

TECHNICAL SPECIFICATIONS

These Technical Specifications amend and/or supplement the Standard General Conditions of the Construction Contract and other provisions of the Bid/Contract Documents to the extent any technical specifications herein are inconsistent with the Standard General Conditions of the Construction Contract and other provisions of the Bid/Contract Documents. All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Technical Specifications have the meanings stated in the General Conditions. Additional terms used in these Technical Specifications have the meanings stated herein, which are applicable to both the singular and plural thereof.

The construction of the project shall be in accordance with the following standards:

- Uniform Standard Specifications and Details for Public Works Construction, 2023 Revision to the 2020 Edition, Maricopa Association of Governments (MAG).
- Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2008 Edition, latest revision.
- Manual on Uniform Traffic Control Devices (MUTCD), latest revision.
- Arizona Supplement to the MUTCD, ADOT, latest revision.
- Maricopa County Traffic Control Manual, September 2015, latest revision.
- Maricopa County Pavement Marking Manual, April 28, 2020, latest revision.

These Technical Specifications provide supplemental information regarding the bid / construction line items for the project and shall be used in conjunction with the Bid Schedule. These technical specifications shall govern and control anywhere they may deviate or conflict with the MAG Standard Specifications.

GEOTECHNICAL EVALUATION & REPORT

No geotechnical investigation or evaluation was conducted for this project. Bidders/contractors shall satisfy themselves as to the local site conditions through close and careful site reconnaissance and performing any testing needed to prepare the bid and for construction of the project.

COMPLIANCE WITH NOISE ORDINANCE

Construction work shall be scheduled to comply with the City's Noise Ordinance and other applicable ordinances, rules, and regulations pertaining to construction activities.

CONTRACT/BID ITEMS

The various bid items (construction contract pay items) set forth in the Bid Schedule are hereby described and defined starting on the next page. The measurement and payment for each bid item are governed as provided for herein.

1. REMOVE & REPLACE ASPHALT PAVEMENT, 3" AC ON 6" ABC

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Section 301, Section 310, Section 321, Section 336, Section 601, Section 702, Section 710, Detail No. 200-1, and other related sections and details.

Description: The Contractor shall place and compact the required thickness of aggregate base course (6") and asphalt concrete pavement surface course (3").

Aggregate base material shall meet the requirements for Aggregate Base Course per MAG Section 702. The aggregate base material shall be moisture conditioned and compacted to 100% of the maximum dry density for the material and within the range of plus or minus 2% of the optimum moisture content per ASTM D698C.

The asphalt pavement shall be ½" asphalt concrete mix designation, Marshall mix design for high traffic areas, per MAG Specification Section 710. The Contractor shall submit the asphalt mix design to the City of Globe for approval prior to placement of any asphalt on this project.

The areas of asphalt pavement removal and replacement are shown on the project plans, and generally include where the new water main is installed within and across asphalt paved streets and where excavations need to occur to disconnect and abandon the old water mains that are being replaced by the new water main. Asphalt pavement removal shall be made by sawcut for the full pavement depth to facilitate its removal. The sawcut edges shall present a neat, trim, and vertical line. Adjacent sections of asphalt pavement shall be protected in place, and any sections outside the designated removal areas that may be damaged by the Contractor's actions shall be removed and replaced at the Contractor's sole expense.

The aggregate base course and asphalt concrete pavement shall be placed and constructed as shown on MAG Detail 200-1 for "T Top" Trench Repair Surface Replacement and in accordance with MAG Section 336.2.4 for Permanent Pavement Replacement.

The work shall include all materials, equipment, and labor costs to furnish, place, compact, and construct the aggregate base course and the asphalt pavement surface course over the installed water main and service lines per the plans and the specifications.

As part of this bid item, if any existing pavement markings are removed or obliterated during the water main installation process, the Contractor shall replace in kind any pavement markings (striping and/or symbols) that are removed or obliterated as part of the pavement removal and replacement process. The pavement markings (striping and/or symbols) shall match the size and materials of the existing markings and shall comply with all applicable the requirements of the Manual on Uniform Traffic Control Devices (MUTCD) and the ADOT Standard Specifications. This construction work shall not be measured or paid for separately but shall be considered subsidiary and incidental to this bid item to construct new asphalt pavement.

Measurement & Payment: **Refer to Attachment 6"**

2. REMOVE & REPLACE CONCRETE VALLEY GUTTER

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Section 301, Section 310, Section 336, Section 340, Section 350, Section 601, Section 702, Section 725, Detail No. 240 – Valley Gutter, and other related sections and details.

Description: Existing PC concrete valley gutter sections shall be removed where shown on the plans, or as may be marked in the field by the City Inspector. Valley gutter removal shall be made to the nearest construction joint provided it is within 2-feet of the designated removal line. If not, the curb or curb and gutter section shall be sawcut for its full depth to facilitate its removal. The sawcut edges shall present a neat, trim, and vertical line. Adjacent sections of valley gutter shall be protected in place, and any sections outside the designated removal areas that may be damaged by the Contractor's actions shall be removed and replaced at the Contractor's sole expense.

PC concrete valley gutter shall be reconstructed to match the existing adjacent valley gutter section on each side in cross-section and slopes. The new concrete valley gutter shall be constructed on a prepared and compacted subgrade per MAG Section 301. Construction of the valley gutter sections shall be in accordance with MAG Standard Specification Section 340 and Standard Detail 240, Valley Gutter, modified as needed to match the adjacent existing valley gutter sections.

The work shall include all materials, equipment, and labor costs to remove the existing concrete valley gutter sections and to properly dispose of these materials at a landfill or legal and approved disposal site. Sawcut, if needed, and disposal of the removed materials shall be included in the bid price for this construction item. The new valley gutter construction work shall include all materials, equipment, and labor costs to furnish, place, install, and construct the new PC concrete valley gutter sections on the prepared and compacted subgrade per the plans and specifications.

Measurement & Payment: **Refer to Attachment 6**

3. REMOVE & REPLACE CONCRETE CURB & 4' WIDE GUTTER PAN

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Section 301, Section 310, Section 336, Section 340, Section 350, Section 601, Section 702, Section 725, Detail No. 220-1, Detail 221, Detail 220-2, Detail 222, and other related sections and details.

Description: The City of Globe reports the gutter pan width beneath the existing asphalt overlay measures approximately 4-feet in width from the curb face on each side of the street. The plans show removal and replacement of a section of the concrete curb and 4' wide gutter pan in two locations: (1) for the new combination air release valve at Station 1+94, and (2) for the 2" dia. replacement water service line to the old school building at Station 3+73.

