

SECTION 01012

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section includes administrative and procedural requirements for determining payment for Work completed and ready for payment under the Unit Price Contract where the Unit Price Bid Form is utilized in the Applications for Payment.
- B. The Contractor's attention is called to the fact that the quotations for the various items of work are intended to obtain a complete and working installation under this Contract, and any items of labor, equipment, or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein. Should the Contractor feel that the cost of any item of work has not been established by the Bid Price Sheet or this section, they shall include the cost for that work in the Bid Item most closely associated with that work so that their proposal for the project does reflect their total price for completing the work in its entirety.

1.02 RELATED SECTIONS

- A. Bid Price Sheet
- B. Section 01152 – Applications for Payment
- C. Section 01370 – Schedule of Values

1.03 REFERENCES

- A. Manual on Uniform Traffic Control Devices (MUTCD)
- B. FDOT Standard Specification for Road and Bridge Construction (Standard Specifications)
- C. FDOT Design Standards for Design, Construction, Maintenance and Utility Operations in the State Highway System (Standard Indexes)
- D. Broward County Public Works and Transportation Department, Highway Construction and Engineering Division Minimum Standards

1.04 GENERAL REQUIREMENTS

- A. Prices shall include all costs required for the completed, in-place construction of the specified unit of Work. This may include but not be limited to, materials and delivery; cost of installation; incidentals; labor including social security, insurance, and other required fringe benefits; workman's compensation insurance; bond premiums; rental of equipment and machinery; taxes; testing; surveys; incidental expenses; and supervision.

- B. Installation, acceptance, and payment shall be in accordance with the References.
- C. The Owner reserves the right to reject the Contractor's measurement of completed Work that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.
- D. Contract Sum adjustments will be by Change Order on basis of net accumulative change for each unit price category.
 - 1. Except as otherwise specified, unit prices shall apply to both deductive and additive variations of quantities.
 - 2. Lump sum and unit prices in the Agreement shall remain in effect until date of final completion of the entire Work.
- E. Partial payment for material and equipment properly stored and protected will be made in accordance with requirements of the Contract.
- F. Abbreviations:
 - 1. Acre - AC
 - 2. Allowance - AL
 - 3. Cubic Yard - CY
 - 4. Each - EA
 - 5. Furnish and Install - F&I
 - 6. Gallons - GA
 - 7. Gross Mile - GM
 - 8. Linear Feet - LF
 - 9. Lump Sum - LS
 - 10. Million Gallons - MG
 - 11. Net Mile - NM
 - 12. Square Foot - SF
 - 13. Square Yard - SY
 - 14. Ton - TN

1.05 MEASUREMENT FOR PAYMENT

- A. Payment shall constitute full compensation and will be made as indicated in the Contract.
- B. The quantity approved for payment shall be either:
 - 1. Percentage of the Lump Sum Price - A percentage of the Lump Sum Price equivalent to the percentage of the specific Pay Item or of the total project completion as determined by the Engineer as of the date of the pay request submitted. The percent completion of the project shall be based on the percent of the total project actually constructed and not on the percent of

the Contract price completed.

2. Measured Quantities - The actual quantities in-place and accepted as measured by the Engineer on the date of the pay request submitted in the units specified in the Bid Price Sheet or in the approved Schedule of Values.
- C. Items measured by linear foot such as pipes, culverts, curb, guardrails, and underdrains that are shown on the Drawings and on the Bid Price Sheet are measured parallel with the base or foundations upon which they are placed. Contractor shall be paid based on plan view measurements installed for these types of items regardless of vertical deflections or other changes in depth that may require additional materials.
- D. Utility pipelines under pressure which are measured by linear foot, such as sanitary sewer force main, potable water main, reuse water main and alike, are measured from point of intersection to point of intersection (through valves and fittings). Gravity pipelines that typically connect to structures, such as stormwater or sanitary sewer, are measured from the inside wall of the structures and shall be paid for by this quantity as shown on the plans.

