

DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01100

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Scope.
- B. Definitions.
- C. Authority of City.
- D. Work by City.
- E. Plan Approval and Revision.
- F. Contractor Responsibility.
- G. Contractor's Use of Site.
- H. Work sequence.

1.2 SCOPE

- A. Specifications and requirements set forth to be used in the design and construction or repair of water mains, streets, pavements, curb and gutter, sidewalks, storm sewers, culverts, and installation of utilities or any other work performed within the public right of way for approval and acceptance by the City of Cañon City.
- B. Excavation and restoration standards are required to preserve the integrity, operational safety, and function of the City rights-of-way.
- C. Future Considerations:
 - 1. Licensing of landscapers for inclusion of landscape work within the right-of-way to be covered by these specifications.
 - 2. Continuance of City/Contractor Committee meetings annually for updates and necessary revisions.

1.3 DEFINITIONS

- A. City: Shall mean the City of Cañon City, Colorado and personnel with the authority to act on behalf of the City of Cañon City.
- B. Engineer: Shall mean the City Engineer of the City of Cañon City, Colorado and authorized representatives acting on behalf of the City or the City Engineer, including but not limited to inspectors in the field.
- C. Public Works Inspector: Shall mean the Public Works Inspector of the City of Cañon City, Colorado and authorized representatives acting on behalf of the City or the Public Works Inspector.
- D. Right-of-Way (ROW or R-O-W): Shall mean the area on, below, or above a public roadway, highway, street, path way, bicycle lane and public sidewalk in which the City has an interest, including other dedicated rights of ways for travel purposes and utility easements of the City.
- E. Contractor: Shall mean a person, partnership, or corporation duly licensed in the City of Cañon City in accordance with the requirements of the laws and codes of the City of Cañon City.
- F. Excavate: Shall mean to dig into or in any way remove or physically disturb or penetrate any part of a right of way.
- G. Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, maintenance procedures, and other management practice to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, waste disposal, or drainage from material storage.

1.4 AUTHORITY OF CITY

- A. City shall have authority to ascertain that all construction of facilities is equal to or better than the minimum construction requirements set forth in these specifications.
- B. City and Engineer have authority to assign an inspector to check any and all work, including materials to be incorporated in the work, excavation, bedding, backfill, and all construction methods and practice.
- C. Inspectors are assigned to assist the Contractor to comply with these specifications and have the authority to reject defective or inferior materials and workmanship and to suspend work until the conditions in question are corrected.

1.5 WORK BY CITY

- A. Work includes:
 - 1. Approval of plans, means, and methods of construction.
 - 2. Installation of tapping saddles, corporation stops, and tapping of water mains.
 - 3. Blowing off and testing of chlorine residual for new water mains.
 - 4. Pressure testing of water mains to be accepted by the City.
 - 5. Operating existing valves and appurtenances in existing system required for construction, including filling and flushing mains to be accepted by the City.
 - 6. Notifying public of water interruption due to construction 24 hours prior to shut off.

1.6 PLAN APPROVAL AND REVISION

- A. Plans shall be submitted for all subdivisions, new utility main installation, and all water mains and any other project the City deems is significant enough to warrant.
- B. Four copies of plans for proposed construction shall be submitted on 24-inch X 36-inch sheets (minimum scale of drawing, 1 inch = 50 feet) to Engineer for approval.
- C. Plans must be submitted digitally in DWG or DXF format. All plans must be projected to Colorado State Plane Central Zone coordinates (NAD 1983) with appropriate scale factor.
- D. The plans shall show lots and blocks to be served and the location of the water mains or other utilities and their service lines with reference to property lines. The type, size, approximate location, and number of all known underground utilities shall be shown on the drawings. Profiles may be required by Engineer, which shall give dimensions, grades, and show locations of improvements, water mains or utilities to be constructed.
- E. The Engineer shall return the plans with either a stamp of approval or a letter designating necessary revisions required for approval.
- F. No work shall proceed on that portion of the project requiring revisions until such revisions have been submitted and approved.
- G. Minor revisions may be made by written permission from the Engineer.

