

# 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>	West side of road I-15, Pleasant Grove

## MSE WALL CHARACTERISTICS

MSE Wall at Bridge	(Y) N	Bridge Number if applicable:		Wall Number	R-374 A, B
Surrounding Structures				Maximum Height of Wall (ft)	5.5 ft
Distance to Each Structure				One Stage, Two Stage or Block Wall	one stage
State Route Number				Estimated Max Length of Wall Abutment:	215 ft
Approximate Mile Marker				Max Slope of Ground in front of wall:	0.5:1
GPS Datum	WGS/84, NAD/83, or NAD/27			Max Height of wall burial line above surrounding level ground:	0
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	40° 20' 59.31" N 111° 46' 9.70" 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: 200px; height: 100px; margin: 0 auto; position: relative;"> <span style="position: absolute; top: 5px; right: 5px; font-size: 2em;">8"</span> <span style="position: absolute; bottom: 5px; left: 5px; font-size: 2em;">18"</span> </div>				

**Summary of Key Observations:**

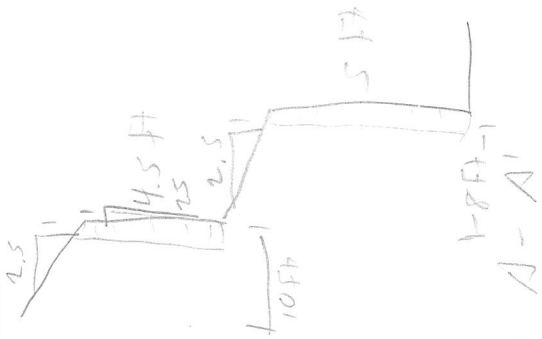


Plan View/Drainage:

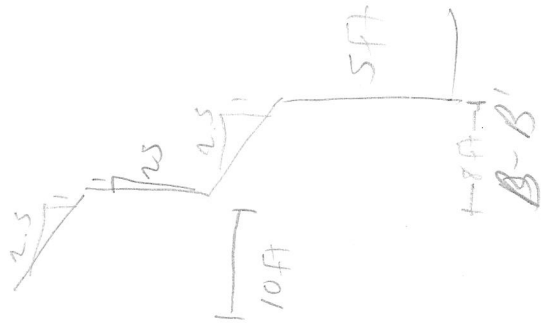




Cross Sections:



Cross Sections:





**MISE WALL DRAINAGE**

Required Items:		Yes		No		N/A		UKS		Measurement/Extent of Problem/Location/Photo Numbers	
Drainage		Y	N	N/A	UKS	1-Is there an active water source near the toe of the wall (is the wall near a body of water with scour potential)?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	N/A	UKS	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	N/A	UKS	3-Are there culverts protruding through the wall?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	4-Are there vertical drains that travel through the backfill?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	5-Is there erosion at the base of the wall or leveling pad? (Photo 12)	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	6-Is there erosion along the wing walls?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	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	N/A	UKS	8-Is there less than 14 feet between irrigation sprinklers and wall?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	9-Does the backfill or joint fabric appear to be saturated?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	10-Is there vegetation growing in panel joints (Photo 8)?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	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	N/A	UKS	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	N/A	UKS	13-Is there evidence of discharge point of fill washing through drain pipes?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				

**MISE WALL JOINTS**

Required Items:		Yes		No		N/A		UKS		Measurement/Extent of Problem/Location/Photo Numbers	
Joints		Y	N	N/A	UKS	14-Is backfill coming out of joints 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	N/A	UKS	15-Are the joints wide enough to see debris or backfill behind panels when looking into joints? (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	N/A	UKS	16-Is exposed backfill visible in the horizontal joints? (Photo 4)	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	17-Do the joints appear to be filled? If there is evidence of backfill or water leaking through joint? (Do not record if there is evidence of backfill or water leaking through joint)	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	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	N/A	UKS	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	N/A	UKS	20-Are the panels offset at the joints 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	N/A	UKS	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 PACING**

