TEMPORARY MSE WALL SYSTEM 2/15/24

**1.0 Description**. This work shall consist of furnishing material and placement of a temporary mechanically stabilized earth (MSE) wall system constructed in accordance with these special provisions and in reasonably close conformance with the location shown on the plans or otherwise established.

**1.1** The temporary MSE wall system (temporary wire face wall) is located on the plans for staging of the permanent precast MSE wall system (MSE wall). The contractor may locate the temporary wall differently than that shown on the plans with the approval of the engineer. No additional payment will be made for change in wall location or subsequent changes in labor or material for the relocation.

**1.2** The contractor will be solely responsible for determining the dimensions of the temporary MSE wall and ensuring that the temporary MSE wall is compatible with the construction of the MSE walls and bridges.

**2.0 Design Requirements.** The design by the wall system supplier shall be in accordance with acceptable engineering practice and these special provisions. The design life of the structure shall be 3 years unless otherwise specified by the owner. Design calculations in accordance with the AASHTO specifications shown on the plans shall be provided to the engineer.

**2.1** Temporary MSE wall shall be designed and detailed by the same wall designer and wall manufacturer responsible for the design of the MSE wall.

**2.2** The contractor shall be responsible for the internal stability, external stability, compound stability, and overall global stability of the structure.

**2.3** The contractor shall ensure that the temporary MSE wall is capable of supporting all applicable dead loads, any contributed live load from staged traffic handling, and any construction loads while not interfering with load distribution of final roadway and MSE wall configuration. Submittals shall be required in accordance with Secs 720.3.3, 720.3.4, 720.3.5 and 720.3.6.

**2.4** The structure’s design height, H, shall be from the bottom of the excavation cut to the top of the roadway/approach slab or where the ground surface intercepts the temporary MSE wall facing. The temporary MSE wall shall extend past the end of the bottom layer of MSE wall soil reinforcement a minimum of one foot and then step up to the final grade at a 1:1 maximum slope. Any deviation to wall extents shall be approved by the engineer.

**2.5** The soil reinforcement length shall be the same length from top to bottom of the wall. The minimum soil reinforcement length shall be greater than or equal to 70 percent of the design height, H. The minimum reinforcement length shall be 8 feet.

**2.6** The soil parameters assumed for the temporary MSE wall design shall be those shown on the plan details for the MSE wall and shown in the foundation report.

**2.7** The lateral earth pressure to be resisted by the reinforcement at each reinforcement layer shall be calculated using the appropriate coefficient of earth pressure, K, times the vertical stress at each reinforcement layer. The vertical soil stress at each reinforcement layer shall consider the local equilibrium of all the forces acting above the layer under investigation.

**2.8** For temporary MSE walls, the contractor may adjust the stiffness of the facing and spacing of the reinforcements such that the local deformation between the reinforcement is within the elastic range in bending and tension, and the overall geometry meets the line and grade requirements for the temporary walls.

**3.0 Material**. The contractor shall make arrangements to purchase the material covered by this section of the special provisions.

**3.1** Select granular backfill shall be in accordance with Sec 1010.

**3.2** Geotextile fabric shall be in accordance with Sec 1011.

**3.3** Soil reinforcement and attachment devices shall be in accordance with Sec 1052. Metallic or non-metallic soil reinforcement may be used for temporary MSE walls.

**3.4** Metallic soil reinforcement, fasteners, and wire facing for temporary MSE wall will not require galvanization in accordance with Sec 1052 if the contractor ensures that a 3-inch minimum clearance will be provided between any ungalvanized steel used in the temporary wall and the galvanized steel provided for the MSE wall. Damage done to the galvanization prior to the soil reinforcement installation shall be repaired in accordance with ASTM A 780.

**3.5** Wire facing shall be shop fabricated of cold drawn steel wire and welded into the finished configuration in accordance with AASHTO M 32 (ASTM A 1064).

**3.6** Inspection of the foundation conditions, the materials of construction, and the construction procedures will be the responsibility of the owner or their agents.

**4.0 Construction Requirements.**

**4.1** Foundation preparation shall be in accordance with Sec 720.

**4.2** The wall system components for the temporary MSE wall shall be constructed in accordance with the wall system supplier's recommendations and construction manual. The temporary MSE wall shall be constructed vertical or as near vertical as the wall system will allow. The erection of the first level of facing elements requires only a level grade. Wire face panel height shall be limited to a maximum of 18 inches. The overall vertical tolerance of the wall and the horizontal alignment tolerance shall not exceed 3 inches per 10 feet. Batter requirements shall be in accordance with Sec 720.

**4.3** The contractor shall coordinate construction of the MSE wall and temporary MSE wall, and the walls shall be constructed simultaneously. Backfill material shall be placed and compacted in layers not exceeding a loose lift thickness of 8 inches and brought up evenly. A minimum fill thickness of 6 inches over non-metallic and 3 inches over metallic reinforcement shall be required prior to operating any compaction equipment. Lifts within 3 feet of the wall shall not exceed 6 inches. Placement of select granular backfill for temporary MSE walls and MSE walls shall be in accordance with Sec 720.

**4.4** Wall materials damaged during backfill placement shall be removed and replaced at the contractor’s expense.

**4.5** Technical assistance shall be in accordance with Sec 720.

**5.0 Method of Measurement.** No measurement will be made.

**6.0 Basis of Payment.** Payment for the above described work including all material, equipment, labor, and any other incidental work necessary to complete the temporary MSE wall will be considered completely covered by the contract lump sum price for Temporary MSE Wall System for each MSE wall where a temporary MSE wall is required.