1.7 CONTRACTOR RESPONSIBILITY

- A. Contractor shall be responsible to read and fully comply with all the provisions of these specifications.
- B. Contractor shall perform work in a manner subject to current Occupational Safety and Health Administration and State of Colorado safety requirements. It shall be the responsibility of the Contractor to fully comply with these regulations.
- C. Contractor shall provide adequate construction signing, flagmen, barricades, etc., to warn vehicular and pedestrian traffic of work in progress and divert traffic as may be required during the course of the construction per approved traffic plan. All signing shall conform to the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD). Contractor shall notify the respective local emergency response agencies 24 hours in advance of the closure of any street.
- D. Contractor shall notify the City of Cañon City Water Distribution Supervisor at least 36 hours prior to a planned water service interruption.
- E. Contractor shall pay City for all expenses required of City personnel due to construction activities.
- F. Contractor shall protect all existing facilities and utilities within the work area and shall be liable for any damage to any such facilities and utilities due to Contractor's activities.

1.8 CONTRACTOR'S USE OF SITE

- A. Limit use of site to allow:
 - 1. City occupancy.
 - 2. Work by City.
 - 3. Use of site by the public.

1.9 WORK SEQUENCE

- A. Construct Work in stages to accommodate City's occupancy requirements during construction period. Coordinate construction schedule and operations with Engineer.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01600
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Product delivery requirements.
- C. Product storage and handling requirements.
- D. Product options.
- E. Product substitution procedures.

1.2 PRODUCTS

- A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by City.
- C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- D. For exterior storage of fabricated products, place on sloped supports above ground.
- E. Provide off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: products of one of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBMITTALS

- A. Submit three copies of each submittal for each product to the City Engineer.
- B. Product submittals are required for all construction related to subdivisions, new utility main installation, and all water mains and any other project the City deems is significant enough to warrant or as required by Specifications.
- C. Duplicate submittals will not be required if a copy is already on file with City.

1.7 PRODUCT SUBSTITUTION PROCEDURES

- A. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.
- B. Document each request with complete data substantiating compliance of proposed Substitution with Specifications.
- C. A request constitutes a representation that Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 - 2. Will provide same warranty for Substitution as for specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to City.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5. Will reimburse Engineer for review or redesign services associated with re-approval by City.
- D. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Specifications or prior agreements and requirements.
- E. Substitution Submittal Procedure:
 - 1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 - 2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
 - 3. Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01700
EXECUTION REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Contractor Responsibilities.
- B. Construction Facilities.
- C. Protection of Utilities.
- D. Closeout procedures.
- E. Cleaning & site maintenance.
- F. Construction schedule, testing, and inspections.
- G. Restoration.
- H. Control of vehicular and pedestrian traffic.
- I. Protecting installed construction.
- J. Project record documents.
- K. Discovery of historical items.
- L. Construction site erosion.

1.2 CONTRACTOR RESPONSIBILITIES

- A. Contractor shall obtain an excavation permit with the City of Cañon City prior to the beginning of any work operations within the City rights of way.
- B. Contractor shall be a licensed and bonded contractor with the City of Cañon City.
- C. Contractor shall assume responsibility for disposing of removed vegetation, tree material, soil, asphalt, concrete, and other surplus materials at an acceptable site at Contractor's expense.
- D. Contractor shall assume responsibility for performing all work in a workmanlike manner with due care being taken to avoid unnecessary damage to property. Contractor shall be responsible for all damage resulting from carelessness or work performed in an irresponsible or unworkmanlike manner.
- E. Contractor shall obtain all utility locates prior to excavating, and shall be liable for all damages to existing structures and utilities and shall save the City harmless for any liability or expense for injuries, damages, or repairs.
- F. Contractor shall perform all work not covered in the Specifications to applicable industry standards.
- G. Contractor shall conform to all applicable State and local Codes and Ordinances.
- H. Contractor shall provide all construction surveying and/or staking as deemed necessary to complete the project as intended per the Specifications and approved plans.

