

**MSE NOTES**

REVISIONS		
REV. NO.	DESCRIPTION	DATE

**GENERAL NOTES FOR MSE WALLS:**

Materials, design, and methods used in construction of retaining walls shall be in accordance with 2009 Oklahoma Department of Transportation Standard Specifications for Highway Construction, unless otherwise noted.

The reinforced zone materials shall extend horizontally from the back of the panels to the end of the earth reinforcements. The reinforced zone material shall extend vertically from the top of the leveling pad to the top of the panels.

Minimum cover of 2.0' shall be provided from the top of the leveling pad finished grade.

Standard precast concrete panels shall have a maximum panel height of six (6') feet and a minimum panel height of four (4') feet.

An open joint shall be provided around the perimeter of the concrete panels. The nominal joint opening shall be between 3/8" and 3/4". The joint configuration shall be such that the filter fabric or pad materials are not exposed at the wall face.

A concrete coping shall be provided along the top of walls. The joints between all coping segments shall be sealed to prevent infiltration of water into the retaining wall backfill. Sealing shall be in accordance with section 504 of the standard specifications. All cost for sealing coping segments shall be included in the unit price bid per sq. yard of "(PL) MSE RETAINING WALL". If cast-in-place coping is used, then joints shall be placed to coincide with precast panel joints. The wall face panels shall extend up into the coping a minimum of 2 inches.

If coping is precast, a smooth level-up strip shall be provided on top of the precast panels prior to installation of the coping. Shims may be used on top of the level-up strip to facilitate alignment.

The top of the wall coping grade shall follow a smooth curvature and transitions to provide the aesthetics flow required. No abrupt changes or angles are allowed in the coping. The minimum elevations provided in the plans shall be met at the top of the wall.

If existing or future structures, pipes, foundations or guardrail posts which are within reinforced soil volume interfere with the normal placement of reinforcing mesh, and specific direction has not been provided on the plans, the contractor shall notify the Engineer to determine what source of action should be taken.

The concrete drainage ditch at the top of the wall and the concrete mow strip at the base of the wall include an estimated 97.3 CY and 14.5 CY of Class 'C' Concrete, respectively for all walls. All costs associated with the construction of the ditch and strip, including joints, shall be included in the unit cost per square yard of "(PL) MSE RETAINING WALLS".

**DESIGN NOTES:**

Mechanically stabilized earth (MSE) walls shall be the responsibility of the contractor and shall be designed by a Registered Professional Engineer in the State of Oklahoma in accordance with the current edition of the AASHTO LRFD Design Specifications and Current Interims. Design calculations and drawings shall be submitted to ODOT Bridge Division for acceptance prior to construction.

All structural fill used for the MSE walls shall be provided in accordance with Subsection 510.02D, as specified by the 2009 ODOT Standard Specifications for Highway Construction. Material used for the reinforced zone and the overexcavation below the reinforced zone shall be in accordance with 703.07.

There shall be no surcharge within 25 feet of the crest of the temporary excavation slope during construction of the retaining walls.

Where recommended temporary excavation slopes would result in Right-of-Way encroachment, or for the purposes of soil stability during excavation, temporary sheet piling shall be required. At the contractor's option and with approval of the Engineer, the temporary sheet piling may be cut a minimum of 2' below the ground line and left in place.

Care shall be taken in the design and during construction to develop and maintain rapid, positive drainage away from the retaining wall area. Water should not be allowed to pond adjacent to either the up slope or down slope sides of the retaining wall. Proper surface drainage is needed to prevent water from flowing over the face of the wall and saturating either the fill behind the wall or the subgrade soils at the base of the wall.

Conventional de-watering methods should be adequate for temporary removal of any groundwater encountered during the shallow excavation process. More extensive de-watering may be required for excavations to remove soft soils and/or if construction occurs during wet periods of the year.

**DESIGN PARAMETERS FOR MSE RETAINING WALLS:**

The Geotechnical Report provides recommendations (including external stability, global stability, and settlement) for the MSE walls. However, the Contractor is responsible for the overall design of the MSE walls.

Contractor shall be responsible for design of the MSE Walls for:

- 1.Global Stability: Sliding, Overturning, Bearing Capacity, and Eccentricity.
- 2.Internal Stability including: Tensile Stresses, Pullout, Facing Connection, and Sliding along Reinforcement.
- 3.Local Stability including: Bulging and Maximum Unreinforced Heights.
- 4.Design the MSE Walls to account for dead and live loads, seismic loads, horizontal loads from guardrails or barriers, hydrostatic loads, and other loads as appropriate.
- 5.Design the MSE Wall such that the toe is at a depth that no scouring or undermining will occur.

For further design information not provided in the plans or Geotechnical Report, refer to the 2009 Oklahoma Department Of Transportation Standard Specifications for Highway Construction.

**PAYMENT:**

The payment for MSE Retaining Wall shall be based on the surface area shown on the plan and profile sheets from the top of the retaining walls to top of leveling pad not to exceed 2 feet below finish grade at face of wall. No additional payment will be allowed for varying of the leveling pad elevation. The actual tops of leveling pads shall be determined by the contractor to provide support for the proposed wall system and submitted to the engineer for approval.

All costs incurred during construction of the MSE Retaining Walls shall be included in the unit price bid per square yard of "(PL) MSE RETAINING WALL". The cost shall include but not limited to: excavation, backfill, backfill material, drainage systems, geocomposites, filter fabrics, perforated and non-perforated pipe, concrete, reinforcing steel, sheeting and shoring, driving shoes, coping, earth reinforcement, concrete panels, concrete surface form liners, finish, leveling pads, concrete mow strips, concrete drainage ditches, chain link fence, and engineering and associated costs.

NOTE: All Elevations Should Be Verified By Contractor Prior to Construction

US 75A OVER BNSF RR BRIDGE 'A'	CREEK COUNTY	Design	N/A	N/A
GENERAL NOTES (BRIDGE) (SHEET 2 OF 2)		Detail	RWM	3/16
		Check	KMS	3/16
STATE OF OKLAHOMA		Squad:	MAYFIELD	
DEPARTMENT OF TRANSPORTATION		Eng.:	ELYAZGI	
STATE JOB NO. 27075(04)		SHEET NO. 07		