**INDOT Check List for Retaining Structures**

**Masonry Retaining Wall**

*Indicates higher likelihood

<table>
<thead>
<tr>
<th>Wall Facing &amp; Vertical Support</th>
<th>Horizontal Coping, Vertical coping, and Masonry Architectural Facing is susceptible to show…</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Columns are susceptible to show…</strong></td>
<td>-Everything listed in first column <strong>EXCEPT</strong> for erosion.</td>
</tr>
<tr>
<td>-Delamination/Spall/ Patched Area</td>
<td></td>
</tr>
<tr>
<td>-Exposed Rebar/Welded Wire Fabric/Strands</td>
<td></td>
</tr>
<tr>
<td>-Efflorescence/Rust Staining</td>
<td></td>
</tr>
<tr>
<td>-Mortar Breakdown (Cracking)*</td>
<td></td>
</tr>
<tr>
<td>-Split/Spall</td>
<td></td>
</tr>
<tr>
<td>-Patched Area</td>
<td></td>
</tr>
<tr>
<td>-Masonry Displacement*</td>
<td></td>
</tr>
<tr>
<td>-Distortion</td>
<td></td>
</tr>
<tr>
<td>-Bulging*</td>
<td></td>
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<tr>
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</tr>
<tr>
<td>-Separation*</td>
<td></td>
</tr>
<tr>
<td>-Graffiti</td>
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<tr>
<td>-Vegetation Growth</td>
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<tr>
<td>-Freeze-thaw Damage</td>
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<td>-Damage (from impact)</td>
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</table>

<table>
<thead>
<tr>
<th>Wall Railing (masonry) is susceptible to show…</th>
<th></th>
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<tbody>
<tr>
<td>-Everything in first column <strong>EXCEPT</strong> for leakage and erosion.</td>
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</tbody>
</table>
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
- Connection Distress
- Deterioration
- Distortion
- Effectiveness of Anchor (slippage)
- 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

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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.