1.3 CONSTRUCTION FACILITIES

- A. Provide and place all traffic control signs, barricades, and devices during the total construction time of the work, including time for concrete curing. Temporary fencing or other adequate measures to control pedestrian access to construction area shall be maintained.
- B. Contractor's construction activities are restricted to the area within the City rights of way and City owned property boundaries as near as practical and within any specified construction easements within private property, which are obtained by the City or the Contractor. Access must be maintained for property owners and residents and their business patrons to and from private property within the site.
- C. Protect all private and public property located within the construction site. All property disturbed by Contractor during construction will, at Contractor's expense, be repaired or replaced and left in as good a condition as originally found.
- D. All temporary utilities such as electricity, sanitation services (when practical these facilities should be located outside of the public way and screened from public view), heating, or other services required for construction and other facilities such as safety equipment, fire extinguishers, warning signs, lights, or special equipment shall be supplied as needed by the Contractor at his expense.
- E. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment. Protect site from puddling or uncontrolled running water. Provide sumps, water barriers as required to protect site from soil erosion and other potential damage to work, such as storm water accumulating on site from upstream.

1.4 PROTECTION OF UTILITIES

- A. The Contractor shall protect all public utilities encountered. These may include telephone lines, culverts, buried cables, power lines, water lines, sewer lines, irrigation laterals, gas lines and other overhead and underground utilities.
- B. Before any excavation or work is begun in the vicinity of the above-named utilities, each utility company or department concerned must be notified in advance of such work, and such work shall not be done until an authorized representative of the utility concerned is on the premises.
- C. The Contractor shall be held liable for all damages to any and all public utilities encountered on this project, which damages are due to the Contractor's operations. Such damages shall include all physical damages to utilities and also all damages due to the interruption of service of such utilities, when such damages and interruptions are caused by the Contractor's operations.
- D. Where alterations or moving of utilities is not required to permit construction of the work, the Contractor shall take such measures as the utility entity may direct to properly protect these utilities throughout his construction activities and shall cooperate at all times with the proper authorities and/or Owner in maintaining service of the above-named utilities affected by the work.
- E. The cost of damages due to the Contractor's operations, the cost of moving water or sewer service lines and the cost of protecting the utilities, where alteration or moving is not required to permit construction of the work, shall be paid for by the Contractor.
- F. Should any pipelines, water lines, gas mains, electrical conduits, sewer pipes, overhead wiring, telephone lines, buried cables, power lines, or any other such utilities not specifically mentioned and provided for elsewhere as a part of this document, have to be moved, repaired, reconditioned or revised due to construction, or moved temporarily to permit construction of work, the party or parties owning and operating such utilities shall perform the actual work of moving, repairing, reconditioning or revising such utilities, unless other agreements are reached with the utility companies involved.

G. Local utility companies and contact information:

<p>1. Colorado811 Utility Notification Center of Colorado 16361 Table Mountain Parkway Golden, CO 80403 Dial 811 Phone: 800-922-1987 Fax: 303-234-1712 www.colorado811.org</p>	<p>8. Black Hills Energy 3110 Utility Drive Cañon City, CO 81212 Phone: (719) 275-3803 www.blackhillsenergy.com <i>Emergency Phone Number</i> 800-694-8989</p>
<p>2. Fremont Sanitation District 107 Berry Parkway Cañon City, CO 81212 Phone: (719) 269-6100 www.fsd.co</p>	<p>9. Charter/Spectrum Communications 402 Main Street Cañon City, CO 81212 Phone: (719) 275-3803 www.charter.net</p>
<p>3. Park Center Water District 1660 Reservoir Rd Cañon City, CO 81212 Phone: (719) 275-2055 Fax: (719) 275-0628 www.parkcenterwater.org</p>	<p>10. CenturyLink Communications 120 South 6th St. Cañon City, CO 81212 Phone: (719) 275-3337 www.centurylink.com</p>
<p>4. Cañon City Water Department 1525 South 9th Street/ P.O. Box 1460 Cañon City, CO 81212 Phone: (719) 269-9022 www.canoncity.org</p>	<p>11. Unite Private Networks(Fiber Optic) 7200 NW 86th Street Suite M Kansas City, MO 64153 Phone:816-368-9039 (Locates) www.uniteprivatenetworks.com</p>
<p>5. Atmos Energy 120 South 6th St. Cañon City, CO 81212 Phone: (719) 275-3337 www.atmosenergy.com <i>Natural Gas Emergency Phone Number</i> 866-322-8667</p>	<p>12. Secom (Fiber Optic) 402 Santa Fe Ave Suite 101 La Junta, CO 81050 Phone 719-384-8583 www.secom.net</p>
<p>6. CDOT (FIBER OPTIC) www.codot.gov</p>	<p>7. Cañon City Stormwater 128 Main Street/ P.O. Box 1460 Cañon City, CO 81212 Phone: (719) 276-5265 www.canoncity.org</p>

