

SCTAC Pavement Evaluation

GREENVILLE, GREENVILLE COUNTY, SOUTH CAROLINA

September 5, 2019

REPORT OF PAVEMENT EVALUATION

Prepared By



Goodwyn, Mills and Cawood, Inc.

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GMC PROJECT NUMBER: GGRE190013



September 5, 2019

Mr. Jody Bryson
South Carolina Technology and Aviation Center
2 Exchange Street
Greenville, SC 29605

**RE: REPORT OF PAVEMENT EVALUATION
ARROWHEAD COURT AND HERCULES WAY
GREENVILLE, GREENVILLE COUNTY, SOUTH CAROLINA
GMC PROJECT NO. GGRE190013**

Dear Mr. Bryson,


Goodwyn, Mills and Cawood, Inc. (Geotechnical & Construction Services Division) is pleased to provide this report of geotechnical exploration performed for the above referenced project. This report includes the results of pavement analysis and the PCI rating for each of the roads.

We appreciate the opportunity to perform this study on this phase of the project for you and look forward to continued participation during the construction phase of this project. If you have any questions pertaining to this report, or if we may be of further service, please call us.

Sincerely,

GOODWYN, MILLS, AND CAWOOD, INC.


Kevin W. Wales
Executive Vice President


Michael J. McNeill, PE
Senior Geotechnical Engineer
Licensed SC 3690



- Attachments:
- Site Location
 - Pavement Distress Report
 - Pavement Section Condition Report





1.0 PROJECT INFORMATION AND SCOPE OF WORK

1.1 Project Information

A pavement evaluation has been conducted for two existing roads within the SCTAC complex in Greenville, South Carolina. The roads that were requested to be evaluated were Hercules Way and Arrowhead Court. Hercules Way is approximately 2975 feet in length and consists of a concrete pavement section (600 feet) and an asphalt overlay on concrete pavement (2375 feet). Arrowhead Court consists of an asphalt pavement section approximately 775 feet long.

1.2 Scope of Work

The pavement evaluation consisted of performing a Pavement Condition Index Survey (PCI) for the referenced roads. The pavement evaluation was in general accordance with ASTM D6433 *Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys*. The International Roughness Index (IRI) was not included in the scope of this project.

2.0 PAVEMENT EVALUATION

2.1 General

The PCI is a numerical indicator that rates the surface condition of the existing pavement. The PCI survey consists of evaluation the pavement surface based on the distress observed on the surface of the pavement. The PCI does not measure the structural capacity of the roadway. Each pavement surface distress is evaluated as to the severity (low, medium, and high) and a given area, length, or count (number of incidences) which is correlated with maximum corrected deduct values. The PCI rating scale rates a pavement between 0 and 100 as noted in the Figure below.



The roads were separated into individual pavement sections and each section was evaluated according to ASTM D6433. Random portions of the road were selected for evaluation representative of the road. The pavement evaluation was performed and recorded in the provided required format and is included in the Appendix.

2.2 Arrowhead Court

Arrowhead Court consists of asphalt with a total length of 775 feet and a width of 21 feet. The road begins at Echelon Road and ends at the entrance to the existing facility at 200 Arrowhead Court. The pavement failures consisted of alligator cracking, block cracking, edge cracking, patch/utility cut, potholes and weathering. The photos below are representative of the road condition.

