

# STATE OF UTAH MSE WALL INSPECTION FORM

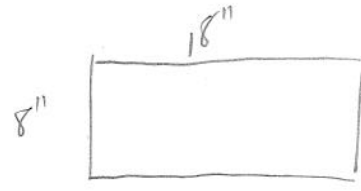
Compiled As Part of Research By The Utah Department of Transportation

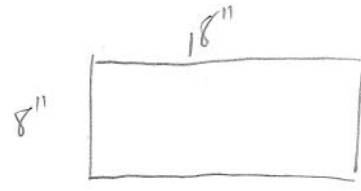
**Instructions:**

- 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, <sup>east</sup> west side
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## MSE WALL CHARACTERISTICS

MSE Wall at Bridge	Y <input checked="" type="checkbox"/> <del>N</del>	Bridge Number if applicable:		Wall Number	R- <del>297</del> 297A
Surrounding Structures				Maximum Height of Wall (ft)	8 Ft
Distance to Each Structure				One Stage, Two Stage or Block Wall	1-stage
State Route Number	189			Estimated Max Length of Wall Abutment:	600 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:	0
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	40°21'13.8"N 111°34'50.79"W			Please draw rough layout of panel with approximate dimensions in space provided below:	
If known, Panel or System Manufacturer					



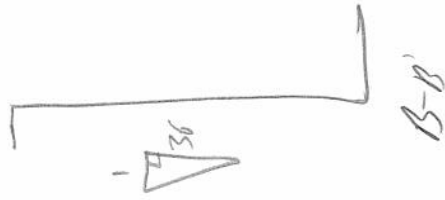
**Summary of Key Observations:**

lots of trash in front of wall

Plan View/Drainage:



Cross Sections:



Cross Sections:

BASE WALL DRAINAGE

Required Tests	Yes	No	NA	UNS	Measurement/Extent of Problem/Locations/Photo Numbers
1-Is there an active water source near the base of the wall (i.e. the wall near a body of water with seepage potential)?	Y	N	N/A	UNS	Drainage / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-If applicable, are the cracks located at the base of the wall blocked?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Are there substrates protruding through the wall?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
4-Are there vertical drains that travel through the backfill?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
5-Is there erosion at the base of the wall or leveling pad? (Photo 12)	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
6-Is there erosion along the wing wall?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
7-Are there any signs of water flow along the base of the wall?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
8-Is there less than 14 feet between irrigation gridlines and wall?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
9-Does the backfill or joint fabric appear to be saturated?	Y	N	N/A	UNS	Blocked / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
10-Is there vegetation growing in-panel joints (Photo 9)?	Y	N	N/A	UNS	Blocked / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
11-Are the back drains and outlets at the top of the wall blocked? (Photo 14)	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
12-Can water enter the wall between coping and slab (i.e., drain apron(s))?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
13-Is there evidence at discharge point of fill washing through drain pipes?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

BASE WALL JOINTS

Required Tests	Yes	No	NA	UNS	Measurement/Extent of Problem/Locations/Photo Numbers
1-Do the joints have a non-uniform horizontal spacing size? Are some horizontal joints larger/smaller than others? (Photo 5)	Y	N	N/A	UNS	Joint / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-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	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Is there evidence of backfill or water tracking through joints? (Do not include additional damage to fabric)	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
4-Do the joints have a non-uniform vertical spacing size? Are some vertical joints larger/smaller than others? (Photo 5)	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
5-Are there signs of fabric or backfill at the joints either in or out of the wall? (Photo 7) If yes, record the approximate maximum offset.	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
6-Does the fabric appear brittle, or appear as if it has undergone excessive UV exposure?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

BASE WALL FACING

Required Tests	Yes	No	NA	UNS	Measurement/Extent of Problem/Locations/Photo Numbers
7-Are the panels "Tilt-Up"? Is there excessive cracking in the panels?	Y	N	N/A	UNS	Wall Facing / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
8-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	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
9-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	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
10-Do the panel corners "pop-out" or chip off? If yes, record the approximate number in the member in the wall.	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
11-Does crack spacing suggest Differential Settlement?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
12-Does the overlying coping exhibit Vertical Offset?	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
13-Are the coping and parapet loose or detaching? If yes, it may be appropriate to contact UDOT if detachment seems imminent.	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
14-Are the panels in danger of falling off? (If potential exists contact appropriate UDOT region).	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
15-Are the panels bulging (bowing horizontally)? If so, record maximum deformations from accessible coping to facing pad. (Photo 11)	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
16-Is there "blowing" at the top or bottom of the wall? (Record maximum degree of lifting from air/wind using vertical level and affected area).	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

