

Chapter 17

Mechanically Stabilized Earth (MSE) Retaining Walls

General Types of MSE Walls

- MSE Segmental (Modular) Walls
- MSE (Large Panel) Walls
- MSE Wire Face Walls
 - Not a common wall type







MSE Modular Block Walls

- Normally 6" x 12" Blocks
- 3/4" Setback per Course (7.1 Degree Batter)
- Alignment Pins (Plastic)
- Extensible Reinforcement (Geogrid)
 - Uni-axial / Bi-axial
- Granular Backfill
 - 3/4" Minus

MSE (Large Panel) Walls

- Approx. 5' x 5'
- Batter Built Into Wall - Comes out in Construction
- Alignment Pins (Galvanized/PVC)
- Non-extensible Reinforcement
- Granular Backfill
 - 2 1/2" Minus

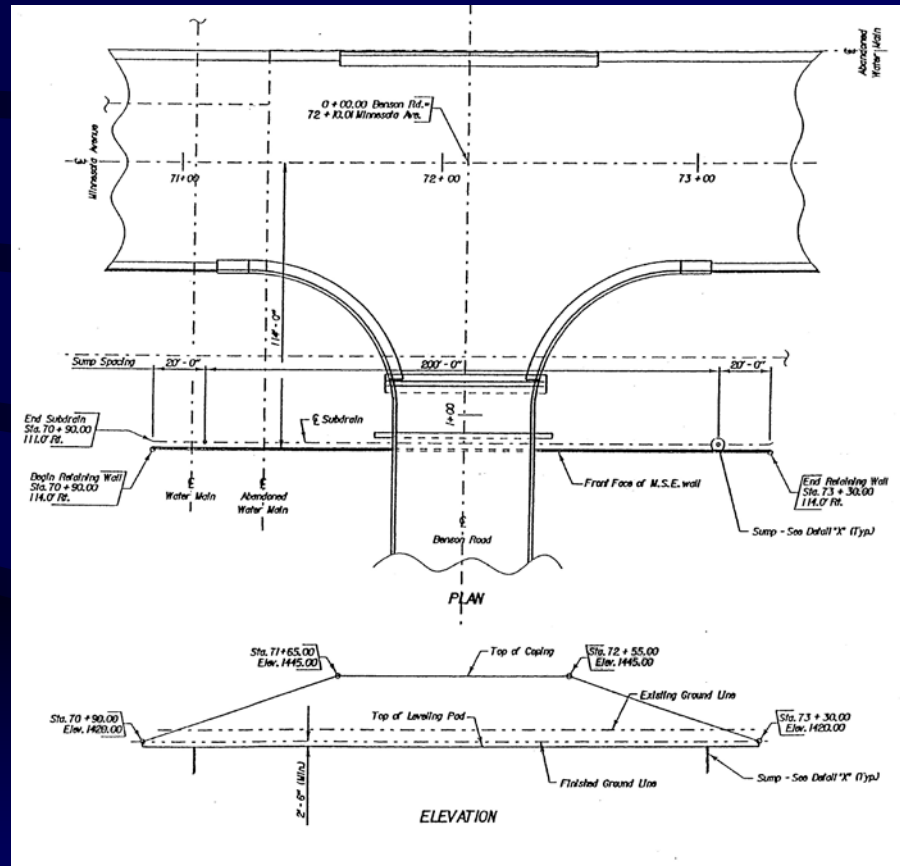
MSE (Wireface) Walls

- Uses an open mesh to retain fill
- Used when aesthetics is not a major issue

Construction Plans

- Plan and Elevation Views Given
 - Begin and End Wall
 - Drain Outlets
 - Wall Elevations
 - Undercut/Backfill Notes

