UNDERPASS WAY STORM DRAIN

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Item No. 101 - CLEARING AND GRUBBING

.01 DESCRIPTION. This work shall consist of the removal and disposal of topsoil, trees, fallen timber and rotten wood, brush, shrubs, vegetation, rubbish, fences, stumps, roots and stubs, brush, and debris; removal and disposal of miscellaneous structures that will not be salvaged including concrete, posts, signs, and other obstructions interfering with the work as specified on the plans; replacement of suitable material wasted during the clearing and grubbing process, and obtaining approved waste areas for disposed materials. This work shall also include removal and resetting of traffic signs throughout the duration of the project.

.02 MATERIALS. Not applicable.

.03 CONSTRUCTION. Refer to MDOT SHA Standard Specifications Section 101.03 and the following:

- A. Complete clearing and grubbing before starting grading operations in an area.
- B. All excavated material shall be disposed of off site.
- C. No burning permitted on site.

.04 MEASUREMENT AND PAYMENT. Clearing and Grubbing will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for the, selective tree scar repair, repair or replacement of damaged trees, restoration measures for damaged or destroyed protected resources, repair to other damaged properties, removal and disposal of existing buildings when not covered as a specific pay item in the Contract Documents, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Item No. 102 - MOBILIZATION

- **.01 DESCRIPTION.** This work shall consist of the construction preparatory operations, including the movement of personnel and equipment to the project site.
- **.02 MATERIALS.** Not applicable.
- **.03 CONSTRUCTION.** Not Applicable.
- **.04 MEASUREMENT AND PAYMENT.** Mobilization will not be measured but will be paid for at the Contract lump sum price. The cost of all required insurance and bonds will be

incidental to the Mobilization item. Payment of 50 percent of the Mobilization item will be made in the first monthly estimate after the Contractor has established the necessary facilities. The remaining 50 percent will be prorated and paid in equal amounts on each subsequent monthly estimate. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work. Payment of the Mobilization item will not be made more than once, regardless of the fact that the Contractor may have, for any reason, shut the work down on the project, moved their equipment away from the project and then back again.

Item No. 103 - MAINTENANCE OF TRAFFIC

- .01 DESCRIPTION. This work shall consist of maintaining traffic, both vehicular and pedestrian, on, along, or through the construction area per approved SHA Standard Details. This section sets forth the traffic control requirements necessary for the safe and continuous maintenance of traffic throughout the area affected by the work. Temporary Traffic Control signs and temporary pavement markings shall be included as part of the MOT item.
- .02 MATERIALS. Not applicable.
- **.03 CONSTRUCTION.** Refer to the General Conditions, Sections 7.08 & 7.09 (page GC-58) and the following:
 - A. Temporary Traffic Control Typical Application details are included in the RFQ. Should the said details not be appropriate for the Contractors means and methods of construction, a predetermined Traffic Control Plan (TCP) shall be submitted, seven (7) calendar days prior to the commencement of the operation. The TCP shall address the type, size, and placement of signs, job location and personnel to be used. The TCP developed by the Contractor may not be employed until the plan is approved by the County.
 - B. All personnel on the project site shall comply with MOSH and Federal OSHA regulations. At a minimum, all personnel shall wear reflective safety vests within the work zone and/or the road right-of-way.
- .04 MEASUREMENT AND PAYMENT. Maintenance of Traffic will not be measured for payment, but will be paid for at the Contract lump sum price. The payment will be full compensation for all work necessary to maintain traffic including all work, sequence of operations, Temporary Traffic Signs, temporary pavement markings, and flagmen for the fulfillment of the Contract requirements and implementation of the approved Traffic Control Plan.

Item No. 104 – TEMPORARY ORANGE CONSTRUCTION FENCE

- **.01 DESCRIPTION:** Refer to Section 104.20.01 of the MDOT SHA Standard Specifications.
- **.02 MATERIALS:** Refer to Section 104.20.02 of the MDOT SHA Standard Specifications.
- **.03 CONSTRUCTION:** Refer to Section 104.20.03 of the MDOT SHA Standard Specifications.
- **MEASUREMENT AND PAYMENT:** Refer to Section 104.20.04 of the MDOT SHA Standard Specifications.

