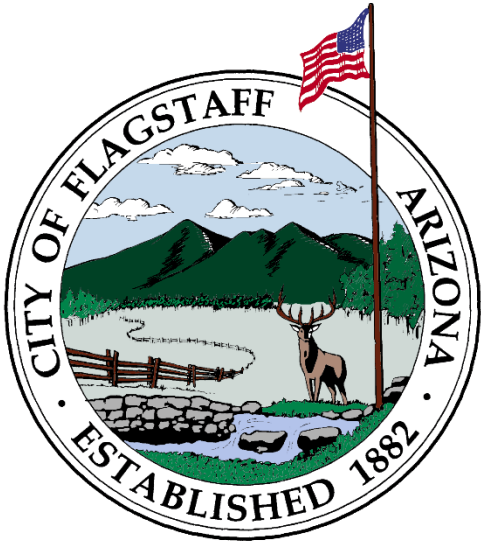


**SPECIAL PROVISIONS
SUMMIT WATER
IMPROVEMENT PROJECT**



Date: March 9th, 2020

**Owner:
City of Flagstaff
211 W. Aspen Ave.
Flagstaff, AZ 86001**

Prepared by:

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CITY OF FLAGSTAFF, ARIZONA

SUMMIT WATER IMPROVEMENT PROJECT

C.O.F. FILE NO. 03-19007

M.A.G. UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC
WORKS CONSTRUCTION (with revisions through 2011) ARE
HEREBY AMENDED TO INCLUDE THE FOLLOWING:

SECTION 100 – GENERAL CONDITIONS

- **SECTION 104 – SCOPE OF WORK**

- 104.1.2 MAINTENANCE OF TRAFFIC

Prior to the Notice to Proceed, the Contractor shall furnish to the City a traffic control plan for the project that includes all traffic control for street/lane closures, work phasing, detours, etc.

Access to all residential driveways shall be provided during non-working hours. Where property has more than one driveway, no more than one access will be restricted or closed at one time. Should it be necessary to close access to a private property, business, driveway, or alley entrance, the closure must be for as short a time as possible and be restored at the end of the work shift. If primary access cannot be restored, the Contractor shall provide an alternative, which will be coordinated with the resident and preapproved by the City's Project Manager prior to any restrictions being implemented.

Existing pedestrian and bicycle facilities shall be continued and signed through or around the construction zone. Any full street closures will require the approval of the City and involve adequate re-routing through the neighborhood to the north, notification of media, notification of emergency responders, notification of residents and businesses in the project area and along the proposed route, and adequate temporary signage/signals. Traffic control may require custom signage, temporary signals, or digital message boards, and assistance from City of Flagstaff Police Department to facilitate traffic flow.

All street restrictions or closures must be coordinated with emergency responders. The Contractor shall be required to provide no less than one (1) week advance written notice of all street closures and traffic restrictions to all affected property owners, business owners, and residents, including those properties on a detour route. The notice shall be submitted to the City for review and shall include the projected date, and duration of the closure and alternate detour routes. Each notice shall include the Contractor's name, contact person and local 24-hour telephone number as well as the City Project Manager's name and telephone number.

Business Access:

The Contractor shall provide access to businesses in and adjacent to the project area during hours of operations including keeping all driveways, alleys, parking lots, etc. clear for vehicular and pedestrian traffic during hours of deliveries, occupancy, and operation. Should it be necessary to restrict access, the closure must be for as short a time as possible and the Contractor shall provide an alternative access, if possible, which must be coordinated with the business owner and pre-approved by the City's Project Manager prior to any restrictions being implemented. The Contractor shall provide business access signs during construction.

Construction Schedule/Phasing Plan:

A detailed Construction Schedule/Phasing Plan must accompany the Traffic Control Plan submitted to the City. This phasing plan must show the schedule, duration, and location of all construction items and activities on a daily basis throughout completion of the project. The phasing plan must coordinate with the Traffic Control plan and show closures, reroutes, and lane restrictions.

The Contractor will be required to present the plans to the City within seven (7) days of Notification of Award. The City's Project Manager shall promptly review the plans and either approve them, or provide a written list of the items that will require revision.

The Contractor shall submit the corrected construction schedule and traffic control plan within seven (7) calendar days of receiving the City's list of required revisions. The corrected phasing

plan shall address all comments from the City's list of required revisions. Weather days per Special Provision 108.7 shall be included in the phasing plan schedule.

The Contractor shall be required to maintain 2-way traffic to the greatest extent possible. Pavement removal and roadway construction activity will be restricted to reduce impacts to the neighborhood and to provide cover protection for subgrade. Maintaining on-street parking in active work zones is not required. Installation of underground utilities will be permitted throughout the full project area, provided that trenches are promptly backfilled and trench patches are maintained. Through traffic may be detoured to the north side streets for a limited duration as approved by the City. Payment for saw cutting, trench patching and maintenance of patching shall be incidental to the bid items of work for which the saw cutting, trench patching, and maintenance is required.

