SECTION 010004X TEMPORARY CONSTRUCTION ITEMS

## PART 1 - GENERAL

**1.1** This item consists of furnishing all labor, materials and equipment for temporary construction items necessary for the safe and proper execution of construction and not otherwise included in other Contract items. The Contractor will be expected to supply and utilize the items listed below and other items as required in the Construction Notes or as contained in the drawings and technical specifications. Temporary construction items include, but are not limited to providing and maintaining

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| **DESIGNER SHOULD LIST ALL SPECIFIC ITEMS RELATED TO THE PROJECT THAT ARE PAID FOR UNDER TEMPORARY CONSTRUCTION. ITEMS CAN INCLUDE : ( ONLY LIST ITEMS FOR SPECIFIC PROJECT)****construction barricades, portable floodlighting, lighted runway closure markers, steel plates, haul road maintenance, maintenance of traffic, snow fence, temporary generator(s), variable message signs, escorts, flaggers, safety personnel, personnel training, temporary sanitary facilities, waste disposal facilities, reworked/temporary materials, men and equipment** |

as needed to keep all aircraft and/or vehicle traffic areas free of debris and ongoing construction activities.

## PART 2 - PRODUCTS

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| **INCLUDE ITEMS PERTINENT TO THE PROJECT FROM THOSE LISTED IN PART 1 ABOVE.** |

* 1. **CONSTRUCTION BARRICADES.** Construction barricades shall be High Density Polyethylene (HDPE) water-ballast barricades and shall be constructed in accordance with the details shown in the plans. Construction barricades shall be placed in accordance with the Construction Safety and Phasing Plans and around all cranes, equipment, and staging areas on the apron area.
	2. **PORTABLE FLOODLIGHTING.** Portable floodlighting shall be provided, as required, for construction operations during nighttime work. The Contractor shall provide sufficient units so that all work areas are illuminated to a level of 5 horizontal footcandles. The lighting levels shall be calculated and measured in accordance with the current standards of the Illumination Engineering Society.
	3. **LIGHTED RUNWAY CLOSURE MARKER.** Lighted Runway Closure Markers should be furnished at each end of a runway when it is closed for construction activities. The markers shall be in accordance with FAA Advisory Circular 150/5345-55, 150/5370-2 and National Transportation Safety Board (NTSB) Safety Recommendation A-03-05. Closure markers shall be provided by [Owner] [Contractor]. [The markers shall be returned to the MAA in the same condition in which they were received (i.e. filled with gas and all light bulbs shall work).] The contractor will be responsible for maintaining the markers (including transportation, fueling, bulbs, etc.) during construction.
	4. **STEEL PLATES.** Steel plates or similar protective material of adequate size and thickness shall be furnished as necessary to cover temporary excavations, unfinished structures or surfaces requiring protection or for safety purposes. Plates shall be securely fastened and shall be adequate to safely support any anticipated loadings to be imposed.
	5. **HAUL ROADS/PERIMETER SERVICE ROAD MAINTENANCE.** Contractor haul routes have been designated on the Plans. It shall be the Contractor's responsibility to inspect existing roads so that he may assess their conditions properly. If the Contractor deems necessary, he shall be responsible for supplying materials to maintain the haul roads and drainage devices to adequately support his construction equipment. The roads shall be inspected prior to construction and restored to their pre-construction condition if damaged at the Contractor's expense as determined by the Engineer. The Contractor shall maintain and make repairs as directed by the Engineer.
	6. **VEHICLE SERVICE ROAD ACCESS.** The Contractor is required to maintain a vehicular path through the site that can be used by Maryland Aviation Administration (MAA) operations/Federal Aviation Administration (FAA) personnel as needed to perform their duties. This can be accomplished via cones/barricades, marking or other means depending on the location of the access route. The contractor shall submit method to Engineer for approval. In addition, fire department access roads shall be provided per NFPA 1, Fire Code, 2015 Edition, and Section 18.2. Fire Department access roads must be maintained and unobstructed of a width not less than 20 ft. with a vertical clearance of not less than 13 ft. 6 inches. Turning radius for fire department access roads shall be approved by the Authority Having Jurisdiction (AHJ). Dead end roads must be approved by the AHJ.
	7. **MAINTENANCE OF TRAFFIC.** Additional items required for temporary traffic control around the airports roadways include temporary signs, variable message signs, flashing arrow boards, lighting and warning devices, temporary pavement markings, channelizing devices, concrete barriers, crash cushions, barrels, and cones. All temporary traffic control devices shall be in accordance with the latest version of the Maryland State Highway Administration (MDSHA) Standard Specifications for Construction and Materials, MDSHA Supplemental Specifications and Provisions, and the Maryland Manual on Uniform Traffic Control Devices (MdMUTCD) available on the MDSHA website. Temporary signs shall also be in accordance with the contract documents.
	8. **SNOW FENCE.** Snow fence shall be six (6) feet in height and shall be in accordance with the details provided on the plans.
	9. **TEMPORARY GENERATOR.** Temporary generator(s) operating rating shall be as indicated on the drawings, voltage to match existing service. Temporary generator(s) shall be a fully integrated mobile power generating system utilizing diesel fuel and shall include sound attenuated enclosure.
	10. **VARIABLE MESSAGE SIGN.** Variable message signs shall be capable of displaying the messages indicated on the plans and on the approved MDSHA equipment list.
	11. **Engineer’s and Contractor's offices.** The establishment and subsequent removal of the Engineer’s and Contractor's offices are not covered under this item but shall be included in SECTION 010001X MOBILIZATION/DEMOBILIZATION”.
	12. **WASTE DISPOSAL FACILITIES.** Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.
	13. **ESCORTS (BWI ONLY).** The Contractor will be responsible for escorts and escorting of all personnel and vehicles from the access gates in this project to the worksite locations. Escorts will be assigned separately from other security functions and safety personnel required for the project.
		1. Escort Definition: The individual BWI Marshall Badge holder, having escort authority, who may accompany non-badged people or vehicles into an Airport restricted area. Under typical conditions, an escort may accompany from one to five people and shall have no other duties other than escorting. Any modifications to these typical conditions will be identified in Paragraph 2.4 of Item 010005X, Security Requirements during Construction. Proper escort procedures at BWI Marshall require the badged employee providing the escort to be able to identify the specific individual(s) they are escorting at any time and that they remain within sight and reasonable speaking distance and positive control of badged individual while in the SIDA. As a badged person, each escort is responsible for challenging non-badged, unescorted personnel within the secure area.

