAHOE COUNTY	N/A	18"	6'
E	11+92.73	22.72' LT	PEDESTAL POLE (16')	ARAPAHOE COUNTY	N/A	18"	6'
F	11+91.71	27.94' RT	SIGNAL POLE W/ MAST ARM & LUMINAIRE	ARAPAHOE COUNTY	30'	36"	14'
G	11+17.61	32.89' RT	SIGNAL POLE W/ MAST ARM & LUMINAIRE	ARAPAHOE COUNTY	35'	36"	14'

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
Creation Date:	11/15/2017 Initials: MES
Last Modification Date:	10/2/2025 Initials: DRL
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings
Drawing File Name:	PC42 PRINCECHURCH-SIGNALPL01.dwg
Acad Ver.	Scale: 1"=20' Units: English

Sheet Revisions		

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
TRAFFIC SIGNAL PLAN

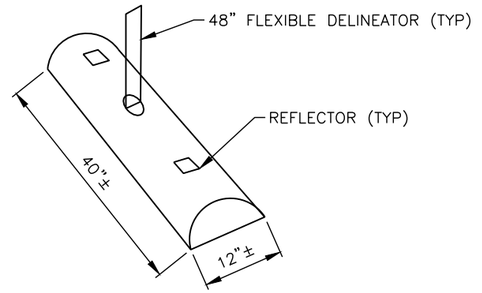
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Project No./Code	
STU M810-018	
24290	
Sheet Number	77

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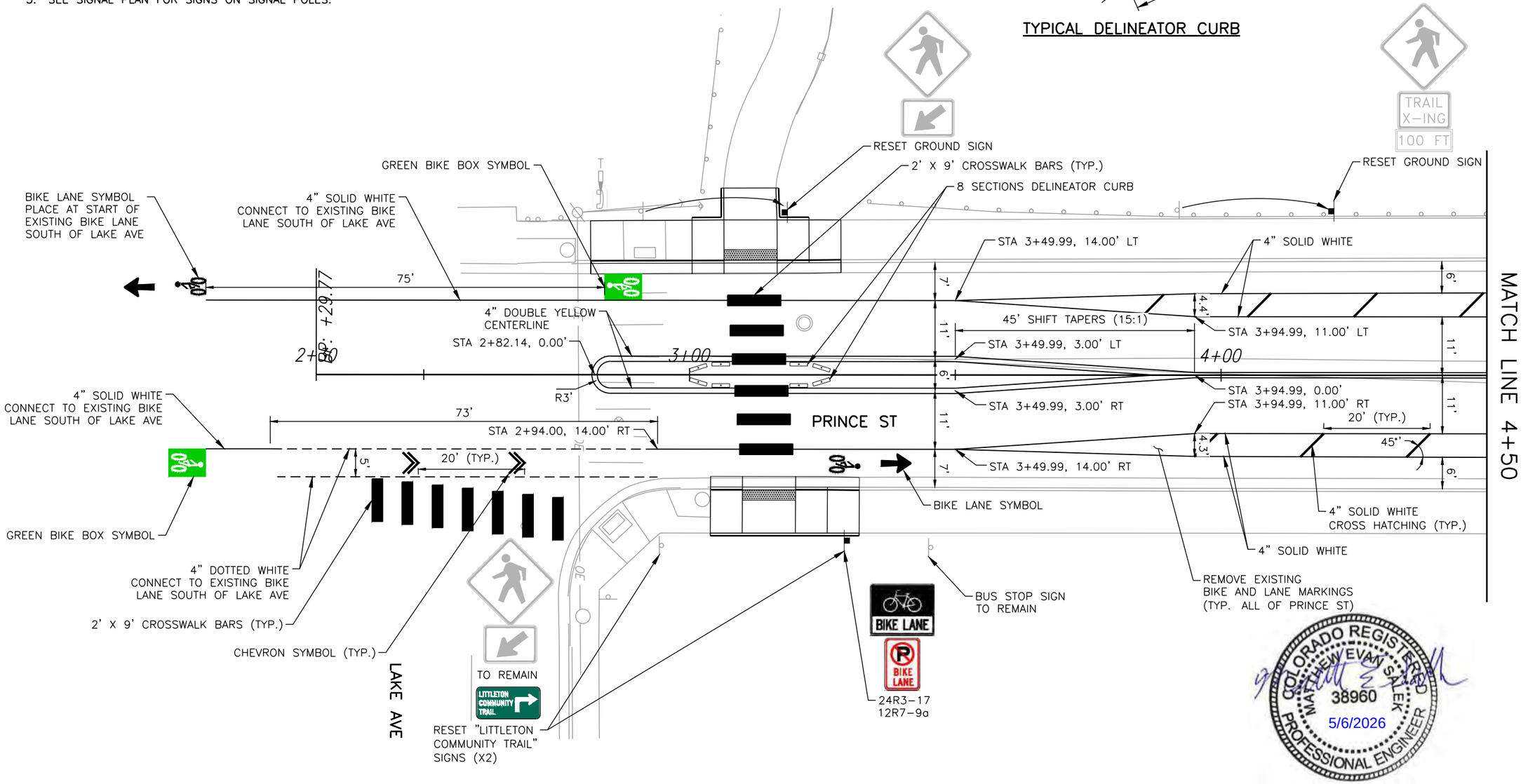
1. STRIPING MEASURED FROM CURB IS MEASURED TO CURB FACE.
2. LANE USE ARROWS SHALL HAVE BLACK OUTLINE WHEN ON CONCRETE SURFACE.
3. ALL LANE LINES TO BE EPOXY AND ALL SYMBOLS, ARROWS AND CROSSWALK MARKINGS SHALL BE THERMOPLASTIC.
4. BIKE LANE SYMBOL SHALL BE HELMETED BICYCLIST SYMBOL AND ARROW (S-627-1 & MUTCD FIGURE 9C-3).
5. SEE SIGNAL PLAN FOR SIGNS ON SIGNAL POLES.



TYPICAL DELINEATOR CURB

10
0 20 40
HORIZONTAL SCALE: 1"=20'

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COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

Computer File Information			
Creation Date:	11/15/2017	Initials:	MES
Last Modification Date:	3/10/2023	Initials:	BPM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings		
Drawing File Name:	PC43 PRINCECHURCH-STRIPE01.dwg		
Acad Ver.	Scale: 1"=40'	Units:	English

Sheet Revisions		

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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION SIGNING & STRIPING PLAN

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SIGN	Subset Sheets:	1 of 7

Project No./Code
STU M810-018
24290
Sheet Number 78

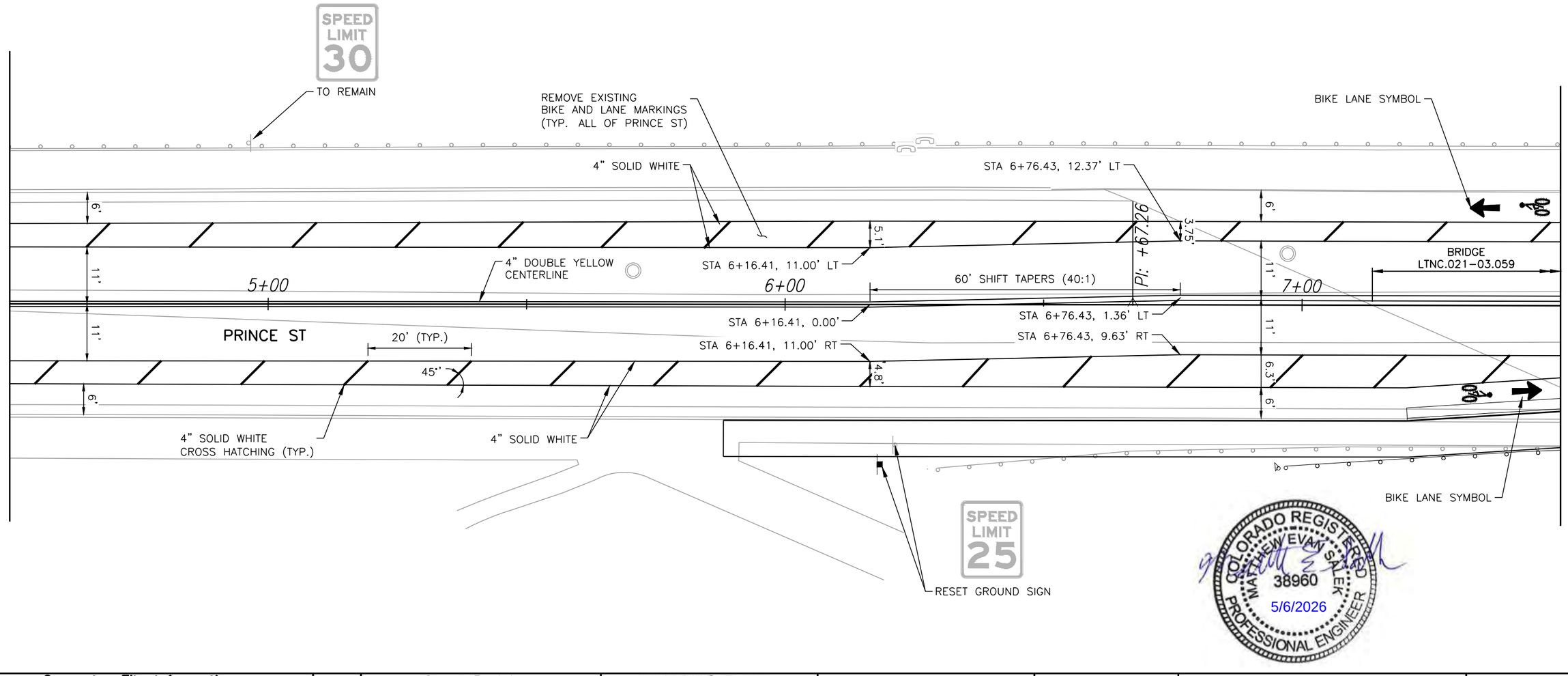
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NOTES

1. STRIPING MEASURED FROM CURB IS MEASURED TO CURB FACE.
2. LANE USE ARROWS SHALL HAVE BLACK OUTLINE WHEN ON CONCRETE SURFACE.
3. ALL LANE LINES TO BE EPOXY AND ALL SYMBOLS, ARROWS AND CROSSWALK MARKINGS SHALL BE THERMOPLASTIC.
4. BIKE LANE SYMBOL SHALL BE HELMETED BICYCLIST SYMBOL AND ARROW (S-627-1 & MUTCD FIGURE 9C-3).
5. SEE SIGNAL PLAN FOR SIGNS ON SIGNAL POLES.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N



COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

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Last Modification Date:	3/10/2023	Initials:	BPM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings		
Drawing File Name:	PC43 PRINCECHURCH-STRIPE01.dwg		
Acad Ver.	Scale: 1"=40'	Units:	English

Sheet Revisions		

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Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION SIGNING & STRIPING PLAN

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SIGN	Subset Sheets:	2 of 7

Project No./Code	
STU M810-018	
24290	
Sheet Number	79

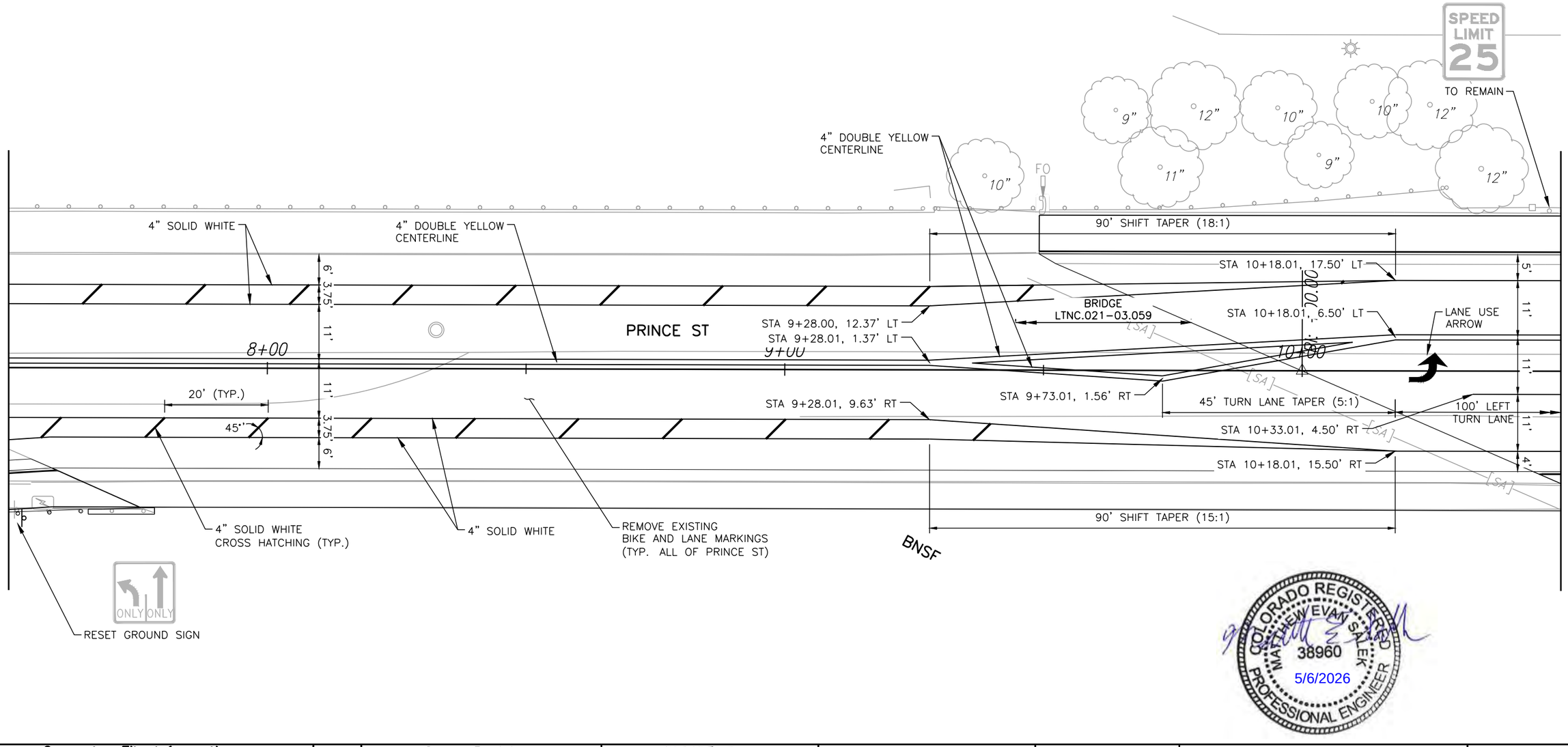
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NOTES

1. STRIPING MEASURED FROM CURB IS MEASURED TO CURB FACE.
2. LANE USE ARROWS SHALL HAVE BLACK OUTLINE WHEN ON CONCRETE SURFACE.
3. ALL LANE LINES TO BE EPOXY AND ALL SYMBOLS, ARROWS AND CROSSWALK MARKINGS SHALL BE THERMOPLASTIC.
4. BIKE LANE SYMBOL SHALL BE HELMETED BICYCLIST SYMBOL AND ARROW (S-627-1 & MUTCD FIGURE 9C-3).
5. SEE SIGNAL PLAN FOR SIGNS ON SIGNAL POLES.

10
0 20 40
HORIZONTAL SCALE: 1"=20'

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COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

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Sheet Revisions		

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2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION SIGNING & STRIPING PLAN

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SIGN	Subset Sheets:	3 of 7

Project No./Code	
STU M810-018	
24290	
Sheet Number	80

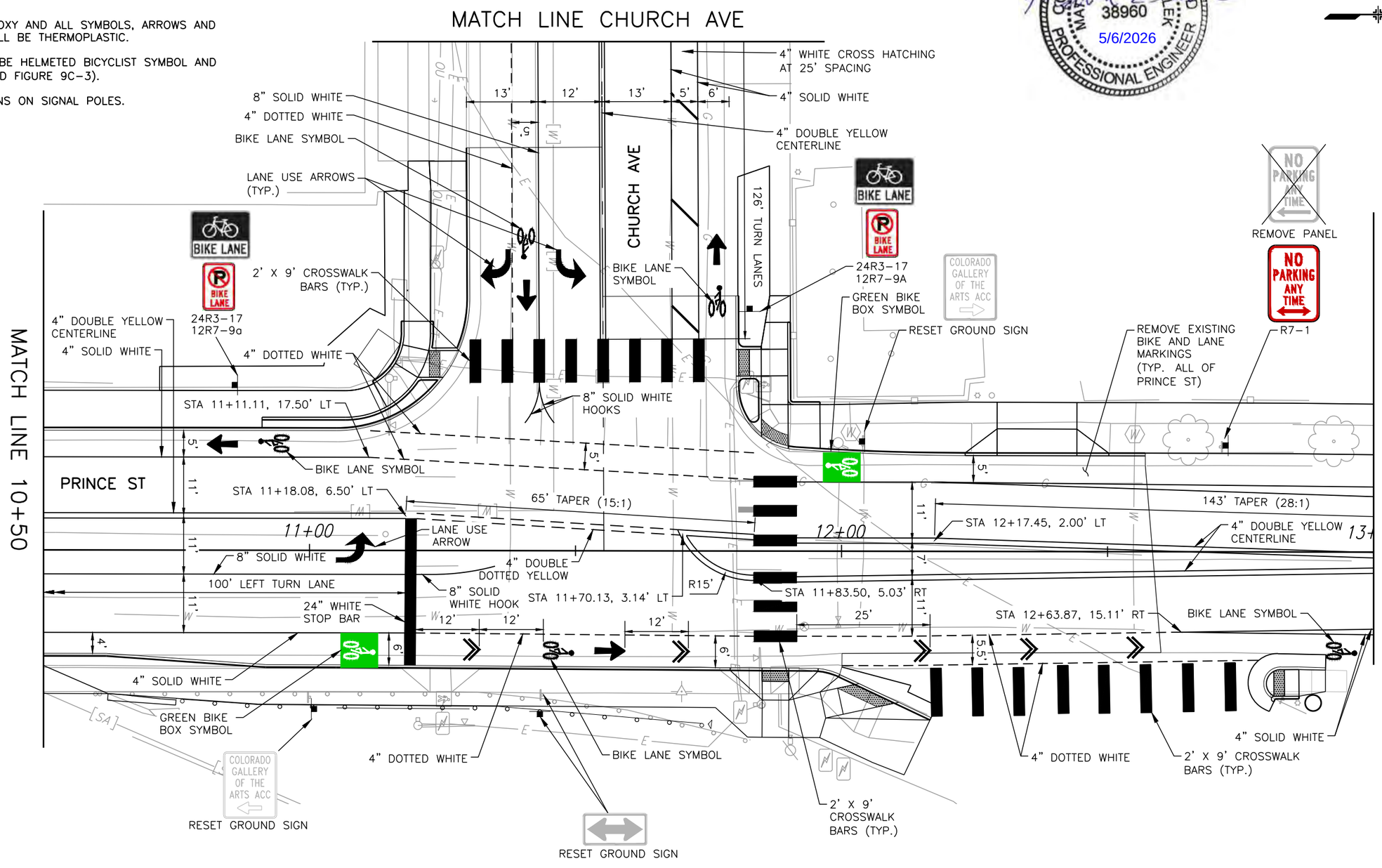
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NOTES

1. STRIPING MEASURED FROM CURB IS MEASURED TO CURB FACE.
2. LANE USE ARROWS SHALL HAVE BLACK OUTLINE WHEN ON CONCRETE SURFACE.
3. ALL LANE LINES TO BE EPOXY AND ALL SYMBOLS, ARROWS AND CROSSWALK MARKINGS SHALL BE THERMOPLASTIC.
4. BIKE LANE SYMBOL SHALL BE HELMETED BICYCLIST SYMBOL AND ARROW (S-627-1 & MUTCD FIGURE 9C-3).
5. SEE SIGNAL PLAN FOR SIGNS ON SIGNAL POLES.

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER 5/6/2026

10 0 20 40
HORIZONTAL SCALE: 1"=20'



Computer File Information			
Creation Date:	11/15/2017	Initials:	MES
Last Modification Date:	3/10/2023	Initials:	BPM
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Acad Ver.	Scale: 1"=40'	Units:	English

Sheet Revisions		

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Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION SIGNING & STRIPING PLAN

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SIGN	Subset Sheets:	4 of 7

Project No./Code
STU M810-018
24290
Sheet Number 81

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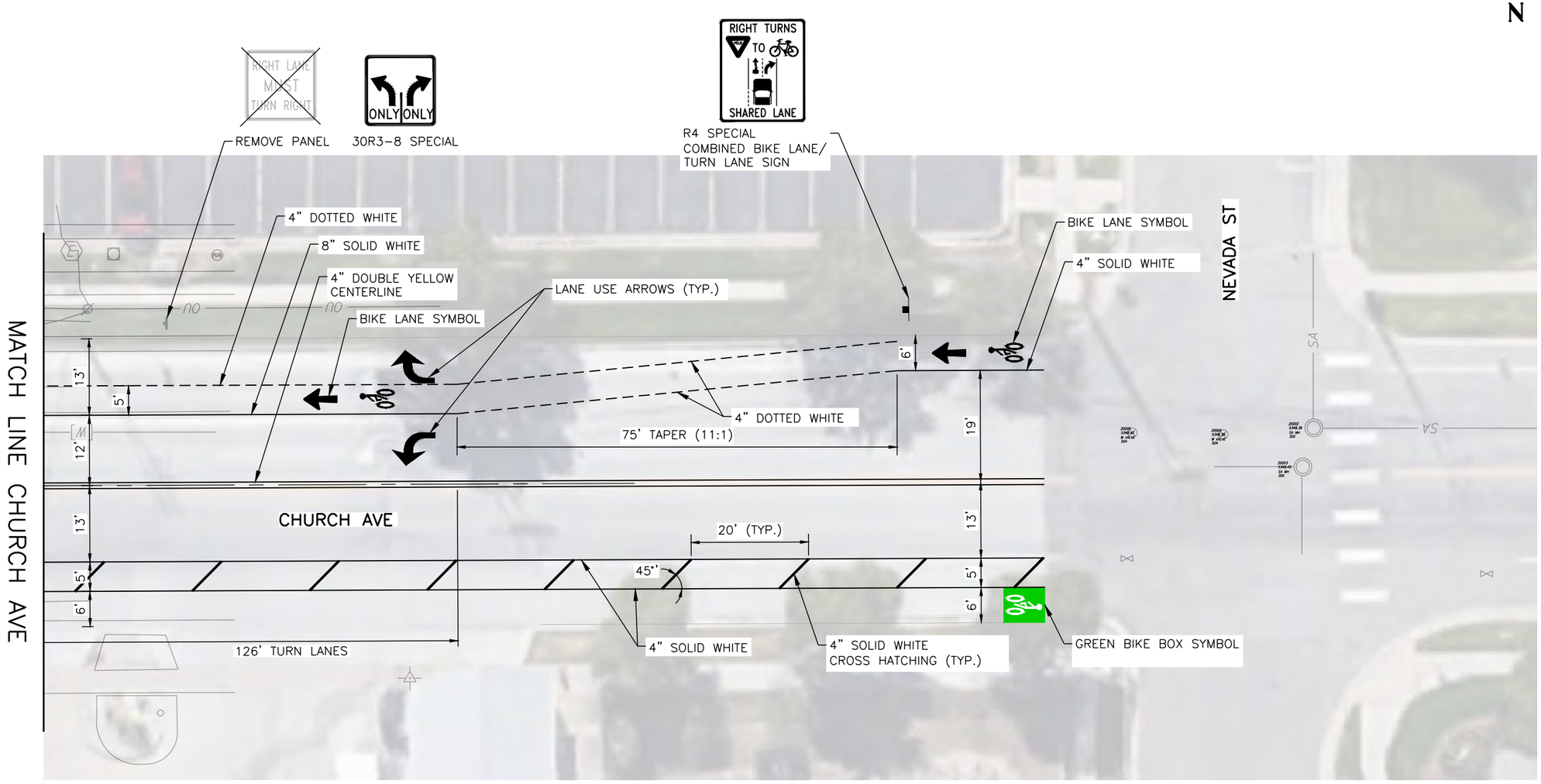
NOTES

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COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N



Computer File Information			
Creation Date:	11/15/2017	Initials:	MES
Last Modification Date:	3/10/2023	Initials:	BPM
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Drawing File Name:	PC43 PRINCECHURCH-STRIPE01.dwg		
Acad Ver.	Scale: 1"=40'	Units:	English

Sheet Revisions		

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2255 W. Berry Ave.
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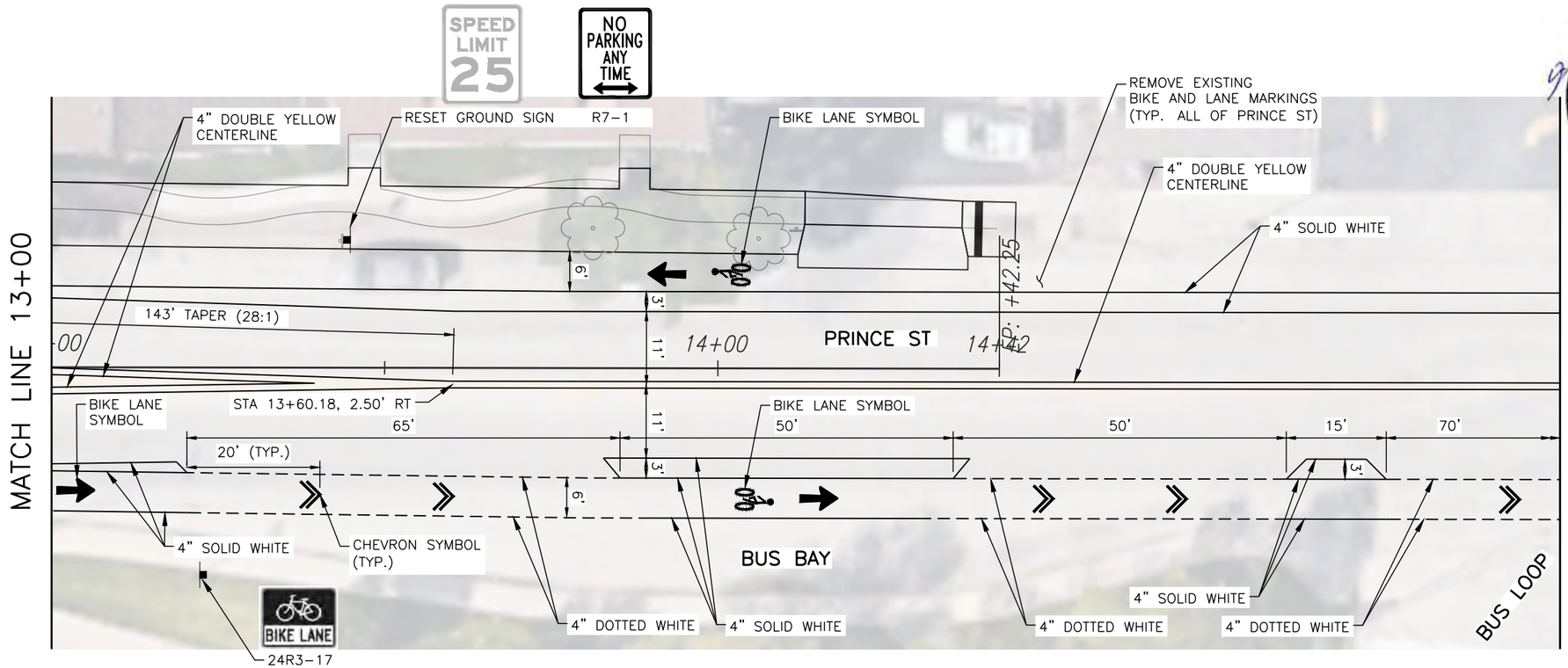
PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
SIGNING & STRIPING PLAN

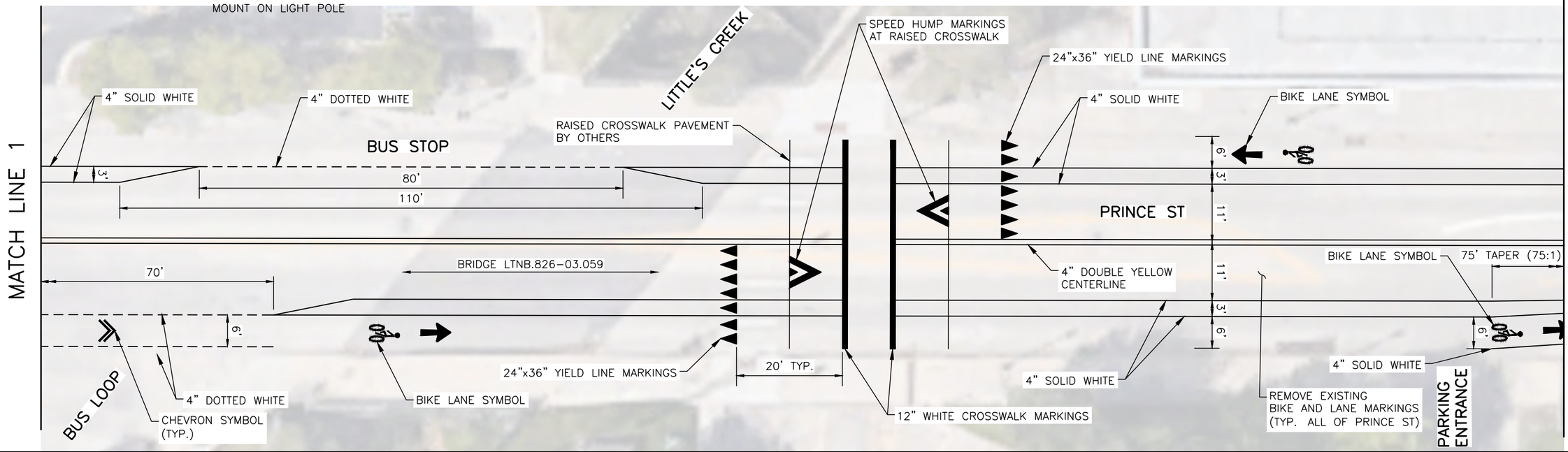
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Detailer:	MES		
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Project No./Code	
STU M810-018	
24290	
Sheet Number	82

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MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N

MATCH LINE 1

NOTES

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5. SEE SIGNAL PLAN FOR SIGNS ON SIGNAL POLES.

Computer File Information			
Creation Date:	11/15/2017	Initials:	MES
Last Modification Date:	3/10/2023	Initials:	BPM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings		
Drawing File Name:	PC43 PRINCECHURCH-STRIPE01.dwg		
Acad Ver.	Scale: 1"=40'	Units:	English

Sheet Revisions		

Littleton
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2255 W. Berry Ave.
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No Revisions:
Revised:
Void:

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
SIGNING & STRIPING PLAN

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SIGN	Subset Sheets:	6 of 7

Project No./Code
STU M810-018
24290
Sheet Number 83

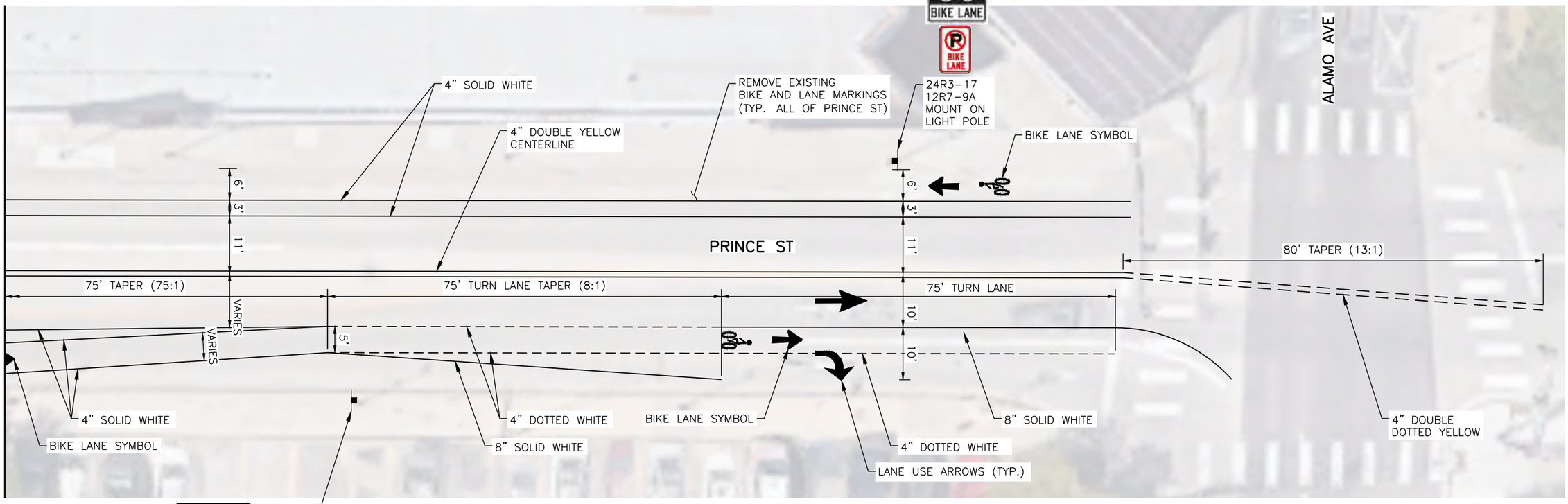
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COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

10
0 20 40
HORIZONTAL SCALE: 1"=20'

N



Computer File Information			
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Last Modification Date:	3/10/2023	Initials:	BPM
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Acad Ver.	Scale: 1"=40'	Units:	English

Sheet Revisions		

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303-771-6868 Job No. 151496.00.5

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No Revisions:	
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
SIGNING & STRIPING PLAN

Designer:	MES	Structure Numbers	
Detailer:	MES		
Sheet Subset:	SIGN	Subset Sheets:	7 OF 7

Project No./Code	
STU M810-018	
24290	
Sheet Number	84

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FOUNDATION NOTES

1. CONCRETE SHALL BE CLASS BZ WITH ENTRAINED AIR PER THE COLORADO DEPARTMENT OF TRANSPORTATION SPECIFICATION, SECTION 601.02 UNLESS OTHERWISE NOTED.
2. SHAFT FOR CONCRETE FOUNDATION TO BE DRILLED BY MECHANICAL AUGER OR USING HYDROVAC EXCAVATION. CASING IF USED IN PLACING CONCRETE SHALL BE REMOVED UPON COMPLETING POUR. CARE SHALL BE TAKEN TO PREVENT "MUSHROOMING" AT TOP OF CAISSON.
3. THE DESIGNS HEREIN ASSUMES THAT THE STREET LIGHTS OR SIGNALS ARE INSTALLED WITHIN THE ROADWAY EARTHWORK PRISM WITH THE FOLLOWING SOIL PARAMETERS:

   SOIL DENSITY γ=120 LBS/ CU FT
   SOIL ø ANGLE = 28° FOR MEDIUM DENSE COHENSIONLESS SOIL

   THE AVERAGE FRICTIONAL RESISTANCE OF THE SOIL (AROUND THE SHAFT) = 750 LBS/SQ FT

   A GEOTECHNICAL ENGINEER IS REQUIRED ONSITE DURING DRILLING OPERATIONS.

   THE STANDARD FOUNDATION DESIGN SHOWN WILL NEED TO BE MODIFIED IF ANY OF THE FOLLOWING ARE ENCOUNTERED:
   - A GEOTECHNICAL INVESTIGATION (CONDUCTED PRIOR TO, OR DURING, CAISSON CONSTRUCTION) INDICATES THE ABOVE NOTED REQUIREMENTS CANNOT BE MET.
   - THE SOIL IS HIGH IN ORGANIC CONTENT.
   - THE SOIL CONSISTS OF SATURATED SILT AND CLAY.
   - THE SOIL CANNOT SUPPORT THE WEIGHT OF THE DRILL RIG.
4. SHOULD ROCK BE ENCOUNTERED, PRIOR TO ATTAINING REQUIRED FOUNDATION DEPTH, THE TOTAL SHAFT LENGTH REQUIRED SHALL BE THE SHORTER OF THE STANDARD SHAFT LENGTH OR A MINIMUM OF 6 FEET INTO ROCK SUBJECT TO THE APPROVAL OF THE ON-SITE GEOTECHNICAL ENGINEER.
5. CONTRACTOR SHALL CONSTRUCT THE FOUNDATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF CDOT STANDARD SPECIFICATION 503 - DRILLED SHAFTS.
6. CONTRACTOR SHALL ESTABLISH TOP ANCHOR BOLT WITH RESPECT TO ADJACENT FINISHED GRADE.
7. REFER TO CDOT STANDARD PLAN S-614-45 FOR PEDESTRIAN PUSH BUTTON POST ASSEMBLY DETAILS.

FOUNDATION LEGEND

① HEX NUT WITH WASHER

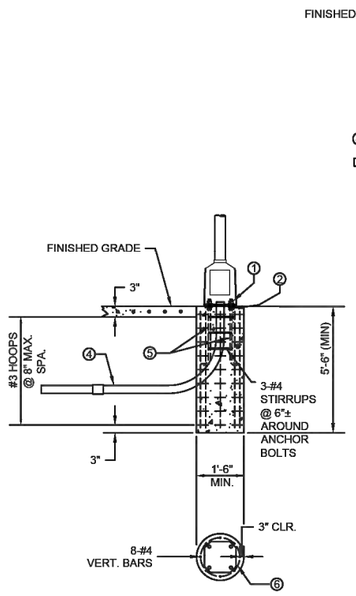
② HEX NUT WITH WASHER (LEVELING NUT)

③ 4" MIN. TO 6" MAX. NON-SHRINKABLE GROUT BETWEEN BASE PLATE AND TOP OF FOUNDATION

④ CONDUIT CONFIGURATION AND SIZES WILL VARY BASED ON INTENDED USE:
PEDESTAL POLE - 2-2" CONDUITS
TRAFFIC SIGNAL - 2-3" CONDUITS AND 2-2" CONDUITS
STREET LIGHTS - 1-2" CONDUIT
(24" MIN. DEPTH WITH 30" MIN. DEPTH UNDER ROADWAY)

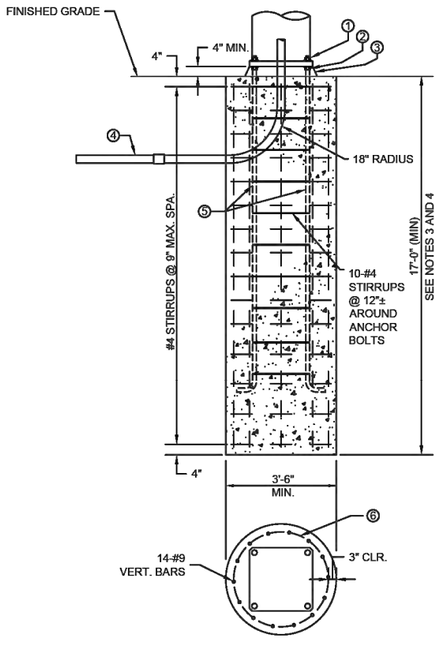
⑤ INSTALL ANCHOR BOLTS (FURNISHED WITH POLE) PER MANUFACTURER'S TEMPLATE PRINT (FURNISHED WITH ORDER). THE CONTRACTOR SHALL ESTABLISH THE TOP OF THE ANCHOR BOLT WITH RESPECT TO THE FINISHED GRADE.

⑥ MINIMUM OVERLAP OF 12"

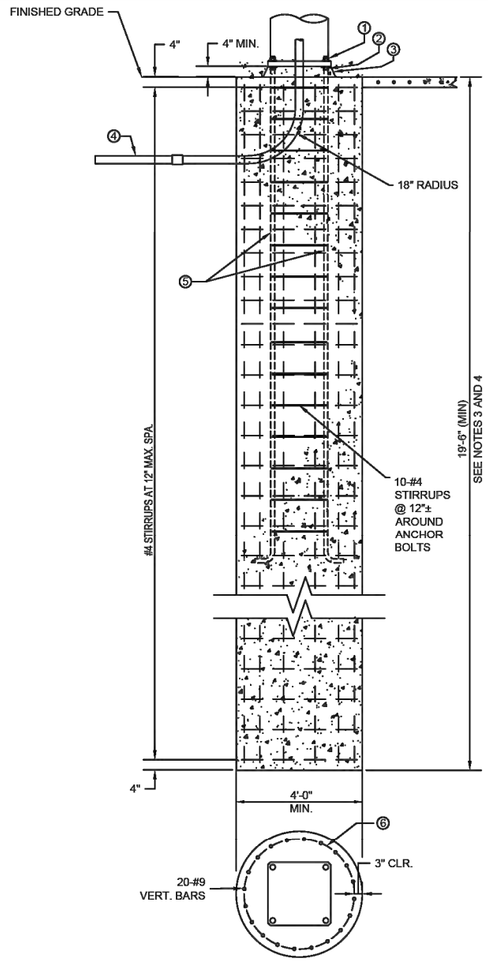


MAST ARM UP TO 45 FEET AND STREET LIGHT

PEDESTAL



MAST ARM 46 TO 60 FEET



MAST ARM 61 TO 75 FEET

TYPICAL POLE FOUNDATION

(NOT TO SCALE)

COLORADO REGISTERED MATTHEW EVAN SALEK 38960 PROFESSIONAL ENGINEER
5/6/2026

My responsibility for this sheet is limited to selecting the appropriate standard detail for the project. The detail is designed by others.

REVISIONS		
NO.	DATE	DESCRIPTION
	11/2024	ORIGINAL

ARAPAHOE COUNTY, COLORADO
DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

STANDARD SIGNAL DESIGN DETAILS

POLE FOUNDATION DETAILS

PROJECT NO.	DATE:	DESIGNED BY:	JOB NO.
PROJECT NAME:	SCALE:	DRAWN BY:	SHEET NO. 4 OF 10

Computer File Information		
Creation Date:	Initials:	MES
Last Modification Date: 10/2/2025	Initials:	MES
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Drawing File Name: PC47 PRINCECHURCH-SIGDTL.dwg		
Acad Ver.	Scale:	Units: English

Sheet Revisions		

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2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

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Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
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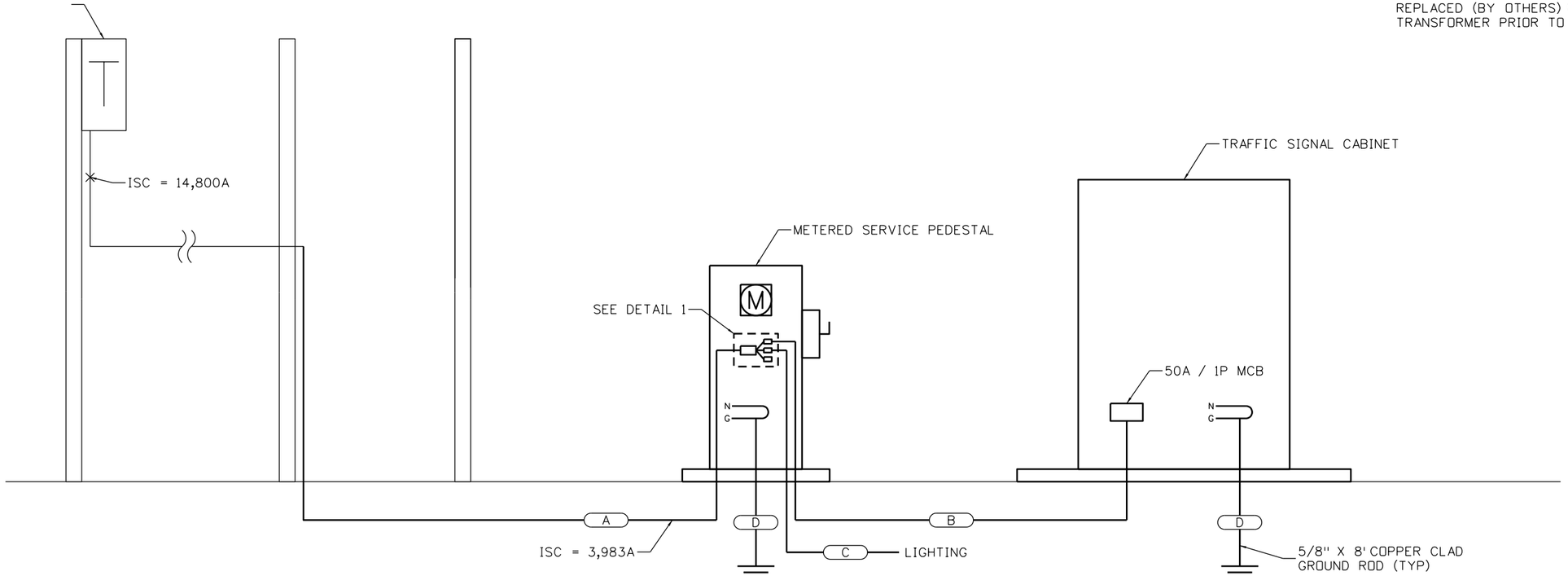
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PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION SIGNAL FOUNDATION DETAILS			
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Detailer:	MES		
Sheet Subset:	SGDT	Subset Sheets:	1 of 1

Project No./Code	
STU M810-018	
24290	
Sheet Number	85

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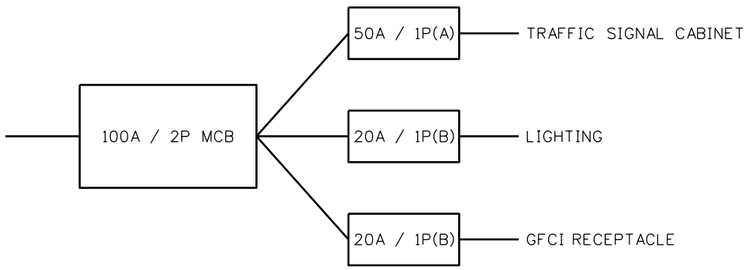
EXISTING 50KVA 240/120V,
1 PHASE POLE-MOUNT
TRANSFORMER
(XCEL ENERGY)
SEE NOTE 1



NOTES:

1. EXISTING 25KVA TRANSFORMER TO BE REPLACED (BY OTHERS) WITH A 50KVA TRANSFORMER PRIOR TO THE PROJECT.

ELECTRICAL ONE-LINE DIAGRAM



DETAIL 1
SERVICE PEDESTAL DETAIL (240/120V, 1 PHASE)

FEEDER SCHEDULE

- (A) (3)#1 XHHW CU
- (B) (2)#6 THWN CU & (1)#6 CU GND (2" Conduit)
- (C) (2)#12 THWN CU (2" Conduit)
- (D) (1)#6 Solid Bare CU to Ground Rod



JacobRogne
11/30/20222:01:50 PM
DGN MODEL:One-Line Diagram
FILE NAME:P:\3049 Littleton One-Line Diagram\CADD\Electrical One-Line Diagrams.dgn

Computer File Information			Sheet Revisions				As Constructed	PRINCE STREET & CHURCH AVENUE ELECTRICAL ONE-LINE DIAGRAM		Project No./Code
Creation Date:	11/18/2022 Initials: JMR						No Revisions:			STU M810-018
Last Modification Date:	11/18/2022 Initials: JMR						Revised:	Designer: LTD	Structure Numbers	24290
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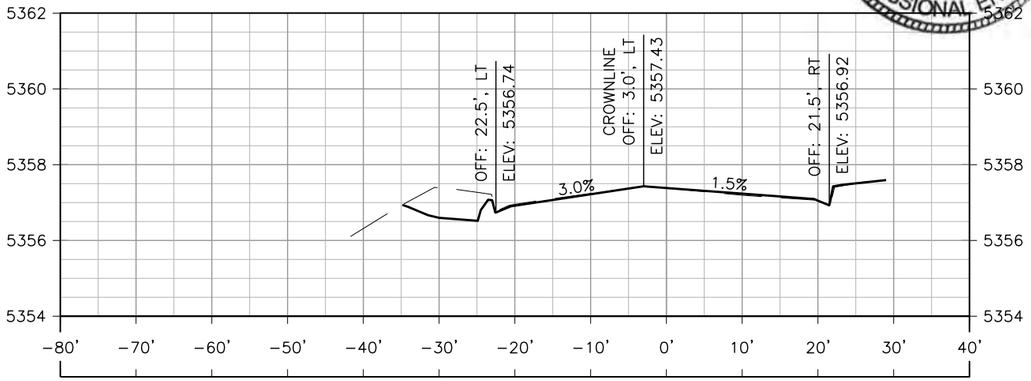
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2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

IRONSTRIDE SOLUTIONS DENVER, COLORADO 80222 PH: 720-807-4766

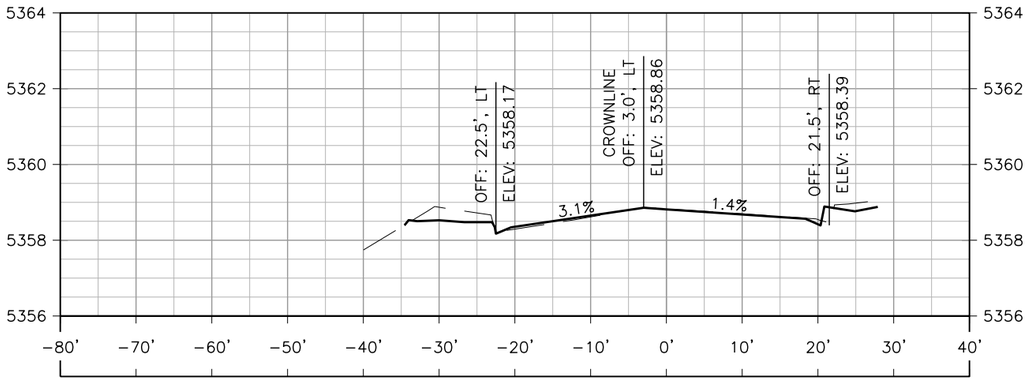
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38960
5/6/2026
PROFESSIONAL ENGINEER

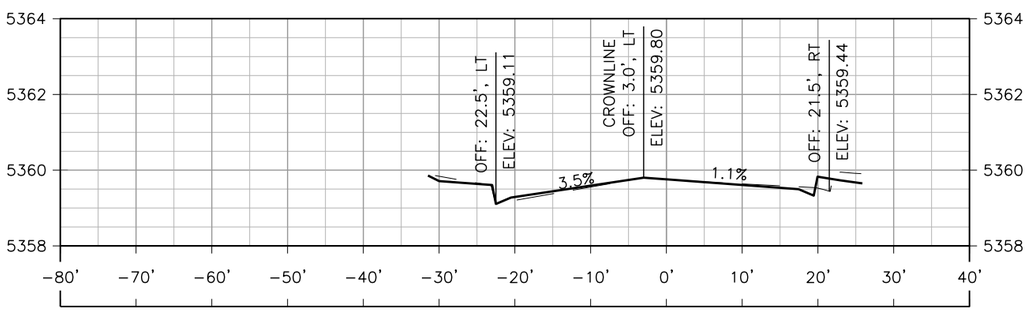
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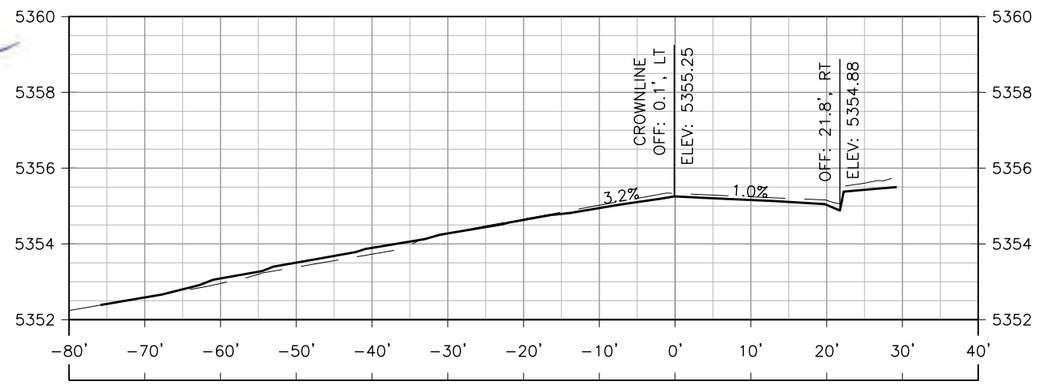
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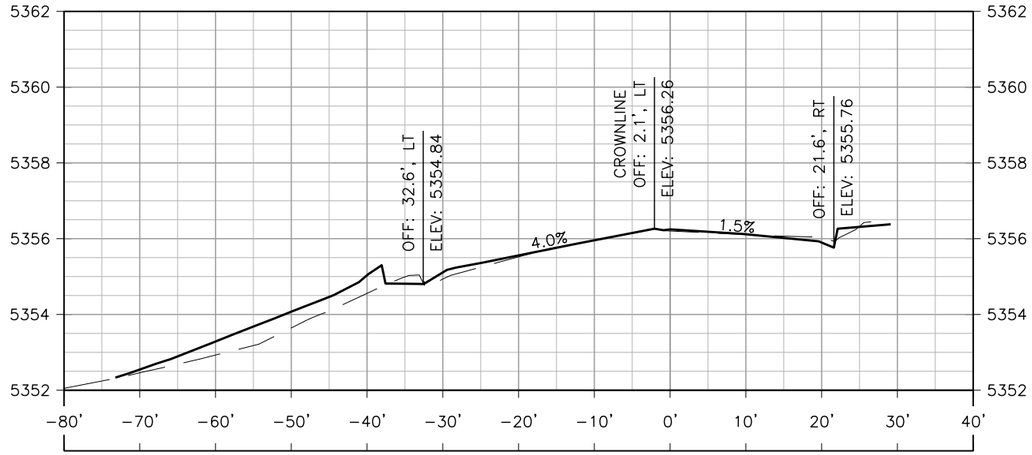
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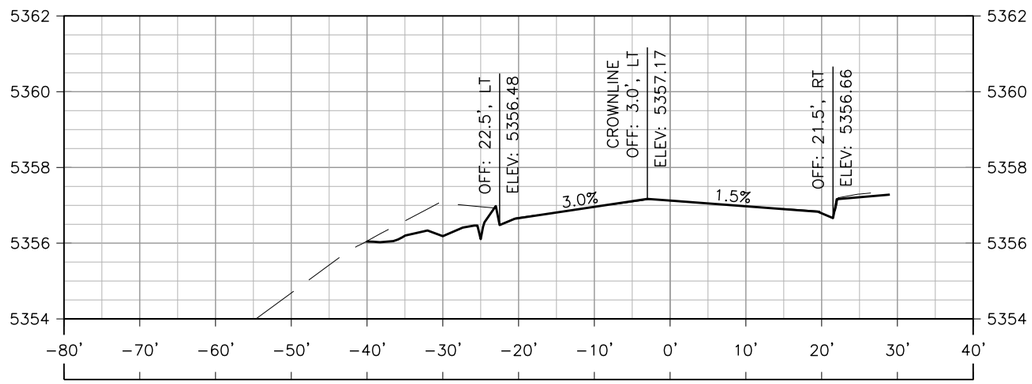
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Acad Ver.	Scale: Units: English

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Revised:	
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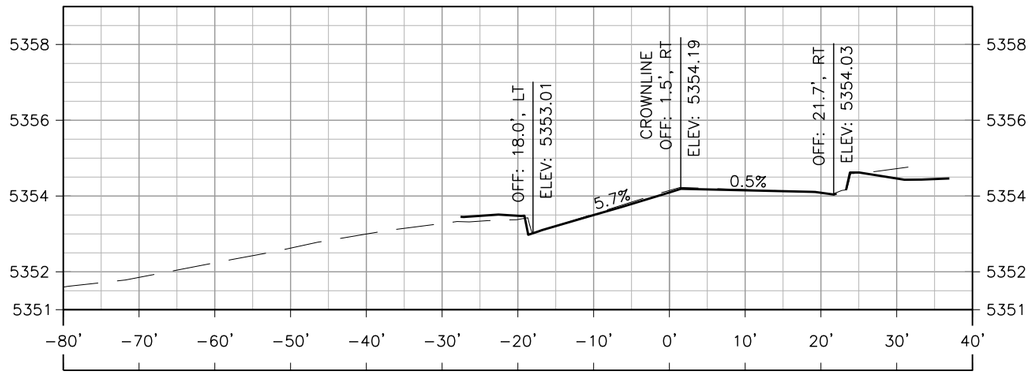
PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
CROSS SECTIONS