Existing concrete curb and gutter sections (with a 4' wide gutter pan) shall be removed where shown on the plans, or as may be marked in the field by the City Inspector. Curb and gutter section removal shall be made to the nearest construction joint provided it is within 2-feet of the designated removal line. If not, the curb and gutter section shall be sawcut for its full depth to facilitate its removal. The sawcut edges shall present a neat, trim, and vertical line. Adjacent sections of curb and gutter shall be protected in place, and any sections outside the designated removal areas that may be damaged by the Contractor's actions shall be removed and replaced at the Contractor's sole expense.

PC concrete curb and gutter (with a 4' wide gutter pan) shall be reconstructed to match the existing adjacent curb and gutter section at the locations shown on the plans and as may be designated and marked in the field by the City Inspector. The new concrete curb and gutter shall be constructed on a prepared and compacted subgrade per MAG Section 301. Construction of the curb and gutter sections shall be in accordance with MAG Standard Specification Section 340 and Standard Detail 220-1 or 220-2, modified as needed to match the adjacent existing curb and gutter sections in terms of elevations, slopes, and cross-section.

The work shall include all materials, equipment, and labor costs to remove the existing curb and gutter sections and to properly dispose of these materials at a landfill or legal and approved disposal site. Sawcut, if needed, and disposal of the removed materials shall be included in the bid price for this construction item. The work shall also include all materials, equipment, and labor costs to furnish, place, install, and construct the new curb and gutter sections on the prepared and compacted subgrade per the plans and specifications.

The removal and replacement of the asphalt overlay surfacing of the concrete curb and 4'-wide gutter pan shall be measured and paid for under contract pay item number 1, REMOVE & REPLACE ASPHALT PAVEMENT, 3" AC ON 6" ABC.

Measurement & Payment: **Refer to Attachment 6**

4. REMOVE & REPLACE CONCRETE SIDEWALK

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Section 301, Section 336, Section 340, Section 350, Section 601, Section 702, Section 725, Detail No. 200-1, Detail No. 230 - Sidewalks, and other related sections and details.

Description: The existing concrete sidewalk shall be removed for its full width, depth, and length where shown on the plans and as needed to construct the proposed water main improvements per the project plans.

Concrete sidewalk removal shall be made to the nearest construction joint if one is located within two (2) feet of the proposed sawcut line. Otherwise, the Contractor shall sawcut the concrete pavement for its complete depth. The sawcut edges shall present a neat, trim, and vertical line. Adjacent sections of sidewalk shall be protected in place, and any sidewalk or driveway sections beyond the removal limits that may be damaged by the contractor's actions shall be removed and replaced at the Contractor's sole expense. The sidewalk removal work shall include all materials, equipment, and labor costs to remove the existing concrete sidewalk, and to properly dispose of these materials at a legal and approved disposal site.

Where the sidewalk was removed for the installation of the new water main, service lines, and appurtenances, the replaced sidewalk section shall be completed with a 4" depth of Portland Cement Concrete (PCC) sidewalk section constructed on a prepared and compacted subgrade per MAG Section 301. The new sidewalk shall be constructed where shown on the plans and to match the removed and adjacent existing sidewalk in width, configuration, appearance, and surface finish. Sidewalk construction shall be in accordance with MAG Standard Specification Section 340 and Standard Detail 230.

The work shall include all materials, equipment, and labor costs to remove the existing sidewalk sections and to properly dispose of these materials at a landfill or legal and approved disposal site. Sawcut, if needed, and disposal of the removed materials shall be included in the bid price for this construction item. The work shall also include all materials, equipment, and labor costs to furnish, place, install, and construct the new concrete sidewalk sections on the prepared and compacted subgrade per the plans, details, and specifications.

Measurement & Payment: **Refer to Attachment 6**

5. CONNECT TO EXISTING WATER LINE, 6" DIA

Specifications: Maricopa Association of Governments, Uniform Standard Specifications and Details for Public Works Construction, Section 601, Section 610, and other related sections and details.

Description: 'Connect to Existing Water Main, 6" Dia' includes all work and costs associated with:

- a. Locating the existing 6" diameter water line pipe.
- b. Excavating to the water line, exposing it, and verifying the pipe size and material type.
- c. Attaching the new water line pipe to the existing water line pipe using a double strap service saddle to make the connection.
- d. Backfilling the excavated area as part of the overall water line installation process.

The service saddle used to make the connection of the new 2" water line to the existing 6" water line shall be a Smith-Blair Service Saddle Double Strap Model 317 or approved equivalent approved for public water line use.

The cost of all labor, equipment, tools, supplies, hardware, and materials necessary for executing and completing the work under this contract pay item and as shown on the plans, whether specifically stated herein or not, shall be included in the bid unit price for this item of work.

The connection to the existing water line can only be made once the new water line has been disinfected, tested, and placed into service.

This item of work shall be coordinated closely with:

City of Globe, Vince Mariscal, Water Facilities Manager, 928-200-3480

The City shall assist the Contractor with any needed shut down of the existing water lines so the connection to the existing 6" water line can be made.

The Contractor shall provide a minimum of 24-hours advance notice to the residents affected by water line shutdown with an estimated time and duration of the shutdown period. The Contractor shall minimize the time frame needed to complete the work so the length of time the water line is shut down is minimized to the greatest extent possible.

Measurement & Payment: **Refer to Attachment 6**

6. INSTALL WATER LINE, MUNICIPEX PIPE, 2" DIA

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Part 600, Section 601, Section 610, Section 611, Section 630, Section 631, Detail No. 200-1, Detail No. 200-2, Detail No. 200-3 and other related sections and details.

Description: The Contractor shall furnish and install 2" diameter water line pipe at the locations shown on the plans and in accordance with MAG Standard Specification Sections 601 and 610.

