

* MSE RETAINING WALL

Standard Drawing Guidance (do not shown on plans):

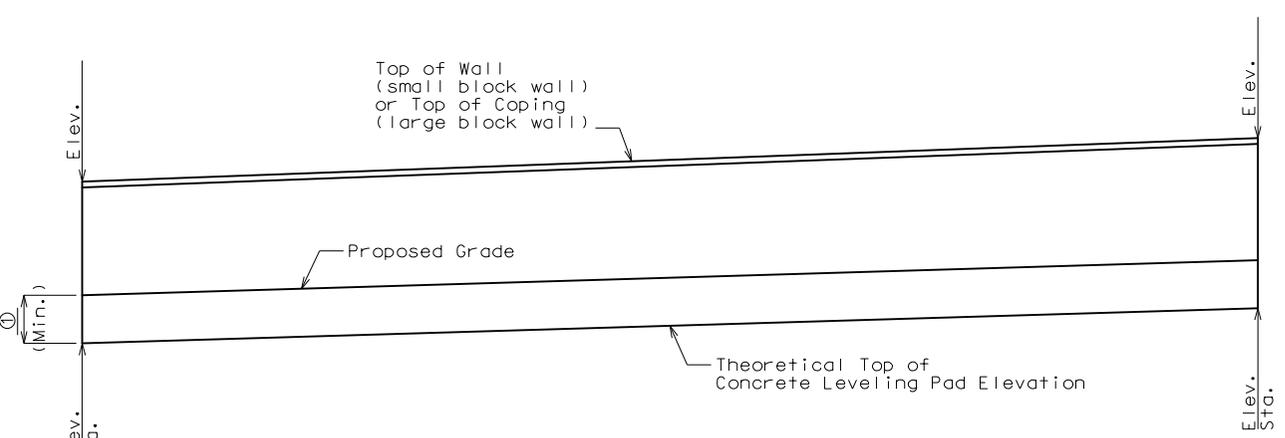
Proposed grade & theoretical top of leveling pad elevation shall be shown in constant slope. Slope line shall be adjusted per project. Top of wall or coping elevation & stationing shall be shown in the developed elevation per project. Sample wall shown. Draw actual wall in elevation and plan per project.

- Show the minimum embedment = maximum (2 feet, embedment based on Geotechnical Report and global stability requirements).
- Show theoretical top of leveling pad elevation on the plan based on minimum embedment requirements. Minimum embedment shall be provided in accordance with AASHTO 5.8.1 & Geotechnical Report.

General notes shown shall be reviewed/revise per project.

- Use for MSE Walls when there may be contact between dissimilar metals.
- Use for MSE Walls when there may be vertical and/or horizontal obstructions in reinforced soil mass.
- The allowable bearing pressure and an angle of internal friction, ϕ_f , for unimproved and improved ground where wall is to rest as determined by the Geotechnical Section and reported on the Foundation Investigation Geotechnical Report shall be shown on the plans. Show areas of improved ground where they are required along the wall.
- Show all boring locations on Plan.

PLAN ⑥



DEVELOPED ELEVATION
Concrete Leveling pad not shown for clarity. *

⊕ Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data

The locations of all subsurface borings for this structure are shown on the plan sheet(s) for this structure. The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, are shown on Sheet(s) NO. or will be available from the Project Contact upon written request. No greater significance or weight should be given to the boring data depicted on the plan sheets than is given to the subsurface data available from the district or elsewhere.

The Commission does not represent or warrant that any such boring data accurately depicts the conditions to be encountered in constructing this project. A contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the boring data depicted here or those available from the district, or on any other documentation not expressly warranted, which the contractor may obtain from the Commission.

General Notes:

Design Specifications:

2002 AASHTO LFD (17th Ed.) Standard Specifications (Section 5, ASD Design)
Seismic Performance Category -
Acceleration Coefficient = ___

Design Loading:

$\phi_b = __^\circ$ and Unit weight, $\gamma_b = __ \text{pcf}$ for retained backfill material to be retained by the mechanically stabilized earth wall system.

