

# 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

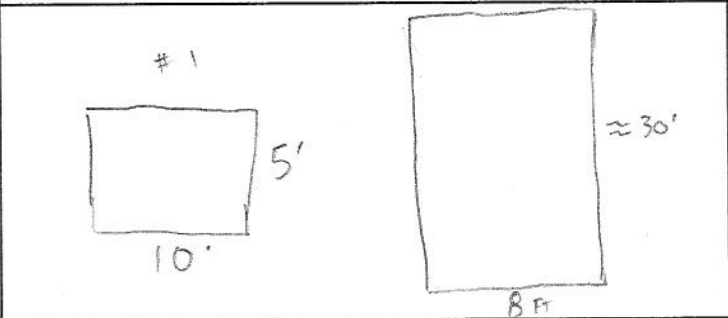
Region	2	Identifying Road/Intersection	WEST SIDE 100 S & F-15
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### MSE WALL CHARACTERISTICS

MSE Wall at Bridge	Y (N)	Bridge Number if applicable:	Wall Number	R-357-22
Surrounding Structures			Maximum Height of Wall (ft)	32'
Distance to Each Structure			One Stage, Two Stage or Block Wall	2 stage
State Route Number			Estimated Max Length of Wall Abutment:	1132'
Approximate Mile Marker			Max Slope of Ground in front of wall:	Flat
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°46'1.25"N 111°54'47.71"W

