

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

Inspector Information

Inspection Date	7/26/07	Names Of Inspectors	Ryan Maw, Holly Griffin
Region	1	Identifying Road/Intersection	US 89 / Shepherd Ln

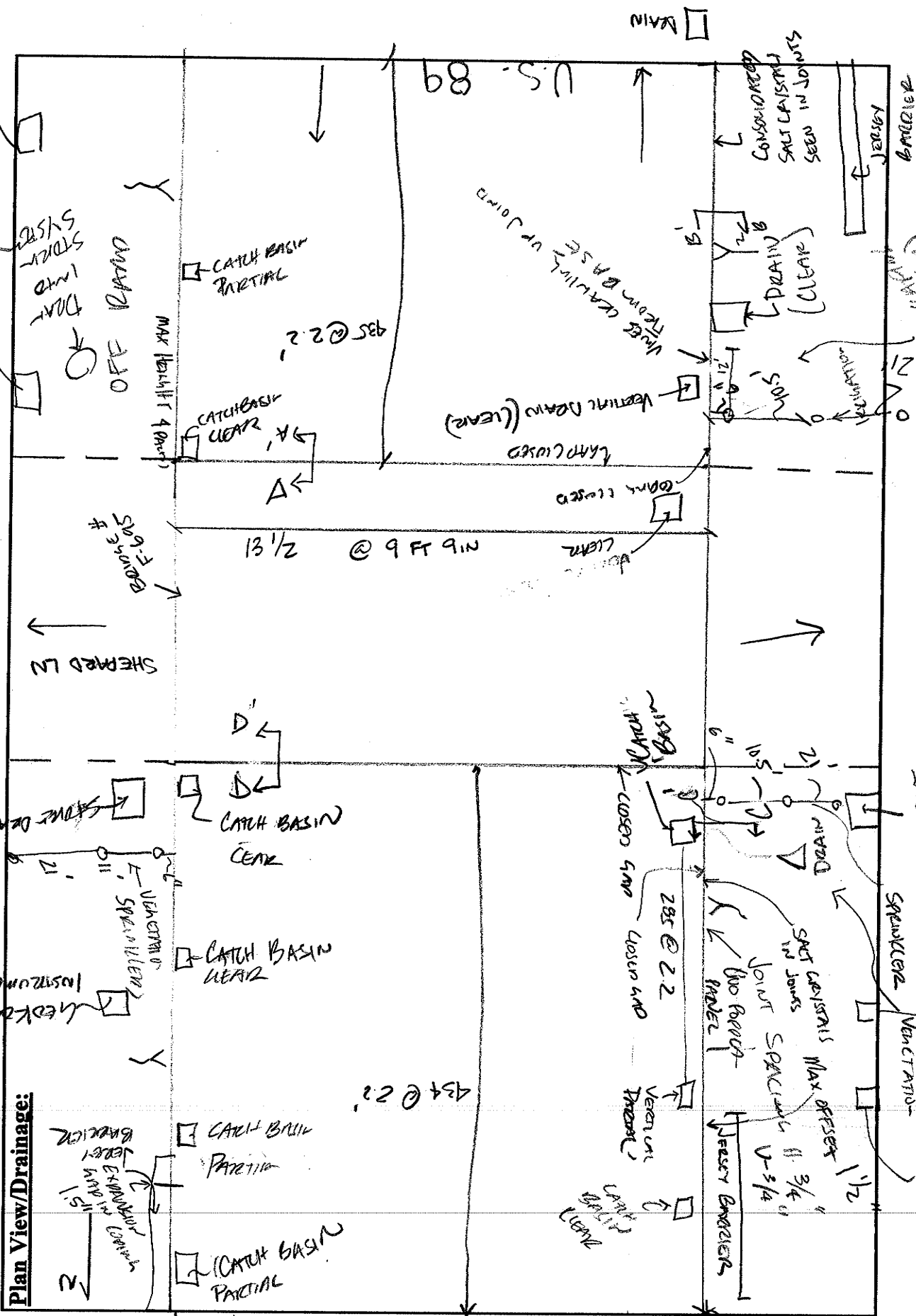
MSE WALL CHARACTERISTICS

MSE Wall at Bridge	(Y) N	Bridge Number if applicable:	F-69S	Wall Number	R-369 615 UNK
Surrounding Structures	COMMERCIAL			Maximum Height of Wall (ft)	20'
Distance to Each Structure	100 FT +			One Stage, Two Stage or Block Wall	TWO STAGE
State Route Number	U.S. 89			Estimated Max Length of Wall Abutment:	957'