1.5 CLOSEOUT PROCEDURES

- A. Contact City for final inspection.
- B. Provide submittals required by City to Engineer.
- C. Provide as-built plans required by City to Engineer:
 - 1. As-built plans shall be submitted for all subdivisions, new utility main installation, and all water mains and any other project the City deems is significant enough to warrant.
 - 2. Four copies of as-built plans for completed construction shall be submitted on 24-inch X 36-inch sheets (minimum scale of drawing, 1 inch = 50 feet) to Engineer.
- D. Plans must be submitted digitally in DWG or DXF format. All plans must be projected to Colorado State Plane Central Zone coordinates (NAD 1983) with appropriate scale factor.
- E. Drawings of Record Criteria:
 - 1. “As-Built/Drawing of Record” means a drawing, or series of drawings, that depict improvements as they were actually constructed, and that are drawn to the same scale, with the same detail, accuracy, format and form as the drawings that were submitted for original approval. Information on the project facilities shall indicate sufficient horizontal and vertical dimensional data so that the constructed improvements may be located and delineated.
 - 2. “As-Built/Drawing of Records” are required of any set of plans approved by the City Engineer. It is the applicant’s responsibility to make arrangements with the Engineer of Record for the preparation and submittal of the “As-Built/Drawing of Records”.
 - 3. In order to effectively comply with this requirement, it will be necessary for the Engineer of Record to provide a periodic review and inspection of the installation of those facilities within the project. The engineer may supplement his review and inspection of the project by utilizing information taken from a valid survey.
 - 4. The Engineer of Record, or other such Registered Professional Engineer as may apply, shall submit to the City the required number (no less than 3) of certified “As-built” or “As-Built/Drawing of Record” on media required by the City signed and stamped within 60 days of the final walk-through inspection.
 - 5. If any errors or omissions are discovered by the City within the “As-Built/Drawing of Record”, the engineer of record shall make corrections and resubmit the plans within 30 days of notice by the City.

6. The “As-Built/Drawing of Record” shall contain a certification from an Engineer registered in the State of Colorado that indicates that the project has been substantially completed in accordance with the approved plans and specifications, or that the deviations noted on the “As-Built/Drawing of Record” will not prevent the project from complying with the design function of the project.
7. “As-Built/Drawing of Record” shall be submitted in the same page format as the original approved plans. If revision requires the addition of a new sheet, it shall be added to the back of the existing set and the entire set renumbered accordingly. All pages must be included in the same order as the original and marked “As-Built/Drawing of Record” regardless of whether any revision applies to any particular page or not. If no changes occurred, simply write “As-Built/Drawing of Record” on the drawing.

1.6 CLEANING & SITE MAINTENANCE

- A. Public streets within the work site must be washed and swept on a daily basis or otherwise, according to the discretion of the Engineer. Anytime during the course of the Work, Contractor shall, at the discretion of the Engineer, wash, sprinkle, or wet down streets or alleys, including areas affected by work detours and construction traffic.
- B. Execute final clean-up of site prior to final project assessment.
- C. Clean debris from right of way and drainage systems.
- D. Clean site; sweep paved areas, rake clean landscaped surfaces; provide access at all driveways and cross streets.
- E. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.7 CONSTRUCTION SCHEDULE, TESTING, AND INSPECTIONS

- A. At least 24 hours prior to the start of any work, Contractor shall furnish a submittal of construction schedule to facilitate scheduling required inspections according to the specifications and to minimize the Contractor’s wait time.
- B. Reports will be submitted by independent firm or City representative to Engineer indicating observations and results of tests and indicating compliance or non-compliance with requirements. Testing does not relieve Contractor from performing Work to requirements.
- C. Retesting required because of non-conformance to specified requirements shall be performed on instructions by the Engineer and will be done at Contractor’s expense.
- D. Contractor shall be responsible for supplying the City of Cañon City, at the Contractor’s expense, with suitable soils tests from a licensed independent soils testing laboratory, with gradation and proctor density data for any material used in the work for backfill.

- E. Contractor shall be responsible for obtaining three soil tests of the existing sub grade material from a licensed independent soils testing laboratory, with gradation and Proctor density data for concrete pavement installation. Additional testing shall be repeated at the direction of the Public Works Inspector or Engineer at Contractor's expense if necessary to reflect changing soil conditions.
- F. Contractor may, at its expense, employ the services of an independent testing service to test the base course and pavement during and after installation.
- G. The City will employ an independent inspection laboratory to take random core samples of finished HMA pavement to be measured for thickness and density or finished PCC pavement for thickness & strength. Final acceptance will be based on the average thickness and density/strength determined by the core samples.

1.8 RESTORATION

- A. All excavations and improvements shall be completely restored within a period of twenty-one days subsequent to acceptance of backfill and compaction.
- B. If restoration is not complete by the end of the required time, the City will schedule to complete the restoration at Contractor's expense, after a nine-day advance notice to Contractor.
- C. The cost of such restoration by the City will be double the replacement cost plus an additional inspection fee and compaction fee as outlined in Section 00710.
- D. Restoration during times of inclement weather may be delayed at the direction of the Public Works Inspector. Temporary measures may be implemented, including but not limited to a cold asphalt patch to be replaced when weather permits.

1.9 CONTROL OF VEHICULAR AND PEDESTRIAN TRAFFIC

- A. Contractor shall be permitted to close the roadways to traffic during construction activities, if it is necessary.
- B. Contractor shall accommodate adjacent property owners and businesses by providing access and parking within the street right-of-way as near to properties as possible, except during paving operations when residents will be expected to walk.
- C. Contractor shall be fully responsible for providing qualified personnel to provide and place all traffic control signs and devices during the total construction time of the project.
- D. Contractor shall provide traffic control that shall conform to the intent and instructions provided by the Engineer, the City of Cañon City Public Works Department and the Manual of Uniform Traffic Control Devices (MUTCD).
- E. Contractor shall submit a prepared traffic control plan prepared by a Certified Traffic Control Supervisor and tentative schedule to the Engineer for approval prior to the start of any work on the project site, if required by the Engineer or Public Works Inspector.

- F. Contractor is responsible for notifying the Police Department, the Fire District, and all emergency and ambulance service providers of any street closures or blockages, due to construction, prior to beginning any such activity. Contractor shall also maintain the means at all times to provide emergency access routes to all properties located along the construction site when needed.

1.10 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Prohibit traffic on newly paved surfaces.
- D. Prohibit traffic from landscaped areas.

1.11 DISCOVERY OF ARCHAEOLOGICAL AND OTHER HISTORICAL ITEMS

- A. In the event of an archaeological find during any phase of construction, the following procedure will be followed:
 - 1. Construction shall be halted, with as little disruption to the site as possible.
 - 2. The Contractor shall notify the City who shall contact the State Historic Preservation Officer
 - 3. The State Historic Preservation Officer may decide to have an archaeologist inspect the site and make recommendations about steps needed to protect the site, before construction is resumed.
 - 4. The entire event should be handled as expediently as possible in order to hold the loss in construction time to a minimum while still protecting archaeological find.

1.12 CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL MEASURES

- A. See Section 02374.
- B. Contractors and subcontractors must implement Best Management Practices (BMPs) to reduce pollutants in any storm water runoff from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of pollutants in storm water discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. Contractors are further required to control construction site waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause

adverse impacts to water quality. These activities must be in compliance with all applicable State and local laws and regulations.

C. Where appropriate, the Contractor's efforts shall reflect the following engineering principles:

1. When appropriate, land grading and excavating should be kept at a minimum to reduce the possibility of creating runoff and erosion problems that require extensive control measures.
2. Whenever possible, topsoil should be removed and stockpiled before grading begins.
3. Land exposure should be minimized in terms of area and time.
4. Exposed areas subject to erosion should be covered as quickly as possible by means of mulching or vegetation.
5. Natural vegetation should be retained whenever feasible
6. Early completion of stabilized drainage system (temporary or permanent) will substantially reduce erosion potential.
7. Appropriate structural or agronomic practices to control runoff and sedimentation should be provided during and after construction.
8. Roadways and parking lots should be paved or otherwise stabilized as soon as feasible.
9. Clearing and grading should not be started until a firm construction schedule is known and can be effectively coordinated with the grading and clearing activity.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION