



Salt River Pima-Maricopa Indian Community

Transportation Asset and Pavement
Assessment Study

Technical Memorandum

Salt River Pima-Maricopa Indian Community, Arizona

October 11, 2018

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1 Introduction

This memo outlines the approach and methodology used to develop the Salt River Pima-Maricopa Indian Community's (the Community) Transportation Asset and Pavement Assessment Study, prepared by HDR for the Community, as a Planning Assistance for Rural Areas project for the Arizona Department of Transportation.

This memo accompanies a *transportation asset and pavement assessment* geodatabase, which is the primary deliverable for this study. The geodatabase provides a baseline condition inventory for the Community's transportation infrastructure, and includes both an assessment of infrastructure conditions and a photo log of the same.

HDR used an existing SRPMIC inventory of roadway, parking lot and miscellaneous pavements provided by the Community as the basis for the evaluation (Appendix A).

2 Pavement condition assessment and condition index rating

The pavement condition was assessed and quantified in accordance with the method presented in ASTM D6433–18, Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys. The sampling rate was modified to allow all of the requested segments to be sampled. The inventoried pavement samples are coded to the route segments, as identified in Appendix A, and a route shapefile provided by the Community. The pavement distress ratings may be joined to the condition assessment through a unique identifier (Pavement ID).

A photograph of the area of each pavement sample was taken, and the photographs may be accessed via the study geodatabase. The pavement condition information is summarized in the Pavement spreadsheet (excel file provided under separate cover), and this file may be joined to the study geodatabase through a unique identifier (Photo ID).

3 Drainage inventory and assessment

Data on the drainage structures was gathered through field visits conducted from March 30, 2018 through July 6, 2018. Drainage features were geo-tagged and categorized under the following criteria:

- Facility Type
 - Cross Culvert
 - Storm Drain
 - Roadside Ditch
 - Irrigation
 - Erosion Protection

- Structure Type
 - Circular Pipe
 - Reinforced Concrete Box Culvert (RCBC)
 - Bridge
 - Elliptical Pipe
 - Riprap
- Drainage Structure
 - Inlet
 - Gate
 - Cattle Crossing
 - Ditch
 - Swale
- Size
 - Minor (Less than 36-in)
 - Major (36-in to 72-in)
 - RCBC (up to 20-ft)
 - Bridge (20-ft +)
- Width (ft.)
- Height (ft.)
- Diameter (ft.)
- Observed Condition
 - Good (Minimal to no signs of wear on structure)
 - Fair (Structure appearing to operate properly despite signs of aging)
 - Poor (Damaged structure or laden with sediment preventing proper operation)
- Material
 - Reinforced Concrete Pipe (RCP)
 - Corrugated Metal Pipe (CMP)
 - Rock
 - Concrete
 - Compacted Soil

3.1 Assessment

The vast majority of existing land use within the project limits is defined as agricultural. Cross culverts convey irrigation water, received from the Arizona Canal, beneath roadway intersections to the local agricultural fields. Field survey indicates the majority of these cross culverts are 2-ft diameter Corrugated Metal Pipe (CMP). Most of these cross culverts are in fair condition with only a handful being in poor condition. Poor condition structures consist of deformed or sediment laden culverts in which the conveyance capacity is severely limited. An example of a poor condition cross culvert include the cross culvert located at the intersection of Country Club Dr. and Highland Ave (on the northeast corner of the entrance to the Salt River High School and Salt River Elementary School), reference Figure 1. Sediment has nearly buried the inlet side of the pipe which

is severely limiting its drainage capacity. As a result of the damage, the culvert's ability to convey storm water flows is severely limited.



Figure 1. Cross culvert in poor condition due to sediment loading.

Irrigation conveyance features located within the roadway ROW were assessed for their condition and ability to operate as intended. As directed by the client, data of cross culverts under residential driveways were not collected in this assessment.

In the developed residential neighborhoods, curb inlets and concrete scuppers are a commonplace drainage feature utilized to capture stormwater runoff concentrating along the curb and gutter flowline. Scuppers outfall to roadside ditches paralleling the roadway alignment. Figure 2 is the typical concrete scupper configuration located within the community.



Figure 2. Curb inlet and concrete scupper along Center Street.

Alternatively curb inlets discharge roadway runoff into riprap pads along the side of roadways. Riprap pads throughout the community generally ranged in size between 0.5-ft to 1-ft in diameter.

There are a limited number of trapezoidal concrete lined channels located within the project area. One such feature, located along the west side of Longmore Rd. south of Lehi Rd., appears to no longer be in use as it is heavily laden with sediment from a lack of maintenance. The sediment diminishes channel capacity to convey stormwater.

In addition to curb inlets, there are several large box culverts along Dobson Rd between Via de Ventura and Indian Bend Rd (see Figure 3) which convey offsite runoff from undeveloped land and drain to a 9-ft diameter RCP which runs north to south underneath Dobson Rd. The ultimate outfall of the large diameter RCP was undetermined through the field visit and desktop review.



Figure 3. Dual cell RCBCs (7-ft x 8-ft) along Dobson Rd.

A 21-ft diameter culvert beneath Indian School Rd between Mesa Drive and 126th Street, conveys both local drainages as well overflows from the Arizona Canal located to the north. See Figure 4 and Figure 5.



Figure 4. Single cell 21-ft at Indian School Rd.



Figure 5. Arizona Canal overflow gates

3.2 Recommendations

The data collected was provided to the Community for their use as part of a geodatabase of transportation infrastructure. The information may be used to prioritize maintenance and identify future capital projects, as deemed necessary by the Community. Maintenance recommendations at this time include sediment cleanup and replacement of minor structures that are damaged or otherwise no longer working properly. These structures may no longer convey stormwater or irrigation water as intended which may lead to ponding at intersections

and access driveways. In larger storm events, there is increased potential of overtopping of roadways. Addressing areas documented as severely eroded or being flanked by forming headcuts should be reviewed and sized with the proper revetment material to reduce potential of further undermining of the roadway embankment slopes.

Major structures that have been specifically mentioned in this memorandum should include documentation (such as as-builts, if available), in order to compliment the inventory prepared by HDR. HDR recommends including this documentation in the database for ease of access should future development require this information.

Table 1 lists the features classified as ‘Poor’ condition, based on the field review. The list includes the feature type, location and assessment of existing conditions. A photograph of each drainage feature was taken, and the photographs and drainage feature condition information is found in the project geodatabase (under separate cover).

Table 1. Poor Condition Drainage Features

Object ID	Structure Type	Size	Notes
16	Cross Culvert	Unable to obtain	Culvert buried with debris
17	Cross Culvert	2-ft Diameter	Culvert buried with debris
34	Swale	3-ft x 1-ft	Swale laden with debris
41	Cross Culvert	2-ft Diameter	Culvert filled over halfway with sediment
45	Cross Culvert	2-ft Diameter	Culvert plugged with debris
51	Cross Culvert	2-ft Diameter	Culvert plugged with debris
66	Cross Culvert	2-ft Diameter	CMP badly damaged and tearing
70	Cross Culvert	2-ft Diameter	CMP badly damaged
89	Cross Culvert	2-ft Diameter	Culvert buried with debris
109	Cross Culvert	3-ft Diameter	CMP badly damaged
117	Cross Culvert	2-ft Diameter	Culvert plugged with sediment
123	Roadside Ditch	2-ft x 1-ft	Ditch laden with debris
138	Cross Culvert	1.5-ft Diameter	Culvert plugged with sediment and debris
143	Trapezoidal Channel	3-ft x 1-ft	Channel filled halfway with sediment and debris
179	Concrete Scupper	2-ft x 0.3-ft	Scupper completely filled with sediment. Does not appear to be in service

Note: Object ID refers to the reference number associated with the Geodatabase. For additional information refer to study geodatabase.

4 Bridge inventory and assessment

HDR bridge engineers performed an inspection of two bridges identified as being the Community's responsibility.

The bridges inspected were:

- H 123 Mesa Drive at Evergreen Canal
- H 124 Mesa Drive at Arizona Canal

The inspection followed National Bridge Inspection Standards (NBIS). The bridge assessment results were provided to the Community on March 22, 2018 (refer to Appendix B) The inspection provides the Community with documentation on the condition of the bridges at the time of survey. Appendix B provides the complete documentation of the bridge condition, provided to the Community for their incorporation into the national database per Bureau of Indian Affairs guidance.

Two additional structures initially identified as bridges were found by HDR bridge engineers not to meet the NBIS requirements to be identified as bridges. Documentation as to this finding may be found in Appendix C.

5 Sidewalk inventory and assessment

Sidewalks facilities associated with the roadway sections where pavement assessment was conducted were inventoried. The inventory identifies

- Composition (concrete, asphalt)
- Attached or detached
- Width and length
- Associated curb or landscape parkway
- Condition assessment
- ADA facilities present

A photograph of the each segment of sidewalk was taken, and the photographs are accessed via the study geodatabase. The sidewalk inventory and assessment information is found in the project geodatabase (under separate cover).

6 Lighting inventory and assessment

Community owned lighting facilities associated with the roadway sections that the tribe provided were inventoried.

A photograph of each light was taken, and the photographs are accessed via the study geodatabase. Lighting inventory included information on type, power, and condition assessment. The lighting inventory and assessment information is found in the project geodatabase (under separate cover).

7 Sign inventory and assessment

Community owned signs associated with the roadway sections where pavement assessment was conducted were inventoried.

In addition to the type of sign (regulatory, warning, guide), the post type, the sign size, and condition was reported. The sign condition assessment may be joined to the sign post condition assessment through a unique identifier (Sign Post ID).

For regulatory signs, HDR collected information on the sign retroreflectivity. This was accomplished with the use of ADOT's retroreflectivity meter (RoadVista, Model 922. More information at <http://www.roadvista.com>). All of the Communities transportation signs were inventoried; however, due to study constraints, the sign retroreflectivity measurements were limited to approximately 250 signs.

A photograph of each of the inventoried signs was taken, and the photographs are accessed via the study geodatabase. The sign inventory and assessment information is found in the project geodatabase (under separate cover).



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APPENDIX A –

Comprehensive SRPMIC TTP data.xls

Owner	Route	Section	ID	Route Name	Begin Location	End Location	Surface Condition Index	Surface Thickness (inches)	Surface Class	Lanes	Length (ft)	Lane-Miles (two-lane section)	Overall Surface Width (ft)	Overall Pavement Area (square feet)	Total No. of Sample Units in Section	Minimum No. of Sample Units for Inspection
Tribal	1	10	001_010	Indian School Road	East of the Loop 101 Pima Freeway	Alma School Road	60		AC	2	9153	1.73	28	256284	103	10
Tribal	1	20	001_020	Indian School Road	Alma School Road	Grand Street	80		AC	2	6647	1.26	28	186116	74	7
Tribal	1	22	001_022	Indian School Road	Grand Street	Pasadena	95	3.5"	AC	2	2660	0.50	30	79800	32	4
Tribal	1	25	001_025	Indian School Road	Pasadena	Horne Road	80		AC	2	3935	0.75	28	110180	44	4
Tribal	1	30	001_030	Indian School Road	Evergreen Wash Bridge	Evergreen Wash Bridge	20		AC	2	42	---	28	1176	0.5	1
BIA	1	40	001_040	Indian School Road	Horne Road	126th Street	75		AC	2	1318	0.25	29	38222	15.3	4
Tribal	4	10	004_010	McDowell Road	Mesa Drive	West of Gilbert Road	90		3 AC	2	10052	1.90	24	241248	96	10
Tribal	5	10	005_010	92nd Street	McKellips Road	McDowell Road	70		4 AC	3	5193	0.98	50	259650	104	10
Tribal	5	20	005_020	92nd Street	McDowell Road	Oak Street	60		AC	2	2615	0.50	27	70605	28	4
Tribal	5	23	005_023	92nd Street	Oak Street	Thomas Road	78		AC	2	2643	0.50	27	71361	29	4
Tribal	5	27	005_027	92nd Street	Thomas Road	Indian School Road	50		AC	2	5268	1.00	27	142236	57	6
BIA	7	5	007_005	Dobson Road	South of McKellips Road	McKellips Road	60		AC	2	673	0.13	34	22546	9	3
Tribal	7	10	007_010	Dobson Road	McKellips Road	McDowell Road	80		AC	2	5200	0.98	26	135200	54	5
BIA	7	15	007_015	Dobson Road	McDowell Road	Thomas Road	90		AC	2	5272	1.00	33	173976	70	7
BIA	7	20	007_020	Dobson Road	Thomas Road	North of Pinchot Drive	90		5 AC	2	999	0.19	33	32967	13	3
BIA	7	25	007_025	Dobson Road	North of Pinchot Drive	Camelback Road	46		AC	2	6895	1.31	33	227535	91	9
Tribal/BIA	7	30	007_030	Dobson Road	Camelback Road	AZ Canal	50		AC	2	8991	1.70	25	224775	90	9
BIA	7	35	007_035	Dobson Road	AZ Canal	AZ Canal	0		PCC		0					
BIA	7	50	007_050	Dobson Road	Talking Stick Way	Via de Ventura	70		4 AC	4	5393	2.04	60	323580	129	13
BIA	7	60	007_060	Dobson Road	Via de Ventura	Royal Palms Road	95		5 AC	4	1320	0.50	68	89760	36	4
BIA	7	70	007_070	Dobson Road	Royal Palms Road	Eastwood Lane				4	1320	0.50				
BIA	7	80	007_070	Dobson Road	Eastwood Lane	92nd Street				4	3760	1.42				
BIA	7	90	007_080	Horseshoe Road	92nd Street	90th Street				4	1320	0.50				
BIA	9	3	009_003	Longmore Road	South of McKellips Road	McKellips Road	62		AC	2	725	0.14	33	23925	10	3
BIA	9	5	009_005	Longmore Road	McKellips Road	McDowell Road	75		2 AC	2	4399	0.83	33	145167	58	6
Tribal	9	8	009_008	Longmore Road	McDowell Road	Oak Street	85		2 AC	2	2663	0.50	28	74564	30	4
Tribal	9	10	009_010	Longmore Road	Oak Street	Thomas Road	90		2 AC	2	2624	0.50	28	73472	29	4
Tribal	9	12	009_012	Longmore Road	Thomas Road	Osborn Road	72		2 AC	2	2629	0.50	29	76241	30	4
Tribal	9	14	009_014	Longmore Road	Osborn Road	Indian School Road	90		2 AC	2	2656	0.50	29	77024	31	4
Tribal	9	16	009_016	Longmore Road	Indian School Road	Chaparral Road	80		2 AC	2	5276	1.00	28	147728	59	6
Tribal	9	20	009_020	Longmore Road	Chaparral Road	Evergreen Canal Road	54		AC	2	5736	1.09	25	143400	57	6
BIA	11	10	011_010	Alma School Road	McDowell Road	AZ Canal	80		4 AC	2	20339	3.85	36	732204	293	29
BIA	11	20	011_020	Alma School Road	AZ Canal	AZ Canal	58		PCC	2	118	0.02	28	3245	1.3	1
BIA	11	30	011_030	Alma School Road	AZ Canal	McDonald Drive	95		4 AC	2	660	0.13	28	18480	7	3
BIA	13	10	013_010	Extension Road	McDowell Road	Palm Lane	90		4 AC	2	1322	0.25	26	34372	14	3
BIA	13	11	013_011	Extension Road	Palm Lane	N. of LDS Church	90		4 AC	2	662	0.13	26	17212	7	3
BIA	13	12	013_012	Extension Road	N. of LDS Church	Indian School Road	90		4 AC	2	8564	1.62	26	222664	89	9
BIA	13	20	013_020	Extension Road	Indian School Road	Camelback Road	75		AC	2	2613	0.49	28	73164	29	4
BIA	13	25	013_025	Extension Road	Camelback Road	Chaparral Road	75		AC	2	2606	0.49	28	72968	29	4
BIA	13	30	013_030	Extension Road	Chaparral Road	Evergreen Canal Road	50		AC	2	2132	0.40	28	59696	24	4
BIA	14	10	014_010	Talking Stick Way	Loop 101 Pima Freeway	Longmore Road	78		4 AC	4	4717	1.79	62	292454	117	12
BIA	15	10	015_010	Country Club Drive	Oak Street	Indian School Road	60		AC	2	7892	1.49	29	228868	92	9
BIA	15	20	015_020	Country Club Drive	Indian School Road	Highland Avenue	70		AC	2	3992	0.76	29	115768	46	5
BIA	15	30	015_030	Country Club Drive	Highland Avenue	Chaparral Road	60		AC	2	1227	0.23	30	36810	15	3
Tribal	16	40	016_040	Evergreen Canal Road	West of Mesa Drive	East of Mesa Drive	64		AC	2	341	0.06	23	7843	3	2
Tribal	16	60	016_060	Evergreen Canal Road	Evergreen Wash Bridge	Evergreen Wash Bridge	36		AC	1	43	0.01	16	667	0.3	1
Tribal	17	10	017_010	Center Street	SR 87 Beeline Highway	Indian School Road	56		AC	2	6089	1.15	28	170492	68	7
Tribal	17	20	017_020	Center Street	Indian School Road	Camelback Road	90		4 AC	2	2610	0.49	24	62640	25	4
Tribal	17	30	017_030	Center Street	Camelback Road	Evergreen Canal Road	62		3 AC	2	2192	0.42	28	61376	25	4
Tribal	17	40	017_040	Center Street	McDonald Drive	Krail Street	95		2 AC	2	3590	0.68	24	86160	34	4
Tribal	18	5	018_005	McDonald Drive	irrigation canal bridge	irrigation canal bridge	60		PCC	2	25	0.00	22	550	0.2	1