(1) Escorting within the Sterile Area. Escorts into the Sterile Area must be for official business purposes only.

(2) Escorts. The General Contractor shall provide the number of escorts that will be responsible for escorting non-badged employees. All escorts must be conducted through a guarded portal. Escorts must be conducted by the General Contractor’s own personnel, a subcontractor or the OAS Approved Airport Security Contractor may be used for escorting in the project worksite areas. Under normal circumstances, one badge holder with escort privileges may escort up to five non-badged workers. One BWI Marshall Airport approved stickered vehicle can escort up to three (3) non-stickered vehicles. Contractor personnel acting as escort for non-badged personnel shall have no other work related responsibilities while performing escort duties unless otherwise defined in Paragraph 2.4 of Item 010005X Security Requirements during Construction.

# PART 3 – EXECUTION

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| **INCLUDE MATERIAL LISTING OF ITEMS THAT ARE PERTINENT FOR THE PROJECT.** |

**3.1** **CONSTRUCTION BARRICADES**. Barricades shall be placed in accordance with the construction plans and as needed and shall remain in place or moved as directed until completion of work in each phase or area. The contractor shall be responsible for maintaining the barricades in good working condition throughout the duration of the contract.

**3.2 PORTABLE FLOODLIGHTING**. Portable floodlighting is required for construction during periods of limited visibility (i.e., nighttime). Illumination requirements shall be those contained in Paragraph 2.2. Portable floodlighting shall not penetrate any operational surfaces. Floodlighting shall be directed to avoid interference with Air Traffic Controllers or aircraft pilots. Hoods or shields may be required to prevent interference. See additional requirements on the plans.