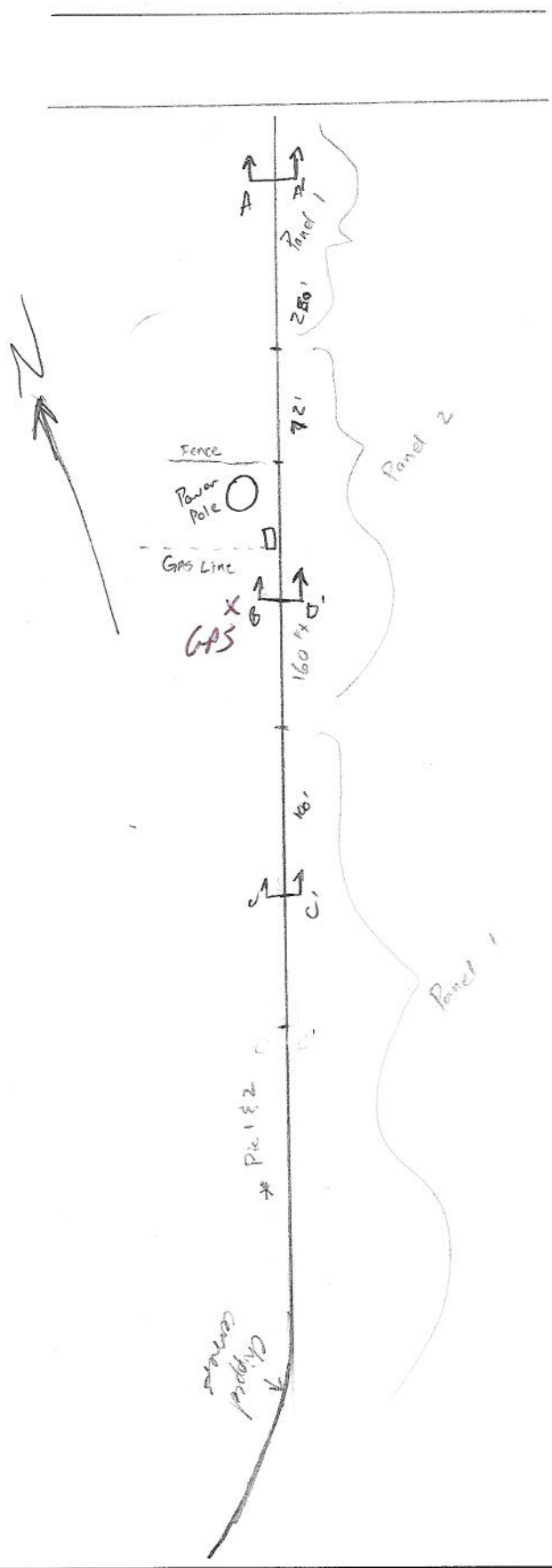
If known, Panel or System Manufacturer



### Summary of Key Observations:

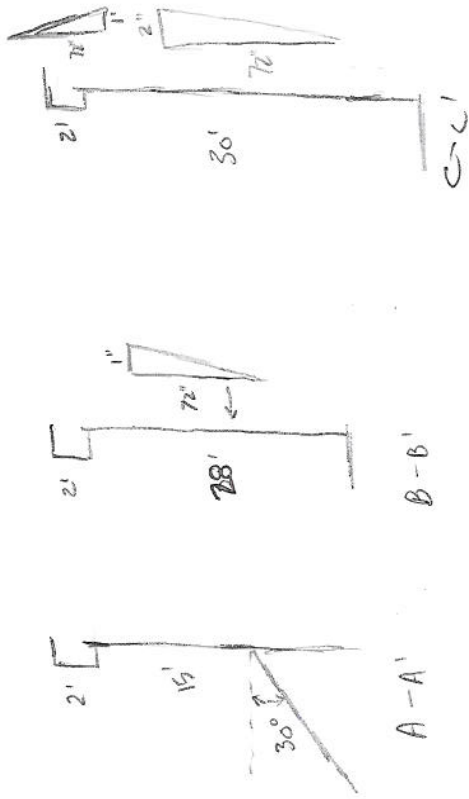
some battling in the panels for the MSE panels mostly inward, but for the "lift-up" panels, the battling was outward

Plan View/Drainage:



2  
250  
72  
160  
100  
540  
132

Cross Sections:



Cross Sections:



MISE WALL DRAINAGE

Required Item:		Yes	No	NA	UNKN	Measurement/Extent of Problem/Location/Photo Numbers
1-Is there an active water source near the toe of the wall (i.e. the wall near a body of water with no ponding)?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-If applicable, are the catch basins at the base of the wall blocked?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Are there obstructions preventing flow through the wall?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
4-Are there vertical drains that extend through the backfill?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
5-Is there erosion at the base of the wall or leveling pad? (Photo 12)		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
6-Is there erosion along the wing wall?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
7-Are there any signs of water flow along the base of the wall?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
8-Is there less than 14 feet between adjacent girders and wall?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
9-Does the backfill or joint fabric appear to be saturated?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
10-Is there vegetation growing in panel joints (Photo 8)?		Y	N	N/A	UNKN	Blocked / 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
11-Are the deck drains and outlets at the top of the wall blocked? (Photo 14)		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
12-Can water enter the wall between coping and slab (i.e., drains appropriately)?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
13-Is there evidence of discharge point of fill washing through drain pipe?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

*right against*  
*cannot reach top of wall*

MISE WALL JOINTS

Required Item:		Yes	No	NA	UNKN	Measurement/Extent of Problem/Location/Photo Numbers
1-Is backfill coming out of joints or are there joints of backfill at the base of the wall? (Pictures 2 & 3)		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-Are the joints wide enough to see fabric or backfill behind panels when locking into joint? (Photo 5) If not, is there evidence of fabric or backfill behind panels when locking into joint? (Photo 4)		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Are there visible signs in the deck? Is there evidence of backfill or water leaking through seal? (Do not include additional damage to fabric)		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
4-Do the joints have a non-uniform horizontal spacing? Are some horizontal joints larger/smaller than others? (Photo 6)		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
5-Do the joints have a non-uniform vertical spacing? Are some vertical joints larger/smaller than others? (Photo 6)		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
6-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	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
7-Does the fabric appear brittle, or appear as if it has undergone excessive UV exposure?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

MISE WALL FACING

Required Item:		Yes	No	NA	UNKN	Measurement/Extent of Problem/Location/Photo Numbers
1-Is there excessive cracking in the panel? (Photo 9 & 10) If yes, record the approximate number of panels in the wall with cracking.		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-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.		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Are the panel corners cracking contact with each other? If yes, record the approximate number in the wall.		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
4-Do the panel corners "pop-out" or chipped from contact with an adjacent panel? If yes record the number in the wall.		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
5-Does crack spacing suggest Differential Settlement?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
6-Does the overlying coping exhibit Vertical Offset?		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
7-Are the coping and parapets loose or detaching? If yes, it may be appropriate to contact UDOT if detachment seems eminent.		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
8-Are the panels bulging (bowing horizontally)? If so, record maximum deformation from accessible wall.		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
9-Is there bulging at the top or bottom of the wall? (Record maximum degree of bulging from minimum using vertical level and affected area).		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