1.06 PROTECTION

- A. Where pavement, pipes, valves, appurtenances, trees, shrubbery, fences, other property or structures are in proximity to the Work, adequate protection shall be provided. Such protection is considered incidental to construction and shall not be assigned as a separate pay item.

1.07 RESTORATION

- A. Where pavement, pipes, valves, structures, appurtenances, trees, shrubbery, fences, other property or structures not designated as pay items, have been damaged, removed or disturbed by the Contractor, whether deliberately or through failure to carry out the requirements of the Contract Documents, state laws, municipal ordinances or the specific direction of the Engineer, or through failure to employ usual and reasonable safeguards, such property and surface structures shall be replaced or repaired at the expense of the Contractor to a condition equal to that before Work began within a time frame approved by the Engineer. Such restoration is considered incidental to construction and shall not be assigned as a separate pay item.

1.08 EXPLORATORY EXCAVATIONS

- A. The Contractor shall verify the exact locations and depths of all utilities shown and shall conduct exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of the Contract and, in any event, enough time in advance of construction to avoid possible delays to the Contractor's work. When such exploratory excavations show the utility location as shown to be in error, the Contractor shall so notify the Engineer. The cost for conducting these excavations shall be considered incidental to construction and shall not be assigned as a separate pay item.

1.09 TESTING, SURVEY, AND RECORD DRAWINGS

- A. All survey layout and record drawings shall be considered incidental to the cost of construction and shall include all calculations and field work required, in order to establish all horizontal and vertical controls, set all stakes needed, such as grade stakes, offset stakes, reference point stakes, slopes stakes, and other reference marks or points necessary to provide lines and grades for construction and as-buitling of all roadways, utility construction, and miscellaneous items.
- B. All testing shall be considered incidental to the cost of construction, shall not be assigned as a separate pay item, and shall include all field testing and laboratory work including reports as required by the Drawings and specifications and by agencies having jurisdiction over the project.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS - BID ITEM NO. 1.01

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include the cost of bonds, insurance, licenses, and all other costs not specifically identified in other bid items.
- C. The Lump Sum Price shall exclude the cost of construction material and installation.
- D. The Lump Sum Price shall not exceed ten percent (10%) of the total contract price. Should it exceed this limit, the overage shall be paid during the final payment request.

3.02 MOBILIZATION AND DEMOBILIZATION - BID ITEM NO. 1.02

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include compensation for all labor, materials, equipment, and all other incidentals required for all temporary facilities, transportation, communications, office, maintenance, project signs, and any other pre- or post-construction expenses necessary for the start or cessation of the Work, not specifically identified in the costs of the Work.
- C. No further payment shall be made for remobilization unless all the Work is suspended by the Owner for a period more than three months and through no fault to the Contractor.
- D. The Lump Sum Price shall not exceed five percent (5%) of the total contract price. Should it exceed this limit, the overage shall be paid during the final payment request.

3.03 MAINTENANCE OF TRAFFIC - BID ITEM NO. 1.03

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include compensation for required labor, materials, all necessary temporary pavement markings and signing for vehicles and pedestrians, temporary pavement, temporary business signage, professional fees, and equipment necessary to provide traffic control for two-way traffic at all times in accordance with the plans and specifications.
- C. MOT permits and approvals from the applicable regulatory agencies, including but not limited to Broward County Highway Construction and Engineering Division and the City of Hallandale Beach, are the responsibility of the Contractor. MOT shall include both vehicular and pedestrian requirements.
- D. Temporary pavement markings and signage shall be provided wherever existing has been damaged, removed, or is no longer visible. The temporary shall be maintained until final markings are installed after asphalt resurfacing.

