

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.

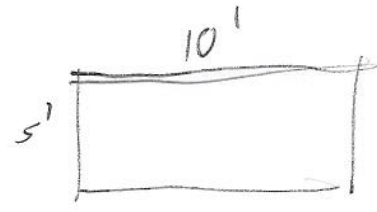
2-Inspect the wall using the attached form. Questions that require a 'Yes' answer should be documented by noting the extent of the problem in the right most column and photo documentation. Photo documentation should consist of wall or bridge number, nature of problem, date, photo number for wall, and 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

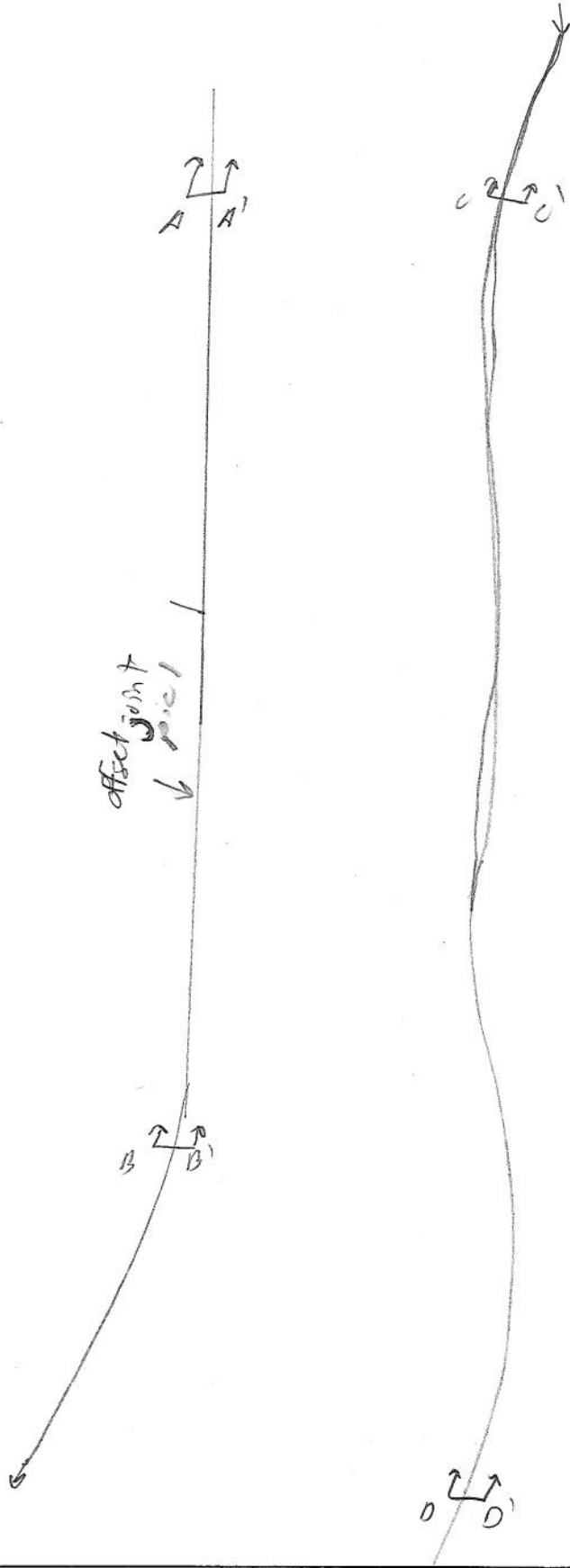
| | | | |
|--------|---|-------------------------------|---------------|
| Region | 2 | Identifying Road/Intersection | 900 W & A-201 |
|--------|---|-------------------------------|---------------|

MSE WALL CHARACTERISTICS

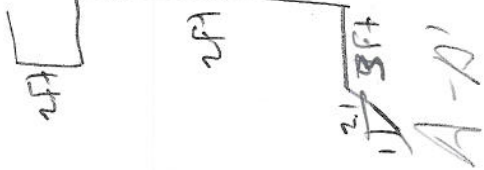
| | | | | | |
|---|---|------------------------------|--|--|--------------------------|
| MSE Wall at Bridge | Y N | Bridge Number if applicable: | | Wall Number | R-349-1 |
| Surrounding Structures | | | | Maximum Height of Wall (ft) | 16 Ft |
| Distance to Each Structure | | | | One Stage, Two Stage or Block Wall | 2 stage |
| State Route Number | | | | Estimated Max Length of Wall Abutment: | 16 Ft 1005 Ft |
| Approximate Mile Marker | | | | Max Slope of Ground in front of wall: | 0 |
| GPS Datum | WGS/84, NAD/83, or NAD/27 | | | Max Height of wall burial line above surrounding level ground: | 7 Ft |
| MSE Wall GPS Coordinates (Location of Measurement shown on plan view) | 40° 43' 28.57" N 111° 53' 10.13" W | | | Please draw rough layout of panel with approximate dimensions in space provided below: | |
| If known, Panel or System Manufacturer |  | | | | |