* 1. **LIGHTED RUNWAY CLOSURE MARKER.** Lighted Runway Closure Markers shall be placed over the runway numeral at each end of the runway being closed. Refer to the construction phasing plans for location and timing of each runway closure. Markers shall be located prior to any construction vehicles entering the runway. Marker locations, brightness, angle, etc. shall be adjusted as directed by the Resident Engineer or Airport Operations personnel. Contractor shall not place markers or enter the Runway Safety Area until permission is directly provided by the Resident Engineer
	2. **SAFETY PERSONNEL.** The safety personnel will be responsible for maintaining the airfield movement area operation and minimizing conflicts with ongoing construction traffic and aircraft movements. Safety personnel will control the Contractor’s traffic during the prosecution of work as well as vehicles crossing active aircraft pavements. All aircraft traffic shall have priority over construction work when travelling on the apron/taxiway/taxilane and vehicle service roads. The safety personnel may act as wing-walkers for larger aircraft in accordance with the phasing plans and approval by MAA Operations. They shall be equipped with airfield radios for monitoring aircraft traffic/direction from the Air Traffic Control Tower (ATCT).

Safety personnel can also act as Safety Access Control (SAC) Personnel as indicated on the construction phasing plans and Security contract documents. Safety personnel will be supplied by the contractor and meet/follow the minimum requirements:

* Complete Movement Area training (provided by MAA Operations at no cost to contractor)
* Provide Briefings (in writing) to MAA Operations at the completion of each shift (forms will be provided by MAA Operations)
* Work a maximum of 12 continuous hours per shift
* Off duty (without any work) for a minimum of 8 hours after each shift regardless of time frame worked.
* Have identification to signify safety personnel as approved by MAA Operations (hardhat, flag, stop sign, vest, flashlight, etc.)
	1. **MAINTENANCE OF TRAFFIC**. Temporary traffic control shall be in accordance with Maryland State Highway Administration standards and the Maryland Manual on Uniform Traffic Control Devices (MdMUTCD).
	2. **TEMPORARY GENERATOR(s).** Provide temporary electrical service; do not interrupt the **[structure item or airfield operational]** electrical service until arranging to provide temporary electrical service. Temporary generator shall be installed in accordance with local and national codes and shall include all cables and required electrical connections between the generator and the item mentioned above. Notify the Engineer a minimum of four (4) weeks in advance of proposed electrical service interruption. Do not proceed with interruption without Engineer’s written permission. Generator shall be maintained and operated on a 24-hour a day, 7 day a week basis. This includes having a responsible contact person respond to the project site, within 1/2 hour of receiving a call, for any issue with the temporary electrical supply system.
	3. **ESCORTS. THIS ITEM CAN BE DELETED IF WORK IS NOT LOCATED WITHIN THE MOVEMENT AREA.** The escort will be responsible for guiding contractor and subcontractor personnel from the access gates to the worksite if located within the movement area. Escorts must have successfully completed Airfield Movement Area training (provided by MAA Operations) which includes a written exam. Safety personnel (as defined above) will control the Contractor’s traffic during the prosecution of work as well as vehicles crossing active aircraft pavements.Escorts will lead contractor traffic to and from the work site.

Contractor provided escorts must meet the following requirements when working on this project:

* Complete Movement Area training (provided by MAA Operations, no cost to contractor).
* Work a maximum of 12 continuous hours per shift.
* Off duty (without any work) for a minimum of 8 hours after each shift regardless of time frame worked.
* Have identification to signify escorts as approved by MAA Operations (hardhat, flag, stop sign, vest, flashlight, etc.)
	1. **CONSTRUCTION MATERIALS STOCKPILING AND EQUIPMENT STORAGE.** Stockpiling of construction materials and equipment storage is not permitted within operating taxiway object free areas. Stockpiled material must be protected against jet blast. Stockpiled materials and equipment should be prominently marked and lighted during hours of restricted visibility or darkness if in the air operations area. Stockpiled material or equipment should not be stored near aircraft turning areas or operational movement areas, aprons, or excavations and trenches. The stockpiled construction materials and equipment shall not cause degraded or hazardous conditions to airport operations safety. This includes determining and verifying that stockpiled materials and equipment are stored or parked at an approved location, that they are properly stowed to prevent foreign object debris (FOD), attraction of wildlife, or obstruction of airport operations either by their proximity to NAVAIDs or to aircraft movement areas.
	2. **FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT**. Waste and loose materials capable of causing damage to aircraft landing gear or propellers or capable of being ingested in jet engines should not be left or placed on or near active aircraft movement areas. Materials tracked onto these areas shall be continuously removed by the Contractor during the construction project. Waste or loose materials that could attract wildlife shall be carefully controlled and removed on a continuous basis. The Contractor shall have sufficient mechanized sweepers and covered trash containers on site to comply with this requirement at all times. The construction area shall be kept clean at all times of debris that may blow onto the airfield.
	3. **FLAGGERS.** Flaggers shall be provided, as necessary, to control the Contractor’s traffic during the prosecution of the work. All Contractor vehicles or equipment that are required to cross active roadway areas shall do so under the direct control of a competent flagger.