3.04 STORMWATER POLLUTION PREVENTION - BID ITEM NO. 1.04

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include full compensation for all equipment, materials, supplies, and labor necessary to prepare, obtain permit approval from the governing agency, and implement the prevention, control, and abatement of erosion and water pollution. Work shall include but not be limited to mulching, sand bagging, slope drains, sediment basins, berms, baled hay or straw, silt fences and staked turbidity barriers, rock bags, artificial coverings and other items relating to the construction/removal and routine maintenance, including mowing.

3.05 STORMWATER STRUCTURES – BID ITEM NOS. 2.01 – 2.03

- A. Price and payment for storm structures shall be made at the Contractor's Unit Price for each installed and accepted. The price shall include compensation for all labor, material, equipment, frames, grates, rings, covers, hardware, caulking, cutting, and connecting to storm pipes, grout, brick, excavating, dewatering, backfilling, compacting, testing, subgrade, base, asphalt, complete surface restoration, or any other items required to install the structures in accordance with the plans and specifications.
- B. Price shall also include installation of concrete aprons or concrete slabs. The concrete shall not be paid for under other bid items.
- C. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

3.06 4'W X 4'D EXFILTRATION TRENCH WITH PERFORATED ADS-HP STORMWATER PIPE – BID

ITEM NO. 2.04

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavation, dewatering, perforated pipe, rock, gravel, filter fabric, joint collars, backfill, subgrade, base, asphalt, compaction, testing, and complete surface restoration.
- B. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

3.07 SOLID ADS-HP STORMWATER PIPE – BID ITEM NO. 2.05

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavation, dewatering, fittings, sleeves, hardware, caulking, gaskets, grout, brick, concrete, filter fabric, joint collars, or any other items required to install the drainage pipes in accordance with the plans and specifications. Price shall also include properly modifying, bricking, mortaring, sealing core holes, backfilling, subgrade, base, asphalt, compacting, testing, and complete surface restoration.
- B. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

3.08 CORE AND CONNECT TO EXISTING STORMWATER STRUCTURE – BID ITEM NO. 2.06

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavation, dewatering, coring, saw-cutting, sleeves, fittings, hardware, gaskets, grout, mortar, concrete, brick, connecting to existing structures, or any other items required to install the drainage pipes in accordance with the plans and specifications. Price shall also include properly modifying structures as needed, sealing core holes, backfilling, subgrade, base, asphalt, compacting, testing, and complete surface restoration.
- B. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

3.09 RELOCATE WATER METERS AND RECONSTRUCT SERVICES – BID ITEM NO. 2.07

- A. Price and payment shall be made at the Contractor's Unit Price for relocating each water meter, box, and other water service appurtenances per the drawings. Full compensation shall include the complete installation and reconnection of the water meter to the service line. Price shall also include replacing up to 10 linear feet of service pipe to connect to the new water meter location. Price shall also include any additional fittings or appurtenances needed to make the required connections to existing piping or appurtenances.
- B. Price shall include complete trench restoration.
- C. Contractor has the option of replacing the meter box instead of preserving and relocating the existing one at their own expense.

3.10 HDPE WATER SERVICES – BID ITEM NO. 2.08

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavation, dewatering, piping, fittings, services saddles, corporation stops, tracer wire, PVC sleeves, connecting to existing piping or water meters, subgrade, limerock, disposing of surplus material, backfilling, subgrade, base, asphalt, compacting, and complete restoration of the surface disturbed by construction.
- B. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

3.11 DIP WATER MAIN – BID ITEM NO. 2.09

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavation, dewatering, piping, joint restraints, painting, priming, coating, lining, subgrade, base, asphalt, disposing of surplus material, backfilling, compacting, testing (densities and pressure), and complete restoration of the surface disturbed by construction.
- B. Price shall also include cutting into and connecting to existing.
- C. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

3.12 DIP FITTINGS – BID ITEM NO. 2.10

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavation, dewatering, fittings, joint restraints, painting, priming, coating, lining, subgrade, base, asphalt, disposing of surplus material, backfilling, compacting, and complete restoration of the surface disturbed by construction.
- B. Price shall also include cutting into and connecting to existing.
- C. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