Item No. 105 - CONSTRUCTION STAKEOUT

- **.01 DESCRIPTION.** This work shall consist of providing all survey, and furnishing, placing and maintaining construction layout points (stakes, hubs, nails, crosses, etc.) as necessary to construct the work as shown on the plans and/or as directed by the Engineer.
- **.02 MATERIALS.** Not applicable.
- **.03 CONSTRUCTION.** Refer to MDOT SHA Standard Specifications Section 107.03 and the following:
 - A. Prior to beginning work, the County will establish the baseline of construction for use by the Contractor. The stakeout and related information will be provided one time only.
 - B. The County will establish appropriately spaced vertical control points (benchmarks).
 - C. It shall be the Contractor's responsibility to provide all survey (including establishing layout lines, elevations, grades, forms, templates, etc.) required to build the work as shown on plans and/or as directed by the Engineer.
 - D. All work relating to this Section shall comply with the Minimum Standards of Practice for Land Surveying, published by the State of Maryland when applicable or as directed by the Engineer.
 - E. The Contractor shall utilize competent personnel, acceptable to the County, for

construction stakeout.

- F. The Contractor shall coordinate construction stakeout with the County during construction. The Contractor shall provide copies of stakeout sheets, survey notes (written and/or electronic), cut sheets, etc.
- **.04 MEASUREMENT AND PAYMENT.** Construction Stakeout will not be measured for payment but will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Item No. 106 – GRADED AGGREGATE BASE FOR MOT

- **.01 DESCRIPTION:** Place aggregate material for the maintenance of traffic.
- **.02 MATERIALS:** Refer to Section 105.02 of the MDOT SHA Standard Specifications.
- **.03 CONSTRUCTION:** Refer to Section 105.03 of the MDOT SHA Standard Specifications.
- **.04 MEASUREMENT AND PAYMENT:** Refer to Section 105.04 of the MDOT SHA Standard Specifications.

Item No. 107 – DRUMS FOR MAINTENANCE OF TRAFFIC

- .01 **DESCRIPTION.** Furnish, set, reset, maintain, and remove drums for maintenance of traffic.
- **.02 MATERIALS.** Refer to MDOT SHA Standard Specifications Section 104.12.02 and the following:

Low Density Polyethylene Drums MDOT SHA Section 950.03.06 Reflectorization MDOT SHA Section 950.03

- **.03 CONSTRUCTION.** Refer to MDOT SHA Standard Specifications Section 104.12.03 and the following:
 - A. **<u>DELETE</u>** General Conditions, Section 7.08 (i), page GC-60.
- **.04 MEASUREMENT AND PAYMENT.** Drums for Maintenance of Traffic will be measured and paid for once at the Contract unit price per each. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete

the work. Where drums have been set and damaged by traffic and the Engineer determines that they are not repairable, replacement will be measured and paid for at the Contract unit price.

Item No. 108 — <u>STEEL PLATE 10 FOOT X 20 FOOT X 1.5 INCH FOR</u> MAINTENANCE OF TRAFFIC

.01 DESCRIPTION: This work shall consist of setting, maintaining, re-setting, and removing steel plates once per location as necessary to complete work in and around the roadway.

.02 MATERIALS:

Steel Plates A36 Steel, Fy = 36 ksi

.03 CONSTRUCTION:

- A. Steel plates are to cover access pits with a minimum one-foot overlap onto existing pavement on all four sides of access pits.
- B. When only three sides overlap existing roadway, the fourth side shall be supported by a 12"x12" I beam or timber of adequate strength.
- C. In cases where plates are used to cover extremely large excavations, it will be necessary to install an immediate support system to prevent deflection. Steel plates must be pinned to prevent movement.
- D. When steel plates are used in the travel way warning signage (Warning Steel Plates Ahead) shall be placed at least 50 feet in advance.
- E. Steel plates shall be set so there is no vertical lip over 1/4 inch between the plate and adjacent pavement. This shall be accomplished in one of the following ways:
 - a. Recessing the plate so that the top of the plate matches adjacent pavement (with no lip over 1/4 inch).
 - b. Providing bituminous concrete lip painted reflective orange to provide a smooth transition slope up from existing pavement to top of plate.
- F. Non-slip surface steel plates are preferred for use, and must be used where plates are in an intersection or within a crosswalk.
- G. Steel plates must be ramped with cold patch or hot mix asphalt at end of each work shift.

- H. It will be necessary to recess any steel plates that are plated in the roadway during winter months.
- .04 MEASUREMENT AND PAYMENT: Steel Plates will be measured and paid once per location at the Contract unit price bid per each. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Item No. 201 - <u>UNCLASSIFIED EXCAVATION</u>

.01 DESCRIPTION: This work shall consist of all excavation and grading to the lines and grades specified in the Contract Documents. All excavation on this project shall be unclassified and shall include all material regardless of type.

