

# 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>	4	<b>Identifying Road/Intersection</b>	I-15, Washington interchange
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## MSE WALL CHARACTERISTICS

MSE Wall at Bridge	(Y) N	Bridge Number if applicable:		Wall Number	R-375-F
Surrounding Structures				Maximum Height of Wall (ft)	17 ft
Distance to Each Structure				One Stage, Two Stage or Block Wall	1-stage
State Route Number				Estimated Max Length of Wall Abutment:	132 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

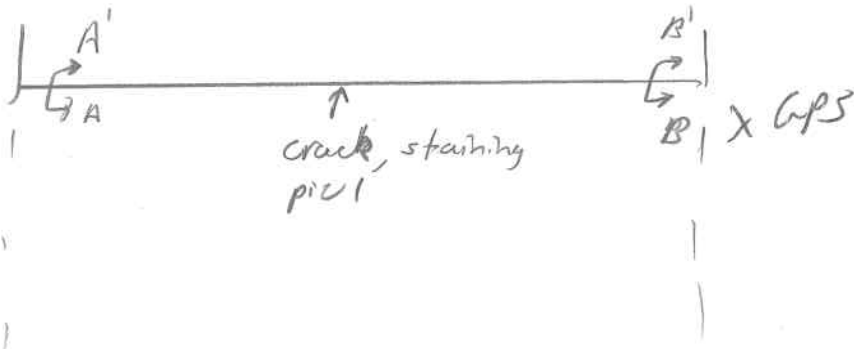
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	37° 7' 42.90" N 113° 31' 29.35" W	Please draw rough layout of panel with approximate dimensions in space provided below:
If known, Panel or System Manufacturer		

**Summary of Key Observations:**

some stains from middle ~~drainage~~  
drainage



I-15



Plan View/Drainage:

Cross Sections:



Cross Sections:

RISE WALL DRAINAGE

Required Item:	Yes	No	N/A	UN	EN	Measurement/Extent of Problem/Location/Photo Numbers
14-Is there an active water source near the base of the wall (in the wall or a body of water with seepage)?	Y	N/A	UN	EN	UN	Drainage / 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-If applicable, are the mesh located at the base of the wall blocked?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Are there obstructions protruding through the wall?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
4-Are there vertical drains that travel through the backfill?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
5-4-Is there erosion at the base of the wall or leveling pad? (Photo 12)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
6-Is there erosion along the wing wall?	Y	N/A	UN	EN	UN	/ 0-Nb 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/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
8-1-Is there evidence of discharge points of BR washing through drain pipes?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
9-Does the backfill or joint fabric appear to be saturated?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
10-Is there vegetation growing in joint joints (Photo 8)?	Y	N/A	UN	EN	UN	Blocked / 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
11-After the deck drains and settles at the top of the wall block? (Photo 14)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
12-Can water enter the wall between coping and slab (i.e., drain approximately)?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
13-1-Is there evidence of discharging points of BR washing through drain pipes?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

RISE WALL JOINTS

Required Item:	Yes	No	N/A	UN	EN	Measurement/Extent of Problem/Location/Photo Numbers
1-Is the backfill moving out of joints or are there signs of backfill at the base of the wall? (Pictures 2 & 3)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-If applicable, are the mesh located at the base of the wall blocked?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Are there obstructions protruding through the wall?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
4-Are there vertical drains that travel through the backfill?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
5-4-Is there erosion at the base of the wall or leveling pad? (Photo 12)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
6-Is there erosion along the wing wall?	Y	N/A	UN	EN	UN	/ 0-Nb 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/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
8-1-Is there evidence of discharge points of BR washing through drain pipes?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
9-Does the backfill or joint fabric appear to be saturated?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
10-Is there vegetation growing in joint joints (Photo 8)?	Y	N/A	UN	EN	UN	Blocked / 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
11-After the deck drains and settles at the top of the wall block? (Photo 14)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
12-Can water enter the wall between coping and slab (i.e., drain approximately)?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
13-1-Is there evidence of discharging points of BR washing through drain pipes?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

RISE WALL FINISH

Required Item:	Yes	No	N/A	UN	EN	Measurement/Extent of Problem/Location/Photo Numbers
1-Is the backfill moving out of joints or are there signs of backfill at the base of the wall? (Pictures 2 & 3)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-If applicable, are the mesh located at the base of the wall blocked?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Are there obstructions protruding through the wall?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
4-Are there vertical drains that travel through the backfill?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
5-4-Is there erosion at the base of the wall or leveling pad? (Photo 12)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
6-Is there erosion along the wing wall?	Y	N/A	UN	EN	UN	/ 0-Nb 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/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
8-1-Is there evidence of discharge points of BR washing through drain pipes?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
9-Does the backfill or joint fabric appear to be saturated?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
10-Is there vegetation growing in joint joints (Photo 8)?	Y	N/A	UN	EN	UN	Blocked / 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
11-After the deck drains and settles at the top of the wall block? (Photo 14)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
12-Can water enter the wall between coping and slab (i.e., drain approximately)?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
13-1-Is there evidence of discharging points of BR washing through drain pipes?	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

RISE TOP OF WALL OBSERVATIONS

Required Item:	Yes	No	N/A	UN	EN	Measurement/Extent of Problem/Location/Photo Numbers
1-Is there evidence of settlement at the top of the wall? ( pavement cracking, etc.)	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-Is there evidence of cracking in the concrete coping (not hairline)? If yes, record the approximate maximum crack width.	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Is there the construction joint in the connecting coping opened up? (Photo 6). If yes, record the maximum joint width.	Y	N/A	UN	EN	UN	/ 0-Nb 1% 5% 10% 25% 50% 75% 90% 95% 100% /