Owner	Route	Section	ID	Route Name	Begin Location	End Location	Surface Condition Index	Surface Thickness (inches)	Surface Class	Lanes	Length (ft)	Lane-Miles (two-lane section)	Overall Surface Width (ft)	Overall Pavement Area (square feet)	Total No. of Sample Units in Section	Minimum No. of Sample Units for Inspection
Tribal	18	10	018_010	McDonald Drive	Alma School Road	Mesa Drive	95	4	AC	2	10526	1.99	28	294728	118	12
Tribal	18	20	018_020	McDonald Drive	Mesa Drive	Olive Street	95	3	AC	2	1306	0.25	24	31344	13	3
Tribal	19	10	019_010	Mesa Drive	SR 87 Beeline Highway	Camelback Road	48		AC	2	6561	1.24	28	183708	73	7
Tribal	19	12	019_012	Mesa Drive	Camelback Road	Evergreen Canal Road	74		AC	2	1009	0.19	31	31279	13	3
Tribal	19	13	019_013	Mesa Drive	Evergreen Canal Bridge	Evergreen Canal Bridge	90		PCC	2	68	0.01	32	2176	1	1
Tribal	19	14	019_014	Mesa Drive	Evergreen Canal Bridge	AZ Canal	74		AC	2	88	0.02	30	2640	1.06	1
Tribal	19	15	019_015	Mesa Drive	AZ Canal	AZ Canal	90		PCC	2	163	0.03	32	5216	2	2
Tribal	19	18	019_018	Mesa Drive	AZ Canal	Chaparral Road	74		AC	2	1294	0.25	31	40114	16	4
Tribal	19	20	019_020	Mesa Drive	Chaparral Road	McDonald Drive	95	3	AC	2	5325	1.01	28	149100	60	6
Tribal	19	25	019_025	Mesa Drive	McDonald Drive	Horse Facility/Well Site	95	3	AC	2	6900	1.31	24	165600	66	7
Tribal	19	27	019_027	Mesa Drive	Horse Facility/Well Site	Roadrunner Road	90	1	AC	2	2275	0.43	18	40950	16	4
Tribal	20	20	020_020	Jackrabbit Road	Alma School Road	Beverly Street	90	3	AC	2	646	0.12	24	15504	6	3
Tribal	21	10	021_010	Horne Road	McDowell Road	Thomas Road	60	2	AC	2	5175	0.98	31	160425	64	6
Tribal	21	20	021-020	Horne Road	Thomas Road	North of Thomas Road	85	3	AC	2	470	0.09	31	14570	6	3
BIA	22	10	022-010	Chaparral Road	Dobson Road	Alma School Road	48		AC	2	5297	1.00	25	132425	53	5
BIA	22	20	022-020	Chaparral Road	Alma School Road	Extension Road	75		AC	2	2604	0.49	26	67704	27	4
BIA	22	30	022-030	Chaparral Road	Extension Road	Country Club Drive	75		AC	2	2644	0.50	25	66100	26	4
BIA	22	40	022-040	Chaparral Road	Country Club Drive	Evergreen Canal	56	3	AC	2	1838	0.35	25	45950	18	4
BIA	22	45	022-045	Chaparral Road	Evergreen Canal	Center Street	64	3	AC	2	980	0.19	34	33320	13	3
BIA	23	10	023-010	Stapley Drive	McDowell Road	Thomas Road	50	2	AC	2	5174	0.98	30	155220	62	6
BIA	24	10	024-010	Camelback Road	Dobson Road	Alma School Road	80		AC	2	5270	1.00	28	147560	59	6
BIA	24	20	024-020	Camelback Road	Alma School Road	Center Street	36		AC	2	7924	1.50	28	221872	89	9
BIA	24	30	024-030	Camelback Road	Center Street	Horne Road	90		AC	2	5269	1.00	28	147532	59	6
Tribal	25	10	025-010	Harris Street	McDowell Road	Thomas Road	75	2	AC	2	5221	0.99	29	151409	61	6
Tribal	28	10	028-010	Osborn Road	Loop 101 Pima Freeway	92nd Street	90	3	AC	2	1205	0.23	26	31330	13	3
Tribal	28	12	028-012	Osborn Road	92nd Street	Longmore Road	48		AC	2	5231	0.99	25	130775	52	5
Tribal	28	15	028-015	Osborn Road	Longmore Road	Standage Road	86	5	AC	3	1313	0.25	35	45955	18	4
Tribal	28	20	028-020	Osborn Road	Standage Road	East of Alma School Road	86		AC	2	2126	0.40	27	57402	23	4
Tribal	28	30	028-030	Osborn Road	Country Club Drive	Mesa Drive	75		AC	2	5248	0.99	25	131200	52	5
BIA	30	5	030-005	Thomas Road	East of the Loop 101 Pir	East of the Loop 101 Pima	78		AC	2	300	0.06	47	14100	6	3
BIA	30	10	030-010	Thomas Road	East of the Loop 101 Pir	92nd Street	70		AC	2	1552	0.29	26	40352	16	4
BIA	30	12	030-012	Thomas Road	92nd Street	Longmore Road	70		AC	2	5242	0.99	28	146776	59	6
BIA	30	15	030-015	Thomas Road	Longmore Road	Center Street	70		AC	2	10524	1.99	27	284148	114	11
BIA	30	20	030-020	Thomas Road	Horne Road	West of Gilbert Road	90	2	AC	2	7625	1.44	32	244000	98	10
BIA	30	25	030-025	Thomas Road	West of Gilbert Road	Gilbert Road	64	2	AC	2	259	0.05	38	9842	4	2
Tribal	32	5	032-005	Oak Street	Loop 101 Pima Freeway	92nd Street	78		AC	2	1410	0.27	29	40890	16	4
Tribal	32	10	032-010	Oak Street	92nd Street	SR 87 Beeline Highway	70		AC	2	13688	2.59	29	396952	159	16
Tribal	32	30	032-030	Oak Street	West of Horne Road	Gilbert Road	95	4	AC	2	9232	1.75	28	258496	103	10
BIA	34	10	034-010	Via de Ventura	Loop 101 Pima Freeway	Dobson Road	70	4	AC	4	1372	0.52	46	63112	25	4
BIA	34	20	034-020	Via de Ventura	Dobson Road	Longmore Road	64	4	AC	4	1908	0.72	46	87768	35	4
Tribal	38	20	038-020	Earll Drive	Sycamore Street	Longmore Road	76	2	AC	2	1304	0.25	24	31296	13	3
Tribal	80	10	080-010	Roma Avenue	Gilbert Road	East of Gilbert Road	36	2.5	AC	2	1245	0.24	24	29880	12	3
Tribal	89	10	089-010	89th Street	Pima Road	Indian School Road	95	4.0	AC	3	3962	1.13	48	190176	76	8
Tribal	100	10	100-010	Two Waters Campus Earll Drive	Longmore	Public Works yard	70		AC	2	620	0.12	27	16740	7	3
Tribal	100	20	100-020	Two Waters Campus Two Waters Drive	Longmore	Council Chambers		3	AC	2	685	0.13				1
Tribal	100	30	100-030	Two Waters Campus Two Waters Drive	Council Chambers	Community Services			AC	2	580	0.11				1
Tribal	100	40	100-040	Two Waters Campus Council Chamber Drive	Roundhouse Road	Osborn		3	AC	2	603	0.11				1
Tribal	100	50	100-050	Two Waters Campus Council Chamber Drive	Osborn	Columbus Ave			AC	2	638	0.12				1
Tribal	100	60	100-060	Two Waters Campus Police and Fire Drive	Council Chambers	Community Services			AC	2	615	0.12				1
Tribal	100	70	100-070	Two Waters Campus Community Services Drive	Two Waters Drive	Osborn			AC	2	625	0.12				1
Tribal	100	80	100-080	Two Waters Campus Social Services Drive	Police and Fire	Osborn			AC	2	315	0.06				1

