

# 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

<b>Region</b>	3	<b>Identifying Road/Intersection</b>	Provo Canyon, river side
---------------	---	--------------------------------------	--------------------------

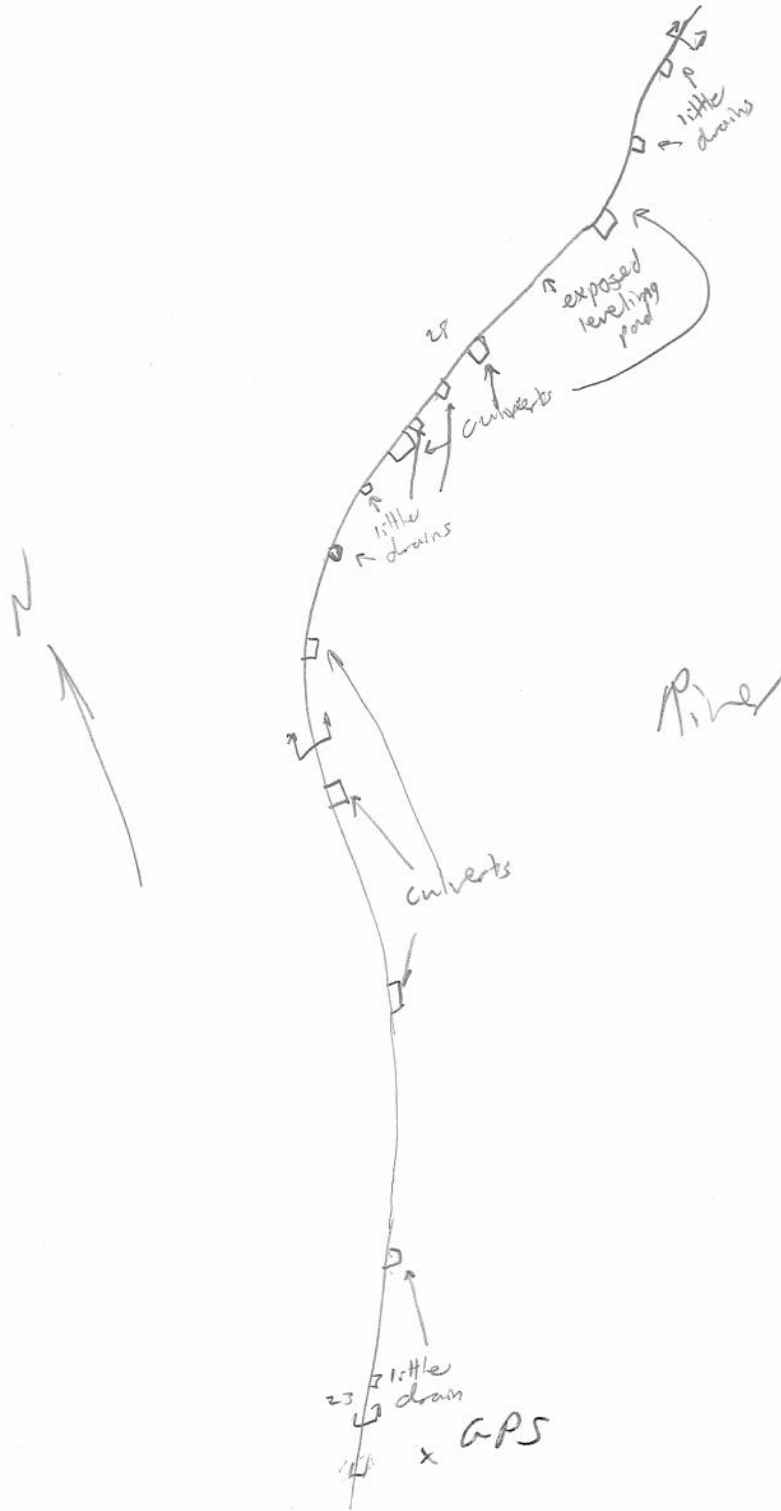
## MSE WALL CHARACTERISTICS

MSE Wall at Bridge	Y <input checked="" type="radio"/> N	Bridge Number if applicable:		Wall Number	R-419 - B2
Surrounding Structures				Maximum Height of Wall (ft)	17.5 ft
Distance to Each Structure				One Stage, Two Stage or Block Wall	1 stage
State Route Number				Estimated Max Length of Wall Abutment:	1200 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:	25 ft
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	40°22'38.53"N 111°33'17.95"W			Please draw rough layout of panel with approximate dimensions in space provided below:	
If known, Panel or System Manufacturer	<div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto; position: relative;"> <span style="position: absolute; top: 5px; left: 50px;">18"</span> <span style="position: absolute; top: 50px; left: 5px;">8"</span> </div>				

**Summary of Key Observations:**

6  
28  
5  
24  
  
18  
1224  
104  
28  
8

Plan View/Drainage:





Required Issue:		Yes	No	N/A	UKN	Measurement/Extent of Problem/Location/Photo Numbers
<b>RISE WALL DRAINAGE</b>						
<b>Non Level Slab Concrete/GFCR</b>						
Y	N/A	UKN				Drainage
Y	N/A	UKN				1-Is there an active water source near the toe of the wall (is the wall near a body of water with seepage potential)?
Y	N/A	UKN				2-If applicable, are the catch basins at the base of the wall blocked?
Y	N/A	UKN				3-Are there obstructions protruding through the wall?
Y	N/A	UKN				4-Are there vertical drains that travel through the backfill?
Y	N/A	UKN				5-Is there evidence at the base of the wall of leveling sand? (Photo 12)
Y	N/A	UKN				6-Is there evidence along the wing wall?
Y	N/A	UKN				7-Are there any signs of water flow along the base of the wall?
Y	N/A	UKN				8-Is there less than 1ft. between irrigation sprinklers and wall?
Y	N/A	UKN				9-Does the backfill or joint (either appear to be saturated)?
Y	N/A	UKN				10-Is there vegetation growing in sand joints (Photo 8)?
Y	N/A	UKN				11-Are the back drains and outlets at the top of the wall blocked? (Photo 14)
Y	N/A	UKN				12-Can water enter the wall between coping and slab (i.e. drain appropriately)?
Y	N/A	UKN				13-Is there evidence at discharge point of fill washing through drain pipe?
<b>RISE WALL JOINTS</b>						
<b>Non Level Slab Concrete/GFCR</b>						
<b>Joints</b>						
Y	N/A	UKN				14-Is backfill coming out of joints or are there piles of backfill at the base of the wall? (Pictures 2 & 3)
Y	N/A	UKN				15-Are the joints wide enough to see fabric or backfill behind panels when looking into joints? (Photo 3) If yes, record the approximate maximum joint width in inches.
Y	N/A	UKN				16-Is exposed backfill visible in the horizontal joint? (Photo 4)
Y	N/A	UKN				17-Are there visible tears in the fabric? Is there evidence of backfill or water leaking through wall? (Do not include additional damage to fabric)
Y	N/A	UKN				18-Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger than others? (Photo 6)
Y	N/A	UKN				19-Do the joints have a non-uniform vertical spacing? Are some vertical joints larger than others? (Photo 7)
Y	N/A	UKN				20-Is there evidence of a void or offset at the joint either in or out of the wall? (Photo 7) If yes, record the approximate maximum offset.
Y	N/A	UKN				21-Does the fabric appear brittle, or appear as if it has undergone excessive UV exposure?
<b>RISE WALL FACING</b>						
<b>Non Level Slab Concrete/GFCR</b>						
<b>Wall Facing</b>						
Y	N/A	UKN				22-Are the panels "tilt-up"? Is there excessive cracking in the panels?
Y	N/A	UKN				23-Are there cracks that continue vertically through adjacent panels (Photos 9 & 10)? If yes, record the approximate number of panels in the wall with cracking.
Y	N/A	UKN				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.
Y	N/A	UKN				25-Over the panel corners making contact with each other? If yes, record the approximate number in the wall.
Y	N/A	UKN				26-Are the panel corners "popped-off" or chipped from contact with an adjacent panel? If yes record the number in the wall.
Y	N/A	UKN				27-Does crack spacing suggest Differential Settlement?
Y	N/A	UKN				28-Does the existing coping exhibit Vertical Offset?
Y	N/A	UKN				29-Are the coping and parapets loose or detaching? If yes, it may be appropriate to contact UDOT if detachment seems imminent.
Y	N/A	UKN				30-Are the panels in danger of falling off? (If potential exit or contact appropriate UDOT region).
Y	N/A	UKN				31-Are the panels "bulging" (bowing horizontally)? If yes, record maximum deformation from acceptable coping to leveling grade. (Photo 11)
Y	N/A	UKN				32-Is there tipping at the top or bottom of the wall? (Record maximum degree of tipping from vertical using vertical level and diffused rear).
<b>RISE TOP OF WALL OBSERVATIONS</b>						
<b>Non Level Slab Concrete/GFCR</b>						
<b>Top Of Wall</b>						
Y	N/A	UKN				33-Is there evidence of settlement at the top of the wall? ( pavement cracking, etc)
Y	N/A	UKN				34-Are there any signs cracks in the concrete coping (see definition)? If yes record the approximate maximum crack width.
Y	N/A	UKN				35-Is there the connection/joint in the concrete coping opened up? (Photo 6) If yes, record the maximum joint width.