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Detailer:	BPM		
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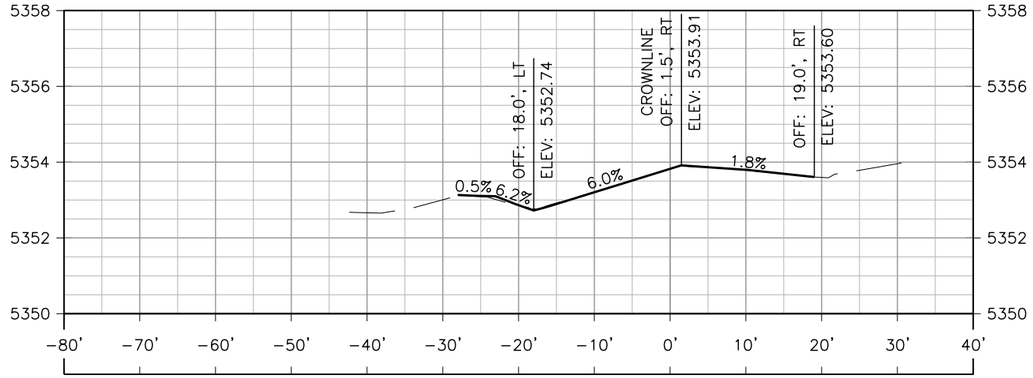
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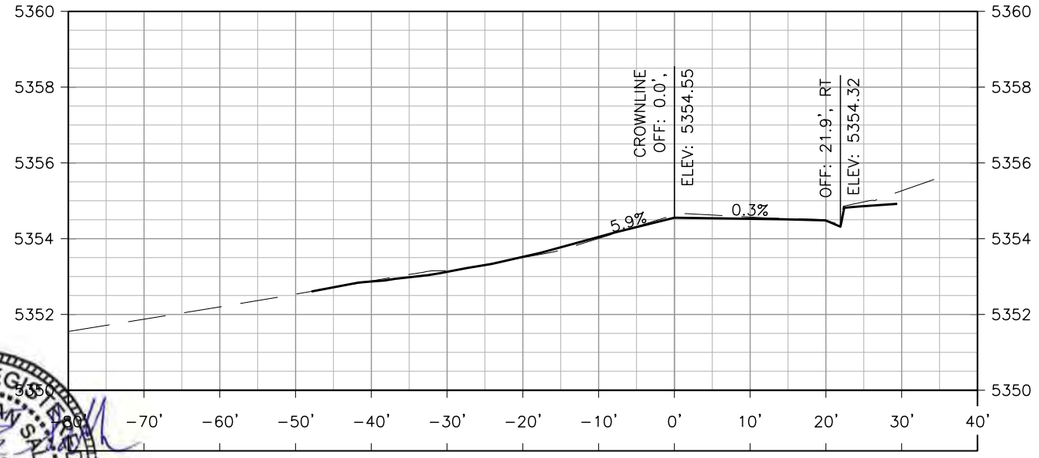
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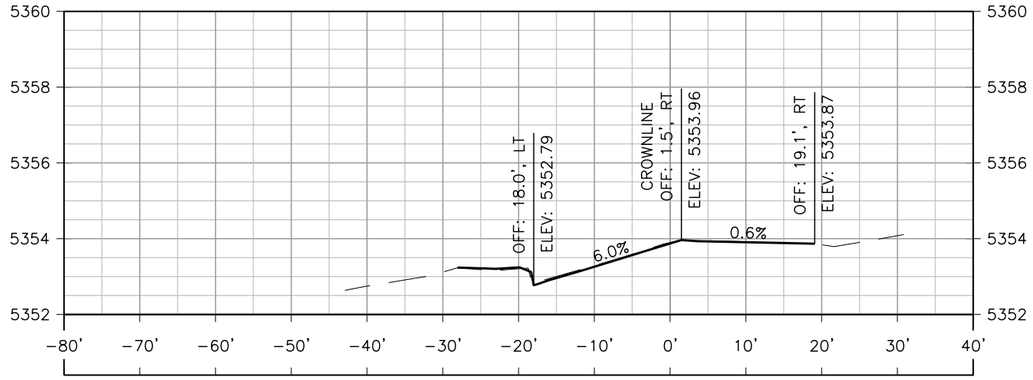
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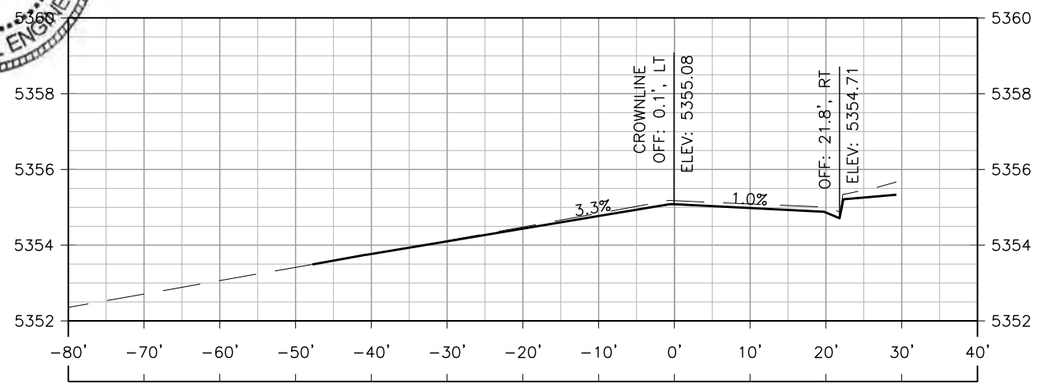
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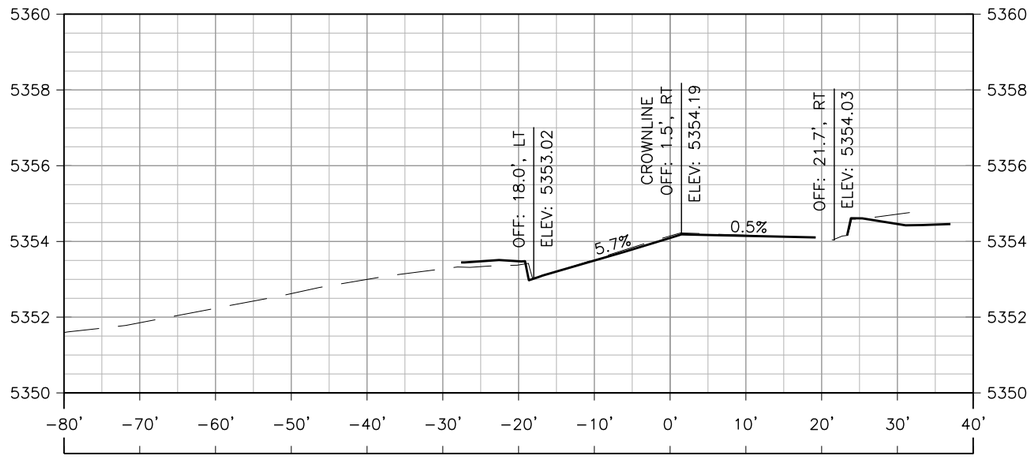
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11+55.33



12+00.11



COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
PROFESSIONAL ENGINEER
5/6/2026

Computer File Information	
Creation Date:	1/3/2018 Initials: BPM
Last Modification Date:	1/24/2022 Initials: BPM
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Drawing File Name:	PC44-46 PRINCECHURCH-XSECTIONS.dwg
Acad Ver.	Scale: Units: English

Sheet Revisions		

Littleton
Public Works
2255 W. Berry Ave.
Littleton, Colorado 80120
303-795-3863

benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

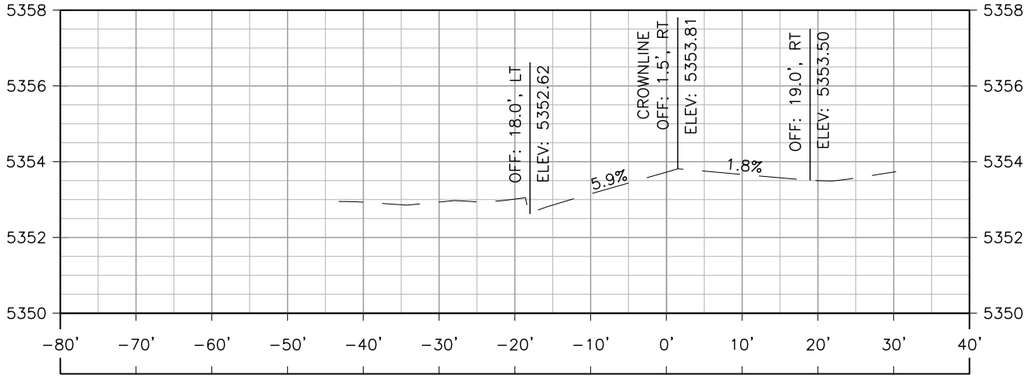
PRINCE STREET & CHURCH AVENUE
INTERSECTION RECONSTRUCTION
CROSS SECTIONS

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	XS	Subset Sheets:	2 of 3

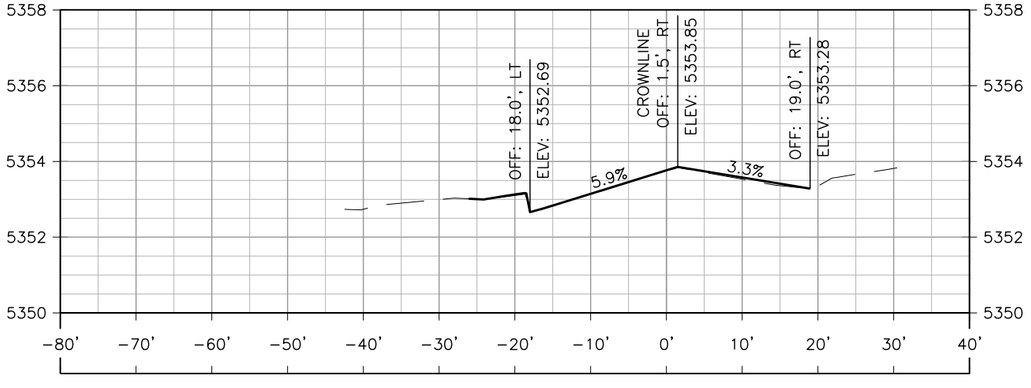
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STU M810-018	
24290	
Sheet Number	88

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12+50.00



COLORADO REGISTERED
MATTHEW EVAN SALEK
38960
5/6/2026
PROFESSIONAL ENGINEER

Computer File Information	
Creation Date:	1/3/2018 Initials: BPM
Last Modification Date:	1/24/2022 Initials: BPM
Full Path:	Y:\DENVER\151400S\00151496.00\Eng_Docs\Drawings
Drawing File Name:	PC44-46 PRINCECHURCH-XSECTIONS.dwg
Acad Ver.	Scale: Units: English

Sheet Revisions		

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benesch
Alfred Benesch & Company
7979 E. Tufts Avenue, Suite 800
Denver, Colorado 80237
303-771-6868 Job No. 151496.00.5

As Constructed	
No Revisions:	
Revised:	
Void:	

PRINCE STREET & CHURCH AVENUE INTERSECTION RECONSTRUCTION
CROSS SECTIONS

Designer:	BPM	Structure Numbers	
Detailer:	BPM		
Sheet Subset:	XS	Subset Sheets:	3 of 3

Project No./Code	
STU M810-018	
24290	
Sheet Number	89

Colorado Department of Transportation
18500 E. Colfax Ave.
Aurora, CO. 80011
Phone: 303-916-4529
Region 1 SDH

Sheet Revisions

Date	Description	Initials

Sheet Revisions

Date	Description	Initials

Farnsworth GROUP
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GREENWOOD VILLAGE, COLORADO 80111
(303) 692-8838 / info@f-w.com
www.f-w.com

COLORADO LICENSED ALAN WARNER 28668 07/21/22 PROFESSIONAL LAND SURVEYOR

Right of Way Plans
TITLE SHEET
Project Number: STU M810-018
Project Location: S. Prince St./ W. Church Ave.
Arapahoe County

Project Code:	Last Mod. Date	Subset	Sheet No.
24290	07/21/2022	1.01 of 1.01	1.01

SURVEYOR STATEMENT (ROW PLAN)

I, *Alan Warner*, a professional land surveyor licensed in the State of Colorado, do hereby state to the Colorado Department of Transportation and the City of Littleton that based upon my knowledge, information and belief, the research, calculations and evaluation of the survey evidence were performed and this Right-of-Way Plan was prepared under my responsible charge.
This statement is not a guaranty or warranty, either expressed or implied.

PLS No. 28668

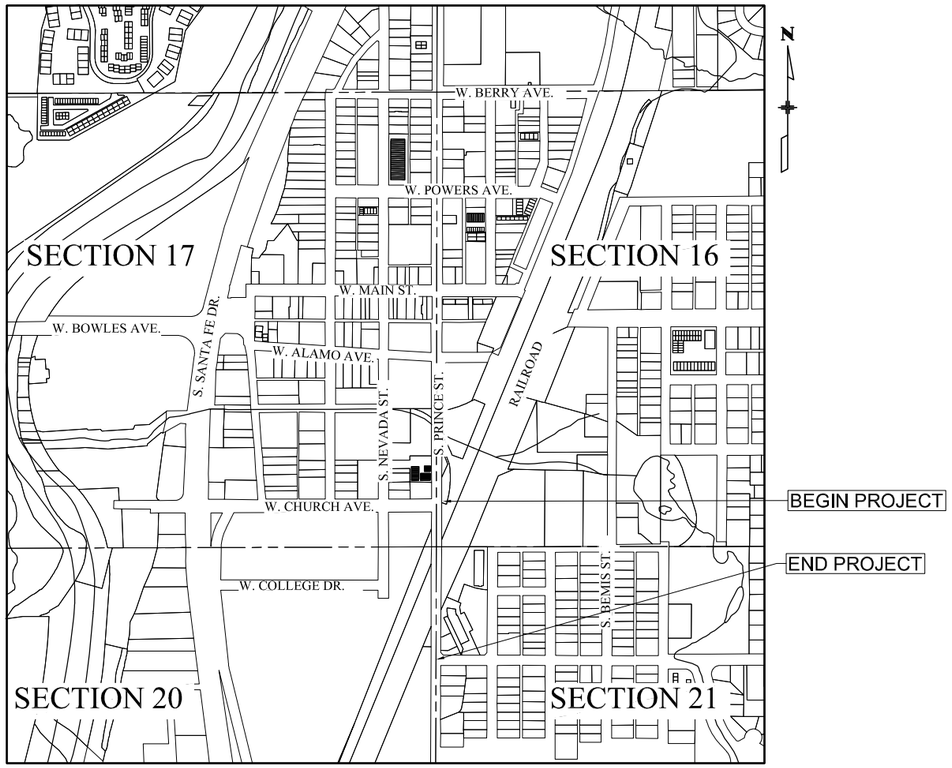
Littleton

DEPARTMENT OF TRANSPORTATION
STATE OF COLORADO

RIGHT OF WAY PLANS OF PROPOSED

PROJECT NO. STU M810-018
CITY OF LITTLETON PROJECT NO. 18-17
PRINCE & CHURCH INTERSECTIONS
ARAPAHOE COUNTY

S. Prince St. Length of Project = 0.18 Miles



PROJECT LOCATION MAP

0' 0.5Mi 1Mi 2Mi
Lineal Units = U.S. Survey Feet

Basis of Bearings: Bearings used in the calculations of coordinates are based on a grid bearing of S 00°05'45" W from the NW corner of the NW 1/4, SW 1/4, Sec. 16, Monumented by a 2" alum. cap marked LS 14115, 1997, in Range Box, to the 100' Witness Corner to the South 1/4 corner of Section 16, Monumented by 2" Alum. Cap marked LS 14115, 1997, in Range Box.

1. This Right-of-Way Plan is not a boundary survey of the adjoining property and is prepared for the Colorado Department of Transportation and City of Littleton purposes only.

2. This Right-of-Way Plan was prepare without benefit of Title Commitments. Farnsworth Group, Inc. relied entirely upon the Arapahoe County Assessor for all information relating to ownership.

3. This plan set is subject to change and may not be the most current set. it is the user's responsibility to verify with CDOT that this set is the most current. The information contained on the attached drawing is not valid unless this copy bears an original signature of the Professional Land Surveyor hereon named.

NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

COLORADO DEPARTMENT OF TRANSPORTATION
LOCAL AGENCY PROJECT

ROW PLANS AUTHORIZED: _____ *DATE*

_____
CDOT CHIEF ENGINEER

SECTION CORNER
1/4 AND 1/16 SECTION CORNERS
SET EASEMENT MONUMENT
TEMPORARY EASEMENT POINT
RIGHT OF WAY MARKER
BLM MARKER
PROPERTY PIN
NOAA MARKER
QUARTER AND SIXTEENTH SECTION CORNERS (TOPO POINT)
FEDERAL MONUMENT
WITNESS CORNER
BENCH MARK
USGS MARKER
LOCAL OR PLSS MONUMENT
SECONDARY CONTROL MONUMENT
RIGHT OF WAY MARKER
PROJECT CONTROL MONUMENT (N 9.88, E 3.81, EL 0.00)
DENSIFICATION CONTROL MONUMENT (N 10.13, E 3.81, EL 0.00)
HIGH ACCURACY REFERENCE NETWORK CONTROL MONUMENT (N 10.38, E 3.81, EL 0.00)

PERMANENT, PROPERTY, SLOPE, & UTILITY EASEMENT LINE (PROPOSED AND EXISTING)
TEMPORARY EASEMENT LINE (PROPOSED AND EXISTING)
PROPERTY BOUNDARY LINE (PROPOSED AND EXISTING)
ACCESS CONTROL LINE (PROPOSED AND EXISTING)
BARRIER ACCESS CONTROL LINE (PROPOSED AND EXISTING)
RIGHT OF WAY LINE (PROPOSED AND EXISTING)
VIRGIN RIGHT OF WAY LINE (PROPOSED AND EXISTING)
CITY LIMIT LINE
COUNTY LINE
QUARTER SECTION LINE
SECTION LINE
SIXTEENTH SECTION LINE
STATE LINE
TOWNSHIP LINE

SURVEY/ROW

TOP OF CUT
TOE OF FILL

TERRAIN

Note: For a complete listing of symbology used within this set of plans, please refer to the M-100-1 Standard Symbols of the Colorado Department of Transportation M&S Standards Publication. Existing topo features are shown as screened weight (gray scale). Proposed or new features are shown as full weight without screening, except as noted with the word (proposed).

SHEET NO. INDEX OF SHEETS

1.01	(1)	Title Sheet
2.01	(1)	Tabulation of Properties
4.01-4.02	(2)	Project Control Diagram-Land Survey Control Diagram (Combined)
5.01	(1)	Monumentation Sheets
–	(NA)	Tabulation of Road Approach Sheets
7.01	(1)	Plan Sheet
8.01	(1)	Ownership Map
	(7)	Total Sheets

Scales of Original 22"x34" Drawings
Plan Sheets 1"=30'
Ownership Map 1"=60'

$DATE$ $PLOT_INFO$

Colorado Department of Transportation
18500 E. Colfax Ave.
Aurora, CO. 80011
Phone: 303-916-4529
Region 1 SDH

Sheet Revisions		
Date	Description	Initials

Sheet Revisions		
Date	Description	Initials

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(303) 692-8838 / info@f-w.com
www.f-w.com

COLORADO LICENSED
ALAN WARNER
28668
07/21/22
PROFESSIONAL LAND SURVEYOR

Right of Way Plans
TABULATION OF PROPERTIES
Project Number: STU M810-018
Project Location: S. Prince St./ W. Church Ave.
Arapahoe County

Project Code:	Last Mod. Date	Subset	Sheet No.
24290	07/21/2022	2.01 of 2.01	2.01

Littleton

R.O.W. TABULATION OF PROPERTIES IN ARAPAHOE COUNTY RAISED PEDESTRIAN CROSSINGS 52

Parcel No.	Ownership Name / Mailing Address / City, State Zip	County Parcel Id / Site Address	Sec. / Twn, Rng	Area Of Parcel	Whole Property (WP) Sq Ft/Acre per Assessor	Existing ROW	Net Area (RL+RR)	WP Remainder Left (RL) of Project Alignment	WP Remainder Right (RR) of Project Alignment	CDOT Purchase Reception No. / Date	Title Commitment Company and Commitment No.	CITY OF LITTLETON PARCELS Purpose of Parcel
				Area In Square Feet								
				Area In Acres								
RWE-1	ARAPAHOE COMMUNITY COLLEGE	2077-20-1-00-036	NE 1/4,	159							Fidelity National	PERMANENT CONSTRUCTION OF SIDEWALK AND TRAFFIC SIGNAL POLE & CABINET
	2500 WEST COLLEGE DRIVE	2500 WEST COLLEGE DRIVE	SECTION 20,	0.004	38.03				38.03		Title Insurance	
	LITTLETON, CO 80128-1955	LITTLETON, CO 80128-1955	T5S, R68W 6TH P.M.								N0038560-010-T02-ES	
TE-1	ARAPAHOE COMMUNITY COLLEGE	2077-20-1-00-036	NE 1/4,	917							Fidelity National	TEMPORARY EASEMENT FOR ACCESS AND CONSTRUCTION OF SIDEWALK
	2500 WEST COLLEGE DRIVE	2500 WEST COLLEGE DRIVE	SECTION 20,	0.021	38.03						Title Insurance	
	LITTLETON, CO 80128-1955	LITTLETON, CO 80128-1955	T5S, R68W 6TH P.M.								N0038560-010-T02-ES	

$DATE$ $PLOT_INFO$

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Sheet Revisions		
Date	Description	Initials

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www.f-w.com

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ALAN WARNER
28668
07/21/22
PROFESSIONAL LAND SURVEYOR

LAND SURVEY-PROJECT CONTROL DIAGRAM
TITLE SHEET

Project Number: STU M810-018
Project Location: S. Prince St./ W. Church Ave.
Arapahoe County

Project Code:	Last Mod. Date	Subset	Sheet No.
24290	07/21/2022	4.01 of 4.02	4.01

SURVEYOR STATEMENT (LAND SURVEY CONTROL DIAGRAM)

I, *Alan Warner*, a professional land surveyor licensed in the State of Colorado, do hereby state to the Colorado Department of Transportation and the City of Littleton that this Land Survey Control Diagram was prepared and the field survey it represents was performed under my responsible charge.

This statement is not a guaranty or warranty, either expressed or implied.

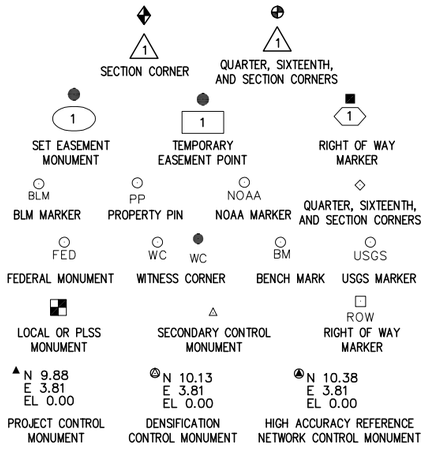
PLS No. 28668

Littleton

DEPARTMENT OF TRANSPORTATION
STATE OF COLORADO

LAND SURVEY CONTROL DIAGRAM / PROJECT CONTROL DIAGRAM

PRINCE & CHURCH INTERSECTIONS
Section 16, AND SECTION 20, Township 5 South, Range 68 West
of the 6th Principal Meridian
County of Arapahoe



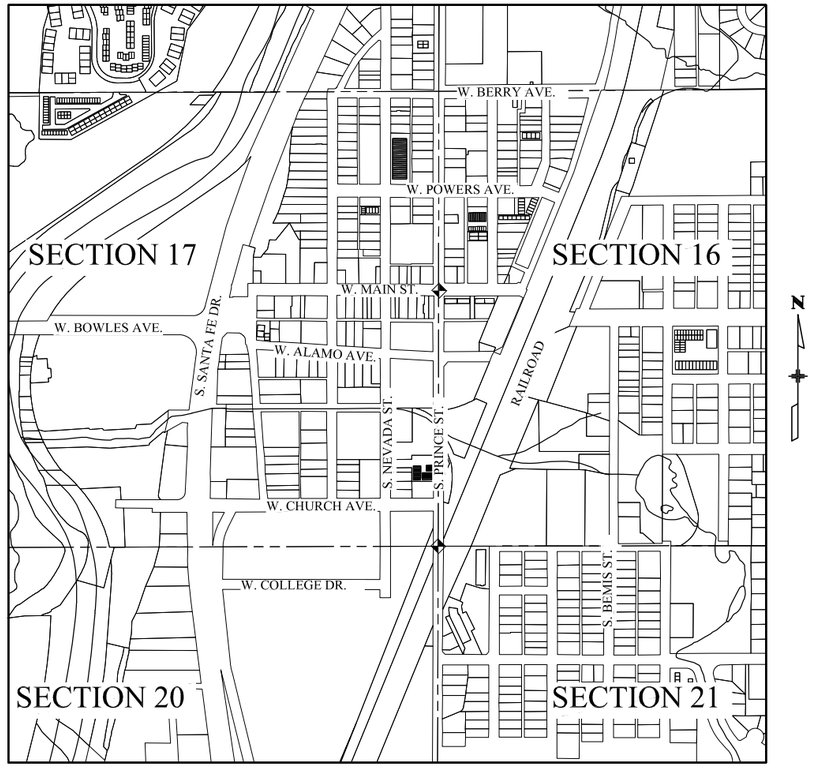
General Notes:

1. This Land Survey Control Diagram – Project Control Diagram is not a boundary survey of the adjoining property and is prepared for the Colorado Department of Transportation and City of Littleton purposes only. No determination has been made to determine if the found monuments as shown are in their proper position or if they are at the corners they are intended to monument

2. Title Policy, Title Commitment, and Title research are not part of this survey, therefore easements, rights, and restrictions of record were not researched and are not shown on this diagram. The verification of the physical evidence with relation to easements, rights of ways, property boundaries, and restrictions, as described in the instruments of record, were not included in this Land Survey Control Diagram.

3. This plan set is subject to change and may not be the most current set. It is the user's responsibility to verify with CDOT and the City of Littleton that this set is the most current. The information contained on the attached drawing is not valid unless this copy bears an original signature of the Professional Land Surveyor hereon named.

4. Refer to the M-629-1 Survey Monuments of the Standard found in the Colorado Department of Transportation, M & S Standards for typical survey monument descriptions.



PROJECT LOCATION MAP

0' 0.5Mi 1Mi 2Mi
Lineal Units = U.S. Survey Feet

Basis of Bearings: Bearings used in the calculations of coordinates are based on a grid bearing of S 00°05'45" W from the NW corner of the NW 1/4, SW 1/4, Sec. 16, Monumented by a 2" alum. cap marked LS 14115, 1997, in Range Box, to the 100' Witness Corner to the South 1/4 corner of Section 16, Monumented by 2" Alum. Cap marked LS 14115, 1997, in Range Box.

Basis of Elevations: Project elevations are a local system based on a topographic survey performed by others and supplied to Farnsworth Group, Inc. by the City of Littleton.

COORDINATE DATUM: Project coordinates are a local system based on a topographic survey performed by others and supplied to Farnsworth Group, Inc. by the City of Littleton. Project coordinates appear to be modified Colorado State Plane Central Zone NAD 83(2011) coordinates based on RTK measurements from NGS Station KK1832. The ground scale factor is 1.000303840. Project Coordinates are truncated by -1756.30 feet in Northings and 73.60 feet in Eastings.

To get from Project to State Plane coordinates: add the truncation factor and divide by the ground scale factor.

Note: For a complete listing of symbology used within this set of plans, please refer to the M-100-1 Standard Symbols of the Colorado Department of Transportation M&S Standards Publication. Existing features are shown as screened weight (gray scale). Proposed or new features are shown as full weight without screening.

NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

SHEET NO.	INDEX OF SHEETS
4.01	(1) Title Sheet
4.02	(1) Monument Coordinate Tables & Plan Sheet
	(2) Total Sheets

$PLOT_INFO$
$DATE$

Colorado Department of Transportation
18500 E. Colfax Ave.
Aurora, CO. 80011
Phone: 303-916-4529
Region 1 SDH

Sheet Revisions		
Date	Description	Initials

Sheet Revisions		
Date	Description	Initials

Farnsworth GROUP
5613 DTC PARKWAY, SUITE 1100
GREENWOOD VILLAGE, COLORADO 80111
(303) 692-8838 / info@f-w.com
www.f-w.com

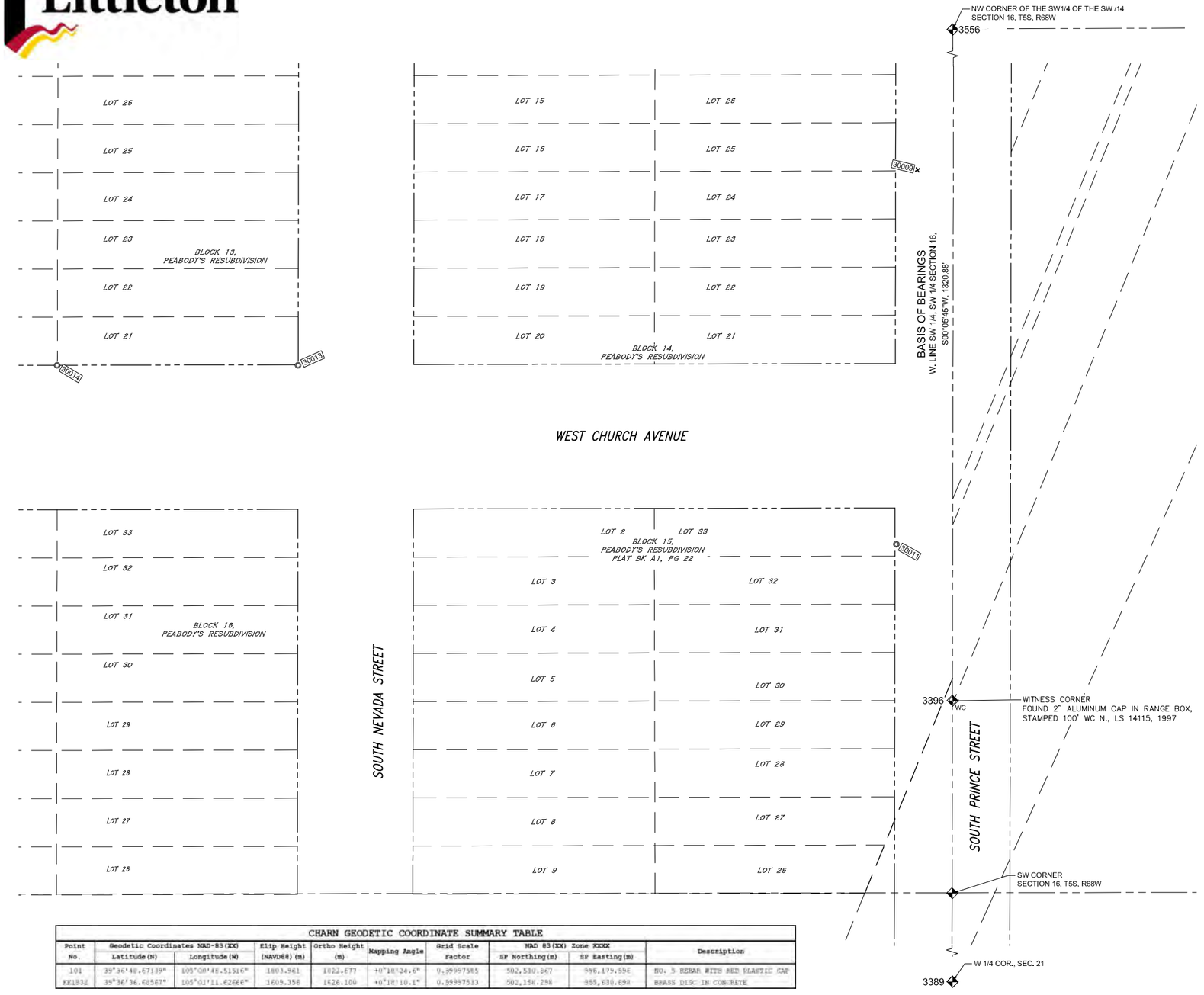
COLORADO LICENSED
ALAN WARNER
28668
07/21/22
PROFESSIONAL LAND SURVEYOR

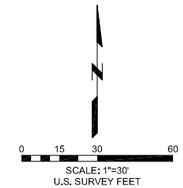
LAND SURVEY-PROJECT CONTROL DIAGRAM
COORDINATE TABLES - PLAN SHEET

Project Number: STU M810-018
Project Location: S. Prince St./ W. Church Ave.
Arapahoe County

Project Code:	Last Mod. Date	Subset	Sheet No.
24290	07/21/2022	4.02 of 4.02	4.02

Littleton





FOUND ALIQUOT MONUMENT COORDINATE TABLE

Point No.	Northing(ft)	Easting(ft)	Description
3556	1,649,076.29	3,137,173.24	2" ALUM. CAP LS 14115, 1997
3396	1,647,855.41	3,137,171.02	2" ALUM. IN RANGE BOX, 100' WC N, LS 14115, 1997
3389	1,645,123.40	3,137,164.42	3-1/4" ALUM. CAP PLS 17669, 1993 IN RANGEBOX

FOUND BOUNDARY MONUMENT COORDINATE TABLE

Point No.	Northing(ft)	Easting(ft)	Description
30009	1,648,131.02	3,137,153.11	CHISELED CROSS
30011	1,647,936.58	3,137,142.02	1" BRASS DISC AZTEC LS ILLEG
30013	1,648,029.52	3,136,831.46	1" BRASS DISC LS 16109
30014	1,648,029.54	3,136,706.38	2" ALUMINUM DISC FARNSWORTH PLS 28668

FOUND R.O.W. MONUMENT COORDINATE TABLE

Point No.	Northing(ft)	Easting(ft)	Description

PROJECT COORDINATE TABLE

Point No.	Project Coordinates		Elev(ft) (NAVD88)	Description
	Northing(ft)	Easting(ft)		
101	1,648,025.84	3,137,013.40	5349.34	FOUND CUT CROSS
1297	1,648,008.07	3,137,197.96	5355.14	FOUND CUT CROSS
1298	1,647,947.07	3,136,839.12	5347.82	FOUND CUT CROSS

CHARN GEODETIC COORDINATE SUMMARY TABLE

Point No.	Geodetic Coordinates NAD-83(XX)		Ellp Height (NAVD88) (m)	Ortho Height (m)	Mapping Angle	Grid Scale Factor	NAD 83(XX) Zone XXXX		Description
	Latitude(N)	Longitude(W)					SP Northing(m)	SP Easting(m)	
101	39°36'48.67139"	105°00'48.51516"	1803.961	1822.677	+0°18'24.6"	0.99997585	502,530.847	496,179.956	NO. 5 REBAR WITH RED PLASTIC CAP
KK1832	39°36'36.68567"	105°01'11.62666"	1809.356	1826.100	+0°18'10.1"	0.99997533	502,158.298	495,630.698	BRASS DISC IN CONCRETE

$PLOT_INFO$
$DATE$

Colorado Department of Transportation
18500 E. Colfax Ave.
Aurora, CO. 80011
Phone: 303-916-4529
Region 1 SDH

Sheet Revisions

Date	Description	Initials

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ALAN WARNER
28668
07/21/22
PROFESSIONAL LAND SURVEYOR

Right of Way Plans
MONUMENTATION SHEET
Project Number: STU M810-018
Project Location: S. Prince St./ W. Church Ave.
Arapahoe County

Project Code:	Last Mod. Date	Subset	Sheet No.
24290	07/21/2022	5.01 of 5.01	5.01

SURVEYOR STATEMENT FOR THE CALCULATED POSITIONS OF ROW MONUMENTS

I, Alan Warner, a professional land surveyor licensed in the State of Colorado, do hereby state to the Colorado Department of Transportation and the City of Littleton that based upon my knowledge, information and belief, the research and evaluation of the survey evidence were performed and the calculated positions of these R.O.W. monuments were prepared under my responsible charge. This statement is not a guaranty or warranty, either expressed or implied.

PLS No. 28668

Littleton

TABULATION OF R.O.W. MONUMENTS TO BE SET

Point No.	Northing(ft)	Easting(ft)	Description	Station	Offset
100	1647955.179	3137141.364	TYPE 6 FOR CITY OF LITTLETON		
101	1647940.329	3137141.339	TYPE 6 FOR CITY OF LITTLETON		
102	1647955.133	3137119.994	TYPE 6 FOR CITY OF LITTLETON		

TABULATION OF TEMPORARY EASEMENT POINTS TO BE STAKED

Point No.	Northing(ft)	Easting(ft)	Description	Station	Offset
200	1647890.788	3137141.256	TEMPORARY EASEMENT		
201	1647890.767	3137131.256	TEMPORARY EASEMENT		
202	1647935.147	3137131.330	TEMPORARY EASEMENT		
203	1647945.136	3137121.337	TEMPORARY EASEMENT		
204	1647945.076	3137093.177	TEMPORARY EASEMENT		
205	1647955.076	3137093.194	TEMPORARY EASEMENT		
206	1647952.944	3137201.36	LICENSE AGREEMENT		
207	1647992.887	3137201.427	LICENSE AGREEMENT		
208	1647991.232	3137206.424	LICENSE AGREEMENT		
209	1647952.936	3137206.36	LICENSE AGREEMENT		

QUANTITY OF MONUMENTS TO BE SET

CAP TYPE	MONUMENT TYPE									
	1	1A	2	2A	3	3A	4	5	5(S)	6
REFERENCE										
ROW									3	
CONTROL										
ALIQUOT CORNER										
PERMANENT EASEMENT										
PROJECT POINTS										
WITNESS POST (REQUIRED)										

$PLOT_INFO$
$DATE$

General Notes:

1. All centerline and offset stationing may not represent the centerline as constructed in the field.
2. Refer to the M-629-1 Survey Monuments of the Standard Plans found in The Colorado Department of Transportation, M & S Standards for survey monument descriptions.
3. This plan set is subject to change and may not be the most current set. It is the user's responsibility to verify with CDOT that this set is the most current. The information contained on the attached drawing is not valid unless this copy bears an original signature of the Professional Land Surveyor hereon named.

COORDINATE DATUM: Project coordinates are modified Colorado State Plane North Zone NAD 83(2011) coordinates based on RTK measurements from NGS Station KK1832. The ground scale factor used to modify the coordinates is 1.000303840. Project Coordinates are truncated by 998,201.43 feet in the Northing and 2,999,992.76 feet in the Easting.

To get from Project to State Plane coordinates: add the truncation and divide by the ground scale factor.

NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

SURVEYOR STATEMENT FOR SET R.O.W. MONUMENTS

I, _____, a professional land surveyor licensed in the State of Colorado, do hereby state to the Colorado Department of Transportation and the City of Littleton that based upon my knowledge, information and belief, adequate research and evaluation of survey evidence were performed and the Right-of-Way monuments depicted on this Right-of-Way Plan WERE SET under my responsible charge and the field survey was performed in accordance with applicable standards of practice defined by Colorado Department of Transportation publications. This statement is not a guaranty or warranty, either expressed or implied.

Colorado Department of Transportation

18500 E. Colfax Ave.
Aurora, CO. 80011
Phone: 303-916-4529

Region 1 SDH

Sheet Revisions		
Date	Description	Initials

Sheet Revisions		
Date	Description	Initials

Farnsworth GROUP
5613 DTC PARKWAY, SUITE 1100
GREENWOOD VILLAGE, COLORADO 80111
(303) 692-8838 / info@f-w.com
www.f-w.com

COLORADO LICENSED
ALAN WARNER
28668
07/21/22
PROFESSIONAL LAND SURVEYOR

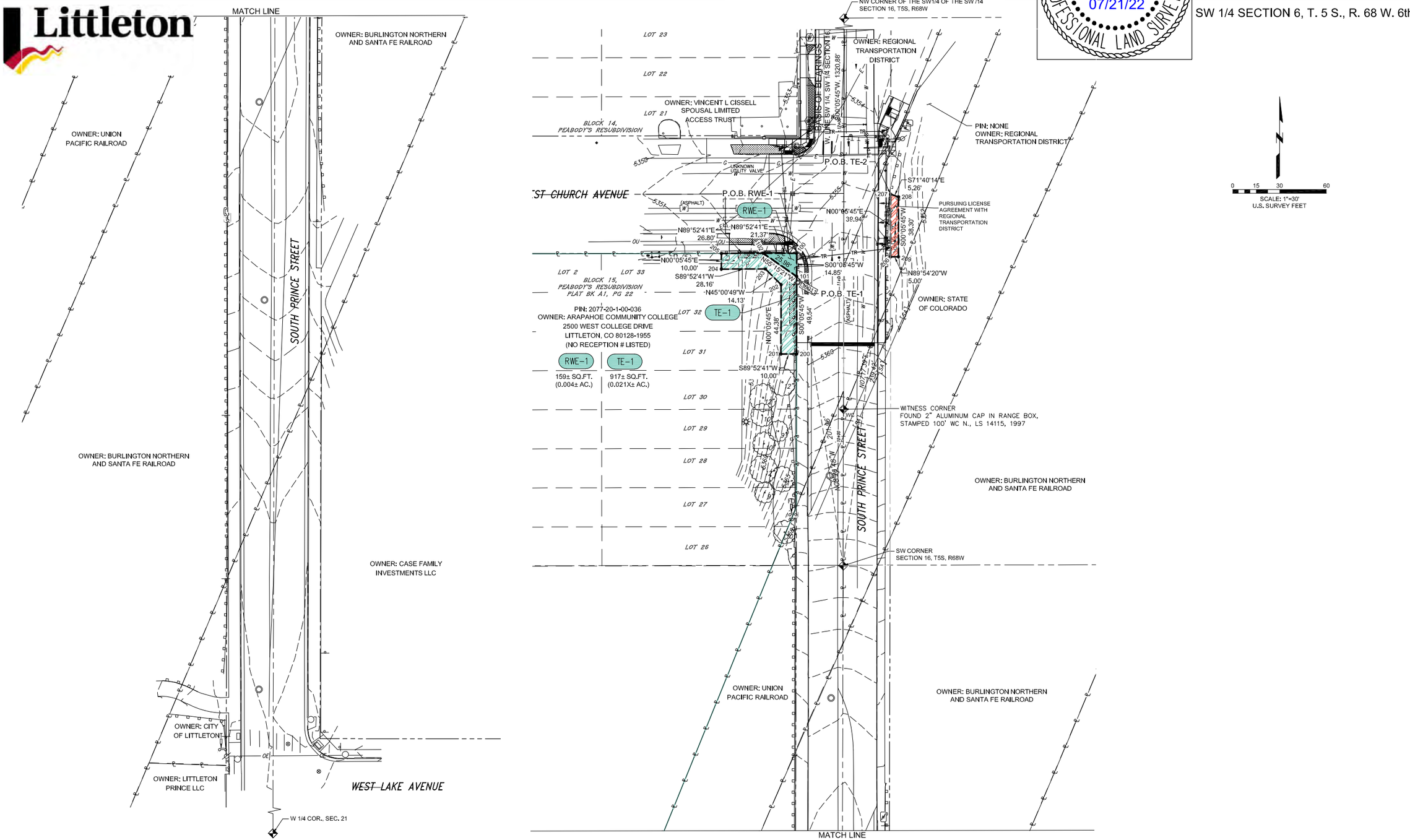
Right of Way Plans
PLAN SHEET

Project Number: STU M810-018
Project Location: S. Prince St./ W. Church Ave.
Arapahoe County

Project Code:	Last Mod. Date	Subset	Sheet No.
24290	07/21/2022	7.01 of 7.01	7.01

SW 1/4 SECTION 6, T. 5 S., R. 68 W. 6th P.M.

Littleton



$PLOT_INFO$
$DATE$

Colorado Department of Transportation

18500 E. Colfax Ave.
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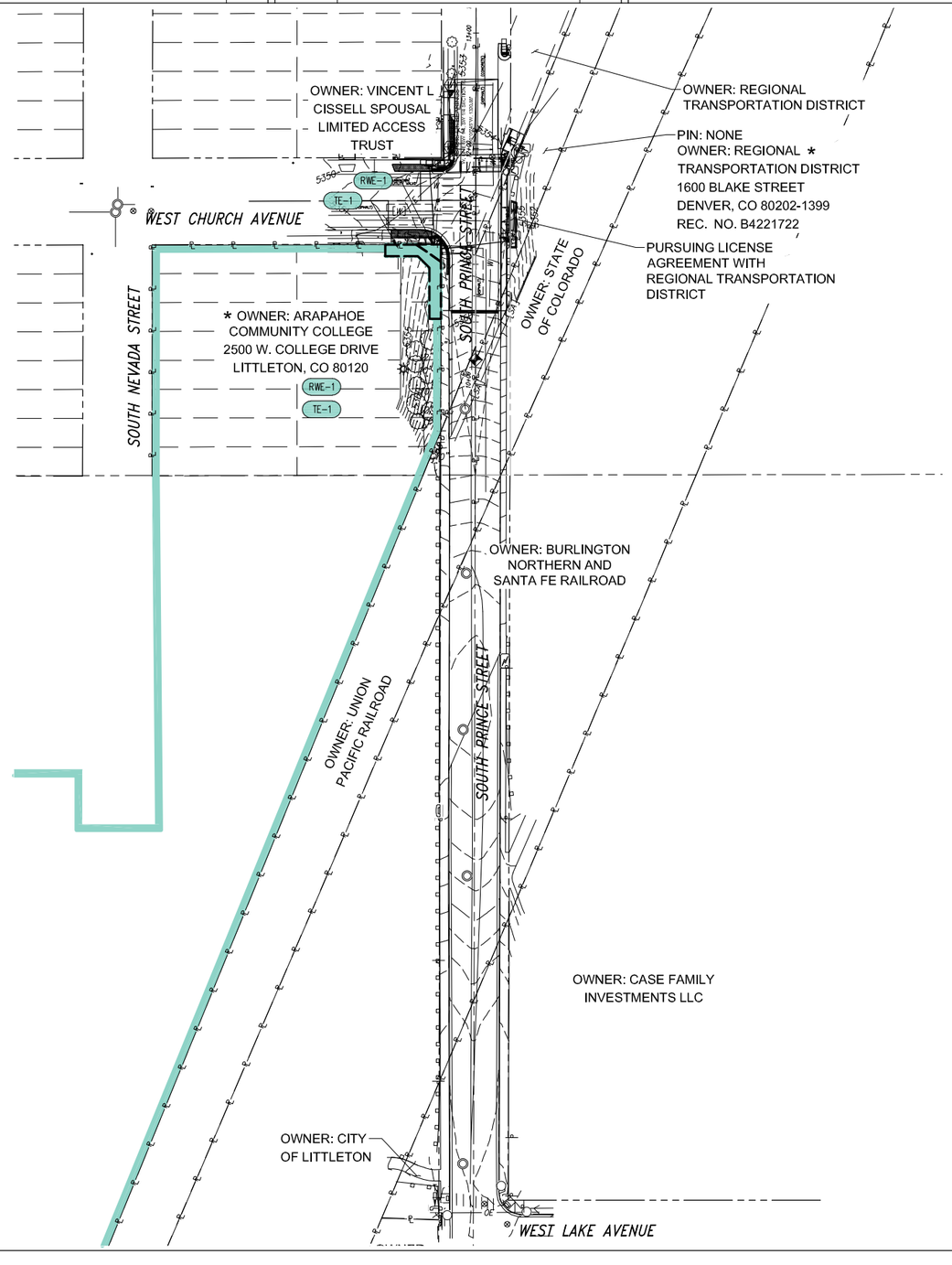
Right of Way Plans
OWNERSHIP SHEET

Project Number: STU M810-018
Project Location: S. Prince St./ W. Church Ave.
Arapahoe County

Project Code:	Last Mod. Date	Subset	Sheet No.
24290	07/21/2022	8.01 of 8.01	8.01

SW 1/4 SECTION 6, T. 5 S., R. 68 W. 6th P.M.

Littleton

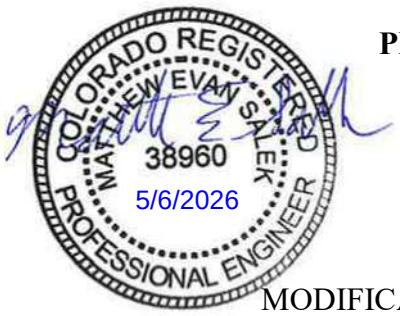


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0 30 60 120
SCALE: 1"=60'
U.S. SURVEY FEET

* OWNERSHIP EXTENTS ARE UNCERTAIN.

$DATE$ $PLOT_INFO$



PRINCE STREET / CHURCH AVENUE INTERSECTION RECONSTRUCTION PROJECT
CITY OF LITTLETON, COLORADO
LITTLETON PROJECT NO. 18-14
CDOT PROJECT NO. STU M810-018 (24290)

PROJECT SPECIAL PROVISIONS
MODIFICATIONS TO COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS

The technical specifications for this project shall be the Colorado Department of Transportation 2025 Standard Specifications for Road and Bridge Construction, modified by the Standard Special Provisions and Municipal Government Pavement Engineers Council 2021 Version of Pavement Design Standards and Construction Specifications. The following special provisions supplement or modify the Standard Specifications and Standard Special Provisions and take precedence over the Standard Specifications, Standard Special Provisions, and plans.

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COLORADO
DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISIONS

STANDARD SPECIAL PROVISIONS

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Revision of Sections 101 and 106 – Revision of Sections 101 and 106 - Buy America and Build America Buy America Requirements - Projects with $500,000 or more in Federal-Aid Highway Funding	(September 11, 2025)	1
Revision of Section 105 – Dispute Resolution, Dispute Review Board and Claims for Unresolved Disputes	(June 11, 2025)	24
Revision of Section 107 – Water Quality Control (Under One Acre of Disturbance)	(July 1, 2025)	8
Revision of Section 108 – Liquidated Damages	(July 1, 2025)	1
Revision of Section 207 – Topsoil	(July 1, 2025)	9
Revision of Section 208 – Erosion Control (Under One Acre of Disturbance)	(July 1, 2025)	36
Revision of Section 212 – Soil Amendments, Seeding, and Sodding	(July 1, 2025)	25
Revision of Section 401 – Plant Mix Pavements – General (Subsection 401.17)	(July 1, 2025)	4
Revision of Section 401 – Reclaimed Asphalt Pavement	(July 1, 2025)	2
Revision of Sections 412 and 601 – Accelerated Pavement Repair Concrete	(June 11, 2025)	5
Revision of Sections 412 and 705 – Preformed Compression Seals	(July 1, 2025)	2
Revision of Section 601 – Pigment in Concrete	(July 1, 2025)	1
Revision of Section 601 – Structural Concrete	(September 11, 2025)	1
Revision of Section 627 – Pavement Marking Paint	(July 1, 2025)	15
Affirmative Action Requirements Equal Employment Opportunity	(July 1, 2025)	13
Certified Payroll Requirements for Construction Contracts	(July 1, 2025)	1
Minimum Wages, Colorado, U.S. Department of Labor General Decision Number CO20250006, Mod 1, Highway Construction for Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, and Park counties.	(March 6, 2025)	10
On the Job Training	(July 1, 2025)	6
Required Contract Provisions – Federal-Aid Construction Contracts	(July 1, 2025)	15

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

The Contractor shall commence work under the Contract within fourteen (14) calendar days after the "Notice to Proceed" and work shall be completed within **80 Working Days**.

The Contractor shall limit hours of operation to **7:30 a.m. to 7:00 p.m. Monday thru Friday** or as otherwise approved in writing by the Engineer.

Minimum Salient features to be shown on the Contractor's Progress Schedule for all schedules (in the tabulation of quantities) are:

1. Submittals
2. Public Notification
3. Traffic Control
4. Erosion Control
5. Remove Pavement
6. Remove Curb, Gutter and Sidewalk
7. Curb and Gutter
8. Driveways
9. Sidewalks and Curb Ramps
10. Aggregate Base Course
11. Concrete Paving
12. Guardrail
13. Signal Equipment Removals
14. Signal Caissons
15. Conduit Boring
16. Signal Poles, Mast Arms and Heads
17. Signal Activation
18. Signing / Striping
19. Sodding, Landscape Repair (as necessary)
20. Final Acceptance

ON THE JOB TRAINING CONTRACT GOAL

The Department has determined that On the Job Training shall be provided to trainees with the goal of developing full journey workers in the types of trade or classification involved. The contract goal for On the Job Trainees working in an approved training plan in this Contract has been established as follows:

Minimum number of total On the Job Training required: 320 hours

REVISION OF SECTION 101
GENERAL PROVISIONS

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

101 DEFINITIONS & TERMS

Technical Specifications related to construction materials and methods for the work embraced under this Contract shall consist of the Colorado Department of Transportation, Standard Specifications for Road and Bridge Construction dated 2017.

Certain terms utilized in the Specifications referred to in the paragraph above shall be interpreted to have different meaning within the scope of this Contract. A summary of redefinitions follows:

Subsection 101.28	"Department" shall mean the City of Littleton, Colorado.
Subsection 101.29	"Chief Engineer" shall mean the City Engineer, Littleton, Colorado, or designated representative (DTA).
Subsection 101.39	"Laboratory" shall mean Littleton, Colorado or their designated representative.
Subsection 101.51	"Project Engineer" or "Project Manager" shall mean the City Engineer, Littleton, Colorado, or his designated representative (DTA).
Subsection 101.76	"State" shall mean Littleton, Colorado (where applicable).

REVISION OF SECTION 105
CONTROL OF WORK

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

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. 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 items, not previously documented and confirmed by the Engineer as existing, will be the responsibility of the Contractor to repair at no cost to the City.

Contactor 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 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.

Damage caused to adjacent asphalt pavement shall be patched at no additional expense to the City. Repair limits are to be determined by the Engineer, but at a minimum shall require a mill and fill of a minimum 12" width the length of the damaged area(s), at a minimum depth of 2 inches. Saw-cutting to remove any concrete over spill shall be included in the repair.

REVISION OF SECTION 107
PUBLIC CONVENIENCE AND SAFETY

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

107.02 PERMITS, LICENSES, AND TAXES s*hall be revised to include the following:*

Unless otherwise specified, the Contractor shall procure all required 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.

Prior to beginning work, the Contractor shall furnish the Engineer with a written list of all permits required for the proper completion of the contract. The list shall clearly identify the types of permits that must be obtained before work on any particular phase or phases of work can be started. Copies of the fully executed permits shall be furnished to the Engineer upon request.

107.11 BARRICADES AND SIGNS s*hall be revised to 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.

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

"NO PARKING" signs shall be placed a minimum of twenty-four (24) hours in advance of any operations that require surface work in parking lanes or prior to street closures.

Any other signs as required by the Traffic Engineer shall be placed.

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.

107.13 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE s*hall be revised to include the following:*

(a) Contractor to submit a construction-work-method-statement for Regional Transportation District review/approval prior to beginning any work on RTD right-of-way. The method must address measures that will be applied to prevent damage to and degradation of the slope and to RTD trackway/trains (at the bottom of the slope) during construction.

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

(c) Sod damage resulting from construction operations 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).

(d) 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.

(e) 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.

(f) Continuous failure to complete repair in the time specified above may result in the suspension of additional work until the specified repairs have been made and are determined to be satisfactory by the Engineer. Additional contract time will not be given for such suspensions.

(g) Job materials and equipment may be stockpiled and stored at locations near the job site. A list of sites to be used for this purpose and written permission from the property owner shall be submitted to the Engineer for approval at least ten (10) days prior to any use. The proposed truck route for ingress and egress to such sites shall also be submitted to the Engineer for approval. Using such job-site storage requires the following:

i. Obtaining written permission from the property owner, which shall include a brief description of the area of the property to be used, the length of time the property will be used for this purpose, any access restrictions (i.e. times of day), and the name and phone number of the property owner. A copy of the written permission shall be submitted to the Project Manager at least one week prior to delivery of material to the site.

ii. Keeping stockpiles and equipment confined to the approved area.

iii. Providing security for job materials and equipment and for public safety at the site.

iv. Keeping all access roads clean and in good condition.

v. Returning site to original condition.