The water line pipe material shall be 2" diameter MUNICIPEX water pipe manufactured by REHAU and meeting the requirements of AWWA C904 for PEXa pipe. Additional requirements are listed below:

- The crosslinked polyethylene (PEXa) municipal water service pipe shall be manufactured using the high-pressure peroxide method of crosslinking.
- Pipe shall be certified to AWWA C904 cross-linked polyethylene (PEX) pressure pipe, 1 inch diameter, for water service by an approved testing agency
- The pipe shall be certified to standards ASTM F876, CSA B137.5, NSF 14, NSF 61 and PPI TR-4, by approved testing agencies, with a standard materials designation code of 3306
- Pipe shall be rated for 200 psi @ 73.4°F (1379 KPa @ 23°C) based on a 0.63 design factor
- Pipe shall be rated for: 160 psi @ 73.4°F (1103 KPa @ 23°C) and 100 psi @ 180°F (690 KPa @ 82°C) per PPI TR-4
- Pipe shall have a co-extruded UV Shield made from UV-resistant high-density polyethylene, with the color blue
- Pipe shall have minimum recommended UV exposure time of one (1) year when tested in accordance with ASTM F2657, or as per manufacturer's recommendations
- Pipe shall be compatible with cold-expansion compression-sleeve fittings certified to ASTM F2080 for installations as cold as -40°F (-40°C)
- Pipe shall be approved for use with AWWA C800 fittings when using manufacturer's recommended insert
- Pipe shall be approved by manufacturer for use with manual plastic pipe squeeze-off tools for temporary stoppage of flow
- Pipe shall be approved by manufacturer to be repaired using hot air, if kinked in the field
- Pipe shall have the minimum markings: PEXa 3306, CSA B137.5, ASTM F876, F2023 and F2080, NSF-pw

The MUNICIPEX water line installation shall be in accordance with MAG Standard Specification Sections 601 – Trench Excavation, Backfilling, and Compaction, 610 – Water Line Construction, and 611 – Water Line Testing, and in strict accordance with the manufacturer's recommendations.

Tracer wire and warning tape shall be installed as part of the water line construction. REHAU approves of the use of tracer wire (for locating buried pipes) with MUNICIPEX pipes, provided that the manufacturer's installation instructions approve of the product's use with plastic pipes and all the manufacturer's instructions are followed. When attaching tracer wire to MUNICIPEX pipe, REHAU recommends using Linerless Rubber Tape, Black (Art. 241002), also sold as Scotch™2242; REHAU Protective Tape, Red (Art. 246869-001); or nylon pipe ties.

The Contractor shall pressure test, disinfect, and flush the newly installed water lines, prior to placing it in service.

In asphalt and concrete pavement areas, the trench bedding, haunching, initial backfill, and final backfill beneath asphalt pavement surfacing shall be aggregate base course material brought to the bottom surface of the asphalt pavement section per MAG Section 601, Section 702, Detail 200-1, Type 'T-TOP' Trench Repair, Detail 200-2, and Detail 200-3. At the Contractor's option, trench backfill may be made with controlled low strength material (CLSM), 1/2 sack cement mix, per MAG Section 604 and Section 728, at no additional cost to the project.

This construction item includes all materials, equipment, and labor needed to complete the water line installation. The finished installation includes the cost of all labor, materials, loading, hauling, fittings, and equipment necessary to complete the installation so that it is fully functional for the purpose intended. Also included are the removal of obstructions; excavation and trenching including dewatering; legal disposal of excavated material; placing, bedding, and shading of the pipe line to grade; construction of concrete thrust blocks or pipe restraints as required; placement of tracer wire and warning tape; installation of bonding straps; and backfilling and compacting the excavation with approved material.

The removal and replacement of the asphalt pavement shall be measured and paid for under contract pay item number 1, REMOVE & REPLACE ASPHALT PAVEMENT, 3" AC ON 6" ABC.

Measurement & Payment: **Refer to Attachment 6**

7. INSTALL WATER SERVICE LINE, MUNICIPEX PIPE, 3/4" DIA

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Part 600, Section 601, Section 610, Section 611, Section 630, Section 631, Detail No. 200-1, Detail No. 200-2, Detail No. 200-3 and other related sections and details.

Description: The Contractor shall furnish and install 3/4" diameter water service line pipe at the locations shown on the plans and in accordance with MAG Standard Specification Sections 601 and 610.

The water service line pipe material shall be 3/4" diameter MUNICIPEX water pipe manufactured by REHAU and meeting the requirements of AWWA C904 for PEXa pipe. Additional requirements are listed below:

- The crosslinked polyethylene (PEXa) municipal water service pipe shall be manufactured using the high-pressure peroxide method of crosslinking.
- Pipe shall be certified to AWWA C904 cross-linked polyethylene (PEX) pressure pipe, 1 inch diameter, for water service by an approved testing agency
- The pipe shall be certified to standards ASTM F876, CSA B137.5, NSF 14, NSF 61 and PPI TR-4, by approved testing agencies, with a standard materials designation code of 3306
- Pipe shall be rated for 200 psi @ 73.4°F (1379 KPa @ 23°C) based on a 0.63 design factor
- Pipe shall be rated for: 160 psi @ 73.4°F (1103 KPa @ 23°C) and 100 psi @ 180°F (690 KPa @ 82°C) per PPI TR-4
- Pipe shall have a co-extruded UV Shield made from UV-resistant high-density polyethylene, with the color blue
- Pipe shall have minimum recommended UV exposure time of one (1) year when tested in accordance with ASTM F2657, or as per manufacturer's recommendations
- Pipe shall be compatible with cold-expansion compression-sleeve fittings certified to ASTM F2080 for installations as cold as -40°F (-40°C)
- Pipe shall be approved for use with AWWA C800 fittings when using manufacturer's recommended insert
- Pipe shall be approved by manufacturer for use with manual plastic pipe squeeze-off tools for temporary stoppage of flow
- Pipe shall be approved by manufacturer to be repaired using hot air, if kinked in the field
- Pipe shall have the minimum markings: PEXa 3306, CSA B137.5, ASTM F876, F2023 and F2080, NSF-pw

The MUNICIPEX water service line installation shall be in accordance with MAG Standard Specification Sections 601 – Trench Excavation, Backfilling, and Compaction, 610 – Water Line Construction, 611 – Water Line Testing, and 631 – Water Taps and Meter Service Connections, and in strict accordance with the manufacturer's recommendations.

Tracer wire and warning tape shall be installed as part of the water service line construction. REHAU approves of the use of tracer wire (for locating buried pipes) with MUNICIPEX pipes, provided that the manufacturer's installation instructions approve of the product's use with plastic pipes and all the manufacturer's instructions are followed. When attaching tracer wire to MUNICIPEX pipe, REHAU recommends using Linerless Rubber Tape, Black (Art. 241002), also sold as Scotch™2242; REHAU Protective Tape, Red (Art. 246869-001); or nylon pipe ties.

In asphalt pavement areas, the trench bedding, haunching, initial backfill, and final backfill beneath asphalt pavement surfacing shall be aggregate base course material brought to the bottom surface of the asphalt pavement section per MAG Section 601, Section 702, Detail 200-1, Type 'T-TOP' Trench Repair, Detail 200-2, and Detail 200-3. At the Contractor's option, trench backfill may be made with controlled low strength material (CLSM), 1/2 sack cement mix, per MAG Section 604 and Section 728, at no additional cost to the project.