Y	N	NA	UNS	35-Is there a large gap between the approach slab and the approach pavement? (Photo 13) Or is this product a bumping condition as the approach is raised. Record the approximate maximum gap size (inches) between the joint between the wall coping and the slab on top of the approach? If so, record maximum distance.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y				36-Is the coping wall pulling away from pavement/curbway section? Please record maximum displacement for wall.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y				37-What is the location depth of leveling pad? Found One-Probe into wall located 2 inches from wall to a maximum depth of 24 inches (24 inches is the minimum depth for MSE Wall)	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y				40-Is leveling pad exposed?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y				41-Is there cracking in the leveling pad? If so, record maximum crack size with RFR.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y				42-Is there a four foot bench (level slope) directly along the wall before the slope changes (Record Width)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y				43-Is there a slope steeper than V: 1.2 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				44-Is there a slope greater than V: 1.2 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				45-Is there excessive degradation of panel face?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%

MSE STABILITY

Required Item:	Struct. Geotextiles	Measurement/Extent of Problem/Location/Photo Numbers
Yes	Y	39-What is the location depth of leveling pad? Found One-Probe into wall located 2 inches from wall to a maximum depth of 24 inches (24 inches is the minimum depth for MSE Wall)
Y	Y	40-Is leveling pad exposed?
Y	Y	41-Is there cracking in the leveling pad? If so, record maximum crack size with RFR.
Y	Y	42-Is there a four foot bench (level slope) directly along the wall before the slope changes (Record Width)?
Y	Y	43-Is there a slope steeper than V: 1.2 to H: 1 in front of the wall? Please record slope and height of backfill above top of wall.
Y	Y	44-Is there a slope greater than V: 1.2 to H: 1 below the wall? Please record slope and height of backfill below the wall.
Y	Y	45-Is there excessive degradation of panel face?

MSE METAL CORROSION

Required Item:	General/UNS	Measurement/Extent of Problem/Location/Photo Numbers
Yes	Y	46-Is there excessive corrosion on guardrails or other exposed metal that might indicate concrete condition?
Y	Y	47-Are there major rust stains on the face panels? Along joints? If so, record total number.
Y	Y	48-Are any internal straps exposed? Does there appear to be corrosion on these straps? If applicable please record the total number of straps affected.
Y	Y	49-Was a reliability sample taken of exposed wall? If so, please indicate depth in inches.
Y	Y	50-Are there any indications of other corrosion (swelling bars, rust, exposed metal table epoxy coating)? If so please record the total number of panels affected.

MSE IMPACT COLLISION PROTECTION

Required Item:	General/UNS	Measurement/Extent of Problem/Location/Photo Numbers
Yes	Y	51-Are guardrails wall protection in place at the base of the wall (to protect it from potential traffic hazard)?
Y	Y	52-Does it appear that the wall has been involved in an accident (replaced panel, recent ding in the wall)?
Y	Y	53-Does it appear the wall's functionality and integrity has been compromised by a collision or accident?

MSE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY

Required Item:	Obstructions in Reinforcement Geometry	Measurement/Extent of Problem/Location/Photo Numbers
Yes	Y	54-Are there any obstructions in the reinforcement geometry?
Y	Y	55-Are there any obstructions in the reinforcement geometry?

MSE AS BUILT DIFFERENT FROM DESIGN

Required Item:	Drawings/General/UNS	Measurement/Extent of Problem/Location/Photo Numbers
Yes	Y	56-Is the built different than design?
Y	Y	57-Are there any deviations from the wall? Please indicate type (Station and Layout, Design, As Built, etc.)
Y	Y	58-Is the layout in general accordance with drawing?
Y	Y	59-Are there any cracks (C&C in place) Does there appear to be excessive cracking in the panels?
Y	Y	60-Are there any structures or near wall that were not included in initial drawing?
Y	Y	61-Are there any irrigation, utilities, or foundations that are not part of the initial drawing?
Y	Y	62-Is there any excavation or evidence of excavation near the wall?
Y	Y	63-Is there any evidence of excavation near the wall?
Y	Y	64-Are there piles located in the wall (bridge abutment)?