Required Items:		Yes		No		N/A		UKS		Measurement/Extent of Problem/Location/Photo Numbers	
Wall Pacing		Y	N	N/A	UKS	22-Are the panels "Tilted"? Is there excessive cracking in the panels?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	N/A	UKS	23-Are there cracks that run vertically 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	N/A	UKS	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	N/A	UKS	25-Are the panel corners making 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	N/A	UKS	26-Are the panel corners "popped-off" or clipped 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	N/A	UKS	27-Does crack spacing suggest Differential Settlement?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	28-Does the overlying coping exhibit Vertical Offset?	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	29-Are the coping and parapets loose or delaminating? If yes, it may be appropriate to contact UDOT if delamination occurs.	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	30-Are the panels in danger of falling off? (If potential exists contact appropriate UDOT region).	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	31-Are the panels bulging (bowing horizontally)? If so, record maximum deformation from accessible coping to leveling pad. (Photo 11)	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				
Y	N	N/A	UKS	32-Is there tilting at the top or bottom of the wall? (Record maximum degree of tilting from azimuth using vertical level from adjacent drains)	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				

**MISE TOP OF WALL OBSERVATIONS**

Required Items:		Yes		No		N/A		UKS		Measurement/Extent of Problem/Location/Photo Numbers	
Top of Wall		Y	N	N/A	UKS	33-Is there evidence of settlement at the top of the wall? (movement cracking, etc.)	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	N/A	UKS	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	N/A	UKS	35-Do the construction joints in the concrete coping "opened up"? (Photo 6) If yes, record the maximum joint width.	/	0-No	1% 5% 10% 25% 50% 75% 90% 95% 100% /				





Y	N/A	UKS	36-Is there a large gap between the approach slab and the approach pavement? (Photo 13) Often this produces a bumping sensation as the surface is crossed. Record the approximate maximum gap size.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	UKS	37-At the abutments, has the joint between the wall coping and the abutment opened up significantly? If so record maximum distance.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	UKS	38-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 Items:		MISE as Built		MISE as Built Different From Design	
Yes	No	Yes	No	Yes	No
Y	N/A	UKS	39-What is the location depth of existing post? Please Circle hole into wall located 1 inches from wall to a maximum depth of 24 inches (24 inches is the minimum depth for MISE Wall)	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	40-Is leveling pad exposed?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	41-Is there cracking in the leveling pad? If so, record maximum crack size with edge.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	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% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	43-Is there a slope steeper than V:1.5 to H:1 in front of the wall? Please record slope and height of wall top of curb.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	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.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	45-Is there excessive degradation of panel faces?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**MISE METAL CORROSION**

Required Items:		MISE as Built		MISE as Built Different From Design	
Yes	No	Yes	No	Yes	No
Y	N/A	UKS	46-Is there excessive corrosion on guardrails or other exposed metal that might indicate concrete conditions?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	47-Are there major rust stains on the face panels? Along joints? If so, record total number.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	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.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	49-Is there a readily visible stain of exposed soil? If so, please indicate depth in inches.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	50-Is there any indication of other corrosion (swelling, 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% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**MISE IMPACT/COLLISION PROTECTION**

Required Items:		MISE as Built		MISE as Built Different From Design	
Yes	No	Yes	No	Yes	No
Y	N/A	UKS	51-Are guardrails wall protrusions in place at the base of the wall to protect it from potential traffic hazards?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	52-Does it appear that the wall has been involved in an accident (replicated panel, recent ding in the wall)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	53-Does it appear the wall functionality and integrity has been compromised by a collision or accident?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**MISE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY**

Required Items:		MISE as Built		MISE as Built Different From Design	
Yes	No	Yes	No	Yes	No
Y	N/A	UKS	54-Are there acute wall angles (<90)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**MISE AS BUILT DIFFERENT FROM DESIGN**

Required Items:		MISE as Built		MISE as Built Different From Design	
Yes	No	Yes	No	Yes	No
Y	N/A	UKS	55-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% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	56-Is the layout in general accordance with drawing?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	57-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% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	58-Was GFCI form used in the construction of the wall?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	59-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% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	60-Are there any impingement, utilities, or obstructions that are not part of the initial drawing?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	61-Have there been any excavations or evidence of excavations near the wall?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	62-Have local property owners changed the dimensions of the wall (additional structures, impingement, vegetation, etc)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UKS	63-Are there piles located in the wall (bridge, abutment)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

