



Attachment "E"

Revised Section 01291

Measurement and Payment

**SECTION 01291
MEASUREMENT AND PAYMENT**

PART 1 - GENERAL

1.1 SCOPE

- A. Payment for various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor operations and incidentals appurtenant to the items of WORK being described, as necessary to complete the various items of the WORK all in accordance with requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenance items of WORK.
- B. Payment for the various items of the Bid Schedule, where applicable, shall constitute full compensation for CONTRACTOR's superintendent at the job site full-time during construction, for furnishing and installing all pipe and structures complete in place including but not limited to bends, valves, ARVs, tees, outlets, fittings, blind flanges and specials, including connections to existing pipelines shown on the DRAWINGS; including surveying both horizontal and vertical control for construction of the roadways, structures, pipeline and appurtenances; including all earthwork, excavation as shown on the DRAWINGS, removal and disposal of waste, unsuitable and excess material, furnishing and installing pipe bedding material, all backfill and compaction of native material, and dewatering (including contaminated sites) as required; including potholing to verify locations of existing utilities in advance of construction; the restoration of interfering portions of existing service and utility lines that are not included in other bid items and shown on the DRAWINGS, including pressure testing and disinfection; restraint of pipe shown on the DRAWINGS and grouting of pipe joints; including providing the water for pressure testing, cleaning the pipe and disinfection, and disposal of the water as required when completed; furnishing, installation, and removal of test heads, cleanup; and restoration of all improvements incidental to construction for which there are no other bid items; including but not limited to, sprinkler systems, drainage systems, guardrails, landscaping, fences, curbs and gutters, and all other WORK not included in other bid items.
- C. Payment shall also include providing the necessary equipment and labor to pothole and verify depths and locations of existing utilities sufficiently ahead of construction to avoid conflicts with the design alignment and grade of the transmission pipeline. Conflicts with utilities shown on the DRAWINGS which result from the CONTRACTOR's negligence to pothole sufficiently ahead of construction (a minimum of two days ahead of construction of the pipeline or as approved by the ENGINEER) shall be resolved by the CONTRACTOR at no additional cost to the City. Unmarked utilities damaged during construction will be paid under unit prices in the Bid Package for similar WORK, if and as approved by the ENGINEER.
- D. Payment for all bid items shall constitute full compensation for the complete installation of each bid item including but not limited to excavation, dewatering, backfill and compaction. The WORK shall include for all bid items to be completed, tested and ready for acceptance by the appropriate government agency.

1.1 MOBILIZATION

- A. Cost for all work and operation necessary for Mobilization and Demobilization of Equipment, Materials and Personnel, Field Engineering, Construction Layout and Surveying, Final Certified As-builts, and Pre-construction video and Documentation shall be included in the unit price for mobilization and no separate payment shall be made.
- B. Payment for Mobilization will be made in equal monthly amounts during the duration of the contract time.

1.2 MAINTENANCE OF TRAFFIC

- A. Section 01010 "Summary of Work", and all other references to traffic control in this document and any regulatory requirements.
- B. Payment for maintenance of traffic will be made at the lump sum price named in the Bid Schedule. Payment for maintenance of traffic will be made in equal monthly amounts during the duration of the contract time. Existing traffic signage shall be maintained and protected at all times. There shall be no additional payment for replacement.

1.3 FURNISH & INSTALL UTILITY WATER PIPE

- A. Measurement for payment for furnishing and installing water pipe will be based upon the number of linear feet of such pipe actually constructed as determined by measurement along the centerline of the pipe in place, all in accordance with the requirements of the Contract Documents.
- B. Payment for furnishing and installing water pipe will be made at the unit price per linear foot of pipe of the size named in the Bid Schedule. Payment for water pipe fittings will be made at the unit price each, named in the Bid Schedule.
- C. Payment shall include providing all necessary pipe, trench excavation, dewatering, bedding, backfilling, compaction and plug as required.

