

731-R-743 MECHANICALLY STABILIZED EARTH RETAINING WALLS

(Revised 11-18-22)

The Standard Specifications are revised as follows:

SECTION 731, BEGIN LINE 43, DELETE AS FOLLOWS:

Where a coping ~~or barrier~~ is utilized, the wall face panel shall extend up into the coping ~~or barrier~~ a minimum of 2 in. ~~as shown on the plans~~. The top of the face panels may be level or sloped to meet the top of the face panel line shown. Cast-in-place concrete will not be an acceptable replacement for panel areas indicated by the wall envelope.

SECTION 731, BEGIN LINE 100, DELETE AS FOLLOWS:

The embedment and bench material, at the front face of the wall, shall match the structural backfill material used for the wall and shall be encased in accordance with 203.09. ~~It shall be 6 in. minimum depth measured perpendicular to the face of the slope.~~ Geotextiles, Type I2B, in accordance with 918.02(a), shall be installed over the bench material in accordance with 616.11. The embedment and bench shall be daylighted at the bottom of the slope with uniform riprap placed at a minimum 12 in. depth for erosion control.

SECTION 731, BEGIN LINE 128, DELETE AND INSERT AS FOLLOWS:

(b) Height of Wall

The wall limits shall be defined by the wall envelope shown on the plans. For internal stability design purposes, the design height, H_D , of wall shall be as follows:

1. For a wall with a level surcharge, the design height of the wall, H_D , shall be measured from the theoretical top of the leveling pad to the top of the coping or to the gutter line of the traffic barrier. The top of the wall shall be the theoretical top of the face panels only where a coping or barrier is not used.
2. For a wall with a sloping surcharge, the design height of the wall, ZH_D , shall be measured from the theoretical top of the leveling pad to a point above the top of the wall as calculated from the formula as follows:

$$ZH_D = H + \frac{0.3H \tan \beta}{1 - 0.3 \tan \beta}$$

where:

β = surcharge slope angle as measured from the top of the coping, and

H = height of the wall from the theoretical top of the leveling pad to the top of the coping.

3. For an abutment face, the design height of the wall, H_D , shall be measured from the theoretical top of the leveling pad to the top of the roadway surface.

(c) Ground Reinforcement

The ground reinforcement length shall be the controlling length resulting from the internal or external design. *The minimum ground reinforcement length for an MSE wall shall be greater of $0.7H_D$ or 8 ft, where H_D is the design height of the wall.*

SECTION 731, BEGIN LINE 296, DELETE AND INSERT AS FOLLOWS:

Coarse Aggregate, Class A or Higher, Size No. 8 ~~or~~, 91904.03
 Coarse Aggregate, Class F or Higher, Size No. 93PG.....904.03

SECTION 731, AFTER LINE 304, INSERT AS FOLLOWS:

Preformed Expansion Joint Filler.....906.03

SECTION 731, BEGIN LINE 318, DELETE AND INSERT AS FOLLOWS:

If coarse aggregate No. 5, No. 8, No. 9, or No. 11 *or structure backfill 1 in. or 1/2 in.* is used in the reinforced backfill zone and the Contractor elects to use a different material in the retained backfill zone, geotextiles *Type 2B in accordance with 918.02(a)* shall be installed at the interface between the reinforced and retained backfill zones *except for the interface between No. 4 structure backfill and B borrow.* If the Contractor elects to use coarse aggregate No. 5, No. 8, No. 9, or No. 11 *or structure backfill 1 in. or 1/2 in.* in both the reinforced and retained backfill zones, geotextiles *Type 2B in accordance with 918.02(a)* shall be installed along the interface between the retained backfill zone and the adjacent soil. In addition, geotextiles *Type 2B in accordance with 918.02(a)* shall be installed ~~over the top of the No. 5, No. 8, No. 9, or No. 11 aggregate used in the reinforced or retained backfill zones~~ *at all interfaces of coarse aggregate and finer soils when used in the foundation.*

SECTION 731, BEGIN LINE 342, DELETE AND INSERT AS FOLLOWS:

731.07 Foundation Preparation

Prior to wall construction, the foundation for the structure shall be graded for a width equal to or exceeding the length of the ground reinforcement or as shown on the plans. The foundation, if not in rock, shall then be compacted in accordance with 203. After the foundation has been compacted, the resulting grade of the foundation shall be 1 in. per foot sloped from the back of the ~~foundation~~ *leveling pad* downward toward the ~~leveling pad~~ *foundation back of the reinforced zone.* The portion of the foundation beneath the leveling pad shall not be sloped. The foundation shall be proofrolled in accordance with 203.26. If unsuitable foundation material is encountered, it shall be removed and replaced with B borrow in accordance with 211.02 and compacted in accordance with 211.04.

SECTION 731, BEGIN LINE 452, DELETE AND INSERT AS FOLLOWS:

731.10 Joint Spacers and Joint Covering for Wall Panels

Horizontal and vertical joint spacers shall be provided between adjacent face panels to prevent concrete-to-concrete contact and chipping if differential settlement occurs. Panels without an uninterrupted vertical joint shall have a minimum joint thickness of 3/4 in. Joint covering shall be provided and attached to the rear face of the panels. Geotextiles used to cover the joint behind the MSE wall facing panels shall be in accordance with 918.02(a), Type I2B.

SECTION 731, BEGIN LINE 495, DELETE AND INSERT AS FOLLOWS:

~~Cutting or altering of the basic structural section of ground reinforcement at the site will be prohibited,~~ *in the field shall not be performed unless the cutting is preplanned and*

~~detailed on the approved working drawings~~ *one of the alternatives in Article 11.10.10.4 of the AASHTO LRFD Bridge Design Specifications is followed and a compensating adjustment is made in the wall design. All adjustments shall be shown on revised working drawings, signed by, and shall bear the seal of a professional engineer, and submitted to the Engineer for approval.*
