

STATE OF UTAH MSE WALL INSPECTION FORM

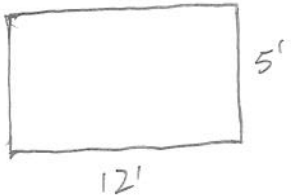
Compiled As Part of Research By The Utah Department of Transportation

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

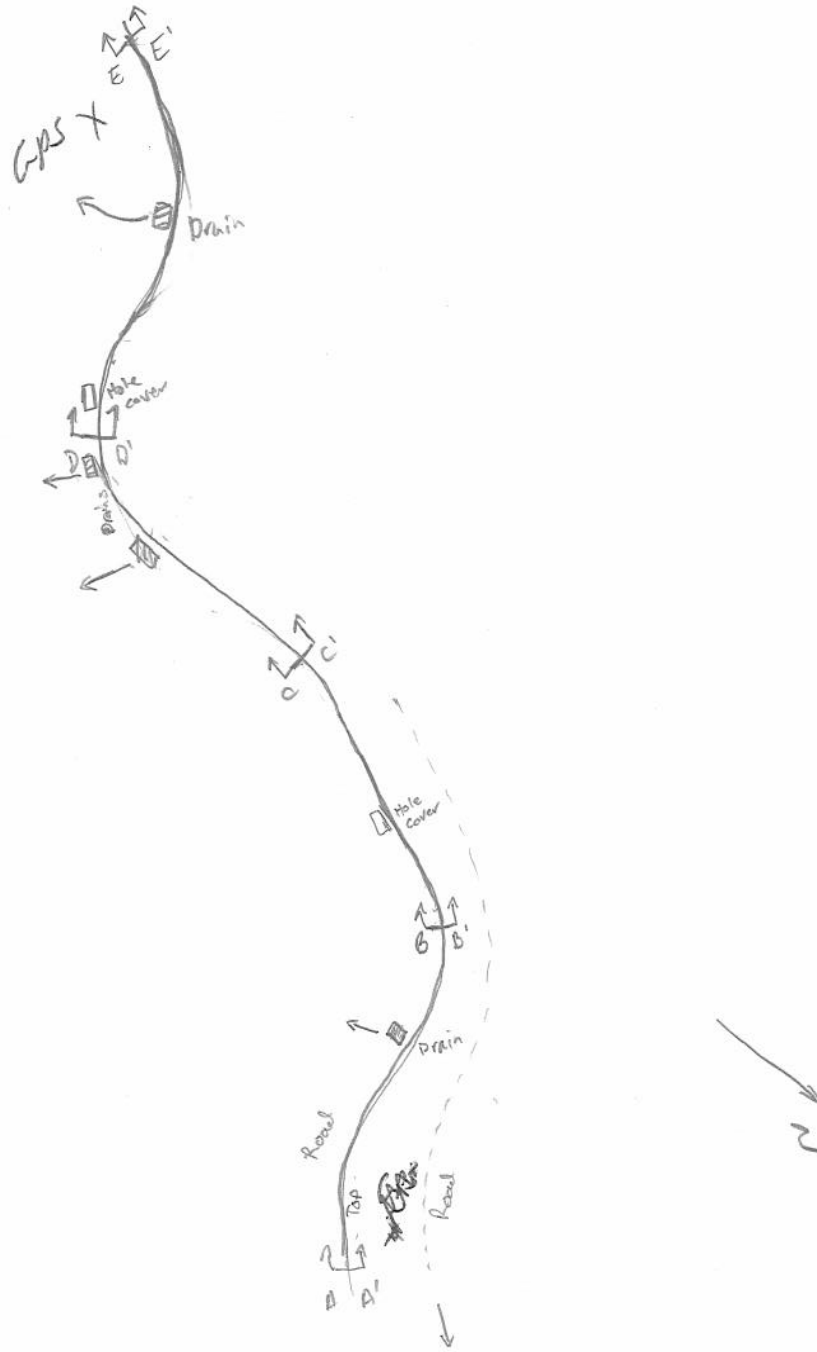
Region	3	Identifying Road/Intersection	Provo Canyon, Between NB & SB
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MSE WALL CHARACTERISTICS

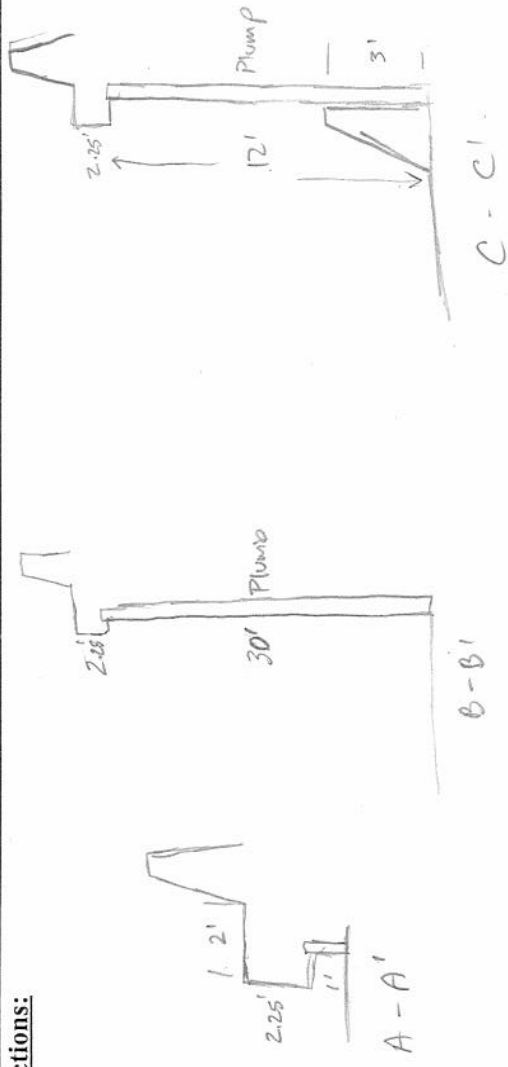
MSE Wall at Bridge	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Bridge Number if applicable:		Wall Number	R-419-A
Surrounding Structures				Maximum Height of Wall (ft)	38ft
Distance to Each Structure				One Stage, Two Stage or Block Wall	One stage
State Route Number				Estimated Max Length of Wall Abutment:	4150ft
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°22'10.60"N 111°33'19.17"W			Please draw rough layout of panel with approximate dimensions in space provided below:	
If known, Panel or System Manufacturer	SSL (steel grid)				

Summary of Key Observations:

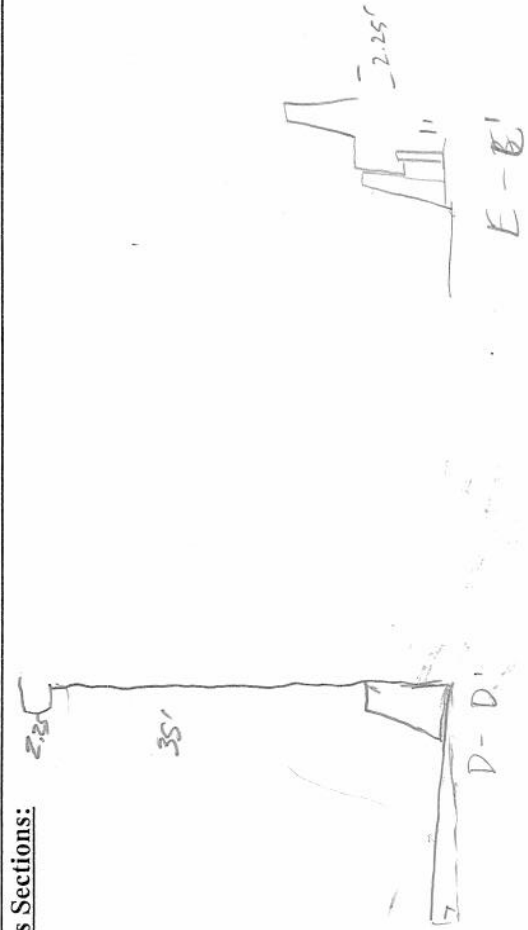
Plan View/Drainage:



Cross Sections:



Cross Sections:



BASE WALL DRAINAGE

Required Item:		Inspection Method	Threat/Problem	Measurements/Extent of Problem	Location	Photo Numbers		
Yes	N/A	UNSY	Drainage	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		
Y	N/A	UNSY	1-Is there an active water source near the base of the wall (i.e. the wall near a body of water with seepage potential)?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		
Y	N/A	UNSY	2-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	UNSY	3-Are there culverts protruding through the wall?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		
Y	N/A	UNSY	4-Are there vertical drains that travel through the backfill?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		
Y	N/A	UNSY	5-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	UNSY	6-Is there erosion along the wing walk?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		
Y	N/A	UNSY	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/A	UNSY	8-Is there less than 18 feet between irrigation sprinklers and wall?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		
Y	N/A	UNSY	9-Does the backfill or joint fabric appear to be saturated?	Blocked	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /	
Y	N/A	UNSY	10-Is there vegetation growing in panel joints (Photo 8)?	Partial	Clear	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	11-Is the deck flange end visible at the top of the wall blocked? (Photo 14)	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		
Y	N/A	UNSY	12-Can water enter the wall between coping and slab (i.e. Ditch approximately)?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		
Y	N/A	UNSY	13-Is there evidence of discharge points of fill washing through drain pipes?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /		

NISK WALL JOINTS

Required Item:		Inspection Method	Threat/Problem	Measurements/Extent of Problem	Location	Photo Numbers
Yes	N/A	UNSY	Joints	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	1-Is backfill coming 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	UNSY	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.	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	16-Is exposed backfill visible in the horizontal joint? (Photo 2)	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	17-Are there visible scars in the diaphragm? Is there evidence of backfill or water leaking through wall? (Do not include additional damage to fabric)	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	18-Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger than others? (Photo 9)	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	19-Are there a non-uniform vertical spacing? Are some vertical joints larger than others? (Photo 6)	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	20-Is the panel offset at the joint 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	UNSY	21-Does the fabric appear fabric, or appear as if it has undergone concrete UV exposure?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /

NISK WALL PACING

Required Item:		Inspection Method	Threat/Problem	Measurements/Extent of Problem	Location	Photo Numbers
Yes	N/A	UNSY	Wall Pacing	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	2-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	UNSY	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/A	UNSY	22-Do the panel corners match up 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	UNSY	23-Does the panel corner "popped-out" 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	UNSY	24-Does the overlying coping suggest Differential Settlement?	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	25-Are the coping and pavement lower or delimiting? If yes, it may be appropriate to contact UDOT if delimiting occurs annually.	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	26-Are the panels in danger of falling off? (If potential exist contact appropriate UDOT region).	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	27-Are the panels bulging (bowing horizontally)? 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	UNSY	28-Is there "lapping" at the top or bottom of the wall? Record maximum degree of lapping from north-south using vertical level and differentiated area.	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /

NISK TOP OF WALL OBSERVATIONS

Required Item:		Inspection Method	Threat/Problem	Measurements/Extent of Problem	Location	Photo Numbers
Yes	N/A	UNSY	Top Of Wall	/ 0-No	1% 5% 10%	25% 50% 75% 90% 95% 100% /
Y	N/A	UNSY	10-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/A	UNSY	11-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	UNSY	12-Is the construction joint 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	UKS	36-Is there a large gap between the approach slab and the approach pavement? (Photo 15) Or, is this a ramping situation as the approach is raised. Record the approximate maximum gap size.	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	37-Is 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	N/A	UKS	38-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: Several GEO-Probes														
Structural Integrity														
Y	N	N/A	UKS	39-What is the location depth of leveling grade? Found Geo-Probes into wall located 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	UKS	40-Is leveling pad exposed?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	41-Is there cracking in the leveling pad? If so, record maximum crack size with gaps.	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	42-Is there a four foot bench (level slope) directly along the wall before the slope changes (Second Width)?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	43-Is there a slope steeper than V: 1.2 to H: 1.1 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	N/A	UKS	44-Is there a slope greater than V: 1.2 to H: 1.1 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	UKS	45-Is there excessive degradation of panel faces?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%

MSE METAL CORROSION

Required tests: N/A; Visual Checks; Zip Lock Bags; Visual														
Metal Corrosion														
Y	N	N/A	UKS	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	UKS	47-Are there major rust stains on the face panels? Along joints? If so, record exact number.	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	48-Are any internal straps exposed? Does there appear to be corrosion on these straps? If applicable please record the total number of straps affected.	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	49-Is there any indication of other corrosion (on walling base, 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%

MSE IMPACT COLLISION PROTECTION

Required tests: Concrete; Impact; Collision														
Y	N	N/A	UKS	51-Are guardrail wall protrusions in place at the base of the wall (to protect it from potential traffic hazards)?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	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	N/A	UKS	53-Does it appear the walls 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: Drawing														
Y	N	N/A	UKS	54-Are there acute wall angles (90°)?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%

MSE AS BUILT DIFFERENT FROM DESIGN

Required tests: Drawing; Concrete; GPS														
Y	N	N/A	UKS	55-Are there available drawings for the wall? Please indicate type (Foundation and Layout, Design, As Built, etc.)	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	56-Is the layout in general accordance with drawings?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	57-Are the panels CTF (C=4 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	UKS	58-Was GEO Form used in the construction of the wall?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	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	UKS	60-Are there any irrigation, utilities, or functions that are not part of the initial drawing?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	61-Do there have been any excavations or evidence of excavations near the wall?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	62-Do there local property owners changed the dimensions of the wall (additional structures, irrigation, vegetation, etc.)	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	UKS	63-Are there piles located in the wall (bridge abutments)?	/ 0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%