Summary of Key Observations:

Plan View/Drainage:



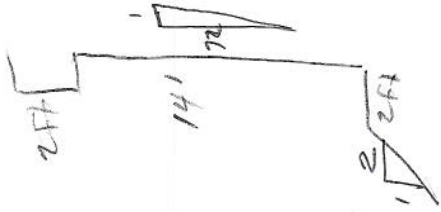
Cross Sections:



A-A'

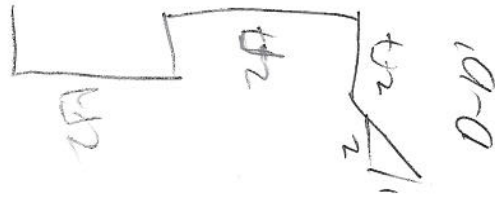


B-B'



C-C'

Cross Sections:



D-D'

MISS WALL DRAINAGE

| Required Issue: | Yes | No | NA | UKN | Long Level-Using CIPS-Cracks | Measurement/Extent of Problem/Location/Photo Numbers |
|--|-----|----|-----|-----|------------------------------|--|
| 14-Is there an active water source near the toe of the wall (i.e. the wall near a body of water with seepage potential)? | Y | N | N/A | UKN | Drainage | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 15-If applicable, are the cracks located at the base of the wall blocked? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 16-Are there vertical drains that travel through the backfill? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 17-Do the vertical drains at the base of the wall or footing pass? (Photo 12) | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 18-Is there evidence along the wing wall? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 19-Are there any signs of water flow along the base of the wall? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 20-Is there less than 14 feet between irrigation sprinklers and wall? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 21-Does the backfill or joint drain appear to be saturated? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 22-Is there vegetation growing in joint (Photo 9)? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 23-Is there water on the back of the wall (Photo 14)? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 24-Does water enter the wall between coping and slab (i.e. drain approximately)? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 25-Is there evidence of discharge point of fill washing through drain pipes? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |

MISS WALL JOINTS

| Required Issue: | Yes | No | NA | UKN | Long Level-Using CIPS-Cracks | Measurement/Extent of Problem/Location/Photo Numbers |
|---|-----|----|-----|-----|------------------------------|--|
| 26-Is backfill coming out of joints or are there piles of backfill at the base of the wall? (Photos 2 & 3) | Y | N | N/A | UKN | Joints | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 27-Are the joints wide enough to see fabric or backfill behind panels when looking into joints? (Photo 5) If yes, record the approximate maximum joint width in inches. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 28-Is exposed backfill visible in the horizontal joints? (Photo 9) | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 29-Are there voids in the joints? Is there evidence of backfill or water leaking through voids? (Do not record maximum damage to fabric) | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 30-Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger than others? (Photo 6) | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 31-Do the joints have a non-uniform vertical spacing? Are some vertical joints larger than others? (Photo 6) | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 32-Are the panels offset at the joints either in or out of the wall? (Photo 7) If yes, record the approximate maximum offset. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 33-Does the fabric appear brittle, or appear as if it has undergone excessive UV exposure? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |

MISS WALL FACING

| Required Issue: | Yes | No | NA | UKN | Long Level-Using CIPS-Cracks | Measurement/Extent of Problem/Location/Photo Numbers |
|--|-----|----|-----|-----|------------------------------|--|
| 34-Is there excessive cracking in the panels? (Photo 7) | Y | N | N/A | UKN | Wall Facing | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 35-Do the cracks continue vertically through adjacent panels? (Photos 9 & 10) If yes, record the approximate number of panels in the wall with cracking. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 36-Do the cracks continue horizontally through adjacent panels? (Photos 9 & 10) If yes, record the approximate number of panels in the wall with cracking. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 37-Are the panels cement raking contact with each other? If yes, record the approximate number in the wall. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 38-Are the panels "popped-out" or chipped from contact with an adjacent panel? If yes, record the number in the wall. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 39-Does crack washing suggest Differential Settlement? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 40-Does the overlying coping exhibit Vertical Offset? | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 41-Is the coping and supports loose or detaching? If yes, it may be appropriate to contact UDOT if detachment occurs. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 42-Are the panels in danger of falling off? (If potential and/or contact appropriate UDOT region). | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 43-Are the panels bulging (bowing horizontally)? If so, record maximum deformation from accessible coping to leveling point. (Photo 11) | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 44-Is there "hipping" at the top or bottom of the wall? (Record maximum degree of hipping from asphalt along vertical level and offset area.) | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |

MISS TOP OF WALL OBSERVATIONS

| Required Issue: | Yes | No | NA | UKN | Long Level-Using CIPS-Cracks | Measurement/Extent of Problem/Location/Photo Numbers |
|--|-----|----|-----|-----|------------------------------|--|
| 45-Is there evidence of settlement at the top of the wall? (pavement cracking, etc) | Y | N | N/A | UKN | Top Of Wall | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 46-Are there any open cracks in the concrete coping (not bedding)? If yes, record the approximate maximum crack width. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |
| 47-Is there the construction joints in the concrete coping opened up? (Photo 6). If yes, record the maximum joint width. | Y | N | N/A | UKN | | / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% / |

| Y | N | NA | UNKN | UNSAT | UNRES | UNEXP | UNDEF | UNDIR | UNDIR | UNDIR |
|---|---|----|------|-------|-------|-------|-------|-------|-------|-------|
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |

36-Is there a large gap between the approach slab and the approach pavement? (Photos 1) Other than this producers a bumping section on the approach is noted. Record the approximate maximum gap size.
 37-At the abutment, does the joint between the wall coping and the abutment exceed up significantly? If so record maximum distance.
 38-Is the coping wall falling away from pavement/roadway section? Please record maximum displacement from wall.

| Y | N | NA | UNKN | UNSAT | UNRES | UNEXP | UNDEF | UNDIR | UNDIR | UNDIR |
|---|---|----|------|-------|-------|-------|-------|-------|-------|-------|
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |

39-What is the location depth of leveling pad? Please Give Photo (one wall located 2 inches from wall to a maximum depth of 24 inches (24 inches in the minimum depth for MSE Wall)
 40-Is leveling pad exposed?
 41-Is there cracking in the leveling pad? If so, record maximum crack size with logs.
 42-Is there a four foot bench level directly along the wall before the slope changes (Record slope)?
 43-Is there a slope greater than V:1.5 to H:1 in front of the wall? Please record slope and height of backfill above line of work.
 44-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.
 45-Is there excessive degradation of panel faces?

| Y | N | NA | UNKN | UNSAT | UNRES | UNEXP | UNDEF | UNDIR | UNDIR | UNDIR |
|---|---|----|------|-------|-------|-------|-------|-------|-------|-------|
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |

46-Is there excessive corrosion on guardrails or other exposed metal that might indicate concrete conditions?
 47-Are there major rust stains on the face panels? Along joints? If so, record total number.
 48-Are any internal steps exposed? Does there appear to be corrosion on these steps? If applicable please record the total number of steps affected.
 49-Is there a readily simple signs of exposed rebar? If so, please indicate depth in inches.
 50-Is there any indication of other corrosion (swelling bars, rust, exposed metal inside epoxy coating)? If so please record the total number of panels affected.

| Y | N | NA | UNKN | UNSAT | UNRES | UNEXP | UNDEF | UNDIR | UNDIR | UNDIR |
|---|---|----|------|-------|-------|-------|-------|-------|-------|-------|
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |

51-Are guardrails wall protrusions in place at the base of the wall (to protect it from potential traffic hazard)?
 52-Does it appear that the wall has been involved in an accident (impacted panel, recent dips in the wall)?
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| Y | N | NA | UNKN | UNSAT | UNRES | UNEXP | UNDEF | UNDIR | UNDIR | UNDIR |
|---|---|----|------|-------|-------|-------|-------|-------|-------|-------|
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |

55-Are there any obstructions or more wall that were not included in initial drawing?
 56-Is the layout in general accordance with drawing?
 57-Are the panels CIP (Cast in Place)? Does there appear to be excessive cracking in the panels?
 58-Is the GEF form used in the construction of the wall?
 59-Are there any structures on or near wall that were not included in initial drawing?
 60-Are there any irrigation, utilities, or structures that are not part of the initial drawing?
 61-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 62-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 63-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 64-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?

| Y | N | NA | UNKN | UNSAT | UNRES | UNEXP | UNDEF | UNDIR | UNDIR | UNDIR |
|---|---|----|------|-------|-------|-------|-------|-------|-------|-------|
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |

65-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 66-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 67-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 68-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 69-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?

| Y | N | NA | UNKN | UNSAT | UNRES | UNEXP | UNDEF | UNDIR | UNDIR | UNDIR |
|---|---|----|------|-------|-------|-------|-------|-------|-------|-------|
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |

70-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 71-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 72-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 73-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 74-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?

| Y | N | NA | UNKN | UNSAT | UNRES | UNEXP | UNDEF | UNDIR | UNDIR | UNDIR |
|---|---|----|------|-------|-------|-------|-------|-------|-------|-------|
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |
| Y | | | | | | | | | | |

75-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 76-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
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 78-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?
 79-Is there any evidence of excessive erosion or evidence of excessive erosion near the wall?