3.13 WATER MAIN REMOVAL – BID ITEM NO. 2.11

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavation, dewatering, pipe removal, fitting removal, valve removal, valve box removal, joint restraint removal, service saddle / appurtenances removal, subgrade, base, asphalt, disposing of surplus material, backfilling, compacting, and complete restoration of the surface disturbed by construction.
- B. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

3.14 PVC SEWER LATERAL RECONSTRUCTION – BID ITEM NO. 2.12

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavation, dewatering, pipe, wyes, fittings, couplings, adapters for connecting to existing pipe, gaskets, joint restraints, making the connection to existing pipe, backfilling, compacting, and complete surface restoration.
- B. Price shall also include the complete trench restoration.
- C. Attention is drawn to the proximity of known contamination sites within one half mile of the project as recorded by FDEP. If required by the governing agencies, the Contractor shall obtain a dewatering permit from SFWMD and Broward County and shall adhere to any required groundwater well monitoring, sampling, cofferdams, or other applicable permit conditions. This shall include retaining a professional engineer for dewatering calculations and / or environmental consultant, if required.

- 3.15 ADJUST EXISTING VALVE BOXES AND OTHER COVERS TO GRADE – BID ITEM NO. 2.13
- A. Price and payment shall be made at the Contractor’s Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavating, cutting, adjusting valve collars, valve extensions, resetting frames, removing and replacing brick and mortar, resetting rings, and complete surface restoration.
 - B. This bid item is intended for existing infrastructure only. The cost for adjusting all new valve boxes, frames, and rings shall be accounted for in the Contractor’s price for each applicable bid item.
- 3.16 BACTERIOLOGICAL SAMPLING POINTS – BID ITEM NO. 2.14
- A. Payment shall be made at the Contractor’s Unit Price for each bacteriological sample point including all material, labor, and equipment required to install, sample, test, and remove after successful results in accordance with the Contract Documents.
 - B. Re-testing due to failing lab reports shall not be compensated. Lab testing shall be performed by an approved third party in accordance with the Contract Documents.
- 3.17 RECONSTRUCTED 8” LIMEROCK BASE AND 2” ASPHALT (NON-TRENCH AREAS) – BID ITEM NO. 3.01
- A. Price and payment shall be made at the Contractor’s Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to excavating, removing / disposing of existing limerock and asphalt, furnishing / installing new limerock and asphalt, re-grading, compacting in lifts, testing, sanding, and priming.
 - B. Contractor’s price shall also include temporary asphalt or tapering of limerock to eliminate any lips or drop-offs for pedestrian or vehicular traffic until permanent asphalt is installed.
- 3.18 THERMOPLASTIC PAVEMENT MARKINGS – BID ITEM NOS. 3.02 – 3.07
- A. Price and payment shall be made at the Contractor’s Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to Retro-Reflective Pavement Markers (BiDir, Yellow/Yellow), Retro-Reflective Pavement Markers, (BiDir., White/Red), Retro-Reflective Pavement Markers, (BiDir., Blue/Blue); Thermoplastic, Standard, White, Solid, 6”; Thermoplastic, Standard, White, Solid, 12”; Thermoplastic, Standard, White, Solid, 24”; Thermoplastic, Standard, White, Skip, 6”; Thermoplastic, Standard, White, Skip; Thermoplastic, Standard, White, Skip; Thermoplastic, Standard, White, Messages; Preformed Tape, Standard, White, Message; Preformed Tape, Standard, White, Arrow; Thermoplastic, Standard, Yellow, Solid, 6”; Thermoplastic, Standard, Double Yellow, Solid, 6”; Thermoplastic, Standard, Yellow, Skip, 6”; painted school messages.
 - B. Thermoplastic pavement markings for speed humps shall not be compensated for under this bid item.

