

STATE OF UTAH MSE WALL INSPECTION FORM

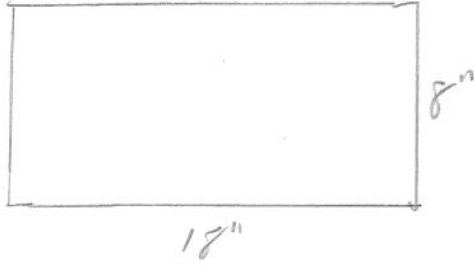
Compiled As Part of Research By The Utah Department of Transportation

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	3	Identifying Road/Intersection	500 N, 1200 W. N, orem
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MSE WALL CHARACTERISTICS

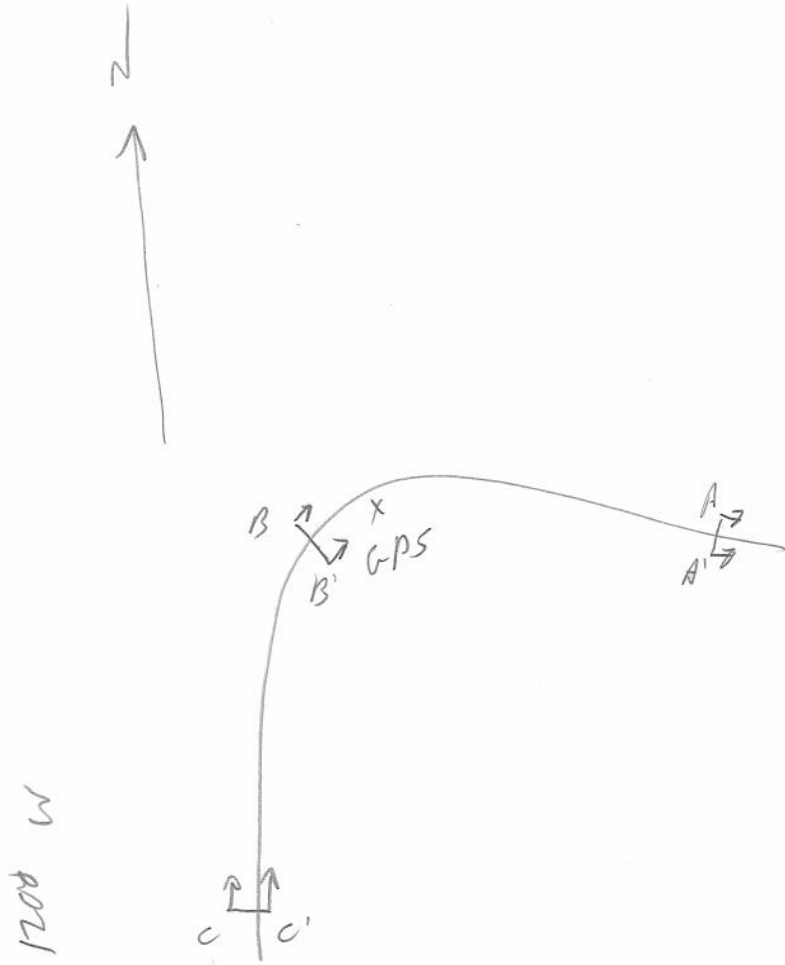
MSE Wall at Bridge	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Bridge Number if applicable:	Wall Number
Surrounding Structures			A-445-D 4.5 FT
Distance to Each Structure		One Stage, Two Stage or Block Wall	one stage
State Route Number		Estimated Max Length of Wall Abutment:	32 FT
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°18'38.64"W 111°43'22.23"W	Please draw rough layout of panel with approximate dimensions in space provided below:	
If known, Panel or System Manufacturer			

Summary of Key Observations:

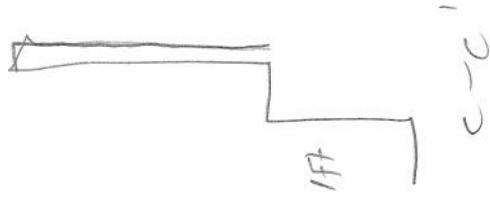
21
 18
 168
 270
 272

121378
 26

Plan View/Drainage:



Cross Sections:



Cross Sections:

MSL WALL DRAINAGE

Required Items:		Nikon MultiView Lens/Zoom/UIS Camera		Measurement/Extent of Problem/Location/Photo Numbers									
Yes	No	NA	UKN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	1-Is there an active water source near the toe of the wall (to the wall face a body of water with seepage potential)?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	2-If applicable, are the earth drains at the base of the wall blocked?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	3-Are there obstructions protruding through the wall?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	4-Are there vertical drains that extend through the backfill?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	5-Is there erosion at the base of the wall or leveling pad? (Photo 12)	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	6-Is there erosion along the wing wall?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	7-Are there any signs of water flow along the base of the wall?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	8-Is there less than 1 ft. between irrigation sprinklers and wall?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	9-Does the backfill or joint fabric appear to be saturated?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	10-Is there vegetation growing in panel joints (Photo 8)?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	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%	100%
Y	N	N/A	UKN	12-Can water enter the wall between coping and slab (i.e., Drains appropriately)?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN	13-Is there evidence of discharge point of fill washing through drain pipe?	0-No	1%	5%	10%	25%	50%	75%	90%	100%
Y	N	N/A	UKN		0-No	1%	5%	10%	25%	50%	75%	90%	100%

MSL WALL JOINTS

Required Items:		Low Level Sling/UIS Camera/UIS		Measurement/Extent of Problem/Location/Photo Numbers										
Yes	No	NA	UKN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	N/A	UKN	1-Is backfill coming out of joints or are there signs of backfill at the base of the wall? (Photos 2 & 3)	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	14-Is backfill coming out of joints or are there signs of backfill behind panels when backing into joint? (Photo 5) If	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	15-Are the joints wide enough to see fabric or backfill behind panels when backing into joint? (Photo 5) If	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	16-Is there evidence of backfill or water seeping through joint? (Photo 4)	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	17-Are there visible signs of fabric or backfill or water seeping through joint? (Do not	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	18-Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger than	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	others? (Photo 6)	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	19-Do the joints have a non-uniform vertical spacing? Are some vertical joints larger than	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	others? (Photo 6)	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	20-Are the panels offset at the joint either in or out of the wall? (Photo 7) If yes, record the approximate	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	minimum offset.	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	21-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%

MSL WALL FACING

Required Items:		Low Level Sling/UIS Camera/UIS		Measurement/Extent of Problem/Location/Photo Numbers										
Yes	No	NA	UKN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	N/A	UKN	1-Is there any cracking in the wall facing?	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	2-Are there panels "Tilt-Up"? If there is excessive cracking in the panels?	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	23-Are there cracks that continue vertically through adjacent panels? (Photos 9 & 10) If yes, record the	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	approximate number of panels in the wall with cracking.	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	24-Are there cracks that continue horizontally through adjacent panels? (Photos 9 & 10) If yes, record the	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	approximate number of panels in the wall with cracking.	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	25-Are the panel corners "popped-off" or chipped from contact with an adjacent panel? If yes, record the	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	number of panels in the wall.	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	27-Does crack spacing suggest Differential Settlement?	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	28-Does the existing coping exhibit Vertical Offset?	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	29-Are the coping and parapet loose or delaminating? If yes, it may be appropriate to contact UDOT if	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	detachment seems imminent.	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	30-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	N/A	UKN	31-Are the panels bulging (bowing horizontally)? If so, record maximum deformation from accessible	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	locations (Photo 11).	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	32-Is there "braking" at the top or bottom of the wall? (Record maximum degree of slipping from actual	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	working vertical level and affected area).	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%