SEE TOP OF WALL OBSERVATIONS

Required Tests	Yes	No	NA	UNS	Measurement/Extent of Problem/Locations/Photo Numbers
17-Is there evidence of settlement at the top of the wall? (pavement cracking, etc)	Y	N	N/A	UNS	Top of Wall / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
18-Are there any signs of cracks in the concrete coping (not soffits)? If yes record the approximate maximum crack width.	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
19-Is there any evidence of cracking in the concrete coping exposed up? (Photo 6) If yes, record the maximum joint width.	Y	N	N/A	UNS	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

Y	N	OK	16-Is there a large gap between the approach slab and the approach pavement? (Photo 15) Other than the approach slab, is there any other concrete on the approach pavement? Record the approximate maximum gap size.	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	OK	17-At the abutments, has the joint between the wall coping and the abutment opened up significantly? If so record maximum distance.	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	OK	18-Is the coping wall pulling away from pavement/truck or section? Please record maximum displacement for wall.	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**RISE STABILITY**

Required Tests: <b>Structural Integrity</b>				
Y	N	N/A	19-Is the face of the wall (or the bottom of the wall) located 2 inches from wall to the maximum depth of 24 inches (24 inches is the minimum depth for MSE Wall).	Measurement of Face from Location/Photo Numbers
Y	N	N/A	20-Is leveling pad exposed?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	21-Is there cracking in the leveling pad? If so, record maximum crack size with gage.	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	22-Is there a four foot backfill (level slope) directly along the wall before the slope changes (Record Width)?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	23-Is there a slope steeper than V: 1.5 to H:1 in front of the wall? Please record slope and height of backfill above top of wall.	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	24-Is there excessive degradation of panel face?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**RISE METALL CORROSION**

Required Tests: <b>Visual Inspection of Top Lock Strap (Visual)</b>				
Y	N	N/A	25-Is there excessive corrosion on guardrail or other exposed metal that might indicate corrosion condition?	Measurement of Face from Location/Photo Numbers
Y	N	N/A	26-Are any lateral straps exposed? Does there appear to be corrosion on these straps? If applicable please record the total number of straps affected.	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	27-Is there a readily visible stain of exposed soil? If so, please indicate depth in inches.	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	28-Is there any indication of other corrosion (swelling, box, rust, exposed metal inside epoxy coating)? If so please record the total number of panels affected.	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**RISE IMPACT/COLLISION PROTECTION**

Required Tests: <b>General</b>				
Y	N	N/A	29-Is any guardrail wall protruding in place at the base of the wall (to protect it from potential traffic loads)?	Measurement of Face from Location/Photo Numbers
Y	N	N/A	30-Does it appear that the wall has been involved in an accident (replaced panel, recent dips in the wall)?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	31-Does it appear the walls functionality and integrity has been compromised by a collision or accident?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**RISE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY**

Required Tests: <b>Drawings</b>				
Y	N	N/A	32-Are there steel wall angles (S)?	Measurement of Face from Location/Photo Numbers
Y	N	N/A	33-Are there any obstructions in Reinforcement Geometry?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**RISE AS BUILT DIFFERENT FROM DESIGN**

Required Tests: <b>Drawings/General</b>				
Y	N	N/A	34-Are there any obstructions in Reinforcement Geometry?	Measurement of Face from Location/Photo Numbers
Y	N	N/A	35-Are there any obstructions in Reinforcement Geometry?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	36-Is the layout in general accordance with drawings?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	37-Are the panels CIP (Cast in Place)? Does there appear to be excessive cracking in the panels?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	38-Are there any structures on or near wall that were not included in initial drawings?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	39-Is there any evidence of excessive or evidence of excessive near the wall?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	40-Is there any evidence of excessive or evidence of excessive near the wall?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	41-Is there any evidence of excessive or evidence of excessive near the wall?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	42-Is there any evidence of excessive or evidence of excessive near the wall?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	43-Is there any evidence of excessive or evidence of excessive near the wall?	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

*fresh containing walls, a shock*