Precautions shall be taken to ensure that stockpiles are carefully mixed just prior to use to ensure uniform distribution of the moisture, and that they do not become contaminated with over-sized seed, rock, clay, silt or excessive amounts of moisture. The stockpile shall be kept in areas that drain readily. Segregation of the aggregate will not be permitted.

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). Prior to 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 ⅜ 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 in accordance with CP 77. Milled surfaces that do not meet these criteria shall require corrective action in accordance with the PCP. The Contractor shall be responsible for testing the macrotexture of the milled surface at the location directed by the Engineer in accordance with CP 77 at a stratified random frequency of one test per 10,000 square yards or a minimum of once per work day.

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 6:1 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 prior to 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 prior to 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 15 working days. All areas on this project that are not overlaid within the specified working days will be assessed a lane rental fee of $1,400 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.

Add subsection 202.091 immediately following subsection 202.09 as follows:

202.091 Equipment

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.

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

REVISION OF SECTION 202
REMOVAL OF PORTIONS OF PRESENT STRUCTURE (CLASS 2)

Revise Section 202 of the Standard Specifications for this project to include the following:

DESCRIPTION

This work consists of saw cutting, removing, and disposing of existing deteriorated bridge deck and approach slab concrete. Removal operations shall be conducted so that the traveling public is protected, and so that interference with the traveling public using the structure is minimized.

Perform the applicable classes of removal as defined in the plans. The Engineer will determine the locations and limits of removal.

CONSTRUCTION REQUIREMENTS

a) General:

At least 10 working days before beginning removal, the Contractor shall submit a method statement to the Engineer with details of the removal operations including the means, methods, sequence of removal, tools, and equipment to be used.

The Contractor's Method Statement shall also include proposed methods used to:

- Determine the locations and limits of deteriorating concrete.
- Prevent debris from falling to the ground or waterways below the structure.
- Protect the traveling public using the structure, and adjacent to the structure, from airborne debris generated by the removal operations.

The Engineer must approve all removal operations, methods, and equipment before the work begins.

The Contractor shall control dust and run-off per applicable governmental regulations. The Contractor is responsible for disposing per regulation of all material removed, including but not limited to, material collected by vacuuming the deck.

Before removal of concrete, sound the bridge deck for delamination per ASTM D4580, Procedure B Chain Drag. Mark the areas of deteriorated concrete to be removed as directed by the Engineer. Removal and patching areas not designated for removal by the Engineer will not be measured or paid for.

Remove the existing concrete as shown on the plans or as directed by the Engineer. Saw cut along the removal limits before removal. Removal operations shall not occur before approval of the Engineer. Concrete sawing shall be done to a true line, with a vertical face, unless otherwise specified. Feathered edges will not be acceptable. The depth of the saw cut shall be approximately 3/4-inch.

The Contractor shall remove and repair only the amount of work that can be completed and

reopened to traffic within the designated lane closure times as specified in the Traffic Control Plan.

The Contractor shall take all steps necessary to prevent cutting or otherwise damaging reinforcing steel, including any vertical stirrups, and structural steel including welded shear connectors projecting into the bridge deck. Repair and replace all bars or shear connectors damaged by the Contractor's operations at the Contractor's expense using means and methods approved by the Engineer with no allowance for contract time extension.

Following the removal of the concrete, straighten all exposed non-epoxy reinforcing steel to remain in place as required and thoroughly cleaned to sound metal by sandblasting per subsection 202. Do not sandblast epoxy coated reinforcing steel, if present, but clean with hand tools. Repaint epoxy coating on reinforcing steel, if damaged, with epoxy paint, before placement of the concrete.

Following sandblasting, the condition of all exposed reinforcing bars will be inspected by the Engineer. If, in the opinion of the Engineer, the loss of original cross-sectional area of the bar due to deterioration is 25 percent or more, the Contractor shall add additional bars to replace the section area loss due to deterioration, as approved by the Engineer. Lap Splice newly added bars as shown in the plans. Use a mechanical splice,if the required lap splice length cannot be used. The mechanical splice shall develop at least 125 percent of the specified yield strength of the bar. Maintain all minimum clearances as defined in the plans. As an alternative, the Contractor may remove additional sound concrete to achieve the required lap length. Payment for additional removals and repairs will be based on the unit price for the appropriate class of removal and repair method.

Secure all reinforcing steel to adjacent bars or to the bridge deck as provided in subsection 602.

Thoroughly clean all areas of the prepared surface contaminated by oil or other materials detrimental to bonding by a method approved by the Engineer.

b) Surface Preparation Equipment

Pneumatic hammers heavier than nominal 15-pound class will not be permitted. Pneumatic hammers and chipping tools shall not be operated at an angle exceeding 60 degrees relative to the surface of the slab. Such tools may be started in the vertical position but must be immediately tilted to a 60-degree operating angle.

Provide hand tools such as hammers and chisels for removing final particles of loose, unbonded concrete. Only short, one-handed hammers with a maximum head weight of five pounds will be allowed unless Class 3 Removal is designated. Use hydraulic demolition with the Engineer’s approval.

Sandblasting equipment shall meet the requirements of subsection 202.

c) Class 2:

Removal of Portions of Present Structure (Class 2) shall consist of removing existing bridge deck concrete within the limits shown on the plans, or as designated by the Engineer. Class 2 removal shall begin at the surface of the existing concrete bridge deck and extend to sound concrete but shall conform to the maximum and minimum for Class 2 shown in the plans.

Wherever solid bond between existing concrete and reinforcing steel is lacking, or where more than half of the diameter of the reinforcing bars is exposed by removal of concrete, the concrete adjacent to the bar shall be removed to a minimum clearance of one inch below and around the bar in all directions to permit new concrete to bond to the entire periphery of the bar. Care shall be taken not to fracture sound concrete in the bottom half of the bridge deck.

Perform Removal by power chipping or hand tools per these specifications or as otherwise approved by the Engineer.

If loose or deteriorated concrete exists below Class 2 limits, Class 3 removal is required.

METHOD OF MEASUREMENT

Removal of Portions of Present Structure will be measured by the actual quantity completed and accepted to the required depth for each class. Each area of bridge deck removal will only be measured once as Class 2; measurement of removal areas will not overlap.

Removal and repairs beyond the minimim required lap length of reinforcing steel will not be measured or paid for, but will be at the contractor's expense.

Cleaning of prepared surfaces contaminated by oil or other materials detrimental to bonding will not be measured and paid for separately, but shall be included in the work.

BASIS OF PAYMENT

Planned deck rehabilitation quantities are approximate. The actual accepted quantities of Removal of Portions of Present Structure will be paid for at the contract unit price.

Payment will be made under:

Pay Item	**Pay Unit**
Removal of Portions of Present Structure (Class 2)	Square Yard

Payment for Removal of Portions of Present Structure will be total compensation for all labor, materials, tools, equipment, and incidentals required to complete the item including but not limited to:

- Saw cutting.
- Removal of concrete to the required depth.
- Sandblasting or hand cleaning reinforcing steel including epoxy repair.

- Disposal of removed materials and debris.

Methods to prevent debris from falling from the structure, and methods to protect the traveling public using the structure, or adjacent to the structure, from airborne debris will not be paid for separately; include it in the work.

Cleaning, straightening, and repairing epoxy coating of existing reinforcing steel will not be paid for separately; include it in the work.

Sounding and marking repair areas will not be paid for separately; include it in the work.

Payment for the new reinforcement steel will be made per Section 602. Payment for the Mechanical splice will be as the weight of reinforcing steel for the designated lap splice for that bar size.

REVISION OF SECTION 202
REMOVAL OF PORTIONS OF PRESENT STRUCTURE

Revise Section 202 of the Standard Specifications for this project as follows:

Subsection 202.01 ***shall include the following:***

This work shall include removing all or portions of the following on Structure LTNC.021-03.059: bridge deck, asphalt. Conduct removal operations to minimally interfere with the traveling public using the structure.

Subsection 202.02 ***shall include the following:***

At least 10 days before beginning bridge removal the Contractor shall submit to the Engineer details of the removal operations showing the methods and sequence of removal and equipment to be used.

Remove the existing concrete as shown on the plans or as directed by the Engineer. If additional removal of unsound concrete is required, it shall be included in the work.

The Engineer will approve all methods and equipment used to accomplish this item.

To promote a good bond with the new concrete, within 24 hours before placing new concrete, sandblast the entire surface where the new concrete bonds to roughen the surface and remove all fractured or loose particles.

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

Before beginning concrete removal operations on the existing bridge decks, make a saw cut to the depth indicated in the plans along the limits of removal.

Subsection 202.12 ***shall include the following:***

Payment shall be made at the contract unit price on a lump sum basis.

Payment will be made under:

Pay Item	**Pay Unit**
Removal of Portions of Present Structure	Lump Sum

REVISION OF SECTION 202
REMOVAL OF FENCE (SPECIAL)

Revise Section 202 of the Standard Specifications for this project as follows:

Subsection 202.01 ***shall include the following:***

This works consists of removal of metal tube end monuments at the ends of bridge rail fence at the locations indicated in the plans. Each existing end monument is comprised of a series of metal tubes, with the overall monument approximately 9 feet long by varying height, and has four posts into the ground.

Subsection 202.02 ***shall include the following:***

The Contractor shall remove the existing metal tube end monument without damaging the existing bridge rail fence. Footings shall be removed to a minimum 2 feet below grade.

Subsection 202.12 ***shall include the following:***

Removal of the metal tube end monument will be measured as Removal of Fence (Special) by the linear foot along the base of the monument.

Payment will be made under:

Pay Item	**Pay Unit**
Removal of Fence (Special)	Linear Foot

REVISION OF SECTION 202
SANDBLASTING REINFORCING STEEL

Revise Section 202 of the Standard Specifications for this project to include the following:

DESCRIPTION

Sandblasting shall consist of cleaning exposed non-epoxy reinforcing steel designated to remain in place, and roughening the surface and removing all fractured particles from the entire existing concrete surface against which new concrete is to be placed.

CONSTRUCTION REQUIREMENTS

Sandblasting equipment shall be capable of removing rust scale and concrete fragments or laitance from reinforcing steel, roughening the existing surface, and removing all fractured particles from the existing concrete surface.

After removing adjacent concrete, clean all exposed non-epoxy reinforcing steel designated to remain in place to sound steel by sandblasting. Sound steel is defined as free of oil, dirt, concrete fragments, or laitance, loose rust scale, and other coatings of any character that would limit or inhibit the bond with the new concrete. Do not sandblast epoxy-coated steel. If damaged, repaint the epoxy coating on reinforcing steel with epoxy paint before placing the concrete.

Rust that may form on the reinforcing steel within seven calendar days following the accepted sandblasting will not be cause for rejection of the steel.

When acceptable reinforcing steel is exposed to the elements for more than seven calendar days before encasement in concrete, adequate measures shall be taken by the Contractor, as approved by the Engineer, to protect the steel from contamination or corrosion. Reinforcing steel contaminated or corroded shall be re-sandblasted at the Contractor’s expense. No adjustment in Contract time will be made for re-sandblasting.

METHOD OF MEASUREMENT

Sandblasting reinforcing steel will not be measured but shall be included in the work.

REVISION OF SECTION 203
EXCAVATION AND EMBANKMENT

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

203.02 EXCAVATION

Subsection 203.02 (c) is hereby deleted and replaced with the following:

(c) Material that is free of organics but has excessive moisture shall not be classified as unsuitable for subgrade due to the presence of excessive water. It shall be the Contractor's responsibility to satisfy the moisture conditions specified in the Contract Documents for subgrade. The classification of material as unsuitable for subgrade shall be made by the Engineer.

203.11 METHOD OF MEASUREMENT *shall be revised to include the following:*

Proof rolling will not be measured and paid for separately, but shall be included in the work as required.

203.12 BASIS OF PAYMENT *shall be revised to include the following:*

Any additional excavation and backfill made by the Contractor below the approved subgrade elevation, without the prior acceptance of the Engineer will be at the responsibility and expense of the Contractor.

REVISION OF SECTION 212
LANDSCAPE RESTORATION

SECTION 212 of the Standard Specifications is here by revised for this project as follows:

DESCRIPTION

212.01 This work consists of restoring existing landscaping due to construction activities for curbs, driveways and sidewalks. The Contractor is also directed to the requirements of Revision of Section 107.12.

CONSTRUCTION REQUIREMENTS

212.03 It is anticipated construction of fence, curbs, sidewalks and driveways will affect existing miscellaneous landscape materials such as wood mulch and rock mulch. When the Contractor's construction operations for fence, curbs, sidewalks and driveways affects existing landscape mulch, the Contractor shall document the landscaping prior to construction with photographs submitted to the Engineer.

The Contractor shall remove the landscape material to the limits required for construction and stockpile the material. Care shall be taken to not damage landscape materials during removal. Following completion of construction the landscape mulch shall be restored to areas behind the sidewalk.

Property owners shall be notified prior to removal of landscape materials, including information on schedule and restoration of the landscaping.

Any landscaping materials damaged by the Contractor's operations shall be replaced as directed by the Engineer at the Contractor's expense.

METHOD OF MEASUREMENT

212.07 Landscape Restoration will not be measured but shall be paid for as lump sum.

BASIS OF PAYMENT

212.08 Payment will be made under:

Pay Item	**Pay Unit**
Landscape Restoration	Lump Sum

Payment shall include removal, hauling, stockpiling, resetting, restoration and replacement of any damaged landscape materials.

Sod will be paid for separately under Section 212.

REVISION OF SECTION 217
HERBICIDE TREATMENT

Section 217 of the Standard Specifications is hereby revised for the project as follows:

DESCRIPTION

Delete Subsection 217.01 and replace with the following:

All areas to be disturbed within the project area, regardless of final disposition, shall be treated with herbicide before disturbance. After seeding and near the end of the project, if noxious weed species persist, seeded areas shall receive an additional application of herbicide. All applications shall target noxious weeds designated by the Colorado Department of Agriculture including List A, B, and C species. Recommended treatments for noxious weeds identified in the project area are summarized in the following table. Additional recommended treatments for noxious weeds including those not listed in the table below, can be found on the Colorado Department of Agriculture's website at
https://www.colorado.gov/pacific/agconservation/noxious-weed-species

Noxious Weed	Plant Growth Characteristics	State List[1]	Recommended Treatments
Cheatgrass *(Bromus tectorum)*	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.
Scotch thistle *(Onopardum acanthium)*	Large thistle grows to 12 feet tall. Extremely spiny. During the second year in mid to late spring the stem bolts, flowers, sets seed, and the plant dies. A prolific seed producer, Scotch thistle can produce up to 14,000 seeds per plant.	B	**Mechanical Control:** sever the root below the soil surface. Mowing is most effective when plants are at full bloom. **Herbicide Control:** Aminopyralid, Chlorosulfuron, Mesulfuron + Chlorosulfuron, Clopyralid, or Aminocyclopyrachlor _ Chlorosufuron during rosette stage. **Cultural Control:** Reseed with native seed mix.

[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.

Dicamba may injure woody plants.
Glyphosate may be used in riparian areas
2,4-D and Transline should not be used in riparian areas or near water.
Picloram is persistent in the soil and should not be used in areas to be re-seeded.

CONSTRUCTION REQUIREMENTS

Section 217.03 ***shall include the following:***

The Contractor shall comply with the following best management practices in all construction areas to prevent the spread of noxious weeds and minimize potential effects from treatment:

- Minimization of soil disturbance to the greatest extent possible
- Clean all construction-related equipment thoroughly before off-loading at the project site and after working with weed-contaminated soils
- Coordination of weed management efforts with adjacent landowners to the extent possible
- Avoidance of non-target injury to passing pedestrians and motorists, adjacent native plant communities, landscaping, sensitive wildlife habitat (prairie dogs), and nearby beekeeping operations (if present)
- 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
- Application of herbicides immediately adjacent to active prairie dog colonies will not be permitted
- Noxious weeds observed in and near the construction area will be 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 re-establishment of noxious weeds

Delete the last paragraph in Subsection 217.03, "Herbicides shall not be…"

METHOD OF MEASUREMENT

Delete Subsection 217.04 ***and replace with the following:***

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

Mechanical control shall be included in the work.

Seeding shall be included in the cost of 212 Seeding (Native).

BASIS OF PAYMENT

Section 217.05 ***shall include the following:***

Payment shall be made under:

Pay Item	**Pay Unit**
Herbicide Treatment	Hour

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.

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 treeand 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.
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 ¾ inch by ¾ 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 responsible for all penalties levied by the U. S. Fish and Wildlife Service (USFWS) for the taking of a migratory bird.

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.

Pay Item	Pay Unit
Wildlife Biologist	Hour

REVISION OF SECTION 304
AGGREGATE BASE COURSE

SECTION 304 of the Standard Specifications is hereby revised for this project as follows:

304.02 AGGREGATE ***shall be revised to 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 (R-value) of at least 78 when tested by the Hveem Stabilometer method.

Reclaimed asphalt pavement (RAP), asphalt millings, or asphalt in any form whatsover shall not be substituted for or used in Aggregate Base Course (Class 6).

The specific gravity for the aggregates shall be greater than 2.0 at the source. The use of crushed reclaimed concrete material under some circumstances may be substituted for natural aggregate for use in roadbed stabilization upon review and written approval of the Engineer. Aggregate base course for use in shouldering and all-weather surfaces shall be natural and approved by the City of Littleton. All-weather surfaces will be required in-place at the end of each shift when traffic is not running on pavement. Base course from within the existing roadway section, if encountered, can be used as an all-weather surface.

Base course shall have a minimum unit weight of 125 pounds per cubic foot.

The Contractor shall have adequate Aggregate Base Course available for use on project as required by the Engineer.

304.08 BASIS OF PAYMENT ***is deleted in its entirety and replaced with the following:***

Payment for aggregate base course shall be made at the applicable contract unit price for Aggregate Base Course and shall include full compensation for all transportation, materials, labor, equipment, supervision, tools, placement, compaction and all other appurtenant items to complete the work.

Excavation and removal of subgrade deemed unsuitable by the Engineer shall not be measured and paid of separately, but shall be included in the work.

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

If the Contractor utilizes imported crushed reclaimed concrete in lieu of aggregate base course, payment will be made on the accepted quantity of Aggregate Base Course, Class 6.

If the Contractor elects to utilize Aggregate Base Course to correct subgrade imperfections or control depths at their convenience this will not be paid for separately but shall be included in the Asphalt Pavement pay item.

Pay Item	**Pay Unit**
Aggregate Base Course (Class 6)	Cubic Yard

REVISION OF SECTION 403
HOT MIX ASPHALT

Section 403 of the Standard Specifications is hereby revised for this project as follows:

Subsection 403.02 ***shall include the following:***

The design mix for hot mix asphalt shall conform to the following:

Table 403-1

Property	Test Method	Value For Grading	
		SX (75)	Patching
Air Voids, percent at: N (design)	CPL 5115	3.5 – 4.5	3.5 – 4.5
Lab Compaction (Revolutions): N (initial) [for information only] N (design)	CPL 5115	 7 75	 7 75
Stability, minimum	CPL 5106	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
Accelerated Moisture Susceptibility Tensile Strength Ratio (Lottman), minimum	CPL 5109 Method B	80	80
Minimum Dry Split Tensile Strength, kPa (psi)	CPL 5109 Method B	205 (30)	205 (30)
Grade of Asphalt Cement, Top Layer		PG 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
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

Note: AI MS-2 = Asphalt Institute Manual Series 2

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.

Note: Gradations for mixes with a nominal maximum aggregate size of one-inch or larger are considered a coarse gradation if they pass below the maximum density line at the #4 screen.
Gradations for mixes with a nominal maximum aggregate size of 3/4" to 3/8" are considered a coarse gradation if they pass below the maximum density line at the #8 screen.
Gradations for mixes with a nominal maximum aggregate size of #4 or smaller are considered a coarse gradation if they pass below the maximum density line at the #16 screen.

*Fractured face requirements for SF may be waived by RME depending on project conditions.

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. The City 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. The City 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

	Minimum Voids in the Mineral Aggregate (VMA)			
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
	* The Nominal Maximum Size is defined as one sieve larger than the first sieve to retain more than 10%. ** Interpolate specified VMA values for design air voids between those listed. *** Extrapolate specified VMA values for production air voids beyond those listed.			

The Contractor shall prepare a quality control plan outlining the steps taken to minimize segregation of HMA. This plan shall be submitted to the Engineer and approved prior to beginning the paving operations. When the Engineer determines that segregation is unacceptable, the paving shall stop and the cause of segregation shall be corrected before paving operations will be allowed to resume.

Hot mix asphalt for patching shall conform to the gradation requirements for Hot Mix Asphalt (Grading SX) (75) (PG 64-22).

City 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 City 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.

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 City approval. Only City Approved WMA incorporating additives from the CDOT 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 403.05 *shall include the following:*

403.05 The accepted quantities of hot mix asphalt will be paid for in accordance with subsection 401.22, at the contract unit price per ton for the bituminous mixture.

Payment will be made under:

Pay Item	**Pay Unit**
Hot Mix Asphalt (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 SECTIONS 601, 701 & 711
ACCELERATED PAVEMENT REPAIR CONCRETE

Section 601 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

601.26 This work consists of furnishing and placing accelerated pavement repair concrete on existing pavements in accordance with these specifications and in conformity with the lines, grades and dimensions as shown on the plans or established.

MATERIALS

601.27 The accelerated pavement repair concrete shall be designated as Class PRS (Class P rapid strength).

Concrete Class	Required Field Compressive Strength (psi)	Air Content: % Range (Total)	Slump	Maximum Water/Cementitious Material Ratio:
PRS	4500 at 28 days	4 - 8	+/- 2" of Form 1373 Slump	w/cm on Form 1373

Class PRS concrete is used for concrete pavement rapid repairs. Class PRS may be substituted for Class P concrete when approved by the Engineer. Additional requirements are:

(1) ASTM C1600 rapid hardening hydraulic cement shall be used.
(2) Set-retarding admixtures such as citric acid or those meeting the requirements of AASHTO M194 may be used.
(3) The unrestrained shrinkage shall not exceed 0.050 percent at 28 days when tested by CP-L 4103.
(4) The mix shall either have a permeability not exceeding 2,500 coulombs at an age of not more than 56 days when tested in accordance with ASTM C1202, or have a surface resistivity of at least 12 kΩ-cm at 28 days using AASHTO T358.
(5) The mix shall consist of a minimum 55 percent AASHTO M 43 sizes No. 57, No. 6, No. 67, No. 357, or No. 467 coarse aggregate by weight of total aggregate.
(6) The mix may use an OG with a nominal maximum aggregate size of at least ¾ inch.

601.28 Mix Design Submittal Requirements. Mix design submittals shall meet the requirements of subsection 601.05 with the following additional requirements.

(1) Class PRS concrete shall include CP-L 4103 shrinkage test results at 4 hours, 24 hours, 7 days, and 28 days.

(2) Class PRS concrete shall include a report of maturity relationships in accordance with CP 69.
(3) Class PRS concrete shall include AASHTO T97 (ASTM C78) Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading). At least two specimens will be tested at 7 days and four specimens at 28 days. The lab trial mix shall produce a flexural strength of at least 650 psi at 28 days
(4) Aggregate used for Class PRS concrete will require ASTM C1567 test results with the mix design cement and aggregates. 14-day expansion shall be 0.10% or less.

Mix designs for Class PRS Concrete are approved for one year from date of the trial mix. When a Self-Contained Mobile Mixer (volumetric mixer truck) is used on the Project, the trial mix shall be performed with the volumetric mixer truck.

601.29 Batching. Batching shall meet the requirements of subsection 601.06

601.30 Mixing. Mixing shall meet the requirements of subsection 601.06.

When a Self-Contained Mobile Mixer (Volumetric truck) is used for Class PRS concrete, the requirements of sub-section 601.06 (d) with the following shall be met:

1. When ice is used to cool the mix water, it must be melted before entering the mixer.

601.31 Placing. Placing shall meet the requirements of Section 412 with the following additional requirements:

(a) **General.** A pre-pour meeting with the Contractor, sub-contractor, material supplier and Department personnel shall be held prior to Class PRS concrete placement to discuss the following:
(1) Delivery of mix. The sample ticket for each batch shall list all admixtures. One shall be required from each truck.
(2) Verification of Strength/Maturity Meter Curve in the field.
(3) Concrete curing.
(4) Time and depth of green cutting.
(5) Concrete protection.
(6) Washout bin staging.
(7) Handling of concrete cylinders.
(8) Placement of maturity probes.
(9) Hot Weather placements.
(10) Cold weather placements.
(11) Opening to traffic.
(b) Class PRS concrete placement may occur when the concrete temperature is between 50 and 80 degrees F, when tested immediately after discharge from chute
(c) **Curing.** Curing shall be applied immediately following finishing operations. Curing compound manufacturer recommended application rates shall be followed, with a minimum rate of 200 SF/Gal. Curing Compound shall be an approved ASTM C 309, Type 2, Class B.
(d) **Hot Weather Limitations.** A plan shall be submitted for approval prior to any placement when air temperature is expected to exceed 80 F. Procedures for maintaining and

monitoring of temperatures of water, aggregates and admixtures during mixing, placement and curing of concrete shall be detailed as well as procedures to be implemented upon abrupt changes in weather conditions. Placing of concrete during hot weather shall be limited by the temperature of the concrete at the time of placing. Class PRS concrete which has a temperature of 80 F or higher, shall not be placed.

(e) **Cold Weather Limitations.** When the ambient temperature is forecast to drop below 40 degrees F during placement and up to 24 hours after placement a plan shall be submitted for approval prior to any placement. Procedures for maintaining and monitoring of temperatures of water, aggregates and all other admixtures during mixing, placement and curing of concrete shall be detailed as well as procedures to be implemented upon abrupt changes in weather conditions. Concrete shall not be placed on frozen subgrade.

601.32 Finishing. During finishing of Class PRS concrete, water and finishing aids shall not be added or worked into the surface. The surface texture of the Class PRS concrete shall match the texture of adjacent concrete pavement. The finished transverse and longitudinal surface elevation of the pavement shall be measured using a 10-foot straightedge. Areas to be measured will be directed by the Engineer. The Contractor shall furnish an approved 10-foot straightedge, depth gauge, and operator to aid the Engineer in testing the pavement surface. Areas showing high spots of more than 3/16 inch in 10 feet shall be marked and diamond ground until the high spot does not exceed 3/16 inch in 10 feet. Areas in a lane with more than 250 continuous feet of paving or diamond grinding in the direction of traffic, the surface texture will be considered acceptable when the average texture depth (ATD) of the panel is greater than 0.05 inch. The Contractor will perform surface texture testing in accordance with CP 77 Method B. Areas in a lane with more than 250 continuous feet of paving will be tested at a frequency of one test per 250 linear feet. Areas with deficient surface texture shall be diamond ground and retested.

601.33 Opening to Traffic. The pavement shall not be opened to traffic until the concrete has achieved a compressive strength of at least 2500 psi. Concrete compressive strength shall be determined by a maturity meter placed no more than 10ft from the end of the final placement of the shift. The contractor shall provide maturity meters and all necessary wires and connectors. The Contractor shall be responsible for the placement and maintenance of the maturity meters and wires. For placements with multiple maturity meters, the lowest compressive strength shall determine when the pavement may be opened to traffic. Prior to opening the pavement to traffic the roadway shall be cleaned.

601.34 Acceptance and Pay Factors. Class PRS concrete will be accepted following the requirements of subsection 601.17 with the following exceptions:

(1) Compressive strength specimens shall be cast and initially cured at the placement location for at least 4 hours. Compressive strength specimens shall be moved prior to opening to traffic.
(2) Slump testing will not be used for acceptance.

Subsection 701.01 of the Standard Specifications *is hereby revised for this project to include the following:*

Cement for Class PRS concrete shall meet the requirements of ASTM C1600. ASTM C1600 cements shall have an expansion of 0.05% or less at 6 months or 0.10% or less at 12 months.

Subsection 711.03 of the Standard Specifications ***is hereby revised for this project to include the following:***

Citric acid for use in Class PRS concrete shall be provided in liquid form with 49-52% solids.

REVISION OF SECTION 601
CONCRETE CLASS DR

Section 601 of the Standard Specifications ***is hereby revised for this project to include the following:***

DESCRIPTION

This work consists of furnishing and placing concrete patching material in accordance with these specifications and in conformity with the lines, grades and dimensions as shown on the plans or established.

MATERIALS

The concrete patching material may be pre-packaged Concrete patching material or Class DR concrete.

(a) *Pre-Packaged Concrete Patching Material.* Concrete patching material shall be polymer modified hydraulic cement and shall be one of the following:

(1.) Rapid Set DOT Concrete Mix as manufactured by:
CTS Cement Manufacturing Company
11065 Knott Avenue
Cypress, CA 90630

(2.) HD 50 as manufactured by
Dayton Superior Corp.
1125 Byers Road
Miamisburg, Ohio 45342

(3.) or approved equal

Alternate concrete patching materials shall demonstrate 1/32-inch maximum mid panel and end crack widths, 0 percent delamination, and 0 percent spalling as tested by NTPEP in a one-year field evaluation. The Contractor shall refer to rapid-set concrete patch materials at www.ntpep.org.

Before January 1, 2020 equivalent materials may be tested to meet minimum requirements by an independent testing lab or NTPEP. If the product has not been field tested by NTPEP, the Contractor shall submit documentation of a project demonstrating the successful use of the proposed product in Colorado. The submittal shall document the material used, the project location and detailed pictures of the patch after at least 1 year of service.

The Contractor shall obtain and provide to the Engineer documentation from the Concrete patching material supplier of the expiration dates of the material components that will be used

on the project. Concrete patching material shall attain an average compressive strength of at least 2,500 psi prior to placing traffic and 4,500 psi at 28 days. Concrete patching material compressive strengths shall be tested according to ASTM C39 or ASTM C109.

The compressive strengths shall be used to develop a strength versus time curve for the material. Three strength data points shall be determined to assess the necessary time to wait before traffic is allowed on the material. Maturity meter data may also be submitted to allow the use of maturity meter to determine when the patching material has gained the required strength for opening to traffic.

Concrete patching material shall provide a minimum bond strength of 2,000 psi at 28 days, as tested by ASTM C882.

Concrete patching material shall have a relative durability factor greater than 90 and a mass loss not to exceed 2.0 percent as tested by ASTM C666.

Concrete patching material shall have a maximum expansion of 0.05 percent, at 28 days as tested by ASTM C157.

ASTM C39, C109, C882 and C157 testing shall be from the same lot of concrete patching material being used on the project. A CTR, in accordance with subsection 106.13, shall be submitted to the Engineer for approval at least 2 weeks prior to placement.

Two bags of the concrete patching material, and two bags of the extending aggregate if used, from the same lot to be used on the project shall be submitted to an accredited Lab to verify compressive strength, and set time properties, by the Contractor before the concrete patching material is to be used on the project. Test results shall be submitted to the Engineer for acceptance. Verification of the strength properties will be achieved if the test results are either equal in strength or stronger than those advertised. Verification of the set time will be achieved if the set time is equal or less than the advertised value. Testing shall be included in the cost of the materials. Test results from other projects using the same lot may be submitted. If the project uses material from more than one lot, test results are required for each lot used.

When Anodes are specified and are to be installed with pre-packaged concrete patching material, the Contractor shall submit test results of ASTM C1760 that the concrete patching material has an electrical resistivity of 15,000 Ohm-centimeters or less. Concrete patching materials that do not meet the electrical resistivity requirements may be used with special anode installation methods recommended by the anode manufacturer and approved by the Engineer. Additional work for special anode installation methods shall be included in the bid price.

(b) *Class DR Concrete.* Class DR Concrete shall have a minimum cement content of 615 pounds per cubic yard, an air content of 5 to 8 percent, a maximum water to cement ratio of 0.44, a minimum 6-hour compressive strength of 2,500 psi and a minimum 28 day compressive strength of 4,500 psi. The concrete mix shall consist of a minimum of 50 percent AASHTO M 43 Size No. 7 or Size No.

8 coarse aggregate by weight of total aggregate. Lab test results shall show that the unrestrained shrinkage is less than 0.050 percent when tested by CP-L 4103.

ASTM C150 Type III or ASTM C1157 Type HE cement may be used in lieu of Concrete Class DR, as approved.

The Contractor shall develop maturity relationships in accordance with CP 69. The Contractor shall provide a multi-channel maturity meter and all necessary wire and connectors. The Contractor shall be responsible for the placement and maintenance of the maturity meter and wire. Placement shall be as directed by the Engineer.

CONSTRUCTION REQUIREMENTS

(a) *Pre-Packaged Concrete Patching Material.* Concrete patching material shall be placed in the repair areas before the expiration date of the material. Proportions of all mix components shall be measured by volume measurement (number of bags of standard weight and quantity of water or liquid component in gallons or quarts). If partial bags are used the bagged mix, extending aggregate, and water shall be weighed on a calibrated scale provided by the Contractor. The Contractor shall submit the Concrete patching material mix design for approval two weeks before any concrete patching material is placed. The Contractor shall also submit a method statement describing what type of equipment will be used to batch the patching material, including the type of mixer, the type of material, volume measures to be used, scales for partial bags, procedures to insure accurate proportioning of the patching material components, and tools to be used in placing and finishing the surface of the patch.
The Contractor shall produce a batch ticket for each mixed batch of concrete patching material with the following information shown on each ticket:

(1) Project No.
(2) Bridge No.
(3) Structure Temperature
(4) Date and Time of batch
(5) Material Type, name, and manufacturer
(6) Material expiration date
(7) Weight or volume of bag mix concrete
(8) Weight or volume of extending aggregate
(9) Weight or volume of water or liquid component
(10) Location of placement (Lane and Station Limits)

The tickets shall be available on site for City personnel to inspect.

Each day the Contractor shall provide to the Engineer tickets for each bridge in separate envelopes stating Project Number, Bridge Number, Date of Paving, Type of Material, Daily Total, and Cumulative Total.

Concrete patching material minimum and maximum thicknesses shall be per recommendation of the material manufacturer.

Concrete patching material site preparation, batching, extending with aggregate, mixing, placement, placement during cold temperatures, consolidation, and curing shall be in accordance with the manufacturer's recommendations. A mix may be extended up to 90 percent of the manufacturer's maximum extension.

The surface of concrete patching material shall have a similar texture as the adjacent driving surfaces.

The Contractor shall submit a report consisting of the mix proportions and compressive strength vs time curve information to the Engineer at least two weeks before the material is to be used on the project.

Field cast cylinders or cubes shall be taken by a qualified testing representative, with a minimum ACI Field Testing Technician Grade I certification, and test results shall be submitted to the Engineer within 24 hours, the first day and every other subsequent day deck patching material is placed with compressive strength determined at 24 hours according to ASTM C 39 or ASTM C109.

Areas patched with Concrete shall not be opened to traffic until concrete patching material has reached a compressive strength of 2,500 psi using the compressive strength versus time curve developed for the material.

(b) *Class DR Concrete*. Class DR Concrete shall be placed in accordance with Class D concrete with the following changes:
The area to be patched with Class DR Concrete and anodes shall be saturated surface dry before placement and shall be free of standing water at the time of placement.

Portions of decks patched with Concrete Class DR shall not be opened to traffic until the concrete's compressive strength, determined by CP 69, has achieved at least 2500 psi.

Concrete Class DR shall be cured until a compressive strength of at least 2500 psi has been achieved. The curing compound shall conform to ASTM C309, Type 2 applied at a rate of 1 gallon per 100 square feet. The curing compound shall be applied as a fine spray within 10 minutes of discontinuing the finishing operation. Before and during application the curing compound shall be kept thoroughly mixed. Curing blankets with a minimum R-value of 0.5 shall be provided and shall be placed as soon as they can be placed without marring the surface. When the ambient temperature is below 50°F, the Contractor shall maintain the concrete temperature above 50°F during the curing period.

METHOD OF MEASUREMENT

Concrete Class DR will be measured and paid for as the actual quantity placed and accepted by the Engineer. The Contractor may stockpile material at their own risk. All unused concrete patching material shall remain the property of the Contractor. The City will not purchase leftover materials or pay any restocking fees.

BASIS OF PAYMENT

The accepted quantities will be paid for at the contract unit price per unit of measurement for each of the pay items listed below that appear in the bid schedule.

Pay Item	**Pay Unit**
Concrete Class DR	Cubic Yard

Payment for Concrete Class DR will be full compensation for all the work, materials, tools, equipment, testing, and incidentals required to complete patching, excluding special installation of anodes when specified, when required.

Furnishing all appurtenances including the molding, curing and breaking of cylinders or cubes for generating the strength versus time curve and for determining the information cylinder or cube strength will not be measured and paid for separately, but shall be included in the work. Concrete patching material or Class DR Concrete will not be measured and paid for separately but shall be included in the Concrete Class DR bid item.

REVISION OF SECTION 601
GALVANIC ANODES

Section 601 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of furnishing and installing galvanic anodes, tying existing steel reinforcing mats for electrical continuity, and testing for electrical continuity in concrete repair locations as shown on the plans or as directed by the Engineer.

MATERIALS

Galvanic anodes shall be one of the following:

(1) "Galvashield XP2" as manufactured by Vector Corrosion Technologies,
1330 Bellaire Street
Broomfield, CO 80020
303-465-5806
(2) "MasterProtect 8105 CP" as supplied by BASF Corporation,
889 Valley Park Drive,
Shakopee, MN 55379
800-433-9517
(3) "Sentinel Silver" as manufactured by Euclid Chemical
19218 Redwood Rd.
Cleveland, OH 44110
800-321-7628
(4) "Galvashield XP+" as supplied by Sika Corporation
201 Polito Ave.
Lyndhurst, NJ 07071
248-577-0980

Galvanic anodes shall be pre-manufactured and consist of a minimum of 100 grams of zinc conforming to ASTM B6 Special High Grade, cast around a pair of steel tie wires conforming to bright annealed ASTM A82.

At least 10 working days prior to the start of repair work, the Contractor shall submit documentation of the anode manufacturer's approval of the patching materials compatibility with their anode system and any special treatment requirements and installation instructions. The Contractor shall contact the manufacturer of the anodes to gain a full understanding of any special treatments that will be required and the process to properly install the anodes. The concrete patching material shall be as shown on the plans or as approved by the Engineer. Any grout used for grout beds or encapsulation of anodes shall have compressive strength equivalent to the original deck concrete per as-built drawings.

CONSTRUCTION REQUIREMENTS

Anodes shall be installed the same day as preparation and cleaning of steel reinforcement to bright metal at the anode tie wire connection. The anode units, in cementitious patching material, shall be pre-wet to achieve a saturated surface dry condition, and the repair shall be completed while the anodes are in this condition.

Anodes used with patching material having resistivity greater than 15,000 Ohm-Centimeters (Ohm-cm) or not meeting compatibility requirements shall be specially treated and installed in accordance with manufacturer recommendations.

Galvanic anodes shall be installed in accordance with manufacturer's recommendations. Anodes shall be placed in each patch, 18 to 24 inches apart on the perimeter, based on rebar spacing. A minimum of one anode shall be placed in each patch and may be placed in the middle of the patching material area if the spacing requirement cannot be met. Each anode shall have a minimum 1.5 inch top cover to the surface of the new concrete deck patch and a 1 inch minimum side and bottom clear cover.

Galvanic anodes shall be secured with anode tie wires as close as possible to the patch edge while achieving minimum cover requirements. The tie wires shall be wrapped around the cleaned reinforcing steel and twisted tight to allow little or no free movement.

Prior to placing new concrete, galvanic anodes shall be installed in accordance with the manufacturer's recommendations and inspected for proper connection and continuity to reinforcing steel.

(a) Electrical Connection and Continuity.

Electrical connection and continuity between anode tie wire and reinforcing steel shall be confirmed by measuring DC resistance (ohm) or potential with a multi-meter. Electrical connection and continuity is acceptable if the DC resistance measured with a multimeter is less than 1 ohm or the DC potential is less than 1 mV.

All intersections of reinforcing steel shall provide electrical continuity. The Contractor shall confirm continuity of at least three intersections per repair area on each structure or as directed by the Engineer. Intersections with visible separation or lack of continuity shall be cleaned and/or tied with bare steel tie wire to achieve continuity. Additional continuity testing will be required as directed by the Engineer. Electrical continuity within a repair area is acceptable if the DC resistance measured with a multimeter is less than 1 ohm or the potential is less than 1 mV.

The Contractor shall furnish the Department with a multimeter to independently check the electrical connection. The multimeter shall become the property of the Department.

METHOD OF MEASUREMENT

Galvanic Anodes will be measured as the actual quantity installed and accepted. The Contractor may stockpile material at their own risk. All unused galvanic anodes shall remain property of the Contractor. The City will not purchase leftover materials or pay any restocking fees.

BASIS OF PAYMENT

The accepted quantities of Galvanic Anodes will be paid for at the contract unit price.

Payment will be made under:

Pay Item	**Pay Unit**
Galvanic Anodes	Each

Payment for Galvanic Anodes will be full compensation for all labor, equipment, materials, and incidentals required to complete the item.

Electrical continuity tie wiring and testing will not be measured and paid for separately, but shall be included in the work.

The multimeter will not be measured and paid for separately, but shall be included in the work. If additional anodes are required during construction, the additional anodes will be paid for at the original Contract unit price.

Any special treatment or installation of the anodes that is required by anode supplier due to the type of patching material used, including but not limited to, grout beds between substrate and anode, or grout encapsulation of the anodes, will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 608
SIDEWALK DRAIN (INSTALL ONLY)

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

Subsection 608.01 shall include the following:

Sidewalk Drain is the Sidewalk Chase as detailed in the plans from the Arapahoe County standard details. The Contractor will be responsible for field fitting Sidewalk Drains at Station 14+40.

Subsection 608.05 shall include the following:

Sidewalk Drain will be measured by the linear feet, including, sawcutting, grout, rebar, concrete, structural steel, as well as any piping, tees and connecting devices necessary to complete the work. Structure excavation and backfill will not be measured and paid for separately but shall be included in the work.

Subsection 608.06 shall include the following:

Payment for the Sidewalk Drain will be made for each unit under:

Pay Item	**Pay Unit**
Sidewalk Drain (Install Only)	Linear Foot

Payment shall include installing all City-furnished materials and incidental labor necessary to complete an in-place functioning assembly.

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 include the following:

Concrete for median cover material shall meet the requirements of Class B Concrete with an integral color admixture, except as follows: Maximum nominal size of course aggregate may be 3/8 inch (Table 703-1 No. 8).

Colored wax-curing compound and the hardener-enhancing compound shall be as approved by the Engineer and shall meet the requirements of ASTM C 309. Integral color admixture shall be Davis Color “Baja Red 160” or approved equal.

The Contractor shall submit a concrete mix design for the median cover material that includes the integral color admixture.

Subsection 610.03 shall include the following:

The Contractor shall place colored concrete median cover, patterning, color hardener, and colored wax-curing compound on a 4 foot by 4 foot test panel for approval by the Engineer prior to commencing the work. If the test panel is unacceptable to the Engineer, the Contractor shall construct additional test panels until the correct color, pattern and finish are approved by the Engineer. Workmen and equipment used on the test panel shall be the same as that used in the final construction of the colored concrete.

Colored hardener, if desired by the Engineer, shall be applied evenly to the concrete surface while it is in the "plastic" stage by the "dry-shake" method. Each application rate shall be a minimum of 60 pounds of hardener per 100 square feet of surface. Color hardener shall have two applications and be wood floated after each application, using a trowel on the final float.

The colored wax-curing compound, thinned in the proportion of 4 parts wax to 3 parts mineral spirits (paint thinner) shall be applied uniformly with a roller or motor-driven power sprayer. The coverage shall be 600 to 650 square feet per gallon of unthinned curing compound.

REVISION OF SECTION 612
DELINEATOR CURB

Section 612 of the Standard Specifications is hereby revised as follows:

Subsection 612.02 ***is revised to include the following:***

Delineator Curb. Delineator curb shall consist of units of rounded lane separators with a minimum of two attached reflectors and an attached flexible delineator. Each unit shall be approximately 40 inches long, 12 inches wide and 3 inches high. The delineator shall be approximately 48 inches high. The flexible delineator shall be capable of returning to upright after being impacted.

The lane separator shall be constructed from durable polyethylene with integral coloring. The color of the lane separator and reflectors shall be the same as the adjacent pavement striping. The unit shall be capable of being mechanically fastened to the pavement. The unit shall be tested to comply with federal MASH requirements.

The Contractor shall submit delineator curb product data to the Engineer for approval prior to ordering.

Subsection 612.03 ***is revised to include the following:***

Delineator curb shall be mechanically fastened to the pavement according to manufacturer's recommendations.

Subsection 612.04 ***is revised to include the following:***

Delineator curb will be measured by the actual number of units installed and accepted.

Subsection 612.05 ***is revised to include the following:***

Payment will be made under:

Pay Item	**Pay Unit**
Delineator Curb	Each

REVISION OF SECTION 613
PULL BOXES

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

613.02 ***is revised to include the following:***

Pull boxes shall conform to the details in the Arapahoe County standard signal drawings.

Pull boxes shall be fiberglass reinforced polymer concrete designed for minimum service load of 15,000 lb. over a 10-foot square. The lid shall have "TRAFFIC" permanently stamped on the surface.

613.11 ***is revised to include the following:***

Pull boxes shall be measured by the actual number installed and accepted.

613.12 ***is revised to include the following:***

Payment will be made under:

Pay Item	**Pay Unit**
Pull Box (____)	Each

Payment shall include installing all City-furnished materials and incidental labor necessary to complete an in-place functioning assembly, including excavation, backfill and bedding.

REVISION OF SECTION 614
TRAFFIC CONTROL DEVICES

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

614.08(b) ***is revised to include the following:***

The traffic signal controller shall be an Econolite Cobalt controller in a Type P44 cabinet. The cabinet shall be on a fiberglass pedestal foundation.

The intersection detection system shall be a Gridsmart “fish eye” bell-style camera system.

614.08(g) ***is revised to include the following:***

Span wire poles, traffic signal poles, mast arms, pedestal poles, base plates, anchor bolts and connecting hardware shall be of the general configuration shown on drawings and shall be designed to meet the requirements outlined in the latest edition of "Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals," published by AASHTO, for a wind velocity of 100 mph.

Mast arms and poles shall meet the requirements of the Arapahoe County signal pole standard details, which indicate the critical dimensions that must be met exactly or within stated tolerances. The intent is to provide mast arms and poles that match the overall appearance as illustrated and meet the performance requirements of the details and these specifications. Pole supplier submittals shall demonstrate conformity with this intent.

All poles and appurtenances shall be galvanized.

614.09 ***is revised to include the following:***

Mast arms and poles shall be wrapped for shipping from the factory in heavy duty paper or plastic, to protect them from scratches and abrasions in transit. The mast arms and poles shall remain wrapped until the poles and mast arm is installed. Neither chains nor cables will be used for unloading or installing poles.

Prior to the installation of poles and mast arms, Contractor shall wipe them clean. Following installation of poles, Contractor shall use factory supplied paint to touch up nicks and abrasions. The paint manufacturer's application instructions shall be followed.

Mast arm poles shall be installed with the proper rake as recommended by the manufacturers of the poles to assure a substantially vertical set when the specified signal and lighting equipment is installed.

Plumbing the pole shall be accomplished by adjusting the nuts before the foundation is finished to final grade. Shims or other similar devices for plumbing or raking will be permitted only when approved by the Project Engineer.

Mast arms shall not be installed and left unloaded for an extended period of time. If, at the discretion of the Engineer, the mast arms are installed and loading cannot occur by installing signal heads or mast arm signing, the mast arms shall be loaded with a minimum of two sign panels on each mast arm. These sign panels shall be mounted with Astro brackets so a gap is maintained between the mast arm and the sign panel. These sign panels shall be spaced at one-third intervals on the mast arm. The sign panels shall be mounted parallel with the roadway on the top of the mast arm. The Contractor shall then contact the Engineer so the mast arm and signal pole can be inspected for excessive vibration. Additional sign panels or adjustments in sign panel spacing may be required at the discretion of the Engineer.

614.13 ***is revised to include the following:***

Traffic signal equipment, including signal faces, push buttons, push button assemblies, detection cameras, poles, and controller cabinets, will be measured by the actual number of units installed and accepted. Payment shall include installing all City-furnished materials and incidental labor necessary to complete an in-place functioning assembly.

614.14 ***is revised to include the following:***

Payment will be made under:

Pay Item	**Pay Unit**
Pedestrian Signal Face (16) (Countdown) (Install Only)	Each
Traffic Signal Face (12-12-12) (Install Only)	Each
Traffic Signal Face (12-12-12-12) (Install Only)	Each
Pedestrian Push Button (Install Only)	Each
Pedestrian Push Button Post Assembly (Install Only)	Each
Accessible Pedestrian Signal (Install Only)	Each
Intersection Detection System (Camera) (Install Only)	Each
Traffic Signal-Light Pole (1 Mast Arm) (Install Only)	Each
Traffic Signal Pedestal Pole Steel (Install Only)	Each
Traffic Signal Controller (Install Only)	Each

REVISION OF SECTION 621
DETOUR PAVEMENT

Section 621 is hereby added to the Standard Specifications for this project and shall include the following:

DESCRIPTION

This work consists of constructing and removing detours and temporary pavement as shown in the plans, or as approved by the Project Engineer, and restoring detour areas to their original condition when detouring is finished.

MATERIALS

The Contractor shall be responsible for quality control for all materials and processes required to assure adequate quality of the detour.

CONSTRUCTION REQUIREMENTS

Proposed detour locations and dimensions shall be as shown in the plans and any other locations shall be approved by the Engineer. The Hot Mix Asphalt (HMA) design or Portland Cement Concrete Pavement (PCCP) design shall be provided by the Contractor. These designs shall be submitted to the Engineer and approved prior to starting construction of detours. The Contractor shall allow 10 working days for review and acceptance prior to starting work. Review and acceptance does not constitute acceptance of the designs. Acceptance will be based solely on providing and maintaining detours in a satisfactory condition. If the material and thickness furnished result in an inadequate detour structure, the Contractor will provide additional thickness, materials, or other measures necessary to provide a satisfactory pavement for the life of the detour. These additional improvements shall be furnished at no additional cost. All necessary signs, pavement markings, and other traffic control devices shall be provided in accordance with the traffic control plan.

Excavation and embankment necessary for construction of Detour Pavement shall be part of the item Detour Pavement. If embankment used for construction of Detour Pavement is to become part of the final embankment on the project, it shall be constructed in accordance with Section 203, or it shall be removed and replaced.

MAINTENANCE OF DETOUR

The Contractor shall maintain detours for the entire period that they are open to traffic. Any distress which affects the ride, safety, or serviceability of the detour roadway shall be corrected to the satisfaction of the Engineer at the expense of the Contractor.

REMOVAL OF DETOUR

The Contractor shall remove detours when they are no longer needed to maintain traffic. This shall include all items necessary to remove the detours and restore areas to their original condition if the area is not part of the final construction area.

Removal of Detour Pavement adjacent to new pavement which is to remain in place shall be accomplished by saw cutting at the removal line to produce a straight edge with no raveling.

METHOD OF MEASUREMENT

Detour Pavement will be measured by the square yard of pavement constructed and opened to detour traffic.

BASIS OF PAYMENT

Detour Pavement shall be paid for at square yard price bid for the item. Payment will be made under:

Pay Item	Pay Unit
Detour Pavement	Square Yard

Payment will be full compensation for all work and materials required to construct, maintain, and remove detours. This includes, but not limited to, items such as stripping, borrow, unclassified excavation, aggregate base course, embankment material, compaction, compaction of bases of cuts and fills, wetting, HMA or PCCP pavement, maintenance, removal and disposal of embankment material and pavement surface material, and restoring detour areas, including reshaping and blading.

Excess material removed from detours and not usable on the project shall become the property of the Contractor, and shall be disposed of off the project site.

Twenty-five percent (25%) of the cost of Detour Pavement will be withheld until the detour has been removed and the area restored to the satisfaction of the Engineer.

REVISION OF SECTION 626
PUBLIC INFORMATION SERVICES

Section 626 of the Standard Special Provisions is hereby revised for this project as follows:

Subsection 626.01 ***shall include the following:***

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.

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

i. City of Littleton

ii. Fire Districts – South Metro Fire Rescue

iii. Emergency Response

iv. Adjacent Businesses/Residences

v. Colorado School for the Blind

vi. Regional Transportation District

(c) A letter of introduction shall be delivered to all property owners and tenants at least five (5) business days and no more than ten (10) business days prior to mobilization and the commencement of work for each project site.

(d) Updates shall be on a weekly basis after mobilization and one (1) week prior to any major traffic control switches.

(e) The letter shall include the following as a minimum:

i. Contractor – Name, Address, Phone Number

ii. Field Superintendent – Name, Mobile Phone Number

iii. Schedule and description of work

iv. Information regarding private property and construction procedures, including methods of access to parcels.

(f) The Contractor shall provide written notice forty-eight (48) hours prior to the actual start of work in each section or work area.

Subsection 626.02 ***shall include the following:***

Payment for the above requirements will not be made separately, but shall be included in the work.

REVISION OF SECTIONS 627 AND 713
PREFORMED THERMOPLASTIC PAVEMENT MARKING

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

Subsection 627.09 (a) *shall include the following:*

(a) *Application.* An epoxy resin primer shall be applied to any existing surface (concrete, asphalt, existing markings, etc.) prior to the application of any new preformed thermoplastic, plastic pavement marking. The epoxy resin primer shall conform to CDOT Standard Specifications subsection 708.07. Primer shall be required for all markings used including markings that manufacture does not require a primer. Primer and application 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/or significant oily substances. Application procedures for Portland concrete pavement shall be as described above except a compatible primer sealer shall be applied before application of marking to assure proper adhesion.

Subsection 627.09 *shall include the following:*

(c) *Inlaid Preformed Thermoplastic Pavement Marking.* Shall be done for crosswalks, stop lines and symbols. The grooved width shall be the pavement marking width plus 1 inch, with a tolerance of ± ¼ inch. The depth of the grooves shall be 130 mils ± 5 mils. Groove position shall be a minimum of 2 inches from the edge of the pavement marking to the longitudinal pavement joint. Grinding of existing preformed thermoplastic pavement marking and the inlaying of proposed preformed thermoplastic pavement marking shall not be measured and paid for separately, but shall be included in the work.

Grooving shall not be performed on bridge decks.

The preformed thermoplastic pavement marking shall be inlaid on new and existing pavements as shown in the Contract. The material shall be capable of use for patching worn areas of the same type according to the manufacturer's recommendations.

The following shall be included in subsection 627.13:

Payment will be made under:

Pay Item	**Pay Unit**
Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)(Special)	Square Foot
Preformed Thermoplastic Pavement Marking (Word-Symbol)(Special)	Square Foot

Removal and application of temporary preformed thermoplastic pavement marking associated with wet-cutting of pavement shall be at the Contractor's expense.

Subsection 713.14 (a) *shall include the following:*

(a) General. Material such as lines, legends, or symbols shall be capable of being affixed to HMA or PCC pavements. Marking shall be capable of conforming to pavement contours, breaks, and faults etc. by the use of the normal heat of a propane torch. Marking shall be capable of withstanding the actions of traffic at normal pavement temperatures. Marking shall have resealing characteristics such that it is capable of fusing with itself and previously applied thermoplastic pavement markings when heated with the torch.

Subsection 713.14 ***shall include the following:***

(c) Performance. Marking, when applied in accordance with manufactures recommendations shall demonstrate a uniform level of sufficient night time retro-reflection when tested in accordance to ASTM E1710-97. The applied material must have an initial minimum intensity reading of 500 $mcd \cdot m^{-2} \cdot 1x^{-1}$ for white and 300 $mcd \cdot m^{-2} \cdot 1x^{-1}$ for yellow as measured with a retro-reflectometer.

The top surface of the stencils (the same side as the factory applied surface beads) shall have an indicator system for the contractor to properly gauge the correct amount of heat to apply during installation. The indicator system shall have a positive visual indication, such as beads changing color or indents closing together, when the material has reached the correct installation temperature. The indicator system must also provide a positive, visual indication if the material has not reached the correct installation temperature.

REVISION OF SECTION 630
MHT SIGNATURE REQUIREMENTS

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

Revise Subsection 630.10(a) to include the following:

The Contractor's superintendent shall implement the TMP.