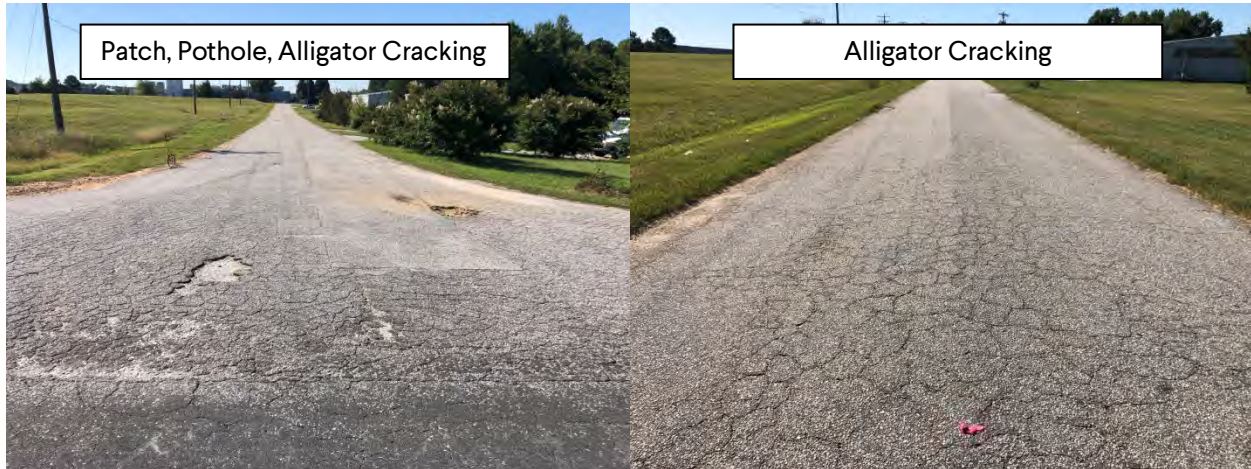


Table 2.1: Arrowhead Court Pavement Distresses

Distress Description	Quantity	Quantity Units	Severity
ALLIGATOR CRACKING	11,088	SqFt	M
BLOCK CRACKING	3,012	SqFt	M
EDGE CRACKING	880	Ft	M
PATCH/UTILITY CUT	1,376	SqFt	M
POTHOLE	10	Count	M
WEATHERING	252	SqFt	M

The total square footage of the true road is 16,275 square feet. The total evaluated area was approximately 12,600 square feet. Based on the pavement evaluation, Arrowhead Court between Echelon Road and the entrance to the existing facility at 200 Arrowhead Court has a PCI rating of 15 (Serious).

2.3 Hercules Way – Delaware Street to Old Taxi Way

Hercules Way is approximately 2975 feet in length and consists of a concrete pavement section (600 feet) and an asphalt overlay on concrete pavement (2375 feet). Between Delaware Street and Old Taxi Way (600 feet) the pavement consisted of concrete with the following pavement failures: buckling, corner break, divided slabs, faulting, joint seal, linear cracking, patching (large and small), and spalling corners. The photos below are representative of the road condition for this portion of the road.



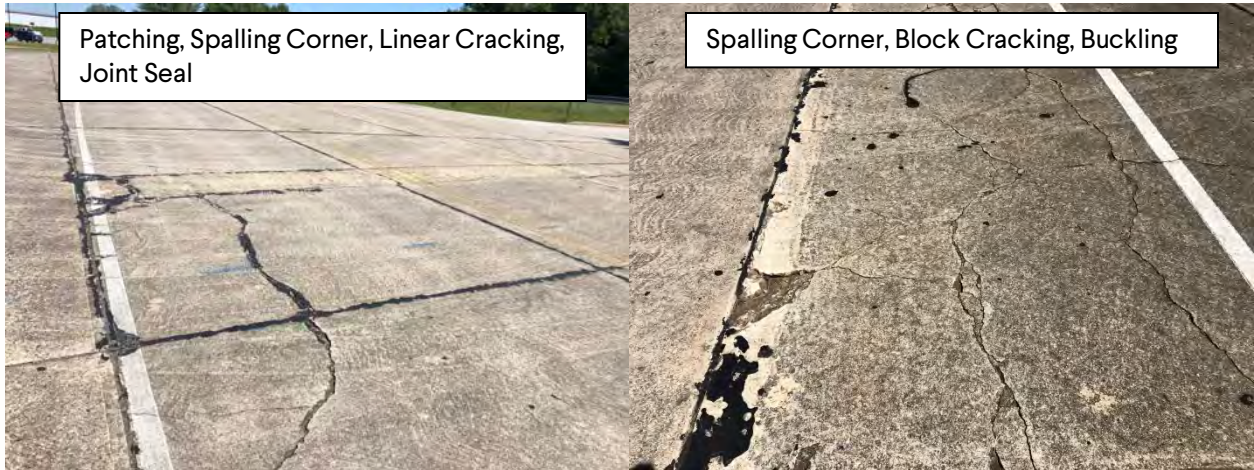


Table 3.1: Hercules Way (Concrete) Pavement Distresses

Distress Description	Quantity	Quantity Units	Severity
BUCKLING	1	Count	L
CORNER BREAK	17	Count	L
DIVIDED SLAB	10	Count	L
FAULTING	4	Count	L
JOINT SEAL	20	Count	L
LINEAR CRACKING	1	Count	L
PATCHING (LARGE)	2	Count	M
PATCHING (SMALL)	2	Count	M
SPALLING CORNER	2	Count	M

The total square footage of the true road for the concrete section is 10,000 square feet. The total evaluated area was approximately 6,250 square feet. Based on the pavement evaluation, Hercules Way between Delaware Street and Old Taxi Way has a PCI rating of 37 (Very Poor).