Tap. The 2" diameter MUNICIPEX water main line shall be tapped with a service saddle for connection of the 3/4" MUNICIPEX water service line pipe. MUNICIPEX is compatible with service saddles from a variety of manufacturers. The following manufacturers have independently tested and approved their saddles for use with 2 in. MUNICIPEX water line pipe.

- Romac 306-H Stainless Steel Service Saddle, Romac Industries, Inc., Bothell, WA, www.romacindustries.com.
- Ford FS313W Stainless Steel Saddle, The Ford Meter Box Company, Inc., Wabash, IN, www.fordmeterbox.com.
- Quick Cam® Hot Tap Saddle, Total Piping Solutions, Inc., Olean, NY, www.tps.us.

Bore. Water service lines are to be installed to the existing water meters by boring the pipe beneath the existing sidewalk and curb & gutter (with 4' wide gutter pan) section wherever possible to avoid the removal & replacement of the sidewalk and/or curb and gutter sections. The means and methods to accomplish this are solely the responsibility of the Contractor but several methods to consider may include:

- Tying the MUNICIPEX pipe to the existing service line and installing the new service line pipe by pulling the existing water service line beneath the sidewalk and curb and gutter sections to remove it.
- Tying a pull cord to the existing service line and pulling it through the void remaining as the existing water service line pipe is pulled under the existing sidewalk and curb and gutter section (in either direction). Then using the pull cord to pull the MUNICIPEX pipe through the void to make the connection.
- Removing the existing water service line by pulling it beneath the sidewalk and curb and gutter section and then pushing the MUNICIPEX pipe through the void remaining in the earth to make the connection.

Regardless of the means and methods used to make the installation of the service line pipe under the sidewalk and curb and gutter sections to connect to the existing water meter, care shall be taken to not allow dirt and debris to enter into the new water service line pipe and flushing will be required to ensure that dirt or debris is not present in the water service line. This work is incidental and subsidiary to the installation of the water service lines.

If needed, the removal and replacement of the sidewalk and/or curb and gutter sections for water service line installation shall be approved by the City in advance of the construction work.

Connect to Meter. The Contractor shall pressure test, disinfect, and flush the newly installed water service lines, prior to placing them in service. When authorized by the City to do so, the Contractor shall then disconnect the existing water service line from the water meter and connect the new 3/4" MUNICIPEX water service line to the existing water meter to place the water customer back in service.

The Contractor shall provide a minimum of 24-hours advance notice to the residents affected by water service outage with an estimated time and duration of the shutdown period. The Contractor shall minimize the time frame needed to complete the work so the length of time the water line is shut down is minimized to the greatest extent possible. This item of work shall be coordinated closely with the City of Globe, Vince Mariscal, Water Facilities Manager, 928-200-3480.

This construction item includes all materials, equipment, and labor needed to install the new 3/4" water service line between the newly installed 2" diameter MUNICIPEX water main and the existing water meter located within the sidewalk pavement. This installation will include a new tap on the water main line pipe, service saddle, corporation/curb stop valve, MUNICIPEX water service line piping, tracer wire, locator tape, fittings and hardware as needed, associated excavation, trenching, boring, backfill, compaction of backfill, and any other component of work needed to complete the water service line installation. The water service line installation shall be completed in accordance with MAG Specification Section 631. The water service line installation shall also include all materials, labor, and equipment costs to remove the existing water service line pipe or properly cap or plug each end of the existing water service line to abandon the existing water service line in place.

The removal and replacement of the asphalt pavement shall be measured and paid for under contract pay item number 1, REMOVE & REPLACE ASPHALT PAVEMENT, 3" AC ON 6" ABC.

Measurement & Payment: **Refer to Attachment 6**

8. INSTALL WATER SERVICE LINE, MUNICIPEX PIPE, 2" DIA, FOR SCHOOL

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Part 600, Section 601, Section 610, Section 611, Section 630, Section 631, Detail No. 200-1, Detail No. 200-2, Detail No. 200-3 and other related sections and details.

Description: The Contractor shall furnish and install 2" diameter water service line pipe at the locations shown on the plans and in accordance with MAG Standard Specification Sections 601 and 610.

The water service line pipe material shall be 2" diameter MUNICIPEX water pipe manufactured by REHAU and meeting the requirements of AWWA C904 for PEXa pipe. Additional requirements are listed below:

- The crosslinked polyethylene (PEXa) municipal water service pipe shall be manufactured using the high-pressure peroxide method of crosslinking.
- Pipe shall be certified to AWWA C904 cross-linked polyethylene (PEX) pressure pipe, 1 inch diameter, for water service by an approved testing agency
- The pipe shall be certified to standards ASTM F876, CSA B137.5, NSF 14, NSF 61 and PPI TR-4, by approved testing agencies, with a standard materials designation code of 3306
- Pipe shall be rated for 200 psi @ 73.4°F (1379 KPa @ 23°C) based on a 0.63 design factor
- Pipe shall be rated for: 160 psi @ 73.4°F (1103 KPa @ 23°C) and 100 psi @ 180°F (690 KPa @ 82°C) per PPI TR-4
- Pipe shall have a co-extruded UV Shield made from UV-resistant high-density polyethylene, with the color blue
- Pipe shall have minimum recommended UV exposure time of one (1) year when tested in accordance with ASTM F2657, or as per manufacturer's recommendations
- Pipe shall be compatible with cold-expansion compression-sleeve fittings certified to ASTM F2080 for installations as cold as -40°F (-40°C)
- Pipe shall be approved for use with AWWA C800 fittings when using manufacturer's recommended insert
- Pipe shall be approved by manufacturer for use with manual plastic pipe squeeze-off tools for temporary stoppage of flow
- Pipe shall be approved by manufacturer to be repaired using hot air, if kinked in the field
- Pipe shall have the minimum markings: PEXa 3306, CSA B137.5, ASTM F876, F2023 and F2080, NSF-pw

The MUNICIPEX water service line installation shall be in accordance with MAG Standard Specification Sections 601 – Trench Excavation, Backfilling, and Compaction, 610 – Water Line Construction, 611 – Water Line Testing, and 631 – Water Taps and Meter Service Connections, and in strict accordance with the manufacturer's recommendations.