(a) Traffic Control Plan. The Contractor shall control traffic per the Traffic Control Plan (TCP), as shown in the Contract. To implement the TCP, the Contractor shall develop and submit a Method for Handling Traffic (MHT) for each different phase of construction, which shows the Contractor's proposed construction phasing and proposed traffic control devices consistent with the TCP. If at any time the Contractor desires to change the MHT, it shall be considered a different phase requiring a new MHT.

Any major revisions to the TCP as determined by the Engineer must be authorized by a Contract Modification Order.

Each approved MHT shall be signed by the prime contractor, the traffic control supervisor, and the Engineer before the corresponding phase of construction will be allowed to begin. The initial MHT shall be submitted at the Pre-construction Conference.

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 DESCRIPTION *shall include the following:*

This work includes furnishing, operating, and maintaining a portable message sign panel.

Add subsection 630.031 immediately following subsection 630.03 as follows:

630.031 Portable Message Sign Panel. Portable message sign panel 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 with an LED legend on a flat black background. LED signs shall have a pre-default message that activates before a power failure. The sign shall be solar powered with independent back-up battery power. The sign shall be capable of 360 degrees rotation and shall be able to be elevated to a height of at least five feet above the ground measured at the bottom of the sign. The sign shall be visible from one-half mile under both day and night conditions. The message shall be legible from a minimum of 750 feet. The sign shall automatically adjust its light source to meet the legibility requirements during the hours of darkness. The sign enclosure shall be weather tight and provide a clear polycarbonate front cover.

Solar powered message signs shall be capable of operating continuously for 10 days without any 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.

Each sign shall also conform to the following:

(1) In addition to the onboard solar power operation with battery back-up, each sign shall be capable of operating on a hard wire, 100-110 VAC, external power source.

(2) All electrical wiring, including connectors and switch controls necessary to enable all required sign functions shall be provided with each sign.

(3) Each sign shall be furnished with an operating and parts manual, wiring diagrams, and trouble-shooting guide.

(4) The portable message sign shall be capable of maintaining all required operations under Colorado mountain-winter weather conditions.

(5) Each sign shall be furnished with an attached license plate and mounting bracket.

(6) Each sign shall be wired with a 7-prong male electric plug for the brake light wiring system.

Subsection 630.13 CONSTRUCTION REQUIREMENTS *shall include the following:*

The portable message sign panel shall be on the project site at least 7 calendar 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.

Subsection 630.17 METHOD OF MEASUREMENT *shall include the following:*

Portable message sign panels will be measured by the maximum number of approved units in use on the project at any one time.

Subsection 630.18 BASIS OF PAYMENT *shall include the following:*

Pay Item	**Pay Unit**
Portable Message Sign Panel	Each

REVISION OF SECTION 630
PEDESTRIAN BARRICADE (ADA)

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

Subsection 630.01 ***shall include the following:***

This work consists of the construction of temporary pedestrian barricades which are fully ADA compliant.

Subsection 630.02 ***shall include the following:***

The pedestrian barricade shall conform to MUTCD 6F.71 for pedestrian traffic control. The barricade shall be made of High Density Polyethylene (HDPE) with Ultraviolet (UV) stabilizers, or other approved material. It shall be able to interlock with adjacent barricades of the same product such that it forms a wall or a rail.

The pedestrian barricade shall comply with the crash test requirements contained in NCHRP Report 350 (only applicable for pedestrian barricades developed prior to 2011) or MASH Level TL3.

The pedestrian barricade shall have a continuous detectable bottom and top surface to be detectable to users of long canes. The bottom of barricade shall be no more than 2 inches above the ground. The top of barricade shall be no lower than 32 inches above the ground. The gap to the bottom of the barricade may be used for drainage. The barricade shall be reflectorized in accordance with subsection 630.02. No extended bases or protrusions shall extend into the walkway.

The Contractor shall submit manufacturer's documentation confirming that the barricade meets all applicable ADA requirements for barricades or rail.

Subsection 630.13 ***shall include the following:***

Placement of the Pedestrian Barricade (ADA) shall be in accordance with manufacturer recommendations.

The ADA pedestrian barricade may be moved to other locations as shown on the plans or as directed upon completion of use at one location.

In subsection 630.17, ***delete the third paragraph and replace with the following:***

Traffic channelizing devices consisting of vertical panels, traffic cones, or drum channelizing devices will be measured by the unit. Concrete barriers will be measured by the linear foot. Barricades will be measured by the number used, except Pedestrian Barricade (ADA). Barricade warning lights shall be furnished as a part of this item when required by the Traffic Control Plan (TCP). Advance Warning Flashing or Sequencing Arrow Panels will be measured by the unit according to size.

Pedestrian Barricade (ADA) will be measured as the actual linear feet of barricade installed and accepted.

Subsection 630.18 ***shall include the following:***

Payment will be made under:

Pay Item	**Pay Unit**
Pedestrian Barricade (ADA)	Linear Foot

Movement of the Pedestrian Barricade (ADA) to different locations, when required, will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL

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

630.01 ***is revised to include the following:***

1. Working hours shall be 7:30 a.m. to 7:00 p.m. Monday through Friday.
2. All work done outside the times above must be approved by the Engineer in writing.

As required by, in descending order of precedence, these plans and special specifications, the current Standard Specifications, as augmented by the Colorado Department of Transportation M and/or S standards, and the manual on Uniform Traffic Control Devices for Streets and Highways.

Subsection 630.02 through 630.14 ***shall be modified to read:***
Traffic control thought 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. When a different MHT is required for a subsequent construction phase, it must be submitted two weeks prior to starting that phase. All proposed methods of handling traffic shall be approved, in writing, by the Engineer. No phase of construction shall start until an acceptable MHT has been received 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.

A tabulation of all traffic control devices shown in the detailed diagram including, but not limited to: construction signs, vertical panels; vertical panel with light; barricades; cones; drum channelizing devices; concrete barrier (temporary); advance warning flashing or sequencing arrow panel.

Approval of the proposed MHT is intended to indicate all devices to complete the project safely. Such approval 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, and obstructions.

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

The Contractor shall, at the preconstruction conference, designate one of his 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 managements shall be maintained on a 24-hour per day basis. The contractor shall make arrangements so that the Traffic Control supervisor or his 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, 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.

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

Specific traffic control requirements for this project are as follows:

- Traffic lanes shall be a minimum of 10 feet wide for each phase of construction.
- Church Avenue is utilized by several RTD bus routes. The intersection reconstruction shall be phased such that access is always allowed from eastbound Church Avenue to the RTD bus bays. Stop bars will require relocation as shown in the phasing plans to allow the access when certain portions of the intersection are being reconstructed.
- When allowed for a particular phase according to the phasing plans, Church Avenue and Prince Street may each be reduced to one lane in each direction on a continuous basis.
- Southbound Prince Street may be completely closed for one phase for a maximum of 16 calendar days and traffic detoured as shown.
- A temporary traffic signal shall be required for southbound Prince Street when the stop bar is moved more than 30' north from its current location. The temporary signal shall be placed north of the intersection on the right side of southbound Prince Street for signal visibility to increase compliance with stopping at the relocated stop bar. The temporary signal shall be comprised of a temporary pedestal pole or portable signal system. The signal shall display a 3-section signal head and be connected to the intersection controller via hardwire or wireless communication to display the southbound indication.
- During construction the intersection shall be controlled by the signal or flaggers.
- The intersection shall have an ADA-compliant sidewalk route along at least side of Prince Street at all times.
- Sidewalks shall be closed on only one side of the street at a time. When a sidewalk is closed, "Sidewalk Closed" signs shall be placed at the closure point and "Sidewalk Closed Ahead Cross Here" signs shall be placed at the next crosswalk prior.
- When phasing is in place that prevents pedestrian movements between the RTD station and Arapahoe Community College, a pedestrian detour shall be marked along Little's Creek Trail and Curtice Street.

FORCE ACCOUNT ITEMS

DESCRIPTION

This special provision contains the City's estimate for force account items included in the Contract. Such estimated amounts will be added to the total bid to determine the Project Commitment Amount and 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.

Force Account Item	Quantity	Estimated Amount
F/A Minor Contract Revisions	F.A.	$69,000
F/A On-The-Job Trainee	F.A.	$3,200
F/A Furnish and Install Electrical Service	F.A.	$5,000
F/A Sprinklers	F.A.	$2,000

F/A Minor Contract Revisions: This item shall be for minor revisions to contract work as directed by the Engineer.

F/A On-The-Job Trainee: This item shall be for payments pursuant to the On-The-Job Training Standard Special Provision.

F/A Furnish & Install Electrical Service: Consists of coordination with electric utilities and final electrical connections for providing electric service to controller cabinets.

F/A Sprinklers: This item shall be for any lawn sprinkler work including resets and repairs, as directed by the Engineer.

UTILITIES

Known utilities within the limits of this project are:

Utility	Contact	Phone / Email
Denver Water	Marty Buckstein	720-233-5329, marty.buckstein@denverwater.org
Xcel Energy – Electric	Builders Call Line	800-628-2121
Xcel Energy – Electric	Christina Danial	303-907-9612
Xcel Energy – Gas	Liz Gardner Brent Aldred	Elizabeth.T.Gardner@xcelenergy.com Brent.Aldred@xcelenergy.com
CenturyLink	Tammy Norton	720-578-5138
CenturyLink – Long Distance	Shayne Bracken	303-885-8867
Comcast	Butch Buster	303-603-5682
Storm Sewer - Littleton	Brent Thompson	303-795-3798, bthompson@littletongov.org
City of Littleton Signal	Aaron Heumann	303-795-3867, aheumann@littletongov.org

The work described in these plans and specifications requires full cooperation between the Contractor and the utility owners in accordance with Subsection 105.11 in conducting their respective operations, to complete the utility work with minimum delay to the project.

PART 1 – CONTRACTOR SHALL PERFORM THE WORK LISTED BELOW:

Coordinate project construction with the performance by the utility owner of each utility work element listed in Part 2 below. Perform preparatory work specified in Part 2 for each utility work element. Provide an accurate construction schedule that includes all utility work elements to the owner of each impacted utility.

Provide each utility owner with 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.

Project Limits – All Utility Owners

Prior to excavating, the Contractor shall positively locate (through potholing if necessary) all potential conflicts with existing underground utilities and proposed construction, as determined by the Contractor according to proposed methods and schedule of construction. The Contractor shall modify construction plans to avoid existing underground facilities as needed, and as approved by the Engineer. Please note that Colorado 811 notifies only members, who mark their own facilities. Other facilities, such as ditches and drainage pipes may exist, and it is the Contractor's responsibility to investigate, locate and avoid such facilities.

Denver Water

- Adjust valve boxes
- Adjust water meter boxes
- Adjust 2 valve boxes and 2 water meters at the intersection of Church Ave and Prince St as shown in the plans. Coordinate required inspections with Denver Water Department forces.
- **Timing:** The City of Littleton Contractor shall provide the utility owner written notice 5 days immediately prior to required inspections.

Xcel Energy – Electric Distribution/Lighting/Traffic

The Contractor shall notify Xcel Energy one (1) week in advance of construction operations commencing near Xcel Energy electric facilities.

The Contractor shall coordinate with Xcel Energy by submitting a Builder's Call Line (BCL) service request to Xce1 Energy regarding the relocation of existing street lighting and underground electric, as shown on the plans.

The Contractor shall be responsible for the coordination of power source work to be performed by Xcel Energy. The Contractor shall complete and submit a Builder's Call Line (BCL) service request for electrical services for every Xcel Energy work element that is to be coordinated with the project a minimum of ninety (90) days prior to the required in-service date for each location. A separate application is required for each electrical service, demolition work, relocation of existing lighting, as well as City of Littleton owned street lighting work. The service request is to be processed through Xcel Energy's Builder's Call Line at 1-800-628-2121 or online at https://co.my.xcelenergy.com/s/partner-resources/build-remodel.The name of the owner for each meter service shall be the owner's name and billing address responsible for paying the utility bill and shall be listed on the BCL application. The Contractor shall be listed as the Builder and the contact during construction on the BCL application. The Contractor shall perform the required coordination to establish the power sources for COL owned pedestrian lighting, traffic signals, various other equipment that requires electrical service, and pedestrian signals as shown on the plans. The Contractor shall perform all work necessary to maintain existing or establish new power sources to the devices called for in the plans and per the standard for any services. The Xcel Energy portion of this work shall be completed within the time frames set forth in the franchise agreement in a manner that does not interfere with the project construction activities, and

the Contractor shall be include the time frames in the project schedule.

The Contractor shall submit the materials list, with locations, for the proposed light standards and traffic signal— light poles for review and approval by Xcel Energy forces.

The Contractor shall coordinate with Xcel Energy to determine the construction schedule for the metered power source connections, including any removals that require Xcel Energy forces and shall include these items in the project schedule.

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 or outside of project limits 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 or outside of project limits. 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 or outside of project limits.

This work will be performed by the utility owners as necessary to avoid conflicts with construction activities. New locations shall be as indicated in the plans. Utility owners shall comply with schedule requirements of the Contractor and make every effort not to impact the overall construction schedule. Unless otherwise approved by the Engineer, abandoned aboveground appurtenances such as pedestals shall be removed and abandoned underground utilities and manholes/handholds shall be abandoned in place.

Utility owners are responsible for obtaining all necessary permits from the City and/or County of record, as required.

Xcel Energy

- Coordinate with the Contractor and conduct requested service connections for meter pedestal.

GENERAL:

The Contractor shall comply with Article 1.5 of Title 9, CRS ("Excavation Requirements") when excavating or grading is planned in the area of underground utility facilities. The Contractor shall notify all affected utilities at least two (2) business days, not including the actual day of notice, prior to commencing such operations. The Contractor shall comply with Article 1.5 of Title 9, CRS ("Excavation Requirements") when excavating or grading is planned in the area of underground utility facilities. The Contractor shall notify all affected utilities at least two (2) business days, not including the actual day of notice, prior to commencing such operations. The Contractor shall contact Colorado 811 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 also be located prior to beginning excavation or grading.

The location of utility facilities as shown on the plan and profile sheets, and herein described, are depicted in accordance with their achieved Quality Level as defined in the American Society of Civil Engineer's document ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data."

All costs incidental to the foregoing requirements will not be paid for separately but shall be included in the work.

RIGHT OF WAY RESTRICTIONS

The Contractor shall not enter the listed right of way parcels before the listed date unless otherwise directed in writing by the Engineer:

Parcel	Owner	FMV Date	Offer Date	Anticipated Possession Date	Restriction Date
RWE-1 2077-20-1-00-036	Arapahoe Community College	May 10, 2023	June 12, 2023	September 01, 2023	September 15, 2023
TE-1 2077-20-1-00-036	Arapahoe Community College	May 10, 2023	June 12, 2023	September 01, 2023	September 15, 2023

The Department anticipates no delay toward completion of the project due to the restrictions imposed herein.

The Contractor shall not enter the listed right of way parcels before the listed date unless otherwise directed in writing by the Engineer and shall not enter until being notified by the Engineer that easements have been acquired.

PROJECT DESCRIPTION

The City of Littleton Public Works is concentrating on upgrading failing infrastructure, including numerous street surfaces. This project consists of full depth reconstruction of the Prince Street & Church Avenue intersection. The project includes curb and gutter, sidewalk, curb ramps, base course, concrete pavement, traffic signals, signing and striping.

CONSTRUCTION NOTES

Construction phasing should proceed as follows:

- Phase 1A: Shift northbound Prince Street east. Construct west portion of northbound Prince north of the intersection. Utilize fasttrack concrete to minimize curing time. Left turns prohibited from Cissell driveway on Prince.
- Phase 1B: Shift both directions of Prince Street west. Construct east portion of northbound Prince north of the intersection. Utilize fasttrack concrete to minimize curing time. Left turns prohibited from Cissell driveway on Prince.
- Phase 2A: Close northbound left turn lane and prohibit left turns. Remove curb and sidewalk on east side of intersection and place temporary asphalt for traffic. Shift traffic to east through intersection. Place temporary stop bar on southbound Prince Street 17’ further away from intersection. Place temporary stop bar on eastbound left turn lane further back from intersection. Construct interior west portion of intersection. Utilize fasttrack concrete to minimize curing time. Left turns prohibited from Cissell driveway on Prince. Signal timing adjustments may be required.
- Phase 2B: Shift southbound traffic to west through intersection. Place temporary stop bar on southbound Prince Street 14’ prior to the Cissell driveway. Install temporary signal near Cissell driveway for southbound traffic. Construct middle portion of Prince Street. Cissell driveway on Prince closed. Northbound left turns prohibited. Signal timing adjustments may be required.
- Phase 2C: Shift northbound traffic to west through intersection. Continue use of temporary stop bar and signal from Phase 2B for southbound traffic. Construct east portion of Prince Street. Cissell driveway on Prince closed. Signal timing adjustments may be required.
- Phase 3: Close southbound Prince Street and divert southbound traffic per detour plan. Shift northbound traffic to east side of intersection. Close eastbound left turn lane and place temporary stop bar for eastbound traffic (right and left turns allowed from right lane). Cissell driveway on Prince closed. Construct southbound Prince north of intersection and westbound Church. Eastbound right turn overlap signal phase to not be used.
- Phase 4A: Reopen southbound Prince. Continue closure of eastbound left turn lane (right and left turns allowed from right lane). Construct interior portion of eastbound Church. Eastbound right turn overlap signal phase to not be used.
- Phase 4B: Remove curb and gutter on southwest corner and place temporary asphalt to accommodate large vehicle right turns. Close eastbound right turn lane and use left turn lane for both turns. Close northbound left turn lane but allow left turns from through lane.

Shift southbound traffic to west. Construct interior portion of southbound Prince south of the intersection. Signal timing adjustments may be required.

- Phase 4C: Continue closure of eastbound right lane and northbound left turn lane. Move northbound stop bar to south to allow room for eastbound right turns. Shift southbound traffic to east. Construct southwest portion of intersection. Eastbound right turn overlap signal phase to not be used.

Alternative construction sequences may be submitted, but are subject to approval by the Engineer. Acceptance of alternatives will be based upon impacts to the public and cost.

Stockpiling location of material must be approved by the Engineer, or a written approval from property owner submitted. The City may allow the Contractor to store equipment or materials at secured City storage facilities if space is available.

All excess material will be disposed of off-site, or at an approved site by the Engineer.

COLORADO DEPARTMENT OF TRANSPORTATION

STANDARD SPECIAL PROVISIONS

June 11, 2025

Revision of Section 105
Dispute Resolution

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects.

Revision of Section 105
Dispute Resolution

Revise Section 105 of the Standard Specifications as follows:

Remove and replace Subsections 105.22, "Dispute Resolution"; 105.23, "Dispute Review Board"; and 105.24, "Claims for Unresolved Disputes", as follows:

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

Definitions:

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

Dispute. An Issue that the Contractor and CDOT have not been able to resolve, and for which the Contractor submits a written formal notice of Dispute per subsection 105.22(c).

Claim. A Dispute not resolved at the Resident Engineer level or resolved after a DRB recommendation.

Merit. Refers to the right of a Contractor to recover on a Claim or Dispute, irrespective of Quantum, based on the substance, elements, and grounds of that Claim or Dispute.

Quantum. Refers to the quantity or amount of compensation or time (or both), if any, that may be granted to the Contractor when a Dispute or Claim is found to have Merit.

The Contractor shall bring the Issue(s) to the Project Engineer's attention, in writing, within 15 days of the Contractor being aware of the Issue(s). Written notice must take the form of a stand-alone, non-chain e-mail or letter, addressed and delivered to the Project Engineer. If a Contractor provides written notice outside of the 15-day deadline, it shall be presumed that CDOT suffered prejudice. Where the Contractor

failed to provide the required notice, the failure to provide notice may be treated as a separate and threshold Dispute to be resolved before other related Dispute(s) are submitted, addressed, or resolved.

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

An audit may be performed by the Department for any Dispute or Claim. All audits will be completed within 90 days of the request for an audit, provided the Contractor allows the auditors reasonable and timely access to the Contractor's books and records.

If CDOT does not respond within the specified timelines, the Contractor may advance the Dispute to the next review level in the dispute resolution process.

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

The dispute resolution process set forth in this subsection shall be exhausted in its entirety before initiation of litigation. Failure to comply with the requirements set forth in this subsection, including notice requirements, shall bar either party from any further administrative, equitable, or legal remedies. Subject to the rebuttable presumption of prejudice to CDOT set forth above, if a deadline is missed that does not prejudice either party, further relief shall be allowed.

All written notices of Dispute shall be submitted within 30 days of the date of the Project Engineer's Final Acceptance letter; see subsection 105.21(b).

When a project has a landscape maintenance period, the Project Engineer will grant partial acceptance per subsection 105.21(a). This partial acceptance will be the project acceptance of all the construction work performed before this partial acceptance.

All Disputes and Claims related to the work in which this partial acceptance is granted shall be submitted within 30 days of the Project Engineer's partial acceptance.

Should the Contractor's Dispute use the Total Cost approach for calculating damages, damages will be determined by subtracting the contract amount from the total cost of performance. Should the Contractor's Dispute use the Modified Total Cost approach for calculating damages, if the Contractor's bid was unrealistic in part, or some of its costs were unreasonable or some of its damages were caused by its own errors, those costs and damages will be deducted from the total cost of performance to arrive at the Modified Total Cost. The Total Cost or Modified Total Cost basis for calculating damages shall not be available for any Disputes or Claims seeking damages where the

Revision of Section 105
Dispute Resolution

Contractor could have kept separate cost records at the time the Dispute arose as described in subsection 105.22(a).

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

Throughout the Dispute, the Contractor and the Project Engineer shall keep complete daily records of extra costs and time incurred, per the following procedures:

1. Daily records shall identify each operation affected, the specific locations where work is affected, and the potential effect to the project's schedule. Such records shall also reflect all labor, material, and equipment applicable to the affected operations.

2. On the first workday of each week following the date of the written notice of Dispute, the Contractor shall provide the Project Engineer with the daily records for the preceding week. If the Contractor's records indicate costs greater than those kept by the Department, the Project Engineer will meet with the Contractor and present CDOT's records to the Contractor at the meeting. The Contractor shall notify the Engineer in writing within three workdays of any inaccuracies noted in, or disagreements with, the Department's records.

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

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

(1) The date of the Dispute.

(2) The nature of the circumstances that caused the Dispute.

(3) A detailed explanation of the Dispute, citing specific provisions of the Contract and any basis, legal or factual, that supports the Dispute.

(4) If any, the estimated Quantum, calculated per the methods set forth in subsection 105.24(b)12, with supporting documentation.

(5) An analysis of the progress schedule showing the schedule change or disruption, if the Contractor is asserting a schedule change or disruption. This analysis shall meet the requirements of subsection 108.08(d).

The Contractor shall submit as much information on the Quantum and impacts to the Contract time as is reasonably available with the REA and then supplement the REA as additional information becomes available. If the Dispute escalates to the DRB process, neither party shall provide or present to the DRB any Issue or any information that was not contained in the REA and fully submitted in writing to the Project Engineer and Resident Engineer during the subsection 105.22 process.

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

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

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

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

(d) Resident Engineer Review. Within seven days after receipt of the Contractor's written notice to the Resident Engineer of unsatisfactory resolution of the Dispute, the Project Engineer and Resident Engineer will hold at least one meeting (or more than one meeting upon mutual agreement of the parties) with the Contractor.

Meetings shall continue weekly for a period of up to 30 days. Meetings shall include a Contractor's representative with decision authority above the project level to discuss the Dispute. When the Project Engineer is a Consultant and the Resident Engineer rendered the Project Engineer's written decision, the Program Engineer will render the Resident Engineer's written decision. Within 7 days after this meeting, the Resident Engineer will issue a written decision on the Merits of the Dispute.

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

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

105.23 Dispute Review Board. A Dispute Review Board (DRB) is an independent third party that will provide specialized expertise in technical areas and the administration of construction contracts. The DRB will assist in and facilitate the timely and equitable resolution of Disputes between CDOT and the Contractor in an effort to avoid animosity and construction delays, and to resolve Disputes as close to the project level as possible. The DRB shall be established and operate as provided and shall serve as an independent and impartial board. A DRB member shall not be called as a witness for future litigation.

There are two types of DRBs: the "On Demand DRB" and the "Standing DRB". The DRB shall be an "On Demand DRB" unless a "Standing DRB" is specified in the Contract. An On Demand DRB may be established at any time during the project to assist with Issue and Dispute resolution and when the Project Engineer initiates a DRB review per subsection 105.23(a). A Standing DRB, when specified in the Contract, shall be established at the beginning of the project.

(a) Initiation of Dispute Review Board Review. When a Dispute has not been resolved per subsection 105.22, the Project Engineer will initiate the DRB review process within five days after the period described in subsection 105.22(e).

(b) Formation of Dispute Review Board. DRBs will be established per the following procedures:

1. CDOT, in conjunction with the Colorado Contractors Association (CCA), will maintain a statewide list of pre-approved DRB candidates experienced in construction processes and the interpretation of contract documents, and the resolution of construction Disputes. Only individuals who have completed training (currently titled DRB Administration and Practice Training) through the Dispute Resolution Board Foundation or otherwise approved by CDOT can be a

DRB member. DRB nominees shall be selected from the list of pre-approved candidates. When a DRB is formed, the parties shall execute the agreement set forth in subsection 105.23(m).

2. If the Dispute has a value of $250,000 or less, the On Demand DRB shall have one member. The Contractor and CDOT shall select the DRB member and execute the Three-Party Agreement within 30 days of initiating the DRB process. If the parties do not agree on the DRB member, each shall select five candidates. Each party shall numerically rank their list using a scale of one to five, with one being their first choice and five being their last choice. If common candidates are listed, but the parties cannot agree, the common candidate with the lowest combined numerical ranking shall be selected. If there is no common candidate, the lists shall be combined, and each party shall eliminate three candidates from the list. Each party shall then numerically rank the remaining candidates, with Number 1 being the first choice. The candidate with the lowest combined numerical ranking shall be the DRB member. The CDOT Project Engineer will be responsible for having all parties execute the agreement.
3. If the Dispute has a value over $250,000, the On Demand DRB shall have three members. The Contractor and CDOT shall each select a member, and those two members shall select a third. Once the third member is approved, the three members will nominate one of them to be the Chair and execute the Three-Party Agreement within 45 days of initiating the DRB process.
4. The Standing DRB shall always have three members. The Contractor and CDOT shall each select a member, and those two members shall select a third member. Once the third member is approved, the three members will nominate one of them to be the Chair. The Contractor and CDOT shall submit their proposed Standing DRB members within five days of execution of the Contract. The third member shall be approved before the Pre-construction Conference. The third member shall be selected within 15 days of the execution of the Contract. Before construction starts, the parties shall execute the Three-Party Agreement. The CDOT Project Engineer will be responsible for having all parties execute the agreement. The Project Engineer will invite the Standing DRB members to the Pre-construction and any Project First conferences.
5. DRB members shall not have been involved in the administration of the project under consideration. CDOT and the Contractor shall inform their selected DRB member who the major firms/people are on the project and request their selected DRB member to review the CDOT disclosure requirements and Canon of Ethics and then submit a disclosure statement, which shall also be submitted to the other party. DRB candidates shall complete the DRB Disclosure

Requirements and DRB Nominee Disclosure Form and disclose to the parties the following relationships:

(1) Prior employment with either party

(2) Prior or current financial interests or ties to either party

(3) Prior or current professional relationships with either party

(4) Anything else that might bring into question the impartiality or independence of the DRB member.

(5) Before agreeing to serve on a DRB, members shall notify all parties of any other CDOT DRB's they are serving or that they will be participating in another DRB.

If either party objects to the selection of the chair or other DRB members based on the disclosures, or based on information not disclosed, which might bring into question the impartiality, independence, or performance of the potential member, that potential member shall not be placed on the Board.

6. There shall be no ex parte communications with the DRB at any time.
7. The service of a Board member may be terminated only by written agreement of both parties.

(c) If a Board member resigns, is unable to serve, or is terminated, a new Board member shall be selected within 30 days in the same manner as the Board member who was removed was originally selected.

(d) Additional Responsibilities of the Standing Disputes Review Board

1. General. No later than 10 days after the Three-Party Agreement has been signed by the Chief Engineer, the DRB will coordinate with the parties on the date and location of the initial DRB meeting.

   (1) Obtain copies of the Contract documents and the Contractor's schedules for each of the Board members.

   (2) Agree on the location of future meetings, which shall be reasonably close to the project site.

   (3) Establish an address and telephone number for each Board member for the purposes of Board business.

2. Regular meetings. Regular meetings of the Board shall be held approximately every 120 to 180 days throughout the life of the Contract, except that this schedule may be modified to suit developments on the job as the work

progresses. Regular meetings shall be attended by representatives of the Contractor and the Department.

3. The Board shall establish an agenda for each meeting, which will cover all items that the Board considers necessary to keep it abreast of the project, such as construction status, schedule, potential problems and solutions, status of past Claims and Disputes, and potential Claims and Disputes. Copies of each agenda shall be submitted to the Contractor and the Department at least seven days before the meeting date. Oral or written presentations or both shall be made by the Contractor and the Department as necessary to give the Board all the data the Board requires to perform its functions. The Board will prepare minutes of each meeting, circulate them to all participants for comments and approval, and issue revised minutes before the next meeting. As a part of each regular meeting, a field inspection trip of all active segments of the work at the project site may be made by the Board, the Contractor, and the Department.

4. Advisory Opinions

   (1) Advisory opinions are typically used soon after the parties find they have a potential Dispute and have conducted preliminary negotiations, but before expenditure of additional resources and hardening their positions. Advisory opinions provide quick insight into the DRB's likely assessment of the Dispute. This process is quick and may be entirely oral and does not prejudice the opportunity for a DRB hearing.

   (2) Both parties must agree to seek an advisory opinion and notify the chairperson. The procedure for requesting and issuing advisory opinions should be discussed with the DRB at the first meeting with the parties.

   (3) The DRB shall issue a one-page written opinion within 5 days of the hearing.

   (4) The opinion is only advisory and does not require acceptance or rejection by either party. If the Dispute is not resolved and a hearing is held, the oral presentations and advisory opinion are completely disregarded, and the DRB hearing procedure is followed.

   (5) Advisory opinions should be limited to Merit Issues only.

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

1. Contact the Contractor and the DRB to coordinate an acceptable hearing date and time. The hearing shall be held at the Resident Engineer's office unless an alternative location is agreed to by both parties. Unless otherwise agreed to by both parties, an On Demand DRB hearing will be held within 30 days after the Three-Party Agreement is signed by the CDOT Chief Engineer. Unless otherwise

agreed to by both parties, a Standing DRB hearing will be held within 30 days after the DRB has been requested per subsection 105.23(a).

2. Ensure DRB members have copies of all documents previously prepared by the Contractor and CDOT pertaining to the Dispute, the DRB request, the Contract documents, and the special provisions at least two weeks before the hearing.

(f) Pre-Hearing Submittal. All Pre-hearing Submittals shall include only arguments, supporting documentation, Quantum, and other information as previously submitted in writing and as previously disputed in the formal Dispute process covered in subsections 105.22(b), (c), (d), and (e). All Pre-hearing Submittals planned to be used at the hearing shall be submitted to the other party 35 days before the hearing for review for compliance with this requirement. If either party contends there are new arguments, supporting documents, new Quantum, or any new information in a pre-hearing Submittal, and the other party objects to this information being presented to the DRB, the objecting party shall submit its objections in writing to the other party within 10 days. The parties shall meet within five days to reconcile the objection before the submittal is submitted to the DRB. If the parties cannot reconcile the objection, but the new argument, supporting documentation, new Quantum, or new information does not change either party's position on Merit or Quantum, the information shall be allowed in the Pre-hearing submittal and presented to the DRB. If the parties cannot reconcile the objections within the five days allowed, each party shall submit a one-page brief on their objections, but not the actual information objected to, to the DRB for a decision on the use of the documents. The DRB shall not approve any information simply because it is relevant to the Dispute or referenced during the Dispute. Neither party shall attempt to present anything to the DRB that they did not present to the other party during the Dispute process. The Dispute process shall be delayed while this determination is being made and a new hearing date set, if necessary. Pre-hearing Submittals to the DRB are as follows:

1. Joint Statement: At least 20 days before the hearing, the Joint Statement(s) shall be submitted to the DRB. The parties shall make every attempt to agree upon a Joint Statement of the Dispute. If the parties cannot agree on the Joint Statement, each party's independent statement shall be submitted to the DRB. The Joint Statement shall summarize, in a few sentences, the nature of the Dispute(s) and the scope of the desired decision.

2. Position Paper: At least 15 days before the hearing, CDOT and the Contractor shall submit by email to the DRB Chairperson their party's Position Paper. The DRB Chairperson shall simultaneously distribute by email the Position Papers to

all parties and other DRB members, if any. The Position Paper shall contain the following:

(1) The basis and justification for the party's position, with reference to specific contract language and the supporting documents of each element of the Disputes.

(2) A list of proposed attendees for the hearing. In the event of any objection by a party, the DRB shall make a final determination as to who attends the hearing.

(3) When the scope of the hearing includes Quantum, full cost details will be calculated per the methods set forth in subsection 105.24(b)12. The Scope of the hearing will not include Quantum if CDOT has requested an audit that has not been completed.

3. Supporting Documents: At least 15 days before the hearing, each party shall submit a copy of all its supporting documents to the DRB and the other party. Supporting documents include any presentations, visuals, or handouts planned to be used at the hearing. To minimize duplication and repetitiveness, the parties are encouraged to identify a common set of documents that will be referred to by both parties and submit them in a separate package to the DRB at least 20 days before the hearing. Common documents are communications between parties, speed memos, change orders, schedules, request for equitable adjustment, correspondence, and any document used in the subsection 105.22 process. CDOT shall submit the common set of documents to the Board and the Contractor.

4. If relevant to the Dispute and requested by the Board, the Engineer shall provide to the DRB either website links, electronic PDFs, or hard copies of pertinent contract documents such as plans, specifications, and M and S Standards.

(g) Pre-Hearing Phone Conference. A pre-hearing phone conference with all Board members and the parties shall be conducted as soon as a hearing date is established, but no later than 10 days before the hearing. The DRB Chairperson shall explain the specifics of how the hearing will be conducted, including how the two parties will present their information. (Ex. Each party makes a full presentation of their positions, or presentations will be made on a "point by point" basis, with each party making a presentation only on the individual dispute issue before moving onto the next Issue.)

If the pre-hearing position papers and documents have been received by the DRB before the conference call, the Chairperson shall discuss the estimated hours of review and activities for the Disputes (such as time spent evaluating and preparing

a recommendation on specific Issues presented to the DRB). If the pre-hearing position papers and documents have not been received by the Board before the conference call, another conference call will be scheduled during the initial conference call to discuss the estimated hours of review. The Engineer shall coordinate the conference call.

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

1. An employee of CDOT presents a brief description of the project and the status of construction on the project.
2. The party that requested the DRB presents the Dispute in detail as supported by previously submitted information and documentation in the pre-hearing position paper. No new information or Disputes will be heard or addressed by the DRB. Rebuttals of the other party's arguments shall not be presented at this time.
3. The other party presents its position in detail as supported by previously submitted information and documentation.
4. The party that requested the DRB presents their rebuttals, followed by the other party's rebuttals.
5. Upon completion of their presentations and rebuttals, both parties and the DRB will be provided the opportunity to exchange questions and answers. Questions from the parties shall be directed to the Chairperson. Attendees may respond only when board members request a response.
6. Employees of each party are responsible for leading presentations at the DRB hearing.
7. Attorneys shall not participate in the hearing unless the DRB specifically addresses an Issue to them or unless agreed to by both parties. Should the parties disagree on attorney participation, the DRB shall decide on what, if any, participation will be permitted. Attorneys representing the parties are permitted to attend the hearing, provided their presence has been noted in the pre-hearing submittal.
8. Either party may use experts only if the expert has previously presented to the other party before the DRB process. A party intending to offer an outside expert's analysis at the hearing shall disclose such intention in the pre-hearing position paper. The expert's name and a general statement of the area of the Dispute that will be covered by his presentation shall be included in the disclosure. The other party may present an outside expert to address or respond to those Issues that may be raised by the disclosing party's outside expert.

9. If both parties approve, the DRB may retain an outside expert. The DRB chairperson shall include the cost of the outside expert in the DRB's regular invoice. CDOT and the Contractor shall equally bear the cost of the services of the outside expert employed by the DRB.
10. If either party attempts to present an argument, documentation, Quantum, or new information that the other party feels was not in the Pre-hearing submittals, the chairperson shall require the party to demonstrate where in the Pre-hearing submittals the information in question resides.
11. If either party fails to timely deliver a position paper, the DRB may reschedule the hearing one time. On the final date and time established for the hearing, the DRB shall proceed with the hearing using the information that has been submitted.
12. If a party fails to appear at the hearing, the DRB shall proceed as if all parties were in attendance.

(i) Dispute Review Board Recommendation. The DRB shall issue a Recommendation per the following procedures:

1. The DRB shall not make a recommendation on the Dispute at the meeting. Before the closure of the hearing, the DRB members and the Contractor and CDOT together will discuss the time needed for analysis and review of the Dispute and the issuance of the DRB's recommendation. The maximum time shall be 30 days unless otherwise agreed to by both parties.
2. After the meeting has been closed, the DRB shall prepare a written Recommendation signed by each member of the DRB. In the case of a three-member DRB where one member dissents, that member shall prepare a written dissent and sign it. The DRB's recommendation shall include the following:
   A. A summary of the Issues and factual evidence presented by the Contractor and CDOT concerning the Dispute.
   B. Recommendations concerning the validity of the Dispute.
   C. Recommendations concerning the value of the Dispute as to cost impacts if the Dispute is determined to be valid.
   D. The contractual and factual bases supporting the recommendation(s) made, including an explanation as to why each and every position was accepted or rejected.
   E. Detailed and supportable calculations that support any recommendation(s).

3. The chairperson shall transmit the signed Recommendation and any supporting documents to both parties.

(j) Clarification and Reconsideration of Recommendation. Either party may request in writing clarification or reconsideration of a decision within 10 days following receipt of the Recommendation. Within 10 days after receiving the request, the DRB shall provide written clarification or reconsideration to both parties.

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

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

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

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

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

If either party rejects the Recommendation in whole or in part, it shall give a written explanation to the other party and the DRB within 14 days after receiving the Recommendation. When the Recommendation is rejected in whole or in part by either party, the other party may either abandon the Dispute or pursue a formal Claim per subsection 105.24.

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

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

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

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

(m) *Cost and Payments*.

1. General Administrative Costs. The Contractor and the Department shall equally share the entire cost of the following to support the Board's operation:

   (1) Copies of the Contract and other relevant documentation
   (2) Meeting space and facilities
   (3) Secretarial services
   (4) Telephone
   (5) Mail
   (6) Reproduction
   (7) Filing

2. The Department and the Contractor shall bear the costs and expenses of the DRB equally. Each DRB board member shall be compensated at an agreed rate of $1,200 per day if time spent on-site per meeting is greater than four hours. Each DRB board member shall be compensated at an agreed rate of $800 per day if the time spent on-site per meeting is less than or equal to four hours. The time spent traveling to and from each meeting shall be reimbursed at $50 per hour if the travel distance is more than 50 miles. The agreed daily and travel time rates shall be considered full compensation for on-site time, travel expenses, transportation, lodging, time for travel of more than 50 miles, and incidentals for each day, or portion thereof, that the DRB member is at an authorized DRB meeting. No additional compensation will be made for time spent by DRB members in review and research activities outside the official DRB meetings unless that time (such as time spent evaluating and preparing recommendations on specific Issues presented to the DRB) has been specifically agreed to in advance by the Department and Contractor. Time away from the project that has been specifically agreed to in advance by the parties will be compensated at an agreed rate of $125 per hour. The agreed amount of $125 per hour shall include all incidentals. Members serving on more than one DRB, regardless of the number of meetings per day, shall not be paid more than the all-inclusive rate per day or rate per hour for an individual project.

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3. Payments to Board Members and General Administrative Costs. Each Board member shall submit an invoice to the Contractor for fees and applicable expenses incurred each month following a month in which the Board members participated in Board functions. Such invoices shall be in the format established by the Contractor and the Department. The Contractor shall submit to the Department copies of all invoices. No markups by the Contractor will be allowed on any DRB costs. The Department will split the cost by authorizing a 50 percent payment on the next progress payment. The Contractor shall make all payments in full to Board members within seven calendar days after receiving payment from the Department for this work.

(m) Dispute Review Board Three Party Agreement.

DISPUTE REVIEW BOARD
THREE PARTY AGREEMENT
COLORADO PROJECT NUMBER

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

_____
_____,

hereinafter called the "Contractor"; and

_____
_____,

_____
_____,

_____
_____, and

_____
_____,

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

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

_____ [Project Name] _____
_____

and

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

NOW, THEREFORE, it is hereby agreed:

ARTICLE I

DESCRIPTION OF WORK AND SERVICES

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

ARTICLE II

COMMITMENT ON THE PART OF THE PARTIES HERETO

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

ARTICLE III

COMPENSATION

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

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

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

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

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

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

ARTICLE IV

ASSIGNMENT

Board members shall not assign any of the work to be performed by them under this agreement. Board members shall disclose any conflicts of interest, including but not limited to any dealings

with either party in the previous five years other than serving as a Board member under other contracts.

ARTICLE V

COMMENCEMENT AND TERMINATION OF SERVICES

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

ARTICLE VI

LEGAL RELATIONS

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

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

Board members shall not be called as witnesses for future litigation.

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

BOARD MEMBER:_____.

BY:_____.

BOARD MEMBER: _____.

BY: _____.

BOARD MEMBER:_____.

BY:_____.

CONTRACTOR:_____.

BY:_____

_____.

TITLE: _____

_____

COLORADO DEPARTMENT OF TRANSPORTATION

BY:_____

_____. DATE: _____,

TITLE: CHIEF ENGINEER

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

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

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

Litigation proceedings must commence within 180 calendar days of the Chief Engineer's decision, absent a written agreement otherwise by both parties.

The venue for all unresolved Disputes with an aggregate value of $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.

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Dispute Resolution

(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 the 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 the 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:

   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: _____

Revision of Section 105
Dispute Resolution

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 certify 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 this Claim, being passed through to CDOT is passed through in good faith and is accurate and complete to the best of my knowledge and belief.

Dated _____/s/_____

Subscribed and sworn before me this _____ day of _____.

NOTARY PUBLIC

My Commission Expires: _____

2. A detailed factual statement of the Claim for additional compensation, time, or both, providing all necessary dates, locations, and items of work affected by the Claim. The Contractor's detailed factual statement shall expressly describe the basis of the Claim and factual evidence supporting the Claim. This requirement is not satisfied by simply incorporating into the Claim package other documents that describe the basis of the Claim and supporting factual evidence.
3. The date on which facts were discovered that 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 contractors, subcontractors, suppliers, 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 per subsection 108.08(d), along with a statement defining if any liquidated damages should be released, if applicable.
12. If additional compensation beyond the Contract Amount 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).

        (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 those 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. Within 15 days of the appeal, either party may submit a written request for a hearing with the RTD or duly authorized Region delegates.

The RTD will render a written decision to the Contractor within 45 days after the receipt of the Claim package or receipt of the audit, or after the hearing, 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 45-day period, or within any extended time period as agreed to by both parties, the Contractor shall either: (1) accept this as a denial of the Claim, or (2) appeal the Claim to the Chief Engineer, as described in this subsection.

If the Contractor accepts the RTD decision, the provisions of the decision shall be implemented 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 45 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(e).

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

Revision of Section 105
Dispute Resolution

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, 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.

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.

Figure 105-1 summarizes the disputes and claims process described in subsections 105.22, 105.23, and 105.24.

(Insert Flow Chart)

September 11, 2025

Revision of Section 106
Buy America (BA) and Build America Buy America (BABA) Requirements – Projects with $500,000 or more in Federal-Aid Highway Funding

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT (and local agency-administered) construction projects:

Use this standard special provision on all federal-aid highway (FHWA) funded (CDOT and Local Agency administered) Infrastructure projects that have a federal funding Construction Phase authorization date that has occurred on or after October 1, 2025, and that contain $500,000 or more in federal-aid highway funding. Design Project Managers should consult with their respective Region Business Office or HQ Business Office to determine the type and amount of federal-aid highway funding that has been or will be used in the projects. The $500,000 threshold is to be based on the aggregate (total amount) of federal-aid funding used or to be used in all phases of the project, including construction and any preliminary engineering phases (e.g., Right-of-way, Utilities, Design, Environmental, or Miscellaneous). The federal funding authorization date for the construction phase may also be viewed in the Project Status Report (ZJ40 Report) from SAP under the FHWA Agreement Date column.

Revision of Section 106
Buy America (BA) and Build America Buy America (BABA) Requirements – Projects with more than $500,000 in Federal-Aid Highway Funding

Section 106 of the Standard Specifications shall be revised as follows:

Delete Section 106.11(a) of the Standard Specifications and replace it with the following:

(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.

Delete Section 106.11(d) of the Standard Specifications and replace it with the following:

d. Manufactured Products. Manufactured products used and permanently incorporated shall be produced in the United States. The manufactured product must meet the following:

1. Buy America requirements apply to any steel or iron component of a manufactured product, regardless of the overall composition of the manufactured product.
2. Final assembly of the manufactured product must have occurred in the United States.

Before the permanent incorporation into the project and before payment for all manufactured products, the Contractor shall obtain a certification from the Manufacturer of the product, who has performed the final assembly of the product, and submit it to the Project Engineer. The certification shall attest that any iron/steel utilized in the manufactured product is compliant with Buy America requirements, and that the final assembly of the product occurred in the United States.

July 1, 2025

Revision of Section 107
Water Quality Control
(Under One Acre of Disturbance)

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Construction Engineering Services Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use on all projects not having a Federal, State or Local Stormwater Construction Permit.
[Projects with less than one acre of disturbance and not part of a common plan of development].

Revision of Section 107
Water Quality Control
(Under One Acre of Disturbance)

Section 107.25 of the Standard Specifications is hereby deleted and replaced as follows:

107.25 Water Quality Control. The project work shall be performed using practices (including but not limited to those listed below) that 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) Construction Site Boundary/Limits of Construction (LOC). The project area defined by the Environmental Clearance document.

(3) Discharge of Pollutants. One or more pollutants leaving the Limits of Construction (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.

(b) Construction Requirements

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.

If the Contractor determines construction of the project will result in a change to the ac

tivities or LDA, the Contractor shall detail the changes in a written report to the Engineer. Upon receipt of the report, the Engineer will coordinate with the Region Planning and Environmental Manager (RPEM) regarding the change. The Engineer, within five days after receipt of the report, will approve or reject in writing the request for change. If approved, the Engineer will detail a course of action including revision of existing permits or obtaining new permits.

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 project specific water quality 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 (CDPHE) or other appropriate federal, state, or local agency to determine the need for any permit.

The Contractor shall conduct the work in a manner that prevents pollution of any adjacent State waters, as defined in section 101. Erosion control work shall be performed in accordance with Section 208, this subsection, and all other applicable parts of the Contract.

Prior to construction, the Stormwater Management Plan (SWMP) Administrator, identified in Section 208, 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, as described in Section 208:

(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.

(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 truck and equipment washing, including the concrete truck chute and associated fixtures and equipment.

(11) Concrete 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) Other areas or procedures where spills could occur.

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

Prior to construction 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 Section 208 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. Prior to start of work, the Contractor shall submit a SPCC Form, if applicable, which has been approved by the EPA for the project.

The Contractor shall obtain a Construction Dewatering (CDW) permit from CDPHE 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 in accordance with Section 250.

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 Permit shall be submitted to the Engineer prior to dewatering operations commencing.

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

1. 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.

2. Discharges from vaults or similar structures shall not be contaminated. Potential sources of contamination include process materials used, stored, or conveyed in the structures, or introduced surface water runoff from outside environments that may contain oil, grease, and corrosives.

3. The groundwater discharge does not leave the project boundary limits where construction is occurring.

4. 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.

5. 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.

6. A visible sheen is not evident in the discharge.

7. Control measures are implemented to prevent any sediment deposited during land application from being transported by stormwater runoff to surface waters or other conveyances.

8. 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 Contractor.

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.

At least 15 days prior to 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.

Temporary fill into wetlands or streams shall 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.

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 shall be allowed only as authorized by the U.S. Army Corps of Engineers 404 Permit. 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.

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 waste and washout water from mixer trucks, concrete finishing tools, concrete saw, and all concrete material 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 ten days prior to 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 in accordance with the manufacturer’s recommended application rates, frequency, and instructions.

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.

Spill prevention and containment measures conforming to Section 208 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 in writing.

The Contractor shall prevent construction activities from causing grass or brush fires.

The construction activities shall not impair Indian tribal rights, including, but not limited to, water rights, and treaty fishing and hunting rights.

Prior to start of work, the Contractor shall certify in writing to the Engineer that construction equipment has been cleaned prior to 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 prior to being brought onto the project site.

Vehicles which have been certified by the Contractor as having been cleaned prior to 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.

At the end of each day the Contractor shall collect all trash and dispose of it in appropriate containers.

All construction site wastes shall be properly managed to prevent potential pollution of State waters. 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.

Discharges from the project area 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.

Stormwater Construction Permit. A Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) is not required for this project. A CDPS-SCP will be obtained from CDPHE, if any of the following activities apply:

(1) Construction sites that will disturb one acre or more; or

(2) Construction sites that are part of a common plan of development or sale; or

(3) It is specified in the contract; or

Stormwater discharges that are designated by the division as needing a stormwater permit because the discharge:

1. Contributes to a violation of a water quality standard; or

2. is a significant contributor of pollutants to State waters.

Dewatering, erosion control for dewatering, and disposal of water resulting from dewatering operations, including all costs for permits, will not be measured and paid for separately, but shall be included in the work.

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.

The Contractor shall 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.

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.

Areas exposed to erosion by fire resulting from the Contractor's operations shall be stabilized in accordance with Section 208 by the Contractor, at the Contractor's expense.

July 1, 2025

Revision of Section 108
Liquidated Damages

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects.

Revision of Section 108
Liquidated Damages

Revise Section 108.09 of the Standard Specifications as follows:

In subsection 108.09 delete the schedule of Liquidated Damages and replace it with the following:

Original Contract Amount ($)		Liquidated Damages per Calendar Day ($)
From More Than	To And Including	
0	1,000,000	1,300
1,000,000	2,000,000	2,300
2,000,000	5,000,000	3,100
5,000,000	10,000,000	6,800
10,000,000	25,000,000	8,800
25,000,000	-----	9,700

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.

(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.

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.

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

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

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) 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.

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 Medial 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.

July 1, 2025

Revision of Section 208
Erosion Control
(Under One Acre of Disturbance)

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Construction Engineering Services Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:
Use on all projects not having a Federal, State or Local Stormwater Construction Permit.
[Projects with less than one acre of disturbance and not part of a common plan of development].

Revision of Section 208
Erosion Control
(Under One Acre of Disturbance)

Delete Section 208 of the Standard Specifications and replace it with the following:

Description

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 Section 101.

Stormwater runoff from all disturbed areas and soil storage areas for which permanent or interim stabilization is not implemented, 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 in accordance with 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.

Materials

208.02 Erosion control materials are subject to acceptance in accordance with Section 106. Erosion control materials shall be subject to the following approval process:

Material	Approval Process	Notes:
Erosion Bales (Weed Free)	COC	The Contractor shall provide a transit certificate number or a copy of the transit certificate as supplied from the producer.
Silt Fence	COC	
Silt Berm	APL	
Erosion Log (Type 1, Type 2, and Type 3)	COC	
Silt Dikes	COC	
Pre-fabricated Concrete Washout Structures (above ground)	APL	
Pre-fabricated Vehicle Tracking Pad	APL	
Aggregate Bag	COC	
Storm Drain Inlet Protection (Type I, II, and III)	APL	

COC = Certificate of Compliance; APL= Approved Product List

The material for control measures shall conform to the following:

(a) Erosion Bales. Material for erosion bales shall consist of Certified Weed Free hay or straw. The hay or straw shall be certified under the Colorado Department of Agriculture Weed Free Forage Certification Program and inspected as regulated by the Weed Free Forage Act, Title 35, Article 27.5, CRS. Each certified weed free erosion bale shall be identified by blue and orange twine binding the bales.

The Contractor shall not place certified weed free erosion bales or remove their identifying twine until the Engineer has inspected them.

The Contractor may obtain a current list of Colorado Weed Free Forage Crop Producers who have completed certification by contacting the:

Colorado Department of Agriculture, Weed Free Forage Program,
305 Interlocken Pkwy, Broomfield, CO 80021

Contact the Weed Free Forage Coordinator at (303) 869-9038. Also available at www.colorado.gov/ag/csd.

Bales shall be approximately 5 cubic feet of material and weigh at least 35 pounds. Stakes shall be wood and shall be 1.5 inch by 1.5 inch by 30 inch actual.

(b) *Silt Fence*. Silt fence posts shall be wood with a minimum length of 46 inches. Wood posts shall be 1.5-inch width by 1.5-inch thickness actual dimensions with 1/8-inch tolerance. Geotextile shall be attached to wood posts with three or more staples per post.

Silt fence geotextile shall conform to the following requirements:

Physical Requirements for Silt Fence Geotextiles

Property	Wire Fence Supported Requirements	Self-Supported Requirements Geotextile Elongation <50%	Test Method
Grab Strength, lbs.	90 minimum	124 minimum	ASTM D4632
Permittivity sec-1	0.05	0.05	ASTM D4491
Ultraviolet Stability	Minimum 70% Strength Retained	Minimum 70% Strength Retained	ASTM D4355

Silt Fence (Reinforced). Silt fence posts shall be metal "studded tee" T-post with a minimum length of 66 inches. Metal posts shall be “studded tee” with 0.095-inch minimum wall thickness. Wire fabric reinforcement for the silt fence geotextile shall be a minimum of 14 gauge with a maximum mesh spacing of 6 inches. Geotextile shall be attached to welded wire fabric with ties or nylon cable ties at 12 inches on center at top, middle and bottom wire. Welded wire fabric shall be attached to the post with a minimum three 12-gauge wire ties per post. Vinyl or rubber safety caps shall be installed on all T-post.

(c) *Temporary Berms*. Temporary berms shall be constructed out of compacted embankment (subsoil) and not out of salvaged topsoil.

(d) *Temporary Slope Drains*. Temporary slope drains shall consist of fiber mats,

plastic sheets, stone, concrete or asphalt gutters, half round pipe, metal or plastic pipe, wood flume, flexible rubber, or other materials suitable to carry accumulated water down the slopes. Outlet protection riprap shall conform to Section 506. Erosion control geotextile shall be a minimum Class 2, conforming to Section 712.

(e) Silt Berm. Silt berm shall consist of permeable multi-use material consisting of ultraviolet (UV) stabilized high-density polyethylene or other approved material effective in reducing water velocity. Designed and tested system shall be installed on a Turf Reinforcement Mat or Soil Retention Blanket in accordance with Section 216. The segment shall be secured to the ground with either metal or wood stakes. Minimum requirements for securing stakes shall be in accordance with the plans. Dimensions of individual segments shall meet the following criteria:

Width	Height	Weight	Percent Open Area
6 - 11 inches	6 - 10 inches	> 0.25 lbs./sq. ft.	20 – 50%

(f) Rock Check Dam. Rock Check dams shall be constructed of stone. Stone shall meet the requirements of Section 506.

(g) Sediment Trap. In constructing an excavated sediment trap, excavated soil may be used to construct the dam embankment, provided the soil meets the requirements of Section 203. Outlet protection riprap shall be the size specified in the Contract and shall conform to Section 506. Erosion control geotextile shall be a minimum Class 1, conforming to Section 712.

(h) Erosion Logs. Erosion logs shall be one of the following types unless otherwise shown on the plans:

(1) Erosion Log (Type 1) shall consist of cylinder casings filled with curled aspen wood excelsior with a consistent width of fibers evenly distributed throughout the log. The casing shall be seamless, photo-degradable tube netting. The curled aspen wood excelsior shall be fungus free, resin free, and free of growth or germination inhibiting substances.