Approximate Mile Marker				Max Slope of Ground in front of wall:	0-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)	N 41° 00.229'	Please draw rough layout of panel with approximate dimensions in space provided below. <div style="border: 1px solid black; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 50%; transform: translate(-50%, 0);">9 FT 9 IN</div> <div style="position: absolute; left: 0; bottom: 0; top: 50%; transform: translate(0, -50%);">4' 10"</div> </div>			
	W 111° 54.574'				
If known, Panel or System Manufacturer	2				

Summary of Key Observations:

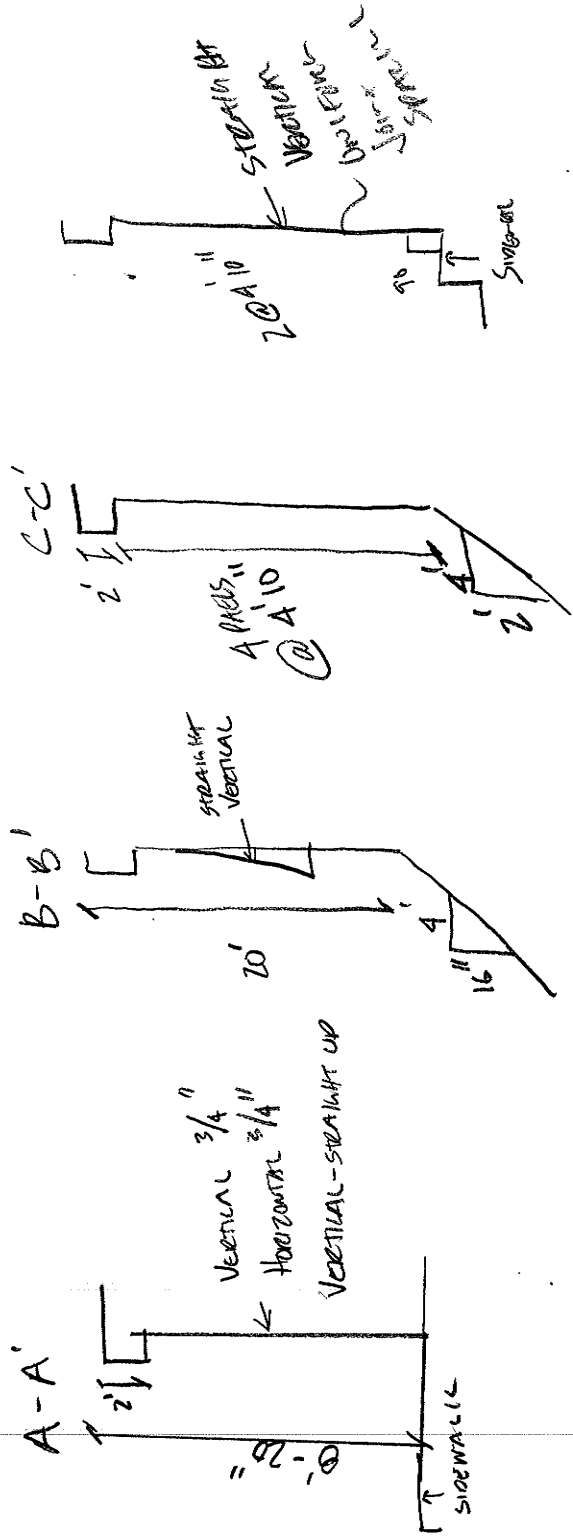
wall in excellent condition
several catch basins partially obstructed