Tracer wire and warning tape shall be installed as part of the water service line construction. REHAU approves of the use of tracer wire (for locating buried pipes) with MUNICIPEX pipes, provided that the manufacturer's installation instructions approve of the product's use with plastic pipes and all the manufacturer's instructions are followed. When attaching tracer wire to MUNICIPEX pipe, REHAU recommends using Linerless Rubber Tape, Black (Art. 241002), also sold as Scotch™2242; REHAU Protective Tape, Red (Art. 246869-001); or nylon pipe ties.

In asphalt pavement areas, the trench bedding, haunching, initial backfill, and final backfill beneath asphalt pavement surfacing shall be aggregate base course material brought to the bottom surface of the asphalt pavement section per MAG Section 601, Section 702, Detail 200-1, Type 'T-TOP' Trench Repair, Detail 200-2, and Detail 200-3. At the Contractor's option, trench backfill may be made with controlled low strength material (CLSM), 1/2 sack cement mix, per MAG Section 604 and Section 728, at no additional cost to the project.

Tee. A 2" x 2" tee fitting shall be installed in the 2" diameter MUNICIPEX water main line pipe for connection of the 2" MUNICIPEX water service line pipe for the old school building. The tee fitting shall be compatible for use with MUNICIPEX water line pipe.

Bore. The 2" water service line to the old school building water meter is to be installed by boring the pipe beneath the existing sidewalk and curb & gutter (with 4' wide gutter pan) section to avoid the removal & replacement of the sidewalk and/or curb and gutter sections. The means and methods to accomplish this are solely the responsibility of the Contractor but several methods to consider may include:

- Tying the MUNICIPEX pipe to the existing service line and installing the new service line pipe by pulling the existing water service line beneath the sidewalk and curb and gutter sections to remove it.
- Tying a pull cord to the existing service line and pulling it through the void remaining as the existing water service line pipe is pulled under the existing sidewalk and curb and gutter section (in either direction). Then using the pull cord to pull the MUNICIPEX pipe through the void to make the connection.
- Removing the existing water service line by pulling it beneath the sidewalk and curb and gutter section and then pushing the MUNICIPEX pipe through the void remaining in the earth to make the connection.

Regardless of the means and methods used to make the installation of the service line pipe under the sidewalk and curb and gutter sections to connect to the existing water meter, care shall be taken to not allow dirt and debris to enter into the new water service line pipe and flushing will be required to ensure that dirt or debris is not present in the water service line. This work is incidental and subsidiary to the installation of the water service lines.

If needed, the removal and replacement of the sidewalk and/or curb and gutter sections for water service line installation shall be approved by the City in advance of the construction work.

Connect to Meter. The Contractor shall pressure test, disinfect, and flush the newly installed water service lines, prior to placing them in service. When authorized by the City to do so, the Contractor shall then disconnect the existing water service line from the water meter and connect the new 2" MUNICIPEX water service line to the existing water meter to place the water customer back in service.

The Contractor shall provide a minimum of 24-hours advance notice to the residents affected by water service outage with an estimated time and duration of the shutdown period. The Contractor shall minimize the time frame needed to complete the work so the length of time the water line is shut down is minimized to the greatest extent possible. This item of work shall be coordinated closely with the City of Globe, Vince Mariscal, Water Facilities Manager, 928-200-3480.

This construction item includes all materials, equipment, and labor needed to install the new 2" water service line between the newly installed 2" diameter MUNICIPEX water main and the existing water meter located within the sidewalk pavement. This installation will include the new tee on the 2" water main line pipe, corporation/curb stop valve, 2" diameter MUNICIPEX water service line piping, tracer wire, locator tape, fittings and hardware as needed, associated excavation, trenching, boring, backfill, compaction of backfill, and any other component of work needed to complete the water service line installation. The water service line installation shall be completed in accordance with MAG Specification Section 631. The water service line installation shall also include all materials, labor, and equipment costs to remove the existing water service line pipe or properly cap or plug each end of the existing water service line to abandon the existing water service line in place.

Abandon Gate Valves. This bid/contract item of work also included abandoning the two existing gate valves in 4th Street where shown on the plans. The work includes removing and properly disposing of the valve boxes and covers so the existing valve will be buried in the backfill for the new 2" water service line to the school. Transport and dispose of the removed materials at a landfill or other legal disposal site. Backfill for the valve box removal void shall meet the requirements for trench backfill under pavements as specified herein.

The removal and replacement of the asphalt pavement shall be measured and paid for under contract pay item number 1, REMOVE & REPLACE ASPHALT PAVEMENT, 3" AC ON 6" ABC.

Measurement & Payment: **Refer to Attachment 6**

9. INSTALL GATE VALVE, 2" DIA

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Section 601, Section 610, Section 630, Detail No. 391-1 (Type A), Detail 391-2, and other related sections and details.

Description: The Contractor shall furnish and install new 2" water line gate valves, complete with valve boxes and covers, at all locations shown on the plans and in accordance with MAG Standard Specification Section 610, Section 630, Standard Detail 391-1, Type A, and Standard Detail 391-2.

The 2" gate valves shall be resilient wedge Non-Rising Stem (NRS) gate valves with mechanical joint ends and standard 2" square operation nuts.

The finished installation includes all costs associated with furnishing and installing the gate valve with a valve box and cover; loading and hauling; labor, materials, and equipment necessary for excavation and trenching; legal disposal of excess materials; dewatering; construction of thrust blocks; placement of bedding material; assembly of the valve; installation and adjustment of the valve box and cover to grade together with placement of 1/4-yard washed rock around base of valve boxes; adjusting valve boxes as required to the final grade, and installation of concrete diamond or circle aprons at all locations.

This bid item shall include backfill with aggregate base material (or 1/2 sack CLSM at the Contractor's option) and compaction of the ABC backfill for the excavation up to and flush with the bottom of the concrete apron and replacement pavement. Backfill for areas outside street pavement shall be to an elevation 12" below the existing ground surface, covered with 12" of topsoil, with repair and restoration of all existing landscaping to preconstruction conditions.

Measurement & Payment: **Refer to Attachment 6**

10. INSTALL AIR RELEASE VALVE

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Section 601, Section 610, Section 611, Section 630, Section 631, Section 750, and other related sections, specifications, and details.

Description: The Contractor shall furnish and install an air release valve assembly for the new water main at high points in the system where shown on the plans. Installation of the air release valve shall be in accordance with the manufacturer's instructions and the detail shown on the plans.

The air release valve shall be an A.R.I. Automatic Air Release Valve "Segev", S-050 Series, or engineer preapproved equal.