MISE TOP OF WALL OBSERVATIONS

Required Item:		Yes	No	NA	UNKN	Measurement/Extent of Problem/Location/Photo Numbers
1-Is there evidence of sidewalk at the top of the wall? ( pavement cracking, etc)		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
2-Are there any open cracks in the concrete coping (not hairline)? If yes, record the approximate maximum crack width.		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
3-Is the construction joint in the concrete coping spaced up? (Photo 6). If yes, record the maximum joint width.		Y	N	N/A	UNKN	/ 0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /



Y	Y	UNK	36-Is there a large gap between the approach slab and the approach pavement? (Photo 13) Often this is caused by the approach slab being too high or too low.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/
Y	Y	UNK	37-AM 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	Y	UNK	38-Is the coping wall pulling away from pavement touchway section? Please record maximum displacement for wall.	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	/

NISE STABILITY

Required Items:		INSPECTION	STRUCTURAL INTEGRITY	MEASUREMENT/EXTENT OF PROBLEMS/LOCATION/PHOTO NUMBERS	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%	
Y	Y	UNK	39-What is the location depth of leveling pad? Pound Geo-Probe into soil located 2 inches from wall to a maximum depth of 24 inches (2 inches is the minimum depth for NISE Wall)	0-24 in	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	40-Is leveling pad exposed?	Flat	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	41-Is there cracking in the leveling pad? If so, record maximum crack size with gage.		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	42-Is there a four foot bench (first slope) directly along the wall before the slope changes (Second Width)?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	43-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.		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	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	Y	UNK	45-Is there excessive degradation of panel face?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%

NISE METAL CORROSION

Required Items:		INSPECTION	METAL CORROSION	MEASUREMENT/EXTENT OF PROBLEMS/LOCATION/PHOTO NUMBERS	0-No	1%	5%	10% <th>25%</th> <th>50%</th> <th>75%</th> <th>90%</th> <th>95%</th> <th>100%</th>	25%	50%	75%	90%	95%	100%	
Y	Y	UNK	46-Is there excessive corrosion on guardrail or other exposed metal that might indicate corrosion's condition?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	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	Y	UNK	48-Are any internal 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	Y	UNK	49-Was a reditivity sample taken of exposed soil? If so, please indicate depth in inches.		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	50-Is there any indication of other 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%

NISE IMPACT/COLLISION PROTECTION

Required Items:		INSPECTION	IMPACT/COLLISION	MEASUREMENT/EXTENT OF PROBLEMS/LOCATION/PHOTO NUMBERS	0-No	1%	5%	10% <th>25%</th> <th>50%</th> <th>75%</th> <th>90%</th> <th>95%</th> <th>100%</th>	25%	50%	75%	90%	95%	100%	
Y	Y	UNK	51-Are guardrails/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	Y	UNK	52-Does it appear that the wall has been involved in an accident (replaced panel, recent dips in the wall)?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	53-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%

NISE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY

Required Items:		INSPECTION	OBSTRUCTIONS IN REINFORCEMENT GEOMETRY	MEASUREMENT/EXTENT OF PROBLEMS/LOCATION/PHOTO NUMBERS	0-No	1%	5%	10% <th>25%</th> <th>50%</th> <th>75%</th> <th>90%</th> <th>95%</th> <th>100%</th>	25%	50%	75%	90%	95%	100%	
Y	Y	UNK	54-Are there voids wall angle (>90)?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%

NISE AS BUILT DIFFERENT FRONT DESIGN

Required Items:		INSPECTION	AS BUILT DIFFERENT FRONT DESIGN	MEASUREMENT/EXTENT OF PROBLEMS/LOCATION/PHOTO NUMBERS	0-No	1%	5%	10% <th>25%</th> <th>50%</th> <th>75%</th> <th>90%</th> <th>95%</th> <th>100%</th>	25%	50%	75%	90%	95%	100%	
Y	Y	UNK	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	Y	UNK	56-Is the design in general accordance with drawing?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	57-Are the panels CIP (Cast in Place)? Does there appear to be excessive cracking in the panels?	but pitted panels are not present in drawing	/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	58-Was GEOFoam used in the construction of the wall?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	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	Y	UNK	60-Are there any irrigation, utilities, or structures that are not part of the initial drawing?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	61-Has there been any encroachment or evidence of encroachment near the wall?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%
Y	Y	UNK	62-Has 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	Y	UNK	63-Are there piles located in the wall (bridge abutment)?		/	0-No	1%	5%	10%	25%	50%	75%	90%	95%	100%