

TECHNICAL SPECIFICATIONS

The technical specifications for construction for the El Paso County Intersections Project shall consist of the applicable sections and subsections of the Colorado Department of Transportation (CDOT) Specifications (2023 Edition) (the *Standard Specifications*), and the revisions to the “Standard Specifications” (the *Project Special Provisions*) provided herein.

In the event there are conflicts within the “Standard Specifications,” the order of precedence will be based upon the order in which the Standard Specifications are listed.

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STANDARD CONSTRUCTION SPECIFICATIONS

The Standard Specifications for Construction for this Project shall consist of the applicable sections and subsections, numbered Section 100 through Section 600, of the 2023 "Colorado Department of Transportation Standard Specifications for Road and Bridge Construction" or most recent version.

The Colorado Department of Transportation General Provisions consists of Sections 100 through 109 of the above-mentioned specifications.

"Project Special Provisions" provide necessary material, construction, measurement and basis of payment information for all bid items that do not conform with the "Standard Specifications". "Project Special Provisions" shall take precedence over construction contract drawings and supplement, amend or replace the referenced "Standard Specifications".

Payment will be made for items listed in the bid form only, unless otherwise approved by the County. Any items not listed in the bid form that are required to complete the work shall be considered incidental to the work.

PROJECT SPECIAL PROVISIONS

CONSTRUCTION LIMITS

The construction limits for the Hampton at Ericson Site are defined as between 1720 Hampton S and 1724 Hampton S, Colorado Springs, as well as the north side of Hampton S and the right-of-way (ROW) at that location. The construction limits of the south Calle Corvo site are defined as the ROW east of 11580 Calle Corvo, Colorado Springs. The construction limits of the north Calle Corvo site are defined as the ROW west of 11325 Calle Corvo, Colorado Springs.

All work shall occur within the El Paso County right-of-way and existing easements. Impacts to existing landscaping, concrete, asphalt, sidewalk, structures, sprinklers, curbs, gutters, or any other elements not designated in the Contract Drawings or by the Project Manager to be impacted during construction shall be repaired by the Contractor at their own expense.

COMMENCEMENT AND COMPLETION OF WORK

(Working Hours and Schedule)

The Contractor shall commence work under the Contract per the County Contract Conditions. The Contractor shall complete all work in accordance with the "Notice to Proceed."

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

1. Mobilization
2. Traffic control
3. Temporary construction stormwater control measures
4. Removal of portions of pavement
5. Stormwater infrastructure
6. Curb & gutter
7. Paving
8. Landscape restoration
9. Anticipated substantial completion
10. Anticipated final completion

Contractor Schedule

The Contractor's progress schedule shall be a Critical Path Method Schedule in Microsoft Project.

The Contractor must coordinate with El Paso County Project Manager on access ahead of beginning construction. The Contractor will not be compensated for administrative, or management costs incurred during down time for utility or other delays.

No additional payment will be made for out-of-sequence work.

Work Restrictions - Nights and Weekends

Night work and weekend work may be allowed with sufficient notice and prior written approval of the County Project Manager. If night work and/or weekend work is approved, the Contractor must coordinate with El Paso County Project Manager throughout duration of night work and/or weekend work.

Work Restrictions for County Holidays

Work shall not occur on holidays listed below. Work shall cease at 12:00 p.m. (noon) the day before the holiday or on the Friday before a Monday holiday. Work may resume at 8:00 a.m. the day after the holiday or the Monday after a Thursday and/or Friday holiday. All travel ways shall be open to the public and clear of obstructions during the holiday non-working periods listed above.

Holidays:

- New Year's Day (observed)
- Martin Luther King Jr's Day (observed)
- Presidents' Day
- Memorial Day
- Independence Day
- Labor Day
- Veterans Day (observed)
- Thanksgiving Day
- Day After Thanksgiving
- Christmas Eve
- Christmas Day

Work Restrictions for County Sponsored or Sanctioned Events

Work may be restricted by County sponsored or sanctioned events. The Project Manager will inform the Contractor of such events a minimum of two weeks prior to said event.

Work Restrictions for County Noise Ordinance and Street Occupancy Permit

Work shall be in conformance with the County's Noise Ordinance. The contractor will be required to submit a noise ordinance permit for the scheduled weekend closures and for any additional night work that may get approved by the Project Manager.

Substantial Completion

Substantial completion will be granted for facilities open to the County upon approval by the Project Manager.

Adjacent Property Owner Coordination

The Contractor shall be responsible to coordinate with all property owners adjacent or impacted by proposed improvements at least 48 hours prior the commencement of construction. The Contractor shall provide construction schedules and timelines with the property owners and communicate any updates in schedule changes.

REVISION OF SECTION 100 - GENERAL PROVISIONS

REVISION OF SECTION 101 – DEFINITION AND 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" most current edition.

Certain terms utilized in the CDOT Specifications referred to in the paragraph above shall be interpreted to have different meanings within the scope of the Contract. A summary of redefinitions follows:

101.28 Department. Refers to El Paso County

101.29 Engineer. El Paso County Project Manager or designated representative.

101.39 Laboratory. El Paso County or their designated representative.

101.51 Project Engineer. The El Paso County Project Manager or designated representative.

101.76 State. El Paso County (where applicable)

REVISION OF SECTION 107 – LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

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

Subsection 107.06 Safety, Health, and Sanitation Provisions shall include the following:

Contractors shall comply with El Paso County's Noise Control Ordinance for all construction activities scheduled to occur between the hours of 7:00 a.m. and 7:00 p.m. Monday through Sunday and 7:00 p.m. and 7:00 a.m. Monday through Sunday if noise levels are expected to exceed 80 dB(A) or 75 dB(A), respectively. Nighttime construction activities exceeding noise levels during these restricted hours may not be initiated without first obtaining this permit variance from El Paso County.

Under any circumstances where nighttime construction activities will take place between the restrictive hours listed above where noise levels will exceed the noise impact thresholds, the Contractor is required to apply for a construction noise variance no less than one month before the startup date for construction.

The Contractor is responsible for fulfilling the requirements set forth by El Paso County and is responsible for obtaining the permit variance prior to the construction startup date. All exemption requests and permitting requirements will not be paid separately but will be included in the work.

If the Contractor is ordered to cease operations due to violations of a noise ordinance as a result of equipment back-up alarms, the Contractor shall take whatever actions are necessary to comply with the ordinance and continue work on the project. This includes the option of using an observer in lieu of using the equipment's back-up alarms as allowed by 29 CFR 1926.601(b) (4) (II) of the OSHA Safety and Health Standards. Should the Contractor fail to mitigate the noise ordinance violation, the Contractor shall be deemed to have waived any right to a claim as a result of work suspension or being required to perform the work at times not specified in the Contract.

If the Contractor uses an observer in lieu of back-up alarms, the Contractor shall follow all of the OSHA requirements regarding the use of observers.

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

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

The Contractor shall save all existing vegetation (including trees, shrubs, ground covers, grasses, wetlands, & riparian) in this area, except for that vegetation which must be removed to accommodate construction of the project, per the Contract Drawings. Specific areas of vegetation to be protected shall be as directed by the Project Manager and shall be protected by using orange construction fencing, or as noted in Section 212. Fencing for trees shall be installed in accordance with Section 212 or approved by the Project Manager. Equipment shall not be installed, and stockpile material shall not be stored within 15 feet of existing trees to remain.

The Contractor shall perform all the work in such a manner that the least environmental damage will result. All questionable areas or items shall be brought to the attention of the Project Manager for approval prior to removal or any damaging activity.

The Contractor shall promptly report any vegetation damaged or scarred during construction to the Project Manager for assessment of damages. Damaged or destroyed fenced vegetation shall be replaced at the expense of the Contractor. Vegetation of replaceable size shall be replaced at the Contractor's expense. When trees, shrubs beyond replaceable size, or wetlands have been damaged or destroyed, the Contractor shall be liable for the appraised value based upon the official current publications. For trees and shrubs, use the International Society of Arboriculture, Guide for Plant Appraisals. The Contractor shall pay any fines or jail time should a wetland be damaged, at no cost to the project. The value of disturbed vegetation shall be calculated according to the following formula:

(Vegetation size) x (Species) x (Location) x (Condition) x (Arborist or Wetland Specialist) = Vegetation value

A consulting Arborist retained by the County will determine the value of the trees and shrubs. A consulting Wetland Specialist shall determine the value of the wetland or wetland species. This value will be deducted from any money due to the Contractor.

The determination as to whether a plant is of replacement size or beyond will be made by the County's Landscape Architect or Wetland Specialist.