1.4 CONNECT TO EXISTING WATER MAIN

- A. Measurement for payment to cut-in fittings and/or connect to existing water main will be based upon the actual number, per each, of such connections completed, all in accordance with the Contract Documents.
- B. Payment for connecting to existing water main will be made at the unit price per each type of connection named in Section 1.5 (Cut-in & tapping sleeve with valves, etc.) and the Bid Schedule, which price shall constitute full compensation for the completed installation of the connection, including shutting down existing main cutting main, by-pass pumping, caps and installation of the connection fittings. Price shall include but not be limited to excavation, testing, backfill, dewatering, connections, and all other appurtenances, restoration work and all else necessary for a complete and functional installation.

1.5 FURNISH & INSTALL CUT-IN & TAPPING SLEEVE WITH VALVES

- A. Measurement for payment to furnish and install cut-in or tapping sleeve and valves will be based upon actual quantity, each, of such named sleeves and valves furnished and installed, all in accordance with the requirements of the Contract Documents.
- B. Payment for furnishing and installing cut-in or tapping sleeves and valves will be made at the unit price each, named in the Bid Schedule which price shall constitute full compensation for the installation of the cut-in or tapping sleeve, valve, valve extension and valve box.

1.6 FURNISH & INSTALL FIRE HYDRANT WITH CHECK VALVE ASSEMBLY

- A. Measurement for payment to furnish and install fire hydrant with check valve assembly shall be at the unit bid price per each fire hydrant assemblies furnished in accordance with the Contract Documents.
- B. Payment for furnishing and installing fire hydrant with check valve assembly shall be at the unit bid price per each and shall include furnishing, storing, and transporting. Fire hydrant assemblies shall include the complete fire hydrant, fire hydrant extensions, 2' x 2' concrete pad, bollards as required and check valve

assemblies. Pipe, gate valves and other fittings shall not be included in this pay item.

1.7 FURNISH & INSTALL VALVE WITH BOX

- A. Measurement for payment to furnish and install valves will be based upon actual quantity, each, of such valves (gate, butterfly, or plug) and boxes furnished and installed, all in accordance with the requirements of the Contract Documents. Additional valves incorporated for testing purposes shall be paid at the unit price.
- B. Payment for furnishing and installing valves and boxes will be made at the unit price each, named in the Bid Schedule which price shall constitute full compensation for the completed installation of the valve, including valve box, brass tag, and extension to finish grade and concrete collar installed in unpaved areas. Test vales shall be constructed with a riser to ground level, and be marked, tagged, and photographed.

1.8 PLUG AND PLACE OUT OF SERVICE FOR EXISTING PIPES

- A. Measurement for payment to plug existing pipe and put out of service will be based upon actual quantity, each, of such connections made in accordance with the contract document.
- B. Payment to plug existing pipe and put out of service will be made at the unit price, each, named in the bid schedule, which price shall constitute full compensation for the completed installation of the capping the existing water main, including excavation, bedding, backfill, compaction, dewatering, shutting down existing main cutting main, by-pass pumping, restrained caps and installation of fittings.

1.9 FURNISH & INSTALL BACTERIOLOGICAL SAMPLE POINTS

- A. Measurement for payment for sample points will be based upon the actual number, each, of such sample points furnished and installed, all in accordance with requirements of the Contract Documents.
- B. Payment for sample points will be made at the unit price, each, named in the Bid Schedule which price shall constitute full compensation for the complete installation of sample point and removal and disposal after sampling is complete.

1.10 ABANDON, CAP AND GROUT EXISTING MAIN

- A. Measurement for payment to abandon, cap and grout pipe will be based upon the actual number of linear feet of such pipe actually abandoned, all in accordance with the Contract Documents.
- B. Payment for abandoning, capping and grouting of existing pipe will be made at the unit price per linear foot of pipe named in the Bid Schedule which price shall constitute full compensation for the abandoning, grouting and including investigation, potholing, excavation, cutting existing pipe, capping existing pipe, backfilling trench, compaction, removal of existing valves, and all restoration work. Limits of payment for abandonment shall be based on as-built locations of caps installed for grouting.
- C. Contractor shall verify that all existing house connections have been disconnected prior to grouting of existing pipelines. Any damages incurred to private property due to house connections not disconnected prior to grouting the pipe, the CONTRACTOR shall repair and/or replace damage at no expense to CITY.
- D. Existing pressure mains to be abandoned and grouted shall be cut and capped/plugged within one (1') foot of the main pressure line to remain in service. The CONTRACTOR shall determine the actual location of the existing connection to the main line by excavation, potholing, etc.