(2) Erosion Log (Type 2) shall consist of cylinder casings filled with Erosion Log (Type 2) Compost in accordance with Section 212. The compost-wood chip blend may be pneumatically shot into a geotextile cylindrical casing or be pre-manufactured. The geotextile casing shall consist of high density polyethylene (HDPE) or polypropylene mesh (knitted, not extruded) with openings of ⅛ to ⅜ inch and contain the compost-wood chip material while not limiting water infiltration.

(3) Erosion Log (Type 3) shall consist of cylinder casings filled with curled aspen wood excelsior with a consistent width of fibers evenly distributed throughout the log. The casing shall be seamless, 100 percent natural fiber cylinder netting (compostable) and shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log shown on the plans. Netting shall be a woven cotton or cellulose base mesh that has an approval to compost certification with a maximum mesh size of 0.075 inches and index values as shown in Table 208-2. The curled aspen wood excelsior shall be fungus free, resin free, and free of growth or germination inhibiting substances.

Natural compostable fiber netting shall not contain any synthetic material woven into the netting such as polypropylene, nylon, polyethylene, or polyester dyes. Oxo-degradable or oxo-biodegradable petrochemical-based fiber shall not be part of the netting material. Burlap netting material shall not be used for Erosion Log (Type 3).

Erosion Log (Type 1, Type 2, and Type 3) shall have minimum dimensions as shown in Table 208-1, based on the specified diameter of the log.

Table 208-1
Dimensions of Erosion Logs

Diameter Type 1 & 3 (Inches)	Diameter Type 2 (Inches)	Min. Length (ft)	Max. Length (ft)	Weight (minimum) (pounds/foot)	Stake Dimensions (Inches)
9	8	10	180	1.6	3/4 thickness by 3/4 width by 18 long
12	12	10	180	2.5	1.5 thickness by 1.25 width by 24 long
20	18	10	100	4.0	1.5 thickness by 1.25 width by 30 long

Wood stake acceptable tolerance +/- 1/8 inch.

Table 208-2
Index Values for Natural Fiber Netting

Property	Requirement	Test Method
Fabric Tensile Strength	>70 lbs.	ASTM D3822
Biodegradable	100%	ASTM D5988
Mesh Pattern	Rib	

Stakes to secure erosion logs shall consist of pinewood or hardwood.

(i) *Silt Dikes*. Silt dikes shall be pre-manufactured flexible sediment barrier that will fully rebound when driven over by heavy equipment. Material shall consist of outer geotextile fabric covering closed cell urethane or polyethylene foam core. The geotextile fabric aprons shall extend beyond the foam core a minimum of 8 inches on both sides.

Table 208-3
Geotextile Requirements

Property	Requirement	Test Method
Water Flow Rate	100-150 gallons per minute/square foot	ASTM D4491
Grab Breaking Load	200 lbs. minimum in each direction	ASTM D4632
Ultraviolet Degradation	70% of original unexposed grab breaking load after 500 hours	ASTM D4595

Each silt dike segment shall have the following dimensions:

Dimension	Length
Vertical height after installation	>5 inches
Geotextile sleeve section to interlock segments	>8 inches

Silt dike segments shall be anchored down using the minimum requirements shown in Table 208-4.

Table 208-4
Silt Dike Segment Requirements

Surface	Nail	Washers
Soil Surface	Installed in 4 inch deep trench with 6 inch nails no more than 4 feet O.C. (on center)	1 inch washers
Hard Surface	1 inch concrete nails no more than 4 feet O.C.	1 inch washers and solvent-free adhesive

(j) Concrete Washout Structure. The Contractor shall construct a washout structure that will contain washout from concrete placement, construction equipment cleaning operations, and residue from cutting, coring, grinding, grooving, and hydro-concrete demolition. Embankment required for the concrete washout structure may be excavated material, provided that this material meets the requirements of Section 203 for embankment. 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 208-5.

Table 208-5
Impermeable Synthetic Liner Requirements

Tested Property	Test Method	Units	Value
Thickness	ASTM D5199	mil	>30 +/- 1.5
Tear Strength	ASTM D1004	lbs.	>8
Low Temperature Impact	ASTM D1790	°F	Pass at -20

(k) Pre-Fabricated Concrete Washout Structure. Pre-Fabricated Concrete Washout Structures shall be one of the following types unless otherwise shown on the plans:

(1) Pre-Fabricated 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 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.

(2) Pre-Fabricated 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.

(l) Vehicle Tracking Pad (VTP). Aggregate for the vehicle tracking pad shall be crushed natural aggregate with at least two fractured faces that meets the following graduation requirements:

Sieve size	Percent by weight Passing Square Mesh Sieves
75 mm (3 inch)	100
50 mm (2 inch)	0 to 25
19.0 mm (3/4 inch)	0 to 15

Recycled crushed concrete or asphalt shall not be used for vehicle tracking pads.

Erosion control geotextile shall be a minimum Class 2, conforming to Section 712.

Pre-Fabricated or manufactured vehicle tracking pads shall only be used if specified in the Contract. Multi-use pads shall consist of industrial grade materials and shall be designed to minimize sediment leaving the project.

Minimum dimensions of the modular systems shall be:

Width	Length of pad
12 feet	35 feet

To accommodate construction traffic turning radii between the tracking pad and a stabilized surface, additional flared sections of approved pads or aggregate in accordance with this specification shall be used at no additional cost to CDOT.

Weight (min.) (lbs./sq. ft.)	Crush strength (min.) (psi)
8	400

A thin layer of stone, geotextile, or other stable surface may be required to stop rutting under the pad or area where the vehicles mount or dismount the manufactured trackout control device.

(m) Aggregate Bag. Aggregate bags shall consist of crushed stone or recycled rubber filled fabric with the following properties:

Diameter (inches)	**Weight (minimum) (pounds per foot)**
6-8	6
10	10
12	15

Rubber used in bags shall be clean, 95 percent free of metal and particulates.

Crushed stone contained in the aggregate bags shall conform to Table 703-1 for Coarse Aggregate No. 6.

The aggregate bag shall consist of a woven geotextile fabric with the following properties:

Property	Requirement	Test Method
Grab Tensile Strength	90 lbs. min.	ASTM D4632
Trapezoid Tear Strength	25 lbs. min.	ASTM D4533
Mullen Burst	300 psi	ASTM D3786
Ultraviolet Resistance	70%	ASTM D4355

(n) Storm Drain Inlet Protection. Storm drain inlet protection shall consist of aggregate filled fabric with the following dimensions:

Storm Drain Inlet Protection Properties	Protection Type I*	Protection Type II#	Protection Type III◂
Diameter	4 in.	4 in.	N/A
Minimum Section Length	7 ft.	5 ft.	5 ft.
Apron Insert	---	30 in. or sized to grate	30 in or sized to grate

*Type I protection shall be used with Inlet Type R.
#Type II protection shall be used with Combination Inlet. Option A or B
◂ Type III protection shall be used with Vane Grate Inlet only. Option A or B
Note: Options A and B are shown on Standard Plan M-208-1.

The Storm Drain Inlet Protection (Type I, II and III) shall consist of a woven geotextile fabric with the following properties:

Property	Test Method	Unit	Requirement
Grab tensile strength	ASTM D4632	lbs.	minimum 150X200
Mullen Burst Strength	ASTM D3786	lbs.	400
Trapezoid Tear Strength	ASTM D4533	lbs.	minimum 60X60
Percent Open Area	COE-22125-86	%	≥20
Water Flow Rate	ASTM D4491	gal./min./sq. ft.	≥100
Ultraviolet	ASTM D4355	%	≥70

Property	Test Method	Unit	Requirement
Resistance			

Curb roll for Storm Drain Inlet Protection (Type I and II) shall have a weight >4 pounds per linear foot of device. The device shall be capable of conforming to the shape of the curb. Aggregate contained in the storm drain inlet device shall consist of gravel or crushed stone conforming Table 703-1 for Coarse Aggregate No. 6.

CONSTRUCTION REQUIREMENTS

208.03 Project Review, Schedule, and Erosion Control Management. Prior to construction the Contractor shall implement control measures in accordance with the approved project schedule as described in this section.

At the Pre-Construction Conference, the attendees shall discuss the Stormwater Management Plan (SWMP), maintaining water quality standards, sensitive habitats on-site, wetlands, other vegetation to be protected, and the enforcement mechanisms for not meeting the requirements of this specification.
Prior to beginning construction, the Contractor shall evaluate the project site for storm water draining into or through the site. When such drainage is identified, control measures shall be used if possible to divert stormwater from running on-site and becoming contaminated with sediment or other pollutants. The diversion may be accomplished with a temporary pipe or other conveyance to prevent water contamination or contact with pollutants. Run-on water that cannot be diverted shall be treated as construction runoff and adequate control measures shall be employed.

The SWMP Administrator shall evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, control measures shall be used to protect off-site water from becoming contaminated with sediment or other pollutants.

The SWMP Administrator shall review existing inlets and culverts to determine if inlet protection is needed due to water flow patterns. Prior to beginning construction, inlets and culverts needing protection shall be protected and the location of the implemented control measure added to the SWMP site map.

Prior to construction, the Contractor shall implement appropriate control measures for protection of wetlands, sensitive habitat, and existing vegetation from ground disturbance and other pollutant sources, in accordance with the approved project schedule as described in Section 208.

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 SWMP site map. The approved control measures will be measured and paid for in accordance with Section 208.

(a) Project Review. The Contractor shall submit modifications to the Contractor's control measures or SWMP in a written proposal to the Engineer. The written proposal shall include the following information:

(1) Reasons for changing the control measures.

(2) Diagrams showing details and locations of all proposed changes.

(3) List of appropriate pay items indicating new and revised quantities.

(4) Schedules for accomplishing all erosion and sediment control work.

(5) Effects on certifications caused by the proposed changes.

The Engineer will approve or reject the written proposal in writing within seven days after receipt of the submittal. The Engineer may require additional control measures prior to approving the proposed modifications. Additional modifications and additional control measures will be paid for at the Contract Unit Price for the specific items involved. If no items exist, they will be paid for as extra work in accordance with Section 109.

(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. The project schedule shall include erosion and sediment control work for haul roads, borrow pits, storage, asphalt or concrete batch sites, and all areas within the project limits. If during construction the Contractor proposes changes which would affect the Contract's control measures, the Contractor shall propose revised control measures to the Engineer for approval in writing. If necessary, the Contractor 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 Erosion Control Inspection. All ECM staff shall have working knowledge and experience in construction, and shall have successfully completed the Transportation Erosion Control Supervisory Certificate Training (TECS) as provided by the Department. The Superintendent may be permitted to serve in an ECM role, unless otherwise specified in the contract.

1. SWMP Administration. The SWMP shall be maintained by a SWMP Administrator. The name of the SWMP Administrator shall be recorded on the SWMP. The SWMP Administrator shall have full responsibility to maintain and update the SWMP and identify all critical action items needed to maintain water quality standards:

   (1) Complete the SWMP as described in Section 208.

   (2) Participate in the Pre-Construction Conference.

   (3) Attend erosion and sediment control meetings.

   (4) Implement necessary actions to reduce erosion or water quality problems, anticipated or presently existing, resulting from construction activities.

   (5) Ensure that all labor, material, and equipment needed to install, maintain, and remove control measures are available as needed.

   (6) During construction, the SWMP site map shall be updated to reflect current field conditions and include, at a minimum, the following if applicable:

      (i) Limits of Construction (LOC).

      (ii) Areas of disturbance (AD), including areas of borrow and fill.

      (iii) Limits of Disturbance (LDA).

      (iv) Areas used for storage of construction materials, equipment, soils, or wastes.

      (v) Location of dedicated asphalt, concrete batch plants, and masonry mixing stations.

      (vi) Location of construction offices and staging areas.

      (vii) Location of work access routes during construction.

      (viii) Location of waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt.

      (ix) Location of temporary, interim and permanent stabilization.

(x) Location of outfalls.

(xi) Flow arrows that depict stormwater flow directions on-site and runoff direction.

(xii) Location of structural and non-structural control measures.

(xiii) Location of springs, streams, wetlands, and other State waters, including areas that require pre-existing vegetation be maintained within 50 horizontal feet of a receiving water, unless infeasible.

(xiv) Location of stream crossings located within the construction site boundary.

(7) Start a new site map before the current one becomes illegible. All site maps shall remain as part of the SWMP.

(8) Install control measures according to Standard Plans M-208-1, M-216-1, and M-615-1.

(9) Record in the SWMP, the approved Method Statement for Containing Pollutant Byproducts.

(10) Update the Potential Pollutants list in the SWMP and Spill Response Plan throughout construction.

2. Erosion Control Inspector (ECI).

The SWMP Administrator shall complete the duties of the ECI.

(1) ECI duties shall be as follows:

(i) Inspect initial placement and adherence to approved SWMP and SWMP site plan control measures

(ii) Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.

(iii) Identify all areas of concern that may impact water quality and, if necessary, implement corrective actions.

(iv) Ensure all other agency Stormwater and inspection requirements are followed unless a waiver or other agreement has been made.

(2) The ECI shall immediately report to the Contractor and Engineer the following instances:

(i) Noncompliance which may endanger health or the environment, regardless of the cause of the incident.

(ii) Spills or discharges which exceeds any water quality standards.

(iii) Upset conditions which cause an exceedance of any water quality standards.

(3) 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 shall be made available for reference at the CDOT field office during construction:

1. SWMP. The Engineer will provide an approved SWMP design (includes items (1) through (4) as listed below) at the Pre-construction Conference, which is and shall remain the property of CDOT. The following Contract documents and reports shall be included or kept maintained, (as applicable), and updated in the SWMP under the appropriate items by the SWMP Administrator:

(1) SWMP Plan Sheets – Notes, tabulation, site description, sequence of major activities, area of disturbance, existing soil data, existing vegetation percent cover, potential pollutant sources, receiving water, non-stormwater discharges and environmental impacts.

(2) SWMP Site Maps and Project Plan Title Sheet, if included in the original contract.

(3) Specifications – Standard and project special provisions related to stormwater and erosion control.

(4) Standard Plans M-208-1, M-216-1 and M-615-1.

(5) Control measure Details not in Standard Plan M-208-1 – project specific non-standard details.

(6) All Water Quality Audit Reports and Form 105(s) relating to Water Quality, if applicable.

(7) Spill Response Plan – Reports of reportable spills submitted to CDPHE.

(8) List and Evaluation of Potential Pollutants – List of potential pollutants as described in Section 107 and approved Method Statement for Containing Pollutant Byproducts.

(9) Other Correspondence including agreements with other Municipal Separate Storm Sewer System (MS4s), approved deferral request, CDPHE audit documentation.

(10) TECS Certifications of the SWMP Administrator, kept current through the life of the project.

(11) Pre-construction Conference – Conference agenda with a certification of understanding for maintaining water quality standards and SWMP. The certification shall be signed by all attendees. 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 Pre-construction Conference has been held, if applicable.

(12) All Project Environmental Permits – All project environmental permits and associated applications and certifications, including, water quality standards, Senate Bill 40, USACE 404, temporary stream crossings, dewatering, biological opinions, and all other permits applicable to the project, including any separate permits obtained by the Contractor for staging area on private property, asphalt or concrete batch plant, etc.

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.

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.

(e) *Weekly Meetings*: If applicable, the Contractor shall conduct a weekly meeting with the Engineer and subcontractors to discuss construction activities that could adversely affect water quality, including the following:

(1) Unresolved issues from observations.

(2) Requirements of the SWMP.

(3) Problems that may have arisen in implementing the site specific SWMP or maintaining control measures.

(4) Control measures that are to be installed, removed, modified, or maintained, and associated SWMP modifications.

(5) Planned activities that will affect stormwater in order to proactively phase control measures.

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 limits of construction (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 SWMP 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, prior to use, at the Contractor's expense. All removed sediment shall be disposed of outside the project limits in accordance with all applicable regulations.

Concrete products wasted on the ground during construction including, but not limited to, excess concrete removed from forms, spills, slop, and all other unused concrete are potential pollutants that shall be removed from the site or contained at a pre-approved containment area that has been identified in the SWMP. The concrete shall be picked up and recycled in accordance with 6 CCR 1007-2 (CDPHE Regulations Pertaining to Solid Waste Sites and Facilities) at regular intervals, as needed, or as directed by the Engineer.

(a) *Unforeseen Conditions*. The Contractor shall design and implement erosion and sediment control measures for correcting conditions unforeseen during the design of the project, or for emergency situations that develop during construction. The Department's Erosion Control and Stormwater Quality Guide shall be used as a reference document for the purpose of designing erosion and sediment control

measures. Measures and methods proposed by the Contractor shall be reviewed and approved in writing by the Engineer prior to installation.

(b) *Other Agencies*. If CDPHE, 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, which are outside CDOT ROW and outside easements acquired by CDOT for construction, are the responsibility of the Contractor.

(d) *Construction Implementation*. The Contractor shall incorporate control measures into the project as outlined in the accepted schedule.

(e) *Stabilization*. Once earthwork has started, the Contractor shall maintain erosion control measures until permanent stabilization of the area has been completed and accepted. Clearing, grubbing and slope stabilization measures shall be performed regularly to ensure final stabilization. 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. Temporary Stabilization. At the end of each 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, road bed preparation, soil compaction, and movement and stockpiling of sediment and materials. Designated topsoil distributed on the surface or in stockpiles shall not receive temporary stabilization. Other stabilization measures may be implemented, as approved.

2. Interim Stabilization. As soon as it is known with reasonable certainty that work will be temporarily halted for 14 days or more, sediment and material stockpiles and disturbed areas shall be stabilized using one or more of the specified following methods:

(1) Application of 1.5 tons per acres of mechanically crimped certified weed free hay or straw in combination with an approved organic mulch tackifier.

(2) Placement of bonded fiber matrix in accordance with Section 213.

(3) Placement of mulching (hydraulic) wood cellulose fiber mulch with tackifier, in accordance with Section 213.

(4) Application of spray-on mulch blanket in accordance with Section 213. Magnesium Chloride, Potassium Chloride and Sodium Chloride, or other salt products, shall not be used as a stabilization method.

(5) Topsoil stockpiles shall receive interim stabilization in accordance with Section 207, unless specified 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 will not be permitted. As soon as the Contractor knows shutdown is to occur, interim stabilization shall be applied to the disturbed area. Protection of the interim stabilization method is required. Reapplication of interim 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 thereof as required by the Contract. Other permanent stabilization techniques may be proposed by the Contractor, in writing, and shall be used when approved in writing by the Engineer. All permanent stabilization requirements shown on the plans shall be completed within four working days of the placement of the topsoil in accordance with 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 pre-disturbance levels, or equivalent permanent physical erosion reduction methods have been employed.

(f) *Maintenance*. Erosion and sediment control practices and other protective measures identified in the SWMP as control measures for stormwater pollution prevention shall be maintained in effective operating condition until final acceptance of the project. Control measures shall be continuously maintained in accordance with good engineering, hydrologic, and pollution control practices, including removal of collected sediment when silt depth is 50 percent or more of the effective height of the erosion control device. When possible, the Contractor

shall use equipment with an operator rather than labor alone to remove the sediment.

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.

Site assessments shall be performed 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 as soon as possible, immediately in most cases.

Approved new or replaced control measures will be measured and paid for in accordance with this section. Devices damaged due to the Contractor's negligence shall be replaced at the Contractor's expense.

From the time seeding and mulching work begins until project acceptance the Contractor shall maintain all seeded areas. Damage to seeded areas or to mulch materials shall be immediately restored. If damage is due to Contractor negligence, it shall be restored at the Contractor's expense. Restoration of other damaged areas will be measured and paid for under the appropriate bid item.

Temporary control measures may be removed prior to final acceptance of the project, as determined by the Engineer. If removed, the area in which these control measures were constructed shall be returned to a condition similar to that which existed prior to its disturbance. Removed control measures shall become the property of the Contractor. Maintenance shall be notified of the locations of any control measures left in place.

If the Contractor fails to complete construction within the approved contract time, the Contractor shall continue erosion and sediment control operations at its expense until acceptance of the work.

Sediment removed during maintenance of control measures and material from street sweeping may be used in or on embankment, provided it meets the requirements of Section 203 and is distributed evenly across the embankment.

Whenever sediment collects on the paved surface, the surface shall be cleaned.

Street washing will not be allowed. Storm drain inlet protection shall be in place prior to shoveling, sweeping, or vacuuming. Sweeping shall be completed with a pickup broom or equipment capable of collecting sediment. Sweeping with a kick broom will not be allowed.

Material from pavement saw cutting operations shall be cleaned from the roadway surface during operations using a vacuum. A control measure, such as a berm, shall be placed to contain slurry from joint flushing operations until the residue can be removed from the soil surface. Aggregate bags, erosion logs or other permeable control measures shall not be used. Residue shall not flow into driving lanes. It shall be removed and disposed of in accordance with Section 107. Material containment and removal will not be paid for separately, but shall be included in the work.

208.05 Construction of Control Measures. Control measures shall be constructed in accordance with Standard Plans M-208-1 and M-216-1, and with the following:

(a) Seeding, Mulching, Sodding, Soil Retention Blanket. Seeding, mulching, sodding, and soil retention blanket installation shall be performed in accordance with Sections 212, 213, and 216.

(b) Erosion Bales. The bales shall be anchored securely to the ground with wood stakes. Erosion Bales shall be entrenched 4 inches minimum into the soil, tightly abutted with no gaps, staked, and backfilled around the entire outside perimeter. Erosion Bales cannot be used for Check Dams.

(c) Silt Fence. Silt fence shall be installed in locations as per M standard plans 208-1 and as specified in the Contract.

(d) Temporary Berms. Berms shall be constructed to the dimensions as per M 208-1 standard plans and as shown in the Contract, and sufficiently compacted to prevent erosion or failure. If the berm erodes or fails, it shall be immediately repaired or replaced at the Contractor's expense. Berms must be at least 18 inches tall or high enough to prevent overtopping. Berms must have a minimum of 4 to 6-foot base. Gradient of all receiving area above berm must be less than 2:1, or flatter. Outlets of anticipated flow from captured water behind berms must be designed with additional control measures suitable to control concentrated flow. Maximum drainage area for each outlet must be limited to 2 acres.

(e) Temporary Diversion. Diversions shall be constructed to the dimensions as per M standard plans 208-1 and as 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 immediately repaired or replaced at the Contractor's expense.

(f) Temporary Slope Drains. Temporary slope drains shall be installed prior to installation of permanent facilities or growth of adequate ground cover on the slopes. All temporary slope drains shall be securely anchored to the slope. The inlets and outlets of temporary slope drains shall be protected to prevent erosion. Ensure drainage area for every slope drain is smaller than 5 acres. Ensure pipe or channel is properly sized, and for drainage areas larger than 1 acre the pipe size must be designed by an Engineer to ensure the drainage structure can accommodate the runoff resulting from a 2-year, 24-hour storm event. The use of prefabricated flared inlet sections is recommended.

(g) Silt Berm. Prior to installation of silt berms, the Contractor shall prepare the surface of the areas in which the berms are to be installed such that are they free of materials greater than 2 inches in diameter and are suitably smooth for the installation of the silt berms, as approved. See M standard 208-1 for details. 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 blanket.

(h) Rock Check Dam. Rock shall be installed at locations shown on the plans. Rock check dams shall conform to the dimensions shown on the plans. The Geotextile Erosion Control shall be Class 2 and conform to the requirements of Section 712, and shall extend up ⅔ of the riprap height with 6inch minimum cover over geotextile. Rock Check Dam shall be installed within a ditch sub excavated 6 inches below the flow line. The ends of the rip rap check dam shall be a minimum of 6 inches higher than the center of the check dam. Stone shall meet the requirements of Section 506. Larger rocks with larger void spaces should be used on top. See M standard 208-1 for details.

(i) Riprap Outlet Protection. Geotextile used shall be protected from cutting or tearing. Overlaps between two pieces of geotextile shall be 1-foot minimum. Riprap size shall be in accordance with Section 506 and as shown on the plans.

(j) Storm Drain Inlet Protection. Prior to installation, the Contractor shall sweep the surface of the area in which the storm drain inlet protection devices are to be installed such that the pavement is free of sediment and debris. The ends of the inlet protection Type 1 and Type 2 shall extend a minimum of 1 foot past each end of the inlet.

The Contractor shall remove all accumulated sediment and debris from the surface surrounding all storm drain inlet protection devices after each rain event or as directed. The Contractor shall remove accumulated sediment from each Type II and III containment area when it is more than one third full of sediment, or as

directed.

The Contractor shall protect storm drain facilities adjacent to locations where pavement cutting operations involving wheel cutting, saw cutting, sand blasting, or abrasive water jet blasting are to take place.

(k) Sediment Trap. Sediment traps shall be installed to collect sediment laden water and to minimize the potential of pollutants leaving the project site. Locations shall be in accordance with M standard 208-1 and as shown on the plans or as directed.

Sediment traps shall be constructed prior to disturbance of upslope areas and shall be placed in locations where runoff from disturbed areas can be diverted into the trap.

The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and roots.

Fill material for the embankment shall be free of roots or other vegetation, organic material, large stones, and other objectionable material.

Sediment shall be removed from the trap when it has accumulated to one half of the wet storage depth of the trap and shall be disposed of in accordance with Section 208.

(l) Erosion Logs. Erosion 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 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, e.g. rock or frozen ground.

The Contractor shall maintain the erosion logs during construction to prevent sediment from passing over or under the logs. See M standard 208-1 for details.

(m) Silt Dikes. Prior to installation of silt dikes, the Contractor shall prepare the surface of the areas in which the silt dikes are to be installed such that they are free of materials greater than two inches in diameter and are suitably smooth for the installation of the silt dikes, as approved by the Engineer.

(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 written acceptance of location is provided by the Engineer. See M standard 208-1 for details.

Control measures designed for concrete washout waste shall be implemented. 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 208-5 or use a prefabricated washout.

The following requirements shall be met:

(1) The structure shall contain all washout water.

(2) Stormwater shall not carry wastes from washout and disposal locations.

(3) The site 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 Section 107.

(4) The site shall be signed as "Concrete Washout".

(5) The site 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) Solvents, flocculants, and acid shall not be added to wash water.

(9) The structure shall be surrounded on three sides by a compacted berm.

(10) The structure shall be fenced with orange plastic construction fencing conforming to Section 607, to provide a barrier to construction equipment and to aid in identification of the concrete washout area.

(11) Concrete waste, liquid and solid, shall not exceed ⅔ the storage capacity of the washout structure.

(12) A concrete washout sign shall have letters at least 3 inches high and conform to Section 630.

(o) Pre-fabricated concrete washout structures (Type 1 and Type 2). Structures and sites shall meet the following requirements:

(1) Structure shall contain all washout water. If bins are determined to be leaking,

the Contractor shall replace the bin on-site and clean up the spilled material and dispose of it properly.

(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. The pre-fabricated structure shall be signed as "Concrete Washout". Sign can be on portable bin.

(3) The site shall be accessible to appropriate vehicles.

(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) Solvents, flocculants, and acid shall not be added to wash water.

(6) Concrete waste, liquid and solid, shall not exceed ⅔ the storage capacity of the washout structure.

(7) Prefabricated structures cannot be moved when they contain liquid, unless otherwise approved.

(8) The concrete washout structure shall be installed and ready for use prior to concrete placement operations.

(9) Washout areas shall be checked and maintained as required. On-site permanent disposal of concrete washout waste is not allowed.

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.

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.

(p) Vehicle Tracking Pad (VTP). Vehicle tracking pads shall be constructed to the minimum dimensions shown in the Contract, unless otherwise directed by the Engineer. Construction of approved vehicle tracking pads shall be completed before any disturbance of the area.

The Contractor shall maintain each vehicle tracking pad during the entire time that it is in use for the project. The vehicle tracking pad shall be removed at the completion of the project unless otherwise directed by the Engineer. Additional aggregate may be required for maintenance and will be paid for under Pay Item,

Maintenance Aggregate (Vehicle Tracking Pad).

(q) Detention Pond. Permanent detention ponds shown on the construction plans may be used as temporary control measures if all 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 in accordance with 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 prior to project acceptance.

(r) Aggregate Bag. Aggregate bags shall be placed on a stable surface, consisting of hardscape or compacted gravel. If approved by the Engineer, the aggregate bag may be placed on compacted dirt areas, where bags conform to the surface and can effectively minimize sediment transport. Aggregate bags can be used on frozen ground when other control measures cannot be trenched or staked, but only until the ground is capable of being trenched and staked. Aggregate bags shall not be placed in concentrated flow areas, other than gutter pans. Aggregate bags shall be placed to conform to the surface without gaps to ensure that discharge water does not cause erosion. See M standard 208-1 for details.

(s) Surface roughening. Surface roughening creates horizontal grooves along the contour of the slope. Roughening may be accomplished by furrowing, scarifying, ripping, or disking the soil surface to create a 2 to 4-inch minimum variation in soil surface.

(t) Vertical Tracking. Vertical tracking involves driving a tracked vehicle up and down the soil surface and creating horizontal grooves and ridges along the contour of the slope. Sandy soils or soils that are primarily rock need not be tracked.

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 Section 107 or Section 208. 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 so as 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 which is deemed to be contaminated (e.g., 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 all Spill Response Coordinators in accordance with 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 Coordinators.

(2) Locations of areas on the project site where equipment fueling and servicing operations are permitted.

(3) Location of cleanup kits.

(4) Quantities of chemicals and locations stored on site.

(5) Label system for chemicals and Safety Data Sheets (SDS) for products.

(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. CDOT's Erosion Control and Stormwater Quality Guide contains spill notification contacts and phone numbers required in the Spill Response Plan.

(8) A summary of the employee training provided.

Information in items (1) through (8) shall be updated in the SWMP when they change.

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.

Erodible stockpiles (including topsoil) shall be contained with acceptable control measures at the toe (or within 20 feet of the toe) throughout construction. Control measures shall be approved by the Engineer. The SWMP Administrator shall describe, detail, and record the sediment control devices on the SWMP.

208.08 Limits of Disturbance. The Contractor shall limit construction activities to those areas within the limits of disturbance 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 which would disturb existing soil conditions. Staging areas within the LDA shall be as approved by the Engineer. Construction activities beyond the limits of disturbance 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 SWMP. If the disturbance at any time exceeds 1 acre (including as part of a common plan of development), the Contractor will need to apply for a Colorado Discharge Permit System- Stormwater Construction Permit (CDPS-SCP) and comply with all of CDOT's over one acre specifications.

The Contractor shall pursue stabilization of all disturbances to completion.

208.09 Regulatory Mechanism for Water Quality. Failure to implement the Stormwater Management Plan is a violation of the Colorado Water Quality Control Act. Penalties may be assessed to the Contractor by the appropriate agencies. All fines assessed to the Department for the Contractor's failure to implement the SWMP will be deducted from monies due the Contractor.

The Contractor shall be subject to liquidated damages for incidents of failure to perform erosion control as required by the Contract. Liquidated damages will be applied for failure to comply with these specifications, including the following:

(1) Failure of the Contractor to implement necessary actions required by the Engineer as required by this section.

(2) Failure to construct or implement erosion control or spill containment measures required by the Contract, or failure to construct or implement them in accordance with the Contractor's schedule.

(3) Failure to stabilize disturbed areas as required by this section.

(4) Failure to replace or perform maintenance on an erosion control feature after notice from the Engineer to replace or perform maintenance as required by this section.

(5) Failure to remove and dispose of sediment from control measures as required.

(6) Failure to install and properly utilize a concrete washout structure for containing washout from concrete placement operations.

(7) Failure to perform permanent stabilization as required by this section.

(8) Failure to prevent discharges not composed entirely of stormwater from leaving the construction site.

(9) Failure to provide the survey of Permanent Water Quality features when required on the project in accordance with this section.

The Engineer will immediately notify the Contractor of each incident of failure to perform erosion control in accordance with any water quality standards, specifications, including items (1) through (9) above by issuing a Form 105. Correction shall be made as soon as possible, immediately in most cases, but no later than 48 hours from the date of notification to correct the failure. The Contractor will be charged liquidated damages in the amount of $970 for each day after the 48-hour period has expired that one or more of the incidents of failure to perform the requirements for each Form 105 remains uncorrected. Liquidated damages will begin at Midnight of the date on which the 48 hours has expired.

This deduction will not be considered a penalty, but will be considered liquidated damages based on estimated additional construction engineering costs. The liquidated damages will accumulate, for each cumulative day that one or more of the incidents remain uncorrected. The number of days for which liquidated damages are assessed will be cumulative for the duration of the project; that is: the damages for a particular day will be added to the total number of days for which liquidated damages are accumulated on the project. The liquidated damages will be deducted from any monies due the Contractor.

If all other failures are not corrected within 48 hours after liquidated damages have begun to be assessed, the Engineer will issue a Stop Work Order in accordance with Section 105. Work shall not resume until the Engineer has approved a written corrective action plan submitted by the Contractor that includes measures to prevent future violations and a schedule for implementation.

If the Contractor requires more than 96 hours to perform the corrective work from the date on the Form 105, the Contractor shall submit a request for deferment. The deferment request shall be in writing and shall include the specific failure, temporary measures until final correction is made, the methodology which will be employed to make the correction, and interim milestones to completing the work. The Region Water Pollution Control Manager (RWPCM), Engineer, the SWMP Administrator, and the Contractor shall concur on this deferral and set a proposed date of completion. If approved, the Contractor shall complete the corrective measures by Midnight of the proposed completion date. If corrective work is not corrected by the completion date the Engineer will issue a Stop Work Order. Liquidated Damages will apply retroactively back to the 48 hours after the Form 105 date of notification. Liquidated Damages will be assessed until the corrective work has been completed and accepted.

Deferment of work to correct failures to perform erosion control will not affect the Contractor's other contractual responsibilities, notifications for other non-compliance, nor the final completion date of the project. Liquidated Damages for other non-compliance notifications will continue to apply during the deferment period in addition to liquidated damages associated with the deferment.

Based on the submittal date of the approved deferment, Liquated Damages and a Stop Work Order may not be mandated to the Contractor.

Disagreements regarding the suggested corrective action for a control measure compliance issue between the Project Engineer, SWMP Administrator, and Superintendent, shall be discussed with the Resident Engineer and Region Water Pollution Control Manager. If after the discussions, the Project Engineer and the Contractor are still in disagreement and the Contractor believes that additional compensation is owed, the Contractor shall follow the decision of the Project Engineer, keep track of the costs and negotiate further with the Project Engineer. If after pursuing the issue, the Contractor is unable to reach an agreement with the Project Engineer, then the Contractor can follow the dispute process outlined in Section 105.

If the Contractor's corrective action plan and schedule are not submitted and approved within 96 hours of the initial notice, the Engineer will issue a Stop Work Order and have an on-site meeting with the Superintendent, SWMP Administrator, and the Superintendent's supervisor. This meeting will also be attended by the Resident Engineer, the Region Water Pollution Control Manager, and the Region Program Engineer. This meeting will identify and document needed corrective actions and a schedule for completion. If after the meeting, the unacceptable work

is not remedied within the schedule as agreed to in the meeting, the Engineer will take action to effect compliance with the Contract and these specifications by utilizing CDOT Maintenance personnel or other non-Contractor forces and deduct the cost from any monies due or to become due to the Contractor pursuant to Section 105. Delays due to these Stop Work Orders shall be considered non- excusable. The Stop Work Order shall be in place until the project is in compliance.

If the Contractor remains non-responsive to requirements of the on-site meeting, the Engineer will start default or Contract termination procedures in accordance with Section 108. CDOT will proceed with corrective or disciplinary action in accordance with the Rules for Prequalification, Debarment, Bidding and Work on Transportation, Road, Highway and Bridge Public Projects.

When a failure meets any one of the following conditions, the Engineer will immediately issue a Stop Work Order in accordance with Section 105 irrespective of any other available remedy:

(1) It may endanger health or the environment.

(2) It consists of a spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.

(3) It consists of a discharge which may cause a violation of water quality standards.

208 Items to Be Completed Prior to Requesting Partial Acceptance of Water Quality Work.

(a) Reclamation of Washout Areas. After concrete operations are complete, washout areas shall be reclaimed in accordance with this section at the Contractor's expense.

(b) Survey. When Permanent Water Quality (PWQ) control measures are required on the project and once built, the Contractor shall survey the control measures to confirm that the PWQ control measures conform to the configuration, grade, and volume shown on the plans. The survey shall conform to Section 625. The results of the survey shall be submitted in accordance with CDOT's Survey Manual (AutoCAD to GIS and TMOSS Codes), or GIS with attribute tables, showing both designed and final elevations and configurations. Paper versions of the drawings shall be submitted with the stamp and seal of the Contractor's Surveyor.

PWQ control measures that do not meet the Contract requirements will be identified in writing by the Engineer, and shall be repaired or replaced at the Contractor's expense. Correction surveys shall be performed at the Contractor's expense to confirm the locations, dimensions, and volume certification (for water

quality capture volume structures only) of each PWQ control measure. The Engineer, CDOT Hydraulics Engineer for the region, Headquarters Permanent Water Quality Manager, and Headquarters Maintenance staff will perform a walkthrough of the PWQ control measures to confirm conformance to material requirements, locations, and dimensions. Before the walkthrough, the Contractor shall provide the corrected survey to the Engineer, Regional, and Headquarters Permanent Water Quality Managers.

(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.

All punch list and walkthrough items shall be completed and approved by the Engineer and Maintenance.

Method of Measurement

208.11 Erosion Control Management on projects having less than one acre of total disturbed area will not be measured and paid for separately but shall be included in the work, unless otherwise specified in the contract (bid schedule). If contracted, ECM work will be measured as the actual number of days of ECM work performed, regardless of the number of personnel required for SWMP Administration and Erosion Control Inspection, including erosion control inspections, documentation, meeting participation, SWMP Administration, and the preparation of the SWMP. If the combined hours of SWMP Administration and Erosion Control Inspection is four hours or less in a day, the work will be measured as ½ day. If the combined hours of SWMP Administration and Erosion Control Inspection is more than four hours in a day, the work will be measured as one day. Total combined hours of ECM work exceeding eight hours in a day will still be paid as one day.

Erosion bales and rock check dams will be measured by the actual number installed and accepted.

Silt fence, silt berms, erosion logs, aggregate bags, silt dikes, temporary berms, temporary diversions, and temporary slope drains, will be measured by the actual number of linear feet that are installed and accepted. Measured length will not include required overlap.

Concrete washout structure will be measured by the actual number of structures that are installed and accepted.

Pre-fabricated concrete washout structures will be measured by the actual number of

structures delivered to the site. It shall not include structures moved on-site.

Storm drain inlet protection will be measured by linear foot or actual number of devices that are installed and accepted.

Sediment trap quantities will be measured by the actual number installed and accepted.

Removal of trash that is not generated by construction activities will be measured by the actual number of hours that Contractor workers actively remove trash from the project. Each week the Contractor shall submit to the Engineer a list of workers and the hours spent collecting such trash.

Removal of accumulated sediment from traps, basins, areas adjacent to silt fences and erosion bales, and other clean out excavation of accumulated sediment, and the disposal of such sediment, will be measured by the number of hours that equipment, labor, or both are used for sediment removal.

Vehicle tracking pads will be measured by the actual number constructed and accepted.

Additional aggregate required for maintaining vehicle tracking pads will be measured as the actual number of cubic yards installed and accepted.

Pre-fabricated vehicle tracking pads will be measured by the actual number of pads delivered to the site and set up to the minimum dimensions. It shall not include pads moved on-site.

Basis of Payment

208.12 Control measures will be paid for at the Contract unit price for each of the items listed below that appear in the contract. Erosion Control management (ECM) duties on projects having less than one acre of total disturbed area will not be measured and paid for separately but shall be included in the work, unless otherwise specified in the contract.

Payment will be made under:

Pay Item	Pay Unit
Aggregate Bag	Linear Foot
Concrete Washout Structure	Each
Erosion Bales (Weed Free)	Each
Erosion Control Management	Day (If in the contract)
Erosion Log (Type 1) (_____ Inch)	Linear Foot
Erosion Log (Type 2) (_____Inch)	Linear Foot
Erosion Log (Type 3) (_____Inch)	Linear Foot
Pre-Fabricated Concrete Washout Structure (Type 1)	Each
Pre-Fabricated Concrete Washout Structure (Type 2)	Each
Pre-Fabricated Vehicle Tracking Pad	Each
Maintenance Aggregate (Vehicle Tracking Pad)	Cubic Yard
Removal and Disposal of Sediment (Equipment)	Hour
Removal and Disposal of Sediment (Labor)	Hour
Removal of Trash	Hour
Rock Check Dam	Each
Sediment Basin	Each
Sediment Trap	Each
Silt Berm	Linear Foot
Silt Dike	Linear Foot
Silt Fence	Linear Foot
Silt Fence (Reinforced)	Linear Foot
Storm Drain Inlet Protection (Type__)	Linear Foot
Storm Drain Inlet Protection (Type__)	Each
Sweeping (Sediment Removal)	Hour
Temporary Berm	Linear Foot
Temporary Diversion	Linear Foot
Temporary Slope Drain	Linear Foot
Vehicle Tracking Pad	Each

Modifications to the SWMP due to construction errors or survey errors by the Contractor shall be made at the Contractor’s expense.

Surface roughening and vertical tracking (temporary 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.

Payment for Removal and Disposal of Sediment (Equipment) will be full compensation for use of the equipment, including the operator. Payment for Removal and Disposal of Sediment (Labor) will be full compensation for use of the labor.

Payment for concrete washout structure, whether constructed or prefabricated, will be full compensation for all work and materials required to install, maintain, and remove the item. Maintenance and relocation, as required, of these structures throughout the duration of the project will not be measured and paid for separately, but shall be included in the work.

Silt berm spikes and wood spikes will not be measured and paid for separately, but shall be included in the work. When required, soil retention blankets will be measured and paid for in accordance with Section 216.

Compost and wood stakes for Erosion Log (Type 2) will not be measured and paid for separately, but shall be included in the work.

Spray-on mulch blankets required by the Contract, including those used in both interim and final stabilization, will be measured and paid for in accordance with Section 213.

Payment for storm drain inlet protection will be full compensation for all work, materials, and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of the work. Aggregate will not be measured and paid for separately, but shall be included in the work.

Sweeping, when used as a control measure as shown in the Contract, will be measured by the number of hours that a pickup broom or equipment capable of collecting sediment, authorized by the Engineer, is used to remove sediment from the roadway or other paved surfaces. Each week the Contractor shall submit to the Engineer a statement detailing the type of sweeping equipment used and the number of hours it was used to pick up sediment. The operator will not be measured and paid for separately, but shall be included in the work.

Stakes, anchors, connections, geotextile, riprap, and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Payment for vehicle tracking pad will be full compensation for all work, materials and equipment required to construct, maintain, and remove the entrance upon completion of the work. Aggregate and geotextile will not be measured and paid for separately, but shall be included in the work. If additional aggregate for maintenance of vehicle tracking pads is required, it will be measured by the cubic yard in accordance with Section 304 and will be paid for under this Section as Maintenance Aggregate (Vehicle Tracking Pad).

Seeding, sod, mulching, soil retention blanket, and riprap will be measured and paid for in accordance with Sections 212, 213, 216, and 506.

All work and materials required to perform the permanent control measure survey and furnish the electronic files shall be included in the original unit price bid for surveying. Surveying will be measured and paid for in accordance with Section 625.

Payment will be made for control measures replaced as approved by the Engineer. Temporary erosion and sediment control measures required due to the Contractor’s negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or ordered by the Engineer or for the Contractor's convenience, shall be performed at the Contractor’s expense. If the Contractor fails to complete construction within the contract time, payment will not be made for Section 208 pay items for the period of time after expiration of the contract time. These items shall be provided at the Contractor's expense.

July 1, 2025

Revision of Section 212
Soil Amendments, Seeding, and Sodding

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use in projects having earthwork disturbances that will be stabilized with vegetation.

Revision of Section 212
Soil Amendments, Seeding, and Sodding

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) 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. 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.

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.

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.

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.

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.

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).

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 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

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.

(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.

(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 ¾ 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.

Construction Requirements

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.

(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).

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 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:

(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 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 = one acre or 43,560 square feet (SF)
   A /W = feet (F) the drill seeder needs to travel for each acre
   F/C = number of rotations (R) of the tire per acre
E. Reduce the amount of tire rotations by one tenth.
   .90R = # 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:
   % PLS = (% purity (in decimal form) from seed label) x (% germination (in decimal form) from seed label)
   (LBS PLS / Acre) from the SWMP / % PLS = Required bulk seed per acre in LBS
H. Reduce the required bulk seed per acre based on the number of seeder tubes.
   Required bulk seed per acre / N = Weight in LBS of bulk seed from one tube
I. Reduce the required bulk seed rate from the tube by one tenth.
   0.90 x Weight of bulk seed from one tube = 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.

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. 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.

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.

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 ¼ to ½ 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.

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.

(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.

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.

July 1, 2025

Revision Of Section 401
Plant Mix Pavements - General

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects.

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 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 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 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.

July 1, 2025

Revision of Section 401
Reclaimed Asphalt Pavement

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for Use on CDOT Construction Projects:

Use this standard special provision on projects with voids acceptance of hot mix asphalt. This specification may also be used on other projects as determined by the Region Materials Engineer.

Revision of Section 401
Reclaimed Asphalt Pavement

Revise Section 401 of the Standard Specifications for this project as follows:

Subsection 401.02(b) shall include the following:

Reclaimed Asphalt Pavement (RAP) is allowed in hot mix asphalt (HMA) up to a maximum binder replacement of 23 percent for all lifts, provided all specifications for HMA are met. Fine Aggregate Angularity requirements shall apply only to the virgin fraction of the fine aggregate. The RAP shall not contain clay balls, vegetable matter, or other deleterious substances, and must meet the uniformity requirements as outlined below.

HMA Project Verification Testing for asphalt content and gradation will be performed at the frequencies listed in the Field Materials Manual per CP-L 5120.

The Contractor shall have an approved mix design for the amount of RAP to be used. The AC content of the RAP utilized in the Contractor RAP mix design shall be the average AC content determined per 1B or 1C, below, or alternatively, a minimum of five samples of the Contractors RAP stockpile may be sampled and the average AC content of the RAP be determined using AASHTO T-164, Method A or B, or per 1C below. The Contractor shall determine the total binder replaced by the binder in the RAP pursuant to the following equation:

Total Binder Replaced = (A x B) x 100/E

Where:

A = RAP % Binder Content *

B = RAP % in Mix *

E = Total Effective Binder Content *

* In decimal format (2% is 0.02)

The Total Binder Replaced by the binder in the RAP shall not exceed 23 percent of the effective binder content of either the mix design or the produced mix.

The use of RAP shall be controlled per subsections 105.05 and 106.05. If the Contractor elects to use RAP, the following additional conditions shall apply:

1. The Contractor shall have an approved Process Control (PC) Plan that details how the RAP will be processed and controlled. The PC plan shall address the following:

   A. RAP Processing Techniques. This requires a schematic diagram and narrative that explains the processing (crushing, screening, and rejecting) and stockpile operation for this specific project.

   B. Control of RAP Asphalt Binder Content (AASHTO T-164, Method A or B). RAP Asphalt Binder Content may also be determined per CP-L 5120, provided a RAP AC content correction factor is determined through correlation testing with AASHTO T-164, Method A or B. The correction factor shall be determined by performing correlation testing on the first five samples of the RAP AC content, then at a frequency of one for every five AC content tests thereafter. The correction factor shall be determined by calculating the average difference in AC content between CP-L 5120 and AASHTO T-164, Method A or B, and applying the correction to the AC content determined per CP-L 5120 :

Frequency: 1/1000 tons of processed RAP material (minimum five tests)

C. Alternative Control of RAP Binder Content. The Contractor may propose a RAP asphalt content correction factor to be used in conjunction with CP-L 5120. The proposed CP-L 5120 RAP asphalt content correction factor shall be used with all RAP asphalt contents tested for the mixture design and quality control sampling and testing. The methodology of the proposed CP-L 5120 RAP asphalt content correction factor shall be outlined in detail in the approved RAP PC Plan. At a minimum, the proposed CP-L 5120 correction factor shall identify the principal source locations of the RAP aggregate, gradation of the material tested, and specific ignition oven serial number used in all the RAP asphalt content testing. The RAP source locations, material gradation, and specific equipment used shall substantiate the CP-L 5120 asphalt content correction factor used for the testing. The substantiation must be from data gathered from historical information or specific asphalt content correction data obtained from tests performed on similar virgin aggregate sources, virgin material gradations, and the specific equipment used.

D. Control of RAP Gradation (CP31 or AASHTO T-30):

Frequency: 1/1000 tons of processed RAP material (minimum three tests)

E. Process Control Charts shall be maintained for binder content and each screen listed in subsection 401.02(b), during addition of any RAP material to the stockpile. The Contractor shall maintain separate control charts for each RAP stockpile. The control charts shall be displayed and shall be made available, along with RAP AC extraction testing laboratory reports, to the Engineer upon request.

2. The processed RAP must be 100 percent passing the 31.5 mm (1 1/4 inch) sieve. The aggregate obtained from the processed RAP shall be 100 percent passing the 25.0 mm (1 inch) sieve. The aggregate and binder obtained from the processed RAP shall be uniform in all the measured parameters per the following:

Uniformity*

Parameter	Standard Deviation
Binder Content	0.5
Percent Passing 19 mm (3/4”)	4.0
Percent Passing 12.5 mm (1/2”)	4.0
Percent Passing 9.5 mm (3/8”)	4.0
Percent Passing 4.75 mm (#4)	4.0
Percent Passing 2.36 mm (#8)	4.0
Percent Passing 600 μm (#30)	3.0
Percent Passing 75 μm (#200)	1.5

***Uniformity is the Maximum allowable Standard Deviation of test results of processed RAP.

3. If RAP millings generated are incorporated in the same project, per CPL 5145 the Contractor shall pave with a virgin mix design until sufficient amount of processed RAP has been stockpiled and tested to allow full production of a RAP HMA mix.

March 13, 2023

Revision of Sections 412 and 601
Accelerated Pavement Repair Concrete

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:

Use in projects with Concrete Pavement Repair or Rehabilitation Activities.
This should not be incorporated into future Spec Books and will remain as a Standard Special Provision, similar to HMA Voids Acceptance.

Typically, PCCP repair can be completed with Class P (fast track), but when Project constraints limit lane closure time to 8 hours or less or when concrete needs to achieve opening strength of 2,500 psi in 6 hours or less, Class PRS Concrete should be specified in the plan.

When longer lane closures are allowed or concrete is allowed to gain strength in a longer period, specify Class P (fast track).

Consult with the Region Materials Engineer before including Class PRS.

Revision of Sections 412 and 601
Accelerated Pavement Repair Concrete

Delete Subsection 412.45 and include the following:

412.45 Materials. Concrete used shall be an approved Class P or PRS mix as specified in the Contract.

Revise Section 601 of the Standard Specifications to include the following:

Description

601.26 This work consists of furnishing and placing accelerated pavement repair concrete on existing pavements per these specifications and in conformity with the lines, grades, and dimensions as shown on the plans or established.

Materials

601.27 The accelerated pavement repair concrete shall be designated as Class PRS.

Concrete Class	Required Field Compressive Strength (psi)	Air Content: % Range (Total)	Slump	Maximum Water/Cementitious Material Ratio:
PRS	4500 at 28 days	4 - 8	+/- 2" of Form 1373 Slump	w/cm on Form 1373

Class PRS concrete is used for concrete pavement rapid repairs. Class PRS may be substituted for Class P concrete when approved by the Engineer. Class PRS shall not be substituted for any other Class of Concrete. Additional requirements are:

(1) ASTM C1600 rapid hardening hydraulic cement shall be used.
(2) Set-retarding admixtures such as citric acid meeting the requirements of subsection 711.03 or those meeting the requirements of AASHTO M194 may be used.
(3) The unrestrained shrinkage shall not exceed 0.050 percent at 28 days when tested by CP-L 4103.
(4) The mix shall either have a permeability not exceeding 2,500 coulombs at an age of not more than 56 days when tested per ASTM C1202 or have a surface resistivity of at least 12 kΩ-cm at 28 days using AASHTO T358.

(5) The mix shall consist of a minimum of 55 percent AASHTO M 43 sizes No. 57, No. 6, No. 67, No. 357, or No. 467 coarse aggregate by weight of total aggregate.
(6) The mix may use an OG with a nominal maximum aggregate size of at least 3/4 inch.
(7) Pozzolan shall not be substituted for cement
(8) Shall achieve 2500 psi by the time indicated in the plans

601.28 Mix Design Submittal Requirements. Mix design submittals shall meet the requirements of subsection 601.05 with the following additional requirements.

(1) Class PRS concrete shall include CP-L 4103 shrinkage test results at 28 days.
(2) Class PRS concrete shall include a report of maturity relationships per CP 69.
(3) Class PRS concrete shall include AASHTO T97 (ASTM C78) Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading). At least two specimens will be tested at 7 days and four specimens at 28 days. The lab trial mix shall produce a flexural strength of at least 650 psi at 28 days.

Mix designs for Class PRS Concrete are approved for one year from the date of the trial mix. When a Self-Contained Mobile Mixer (volumetric mixer truck) is used on the Project, the trial mix shall be performed with the volumetric mixer truck.

601.29 Batching. Batching shall meet the requirements of subsection 601.06.

601.30 Mixing. Mixing shall meet the requirements of subsection 601.07. Mixing Class PRS shall require the use of a Self-Contained Mobile Mixer. The Engineer may approve other methods of mixing upon the Contractor placing an accepted test section with the proposed mixing method.

A Self-Contained Mobile Mixer (Volumetric truck) is required for Class PRS concrete. The requirements of subsection 601.07 (d) with the following shall be met:

- When ice is used to cool the mix water, it must be melted before entering the mixer.

601.31 Placing Concrete. Placing concrete shall meet the requirements of Section 412 with the following additional requirements:

Revision of Sections 412 and 601
Accelerated Pavement Repair Concrete

(a) General. A pre-pour meeting with the Contractor, sub-contractor, material supplier, and Department personnel shall be held before Class PRS concrete placement to discuss the following:

- Delivery of the mix. The sample ticket for each batch shall list all cements, water, aggregates & admixtures. One shall be required from each truck.
- How/when the Strength/Maturity Meter Curve will be verified in the field.
- Concrete curing.
- Concrete protection.
- Time and depth of early age saw cutting.
- Washout bin staging.
- Handling of concrete cylinders.
- Placement of maturity probes.
- Hot weather placements and limitations.
- Cold weather placements and limitations.
- Opening to traffic.
- Test Section requirements

(b) Class PRS concrete placement may occur when the concrete temperature is between 50 and 90°F, when tested immediately after discharge from the chute.

(c) Curing. Curing shall be applied immediately following finishing operations. Curing compound manufacturer recommended application rates shall be followed, with a minimum rate of 200 SF/Gal. Curing Compound shall be an approved ASTM C 309, Type 2, Class B.

(d) Hot Weather Limitations. A plan shall be submitted for approval before any placement when the air temperature is expected to exceed 90°F. Procedures for maintaining and monitoring the temperatures of water, aggregates, and admixtures during mixing, placement and curing of concrete shall be detailed, as well as procedures to be implemented upon abrupt changes in weather conditions. Placing of concrete during hot weather shall be limited by the temperature of the concrete at the time of placing. Class PRS concrete, which has a temperature of 90°F or higher, shall not be placed.

(e) Cold Weather Limitations. When the ambient temperature is forecast to drop below 40 degrees F during placement and up to 24 hours after placement, a plan shall be submitted for approval before any placement. Procedures for maintaining and monitoring the temperatures of water, aggregates, and all other admixtures during mixing, placement and curing of concrete shall be

detailed, as well as procedures to be implemented upon abrupt changes in weather conditions. Concrete shall not be placed on frozen subgrade.

(f) Test Section Requirements: The location of the test section shall be approved by the Engineer. The test section shall have a cross section similar to the repair cross section and be a minimum of one slab in length or as approved by the Engineer. The test section placement shall have the same haul time, placing crew, finishing crew, and curing as the project. If saw cutting is required on the project, the test section shall be saw cut to determine the minimum curing time to minimize sawcut raveling. If the test section has excessive voids, cracking, surface irregularities described in subsection 412.16, or fails to gain adequate strength as determined by maturity meter(s) within the project time limits, an additional test section will be required. The test section shall be approved by the Engineer prior to proceeding with production repair work.

