

Standard Drawing Guidance (do not show on plans):

Revise notes and details per project as necessary.

For Modified Type A and Type B Gutter and Fence Post Connection details, see Missouri Standard Plans No. 607.11.

For Type A & Type B Gutter information, see Missouri Standard Plans No. 609.00.

See EPG 751.24.2.1 for drainage guidance.

1 Show the minimum embedment = maximum (2 feet; embedment based on Geotechnical Report and global stability requirements; and FHWA-NHI-10-024, Table 2-2).

2 Minimum soil reinforcement length shall be based on the following cases in accordance with EPG 751.6.2.17:

Maximum (0.7H, 8 ft, or FIGR) for a non-seismic design.

Maximum (0.7H, 8 ft, or FIGR, seismic loading requirement) for a seismic design.

Maximum (0.8H, 8 ft, or FIGR) for a sloping backfill surcharge case.

Soil reinforcement length shall be greater than or equal to as required for a stable feature wall for strong/stable rock case.

Where,

H = Height of the wall as measured from the top of the leveling pad to the top of the wall.

FIGR = Foundation Investigation Geotechnical Report

3 Use for MSE walls in Seismic Categories B, C & D.

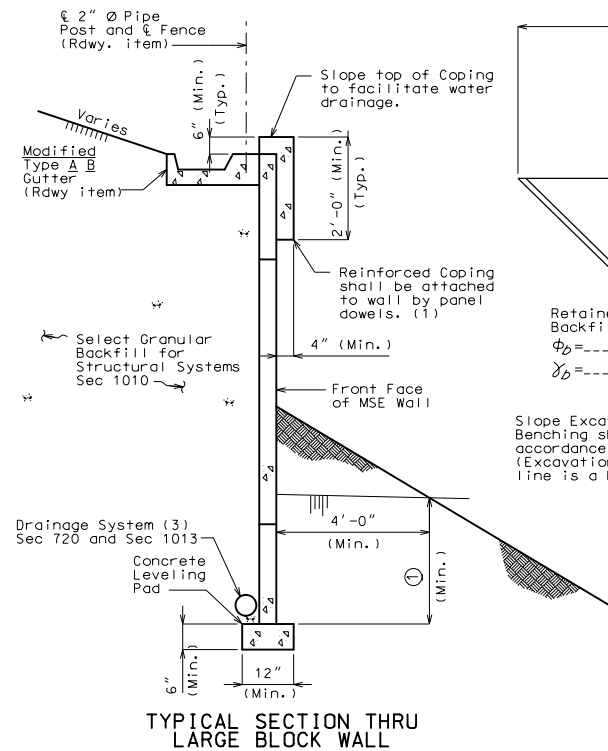
4 District Design Division to verify 6" diameter pipe or increase diameter. Minimum pipe diameter shall be 6".

5 Use for MSE Walls when there may be contact between dissimilar metals.

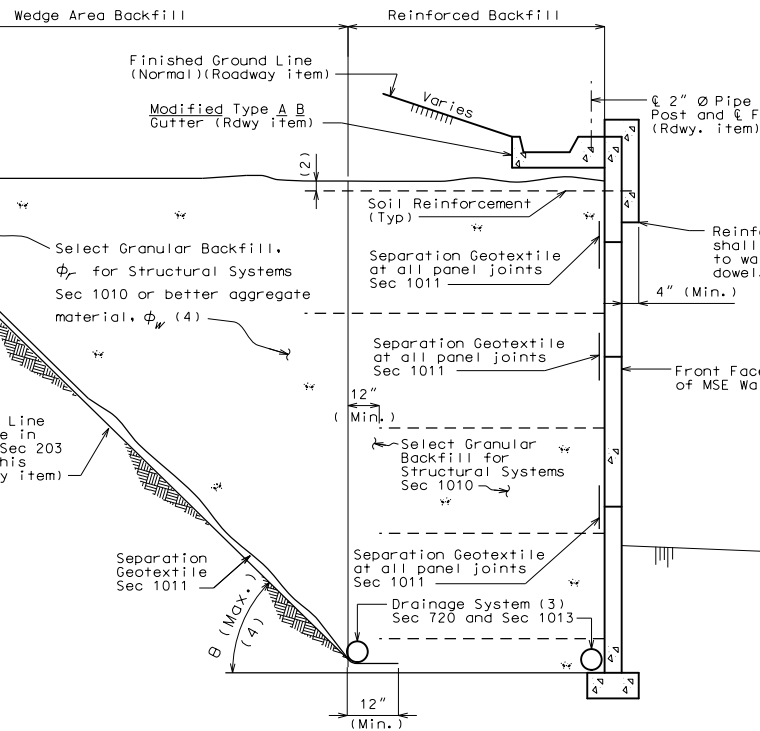
6 Use for MSE Walls when there may be vertical and/or horizontal obstructions in reinforced soil mass.

