

STATE OF UTAH MSE WALL INSPECTION FORM

Compiled As Part of Research By The Utah Department of Transportation

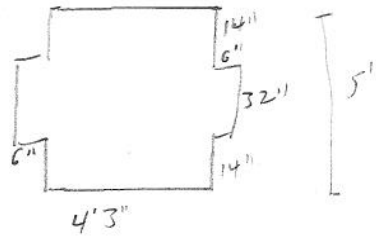
Instructions:

- 1-Fill out required sections for MSE Wall Inspector and Wall Characteristics.
- 2-Inspect the wall using the attached form. Questions that require a 'Yes' answer should be documented by noting the extent of the problem in the right most column and photo documentation. Photo documentation should consist of wall or bridge number, nature of problem, date, photo number for wall, and a size reference, which should be indicated in the photo (white board/paper). Photos taken should be placed on the Top View layout and indicated with the appropriate number. Note should be taken by the inspector that often anomalies are due to construction and should be distinguished from those that are a result of post-construction. If it is observable that they existed at the time of construction note should be taken in the space provided for drawings.
- 3- Shoot digital photos of the entire wall. This may require the use of a variety of shots and angles on each wall to cover the wall in its entirety.
- 4- Indicate Layout of MSE Wall in respect to major intersections, roadways, potential hazards, irrigation, vegetation, locations of conditions for which 'Yes' was marked, etc. in space provided below. Also Indicate approximate GPS Coordinates of Site of Interest in space provided below

| | | | |
|---------------|----------|--------------------------------------|--|
| Region | <u>3</u> | Identifying Road/Intersection | <u>I-15 & Univ. Parks exit West side</u> |
|---------------|----------|--------------------------------------|--|

MSE WALL CHARACTERISTICS

| | | | | |
|---|--|------------------------------|--|------------------|
| MSE Wall at Bridge | <input checked="" type="radio"/> Y <input type="radio"/> N | Bridge Number if applicable: | Wall Number | <u>R-367A</u> |
| Surrounding Structures | | | Maximum Height of Wall (ft) | <u>23ft</u> |
| Distance to Each Structure | | | One Stage, Two Stage or Block Wall | <u>One stage</u> |
| State Route Number | | | Estimated Max Length of Wall Abutment: | <u>570 FT</u> |
| Approximate Mile Marker | | | Max Slope of Ground in front of wall: | |
| GPS Datum | <u>WGS/84, NAD/83, or NAD/27</u> | | Max Height of wall burial line above surrounding level ground: | <u>24 ft</u> |
| MSE Wall GPS Coordinates (Location of Measurement shown on plan view) | <u>40° 16' 33.15" N 111° 13' 12.19" W</u> | | Please draw rough layout of panel with approximate dimensions in space provided below: | |
| If known, Panel or System Manufacturer | | | | |