Y	N/A	UNSN	35-Is there a large gap between the approach slab and the approach pavement? (Photos 13) Other than 35-Is there a blurring condition as the approach is increased. Record the approximate maximum gap size. Record the maximum distance from the joint between the wall coping and the adjacent opening alignment? If the coping is not in contact with the approach pavement, please record the maximum displacement of the coping wall pulling away from pavement/curbway section? Please record maximum displacement for wall.	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UNSN	36-Is the coping wall pulling away from pavement/curbway section? Please record maximum displacement for wall.	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	UNSN	38-Is the coping wall pulling away from pavement/curbway section? Please record maximum displacement for wall.	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /

**REQUIREMENT TITLE: SHEET, MEASUREMENT**

Yes	No	N/A	UNSN	Measurement/Extent of Problem/Location/Photo Numbers	95%	90%	75%	50%	25%	10%	5%	100%
Y	N/A	UNSN	39-What is the location depth of leveling pad? Please Cross-hatch into wall located 2 inches from wall to a minimum depth of 24 inches (24 inches for the minimum depth for MSE Wall)	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	40-Is leveling pad exposed?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	41-Is there cracking in the leveling pad? If so, record maximum crack size with page.	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	42-Is there a four feet back (level slope) directly along the wall before the slope changes (Record Width)?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	43-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-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	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-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	45-Is there excessive degradation of front face?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								

**REQUIREMENT TITLE: NYLON BUSHES/CONCRETE/ZIP LOCK TOP FROWL**

Yes	No	N/A <th>UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th> </th>	UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th>	Measurement/Extent of Problem/Location/Photo Numbers	95%	90%	75%	50%	25%	10%	5%	100%
Y	N/A	UNSN	46-Is there excessive corrosion on guardrail or other exposed metal that might indicate concrete condition?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	47-Are there any rust stains on the floor panels? Along joints? If so, record total number.	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	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-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	49-Was a randomly sample taken of exposed wall? If so, please indicate depth in inches.	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	50-Is there any indication of chime corrosion (swelling bars, rust, exposed metal inside epoxy coating)? If so please record the total number of joints affected.	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								

**REQUIREMENT TITLE: CONCRETE/IMPACT COLLISION**

Yes	No	N/A <th>UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th> </th>	UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th>	Measurement/Extent of Problem/Location/Photo Numbers	95%	90%	75%	50%	25%	10%	5%	100%
Y	N/A	UNSN	51-Are guardrails wall protrusions in place at the base of the wall to prevent it from potential uplift hazard?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	52-Does it appear that the wall has been involved in an accident (replaced panel, recent dip in the wall)?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	53-Does it appear the wall's functionality and integrity has been compromised by a collision or accident?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								

**REQUIREMENT TITLE: OVERLAP**

Yes	No	N/A <th>UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th> </th>	UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th>	Measurement/Extent of Problem/Location/Photo Numbers	95%	90%	75%	50%	25%	10%	5%	100%
Y	N/A	UNSN	54-Are there voids with angle <90°?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								

**REQUIREMENT TITLE: DRAWINGS/CONSTRAINTS IN REINFORCEMENT GEOMETRY**

Yes	No	N/A <th>UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th> </th>	UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th>	Measurement/Extent of Problem/Location/Photo Numbers	95%	90%	75%	50%	25%	10%	5%	100%
Y	N/A	UNSN	55-Are there available drawings for the wall? Please indicate type (Shading and Layout, Design, As Built, etc.)	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	56-Is the layout in general accordance with drawings?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	57-Are the panels CIP (Cast in Place) Does there appear to be excessive cracking in the panels?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	58-Was a GED/Instrument used for the construction of the wall?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	59-Are there any structures on or near wall that were not included in initial drawings?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	60-Are there any irregularities, utilities, or intrusions that are not part of the initial drawings?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	61-Have there been any excavations or evidence of excavations near the wall?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	62-Have road property owners changed the character of the wall (additional structure, vegetation, etc.)	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	63-Are there piles located in the wall (bridge abutment)?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								

**REQUIREMENT TITLE: DRAWINGS/CONSTRAINTS IN REINFORCEMENT GEOMETRY**

Yes	No	N/A <th>UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th> </th>	UNSN <th>Measurement/Extent of Problem/Location/Photo Numbers</th> <th>95%</th> <th>90%</th> <th>75%</th> <th>50%</th> <th>25%</th> <th>10%</th> <th>5%</th> <th>100%</th>	Measurement/Extent of Problem/Location/Photo Numbers	95%	90%	75%	50%	25%	10%	5%	100%
Y	N/A	UNSN	64-Is the wall built different than design.	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	65-Is there available drawings for the wall? Please indicate type (Shading and Layout, Design, As Built, etc.)	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	66-Is the layout in general accordance with drawings?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	67-Are the panels CIP (Cast in Place) Does there appear to be excessive cracking in the panels?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	68-Was a GED/Instrument used for the construction of the wall?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	69-Are there any structures on or near wall that were not included in initial drawings?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	70-Are there any irregularities, utilities, or intrusions that are not part of the initial drawings?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	71-Have there been any excavations or evidence of excavations near the wall?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	72-Have road property owners changed the character of the wall (additional structure, vegetation, etc.)	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								
Y	N/A	UNSN	73-Are there piles located in the wall (bridge abutment)?	/ 0-N0 1% 5% 10% 25% 50% 75% 90% 95% 100% /								