- C. Price shall also include removing existing pavement markings prior to installing new thermoplastic by either sand blasting or water blasting.
 - D. Pavement markings and retro-reflective pavement markers shall be installed in accordance with FDOT and Broward County standards by a Contractor holding a current Broward County Certificate of Competency, issued by the Broward County Permitting, License and Consumer Protection Division.
 - E. Any damage to existing thermoplastic outside of the limits shown in the drawings shall be replaced at the Contractor's expense at no additional cost to the City.
- 3.19 SIGNPOST ASSEMBLIES – BID ITEM NOS. 3.08 – 3.09
- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to new plaques, signposts, concrete foundations, excavation, and restoration.
 - B. Price shall also include removing existing signpost assemblies and salvaging signs.
- 3.20 DETECTABLE WARNINGS – BID ITEM NO. 3.10
- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required to furnish and install detectable warnings in accordance with the contract documents.
- 3.21 6" CONCRETE SIDEWALK – BID ITEM NO. 3.11
- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to concrete, subgrade, expansion joints, control joints, saw-cutting, forming, grading, compacting, and complete surface restoration.
- 3.22 CONCRETE SIDEWALK REMOVAL – BID ITEM NO. 3.12
- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to saw-cutting, removing / disposing of existing concrete and subgrade, and the complete restoration of the surface disturbed by the construction such as pavement restoration, adjacent sidewalk restoration, curb restoration, swale restoration, driveway restoration, and landscape restoration.
- 3.23 SOD AND SWALE REGRADING – BID ITEM NO. 3.13
- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to stripping, excavating, cutting, filling, re-grading, sod, temporary watering until sod has established, and complete surface restoration.
- 3.24 DRIVEWAY RECONSTRUCTION – BID ITEM NOS. 3.14 – 3.15
- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not

limited to excavating, asphalt, concrete, base, subgrade, saw-cutting, expansion joints, control joints, compacting, and complete surface restoration.

- B. Price shall also include limerock and asphalt specific to the driveway reconstruction areas and will not be compensated for separately under other bid items.

3.25 ASPHALT SPEED HUMP RECONSTRUCTION (INCLUDING WHITE THERMOPLASTIC) – BID ITEM NO. 3.16

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to removing existing speed humps, properly disposing of material, and installing new asphalt in lifts in accordance with the Contract Drawings.
- B. Price shall include thermoplastic pavement markings specific to the speed humps.
- C. Price shall include restoring adjacent areas that are incidentally disturbed from removing existing or installing new asphalt speed humps.

3.26 LANDSCAPE REMOVAL – BID ITEM NO. 4.01

- A. Price and payment shall be made at the Contractor's Lump Sum Price and shall include compensation for all labor, material, and equipment required, including but not limited to stump grinding, **complete landscape removal, complete removal of existing stumps, complete removal of existing roots, excavation, backfill, compaction**, protection of existing landscape, protection of adjacent hardscape, sod restoration, asphalt restoration, concrete restoration, and repairing any damaged irrigation or other infrastructure.

3.27 1" SP-9.5 ASPHALT MILLING AND RESURFACING – BID ALTERNATE NO. ALT-01

- A. Price and payment shall be made at the Contractor's Unit Price and shall include compensation for all labor, material, and equipment required, including but not limited to saw-cutting, milling, excavating, removing / disposing of existing asphalt, furnishing / installing new asphalt, prime coats, and tack coats.
- B. The price provided for this bid alternate shall not be considered in the review of the lowest most responsive and responsible Bidder. The contract award will be based on the base bid price.

3.28 CONTINGENCIES (BASE BID AND BID ALTERNATES)

- A. The price for these items shall be full compensation for additional items of Work requested by the City or warranted unforeseen conditions found during construction and approved by the City. The Contractor is required to provide a quote with unit price breakdowns of the Work to the City for review and approval prior to commencing any Work. These allowances are for the sole use and discretion by the City to cover unforeseen or unanticipated costs. The cost of these allowances is not guaranteed to be used and compensated to the Contractor in part or in whole if the City does not require their use.

END OF SECTION