- a. Inlet shut off valve shall be a 1/4 turn 2-inch NPT X NPT brass, blowout proof, ball valve.
- b. Stainless steel tapping saddle, bolts, and nuts shall be 304 stainless steel, per ASTM A240; tapping saddle shall be model 306-H as supplied by ROMAC industries or engineer preapproved equal.
- c. ARV cover shall be a traffic rated box and cover, Box Number 1730, per MAG Detail No. 319.

The finished work includes all labor, materials, equipment, supplies, tools and other costs to complete the installation of the ARV and related improvements as shown on the project plans that is fully functional for its intended purpose.

Shop Drawing Submittal: The Contractor shall submit a shop drawing for the combination air release valve, piping, box, and cover for approval prior to construction.

Measurement & Payment: **Refer to Attachment 6**

11. CAP & ABANDON EXISTING WATER LINE, 2" DIA

Specifications: Maricopa Association of Governments, Uniform Standard Specifications and Details for Public Works Construction, Section 601, Section 610, and other related sections and details.

Description: Cap and abandon an existing water line, 2" diameter, includes locating the existing water main at the point of abandonment on each end where shown on the plans, cutting or otherwise disconnecting the pipe where needed, and capping the exposed pipe end or fitting end to completely seal off the pipe that is being abandoned in place.

Capping and abandonment of the existing 2" water line cannot occur until the new water line has been installed, tested, disinfected, and placed in operation.

The cost of all labor, equipment, tools, and materials necessary for executing the work; verification of existing pipe type and size at the abandonment location; cutting pipes; removal and disposal of any obstructions such as thrust blocks; providing and installing caps, plugs, or other fittings as required to enable the pipe section to be removed from service; backfilling the excavation with aggregate base course material, and compacting the backfill material as specified (100% ASTM D698 Standard Proctor Density) up to the subgrade of the new pavement or to the surface of the adjacent grade; and construction clean-up. All work needed to complete the abandonment of the existing water line should be included in the cost of this item.

The Contractor shall provide a minimum of 24-hours advance notice to the residents affected by water service outage with an estimated time and duration of the shutdown period. The Contractor shall minimize the time frame needed to complete the work so the length of time the water line is shut down is minimized to the greatest extent possible. This item of work shall be coordinated closely with the City of Globe, Vince Mariscal, Water Facilities Manager, 928-200-3480.

Measurement & Payment: **Refer to Attachment 6**

12. CONSTRUCT DOUBLE CHIP SEAL STREET SURFACING

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Section 330 Asphalt Chip Seal, Section 333 Fog Seal Coats, Section 336 Pavement Matching and Surfacing Replacement, Section 713 Emulsified Asphalt Materials, Section 716 Cover Material, and other related sections and details.

Description: After the water line has been installed and the street repair work completed, the Contractor shall construct a new double application of an asphalt chip seal surface on a prepared asphalt street pavement surface in between concrete curb and gutter sections. The construction of the double chop seal street surfacing shall be in accordance with MAG Section 330 Asphalt Chip Seal, including all items of work specified herein and as needed to complete the work.

Materials:

Bituminous Material. The bituminous material used for each chip seal layer shall be Polymer Modified Asphalt Rubber (PMAR). The blend used in Globe for chip seal work shall be as follows:

<i>Material</i>	<i>Content Proportion</i>
PG 64-15 Base Binder	82%
Tire Rubber	16%
SBS Polymer	2%
<i>Total</i>	<i>100%</i>

Aggregate Cover Material. Cover material “chips” shall be precoated aggregate for low volume traffic per MAG Section 716 with 100% of the aggregate passing the 1/2" sieve size.

The cover material shall be precoated. The aggregate shall be heated and precoated with asphalt cement as specified in MAG Section 711. The quantity of bituminous material used shall not be less than 0.30 percent or greater than 0.70 percent of the combined weight of the bituminous material and the aggregate to achieve a “salt and pepper” appearance. The precoating shall be done in a drum mix hot plant.

Fog Seal Material. Emulsified asphalt for fog seal shall be grade CSS-1h as specified In MAG Section 713.

Execution:

The areas requiring construction of a double asphalt chip seal surface are shown on the project plans. For this project, the area shall be the full width of the asphalt pavement between the concrete curb and gutter sections for the full length of 4th Street from the west line of Maple Street pavement to the concrete valley gutter section at Ash Street.

The work shall consist of the following:

- (1) Thoroughly clean the existing asphalt pavement to receive the double chip seal surfacing.
- (2) Application of the PMAR asphalt binder at a rate of 0.55 to 0.65 gallons per square yard sufficient to ensure 70% embedment of the aggregate chips.
- (3) Application of aggregate cover material (rock chips) at a rate of 26 to 32 pounds per square yard.
- (4) Thorough rolling (at least 3 roller passes) of the chip seal surface with self-propelled pneumatic-tired rollers to achieve 70% embedment of the chips.

- (5) Broom up loose aggregate chips from the newly sealed surface (clean chips may be reused) using a suitable pick-up broom.
- (6) Open the chip sealed street to traffic and wait a minimum of four (4) hours before construction of the 2nd chip seal on the initial chip sealed street surface.
- (7) Second application PMAR asphalt binder at a rate of 0.55 to 0.65 gallons per square yard (sufficient to ensure 70% embedment of the aggregate chips) on the previously constructed chip seal surface.
- (8) Second application of aggregate cover material (rock chips) at a rate of 26 to 32 pounds per square yard.
- (9) Thorough rolling (at least 3 roller passes) of the chip seal surface with self-propelled pneumatic-tired rollers to achieve 70% embedment of the chips.
- (10) Broom up and dispose of any loose aggregate chips using a suitable pick-up broom.
- (11) Open the double chip sealed street to traffic.
- (12) Apply a fog seal to the double chip seal surface per MAG Section 333 no sooner than the next day with an application rate of 0.12 gallons per square yard to complete the double chip seal street surfacing.

The Contractor shall exercise care not to apply any asphalt emulsion on the new curb and gutter sections or to leave aggregate chips on the curb and gutter and sidewalk surfaces.

This bid item includes all labor, equipment, and materials needed to construct the double chip seal street surfacing including both layers of chip seal, the subsequent fog seal, preparation and clean-up work, and all other related items of work.

Measurement & Payment: **Refer to Attachment 6**

13. APPLY CENTER LINE STRIPING, YELLOW TRAFFIC PAINT, 4" WIDTH

Specifications: Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2008 Edition – latest revision, Section 708, Permanent (Painted) Pavement Markings, and related sections.

Description: The Contractor shall apply new pavement striping paint at least one (1) day after but not more than three (3) days after the new double chip seal surfacing has been constructed.