## PART 4 – METHOD OF MEASUREMENT

**4.1** Temporary Construction Items: No direct measurement will be made for this item as payment will be made on a lump sum basis.

**4.2** Snow fence shall be measured by the number of linear feet installed and accepted by the Engineer.

**4.3** Temporary generator shall be measured by the number of days of operation (based on 24 hours per day) and accepted by the Engineer.

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| **DEPENDING ON THE SIZE OF THE PROJECT, ENGINEER SHALL MEET WITH THE MAA TO DETERMINE IF HOURLY UNIT COST SHOULD BE USED OR ESCORT TIME WILL BE INCLUDED IN THE LUMP SUM COST FOR TEMPORARY CONSTRUCTION.**  |

**4.4** Escorts shall not be measured for payment, but included in the lump sum cost for temporaryconstruction items.

**PART 5 - BASIS OF PAYMENT**

**5.1** **TEMPORARY CONSTRUCTION ITEMS.** Payment will be made at the lump sum bid price for "Temporary Construction Items." This payment shall be full compensation for furnishing all materials and labor for placing, moving and removing construction barricades; providing flaggers; escorts, furnishing portable floodlighting; placing, moving, removing and maintaining lighted runway closure markers; providing safety personnel; maintenance of traffic; and for any other labor, materials, equipment, tools and incidentals necessary for temporary items required for construction of this project.

Payment for this item will be made in installments. The first payment of 10 percent of the lump sum price will be included in the first progress estimate following the initiation of construction work. The remaining 90 percent of the lump sum price will be included as installments in subsequent progress estimates. Each such installment will be determined based on the ratio of the total work completed to date to the total contract amount.

**The lump sum price for Temporary Construction Items shall not exceed three (3) percent of the total Contract bid amount for base/alternate bid less the bid prices for Mobilization/Demobilization and Temporary Construction Items, as shown on the provided Bid Tabulation Form.** No payment in excess of three (3) percent of the total Contract bid amount for base/alternate bid less the bid prices for Mobilization/Demobilization and Temporary Construction Items will be made for this item. If the total cost for all items required for Temporary Construction Items is in excess of three (3) percent of the total Contract bid amount for base/alternate bid less the bid prices for Mobilization/Demobilization and Temporary Construction Items, the Contractor shall include the excess in the unit price of other items of work.

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| **At the Engineer’s discretion and with approval from MAA Project Manager, the maximum percentage may be increased to 5% for contracts with total construction estimate (Subtotal A) of under $2M and 10% for contracts with total construction estimate (Subtotal A) of under $1M. If percentages are changed, Engineer must modify the Bid Tabulation Form as well.** |

No payment will be made under this item for Temporary Construction Items related to work under “Miscellaneous Work Allowance”.

**5.2** **SNOW FENCE.** Payment will be made at the contract unit price per linear foot. This price shall be full compensation for performing the work specified and the furnishing of all materials, labor, tools, equipment, and incidentals necessary to complete the item.

**5.3** **TEMPORARY GENERATOR.** Payment will be made at the contract unit price per day (based on 24 hours per day). This price shall be full compensation for performing the work specified and the furnishing of all materials, labor, tools, equipment, and incidentals necessary to complete the item as well as maintain and operate the generator.

**5.4** **ESCORTS**. Payment will be made at the contract unit price per **[lump sum/per hour]**. This price shall be full compensation for performing the work specified and the furnishing of all materials (including vehicles), labor, tools, equipment, and incidentals necessary to complete the item.

Payment will be made under:

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| **ENGINEER SHALL USE ITEM(S) AS NEEDED.** |

Item 010004X.1 Temporary Construction Items (not to exceed 3% of the total contract bid amount less bid price for Mobilization/Demobilization and Temporary Construction Items) – per lump sum

 Item 010004X.2 Snow Fence – per linear foot

 Item 010004X.3 Temporary Generator – per day

 Item 010004X.4 Escorts- Per Hour/LS

**END OF SECTION 010004X**