Traffic Safety:

At the time of the pre-construction conference, the Contractor shall designate an employee who is qualified and experienced in construction traffic control and safety, to be available on the project site during all periods of construction to coordinate and maintain safe barricading whenever construction restricts traffic. This person shall be available during non-construction hours in case of any traffic control and/or safety items that need to be handled in an urgent manner. Traffic control shall include pedestrian, bicycle and vehicular traffic.

Sanitation Pickup:

Regular residential sanitation pickup in the area of this project is scheduled every Tuesday (Recycle) and Wednesday (Trash). Dumpster pick up varies from location to location; coordinate with the City's Environmental Division and the property owner for pick-up days. When construction activity interferes with sanitation pickup, the Contractor shall provide for sanitation vehicle access to the affected properties or relocate the trash containers where access is acceptable. The contact number for the Environmental Division of the Public Works Department is 928-774-0668. The contact number for Waste Management is (928) 779-6050.

Emergency Access:

All roadway closures shall be coordinated by the Contractor with Traffic Engineering and the City's Project Manager at least 1 week in advance of the closures. The Contractor shall submit the closure for approval to the Traffic Engineer, copy the information to the City's Project Manager, and forward the street closure information to the Fire Department, Police Department, and Emergency Medical Services after approval.

US Postal Service Access:

The Contractor shall be responsible for maintaining access for postal service within the project area at all times. The Contractor shall coordinate this work to avoid interruption of mail service. Should an existing mailbox be damaged by construction activity, the Contractor shall promptly remove and replace the damaged mailbox, including post and foundation in-kind, at no cost to the resident or the City.

The Contractor shall maintain mailboxes so that no disruption of mail service shall occur. If mail disruption is anticipated, the Contractor shall notify the City's Project Manager, Inspector, affected property owner and/or resident(s) at least 48 hours in advance.

o 104.2.3 Due to Extra Work

The following contract contingencies are included and hereby incorporated into the contract documents as follows:

Trench Rock Excavation shall include all equipment, labor and materials necessary to conduct trenching activities sufficient to install all proposed underground improvements. The Trench Rock Contingency bid item includes an estimated quantity in the Bid Schedule and has the same requirements and restrictions as the Contract Allowance. Trench Rock Excavation shall NOT be

considered for construction associated with water service lines and fire hydrants. See City of Flagstaff Amendments to MAG Standard Specifications Section 601.2.1.

Unsuitable Material shall include all equipment, labor and materials necessary to remove unsuitable materials and replace with materials that conform to the project specifications. The Unsuitable Material bid item includes an estimated quantity in the Bid Schedule and has the same requirements and restrictions as the Contract Allowance.

Pipe Utility Conflict shall include all equipment, labor and materials necessary to address and coordinate the successful solution to any and all pipe utility conflicts as shown on the plans or discovered through the efforts of construction. The pipe utility bid item includes an estimated quantity in the Bid Schedule and has the same requirements and restrictions as the Contract Allowance.

- **SECTION 105 – CONTROL OF WORK**

- 105.2 PLANS AND SHOP DRAWINGS

The Contractor shall submit three (3) hard copies and one electronic copy of each shop drawing, product data, or mix design to the City for review. Only materials to be used on this specific construction project shall be submitted. The General Contractor shall review and stamp all shop drawings and product data for conformance with the construction documents prior to submission. Any shop drawings or product data not reviewed and stamped by the General Contractor will be returned without review. Items not in accordance with the contract drawings shall be so noted upon the Contractor's review.

- 105.5 Cooperation of Contractor

The Contractor's Project Manager and Project Superintendent shall attend weekly construction progress meetings. The Contractor shall be prepared to discuss construction schedule, construction activities planned for the upcoming two (2) weeks (submit proposed two (2) week schedule), problems, issues, any information required by the City's Project Representative, construction staking, business/residence/citizen complaints, safety, traffic control and pedestrian access requirements, weather delays experienced during the previous week, disposal of materials, access/construction coordination with businesses/residences, inspection/testing, overtime worked during the previous week, payments, water/sewer service disruption, submittals, field orders/field changes and any other business as necessary. The Contractor shall prepare meeting agendas and meeting minutes. Minutes shall be distributed within four (4) working days after the meeting.

Public Involvement: At the time of the Pre-construction Conference, the Contractor shall designate an employee that is fully responsible for coordination with the public, including but not limited to; the property owners, the business owners, renters, leasers, Public media, the City of Flagstaff Public Information Officer and Mayor/Council. This person shall be qualified and experienced in public coordination and shall be available during all periods of construction to coordinate any issues.

In addition to the requirements of the preceding paragraph if requested by the city, the Contractor shall actively participate in a public meeting PRIOR to any work commencing. The public meeting shall be at a date, time and location as designated by the City of Flagstaff Project Manager. At a minimum, the Contractor shall have the project Superintendent, Project Manager, and Safety Officer attend the meeting to answer questions of the public.

Protection of Work: The Contractor is required to protect work during inclement weather. The Contractor shall grade areas to drain and utilize pumps to remove ponding water immediately during all stages of construction during both working and non-working hours.