Pavement striping shall be installed in accordance with the MUTCD and per ADOT Standard Specifications Section 708 – Permanent Pavement Markings.

Yellow center lines are to be a solid line to be painted to a 4" width. The double yellow center line stripes are to be separated by a 4" space.

This construction item is to provide an immediate 4" wide continuous double yellow center line marking applied on the completed double chip seal surface.

If the first application of paint striping has a dull finish or does not meet thickness or retroreflective requirements, a second application shall be made at no additional cost to the project.

Prior to applying the double chip seal surface, the Contractor shall survey, measure, and record the locations of all pavement markings including the beginning and end points, widths, and distances for each stop bar, striping line, and symbols/legends in order to enable the Contractor to apply new pavement markings in the same location as the existing markings that will be obliterated.

All labor, material, and equipment costs associated with this item of construction work shall be incorporated into the bid/contract unit price.

Measurement and Payment: **Refer to Attachment 6**

14. APPLY CROSSWALK STRIPING, WHITE TRAFFIC PAINT, 6" WIDTH

Specifications: Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2008 Edition – latest revision, Section 708, Permanent (Painted) Pavement Markings, and related sections.

Description: The Contractor shall apply new pavement striping paint at least one (1) day after but not more than three (3) days after the new double chip seal surfacing has been constructed.

Pavement striping shall be installed in accordance with the MUTCD and per ADOT Standard Specifications Section 708 – Permanent Pavement Markings.

White crosswalk lines are to be a solid line to be painted to a 6" width, 10' apart.

This construction item is to provide immediate 6" wide continuous crosswalk line markings applied on the completed double chip seal surface.

If the first application of paint striping has a dull finish or does not meet thickness or retroreflective requirements, a second application shall be made at no additional cost to the project.

Prior to applying the double chip seal surface, the Contractor shall survey, measure, and record the locations of all pavement markings including the beginning and end points, widths, and distances for each stop bar, striping line, and symbols/legends in order to enable the Contractor to apply new pavement markings in the same location as the existing markings that will be obliterated.

All labor, material, and equipment costs associated with this item of construction work shall be incorporated into the bid/contract unit price.

Measurement and Payment: **Refer to Attachment 6**

15. APPLY STOP BAR STRIPING, WHITE THERMOPLASTIC, 24" WIDTH

Specifications: Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2008 Edition, Section 704, Thermoplastic Pavement Markings, and related sections.

Description: The Contractor shall furnish and apply approved thermoplastic pavement markings, white stop bar striping, to the required 24" width, length, and configurations at all locations shown on the plans, and as may be directed by the City Inspector.

The thermoplastic lines shall be 0.090-inch thick (90 mils) striping.

The work shall include all materials, equipment, and labor costs to properly apply the thermoplastic pavement markings, white stop bar striping, 24" width, in accordance with Section 704, Thermoplastic Pavement Markings, of the ADOT Standard Specifications.

Measurement and Payment: **Refer to Attachment 6**

16. TRAFFIC CONTROL

Specifications: **City of Globe requirements**, Maricopa County Department of Transportation, Arizona Department of Transportation, and the Manual on Uniform Traffic Control Devices specifications and requirements for traffic control and work zone safety.

Description: Effective and safe traffic control is critically important for this project. The Contractor shall coordinate closely with City officials throughout the duration of the project to ensure safe passage of pedestrian, bicycle, and vehicular traffic (as may be permitted) within and around the construction zone.

This construction/bid item includes any and all traffic control supervisors, flaggers, barrels, cones, barricades, lights, signage, directional pedestrian routing, signing of detour routes, pilot cars, and development and implementation of an approved traffic control plan. This bid/construction item also includes the routine and daily maintenance of all traffic control devices to safeguard all travelers for the full duration of the project construction, including during nighttime hours.

Traffic control shall meet all requirements of the **City of Globe**, Maricopa County Department of Transportation, the Arizona Department of Transportation, and the Manual on Uniform Traffic Control Devices.

Vehicular traffic passing through the construction zone shall be routed over a uniform durable driving surface at all times with no drop offs adjacent to traffic travel lanes greater than 2" at any time.

At least one traffic lane shall be provided through the construction area with appropriate flagging and traffic control for safe passage of vehicles, pedestrians, and bicyclists through the work zone.

Access to adjacent dwelling units must be maintained to the greatest extent possible at all times unless a minimum of 3 calendar days written notification is given to owners and residents including an estimated length of time for the entire duration of the planned closure, and all closures must be pre-approved by the City. The Contractor shall be responsible for individual notification to property owners and residents within the construction area whenever they are impacted by access restrictions, road closures, and construction activities impacting their residence and property. The Contractor shall construct temporary driveway access ramps of aggregate base course material and maintain the driveway access ramps as long as needed to allow reasonable and continuous access to the properties to the greatest extent possible.

Traffic Control Plan: Prior to the start of work, the contractor shall submit a detailed "Traffic Control Plan" to the City for approval. The plan will address and include:

- a. A schedule for shutting down and reopening of streets/roads, site driveways, and/or sidewalk access with planned durations.
- b. Proposed signage indicating any applicable street, driveway, and sidewalk closures and/or detour routes.
- c. Signage and lighting layout and design in compliance with the MUTCD and other standards/specifications.
- d. Overall total length (distance and duration) of street, driveway, and/or sidewalk access closures due to construction activities at any point in time during the overall project schedule.
- e. Construction staging and phasing to limit total length of traffic closures at any time.

ADOT Encroachment Permit: **Traffic control is particularly important for this project due to the location of some of the improvements within the ADOT right of way for US 60. The Contractor shall not encroach onto the roadway pavement of the highway at any time with construction stockpiles or materials.**

The Contractor shall apply for an ADOT Encroachment permit to complete the work under this contract. The Contractor's traffic control plan and insurance must receive the approval of ADOT, and the traffic control plan shall comply with all ADOT and MUTCD requirements. Traffic control plan approval from ADOT and the City is required before work can commence.

Traffic control for any and all work within ADOT Right of Way shall comply with all requirements of the ADOT Encroachment Permit for this project and any special requirements imposed by ADOT for working in close proximity to traffic on the highway. The Contractor shall coordinate closely with ADOT officials throughout the duration of the project to ensure safe passage of vehicles.

Measurement & Payment: **Refer to Attachment 6**

(36) MOBILIZATION; (37) BONDING; (38) TAXES

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Part 100, Section 109, and other related sections.