All suitable material from excavation operations shall be used for construction of embankments and restoration of existing grades throughout the limits of the work. Such work shall be performed in accordance with Section 204 of the MDOT SHA Specification Booklet. The Contractor shall be responsible for providing all required testing prior to placing material.

- .02 MATERIALS: Not applicable.
- **CONSTRUCTION:** Within fifteen (15) calendar days of the Notice to Proceed the Contractor shall provide written verification of all excavation quantities. Failure to dispute the excavation quantities within fifteen (15) calendar days of the Notice to Proceed, shall imply the Contractor's acceptance of the quantities being accurate.
 - A. Section 201.03.01 through 201.03.08, inclusive shall apply to this project, with the exception of Section 201.03.04 (b) Blasting, which will not be permitted on this project.
 - B. The limit of Unclassified Excavation shall include all material from existing ground to subgrade. Unclassified Excavation will include the removal and disposal of all existing concrete curb, sidewalk, median, and asphalt paving as specified on the construction drawings.
 - C. Moisture and compaction requirements shall conform to Section 204.03.04.
- based on the average end area method using cross sections, and paid at the Contract unit price bid per cubic yard. In areas without cross section, the Contractor shall perform survey prior to and after excavation. No adjustments will be made for material swelling. The payment will be full compensation for all excavation and hauling, formation and compaction of embankments and backfills; disposing of excess and unsuitable materials; removal and disposal of existing payment, removal and disposal

of existing curbing, removal and disposal of existing sidewalk or median, etc.; topsoil stripping and stockpiling; preparation and completion of subgrade and shoulders except as otherwise specified; serrated slopes; rounded and transition slopes and for all material, labor, equipment, tools and incidentals necessary to complete the work. Payment will not be made for excavation of any material that is used for purposes other than those designed.

Item No. 202 – SAW CUTS

- **.01 DESCRIPTION:** The Contractor shall saw cut the existing roadway pavement full depth to provide a clean joint to place the new construction adjacent to the existing pavement. The Contractor shall saw cut either hot mix asphalt or Portland cement concrete pavement to provide a along a line designated by the Engineer.
- .02 MATERIALS: Not applicable
- .03 CONSTRUCTION: Saw cuts shall be made with a power saw, to the width directed by the Engineer. Saw cuts shall be clean, dry, and free from dust, grit, oil and moisture to the satisfactory of the Engineer. This item shall be used only where and as directed by the Engineer.
- **.04 MEASUREMENT AND PAYMENT:** This item will be measured and paid at the Contract unit price bid per linear foot. Payment will be for full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Item No. 301 – <u>SELECT BACKFILL USING AASHTO NO. 57 AGGREGATE</u>

.01 DESCRIPTION. This work shall consist of placing selected backfill material as specified in the contract documents or as directed by the Engineer.

.02 MATERIALS.

No. 57 Aggregate

MDOT SHA Section 901.01

.03 CONSTRUCTION.

- A. Compaction may be achieved using tamped fill methods conforming to Section 210, acceptable to the Engineer.
- B. The Contractor shall provide the Owner all laboratory tests for aggregates (fine & coarse) for quality control purposes prior to its placement. The

tests shall include, but not be limited to, sieve analysis, moisture-density relationship, and specific gravity tests (if required by the Engineer). All tests shall be performed from a finished product at the quarry in accordance with AASHTO/ASTM Standards.

.04 MEASUREMENT AND PAYMENT. Selected Backfill using No. 57 Aggregate will be measured and paid for at the Contract unit price bid per cubic yard. The payment will be full compensation for compaction and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Item No. 302 - 18 INCH HIGH-DENSITY POLYPROPYLENE STORM DRAIN

- **.01 DESCRIPTION:** Refer to Section 303.01 of the MDOT SHA Standard Specifications.
- **.02 MATERIALS:** Refer to Section 303.02 of the MDOT SHA Standard Specifications.
- **.03 CONSTRUCTION:** Refer to Section 303.03 of the MDOT SHA Standard Specifications.
- **.04 MEASUREMENT AND PAYMENT:** Refer to Section 303.04 of the MDOT SHA Standard Specifications.