- 105.8 Construction Stakes, Lines and Grades

Unless noted otherwise in the contract documents, the Contractor shall lay out the work from the lines, grades and dimensions shown on the drawings. The Contractor shall be responsible for all such work for the duration of the project. Any dimension or grade errors shall be immediately transmitted in writing to the City's Project Manager for clarification, before proceeding with the work.

- **SECTION 107 – LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC**

- 107.5.1 ASBESTOS MATERIALS
(revise to include the following)

Handling, Removal and Disposal of Surplus Material and Asbestos Containing Materials

The City requires compliance with Environmental Protection Agency (EPA), Arizona Department of Environmental Quality (ADEQ) and Occupational Safety and Health Administration (OSHA) asbestos regulations for all City projects.

Utility pipes constructed of materials other than metal and polyvinyl chloride (PVC) require testing prior to any disturbance of the pipes to determine if regulated levels of asbestos are present in the pipe material. Suspect pipe materials requiring testing typically include vitrified clay and cement pipe (transite). Asbestos testing is not required for metal pipes.

City Public Works/Sustainability & Environmental Managements staff are available to collect samples and submit the samples for analyses with small charges for the testing. If the pipe does not contain regulated levels of asbestos the contractor may disturb and remove the piping.

If utility piping contains regulated levels of asbestos, any materials generated by cutting or breaking the pipe to remove it from the ground must be handled, removed, and disposed of in accordance with City of Flagstaff requirements. If asbestos containing materials (ACM) removal is necessary on the project, the City of Flagstaff requirements for handling, removal and disposal are as follows:

If any infrastructure or building material that is not either wood, glass or metal is encountered during the project and has not yet been either assumed or positively identified to be ACM then the material(s) must be sampled in accordance with regulations generated by the EPA Asbestos Hazard and Emergency Response Act (AHERA) 40 CFR 763 as well as OSHA 29 CFR 1910.1101, by a certified AHERA Building Inspector and sent to a National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratory for analysis.

Once materials of concern are either agreed to be assumed or properly identified to be ACM then the material is required to be removed according to OSHA 29 CFR 1910-1926.1101 by a certified asbestos abatement worker, and NOT a general contractor (GC). However, if the GC holds the appropriate asbestos certifications (AHERA Asbestos Operations and Maintenance), which the City would need to verify is current, then the GC could perform the asbestos abatement.

The City requires the GC arrange for abatement of assumed and/or identified ACM by a certified asbestos abatement contractor as well as arrange area and /or clearance air monitoring by a third party asbestos consultant. If applicable to the project, copies of abatement activities and air monitoring shall be provided to City of Flagstaff Environmental Management staff.

In the event of large disturbances to ACM, compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61, Subpart M shall be followed. Notification would be required with the ADEQ <http://www.azdeq.gov/enviro/air/asbestos/> 10 working days in advance of the start of a large project. This notification is not typically required for utility pipe work, but could be required for a very large project involving numerous saw cuts of utility pipes.

If ACM removal is necessary on the project, the City of Flagstaff requirements for ACM disposal at the City's Cinder Lake Landfill are as follows:

Only non-friable asbestos waste is accepted for disposal at Cinder Lake Landfill. Prior to disposal of non-friable ACM, obtain the necessary forms, which are:

1. Non-Friable Asbestos Waste Acceptance Application and accompanying instructions
2. Non-Friable Asbestos Waste Shipment Record (WSR)

The Asbestos Waste Acceptance Application is available at the City of Flagstaff's website <http://www.flagstaff.az.gov/index.aspx?NID=929> or by contacting the City of Flagstaff Environmental Management staff at (928)213-2146 or 2151. Fax the completed Non-Friable Asbestos Waste Acceptance Application to (928) 213-3636. Once faxed to the EM Office the application will be reviewed, signed and faxed back to you, normally within one (1) working day. A Waste Shipment Record is required to accompany each load of non-friable asbestos waste taken to the Cinder Lake Landfill. Forms contain multiple carbon copy sheets and need to be obtained from the Cinder Lake Landfill (928)527-1927 or City of Flagstaff Environmental Management staff.

Assure the non-friable ACM is properly handled and wrapped. Non-Friable ACM must be thoroughly wetted using amended water prior to being wrapped in 6-milimeter poly and be tightly sealed with duct tape. If the material is heavy (such as transite pipe), has sharp edges, or may easily puncture the poly wrap, a double layer of poly will be necessary. The Cinder Lake Landfill scale house attendant will inspect the load to ensure it is properly wrapped. Containers holding non-friable ACM shall be carefully unloaded and placed in a designated location. Dumping using a hydraulically lifted bed of a truck is not permitted (dump truck), as the poly wrap may be torn open.

If using a large bin for disposal, attach a copy of the Waste Shipment Record to the disposal bin. If not using a City of Flagstaff disposal bin, make sure the delivery driver takes a copy of the signed Non-Friable Asbestos Waste Acceptance Application and the Waste Shipment Record to the Cinder Lakes Landfill with the waste delivery. If using a City of Flagstaff disposal bin call City Environmental Services at (928)774-0668 to schedule a pickup for the disposal bin. Please be sure to provide the driver with the signed Non-Friable Asbestos Waste Acceptance Application and the Waste Shipment Record and be sure to clarify if you would like the disposal bin emptied and removed, or emptied and returned to the work site. When disposal is completed, the Landfill Manager will sign the Waste Shipment Record and landfill staff will provide or mail a copy of the Waste Shipment Record.