If the fence is knocked down or destroyed by the Contractor, the Project Manager will suspend the work, wholly or in part, until the fence is repaired to the Project Manager's satisfaction 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.

Subsection 107.23 Archaeological and Paleontological Discoveries is hereby revised as follows:

When the Contractor's operations, including materials pits and quarries, encounter plant or animal fossils, remains of prehistoric or historic structures, prehistoric or historic artefacts (bottle dumps, charcoal from subsurface hearths, old pottery, potsherds, stone tools, arrowheads, etc.), the Contractor's affected operations shall immediately cease. The Contractor shall immediately notify the Project Manager, or other appropriate agency for contractor source pits or quarries, of the discovery of these materials. When ordered to proceed, the Contractor shall conduct affected operations as directed. Additional work, except that in contractor source materials pits or quarries, will be paid for by El Paso County as provided in the General Contract conditions when contract unit prices exist, or as extra work as provided in the General Contract Conditions when no unit prices exist. Delays to the Contractor, not associated with work in Contractor sources, because of the materials encountered may be cause for extension of contract time in accordance with the General Contract Conditions. If fossils, prehistoric or historic structures, or prehistoric or historic artefacts are encountered in a contractor source materials pit or quarry, all costs and time delays shall be the responsibility of the contractor.

REVISION OF SECTION 200 - GENERAL PROVISIONS

REVISION OF SECTION 201 – CLEARING AND GRUBBING

Subsection 201.01 Description is hereby revised as follows:

This work consists of clearing, grubbing, removing, and disposing of trees, vegetation and debris within the limits of the right of way, easement areas, borrow pits, and other areas shown in the Contract or required by the work. Trees, vegetation, and objects designated to remain shall be preserved free from injury or defacement.

Subsection 201.02 Construction Requirements is hereby revised as follows:

Prior to construction, the contractor shall set up a site meeting with the County Project Manager and County Forestry Department to discuss and mark all trees and vegetation to be removed. Trees and vegetation not designated in the Contract Drawings or by the County to be removed shall not be impacted by the Contractor. Any protection measures set forth by the Contractor to avoid impacting the trees outside of those designated to be protected including, but not limited to fencing shall not be paid for separately but shall be included in the work.

All other surface objects including, existing stumps, roots, bushes, brush and other protruding vegetative obstructions within the construction limits not designated to remain shall be cleared and grubbed excluding sod which shall be measured and paid for separately (see section 220.02). Stumps shall be removed to at least 2 feet below final grade.

Except in areas to be excavated, all holes resulting from the removal of obstructions shall be backfilled with suitable material and compacted.

No material or debris shall be disposed of within the project limits without the written permission of the County. The Contractor shall make all arrangements to obtain written permission from property owners for disposal locations outside the limits and view of the project. Copies of this written agreement shall be furnished to the County before the disposal area is used.

All cleared merchantable timber shall be removed from the project and shall become the property of the Contractor. Branches on trees or shrubs shall be removed as directed. Branches of trees extending over the construction area shall be trimmed to give a clear height of 20 feet above the construction area. All trimming shall be done per good tree surgery practices and shall not be paid for separately but shall be included in the work.

Subsection 201.03 Method of Measurement is hereby revised as follows:

Clearing and Grubbing will be measured and paid for on a by acre basis. Payment under clearing and grubbing shall include all removal and proper disposal of sediment and trash. All labor, materials, and equipment required to perform the task are incidental to clearing and grubbing.

Subsection 201.04 Basis of Payment is hereby revised as follows:

Payment for Clearing and Grubbing will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
201-00001	Clearing and Grubbing	Acre

REVISION OF SECTION 202 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS

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

All equipment, labor, hauling, sorting, removal, delivery, and documentation of recyclable materials as per Special Contract Condition, will not be paid separately; all costs incurred by the Contractor to meet the requirements of Special Contract Conditions shall be included in the removal of the related appurtenance.

Subsection 202.02 General shall be revised to include the following:

The Contractor will mark the limits of removals in the field. The Project Manager or designee will verify these limits prior to commencement of removal efforts. Removals in the vicinity of trees to remain shall conform to applicable provisions of the Tree Retention and Protection specification.

The Contractor will report and follow the El Paso County no asbestos requirements as applicable during the course of the project.

Subsection 202.07 Pavements, Sidewalks, Curbs is hereby replaced as follows:

All concrete pavement, sidewalks, structures, curbs, gutters, designated for removal, shall be disposed of per subsection 201.02.

Subsection 202.09 Removal of Asphalt Mat (Planing) shall be replaced as follows:

The Contractor shall not commence planning operations until the hot mix asphalt, (HMA) Mix Design (CDOT Form 43) has been approved and signed.

Before beginning planing operations, the Contractor shall submit a planing plan for approval by the Engineer. This plan shall include as a minimum:

The number and types of planers to be used.

The width and location of each planing pass.

The number and types of brooms to be used, and their locations with respect to the planers. The Contractor shall have at least one back up broom on the project at all times in case one of the operating brooms breaks down.

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.

Operation with broken or missing teeth will not be allowed. Worn teeth shall be replaced if the planer does not produce a uniform surface.

The planer shall be capable of picking up the removed asphalt in a single operation.

A self-loading conveyer shall be an integral part of the planer. Windrows will not be allowed.

All planed areas shall be broomed with a pickup broom, unless otherwise specified, before being opened to traffic. A sufficient number of brooms shall be used immediately after planning to remove all planed material remaining on 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.

At the completion of each day's work, vertical edges caused by planing that are greater than 1 inch in height shall be: Longitudinal - tapered to not less than a 3:1 slope, Transverse – tapered to not less than a 50:1 slope.

The roadway shall be left in a safe and usable condition at the end of each workday. All required pavement markings, removed by the planing, shall be restored before the roadway is opened to traffic.

All planing shall be completed parallel to the travel lanes unless otherwise directed by the Engineer.

All planing shall be completed full width before resurfacing commences.

Subsection 202.11 Method of Measurement shall be revised to include the following:

Removal of Structure will be measured by each existing structure removed as called out in the Contract Drawings, including but not limited to, existing trees, inlets, pipes, curb, gutter and sidewalk, and asphalt mat. Payment under Removal of Structure shall include the existing trees, inlets, pipes, curb, gutter and sidewalk, and asphalt mat shown per Contract Drawings, and includes, but is not limited to, required materials, equipment, labor, earthwork, transporting, and disposal required to remove existing structure.

Removal of Concrete Pavement will be measured by area in square yards, regardless of thickness.

Removal of Asphalt Mat will be measured by square yard regardless of thickness. Payment under Removal of Asphalt Mat shall include the sawcut limits shown per Contract Drawings and includes, but is not limited to, required materials, equipment, labor, earthwork, transporting, and disposal required to remove existing asphalt mat.

Subsection 202.12 Basis of Payment is hereby deleted and replaced as follows:

The accepted quantities will be paid at the contract unit price for each of the pay items that appear in the bid schedule. The work includes saw-cutting, removing, hauling and disposal of such items, excavation, and subsequent backfill (with moisture/density control) to proposed subgrade elevation. The work shall also include salvageable materials removed, their custody, preservation, storage, haul, and disposal as provided herein.

Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
202-00010	Removal of Tree	Each
202-00019	Removal of Inlet	Each
202-00035	Removal of Pipe	Linear Foot
202-00204	Removal of Curb, Gutter and Sidewalk	Linear Foot
202-00210	Removal of Concrete Pavement	Square Yard
202-00220	Removal of Asphalt Mat	Square Yard

REVISION OF SECTION 203 – EXCAVATION AND EMBANKMENT

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

Subsection 203.04 General is hereby revised to include the following:

The Contractor shall protect and promptly dewater and recondition and/or remove affected soils from all excavations from water regardless of source.

Unclassified Excavation shall consist of all work to excavate materials in designated areas. Excess suitable material may be used as part of proposed embankments within the project limits. Embankment materials and construction shall not be paid for separately but shall be included in the work of Unclassified Excavation.

Unsuitable Material encountered in the excavation shall be removed to the depth and extents directed by the County. The excavated area shall be backfilled to the finished graded section with approved material. Materials that contain organics or that cannot be dried, or moisture conditioned, then compacted to the required density shall be disposed of and shall not be reused as embankment fill. Materials that do not contain organics and that can be dried, or moisture conditioned and compacted to the required density may be reused as embankment fill as approved by the County.

Subsection 203.11 Method of Measurement is hereby revised to include the following:

Unclassified Excavation shall be measured in its final position after compaction, volume, in cubic yard based on the limits of disturbances lines shown on the construction drawings and accepted by the County as complying with the Contract Drawings and specifications in accordance with Section 202 of the City of Colorado Springs Standard Specifications. The Contractor shall supply calculations to the County based on the as-built survey. The calculations shall be stamped and signed by a registered Professional Engineer or Surveyor in the State of Colorado.