MSL TOP OF WALL OBSERVATIONS

Required Items:		Low Level Sling/UIS Camera		Measurement/Extent of Problem/Location/Photo Numbers										
Yes	No	NA	UKN	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	N	N/A	UKN	1-Is there evidence of settlement at the top of the wall? (pavement cracking, etc)	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	34-Are there any open cracks in the concrete coping (not hairline)? If yes, record the approximate	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	maximum crack width.	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	35-How are the construction joints in the concrete coping opened up? (Photo 6). If yes, record the maximum	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKN	joint width.	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%

Y	N	UKN	16-Is there a large gap between the approach slab and the approach pavement? (Phase 15) Often this produces a blurring sensation as the car passes it crossed. Record the approximate maximum gap. Also	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	UKN	17-At the abutment, has the joint between the wall coping and the abutment coping significantly? If so	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	UKN	18-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% /

RISE STABILITY

Required Item: Structural Integrity				
Yes	No	N/A	UKN	19-What is the location depth of leveling pad? Found One-Probe line will located 2 inches from wall to a maximum depth of 24 inches (24 inches is the minimum depth for MSE Wall)
Y	N	N/A	UKN	20-Is leveling pad exposed?
Y	N	N/A	UKN	21-Is there cracking in the leveling pad? If so, record maximum crack size with gauge.
Y	N	N/A	UKN	22-Is there a four foot knock (level slope) directly along the wall before the slope changes (Record Width)?
Y	N	N/A	UKN	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.
Y	N	N/A	UKN	24-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.
Y	N	N/A	UKN	25-Is there excessive degradation of panel face?

RISE RETAINMENT CONSTRUCTION

Required Item: Metal Corrosion				
Yes	No	N/A	UKN	26-Is there excessive corrosion on guardrails or other exposed metal that might indicate concrete conditions?
Y	N	N/A	UKN	27-Are there major rust stains on the face panel? Along joints? If so, record total number.
Y	N	N/A	UKN	28-Are any internal straps exposed? Does there appear to be corrosion on these straps? If applicable please record the total number of straps affected.
Y	N	N/A	UKN	29-Is there any indication of other corrosion (swelling bars, void, exposed metal inside epoxy coating)? If so please note the total number of panels affected.

RISE IMPACT/COLLISION PROTECTION

Required Item: Concrete				
Yes	No	N/A	UKN	31-Are guardrails wall protections in place at the base of the wall (to protect it from potential traffic hazard)?
Y	N	N/A	UKN	32-Does it appear that the wall has been involved in an accident (replaced panel, recent dips in the wall)?
Y	N	N/A	UKN	33-Does it appear the wall's functionality and integrity has been compromised by a collision or accident?

Required Item: Drawings

Yes	No	N/A	UKN	Observations in Reinforcement Geometry
Y	N	N/A	UKN	34-Are there acute wall angles (<90°)

RISE AS BUILT DIFFERENT FROM DESIGN

Required Item: Drawings-Geometry				
Yes	No	N/A	UKN	RISE as built different than design
Y	N	N/A	UKN	35-Are there available drawings for the wall? Please indicate type (Situation and Layout, Design, As Built, etc.)
Y	N	N/A	UKN	36-Is the layout in general accordance with drawings?
Y	N	N/A	UKN	37-Are the panel C/P (Cut in Flow) Does there appear to be excessive cracking in the panel?
Y	N	N/A	UKN	38-Is any GEP (used in the construction of the wall)
Y	N	N/A	UKN	39-Are there any structures on or near wall that were not included in initial drawings?
Y	N	N/A	UKN	40-Are there any irrigation, utilities, or foundations that are not part of the initial drawing?
Y	N	N/A	UKN	41-Have there been any excavations or evidence of excavations near the wall?
Y	N	N/A	UKN	42-Have local property owners changed the diameter of the wall (additional structures, irrigation, vegetation, etc.)
Y	N	N/A	UKN	43-Are there piles located in the wall (bridge abutment)?