

**STATE OF NEVADA**  
**DEPARTMENT OF TRANSPORTATION**

**RESEARCH DIVISION**

**MSE Retaining Wall Systems Approval Procedures**

Effective Date: Oct 1, 2010

**PURPOSE:**

To establish the evaluation procedure used to approve MSE Retaining Wall Systems for possible inclusion onto NDOT's Qualified Product List (QPL).

**REFERENCES:**

- 1) Nevada Department of Transportation Standard Specifications for Road and Bridge Construction (latest version)
- 2) AASHTO LRFD Bridge Design Specifications (latest version)
- 3) Design & Construction of Mechanically Stabilized Earth Wall's & Reinforced Earth Slopes, Volumes 1 and 2, Publication Nos. FHWA-NHI-10-024 & FHWA-NHI-10-025
- 4) NDOT Structures Manual (latest version)
- 5) NDOT Geotechnical Policies and Procedures Manual (latest version)
- 6) Guidelines for Evaluating Earth Retaining Systems, Highway Innovative Technology Evaluation Center (HITEC), CERF Report: 40334, March 1998

**PROCEDURE:**

**A. Manufacturer's Request for Approval**

The manufacturer shall submit a written request for approval of the proposed MSE Retaining Wall System. The wall system must meet the requirements specified in Subsection 11.10 of the AASHTO LRFD Bridge Design Specifications to qualify as a MSE Retaining Wall System. Submit the following information with the request for approval:

- 1) The name, address and contact information of the manufacturer.
- 2) The name or designation of the proposed MSE Retaining Wall System.
- 3) AASHTO's National Transportation Product Evaluation Program (NTPEP) test reports.
- 4) The Submittal Protocol Checklist and completed Technical Evaluation Report from the Highway Innovative Technology Evaluation Center (HITEC) based on the HITEC Guidelines for Evaluating Earth Retaining Systems-CERF Report: 40334, March 1998, with the following modifications:
  - Replace the AASHTO 1997 Specifications with current AASHTO LRFD Bridge Design Specifications in the HITEC report and check list.

- Design the wall system for 100 years design life.
- Use English Units in calculations
- Use a seismic acceleration coefficient of  $A=0.2g$  without reduction

As an alternative to the HITEC evaluation, the manufacturer/vendor shall obtain and submit a comparable technical evaluation by an independent MSE wall system expert subject to NDOT approval. The submittal and review protocol included in the HITEC Guidelines for Evaluating Earth Retaining Systems must be utilized as the basis/model for the independent evaluation.

Mail the request for approval to:

Research Division  
Nevada Department of Transportation  
1263 S. Stewart Street  
Carson City, Nevada 89712

#### **B. QPL Product Review**

NDOT's Research Division will review the Manufacturer's submittal to insure that all the above required information has been included. If the submittal is incomplete, it will be returned to the Manufacturer for completion without further review. If complete the Research Division will forward it to NDOT's Structures and Materials Divisions for QPL evaluation. Materials and Structures Divisions will review the submittal to verify that it meets AASHTO LRFD Bridge Design Specifications and NDOT design parameters. After evaluation the Research Division will be notified of Materials and Structures Division's conclusions and recommendations. The Research Division will make the final determination on approval of the wall system for addition to the QPL and be responsible for officially notifying the wall system manufacturer on the results of the evaluation.

#### **C. Contract Acceptance Requirements**

Qualification of a MSE Retaining Wall System and its addition to NDOT's QPL does not constitute a blank approval of the wall system for use on NDOT Construction Contracts. Site specific shop drawings and internal/external design calculations submittals are required for approval for each individual MSE wall built on NDOT Contracts.

#### **D. Disqualification from QPL**

The Research Division may remove a wall system from the QPL for non-conformance with design and construction specification requirements or for a documented history of poor field performance. The Manufacturer shall immediately notify the Research Division, in writing, of any change in product formulation. Failure to notify the Research Division of changes in product formulation will result in disqualification.

### **E. Requalification**

The Research Division will reevaluate a wall system that has been disqualified and removed from the QPL only after submission of a formal request along with acceptable evidence that the problems causing the disqualification have been resolved.

The Research Division may require the manufacturer to requalify the wall system for any of the following reasons:

1. To ensure that obsolete wall systems are not kept on the list, the Research Division may request written confirmation from the Manufacturer that the wall system is still available and has not changed formulation. Failure to respond to the Research Division's written request will result in the product being removed from the list.
2. If the formulation of the wall system has changed, the Research Division may require that the new formulation be requalified.
3. If the NDOT Standard Specifications, AASHTO LRFD Bridge Design Specifications, or NDOT Bridges Structures Design Manual, NDOT Geotechnical Policies and procedures Manual change, or if any referenced ASTM or AASHTO specifications change, the Research Division may require requalification to ensure that the product meets new criteria.