Cutting of utility pipes generates Regulated Asbestos Containing Material (RACM) (dust from cutting) and breaking pipes may generate RACM. RACM requires disposal at the Joseph City Landfill or at other landfills located in southern Arizona.

- o 107.6 PUBLIC CONVENIENCE AND SAFETY
(revise to include the following)

The contractor shall give written notice, describing the proposed work and parking restrictions, to each adjacent business or residence. Written notice (with specific dates of anticipated construction work) shall be given at least 48 hours in advance of the work and no more than three working days before the work is scheduled to begin. In the event that the work requires removal of parked vehicles, they will be removed to the nearest convenient side street at the contractor's expense. No separate payment will be made for this work.

The contractor shall give written notification to each affected resident at least 48 hours prior to any disruption to water or sewer service in the construction area. The notice must include the exact

time of the disruption and the expected duration of the loss of service. Disruption of water or sewer services shall only be between the hours of 9am and 4pm.

- 107.9 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE
(revise to include the following)

The contractor shall shore all adjacent building walls and trench walls to protect all adjacent building walls and footings during trenching and backfilling operations. All shoring plans need to be designed and sealed by a registered professional engineer in the state of Arizona and submitted to the City for approval prior to construction.

The contractor shall take special care to control construction-related dust and noise and to keep the project site cleaned up to the greatest extent possible. The contractor is responsible to coordinate alternate measures for any impacted operations as mentioned which are acceptable to the parties involved.

Survey monuments and property corners shall be protected and not disturbed unless specifically called out on the plans for replacement. All costs associated with protecting or re-establishing disturbed survey monuments and property corners shall be borne solely by the contractor.

Concrete curb and gutter that is not designated for removal and replacement shall be protected. All costs associated with unauthorized removal and replacement or damage shall be borne solely by the contractor.

The contractor is responsible for replacing and/or restoring landscaping (including but not limited to fences (any type), plantings, retaining walls, pea gravel, grass (sod and Seeded), brick pavers, concrete driveways, asphalt driveways and landscape rock walls) and owner improvements associated with the project. All cost shall be included in the bid. The contractor is responsible for removing existing improvements and salvaging items for replacement at the same location or relocation as directed by the owner after the public improvements are finished. The contractor is responsible for replacing material in like kind. This may necessitate close coordination with the property owners.

- 107.11 CONTACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES
(revise to include the following)

The contractor is responsible for providing written notification to each affected resident at least 48 hours prior to any disruption of water or sewer service in the construction area. The notice must include the exact time of the disruption of service and the expected duration of the loss of service. Any night or weekend work request shall be submitted to the owner in writing 48 hours prior and approved before the construction activity is performed.

The contractor shall protect existing water, sewer, gas, or other service lines where the proposed work crosses individual service lines. Not all service lines are shown on the plans and it is the contractor's responsibility to determine their location in the field. Protection or repair of existing service lines not in conflict with the work is considered incidental. In the event that there is a physical conflict between an existing service line and the proposed work, the contractor shall immediately notify the owner of the conflict. The owner will make a determination as to how the conflict will be resolved. Any extra work required as a result of an unforeseen service conflict will be ordered and paid for in accordance with Revisions of M.A.G. Standard Specifications Section 104.2.3 Protection of existing utilities during the contractor's operation is considered incidental to the line item that is being performed in the area of the existing utility.

- **SECTION 108 – COMMENCEMENT, PROSECUTION AND PROGRESS**

- 108.5 LIMITATIONS OF OPERATIONS

(revise to include the following)

Work on Saturdays will be permitted, as necessary, as approved by the City's Engineering Inspection Supervisor. 72 hours advance notice will be required. Work on Sundays and legal City Holidays will not be permitted except in emergencies or as approved by the owner.

- 108.7 DETERMINATIONS AND EXTENSIONS OF CONTRACT TIME
(delete the second paragraph of General Provisions Section 108.7 and replace with the following)

The contract time, including final cleanup of the project site and storage areas, may be extended as a result of weather conditions that cannot be reasonably anticipated. The number of actual days that the scheduled work is actual impacted by adverse weather shall be recorded monthly during the construction period. The contractor shall submit claims for the delay of critical work within two working days of experiencing adverse weather and associated project delays.

The contractor will be entitled to a contract time extension if the actual adverse weather days experienced during the work exceed the anticipated adverse weather days shown. The following is the monthly schedule of adverse weather days that shall be anticipated by the contractor in scheduling the work.

Table 108.7 Monthly Anticipated Adverse Weather Calendar Days

Month	January	February	March	April	May	June
Monthly anticipated adverse weather calendar days	7 days	7 days	8 days	6 days	4 days	3 days
Average Monthly Precipitation	1.98"	1.96"	2.05"	1.34"	0.68"	0.51"
Month	July	August	Sept.	Oct.	Nov.	Dec.
Monthly anticipated adverse weather calendar days	12 days	11 days	7 days	5 days	5 days	6 days
Average Monthly Precipitation	2.78"	2.68"	1.82"	1.52"	1.49"	1.90"

The above schedule of anticipated adverse weather days establishes the base line for the project's monthly weather impacts, based on historical records, as recorded by the National Weather Service at Pulliam Airport, for precipitation in excess of 0.01 of an inch per calendar day.

The number of actual days that scheduled work is impacted by adverse weather as defined above shall be recorded weekly during the contract period. It is the contractor's responsibility to request in writing any adverse weather delays experienced during the prior week no later than the normally scheduled weekly project meeting. Any adverse weather day requests that are not received as stated above shall not be considered nor approved. Once the number of approved actual adverse weather days exceeds the number of anticipated adverse weather days in the schedule above, the contractor is entitled to a contract time extension. Actual adverse weather days must also prevent work for fifty (50) percent or more of the contractor's work day and delay scheduled work critical to the timely completion of the project. The city will convert any delays meeting the above requirements to calendar days and extend the contract period as necessary. No additional compensation will be allowed for direct and indirect overhead expenses associated with any such contract time extensions.

The contractor's schedule must reflect the above anticipated adverse weather delays on weather dependent activities and must show all weekends and holidays. The contractor shall protect construction work for storm damage. Additional time or compensation will not be given for replacement of repair of work items not protected from damage.

SECTION 200 – EARTHWORK

- **SECTION 225 – WATERING**

- 225.2 WATER SUPPLY
(revise to read as follows)

The contractor is advised that except for public water main flushing and testing, the City will not authorize the use of potable water for construction purposes. Prior to submitting a bid contractors shall determine the availability of reclaimed water for construction purposes by contacting the City of Flagstaff Water Services Department.

Prior to loading, hauling, and applying reclaim water, the contractor shall be required to obtain the necessary permit (no fee) at the Wildcat Hill Wastewater Treatment Plant and will be responsible for complying with all permit requirements.

- 225.4 MEASUREMENT
(revise to read as follows)

No measurement for construction water shall be made.

- 225.5 PAYMENT
(revise to read as follows)

No separate payment shall be made for construction water needs.

SECTION 300 – STREETS/RELATED WORK

- **SECTION 301 – SUBGRADE PREPARATION**

- 301.2.2 UNSTABLE SUBGRADE
(revise to include the following)

If it is determined by the owner's representative that the subgrade is unstable for compaction placement of aggregate base the contractor shall use one of the following methods to make subgrade stable.

Remove unsuitable subgrade and replace with additional subbase (minimum of 2 feet of stockpiled asphalt millings or (ABC) or as directed by Engineer. Contractor should consult with Engineer prior to performing work.

Once the suspect areas are stabilized to the satisfaction of the engineer, the normal ABC subbase should then be installed. The contractor shall take all reasonable efforts to eliminate or reduce construction traffic on the repaired areas.

Payment will be made on a cubic yard unit basis from the bid item or Remove and Replace Unsuitable Subgrade Contingency.

- 301.4 SUBGRADE TOLERANCES
(revise to read as follows)

Subgrade upon which pavement, sidewalk, curb and gutter, driveways, or other structures are to be directly placed shall not vary more than ¼ inch from the specified grade and cross-section. Subgrade upon which subbase or base material is to be placed shall not vary more than ¼ inch from the specified grad and cross-section. Variations within the above specified tolerances shall be compensating so that the average grade and cross-section specified are met.

- **SECTION 305 – STREET REBUILDING/PATCH BACK**

- 305.1 DESCRIPTION

Certain small areas of the streets are to be rebuilt for the service trenching. This work shall consist of removal and disposal of existing materials, subgrade preparation, and furnishing and placing asphaltic concrete.

- 305.2 CONSTRUCTION

The areas will vary in size. The existing pavement and base will be removed to below the existing pavement base layer. The subgrade will be compacted. The existing pavements shall be wheel or saw cut back to a neat straight line. The asphaltic concrete (19mm or ¾") will be placed and compacted so that it meets the following requirements.

1. The density of the asphaltic concrete is as specified under Section 321.
2. The finished grade of new asphalt is ¼" above the adjacent existing pavement or as directed by owner's representative.
3. The minimum thickness of the new asphaltic concrete is 4" placed in 1 lift or as necessary to match existing pavement grade.

- 305.3 MEASUREMENT AND PAYMENT

Measurement and payment will be made at the contract unit price for each square yard of pavement removed and replaced as directed by the engineer. Payment will be accepted as full compensation as for all equipment, labor and materials used under this item.

- **SECTION 310 – UNTREATED BASE**

- 310.2 PLACEMENT AND CONSTRUCTION
(revise 3rd paragraph to read)

After placement, the aggregate base course surface shall be true, even and uniform conforming to the grade and cross-section specified. In no case shall the aggregate base course vary by more than ¼ inch above or below required grade.

Untreated base compaction shall be 95% under curb and gutter, sidewalk, driveway and alley entrances, handicap ramps, and catch basins.

- **SECTION 345 – ADJUSTING FRAMES, COVERS, VALVE BOXES, AND WATER METER BOXES**

- 345.1 DESCRIPTION
(revise to include the following)

The adjustment of manhole frames and covers and water valve boxes shall be done in accordance with City Standard Drawing 9-03-060 and 9-03-062. The contractor is cautioned that only straight, centered valve boxes that conform to City Detail 9-03-060 will be acceptable. The engineer will provide the contractor necessary direction for the appropriate adjustment or replacement of each valve box and cover.

The contractor is to supply and install a new valve box and cover, as directed by the engineer, to replace existing tops that are broken, non-standard or defective. Payment for furnishing and installation of new valve boxes and covers as shown on the plans or as directed by the engineer shall be at the bid unit price for Install New Water Valve Box & Cover.

If during construction the contractor breaks or damages an otherwise acceptable valve box and/or cover then the contractor shall supply and install a new valve box and cover at no additional cost. Payment for adjustment of existing valve box and cover shall be per the bid unit price for Adjust Water Valve Box.

When the entire existing valve box and cover is found to be unacceptable or not centered over the valve nut, the entire valve box and cover shall be excavated, removed and replaced under the Remove, Replace & Adjust Valve Box & Cover bid item. This item includes excavation to the valve nut, removal of the old box and cover, a new complete valve box and cover as well as the adjustment to grade.

Any usable valve box and covers removed under this contract shall remain the property of the City. The water valve box and covers that require removal and replacement shall be excavated and installed prior to the overlay. Final adjustments shall be made after repair and resurface of existing pavement.

The contractor will be required to keep a record of locations of each frame or box as per the following:

1. For those boxes and frames readily visible, the contractor will make reference points which will allow him to accurately locate frames and boxes after they are covered. It will be the contractor's responsibility to preserve these reference points.
2. For those boxes and frames not visible before surface treatment, utilities representatives will locate frames and boxes, making a mark at each location. It will be the contractor's responsibility to preserve these marks and all reference marks as required and identified in item 1 above.

SECTION 400 – RIGHT-OF-WAY TRAFFIC CONTROL

- **SECTION 401 – TRAFFIC CONTROL**

- 401.4 TRAFFIC CONTROL MEASURES
(revise to include the following)

Contractor shall provide traffic control for both delivery vehicles into the alleyway and pedestrian traffic.

- **SECTION 405 – MONUMENTS**

- 405.4 INSTALLATION
(revise this section to read)

As part of the contract work, existing survey monuments may be reestablished by a surveyor registered in the State of Arizona. The surveyor shall provide reference marks and dimensions to the survey monuments. A minimum of two “permanent” reference marks shall be established for each right-of-way control monument. The angle formed by the control point and the two reference points shall be approximately 90 degrees. Examples of permanent reference marks include an “x” chiseled into the curb, pk nail in concrete and a nail in a power pole. Any suitable reference marks found to be existing may be used. No new survey monuments shall be incorporated into this project without prior approval from the City Engineer or representative. New survey monuments shall be reinstalled ¼” minimum below new pavement grade at the accurate location. An elevation shall be established on survey monuments that replace survey monuments with a City established elevation. This work shall be done in accordance with good surveying practices and shall be in accordance with City Detail 11-01-010. The surveyor shall prepare and record a Results of Survey map showing the monuments found and set. This map shall include the City’s unique identifying number for each point. The Results of Survey shall be reviewed and accepted by the City prior to recordation.

Any survey monuments with boxes and covers shall be raised to grade by the contractor without disturbing the survey monument. This work will be paid at the contract unit price for raising survey monument boxes and covers.

SECTION 600 – WATER AND SEWER

- **SECTION 601 – TRENCH EXCAVATION, BACKFILLING AND COMPACTION**

- 601.2.3 TRENCH GRADE
(revise first sentence of first paragraph to read)

Alignment and elevation stakes shall be furnished by the contractor at a minimum 50 foot intervals and agreed upon offsets.

(revise First sentence of second paragraph to read)

For all pipe or conduit, the contractor shall excavate for and provide an initial granular bedding of at least 6 inches thick; per the details shown on the plans; or ½ the OD of the pipe; whichever is greater.

- 601.2.9 SHORING AND SHEETING
(modify to add)

It shall be the contractor's responsibility to provide such trench bracing, sheeting, or shoring as may be necessary to protect existing improvements outside the trench and to support and ensure the ground alongside the excavation will not slide or settle. Existing improvements outside the trench, either public or private, damaged due to lack of adequate trench bracing, sheeting, or shoring shall be removed and replaced in kind at the contractor's expense.

The contractor shall shore all adjacent building walls and trench walls to protect all adjacent building walls and footings during trenching and backfilling operations. All shoring plans need to be designed and sealed by a registered professional engineer in the State of Arizona and submitted to the City for approval prior to construction.

- 601.2.10 OPEN TRENCH
(modify to add)

All trenches shall be covered by prefabricated chain-link fence and/or traffic panels, or completely and securely fenced off during nights, weekends, and other times when construction is not underway.

- 601.3 PROTECTION OF EXISTING UTILITIES:
(revise to include the following)

The Contractor shall protect existing water, sewer, gas, communications, or other service lines where the proposed work crosses individual service lines. Not all service lines are shown on the plans and it is the contractor's responsibility to determine their location in the field. Protection or repair of existing service lines not in conflict with the work is considered incidental. In the event that there is a physical conflict between an existing service line and the proposed work, the contractor shall immediately notify the owner of the conflict. The owner will make a determination as to how the conflict will be resolved. Any extra work required as a result of an unforeseen service conflict will be ordered and paid for in accordance with Revisions of MAG Standard Specifications Section 104.2.3. Protection of existing utilities during the contractor's operations is considered incidental to the line item that is being performed in the area of the existing utility. Franchise utilities are obligated to move their facilities at no cost to the City if within ROW.

- 601.4.2 BEDDING
(first paragraph)

Revise maximum size of granular material to $\frac{3}{4}$ inch.

Aggregate base in accordance with Section 702 of the Standards Specifications shall also be acceptable as bedding material.

- 601.4.3 BACKFILL
(revise to include the following)

Per MAG 702: RAP meeting the requirements of Section 701.5 can be utilized in base material up to 100% and may be used in roadway applications or where otherwise specified by project plans or special provisions.

RAP should meet or exceed testing requirements per applicable sections of MAG 701 or 702.

(revise second paragraph to read)

Water consolidation (flooding, jetting, or similar methods) shall not be permitted.

(revise fourth paragraph to read)

When mechanical compaction is used, backfill shall not be placed in lifts exceeding one foot in compaction height, regardless of pipe size, material, or backfill type.

- 601.4.5 COMPACTION METHODS
(revise second paragraph to read)

Jetting and/or water settling will not be allowed.

- **SECTION 604 – PLACEMENT OF CONTROLLED LOW STRENGTH MATERIAL**

- 604.1 DESCRIPTION
(modify to add)

Controlled low strength material shall be used in areas specified to receive slurry backfill on the plans. CLSM used for encasement shall be 1.5-sack mix in accordance with section 728.

- **SECTION 610 – WATER LINE CONSTRUCTION**

- 610.1 DESCRIPTION
(modify to add)

The contractor is to conform to the requirements of the Arizona Department of Environmental Quality for all water construction. Reference: Bulletin 10. Where ADEQ construction requirements differ from the requirements of the Standard Specifications, or these Specification Amendments, the more restrictive provisions shall apply.

- 610.2 GENERAL
(modify to add)

Contractor shall maintain full water service to the adjacent community, with the exception of minimal shutdown as required to install new service connections and to tie into the existing line.

The contractor may have to utilize an above ground temporary main line to maintain water services to the adjacent residences and businesses. Temporary lines will have to be approved by the City of Flagstaff.

- 610.3 MATERIALS
(revise items (A) and (B) under this subsection to read)

8" diameter water main pipe will be PVC C900, in accordance with section 610.6, except where a particular material is specified.

Ductile Iron water pipe shall be pressure class 350, Cement Mortar Lined and Polyethylene wrapped, NSF approved, in accordance with ANSI/AWWA C151.

All joints at fittings must be mechanically restrained. All joints within the restrain length of the fitting shall also be mechanically restrained. Joint restraint shall be provided through use either an approved manufacturer's proprietary system or through the use of approved exterior restraints (Ebaa Iron "Megalug" or approved equivalent system).

All valves and fittings shall be ductile iron encased in polyethylene.

Water service connections shall be ¾" – 2" copper lines.

Underground marking tape shall be a 4" width detectable marking tape, with a minimum 5.0 mil overall thickness. Tape shall be manufactured using a clear virgin polypropylene film, reverse printed and laminated to an aluminum foil core, and then laminate to a clear virgin polyethylene film. Tape shall be printed using a diagonal striped design for maximum visibility and meet the APWA Color-Code standard for identification of buried utilities.

All main line water pipes must have tracer wire taped to the top center of the main with 10 mil PVC tape on 4' center.

- 610.4 CONSTRUCTION METHODS
(modify to add)

Deflected ductile iron and PVC pipe shall be installed with a deflection of not greater than ½ the manufacturer's recommended deflection, horizontally and vertically, based upon pipe sizing and jointing method.

Stake and maintain waterline grades as shown on the drawings. Eliminate localized highs where unvented air may accumulate.

All underground ductile iron pipe and ductile iron fitting shall receive polyethylene wrap, in accordance with section 610.6.

- 610.11 METER SERVICE CONNECTIONS
(revise to include the following)

City of Flagstaff utility tapping fees are the responsibility of the Contractor. Fee rates may be obtained from the counter. All cost and fees for the utility for the utility tap work shall be included in the line item for the installation of new services, including but not limited to all labor and materials for installation, repair of any associated abandoned tap and fees. The contractor shall perform all work and coordinate payment directly with the Water Services Department counter in the City Hall Lobby.

Contractor shall provide the City with two copies of the pre-construction video survey/log of the construction area. The video cannot be done by vehicle and must capture existing conditions of resident's driveways, yards, landscaping and adjacent property.