Construction Plans



Construction Plans

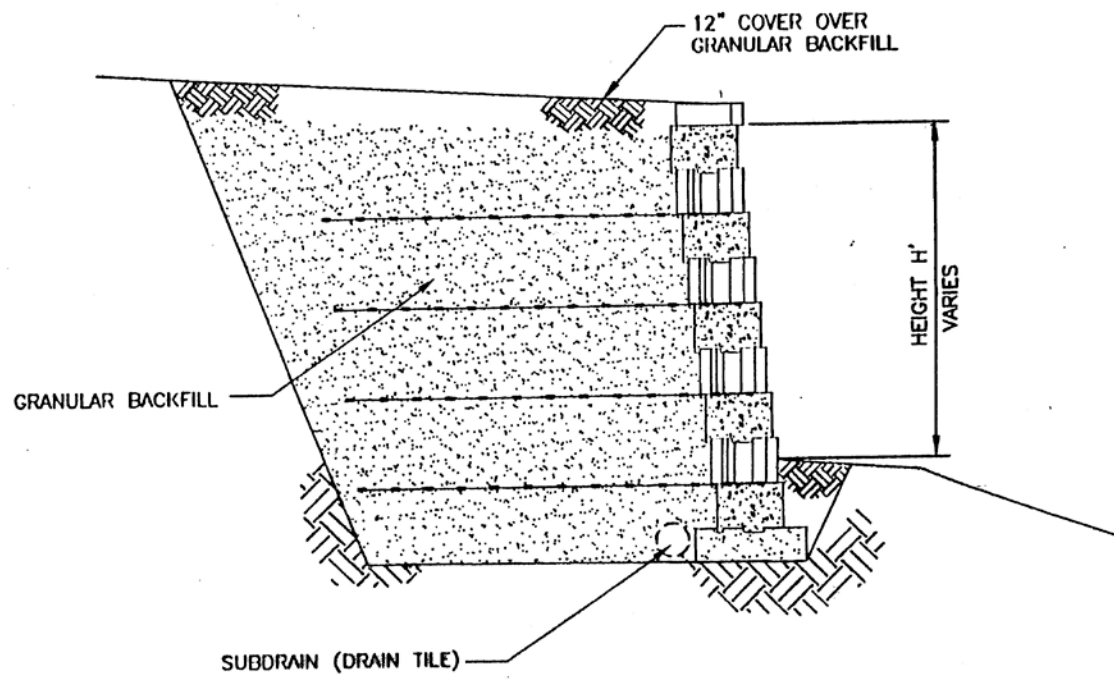


Fig. 17.3 –MSE Segmental (Modular) Wall Section

Preconstruction Preparation

- Design is the responsibility of the Contractor
- “Shop Plans” are to be submitted for approval to the Office of Bridge Design two weeks prior to construction.
- Review site conditions prior to construction



Materials Inspection

- Concrete Facing Elements
 - Imperfect Molding
 - Honeycombing
 - Cracks, Chips, or Spalls
 - Color Variation
 - Dimension Tolerances
 - Connection Misalignment

Materials Inspection

- Reinforcing
 - Damage to epoxy or galvanized coating.
- Backfill Material
 - Correct gradation?

Foundation Preparation

- Thoroughly compacted subgrade
 - Undercut if necessary
- Entire area under reinforcement is the foundation (Not just the leveling pad)
- Concrete Leveling Pad
 - 6" x 18" (Modular)
 - 6" x 12" (Large Panel)



Erecting Facing Elements

- First Row is very important
- Ensure correct batter
 - Temporary Wedges
 - Spacer Bars
 - Adequate Bracing

Reinforced Fill Placement

- Placement of subdrain
- Density requirements
 - Smooth drum rollers
 - Walk-behind vibratory rollers or plate compactors

Reinforcement Placement

- Reinforcing should be level or slightly upwards.
- Skew Reinforcement around obstacles.
- Overlapping layers of reinforcement should be separated by 3” of fill.