Unsuitable Material will be measured and paid for by the Cubic Yard. Payment for replacement of unsuitable material shall be as follows: If excavated material can be re-used as embankment fill by moisture conditioning and compaction, replacement shall be included in the cost for Unsuitable Material. If the material cannot be re-used as embankment fill, the contractor shall first utilize any excess material from Unclassified Excavation. Otherwise, payment for replacement of unsuitable material shall be for the volume that is placed in the excavated area at the respective unit price for the material that is approved by the County and used.

Payment under Unclassified Excavation and Unsuitable Material shall include, but is not limited to, required materials, equipment, labor, earthwork, transporting, and disposal required.

Subsection 203.12 Basis of Payment is hereby revised to include the following:

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

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
203-00000	Unclassified Excavation	Cubic Yard

REVISION OF SECTION 208 – EROSION CONTROL

Section 208 of the Standard Construction Specifications is hereby removed in its entirety and replaced with the following:

PART I: DEFINITIONS

Definitions used for this Section shall consist of those listed in “CDOT Standard Specifications for Road and Bridge Construction”, 2023 edition.

Additional Definitions applicable to this Section are listed heretofore:

Basis of Payment: The terms under which “Work” is paid, as designated “Pay Item” in accordance with the quantity measured and the “Pay Unit.”

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, installation of devices, maintenance procedures, and other management practices deployed to stabilize the construction site to prevent or reduce the pollution of State Waters (see definition below). Stormwater BMPs can be classified as “structural” (i.e., devices installed or constructed on a site) or “non-structural” (procedures, such as modified landscaping practices). BMPs are also referred to as Temporary Construction Control Measures, Temporary Control Measures, and Construction Control Measures.

Colorado Department of Health and Environment (CDPHE): State of Colorado, Water Quality Control Division responsible for issuance of State Construction Stormwater Permit.

Colorado Department of Transportation (CDOT): State agency that has published standards for Erosion Control with accompanying Erosion Control Supervisor certification courses.

Final Stabilization: Point of construction when all ground surface disturbing activities at the site have been completed and uniform vegetative cover has reached 70% of pre-disturbance vegetative cover (as judged by comparison to nearest fallow vegetation), or equivalent permanent features have been employed. At this point, all temporary BMPs can be removed, all construction and equipment maintenance wastes have been disposed of properly.

Municipal Separate Storm Sewer System (MS4): A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curb, gutters, ditches, man-made channels, or storm drains):

- a) Owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of stormwater or other wastes, including special districts under State law such as a sewer district, flood control district, or drainage district, or similar entity, or designated and approved management agency under Section 208 of the Federal Clean Water Act that discharges to State Waters;
- b) Designed or used for collecting or conveying stormwater;
- c) Which is not a combined sewer; and
- d) Which is not part of a Publicly Owned Treatment Works (POTW).

State Construction Stormwater Permit: Colorado Revised Statutes required that all construction sites/development Project, which, by definition, disturb one or more acres in area, shall be covered by a State issued general permit for construction activities. Information on the application requirements for the State permit can be obtained by phone at 303-692-3500; or by visiting their offices located at 4300 Cherry Creek Drive South, Denver, CO 80246-1530, or on the Web at: <https://www.colorado.gov/pacific/cdphe/news/water-quality-permits> Contractor shall obtain the State Construction Stormwater Permit prior to construction.

State Waters: Any and all surface waters which are contained in or flow in or through this State, not to include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

Examples of State Waters include, but are not limited to, perennial streams, intermittent or ephemeral gulches and arroyos, ponds, lakes, reservoirs, irrigation canals or ditches, wetlands, stormwater conveyances (when they discharge to a surface water), and groundwater.

Substantial Completion of Erosion Control: Point of construction when permanent BMPs have been installed, initial growth is in place, and the site is waiting for vegetative cover to reach 70% of pre-disturbance vegetative cover.

PART II: DESCRIPTION

This Work shall consist of constructing, installing, maintaining, and removing when required, BMPs during the life of the Contract until Final Stabilization to prevent or minimize erosion, sedimentation, and pollution of any waters including storm, drainageways, MS4, State Waters, and/or wetlands. Work under this Section includes the Contractor obtaining required Permits, including the State Construction Stormwater Permit, utilizing SWMP elements provided in the Contract, and/or SWMP elements specifically prepared by the Contractor as defined herein. The work shall also consist of providing on-going maintenance and monitoring of the SWMP as may be necessary due to the specific and/or dynamic needs of the Project as well as meet all requirements set forth within the CASM.

The Contractor shall coordinate the construction of temporary BMPs with the construction of permanent BMPs (permanent Control Measures) to assure economical, effective, and continuous erosion and sediment control and water pollution prevention throughout the construction period until Final Stabilization is achieved.

PART III: MATERIALS

The materials to be used for BMPs shall conform to each specific detail as set forth within the Contract Drawings.

PART IV: EROSION CONTROL PERMIT STATUS

The current SWMP status for the Project is as follows: The design of the Project is anticipated to disturb less than 1 acre and is not required to obtain County nor State SWMP Permits.

PART V: CONSTRUCTION REQUIREMENTS

A) SCHEDULES:

At least ten (10) working days prior to the beginning of any construction work, the Contractor shall submit for approval a schedule for accomplishment of temporary and permanent BMPs shown in the Contract Drawings. This schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent BMPs. The schedule shall include BMPs for all areas within the Project boundaries, including but not limited to, haul roads, borrow pits, and storage and other staging sites. Work shall not be started until the BMP schedule has been approved in writing by the Project Manager, and on-site pre-construction inspection is performed and approved by County inspector. Once the work has started, and during the active construction period, the Contractor shall update the schedule for all BMPs on a regular basis, and as required to keep the SWMP in compliance.

B) CONSTRUCTION IMPLEMENTATION: The Contractor shall incorporate into the Project all BMPs that are appropriate for the current phase of work, as outlined in the accepted schedule.

C) UNFORSEEN CONDITIONS: The Contractor shall direct the ECS (under the supervision of a Professional Engineer licensed in the State of Colorado) to design and implement BMPs for correcting conditions unforeseen during design of the Project, or as possible for emergency situations, which arise during construction. The Project's SWMP, MHFD Vol 3 standards and details, and CDOT's "Erosion Control and Storm-Water Quality Guide," and any approved modification to these documents as proposed by the Contractor, shall be used as reference documents for the purpose of designing appropriate BMPs. Measures and methods proposed by the Contractor to deal with unforeseen conditions shall be reviewed and approved in writing by the Project Manager and the Engineer prior to implementation and construction.

In an emergency situation, the Contractor shall use best judgment for immediately responding to the emergency situation as it arises and shall notify the Project Manager and ECS of the emergency situation and BMPs employed in response as soon as practical after installation.

D) PERMITS:

The Contractor shall obtain all required permits for the Project including those required by federal, state, and local agencies. The Contractor shall obtain (or transfer from the County when specified) required erosion control and water quality permits and shall be responsible for compliance with all requirements under any such permits.

F) APPLYING BMPs TO STABILIZE SITE:

The duration of the exposure of incomplete construction to the effects of weather shall be as short as practicable. BMPs such as: seeding, surface roughening, mulching, applying tackifier, use of geotextiles and matting, permanent landscaping, or other selected BMPs shall be applied within fourteen (14) calendar days of completion of grading/soil disturbance activities to stabilize the construction site unless disturbed area is within 100 feet of an MS4 or State Waters or has slopes of 3 to 1 or greater in which case BMPs shall be implemented within seven (7) calendar days of completion of grading activities. Disturbed areas where work is temporarily halted shall be temporarily stabilized within seven (7) days after the activity ceased unless work is to be resumed within thirty (30) calendar days after the activity ceased. Clearing and grubbing operations shall be scheduled and performed to minimize both the area of the Project disturbed at a given time and the amount of time that disturbed areas remain open. BMPs such as temporary seeding are required between successive construction stages when disturbed areas will not be stable or active for thirty (30) calendar days or more. No payment will be made for additional work required because the Contractor has failed to properly coordinate the BMP schedule, thus causing previously stabilized areas to be disturbed by operations that could have been performed prior to the stabilization. Upon failure of the Contractor to coordinate the permanent BMPs with the grading operations in a manner to effectively control erosion and prevent water pollution, the Permit Enforcement Authority can suspend the Contractor's grading operations and the Project Manager can withhold monies due to the Contractor on current estimates until such time that all aspects of the work are coordinated in an acceptable manner.

