

# STATE OF UTAH MSE WALL INSPECTION FORM

Compiled As Part of Research By The Utah Department of Transportation

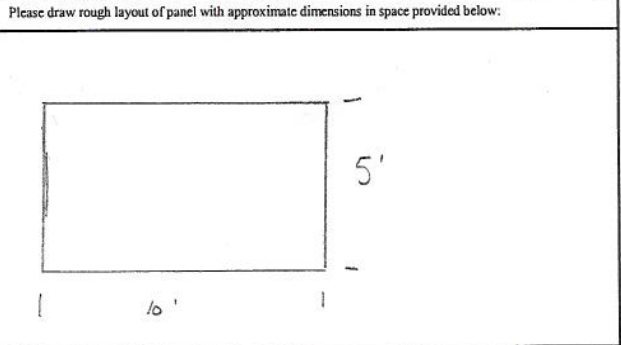
**Instructions:**

- 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>	Z	<b>Identifying Road/Intersection</b>	I-80 WEST OFF RAMP OVER 4005
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## MSE WALL CHARACTERISTICS

MSE Wall at Bridge	(Y) N	Bridge Number if applicable:		Wall Number	R-351-9
Surrounding Structures	None			Maximum Height of Wall (ft)	22'
Distance to Each Structure				One Stage, Two Stage or Block Wall	Two
State Route Number				Estimated Max Length of Wall Abutment:	700'
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:	N/A
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	#1 40° 45' 32.32" N 111° 54' 46.65" W #2 40° 45' 36.5" N 111° 54' 47.90" W				
If known, Panel or System Manufacturer					

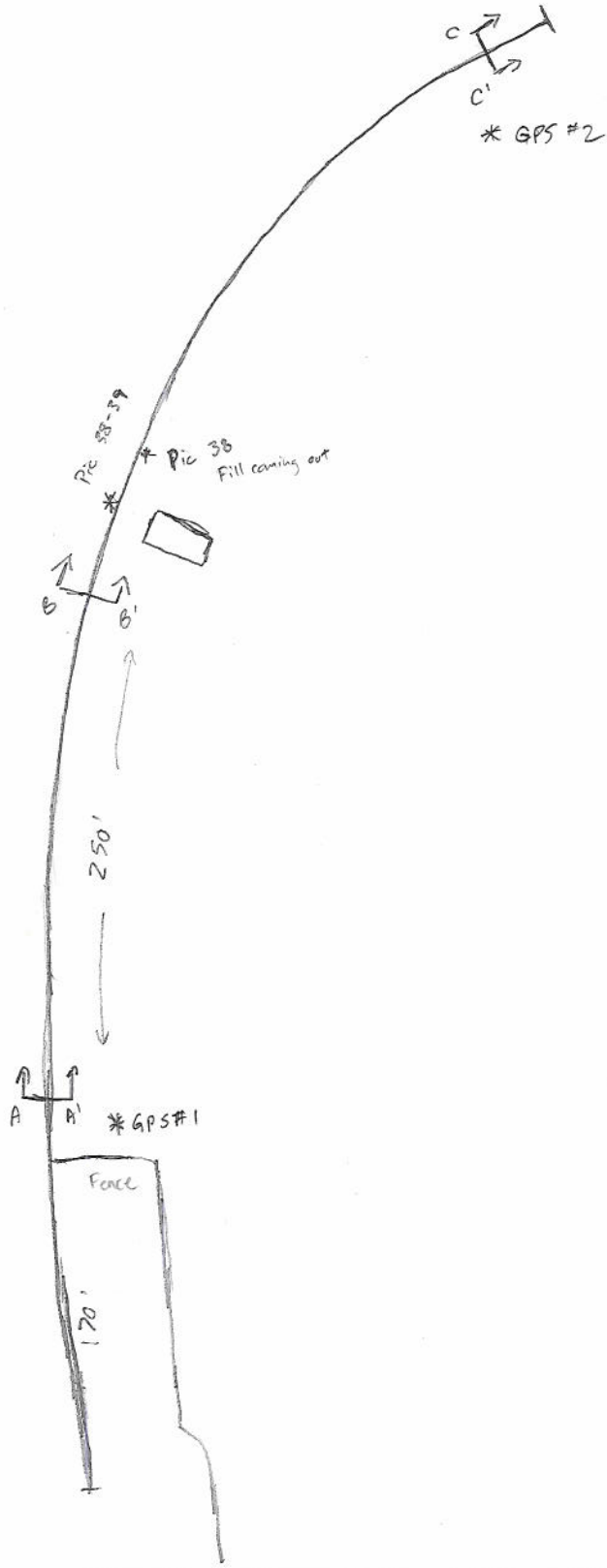


**Summary of Key Observations:**

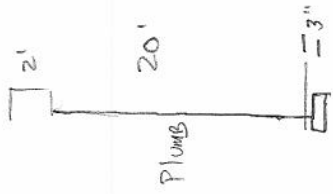
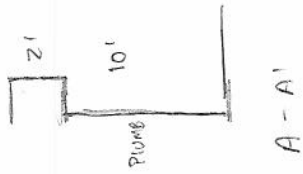
- unable to access top of wall, unknown condition
- wall appears in very good condition

39-90 wall

Plan View/Drainage:



Cross Sections:



Cross Sections:



MISE WALL DRAINAGE

Required Tests:		Yes	No	NA	USN	Measurement/Extent of Problem/Location/Photo Numbers
Drainage						
Y	N/A	USN	1-4: Is there an active water source near the toe of the wall (is the wall near a body of water with sear potential)?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	2-4: 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/A	USN	3-4: Are there culverts penetrating through the wall?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	4-4: Are there vertical drains that travel through the backfill?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	5-4: 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/A	USN	6-4: Is there erosion along the wing wall?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	7-4: 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/A	USN	8-4: Is there less than 14 feet between irrigation sprinklers and wall?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	9-4: Does the backfill or joint fabric appear to be saturated?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	10-4: Is there vegetation growing in panel joints (Photo 8)?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	11-4: 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/A	USN	12-4: Can water enter the wall between coping and slab (i.e., Drains appropriately)?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	13-4: Is there evidence of fill washing through drain pipe?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Blocked						
Y	N/A	USN	14-4: Is the wall inaccessible?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

MISE WALL JOINTS

Required Tests:		Yes	No	NA	USN	Measurement/Extent of Problem/Location/Photo Numbers
Joints						
Y	N/A	USN	14-4: Is backfill coating 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/A	USN	15-4: Are the joints wide enough to see fabric or backfill behind panels when looking into joints? (Photos 5 & 6)			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	16-4: Is exposed backfill visible in the horizontal joints? (Photo 4)			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	17-4: Are there visible tears in the fabric? Is there evidence of backfill or water leaking through tears? (Do not include additional damage to fabric)			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	18-4: Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger than others? (Photo 6)			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	19-4: 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/A	USN	20-4: 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 FACING

Required Tests:		Yes	No	NA	USN	Measurement/Extent of Problem/Location/Photo Numbers
Wall Facing						
Y	N/A	USN	21-4: Are the panels "tilting"? If there is excessive cracking in the panel?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	22-4: 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.			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	23-4: Are the panels racking 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/A	USN	24-4: Are the panel corners "popped-off" or chipped 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/A	USN	25-4: Does crack spacing suggest Differential Settlement?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	26-4: Does the overlying coping exhibit Vertical Offset?			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	27-4: Are the coping and parapets loose or delaminating? If yes, it may be appropriate to contact UDOT if detachment seems evident.			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	28-4: 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/A	USN	29-4: Are the panels bulging (showing horizontal)? 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/A	USN	30-4: Is there "lapping" at the top or bottom of the wall? (Record maximum degree of lapping from rebarub using vertical level and affected area).			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

MISE TOP OF WALL OBSERVATIONS

Required Tests:		Yes	No	NA	USN	Measurement/Extent of Problem/Location/Photo Numbers
Top Of Wall						
Y	N/A	USN	31-4: Is there evidence of misalignment at the top of the wall? (government cracking, etc)			/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N/A	USN	32-4: 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/A	USN	33-4: Have 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	N/A	UN	56-Is there a large gap between the approach slab and the approach pavement? (Photo 15) Often this produces a bumping sensation as the car approaches. Record the approximate maximum gap size.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	UN	57-At the abutment, has the joint between the wall coping and the abutment opened up significantly? If so record maximum distance.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/	
Y	N	UN	58-Is the coping wall pulling away from pavement/roadway section? Please record maximum displacement from wall.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/	

**MISE STABILITY**

Measurement/Extent of Problem/Location/Photo Numbers																
Y	N	N/A	UN	59-What is the location depth of leveling pad? Found One Probe (into soil) located 2 inches from wall to a maximum depth of 24 inches (24 inches is the minimum depth for MSE Wall)	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	60-Is leveling pad exposed?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	61-Is there cracking in the leveling pad? If so, record maximum crack size with gaps.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	62-Is there a four foot bench (level slope) directly along the wall before the slope changes (Record Width)	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	63-Is there a slope steeper than V:1.5 to H:1 in front of the wall? Please record slope and height of bench/level above top of wall.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	64-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.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	65-Is there excessive degradation of front face?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

**MISE METAL CORROSION**

Measurement/Extent of Problem/Location/Photo Numbers																
Y	N	N/A	UN	66-Is there excessive corrosion on garbolls or other exposed metal that might indicate corrosion potential?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	67-Are there major rust stains on the face panels? Along joints? If so, record total number.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	68-Are any internal straps exposed? Does there appear to be corrosion on these straps? If applicable please record the total number of straps affected.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	69-Was a rebar/city sample taken of exposed wall? If so, please indicate depth in inches.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	70-Is there any indication of other corrosion (peeling bark, rust, exposed metal inside epoxy coating)? If so please record the total number of panels affected.	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

**MISE IMPACT/COLLISION PROTECTION**

Measurement/Extent of Problem/Location/Photo Numbers																
Y	N	N/A	UN	71-Are garbolls/wall protections in place at the base of the wall (to protect it from potential traffic loads)?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	72-Does it appear that the wall has been involved in an accident (repaved panel, recent digging in the wall)?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	73-Does it appear the wall's functionality and integrity has been compromised by a collision or accident?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

**MISE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY**

Measurement/Extent of Problem/Location/Photo Numbers																
Y	N	N/A	UN	74-Are there rebar wall angles <90°?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

**MISE AS BUILT DIFFERENT FROM DESIGN**

Measurement/Extent of Problem/Location/Photo Numbers																
Y	N	N/A	UN	75-Are there available drawings for the wall? Please indicate type (Situation and Layout, Design, As Built, etc.)	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	76-Is the layout in general accordance with drawings?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	77-Are the panels CIP (Cast in Place) Does there appear to be excessive cracking in the panels?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	78-Was GFD (formed) in the construction of the wall?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	79-Are there any structures or rebar walls that were not included in initial drawings?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	80-Are there any irrigation, utilities, or foundations that are not part of the initial drawings?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	81-Have there been any excavations or evidence of excavations near the wall?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	82-Have load property owners changed the dynamics of the wall (additional structures, irrigation, vegetation, etc.)?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UN	83-Are there piles located in the wall (bridge abutment)?	UN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

*Unaccessible*

*3-9"*

*Flat ground*

*Layout*