

Agenda

Presented by Terry McCleary

Types of Retaining Walls

Traditional cantilevered retaining walls

- Reinforced concrete walls
- Reinforced concrete masonry walls

Soldier pile and lagging walls

Traditional timber walls

Traditional gravity walls

- | | |
|---------------|------------|
| Mass concrete | Stone |
| Gabion walls | Crib walls |

Reinforced soil retaining walls

Anchored retaining walls (tie-backs, soil nailing, etc.)

Temporary retaining walls

Over-steepened reinforced slopes

Sheet pile

Fabric wrapped walls

Private-sector vs. highway retaining wall systems

Retaining Wall Design

Soil design parameters

Lateral earth pressure

External stability

- | | |
|--------------------|---------------|
| • Sliding | • Overturning |
| • Bearing capacity | |
| • Settlement | • Scour |

Internal stability Global stability

Special considerations for tiered retaining walls

- | | |
|--------------|-----------------|
| Backfill | Groundwater |
| Service life | Design software |

Slope Stabilization

Science of slope stability

Surficial vs. deep-seated slope stability

Long term vs. short term stability

Slope stabilization techniques

- Regrading
- Excavation and replacement
- Slope reinforcement/pinning
- Ground improvement
- Toe retaining walls

Retaining Wall and Slope Stabilization Case Histories

Various commercial, residential projects

Various highway and institutional projects

Retaining Wall Design and Slope Stabilization Techniques

Johnston, IA - Thursday, July 18, 2019



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Learning Objectives

You'll be able to:

Define the characteristics of and applications for different types of retaining walls including traditional cantilevered walls, timber walls and gravity walls.

Identify and quantify the forces that act on retaining walls.

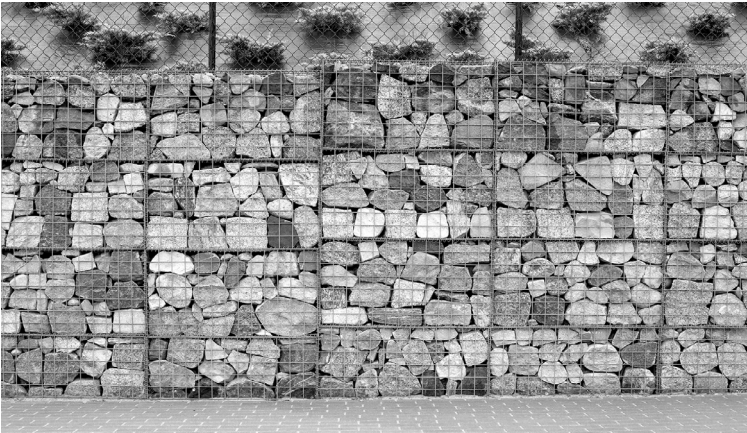
Discuss the factors that impact slope stability and can lead to slope failure.

Evaluate crucial slope stabilization techniques including regrading, reinforcement and ground improvement.



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Identify types of retaining walls, such as cantilevered walls, gravity walls and soldier pile walls, and learn when to use each

Review the forces acting on retaining walls including pressure from retained soil and the impacts of groundwater

Design retaining walls for internal and external stability

Use slope stabilization techniques such as reinforcement and ground improvement

Review retaining wall and slope stabilization case studies

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