Owner	Route	Section	ID	Route Name	Begin Location	End Location	Surface Condition Index	Surface Thickness (inches)	Surface Class	Lanes	Length (ft)	Lane-Miles (two-lane section)	Overall Surface Width (ft)	Overall Pavement Area (square feet)	Total No. of Sample Units in Section	Minimum No. of Sample Units for Inspection
Tribal	100	90	100-090	Two Waters Campus Dialysis Drive	Osborn	south of Osborn			AC	2	263	0.05				1
Tribal	100	100	100-100	Two Waters Campus Dialysis Drive	south of Osborn	East Tribal Campus Parkin	90	2	AC	2	193	0.04				1
Tribal	P100	10	100-110	Two Waters Campus PW Employee Parking Lot	Earll	Longmore			AC							1
Tribal	P100	20	100-120	Two Waters Campus DOC Parking Lot	Longmore	Roundhouse Road			AC							1
Tribal	P100	30	100-130	Two Waters Campus Bldg B Parking Lot	Two Waters Drive	Council Chambers			PCC							1
Tribal	P100	40	100-140	Two Waters Campus Fleet Parking Lot	Council Chambers	Police and Fire Drive			AC							1
Tribal	P100	45	100-145	Two Waters Campus Data Center Parking Lot	Social Services Drive	Police and Fire Drive			AC							1
Tribal	P100	50	100-150	Two Waters Campus Courts PD Admin Parking Lot	Council Chambers	Police and Fire Drive			AC							1
Tribal	P100	60	100-160	Two Waters Campus Museum Parking Lot	Longmore	Osborn			AC							1
Tribal	P100	70	100-170	Two Waters Campus Bldg A Parking Lot	Osborn	Longmore			PCC							1
Tribal	P100	80	100-180	Two Waters Campus Council Chambers Parking Lot	Council Chambers	Osborn			PCC							1
Tribal	P100	90	100-190	Two Waters Campus Police Parking Lot	Osborn	Council Chambers			AC							1
Tribal	P100	95	100-195	Two Waters Campus Fire Parking Lot	Osborn											1
Tribal	P100	100	100-200	Two Waters Campus FAC Parking Lot South	Police and Fire	Community Services			AC							1
Tribal	P100	110	100-210	Two Waters Campus FAC Parking Lot North	Osborn	Community Services			AC							1
Tribal	P100	120	100-220	Two Waters Campus East Parking Lot	Osborn	Social Services Drive			AC							1
Tribal	P100	130	100-230	Two Waters Campus Social Services Parking Lot	Community Services Dr	Police and Fire Drive			AC							1
Tribal	P100	140	100-240	Two Waters Campus Cultural Resources Parking Lot	Osborn	Social Services Drive			AC							1
Tribal	P100	150	100-250	Two Waters Campus Health Center Parking Lot	Osborn	Social Services Drive			AC							1
Tribal	P100	160	100-260	Two Waters Campus Employee Parking Lot	Osborn	Council Chambers			AC							1
BIA	101	10	101-010	BIA School South Road	Longmore Road	end	20		AC	2	854	0.16	20	17080	7	3
BIA	101	20	101-020	BIA School North Road	Longmore Road	East Road	20		AC	2	690	0.13	20	13800	6	3
BIA	101	30	101-030	BIA School West Road	South Road	fence	42		AC	2	541	0.10	21	11361	5	2
BIA	101	40	101-040	BIA School East Road	South Road	North Road	42		AC	2	273	0.05	17	4641	2	2
BIA	101	50	101-050	Main SR Ballfield	Longmore Road	South SR Ballfield parking	95	3	AC	2	568	0.11	26	14768	6	3
BIA	101	60	101-060	North SR Ballfield	Longmore Road	West SR Ballfield	95	3	AC	2	105	0.02	26	2730	1	1
BIA	101	70	101-070	West SR Ballfield	North SR Ballfield	Main SR Ballfield	95	3	AC	2	235	0.04	53	12455	5	2
BIA	P101	10	101-110	BIA School South Parking Lot	South Road	West Road			AC							1
BIA	P101	20	101-120	BIA School East ALA Parking Lot	South Road	East Road			AC							1
BIA	P101	30	101-130	BIA School North ALA Parking Lot	North Road	East Road			AC							1
BIA	P101	40	101-140	BIA School North Parking Lot	North Road	West Road			AC							1
BIA	P101	50	101-150	BIA School SR Ballfield Parking Lot	Main SR Ballfield	West SR Ballfield			AC							1
BIA	P101	60	101-160	BIA School West SR Ballfield Parking Lot	Logmore Road	Main SR Ballfield			AC							1
Tribal	102	10	102-010	Dobson Heights Subd Pinchot Drive	Dobson Road	East of Dobson Road	80		AC	2	1205	0.23	29	34945	14	3
Tribal	P102	10	102-020	Dobson Heights Subd Neighborhood Center Parking Lo	Pinchot Drive	Dobson Road	85		AC					0		1
BIA	103	10	103-010	Victory Acres I Subd Grand Street	Indian School Road	Glenrosa Drive	40		AC	2	1111	0.21	26	28886	12	3
BIA	103	20	103-020	Victory Acres I Subd Glenrosa Drive	Grand Street	cul-de-sac	40		AC	2	843	0.16	35	29505	12	3
BIA	103	30	103-030	Victory Acres I Subd MacDonald Drive	Indian School Road	Glenrosa Drive	40		AC	2	1127	0.21	37	41699	17	4
BIA	103	40	103-040	Victory Acres I Subd Monterosa Road	MacDonald Drive	Center Street	40		AC	2	674	0.13	36	24264	10	3
BIA	103	50	103-050	Victory Acres II Subd Monterosa Road	Center Street	Pima Drive	90	2.5	AC	2	1164	0.22	24	27936	11	3
BIA	103	60	103-060	Victory Acres II Subd Pima Drive	Monterosa Road	Glenrosa Drive	90	2.5	AC	2	510	0.10	24	12240	5	2
BIA	103	70	103-070	Victory Acres II Subd Glenrosa Drive	Center Street	Pima Drive	90	2.5	AC	2	1279	0.24	24	30696	12	3
BIA	103	80	103-080	Victory Acres II Subd Glenrosa Circle	Glenrosa Drive	cul-de-sac	90	2.5	AC	2	328	0.06	24	7872	3	2
Tribal	P103	10	103-090	Victory Acres I Subd Parking Lot	MacDonald Drive	Monterosa Road			AC							1
Tribal	104	10	104-010	Red Mt Vista Subd Glenrosa	cul-de-sac	Mesa Drive	52	2	AC	2	1270	0.24	24	30480	12	3
Tribal	104	20	104-020	Red Mt Vista Subd Oleander	cul-de-sac	Glenrosa Avenue	56	2	AC	2	239	0.05	24	5736	2	2
Tribal	104	30	104-030	Red Mt Vista Subd Ironwood	cul-de-sac	Glenrosa Avenue	56	2	AC	2	191	0.04	24	4584	2	2
Tribal	104	40	104-040	Red Mt Vista Subd Palo Verde	Glenrosa Avenue	cul-de-sac	62	2	AC	2	204	0.04	24	4896	2	2
Tribal	104	50	104-050	Red Mt Vista Subd Cottonwood	cul-de-sac	Glenrosa Avenue	58	2	AC	2	218	0.04	24	5232	2	2
Tribal	104	60	104-060	Red Mt Vista Subd Cottonwood	Glenrosa Avenue	cul-de-sac	60	2	AC	2	181	0.03	24	4344	2	2
Tribal	104	70	104-070	Red Mt Vista Subd Arrow Weed	cul-de-sac	Glenrosa Avenue	54	2	AC	2	197	0.04	24	4728	2	2