Plan View/Drainage:



PLAN VIEW/Drainage: 3

Cross Sections:



Cross Sections:

MSE WALL DRAINAGE

Required Field	Yes	No	NA	UKN	Measurement/Ex
14-Is there an active water source near the toe of the wall (in the wall near a body of water with sear potential)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
15-If applicable, are the catch basins at the base of the wall blocked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
16-Are there catch basins protruding through the wall?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
17-Are there vertical drains that extend through the backfill?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
18-Is there erosion at the base of the wall or leveling pad? (Photo 12)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
19-Is there erosion along the wing wall?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
20-Are there any signs of water flow along the base of the wall?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
21-Is there evidence of water flow between irrigation sprinklers and wall?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
22-Does the backfill or joint fabric appear to be saturated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
23-Is there vegetation growing in panel joints (Photo 8)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
24-Are the deck drains and outlets at the top of the wall blocked? (Photo 14)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
25-Can water enter the wall between coping and slab (i.e., drain appropriately)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
26-Is there evidence at discharge point of fill washing through drain pipes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No

6" away - several on all walls

Blocked

60 clear, 4 partially blocked

sand from roadway

MSE WALL JOINTS

Required Field	Yes	No	NA	UKN	Measurement/Ex
1-Is backfill coming out of joints or are there piles of backfill at the base of the wall? (Photos 2 & 3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
2-Are the joints wide enough to see fabric or backfill behind panels when looking into joint? (Photo 5) If yes, record the approximate maximum joint width in inches.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
3-Do the joints have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
4-Is there evidence of backfill or water leaking through joint? (Do not include additional damage to fabric)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
5-Do the joints have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
6-Do the joints have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
7-Do the joints have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
8-Are the panels offset at the joint either in or out of the wall? (Photo 7) If yes, record the approximate maximum offset.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
9-Does the fabric appear brittle, or appear as if it has undergone excessive UV exposure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No

.75"
.75"
1" max at one location (1%)

MSE WALL FACING

Required Field	Yes	No	NA	UKN	Measurement/Ex
10-Is there excessive cracking in the panels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
11-Do these cracks that continue vertically through adjacent panels? (Photos 9 & 10) If yes, record the approximate number of panels in the wall with cracking.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
12-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
13-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
14-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
15-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
16-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
17-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
18-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
19-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
20-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
21-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
22-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
23-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
24-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
25-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
26-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
27-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
28-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
29-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
30-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
31-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
32-Do the panels have a non-uniform horizontal spacing? (Photo 9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
33-Do the panels have a non-uniform vertical spacing? (Photo 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No

MSE TOP OF WALL OBSERVATIONS

Required Field	Yes	No	NA	UKN	Measurement/Ex
34-Is there evidence of settlement at the top of the wall? (settlement cracking, etc)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
35-Are there any open cracks in the concrete coping (not hairline)? If yes, record the approximate maximum crack width.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No
36-Do the concrete coping joints in the overlying coping appear open? (Photo 6). If yes, record the maximum joint width.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-No

Y	N	N/A	URK	12-Are the panels "tilt-up" to there excessive cracking in the panels?	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	23-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	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	24-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	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	25-Are the panels forming contact with each other? If yes, record the approximate number in the member in the wall.	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	26-Are the panels "pop-out" or slipped from contact with an adjacent panel? If yes record the member in the wall.	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	27-Does crack opening suggest Differential Settlement?	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	28-Does the overlying coping exhibit Vertical Offset?	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	29-Are the coping and parapets loose or delaminating? If yes, it may be appropriate to contact UDOT if delamination seems evident.	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	30-Are the panels in danger of falling off? (If potential exists contact appropriate UDOT region).	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	31-Are the panels bulging (bowing horizontally)? If no, record maximum deflection from assembly coping to leveling pad. (Photo 11)	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%
Y	N	N/A	URK	32-Are there voids at the top of bottom of the wall? (Record maximum degree of slipping from bottom using vertical level and adjacent area).	0-No	1-1	5%	10%	25%	50%	75%	90%	95%	100%