- $\phi_f = __^\circ$ for unimproved foundation ground where wall is to rest.
- $\phi_f = __^\circ$ for improved foundation ground where wall is to rest.

Actual $\phi_f \geq 34^\circ$ for the select granular backfill (reinforced backfill and wedge area backfill) for structural systems.

Design $\phi_f = 34^\circ$ for the select granular backfill (reinforced backfill) only for structural systems.

- The allowable bearing pressure for unimproved ground ___ ksf. The allowable bearing pressure for improved ground ___ ksf.

Factor of safety shall be 2.0 for overturning and 1.5 for sliding.

For seismic design the factor of safety shall be 1.5 for overturning and 1.1 for sliding.

Design Unit Stresses:

All concrete for leveling pad and coping shall be Class B or B-1 with $f'c = 4000 \text{ psi}$.

Miscellaneous:

The MSE wall system shall be built vertical.

The MSE wall system shall be built in accordance with Sec 720.

The MSE wall system shall be a small large block wall system.

The cost of joint filler and joint seal, complete in place, will be considered completely covered by the contract unit price for Concrete Traffic Barrier (Type A D). See Roadway Plans.

Panel and coping (or capstone) reinforcement shall be epoxy coated.

Anchorage reinforcement shall be spaced to avoid roadway drop inlet behind wall.

A filter cloth meeting the requirements for a Separation Geotextile material shall be placed between the select granular backfill for structural systems and the backfill being retained by the mechanically stabilized earth wall system.

Coping shall be required on this structure unless a small block system is used. Bond breaker (roofing felt or other approved alternate) between wall panel and coping required if coping is cast in place.

The top and bottom elevations are given for a vertical wall. If a battered small block wall system is used, the height of the wall shall be adjusted as necessary to fit the ground slope and the concrete leveling pad shall be adjusted as necessary to account for the wall batter. If a fence is built on an extended gutter, then the height of the wall shall be adjusted further.

The baseline of the wall shown is for a vertical wall. If a battered wall system is used, this baseline shall correspond to Elevation ___.

The contractor shall be solely responsible to coordinate construction of the wall with bridge and roadway construction and ensure that the bridge and roadway construction, resulting or existing obstructions, shall not impact the construction or performance of the wall. Soil reinforcement shall be designed and placed to avoid damage by pile driving, guardrail post installation, utility and sign foundations. (See Roadway and Bridge plans.)

- All steel soil reinforcements shall be separated from other metallic elements by at least 3 inches.

The splay angle should be less than 15° and tensile capacity of splayed reinforcement shall be reduced by the cosine of the splay angle.

- No reinforcement shall be left unconnected to the wall face or arbitrarily cut/bent in the field to avoid the obstruction.

Where interference between the vertical obstruction and the soil reinforcement is unavoidable, the design of the wall near the obstruction may be modified using one of the alternatives in FHWA-NHI-10-24, Section 5.4.2. Show detail layout on the drawings. For wall designs with horizontal obstructions in reinforced soil mass, see FHWA-NHI-10-024, Section 5.4.3.

B.M.

RETAINING WALL ALONG *

ROUTE * FROM * TO *
ABOUT * MILES * OF *
* STATION *

* Wall contractor shall show the following items on the design drawings and/or on the fabricator shop drawings.

- Leveling pad horizontal.
- Leveling pad length and step elevations shall be based on wall manufacturer's recommendation. Top of leveling pad elevations shall not be higher than theoretical top of leveling pad elevations shown on these plans.

Estimated Quantities	
Item	Total
Mechanically Stabilized Earth Wall Systems	sq. foot

MSE Wall Systems Data Table					
Proprietary Wall Systems		Combination Wall Systems			
Manufacturer	System	Facing Unit Manufacturer	Facing Unit	Geogrid Manufacturer	Geogrid

MSE Wall Systems Data Table is to be completed by MoDOT construction personnel to record the manufacturer of the proprietary wall system or the manufacturers of the combination wall system that was used for constructing the MSE wall.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED: 12/6/2016

ROUTE: * STATE: MO

DISTRICT: BR SHEET NO. 1

COUNTY: *

JOB NO.:

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO. MSEW 1

DESCRIPTION:

DATE:

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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