1.11 FURNISH & INSTALL WATER SERVICE WITH METER BOX AND REMOVAL/DISPOSAL OF EXISTING METER BOX AND METER

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- A. Measurement for payment for furnishing and installing water service and new meter box for installation of new meter by the City as necessary will be based upon the actual number, each, of water services and new meter boxes installed, all in accordance with the Contract Documents.
 - B. Payment for furnishing and installing water service and new meter box as necessary will be made at the unit price, each, named in the Bid Schedule which price shall constitute full compensation for its complete installation of the water service from the water main to the new meter box, casing pipe, connections to existing service, fittings, backflow preventer, and check valve for a complete and functional installation. This bid item includes the removal and delivery to the City of the existing water meter and meter box. The City will install the new meter in the new meter box. Contractor will be required to pay meter installation fees to the City.
 - C. This bid item shall include copper or High Density Polyethylene (HDPE) pipe, as detailed in the plans, removal of existing services as needed, all yokes, compression couplings and adapters as needed. This item shall also include reading and recording of water readings prior to and upon completion of installation of new meters. Meter box and bedding shall be included.
 - D. Payment for furnishing and installing water service on private property from meter to connection point will be included, which price shall constitute full compensation for its complete installation of the water service from the water meter to where the existing water service can be connected to the new water service, including all fittings, backflow preventer, check valve, piping on private property to match existing size, clearing as required and complete restoration of private property and all else necessary for a complete and functional installation. Contractor is required to coordinate with the City to provide the property owner with notification prior to performing the work on private property. Payment for this item shall be made upon completion of all items stated above.
- 1.12 FURNISH & INSTALL WATER SERVICE TO EXISTING METER BOX AND METER
- A. Measurement for payment for furnishing and installing water service to existing meter box and meter as necessary will be based upon the actual number, each, of water services installed, all in accordance with the Contract Documents.
 - B. Payment for furnishing and installing water service as necessary will be made at the unit price, each, named in the Bid Schedule which price shall constitute full compensation for its complete installation of the water service from the water main to the existing meter box, casing pipe, connections to existing service, fittings, backflow preventer, and check valve for a complete and functional installation.
 - C. This bid item shall include copper or High Density Polyethylene (HDPE) pipe, as detailed in the plans, removal of existing services as needed, all yokes, compression couplings and adapters as needed. This item shall also include reading and recording of water readings prior to and upon completion of installation of new service line. Payment for this item shall be made upon completion of all items stated above.
- 1.13 FURNISH & INSTALL AUTOMATIC AIR RELEASE VALVE
- A. Measurement for payment to furnish and install an air vacuum/air release valve will be based upon the actual number, each, of such air/vacuum air release valve installed all in accordance with the Contract Documents.
 - B. Payment for furnishing and installing an air vacuum/air release valve will be made at the unit price named in the Bid Schedule which price shall constitute full compensation for the supply of stainless steel valve, construction of air vacuum/air release valve maintenance access structure, ring and cover, excavation, backfill, stone, valves and all else necessary for a complete and functional installation.

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1.14 FURNISH & PLACE ASPHALT CONCRETE PAVEMENT

- A. Measurement for payment of asphalt concrete pavement will be based upon the number of square yards of such asphalt concrete pavement actually constructed, as detailed in the Drawings, all in accordance with the requirements of the Contract Documents.
- B. Payment for placement of asphalt concrete pavement and the thickness indicated will be made at the unit price per square yard for such placement as named and at the thickness indicated in the Bid Schedule, which price will constitute full compensation for applying a tack coat and furnishing, placing and compacting the asphalt surface, complete in place to the cross section and thicknesses shown on the Drawings; including restoration of traffic loop detectors, adjustment of finished grades of valve boxes for mains which are proposed to remain in service, milling and saw cutting of all pavement and all cleanup of the area disturbed by this construction.
- C. Payment for maintenance and protection of traffic, including but not limited to temporary striping between lifts of asphalt, as required, shall be made under the maintenance and protection of traffic item named in the Bid Schedule.

