

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

Region	2	Identifying Road/Intersection	I-15, 600E
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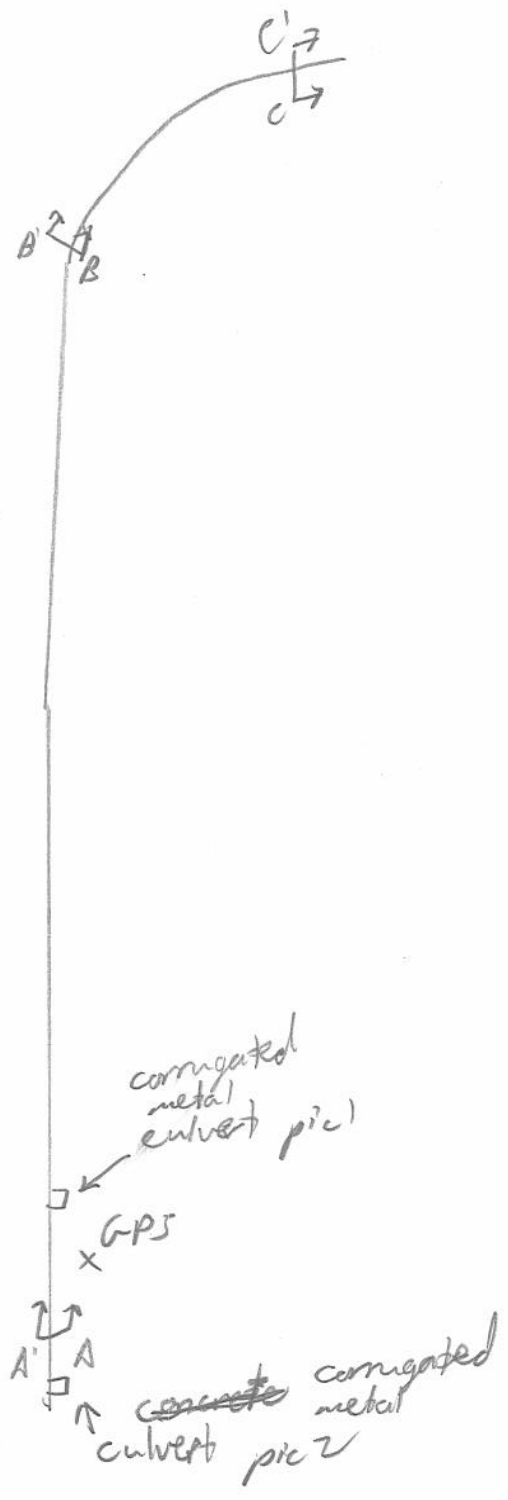
MSE WALL CHARACTERISTICS

MSE Wall at Bridge	Y <u>(N)</u>	Bridge Number if applicable:		Wall Number	R-337-E
Surrounding Structures				Maximum Height of Wall (ft)	32 ft
Distance to Each Structure				One Stage, Two Stage or Block Wall	
State Route Number				Estimated Max Length of Wall Abutment:	
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°46'48.79"N 111°54'35.98"W			Please draw rough layout of panel with approximate dimensions in space provided below:	
If known, Panel or System Manufacturer	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; width: 150px; height: 100px; position: relative;"> 5' 10' </div> <div style="border: 1px solid black; width: 80px; height: 100px; position: relative;"> 8' </div> </div> <p style="margin-left: 200px;">Varies</p>				

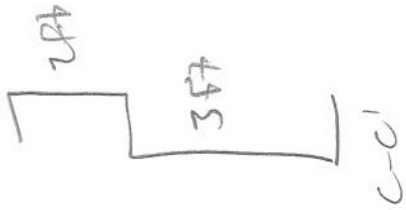
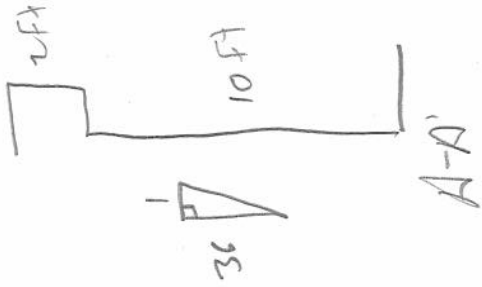
Summary of Key Observations:

house lawns grown up against the wall.

Plan View/Drainage:



Cross Sections:



Cross Sections:

RISE WALL DRAINAGE

Required Item:		Issue	Yes	No	N/A	UKS	Measurement/Extent of Problem/Location/Photo Numbers
Drainage							
Y	N	1-Is there an active water source near the toe of the wall (i.e. wall near a body of water with seepage)?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	2-If applicable, are the cracks below the toe of the wall blocked?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	3-Are there culverts protruding through the wall?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	4-Are there vertical drains that travel through the backfill?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	5-Do these drains end at the base of the wall or leveling pad? (Photo 12)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	6-Is there evidence of water flow along the base of the wall?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	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	8-Is there more than 12 feet between irrigation peripherals and a wall?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	9-Does the backfill or joint fabric appear to be saturated?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	10-Is there vegetation growing in paved joints? (Photo 8)?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	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	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	13-Is there evidence of discharge point of fill "weeping" through joints?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

against wall

RISE WALL JOINTS

Required Item:		Issue	Yes	No	N/A	UKS	Measurement/Extent of Problem/Location/Photo Numbers
Leaking Concrete/Joints							
Y	N	1-Is backfill coming out of joints or are there piles of backfill at the base of the wall? (Photos 2 & 3)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	2-Are the joints wide enough to see fabric or backfill behind pads when looking into joints? (Photo 5)? If yes, record the approximate measurement (in inches).					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	3-Is there evidence of water seeping through joints? (Photo 6)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	4-Is there evidence of backfill or water leaking through joints? (Do not include additional drains to fabric)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	5-Do the joints have a non-uniform horizontal spacing/drain? Are some horizontal joints larger/smaller than others? (Photo 6)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	6-Do the joints have a non-uniform vertical spacing/drain? Are some vertical joints larger/smaller than others? (Photo 6)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	7-Are 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	8-Do the joints appear hollow, or appear as if it has undergone increased LV exposure?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

