

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, 900S, SLC
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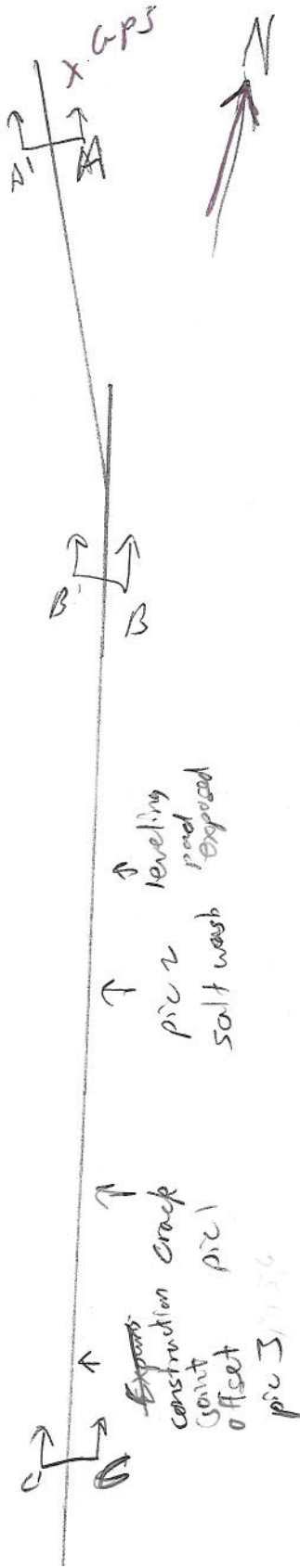
MSE WALL CHARACTERISTICS

MSE Wall at Bridge	<input checked="" type="checkbox"/> N	Bridge Number if applicable:		Wall Number	R-351-7
Surrounding Structures				Maximum Height of Wall (ft)	18 ft
Distance to Each Structure			One Stage, Two Stage or Block Wall		
State Route Number			Estimated Max Length of Wall Abutment:		500 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:	20 ft
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	40° 44' 56.33" N 111° 54' 29.00" W			Please draw rough layout of panel with approximate dimensions in space provided below:	
If known, Panel or System Manufacturer				<div style="border: 1px solid black; width: 150px; height: 100px; margin: 0 auto; position: relative;"> <div style="position: absolute; top: -10px; left: 50px;">varies</div> <div style="position: absolute; bottom: -10px; left: 50px;">8'</div> </div>	

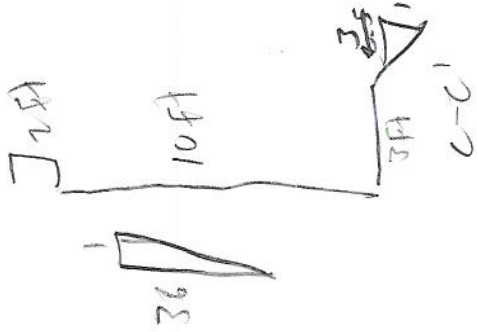
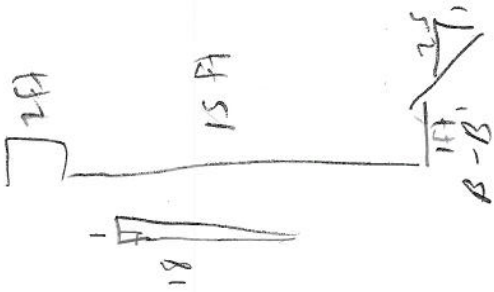
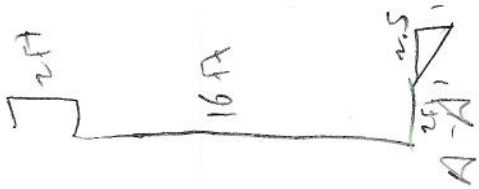
Summary of Key Observations:

vertical offset

Plan View/Drainage:



Cross Sections:



Cross Sections:

BASE WALL DRAINAGE

Required Toler:		Long Level/Slung/Center/Chis	Measurement/Extent of Problem/Location/Photo Numbers
Yes	N/A	UNSN	Drainage
Y	N	UNSN	1-Is there an active water source near the toe of the wall (i.e. the wall near a body of water with seepage potential)?
Y	N	UNSN	2-If applicable, are the catch basins at the base of the wall blocked?
Y	N	UNSN	3-Are there subverts protruding through the wall?
Y	N	UNSN	4-Are there vertical drains that extend through the backfill?
Y	N	UNSN	5-Is there evidence at the base of the wall or leveling pad? (Photo 12)
Y	N	UNSN	6-Is there evidence along the wing wall?
Y	N	UNSN	7-Are there any signs of water flow along the base of the wall?
Y	N	UNSN	8-Is there less than 14 feet between irrigation sprinklers and wall?
Y	N	UNSN	9-Does the backfill or joint drain appear to be saturated?
Y	N	UNSN	10-Is there vegetation growing in sand joints? (Photo 8)?
Y	N	UNSN	11-Are the back drains and outlets at the top of the wall blocked? (Photo 14)
Y	N	UNSN	12-Can water enter the wall between coping and slab? (i.e., drain appropriately)?
Y	N	UNSN	13-Is there evidence at discharge point of fill washing through drain pipe?

BASE WALL JOINTS

Required Toler:		Long Level/Slung/Center/Chis	Measurement/Extent of Problem/Location/Photo Numbers
Yes	N/A	UNSN	Joint
Y	N	UNSN	14-Is backfill coming out of joints or are there piles of backfill at the base of the wall? (Photos 2 & 3)
Y	N	UNSN	15-Are the joints wide enough to see fabric or backfill behind panels when looking into joints? (Photo 3) If yes, record the approximate maximum joint width in inches.
Y	N	UNSN	16-Is exposed backfill visible in the horizontal joints? (Photo 3)
Y	N	UNSN	17-Are there visible tears in the fabric? Is there evidence of backfill or water leaking through tears? (Do not include additional damage to fabric)
Y	N	UNSN	18-Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger than others? (Photo 6)
Y	N	UNSN	19-Do the joints have a non-uniform vertical spacing? Are some vertical joints larger than others? (Photo 6)
Y	N	UNSN	20-Are the panels offset at the joints either in or out of the wall? (Photo 7) If yes, record the approximate maximum offset.
Y	N	UNSN	21-Does the fabric appear brittle, or appear as if it has undergone excessive UV exposure?

BASE WALL FACING

Required Toler:		Long Level/Slung/Center/Chis	Measurement/Extent of Problem/Location/Photo Numbers
Yes	N/A	UNSN	Wall Facing
Y	N	UNSN	22-Over the panels, "fill-up" Is there excessive cracking in the panels?
Y	N	UNSN	23-Over the panels, do they continue vertically through adjacent panels? (Photos 9 & 10): If yes, record the approximate number of panels in the wall with cracking.
Y	N	UNSN	24-Are the panels making contact with each other? If yes, record the approximate number in the wall with contact.
Y	N	UNSN	25-Are the panel corners making contact with each other? If yes, record the approximate number in the wall.
Y	N	UNSN	26-Are the panel corners "pop-out" or chipped from contact with an adjacent panel? If yes record the number in the wall.
Y	N	UNSN	27-Over crack spacing, suggest Differential Settlement?
Y	N	UNSN	28-Over the existing coping exhibit Vertical Offset?
Y	N	UNSN	29-Are the coping and adjacent base or detaching? If yes, it may be appropriate to contact UDOT if abutment work is needed.
Y	N	UNSN	30-Are the panels in danger of falling off? (If potential exist, contact appropriate UDOT region).
Y	N	UNSN	31-Are the panels "bulging" (bowing horizontally)? If so, record maximum deformation from accessible coping to leveling pad. (Photo 11)
Y	N	UNSN	32-Is there "flipping" at the top or bottom of the wall? (Record maximum degree of flipping from rainfall using vertical level and affected area)

BASE TOP OF WALL OBSERVATIONS

Required Toler:		Long Level/Slung/Center/Chis	Measurement/Extent of Problem/Location/Photo Numbers
Yes	N/A	UNSN	Top Of Wall
Y	N	UNSN	33-Is there evidence of settlement at the top of the wall (pavement cracking, etc)
Y	N	UNSN	34-Are there any open cracks in the concrete coping (not hairline)? If yes record the approximate maximum crack width.
Y	N	UNSN	35-Is there the connection joint in the concrete coping opened up? (Photo 6). If yes, record the maximum joint width.

pic 3

Y	N	NA	UKS	26-Is there a large gap between the approach slab and the approach pavement? (Photo 13) Does this produce a humping sensation at the approach? Record the approximate maximum gap size.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	NA	UKS	27-At the abutments, 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	NA	UKS	28-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% /

MSE STABILITY

Required Tests:		Showed OK/Not OK		Structural Integrity		Measurement/Extent of Problem/Location/Photo Numbers	
Y	N	NA	UKS	29-What is the location, depth of horizontal joint? Does joint occur within 2 inches from wall to a maximum depth of 24 inches (24 inches is the maximum depth for MSE Wall)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	30-Is there any delamination or spalling of concrete?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	31-Is there cracking in the leveling pad? If so, record maximum crack size with page.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	32-Is there a four foot bench (level 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	UKS	33-Is there a slope steeper than 1:1.5 to 1:1 in front of the wall? Please record slope and height of bench (above top of wall).	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	34-Is there a slope greater than 1:1.5 to 1:1 below the wall? Please record slope and height of bench below the wall.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	35-Is there excessive degradation of panel face?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		

MSE METAL CORROSION

Required Tests:		None Meets Criteria/2% UKS Log File		Metal Corrosion		Measurement/Extent of Problem/Location/Photo Numbers	
Y	N	NA	UKS	36-Is there excessive corrosion or galvanic or other exposed metal that might indicate rebar condition?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	37-Are there major rust stains on the face panel? Along joints? If so, record total number.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	38-Is any (oil) stain (stains) present? Does there appear to be corrosion on these stains? If applicable please record the total number of stains/patches.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	39-Is there a visible surface of exposed soil? If so, please indicate depth in inches.	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	40-Is there any indication of rebar corrosion (swelling, rust, scale, 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% /		

MSE IMPACT COLLISION PROTECTION

Required Tests:		General/2%		Impact/Corrosion		Measurement/Extent of Problem/Location/Photo Numbers	
Y	N	NA	UKS	41-Are guardrail's wall protrusions in place at the base of the wall (to prevent from potential traffic barrier)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	42-Does it appear that the wall has been involved in an accident (replaced panel, recent damage to the wall)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	43-Does it appear the wall's functionality and integrity has been compromised by a collision or accident?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		

MSE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY

Required Tests:		Drawings/General/2%		Obstructions in Reinforcement Geometry		Measurement/Extent of Problem/Location/Photo Numbers	
Y	N	NA	UKS	44-Are there acute wall angles (COP)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		

MSE AS BUILT DIFFERENT FROM DESIGN

Required Tests:		Drawings/General/2%		MSE as Built different than design		Measurement/Extent of Problem/Location/Photo Numbers	
Y	N	NA	UKS	45-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	UKS	46-Is the layout in general accordance with drawings?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	47-Are the panels C/P (Cut 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	UKS	48-Is there any OEP/Form used in the construction of the wall?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	49-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	UKS	50-Are there any excavations, utilities, or obstructions that are not part of the initial drawings?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	51-Is there any excavation or evidence of excavation near the wall?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	52-Is there any property owners changed the dimensions of the wall (additional structure, irrigation, vegetation, etc.)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		
Y	N	NA	UKS	53-Are there piles located in the wall (bridge abutment)?	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /		