

STATE OF UTAH MSE WALL INSPECTION FORM

Compiled As Part of Research By The Utah Department of Transportation

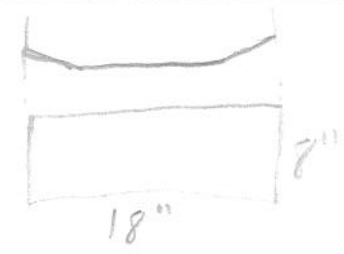
Instructions:

- 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	Identifying Road/Intersection	US 6 & WPKR west of Santaquin
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MSE WALL CHARACTERISTICS

MSE Wall at Bridge	(Y) N	Bridge Number if applicable:	Wall Number	R-436-A
Surrounding Structures			Maximum Height of Wall (ft)	18 ft
Distance to Each Structure			One Stage, Two Stage or Block Wall	One stage
State Route Number			Estimated Max Length of Wall Abutment:	120 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

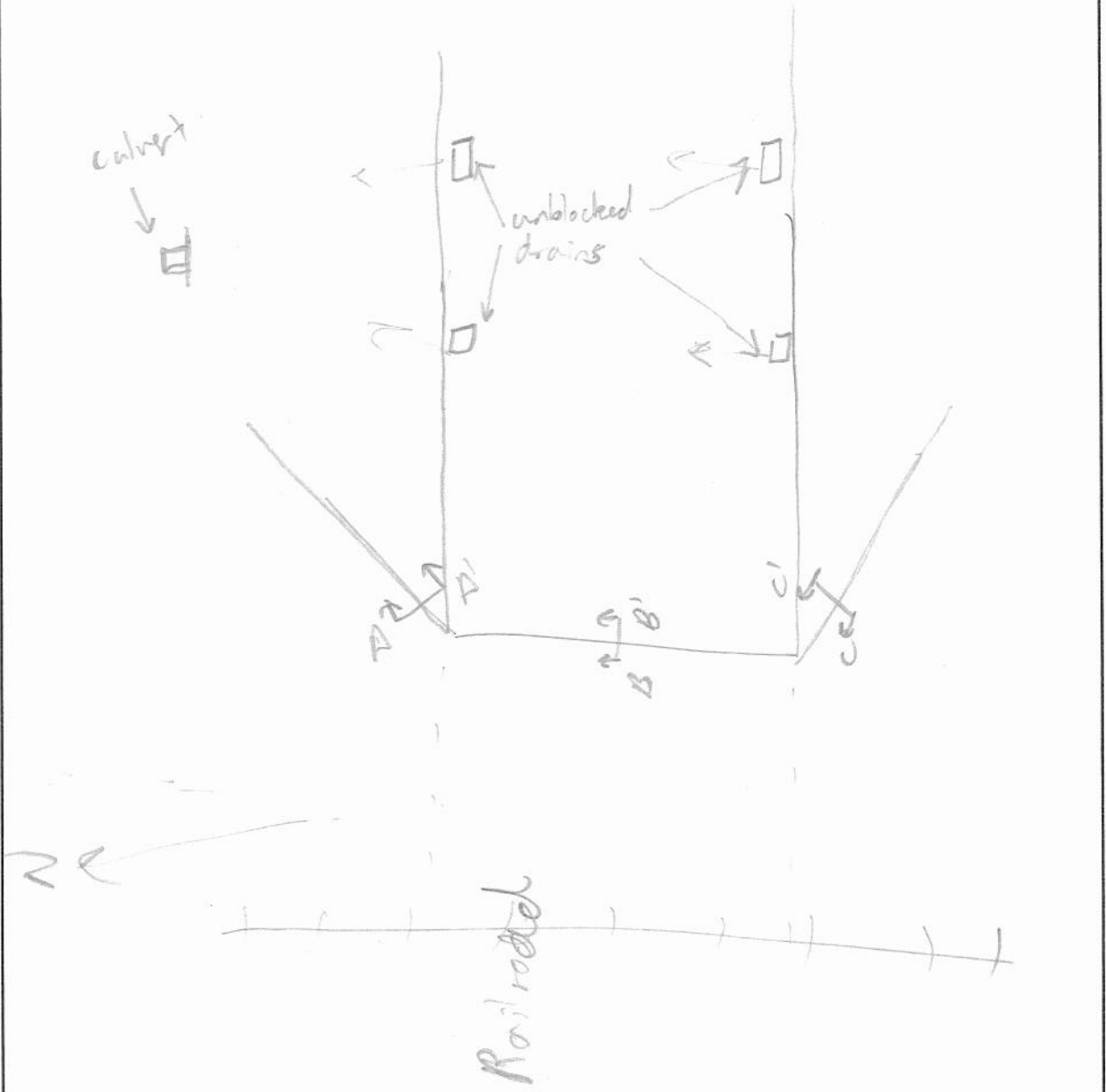
MSE Wall GPS Coordinates (Location of Measurement shown on plan view)	Please draw rough layout of panel with approximate dimensions in space provided below:
39° 58' 49.05" N, 111° 49' 12.58" W	
If known, Panel or System Manufacturer	

Summary of Key Observations:

good

87
17
216
216

Plan View/Drainage:



Cross Sections:



Cross Sections:

11/20/09

MSE WALL DRAINAGE

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

Required Tests:		Notes	Measurement/Extent of Problem/Location/Photo Numbers
Yes	N/A	UKN	Long Level/Slab/Concrete/Cracks
Y	N/A	UKN	14-Is backfill coming out of joints or over the piles of backfill at the base of the wall? (Pictures 2 & 3)
Y	N/A	UKN	15-Are the joints wide enough to see fabric or backfill behind panels when looking into joints? (Photos 5) If yes, record the approximate maximum joint width in inches.
Y	N/A	UKN	16-Is exposed backfill visible in the horizontal joints? (Photo 4)
Y	N/A	UKN	17-Are there visible tears in the fabric? Is there evidence of backfill or water leaking through tear? (Do not include additional damage to fabric)
Y	N/A	UKN	18-Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger/smaller than others? (Photo 6)
Y	N/A	UKN	19-Do the joints have a non-uniform vertical spacing? Are some vertical joints larger/smaller than others? (Photo 6)
Y	N/A	UKN	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/A	UKN	21-Does the fabric appear brittle, or appear as if it be undergoing excessive UV exposure?

MSE WALL FACING

Required Tests:		Notes	Measurement/Extent of Problem/Location/Photo Numbers
Yes	N/A	UKN	Well Spacing
Y	N/A	UKN	22-Over the panels, "Tilt-15": Is there excessive cracking in the panel?
Y	N/A	UKN	23-Over the cracks that continue vertically through adjacent panels (Photos 9 & 10)? If yes, record the approximate number of panels in the wall with this type of cracking.
Y	N/A	UKN	24-Over the cracks that continue horizontally through adjacent panels (Photos 9 & 10)? If yes, record the approximate number of panels in the wall with this type of cracking.
Y	N/A	UKN	25-Are the panel corners cracking contact with each other? If yes, record the approximate number in the wall.
Y	N/A	UKN	26-Are the panel corners "popped-off" or chipped from contact with an adjacent panel? If yes record the number in the wall.
Y	N/A	UKN	27-Does crack spacing suggest Differential Settlement?
Y	N/A	UKN	28-Does the overlying coping exhibit Vertical Offset?
Y	N/A	UKN	29-Are the coping and adjacent base or detaching? If yes, it may be appropriate to contact UDOT if detachment seems evident.
Y	N/A	UKN	30-Over the panels in danger of falling off (if potential exists contact appropriate UDOT region).
Y	N/A	UKN	31-Are the panels bulging (bowing horizontally)? If so, record maximum deformation from accessible coping to leveling pad. (Photo 11)
Y	N/A	UKN	32-Is there "lipping" at the top or bottom of the wall? (Record maximum degree of dipping from mitrebush using vertical level and affected area).

MSE TOP OF WALL OBSERVATIONS

Required Tests:		Notes	Measurement/Extent of Problem/Location/Photo Numbers
Yes	N/A	UKN	Top Of Wall
Y	N/A	UKN	33-Is there evidence of settlement at the top of the wall? (pavement cracking, etc)
Y	N/A	UKN	34-Are there any open cracks in the concrete coping (not hairline)? If yes record the approximate maximum crack width.
Y	N/A	UKN	35-How do the construction joints in the concrete coping appear? (Photo 6). If yes, record the maximum joint width.

Construction before

Y	N/A	UNN	36-Is there a large gap between the approach slab and the approach pavement? (Photo 15) Other than production bumping, sanding as the overlap is created. Record the approximate maximum gap size.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	UNN	37-AI 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	UNN	38-Is the coping wall pulling away from pavement/roadway/acient? Please record maximum displacement for wall.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

MISE STABILITY

Requirement: Structural Integrity																
Yes	No	N/A	UNN	39-What is the location/depth of walling wall? Please provide date and location 2 inches from wall to a maximum depth of 24 inches (24 inches is the minimum depth for MSE Wall)	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	40-Is leveling pad exposed?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	41-Is there cracking in the leveling pad? If so, record maximum crack size with gauge.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	42-Is there a four foot bench (level apex) directly along the wall before the slope changes (Record Width)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	43-Is there a slope steeper than V:1.5 to H:1 in front of the wall? Please record slope and height of wall?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	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	N/A	UNN	45-Is there excessive degradation of panel faces?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

MISE METAL CORROSION

Requirement: Nylon Nuts/Concrete-GRS/Zip Lock Bag/ Crown																
Yes	No	N/A	UNN	46-Is there excessive corrosion on guardrails or other exposed metal that might indicate corrosive conditions?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	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	N/A	UNN	48-Are any (stained) steps exposed? Does there appear to be corrosion on these steps? If applicable please record the total number of steps affected.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	49-Was a readability 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	N/A	UNN	50-Is there any indication of color corrosion (swelling, loss, 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%	/

MISE IMPACT/COLLISION PROTECTION

Requirement: Concrete-GRS																
Yes	No	N/A	UNN	51-Are guardrails wall protrusions in place at the base of the wall (to protect it from potential traffic boards)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	52-Does it appear that the wall has been involved in an accident (replaced panel, recent damage in the wall)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	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%	/

MISE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY

Requirement: Drawings																
Yes	No	N/A	UNN	54-Are there acute wall angles (<90)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

MISE AS BUILT DIFFERENT FROM DESIGN

Requirement: Drawings/Concrete-GRS																
Yes	No	N/A	UNN	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	N/A	UNN	56-Is the layout in general accordance with drawings?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	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	N/A	UNN	58-Was GRC/Form used in the construction of the wall?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	59-Are there any structures on or near wall that were not included in initial drawing?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	60-Are there any tripolets, utilities, or limitations that are not part of the initial drawing?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	61-How have there been any excavations or evidence of excavation near the wall?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	62-How have tool property owners changed the dynamics of the wall (additional structures, tripolets, vegetation, etc.)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	N	N/A	UNN	63-Are there piles located in the wall (bridge abutment)?	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/