RISE WALL FACING

Required Item:		Issue	Yes	No	N/A	UKS	Measurement/Extent of Problem/Location/Photo Numbers
Cracks/Spalling/Concrete Usage							
Y	N	1-Is there excessive spalling or concrete usage?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	2-Are there cracks that extend 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	3-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.					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	4-Are the panel corners making 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	5-Are the panel corners "popped-out" or clipped 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	6-Does the overlying coping exhibit Vertical Offset?					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	7-Are the coping and supports loose or detaching? If yes, it may be appropriate to contact LDOT if detachment occurs eminent.					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	8-Are the panels in danger of falling off? (If potential risk contact appropriate LDOT region).					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	9-Are the panels bulging (bowing horizontally)? If so, record maximum deflection from accessible coping on leveling pad. (Photo 11)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	10-Is there tilting at the top or bottom of the wall? Record maximum degree of tilting from azimuth (deg. vert. vs. horz.). (Photo 11)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

RISE TOE OF WALL OBSERVATIONS

Required Item:		Issue	Yes	No	N/A	UKS	Measurement/Extent of Problem/Location/Photo Numbers
Top Of Wall							
Y	N	1-Is there evidence of settlement at the top of the wall? (movement exceeding .02)					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	2-Are there any open cracks in the concrete coping (not building)? If yes, record the approximate maximum crack width.					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	3-Do the construction joints in the coping appear opened up? (Photo 6) If yes, record the maximum joint width.					0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

Y	N	NA	UNS	Meets there a large gap between the approach slab and the approach pavement? (Photos 13) Other slab producer a humping, unevenness at the expense is covered. Record the approximate maximum gap size. record maximum distance.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	X	UNS	37-A: At the abutment, has the joint between the wall coping and the abutment opened up significantly? If so record maximum distance.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	X	UNS	38-A: Is the coping wall pulling away from pavement/roadway section? Please record maximum displacement for wall	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%

MISS STABILITY

Required Tests: Street/Geo/Probe																
Y	N	NA	UNS	Structural Integrity	Measurement/Extent of Problem/Location/Photo Numbers	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	NA	UNS	39: Were there any localized, deep cracks in the concrete? (Photos 14) If so, were they located in the wall face or the maximum depth of 24 inches (24 inches) in the maximum depth for MSE Wall?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	40: Is leveling pad exposed?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	41: Is there cracking in the leveling pad? If so, record maximum crack size with photo.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	42: Is there a four foot bowl? (It will slope) directly along the wall before the slope changes (Record width)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	43: Is there a slope steeper than V: 1.2 to H: 1 in front of the wall? Please record slope and height of backfill above top of wall.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	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-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	45: Is there excessive degradation of panel face?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	

MISS METAL CORROSION

Required Tests: Nylon Matrix Concrete/Zip Lock Bag/Steel																
Y	N	NA	UNS	Metal Corrosion	Measurement/Extent of Problem/Location/Photo Numbers	/	0-No	1%	5%	10%	25%	50%	75%	90% <th>95% <th>100%</th> </th>	95% <th>100%</th>	100%
Y	N	NA	UNS	46: Is there excessive corrosion on guardrails or other exposed metal that might indicate concrete conditions?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	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%	95%	100%	
Y	N	NA	UNS	48: Are any internal steps exposed? If so, record total number. If applicable please record the total number of steps affected.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	49: Was a reactivity sample taken of exposed wall? If so, please indicate depth in inches.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	50: Is there any indication of rebar corrosion (swelling, 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%	95%	100%	

MISS IMPACT/COLLISION PROTECTION

Required Tests: Concrete/US																
Y	N	NA	UNS	Impact/Collision	Measurement/Extent of Problem/Location/Photo Numbers	/	0-No	1%	5%	10%	25%	50%	75%	90% <th>95% <th>100%</th> </th>	95% <th>100%</th>	100%
Y	N	NA	UNS	51: Are guardrails wall protection in place at the base of the wall (to protect it from potential traffic hazard)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	52: Does it appear that the wall has been involved in an accident (replaced panel, recent ding in the wall)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	53: Does it appear the wall functionality and integrity has been compromised by a collision or accident?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	

MISS OBSTRUCTIONS IN REINFORCEMENT GEOMETRY

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

MISS AS BUILT DIFFERENT FROM DESIGN

Required Tests: Drawings/Concrete/GIS																
Y	N	NA	UNS	MSE as built different than design	Measurement/Extent of Problem/Location/Photo Numbers	/	0-No	1%	5%	10%	25%	50%	75%	90% <th>95% <th>100%</th> </th>	95% <th>100%</th>	100%
Y	N	NA	UNS	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%	95%	100%	
Y	N	NA	UNS	56: Is the layout in general accordance with drawings?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	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%	95%	100%	
Y	N	NA	UNS	58: Was GED/Form used in the construction of the wall?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	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%	95%	100%	
Y	N	NA	UNS	60: Are there any impingement, utility, or structure that are not part of the initial drawings?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	61: Have there been any excavations or evidence of excavations near the wall?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	NA	UNS	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%	95%	100%	
Y	N	NA	UNS	63: Are there piles located in the wall (bridge abutment)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	

needs up against wall