Item No. 303 – STANDARD 5 FT COG INLET

- **.01 DESCRIPTION:** Refer to Section 305.01 of the MDOT SHA Standard Specifications.
- **.02 MATERIALS:** Refer to Section 305.02 of the MDOT SHA Standard Specifications.
- **.03 CONSTRUCTION:** Refer to Section 305.03 of the MDOT SHA Standard Specifications.
- **.04 MEASUREMENT AND PAYMENT:** Refer to Section 305.04.of the MDOT SHA Standard Specifications.

Item No. 304 - <u>INLET PROTECTION</u>

.01 DESCRIPTION: Refer to Section 308.01 of the MDOT SHA Standard Specifications.

- **.02 MATERIALS:** Refer to Section 308.02 of the MDOT SHA Standard Specifications.
- **.03 CONSTRUCTION:** Refer to Section 308.03.30 of the MDOT SHA Standard Specifications.
- **.04 MEASUREMENT AND PAYMENT:** Refer to Section 308.04.19 of the MDOT SHA Standard Specifications.

Item No. 305 - FILTER LOG

- **DESCRIPTION:** This work shall consist of installation, maintenance, and removal of tubular filter logs for sediment control as shown on the Contract Documents.
- .02 MATERIALS: 15-inch diameter tubular-shaped fabric Standard Duty 2 inch x 2 inch x 3 feet hard wood stakes
- .03 CONSTRUCTION: Clear all obstructions greater than 1 inch that may interfere with the proper function of the filter log. Fill log netting uniformly with compost or wood chips. Install filter logs perpendicular to the flow direction and parallel to the slope with the beginning and end of the installation pointing lightly up the slope at each end to prevent bypass. Stake filter logs in place at a 45 degree angle without puncturing the log every 4 to 8 feet. Stakes are to be driven into the ground a minimum of 12 inches with 3 inches protruding above the log.

Remove sediment when it has accumulated to a depth of ½ the exposed height of the log and replace mulch. Replace and reinstall damaged and dislodged filter logs.

Remove only after construction is complete and permission has been granted by the Erosion and Sediment Control Inspector.

.04 MEASUREMENT AND PAYMENT: Filter Logs will be measured and paid at the Contract unit bid price per linear foot. The payment will be full compensation for all labor, materials, installation, maintenance, removal, and incidentals necessary to complete the work.

Item No. 5001 - 8 INCH GRADED AGGREGATE BASE COURSE

- **.01 DESCRIPTION:** Refer to Section 501.01 of the MDOT SHA Standard Specifications.
- **.02 MATERIALS:** Refer to Section 501.02 of the MDOT SHA Standard Specifications.
- **.03 CONSTRUCTION:** Refer to Section 501.03 of the MDOT SHA Standard Specifications.
- **.04 MEASUREMENT AND PAYMENT:** Refer to Section 501.04 of the MDOT SHA Standard Specifications.
- Item No. 5002 <u>HOT MIX ASPHALT SUPERPAVE 19.0mm FOR BASE</u>, <u>PG64-22, LEVEL-2</u>
- Item No. 5003 HOT MIX ASPHALT SUPERPAVE 9.5 mm FOR SURFACE, PG64-22, LEVEL-2
- **.01 DESCRIPTION:** Refer to Section 504.01 of the MDOT SHA Standard Specifications and add the following:
- ADD: This work shall consist of furnishing and installing Hot Mix Asphalt (HMA) Superpave courses as shown herein and/or as directed by the Engineer. HMA Superpave courses shall consist of crushed stone, crushed slag, or crushed gravel and fine aggregate, slag or stone screening or a combination thereof combined with asphalt cement. The Engineer will permit the use of Superpave courses containing RAP material in the specified mixes. All mix designs used on this contract shall be MDOT SHA approved and certified.
- **MATERIALS:** Refer to Section 504.02 of the MDOT SHA Standard Specifications and the following.

ADD: Hot Applied Joint Sealer

MDOT SHA Section 911.01

A. Hot Mix Asphalt Superpave Mixes shall meet the requirements of <u>Standard Specification for SUPERPAVE Volumetric Mix Design, AASHTO Designations MP2-99</u>, and be subject to approval by the Engineer.

B. The Contractor shall submit a certificate of analysis showing conformance with Performance Graded Asphalt Binder Specification, MP1 for the following mixes:

Mix	Binder
HMA Superpave 9.5 mm	PG 64-22
HMA Superpave 19.0 mm	PG 64-22

(Job mix formulas shall be submitted for approval by the County for the above mixes prior to placement)

- C. Mixes shall be designed for an Equivalent Single Axle Load (ESAL) range of 0.3 million to < 3.0 million ESAL's (compaction level 2) and a seven (7) Day Average Design Air Temperature < 39°C.
- D. The allowable percentage of recycled asphalt pavement (RAP) and its suitability for use shall be in conformance with MSMT 412 and M 323. The allowable amount of RAP in the specified mixes shall not exceed 20% for surface mixes or 25% for base mixes. When using 20% or less of RAP, binder viscosity adjustments are not required. Documentation of RAP stockpile quality and traceability shall be submitted to the Engineer for an approval prior to use.
- E. Crushed glass and roofing shingles shall not be used in the Superpave mixes.
- **.03 CONSTRUCTION:** Refer to Section 504.03 of the MDOT SHA Standard Specifications and the following.

ADD:

- A. The Contractor shall provide a copy of the plant quality control testing results within 24 hours of placement of applicable HMA.
- B. At any time during the period of the Contract, the Engineer may increase, delete, or substitute asphalt or sealant tonnage, milling area or patching quantities as listed herein for Washington County, at his/her discretion. The Engineer may also change the limits of the work by adding or deleting roads as listed herein. A change in quantities shall be in accordance with the "Estimated Quantities" provision as stated in Washington County General Conditions, Section 4.04, page GC-27.
- C. All construction joints and cores shall be sealed with an approved hot applied joint sealer within two (2) working days after the surface course has been completed.

- D. All compaction of HMA shall take place while in place temperature is above 185 degrees. HMA shall be compacted to an in place density of 92.0 to 97.0 percent of the maximum density.
- E. The Paver speed shall not be in excess of 35 feet per minute. The Engineer may require a lesser speed if it is deemed that the rollers are not able to achieve the required compaction at that speed.
- F. At the direction of the Engineer, the Contractor shall perform density testing
- G. Random testing may be performed at the direction of the Engineer.
- H. Roadway surface must be completely dry before placement of any tack coat or HMA.
- I. When applying the tack coat to a vertical surface, a wand may be used. While applying tack coat to a horizontal surface (mainline or shoulder), the tack coat shall be applied using a controlled application method. Application to horizontal surfaces with a wand is considered unacceptable.
- J. Prior to applying the tack coat, remove all loose and foreign materials from the surface. Apply using full circulation spray bars that are laterally and vertically adjustable and that provide triple fanning and overlapping action. The tack coat distributing equipment shall have a computerized rate control for adjusting and controlling the application from the cab, this application rate shall be a minimum of .04 gal/sq yd.

.04 MEASUREMENT AND PAYMENT: Refer to Section 504.04 of the MDOT SHA Standard Specifications and the following.

- A. Superpave Hot Mix Asphalt (HMA) pavements will be measured and paid at the Contract unit price bid per ton for the respective types of Superpave. The payment will be full compensation for furnishing, hauling, placing, field and plant quality control, field and laboratory testing, tack coat, labor, equipment, tools and incidentals necessary to complete the work.
- B. Joint Seal shall be considered incidental to the cost of the pertinent asphalt pay items. Joint Seal shall be used for any location that new pavement is adjacent to existing pavement surfaces and shall include, but not limited to, storm drain inlets, roadway tie-ins, driveway tie-ins, patches, and any Longitudinal and/or Transverse joints that are identified by the Engineer. Joint Seal shall be applied no later than two (2) working days after the final surface course or patch course has been completed.
- C. There will be no Price Adjustments for Asphalt Binder.
- D. There will be no Pay Adjustments for Pavement Density and Hot Mix Asphalt Mixture.

Item No. 701 - TEMPORARY SEEDING AND MULCH

- **.01 DESCRIPTION:** Refer to Section 704.01 of the MDOT SHA Standard Specifications.
- **.02 MATERIALS:** Refer to Section 704.02 of the MDOT SHA Standard Specifications.
- **.03 CONSTRUCTION:** Refer to Section 704.03 of the MDOT SHA Standard Specifications and the following.
 - A. Areas located along roadways that have been seeded by the Contractor shall be mowed when the grass or vegetation exceeds 6 in. in height. Mowing shall take place until the final surface course of asphalt is placed.
- **MEASUREMENT AND PAYMENT:** Temporary Seeding will be measured and paid at the Contract unit price per square yard. Payment will be full compensation for all material, including temporary mulch, labor, mowing, equipment, tools, and incidentals necessary to complete the work.