

INDOT Check List for Retaining Structures

Masonry Retaining Wall

*Indicates higher likelihood

Wall Facing & Vertical Support Columns are susceptible to show...

- Delamination/Spall/ Patched Area
- Exposed Rebar/Welded Wire Fabric/Strands
- Efflorescence/Rust Staining
- Mortar Breakdown (Cracking)*
- Split/Spall
- Patched Area
- Masonry Displacement*
- Distortion
- Bulging*
- Vertical Rotation
- Horizontal Rotation
- Separation*
- Graffiti
- Vegetation Growth
- Freeze-thaw Damage
- Leakage
- Erosion
- Damage (from impact)

Horizontal Coping, Vertical coping, and Masonry Architectural Facing is susceptible to show...

-Everything listed in first column
EXCEPT for erosion.

Wall Railing (masonry) is susceptible to show...

-Everything in first column
EXCEPT for leakage and
erosion.

R.C. Cantilever & R.C. Counterfort Retaining Wall

(Reinforced Concrete)

*Indicates higher likelihood

Wall Facing & Vertical Support Columns are susceptible to show...

- Delamination/Spall/ Patched Area
- Exposed Rebar/Welded Wire Fabric/Strands
- Efflorescence/Rust Staining
- Cracking*
- Abrasion/Wear
- Distortion
- Bulging*
- Vertical Rotation
- Horizontal Rotation
- Separation
- Graffiti
- Vegetation Growth
- Freeze-thaw Damage
- Leakage
- Erosion
- Damage (from impact)

Spread Footing & Pile/ Caissons are susceptible to show...

- Scour
- Everything listed in first column **EXCEPT** for bulging, vertical rotation, horizontal rotation, separation, and leakage.

Horizontal Coping, Vertical Coping, and Concrete Architectural Facing is susceptible to show...

- Everything listed in first column **EXCEPT** for erosion.

Wall Railing (concrete) is susceptible to show...

- Everything listed in first column **EXCEPT** for abrasion/wear.

Prestressed Concrete

R.C. Cantilever & R.C. Counterfort retaining walls made from pre-stressed concrete have all of the same susceptibilities as reinforced concrete with one exception, all elements are also susceptible to show exposed prestressing.

Cantilever Sheet Pile Retaining Wall

*Indicates higher likelihood

Wall Facing & Vertical Support Columns are susceptible to show...

- Corrosion*
- Cracking
- Connection Distress
- Distortion
- Bulging
- Vertical Rotation
- Horizontal Rotation
- Separation
- Graffiti
- Vegetation Growth
- Leakage
- Erosion
- Damage (from impact)

Horizontal Coping, Vertical coping, and Steel Architectural Facing is susceptible to show...

-Everything listed in first column
EXCEPT for erosion.

Pile/Caissons are susceptible to show...

- Scour
- Settlement
- Everything listed in first
column **EXCEPT** for bulging,
vertical rotation, horizontal
rotation, leakage, and
separation.

Wall Railing (steel) is susceptible to show...

-Everything in first column
EXCEPT for settlement and
erosion.

Anchored Bulkhead Retaining Wall

Anchored Bulkhead Retention Walls have all of the same susceptibilities as Cantilever Sheet Pile retention Walls. However, they also include an anchorage, which introduce defects specific to the anchor. These include...

- Corrosion
- Deterioration
- Effectiveness of Anchor (slippage)
- Connection Distress
- Distortion
- Damage (from impact)

Diaphragm, Bored Pile, & Soldier Pile Retaining Wall

*Indicates higher likelihood

Wall Facing & Vertical Support Columns are susceptible to show...

- Delamination/Spall/
Patched Area
- Exposed
Rebar/Welded Wire
Fabric/Strands
- Efflorescence/Rust
Staining
- Cracking*
- Abrasion/Wear
- Distortion
- Bulging*
- Vertical Rotation
- Horizontal Rotation
- Separation
- Graffiti
- Vegetation Growth
- Freeze-thaw Damage
- Leakage
- Erosion
- Damage (from impact)

Horizontal Coping, Vertical Coping, and Concrete Architectural Facing is susceptible to show...

- Everything listed in first
column **EXCEPT** for erosion.

Wall Railing (concrete) is susceptible to show...

- Everything listed in first
column **EXCEPT** for
abrasion/wear.

Pile/Caissons are susceptible to show...

- Scour
- Everything listed in first
column **EXCEPT** for bulging,
vertical rotation, horizontal
rotation, separation, and
leakage.

Anchorage is susceptible to show...

- | | | |
|----------------------|----------------|-------------------------------------|
| -Corrosion | -Deterioration | -Effectiveness of Anchor (slippage) |
| -Connection Distress | -Distortion | -Damage (from impact) |

Reinforced Earth & Mechanically Stabilized Earth (MSE)

Retaining Wall

*Indicates higher likelihood

Wall Facing & Vertical Support Columns are susceptible to show...

- Delamination/Spall/ Patched Area
- Exposed Rebar/Welded Wire Fabric/Strands
- Efflorescence/Rust Staining
- Cracking*
- Abrasion/Wear
- Distortion
- Bulging
- Vertical Rotation
- Horizontal Rotation
- Separation
- Graffiti
- Vegetation Growth
- Freeze-thaw Damage
- Leakage
- Erosion
- Damage (from impact)

Horizontal Coping, Vertical Coping, and Concrete Architectural Facing is susceptible to show...

- Everything listed in first column **EXCEPT** for erosion.

Pile/Caissons are susceptible to show...

- Scour
- Everything listed in first column **EXCEPT** for bulging, vertical rotation, horizontal rotation, separation, and leakage.

Anchorage is susceptible to show...

- Corrosion
- Deterioration
- Effectiveness of Anchor (slippage)
- Connection Distress
- Distortion
- Damage (from impact)

Timber/Bin/Wire Retaining Walls

*Indicates higher likelihood

Wall Facing & Vertical Support Columns are susceptible to show...

- Connection Distress
- Decay/Section Loss*
- Check/Shake
- Crack (Timber)
- Split/Delamination*
- Abrasion/Wear
- Distortion
- Bulging*
- Vertical Rotation
- Horizontal Rotation
- Separation
- Graffiti
- Vegetation Growth
- Leakage
- Settlement
- Erosion
- Corrosion*
- Damage (from impact)

Pile/Caissons are susceptible to show...

- Scour
- Settlement
- Everything listed in first
column **EXCEPT** for bulging,
vertical rotation, horizontal
rotation, leakage, and
separation.

Horizontal Coping, Vertical Coping, and Timber Architectural Facing is susceptible to show...

- Everything listed in first
column **EXCEPT** for erosion.

Wall Railing (timber) is susceptible to show...

- Everything listed in first
column **EXCEPT** for leakage
and erosion.