1.15 FURNISH & PLACE LIMEROCK BASE MATERIAL

- A. Measurement for payment for furnishing and placing limerock base material will be based upon the number of square yards of such materials actually compacted in place at the depth indicated, all in accordance with the requirements of the Contract Documents.
- B. Payment for furnishing and placing of limerock base material will be made at the unit price per square yard at the depth indicated and named in the Bid Schedule, which price shall constitute full compensation for applying prime coat and furnishing all such material, in place, including all transportation, handling, cleaning, positioning and compacting of said bedding and disposal of waste or unsuitable material.

1.16 COMPACTION/STABILIZATION OF SUBGRADE

- A. Measurement for payment for compaction/stabilization of subgrade will be based upon the number of square yards of such materials actually compacted, all in accordance with the requirements of the Contract Documents.
- B. Payment for compacting/stabilizing of subgrade will be made at the unit price per square yard named in the Bid Schedule, which price shall constitute full compensation for handling, cleaning, positioning and compacting of said bedding to a Load-Bearing Ratio (LBR) of 40, importing fill material and disposal of excess waste or unsuitable material.

1.17 RESTORATION OF ASPHALT / CONCRETE DRIVEWAYS / RESTORATION OF DRIVEWAYS INCLUDING TEXTURED CONCRETE OR PAVERS

- A. Measurement for payment for restoration of driveways will be based upon the actual number of square yards of such Asphalt / Concrete / Textured Concrete or Paver driveways restored as shown in the DRAWINGS, all in accordance with the requirements of the Contract Documents.
- B. Payment for restoration of driveways will be made at the unit price per square yard named in the Bid Schedule which price shall constitute full compensation for completing said WORK, including all removal and disposal of existing material, earthwork, grading, base compaction, construction of the driveway to the same depth and material as the existing one, base material, sand, furnishing and setting for expansion joint material, edge restraint disposal of excess material, densities passed, and the appurtenant items for which

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separate payment is not specifically included in the Bid Schedule.

- C. No payment will be made for restoration of driveways outside the limits shown on the DRAWINGS or not approved by the ENGINEER. Driveway restoration on private property shall be done as approved by the ENGINEER, to accommodate grade changes.
- D. Minimum Asphalt Restoration shall be 1" thick Superpave SP-9.5 and 6" Limerock Base (LBR-100), Minimum Concrete Driveway Restoration shall be 6" thick of 3,000 psi concrete and Minimum Paver Driveway Restoration shall be paver to match existing to remain on 6" Limerock Base (LBR-100).

1.18 MILL & RESURFACE PAVEMENT

- A. Measurement for payment for milling and resurfacing of asphalt pavement within the Rights of Way will be based upon the number of square yards of such asphalt pavement actually milled and resurfaced, as detailed in the Drawings, all in accordance with the requirements of the Contract Documents.
- B. Payment for milling and resurfacing of asphalt pavement at the minimum thickness of 1" indicated will be made at the unit price per square yard for such milling and resurfacing as named in the Bid Schedule which price will constitute full compensation for milling and disposal of existing asphalt to a minimum depth of 1", applying a tack coat and furnishing, placing and compacting a minimum 1" thick Superpave SP-9.5, complete in place to the cross section of existing roadway, including temporary pavement markings and messages, milling and saw cutting of all pavement and all cleanup of the area disturbed by this construction.
- C. Milling and resurfacing shall comply with the specifications as shown in the plans. Asphalt shall be placed to assure an approximate 2% cross slope is maintained throughout the resurfacing area of the roadway.

1.19 RESTORE CONCRETE SIDEWALKS INCLUDING CAST IN PLACE TRUNCATED DOMES

- A. Measurement for payment for furnishing and installing sidewalks including cast in place truncated dome detectable warnings, if required, will be based upon the actual number of square yards of such sidewalks constructed as shown in the DRAWINGS, all in accordance with the requirements of the Contract Documents.
- B. Payment for furnishing and installing sidewalks including cast in place truncated domes detectable warnings, if required, will be made at the unit price per square yard named in the Bid Schedule which price shall constitute full compensation for completing said WORK, including all removal and disposal of existing material, earthwork, clearing, grading, compaction of subgrade, backfilling of sidewalk, construction of the sidewalk including ADA ramps as required, detectable warning cutting and installation, furnishing and setting for expansion joint material, disposal of excess material, and the appurtenant items for which separate payment is not specifically included in the Bid Schedule.
- C. Furnishing and installing cast in place Truncated Dome Detectable Warning are included in the price of sidewalk installation. Size of cast in place detectable warnings shall be per the applicable code.

1.20 FURNISH & INSTALL IRRIGATION SYSTEM RESTORATION

- A. Measurement for payment for furnish and install irrigation system restoration will be based upon the actual number, each lot, of such irrigation systems restored in swales and to replace systems on private property, all in accordance with requirements of the Contract Documents.
- B. Payment for irrigation system restoration will be made at the unit price, each lot, named in the Bid

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Schedule which price shall constitute full compensation for the complete restoration of the irrigation system including capping existing system during construction and installing new irrigation. New irrigation system shall be connected to existing private property irrigation systems. Corner lots will be paid as one lot. Irrigation systems shall provide full coverage of the swale and/or match coverage/heads prior to construction.

- C. Irrigation systems shall be restored with pipe matching the size of the existing pipe and necessary adapters and coupling at each end splicing the restored pipe in place. All WORK shall meet the approval of the ENGINEER.

1.21 FURNISH & PLACE PAVEMENT THERMOPLASTIC MARKING

- A. Measurement for payment for furnishing and placing pavement markings will be based upon the number of linear feet of such markings actually constructed as determined by measurement along the centerline of the pavement markings in place, including temporary striping, temporary layout, final thermoplastic striping, etc. all in accordance with the requirements of the Contract Documents. Contractor shall restore all existing pavement markings damaged during the construction.
- B. Payment for furnishing and placing pavement markings will be made at the unit price per linear foot or each of pavement markings named in the Bid Schedule.

1.22 FURNISH & INSTALL REFLECTIVE PAVEMENT MARKERS

- A. Measurement for payment for furnishing and installing reflective pavement markers (RPM) will be based upon the actual number, each, of such RPM's installed, all in accordance with requirements of the Contract Documents.
- B. Payment for furnishing and installing RPMs will be made at the unit price, each, named in the Bid Schedule which price shall constitute full compensation for the complete installation.

1.23 RELOCATE OR ADJUST EXISTING SIGN

- A. Measurement for payment to relocate or adjust existing sign posts will be based on the actual quantity, per each, of sign posts relocated or adjusted all in accordance with the requirements of the Contract Documents.
- B. Payment for relocating or adjusting existing sign posts will be made at the unit price per each, named in the Bid Schedule, which price shall constitute full compensation for the work of relocating or adjusting existing sign posts, adjusting signs and all else necessary for a complete and functional installation.

1.24 FURNISH & PLACE SOD AND GRADE SWALE

- A. Measurement for payment for furnishing and installing sod and grading swale will be based upon the number of square yards of sod actually installed, and area cleared and graded including private property, as approved by the ENGINEER, all in accordance with the requirements of the Contract Documents.
- B. Payment for sod and grading will be made at the unit price per square yard of performance turf, sod and swale graded as named in the Bid Schedule which price shall constitute full compensation for furnishing and installing the sod and clearing and grading swale.

1.25 EROSION AND DUST CONTROL

- A. Cost for all work and operation necessary including all Work, Labor and Materials necessary to comply with

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Storm Water Pollution Prevention measures, and Dust Control as required by the contract documents and the regulating agencies.

- B. Payment for Erosion and Dust Control will be made in equal monthly amounts during the duration of the contract time.

1.26 FIELD TESTING AND LABORATORY WORK WITH CERTIFIED REPORTS

- A. Cost for all work and operation necessary including all Work, Labor and Materials necessary to comply with testing requirements by the contract documents. Contractor to submit a Quality Control Plan and testing schedule for approval by the City.
- B. Payment for Field Testing and Laboratory Testing with Certified Reports will be made in equal monthly amounts during the duration of the contract time.

1.27 PERMIT FEES

- A. Any applicable permit fees shall be covered under the Permit Fee Allowance in the payment application.

END OF SECTION