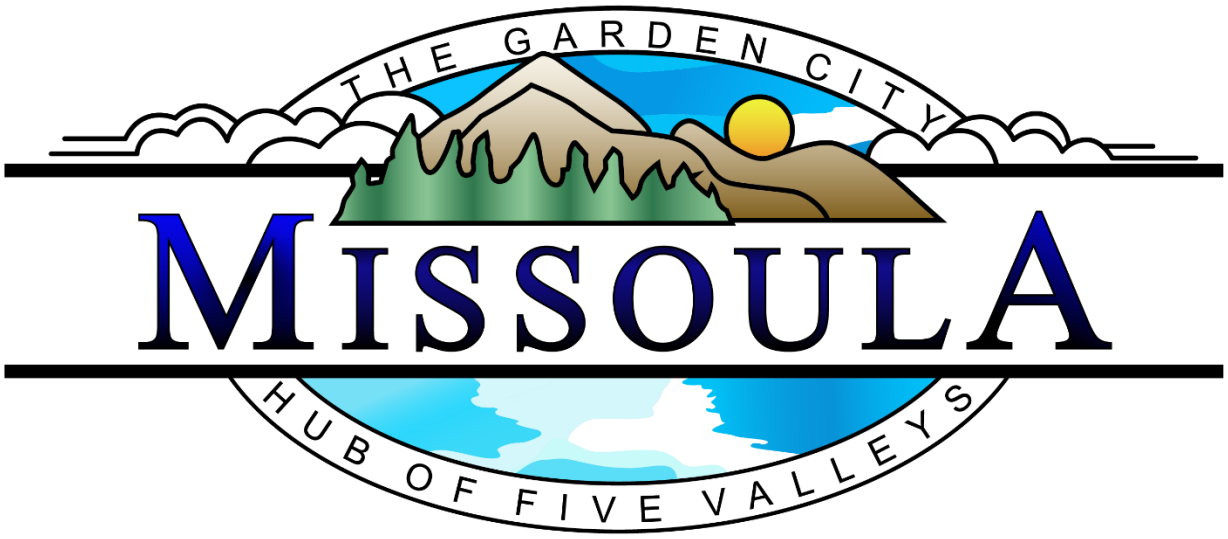

Missoula City Public Works
Standards and Specifications Manual

CHAPTER 2 – CONSTRUCTION WITHIN RIGHT-OF-WAY

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CHAPTER 2 - CONSTRUCTION WITHIN RIGHT-OF-WAY

2.1 Introduction

2.1.1 Applicability

The information contained in this chapter pertains to all construction within City right-of-way and public easements. Specifications and requirements not specifically contained herein shall be in conformance with the *Montana Public Works Standard Specifications* (MPWSS), Seventh Edition, 2021, and the City of Missoula Modifications to the MPWSS, which are all located in Appendix 2-A, and the City of Missoula Standard Drawings, located in Appendix 2-B.

2.1.2 References

A. *Montana Public Works Standard Specifications* (MPWSS) – Seventh Edition, 2021
B. *Missoula Parks & Recreation Design Manual*
C. Missoula City/County Health Department's Air Pollution Control Program Rules

2.1.3 Standard Drawings and Modifications

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2.1.5 Contractor Requirements

A. Business License, Surety Bond, and Liability Insurance

Any contractor who will perform construction (including private services) within the right-of-way (ROW) must be a City-licensed, bonded contractor as described in MMC Title 12. Contractors are also required to submit proof of liability insurance as described in MMC Title 5. These are minimum requirements for obtaining a business license in the City, but more restrictive requirements may be specified as part of a construction contract for a particular project.

B. ACI Flatwork Finisher Requirements

Per MMC Title 12.10, all City-licensed and bonded sidewalk and curb contractors' concrete placing/finishing crews shall have at least one American Concrete Institute (ACI) Certified Flatwork Finisher on site at all times.

C. Competent Person Requirements

Contractors are required to follow all state and Occupational Safety and Health Association (OSHA) regulations applicable to the work they perform. Additionally, the City of Missoula requires that a *competent person*, as defined by OSHA, be specified on excavation permits. A *competent person* is defined as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees and who has authorization to take prompt, correct measures to eliminate them.

D. Certified Traffic Control Supervisor

Traffic control certification is required for certain street classifications. See Section 2.3.4 of this chapter.

2.2 Permits, Fees, and Other Requirements

2.2.1 Payment

City of Missoula requires permits and fees to be paid prior to any construction work. The requirements are listed in Missoula Municipal Code. The applicable permits and fees are listed in the Public Work and Mobility Fee Schedule. Other permits and fees also may be required prior to any construction.

2.2.2 Water and Sewer Repair Permits for Reconnection

The City of Missoula requires a main line excavation permit when services outside of the main trench are reconnected from a pre-existing utility main to a new or replacement utility main. These permits shall be required if the service reconnections are within 5 feet of the edge of the new trench cut, or at the discretion of the City Engineer or a designated agent. Those connections or repairs deemed outside the new trench, as determined by the City Engineer, may require an excavation permit for each occurrence.

2.2.3 Utility Development Fees

Utility development fees shall be charged for connections to the wastewater and water systems in accordance with the Utility Rate Schedule.

2.2.4 Upsizing or Extra Depth – General Benefit Water or Sewage Facility

A. Sewer or Water Main Upsizing

Public water and sewer main extensions shall be sized for a proposed development or financing district by a registered Professional Engineer. The City Engineer may determine that it is in the community's interest to increase the main size to create a general benefit water or sewage facility. The City will pay installation costs, including labor, pipe materials, appurtenances, and extra excavation quantities, only of the upsize difference between the main size to be installed and the minimum main size required for the development. The final cost difference in main sizes must be based on actual itemized bid prices or engineer estimates, as reviewed, and approved by City Engineering. The City will not pay for additional

engineering services for pipe upsizing. An upsizing agreement must be signed in accordance with the City's procurement policies prior to the start of construction.

B. Sewer Line Extra Depth

Public sewer main extensions shall be designed by a registered Professional Engineer and with sufficient depth to serve the proposed development and the adjacent community sewer system. The City Engineer may determine that it is in the community's interest to increase the sewer main depth to create a general benefit sewage facility. Extra depth is defined as a sewer main invert more than 14 feet deep and deeper than the depth necessary to serve the proposed development. The City will pay for the sewer main extra depth based on the actual cost difference for the extra manhole depth and extra excavation quantities over the minimum required for the development.

2.2.5 Latecomer's Agreements for Water and Sewer

A. Description

This section outlines the procedures for the developer or public entity paying for a water or sewer main extension ("Sponsor") to establish a Latecomer's Agreement ("Agreement") for that particular water or sewer main extension. This would result in other properties connecting service lines to the main extensions to be charged for a proportional share of the cost of the main extensions, which would be refunded to the Sponsor.

B. Application Process

1. To be eligible for an Agreement, the Sponsor must complete the request for an Agreement from the City Engineer prior to Stage 4 approval of the Development Review process.
2. Sponsor shall provide the estimated costs of the water or sewer main extension, including construction and engineering expenses, with the Stage 3 documentation. This may include the cost of water system infrastructure such as pumps, storage tanks, or other facilities that provide additional capacity to a portion of the utility's system.
3. The Sponsor shall also provide a map, to be called Exhibit A, showing the properties to be subject to the Agreement. Only properties that can connect new service lines to the water or sewer mains installed under this contract, or newly connected properties that benefit from the additional capacity provided by water system infrastructure installed under this contract, will be included in the agreement. Developers further extending a main to serve their properties will not be included. The properties to be included in the Agreement will typically be only those fronting directly on the mains, except as described in Section 4.2.5 (Water System) of this Manual.
4. The City may allow other properties to be included where it does not see a benefit in extending mains to those properties and where service lines less than 200 feet in length could feasibly serve those properties. In addition, the City Engineer may determine that properties beyond 200 feet from the main may be included where the City Engineer concludes that a property is eligible to connect a service line to the main based on site-specific factors.

5. The Sponsor shall also propose a methodology for apportioning costs between the subject properties using one of the methods listed below in Section 2.2.5.C of this chapter.

C. Process for Apportioning Costs

1. One of the following methods may be used for apportioning costs between the subject properties:
    a. **Lot Frontage:** Divide the total cost of the extension by the total frontage of all lots that can connect to the main (including the Sponsor's lots) to calculate a latecomer's fee per foot of lot frontage.
    b. **Lot Area:** Divide the total cost of the extension by the total area of all lots (including the Sponsor's lots) that can connect to the main to calculate a latecomer's fee per square foot of lot area.
    c. **Total Number of Lots:** Divide the total cost of the extension by the total number of lots that can connect to the main (including the Sponsor's lots) to calculate a latecomer's fee per lot.
    d. **Other:** Other means agreeable to both the City Engineer and the property owners that is equitable to all parties as well as future customers subject to the agreement.
2. The City Engineer shall review the proposed methodology and shall make the final decision on the methodology to be used in each case based on balancing the equity between the Sponsor and other property owners who may be affected. If the units used to apportion costs (feet of lot front frontage, square footage, or number of parcels) increase, then the cost per unit should decrease proportionately. If the units used to apportion costs (feet of lot frontage, square footage, or number of parcels) decrease, the cost per unit should not be changed. In no event shall the total amount of reimbursement to which the Sponsor is entitled be increased.
3. If the City Engineer agrees with the estimated costs, properties subject to the fee, and the method of apportionment, the City Engineer will provide a draft Agreement with the Stage 4 approval using a template developed by the City Attorney. The Agreement will include Exhibit A and an Exhibit B identifying the fee that would be due from each subject property shown on Exhibit A. The City will mail a notice letter to the affected property owners shown on Exhibit A, informing them that a Latecomer's Agreement is being requested and that their property may be included within the Agreement.

D. Finalizing the Agreement

1. The Agreement will not be finalized until the actual costs are documented by the Sponsor with the Stage 6 submittal, to the satisfaction of the City Engineer. If the City Engineer reviews and approves the total costs, the City Engineer will provide the finalized Agreement to the Sponsor for signature. The agreement shall be executed prior to the Stage 6 acceptance.
2. Upon execution of the Agreement, the City will notify the owners of all properties subject to the latecomer's fee of the amount of the fee for their property. The City will add notes to those particular properties in its Accela program to prevent future water or sewer

connections until the latecomer's fees are collected. The City will also file a "Notice of Latecomer's Fee" with the County Clerk and Recorder.

E. Processing Payments. The City Finance Director or designee will place the monies in a special fund and shall pay the proportionate shares to the Sponsor or the Sponsor's assignee.

2.2.6 Asphalt Penalties

A. In accordance with Missoula Municipal Code 12.24.140, the City shall charge pavement assessments, also known as asphalt penalties, for square footage of pavement to be removed or damaged during excavation projects. Asphalt penalties shall be based on the area to be excavated, the street classification, and the age of the street and/or chip seal, as listed in the most current Public Works and Mobility Fee Schedule . The area to be excavated shall be estimated based on the linear footage of main to be installed in combination with the following standard widths:

Standard Dimensions for Asphalt Penalty Estimates

Project Type	Standard Dimension
Water/Sewer/Storm Main	8-foot trench width
Water/Sewer/Storm Service	6-foot trench width
Shallow-Buried Dry Utility (electric, fiberoptic, gas)	2-foot trench width
Stormwater Structure	10-foot width x 10-foot length

B. Asphalt penalties shall be estimated and charged along with the excavation permit prior to the start of construction. City inspectors will retain the ability to inspect a construction site and determine if the actual quantities of impacted asphalt are significantly different than the quantities shown in the permit. If this was the case, the City could choose to assess additional asphalt penalties by notifying the contractor and creating an invoice for the contractor to pay these additional penalties.

C. Specific asphalt penalties for each road in Missoula are shown online on the City of Missoula Roadways Map. Asphalt cutting on streets less than 2 years of age will require approval from the City Engineer. Approval will only be given if the applicant can demonstrate that underground boring or alternative alignments are not practical.

D. The following exceptions apply to pavement assessments:

1. When the excavation is performed at the request of the City for street reconstruction that requires utility improvements, no pavement assessment will be required of the utility making the improvements.
2. When an excavation is performed to replace or repair an existing water or sewer service, no paving assessment will be required of the property owner.

2.3 General Construction Requirements

2.3.1 Utility Locates

A. The City of Missoula participates in the 811: Call Before You Dig program. The City of Missoula performs locates only for City-owned sewer and water main lines.

B. The City of Missoula **does not** locate the following for sewer, stormwater, or water:

1. Utility service lines (lines connected to sewer and water mains),
2. Private distribution networks (irrigation systems, outbuildings, etc.), or
3. Private underground facilities (wells, septic systems, etc.).
4. MDT or privately owned stormwater mains.

C. Private underground facilities are found everywhere, including single family homes, farms, multi-family homes, businesses, industrial areas, mobile home courts, shopping centers, and sometimes in the road right-of-way.

D. When a property owner, tenant, or excavation contractor knows of or suspects the presence of any type of private underground facility or utility service line, they are responsible to locate that facility or service line or hire a third-party to locate it.

E. The City of Missoula does not own, maintain, locate, or install private sewer or water service lines.

2.3.2 Project Preconstruction Requirements

Any project involving installation of City-owned infrastructure shall require a comprehensive preconstruction conference using an agenda generally following the example given in Appendix 2-E. The date, time, and location of the meeting shall be given to, at a minimum, the City project lead no less than one week prior to the meeting to allow for the scheduling of City personnel to attend. To make the best use of time during the preconstruction conference, the construction schedule and traffic control plan should be submitted in advance of the preconstruction conference. Thorough meeting notes are required for the Public Infrastructure Review Stage 5 Checklist submittal but preferably would be submitted to the City project lead within 2 weeks from the conclusion of the meeting.

2.3.3 Weekly Construction Documentation

The developer's representative shall submit weekly construction documentation to the City during active construction, which is defined as the period when public infrastructure is being installed. Weekly submittals shall include, at a minimum, the developer's representative's Daily Construction Reports; test results from any utilities (e.g., water main pressure test, sewer main light test), as applicable; and construction photos. Construction photos shall meet the requirements in Appendix 2-A of this Manual, Section 01600. Daily Construction Reports shall, at a minimum, provide the name of the observer, time and date of observation, temperature, weather, contractor workforce and equipment, and a summary of the major construction activities and where they are occurring. Submittals shall be uploaded to the

City of Missoula cloud server, known as Next Cloud, at the web address provided in the Stage 4 approval letter and shall be received by the City no later than 5:00 PM on Monday for the previous week's work.

2.3.4 Construction Traffic Control

A. Construction Traffic Control specifications are included in City of Missoula Standard Modifications to MPWSS Section 01570.

B. Work within the city right-of-way or public easements will generally require a Traffic Control Plan (TCP) to be submitted to, reviewed by, and approved by the City. The City must approve the TCP before construction permits will be issued.

C. Traffic control devices shall be installed in accordance with the approved plan prior to work commencing. The City provides certain Traffic Control Standard Drawings.

D. Closure notifications vary depending on the type of closure and functional classification of the street being closed. Street classifications can be found on the City of Missoula Roadways Map.

E. Any excavation of asphalt or concrete within the right-of-way or public easement must be appropriately backfilled, compacted, and capped with a permanent surface prior to removal of traffic control devices.

2.3.5 Construction Work Hours

Regular construction work hours are 7:00 a.m. to 7:00 p.m., Monday through Friday. Any deviation from this timeframe must be preapproved by the City Engineer or designee prior to 5-business days before any work outside of regular construction work hours begins.

2.3.6 Noise Ordinance

The City's noise control ordinance (MMC 9.30 Noise Control) lists specific decibel levels for specific times, locations, and activities. Activities that will exceed these established levels require prior City Council approval. Contact the City Engineer to begin this process, which could take 2 weeks or more, depending on City Council's meeting schedule.

2.3.7 Protection/Replacement of Monuments

All survey monuments, benchmarks, etc., disturbed during construction shall be replaced in accordance with MPWSS Section 01050.

2.3.8 Construction Water

Missoula Water has designated certain hydrants in the water system for use for construction water. Contact Missoula Water for a current list of hydrants available for this use and instructions on setting up a construction water account. Construction water is provided on a case-by-case basis and must be prearranged with Missoula Water. Metering and backflow protection are required to be in place before any construction water use. For contractor convenience, a fill station may be installed on or near the project site if all metering and backflow requirements have been met.

2.3.9 Stop Work (City Rights)

In accordance with MMC Title 12, the City shall have the authority to order the contractor constructing right-of-way improvements to suspend work until construction conforms with the specifications set forth in this Manual.

2.3.10 Inspections

A. All right-of-way improvements shall be inspected and approved if they comply with City standards.

B. Contractors are required to request an inspection the working day before they wish to have the City perform an inspection. Engineering and utility inspections must be scheduled by using the IVR (Interactive Voice Response) system. Information and instructions for using the IVR system can be found at this link. Inspections are conducted Monday through Friday during the normal working hours of 8:00 a.m. to 5:00 p.m., excluding City-observed holidays.

C. The general contractor shall have the City of Missoula reviewed, stamped, and approved set of plans available on all construction sites at all times.

2.3.11 Contractor Quality Control and Owner Quality Assurance

A. See City of Missoula Modification to MPWSS Section 01400.

B. The City requires the Engineer of Record or designee to provide sufficient inspection services to ensure construction conforms to the approved plans and City standards and specifications. The Engineer of Record or designee shall submit professional inspection reports per the stage process to City Engineering at the end of each week. The City expects the Engineer of Record, or their representative, to be present for critical moments of construction, such as, but not limited to, thrust block pours, tie-ins to existing utility infrastructure, manhole placement, sidewalk pours, asphalt testing, and utility acceptance testing such as pressure testing and sewer leakage test.

2.3.12 Continual Site Maintenance

The contractor shall keep the construction site in a safe and clean manner at all times. The contractor shall keep sidewalks clear and free of mud, dirt, rock, sand, and debris at all times and shall prevent these materials from being spilled or tracked onto streets and sidewalks. The contractor is responsible for any damage to any public infrastructure.

2.3.13 Site Cleanup

A. See MPWSS Section 01700. In addition, it is the contractor's responsibility to prevent all mud, dirt, rock, sand, and debris from being spilled or tracked onto streets and rights-of-way outside the construction site. If City inspectors determine that a construction site is not in compliance with this policy, they will notify the construction permit holder about the violation. A violation notice will be posted on the site that the permit holder has 48 hours to bring the site and any affected, adjacent streets into compliance with this policy.

B. If the affected streets are not cleaned within 48 hours, NO ACCESS notices will be placed on the construction site, and all motorized access to the construction site authorized under the

construction permit shall be suspended. No motorized access across the right-of-way will be allowed until the affected streets are cleaned and brought into compliance with this policy. Access from the construction site to adjacent streets or right-of-way will continue to be suspended until the affected streets are cleaned.

2.4 Construction Contracts for Public Infrastructure

Public infrastructure includes both publicly funded infrastructure as well as privately funded infrastructure that is turned over to the City of Missoula upon completion. Some provisions of this chapter apply to all public infrastructure while others apply only to privately funded public infrastructure.

2.4.1 Warranty

A. All public infrastructure (whether publicly or privately funded) shall be warranted against defective and inferior materials and poor workmanship for a period of at least 2 years from the date of final acceptance. A warranty period longer than 2 years may be required if the project is not built to applicable standards or the as-built documents (drawings, construction photos, etc.) lack the appropriate level of detail. The warranty period may also be required to be extended if defective or inferior materials or poor workmanship issues are discovered during the initial warranty period. The party providing the warranty (whether a contractor or developer) shall be responsible for all reasonable and necessary costs incurred by the City to hire third-party engineering and contracting firms to address defects in workmanship discovered during the warranty period. Failure to comply with the requirements of this section may bar the party providing the warranty from future work on City infrastructure.

B. The type of performance security required to secure the warranty depends on whether the infrastructure is publicly or privately funded, as described below in Section 2.4.2 and Section 2.4.3 of this chapter.

2.4.2 Requirements for Privately Funded Public Infrastructure

A. Maintenance Bonds

1. As a condition to the City accepting privately funded infrastructure, the property owner, developer, or general contractor shall provide the City with a single maintenance bond of 20% of the total value of the public infrastructure constructed as part of a project, subdivision, development, townhome exempt development (TED), or phased development. This requirement is waived when the total value of the public infrastructure is less than $50,000.
2. The maintenance bond shall remain in full force for the 2-year period after acceptance of all public infrastructure by the City for maintenance. If the City requires the warranty period to be extended as described previously in this chapter, the maintenance bond will also need to be extended through the term of the extended warranty. The City expressly reserves the

right to draft the maintenance bond for repairs not completed by the property owner, developer, or contractor within 30 calendar days of being advised that repairs are required.

3. The commencement date for the maintenance bond shall be the date set for the completion of the required improvements as stated in the Subdivision Improvements Agreement, the date of Substantial Completion as certified by a Professional Engineer, or the date Final Plat is granted, whichever is later. If the expiration date of the maintenance bond falls after November 16, the expiration date of the maintenance bond shall be June 30 of the following year.
4. Maintenance bonds may be in the form of a surety bond, a certificate of deposit (CD), a certified check, or an irrevocable letter of credit issued by a bank licensed to do business in the State of Montana.

B. Indemnity

In constructing any facilities, the developer agrees to defend, indemnify, and hold harmless the City, its officers, agents, and employees against any and all claims for damages of any kind caused or alleged to have been caused as a result of the construction of the facilities, whether such damage or injury results from normal operation or accident or any other cause.

2.4.3 Requirements for Publicly Funded Infrastructure

Publicly funded infrastructure must be installed in accordance with City of Missoula's Administrative Rule 3, Purchasing and Contracts Policy. It is not the intent of this document to list all requirements of the purchasing and contracts policy but to highlight a few key provisions that need to be addressed in public works contracts.

A. Gross Receipts Tax

Construction contracts more than $5,000 are subject to Gross Receipts Tax reporting and collection in accordance with Section 15-50-101 MCA.

B. Prevailing Wage Requirements

In accordance with Section 18-2-422 MCA, all public works contracts more than $25,000 must contain language included in Section 8(E)(i) of the City's Purchasing and Contracts Policy.

C. Performance Security Requirements

To comply with Section 18-2-201 MCA, performance security is required on construction contracts as a guarantee that contract provisions are performed and that laborers, suppliers, and subcontractors are paid. This provision may be waived for contracts less than $50,000. The City of Missoula Public Works and Mobility Department will not require security on projects less than $50,000 unless the Department specifically requests it for a project. The performance security shall remain in effect for the full term of the warranty as described previously in this section.

D. Insurance

Contractors entering into public works contracts with the City of Missoula must provide insurance in compliance with MPWSS Section 00810.

E. Liquidated Damages in Contract Agreements

1. This rule shall govern the provisions for recovery of Liquidated Damages in Contract Agreements entered into by the City of Missoula for which the Public Works and Mobility Department provides contract administration services. Liquidated Damages in Contract Agreements acknowledge that the owner has a valued interest in completion of a project in a timely manner, per the contract documents. The liquidated damages in a City of Missoula contract are set forth in the contract agreement.
2. For each working day that any part of the work remains uncompleted after the expiration of the time allowed for completion of the work stipulated in the contract, or as extended by the additional work or materials ordered after the contract is signed, the sum per day given in the contract shall be deducted from any moneys due to the contractor, or if no money is due the contractor, the owner shall have the right to recover said sum or sums from the contractor, from the surety, or from both. The amount of these deductions is to cover liquidated damages to the City of Missoula incurred by additional employment of engineers and other expenses due to the failure of the contractor to complete the work or any part of the work within the time specified, and such deductions are not to be considered as penalties.
3. Amount of liquidated damages per day will be determined on a contract-by-contract basis.
4. Liquidated damages may be included in the contract agreement for any construction, non-construction services, or procurement contract. Prior to advertising any project for bid, liquidated damages for any individual contract agreement may be established as ZERO or an alternate amount by the accountable department or agency.

F. Apprenticeship Bidder's Preference Program

1. The City of Missoula recognizes that a well-trained construction work force is critical to the economic future of Missoula. Apprenticeship training programs are particularly effective in providing training and experience to individuals seeking to enter or advance in the work force. By providing apprenticeship utilization on City projects, the City can create opportunities for training and experience that will help ensure that a trained work force will be available in sufficient numbers in the future.
2. This apprenticeship program is optional; it is not a mandatory requirement for working on City projects. This program only applies to a City of Missoula construction project estimated to exceed $500,000 in value.
3. Contractors who can prove that they are part of a Montana registered (state-approved) apprenticeship training program and can show that 10% of all labor hours will be comprised of registered apprentices will receive a 5% preference during the bidding selection process. The total value of this preference shall not exceed $100,000 in value. If a bid is submitted using the preference, the apprenticeship rules will apply even if the selected bidder is the lowest bidder without consideration of the preference.
4. More details on the City's Apprenticeship Program are located on the City's website at: www.ci.missoula.mt.us/2669/Apprenticeship-Program.

2.5 Pollution Controls

2.5.1 Dust abatement

See MPWSS Section 01500 – Construction and Temporary Facilities. Additional air quality regulations are in the Missoula City/County Health Department's Air Pollution Control Regulations, Chapter 8.

2.5.2 Soil Erosion and Pollution Control

See Chapter 8 (Erosion Control) of this Manual.

2.5.3 Weed Management

See Chapter 8 (Erosion Control) of this Manual and Missoula County Weed District's *A Source Guide to Revegetation and Weed Control*.

2.5.4 Noise

See MMC 9.30 Noise Control in for noise pollution regulations.

2.6 Surfacing Removal, Replacement, and Pavement Protection

2.6.1 General

A. Removal of existing asphalt and concrete pavements and structures in the right-of-way shall be in accordance with City of Missoula Standard Drawing 744 and MPWSS Section 02112. All cuts within the right-of-way shall be in a straight line perpendicular or parallel to the center line of the excavation unless approved by Public Works and Mobility Department staff.

B. Contractors should take photos or videos before they begin work. Photos and videos should include dates and site locations to document existing site conditions as a precautionary measure.

2.6.2 Concrete

The outer edge of all cuts through concrete items shall be sawn through to a depth of not less than 30% of the total thickness by means of a power-driven concrete saw. Removal of concrete must be at a construction joint.

2.6.3 Asphalt

A. After excavation is completed, asphalt shall be cut 12 inches beyond the limits of excavation immediately prior to paving. Where the cut line is less than 5 feet from the edge of the existing pavement, remove and replace the entire pavement section between the trench and edge of pavement. All existing asphalt cuts shall be tacked prior to replacement of asphalt and crack sealed. No undercutting of material below the paved surface shall be permitted. If undercutting occurs, that section where undercutting took place shall be excavated and repaired.

B. Asphaltic surface cutting shall be done with a jackhammer with a spade bit, power driven saw, or cutting tool to the same requirements cited above.

C. An excavator or backhoe with a toothed bucket or flat straight blade bucket may be used to remove an asphaltic surface.

D. All excavation backfill within asphalt streets or alleys shall be completed with a flat straight blade in order to protect the asphalt surrounding the excavation. Loader buckets, hoe buckets, and any backfill device shall not have any equipment capable of gouging or marking the asphalt. This also includes out-riggers, grousers, or buckets.

E. Failure to comply with this requirement will cause the excavation to be out of compliance and will result in immediate stop of work until brought into compliance.

F. At the City Engineer's discretion, the damaged portion of asphalt shall be square cut and repaved or chip-sealed.

2.6.4 Cold and Hot Weather Construction

A. See City of Missoula Standard Modifications to MPWSS Section 02510, Part 3 Execution, 3.10.C for cold weather placement of asphalt concrete pavement.

B. See City of Missoula Standard Modifications to MPWSS Section 03310, Part 3 Execution, 3.6 for weather limitations for placement of concrete.

2.7 Requirements for Non-Municipal Utility Mains in the Right-of-Way or Public Easements

2.7.1 Introduction

Non-municipal utility installations within rights-of-way or public easements are subject to approval by the City of Missoula. The following guidelines are to be used in regulating utility or utility-like facilities that are proposed to occupy right-of-way under the City of Missoula's jurisdiction. This section can also be used by utility and non-utility companies as guidance when proposing to locate their facilities in right-of-way. In case of conflict between these guidelines and state laws concerning utility occupancy of right-of-way, the more restrictive requirement shall take precedence.

2.7.2 Definitions

A. Non-municipal utility mains are generally defined as power, communications, television, fiber-optic, water, sewer, stormwater, and gas mains, that are not publicly owned. A utility is defined by state law in Section 69-3-101 MCA, Section 69-13-101 MCA, and Sections 35-18-101 through 35-18-503 MCA.

B. All utilities must be placed underground when technically and economically feasible, as required by the Public Service Commission on regulated utilities, by local ordinances, or by state law.

1. As used in this section, "technically feasible" means that the trench through which the underground lines would run could be excavated by a conventional backhoe or trencher, with no blasting, and with minimal use of jack hammers or equipment required.

2. As used in this section, “economically feasible” means that if the underground installation cost per unit does not exceed twice the overhead installation cost per unit, underground installation is feasible and must be constructed at the expense of the utility and/or developer.
3. New poles on City streets are prohibited as per MMC 12.36.010.

2.7.3 Approval Process

A. The City’s Public Works & Mobility Department requires plans for any non-municipal utility mainline located within a right-of-way or public utility easement to be submitted, reviewed, and ultimately approved before City staff will issue excavation or occupancy permits. This plan review and approval will reduce conflicts with existing non-municipal and public underground utilities as well as with future public infrastructure, such as water mains, sanitary sewer mains, stormwater facilities, surface improvements, public trees, or future tree planting sites. This plan review and approval is separate from the City’s Public Infrastructure Review Stage Process, which is currently not required for non-municipal utilities. See MMC Title 12.24 Excavations for further information and requirements on excavation work within the right-of-way or a public utility easement.

B. These plans shall be submitted 10 working days prior to requesting the excavation permit.

C. Complete non-municipal utility plans are required to be submitted with the construction plans for all subdivisions and major developments.

2.7.4 Plan Submission Requirements

A. At a minimum, non-municipal utility plan submissions shall comply with the City’s requirements in Section 3.2.2 (Improvement Plans) of this Manual. In addition, the following information shall be included with non-municipal utility main plan submittals:

1. Right-of-way and/or existing and proposed utility easement locations, boundaries, and dimensions.
2. Surface features, including but not limited to asphalt limits, curb, sidewalk, sumps, fences, trees, tree planting sites, and structures.
3. Accurate locations for all existing utilities, including manholes, valves, and appurtenances via the use of as-built drawings or field surveys. Where city staff determine that there is a high likelihood of utility conflicts field surveys may be required.
4. Proposed new construction location, including alignment, depth, valves, and appurtenances and clearly show dimensioned separation distance, both vertically and horizontally, from all existing utilities along the proposed route.
5. A list of all footages for non-municipal utility installation and service stub-outs, if applicable, for determining permit amounts. Include locate number, traffic control plan, competent person, American Concrete Institute person (if necessary for concrete), and dates of proposed work. If a common trench is being used, provide a typical cross-section of trench and relative location of utilities located in the trench.
6. Specific asphalt repair requirements.
7. Requirements for compaction testing and frequency included on plans.

8. Specific notation on the plans that all field changes which affect the alignment must be approved by the City Utility Engineer (or designee) prior to construction.
9. Pre-construction photo or video documentation of all excavation sites are strongly encouraged and may be required at the City's discretion. Photos and videos should include dates and site locations to document existing site conditions as a precautionary measure. Google Earth street view is not considered sufficiently reliable or recent enough to settle all warranty disputes.

2.7.5 Design Requirements

A. Non-municipal utility mains should be placed outside of the right-of-way in either front yard or rear yard easements when possible. Where no reasonable alternatives exist, mains may be permitted in the right-of-way in accordance with MMC 12.36.060. The following specific rules apply to non-municipal utility mains within the right-of-way or within public easements:

1. Potholing of all crossings of water, sewer, or stormwater mains shall be done to verify depth and to ensure no damage is done to these lines during trenchless installations. Potholing of water and sewer services will also be required if depth cannot be verified through other means.
2. All non-municipal utility mains, including manholes and above-ground structures, shall have a horizontal separation from existing parallel public utility mains of 6 feet minimum.
3. All non-municipal utility mains installed within the boulevard right of way where trees are located or may be located in the future, shall be located within 1 foot of either the curb or sidewalk edge or have a minimum depth of 42 inches, to minimize conflict with existing boulevard trees or future tree planting sites.
4. All non-municipal utility mains shall have a vertical separation from existing public utility mains of 3 feet minimum. Crossings of water and sewer services must maintain a minimum spacing of 2 feet. If this minimum separation cannot be maintained during construction, the City will require the contractor provide post-construction video inspection of the sewer line to determine if damage to the sewer service occurred during construction of the non-municipal utility main. Any damage to water and/or sewer services during the 2-year warranty period following the non-municipal utility main construction will be the responsibility of the non-municipal utility to address.
5. Non-municipal utility main crossings should be at right angles to the roadway and at right angles to the public utility mains where possible. Crossings of public utility mains shall not be at angles less than 45 degrees.
6. All non-municipal utility mains shall have a minimum depth of 24 inches, but they shall be at least 42 inches deep beneath boulevards where tree roots may be present or could be located in the future.
7. If installed with an open trench, non-municipal utility mains shall include a warning tape 18 inches above the main.
8. Manholes and valve boxes should be located outside of the wheel path. Manholes should be placed where entrance to the manhole for maintenance will not obstruct traffic.

9. Any utility facilities installed under street pavement must be stubbed to the edge of right-of-way improvements to minimize future disturbance of right-of-way improvements.

2.7.6 Construction and Warranty Period

A. All existing utilities, when encountered, shall be supported, shored, and protected wherever exposed in the trench or other excavation. Any existing utility damaged during excavation shall be immediately repaired by the non-municipal utility company or contractor, who shall contact the non-municipal utility owner.

B. In accordance with MMC 12.32.100, any excavation work necessary as part of a non-municipal utility project shall comply with International Society of Arboricultural (ISA) standards. The City shall require the contractor to hire and have present an ISA-certified arborist for any excavation work within the drip line of any existing tree in the public ROW in order to minimize damage to tree roots. If severe damage to the tree roots occur, the contactor may be required to pay for tree removal and for planting a new tree as per the requirements in MMC 12.32.120.

C. The City requires non-municipal utility construction to comply with the site cleanup requirements specified in Section 2.3.13 of this chapter.

D. The City may require a final walk-through inspection. Before requesting a final construction inspection by City Engineering, the contractor shall conduct an independent final construction inspection. During the scheduled final construction inspection with the contractor, City Engineering will generate a punch list of any deficiencies, as applicable, and provide a copy of this punch list to the contractor. These deficiencies must be addressed prior to the City closing the excavation permit and starting the warranty period.

E. The City requires the non-municipal utility to provide a close-out package within 1 month following the end of construction, complete with the record drawings, consisting of plan and profile, created from boring logs and daily diaries. Warranty periods will not be initiated until this information is received.

F. The warranty period shall be 2 years, dated from the close of permit, as per Section 2.4.1 of this chapter.

2.8 Environmental Compliance

All environmental compliance necessary for project implementation, including but not limited to the Clean Water Act, Safe Drinking Water Act, and National Flood Insurance Program, shall be completed before work begins.

2.9 Hazardous Materials

2.9.1 Contractor and Property Owner Responsibility

A. If the contractor encounters a hazardous environmental condition, or if the contractor or anyone for whom contractor is responsible creates a hazardous environmental condition, the contractor shall immediately:

1. Secure or otherwise isolate the condition,
2. Stop all work in connection with the condition and in any area affected thereby, and
3. Notify the property owner and Engineer of Record (and promptly thereafter confirm the condition in writing).

B. The property owner shall promptly consult with Engineer of Record concerning the necessity for the property owner to retain a qualified expert to evaluate the condition or take corrective action, if any. Promptly after consulting with Engineer of Record, the property owner shall take such actions as are necessary to allow the contractor to timely obtain required hazardous material permits..

2.10 Easement Requirements

Standard easement templates for utility mains and services are available in Appendix 2-F. Other easement templates are available upon request to the City's Public Works & Mobility Department, Engineering Section.

2.10.1 Public Easements

A. Public utility and access easements and rights-of-way are required for the installation, ongoing maintenance, and any replacement of public infrastructure located on private property prior to conveying the easement or rights-of-way to the public (City). The applicant shall prepare, or cause to be prepared, these documents and submit them to City staff as draft easements or rights-of-way for review. After the City determines that the public infrastructure has been constructed within the easements or rights-of-way, City staff will properly record the documents with the Missoula County Clerk and Recorder's Office prior to the City's acceptance. A standard easement template is provided in Appendix 2-F. Non-standard easement templates may be provided upon request.

B. All public utility and access easements shall be a minimum of 20 feet wide centered on the utility main pipe or surface infrastructure improvement. Deviations from this requirement will require the approval of the City Engineer. All utility main easements shall be unencumbered and remain unencumbered by any and all permanent structures. Private utilities within easements shall comply with Section 2.7 of this chapter. If water and sewer utilities are included in the same easement, a minimum easement width of 32 feet shall be provided. The actual width of these easements will depend on the diameters of the water and sewer mains. A greater width will be required when one or both of the mains are larger than 12 inches in diameter.

2.10.2 Private Easements

A. General

1. The easement must be recorded with the Missoula County Clerk and Recorder's Office on all properties or tax lots on which the private utility service is located other than the property that the utility is serving. This easement may also be shown on a Certificate of Survey, plat, amended plat, or other recordable instrument.
2. A single easement may be used where the utility line crosses multiple properties or tax lots if the easement is signed by all owners of the affected properties or tax lots.

3. A draft of the easement or covenant of future easement (in the case of properties having the same ownership) must be provided for review and approved by City staff before recording with the County. A survey may be required depending on the complexity of the easement. After approval, the easement must be recorded before a utility excavation permit can be issued. Easements associated with land divisions and final plats may occur on separate timelines than those listed above.
4. A single easement may be used for multiple private utility services serving a single property or tax lot. The easement must describe the number and intended use for each of the multiple private utility services allowed.

B. Easement Width

1. **General**
    a. The standard easement width for a private utility service is 10 feet wide.
    b. The easement width may be reduced to a minimum of 5 feet if an appropriately sized casing sleeve is provided.
    c. All services shall be a minimum of 4 feet from the edge of the easement. Services shall be allowed closer to the edge of easement if a sleeve is provided or if trenchless methods are specified for any and all future maintenance of services.
2. **Service Spacing.** Multiple, parallel utility services shall have a minimum horizontal spacing of 12 inches between each other and may not be located directly on top of other services.
3. **Conflicting Use.** The easement must include a statement prohibiting property uses that would encumber or interfere with the intended utility easement, such as planting trees or constructing permanent structures.
4. **Maintenance or Repair.** The easement must include a provision allowing entry onto the property or properties burdened by the easement to install, maintain, inspect, and repair the utility line.
5. **Alteration or Revocation of Easement.** The easement must include a provision that prohibits alteration to or revocation of the easement until/unless the utility use is discontinued.
6. **Crossing Over Multiple Lots Under Single Ownership.** Where a single person or entity owns the property being served and any of the properties or tax lots the private utility will cross, then the property owner must record a covenant of future easement on the commonly owned properties the private utility will cross. The recorded covenant must include the same information required for the easement. Upon sale or reassignment of ownership of any of the properties or tax lots under common ownership, such that said parcels are no longer under common ownership, the private utility easement will become effective on those tax lots or properties.

2.10.3 Septic Tank Effluent Pump (STEP) Sewer System Easements

See Section 5.3.5.H (Sanitary Sewer System) of this Manual for easement requirements associated with STEP systems.

2.10.4 Private Stormwater Facilities Maintenance Covenant and Right to Access

See Section 6.2.1.J.4 (Stormwater System) of this Manual for private stormwater facilities maintenance covenant and operations and maintenance manual requirements.

2.10.5 Vacation of Public Easements

Vacation of public easement requests shall be reviewed by the City's Planning & Engineering Division, Engineering Section. Contact Section staff for process and forms.

2.11 Right-of-Way Occupancy and Encroachments

2.11.1 General

A. Right-of-way occupancy and encroachments shall be per MMC Title 12.14 Right-of-Way Occupancy/Encroachment Permits.

B. The contractor shall confine construction operations to the limits of the required work shown on the plans and shall use due care in placing construction tools, equipment, excavated materials, and pipe materials/supplies so as to cause the least possible interference with the transportation system. When these requirements cannot be met, a right-of-way occupancy permit is required..

C. Rights-of-way across private property shall be as indicated on the plans. When necessary, the boundaries of rights-of-way across private property will be marked with stakes set by the Engineer of Record. The stakes shall be protected and maintained until backfilling and clean-up have been completed.

D. If it is necessary or desirable that the contractor use land outside of the right-of-way, the contractor shall obtain consent from and shall execute a written agreement with the owner or tenant of the land. The contractor shall not enter any private property outside the designated right-of-way boundaries without permission from the owner or tenant for pipe delivery or occupy it for any other purposes with people, tools, equipment, construction materials, or material excavated from the pipe trench.

2.12 Enforcement and Penalties

See MMC Title 12.01 General Provisions.

2.13 Public Safety

2.13.1 Responsibilities

A. The contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. Such responsibility does not relieve subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety laws and regulations. The contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury, or loss to:

1. All persons on the site or who may be affected by the work;
2. All the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement during construction.

2.13.2 Compliance Requirements

A. The contractor shall comply with all applicable laws and regulations relating to the safety of persons or property; ensure the protection of persons or property from damage, injury, or loss; and erect and maintain all necessary safeguards for such safety and protection.

B. The contractor shall notify owners of adjacent property and of underground facilities and other utility owners when conducting the work that may affect them and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. The contractor shall comply with the applicable requirements of owner's safety programs, if any. The Supplementary Conditions within the Construction Contract identify any owner's safety programs that are applicable to the work.

D. The contractor shall inform owner and engineer of the specific requirements of contractor's safety program with which owner's and engineer's employees and representatives must comply while at the site.

E. The contractor in accepting and acting under the excavation permit granted under the provisions hereof agrees to assume full responsibility for injury to persons or losses or damage to property incurred by reason of, or arising out of, any act or omission of such excavation or to properly barricade, guard, and warn the public of such excavation.

F. All work shall meet current OSHA Safety and Health Standards. Failure to comply with OSHA rules may result in an immediate termination of the excavation permit. The contractor shall take all necessary precautions to prevent injury to workers and others, and to protect any and all adjacent private and public property. This shall include protecting dry wells, storm drains, sidewalks, curbs, sprinkler systems, traffic loops, traffic signals, etc. The contractor shall have a competent person, as defined by OSHA, on site during all work associated with the excavation permit. The contractor shall be solely responsible for all safety related to the excavation.