The City will provide the contractor with Temporary Rights of Entry for the water service connection, replacement/adjustment of water meter boxes and associated work. If the contractor needs to go outside the Temporary Right of Entry limits they will have to provide the City with written permission from the property owner prior to conducting the work.

A residential plumber's license will be required for all work that is done on the private service side of the meter.

All water service connections shall be complete in place. A new service saddle, copper service line (type k), corp. stop, quick compression unit, Ford curb stop or equal, UF-600 direct bury 12 Ga. Min. or copper wire w/ blue insulation, and meter box shall be provided by the contractor. All service connections shall conform to the City of Flagstaff Section 13-09-003-0007 and Standard Detail 9-03-070 for the 3/4" – 1" connections and 9-03-071 for the 1.5" – 2.5" connections. The Meter box shall be H2O rated and conform to the City of Flagstaff Standard Detail 9-03-080.

The water meters within the public right of way are to be left in their existing location. All meters on private property must be removed, salvaged and placed within the public right of way. All meters must be adjusted to grade after final grading is done. The contractor will re-establish the landscaping in like kind in the area vacated by the old water meter in addition to the disturbed area in the new location.

Once the contractor is finished with all the new service connections, the landscape on city property and private property shall be replaced to reconstruction conditions or better. All costs associated with this work are to be included in the amount bid for the project.

The contractor will maintain As-Built drawings and allow the City Inspectors to review them no less than twice a month. The contractor will provide a final field set of As-Built plans to the City for verification. As-Built plans shall clearly illustrate all work constructed as well as existing utilities throughout the project. Please see City's As-Built check list, as well as City of Flagstaff General Provisions 105.2.1 and 105.2.2. The As-Built drawing shall be clear and neatly noted. There will be no separate payment for this item.

SECTION 700 – MATERIALS

- **SECTION 725 – PORTLAND CEMENT CONCRETE**

- 725.1.1 CLASSES OF CONCRETE
(revise subsection (1) third paragraph to read)

Class AA concrete shall be used for all concrete.

(revise Table 725 to read)

Class of Concrete	Minimum Cement Content-lbs per Cubic Yard	Minimum Strength at 28 days Compressive (1)
AA	600	4,000 psi

- 725.6 ADMIXTURES
(revise second paragraph to read)

All concrete shall contain not less than 5% and not more than 7% entrained air by volume. Air entraining admixtures shall conform to the requirements of AASHTO M-154. Contractor shall furnish certificates of compliance for each type of admixture furnished. All admixtures shall be stored in suitable containers in accordance with manufacturer's recommendations. Liquid admixtures that have been frozen shall be used. Any admixture shall be measured accurately by mechanical means into each batch by equipment and in a method approved by the Engineer. Cost of admixtures used shall be incorporated into the bid price for the appropriate item.

- 725.7 PROPORTIONING
(revise last paragraph to read)

At least two weeks prior to the appropriate concreting operation, the contractor shall furnish a mix design for each class of concrete and each strength of concrete for review and approval. More than one design for each class of concrete and each strength of concrete may be submitted for approval provided specific items and locations of intended uses accompany the design. The contractor shall substantiate each mix design by furnishing test data and providing all details of the mixtures proposed for use.

The completed solid volume mix designs submitted for approval shall include all weights and volumes of all ingredients. The brand, type and source of hydraulic cement and admixtures, the coarse aggregate size number designation, source of aggregates, the specific gravity's of all ingredients, the proposed slump, a code number to identify the mix design, and the intended use of the each mix design shall be an integral part of each mix design.

No changes in the approved mix designs or code numbers shall be made by the contractor except by approval of the Engineer. A new mix design shall be submitted for approval any time the contractor requests a change in materials or proportioning of the materials from that given in each approved mix design. In no case shall the approval of a mix design relieve the contractor of the responsibility for the results obtained by the use of such approved mix design.

Mix designs from previous or concurrent projects may be submitted at any time for approval. The Engineer reserves the right to require trial batches at any time.

A new mix design shall be submitted for approval any time the test results of an approved mix design indicate that the concrete will not meet the required 28 day compressive strength.

- 725.10 TESTS
(modify to add)

Notwithstanding any provisions of this section, no concrete supplied for this project shall have slump, as determined in the field, of greater than 4 inches, unless such excess slump has been specifically approved by the Engineer at the time of the mix design. Excess slump concrete shall be rejected, and shall not be incorporated into the work.

- **SECTION 750 IRON WATER PIPE AND FITTINGS**

- 750.2 DUCTILE IRON WATER PIPE
(modify this section as indicated)

Ductile iron water pipe shall be pressure class 350, Cement Mortar Lined and Polyethylene wrapped, NSF approved, in accordance with ANSI/AWWA C151. All underground ductile iron pipe shall receive polyethylene wrap, in accordance with Section 610.6. All joints must be mechanically restrained.

(revise to include the following)

Pipe shall be pressure class 350 psi.

- 750.3 JOINT REQUIREMENTS: FITTINGS
(remove first paragraph and replace with)

Push-on-joints will not be allowed.

(revise to include the following)

All joints shall be mechanical joints, Megalug or approved equal.