G) WORK OUTSIDE LIMITS OF CONSTRUCTION: Non-contiguous areas outside the limits of construction that are used by the Contractor that include, but are not limited to, borrow pits, haul routes, storage and disposal areas, field offices, maintenance, batching areas, etc., shall have appropriate BMPs implemented by the Contractor at the Contractor's expense.

H) MAINTENANCE: The Contractor shall continuously maintain erosion and sediment control BMPs on a daily basis or as directed by the ECS so that they function properly during and after construction (including work suspensions) until Final Stabilization has been approved by the Permit Enforcement Authority. Maintenance includes, but is not limited to, the following items:

1. From the time seeding and mulching work begins until the date the Project has reached Substantial Completion of Erosion Control, the Contractor shall keep all seeded areas stabilized at all times. Any damage to seeded areas or to mulch materials shall be promptly repaired.
2. All inspection sediment removal, and BMP maintenance activities to comply with all Federal, State & Local erosion control permit requirements until Final Stabilization is reached.
3. All removal and replacement of existing BMPs due to damage to same suffered either by the contractor, outside agencies, the public, or acts of God.
4. All required mechanical and/or manual street sweeping.
5. Discretionary changes required of any regulatory enforcement officer. If the Contractor fails to maintain the BMPs in accordance with the Contract, or as directed, the County may at the expiration of a period of 48 hours, after having given the Contractor written notice, proceed to maintain BMPs as deemed necessary. The cost thereof will be deducted from any compensation due, or which may become due to the Contractor under this Contract.

K) SUBSTANTIAL COMPLETION OF EROSION CONTROL: Substantial Completion of the Project as defined by the CDOT Standard Specifications for Road and Bridge Construction cannot be reached until Substantial Completion of Erosion Control has been granted. Granting of Substantial Completion of Erosion Control must be requested by the Contractor and be approved by the Project Manager in the form of a "Certificate of Substantial Completion of Erosion Control".

L) FINAL STABILIZATION: Granting of Final Stabilization must be requested by the Contractor and be approved by the Project Manager. Other permanent soil stabilization techniques may be proposed, in

writing, by the Contractor and used upon approval, in writing, by the Project Manager. The Contractor shall follow the following procedures for approval of Final Stabilization:

1. The Contractor shall coordinate with the Project Manager to hold a Final Inactivation Inspection.
2. If passing, the Project Manager transmits a letter of approval for Final Stabilization.
3. If not passing, the Project Manager transmits a letter of denial for Final Stabilization with associated inspection report to Contractor.
4. Stabilization, inspection, and maintenance requirements shall continue until confirmation of having met final closure requirements have been granted in writing by the Project Manager. When Final Stabilization has been reached, the Project Manager shall issue a "Certificate of Final Stabilization".
5. Once the Inactivation request is approved by the County, the contractor can apply to close the State Stormwater Permit.

M) FINAL ACCEPTANCE:

The Contractor must meet all obligations outlined in the County's Criteria as well as the CDOT Standard Specifications for Road and Bridge Construction prior to final acceptance.

PART VI: CONSTRUCTION OF BMPs

BMPs shall be constructed so that they conform to all requirements as set forth within the Contract Drawings. They shall meet all requirements set forth within each BMP detail and shall be installed and maintained so that they function in an effective and operable manner.

PART VII: METHOD OF MEASUREMENT

The Contractor is responsible for routine maintenance of all control measures. Installation, inspection, management, labor, and materials related to the maintenance of the control measures shall not be paid for separately but shall be included in the work.

Silt fence, silt berms, erosion logs, gravel bags, silt dikes, temporary berms, temporary diversions, temporary drains, and brush barriers will be measured by the actual number of linear feet that are installed and accepted. Stakes, anchors, connections and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

Concrete washout structure and vehicle tracking pads will be measured by the actual number of structures that are installed and accepted, and if specified on the SWMP as in-ground will include excavation, embankment, concrete, liner, erosion bales, fencing, and containment and disposal of concrete washout and all other associated waste material.

Storm drain inlet protection will be measured by the unit as specified in the Contract. Sediment trap and sediment basin quantities will be measured by the unit which shall include all excavation and embankment required to construct the item.

Removal and disposal of sediment, concrete & trash that is or is not generated by construction activities will not be measured separately but shall be included in the work.

Any excavation required for the removal of sediment from traps, basins, areas adjacent to silt fences and erosion bales, and any other cleanout excavation of accumulated sediment, and removal of check dams or storm drain inlet protection will not be measured separately but shall be included in the work.

Required materials, equipment, labor, earthwork, transporting, and disposal required to install, maintain, and remove BMPs will not be measured separately but shall be included in the work.

PART VIII: BASIS OF PAYMENT

Work to furnish, install, maintain, replace (if not due to contractor negligence), remove, and dispose of BMPs specified in the Contract will be paid for at the contract unit price.

Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
700-70380	Erosion Control	Lump Sum

Street sweeping and sediment removal during construction shall be considered incidental to the work and not paid for separately.

Temporary erosion control will be measured by the BMPs used and paid for as a lump sum cost. Surface roughening and vertical tracking will not be measured and paid for separately but shall be included in the work. Payment for ECM will be full compensation for all work and materials required to furnish, install, maintain, and remove the BMP when directed.

Payment will be made for BMPs replaced as approved by the Engineer. Temporary erosion and sediment BMPs 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.

REVISION OF SECTION 210 – RESET STRUCTURE

Subsection 210.04 Fences and Gates shall be revised with the following:

Where fences (except snow fence) are reset, the Contractor shall supply and install any new materials required to restore the fence to acceptable condition except for new posts. The Contractor shall supply new posts as needed for the reset fence per Section 607. Wire in the old fence shall be salvaged and used in the reset fence.

Where snow fences are reset, panels shall be removed from their existing location and reset at the new location.

Gates designated to be reset shall be removed and restored for service at the new locations.

Right-of-way fence shall be reset approximately six inches inside the boundary of the highway right of way shown on the plans. Anchorages, footings, or fence appurtenances shall not extend beyond the limits of the highway right of way without the written consent of the abutting property owner.

Subsection 210.06 Mailbox shall be revised with the following:

Mailboxes complete with supporting structures are to be removed and temporarily reset at points near their original location to be accessible for mail delivery service. Upon completion of paving operations, the boxes shall again be reset at the locations designated. A supporting structure may contain one or more mailboxes. New permanent mailbox support posts and mounting brackets shall be furnished and installed per direction from the County.

Subsection 210.12 Method of Measurement shall include the following:

Reset Structure will be measured as an each for one unit.

Payment under Reset Mailbox and Reset Fence shall include, but is not limited to, required materials, equipment, labor earthwork, transporting, and disposal required.

Subsection 210.13 Basis of Payment shall include the following:

Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
210-00010	Reset Mailbox	Each
210-01000	Reset Fence	Linear Foot

REVISION OF SECTION 300 – BASES

REVISION OF SECTION 304 – AGGREGATE BASE COURSE

Section 304 of the Standard Specifications is hereby revised as follows:

Subsection 304.02 Materials is hereby revised to include the following:

Contractor to review and install aggregate base course per El Paso County Appendix D Pavement Design Criteria and Report. Aggregate base course materials are to meet gradation specification outlined in Table D-6 of the El Paso County Appendix D Pavement Design Criteria and Report.

Subsection 304.06 Shaping and Compaction is hereby revised to include the following:

All material within and outside the asphalt section shall be compacted to 95% of maximum density as determined in accordance with AASHTO T-180 as modified by CP 23. It is the Contractor's responsibility to provide Quality Control density testing and provide test results in a testing frequency, method, and report as per Pre-construction submittal approved by the Project Manager. Quality Control testing, reports, and submittals will not be paid separately but shall be included in the work. Contractor shall confirm in writing test types, and frequency with El Paso County prior to beginning work.

Subsection 304.07 Method of Measurement is hereby revised as follows:

Payment under Aggregate Base Course (Class 6) shall be complete in place work and will be measured by volume in cubic yards. Payment under Aggregate Base Course (Class 6) includes, but is not limited to, subgrade preparation, structural fill (class 2), soil conditioning, bedding material, compaction, transportation, earthwork, labor, and equipment.

Subsection 304.08 Basis of Payment is hereby revised as follows:

Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
304-06007	Aggregate Base Course (Class 6)	Cubic Yard

When the contract does not include pay items for Aggregate Base Course, these items will not be paid for separately but shall be included in the work.

Testing, excavation, backfill, and bedding material shall be considered incidental to the work and not paid for separately.