Quantities

- Estimated Quantity
- Shop Plans Quantity

Construction Problems and Causes

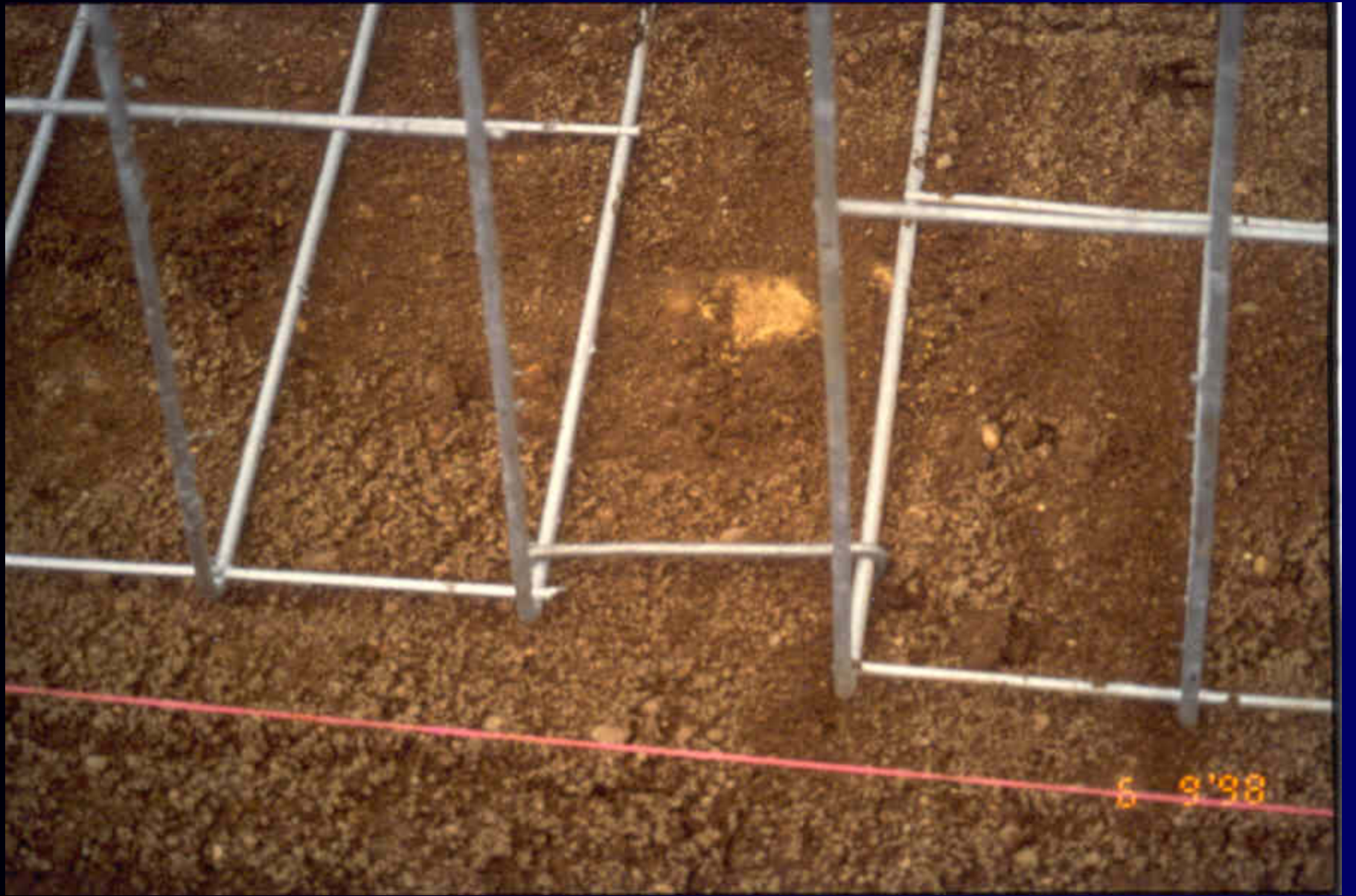
- See Structures Construction Manual

















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