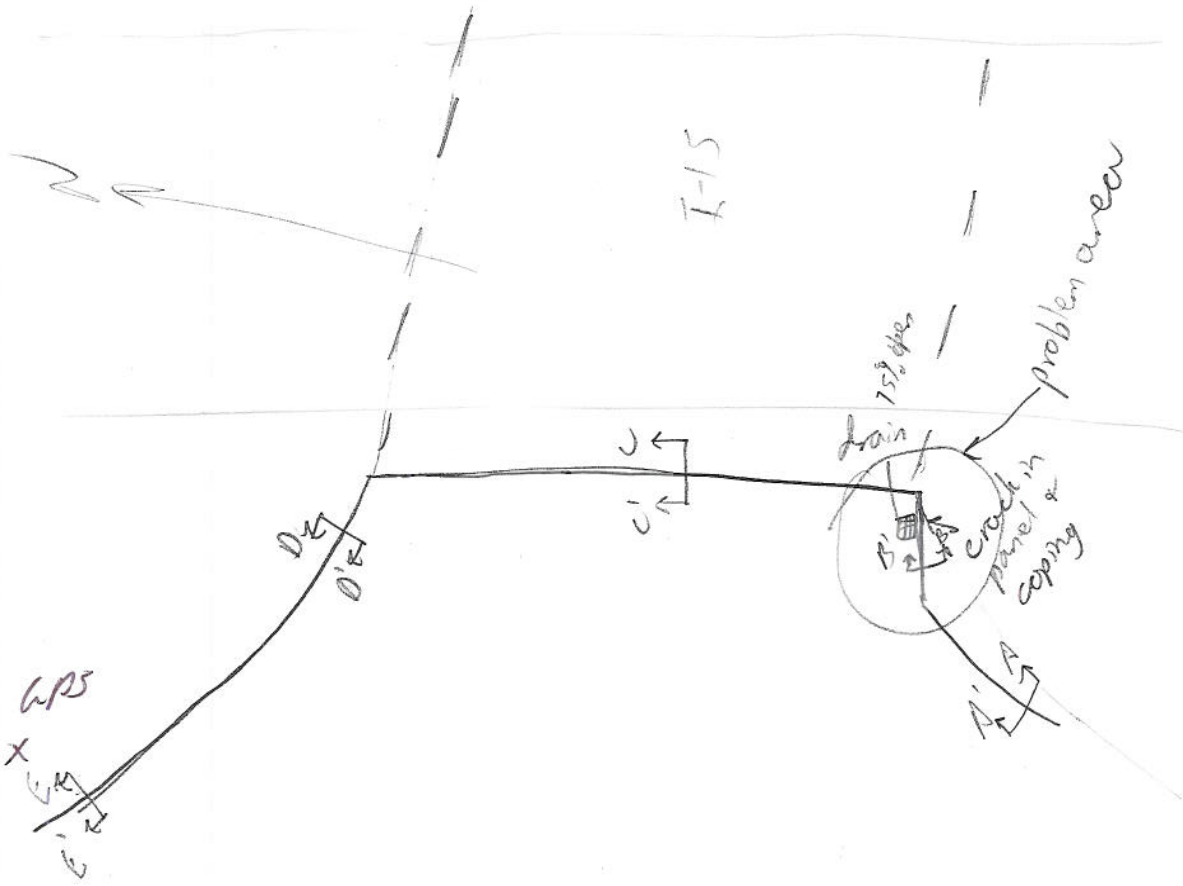


Summary of Key Observations:

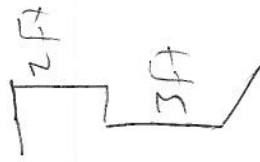
190
 6
 20
 9.5
 100
 1800

19
 4
 190
 3
 570

Plan View/Drainage:



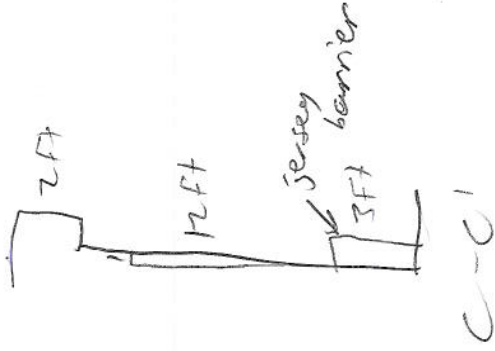
Cross Sections:



A-A'



B-B'



C-C'

Cross Sections:



D-D'



E-E'

MISE WALL DRAINAGE

| Required Tests: | | Nylon Duct-Tape Bond-Grout-Cure | | Measurement/Extent of Problem/Locations/Photo Numbers | |
|-----------------|-----|---------------------------------|-----|---|---|
| Yes | No | N/A | USN | | |
| Y | N/A | USN | | Drainage | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 1-Is there an active source near the toe of the wall (to the wall near a body of water with scour present)? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 2-If applicable, are the catch basins at the base of the wall blocked? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 3-Are there culverts protruding through the wall? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 4-Are there vertical drains that travel through the backfill? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 5-Is there erosion at the base of the wall or leveling roof? (Photo 12) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 6-Is there erosion along the wing wall? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 7-Are there any signs of water flow along the base of the wall? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 8-Is there less than 14 feet between impingement splitters and wall? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 9-Does the backfill or joint fabric appear to be saturated? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 10-Is there vegetation growing in panel joints (Photo 9)? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 11-Are the deck drains and outlets at the top of the wall blocked? (Photo 14) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 12-Can water enter the wall between coping and slab (i.e., drain appropriately)? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 13-Is there evidence of discharge point of fill washing through drain pipes? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |

northeast
against wall

MISE WALL JOINTS

| Required Tests: | | Long Level Slab-Grout-Cure | | Measurement/Extent of Problem/Locations/Photo Numbers | |
|-----------------|-----|----------------------------|-----|--|---|
| Yes | No | N/A | USN | | |
| Y | N/A | USN | | Joint | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 14-Is backfill coming out of joint or are there piles of backfill at the base of the wall? (Pictures 2 & 3) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 15-Are the joints wide enough to see fabric or backfill behind panels when looking into joint? (Photo 5) If yes, record the approximate maximum joint width in inches. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 16-Is exposed backfill visible in the horizontal joints? (Photo 5) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 17-Do there appear to be any signs of fabric or water leaking through joint? (Do not include joints with signs of fabric or water leaking through joint.) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 18-Do the joints have a non-uniform horizontal spacing/size? Are some horizontal joints larger/smaller than others? (Photo 6) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 19-Do the joints have a non-uniform vertical spacing/size? Are some vertical joints larger/smaller than others? (Photo 6) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 20-Are the panel offset at the joint either in or out of the wall? (Photo 7) If yes, record the approximate maximum offset. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 21-Does the fabric appear brittle, or appear as if it has undergone excessive UV exposure? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |

MISE WALL FINISH

| Required Tests: | | Long Level Slab-Grout-Cure | | Measurement/Extent of Problem/Locations/Photo Numbers | |
|-----------------|-----|----------------------------|-----|--|---|
| Yes | No | N/A | USN | | |
| Y | N/A | USN | | Wall Finishing | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 22-Are the panels "T-shaped"? Is there excessive cracking in the panel? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 23-Are the panels fully covered vertically through adjacent panels? (Photos 9 & 10) If yes, record the approximate number of cracks in the wall with cracking. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 24-Are there cracks that continue horizontally through adjacent panels? (Photos 9 & 10) If yes, record the approximate number of panels in the wall with cracking. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 25-Are the panel corners rubbing contact with each other? If yes, record the approximate number in the wall. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 26-Are the panel corners "pop-out" or chipped from contact with an adjacent panel? If yes, record the number in the wall. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 27-Does crack spacing suggest Differential Settlement? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 28-Does the overlying coping exhibit Vertical Offset? | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 29-Are the coping and parapet loose or delaminating? If yes, it may be appropriate to contact UDOT if delamination occurs exterior. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 30-Are the panels in danger of falling off? (If potential, note contact appropriate UDOT region). | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 31-Are there any panel bulging (bowing horizontally)? If so, record maximum deformation from accessible coping to leveling post. (Photo 11) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 32-Is there "lifting" at the top or bottom of the wall? (Record maximum degree of lifting from subwall along vertical face measured only) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |

MISE TOP OF WALL OBSERVATIONS

| Required Tests: | | Long Level Slab-Grout-Cure | | Measurement/Extent of Problem/Locations/Photo Numbers | |
|-----------------|-----|----------------------------|-----|--|---|
| Yes | No | N/A | USN | | |
| Y | N/A | USN | | Top Of Wall | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 33-Is there evidence of settlement at the top of the wall (pavement cracking, etc.) | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 34-Are there any open cracks in the concrete coping (not hairline)? If yes, record the approximate maximum crack width. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| Y | N/A | USN | | 35-Is there the connection joints in the coarsening coping opened up? (Photo 6). If yes, record the maximum joint width. | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |

1/16"

| | | | | | | | | | | | | | | |
|---|-----|-----|---|--------|----|----|-----|-----|-----|-----|-----|-----|------|---|
| Y | N/A | UKN | 16-Is there a large gap between the approach slab and the approach pavement? (Photo 15) Other than the approach pavement, is there any exposed reinforcement? Please record maximum displacement. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | UKN | 17-At the bottom, is the joint between the wall coping and the reinforcement exposed or significant? If so record maximum distance. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | UKN | 18-Is the coping wall pulling away from pavement/roadway section? Please record maximum displacement for wall. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |

MISE STABILITY

| Required Topic | | Drawings | Comments/Photo Numbers | Measurement/Extent of Problem/Location/Photo Numbers | Yes | No | N/A | UKN | | | | | | | |
|----------------|---|----------|------------------------|--|--------|----|-----|-----|-----|-----|-----|-----|-----|------|---|
| Y | N | N/A | UKN | 19-What is the location depth of leveling pad? Please Give Probe into wall located 2 inches from wall to a maximum depth of 24 inches (24 inches is the minimum depth for MSE W. Wall) | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 20-Is leveling pad exposed? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 21-Is there encroaching in the leveling pad? If so, record maximum crack size with gage. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 22-Is there a four foot bench (level slope) already along the wall before the slope changes (flared width)? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 23-Is there a slope steeper than V: 1.5 to H:1 in front of the wall? Please record slope and height of backfill above top of wall. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 24-Is there a slope greater than V: 1.5 to H:1 below the wall? Please record slope and height of backfill below the wall. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 25-Is there excessive degradation of panel face? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |

MISE METAL CORROSION

| Required Topic | | Drawings | Comments/Photo Numbers | Measurement/Extent of Problem/Location/Photo Numbers | Yes | No | N/A <th>UKN</th> | UKN | | | | | | | |
|----------------|---|----------|------------------------|---|--------|----|------------------|-----|-----|-----|-----|-----|-----|------|---|
| Y | N | N/A | UKN | 26-Is there excessive corrosion on guardrails or other exposed metal that might indicate corrosive conditions? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 27-Are there major rust stains on the face panels? Along joints? If so, record stain number. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 28-Are any internal steps exposed? Does there appear to be corrosion on these steps? If applicable please record the total number of steps affected. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 29-Was a weldability sample taken if exposed wall? If so, please indicate depth in inches. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 30-Is there any indication of other corrosion (cracking bars, rust, exposed metal inside epoxy coating)? If so please record the total number of panels affected. | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |

MISE IMPACT/COLLISION PROTECTION

| Required Topic | | Drawings | Comments/Photo Numbers | Measurement/Extent of Problem/Location/Photo Numbers | Yes | No | N/A <th>UKN</th> | UKN | | | | | | | |
|----------------|---|----------|------------------------|--|--------|----|------------------|-----|-----|-----|-----|-----|-----|------|---|
| Y | N | N/A | UKN | 31-Are guardrails well protected in places at the base of the wall (to protect it from potential traffic loading)? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 32-Does it appear that the wall has been involved in an accident (spliced panel, recent damage in the wall)? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 33-Does it appear the wall's functionality and integrity has been compromised by a collision or accident? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |

MISE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY

| Required Topic | | Drawings | Comments/Photo Numbers | Measurement/Extent of Problem/Location/Photo Numbers | Yes | No | N/A <th>UKN</th> | UKN | | | | | | | |
|----------------|---|----------|------------------------|--|--------|----|------------------|-----|-----|-----|-----|-----|-----|------|---|
| Y | N | N/A | UKN | 34-Are there inside wall angles (<90°) | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |

MISE AS BUILT DIFFERENT FROM DESIGN

| Required Topic | | Drawings | Comments/Photo Numbers | Measurement/Extent of Problem/Location/Photo Numbers | Yes | No | N/A <th>UKN</th> | UKN | | | | | | | |
|----------------|---|----------|------------------------|---|--------|----|------------------|-----|-----|-----|-----|-----|-----|------|---|
| Y | N | N/A | UKN | 35-Are there available drawings for the wall? Please indicate type (Situation and Layout, Design, As Built, etc.) | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 36-Is the layout in general accordance with drawings? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 37-Are the panels CIP (Cast in Place)? Does there appear to be excessive cracking in the panels? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 38-Was GEOFoam used in the construction of the wall? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 39-Are there any structures on or near wall that were not included in initial drawings? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 40-Are there any irrigation, utilities, or structures that are not part of the initial drawings? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 41-Have there been any excavations or evidence of excavations near the wall? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 42-Have local property owners changed the dynamics of the wall (additional structures, irrigation, vegetation, etc.)? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |
| Y | N | N/A | UKN | 43-Are there plants located in the wall (parge abatement)? | / 0-No | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 100% | / |