REVISION OF SECTION 400 – PAVEMENTS

REVISION OF SECTION 403 – HOT MIX ASPHALT

Section 403 of the Standard Specifications for Roadway and Bridge Construction shall hereby include the following:

Hot mix asphalt (including patching) shall be paid by the square yard. Batch weights will not be permitted as a method of measurement. Tack Coat will not be measured and paid for separately but shall be included in the cost of the work.

It is the Contractor's responsibility to provide Quality Control density testing and provide test results in a testing frequency, method, and report as per pre-construction submittal approved by the County Project Manager. Quality Control testing, reports, and submittals will not be paid for separately but shall be included in the work.

The contractor shall refer to the County for information detailing lifts, asphalt grade, and mix grade.

Asphalt pad and patching shall be installed in conformance with the El Paso County Utility Trench Repair Detail Asphalt Patching Detail SD_4-20 and in conformance with the Pikes Peak Region Asphalt Paving Specifications. Asphalt to be removed within existing asphalt pavement sections should be replaced and installed in kind in its entirety.

Contractor shall confirm in writing test types, and frequency with El Paso County prior to beginning work.

Section 403.05 of the Basis of Payment shall hereby include the following:

Payment for Hot Mix Asphalt (Patching) shall be complete in place work and shall include all materials and labor required to install the asphalt patching. Materials incidental to asphalt patching includes, but is not limited to excavation, compaction, hand compacting/placement, and base course preparation.

Payment for Hot Mix Asphalt shall be complete in place work and shall include all materials and labor required to install the asphalt. Materials incidental to asphalt includes, but is not limited to excavation, compaction, rolling, hand compacting/placement, and base course preparation.

Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
403-34722	Hot Mix Asphalt (Grading SX)(75)(PG 58-28)	Square Yard

When the contract does not include pay items for Plant Mix Pavements, these items will not be paid for separately but shall be included in the work.

Testing, excavation, backfill, and bedding material shall be considered incidental to the work and not paid for separately.

The bottom of this excavation should then be moisture treated to a depth of at least 6 inches, brought to near optimum moisture content and compacted to a minimum of 90 percent relative compaction in accordance with ASTM D1557 prior to refilling the excavation to the required grade with properly compacted structural fill per Geotechnical Report.

REVISION OF SECTION 412 – PORTLAND CEMENT CONCRETE PAVEMENT

Section 412 of the Standard Specifications is hereby revised as follows:

Subsection 412.01 Materials shall be revised to include the following:

This work shall include curb chase. All work shall be in accordance with the latest edition of the CDOT Standard Specifications for Road and Bridge Construction", 2023 edition. Contractor shall confirm in writing test types, and frequency with El Paso County prior to beginning work.

Subsection 412.03 Classification shall be revised to include the following:

Mix designs must be submitted for approval by the Engineer. Such mix designs shall be submitted three (3) weeks prior to the anticipated concrete pavement placement date so as not to delay the scheduled commencement of the project, taking into account time for testing of the mix by the Contractor's laboratory. It is the Contractor's responsibility to provide Quality Control concrete strength testing and provide test results in a testing frequency, method, and report as per pre-construction submittal approved by the County Project Manager. Quality Control testing, reports and submittals will not be paid for separately but shall be included in the work.

Subsection 412.04 shall be deleted and replaced with Subsection 601.05, with the following revisions:

Calcium chloride (up to 1 percent by weight of cement) or Type C or E accelerators may be used under the following conditions:

- a. The median daily temperature is less than 55 degrees (Average of previous three days).
- b. The date of placement is between September 30th and May 30th.
- c. The concrete temperature may not exceed 80 degrees F prior to placement.

Difficulties encountered as a result of use of accelerators, the costs of associated delays, and corrective action costs shall be borne by the Contractor.

When High Early Strength is requested by the Engineer for the convenience of the County, field strength of 2500 psi shall be achieved in twenty-four (24) hours or less. An additional charge per cubic yard will be negotiated and paid for high early concrete when directed to be used by the Project Manager. If high early concrete is placed by the contractor without the request of the County the entire additional cost will be borne by the contractor. When directed by the Project Manager, a maturity meter (James Instrument Model No. 3006) shall be used to monitor on-site maturity of pavement concrete. The Contractor shall establish a maturity versus strength relationship for the concrete mixture being used. This correlation may be achieved by casting and curing cylinders on site, monitoring temperature and maturity of cylinders and paving concrete versus time, and testing cylinders at time intervals to establish the correlation.

Subsection 412.10 Placing Concrete shall be revised to include the following:

The Contractor is required to submit a detailed breakdown of paving equipment, vibratory devices, finishing tools, and provisions for protection from or avoidance of damage from weather impacts. This information shall be submitted for approval by the Engineer prior to commencing any construction activities.

Subsection 412.12 Finishing shall be revised to include the following:

The Contractor shall ensure that new concrete items built under this contract drain properly and, as such, there are no areas of standing water on new concrete items.

The Contractor shall protect all new concrete items built under this Contract against defacement, or other injury, from any cause. If said damage cannot be adequately repaired to the satisfaction of the Engineer, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Subsection 412.22 Opening to Traffic shall be deleted and replaced with the following:

The pavement shall be cleaned and opened to traffic in accordance with the time requirements shown on the Contract Drawings or in the specifications.

Pavement shall not be opened until it has reached a compressive strength of 2,500 psi in-place, regardless of the curing time required by the Traffic Control Plan. The TCP may necessitate the required compressive strength to be attained within 72 hours or less.

Subsection 412.23 Method of Measurement shall be deleted and replaced with the following:

Concrete Pavement (6 Inch) shall include all curb chase. All work to curb chase shall not be measured and paid for separately but shall be included in the work of the concrete pavement.

Concrete Pavement (12 Inch) shall include all concrete headwalls and wingwalls. All work to construct concrete headwalls and wingwalls shall not be measured and paid for separately but shall be included in the work of the concrete pavement.

Subsection 412.24 Basis of Payment shall be revised to include the following:

Payment under Concrete Pavement shall be full compensation for all materials and labor required to complete the various pavement sections, including curb chase and proposed to existing concrete tie ins as shown per Contract Drawings.

Payment for Portland Cement Concrete Pavement will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
412-00600	Concrete Pavement (6 Inch)	Square Yard
412-01200	Concrete Pavement (12 Inch)	Square Yard

When the contract does not include pay items for Portland Cement Concrete Pavement, these items will not be paid for separately but shall be included in the work.

Testing, excavation, backfill, and bedding material shall be considered incidental to the work and not paid for separately.

The bottom of this excavation should then be moisture treated to a depth of at least 6 inches, brought to near optimum moisture content and compacted to a minimum of 90 percent relative compaction in accordance with ASTM D1557 prior to refilling the excavation to the required grade with properly compacted structural fill per Geotechnical Report.

Steel Reinforcing Rebar shall be considered incidental to the work and not paid separately. All reinforcement to be placed in concrete pavement shall be installed as shown in Contract Drawings and shall meet CDOT requirements in Standard Specification Section 602. Reinforcing steel materials shall be per CDOT Standard section 602.02.

REVISION OF SECTION 500 - STRUCTURES

REVISION OF SECTION 506 – RIPRAP

Subsection 506.03 Construction Requirements is hereby revised to include the following:

All Grouted Riprap and Soil Riprap shall be constructed and installed such that at the upstream and downstream termination of riprap lining, the thickness should be increased 50% for at least three (3) linear feet to prevent undercutting as directed per riprap detail on the Contract Drawings or as directed by the Engineer.

All Grouted Riprap and Soil Riprap shall be installed such that finished grade is top of riprap and/or soil. Contractor shall ensure positive drainage of all Grouted Riprap and Soil Riprap such that there is no standing water on or within riprap at any given time. Placement of sediment or other construction material on Grouted Riprap and Soil Riprap is strictly forbidden.

Subsection 506.04 Method of Measurement is hereby revised to include the following:

The contractor shall provide documentation of material sampling as directed by the County during the pre-construction meeting. This sampling, testing and documentation shall not be paid for separately but shall be included in the work.

Riprap shall be measured by the cubic yard. This work shall include all materials and labor required to transport, store, and install the riprap. Materials incidental to Riprap includes, but is not limited to structural excavation, soil, soil conditioning, and bedding material.

Subsection 506.05 Basis of Payment is hereby revised to include the following:

Payment for Grouted Riprap and Soil Riprap shall be complete in place work and shall include all materials and labor required to install the grouted riprap and soil riprap, including resetting any loose existing riprap downstream of proposed work to reestablish channel shape and smooth transition. Materials incidental to grouted riprap and soil riprap includes, but is not limited to structural excavation, soil, soil conditioning, and bedding material.

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
506-00030	Grouted Riprap (18 Inch) (Type H)	Cubic Yard
506-00409	Soil Riprap (9 Inch) (Type L)	Cubic Yard

Testing, excavation, structural backfill (class 2), and bedding material shall be considered incidental to the work and not paid for separately.

The bottom of this excavation should then be moisture treated to a depth of at least 6 inches, brought to near optimum moisture content and compacted to a minimum of 90 percent relative compaction in accordance with ASTM D1557 prior to refilling the excavation to the required grade with properly compacted structural fill per Geotechnical Report.

REVISION OF SECTION 600 – MISCELLANEOUS CONSTRUCTION

REVISION OF SECTION 603 – CULVERTS AND SEWERS

Subsection 603.01 Description is hereby revised to include the following:

This work consists of excavation, materials, labor, tools and equipment necessary to install reinforced concrete pipe (RCP) and end sections for proposed stormwater improvements.

Subsection 603.12 and 603.13 Method of Measurement and Basis of Payment is hereby added the standard specifications and shall include the following:

The contractor shall provide shop drawings of all pipes/end sections prior to procurement/installation.

Pipe will not be measured but will be the net length of pipe called for on the Contract Drawings, except when field changes are ordered or when there are errors on the Contract Drawings. In case of exceptions, the quantity to be measured shall be the actual net length of the conduit measured along the bottom centerline. Extra length of the conduit due to joint creep will not be measured and paid for. Complete in place work and shall include all materials and labor required to install the storm drains/culverts. Materials and work incidental to all pipes includes, but is not limited to, pipe cutting as specified on Contract Drawings, watertight connections, sealant, excavation, fittings, jointing material, and bedding material.

Reinforced Concrete End Sections will be measured and paid for by each. This work shall include all materials and labor required to install the end section. Materials incidental to end sections include, but is not limited to excavation, fittings, jointing material, concrete toe walls with reinforcing steel, rebar reinforcement placement, form work, safety grates, structural fill (Class 2), and bedding material.

Payment for Storm Drains and Culverts will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
603-01125	12 Inch Reinforced Concrete Pipe (Complete In Place)	Linear Foot
603-01485	48 Inch Reinforced Concrete Pipe (Complete In Place)	Linear Foot
603-05048	48 Inch Reinforced Concrete End Section	Each

Structure Excavation, Structural Fill and Backfill (Class 2) will not be measured separately but shall be included in the work.

All Erosion Control Measures (BMPs or Construction Control Measures) required to prevent the transport of sediment in the work area to State Waters will not be measured separately but shall be included in the work. Major revision to the SWMP required for this work will not be paid separately but shall be included in the work.

REVISION OF SECTION 604 – MANHOLES, INLETS AND METER VAULTS

Section 604 of the Standard Specifications is hereby revised for this project as follows:

Subsection 604.04(c) shall include the following:

Where inlets are placed in existing curbs or gutters, the Contractor shall carefully remove sections of the present curb, gutter, or curb and gutter. All damage to sections to remain in place shall be repaired at the Contractor's expense. The top portion of inlets shall be constructed concurrently with the adjacent curb and gutter to ensure proper alignment of grades unless otherwise permitted in writing.

Subsection 604.06 Method of Measurement shall include the following:

The use of precast inlets may require an increase in the structure size denoted on the Contract Drawings. The cost associated with an increase in structure size due to the use of precast structures will be at the contractor's expense.

Payment under Inlet Type shall be complete in place work and shall include all materials and labor required to install the storm inlets. Materials incidental to all inlets includes, but is not limited to excavation, fittings, jointing material, reinforcing steel, form work, soil conditioning, and bedding material.

Subsection 604.07 Basis of Payment shall include the following:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
604-19000	Inlet Special (Type R 25 Foot)	Each

Structure Excavation, Structural Fill (Class 2), Soil Conditioning, and Backfill will not be measured separately but shall be included in the work.

Structures shall rest on at least 12 inches of properly compacted structural fill (class 2) area beneath footing shall be excavated to a depth of 12 inches or more below the proposed structure. The bottom of this excavation should then be moisture treated to a depth of at least 6 inches, brought to near optimum moisture content and compacted to a minimum of 90 percent relative compaction in accordance with ASTM D1557 prior to refilling the excavation to the required grade with properly compacted structural fill per Geotechnical Report. If expansive soils are encountered during excavation, the Contractor shall use structural fill in coordination with the County.

Steel Reinforcing Rebar shall be considered incidental to the work and not paid separately. All reinforcement to be placed shall be installed as shown in Contract Drawings and shall meet CDOT requirements in Standard Specification Section 602. Reinforcing steel materials shall be per CDOT Standard section 602.02.

REVISION OF SECTION 609 – CURB AND GUTTER

Section 609 of the Standard Specification is hereby revised as follows:

Subsection 609.01 Description shall be revised to include the following:

Curb and Gutter Type 2 (Section I-B)

Subsection 609.02 Materials shall be revised as follows:

Paragraph 2 shall be deleted and replaced with the following:

Concrete shall conform to the requirements for Class “P” concrete as specified in subsections 601.02 and 601.03. When curb machines are used, the Contractor will be permitted to use AASHTO M 43 Size 57 or 67 aggregate in lieu of the coarse aggregate specified in Table 601-1, and a lesser slump will be permitted.

Subsection 609.03(a) Excavation shall be revised as follows:

Excavation: Excavation shall conform to the requirements of the Revision of Section 608, Subsection 608.03(a).

Subsection 609.03(c) Mixing and Placing shall be revised to include the following:

The Contractor shall protect all new concrete items built under this Contract against defacement, or other injury, from any cause. If said damage cannot be adequately repaired to the satisfaction of the Project Manager, the Contractor shall remove and replace the unacceptable items at Contractor's expense.

Subsection 609.03(d) Sections shall be revised to include the following:

For construction of curb and gutter adjacent to existing concrete pavement, the joint pattern shall match that of the concrete pavement. The joint pattern shall be approved by the Project Manager prior to construction.

Subsection 609.03(i) Surface Tolerance shall be revised to include the following:

The Contractor shall confirm that new concrete items built under this contract drain properly and, as such, there are no areas of standing water on new concrete items.

It is the Contractor's responsibility to provide Quality Control concrete strength testing and provide test results in a testing frequency, method, and report as per Pre-construction submittal approved by the County Project Manager. Quality Control testing, reports and submittals will not be paid for separately but shall be included in the work.

Subsection 609.07 Basis of Payment shall be revised to include the following:

Payment shall be full compensation for labor and materials including, but not limited to, reconditioning, grading, curing compound, control and expansion joint, and sealant as required completing these Pay Items. Materials and work incidental to curb and gutter includes, but is not limited to, dowel connections to existing vector pit wall, epoxy adhesive, and proposed to existing concrete tie ins. The Contractor shall make good or replace at his own expense any such existing concrete materials and structures damaged prior to receipt by the County.

Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
609-21021	Curb and Gutter Type 2 (Section I-B)	Linear Foot

Structure Excavation, Structural Fill (Class 2), Soil Conditioning, and Backfill will not be measured separately but shall be included in the work.

REVISION OF SECTION 625 – CONSTRUCTION SURVEYING

Subsection 625.01 Description is hereby revised to include the following:

Construction Surveying consists of construction surveying, calculating, and staking necessary for the construction of all elements of the project. The work shall be done under the supervision of a Professional Land Surveyor (PLS) who is experienced and competent in road and bridge construction surveying and licensed in the State of Colorado.

As-Built Surveying consists of completed construction surveying, calculating, and staking necessary to verify the construction of all elements of the project. The work shall be done under the supervision of a Professional Land Surveyor (PLS) or Professional Engineer (PE) who is experienced and competent in road and bridge construction surveying and licensed in the State of Colorado.

The Contractor will submit all survey information acquired during the As-Built Surveying as a CAD drawing that must be formatted in accordance the County's electronic drawing standards and shall be submitted to the County and the Engineer for their records.

Subsection 625.03 Construction Requirements is hereby revised to include the following:

As-Built Survey drawings must be submitted to the Engineer after work is completed and not later than 30 days after the project is accepted by the County. An electronic copy must accompany the hard copy submittal bearing the PLS seal.

The Contractor shall complete an as-constructed survey of final features of the project which shall include, but is not limited to:

- Edge of asphalt
- Top and bottom of curb
- Profile grade line (horizontal control line)
- Permanent pipe/culvert inverts
- Permanent storm inlets and manholes rim elevations
- Wingwalls, including skew angles and offsets
- Limits of riprap
- Permanent erosion control measures
- Maintenance paths
- Ditch flowlines
- Top of ditch
- Embankments

Subsection 625.12 Method of Measurement is hereby revised to include the following:

Construction Surveying will not be measured but will be paid for on a lump sum basis.

As-Built Surveying will not be measured but will be paid for on a lump sum basis.

Subsection 625.13 Basis of Payment is hereby revised to include the following:

Payment for Construction Surveying will be the lump sum bid and will be full compensation for all surveying work necessary to complete the project shall include, but is not limited to, all resetting of stakes, marks, monuments, preparing survey documentation as required, and field locating all utilities.

Payment for As-Built Surveying will be the lump sum bid and will be full compensation for all surveying work necessary to verify the construction of the project and shall include, but is not limited to, all resetting of stakes, marks, monuments, preparing and furnishing the survey CAD file documentation.

Before final payment is made, the Contractor's responsible P.L.S. shall complete and electronically seal all survey records and the Project Control Diagram (supplemental or amended). Submit the survey records and the supplement or amended Project Control Diagram to the Engineer and the County for review.

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
625-00000	Construction Surveying	Lump Sum

REVISION OF SECTION 626 – MOBILIZATION

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

Subsection 626.01 Description is revised to include the following:

For the portion of the project along Calle Corvo, the Contractor shall limit all of their activities and disturbed areas to El Paso County's property line and ROW. For the portion of the project at the intersection of Hampton and Ericson, the Contractor will be required to perform construction activities on private property. All disturbed or damaged areas outside of ROW limits shall be restored in accordance with the general contract conditions to original or better condition to the satisfaction of the Project Manager at no additional cost to the project.

The Contractor and County will work cooperatively to ensure all required forms and material tests are completed satisfactorily to County requirements. The County reserves the right to delay progress and/or final payment until all daily, weekly, monthly, and annual forms are satisfactorily completed by the contractor and/or adequate information is provided to the County to complete.

The Contractor shall reference the current versions of the following for additional details and Form requirements:

- CDOT Field Materials Manual
- CDOT Construction Manual
- CDOT Local Agency Manual

If multiple mobilizations are anticipated due to the phasing of the project, the Contractor shall include the requirements of the construction phasing in the bid price for Mobilization. No separate payment will be made for multiple mobilizations due to the Contractor's scheduling. Should the Contractor fail to satisfy any of the above requirement, payment to the Contractor will be withheld or deducted.

This item also includes demobilization of equipment and supplies from this project site.

Subsection 626.02 Basis of Payment shall be revised to include the following:

Payment will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
626-00000	Mobilization	Lump Sum

REVISION OF SECTION 630 – CONSTRUCTION ZONE TRAFFIC CONTROL

Subsection 630.01 – Description is hereby revised to include the following:

This work consists of the review of traffic control plans, installation of traffic control devices (including but not limited to barricades, channelizing devices, signs, flagging, etc), and traffic control management.

Subsection 630.10 – Construction Requirements is hereby revised to include the following:

Sign Panels: Sign Panels shall conform to CDOT standard specifications, section 614.04.

Signposts: Signposts shall conform to CDOT standard specifications, section 614.02.

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 Engineer, it shall be cleaned before the placement of the modified epoxy pavement marking.

Traffic Control: The contractor is responsible for the reviewing of the traffic control plans and coordinating with the Engineer and Project Manager if additional traffic control management measures are deemed necessary during construction of the Project. Any revisions to the traffic control plans will need to be submitted to the Engineer and the County prior to construction.

Any revised traffic control plans must be stamped by a licensed professional engineer from the state of Colorado. The Contractor shall provide comments on the traffic control plans at the preconstruction meeting.

All traffic control devices shall be provided with all components necessary to comprise a complete installation. Traffic control devices deemed inadequate by the Engineer shall not be used and shall be removed from the project site.

Work zone devices designated by FHWA as Category I, II, or III, shall comply with the performance criteria contained in NCHRP Report 350 (only applicable for devices developed before 2011) or MASH (acceptable for all devices). Devices designated as Category IV, including but not limited to portable or trailer-mounted devices such as flashing arrow panels, temporary traffic signals, area lighting supports, and changeable message signs are not required to meet NCHRP 350 or MASH requirements.

Except for Category IV devices, the Contractor shall obtain and present to the Engineer the manufacturer's written NCHRP 350 (only applicable for devices developed before 2011) or MASH (acceptable for all devices) certification for each work zone device before it is first used on the project.

The Flashing Beacon (Portable) shall include all work and material necessary to complete the item. The beacon head, lens, signal lamp, flasher and electrical boxes and fittings shall conform to permanent flashing beacon requirements. The post or mounting method shall conform to construction traffic control materials.

Portable devices that require weight to prevent overturning shall be weighted with appropriately sized sandbags.

Traffic control devices that are damaged, weathered, worn, or otherwise determined to be unacceptable, shall be replaced at the Contractor's expense.

The Contractor shall designate an individual, other than the superintendent, to be the Traffic Control Supervisor. The Traffic Control Supervisor shall be certified as a worksite traffic supervisor by an authorized entity and shall have a current flagger certification from an authorized entity. A copy of the

Traffic Control Supervisor's certifications shall be provided to the Engineer at the pre-construction Conference and shall be available at all times on the worksite.

All labor required in the contractors traffic control plans, including but not limited to traffic control supervision, management and flagging shall not be paid for separately but shall be included in the work

and materials required in the contractors traffic control plans, including but not limited to barricaded, channelizing devices, signage shall not be paid for separately but shall be included in the work.

Subsection 630.17 and 630.18– Method of Measurement and Basis of Payment is hereby revised to include the following:

Payment under Traffic Control will not be measured but will be paid for on a lump sum basis and will include all materials and labor required per traffic control plans and includes installation, maintenance, and removal of traffic control materials.

Payment for will be made under:

<u>Item No.</u>	<u>Pay Item</u>	<u>Pay Unit</u>
630-00016	Traffic Control	Lump Sum

FORCE ACCOUNT ITEMS

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

The Contractor shall perform unforeseen work, for which there is no price included in the Contract, whenever the extra work is necessary or desirable for contract completion. This work shall be performed in accordance with the Contract, as stipulated in the order authorizing the work, and as directed by the Engineer. Extra work will be paid for as provided under CDOT subsection 109.04.

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.

<u>Force Account Item</u>	<u>Pay Unit</u>	<u>Estimated Amount</u>
F/A Landscape Removal and Restoration	F/A	\$15,000
F/A Drainage Improvement	F/A	\$40,000
F/A Erosion Control	F/A	\$56,000

F/A Minor Contract Revisions: This work consists of minor work authorized and approved by the Engineer, which is not included in the Contract Drawings or specifications and is necessary to accomplish the scope of work for this contract. Authorization will be documented in writing by a Speed Memo and/or a Field Modification Order Form.

SUPPLEMENTAL SPECIFICATIONS

SECTION 33 39 20 – PRECAST CONCRETE STRUCTURES

PART I - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sanitary Sewer, Water Appurtenance, or Reclaimed Water Appurtenance Precast Concrete Structures

B. Deviations from this Colorado Department of Transportation Standard Specification

1. None.

C. Related Specification Sections include, but are not necessarily limited to:

1. Colorado Department of Transportation Standard Specification for Road and Bridge Construction Division 100 – General Provisions
2. Colorado Department of Transportation Standard Specification for Road and Bridge Construction Division 200 – Earthwork
3. Colorado Department of Transportation Standard Specification for Road and Bridge Construction Division 600 – Miscellaneous Construction
4. Colorado Department of Transportation Standard Specification for Road and Bridge Construction Division 700 – Material Details
5. Section 33 31 20 – Polyvinyl Chloride (PVC) Gravity Sanitary Sewer Pipe
6. Section 03 80 00 – Modifications to Existing Concrete Structures

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Measurement

- a. Measurement for this Item shall be per each concrete structure installed.

2. Payment

- a. The work performed and the materials furnished in accordance with this Item shall be paid for at the unit price bid per each "Structure" installed for:

- 1) Various sizes
- 2) Various types

3. The price bid will include:

- a. Concrete structure complete in place
- b. Excavation
- c. Forms
- d. Reinforcing steel (if required)
- e. Concrete
- f. Backfill
- g. Foundation
- h. Drop pipe
- i. Stubs

- j. Frame
 - k. Cover
 - l. Grade rings
 - m. Pipe connections
 - n. Pavement removal
 - o. Hauling
 - p. Disposal of excess material
 - q. Placement and compaction of backfill
 - r. Clean-up
4. Extra Depth Manhole
- a. Measurement
 - 1) Measurement for added depth beyond 8 feet will be per vertical foot, measured to the nearest 1/10 foot.
 - b. Payment
 - 1) The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid per vertical foot for "Extra Depth Manhole" specified for:
 - 1. Various sizes
 - 2) The price bid will include:
 - 1. Manhole structure complete in place
 - 2. Excavation
 - 3. Forms
 - 4. Reinforcing steel (if required)
 - 5. Concrete
 - 6. Backfill
 - 7. Foundation
 - 8. Drop pipe
 - 9. Stubs
 - 10. Frame
 - 11. Cover
 - 12. Grade rings
 - 13. Pipe connections
 - 14. Pavement removal
 - 15. Hauling
 - 16. Disposal of excess material
 - 17. Placement and compaction of backfill
 - 18. Clean-up

1.3 REFERENCES

A. Definitions

1. Manhole Type

- a. Sanitary Sewer Manhole CIP Base (See Cherokee Metropolitan District Standard Details)
- b. Sanitary Sewer Manhole Precast Base (See Cherokee Metropolitan District Standard Details)
- c. Standard Drop Manhole (See Cherokee Metropolitan District Details)
 - 1) Same as Standard Manhole with external drop connection(s)

2. Manhole Size

- a. 4-foot diameter
 - 1) Used with pipe ranging from 6-inch to 15-inch

3. Grease or Sand/Oil Interceptor Type

- a. Per manufacturer's standards and specifications

4. Grease or Sand/Oil Interceptor Size

- a. 2,500 gallons

B. Reference Standards

1. All materials and workmanship for sanitary sewer construction shall conform to the latest Cherokee Metropolitan District Standards and the latest City of Colorado Springs, Department of Public Works, Storm Drainage and Sanitary Sewer Construction Details and Technical Specifications, Wastewater Management Division Standard Details.

2. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.

a. ASTM International (ASTM):

- 1) C443, Standard Specification for Joint for Concrete Pipe and Manholes, Using Rubber Gaskets
- 2) C478, Standard Specification for Precast Reinforced Concrete Manhole Sections
- 3) C923, Standard Specification for Resilient Connectors Between Reinforced Concrete Manholes Structures, Pipes, and Laterals
- 4) D1187, Standard Specification for Asphalt-Base Emulsion for Use as Protective Coatings for Metal
- 5) D1227, Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
- 6) C913, Standard Specification for Precast Concrete Water and Wastewater Structures
- 7) C890, Standard Practice for Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures

1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED]

1.5 SUBMITTALS

A. Submittals shall be in accordance with Colorado Department of Transportation Standard Specification for Road and Bridge Construction Section 105.

B. All submittals shall be approved by Colorado Department of Transportation prior to delivery.

1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

A. Product Data

1. Precast Concrete Manhole

- a. Drop connection materials
- b. Pipe connections at manhole walls
- c. Stubs and stub plugs
- d. Admixtures
- e. Concrete Mix Design

2. Precast Grease or Sand/Oil Interceptor

- a. Pipe connections at structure walls
- b. Manhole ring and cover
- c. Manhole steps
- d. Admixtures
- e. Concrete mix design
- f. Concrete sealant

1.7 CLOUSEOUT SUBMITTALS [NOT USED]

1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED]

1.9 QUALITY ASSURANCE [NOT USED]

1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED]

1.11 FIELD [SITE] CONDITIONS [NOT USED]

1.12 WARRANTY

A. Manufacturer Warranty

- 1. Manufacturer's Warranty shall be in accordance with Colorado Department of Transportation Standard Specification for Road and Bridge Construction Division 100.

PART II – PRODUCTS

2.1 OWNER-FURNISHED [OR] OWNER-SUPPLIE PRODUCTS [NOT USED]

2.2 EQUIPMENT, PRODUCT TYPES, AND MATERIALS

A. Materials

1. Precast Reinforced Concrete Sections – Conform to ASTM C478.

2. Precast Joints

- a. Provide gasketed joints in accordance with ASTM C443.
- b. Minimize number of segments.
- c. Use long joints at the bottom and shorter joints toward the top.

d. Include manufacturer's stamp on each section.

3. Lifting Devices

a. Manhole sections and cones may be furnished with lift lugs or lift holes.

b. If lift lugs are provided, place 180 degrees apart.

c. If lift holes are provided, place 180 degrees apart and grout during manhole installation.

4. Frame and Cover – Conform to Colorado Department of Transportation Standard Specification for Road and Bridge Construction Section 604.

5. Grade Ring – Conform to Colorado Department of Transportation Standard Specification for Road and Bridge Construction Section 604 and ASTM C478.

6. Pipe Connections

a. Utilize either an integrally cast embedded pipe connector or a boot-type connector installed in a circular block out opening conforming to ASTM C923.

7. Steps

a. Steps shall conform to the requirements of AASHTO M 199.

8. Exterior Coating

a. Coat with non-fibred asphaltic emulsion in accordance with ASTM D1187 Type I and ASTM D1227 Type III Class I.

9. Grease or Sand/Oil Interceptors

a. Precast concrete shall comply with ASTM C913.

1) Provide rubber-gasketed joints, manholes, compartments or baffles, and piping or openings to retain grease and to permit wastewater flow.

2) Structural design load shall comply to ASTM C890, A-16 (AASHTO HS20-44) for Heavy-Traffic Loads.

3) Pipe connections shall be per ASTM C923, cast or fitted into interceptor walls, for each pipe connection.

4) Grade rings shall be reinforced-concrete rings, to match diameter of manhole frame and cover.

5) Manhole frames and covers shall be 24-inch ID by 6- to 8-inch riser with 4-inch minimum width flange and 26-inch diameter cover.

1. Gray Iron: ASTM A-48, Class 35.

2. Include indented top design with lettering cast into cover, using wording equivalent to "SANITARY SEWER".

2.3 ACCESSORIES [NOT USED]

2.4 SOURCE QUALITY [NOT USED]

PART III – EXECUTION

3.1 INSTALLERS [NOT USED]

3.2 EXAMINATION

A. Evaluation and Assessment

1. Verify lines and grades are in accordance with the Drawings.

3.3 PREPARATION

A. Foundation Preparation

1. Excavate 8 inches below structure foundation.
2. Replace excavated soil with coarse aggregate, creating a stable base for structure construction.
3. If soil conditions or ground water prevent use of coarse aggregate base a 2-inch mud slab may be substituted.

3.4 INSTALLATION

A. Manhole

1. Construct manhole to dimensions shown on Drawings.

B. Grease or Sand/Oil Interceptor

1. Construct grease or sand/oil interceptor to dimensions shown on Drawings.

C. Precast Sections

1. Provide bell-and-spigot design incorporating a premolded joint sealing compound for wastewater use.
2. Clean bell spigot and gaskets, lubricate and join.
3. Minimize number of segments.
4. Use long joints used at the bottom and shorter joints toward the top.

D. Invert

1. Construct invert channels to provide a smooth waterway with no disruption of flow at pipe-manhole connections.
2. For direction changes of mains, construct channels tangent to mains with maximum possible radius of curvature.
3. Provide curves for side inlets.
4. For all standard manholes provide full depth invert.
5. For example, if 8-inch pipe is connected to manhole construct the invert to full 8 inches in depth.

E. Drop Manhole Connection

1. Install drop connection when sewer line enters manhole higher than 24 inches above the invert.

F. Final Rim Elevation

1. Install concrete grade rings for height adjustment.
2. Construct grade ring on load bearing shoulder of manhole.
3. Use sealant between rings as shown on Drawings.
4. Set frame on top of manhole or grade rings using continuous water sealant.
5. Remove debris, stones and dirt to ensure a watertight seal.
6. Do not use steel shims, wood, stones or other unspecified material to obtain the final surface elevation of the manhole frame.

G. External coating

1. Remove dirt, dust, oil and other contaminants that could interfere with adhesion of the coating.
2. Cure manhole for 3 days before backfilling around the structure.
3. Application will follow manufacturer's recommendation.

H. Modifications and Pipe Penetrations

1. Conform to Section 03 80 00.

3.5 REPAIR/RESTORATION [NOT USED]

3.6 RE-INSTALLATION [NOT USED]

3.7 FIELD QUALITY CONTROL

A. Field Tests and Inspections

1. Perform vacuum test in accordance with Cherokee Metropolitan District Standards.

3.8 SYSTEMS STARTUP [NOT USED]

3.9 ADJUSTING [NOT USED]

3.10 CLEANING [NOT USED]

3.11 CLOSEOUT ACTIVITIES [NOT USED]

3.12 PROTECTION [NOT USED]

3.13 MAINTENANCE [NOT USED]

3.14 ATTACHMENTS [NOT USED]