TOP OF WALL OBSERVATIONS

Required Photo	Yes	No	URK	Top of Wall	Measurement (Amount of Problem/Location/Photo Numbers)
Y	N	N/A	URK	13-Are there signs 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	URK	14-Are there any signs visible on the concrete coping (not railing)? If yes record the approximate maximum crack width.	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	URK	15-Are the construction joints 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	URK	16-Are there a large gap between the coping slab and the approach pavement? (Photo 13) Other this provides a bumping sensation as the vehicle is crossed. Record the approximate maximum gap size.	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	URK	17-Are the rubbers, 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	N/A	URK	18-Are 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% /

WALL STABILITY

Required Photo	Yes	No	URK	Structural Integrity	Measurement (Amount of Problem/Location/Photo Numbers)
Y	N	N/A	URK	19-What is the location depth of walling wall? (Record Coping (top wall) located 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	N/A	URK	20-Are there voids in the leveling pad? If so, record maximum void size with gap.	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	URK	21-Are there a four foot panel? (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	N/A	URK	22-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	URK	23-Is there a slope greater than V:1.5 to H:1 below the wall? Please record slope and height of bankfill below the wall.	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	URK	24-Is there excessive degradation of panel base?	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /

4 to 2 slope max

MSE METAL CORROSION

Required Photo	Yes	No	URK	Metal Corrosion	Measurement (Amount of Problem/Location/Photo Numbers)
Y	N	N/A	URK	46-Is there excessive corrosion on panels or other exposed metal that might indicate concrete condition?	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	URK	47-Are there rust or red 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	URK	48-Are any unusual stains present? Do they appear to be corrosion on these strips? If applicable please record the total number of strips affected.	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	URK	49-What a reliability sample taken of exposed soil? If so, please indicate depth in inches.	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	URK	50-Is there any indication of rebar corrosion (swelling, rust, exposed steel 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 Photo	Yes	No	URK	Impact/Collision	Measurement (Amount of Problem/Location/Photo Numbers)
Y	N	N/A	URK	51-Are there any protrusions in place at the base of the wall (to protect it from potential traffic impacts)?	0-No 1% 5% 10% 25% 50% 75% 90% 95% 100% /
Y	N	N/A	URK	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	N	N/A	URK	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% /

MSE OBSTRUCTIONS IN REINFORCEMENT GEOMETRY

Required Photo	Yes	No	URK	Obstructions in Reinforcement Geometry	Measurement (Amount of Problem/Location/Photo Numbers)
Y	N	N/A	URK		

Y		N		N/A		14-Are there acute wall angle (<90)?																																							
URDN		URDN		URDN		/ O-No				1%				5%				10%				25%				50%				75%				90%				95%				100% /			
MEASUREMENTS DIFFERENT FROM DESIGN																																													
Required Tools: Drawing, Camera-DSLR																																													
MEB as built different than design																																													
Y	N	N/A	URDN	URDN	URDN	15-Are there available drawings for the wall? Please indicate type (Situation and Layout, Design, As Built, etc.)																																							
Y	N	N/A	URDN	URDN	URDN	16-Are there any drawings on or near wall that were not included in initial drawings?																																							
Y	N	N/A	URDN	URDN	URDN	17-Are there any irrigation, utilities, or structures that are not part of the initial drawings?																																							
Y	N	N/A	URDN	URDN	URDN	18-Do any local property owners adjacent to the wall (additional structures, irrigation, vegetation, etc.)?																																							
Y	N	N/A	URDN	URDN	URDN	19-Are there piles located in the wall (bridge abutments)?																																							