

# STATE OF UTAH MSE WALL INSPECTION FORM

Compiled As Part of Research By The Utah Department of Transportation

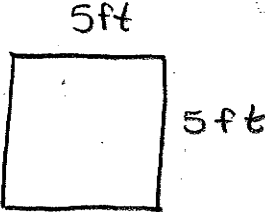
**Instructions:**

- 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

**Inspector Information**

Inspection Date	7/31/07	Names Of Inspectors	Ruan Mowl, Holly Griffin
Region	2	Identifying Road/Intersection	Clearfield center street

**MSE WALL CHARACTERISTICS**

MSE Wall at Bridge	(Y) N	Bridge Number if applicable:	011023 C	Wall Number	unknown
Surrounding Structures	railroad ties		Maximum Height of Wall (ft)	5 panels	
Distance to Each Structure	30 ft		One Stage, Two Stage or Block Wall	one stage	
State Route Number	center street - clearfield		Estimated Max Length of Wall Abutment:	52 ft	
Approximate Mile Marker			Max Slope of Ground in front of wall:	3 ft. to 10.5"	
GPS Datum	WGS/84 NAD/83, or NAD/27		Max Height of wall burial line above surrounding level ground:	level	
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	N 41° 06.776		Please draw rough layout of panel with approximate dimensions in space provided below:  <div style="text-align: center;">  </div>		
	W 112° 01.706				
If known, Panel or System Manufacturer	VSL?				

**Summary of Key Observations:**

- poor construction has led to severe erosion / drainage problems
- wall is in critical condition due to differential settlement
- pounding on panels indicated possible loss of fill



Cross Sections:

Cross Sections:

MSE WALL DRAINAGE

Required Tools: Nylon Mailer-Water Bottle-GPS-Camera

Required Tools:		Nylon Mailer-Water Bottle-GPS-Camera		Drainage		Measurement/Extent of Problem/Location/Photo Numbers											
Yes	No	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 scour potential?)		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UKN			/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UKN	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	UKN	3-Are there culverts protruding through the wall?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UKN	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	UKN	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	UKN	6-Is there erosion along the wing walls?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UKN	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	UKN	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	UKN	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	UKN	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	UKN	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	UKN	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	UKN	13-Is there evidence at discharge point of fill washing through drain pipes?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
						Blocked - Partial - Clear / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /											

MSE WALL JOINTS

Required Tools: Long Level-String-Camera-GPS

Required Tools:		Long Level-String-Camera-GPS		Joints		Measurement/Extent of Problem/Location/Photo Numbers											
Yes	No	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) <th>/</th> <th>0-No</th> <th>1%</th> <th>5%</th> <th>10%</th> <th>25%</th> <th>50%</th> <th>75%</th> <th>90% <th>95% <th>100% <th>/</th> </th></th></th>		/	0-No	1%	5%	10%	25%	50%	75%	90% <th>95% <th>100% <th>/</th> </th></th>	95% <th>100% <th>/</th> </th>	100% <th>/</th>	/
Y	N	N/A	UKN			/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UKN	15-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.		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UKN	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	UKN	17-Are there visible tears in the fabric? Is there evidence of backfill or water leaking through tear? (Do not induce additional damage to fabric)		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UKN	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	UKN	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	UKN	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	UKN	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%	/



MSE METAL CORROSION

Required Tools: Nylon Mallet-Camera-GPS-Zip Lock Bag-Trowel		Metal Corrosion		Measurement/Extent of Problem/Location/Photo Numbers										
Yes	No	N/A	UKN		0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	46-Is there excessive corrosion on guardrails or other exposed metal that might indicate corrosive conditions?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	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%	100% /
Y	N	N/A	UKN	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%	100% /
Y	N	N/A	UKN	49-Was a resistivity sample taken of exposed soil? If so, please indicate depth in inches.	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	50-Is there any indication of rebar corrosion (swelling 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%	100% /

MSE IMPACT/COLLISION PROTECTION

Required Tools: Camera-GPS		Impact/Collision		Measurement/Extent of Problem/Location/Photo Numbers										
Yes	No	N/A	UKN		0-No	1%	5%	10%	25%	50%	75%	90% <th>95% <th>100%</th> </th>	95% <th>100%</th>	100%
Y	N	N/A	UKN	51-Are guardrails/ wall protections in place at the base of the wall (to protect it from potential traffic hazards)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	52-Does it appear that the wall has been involved in an accident (replaced panel, recent dings in the wall)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	53-Does it appear the walls functionality and integrity has been compromised by a collision or accident?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /

MSE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY

Required Tools: Drawings		Obstructions in Reinforcement Geometry		Measurement/Extent of Problem/Location/Photo Numbers										
Yes	No	N/A	UKN		0-No	1%	5%	10%	25%	50%	75%	90% <th>95% <th>100%</th> </th>	95% <th>100%</th>	100%
Y	N	N/A	UKN	54-Are there acute wall angles (<90)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /

MSE AS BUILT DIFFERENT FROM DESIGN

Required Tools: Drawings-Camera-GPS		MSE as built different than design		Measurement/Extent of Problem/Location/Photo Numbers										
Yes	No	N/A	UKN		0-No	1%	5%	10%	25%	50%	75%	90% <th>95% <th>100%</th> </th>	95% <th>100%</th>	100%
Y	N	N/A	UKN	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%	100% /
Y	N	N/A	UKN	56-Is the layout in general accordance with drawings?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	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%	100% /
Y	N	N/A	UKN	58-Was GEOFoam used in the construction of the wall?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	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%	100% /
Y	N	N/A	UKN	60-Are there any irrigation, utilities, or intrusions that are not part of the initial drawings?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	61-Have there been any excavations or evidence of excavations near the wall?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	62-Have local property owners changed the dynamics of the wall (additional structures, irrigation, vegetation, etc.)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /
Y	N	N/A	UKN	63-Are there piles located in the wall (bridge abutment)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	100% /