2.4 Hercules Way – Old Taxi Way to the End

Hercules Way between Old Taxi Way and the end (2375 feet) the pavement consisted of asphalt overlay on concrete with the following pavement failures: alligator cracking, block cracking, bumps and sags, patch/utility cut, pothole, weathering, and joint reflection cracking. The photos below are representative of the road condition for this portion of the road.





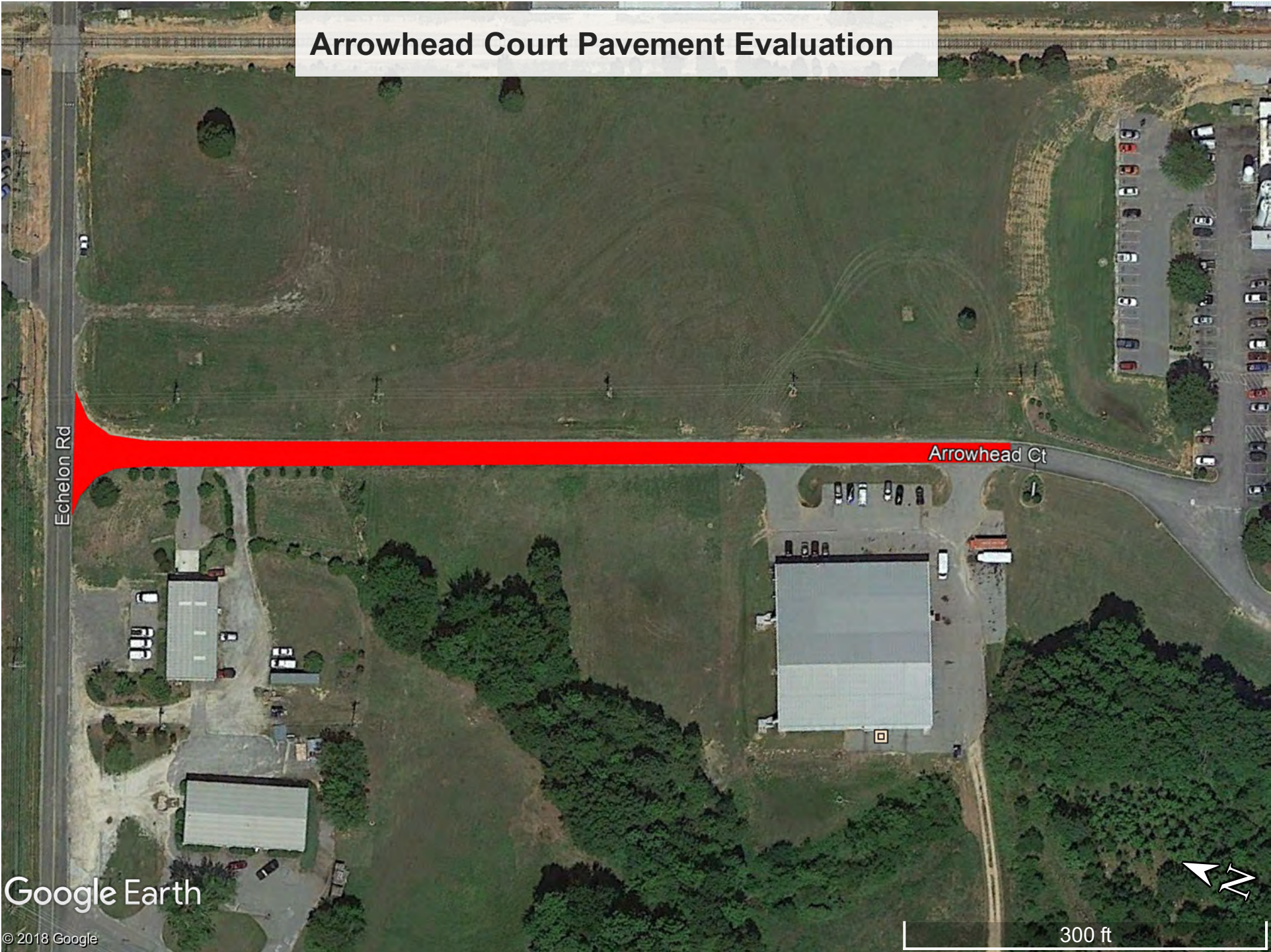
Table 3.2: Hercules Way (Asphalt) Pavement Distresses