601.32 Finishing. During the finishing of Class PRS concrete, water and finishing aids shall not be added or worked into the surface. The surface texture of the Class PRS concrete shall match the texture of the adjacent concrete pavement. The finished transverse and longitudinal surface elevation of the pavement shall be measured using a 10-foot straightedge. Areas to be measured will be directed by the Engineer. The Contractor shall furnish an approved 10-foot straightedge, depth gauge, and operator to aid the Engineer in testing the pavement surface. Areas showing high spots of more than 3/16 inch in 10 feet shall be marked and diamond ground until the high spot does not exceed 3/16 inch in 10 feet. In areas in a lane with more than 250 continuous feet of paving or diamond grinding in the direction of traffic, the surface texture will be considered acceptable when the average texture depth (ATD) of the panel is greater than 0.05 inch. The Contractor will perform surface texture testing per CP 77 Method B. Areas in a lane with more than 250 continuous feet of paving will be tested at a frequency of one test per 250 linear feet. Areas with deficient surface texture shall be diamond ground and retested.

601.33 Opening to Traffic. The pavement shall not be opened to traffic until the concrete has achieved a compressive strength of at least 2500 psi. Concrete compressive strength shall be determined by a maturity meter placed no more than 10ft from the end of the final placement of the shift. The contractor shall provide maturity meters and all necessary wires and connectors. The Contractor shall be responsible for the placement and maintenance of the maturity meters and wires. For placements with multiple maturity meters, the lowest compressive

strength shall determine when the pavement may be opened to traffic. Before opening the pavement to traffic, the roadway shall be cleaned.

601.34 Acceptance and Pay Factors. Class PRS concrete will be accepted following the requirements of subsection 601.17 with the following exceptions:

- Compressive strength specimens shall be cast and initially cured at the placement location for at least 4 hours. Compressive strength specimens shall be moved before opening to traffic.
- Slump testing will not be used for acceptance.
- Sampling shall occur after at least 1 cu yd has been discharged from the mixer.

July 1, 2025

Revision of Sections 412 and 705
Preformed Compression Seals

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on projects where it is necessary to use preformed compression seals in lieu of silicone sealant in concrete pavement joints, such as projects with fast track concrete.

Revision of Sections 412 and 705
Preformed Compression Seals

Sections 412 and 705 of the Standard Specifications are hereby revised for this project as follows:

Subsection 412.13 shall include the following:

Transverse and untied longitudinal joints shall be sawed and sealed as shown in the following diagram for preformed compression seals. Installation shall conform to subsection 412.18, as revised for this project, and the compression seal and lubricant materials shall conform to subsection 705.01, as revised for this project.

Subsection 412.18 shall include the following:

Before installation of the preformed compression seal the following shall be completed:

(1) Repair of defective pavement slabs and repair and proper curing of cracks or spalls per subsection 412.16.

(2) Corrective work for texturing.

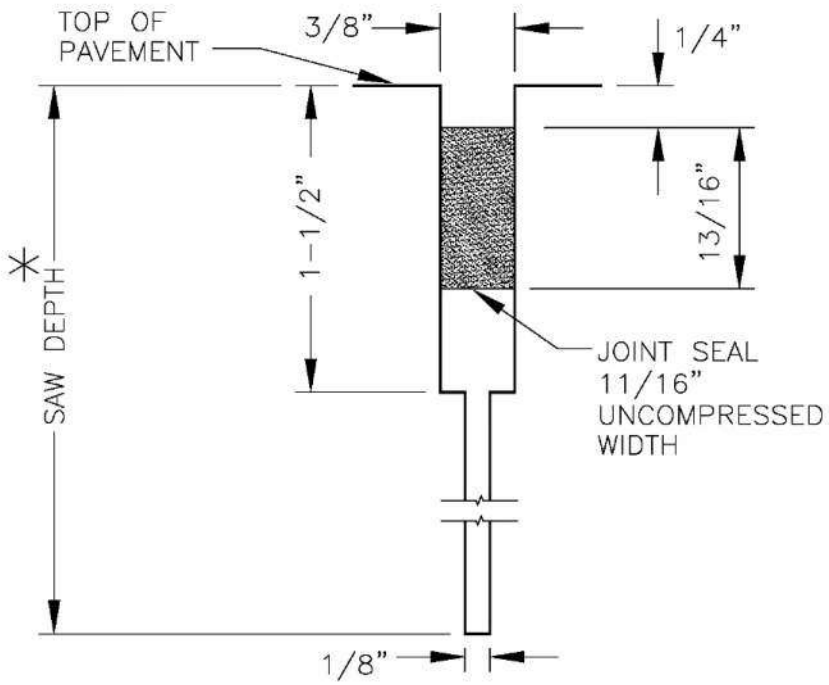
(3) Corrective work for smoothness per subsection 105.08.

Air temperature at the time of installation shall be from 40 to 80°F or as recommended by the manufacturer. The joint shall be air cleaned with oil free air at 100 psi minimum just before seal installation. The preformed compression seal shall have an uncompressed width of 11/16 inch. Installation shall be in conformance with the following diagram and shall follow the manufacturers recommendations. A machine shall be used for installation which results in proper depth of the seal without damage or twisting of the seal. Elongation during installation shall not exceed 5 percent.

Subsection 705.01 shall include the following:

(c) *Preformed Compression Seals.* Preformed compression seals shall conform to AASHTO M 220. The lubricant adhesive used for installation of the preformed compression seal shall conform to ASTM D 2835. The Contractor shall provide the Engineer with certified test reports that indicate conformance of the preformed compression seals and lubricant adhesive with these specifications before installation begins.

Joint Shape and Joint Filler Details for
Transverse Sawed Contraction Joint and
Untied Longitudinal Contraction Joint



*Saw Depth
T/4 for transverse sawed contraction joint
T/3 for untied longitudinal contraction joint
Where:
T = pavement thickness

Tolerances of all joint width dimensions: 0 to +1/16 inch

Installation of preformed compression joint seals shall be per manufacturer's recommendations.

The joint locations, spacing, and general notes on the standard for concrete pavement joints for this project shall apply.

All materials and installation required for compression joint seals will be included in the work.

All other joints shall be constructed per standard specifications.

July 1, 2025

Revision of Section 601
Pigment in Concrete

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects with concrete with pigment added.

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.

September 11, 2025

Revision of Section 601
Structural Concrete

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:

Use the following standard special provision on all projects with Structural Concrete.

Revision of Section 601
Structural Concrete

Revise Section 601, Structural Concrete, of the Standard Specifications as follows:

Revise Section 601.08 as follows:

601.08: Air Content Adjustment. When a batch of concrete delivered to the project does not conform to the minimum specified air content, an air-entraining admixture listed on the approved mix design may be added per subsection 601.17. After the admixture is added, the concrete shall be re-mixed for a minimum of 20 revolutions of the mixer drum at mixing speed. The concrete shall then be re-tested by PC.

March 21, 2025

Revision of Section 627
Pavement Marking

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects with pavement marking paint.

Section 627
Pavement Marking

Revise Section 627 by removing and replacing the existing Section 627 of the Standard Specifications with the following:

Description

627.01 This work consists of furnishing and applying pavement marking, and furnishing, installing, and removing temporary pavement marking per these specifications, the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), the Colorado supplement thereto, and in conformity to the lines, dimensions, patterns, locations and details shown on the plans or established.

Materials

627.02 Materials shall conform to the requirements of the following subsections:

Material Requirements	Subsection
Paint	708.05
Glass Beads	713.08
Modified Epoxy Pavement Marking Material	713.17
Thermoplastic Marking Material	713.12
Pavement Primer	708.07
Preformed Plastic Pavement Marking Material	713.13
Pavement Marking Tape	713.15
Pavement Marking Tape (Removable)	713.16
Raised Pavement Marker	713.18
Preformed Thermoplastic Pavement Marking Material	713.14
Methyl Methacrylate Pavement Marking Material	713.19

Construction Requirements

627.03 General. All pavement markings shall be placed per the following requirements. When the term “full compliance” is used, it means the pavement markings shall meet the requirements of Standard Plan S-627-1.

(a) Pavement Marking Plan. When pavement-marking location details are not provided in the Contract, the Contractor shall submit a layout of existing conditions to the Project Engineer for approval. The approved layout is to be used as the final pavement-marking plan.

(b) Roadways Closed to Traffic During Construction. Full-compliance final markings shall be in place before opening the roadway to traffic.
Pavement markings on detour routes shall be full-compliance markings.

(c) Roadways Constructed Under Traffic. Full compliance final pavement markings shall be placed within two weeks after final surfacing is completed. Full compliance pavement markings shall also be placed on any roadways opened to traffic when the project pavement work is discontinued for more than two weeks.

(d) Temporary Pavement Markings. Temporary pavement markings and control points for the installation of those pavement markings for roadways that are being constructed under traffic shall be installed as follows:

1. When one roadway of a normally physically divided highway is closed, and a crossover is constructed, full-compliance pavement markings shall be placed along the tapers and through the median crossovers to the two-way traffic section. Pavement markings through the two-way traffic section shall be as shown on the plans.

   All temporary paved roadways shall have full-compliance centerline, lane line, and edge line markings before they are open for traffic.

   Upon removal, markings applied to a final surface shall not leave a scar that conflicts with permanent markings.

2. The following criteria apply to all construction on roadways open to traffic other than (d)1. above:

   Full-compliance centerline, lane line, and edge line temporary markings shall be in place at the end of each workday.

   No-passing zone restrictions shall be identified by full compliance no-passing zone markings. No-passing zone markings shall be in place daily.

   Temporary pavement stencils (SCHOOL, RR Xing, etc.) are not required unless specified in the plans.

   Temporary pavement markings shall be installed according to the manufacturer's recommendations in such a way that the markings adequately follow the desired alignment.

3. Control Points consisting of 4-inch by 1-foot marks at 40-foot intervals may be placed as guide markers for the installation of temporary or final pavement markings. Raised flexible pavement markers may be substituted for these marks. Control points shall not be used as a substitute for any required marking.

(e) Pavement Marking for Seal Coats (Section 409).

1. Raised flexible pavement markers, suitable for use on seal coats, shall be installed as follows:

   No-passing zones shall be marked with two markers placed side-by-side at 40-foot intervals throughout the zone.

   Passing zones shall be marked with one marker at 40-foot centers. Closer spacing shall be used on curves, as deemed appropriate.

   Raised flexible pavement markers, installed on 40-foot centers, may also be used to mark lane lines through multi-lane roadway sections. Auxiliary lanes and shoulder lines may be marked with flexible markers on 80-foot centers or as appropriate.

2. Full-compliance final pavement markings shall be placed within one week of completion of the seal coat project.

(f) **Procedures for Items Paid by the Gallon**

Either of the following methods are acceptable unless otherwise specified by the Project Engineer.

1. **Method #1 - Use of Data Logging System (DLS)**
   Equipment: The Contractor shall use a "Skip-line by SPEC-RITE" Data Logger System (DLS) or equivalent DLS equipment as approved by the Project Engineer.
   Calibration: Pavement marking vehicles using a Data Logging System (DLS) shall be calibrated at intervals no longer than 12 months. Calibration requirements and allowable tolerances will be determined by the equipment manufacturer. Prior to the installation of materials paid by the gallon, a copy of the most recent certification report for each DLS equipment system used shall be submitted to the Project Engineer.
   Verification: A verification test section may be conducted at any time during production at the discretion of the Project Engineer. The verification test shall be performed according to Method #2 and the pavement marking shall be at least 1 mile (5,280 feet) in length, and shall be a width of four, six or eight inches. If the test section cannot be performed as a result of limitations, then method #2 shall be used to verify quantities for payment. If the calibration application rate cannot be verified, then method #2 shall be used to verify quantities for payment.

2. **Method #2 - Performing Tank Stabs and Field Measurement**
   Tank stab measurements shall be used to verify the application rate by calculating the volume of material used over the corresponding application (square foot) area. Tank stab measurements shall be performed by the Contractor at the beginning and end of the pavement marking installation with the pavement marking vehicle parked at the same location and direction of travel for each measurement. Tank stab measurements shall be taken to the top of the fluid level from a fixed point. These measurements will be visually observed and recorded before the pavement marking operations begin, at the end of the pavement marking operations, and before and after each tank is replenished. The difference in the height of the fluid level corresponds to the volume of material used per the manufacturer's tank conversion chart. Measurements will be recorded to the nearest 1/4 inch.

   Plural component materials, such as modified epoxy pavement markings, are applied as a combination of resins and catalysts from separate tanks. Tank stabs shall be recorded for each tank and the volumes combined to determine the total volume, in gallons, applied. Pavement markings shall be field measured to determine the total area of material installed. The tank stab and field measurements will be used to verify the application rate is within the rate specified by the contract.

627.04 Pavement Marking with Low Temperature Acrylic Paint and High Build Acrylic Paint. Striping shall be applied on asphalt or portland cement concrete pavements when the air and pavement temperatures are as follows: for high-build waterborne paint, at least 45 °F and expected to remain 45 °F or above for at least 24 hours; for low temperature waterborne paint, at least 35 °F and expected to remain 35 °F or above for at least 24 hours. The pavement surface shall be dry and clean, and free of all latent materials, per the manufacturer's recommendations. Weather conditions shall be conducive to satisfactory results. Glass beads shall be applied into the paint by means of a low pressure, gravity drop bead applicator.

The Contractor shall use equipment that meets the following requirements, as approved:

(1) Equipment shall permit traffic to pass safely within the limits of the roadway surface and shoulder while operating.

(2) Equipment shall be designed for placement of both solid and broken line pavement markings with a reasonably clean-edged pavement marking of the width and location as shown on the contract and no overspray on the road surface.

(3) Equipment shall have a glass bead dispenser directly behind and synchronized with the paint applicator. Each applicator shall have individual control and automatic skip control that will paint a strip with a gap as shown in the Contract.

(4) The equipment may be equipped with a heat exchanger to heat the paint to reduce drying time.

(5) The operation shall include a trailing vehicle equipped with a flashing arrow board.

The Contractor shall prevent traffic from crossing a wet pavement marking. Pavement markings that have been marred or picked up by traffic before they have dried shall be repaired at the Contractor's expense. Removal of paint material from vehicles that encountered wet paint shall be at the Contractor's expense.

The water-based paint pavement markings shall fall within the following minimum and maximum ranges:

Table 627-1
Application Rates and Tolerances for Pavement Markings

Description	Units	Pavement Marking Paint Low Temp	Pavement Marking Paint High Build	Pavement Marking Paint High Build (Temporary)
Alignment (Lateral Deviation)	Inches	< 2.0	< 2.0	< 2.0
Application Rate	Sq Ft/Gallon	89-94	67-70	100-105
Thickness	Mil	17.5 ± 0.5	23.5 ± 0.5	15.5 ± 0.5
Width	Inches	Per Plans ± 0.25	Per Plans ± 0.25	Per Plans ± 0.25
No Tack Dry Time @ 77° F	Minutes	5-10	7-12	5-10
Glass Bead Application Rate	Lbs, Gallon	7+	9+	5+

(6) High Build (Temporary) shall only be used for temporary pavement marking applications. Equipment shall have a bead dispenser directly behind, synchronized with the paint applicator and shall be capable of painting a clean-edged pavement marking of the designated width plus or minus 1/4 inch with no overspray on the road surface. For centerlines and lane lines, an automatic skip control shall be used. Machines having multiple applicators shall be used for centerlines with "no passing zones." In areas where machines are not practical, suitable hand-operated equipment shall be used as directed by the Project Engineer. Pavement markings shall be protected until dry.

627.05 Modified Epoxy Pavement Marking. The modified epoxy pavement-marking compound shall be applied with equipment that will precisely meter the two components in the ratio given in subsection 713.17(a). The equipment shall automatically shut off or warn the operator if one component is not being mixed. The equipment shall produce the required amount of heat at the mixing head and gun tip to provide and maintain the temperatures specified.

Before mixing, the individual components A and B shall each be heated to a temperature of 80 to 140 °F. After mixing, the application temperature for the combined material at the gun tip shall be 80 to 140 °F. The 140 °F upper limit is the maximum temperature under any circumstances.

Both pavement and air temperatures shall be at least 35 °F at the time of modified epoxy pavement marking application.

The surface areas of new portland cement concrete pavement and decks that are to receive markings shall be waterblasted before placement of the modified epoxy pavement marking. The amount of waterblasting shall be sufficient to remove all dirt, laitance, and curing compound residue.

The surface areas of new asphalt pavement, existing asphalt pavement, and existing concrete pavement that are to receive markings shall be cleaned with a high-pressure air blast to remove loose material before placement of the modified epoxy pavement marking. Should any pavement become dirty, from tracked mud etc. as determined by the Project Engineer, it shall be cleaned before the placement of the modified epoxy pavement marking.

When recommended by the modified epoxy manufacturer, a high-pressure water blast integrated into the gun carriage shall be used to clean the pavement surface before modified epoxy pavement marking application. The water blast shall be followed by a high- pressure air blast to remove all residual water, leaving only a damp surface.

Modified epoxy pavement marking shall be applied to the road surface according to the modified epoxy manufacturer's recommended methods at the application rate or coverage shown below. Glass beads shall be applied into the modified epoxy pavement marking by means of a low pressure, gravity drop bead applicator.

Modified epoxy pavement markings and beads shall be applied within the following limits:

Table 627-2
Application Rates and Tolerances for Modified Epoxy Pavement Marking

Description	Units	Modified Epoxy Pavement Marking
Alignment (Lateral Deviation)	Inches	< 2.0
Application Rate	Sq Ft/Gallon	85 - 90
Thickness	Mil	18.5 ± 0.5
Width	Inches	Per Plans ± 0.25
No Tack Dry Time @ 77° F	Minutes	5 - 7
Glass Bead Application Rate	Lbs per Gallon	23+

627.06 Thermoplastic Pavement Marking.

(a) Equipment-General. The material shall be applied to the pavement by an extrusion method where one side of the shaping die is the pavement and the other three sides are contained by or are part of suitable equipment for heating, mixing, and controlling the flow of the material.

The equipment shall be constructed to provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the shaping die shall be so constructed as to prevent accumulation and clogging. All parts of the equipment that come in contact with the material shall be easily accessible and exposable for cleaning and maintenance.

All mixing and conveying parts up to and including the shaping die, shall maintain the material at the plastic temperature.

The equipment shall be so constructed as to assure continuous uniformity in the dimensions of the pavement marking. The applicator shall provide a means for cleanly cutting off square pavement marking ends and shall provide a method of applying "skip" lines. The use of pans, aprons or similar appliances that the die overruns will not be permitted under this specification.

Glass beads for the surface of the completed pavement marking shall be applied by an automatic bead dispenser attached to the applicator in such manner that the beads are dispensed almost instantly upon the completed line. The bead dispenser shall be equipped with an automatic cutoff control synchronized with the cutoff of the thermoplastic material.

The equipment shall be so constructed as to provide for varying die widths to produce varying widths of traffic markings.

The equipment shall be designed to permit agitation of the material to prevent scorching, discoloration or excessive high temperatures of any part of the material.

A special kettle shall be provided for melting and heating the composition. The kettle shall be equipped with an automatic thermostatic control device so that heating can be done by controlled heat transfer liquid rather than direct flame.

The applicator and kettle shall be so equipped and arranged as to satisfy the requirements of the National Fire Underwriters.

The equipment shall be so equipped as to permit preheating of the pavement immediately before application of the material.

The applicator shall be mobile and maneuverable to the extent that straight lines can be followed, and normal curves can be made in a true arc.

(b) Types of Equipment.

1. Portable Applicator. The portable applicator shall be a device typically used for painting crosswalk lines, stop bars, short lane lines and short centerlines. The applicator shall be easily maneuverable and capable of being propelled by the operator.

2. Mobile Applicator. The mobile applicator shall contain equipment to provide for automatic installation of skip lines in any combination of line and skip up to 40 feet. The mobile applicator shall be moved in conjunction with the melting and heating kettles in such a manner as to provide continuous highway operation of the kettles and the mobile applicator as an integral unit.
3. Epoxy Primer Equipment. The epoxy primer application shall be accomplished using equipment having the following features:

   A. The main storage tank shall be equipped with a visible gauge that will allow the Project Engineer to readily ascertain the rate of application.

   B. The main storage tank shall be equipped with a heating device that will maintain the epoxy at a constant efficient temperature.

   C. The spray nozzle and epoxy spray shall be protected from the action of wind to ensure placement where needed.

4. Cleaning Equipment. Equipment must be provided to ensure removal of laitance, dust, debris, paint and other foreign matter from the road surface immediately before the installation of the composition, or immediately before the application of primer.

(c) Application. The pavement marking shall be applied to the pavement to either the right or left of the application unit, dependent upon roadway lane being used. The unit shall not occupy more than one lane of roadway while operating.

The finished lines shall have well defined edges and be free of waviness. All of the equipment necessary to the preheating and application of the material shall be so designed that the temperature of the material can be controlled within the limits necessary to its pourability for good application.

At the time of installation of thermoplastic materials, the pavement shall be clean, dry, and free of laitance, oil, dirt, grease, paint or other foreign contaminants. Pavement and ambient temperatures shall be at least 50 °F.

An epoxy resin primer conforming to subsection 708.07 shall be applied to all pavement surfaces before the application of the thermoplastic pavement marking.

The marking material shall not be applied until the epoxy resin primer reaches the tacky stage, approximately 15 minutes under normal conditions. An infrared heating device may be employed to shorten the curing time of the epoxy.

To ensure the best possible adhesion, the marking material as specified, shall be installed at the manufacturer's recommended temperature.

The minimum thickness of thermoplastic lines as viewed from a lateral cross section shall not be less than 3/32 inch at the edges, or less than 1/8 inch at the center. Measurements shall be taken as an average throughout any 36-inch section of the line. The material, when formed into traffic pavement markings, must be readily renewable by placing an overlay of new material directly over an old line of compatible material. Such new material shall bond itself to the old line in such a manner that no splitting or separation takes place.

Glass beads shall be applied to the thermoplastic pavement marking by means of a low pressure, gravity drop bead applicator at a rate of 10 pounds per 100 square feet, minimum.

627.07 Methyl Methacrylate Pavement Marking. Methyl methacrylate pavement marking shall be installed per manufacturer's recommendations. The Contractor shall use installation equipment, materials, equipment technicians and operators recommended by the manufacturer.

Methyl methacrylate pavement markings shall be applied to the road surface according to the manufacturer's recommended methods at 60-mil minimum thickness. Glass beads shall be applied using a double drop bead application system. The first bead applicator shall apply glass beads at the rate of 3.2 pounds per square yard (10 pounds per gallon) minimum, and 1.9 pounds per square yard (6 pounds per gallon) minimum for the second bead applicator.

Methyl methacrylate pavement marking, and beads shall be applied within the following limits:

Table 627-3

Application Rates and Tolerances for

Methyl Methacrylate Pavement Marking

Description	Units	Methyl Methacrylate Pavement Marking
Alignment (Lateral Deviation)	Inches	< 2.0
Application Rate	Sq Ft per Gallon	26 - 28
Thickness	Mil	60 ± 2.0
Width	Inches	Per Plans ± 0.25
No Tack Dry Time @ 77 ºF	Minutes	< 15
Glass Bead Application Rate	Lbs per Gallon	1st Application = 10+ 2nd Application = 6+

627.08 Preformed Plastic Pavement Marking. This retroreflective preformed plastic strip shall be suitable for application on asphaltic or portland cement concrete pavement. The strip shall be applied at the locations called for on the plans or as directed.

If recommended by the manufacturer, an epoxy resin primer conforming to subsection 708.07 shall be applied to all pavement surfaces before the application of the preformed plastic pavement marking.

The surface of the pavement shall be clean, free of loose foreign material, dry and have no moisture for a minimum of 48 hours before application of the markings.

The air and surface temperature shall be a minimum 40 °F or as recommended by the manufacturer.

The marking strip as applied shall be in good appearance, free of cracks and the edges shall be true and straight.

The preformed plastic pavement marking shall be Type I, Type II, or Type III as shown on the plans.

Before beginning installation operations, the Contractor shall submit to the Project Engineer instructions from the performed plastic pavement manufacturer detailing surface preparation, grooving requirements and material application. The instructions shall include the following:

(1) Equipment Requirements.

(2) Approved Work Methods and Procedures.

(3) Material Application Temperature Requirements.

(4) Ambient Air and Surface temperature Requirements.

(5) Weather Limitations.

(6) Special Precautions.

(7) Any other requirements necessary for successful installation and satisfactory performance of the material.

The Contractor shall secure from the manufacturer all warranties and guarantees with respect to materials, workmanship, performance, or combination thereof, and shall include these warranties and guarantees with the Certification of Compliance.

Materials supplied without installation instructions or with incomplete instructions will not be accepted for use.

Unless otherwise shown on the plans, typical pavement markings shall conform to the shapes and sizes as shown on Standard Plan S-627-1.

The Contractor shall make all arrangements to have a manufacturer-trained installer of the manufacturer’s products on-site during the placement of preformed plastic pavement marking to ensure proper installation. A minimum of two weeks before the placement of the preformed plastic pavement marking, the Contractor shall submit written documentation of the installer’s qualifications and training in the installation of preformed plastic pavement marking. Upon completion of the work, the Contractor shall obtain and submit to the Project Engineer written documentation from the manufacturer-trained installer certifying that the product was installed in full compliance with this specification and manufacturer’s recommendations.

The preformed plastic pavement marking shall be inlaid on new and existing pavements as shown in the Contract. The material shall be usable for patching worn areas of the same type according to the manufacturer’s recommendations.

The Contractor shall not perform wet cutting of pavement unless otherwise directed. Application and removal of temporary pavement marking associated with wet cutting of pavement shall be at the Contractor’s expense.

The preformed plastic pavement marking shall conform to pavement contours by the action of traffic, and shall be applicable on new, dense, and open graded asphalt wearing courses during the paving operations according to the manufacturer’s recommendations. After application, the markings shall be immediately ready for traffic.

(a) Inlaid Preformed Plastic Pavement Marking. The grooved width for inlaid preformed plastic pavement marking is called for in the Contract. The grooved width shall be the pavement marking width plus 1 inch, with a tolerance of plus or minus 1/4 inch. The depth of the grooves shall be 130 mils plus or minus 5 mils. Groove position shall be a minimum of 2 inches from the edge of the pavement marking to the longitudinal pavement joint.

Grooving shall not be performed on bridge decks with Polyester Polymer Concrete Overlays.

The bottom of the groove shall have a smooth, flat finished surface. The spacers between blade cuts shall be such that there will be less than a 10-mil rise in the finished groove between the blades.

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 re-clean grooves, as necessary, before application of the preformed plastic pavement markings.

(b) Reserved.

627.09 Preformed Thermoplastic Pavement Marking. The markings shall consist of a resilient white or yellow thermoplastic product with glass beads uniformly distributed throughout the entire cross-sectional area. Legends and symbols shall be capable of being affixed to bituminous pavements by heating.

The markings shall conform to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. The material shall have resealing characteristics with the capability of fusing with itself and previously applied thermoplastic markings under normal use.

The preformed thermoplastic markings shall be packaged in a protective plastic film with cardboard stiffeners where necessary to prevent damage in transit. The carton in that the material is packed shall be clearly labeled for ease of identification.

(a) Application. Application temperature shall be as recommended by the manufacturer. The pavement and air temperature shall be as recommended by the manufacturer at the time of application. The materials shall be applied using a heating method recommended by the manufacturer. The Contractor shall provide the Project Engineer a copy of the manufacturer's installation recommendations before beginning the work. The pavement shall be clean, dry and free from debris. The preformed thermoplastic markings may be installed on top of existing thermoplastic markings after all loose material has been removed. The preformed thermoplastic markings shall not be installed on top of existing preformed plastic pavement markings without first removing the existing markings to a depth that ensures removal of the adhesive backing of the preformed plastic. It shall not be installed on top of pavement marking paint without first removing the paint.

(b) Equipment. The Contractor shall use a heating method specifically recommended by the manufacturer for the installation of preformed thermoplastic markings.

627.10 Pavement Marking Tape. Retroreflective tape shall be suitable for temporary use on asphaltic or portland cement concrete pavements. The tape shall be applied at the locations shown on the plans or as directed. The tape shall conform to subsection 713.15.

The surface that the tape is applied shall be clean, dry and free of dirt, oils and grease. The tape shall be pressed down immediately after application, until it adheres properly and conforms to the surface. Temporary marking tape sections longer than 1 foot shall be removed before placement of the final pavement course. All tape shall be removed on sections where tape conflicts with revised traffic lanes before opening of new lanes to traffic.

Pavement marking tape (removable) shall be installed per the manufacturer's recommendations and maintained throughout the required construction phase at no additional cost to the Department.

627.11 Raised Pavement Markers. Raised pavement markers (temporary) shall be installed on centerlines, edge lines, and lane lines where specified in the Contract. Single markers shall be installed at 5-foot intervals for solid lines. A group of four markers at 3-foot spacings and at 40- foot intervals shall be installed for skip lines.

Markers supplementing lines shall be installed at the spacing shown on the plans. Raised pavement markers (temporary) shall be installed per the manufacturer's recommendations and shall be maintained throughout the required construction phase at the Contractor’s expense.

Method of Measurement

627.12 The types of pavement marking described will be measured by the following units, complete-in-place and accepted.

Pavement marking paint will be measured by the number of gallons used. Procedures Method #1 or Method #2 will be used to determine the quantities for pavement markings paid by the gallon. The material used in excess of the application rate specified, will not be paid.

Modified epoxy pavement marking, polyurea, and methyl methacrylate pavement marking will be measured by the total number of gallons of components A (pigment/resin) and B (hardener/catalyst) combined to achieve the application requirements as specified. Procedures Method #1 or Method #2 will be used to determine the quantities for pavement markings paid by the gallon. The material used in excess of the application rate specified, will not be paid.

Thermoplastic pavement marking, preformed thermoplastic pavement marking, and preformed plastic pavement marking will be measured by the square foot. The unmarked spaces between markings will not be included in the overall measurement.

The amount of pavement marking tape to be measured will be the linear feet of the specified width tape applied. Gaps in marking will not be measured for payment.

Raised pavement marker (temporary) will be measured as a unit in place and shall include all adhesive necessary for installation. Removal of the raised pavement marker shall be included in the work.

Pavement word and symbol markings, transverse and longitudinal crosswalk lines, and stop lines will not be measured, but shall be the quantities, in square feet, designated in the Contract; except measurements will be made for revisions requested by the Project Engineer. The unmarked spaces within these markings will not be included in the measurement.

Basis of Payment

627.13 The accepted quantities will be paid for at the contract price per unit of measurement for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

Pay Item	Pay Unit
Pavement Marking Paint	Gallon
Pavement Marking Paint (High Build)	Gallon
Pavement Marking Paint (High Build)(Temporary)	Gallon
Pavement Marking Paint (Low Temperature)	Gallon
Modified Epoxy Pavement Marking	Gallon
Methyl Methacrylate Pavement Marking	Gallon
Thermoplastic Pavement Marking	Square Foot
Preformed Plastic Pavement Marking (Type _) (Inlaid)	Square Foot
Preformed Plastic Pavement Marking (Word-Symbol) (Type I) (Inlaid)	Square Foot
Preformed Plastic Pavement Marking (Xwalk-Stop Line) (Type I) (Inlaid)	Square Foot
___Inch Pavement Marking Tape	Linear Foot
Pavement Marking Tape (Removable) Linear	Foot
Raised Pavement Marker (Temporary)	Each
Pavement Marking Paint (Word-Symbol)	Square Foot
Pavement Marking Paint (Xwalk-Stop Line)	Square Foot
Thermoplastic Pavement Marking (Word-Symbol)	Square Foot
Thermoplastic Pavement Marking (Xwalk-Stop Line)	Square Foot
Preformed Thermoplastic Pavement Marking	Square Foot
Preformed Thermoplastic Pavement Marking (Word-Symbol)	Square Foot
Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	Square Foot

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

Glass beads and cleaning with high-pressure water blast or air blast shall be included in the cost of the work.

Calibration and the verification of DLS equipment will not be measured and paid for separately but shall be included in the work.

Each authorized application of temporary pavement marking will be measured and paid for at the contract unit price for the type of material used.

Control points and Contractor pavement marking plans will not be measured and paid for separately but shall be included in the work.

All costs associated with having the Preformed Plastic Pavement Marking manufacturer-trained installer on-site and providing the documentation will not be measured and paid for separately but shall be included in the work.

627.13

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July 1, 2025

AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on all projects.

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			

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

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this specification, and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the Invitation for Bids and on the plans. In cases where the work is in two or more counties covered by differing percentage goals, the highest percentage will govern.

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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

to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractor toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any office of Federal Contract Compliance Programs Office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following;

   a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with

specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and maintain a record of the organization's responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source of community organization and of what action was taken with respect to each individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when he Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees at least once a year, and by posting the Contractor's EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the Contractor's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc. such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and Contractor's activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligation.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goal and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even thought 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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AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

13 The Contractor in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form, however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

C. SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES.

1. *General*.

   a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract. Provisions (Form FHWA 1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract provisions.

   b. The Contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.

   c. The Contractor and all his/her subcontractors holding subcontracts not including material suppliers, of $10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal

employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The Contractor will include these requirements in every subcontract of $10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. *Equal Employment Opportunity Policy*. The Contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program;

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

3. *Equal Employment Opportunity Officer*. The Contractor will designate and make known to the State highway agency contracting officers and equal employment opportunity officer (herein after referred to as the EEO Officer) who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. *Dissemination of Policy*.

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

      (1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the Contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

      (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official,

covering all major aspects of the Contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the Contractor.

(3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the Contractor's procedures for locating and hiring minority group employees.

b. In order to make the Contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:

(1) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

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(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

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 Contract 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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AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

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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AFFIRMATIVE ACTION REQUIREMENTS
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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.

July 1, 2025

CERTIFIED PAYROLL REQUIREMENTS
FOR CONSTRUCTION CONTRACTS

NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies, which use the Standard Specifications for Road and Bridge Construction to administer construction projects, use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on:

(1) All FHWA-assisted construction contracts.

(2) Select local agency FHWA-assisted construction contracts that elect to use the CDOT LCPtracker certified payroll system on projects advertised prior to July 1, 2022.

(3) All local agency FHWA-assisted contracts advertised on or after July 1, 2022.

(4) All state-funded CDOT construction contracts advertised on or after July 1, 2021, (local agency projects are exempt from this requirement).

July 1, 2025

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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.

March 14, 2025

U.S. Dept. of Labor Davis Bacon Minimum Wages
Colorado Highway Construction
General Decision Number - CO20250006

Notice

The Standard Special Provision (SSP) on the following page(s) revises or modifies CDOT's Standard Specifications for Road and Bridge Construction. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on all federal-aid projects with contracts exceeding $2000, except for non-ARRA projects on roadways classified as local roads or rural minor collectors, which are exempt. Projects on local roads, rural minor collectors, and enhancement projects funded with ARRA funds are not exempt.

Decision Nos. CO20250006 dated January 3, 2025 supersedes **Decision Nos. CO20240006** dated January 5, 2024.	**Modifications**			**ID**
	Mod Number	**Date**	**Page Number(s)**	
	1	**3/14/25**	**1**	
When work within a project is located in two or more counties and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.				
General Decision No. CO20250006 applies to the following counties: Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, and Park counties.				

General Decision No. CO20250006

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	38.97	13.75%+7.80	**1**
	POWER EQUIPMENT OPERATOR:			
	Drill Rig Caisson			
1001	Smaller than Watson 2500 and similar	35.03	15.20	
1002	Watson 2500 similar or larger	35.41	15.20	
	Crane (50 tons and under)			
1003	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	35.78	15.20	
	Crane (51 - 90 tons)			
1004	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	36.09	15.20	
	Crane (91 - 140 tons)			
1005	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	37.54	15.20	
1006	**Scraper**			
1007	Single bowl under 40 cubic yards	35.20	15.20	
1008	40 cubic yards and over	35.41	15.20	

General Decision No. CO20250006 **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. CO20250006

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	

General Decision No. CO20250006

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) (Excludes Flaggers)			
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	

General Decision No. CO20250006

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	

General Decision No. CO20250006

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	

General Decision No. CO20250006

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	

General Decision No. CO20250006

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 Specialty 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. CO20250006 **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:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to: davisbaconinfo@dol.gov, or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to: BCWD-Office@dol.gov, or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to: dba.reconsideration@dol.gov, or by mail 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 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.

End of General Decision No. CO20250006

On The Job Training

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions regarding its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies that use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

INSTRUCTIONS FOR USE ON CDOT CONSTRUCTION PROJECTS:

Use this standard special provision on all Federal-aid projects, including local agency projects, except for local agency projects where the local agency will not use LCPtracker for reporting.

1
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."

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

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

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.

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.

July 1, 2025

Required Contract Provisions
Federal-Aid Construction Contracts

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's Standard Specifications for Road and Bridge Construction. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision all on federal-aid construction projects.

Include the revised 1273 where the bids or the responses to solicitations are **due after October 23, 2023.**

July 1, 2025

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 reprocurement 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/WHD/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 reprocurement 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 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).

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.

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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.

June 11, 2025

Revision of Section 105
Dispute Resolution

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects.

Revision of Section 105
Dispute Resolution

Revise Section 105 of the Standard Specifications as follows:

Remove and replace Subsections 105.22, "Dispute Resolution"; 105.23, "Dispute Review Board"; and 105.24, "Claims for Unresolved Disputes", as follows:

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

Definitions:

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

Dispute. An Issue that the Contractor and CDOT have not been able to resolve, and for which the Contractor submits a written formal notice of Dispute per subsection 105.22(c).

Claim. A Dispute not resolved at the Resident Engineer level or resolved after a DRB recommendation.

Merit. Refers to the right of a Contractor to recover on a Claim or Dispute, irrespective of Quantum, based on the substance, elements, and grounds of that Claim or Dispute.

Quantum. Refers to the quantity or amount of compensation or time (or both), if any, that may be granted to the Contractor when a Dispute or Claim is found to have Merit.

The Contractor shall bring the Issue(s) to the Project Engineer's attention, in writing, within 15 days of the Contractor being aware of the Issue(s). Written notice must take the form of a stand-alone, non-chain e-mail or letter, addressed and delivered to the Project Engineer. If a Contractor provides written notice outside of the 15-day deadline, it shall be presumed that CDOT suffered prejudice. Where the Contractor

failed to provide the required notice, the failure to provide notice may be treated as a separate and threshold Dispute to be resolved before other related Dispute(s) are submitted, addressed, or resolved.

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

An audit may be performed by the Department for any Dispute or Claim. All audits will be completed within 90 days of the request for an audit, provided the Contractor allows the auditors reasonable and timely access to the Contractor's books and records.

If CDOT does not respond within the specified timelines, the Contractor may advance the Dispute to the next review level in the dispute resolution process.

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

The dispute resolution process set forth in this subsection shall be exhausted in its entirety before initiation of litigation. Failure to comply with the requirements set forth in this subsection, including notice requirements, shall bar either party from any further administrative, equitable, or legal remedies. Subject to the rebuttable presumption of prejudice to CDOT set forth above, if a deadline is missed that does not prejudice either party, further relief shall be allowed.

All written notices of Dispute shall be submitted within 30 days of the date of the Project Engineer's Final Acceptance letter; see subsection 105.21(b).

When a project has a landscape maintenance period, the Project Engineer will grant partial acceptance per subsection 105.21(a). This partial acceptance will be the project acceptance of all the construction work performed before this partial acceptance.

All Disputes and Claims related to the work in which this partial acceptance is granted shall be submitted within 30 days of the Project Engineer's partial acceptance.

Should the Contractor's Dispute use the Total Cost approach for calculating damages, damages will be determined by subtracting the contract amount from the total cost of performance. Should the Contractor's Dispute use the Modified Total Cost approach for calculating damages, if the Contractor's bid was unrealistic in part, or some of its costs were unreasonable or some of its damages were caused by its own errors, those costs and damages will be deducted from the total cost of performance to arrive at the Modified Total Cost. The Total Cost or Modified Total Cost basis for calculating damages shall not be available for any Disputes or Claims seeking damages where the

Revision of Section 105
Dispute Resolution

Contractor could have kept separate cost records at the time the Dispute arose as described in subsection 105.22(a).

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

Throughout the Dispute, the Contractor and the Project Engineer shall keep complete daily records of extra costs and time incurred, per the following procedures:

1. Daily records shall identify each operation affected, the specific locations where work is affected, and the potential effect to the project's schedule. Such records shall also reflect all labor, material, and equipment applicable to the affected operations.

2. On the first workday of each week following the date of the written notice of Dispute, the Contractor shall provide the Project Engineer with the daily records for the preceding week. If the Contractor's records indicate costs greater than those kept by the Department, the Project Engineer will meet with the Contractor and present CDOT's records to the Contractor at the meeting. The Contractor shall notify the Engineer in writing within three workdays of any inaccuracies noted in, or disagreements with, the Department's records.

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

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

(1) The date of the Dispute.

(2) The nature of the circumstances that caused the Dispute.

(3) A detailed explanation of the Dispute, citing specific provisions of the Contract and any basis, legal or factual, that supports the Dispute.

(4) If any, the estimated Quantum, calculated per the methods set forth in subsection 105.24(b)12, with supporting documentation.

(5) An analysis of the progress schedule showing the schedule change or disruption, if the Contractor is asserting a schedule change or disruption. This analysis shall meet the requirements of subsection 108.08(d).

The Contractor shall submit as much information on the Quantum and impacts to the Contract time as is reasonably available with the REA and then supplement the REA as additional information becomes available. If the Dispute escalates to the DRB process, neither party shall provide or present to the DRB any Issue or any information that was not contained in the REA and fully submitted in writing to the Project Engineer and Resident Engineer during the subsection 105.22 process.

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

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

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

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

(d) Resident Engineer Review. Within seven days after receipt of the Contractor's written notice to the Resident Engineer of unsatisfactory resolution of the Dispute, the Project Engineer and Resident Engineer will hold at least one meeting (or more than one meeting upon mutual agreement of the parties) with the Contractor.

Meetings shall continue weekly for a period of up to 30 days. Meetings shall include a Contractor's representative with decision authority above the project level to discuss the Dispute. When the Project Engineer is a Consultant and the Resident Engineer rendered the Project Engineer's written decision, the Program Engineer will render the Resident Engineer's written decision. Within 7 days after this meeting, the Resident Engineer will issue a written decision on the Merits of the Dispute.

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

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

105.23 Dispute Review Board. A Dispute Review Board (DRB) is an independent third party that will provide specialized expertise in technical areas and the administration of construction contracts. The DRB will assist in and facilitate the timely and equitable resolution of Disputes between CDOT and the Contractor in an effort to avoid animosity and construction delays, and to resolve Disputes as close to the project level as possible. The DRB shall be established and operate as provided and shall serve as an independent and impartial board. A DRB member shall not be called as a witness for future litigation.

There are two types of DRBs: the "On Demand DRB" and the "Standing DRB". The DRB shall be an "On Demand DRB" unless a "Standing DRB" is specified in the Contract. An On Demand DRB may be established at any time during the project to assist with Issue and Dispute resolution and when the Project Engineer initiates a DRB review per subsection 105.23(a). A Standing DRB, when specified in the Contract, shall be established at the beginning of the project.

(a) Initiation of Dispute Review Board Review. When a Dispute has not been resolved per subsection 105.22, the Project Engineer will initiate the DRB review process within five days after the period described in subsection 105.22(e).

(b) Formation of Dispute Review Board. DRBs will be established per the following procedures:

1. CDOT, in conjunction with the Colorado Contractors Association (CCA), will maintain a statewide list of pre-approved DRB candidates experienced in construction processes and the interpretation of contract documents, and the resolution of construction Disputes. Only individuals who have completed training (currently titled DRB Administration and Practice Training) through the Dispute Resolution Board Foundation or otherwise approved by CDOT can be a

DRB member. DRB nominees shall be selected from the list of pre-approved candidates. When a DRB is formed, the parties shall execute the agreement set forth in subsection 105.23(m).

2. If the Dispute has a value of $250,000 or less, the On Demand DRB shall have one member. The Contractor and CDOT shall select the DRB member and execute the Three-Party Agreement within 30 days of initiating the DRB process. If the parties do not agree on the DRB member, each shall select five candidates. Each party shall numerically rank their list using a scale of one to five, with one being their first choice and five being their last choice. If common candidates are listed, but the parties cannot agree, the common candidate with the lowest combined numerical ranking shall be selected. If there is no common candidate, the lists shall be combined, and each party shall eliminate three candidates from the list. Each party shall then numerically rank the remaining candidates, with Number 1 being the first choice. The candidate with the lowest combined numerical ranking shall be the DRB member. The CDOT Project Engineer will be responsible for having all parties execute the agreement.
3. If the Dispute has a value over $250,000, the On Demand DRB shall have three members. The Contractor and CDOT shall each select a member, and those two members shall select a third. Once the third member is approved, the three members will nominate one of them to be the Chair and execute the Three-Party Agreement within 45 days of initiating the DRB process.
4. The Standing DRB shall always have three members. The Contractor and CDOT shall each select a member, and those two members shall select a third member. Once the third member is approved, the three members will nominate one of them to be the Chair. The Contractor and CDOT shall submit their proposed Standing DRB members within five days of execution of the Contract. The third member shall be approved before the Pre-construction Conference. The third member shall be selected within 15 days of the execution of the Contract. Before construction starts, the parties shall execute the Three-Party Agreement. The CDOT Project Engineer will be responsible for having all parties execute the agreement. The Project Engineer will invite the Standing DRB members to the Pre-construction and any Project First conferences.
5. DRB members shall not have been involved in the administration of the project under consideration. CDOT and the Contractor shall inform their selected DRB member who the major firms/people are on the project and request their selected DRB member to review the CDOT disclosure requirements and Canon of Ethics and then submit a disclosure statement, which shall also be submitted to the other party. DRB candidates shall complete the DRB Disclosure

Requirements and DRB Nominee Disclosure Form and disclose to the parties the following relationships:

(1) Prior employment with either party

(2) Prior or current financial interests or ties to either party

(3) Prior or current professional relationships with either party

(4) Anything else that might bring into question the impartiality or independence of the DRB member.

(5) Before agreeing to serve on a DRB, members shall notify all parties of any other CDOT DRB's they are serving or that they will be participating in another DRB.

If either party objects to the selection of the chair or other DRB members based on the disclosures, or based on information not disclosed, which might bring into question the impartiality, independence, or performance of the potential member, that potential member shall not be placed on the Board.

6. There shall be no ex parte communications with the DRB at any time.
7. The service of a Board member may be terminated only by written agreement of both parties.

(c) If a Board member resigns, is unable to serve, or is terminated, a new Board member shall be selected within 30 days in the same manner as the Board member who was removed was originally selected.

(d) Additional Responsibilities of the Standing Disputes Review Board

1. General. No later than 10 days after the Three-Party Agreement has been signed by the Chief Engineer, the DRB will coordinate with the parties on the date and location of the initial DRB meeting.

   (1) Obtain copies of the Contract documents and the Contractor's schedules for each of the Board members.

   (2) Agree on the location of future meetings, which shall be reasonably close to the project site.

   (3) Establish an address and telephone number for each Board member for the purposes of Board business.

2. Regular meetings. Regular meetings of the Board shall be held approximately every 120 to 180 days throughout the life of the Contract, except that this schedule may be modified to suit developments on the job as the work

progresses. Regular meetings shall be attended by representatives of the Contractor and the Department.

3. The Board shall establish an agenda for each meeting, which will cover all items that the Board considers necessary to keep it abreast of the project, such as construction status, schedule, potential problems and solutions, status of past Claims and Disputes, and potential Claims and Disputes. Copies of each agenda shall be submitted to the Contractor and the Department at least seven days before the meeting date. Oral or written presentations or both shall be made by the Contractor and the Department as necessary to give the Board all the data the Board requires to perform its functions. The Board will prepare minutes of each meeting, circulate them to all participants for comments and approval, and issue revised minutes before the next meeting. As a part of each regular meeting, a field inspection trip of all active segments of the work at the project site may be made by the Board, the Contractor, and the Department.

4. Advisory Opinions

   (1) Advisory opinions are typically used soon after the parties find they have a potential Dispute and have conducted preliminary negotiations, but before expenditure of additional resources and hardening their positions. Advisory opinions provide quick insight into the DRB's likely assessment of the Dispute. This process is quick and may be entirely oral and does not prejudice the opportunity for a DRB hearing.

   (2) Both parties must agree to seek an advisory opinion and notify the chairperson. The procedure for requesting and issuing advisory opinions should be discussed with the DRB at the first meeting with the parties.

   (3) The DRB shall issue a one-page written opinion within 5 days of the hearing.

   (4) The opinion is only advisory and does not require acceptance or rejection by either party. If the Dispute is not resolved and a hearing is held, the oral presentations and advisory opinion are completely disregarded, and the DRB hearing procedure is followed.

   (5) Advisory opinions should be limited to Merit Issues only.

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

1. Contact the Contractor and the DRB to coordinate an acceptable hearing date and time. The hearing shall be held at the Resident Engineer's office unless an alternative location is agreed to by both parties. Unless otherwise agreed to by both parties, an On Demand DRB hearing will be held within 30 days after the Three-Party Agreement is signed by the CDOT Chief Engineer. Unless otherwise

agreed to by both parties, a Standing DRB hearing will be held within 30 days after the DRB has been requested per subsection 105.23(a).

2. Ensure DRB members have copies of all documents previously prepared by the Contractor and CDOT pertaining to the Dispute, the DRB request, the Contract documents, and the special provisions at least two weeks before the hearing.

(f) Pre-Hearing Submittal. All Pre-hearing Submittals shall include only arguments, supporting documentation, Quantum, and other information as previously submitted in writing and as previously disputed in the formal Dispute process covered in subsections 105.22(b), (c), (d), and (e). All Pre-hearing Submittals planned to be used at the hearing shall be submitted to the other party 35 days before the hearing for review for compliance with this requirement. If either party contends there are new arguments, supporting documents, new Quantum, or any new information in a pre-hearing Submittal, and the other party objects to this information being presented to the DRB, the objecting party shall submit its objections in writing to the other party within 10 days. The parties shall meet within five days to reconcile the objection before the submittal is submitted to the DRB. If the parties cannot reconcile the objection, but the new argument, supporting documentation, new Quantum, or new information does not change either party's position on Merit or Quantum, the information shall be allowed in the Pre-hearing submittal and presented to the DRB. If the parties cannot reconcile the objections within the five days allowed, each party shall submit a one-page brief on their objections, but not the actual information objected to, to the DRB for a decision on the use of the documents. The DRB shall not approve any information simply because it is relevant to the Dispute or referenced during the Dispute. Neither party shall attempt to present anything to the DRB that they did not present to the other party during the Dispute process. The Dispute process shall be delayed while this determination is being made and a new hearing date set, if necessary. Pre-hearing Submittals to the DRB are as follows:

1. Joint Statement: At least 20 days before the hearing, the Joint Statement(s) shall be submitted to the DRB. The parties shall make every attempt to agree upon a Joint Statement of the Dispute. If the parties cannot agree on the Joint Statement, each party's independent statement shall be submitted to the DRB. The Joint Statement shall summarize, in a few sentences, the nature of the Dispute(s) and the scope of the desired decision.

2. Position Paper: At least 15 days before the hearing, CDOT and the Contractor shall submit by email to the DRB Chairperson their party's Position Paper. The DRB Chairperson shall simultaneously distribute by email the Position Papers to

all parties and other DRB members, if any. The Position Paper shall contain the following:

(1) The basis and justification for the party's position, with reference to specific contract language and the supporting documents of each element of the Disputes.

(2) A list of proposed attendees for the hearing. In the event of any objection by a party, the DRB shall make a final determination as to who attends the hearing.

(3) When the scope of the hearing includes Quantum, full cost details will be calculated per the methods set forth in subsection 105.24(b)12. The Scope of the hearing will not include Quantum if CDOT has requested an audit that has not been completed.

3. Supporting Documents: At least 15 days before the hearing, each party shall submit a copy of all its supporting documents to the DRB and the other party. Supporting documents include any presentations, visuals, or handouts planned to be used at the hearing. To minimize duplication and repetitiveness, the parties are encouraged to identify a common set of documents that will be referred to by both parties and submit them in a separate package to the DRB at least 20 days before the hearing. Common documents are communications between parties, speed memos, change orders, schedules, request for equitable adjustment, correspondence, and any document used in the subsection 105.22 process. CDOT shall submit the common set of documents to the Board and the Contractor.

4. If relevant to the Dispute and requested by the Board, the Engineer shall provide to the DRB either website links, electronic PDFs, or hard copies of pertinent contract documents such as plans, specifications, and M and S Standards.

(g) Pre-Hearing Phone Conference. A pre-hearing phone conference with all Board members and the parties shall be conducted as soon as a hearing date is established, but no later than 10 days before the hearing. The DRB Chairperson shall explain the specifics of how the hearing will be conducted, including how the two parties will present their information. (Ex. Each party makes a full presentation of their positions, or presentations will be made on a "point by point" basis, with each party making a presentation only on the individual dispute issue before moving onto the next Issue.)

If the pre-hearing position papers and documents have been received by the DRB before the conference call, the Chairperson shall discuss the estimated hours of review and activities for the Disputes (such as time spent evaluating and preparing

a recommendation on specific Issues presented to the DRB). If the pre-hearing position papers and documents have not been received by the Board before the conference call, another conference call will be scheduled during the initial conference call to discuss the estimated hours of review. The Engineer shall coordinate the conference call.

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

1. An employee of CDOT presents a brief description of the project and the status of construction on the project.
2. The party that requested the DRB presents the Dispute in detail as supported by previously submitted information and documentation in the pre-hearing position paper. No new information or Disputes will be heard or addressed by the DRB. Rebuttals of the other party's arguments shall not be presented at this time.
3. The other party presents its position in detail as supported by previously submitted information and documentation.
4. The party that requested the DRB presents their rebuttals, followed by the other party's rebuttals.
5. Upon completion of their presentations and rebuttals, both parties and the DRB will be provided the opportunity to exchange questions and answers. Questions from the parties shall be directed to the Chairperson. Attendees may respond only when board members request a response.
6. Employees of each party are responsible for leading presentations at the DRB hearing.
7. Attorneys shall not participate in the hearing unless the DRB specifically addresses an Issue to them or unless agreed to by both parties. Should the parties disagree on attorney participation, the DRB shall decide on what, if any, participation will be permitted. Attorneys representing the parties are permitted to attend the hearing, provided their presence has been noted in the pre-hearing submittal.
8. Either party may use experts only if the expert has previously presented to the other party before the DRB process. A party intending to offer an outside expert's analysis at the hearing shall disclose such intention in the pre-hearing position paper. The expert's name and a general statement of the area of the Dispute that will be covered by his presentation shall be included in the disclosure. The other party may present an outside expert to address or respond to those Issues that may be raised by the disclosing party's outside expert.

9. If both parties approve, the DRB may retain an outside expert. The DRB chairperson shall include the cost of the outside expert in the DRB's regular invoice. CDOT and the Contractor shall equally bear the cost of the services of the outside expert employed by the DRB.
10. If either party attempts to present an argument, documentation, Quantum, or new information that the other party feels was not in the Pre-hearing submittals, the chairperson shall require the party to demonstrate where in the Pre-hearing submittals the information in question resides.
11. If either party fails to timely deliver a position paper, the DRB may reschedule the hearing one time. On the final date and time established for the hearing, the DRB shall proceed with the hearing using the information that has been submitted.
12. If a party fails to appear at the hearing, the DRB shall proceed as if all parties were in attendance.

(i) Dispute Review Board Recommendation. The DRB shall issue a Recommendation per the following procedures:

1. The DRB shall not make a recommendation on the Dispute at the meeting. Before the closure of the hearing, the DRB members and the Contractor and CDOT together will discuss the time needed for analysis and review of the Dispute and the issuance of the DRB's recommendation. The maximum time shall be 30 days unless otherwise agreed to by both parties.
2. After the meeting has been closed, the DRB shall prepare a written Recommendation signed by each member of the DRB. In the case of a three-member DRB where one member dissents, that member shall prepare a written dissent and sign it. The DRB's recommendation shall include the following:
   A. A summary of the Issues and factual evidence presented by the Contractor and CDOT concerning the Dispute.
   B. Recommendations concerning the validity of the Dispute.
   C. Recommendations concerning the value of the Dispute as to cost impacts if the Dispute is determined to be valid.
   D. The contractual and factual bases supporting the recommendation(s) made, including an explanation as to why each and every position was accepted or rejected.
   E. Detailed and supportable calculations that support any recommendation(s).

3. The chairperson shall transmit the signed Recommendation and any supporting documents to both parties.

(j) Clarification and Reconsideration of Recommendation. Either party may request in writing clarification or reconsideration of a decision within 10 days following receipt of the Recommendation. Within 10 days after receiving the request, the DRB shall provide written clarification or reconsideration to both parties.

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

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

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

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

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

If either party rejects the Recommendation in whole or in part, it shall give a written explanation to the other party and the DRB within 14 days after receiving the Recommendation. When the Recommendation is rejected in whole or in part by either party, the other party may either abandon the Dispute or pursue a formal Claim per subsection 105.24.

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

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

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

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

(m) *Cost and Payments*.

1. General Administrative Costs. The Contractor and the Department shall equally share the entire cost of the following to support the Board's operation:

   (1) Copies of the Contract and other relevant documentation
   (2) Meeting space and facilities
   (3) Secretarial services
   (4) Telephone
   (5) Mail
   (6) Reproduction
   (7) Filing

2. The Department and the Contractor shall bear the costs and expenses of the DRB equally. Each DRB board member shall be compensated at an agreed rate of $1,200 per day if time spent on-site per meeting is greater than four hours. Each DRB board member shall be compensated at an agreed rate of $800 per day if the time spent on-site per meeting is less than or equal to four hours. The time spent traveling to and from each meeting shall be reimbursed at $50 per hour if the travel distance is more than 50 miles. The agreed daily and travel time rates shall be considered full compensation for on-site time, travel expenses, transportation, lodging, time for travel of more than 50 miles, and incidentals for each day, or portion thereof, that the DRB member is at an authorized DRB meeting. No additional compensation will be made for time spent by DRB members in review and research activities outside the official DRB meetings unless that time (such as time spent evaluating and preparing recommendations on specific Issues presented to the DRB) has been specifically agreed to in advance by the Department and Contractor. Time away from the project that has been specifically agreed to in advance by the parties will be compensated at an agreed rate of $125 per hour. The agreed amount of $125 per hour shall include all incidentals. Members serving on more than one DRB, regardless of the number of meetings per day, shall not be paid more than the all-inclusive rate per day or rate per hour for an individual project.

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3. Payments to Board Members and General Administrative Costs. Each Board member shall submit an invoice to the Contractor for fees and applicable expenses incurred each month following a month in which the Board members participated in Board functions. Such invoices shall be in the format established by the Contractor and the Department. The Contractor shall submit to the Department copies of all invoices. No markups by the Contractor will be allowed on any DRB costs. The Department will split the cost by authorizing a 50 percent payment on the next progress payment. The Contractor shall make all payments in full to Board members within seven calendar days after receiving payment from the Department for this work.

(m) Dispute Review Board Three Party Agreement.

DISPUTE REVIEW BOARD
THREE PARTY AGREEMENT
COLORADO PROJECT NUMBER

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

_____
_____,

hereinafter called the "Contractor"; and

_____
_____,

_____
_____,

_____
_____, and

_____
_____,

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

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

_____ [Project Name] _____
_____

and

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

NOW, THEREFORE, it is hereby agreed:

ARTICLE I

DESCRIPTION OF WORK AND SERVICES

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

ARTICLE II

COMMITMENT ON THE PART OF THE PARTIES HERETO

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

ARTICLE III

COMPENSATION

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

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

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

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

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

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

ARTICLE IV

ASSIGNMENT

Board members shall not assign any of the work to be performed by them under this agreement. Board members shall disclose any conflicts of interest, including but not limited to any dealings

with either party in the previous five years other than serving as a Board member under other contracts.

ARTICLE V

COMMENCEMENT AND TERMINATION OF SERVICES

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

ARTICLE VI

LEGAL RELATIONS

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

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

Board members shall not be called as witnesses for future litigation.

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

BOARD MEMBER:_____.

BY:_____.

BOARD MEMBER: _____.

BY: _____.

BOARD MEMBER:_____.

BY:_____.

CONTRACTOR:_____.

BY:_____

_____.

TITLE: _____

_____

COLORADO DEPARTMENT OF TRANSPORTATION

BY:_____

_____. DATE: _____,

TITLE: CHIEF ENGINEER

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

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

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

Litigation proceedings must commence within 180 calendar days of the Chief Engineer's decision, absent a written agreement otherwise by both parties.

The venue for all unresolved Disputes with an aggregate value of $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.

Revision of Section 105
Dispute Resolution

(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 the 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 the 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:

   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: _____

Revision of Section 105
Dispute Resolution

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 certify 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 this Claim, being passed through to CDOT is passed through in good faith and is accurate and complete to the best of my knowledge and belief.

Dated _____/s/_____

Subscribed and sworn before me this _____ day of _____.

NOTARY PUBLIC

My Commission Expires: _____

2. A detailed factual statement of the Claim for additional compensation, time, or both, providing all necessary dates, locations, and items of work affected by the Claim. The Contractor's detailed factual statement shall expressly describe the basis of the Claim and factual evidence supporting the Claim. This requirement is not satisfied by simply incorporating into the Claim package other documents that describe the basis of the Claim and supporting factual evidence.
3. The date on which facts were discovered that 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 contractors, subcontractors, suppliers, 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 per subsection 108.08(d), along with a statement defining if any liquidated damages should be released, if applicable.
12. If additional compensation beyond the Contract Amount 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).

        (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 those 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. Within 15 days of the appeal, either party may submit a written request for a hearing with the RTD or duly authorized Region delegates.

The RTD will render a written decision to the Contractor within 45 days after the receipt of the Claim package or receipt of the audit, or after the hearing, 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 45-day period, or within any extended time period as agreed to by both parties, the Contractor shall either: (1) accept this as a denial of the Claim, or (2) appeal the Claim to the Chief Engineer, as described in this subsection.

If the Contractor accepts the RTD decision, the provisions of the decision shall be implemented 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 45 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(e).

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

Revision of Section 105
Dispute Resolution

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, 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.

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.

Figure 105-1 summarizes the disputes and claims process described in subsections 105.22, 105.23, and 105.24.

(Insert Flow Chart)

September 11, 2025

Revision of Section 106
Buy America (BA) and Build America Buy America (BABA) Requirements – Projects with $500,000 or more in Federal-Aid Highway Funding

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT (and local agency-administered) construction projects:

Use this standard special provision on all federal-aid highway (FHWA) funded (CDOT and Local Agency administered) Infrastructure projects that have a federal funding Construction Phase authorization date that has occurred on or after October 1, 2025, and that contain $500,000 or more in federal-aid highway funding. Design Project Managers should consult with their respective Region Business Office or HQ Business Office to determine the type and amount of federal-aid highway funding that has been or will be used in the projects. The $500,000 threshold is to be based on the aggregate (total amount) of federal-aid funding used or to be used in all phases of the project, including construction and any preliminary engineering phases (e.g., Right-of-way, Utilities, Design, Environmental, or Miscellaneous). The federal funding authorization date for the construction phase may also be viewed in the Project Status Report (ZJ40 Report) from SAP under the FHWA Agreement Date column.

Revision of Section 106
Buy America (BA) and Build America Buy America (BABA) Requirements – Projects with more than $500,000 in Federal-Aid Highway Funding

Section 106 of the Standard Specifications shall be revised as follows:

Delete Section 106.11(a) of the Standard Specifications and replace it with the following:

(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.

Delete Section 106.11(d) of the Standard Specifications and replace it with the following:

d. Manufactured Products. Manufactured products used and permanently incorporated shall be produced in the United States. The manufactured product must meet the following:

1. Buy America requirements apply to any steel or iron component of a manufactured product, regardless of the overall composition of the manufactured product.
2. Final assembly of the manufactured product must have occurred in the United States.

Before the permanent incorporation into the project and before payment for all manufactured products, the Contractor shall obtain a certification from the Manufacturer of the product, who has performed the final assembly of the product, and submit it to the Project Engineer. The certification shall attest that any iron/steel utilized in the manufactured product is compliant with Buy America requirements, and that the final assembly of the product occurred in the United States.

July 1, 2025

Revision of Section 107
Water Quality Control
(Under One Acre of Disturbance)

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Construction Engineering Services Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use on all projects not having a Federal, State or Local Stormwater Construction Permit.
[Projects with less than one acre of disturbance and not part of a common plan of development].

Revision of Section 107
Water Quality Control
(Under One Acre of Disturbance)

Section 107.25 of the Standard Specifications is hereby deleted and replaced as follows:

107.25 Water Quality Control. The project work shall be performed using practices (including but not limited to those listed below) that 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) Construction Site Boundary/Limits of Construction (LOC). The project area defined by the Environmental Clearance document.

(3) Discharge of Pollutants. One or more pollutants leaving the Limits of Construction (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.

(b) Construction Requirements

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.

If the Contractor determines construction of the project will result in a change to the ac

tivities or LDA, the Contractor shall detail the changes in a written report to the Engineer. Upon receipt of the report, the Engineer will coordinate with the Region Planning and Environmental Manager (RPEM) regarding the change. The Engineer, within five days after receipt of the report, will approve or reject in writing the request for change. If approved, the Engineer will detail a course of action including revision of existing permits or obtaining new permits.

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 project specific water quality 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 (CDPHE) or other appropriate federal, state, or local agency to determine the need for any permit.

The Contractor shall conduct the work in a manner that prevents pollution of any adjacent State waters, as defined in section 101. Erosion control work shall be performed in accordance with Section 208, this subsection, and all other applicable parts of the Contract.

Prior to construction, the Stormwater Management Plan (SWMP) Administrator, identified in Section 208, 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, as described in Section 208:

(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.

(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 truck and equipment washing, including the concrete truck chute and associated fixtures and equipment.

(11) Concrete 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) Other areas or procedures where spills could occur.

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

Prior to construction 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 Section 208 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. Prior to start of work, the Contractor shall submit a SPCC Form, if applicable, which has been approved by the EPA for the project.

The Contractor shall obtain a Construction Dewatering (CDW) permit from CDPHE 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 in accordance with Section 250.

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 Permit shall be submitted to the Engineer prior to dewatering operations commencing.

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

1. 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.

2. Discharges from vaults or similar structures shall not be contaminated. Potential sources of contamination include process materials used, stored, or conveyed in the structures, or introduced surface water runoff from outside environments that may contain oil, grease, and corrosives.

3. The groundwater discharge does not leave the project boundary limits where construction is occurring.

4. 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.

5. 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.

6. A visible sheen is not evident in the discharge.

7. Control measures are implemented to prevent any sediment deposited during land application from being transported by stormwater runoff to surface waters or other conveyances.

8. 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 Contractor.

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.

At least 15 days prior to 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.

Temporary fill into wetlands or streams shall 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.

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 shall be allowed only as authorized by the U.S. Army Corps of Engineers 404 Permit. 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.

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 waste and washout water from mixer trucks, concrete finishing tools, concrete saw, and all concrete material 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 ten days prior to 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 in accordance with the manufacturer’s recommended application rates, frequency, and instructions.

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.

Spill prevention and containment measures conforming to Section 208 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 in writing.

The Contractor shall prevent construction activities from causing grass or brush fires.

The construction activities shall not impair Indian tribal rights, including, but not limited to, water rights, and treaty fishing and hunting rights.

Prior to start of work, the Contractor shall certify in writing to the Engineer that construction equipment has been cleaned prior to 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 prior to being brought onto the project site.

Vehicles which have been certified by the Contractor as having been cleaned prior to 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.

At the end of each day the Contractor shall collect all trash and dispose of it in appropriate containers.

All construction site wastes shall be properly managed to prevent potential pollution of State waters. 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.

Discharges from the project area 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.

Stormwater Construction Permit. A Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) is not required for this project. A CDPS-SCP will be obtained from CDPHE, if any of the following activities apply:

(1) Construction sites that will disturb one acre or more; or

(2) Construction sites that are part of a common plan of development or sale; or

(3) It is specified in the contract; or

Stormwater discharges that are designated by the division as needing a stormwater permit because the discharge:

1. Contributes to a violation of a water quality standard; or

2. is a significant contributor of pollutants to State waters.

Dewatering, erosion control for dewatering, and disposal of water resulting from dewatering operations, including all costs for permits, will not be measured and paid for separately, but shall be included in the work.

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.

The Contractor shall 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.

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.

Areas exposed to erosion by fire resulting from the Contractor's operations shall be stabilized in accordance with Section 208 by the Contractor, at the Contractor's expense.

July 1, 2025

Revision of Section 108
Liquidated Damages

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects.

Revision of Section 108
Liquidated Damages

Revise Section 108.09 of the Standard Specifications as follows:

In subsection 108.09 delete the schedule of Liquidated Damages and replace it with the following:

Original Contract Amount ($)		Liquidated Damages per Calendar Day ($)
From More Than	To And Including	
0	1,000,000	1,300
1,000,000	2,000,000	2,300
2,000,000	5,000,000	3,100
5,000,000	10,000,000	6,800
10,000,000	25,000,000	8,800
25,000,000	-----	9,700

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.

(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.

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.

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

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

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) 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.

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 Medial 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.

July 1, 2025

Revision of Section 208
Erosion Control
(Under One Acre of Disturbance)

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Construction Engineering Services Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:
Use on all projects not having a Federal, State or Local Stormwater Construction Permit.
[Projects with less than one acre of disturbance and not part of a common plan of development].

Revision of Section 208
Erosion Control
(Under One Acre of Disturbance)

Delete Section 208 of the Standard Specifications and replace it with the following:

Description

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 Section 101.

Stormwater runoff from all disturbed areas and soil storage areas for which permanent or interim stabilization is not implemented, 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 in accordance with 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.

Materials

208.02 Erosion control materials are subject to acceptance in accordance with Section 106. Erosion control materials shall be subject to the following approval process:

Material	Approval Process	Notes:
Erosion Bales (Weed Free)	COC	The Contractor shall provide a transit certificate number or a copy of the transit certificate as supplied from the producer.
Silt Fence	COC	
Silt Berm	APL	
Erosion Log (Type 1, Type 2, and Type 3)	COC	
Silt Dikes	COC	
Pre-fabricated Concrete Washout Structures (above ground)	APL	
Pre-fabricated Vehicle Tracking Pad	APL	
Aggregate Bag	COC	
Storm Drain Inlet Protection (Type I, II, and III)	APL	

COC = Certificate of Compliance; APL= Approved Product List

The material for control measures shall conform to the following:

(a) Erosion Bales. Material for erosion bales shall consist of Certified Weed Free hay or straw. The hay or straw shall be certified under the Colorado Department of Agriculture Weed Free Forage Certification Program and inspected as regulated by the Weed Free Forage Act, Title 35, Article 27.5, CRS. Each certified weed free erosion bale shall be identified by blue and orange twine binding the bales.

The Contractor shall not place certified weed free erosion bales or remove their identifying twine until the Engineer has inspected them.

The Contractor may obtain a current list of Colorado Weed Free Forage Crop Producers who have completed certification by contacting the:

Colorado Department of Agriculture, Weed Free Forage Program,
305 Interlocken Pkwy, Broomfield, CO 80021

Contact the Weed Free Forage Coordinator at (303) 869-9038. Also available at www.colorado.gov/ag/csd.

Bales shall be approximately 5 cubic feet of material and weigh at least 35 pounds. Stakes shall be wood and shall be 1.5 inch by 1.5 inch by 30 inch actual.

(b) *Silt Fence*. Silt fence posts shall be wood with a minimum length of 46 inches. Wood posts shall be 1.5-inch width by 1.5-inch thickness actual dimensions with 1/8-inch tolerance. Geotextile shall be attached to wood posts with three or more staples per post.

Silt fence geotextile shall conform to the following requirements:

Physical Requirements for Silt Fence Geotextiles

Property	Wire Fence Supported Requirements	Self-Supported Requirements Geotextile Elongation <50%	Test Method
Grab Strength, lbs.	90 minimum	124 minimum	ASTM D4632
Permittivity sec-1	0.05	0.05	ASTM D4491
Ultraviolet Stability	Minimum 70% Strength Retained	Minimum 70% Strength Retained	ASTM D4355

Silt Fence (Reinforced). Silt fence posts shall be metal "studded tee" T-post with a minimum length of 66 inches. Metal posts shall be “studded tee” with 0.095-inch minimum wall thickness. Wire fabric reinforcement for the silt fence geotextile shall be a minimum of 14 gauge with a maximum mesh spacing of 6 inches. Geotextile shall be attached to welded wire fabric with ties or nylon cable ties at 12 inches on center at top, middle and bottom wire. Welded wire fabric shall be attached to the post with a minimum three 12-gauge wire ties per post. Vinyl or rubber safety caps shall be installed on all T-post.

(c) *Temporary Berms*. Temporary berms shall be constructed out of compacted embankment (subsoil) and not out of salvaged topsoil.

(d) *Temporary Slope Drains*. Temporary slope drains shall consist of fiber mats,

plastic sheets, stone, concrete or asphalt gutters, half round pipe, metal or plastic pipe, wood flume, flexible rubber, or other materials suitable to carry accumulated water down the slopes. Outlet protection riprap shall conform to Section 506. Erosion control geotextile shall be a minimum Class 2, conforming to Section 712.

(e) Silt Berm. Silt berm shall consist of permeable multi-use material consisting of ultraviolet (UV) stabilized high-density polyethylene or other approved material effective in reducing water velocity. Designed and tested system shall be installed on a Turf Reinforcement Mat or Soil Retention Blanket in accordance with Section 216. The segment shall be secured to the ground with either metal or wood stakes. Minimum requirements for securing stakes shall be in accordance with the plans. Dimensions of individual segments shall meet the following criteria:

Width	Height	Weight	Percent Open Area
6 - 11 inches	6 - 10 inches	> 0.25 lbs./sq. ft.	20 – 50%

(f) Rock Check Dam. Rock Check dams shall be constructed of stone. Stone shall meet the requirements of Section 506.

(g) Sediment Trap. In constructing an excavated sediment trap, excavated soil may be used to construct the dam embankment, provided the soil meets the requirements of Section 203. Outlet protection riprap shall be the size specified in the Contract and shall conform to Section 506. Erosion control geotextile shall be a minimum Class 1, conforming to Section 712.

(h) Erosion Logs. Erosion logs shall be one of the following types unless otherwise shown on the plans:

(1) Erosion Log (Type 1) shall consist of cylinder casings filled with curled aspen wood excelsior with a consistent width of fibers evenly distributed throughout the log. The casing shall be seamless, photo-degradable tube netting. The curled aspen wood excelsior shall be fungus free, resin free, and free of growth or germination inhibiting substances.

(2) Erosion Log (Type 2) shall consist of cylinder casings filled with Erosion Log (Type 2) Compost in accordance with Section 212. The compost-wood chip blend may be pneumatically shot into a geotextile cylindrical casing or be pre-manufactured. The geotextile casing shall consist of high density polyethylene (HDPE) or polypropylene mesh (knitted, not extruded) with openings of ⅛ to ⅜ inch and contain the compost-wood chip material while not limiting water infiltration.

(3) Erosion Log (Type 3) shall consist of cylinder casings filled with curled aspen wood excelsior with a consistent width of fibers evenly distributed throughout the log. The casing shall be seamless, 100 percent natural fiber cylinder netting (compostable) and shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log shown on the plans. Netting shall be a woven cotton or cellulose base mesh that has an approval to compost certification with a maximum mesh size of 0.075 inches and index values as shown in Table 208-2. The curled aspen wood excelsior shall be fungus free, resin free, and free of growth or germination inhibiting substances.

Natural compostable fiber netting shall not contain any synthetic material woven into the netting such as polypropylene, nylon, polyethylene, or polyester dyes. Oxo-degradable or oxo-biodegradable petrochemical-based fiber shall not be part of the netting material. Burlap netting material shall not be used for Erosion Log (Type 3).

Erosion Log (Type 1, Type 2, and Type 3) shall have minimum dimensions as shown in Table 208-1, based on the specified diameter of the log.

Table 208-1
Dimensions of Erosion Logs

Diameter Type 1 & 3 (Inches)	Diameter Type 2 (Inches)	Min. Length (ft)	Max. Length (ft)	Weight (minimum) (pounds/foot)	Stake Dimensions (Inches)
9	8	10	180	1.6	3/4 thickness by 3/4 width by 18 long
12	12	10	180	2.5	1.5 thickness by 1.25 width by 24 long
20	18	10	100	4.0	1.5 thickness by 1.25 width by 30 long

Wood stake acceptable tolerance +/- 1/8 inch.

Table 208-2
Index Values for Natural Fiber Netting

Property	Requirement	Test Method
Fabric Tensile Strength	>70 lbs.	ASTM D3822
Biodegradable	100%	ASTM D5988
Mesh Pattern	Rib	

Stakes to secure erosion logs shall consist of pinewood or hardwood.

(i) *Silt Dikes*. Silt dikes shall be pre-manufactured flexible sediment barrier that will fully rebound when driven over by heavy equipment. Material shall consist of outer geotextile fabric covering closed cell urethane or polyethylene foam core. The geotextile fabric aprons shall extend beyond the foam core a minimum of 8 inches on both sides.

Table 208-3
Geotextile Requirements

Property	Requirement	Test Method
Water Flow Rate	100-150 gallons per minute/square foot	ASTM D4491
Grab Breaking Load	200 lbs. minimum in each direction	ASTM D4632
Ultraviolet Degradation	70% of original unexposed grab breaking load after 500 hours	ASTM D4595

Each silt dike segment shall have the following dimensions:

Dimension	Length
Vertical height after installation	>5 inches
Geotextile sleeve section to interlock segments	>8 inches

Silt dike segments shall be anchored down using the minimum requirements shown in Table 208-4.

Table 208-4
Silt Dike Segment Requirements

Surface	Nail	Washers
Soil Surface	Installed in 4 inch deep trench with 6 inch nails no more than 4 feet O.C. (on center)	1 inch washers
Hard Surface	1 inch concrete nails no more than 4 feet O.C.	1 inch washers and solvent-free adhesive

(j) Concrete Washout Structure. The Contractor shall construct a washout structure that will contain washout from concrete placement, construction equipment cleaning operations, and residue from cutting, coring, grinding, grooving, and hydro-concrete demolition. Embankment required for the concrete washout structure may be excavated material, provided that this material meets the requirements of Section 203 for embankment. 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 208-5.

Table 208-5
Impermeable Synthetic Liner Requirements

Tested Property	Test Method	Units	Value
Thickness	ASTM D5199	mil	>30 +/- 1.5
Tear Strength	ASTM D1004	lbs.	>8
Low Temperature Impact	ASTM D1790	°F	Pass at -20

(k) Pre-Fabricated Concrete Washout Structure. Pre-Fabricated Concrete Washout Structures shall be one of the following types unless otherwise shown on the plans:

(1) Pre-Fabricated 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 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.

(2) Pre-Fabricated 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.

(l) Vehicle Tracking Pad (VTP). Aggregate for the vehicle tracking pad shall be crushed natural aggregate with at least two fractured faces that meets the following graduation requirements:

Sieve size	Percent by weight Passing Square Mesh Sieves
75 mm (3 inch)	100
50 mm (2 inch)	0 to 25
19.0 mm (3/4 inch)	0 to 15

Recycled crushed concrete or asphalt shall not be used for vehicle tracking pads.

Erosion control geotextile shall be a minimum Class 2, conforming to Section 712.

Pre-Fabricated or manufactured vehicle tracking pads shall only be used if specified in the Contract. Multi-use pads shall consist of industrial grade materials and shall be designed to minimize sediment leaving the project.

Minimum dimensions of the modular systems shall be:

Width	Length of pad
12 feet	35 feet

To accommodate construction traffic turning radii between the tracking pad and a stabilized surface, additional flared sections of approved pads or aggregate in accordance with this specification shall be used at no additional cost to CDOT.

Weight (min.) (lbs./sq. ft.)	Crush strength (min.) (psi)
8	400

A thin layer of stone, geotextile, or other stable surface may be required to stop rutting under the pad or area where the vehicles mount or dismount the manufactured trackout control device.

(m) Aggregate Bag. Aggregate bags shall consist of crushed stone or recycled rubber filled fabric with the following properties:

Diameter (inches)	**Weight (minimum) (pounds per foot)**
6-8	6
10	10
12	15

Rubber used in bags shall be clean, 95 percent free of metal and particulates.

Crushed stone contained in the aggregate bags shall conform to Table 703-1 for Coarse Aggregate No. 6.

The aggregate bag shall consist of a woven geotextile fabric with the following properties:

Property	Requirement	Test Method
Grab Tensile Strength	90 lbs. min.	ASTM D4632
Trapezoid Tear Strength	25 lbs. min.	ASTM D4533
Mullen Burst	300 psi	ASTM D3786
Ultraviolet Resistance	70%	ASTM D4355

(n) Storm Drain Inlet Protection. Storm drain inlet protection shall consist of aggregate filled fabric with the following dimensions:

Storm Drain Inlet Protection Properties	Protection Type I*	Protection Type II#	Protection Type III◂
Diameter	4 in.	4 in.	N/A
Minimum Section Length	7 ft.	5 ft.	5 ft.
Apron Insert	---	30 in. or sized to grate	30 in or sized to grate

*Type I protection shall be used with Inlet Type R.
#Type II protection shall be used with Combination Inlet. Option A or B
◂ Type III protection shall be used with Vane Grate Inlet only. Option A or B
Note: Options A and B are shown on Standard Plan M-208-1.

The Storm Drain Inlet Protection (Type I, II and III) shall consist of a woven geotextile fabric with the following properties:

Property	Test Method	Unit	Requirement
Grab tensile strength	ASTM D4632	lbs.	minimum 150X200
Mullen Burst Strength	ASTM D3786	lbs.	400
Trapezoid Tear Strength	ASTM D4533	lbs.	minimum 60X60
Percent Open Area	COE-22125-86	%	≥20
Water Flow Rate	ASTM D4491	gal./min./sq. ft.	≥100
Ultraviolet	ASTM D4355	%	≥70

Property	Test Method	Unit	Requirement
Resistance			

Curb roll for Storm Drain Inlet Protection (Type I and II) shall have a weight >4 pounds per linear foot of device. The device shall be capable of conforming to the shape of the curb. Aggregate contained in the storm drain inlet device shall consist of gravel or crushed stone conforming Table 703-1 for Coarse Aggregate No. 6.

CONSTRUCTION REQUIREMENTS

208.03 Project Review, Schedule, and Erosion Control Management. Prior to construction the Contractor shall implement control measures in accordance with the approved project schedule as described in this section.

At the Pre-Construction Conference, the attendees shall discuss the Stormwater Management Plan (SWMP), maintaining water quality standards, sensitive habitats on-site, wetlands, other vegetation to be protected, and the enforcement mechanisms for not meeting the requirements of this specification.
Prior to beginning construction, the Contractor shall evaluate the project site for storm water draining into or through the site. When such drainage is identified, control measures shall be used if possible to divert stormwater from running on-site and becoming contaminated with sediment or other pollutants. The diversion may be accomplished with a temporary pipe or other conveyance to prevent water contamination or contact with pollutants. Run-on water that cannot be diverted shall be treated as construction runoff and adequate control measures shall be employed.

The SWMP Administrator shall evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, control measures shall be used to protect off-site water from becoming contaminated with sediment or other pollutants.

The SWMP Administrator shall review existing inlets and culverts to determine if inlet protection is needed due to water flow patterns. Prior to beginning construction, inlets and culverts needing protection shall be protected and the location of the implemented control measure added to the SWMP site map.

Prior to construction, the Contractor shall implement appropriate control measures for protection of wetlands, sensitive habitat, and existing vegetation from ground disturbance and other pollutant sources, in accordance with the approved project schedule as described in Section 208.

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 SWMP site map. The approved control measures will be measured and paid for in accordance with Section 208.

(a) Project Review. The Contractor shall submit modifications to the Contractor's control measures or SWMP in a written proposal to the Engineer. The written proposal shall include the following information:

(1) Reasons for changing the control measures.

(2) Diagrams showing details and locations of all proposed changes.

(3) List of appropriate pay items indicating new and revised quantities.

(4) Schedules for accomplishing all erosion and sediment control work.

(5) Effects on certifications caused by the proposed changes.

The Engineer will approve or reject the written proposal in writing within seven days after receipt of the submittal. The Engineer may require additional control measures prior to approving the proposed modifications. Additional modifications and additional control measures will be paid for at the Contract Unit Price for the specific items involved. If no items exist, they will be paid for as extra work in accordance with Section 109.

(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. The project schedule shall include erosion and sediment control work for haul roads, borrow pits, storage, asphalt or concrete batch sites, and all areas within the project limits. If during construction the Contractor proposes changes which would affect the Contract's control measures, the Contractor shall propose revised control measures to the Engineer for approval in writing. If necessary, the Contractor 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 Erosion Control Inspection. All ECM staff shall have working knowledge and experience in construction, and shall have successfully completed the Transportation Erosion Control Supervisory Certificate Training (TECS) as provided by the Department. The Superintendent may be permitted to serve in an ECM role, unless otherwise specified in the contract.

1. SWMP Administration. The SWMP shall be maintained by a SWMP Administrator. The name of the SWMP Administrator shall be recorded on the SWMP. The SWMP Administrator shall have full responsibility to maintain and update the SWMP and identify all critical action items needed to maintain water quality standards:

   (1) Complete the SWMP as described in Section 208.

   (2) Participate in the Pre-Construction Conference.

   (3) Attend erosion and sediment control meetings.

   (4) Implement necessary actions to reduce erosion or water quality problems, anticipated or presently existing, resulting from construction activities.

   (5) Ensure that all labor, material, and equipment needed to install, maintain, and remove control measures are available as needed.

   (6) During construction, the SWMP site map shall be updated to reflect current field conditions and include, at a minimum, the following if applicable:

      (i) Limits of Construction (LOC).

      (ii) Areas of disturbance (AD), including areas of borrow and fill.

      (iii) Limits of Disturbance (LDA).

      (iv) Areas used for storage of construction materials, equipment, soils, or wastes.

      (v) Location of dedicated asphalt, concrete batch plants, and masonry mixing stations.

      (vi) Location of construction offices and staging areas.

      (vii) Location of work access routes during construction.

      (viii) Location of waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt.

      (ix) Location of temporary, interim and permanent stabilization.

(x) Location of outfalls.

(xi) Flow arrows that depict stormwater flow directions on-site and runoff direction.

(xii) Location of structural and non-structural control measures.

(xiii) Location of springs, streams, wetlands, and other State waters, including areas that require pre-existing vegetation be maintained within 50 horizontal feet of a receiving water, unless infeasible.

(xiv) Location of stream crossings located within the construction site boundary.

(7) Start a new site map before the current one becomes illegible. All site maps shall remain as part of the SWMP.

(8) Install control measures according to Standard Plans M-208-1, M-216-1, and M-615-1.

(9) Record in the SWMP, the approved Method Statement for Containing Pollutant Byproducts.

(10) Update the Potential Pollutants list in the SWMP and Spill Response Plan throughout construction.

2. Erosion Control Inspector (ECI).

The SWMP Administrator shall complete the duties of the ECI.

(1) ECI duties shall be as follows:

(i) Inspect initial placement and adherence to approved SWMP and SWMP site plan control measures

(ii) Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.

(iii) Identify all areas of concern that may impact water quality and, if necessary, implement corrective actions.

(iv) Ensure all other agency Stormwater and inspection requirements are followed unless a waiver or other agreement has been made.

(2) The ECI shall immediately report to the Contractor and Engineer the following instances:

(i) Noncompliance which may endanger health or the environment, regardless of the cause of the incident.

(ii) Spills or discharges which exceeds any water quality standards.

(iii) Upset conditions which cause an exceedance of any water quality standards.

(3) 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 shall be made available for reference at the CDOT field office during construction:

1. SWMP. The Engineer will provide an approved SWMP design (includes items (1) through (4) as listed below) at the Pre-construction Conference, which is and shall remain the property of CDOT. The following Contract documents and reports shall be included or kept maintained, (as applicable), and updated in the SWMP under the appropriate items by the SWMP Administrator:

(1) SWMP Plan Sheets – Notes, tabulation, site description, sequence of major activities, area of disturbance, existing soil data, existing vegetation percent cover, potential pollutant sources, receiving water, non-stormwater discharges and environmental impacts.

(2) SWMP Site Maps and Project Plan Title Sheet, if included in the original contract.

(3) Specifications – Standard and project special provisions related to stormwater and erosion control.

(4) Standard Plans M-208-1, M-216-1 and M-615-1.

(5) Control measure Details not in Standard Plan M-208-1 – project specific non-standard details.

(6) All Water Quality Audit Reports and Form 105(s) relating to Water Quality, if applicable.

(7) Spill Response Plan – Reports of reportable spills submitted to CDPHE.

(8) List and Evaluation of Potential Pollutants – List of potential pollutants as described in Section 107 and approved Method Statement for Containing Pollutant Byproducts.

(9) Other Correspondence including agreements with other Municipal Separate Storm Sewer System (MS4s), approved deferral request, CDPHE audit documentation.

(10) TECS Certifications of the SWMP Administrator, kept current through the life of the project.

(11) Pre-construction Conference – Conference agenda with a certification of understanding for maintaining water quality standards and SWMP. The certification shall be signed by all attendees. 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 Pre-construction Conference has been held, if applicable.

(12) All Project Environmental Permits – All project environmental permits and associated applications and certifications, including, water quality standards, Senate Bill 40, USACE 404, temporary stream crossings, dewatering, biological opinions, and all other permits applicable to the project, including any separate permits obtained by the Contractor for staging area on private property, asphalt or concrete batch plant, etc.

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.

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.

(e) *Weekly Meetings*: If applicable, the Contractor shall conduct a weekly meeting with the Engineer and subcontractors to discuss construction activities that could adversely affect water quality, including the following:

(1) Unresolved issues from observations.

(2) Requirements of the SWMP.

(3) Problems that may have arisen in implementing the site specific SWMP or maintaining control measures.

(4) Control measures that are to be installed, removed, modified, or maintained, and associated SWMP modifications.

(5) Planned activities that will affect stormwater in order to proactively phase control measures.

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 limits of construction (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 SWMP 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, prior to use, at the Contractor's expense. All removed sediment shall be disposed of outside the project limits in accordance with all applicable regulations.

Concrete products wasted on the ground during construction including, but not limited to, excess concrete removed from forms, spills, slop, and all other unused concrete are potential pollutants that shall be removed from the site or contained at a pre-approved containment area that has been identified in the SWMP. The concrete shall be picked up and recycled in accordance with 6 CCR 1007-2 (CDPHE Regulations Pertaining to Solid Waste Sites and Facilities) at regular intervals, as needed, or as directed by the Engineer.

(a) *Unforeseen Conditions*. The Contractor shall design and implement erosion and sediment control measures for correcting conditions unforeseen during the design of the project, or for emergency situations that develop during construction. The Department's Erosion Control and Stormwater Quality Guide shall be used as a reference document for the purpose of designing erosion and sediment control

measures. Measures and methods proposed by the Contractor shall be reviewed and approved in writing by the Engineer prior to installation.

(b) *Other Agencies*. If CDPHE, 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, which are outside CDOT ROW and outside easements acquired by CDOT for construction, are the responsibility of the Contractor.

(d) *Construction Implementation*. The Contractor shall incorporate control measures into the project as outlined in the accepted schedule.

(e) *Stabilization*. Once earthwork has started, the Contractor shall maintain erosion control measures until permanent stabilization of the area has been completed and accepted. Clearing, grubbing and slope stabilization measures shall be performed regularly to ensure final stabilization. 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. Temporary Stabilization. At the end of each 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, road bed preparation, soil compaction, and movement and stockpiling of sediment and materials. Designated topsoil distributed on the surface or in stockpiles shall not receive temporary stabilization. Other stabilization measures may be implemented, as approved.

2. Interim Stabilization. As soon as it is known with reasonable certainty that work will be temporarily halted for 14 days or more, sediment and material stockpiles and disturbed areas shall be stabilized using one or more of the specified following methods:

(1) Application of 1.5 tons per acres of mechanically crimped certified weed free hay or straw in combination with an approved organic mulch tackifier.

(2) Placement of bonded fiber matrix in accordance with Section 213.

(3) Placement of mulching (hydraulic) wood cellulose fiber mulch with tackifier, in accordance with Section 213.

(4) Application of spray-on mulch blanket in accordance with Section 213. Magnesium Chloride, Potassium Chloride and Sodium Chloride, or other salt products, shall not be used as a stabilization method.

(5) Topsoil stockpiles shall receive interim stabilization in accordance with Section 207, unless specified 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 will not be permitted. As soon as the Contractor knows shutdown is to occur, interim stabilization shall be applied to the disturbed area. Protection of the interim stabilization method is required. Reapplication of interim 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 thereof as required by the Contract. Other permanent stabilization techniques may be proposed by the Contractor, in writing, and shall be used when approved in writing by the Engineer. All permanent stabilization requirements shown on the plans shall be completed within four working days of the placement of the topsoil in accordance with 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 pre-disturbance levels, or equivalent permanent physical erosion reduction methods have been employed.

(f) *Maintenance*. Erosion and sediment control practices and other protective measures identified in the SWMP as control measures for stormwater pollution prevention shall be maintained in effective operating condition until final acceptance of the project. Control measures shall be continuously maintained in accordance with good engineering, hydrologic, and pollution control practices, including removal of collected sediment when silt depth is 50 percent or more of the effective height of the erosion control device. When possible, the Contractor

shall use equipment with an operator rather than labor alone to remove the sediment.

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.

Site assessments shall be performed 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 as soon as possible, immediately in most cases.

Approved new or replaced control measures will be measured and paid for in accordance with this section. Devices damaged due to the Contractor's negligence shall be replaced at the Contractor's expense.

From the time seeding and mulching work begins until project acceptance the Contractor shall maintain all seeded areas. Damage to seeded areas or to mulch materials shall be immediately restored. If damage is due to Contractor negligence, it shall be restored at the Contractor's expense. Restoration of other damaged areas will be measured and paid for under the appropriate bid item.

Temporary control measures may be removed prior to final acceptance of the project, as determined by the Engineer. If removed, the area in which these control measures were constructed shall be returned to a condition similar to that which existed prior to its disturbance. Removed control measures shall become the property of the Contractor. Maintenance shall be notified of the locations of any control measures left in place.

If the Contractor fails to complete construction within the approved contract time, the Contractor shall continue erosion and sediment control operations at its expense until acceptance of the work.

Sediment removed during maintenance of control measures and material from street sweeping may be used in or on embankment, provided it meets the requirements of Section 203 and is distributed evenly across the embankment.

Whenever sediment collects on the paved surface, the surface shall be cleaned.

Street washing will not be allowed. Storm drain inlet protection shall be in place prior to shoveling, sweeping, or vacuuming. Sweeping shall be completed with a pickup broom or equipment capable of collecting sediment. Sweeping with a kick broom will not be allowed.

Material from pavement saw cutting operations shall be cleaned from the roadway surface during operations using a vacuum. A control measure, such as a berm, shall be placed to contain slurry from joint flushing operations until the residue can be removed from the soil surface. Aggregate bags, erosion logs or other permeable control measures shall not be used. Residue shall not flow into driving lanes. It shall be removed and disposed of in accordance with Section 107. Material containment and removal will not be paid for separately, but shall be included in the work.

208.05 Construction of Control Measures. Control measures shall be constructed in accordance with Standard Plans M-208-1 and M-216-1, and with the following:

(a) Seeding, Mulching, Sodding, Soil Retention Blanket. Seeding, mulching, sodding, and soil retention blanket installation shall be performed in accordance with Sections 212, 213, and 216.

(b) Erosion Bales. The bales shall be anchored securely to the ground with wood stakes. Erosion Bales shall be entrenched 4 inches minimum into the soil, tightly abutted with no gaps, staked, and backfilled around the entire outside perimeter. Erosion Bales cannot be used for Check Dams.

(c) Silt Fence. Silt fence shall be installed in locations as per M standard plans 208-1 and as specified in the Contract.

(d) Temporary Berms. Berms shall be constructed to the dimensions as per M 208-1 standard plans and as shown in the Contract, and sufficiently compacted to prevent erosion or failure. If the berm erodes or fails, it shall be immediately repaired or replaced at the Contractor's expense. Berms must be at least 18 inches tall or high enough to prevent overtopping. Berms must have a minimum of 4 to 6-foot base. Gradient of all receiving area above berm must be less than 2:1, or flatter. Outlets of anticipated flow from captured water behind berms must be designed with additional control measures suitable to control concentrated flow. Maximum drainage area for each outlet must be limited to 2 acres.

(e) Temporary Diversion. Diversions shall be constructed to the dimensions as per M standard plans 208-1 and as 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 immediately repaired or replaced at the Contractor's expense.

(f) Temporary Slope Drains. Temporary slope drains shall be installed prior to installation of permanent facilities or growth of adequate ground cover on the slopes. All temporary slope drains shall be securely anchored to the slope. The inlets and outlets of temporary slope drains shall be protected to prevent erosion. Ensure drainage area for every slope drain is smaller than 5 acres. Ensure pipe or channel is properly sized, and for drainage areas larger than 1 acre the pipe size must be designed by an Engineer to ensure the drainage structure can accommodate the runoff resulting from a 2-year, 24-hour storm event. The use of prefabricated flared inlet sections is recommended.

(g) Silt Berm. Prior to installation of silt berms, the Contractor shall prepare the surface of the areas in which the berms are to be installed such that are they free of materials greater than 2 inches in diameter and are suitably smooth for the installation of the silt berms, as approved. See M standard 208-1 for details. 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 blanket.

(h) Rock Check Dam. Rock shall be installed at locations shown on the plans. Rock check dams shall conform to the dimensions shown on the plans. The Geotextile Erosion Control shall be Class 2 and conform to the requirements of Section 712, and shall extend up ⅔ of the riprap height with 6inch minimum cover over geotextile. Rock Check Dam shall be installed within a ditch sub excavated 6 inches below the flow line. The ends of the rip rap check dam shall be a minimum of 6 inches higher than the center of the check dam. Stone shall meet the requirements of Section 506. Larger rocks with larger void spaces should be used on top. See M standard 208-1 for details.

(i) Riprap Outlet Protection. Geotextile used shall be protected from cutting or tearing. Overlaps between two pieces of geotextile shall be 1-foot minimum. Riprap size shall be in accordance with Section 506 and as shown on the plans.

(j) Storm Drain Inlet Protection. Prior to installation, the Contractor shall sweep the surface of the area in which the storm drain inlet protection devices are to be installed such that the pavement is free of sediment and debris. The ends of the inlet protection Type 1 and Type 2 shall extend a minimum of 1 foot past each end of the inlet.

The Contractor shall remove all accumulated sediment and debris from the surface surrounding all storm drain inlet protection devices after each rain event or as directed. The Contractor shall remove accumulated sediment from each Type II and III containment area when it is more than one third full of sediment, or as

directed.

The Contractor shall protect storm drain facilities adjacent to locations where pavement cutting operations involving wheel cutting, saw cutting, sand blasting, or abrasive water jet blasting are to take place.

(k) Sediment Trap. Sediment traps shall be installed to collect sediment laden water and to minimize the potential of pollutants leaving the project site. Locations shall be in accordance with M standard 208-1 and as shown on the plans or as directed.

Sediment traps shall be constructed prior to disturbance of upslope areas and shall be placed in locations where runoff from disturbed areas can be diverted into the trap.

The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and roots.

Fill material for the embankment shall be free of roots or other vegetation, organic material, large stones, and other objectionable material.

Sediment shall be removed from the trap when it has accumulated to one half of the wet storage depth of the trap and shall be disposed of in accordance with Section 208.

(l) Erosion Logs. Erosion 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 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, e.g. rock or frozen ground.

The Contractor shall maintain the erosion logs during construction to prevent sediment from passing over or under the logs. See M standard 208-1 for details.

(m) Silt Dikes. Prior to installation of silt dikes, the Contractor shall prepare the surface of the areas in which the silt dikes are to be installed such that they are free of materials greater than two inches in diameter and are suitably smooth for the installation of the silt dikes, as approved by the Engineer.

(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 written acceptance of location is provided by the Engineer. See M standard 208-1 for details.

Control measures designed for concrete washout waste shall be implemented. 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 208-5 or use a prefabricated washout.

The following requirements shall be met:

(1) The structure shall contain all washout water.

(2) Stormwater shall not carry wastes from washout and disposal locations.

(3) The site 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 Section 107.

(4) The site shall be signed as "Concrete Washout".

(5) The site 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) Solvents, flocculants, and acid shall not be added to wash water.

(9) The structure shall be surrounded on three sides by a compacted berm.

(10) The structure shall be fenced with orange plastic construction fencing conforming to Section 607, to provide a barrier to construction equipment and to aid in identification of the concrete washout area.

(11) Concrete waste, liquid and solid, shall not exceed ⅔ the storage capacity of the washout structure.

(12) A concrete washout sign shall have letters at least 3 inches high and conform to Section 630.

(o) Pre-fabricated concrete washout structures (Type 1 and Type 2). Structures and sites shall meet the following requirements:

(1) Structure shall contain all washout water. If bins are determined to be leaking,

the Contractor shall replace the bin on-site and clean up the spilled material and dispose of it properly.

(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. The pre-fabricated structure shall be signed as "Concrete Washout". Sign can be on portable bin.

(3) The site shall be accessible to appropriate vehicles.

(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) Solvents, flocculants, and acid shall not be added to wash water.

(6) Concrete waste, liquid and solid, shall not exceed ⅔ the storage capacity of the washout structure.

(7) Prefabricated structures cannot be moved when they contain liquid, unless otherwise approved.

(8) The concrete washout structure shall be installed and ready for use prior to concrete placement operations.

(9) Washout areas shall be checked and maintained as required. On-site permanent disposal of concrete washout waste is not allowed.

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.

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.

(p) Vehicle Tracking Pad (VTP). Vehicle tracking pads shall be constructed to the minimum dimensions shown in the Contract, unless otherwise directed by the Engineer. Construction of approved vehicle tracking pads shall be completed before any disturbance of the area.

The Contractor shall maintain each vehicle tracking pad during the entire time that it is in use for the project. The vehicle tracking pad shall be removed at the completion of the project unless otherwise directed by the Engineer. Additional aggregate may be required for maintenance and will be paid for under Pay Item,

Maintenance Aggregate (Vehicle Tracking Pad).

(q) Detention Pond. Permanent detention ponds shown on the construction plans may be used as temporary control measures if all 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 in accordance with 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 prior to project acceptance.

(r) Aggregate Bag. Aggregate bags shall be placed on a stable surface, consisting of hardscape or compacted gravel. If approved by the Engineer, the aggregate bag may be placed on compacted dirt areas, where bags conform to the surface and can effectively minimize sediment transport. Aggregate bags can be used on frozen ground when other control measures cannot be trenched or staked, but only until the ground is capable of being trenched and staked. Aggregate bags shall not be placed in concentrated flow areas, other than gutter pans. Aggregate bags shall be placed to conform to the surface without gaps to ensure that discharge water does not cause erosion. See M standard 208-1 for details.

(s) Surface roughening. Surface roughening creates horizontal grooves along the contour of the slope. Roughening may be accomplished by furrowing, scarifying, ripping, or disking the soil surface to create a 2 to 4-inch minimum variation in soil surface.

(t) Vertical Tracking. Vertical tracking involves driving a tracked vehicle up and down the soil surface and creating horizontal grooves and ridges along the contour of the slope. Sandy soils or soils that are primarily rock need not be tracked.

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 Section 107 or Section 208. 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 so as 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 which is deemed to be contaminated (e.g., 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 all Spill Response Coordinators in accordance with 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 Coordinators.

(2) Locations of areas on the project site where equipment fueling and servicing operations are permitted.

(3) Location of cleanup kits.

(4) Quantities of chemicals and locations stored on site.

(5) Label system for chemicals and Safety Data Sheets (SDS) for products.

(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. CDOT's Erosion Control and Stormwater Quality Guide contains spill notification contacts and phone numbers required in the Spill Response Plan.

(8) A summary of the employee training provided.

Information in items (1) through (8) shall be updated in the SWMP when they change.

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.

Erodible stockpiles (including topsoil) shall be contained with acceptable control measures at the toe (or within 20 feet of the toe) throughout construction. Control measures shall be approved by the Engineer. The SWMP Administrator shall describe, detail, and record the sediment control devices on the SWMP.

208.08 Limits of Disturbance. The Contractor shall limit construction activities to those areas within the limits of disturbance 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 which would disturb existing soil conditions. Staging areas within the LDA shall be as approved by the Engineer. Construction activities beyond the limits of disturbance 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 SWMP. If the disturbance at any time exceeds 1 acre (including as part of a common plan of development), the Contractor will need to apply for a Colorado Discharge Permit System- Stormwater Construction Permit (CDPS-SCP) and comply with all of CDOT's over one acre specifications.

The Contractor shall pursue stabilization of all disturbances to completion.

208.09 Regulatory Mechanism for Water Quality. Failure to implement the Stormwater Management Plan is a violation of the Colorado Water Quality Control Act. Penalties may be assessed to the Contractor by the appropriate agencies. All fines assessed to the Department for the Contractor's failure to implement the SWMP will be deducted from monies due the Contractor.

The Contractor shall be subject to liquidated damages for incidents of failure to perform erosion control as required by the Contract. Liquidated damages will be applied for failure to comply with these specifications, including the following:

(1) Failure of the Contractor to implement necessary actions required by the Engineer as required by this section.

(2) Failure to construct or implement erosion control or spill containment measures required by the Contract, or failure to construct or implement them in accordance with the Contractor's schedule.

(3) Failure to stabilize disturbed areas as required by this section.

(4) Failure to replace or perform maintenance on an erosion control feature after notice from the Engineer to replace or perform maintenance as required by this section.

(5) Failure to remove and dispose of sediment from control measures as required.

(6) Failure to install and properly utilize a concrete washout structure for containing washout from concrete placement operations.

(7) Failure to perform permanent stabilization as required by this section.

(8) Failure to prevent discharges not composed entirely of stormwater from leaving the construction site.

(9) Failure to provide the survey of Permanent Water Quality features when required on the project in accordance with this section.

The Engineer will immediately notify the Contractor of each incident of failure to perform erosion control in accordance with any water quality standards, specifications, including items (1) through (9) above by issuing a Form 105. Correction shall be made as soon as possible, immediately in most cases, but no later than 48 hours from the date of notification to correct the failure. The Contractor will be charged liquidated damages in the amount of $970 for each day after the 48-hour period has expired that one or more of the incidents of failure to perform the requirements for each Form 105 remains uncorrected. Liquidated damages will begin at Midnight of the date on which the 48 hours has expired.

This deduction will not be considered a penalty, but will be considered liquidated damages based on estimated additional construction engineering costs. The liquidated damages will accumulate, for each cumulative day that one or more of the incidents remain uncorrected. The number of days for which liquidated damages are assessed will be cumulative for the duration of the project; that is: the damages for a particular day will be added to the total number of days for which liquidated damages are accumulated on the project. The liquidated damages will be deducted from any monies due the Contractor.

If all other failures are not corrected within 48 hours after liquidated damages have begun to be assessed, the Engineer will issue a Stop Work Order in accordance with Section 105. Work shall not resume until the Engineer has approved a written corrective action plan submitted by the Contractor that includes measures to prevent future violations and a schedule for implementation.

If the Contractor requires more than 96 hours to perform the corrective work from the date on the Form 105, the Contractor shall submit a request for deferment. The deferment request shall be in writing and shall include the specific failure, temporary measures until final correction is made, the methodology which will be employed to make the correction, and interim milestones to completing the work. The Region Water Pollution Control Manager (RWPCM), Engineer, the SWMP Administrator, and the Contractor shall concur on this deferral and set a proposed date of completion. If approved, the Contractor shall complete the corrective measures by Midnight of the proposed completion date. If corrective work is not corrected by the completion date the Engineer will issue a Stop Work Order. Liquidated Damages will apply retroactively back to the 48 hours after the Form 105 date of notification. Liquidated Damages will be assessed until the corrective work has been completed and accepted.

Deferment of work to correct failures to perform erosion control will not affect the Contractor's other contractual responsibilities, notifications for other non-compliance, nor the final completion date of the project. Liquidated Damages for other non-compliance notifications will continue to apply during the deferment period in addition to liquidated damages associated with the deferment.

Based on the submittal date of the approved deferment, Liquated Damages and a Stop Work Order may not be mandated to the Contractor.

Disagreements regarding the suggested corrective action for a control measure compliance issue between the Project Engineer, SWMP Administrator, and Superintendent, shall be discussed with the Resident Engineer and Region Water Pollution Control Manager. If after the discussions, the Project Engineer and the Contractor are still in disagreement and the Contractor believes that additional compensation is owed, the Contractor shall follow the decision of the Project Engineer, keep track of the costs and negotiate further with the Project Engineer. If after pursuing the issue, the Contractor is unable to reach an agreement with the Project Engineer, then the Contractor can follow the dispute process outlined in Section 105.

If the Contractor's corrective action plan and schedule are not submitted and approved within 96 hours of the initial notice, the Engineer will issue a Stop Work Order and have an on-site meeting with the Superintendent, SWMP Administrator, and the Superintendent's supervisor. This meeting will also be attended by the Resident Engineer, the Region Water Pollution Control Manager, and the Region Program Engineer. This meeting will identify and document needed corrective actions and a schedule for completion. If after the meeting, the unacceptable work

is not remedied within the schedule as agreed to in the meeting, the Engineer will take action to effect compliance with the Contract and these specifications by utilizing CDOT Maintenance personnel or other non-Contractor forces and deduct the cost from any monies due or to become due to the Contractor pursuant to Section 105. Delays due to these Stop Work Orders shall be considered non- excusable. The Stop Work Order shall be in place until the project is in compliance.

If the Contractor remains non-responsive to requirements of the on-site meeting, the Engineer will start default or Contract termination procedures in accordance with Section 108. CDOT will proceed with corrective or disciplinary action in accordance with the Rules for Prequalification, Debarment, Bidding and Work on Transportation, Road, Highway and Bridge Public Projects.

When a failure meets any one of the following conditions, the Engineer will immediately issue a Stop Work Order in accordance with Section 105 irrespective of any other available remedy:

(1) It may endanger health or the environment.

(2) It consists of a spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.

(3) It consists of a discharge which may cause a violation of water quality standards.

208 Items to Be Completed Prior to Requesting Partial Acceptance of Water Quality Work.

(a) Reclamation of Washout Areas. After concrete operations are complete, washout areas shall be reclaimed in accordance with this section at the Contractor's expense.

(b) Survey. When Permanent Water Quality (PWQ) control measures are required on the project and once built, the Contractor shall survey the control measures to confirm that the PWQ control measures conform to the configuration, grade, and volume shown on the plans. The survey shall conform to Section 625. The results of the survey shall be submitted in accordance with CDOT's Survey Manual (AutoCAD to GIS and TMOSS Codes), or GIS with attribute tables, showing both designed and final elevations and configurations. Paper versions of the drawings shall be submitted with the stamp and seal of the Contractor's Surveyor.

PWQ control measures that do not meet the Contract requirements will be identified in writing by the Engineer, and shall be repaired or replaced at the Contractor's expense. Correction surveys shall be performed at the Contractor's expense to confirm the locations, dimensions, and volume certification (for water

quality capture volume structures only) of each PWQ control measure. The Engineer, CDOT Hydraulics Engineer for the region, Headquarters Permanent Water Quality Manager, and Headquarters Maintenance staff will perform a walkthrough of the PWQ control measures to confirm conformance to material requirements, locations, and dimensions. Before the walkthrough, the Contractor shall provide the corrected survey to the Engineer, Regional, and Headquarters Permanent Water Quality Managers.

(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.

All punch list and walkthrough items shall be completed and approved by the Engineer and Maintenance.

