

# STATE OF UTAH MSE WALL INSPECTION FORM

Compiled As Part of Research By The Utah Department of Transportation

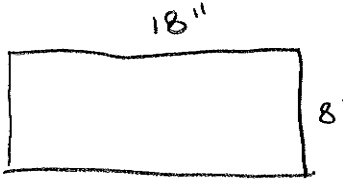
**Instructions:**

- 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	7/20/2009	Names Of Inspectors	HOLLY / RYAN
Region	Z	Identifying Road/Intersection	SR-71-CARNATION

**MSE WALL CHARACTERISTICS**

MSE Wall at Bridge	(Y) N	Bridge Number if applicable:	F-1727	Wall Number	R-455
Surrounding Structures	Noise Wall / RESIDENTIAL / PIPES			Maximum Height of Wall (ft)	9.5'
Distance to Each Structure	110'			One or Two Stage Wall	BLOCK
State Route Number	SR-71			Estimated Max Length of Wall Abutment:	110.5'
Approximate Mile Marker				Max Slope of Ground in front of wall:	4'run / 21" rise
GPS Datum	(WGS/84)	NAD/83, or NAD/27		Max Height of wall burial line above surrounding level ground:	~100 ft
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	N 40° 34.138'			Please draw rough layout of panel with approximate dimensions in space provided below:	
	W 111° 52.339'				
If known, Panel or System Manufacturer	Gardall				

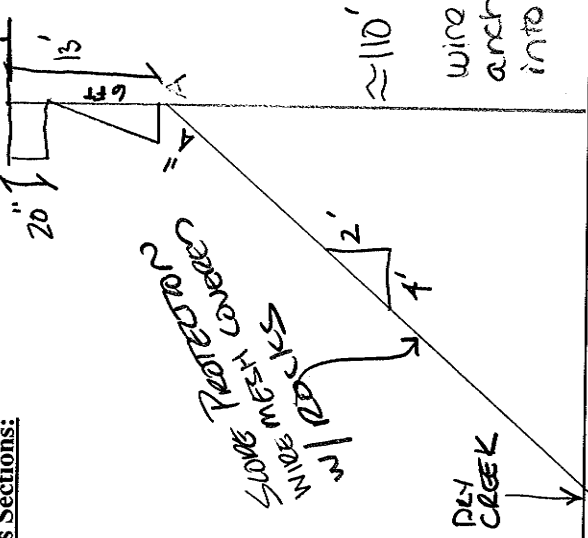
**Summary of Key Observations:**

no 4' bench present  
 uneven leveling pad  
 steep slope  
 irrigation sprinklers too close  
 differential settlement



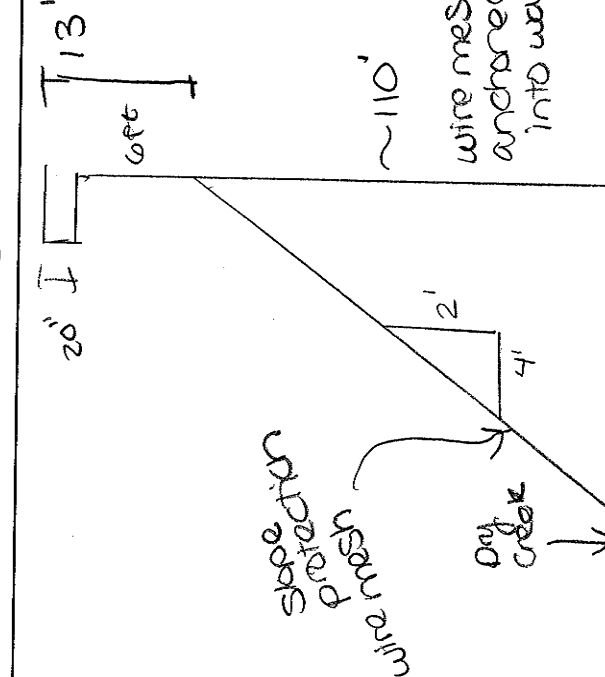
A-A Bense

Cross Sections:



Cross Sections:

B-B



slope section  
with mesh

MSK WALL DRAINAGE

Required Item	Yes	No	N/A	UN	Measure/Extent of Problem/Location/Photo Numbers
1-Is there an active water source near the toe of the wall (a well near a body of water, etc.)?	Y				Stream 100 ft below
2-If applicable, are the earth drains at the base of the wall blocked?	Y				
3-Are there drains penetrating through the wall?	Y				
4-Are there vertical drains that extend through the backfill?	Y				
5-Is there evidence at the base of the wall of leveling pads? (Photo 12)	Y				
6-Is there evidence along the wing wall?	Y				
7-Are there any signs of water flow along the base of the wall?	Y				
8-Is there any sign of water flow along the base of the wall?	Y				
9-Does the backfill or joint fabric appear to be saturated?	Y				
10-Is there vegetation growing in joint fabric (Photo 9)?	Y				
11-Is the deck drain and outlets at the top of the wall blocked? (Photo 14)	Y				
12-Can water enter the wall between coping and slab (i.e. Drain appropriately)?	Y				
13-Is there evidence at discharge point of fill washing through drain pipes?	Y				

MSK WALL JOINTS

Required Item	Yes	No	N/A	UN	Measure/Extent of Problem/Location/Photo Numbers
14-Is backfill coming out of joints or are there piles of backfill at the base of the wall? (Photos 2 & 3)	Y				
15-Are the joints wide enough to see through or backfill behind joints when looking into joints? (Photo 5) If so, record the approximate number of joints in the wall with this condition.	Y				
16-Is excess backfill visible in the horizontal joints? (Photo 4)	Y				
17-Are there visible signs of water leaking through joints? (Do not include additional drainage to ditches)	Y				
18-Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger/smaller than others? (Photo 6)	Y				
19-Do the joints have a non-uniform vertical spacing? Are some vertical joints larger/smaller than others? (Photo 7)	Y				
20-Are there any signs of water flow through joints?	Y				
21-Does the fabric appear brittle, or appear as if it has undergone excessive UV exposure?	Y				

MSK WALL FINISH

Required Item	Yes	No	N/A	UN	Measure/Extent of Problem/Location/Photo Numbers
22-Are the panels "chipped"? Is there excessive cracking in the panels?	Y				
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 this condition.	Y				
24-Are there cracks or panels in the wall with conditions that suggest adjacent panels (Photos 9 & 10)? If yes, record the approximate number of panels in the wall with this condition.	Y				
25-Are the panel corners "propped" or clipped from contact with an adjacent panel? If yes, record the number in the wall.	Y				
26-Are the panel corners "propped" or clipped from contact with an adjacent panel? If yes, record the number in the wall.	Y				
27-Does crack spacing suggest Differential Settlement?	Y				
28-Does the overlying coping exhibit Vertical Offset?	Y				
29-Are the coping and parapets loose or delaminating? If yes, it may be appropriate to remove UTRDT if horizontal occurs annual.	Y				
30-Are the bands in danger of falling off? If present, record extent (approximate UTRDT report).	Y				
31-Are the bands showing flexing horizontally? If so, record maximum deflection from accessible coping to slab and the approximate number of panels in the wall with this condition.	Y				
32-Are there signs of water flow through joints? (Photo 15) (Does this produce a blurring, saturation at the overpass or crown? Record the approximate maximum gap size.)	Y				

MSK TOP OF WALL OBSERVATIONS

Required Item	Yes	No	N/A	UN	Measure/Extent of Problem/Location/Photo Numbers
33-Is there evidence of settlement at the top of the wall? (reconciling, etc.)	Y				
34-Are there any signs of water flow in the concrete coping (not building)? If yes, record the approximate maximum crack width.	Y				
35-Is there any evidence of water flow in the concrete coping (not building)? If yes, record the maximum joint width.	Y				
36-Is there a large gap between the approach slab and the approach pavement? (Photo 15) (Does this produce a blurring, saturation at the overpass or crown? Record the approximate maximum gap size.)	Y				

photo 5  
photo 6  
photo 7  
photo 8  
photo 9  
photo 10  
photo 11  
photo 12  
photo 13  
photo 14  
photo 15

block wall  
photos # 1-3  
(0-1/4") - N photo 2

block wall photo 6  
4" over 6" → N, 4" over 7" → S

20" away from wall  
2-clear  
positive batter

Y	N	URS	37-Are the abutments, from the joint between the wall coping and the abutment upward up to crown? If so, record maximum distance.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	URS	37-B Is the coping wall pulling away from previous roadway section? Please record maximum distance for wall.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**MIN. STABILITY**

Requirement		Measure	Extent of Problem	Location	Photo	Photo Numbers
Y	N	URS	38-What is the bottom depth of leveling pad? Found Geoprobe into soil below 2' surface from wall in a minimum depth of 24 inches (2' interval) to the minimum depth per ASHRAE (wall)			
Y	N	URS	40-Is leveling pad exposed?			
Y	N	URS	41-Is there cracking in the leveling pad? If so, record maximum crack size with paper.			
Y	N	URS	42-Is there a four foot "level" (level shaped) directly along the wall before the slope changes (recant wall)?			
Y	N	URS	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 below the wall.			
Y	N	URS	44-Is there excessive degradation of joint faces?			

**MIN. MIN. COLLISION**

Requirement		Measure	Extent of Problem	Location	Photo	Photo Numbers
Y	N	URS	46-Is there excessive corrosion on panels or other exposed metal that might indicate concrete condition?			
Y	N	URS	47-Are there major rust stains on the face panels? Along joints? If so, record joint number.			
Y	N	URS	48-Are any internal rebar exposed? Does this appear to be corrosion on these rebar? If applicable please record the total number of rebar exposed.			
Y	N	URS	49-Was a rebar survey sample taken of exposed wall? If so, please indicate depth in inches.			
Y	N	URS	50-Is there any indication of fiber concrete (looking like, not exposed metal inside epoxy coating)? If so, please indicate depth in inches.			

**MIN. IMPACT/COLLISION PROTECTION**

Requirement		Measure	Extent of Problem	Location	Photo	Photo Numbers
Y	N	URS	51-Are guardrails/wall protrusions in place at the base of the wall to protect it from potential impact?			
Y	N	URS	53-Does it appear that the wall has been involved in an accident (replaced panel, recent dips in the wall)?			
Y	N	URS	53-Does it appear the wall's functionality and integrity has been compromised by a collision or accident?			

**MIN. OBSTRUCTIONS IN REINFORCEMENT GEOMETRY**

Requirement		Measure	Extent of Problem	Location	Photo	Photo Numbers
Y	N	URS	54-Are there rebar wall angles <90°?			

**MIN. AS BUILT DIFFERENT FROM DESIGN**

Requirement		Measure	Extent of Problem	Location	Photo	Photo Numbers
Y	N	URS	55-Are there visible drawings for the wall? Please indicate type (Situation and Layout, Design, As BUILT, etc.)			
Y	N	URS	56-Is the layout in general accordance with drawings?			
Y	N	URS	57-Are the panels CIP (Cast in Place)? Does there appear to be excessive embedding in the panels?			
Y	N	URS	58-Was GFRP used in the construction of the wall?			
Y	N	URS	59-Are there any variations on or near wall that were not included in initial drawings?			
Y	N	URS	60-Are there any variations, utilities, or imitations that are not part of the initial drawings?			
Y	N	URS	61-Have there been any excavations or evidence of excavations near the wall?			
Y	N	URS	62-Have local property owners changed the dynamics of the wall (additional structures, vegetation, etc.)?			
Y	N	URS	63-Are there piles located in the wall (bridge abutment)?			