Distress Description	Quantity	Quantity	
		Units	Severity
ALLIGATOR CRACKING	18,750	SqFt	H
BLOCK CRACKING	18,750	SqFt	L
BUMPS AND SAGS	100	Ft	L
BUMPS AND SAGS	625	Ft	M
PATCH/UTILITY CUT	100	SqFt	L
PATCH/UTILITY CUT	250	SqFt	M
POTHOLE	19	Count	M
WEATHERING	7,750	SqFt	L
WEATHERING	18,750	SqFt	M
JOINT REFLECTION CRACKING	2,550	Ft	L
JOINT REFLECTION CRACKING	5,150	Ft	M

The total square footage of the true road for the concrete section is 59,375 square feet. The total evaluated area was approximately 37,500 square feet. Based on the pavement evaluation, Hercules Way between Old Taxi Way and the end has a PCI rating of 0 (Failed).

Attachments

Arrowhead Court Pavement Evaluation



Echelon Rd

Arrowhead Ct

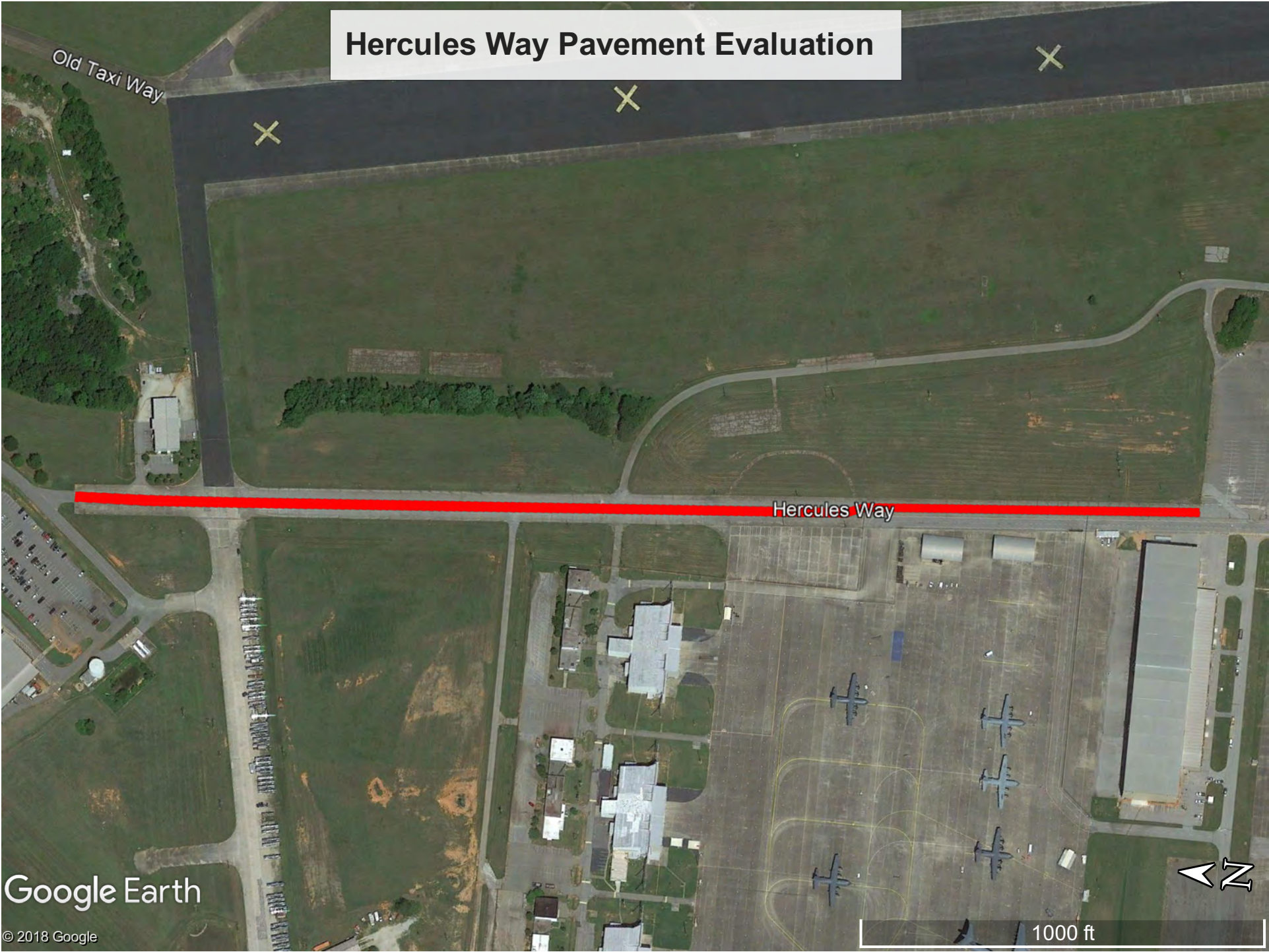
Google Earth

© 2018 Google



300 ft

Hercules Way Pavement Evaluation



Google Earth

© 2018 Google



1000 ft

Branch ID	Name	Section ID	From	To	True Area (Ft ²)	Length (Ft)	PCI	Sample Number	Distress Description	Quantity	Quantity Units	Severity
SCACT1	ARROWHEAD CT	SCACT1	ECHELON RD	END	16,275	775.00	15	12,600	ALLIGATOR CRACKING	11,088	SqFt	M
SCACT1	ARROWHEAD CT	SCACT1	ECHELON RD	END	16,275	775.00	15	12,600	BLOCK CRACKING	3,012	SqFt	M
SCACT1	ARROWHEAD CT	SCACT1	ECHELON RD	END	16,275	775.00	15	12,600	EDGE CRACKING	880	Ft	M
SCACT1	ARROWHEAD CT	SCACT1	ECHELON RD	END	16,275	775.00	15	12,600	PATCH/UTILITY CUT	1,376	SqFt	M
SCACT1	ARROWHEAD CT	SCACT1	ECHELON RD	END	16,275	775.00	15	12,600	POTHOLE	10	Count	M
SCACT1	ARROWHEAD CT	SCACT1	ECHELON RD	END	16,275	775.00	15	12,600	WEATHERING	252	SqFt	M
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	BUCKLING	1	Count	L
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	CORNER BREAK	17	Count	L
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	DIVIDED SLAB	10	Count	L
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	FAULTING	4	Count	L
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	JOINT SEAL	20	Count	L
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	LINEAR CRACKING	1	Count	L
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	PATCHING (LARGE)	2	Count	M
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	PATCHING (SMALL)	2	Count	M
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	10,000	600.00	37	6,250	SPALLING CORNER	2	Count	M
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	ALLIGATOR CRACKING	18,750	SqFt	H
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	BLOCK CRACKING	18,750	SqFt	L
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	BUMPS AND SAGS	100	Ft	L
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	BUMPS AND SAGS	625	Ft	M
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	PATCH/UTILITY CUT	100	SqFt	L
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	PATCH/UTILITY CUT	250	SqFt	M
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	POTHOLE	19	Count	M
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	WEATHERING	7,750	SqFt	L
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	WEATHERING	18,750	SqFt	M
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	JOINT REFLECTION CRACKING	2,550	Ft	L
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	59,375	2,375.00	0	37,500	JOINT REFLECTION CRACKING	5,150	Ft	M

Branch ID	Name	Section ID	From	To	Functional Class	IRI (m/km)	True Area (Ft ²)	True Area (Yd ²)	Length (Ft)	Length (Mi)	PCI
SCACT1	ARROWHEAD CT	SCACT1	ECHELON RD	END	Local		16,275	1,808	775	0.15	15
SCHW1	HERCULES WAY	SCHW1	DELAWARE ST	OLD TAXI WAY	Local		10,000	1,111	600	0.11	37
SCHW2	HERCULES WAY	SCHW2	OLD TAXI WAY	END	Local		59,375	6,597	2,375	0.45	0