Description: The work under this item shall consist of preparatory work and operations, including but not limited to, the movement of personnel, equipment, materials, supplies, and incidentals to the project site; the establishment and on-going maintenance of restroom facilities; establishment and on-going maintenance of storage/staging facilities necessary for the prosecution of the work; project site restoration; and for all other work and operations that must be performed and costs incurred prior to beginning work and during the course of construction of the various items of work at the project site. The mobilization work shall also include demobilization, including the movement of personnel, equipment, materials, supplies, tools, and other items from the site following completion of construction activities and restoration and clean-up of the overall project site and the Contractor storage and staging yard.

Project Site Restoration and Clean-up: Fine grading of disturbed surfaces; replacing in kind any landscape vegetation (trees, bushes, shrubs, succulents, flowers, etc.) damaged or removed during the construction of the project and related work; spreading new decomposed granite on disturbed surfaces where it existed prior to construction; returning all project areas and surrounding disturbed areas to their original condition (or better), and including reseeding, if necessary.

Trees and shrubbery within the project right of way that conflict with the proposed improvements shall not be removed without prior approval from the City.

Prior to final approval and acceptance of the work, the Contractor shall clean, and repair nearby off-project roadways or facilities used or damaged during the course of construction for this project. The Contractor shall clean up and re-open individual project areas as soon as practical following construction.

Contractor Storage and Staging Yard: The Contractor is solely responsible for securing the location for a storage and staging yard for construction activities. The Contractor shall obtain approval of the property owner(s) and the City when using vacant private property to park and service equipment, and/or to store materials for use on this project.

The following conditions apply:

- a. The **CITY OF GLOBE** does not allow storage and staging areas on residential properties.
- b. The Contractor shall notify adjacent property owners/residents of this proposed use.
- c. Any use of vacant property adjacent to or near the project for parking or servicing equipment and/or storing of material will require the Contractor to obtain written approval from the property owner. This approval shall contain any requirements which are a condition of this approval.
- d. A copy of the property owner's approval shall be submitted along with the Contractor's request to the City for approval for the use of the storage, staging, and marshaling yard in connection with the project. An appropriate distance from adjacent properties will be set by the City on a case-by-case basis based on the size and type of equipment to be used on the project.
- e. The yard shall be fenced and adequately dust-proofed in a manner such as to preclude dirt and dust blowing off the site and tracking of mud onto paved or unpaved streets.
- f. Work in the yard shall be scheduled so as to comply with the City's Noise Ordinance and other applicable ordinances, rules, and regulations pertaining to construction activities.

- g. Equipment, materials, supplies, etc., shall be located so as to minimize impact on adjacent properties. A sound barrier may be required if deemed necessary by the City.
- h. The Contractor shall clean up the property promptly upon completion of use and shall provide a signed property release as a condition of final acceptance.

The Contractor's request for approval of the storage and staging yard shall specify in detail how the Contractor proposes to comply with requirements set forth above.

Storage and staging areas shall be provided with security fencing and a scrubber pad to keep from tracking dirt/mud onto street surfaces. The Contractor shall provide frequent housekeeping cleanup and complete restoration of the site to a condition as good if not better than found prior to construction. Storage and staging yard clean-up shall include fine grading of disturbed surfaces; spreading new decomposed granite on disturbed surfaces where it existed prior to construction; returning storage/staging areas and surrounding disturbed areas to their original condition (or better), and including reseeding, if necessary.

Dust and Pollution Control: This work item includes all costs associated with routine street sweeping as necessary to eliminate tracked dirt, mud, and debris from the project sites onto paved surfaces via construction vehicle traffic and domestic traffic as a storm water management, pollution, and sediment control mitigation measure. Sweeping and dust control shall be monitored and performed daily as needed and as may be directed by the City Inspector. Dust control measures (including spraying water and/or dust palliatives on disturbed ground surfaces) are to be employed as needed to minimize fugitive dust from project activities.

Measurement & Payment: **Refer to Attachment 6**

INCIDENTAL ITEMS

Any and all items of work to be provided by the Contractor that are not specifically listed in the Bid Schedule will NOT be measured or paid for separately as they are considered “incidental” and “subsidiary” to the overall project. The cost associated with each incidental item of work shall be applied to its associated bid schedule line item or across all applicable bid schedule line items as most appropriate in the judgment of the Contractor.

The following is a list of some, but not all, construction items that are considered “incidental” to the construction project that shall be provided, but will not be paid for separately as a bid item:

- **Water Used by the Contractor for Construction Purposes**

The **CITY OF GLOBE** will provide water to the Contractor as needed for construction activities at no cost to the project. The City will designate a water hydrant as the source of water for the project. Contact Vince Mariscal, Water Facilities Manager, at 928-200-3480 to coordinate this activity.

- **Construction Surveying and Staking for all Improvements**

The total cost for all labor, materials, and equipment associated with construction surveying and staking including, but not limited to, elevations and the staking of the improvements, fixtures, and appurtenances, utilities, removals, new paving, signage, striping/markings, and other associated improvements for construction purposes. Any survey monuments that are disturbed during construction activities shall be replaced by a registered land surveyor at the Contractor’s expense.

- **Quality Control Testing**

The Contractor is responsible for quality control testing. The Contractor shall provide the testing and inspection services required by the Contract Documents and other such test necessary to assure the quality of the work.

Contractor shall provide all pre-construction, during-construction, and post-construction testing required by the MAG standards, ADOT testing guidelines, and the project’s contract documents.

When not specifically called out in the MAG Standard Specifications, testing frequency minimums are governed by the Arizona Department of Transportation Materials Quality Assurance Program manual, Appendix C, Sampling Guide Schedule, latest edition (June 19, 2019).

The Contractor shall provide all test results to the City, the Engineer of Record, and the City Inspector within 48 hours of completion of the testing.

Be advised the City may provide quality assurance testing as needed to verify the quality of the work and to satisfy themselves that the work has been constructed in compliance with the plans, specifications, and bid/contract documents.

- **Record Drawings**

Accurate red-lined “as-built” drawings of all pavements, street reconstruction, sidewalks, driveway construction, installed and constructed water lines, fixtures (including valves, meter boxes, and fittings), appurtenances, signs, markings, utilities, services, other improvements, and any encountered existing utility, whether shown on the plans or not, shall be provided to the City and the Engineer of Record upon completion of the construction.

The location of all installed features shall be dimensioned, with the location based on identifiable surface features. Two weeks prior to final contract settlement, full record (as-built) drawings and data will be required.

▪ **Other Items**

There may be other items of work shown and called for on the plans. Some of these items may specifically be called out as a “No Pay Item” or “Incidental”.

End of Technical Specifications Section