Method of Measurement

208.11 Erosion Control Management on projects having less than one acre of total disturbed area will not be measured and paid for separately but shall be included in the work, unless otherwise specified in the contract (bid schedule). If contracted, ECM work will be measured as the actual number of days of ECM work performed, regardless of the number of personnel required for SWMP Administration and Erosion Control Inspection, including erosion control inspections, documentation, meeting participation, SWMP Administration, and the preparation of the SWMP. If the combined hours of SWMP Administration and Erosion Control Inspection is four hours or less in a day, the work will be measured as ½ day. If the combined hours of SWMP Administration and Erosion Control Inspection is more than four hours in a day, the work will be measured as one day. Total combined hours of ECM work exceeding eight hours in a day will still be paid as one day.

Erosion bales and rock check dams will be measured by the actual number installed and accepted.

Silt fence, silt berms, erosion logs, aggregate bags, silt dikes, temporary berms, temporary diversions, and temporary slope drains, will be measured by the actual number of linear feet that are installed and accepted. Measured length will not include required overlap.

Concrete washout structure will be measured by the actual number of structures that are installed and accepted.

Pre-fabricated concrete washout structures will be measured by the actual number of

structures delivered to the site. It shall not include structures moved on-site.

Storm drain inlet protection will be measured by linear foot or actual number of devices that are installed and accepted.

Sediment trap quantities will be measured by the actual number installed and accepted.

Removal of trash that is not generated by construction activities will be measured by the actual number of hours that Contractor workers actively remove trash from the project. Each week the Contractor shall submit to the Engineer a list of workers and the hours spent collecting such trash.

Removal of accumulated sediment from traps, basins, areas adjacent to silt fences and erosion bales, and other clean out excavation of accumulated sediment, and the disposal of such sediment, will be measured by the number of hours that equipment, labor, or both are used for sediment removal.

Vehicle tracking pads will be measured by the actual number constructed and accepted.

Additional aggregate required for maintaining vehicle tracking pads will be measured as the actual number of cubic yards installed and accepted.

Pre-fabricated vehicle tracking pads will be measured by the actual number of pads delivered to the site and set up to the minimum dimensions. It shall not include pads moved on-site.

Basis of Payment

208.12 Control measures will be paid for at the Contract unit price for each of the items listed below that appear in the contract. Erosion Control management (ECM) duties on projects having less than one acre of total disturbed area will not be measured and paid for separately but shall be included in the work, unless otherwise specified in the contract.

Payment will be made under:

Pay Item	Pay Unit
Aggregate Bag	Linear Foot
Concrete Washout Structure	Each
Erosion Bales (Weed Free)	Each
Erosion Control Management	Day (If in the contract)
Erosion Log (Type 1) (_____ Inch)	Linear Foot
Erosion Log (Type 2) (_____Inch)	Linear Foot
Erosion Log (Type 3) (_____Inch)	Linear Foot
Pre-Fabricated Concrete Washout Structure (Type 1)	Each
Pre-Fabricated Concrete Washout Structure (Type 2)	Each
Pre-Fabricated Vehicle Tracking Pad	Each
Maintenance Aggregate (Vehicle Tracking Pad)	Cubic Yard
Removal and Disposal of Sediment (Equipment)	Hour
Removal and Disposal of Sediment (Labor)	Hour
Removal of Trash	Hour
Rock Check Dam	Each
Sediment Basin	Each
Sediment Trap	Each
Silt Berm	Linear Foot
Silt Dike	Linear Foot
Silt Fence	Linear Foot
Silt Fence (Reinforced)	Linear Foot
Storm Drain Inlet Protection (Type__)	Linear Foot
Storm Drain Inlet Protection (Type__)	Each
Sweeping (Sediment Removal)	Hour
Temporary Berm	Linear Foot
Temporary Diversion	Linear Foot
Temporary Slope Drain	Linear Foot
Vehicle Tracking Pad	Each

Modifications to the SWMP due to construction errors or survey errors by the Contractor shall be made at the Contractor’s expense.

Surface roughening and vertical tracking (temporary 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.

Payment for Removal and Disposal of Sediment (Equipment) will be full compensation for use of the equipment, including the operator. Payment for Removal and Disposal of Sediment (Labor) will be full compensation for use of the labor.

Payment for concrete washout structure, whether constructed or prefabricated, will be full compensation for all work and materials required to install, maintain, and remove the item. Maintenance and relocation, as required, of these structures throughout the duration of the project will not be measured and paid for separately, but shall be included in the work.

Silt berm spikes and wood spikes will not be measured and paid for separately, but shall be included in the work. When required, soil retention blankets will be measured and paid for in accordance with Section 216.

Compost and wood stakes for Erosion Log (Type 2) will not be measured and paid for separately, but shall be included in the work.

Spray-on mulch blankets required by the Contract, including those used in both interim and final stabilization, will be measured and paid for in accordance with Section 213.

Payment for storm drain inlet protection will be full compensation for all work, materials, and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of the work. Aggregate will not be measured and paid for separately, but shall be included in the work.

Sweeping, when used as a control measure as shown in the Contract, will be measured by the number of hours that a pickup broom or equipment capable of collecting sediment, authorized by the Engineer, is used to remove sediment from the roadway or other paved surfaces. Each week the Contractor shall submit to the Engineer a statement detailing the type of sweeping equipment used and the number of hours it was used to pick up sediment. The operator will not be measured and paid for separately, but shall be included in the work.

Stakes, anchors, connections, geotextile, riprap, and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Payment for vehicle tracking pad will be full compensation for all work, materials and equipment required to construct, maintain, and remove the entrance upon completion of the work. Aggregate and geotextile will not be measured and paid for separately, but shall be included in the work. If additional aggregate for maintenance of vehicle tracking pads is required, it will be measured by the cubic yard in accordance with Section 304 and will be paid for under this Section as Maintenance Aggregate (Vehicle Tracking Pad).

Seeding, sod, mulching, soil retention blanket, and riprap will be measured and paid for in accordance with Sections 212, 213, 216, and 506.

All work and materials required to perform the permanent control measure survey and furnish the electronic files shall be included in the original unit price bid for surveying. Surveying will be measured and paid for in accordance with Section 625.

Payment will be made for control measures replaced as approved by the Engineer. Temporary erosion and sediment control measures required due to the Contractor’s negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or ordered by the Engineer or for the Contractor's convenience, shall be performed at the Contractor’s expense. If the Contractor fails to complete construction within the contract time, payment will not be made for Section 208 pay items for the period of time after expiration of the contract time. These items shall be provided at the Contractor's expense.

July 1, 2025

Revision of Section 212
Soil Amendments, Seeding, and Sodding

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use in projects having earthwork disturbances that will be stabilized with vegetation.

Revision of Section 212
Soil Amendments, Seeding, and Sodding

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) 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. 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.

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.

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.

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.

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.

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).

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 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

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.

(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.

(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 ¾ 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.

Construction Requirements

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.

(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).

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 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:

(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 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 = one acre or 43,560 square feet (SF)
   A /W = feet (F) the drill seeder needs to travel for each acre
   F/C = number of rotations (R) of the tire per acre
E. Reduce the amount of tire rotations by one tenth.
   .90R = # 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:
   % PLS = (% purity (in decimal form) from seed label) x (% germination (in decimal form) from seed label)
   (LBS PLS / Acre) from the SWMP / % PLS = Required bulk seed per acre in LBS
H. Reduce the required bulk seed per acre based on the number of seeder tubes.
   Required bulk seed per acre / N = Weight in LBS of bulk seed from one tube
I. Reduce the required bulk seed rate from the tube by one tenth.
   0.90 x Weight of bulk seed from one tube = 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.

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. 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.

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.

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 ¼ to ½ 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.

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.

(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.

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.

July 1, 2025

Revision Of Section 401
Plant Mix Pavements - General

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects.

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 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 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 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.

July 1, 2025

Revision of Section 401
Reclaimed Asphalt Pavement

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for Use on CDOT Construction Projects:

Use this standard special provision on projects with voids acceptance of hot mix asphalt. This specification may also be used on other projects as determined by the Region Materials Engineer.

Revision of Section 401
Reclaimed Asphalt Pavement

Revise Section 401 of the Standard Specifications for this project as follows:

Subsection 401.02(b) shall include the following:

Reclaimed Asphalt Pavement (RAP) is allowed in hot mix asphalt (HMA) up to a maximum binder replacement of 23 percent for all lifts, provided all specifications for HMA are met. Fine Aggregate Angularity requirements shall apply only to the virgin fraction of the fine aggregate. The RAP shall not contain clay balls, vegetable matter, or other deleterious substances, and must meet the uniformity requirements as outlined below.

HMA Project Verification Testing for asphalt content and gradation will be performed at the frequencies listed in the Field Materials Manual per CP-L 5120.

The Contractor shall have an approved mix design for the amount of RAP to be used. The AC content of the RAP utilized in the Contractor RAP mix design shall be the average AC content determined per 1B or 1C, below, or alternatively, a minimum of five samples of the Contractors RAP stockpile may be sampled and the average AC content of the RAP be determined using AASHTO T-164, Method A or B, or per 1C below. The Contractor shall determine the total binder replaced by the binder in the RAP pursuant to the following equation:

Total Binder Replaced = (A x B) x 100/E

Where:

A = RAP % Binder Content *

B = RAP % in Mix *

E = Total Effective Binder Content *

* In decimal format (2% is 0.02)

The Total Binder Replaced by the binder in the RAP shall not exceed 23 percent of the effective binder content of either the mix design or the produced mix.

The use of RAP shall be controlled per subsections 105.05 and 106.05. If the Contractor elects to use RAP, the following additional conditions shall apply:

1. The Contractor shall have an approved Process Control (PC) Plan that details how the RAP will be processed and controlled. The PC plan shall address the following:

   A. RAP Processing Techniques. This requires a schematic diagram and narrative that explains the processing (crushing, screening, and rejecting) and stockpile operation for this specific project.

   B. Control of RAP Asphalt Binder Content (AASHTO T-164, Method A or B). RAP Asphalt Binder Content may also be determined per CP-L 5120, provided a RAP AC content correction factor is determined through correlation testing with AASHTO T-164, Method A or B. The correction factor shall be determined by performing correlation testing on the first five samples of the RAP AC content, then at a frequency of one for every five AC content tests thereafter. The correction factor shall be determined by calculating the average difference in AC content between CP-L 5120 and AASHTO T-164, Method A or B, and applying the correction to the AC content determined per CP-L 5120 :

Frequency: 1/1000 tons of processed RAP material (minimum five tests)

C. Alternative Control of RAP Binder Content. The Contractor may propose a RAP asphalt content correction factor to be used in conjunction with CP-L 5120. The proposed CP-L 5120 RAP asphalt content correction factor shall be used with all RAP asphalt contents tested for the mixture design and quality control sampling and testing. The methodology of the proposed CP-L 5120 RAP asphalt content correction factor shall be outlined in detail in the approved RAP PC Plan. At a minimum, the proposed CP-L 5120 correction factor shall identify the principal source locations of the RAP aggregate, gradation of the material tested, and specific ignition oven serial number used in all the RAP asphalt content testing. The RAP source locations, material gradation, and specific equipment used shall substantiate the CP-L 5120 asphalt content correction factor used for the testing. The substantiation must be from data gathered from historical information or specific asphalt content correction data obtained from tests performed on similar virgin aggregate sources, virgin material gradations, and the specific equipment used.

D. Control of RAP Gradation (CP31 or AASHTO T-30):

Frequency: 1/1000 tons of processed RAP material (minimum three tests)

E. Process Control Charts shall be maintained for binder content and each screen listed in subsection 401.02(b), during addition of any RAP material to the stockpile. The Contractor shall maintain separate control charts for each RAP stockpile. The control charts shall be displayed and shall be made available, along with RAP AC extraction testing laboratory reports, to the Engineer upon request.

2. The processed RAP must be 100 percent passing the 31.5 mm (1 1/4 inch) sieve. The aggregate obtained from the processed RAP shall be 100 percent passing the 25.0 mm (1 inch) sieve. The aggregate and binder obtained from the processed RAP shall be uniform in all the measured parameters per the following:

Uniformity*

Parameter	Standard Deviation
Binder Content	0.5
Percent Passing 19 mm (3/4”)	4.0
Percent Passing 12.5 mm (1/2”)	4.0
Percent Passing 9.5 mm (3/8”)	4.0
Percent Passing 4.75 mm (#4)	4.0
Percent Passing 2.36 mm (#8)	4.0
Percent Passing 600 μm (#30)	3.0
Percent Passing 75 μm (#200)	1.5

***Uniformity is the Maximum allowable Standard Deviation of test results of processed RAP.

3. If RAP millings generated are incorporated in the same project, per CPL 5145 the Contractor shall pave with a virgin mix design until sufficient amount of processed RAP has been stockpiled and tested to allow full production of a RAP HMA mix.

March 13, 2023

Revision of Sections 412 and 601
Accelerated Pavement Repair Concrete

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:

Use in projects with Concrete Pavement Repair or Rehabilitation Activities.
This should not be incorporated into future Spec Books and will remain as a Standard Special Provision, similar to HMA Voids Acceptance.

Typically, PCCP repair can be completed with Class P (fast track), but when Project constraints limit lane closure time to 8 hours or less or when concrete needs to achieve opening strength of 2,500 psi in 6 hours or less, Class PRS Concrete should be specified in the plan.

When longer lane closures are allowed or concrete is allowed to gain strength in a longer period, specify Class P (fast track).

Consult with the Region Materials Engineer before including Class PRS.

Revision of Sections 412 and 601
Accelerated Pavement Repair Concrete

Delete Subsection 412.45 and include the following:

412.45 Materials. Concrete used shall be an approved Class P or PRS mix as specified in the Contract.

Revise Section 601 of the Standard Specifications to include the following:

Description

601.26 This work consists of furnishing and placing accelerated pavement repair concrete on existing pavements per these specifications and in conformity with the lines, grades, and dimensions as shown on the plans or established.

Materials

601.27 The accelerated pavement repair concrete shall be designated as Class PRS.

Concrete Class	Required Field Compressive Strength (psi)	Air Content: % Range (Total)	Slump	Maximum Water/Cementitious Material Ratio:
PRS	4500 at 28 days	4 - 8	+/- 2" of Form 1373 Slump	w/cm on Form 1373

Class PRS concrete is used for concrete pavement rapid repairs. Class PRS may be substituted for Class P concrete when approved by the Engineer. Class PRS shall not be substituted for any other Class of Concrete. Additional requirements are:

(1) ASTM C1600 rapid hardening hydraulic cement shall be used.
(2) Set-retarding admixtures such as citric acid meeting the requirements of subsection 711.03 or those meeting the requirements of AASHTO M194 may be used.
(3) The unrestrained shrinkage shall not exceed 0.050 percent at 28 days when tested by CP-L 4103.
(4) The mix shall either have a permeability not exceeding 2,500 coulombs at an age of not more than 56 days when tested per ASTM C1202 or have a surface resistivity of at least 12 kΩ-cm at 28 days using AASHTO T358.

(5) The mix shall consist of a minimum of 55 percent AASHTO M 43 sizes No. 57, No. 6, No. 67, No. 357, or No. 467 coarse aggregate by weight of total aggregate.
(6) The mix may use an OG with a nominal maximum aggregate size of at least 3/4 inch.
(7) Pozzolan shall not be substituted for cement
(8) Shall achieve 2500 psi by the time indicated in the plans

601.28 Mix Design Submittal Requirements. Mix design submittals shall meet the requirements of subsection 601.05 with the following additional requirements.

(1) Class PRS concrete shall include CP-L 4103 shrinkage test results at 28 days.
(2) Class PRS concrete shall include a report of maturity relationships per CP 69.
(3) Class PRS concrete shall include AASHTO T97 (ASTM C78) Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading). At least two specimens will be tested at 7 days and four specimens at 28 days. The lab trial mix shall produce a flexural strength of at least 650 psi at 28 days.

Mix designs for Class PRS Concrete are approved for one year from the date of the trial mix. When a Self-Contained Mobile Mixer (volumetric mixer truck) is used on the Project, the trial mix shall be performed with the volumetric mixer truck.

601.29 Batching. Batching shall meet the requirements of subsection 601.06.

601.30 Mixing. Mixing shall meet the requirements of subsection 601.07. Mixing Class PRS shall require the use of a Self-Contained Mobile Mixer. The Engineer may approve other methods of mixing upon the Contractor placing an accepted test section with the proposed mixing method.

A Self-Contained Mobile Mixer (Volumetric truck) is required for Class PRS concrete. The requirements of subsection 601.07 (d) with the following shall be met:

- When ice is used to cool the mix water, it must be melted before entering the mixer.

601.31 Placing Concrete. Placing concrete shall meet the requirements of Section 412 with the following additional requirements:

Revision of Sections 412 and 601
Accelerated Pavement Repair Concrete

(a) General. A pre-pour meeting with the Contractor, sub-contractor, material supplier, and Department personnel shall be held before Class PRS concrete placement to discuss the following:

- Delivery of the mix. The sample ticket for each batch shall list all cements, water, aggregates & admixtures. One shall be required from each truck.
- How/when the Strength/Maturity Meter Curve will be verified in the field.
- Concrete curing.
- Concrete protection.
- Time and depth of early age saw cutting.
- Washout bin staging.
- Handling of concrete cylinders.
- Placement of maturity probes.
- Hot weather placements and limitations.
- Cold weather placements and limitations.
- Opening to traffic.
- Test Section requirements

(b) Class PRS concrete placement may occur when the concrete temperature is between 50 and 90°F, when tested immediately after discharge from the chute.

(c) Curing. Curing shall be applied immediately following finishing operations. Curing compound manufacturer recommended application rates shall be followed, with a minimum rate of 200 SF/Gal. Curing Compound shall be an approved ASTM C 309, Type 2, Class B.

(d) Hot Weather Limitations. A plan shall be submitted for approval before any placement when the air temperature is expected to exceed 90°F. Procedures for maintaining and monitoring the temperatures of water, aggregates, and admixtures during mixing, placement and curing of concrete shall be detailed, as well as procedures to be implemented upon abrupt changes in weather conditions. Placing of concrete during hot weather shall be limited by the temperature of the concrete at the time of placing. Class PRS concrete, which has a temperature of 90°F or higher, shall not be placed.

(e) Cold Weather Limitations. When the ambient temperature is forecast to drop below 40 degrees F during placement and up to 24 hours after placement, a plan shall be submitted for approval before any placement. Procedures for maintaining and monitoring the temperatures of water, aggregates, and all other admixtures during mixing, placement and curing of concrete shall be

detailed, as well as procedures to be implemented upon abrupt changes in weather conditions. Concrete shall not be placed on frozen subgrade.

(f) Test Section Requirements: The location of the test section shall be approved by the Engineer. The test section shall have a cross section similar to the repair cross section and be a minimum of one slab in length or as approved by the Engineer. The test section placement shall have the same haul time, placing crew, finishing crew, and curing as the project. If saw cutting is required on the project, the test section shall be saw cut to determine the minimum curing time to minimize sawcut raveling. If the test section has excessive voids, cracking, surface irregularities described in subsection 412.16, or fails to gain adequate strength as determined by maturity meter(s) within the project time limits, an additional test section will be required. The test section shall be approved by the Engineer prior to proceeding with production repair work.

601.32 Finishing. During the finishing of Class PRS concrete, water and finishing aids shall not be added or worked into the surface. The surface texture of the Class PRS concrete shall match the texture of the adjacent concrete pavement. The finished transverse and longitudinal surface elevation of the pavement shall be measured using a 10-foot straightedge. Areas to be measured will be directed by the Engineer. The Contractor shall furnish an approved 10-foot straightedge, depth gauge, and operator to aid the Engineer in testing the pavement surface. Areas showing high spots of more than 3/16 inch in 10 feet shall be marked and diamond ground until the high spot does not exceed 3/16 inch in 10 feet. In areas in a lane with more than 250 continuous feet of paving or diamond grinding in the direction of traffic, the surface texture will be considered acceptable when the average texture depth (ATD) of the panel is greater than 0.05 inch. The Contractor will perform surface texture testing per CP 77 Method B. Areas in a lane with more than 250 continuous feet of paving will be tested at a frequency of one test per 250 linear feet. Areas with deficient surface texture shall be diamond ground and retested.

601.33 Opening to Traffic. The pavement shall not be opened to traffic until the concrete has achieved a compressive strength of at least 2500 psi. Concrete compressive strength shall be determined by a maturity meter placed no more than 10ft from the end of the final placement of the shift. The contractor shall provide maturity meters and all necessary wires and connectors. The Contractor shall be responsible for the placement and maintenance of the maturity meters and wires. For placements with multiple maturity meters, the lowest compressive

strength shall determine when the pavement may be opened to traffic. Before opening the pavement to traffic, the roadway shall be cleaned.

601.34 Acceptance and Pay Factors. Class PRS concrete will be accepted following the requirements of subsection 601.17 with the following exceptions:

- Compressive strength specimens shall be cast and initially cured at the placement location for at least 4 hours. Compressive strength specimens shall be moved before opening to traffic.
- Slump testing will not be used for acceptance.
- Sampling shall occur after at least 1 cu yd has been discharged from the mixer.

July 1, 2025

Revision of Sections 412 and 705
Preformed Compression Seals

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on projects where it is necessary to use preformed compression seals in lieu of silicone sealant in concrete pavement joints, such as projects with fast track concrete.

Revision of Sections 412 and 705
Preformed Compression Seals

Sections 412 and 705 of the Standard Specifications are hereby revised for this project as follows:

Subsection 412.13 shall include the following:

Transverse and untied longitudinal joints shall be sawed and sealed as shown in the following diagram for preformed compression seals. Installation shall conform to subsection 412.18, as revised for this project, and the compression seal and lubricant materials shall conform to subsection 705.01, as revised for this project.

Subsection 412.18 shall include the following:

Before installation of the preformed compression seal the following shall be completed:

(1) Repair of defective pavement slabs and repair and proper curing of cracks or spalls per subsection 412.16.

(2) Corrective work for texturing.

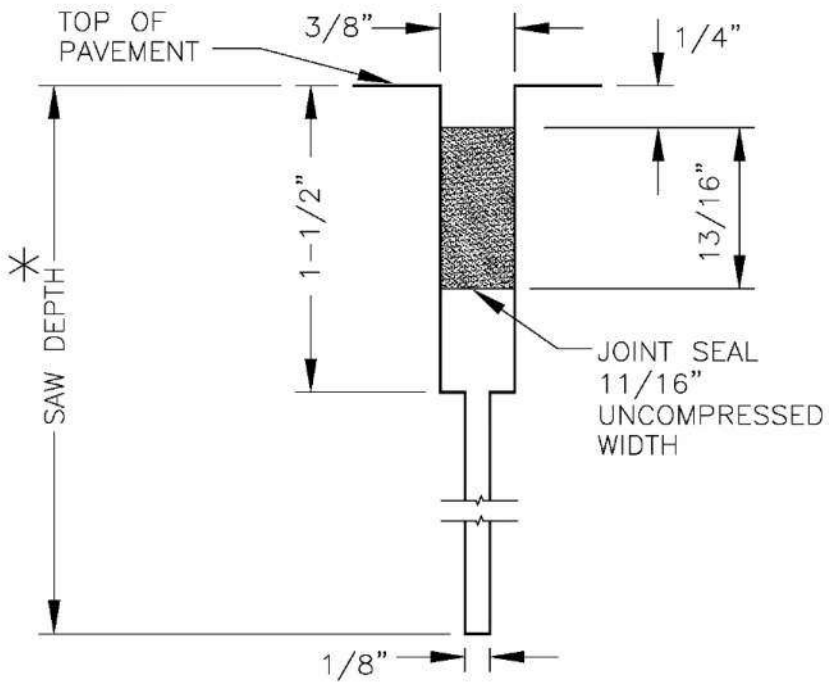
(3) Corrective work for smoothness per subsection 105.08.

Air temperature at the time of installation shall be from 40 to 80°F or as recommended by the manufacturer. The joint shall be air cleaned with oil free air at 100 psi minimum just before seal installation. The preformed compression seal shall have an uncompressed width of 11/16 inch. Installation shall be in conformance with the following diagram and shall follow the manufacturers recommendations. A machine shall be used for installation which results in proper depth of the seal without damage or twisting of the seal. Elongation during installation shall not exceed 5 percent.

Subsection 705.01 shall include the following:

(c) *Preformed Compression Seals.* Preformed compression seals shall conform to AASHTO M 220. The lubricant adhesive used for installation of the preformed compression seal shall conform to ASTM D 2835. The Contractor shall provide the Engineer with certified test reports that indicate conformance of the preformed compression seals and lubricant adhesive with these specifications before installation begins.

Joint Shape and Joint Filler Details for
Transverse Sawed Contraction Joint and
Untied Longitudinal Contraction Joint



*Saw Depth
T/4 for transverse sawed contraction joint
T/3 for untied longitudinal contraction joint
Where:
T = pavement thickness

Tolerances of all joint width dimensions: 0 to +1/16 inch

Installation of preformed compression joint seals shall be per manufacturer's recommendations.

The joint locations, spacing, and general notes on the standard for concrete pavement joints for this project shall apply.

All materials and installation required for compression joint seals will be included in the work.

All other joints shall be constructed per standard specifications.

July 1, 2025

Revision of Section 601
Pigment in Concrete

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects with concrete with pigment added.

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.

September 11, 2025

Revision of Section 601
Structural Concrete

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:

Use the following standard special provision on all projects with Structural Concrete.

Revision of Section 601
Structural Concrete

Revise Section 601, Structural Concrete, of the Standard Specifications as follows:

Revise Section 601.08 as follows:

601.08: Air Content Adjustment. When a batch of concrete delivered to the project does not conform to the minimum specified air content, an air-entraining admixture listed on the approved mix design may be added per subsection 601.17. After the admixture is added, the concrete shall be re-mixed for a minimum of 20 revolutions of the mixer drum at mixing speed. The concrete shall then be re-tested by PC.

March 21, 2025

Revision of Section 627
Pavement Marking

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies using the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision appropriately and at their own risk.

Instructions for use on CDOT construction projects:
Use the following standard special provision on all projects with pavement marking paint.

Section 627
Pavement Marking

Revise Section 627 by removing and replacing the existing Section 627 of the Standard Specifications with the following:

Description

627.01 This work consists of furnishing and applying pavement marking, and furnishing, installing, and removing temporary pavement marking per these specifications, the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), the Colorado supplement thereto, and in conformity to the lines, dimensions, patterns, locations and details shown on the plans or established.

Materials

627.02 Materials shall conform to the requirements of the following subsections:

Material Requirements	Subsection
Paint	708.05
Glass Beads	713.08
Modified Epoxy Pavement Marking Material	713.17
Thermoplastic Marking Material	713.12
Pavement Primer	708.07
Preformed Plastic Pavement Marking Material	713.13
Pavement Marking Tape	713.15
Pavement Marking Tape (Removable)	713.16
Raised Pavement Marker	713.18
Preformed Thermoplastic Pavement Marking Material	713.14
Methyl Methacrylate Pavement Marking Material	713.19

Construction Requirements

627.03 General. All pavement markings shall be placed per the following requirements. When the term “full compliance” is used, it means the pavement markings shall meet the requirements of Standard Plan S-627-1.

(a) Pavement Marking Plan. When pavement-marking location details are not provided in the Contract, the Contractor shall submit a layout of existing conditions to the Project Engineer for approval. The approved layout is to be used as the final pavement-marking plan.

(b) Roadways Closed to Traffic During Construction. Full-compliance final markings shall be in place before opening the roadway to traffic.
Pavement markings on detour routes shall be full-compliance markings.

(c) Roadways Constructed Under Traffic. Full compliance final pavement markings shall be placed within two weeks after final surfacing is completed. Full compliance pavement markings shall also be placed on any roadways opened to traffic when the project pavement work is discontinued for more than two weeks.

(d) Temporary Pavement Markings. Temporary pavement markings and control points for the installation of those pavement markings for roadways that are being constructed under traffic shall be installed as follows:

1. When one roadway of a normally physically divided highway is closed, and a crossover is constructed, full-compliance pavement markings shall be placed along the tapers and through the median crossovers to the two-way traffic section. Pavement markings through the two-way traffic section shall be as shown on the plans.

   All temporary paved roadways shall have full-compliance centerline, lane line, and edge line markings before they are open for traffic.

   Upon removal, markings applied to a final surface shall not leave a scar that conflicts with permanent markings.

2. The following criteria apply to all construction on roadways open to traffic other than (d)1. above:

   Full-compliance centerline, lane line, and edge line temporary markings shall be in place at the end of each workday.

   No-passing zone restrictions shall be identified by full compliance no-passing zone markings. No-passing zone markings shall be in place daily.

   Temporary pavement stencils (SCHOOL, RR Xing, etc.) are not required unless specified in the plans.

   Temporary pavement markings shall be installed according to the manufacturer's recommendations in such a way that the markings adequately follow the desired alignment.

3. Control Points consisting of 4-inch by 1-foot marks at 40-foot intervals may be placed as guide markers for the installation of temporary or final pavement markings. Raised flexible pavement markers may be substituted for these marks. Control points shall not be used as a substitute for any required marking.

(e) Pavement Marking for Seal Coats (Section 409).

1. Raised flexible pavement markers, suitable for use on seal coats, shall be installed as follows:

   No-passing zones shall be marked with two markers placed side-by-side at 40-foot intervals throughout the zone.

   Passing zones shall be marked with one marker at 40-foot centers. Closer spacing shall be used on curves, as deemed appropriate.

   Raised flexible pavement markers, installed on 40-foot centers, may also be used to mark lane lines through multi-lane roadway sections. Auxiliary lanes and shoulder lines may be marked with flexible markers on 80-foot centers or as appropriate.

2. Full-compliance final pavement markings shall be placed within one week of completion of the seal coat project.

(f) **Procedures for Items Paid by the Gallon**

Either of the following methods are acceptable unless otherwise specified by the Project Engineer.

1. **Method #1 - Use of Data Logging System (DLS)**
   Equipment: The Contractor shall use a "Skip-line by SPEC-RITE" Data Logger System (DLS) or equivalent DLS equipment as approved by the Project Engineer.
   Calibration: Pavement marking vehicles using a Data Logging System (DLS) shall be calibrated at intervals no longer than 12 months. Calibration requirements and allowable tolerances will be determined by the equipment manufacturer. Prior to the installation of materials paid by the gallon, a copy of the most recent certification report for each DLS equipment system used shall be submitted to the Project Engineer.
   Verification: A verification test section may be conducted at any time during production at the discretion of the Project Engineer. The verification test shall be performed according to Method #2 and the pavement marking shall be at least 1 mile (5,280 feet) in length, and shall be a width of four, six or eight inches. If the test section cannot be performed as a result of limitations, then method #2 shall be used to verify quantities for payment. If the calibration application rate cannot be verified, then method #2 shall be used to verify quantities for payment.

2. **Method #2 - Performing Tank Stabs and Field Measurement**
   Tank stab measurements shall be used to verify the application rate by calculating the volume of material used over the corresponding application (square foot) area. Tank stab measurements shall be performed by the Contractor at the beginning and end of the pavement marking installation with the pavement marking vehicle parked at the same location and direction of travel for each measurement. Tank stab measurements shall be taken to the top of the fluid level from a fixed point. These measurements will be visually observed and recorded before the pavement marking operations begin, at the end of the pavement marking operations, and before and after each tank is replenished. The difference in the height of the fluid level corresponds to the volume of material used per the manufacturer's tank conversion chart. Measurements will be recorded to the nearest 1/4 inch.

   Plural component materials, such as modified epoxy pavement markings, are applied as a combination of resins and catalysts from separate tanks. Tank stabs shall be recorded for each tank and the volumes combined to determine the total volume, in gallons, applied. Pavement markings shall be field measured to determine the total area of material installed. The tank stab and field measurements will be used to verify the application rate is within the rate specified by the contract.

627.04 Pavement Marking with Low Temperature Acrylic Paint and High Build Acrylic Paint. Striping shall be applied on asphalt or portland cement concrete pavements when the air and pavement temperatures are as follows: for high-build waterborne paint, at least 45 °F and expected to remain 45 °F or above for at least 24 hours; for low temperature waterborne paint, at least 35 °F and expected to remain 35 °F or above for at least 24 hours. The pavement surface shall be dry and clean, and free of all latent materials, per the manufacturer's recommendations. Weather conditions shall be conducive to satisfactory results. Glass beads shall be applied into the paint by means of a low pressure, gravity drop bead applicator.

The Contractor shall use equipment that meets the following requirements, as approved:

(1) Equipment shall permit traffic to pass safely within the limits of the roadway surface and shoulder while operating.

(2) Equipment shall be designed for placement of both solid and broken line pavement markings with a reasonably clean-edged pavement marking of the width and location as shown on the contract and no overspray on the road surface.

(3) Equipment shall have a glass bead dispenser directly behind and synchronized with the paint applicator. Each applicator shall have individual control and automatic skip control that will paint a strip with a gap as shown in the Contract.

(4) The equipment may be equipped with a heat exchanger to heat the paint to reduce drying time.

(5) The operation shall include a trailing vehicle equipped with a flashing arrow board.

The Contractor shall prevent traffic from crossing a wet pavement marking. Pavement markings that have been marred or picked up by traffic before they have dried shall be repaired at the Contractor's expense. Removal of paint material from vehicles that encountered wet paint shall be at the Contractor's expense.

The water-based paint pavement markings shall fall within the following minimum and maximum ranges:

Table 627-1
Application Rates and Tolerances for Pavement Markings

Description	Units	Pavement Marking Paint Low Temp	Pavement Marking Paint High Build	Pavement Marking Paint High Build (Temporary)
Alignment (Lateral Deviation)	Inches	< 2.0	< 2.0	< 2.0
Application Rate	Sq Ft/Gallon	89-94	67-70	100-105
Thickness	Mil	17.5 ± 0.5	23.5 ± 0.5	15.5 ± 0.5
Width	Inches	Per Plans ± 0.25	Per Plans ± 0.25	Per Plans ± 0.25
No Tack Dry Time @ 77° F	Minutes	5-10	7-12	5-10
Glass Bead Application Rate	Lbs, Gallon	7+	9+	5+

(6) High Build (Temporary) shall only be used for temporary pavement marking applications. Equipment shall have a bead dispenser directly behind, synchronized with the paint applicator and shall be capable of painting a clean-edged pavement marking of the designated width plus or minus 1/4 inch with no overspray on the road surface. For centerlines and lane lines, an automatic skip control shall be used. Machines having multiple applicators shall be used for centerlines with "no passing zones." In areas where machines are not practical, suitable hand-operated equipment shall be used as directed by the Project Engineer. Pavement markings shall be protected until dry.

627.05 Modified Epoxy Pavement Marking. The modified epoxy pavement-marking compound shall be applied with equipment that will precisely meter the two components in the ratio given in subsection 713.17(a). The equipment shall automatically shut off or warn the operator if one component is not being mixed. The equipment shall produce the required amount of heat at the mixing head and gun tip to provide and maintain the temperatures specified.

Before mixing, the individual components A and B shall each be heated to a temperature of 80 to 140 °F. After mixing, the application temperature for the combined material at the gun tip shall be 80 to 140 °F. The 140 °F upper limit is the maximum temperature under any circumstances.

Both pavement and air temperatures shall be at least 35 °F at the time of modified epoxy pavement marking application.

The surface areas of new portland cement concrete pavement and decks that are to receive markings shall be waterblasted before placement of the modified epoxy pavement marking. The amount of waterblasting shall be sufficient to remove all dirt, laitance, and curing compound residue.

The surface areas of new asphalt pavement, existing asphalt pavement, and existing concrete pavement that are to receive markings shall be cleaned with a high-pressure air blast to remove loose material before placement of the modified epoxy pavement marking. Should any pavement become dirty, from tracked mud etc. as determined by the Project Engineer, it shall be cleaned before the placement of the modified epoxy pavement marking.

When recommended by the modified epoxy manufacturer, a high-pressure water blast integrated into the gun carriage shall be used to clean the pavement surface before modified epoxy pavement marking application. The water blast shall be followed by a high- pressure air blast to remove all residual water, leaving only a damp surface.

Modified epoxy pavement marking shall be applied to the road surface according to the modified epoxy manufacturer's recommended methods at the application rate or coverage shown below. Glass beads shall be applied into the modified epoxy pavement marking by means of a low pressure, gravity drop bead applicator.

Modified epoxy pavement markings and beads shall be applied within the following limits:

Table 627-2
Application Rates and Tolerances for Modified Epoxy Pavement Marking

Description	Units	Modified Epoxy Pavement Marking
Alignment (Lateral Deviation)	Inches	< 2.0
Application Rate	Sq Ft/Gallon	85 - 90
Thickness	Mil	18.5 ± 0.5
Width	Inches	Per Plans ± 0.25
No Tack Dry Time @ 77° F	Minutes	5 - 7
Glass Bead Application Rate	Lbs per Gallon	23+

627.06 Thermoplastic Pavement Marking.

(a) Equipment-General. The material shall be applied to the pavement by an extrusion method where one side of the shaping die is the pavement and the other three sides are contained by or are part of suitable equipment for heating, mixing, and controlling the flow of the material.

The equipment shall be constructed to provide continuous mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the shaping die shall be so constructed as to prevent accumulation and clogging. All parts of the equipment that come in contact with the material shall be easily accessible and exposable for cleaning and maintenance.

All mixing and conveying parts up to and including the shaping die, shall maintain the material at the plastic temperature.

The equipment shall be so constructed as to assure continuous uniformity in the dimensions of the pavement marking. The applicator shall provide a means for cleanly cutting off square pavement marking ends and shall provide a method of applying "skip" lines. The use of pans, aprons or similar appliances that the die overruns will not be permitted under this specification.

Glass beads for the surface of the completed pavement marking shall be applied by an automatic bead dispenser attached to the applicator in such manner that the beads are dispensed almost instantly upon the completed line. The bead dispenser shall be equipped with an automatic cutoff control synchronized with the cutoff of the thermoplastic material.

The equipment shall be so constructed as to provide for varying die widths to produce varying widths of traffic markings.

The equipment shall be designed to permit agitation of the material to prevent scorching, discoloration or excessive high temperatures of any part of the material.

A special kettle shall be provided for melting and heating the composition. The kettle shall be equipped with an automatic thermostatic control device so that heating can be done by controlled heat transfer liquid rather than direct flame.

The applicator and kettle shall be so equipped and arranged as to satisfy the requirements of the National Fire Underwriters.

The equipment shall be so equipped as to permit preheating of the pavement immediately before application of the material.

The applicator shall be mobile and maneuverable to the extent that straight lines can be followed, and normal curves can be made in a true arc.

(b) Types of Equipment.

1. Portable Applicator. The portable applicator shall be a device typically used for painting crosswalk lines, stop bars, short lane lines and short centerlines. The applicator shall be easily maneuverable and capable of being propelled by the operator.

2. Mobile Applicator. The mobile applicator shall contain equipment to provide for automatic installation of skip lines in any combination of line and skip up to 40 feet. The mobile applicator shall be moved in conjunction with the melting and heating kettles in such a manner as to provide continuous highway operation of the kettles and the mobile applicator as an integral unit.
3. Epoxy Primer Equipment. The epoxy primer application shall be accomplished using equipment having the following features:

   A. The main storage tank shall be equipped with a visible gauge that will allow the Project Engineer to readily ascertain the rate of application.

   B. The main storage tank shall be equipped with a heating device that will maintain the epoxy at a constant efficient temperature.

   C. The spray nozzle and epoxy spray shall be protected from the action of wind to ensure placement where needed.

4. Cleaning Equipment. Equipment must be provided to ensure removal of laitance, dust, debris, paint and other foreign matter from the road surface immediately before the installation of the composition, or immediately before the application of primer.

(c) Application. The pavement marking shall be applied to the pavement to either the right or left of the application unit, dependent upon roadway lane being used. The unit shall not occupy more than one lane of roadway while operating.

The finished lines shall have well defined edges and be free of waviness. All of the equipment necessary to the preheating and application of the material shall be so designed that the temperature of the material can be controlled within the limits necessary to its pourability for good application.

At the time of installation of thermoplastic materials, the pavement shall be clean, dry, and free of laitance, oil, dirt, grease, paint or other foreign contaminants. Pavement and ambient temperatures shall be at least 50 °F.

An epoxy resin primer conforming to subsection 708.07 shall be applied to all pavement surfaces before the application of the thermoplastic pavement marking.

The marking material shall not be applied until the epoxy resin primer reaches the tacky stage, approximately 15 minutes under normal conditions. An infrared heating device may be employed to shorten the curing time of the epoxy.

To ensure the best possible adhesion, the marking material as specified, shall be installed at the manufacturer's recommended temperature.

The minimum thickness of thermoplastic lines as viewed from a lateral cross section shall not be less than 3/32 inch at the edges, or less than 1/8 inch at the center. Measurements shall be taken as an average throughout any 36-inch section of the line. The material, when formed into traffic pavement markings, must be readily renewable by placing an overlay of new material directly over an old line of compatible material. Such new material shall bond itself to the old line in such a manner that no splitting or separation takes place.

Glass beads shall be applied to the thermoplastic pavement marking by means of a low pressure, gravity drop bead applicator at a rate of 10 pounds per 100 square feet, minimum.

627.07 Methyl Methacrylate Pavement Marking. Methyl methacrylate pavement marking shall be installed per manufacturer's recommendations. The Contractor shall use installation equipment, materials, equipment technicians and operators recommended by the manufacturer.

Methyl methacrylate pavement markings shall be applied to the road surface according to the manufacturer's recommended methods at 60-mil minimum thickness. Glass beads shall be applied using a double drop bead application system. The first bead applicator shall apply glass beads at the rate of 3.2 pounds per square yard (10 pounds per gallon) minimum, and 1.9 pounds per square yard (6 pounds per gallon) minimum for the second bead applicator.

Methyl methacrylate pavement marking, and beads shall be applied within the following limits:

Table 627-3

Application Rates and Tolerances for

Methyl Methacrylate Pavement Marking

Description	Units	Methyl Methacrylate Pavement Marking
Alignment (Lateral Deviation)	Inches	< 2.0
Application Rate	Sq Ft per Gallon	26 - 28
Thickness	Mil	60 ± 2.0
Width	Inches	Per Plans ± 0.25
No Tack Dry Time @ 77 ºF	Minutes	< 15
Glass Bead Application Rate	Lbs per Gallon	1st Application = 10+ 2nd Application = 6+

627.08 Preformed Plastic Pavement Marking. This retroreflective preformed plastic strip shall be suitable for application on asphaltic or portland cement concrete pavement. The strip shall be applied at the locations called for on the plans or as directed.

If recommended by the manufacturer, an epoxy resin primer conforming to subsection 708.07 shall be applied to all pavement surfaces before the application of the preformed plastic pavement marking.

The surface of the pavement shall be clean, free of loose foreign material, dry and have no moisture for a minimum of 48 hours before application of the markings.

The air and surface temperature shall be a minimum 40 °F or as recommended by the manufacturer.

The marking strip as applied shall be in good appearance, free of cracks and the edges shall be true and straight.

The preformed plastic pavement marking shall be Type I, Type II, or Type III as shown on the plans.

Before beginning installation operations, the Contractor shall submit to the Project Engineer instructions from the performed plastic pavement manufacturer detailing surface preparation, grooving requirements and material application. The instructions shall include the following:

(1) Equipment Requirements.

(2) Approved Work Methods and Procedures.

(3) Material Application Temperature Requirements.

(4) Ambient Air and Surface temperature Requirements.

(5) Weather Limitations.

(6) Special Precautions.

(7) Any other requirements necessary for successful installation and satisfactory performance of the material.

The Contractor shall secure from the manufacturer all warranties and guarantees with respect to materials, workmanship, performance, or combination thereof, and shall include these warranties and guarantees with the Certification of Compliance.

Materials supplied without installation instructions or with incomplete instructions will not be accepted for use.

Unless otherwise shown on the plans, typical pavement markings shall conform to the shapes and sizes as shown on Standard Plan S-627-1.

The Contractor shall make all arrangements to have a manufacturer-trained installer of the manufacturer’s products on-site during the placement of preformed plastic pavement marking to ensure proper installation. A minimum of two weeks before the placement of the preformed plastic pavement marking, the Contractor shall submit written documentation of the installer’s qualifications and training in the installation of preformed plastic pavement marking. Upon completion of the work, the Contractor shall obtain and submit to the Project Engineer written documentation from the manufacturer-trained installer certifying that the product was installed in full compliance with this specification and manufacturer’s recommendations.

The preformed plastic pavement marking shall be inlaid on new and existing pavements as shown in the Contract. The material shall be usable for patching worn areas of the same type according to the manufacturer’s recommendations.

The Contractor shall not perform wet cutting of pavement unless otherwise directed. Application and removal of temporary pavement marking associated with wet cutting of pavement shall be at the Contractor’s expense.

The preformed plastic pavement marking shall conform to pavement contours by the action of traffic, and shall be applicable on new, dense, and open graded asphalt wearing courses during the paving operations according to the manufacturer’s recommendations. After application, the markings shall be immediately ready for traffic.

(a) Inlaid Preformed Plastic Pavement Marking. The grooved width for inlaid preformed plastic pavement marking is called for in the Contract. The grooved width shall be the pavement marking width plus 1 inch, with a tolerance of plus or minus 1/4 inch. The depth of the grooves shall be 130 mils plus or minus 5 mils. Groove position shall be a minimum of 2 inches from the edge of the pavement marking to the longitudinal pavement joint.

Grooving shall not be performed on bridge decks with Polyester Polymer Concrete Overlays.

The bottom of the groove shall have a smooth, flat finished surface. The spacers between blade cuts shall be such that there will be less than a 10-mil rise in the finished groove between the blades.

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 re-clean grooves, as necessary, before application of the preformed plastic pavement markings.

(b) Reserved.

627.09 Preformed Thermoplastic Pavement Marking. The markings shall consist of a resilient white or yellow thermoplastic product with glass beads uniformly distributed throughout the entire cross-sectional area. Legends and symbols shall be capable of being affixed to bituminous pavements by heating.

The markings shall conform to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. The material shall have resealing characteristics with the capability of fusing with itself and previously applied thermoplastic markings under normal use.

The preformed thermoplastic markings shall be packaged in a protective plastic film with cardboard stiffeners where necessary to prevent damage in transit. The carton in that the material is packed shall be clearly labeled for ease of identification.

(a) Application. Application temperature shall be as recommended by the manufacturer. The pavement and air temperature shall be as recommended by the manufacturer at the time of application. The materials shall be applied using a heating method recommended by the manufacturer. The Contractor shall provide the Project Engineer a copy of the manufacturer's installation recommendations before beginning the work. The pavement shall be clean, dry and free from debris. The preformed thermoplastic markings may be installed on top of existing thermoplastic markings after all loose material has been removed. The preformed thermoplastic markings shall not be installed on top of existing preformed plastic pavement markings without first removing the existing markings to a depth that ensures removal of the adhesive backing of the preformed plastic. It shall not be installed on top of pavement marking paint without first removing the paint.

(b) Equipment. The Contractor shall use a heating method specifically recommended by the manufacturer for the installation of preformed thermoplastic markings.

627.10 Pavement Marking Tape. Retroreflective tape shall be suitable for temporary use on asphaltic or portland cement concrete pavements. The tape shall be applied at the locations shown on the plans or as directed. The tape shall conform to subsection 713.15.

The surface that the tape is applied shall be clean, dry and free of dirt, oils and grease. The tape shall be pressed down immediately after application, until it adheres properly and conforms to the surface. Temporary marking tape sections longer than 1 foot shall be removed before placement of the final pavement course. All tape shall be removed on sections where tape conflicts with revised traffic lanes before opening of new lanes to traffic.

Pavement marking tape (removable) shall be installed per the manufacturer's recommendations and maintained throughout the required construction phase at no additional cost to the Department.

627.11 Raised Pavement Markers. Raised pavement markers (temporary) shall be installed on centerlines, edge lines, and lane lines where specified in the Contract. Single markers shall be installed at 5-foot intervals for solid lines. A group of four markers at 3-foot spacings and at 40- foot intervals shall be installed for skip lines.

Markers supplementing lines shall be installed at the spacing shown on the plans. Raised pavement markers (temporary) shall be installed per the manufacturer's recommendations and shall be maintained throughout the required construction phase at the Contractor’s expense.

Method of Measurement

627.12 The types of pavement marking described will be measured by the following units, complete-in-place and accepted.

Pavement marking paint will be measured by the number of gallons used. Procedures Method #1 or Method #2 will be used to determine the quantities for pavement markings paid by the gallon. The material used in excess of the application rate specified, will not be paid.

Modified epoxy pavement marking, polyurea, and methyl methacrylate pavement marking will be measured by the total number of gallons of components A (pigment/resin) and B (hardener/catalyst) combined to achieve the application requirements as specified. Procedures Method #1 or Method #2 will be used to determine the quantities for pavement markings paid by the gallon. The material used in excess of the application rate specified, will not be paid.

Thermoplastic pavement marking, preformed thermoplastic pavement marking, and preformed plastic pavement marking will be measured by the square foot. The unmarked spaces between markings will not be included in the overall measurement.

The amount of pavement marking tape to be measured will be the linear feet of the specified width tape applied. Gaps in marking will not be measured for payment.

Raised pavement marker (temporary) will be measured as a unit in place and shall include all adhesive necessary for installation. Removal of the raised pavement marker shall be included in the work.

Pavement word and symbol markings, transverse and longitudinal crosswalk lines, and stop lines will not be measured, but shall be the quantities, in square feet, designated in the Contract; except measurements will be made for revisions requested by the Project Engineer. The unmarked spaces within these markings will not be included in the measurement.

Basis of Payment

627.13 The accepted quantities will be paid for at the contract price per unit of measurement for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

Pay Item	Pay Unit
Pavement Marking Paint	Gallon
Pavement Marking Paint (High Build)	Gallon
Pavement Marking Paint (High Build)(Temporary)	Gallon
Pavement Marking Paint (Low Temperature)	Gallon
Modified Epoxy Pavement Marking	Gallon
Methyl Methacrylate Pavement Marking	Gallon
Thermoplastic Pavement Marking	Square Foot
Preformed Plastic Pavement Marking (Type _) (Inlaid)	Square Foot
Preformed Plastic Pavement Marking (Word-Symbol) (Type I) (Inlaid)	Square Foot
Preformed Plastic Pavement Marking (Xwalk-Stop Line) (Type I) (Inlaid)	Square Foot
___Inch Pavement Marking Tape	Linear Foot
Pavement Marking Tape (Removable) Linear	Foot
Raised Pavement Marker (Temporary)	Each
Pavement Marking Paint (Word-Symbol)	Square Foot
Pavement Marking Paint (Xwalk-Stop Line)	Square Foot
Thermoplastic Pavement Marking (Word-Symbol)	Square Foot
Thermoplastic Pavement Marking (Xwalk-Stop Line)	Square Foot
Preformed Thermoplastic Pavement Marking	Square Foot
Preformed Thermoplastic Pavement Marking (Word-Symbol)	Square Foot
Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	Square Foot

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

Glass beads and cleaning with high-pressure water blast or air blast shall be included in the cost of the work.

Calibration and the verification of DLS equipment will not be measured and paid for separately but shall be included in the work.

Each authorized application of temporary pavement marking will be measured and paid for at the contract unit price for the type of material used.

Control points and Contractor pavement marking plans will not be measured and paid for separately but shall be included in the work.

All costs associated with having the Preformed Plastic Pavement Marking manufacturer-trained installer on-site and providing the documentation will not be measured and paid for separately but shall be included in the work.

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July 1, 2025

AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on all projects.

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			

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

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this specification, and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the Invitation for Bids and on the plans. In cases where the work is in two or more counties covered by differing percentage goals, the highest percentage will govern.

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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

to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractor toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any office of Federal Contract Compliance Programs Office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following;

   a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with

specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and maintain a record of the organization's responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source of community organization and of what action was taken with respect to each individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when he Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees at least once a year, and by posting the Contractor's EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the Contractor's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc. such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and Contractor's activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligation.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goal and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even thought 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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AFFIRMATIVE ACTION REQUIREMENTS
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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

employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The Contractor will include these requirements in every subcontract of $10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. *Equal Employment Opportunity Policy*. The Contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program;

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

3. *Equal Employment Opportunity Officer*. The Contractor will designate and make known to the State highway agency contracting officers and equal employment opportunity officer (herein after referred to as the EEO Officer) who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. *Dissemination of Policy*.

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

      (1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the Contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

      (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official,

covering all major aspects of the Contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the Contractor.

(3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the Contractor's procedures for locating and hiring minority group employees.

b. In order to make the Contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:

(1) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

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(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

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 Contract 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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AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

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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AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

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.

July 1, 2025

CERTIFIED PAYROLL REQUIREMENTS
FOR CONSTRUCTION CONTRACTS

NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies, which use the Standard Specifications for Road and Bridge Construction to administer construction projects, use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on:

(1) All FHWA-assisted construction contracts.

(2) Select local agency FHWA-assisted construction contracts that elect to use the CDOT LCPtracker certified payroll system on projects advertised prior to July 1, 2022.

(3) All local agency FHWA-assisted contracts advertised on or after July 1, 2022.

(4) All state-funded CDOT construction contracts advertised on or after July 1, 2021, (local agency projects are exempt from this requirement).

July 1, 2025

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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.

March 14, 2025

U.S. Dept. of Labor Davis Bacon Minimum Wages
Colorado Highway Construction
General Decision Number - CO20250006

Notice

The Standard Special Provision (SSP) on the following page(s) revises or modifies CDOT's Standard Specifications for Road and Bridge Construction. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision on all federal-aid projects with contracts exceeding $2000, except for non-ARRA projects on roadways classified as local roads or rural minor collectors, which are exempt. Projects on local roads, rural minor collectors, and enhancement projects funded with ARRA funds are not exempt.

Decision Nos. CO20250006 dated January 3, 2025 supersedes **Decision Nos. CO20240006** dated January 5, 2024.	**Modifications**			**ID**
	Mod Number	**Date**	**Page Number(s)**	
	1	**3/14/25**	**1**	
When work within a project is located in two or more counties and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.				
General Decision No. CO20250006 applies to the following counties: Adams, Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin, Jefferson, and Park counties.				

General Decision No. CO20250006

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	38.97	13.75%+7.80	**1**
	POWER EQUIPMENT OPERATOR:			
	Drill Rig Caisson			
1001	Smaller than Watson 2500 and similar	35.03	15.20	
1002	Watson 2500 similar or larger	35.41	15.20	
	Crane (50 tons and under)			
1003	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	35.78	15.20	
	Crane (51 - 90 tons)			
1004	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	36.09	15.20	
	Crane (91 - 140 tons)			
1005	Arapahoe, Broomfield, Clear Creek, Elbert, Gilpin	37.54	15.20	
1006	**Scraper**			
1007	Single bowl under 40 cubic yards	35.20	15.20	
1008	40 cubic yards and over	35.41	15.20	

General Decision No. CO20250006 **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	

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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
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) (Excludes Flaggers)			
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	

General Decision No. CO20250006

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 Specialty 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. CO20250006 **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:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to: davisbaconinfo@dol.gov, or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to: BCWD-Office@dol.gov, or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to: dba.reconsideration@dol.gov, or by mail 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 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.

End of General Decision No. CO20250006

On The Job Training

Notice

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions regarding its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies that use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

INSTRUCTIONS FOR USE ON CDOT CONSTRUCTION PROJECTS:

Use this standard special provision on all Federal-aid projects, including local agency projects, except for local agency projects where the local agency will not use LCPtracker for reporting.

1
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."

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

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

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.

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.

July 1, 2025

Required Contract Provisions
Federal-Aid Construction Contracts

Notice

The Standard Special Provision (SSP) on the following page revises or modifies CDOT's Standard Specifications for Road and Bridge Construction. The Construction Engineering Services Branch has reviewed, approved, and issued it. Use as written without change. Do not use modified versions of it on CDOT construction projects. Do not use the following special provision on CDOT projects in a manner other than specified in the instructions without approval by CDOT's Standards and Specifications Unit. The instructions for use appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use this standard special provision all on federal-aid construction projects.

Include the revised 1273 where the bids or the responses to solicitations are **due after October 23, 2023.**

July 1, 2025

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 reprocurement 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/WHD/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 reprocurement 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 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).

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.

Exhibit G

FHWA-1273 – Revised October 23, 2023

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 reprocurement 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/WHD/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 reprocurement 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.

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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.

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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 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).

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.

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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.