7 Use for all large block MSE walls.

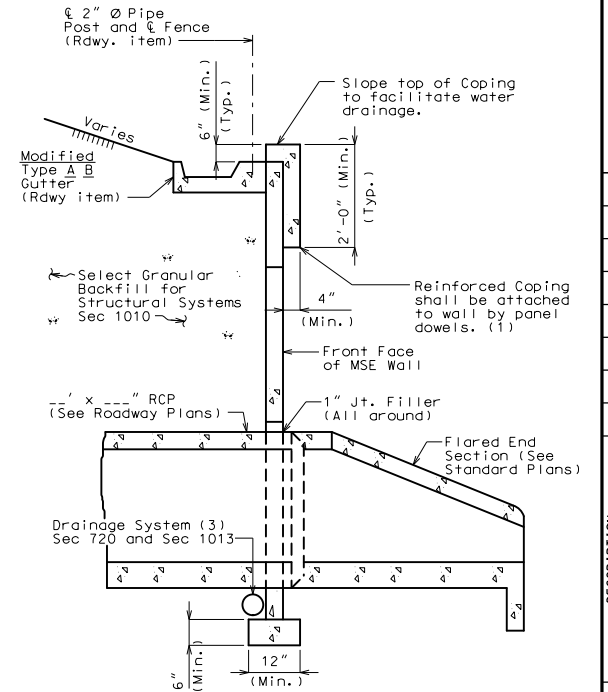
8 Do not show values in the plan details. MSE wall designer shall include this table on shop drawings and provide values used in the design computations.



TYPICAL SECTION THRU LARGE BLOCK WALL



TYPICAL SECTION THRU LARGE BLOCK WALL SHOWING FILTER CLOTH



TYPICAL SECTION THRU LARGE BLOCK WALL AT CULVERT

Vertical joint in MSE wall shall be located at each exterior culvert wall.

General Notes Cont.:

7 Minimum 18" wide Geotextile strips shall be centered at vertical and horizontal joints of panel. Geotextile material shall be adhered to back face of panel using an adhesive compound supplied by the manufacturer. All edges of each fabric strip shall provide a positive seal. A minimum 18" overlap shall be provided between spliced filter fabric.

Aluminized soil reinforcement shall have edges coated with coating material per manufacturer.

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

3 Upper two layers of soil reinforcement shall be extended 3 feet beyond the lower layers when wall height is greater than or equal to 10 feet.

5 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. Soil reinforcement shall clear the obstruction by at least 3 inches.

6 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.

Excavation: Excavation quantities and pay items are given on the roadway plans. Excavation quantities are based on a soil reinforcement length of 2 ft. The soil reinforcement length may vary based upon the wall design selected by the contractor. Plan excavation quantities will be paid regardless of any actual quantities removed based on the soil reinforcement length and design selected.

(1) Inverted U-shape reinforced capstone may be used in lieu of coping. Panel dowels for level-up concrete shall be required and provided by manufacturer. The dowels shall be field trimmed to clear the capstone by a minimum of 1 1/2 inches and a maximum of 2 1/2 inches.

(2) Topmost layer of reinforcement shall be fully covered with select granular backfill for structural systems, as approved by the wall manufacturer, before placement of the Separation Geotextile.

(3) Minimum 4" diameter perforated PVC or PE pipe.

Manufacturer shall show drain details on design plans to be submitted as shown on MoDOT MSE wall plans and/or roadway plans.

Contractor shall modify the drain details as shown if it will improve flow as may be the case for stepped leveling pad, and for an uneven ground line (approval of the engineer required).

Material Properties Used in Design				
Reinf. Fill/Select Granular Backfill	γ (pcf)	Active Force Computations		Foundation
		φ°	γ (pcf)	
φ°				φ°

Note: MSE Wall designer shall include table on shop drawings and provide values used in the design computations. Effects of cohesion shall be ignored unless approved by the engineer.

DETAILS FOR GENERIC MSE WALL

Note: This drawing is not to scale. Follow dimensions. Sheet No. of

(4) Select granular backfill shall extend a minimum of 12" beyond the end of all soil reinforcement. Where the angle, θ, between the retained backfill excavation/fill line and the horizontal is less than 90°, the wedge area backfill between θ and 90° shall be filled with select granular backfill for structural systems meeting the requirements of Section 1010.

- For (45° + φ_D/3) < θ ≤ 90°, properties for retained backfill shall be used for active force computations.

- For θ ≤ (45° + φ_D/3), contractor shall have the option to use select granular backfill, φ_r, or better aggregate material, φ_w for active force computations in the wedge area backfill. For active force computations, the angle of internal friction for wedge area backfill material, φ_r or φ_w, shall be limited to 34° unless determined otherwise in accordance with Section 1010. If φ_r or φ_w > 34° is desired for wedge area backfill then test report shall be submitted with shop drawings. φ_r or φ_w shall not be greater than 40° for computations. Final configuration of this option shall be sent to Geotechnical Section for a new overall global stability analysis. Design φ_w shall be shown on the shop drawings if used.

The slope excavation line shall be benched and separation geotextile shall be placed between the retained backfill and either select granular backfill or better aggregate material, and between the select granular backfill and better aggregate material.

Show range of acceptable theta (θ) angle on shop drawings which must be consistent with design computations and proposed construction of wall. Show active force computation properties on shop drawings and in design computations. Coordination between wall designer (manufacturer) and contractor is required before shop drawing submittal.

DATE PREPARED	4/20/2022
ROUTE	MO
DISTRICT	BR
COUNTY	*
JOB NO.	*
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	MSEW_02

DESCRIPTION	
DATE	

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