Owner	Route	Section	ID	Route Name	Begin Location	End Location	Surface Condition Index	Surface Thickness (inches)	Surface Class	Lanes	Length (ft)	Lane- Miles (two-lane section)	Overall Surface Width (ft)	Overall Pavement Area (square feet)	Total No. of Sample Units in Section	Minimum No. of Sample Units for Inspection
Tribal	104	80	104-080	Red Mt Vista Subd Mesquite	Glenrosa Avenue	cul-de-sac	54	2	AC	2	192	0.04	24	4608	2	2
Tribal	P104	10	104-090	Red Mt Vista Subd Boys and Girls Club Parking Lot	Glenrosa Avenue	Cottonwood Cir			AC							1
Tribal	105	10	105-010	Evergreen Subd Olive Street	Fairmount Road	Indian School Road	70		AC	2	1235	0.23	23	28405	11	3
Tribal	105	20	105-020	Evergreen Subd Amelia Avenue	122nd Street	cul-de-sac	70		AC	2	436	0.08	25	10900	4	2
Tribal	105	30	105-030	Evergreen Subd Picadilly Road	122nd Street	cul-de-sac	70		AC	2	432	0.08	23	9936	4	2
Tribal	105	40	105-040	Evergreen Subd Fairmount Avenue	122nd Street	cul-de-sac	70		AC	2	430	0.08	24	10320	4	2
Tribal	P105	10	105-050	Evergreen Subd Neighborhood Center Parking Lot	Fairmount Road	Olive Street			PCC							1
Tribal	107	10	107-010	Canalside Subd Minnezona Avenue	117th Place	117th Way	56	2.5	AC	2	244	0.05	33	8052	3	2
Tribal	107	20	107-020	Canalside Subd Minnezona Avenue	117th Way	119th Street	80	3	AC	2	1322	0.25	33	43626	17	4
Tribal	107	30	107-030	Canalside Subd Meadowbrook Avenue	Center Street	117th Place	64	2.5	AC	2	644	0.12	33	21252	9	3
Tribal	107	40	107-040	Canalside Subd Hazelwood Pkwy	Center Street	117th Place	64	2.5	AC	2	647	0.12	33	21351	9	3
Tribal	107	50	107-050	Canalside Subd Hazelwood Pkwy	117th Place	cul-de-sac	80	3	AC	2	390	0.07	33	12870	5	3
Tribal	107	60	107-060	Canalside Subd Highland Avenue	Center Street	117th Place	64	2.5	AC	2	719	0.14	33	23727	9	3
Tribal	107	70	107-070	Canalside Subd Highland Avenue	117th Place	118th Street	80	3	AC	2	820	0.16	33	27060	11	3
Tribal	107	80	107-080	Canalside Subd 118th Place	118th Street	Minnezona Avenue	80	3	AC	2	763	0.14	33	25179	10	3
Tribal	107	90	107-090	Canalside Subd Thornwood Drive	Center Street	117th Place	70	2.5	AC	2	779	0.15	33	25707	10	3
Tribal	107	100	107-100	Canalside Subd Thornwood Drive	117th Place	119th Street	80	3	AC	2	1616	0.31	33	53328	21	4
Tribal	107	110	107-110	Canalside Subd 116th Place	Thornwood Drive	cul-de-sac	70	2.5	AC	2	418	0.08	33	13794	6	3
Tribal	107	120	107-120	Canalside Subd 117th Street	Meadowbrook Avenue	cul-de-sac	62	2.5	AC	2	330	0.06	33	10890	4	2
Tribal	107	130	107-130	Canalside Subd 117th Street	Thornwood Drive	cul-de-sac	70	2.5	AC	2	274	0.05	33	9042	4	2
Tribal	107	140	107-140	Canalside Subd 117th Place	Minnezona Avenue	Thornwood Drive	64	2.5	AC	2	1225	0.23	33	40425	16	4
Tribal	107	150	107-150	Canalside Subd 117th Way	Camelback Road	Minnezona Avenue	50	3	AC	2	328	0.06	33	10824	4	2
Tribal	107	160	107-160	Canalside Subd 118th Circle	Minnezona Avenue	cul-de-sac	80	3	AC	2	211	0.04	33	6963	3	2
Tribal	107	170	107-170	Canalside Subd 118th Street	Camelback Road	cul-de-sac	80	3	AC	2	574	0.11	33	18942	8	3
Tribal	107	180	107-180	Canalside Subd 118th Street	Highland Avenue	Thornwood Drive	80	3	AC	2	243	0.05	33	8019	3	2
Tribal	107	190	107-190	Canalside Subd 119th Street	Minnezona Avenue	Thornwood Drive	80	3	AC	2	537	0.10	33	17721	7	3
Tribal	P107	10		Canalside Subd Neighborhood Center Parking Lots	117th Place	Minnezona Avenue	70		AC							1
Tribal	P107	20		Canalside Subd Neighborhood Center Parking Lots	117th Place	Meadowbrook Avenue	70		AC							1
Tribal	P107	30		Canalside Subd Neighborhood Center Parking Lots	117th Place	Meadowbrook Avenue	70		AC							1
Tribal	P107	40		Canalside Subd Neighborhood Center Parking Lots	117th Place	Meadowbrook Avenue	70		AC							1
Tribal	P107	50		Canalside Subd Neighborhood Center Parking Lots	117th Place	Hazelwood Parkway	70		AC							1
Tribal	111	10	111-010	Cottonwood Subd 107 St main	Thomas	107th St (Avalon Dr)	70									1
Tribal	111	20	111-020	Cottonwood Subd 107 St (Catalina Drive)	cul-de-sac	107th St	70									1
Tribal	111	30	111-030	Cottonwood Subd 107 St (Pinchot Ave)	cul-de-sac	Extension	70									1
Tribal	111	40	111-040	Cottonwood Subd 107 St (Avalon Drive)	cul-de-sac	107th St	70									1
Tribal	112	10	112-010	Lewis Sampson Subd Windsor Avenue	Alma School Road	Beverly Street	0									1
Tribal	112	20	112-020	Lewis Sampson Subd Beverly Street	Virginia Road	Windsor Avenue	0									1
Tribal	113	10	113-010	Monte Vista Subdivision Monte Vista Road	Extension Road	Hosick				2	960	0.18				1
Tribal	113	20	113-020	Monte Vista Subdivision Cherry	cul-de-sac	Monte Vista Road				2	320	0.06				1
Tribal	113	30	113-030	Monte Vista Subdivision Hosick	cul-de-sac	Monte Vista Road				2	320	0.06				1
Tribal	114	10	114-010	LaVella Deer Subdivision						2	515	0.10				1
Tribal	114	20	114-020	LaVella Deer Subdivision						2	207	0.04				1
Tribal	114	30	114-030	LaVella Deer Subdivision						2	207	0.04				1
Tribal	180	20	180-020	Montebello Road	irrigation canal bridge	irrigation canal bridge	70		PCC	2	22	---	22	484	0.2	1
Tribal	213	10	213-010	Temple	Oak Street	Virginia Drive										1
Tribal	215	10	215-010	Spencer	Oak Street	Virginia Drive										1
BIA	220	10	220-010	Highland Avenue	Longmore Road	East of Alma School Road	90		AC	2	3266	0.62	24	78384	31	4
BIA	220	40	220-040	Highland Avenue	Country Club Drive	Center Street	80	3	AC	2	2609	0.49	24	62616	25	4
Tribal	P220	10		Salt River Schools HS bus lane	Highland Avenue	Country Club Drive										1
Tribal	P220	20		Salt River Schools HS courts	Highland Avenue	Country Club Drive										1
Tribal	235	10	235-010	Daley Drive	McDowell Road	North of McDowell Road	90		AC	2	835	0.16	24	20040	8	3

Owner	Route	Section	ID	Route Name	Begin Location	End Location	Surface Condition Index	Surface Thickness (inches)	Surface Class	Lanes	Length (ft)	Lane-Miles (two-lane section)	Overall Surface Width (ft)	Overall Pavement Area (square feet)	Total No. of Sample Units in Section	Minimum No. of Sample Units for Inspection
BIA	240	30	240-030	Montecito Avenue	East of Standage Road	Alma School Road	90	3	AC	2	836	0.32	24	20064	8	3
BIA	240	40	240-040	Montecito Avenue	Alma School Road	Beverly Street	90	3	AC	2	711	0.27	24	17064	7	3
BIA	240	50	240-050	Montecito Avenue	Extension Road	Country Club Drive	78		AC	2	2614	0.50	26	66657	27	4
Tribal	260	10	260-010	Weldon Avenue	Center Street	Pasadena										
Tribal	300	20	300-020	Virginia Drive	Westwood Street	Extension Road	90	3	AC	2	1319	0.50	24	31656	13	3
Tribal	320	20	320-020	Palm Lane	Longmore Road	East of Longmore Road	42		AC	2	626	0.12	16	10016	4	2
Tribal	991	10	991-010	Salt River Fields at Talking Stick	Pima Road	90th Street	90	4	AC	4	1088	0.41	50	54400	22	4
Tribal	991	20	991-020	Salt River Fields Roadrunner Road	Pima Road	93rd Street	90	4	AC	2	3189	0.60	24	76536	31	4
Tribal	991	30	991-030	Salt River Fields 93rd Street	Hummingbird Lane	Roadrunner Road	90	4	AC	2	2590	0.49	24	62160	25	4
Tribal	991	40	991-040	Salt River Fields Hummingbird Lane	Pima Road	93rd Street	90	4	AC	2	3070	0.58	24	73680	29	4
Tribal	991	45	991-045	Salt River Fields Talking Stick Ped Bridge	93rd Street	east of 101						---				
Tribal	991	50	991-050	Salt River Fields 90th Street	Roadrunner Road	Via de Ventura	90	4	AC	2	1500	0.28	24	36000	14	3
Tribal	992	10	992-010	Section 12 Infrastructure Brown Rd align	McClintock Road	84th Street										
Tribal	992	20	992-020	Section 12 Infrastructure Curry Road	McClintock Road	86th Street										
Tribal	992	30	992-030	Section 12 Infrastructure Weber Drive	McClintock Road	Pima Road										
Tribal	992	40	992-040	Section 12 Infrastructure 84th Street	Brown Road	McKellips Road										
Tribal	992	50	992-050	Section 12 Infrastructure 86th Street	Curry Road	McKellips Road										
Tribal	P001	10	P001-010	Indian School Police & Fire Substation parking lot	Indian School	Center			AC							1
Tribal	P001	20	P001-020	Lonely Cactus west parking lot	Indian School	Center			AC							1
Tribal	P001	30	P001-030	Lonely Cactus east parking lot	Indian School	Center			AC							1
Tribal	P001	40	P001-040	Youth Facility Parking Lot	Indian School	Center			AC							1
Tribal	P009	10	P009-010	Salt River Community Building parking lot	Longmore	McDowell			AC							1
Tribal	P014	10	P014-010	Talking Stick Police & Fire Substation parking lot	Talking Stick Way	Longmore Road			AC							1
Tribal	P015	10	P015-010	Salt River Schools HS admin parking lot	Country Club Drive	Highland Avenue			AC							1
Tribal	P016	10	P016-010	Salt River Schools ECEC bus circle	Chaparral	Center			AC							1
Tribal	P017	10	P017-010	Salt River Schools Elem east parking lot	Highland Avenue	Center Street			AC							1
Tribal	P017	20	P017-020	Salt River Schools ECEC parking lot	Center Street	Highland Avenue			AC							1
Tribal	P021	10	P021-010	Lehi Cry House parking lot	Horne Road	Thomas Road	95	3	AC							1
Tribal	P022	10	P022-010	Salt River Schools HS Athletic Fields parking lot	Chaparral Road	Country Club Drive			AC							1
Tribal	P023	10	P023-010	Lehi Community Center pool parking lot	Stapley Drive	Oak Street			AC							1
Tribal	P023	20	P023-020	Lehi Police and Fire Substation parking lot	Stapley Drive	Oak Street			AC							1
Tribal	P028	10	P028-010	Senior Housing west parking lot	Osborn Road	Alma School Road			AC							1
Tribal	P028	20	P028-020	Senior Housing middle parking lot	Osborn Road	Alma School Road			AC							1
Tribal	P028	30	P028-030	Senior Housing east parking lot	Osborn Road	Alma School Road			AC							1
Tribal	P032	10	P032-010	Lehi Community Center main parking lot	Oak Street	Stapley Drive			AC							1
Tribal	P038	10	P038-010	Memorial Hall parking lot	Earll Drive	Longmore Road			AC							1
fix all IDs: check for duplicates, underscore format										Totals	408641.0	82.5			4701	739
Sum of Parking Lots, Bus Lanes & Courts														minimum	0.2	
Check 54														maximum	292.9	

APPENDIX B –

Community Bridge Inventory Assessment Results

BRIDGE GROUP

Structure Inventory and Appraisal

Structure Number : H 123		Structure Name : Mesa Dr at Evergreen Canal		Feature Under : Evergreen Canal	
Route : 0 MP : 0		Road Name : Mesa Drive		Agency : SRPMIC	
		Location : 0.20 miles North of Camelback Road			

LOCATION INFORMATION		DIMENSIONS		PROPOSED IMPROVEMENTS	
N1-State Code : 049		N32:Appr Rdwy Width (feet): 32.2		N75-Type of Work:	
N2-State Hwy District :		N48-Max Span Length (feet): 34.75		N76-Length of Str Imp (feet):	
N3-County Code :		N49-Structure Length (feet): 36.5		N94-Br Improv Cost (x1000):	
N4-Place Code : 00000		N50a-Lt Curb/Swlk Width (feet): 5.83		N95-Rdwy Improv Cost (x1000):	
N16-Latitude: 33 Deg 30 Min 19.37 Sec		N50b-Rt Curb/Swlk Width (feet): 5.83		N96-Total Project Cost (x1000):	
N17-Longitude : -111 Deg 49 Min 19.57 Sec		N51-Br Width Curb-Curb (feet): 32.2		N97-Year of Cost Estimate:	
N98-Border St Code - % Resp:		N52-Deck Width Out-Out (feet): 48.3			
N99-Border Bridge Number:		N112-NBIS Br Length? Y Y			
				CONSTRUCTION PROJECT DATA	
				N27-Year Built:	
				N106-Year of Reconstruction:	

INVENTORY ROUTE DATA		VERTICAL & HORIZONTAL CLEARANCE			
N19-Detour Length (miles): 4		N53-Min Vert Over Clr (feet): 14.04 99.99			
N20-Toll: 3		N54-Min Vert Under Clr (feet): N N 0.00 0.00			
ROADWAY RECORD ON UNDER		N55-Min Lat Under Clr Rt (feet): N N 0.0 0.00			
N5-Inv Rte: 1 8 0 00000 0 -		N56-Min Lat Under Clr Lt (feet): 0.0 0.00			
N28-Lanes: 2 0.00					
N10-Inv Rte Min Vert Clr (feet): 99.99		SERVICE, TYPE, and SPAN INFORMATION		INSPECTION	
N11-Inv Rte Milepoint: 0.00		N42-Service Type: 5 5		N90-Inspection Date: 03/27/2018	
N26-Functional Class: 17		N43-Str Type, Main: 5 5		N91-Insp Freq (months): 24	
N29-Avg Daily Traffic: 500		N44-Str Type, Appr: 0 0			
N30-Year of ADT: 2018		N45-Number of Main Spans: 1			
N47-Inv Rte Tot Horiz Clr (feet): 32.2		N46-Number of Appr Spans: 0			
N100-Defense Hwy: 0		CONDITION RATINGS		CRITICAL FEATURES	
N101-Parallel Bridge: N		N58-Deck: 7		N92A-Fracture Critical: N	
N102-Direction of Traffic: 2		N59-Superstructure: 7		N92B-Underwater Insp: N	
N104-Hwy System: 0		N60-Substructure: 7		N92C-Special Insp: N	
N109-Percent Truck Traffic:		N61-Channel: 8		N93A-Date Fract Crit Insp:	
N110-National Truck Network: 0		N62-Culvert: N		N93B-Date Underwater Insp:	
N114-Future ADT:		APPRAISAL RATINGS		N93C-Date Spec Insp:	
N115-Year of Future ADT:		N67-Struct Evaluation: 5			
		N68-Deck Geometry: 6			
		N69-Underclearance Rtg: N			
		N71-Waterway Adequacy: 9			
		N72-Appr Rdw Align: 8			
		N36-Traffic Safety Features: 1 0 0 0			
RESPONSIBILITY		BRIDGE SCOUR DATA			
N21-Maint Responsibility:		N113-Scour Critical Rtg: 6			
N22-Bridge Owner:					
NAVIGATION		LOAD, RATE, and POST			
N38-Navigation Control: 0		N31-Design Loading:			
N39-Nav Vert clr (feet): 0.00		N41-Open, Post, Close:			
N40-Nav Horiz Clr (feet): 0.00		N63-Method Used for Oper. Rtg:			
N111-Nav Pier/Abut Prot: N		N64-Operating Load Rtg/Factor:			
N116-Nav Min Vert Clr (feet):		N65-Method Used for Inv. Rtg:			
		N66-Inventory Load Rtg/Factor:			
		N70-Bridge Posting:			
		N103-Temp Str Designation:			
GENERAL DATA					
N33-Bridge Median: 0					
N34-Skew: 21.0					
N35-Structure Flared: 0					
N37-Historical Significance: 5					
N107-Deck Str Type: 1					
N108-Wear Surf Prot System: 1 0 0					

Deck:

1. Bridge deck has 3 full length longitudinal cracks that are up to 0.06 inches wide. Cracks have the same spacing as the girders.
2. Bridge deck has random cracking that measure up to 0.01 inches wide.
- 3.
- 4.
- 5.

Barriers:

1. No defects noted.
- 2.
- 3.
- 4.
- 5.

Abutments:

1. No defects noted.
- 2.
- 3.
- 4.
- 5.

Approach Slabs:

1. Approach slabs have random cracks that are up to 0.035 inches wide.
- 2.
- 3.
- 4.
- 5.

Roadway Approach:

1. No defects noted.
- 2.
- 3.
- 4.
- 5.

Waterway:

1. Canal flows East to West
2. Canal is concrete lined.
3. No defects noted.
- 4.
- 5.



South Approach looking North

Photo 1



North Approach looking South

Photo 2

STRUCTURE NO.: H123
ARIZONA - MARICOPA COUNTY

Mesa Drive over Evergreen Canal
INSPECTION DATE 3/27/2018



West Elevation looking East

Photo 3



East Elevation looking West

Photo 4

STRUCTURE NO.: H123
ARIZONA DISTRICT - MARICOPA COUNTY ()

Mesa Drive over Evergreen Canal
INSPECTION DATE 3/27/2018



Typical Top of Deck

Photo 5



Typical Bottom of Box Girders

Photo 6

STRUCTURE NO.: H123
ARIZONA DISTRICT - MARICOPA COUNTY ()

Mesa Drive over Evergreen Canal
INSPECTION DATE 3/27/2018



Typical Abutment Condition

Photo 7



Typical Approach Slab (North slab shown)

Photo 8

STRUCTURE NO.: H123
ARIZONA DISTRICT - MARICOPA COUNTY ()

Mesa Drive over Evergreen Canal
INSPECTION DATE 3/27/2018



Full length longitudinal cracks in bridge deck

Photo 9



South West corner, impact damage to concrete barrier

Photo 10

STRUCTURE NO.: H123
ARIZONA DISTRICT - MARICOPA COUNTY ()

Mesa Drive over Evergreen Canal
INSPECTION DATE 3/27/2018

Salt River Maricopa Indian Community

Inspection by Elements Form

Structure #	Structure Name	Route	Letter	Milepost	Agency			
H123	Mesa Drive at Evergreen Canal							
Element #	Defect	Description	Unit	Quantity	Condition State Rating			
					1	2	3	4
12		Reinforced Concrete Deck	SF	1618	1286	237	95	
	1130	Cracking				237	95	
Notes:								
104		P/S Conc Closed Web/Box Girder	LF	417	417			
Notes: 12 - 4ft wide voided slab girders								
215		Reinforced Concrete Abutment	LF	104	104			
Notes:								
321		Reinforced Concrete Approach Slab	SF	1030	412	618		
						618		
Notes:								
330		Metal Bridge Railing	LF	73	73			
Notes: 22-inch concrete curb with metal handrail on top								
Element #	Defect	Description	Unit	Quantity	Condition State Rating			
					1	2	3	4
331		Reinforced Concrete Bridge Railing	LF	73	73			

BRIDGE GROUP

Structure Inventory and Appraisal

Structure Number : H 124		Structure Name : Mesa Dr at Arizona Canal		Feature Under : Arizona Canal	
Route : 0 MP : 0		Road Name : Mesa Drive		Agency: SRPMIC	
		Location 0.20 miles North of Camelback Road			

LOCATION INFORMATION		DIMENSIONS		PROPOSED IMPROVEMENTS	
N1-State Code : 049		N32:Appr Rdwy Width (feet): 32.2		N75-Type of Work:	
N2-State Hwy District :		N48-Max Span Length (feet): 89.16		N76-Length of Str Imp (feet):	
N3-County Code :		N49-Structure Length (feet): 97.0		N94-Br Improv Cost (x1000):	
N4-Place Code : 00000		N50a-Lt Curb/Swlk Width (feet): 5.83		N95-Rdwy Improv Cost (x1000):	
N16-Latitude: 33 Deg 30 Min 21.44 Sec		N50b-Rt Curb/Swlk Width (feet): 5.83		N96-Total Project Cost (x1000):	
N17-Longitude : -111 Deg 49 Min 19.61 Sec		N51-Br Width Curb-Curb (feet): 32.2		N97-Year of Cost Estimate:	
N98-Border St Code - % Resp:		N52-Deck Width Out-Out (feet): 48.3			
N99-Border Bridge Number:		N112-NBIS Br Length? Y Y			
				CONSTRUCTION PROJECT DATA	
				N27-Year Built:	
				N106-Year of Reconstruction:	

INVENTORY ROUTE DATA		VERTICAL & HORIZONTAL CLEARANCE			
N19-Detour Length (miles): 4		N53-Min Vert Over Clr (feet): 14.04 99.99			
N20-Toll: 3		N54-Min Vert Under Clr (feet): N N 0.00 0.00			
ROADWAY RECORD ON UNDER		N55-Min Lat Under Clr Rt (feet): N N 0.0 0.00			
N5-Inv Rte: 1 8 0 00000 0 -		N56-Min Lat Under Clr Lt (feet): 0.0 0.00			
N28-Lanes: 2 0.00					
N10-Inv Rte Min Vert Clr (feet): 99.99		SERVICE, TYPE, and SPAN INFORMATION			
N11-Inv Rte Milepoint: 0.00		N42-Service Type: 5 5			
N26-Functional Class: 17		N43-Str Type, Main: 5 5			
N29-Avg Daily Traffic: 500		N44-Str Type, Appr: 0 0			
N30-Year of ADT: 2018		N45-Number of Main Spans: 1			
N47-Inv Rte Tot Horiz Clr (feet): 32.2		N46-Number of Appr Spans: 0			
N100-Defense Hwy: 0		CONDITION RATINGS			
N101-Parallel Bridge: N		N58-Deck: 7			
N102-Direction of Traffic: 2		N59-Superstructure: 7			
N104-Hwy System: 0		N60-Substructure: 7			
N109-Percent Truck Traffic:		N61-Channel: 8			
N110-National Truck Network: 0		N62-Culvert: N			
N114-Future ADT:		APPRAISAL RATINGS			
N115-Year of Future ADT:		N67-Struct Evaluation: 5			
		N68-Deck Geometry: 6			
		N69-Underclearance Rtg: N			
		N71-Waterway Adequacy: 9			
		N72-Appr Rdw Align: 8			
		N36-Traffic Safety Features: 1 0 0 0			
		BRIDGE SCOUR DATA			
		N113-Scour Critical Rtg: 6			
		LOAD, RATE, and POST			
		N31-Design Loading:			
		N41-Open, Post, Close:			
		N63-Method Used for Oper. Rtg:			
		N64-Operating Load Rtg/Factor:			
		N65-Method Used for Inv. Rtg:			
		N66-Inventory Load Rtg/Factor:			
		N70-Bridge Posting:			
		N103-Temp Str Designation:			

RESPONSIBILITY		CRITICAL FEATURES	
N21-Maint Responsibility:		N92A-Fracture Critical: N	
N22-Bridge Owner:		N92B-Underwater Insp: N	
		N92C-Special Insp: N	
		N93A-Date Fract Crit Insp:	
		N93B-Date Underwater Insp:	
		N93C-Date Spec Insp:	

NAVIGATION			
N38-Navigation Control: 0			
N39-Nav Vert clr (feet): 0.00			
N40-Nav Horiz Clr (feet): 0.00			
N111-Nav Pier/Abut Prot: N			
N116-Nav Min Vert Clr (feet):			
GENERAL DATA			
N33-Bridge Median: 0			
N34-Skew: 21.0			
N35-Structure Flared: 0			
N37-Historical Significance: 5			
N107-Deck Str Type: 1			
N108-Wear Surf Prot System: 1 0 0			

Deck:

1. Bridge deck has random cracking.
2. Bridge deck has one full length longitudinal crack that is up to 0.06 inches wide, see photo 9.
There are also two other similar longitudinal cracks that are 2/3 of the bridge length and are up to 0.05 inches wide.
- 3.
- 4.
- 5.

Barriers:

1. No defects noted.
- 2.
- 3.
- 4.
- 5.

Abutments:

1. No defects noted.
- 2.
- 3.
- 4.
- 5.

Approach Slabs:

1. Approach slabs have random cracks that are up to 0.035 inches wide.
- 2.
- 3.
- 4.
- 5.

Roadway Approach:

1. No defects noted.
- 2.
- 3.
- 4.
- 5.

Waterway:

1. Canal flows East to West
2. Canal is concrete lined.
3. No defects noted.



South Approach looking North

Photo 1



North Approach looking South

Photo 2

STRUCTURE NO.: H124
ARIZONA - MARICOPA COUNTY

Mesa Drive over Arizona Canal
INSPECTION DATE 3/27/2018

Salt River Pima-Maricopa Indian Community
Appendix B-12



West Elevation looking East

Photo 3



East Elevation looking West

Photo 4

STRUCTURE NO.: H124
ARIZONA - MARICOPA COUNTY

Mesa Drive over Arizona Canal
INSPECTION DATE 3/27/2018



Typical Top of Deck

Photo 5



Typical Bottom of Box Beams

Photo 6

STRUCTURE NO.: H124
ARIZONA - MARICOPA COUNTY

Mesa Drive over Arizona Canal
INSPECTION DATE 3/27/2018



Typical Abutment Condition

Photo 7



Typical Approach Slab (North slab shown)

Photo 8

STRUCTURE NO.: H124
ARIZONA - MARICOPA COUNTY

Mesa Drive over Arizona Canal
INSPECTION DATE 3/27/2018



Full length longitudinal cracks in bridge deck

Photo 9

Salt River Maricopa Indian Community

Inspection by Elements Form

Structure #	Structure Name	Route	Letter	Milepost	Agency			
H124	Mesa Drive at Arizona Canal							

Element #	Defect	Description	Unit	Quantity	Condition State Rating			
					1	2	3	4
12		Reinforced Concrete Deck	SF	4589	4202	237	150	
	1130	Cracking				237	150	

Notes:

104		P/S Conc Closed Web/Box Girder	LF	1140	1140			

Notes: 12 - 4ft wide voided slab girders

215		Reinforced Concrete Abutment	LF	104	104			

Notes:

321		Reinforced Concrete Approach Slab	SF	2187		2145	42	
	1130	Cracking				2145	42	

Notes:

330		Metal Bridge Railing	LF	190	190			

Notes: 22-inch concrete curb with metal handrail on top

Element #	Defect	Description	Unit	Quantity	Condition State Rating			
					1	2	3	4
331		Reinforced Concrete Bridge Railing	LF	190	190			

Notes: 34" high concrete bridge barrier

APPENDIX C –

Documentation on Structures Not Classified as Bridges

A field visit was conducted on the SRPMIC structures that cross the irrigation canal at Montebello Avenue (H127) and McDonald Road (H128).

Both structures lengths do not meet the criteria to be considered a bridge per the NBIS bridge length criteria.



U.S. Department
of Transportation

Federal Highway
Administration

Publication No. FHWA NHI 12-049
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Revised February, 2012

Bridge Inspector's Reference Manual

3.1.3

NBIS Bridge Length

The *FHWA Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges* also states, in accordance with Item 112 – NBIS Bridge Length, that the minimum length for a structure to be considered a bridge for National Bridge Inspection Standards purposes, is to be 20 feet (see Figure 3.1.2).

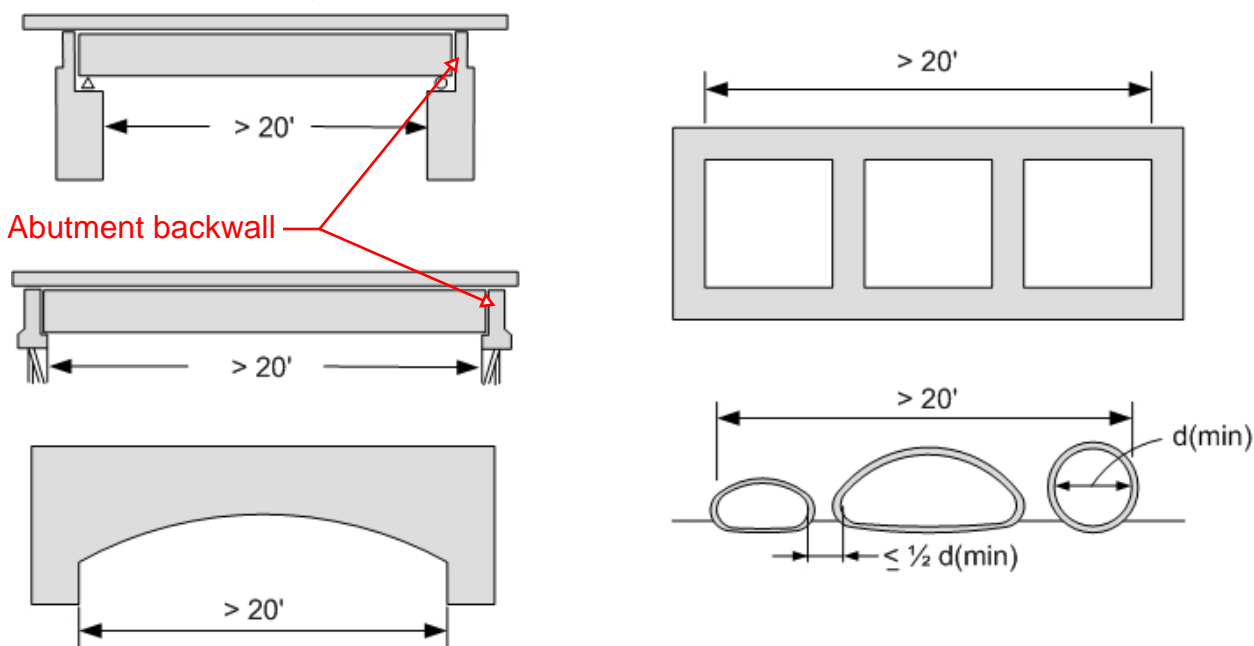
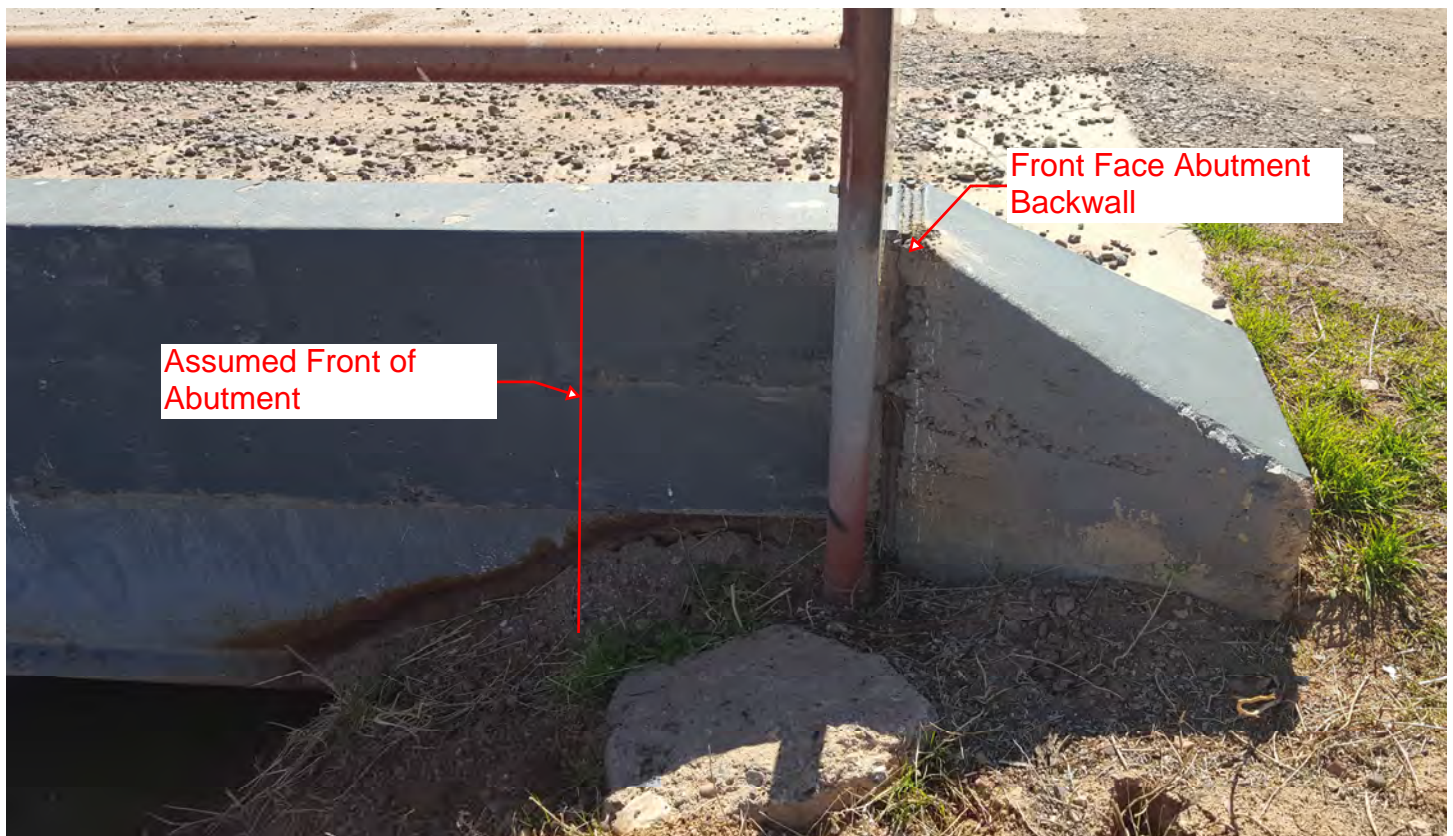
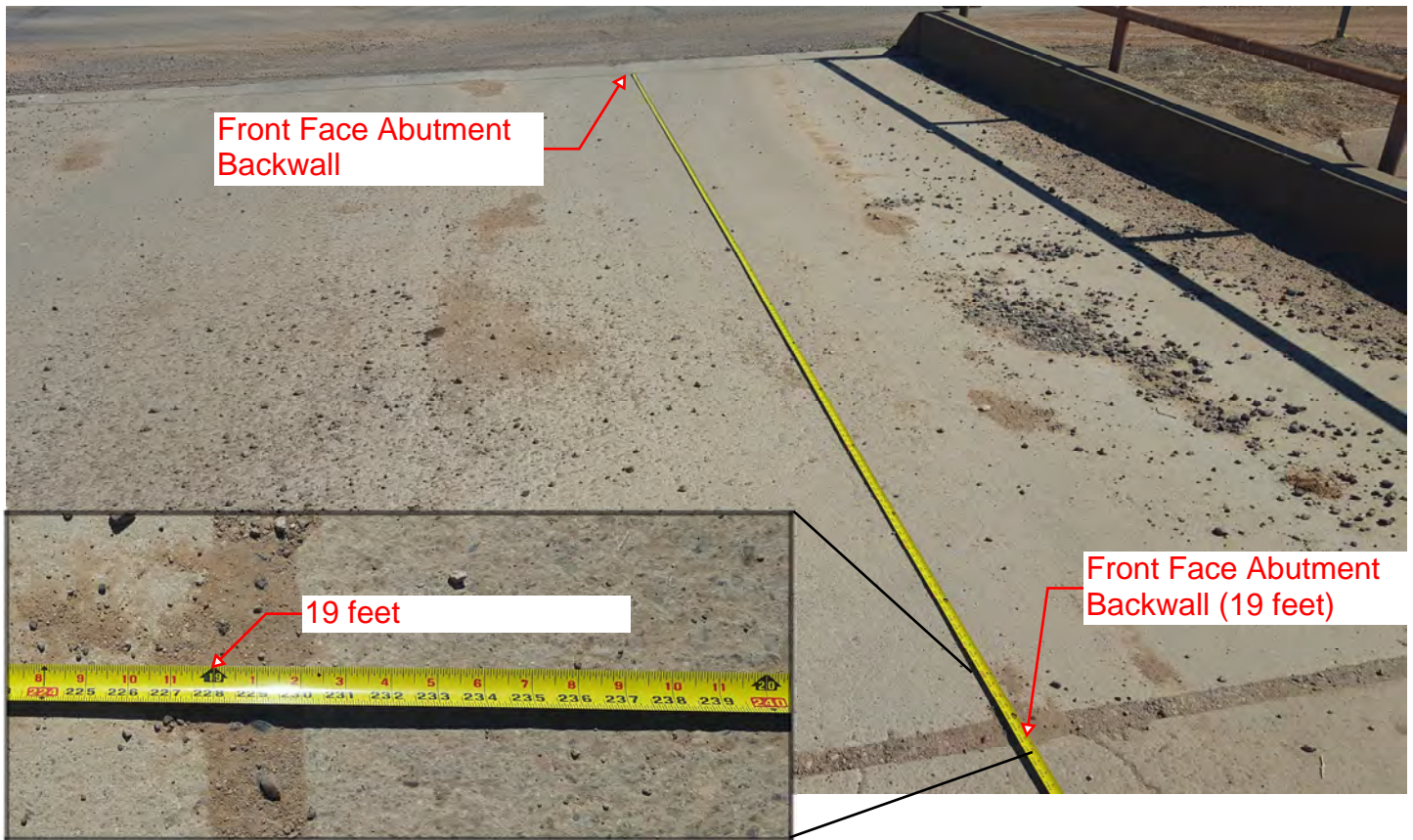


Figure 3.1.2 NBIS Bridge Length (Coding Guide Item 112)

23 CFR Part 650.305 Definitions gives the definition of a bridge as it applies to the NBIS regulations: A bridge is a structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

H127 Montebello Ave and Dobson

Measurement from Front Face Abutment Backwall (FFAB) to Front Face Abutment Backwall is 19 feet. There is a bearing seat that the steel beams were set on, and is now covered with dirt and debris. T Since the measured distance from FFAB to FFAB is 19 feet then the opening (undercropping of abutment) would be less that 19 feet and this structure does not meet the NBIS Bridge Length definition.



H128 McDonald Drive and Dobson

Measurement from Front Face Abutment Backwall (FFAB) to Front Face Abutment Backwall is 20 feet. There is a bearing seat that the steel beams were set on, and is now covered with dirt and debris. Since the measured distance from FFAB to FFAB is 20 feet then the opening (undercropping of abutment) would be less that 20 feet and this structure does not meet the NBIS Bridge Length definition.

