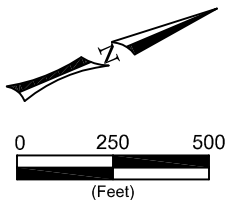
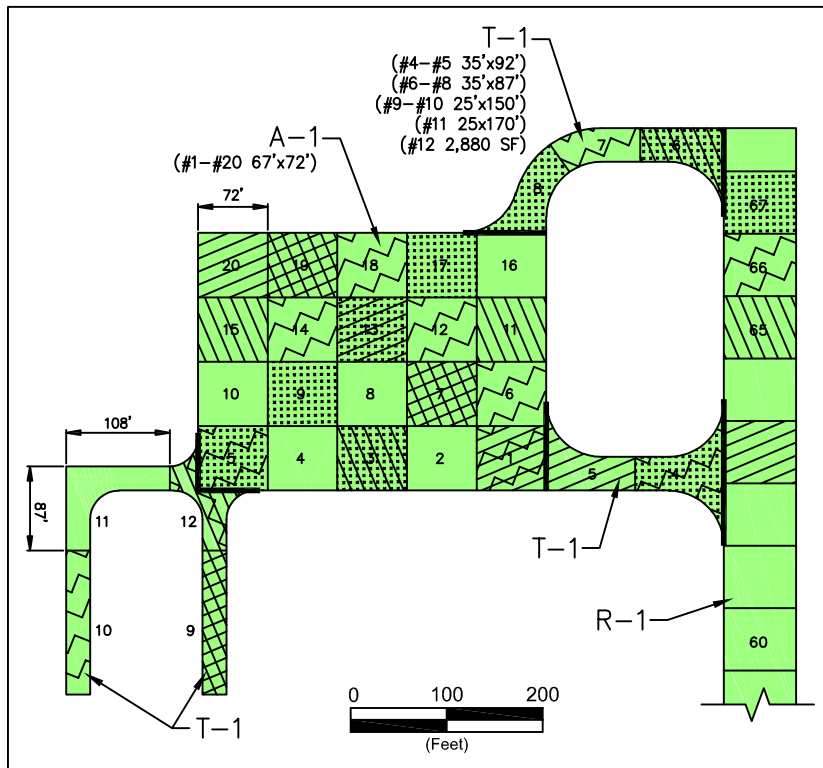
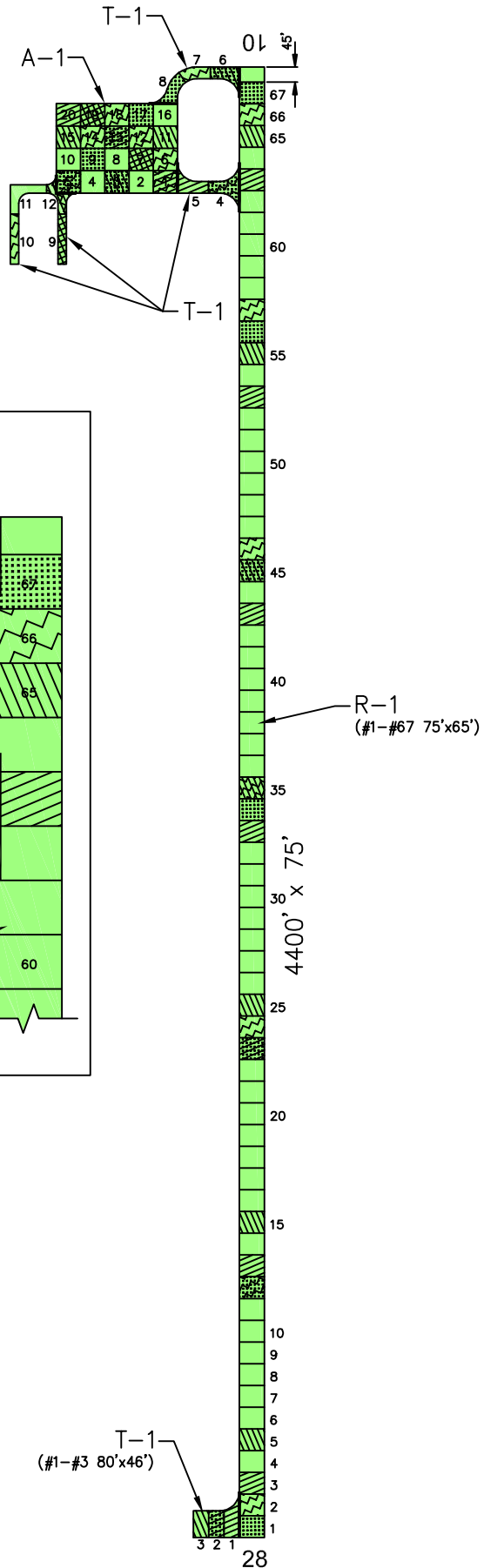


BROADUS



PAVEMENT STRENGTH SURVEY/PAVEMENT CONDITION SURVEY

PAVE. IDENT.	SOIL CLASS	SUB GRADE CLASS	SUBBASE COURSE	BASE COURSE	SURFACE COURSE	OVERLAY	PAVEMENT STRENGTH			REMARKS
							MAX. GROSS LOAD (LBS)			
							SINGLE	DUAL	DUAL TAN.	
RUNWAYS										
R-1		8" P-152	6" P-154	4" P-208	3.5" P-401	P-609	12,500			1,2,3
TAXIWAYS										
T-1		8" P-152	6" P-154	4" P-208	3.5" P-401	P-609	12,500			1,2,3
APRONS										
A-1		8" P-152	6" P-154	4" P-208	3.5" P-401	P-609	12,500			1,2,3

REMARKS:

- AIP-002-2005, ALL NEW CONSTRUCTION: CONSTRUCT RUNWAY 10/28 (R-1), TAXIWAYS (T-1), AND APRON (A-1).
- AIP-005-2011, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS.
- AIP-006-2016, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS.

LEGEND

- 2006 SURVEY AREA (N/A)
- 2009 SURVEY AREA (N/A)
- 2012 SURVEY AREA
- 2015 SURVEY AREA
- 2018 SURVEY AREA
- MAINTAIN: PCI > 60
- TRANSITION: PCI 45 TO 60
- RECONSTRUCT: PCI < 45

DATE OF PAVEMENT STRENGTH SURVEY:	
EVALUATED BY:	
DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	AUG. 15, 2018
EVALUATED BY:	S. BROWN
LOCATION:	BROADUS MONTANA

**MONTANA AVIATION SYSTEM PLAN
2018 UPDATE - PAVEMENT CONDITION INDEXES**

**BROADUS AIRPORT
(00F)**

Date: _____ Prepared For: _____ Prepared By: _____

DECEMBER
2018



BROADUS



A-1, Overview



A-1, Depression



R-1, Overview with Crack



R-1, Patch with Crack



T-1, Overview



T-1, Swell

BROADUS AIRPORT

Branch: 62A **APRON**

A-1

Length: 268 LF **Width:** 360 LF **Area:** 99,855 SF **Last Const:** 2005 **Family:** ACAM
From: ENTIRE APRON **To:** OFF T-1 **Surface:** AC

Inspections

Samples Surveyed: 6 **Total Samples:** 20 **Last Inspection Date:** 8/15/2018 **PCI:** 90

Sample # 1 **Area:** 4,824 SF

Distress Description	Severity	Quantity
WEATHERING	L	4824 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	42 LF
DEPRESSION	L	0.16 SF

Sample # 5 **Area:** 4,824 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	62 LF
WEATHERING	L	4824 SF
DEPRESSION	L	10 SF

Sample # 6 **Area:** 4,824 SF

Distress Description	Severity	Quantity
DEPRESSION	L	0.01 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	11 LF
WEATHERING	L	4824 SF

Sample # 12 **Area:** 4,824 SF

Distress Description	Severity	Quantity
WEATHERING	L	4824 SF
DEPRESSION	L	0.1 SF

Sample # 14 **Area:** 4,824 SF

Distress Description	Severity	Quantity
DEPRESSION	L	0.04 SF
PATCHING	L	0.2 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	3 LF
WEATHERING	L	4824 SF

Sample # 18 **Area:** 4,824 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	23 LF
SHOVING	L	0.54 SF
WEATHERING	L	4824 SF
DEPRESSION	L	4.375 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	LOW	51 SF	0.05%	0.30
LONGITUDINAL/TRANSVERSE CRACKING	LOW	486 LF	0.49%	4.04
PATCHING	LOW	1 SF	0.00%	2.00
SHOVING	LOW	2 SF	0.00%	2.00
WEATHERING	LOW	99,855 SF	100.00%	5.96

* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

Percent of Deduct Values Based on Distress Mechanism

0.0 % Load 84.0 % Climate/Durability 16.0 % Other

BROADUS AIRPORT					Branch: 62R	RUNWAY	R-1
Length: 4,400 LF	Width: 75 LF	Area: 330,000 SF	Last Const: 2005		Family: ACRML		
From: 12+00 RWY 10-28	To: 56+00 RWY 10-28				Surface: AC		

Inspections

Samples Surveyed: 7	Total Samples: 68	Last Inspection Date: 8/15/2018	PCI: 85	
Sample # 2	Distress Description	Severity	Quantity	Area: 4,875 SF
	WEATHERING	L	4875 SF	
	LONGITUDINAL/TRANSVERSE CRACKING	L	26 LF	
	DEPRESSION	M	0.02 SF	
Sample # 12	Distress Description	Severity	Quantity	Area: 4,875 SF
	PATCHING	L	0.2 SF	
	LONGITUDINAL/TRANSVERSE CRACKING	L	82 LF	
	WEATHERING	L	4875 SF	
Sample # 24	Distress Description	Severity	Quantity	Area: 4,875 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	102 LF	
	DEPRESSION	M	0.1 SF	
	WEATHERING	L	4875 SF	
Sample # 35	Distress Description	Severity	Quantity	Area: 4,875 SF
	DEPRESSION	H	0.2 SF	
	DEPRESSION	L	0.1 SF	
	LONGITUDINAL/TRANSVERSE CRACKING	L	67 LF	
	WEATHERING	L	4875 SF	
Sample # 46	Distress Description	Severity	Quantity	Area: 4,875 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	65 LF	
	DEPRESSION	L	0.1 SF	
	WEATHERING	L	4875 SF	
Sample # 57	Distress Description	Severity	Quantity	Area: 4,875 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	72 LF	
	DEPRESSION	L	0.1 SF	
	WEATHERING	L	4875 SF	
Sample # 66	Distress Description	Severity	Quantity	Area: 4,875 SF
	WEATHERING	L	4875 SF	
	DEPRESSION	L	0.1 SF	
	LONGITUDINAL/TRANSVERSE CRACKING	L	34 LF	

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	HIGH	2 SF	0.00%	12.00
DEPRESSION	LOW	4 SF	0.00%	0.30
DEPRESSION	MEDIUM	1 SF	0.00%	5.20
LONGITUDINAL/TRANSVERSE CRACKING	LOW	4,332 LF	1.31%	5.65
PATCHING	LOW	2 SF	0.00%	2.00
WEATHERING	LOW	330,000 SF	100.00%	5.96

* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

Percent of Deduct Values Based on Distress Mechanism

0.0 % Load 44.0 % Climate/Durability 56.0 % Other

BROADUS AIRPORT

Branch: 62T TAXIWAY

T-1

Length: 1,300 LF **Width:** 35 LF **Area:** 45,500 SF **Last Const:** 2005 **Family:** ACRML
From: R/W 12 NORTH & SOUTH ENDS **To:** SOUTHWEST CORNER A-1 **Surface:** AC

Inspections

Samples Surveyed: 5 **Total Samples:** 11 **Last Inspection Date:** 8/15/2018 **PCI:** 86

Sample # 1	<p>Distress Description LONGITUDINAL/TRANSVERSE CRACKING DEPRESSION WEATHERING</p>	<p>Severity L L L</p>	<p>Quantity 9 LF 0.01 SF 3680 SF</p>	Area: 3,680 SF
Sample # 4	<p>Distress Description DEPRESSION LONGITUDINAL/TRANSVERSE CRACKING DEPRESSION PATCHING WEATHERING</p>	<p>Severity L L M L L</p>	<p>Quantity 0.04 SF 130 LF 24.5 SF 0.2 SF 3220 SF</p>	Area: 3,220 SF
Sample # 7	<p>Distress Description LONGITUDINAL/TRANSVERSE CRACKING DEPRESSION WEATHERING</p>	<p>Severity L L L</p>	<p>Quantity 11 LF 0.1 SF 3045 SF</p>	Area: 3,045 SF
Sample # 10	<p>Distress Description SWELL WEATHERING SHOVING PATCHING</p>	<p>Severity L L L L</p>	<p>Quantity 0.01 SF 3750 SF 18 SF 0.2 SF</p>	Area: 3,750 SF
Sample # 12	<p>Distress Description DEPRESSION RAVELING DEPRESSION WEATHERING</p>	<p>Severity L H L L</p>	<p>Quantity 0.03 SF 0.25 SF 12 SF 2880 SF</p>	Area: 2,880 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	LOW	33 SF	0.07%	0.30
DEPRESSION	MEDIUM	67 SF	0.15%	5.46
LONGITUDINAL/TRANSVERSE CRACKING	LOW	412 LF	0.90%	4.75
PATCHING	LOW	1 SF	0.00%	2.00
RAVELING	HIGH	1 SF	0.00%	6.00
SHOVING	LOW	49 SF	0.11%	2.08
SWELL	LOW	0 SF	0.00%	1.00
WEATHERING	LOW	45,500 SF	100.00%	5.96

* Multiple deduct values are scaled down from their algebraic sum to keep the model consistent with experimental data.

Percent of Deduct Values Based on Distress Mechanism

0.0 % Load 68.0 % Climate/Durability 32.0 % Other

BROADUS AIRPORT (62)

FIFTEEN YEAR PROJECTIONS							ESTIMATED AVERAGE ANNUAL COST:		\$37,327	
Plan Year: 2019							Estimated Cost:	\$163,654	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive + Global MR	\$31	\$33,950	\$0	\$0	\$33,981		90	92	
R-1	Preventive + Global MR	\$1,803	\$112,199	\$0	\$0	\$114,002		85	88	
T-1	Preventive + Global MR	\$201	\$15,470	\$0	\$0	\$15,671		86	89	
Plan Year: 2020							Estimated Cost:	\$1,132	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	None	\$0	\$0	\$0	\$0	\$0		91	91	
R-1	Preventive	\$1,030	\$0	\$0	\$0	\$1,030		87	87	
T-1	Preventive	\$102	\$0	\$0	\$0	\$102		88	88	
Plan Year: 2021							Estimated Cost:	\$1,544	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	None	\$0	\$0	\$0	\$0	\$0		90	90	
R-1	Preventive	\$1,395	\$0	\$0	\$0	\$1,395		86	86	
T-1	Preventive	\$149	\$0	\$0	\$0	\$149		87	87	
Plan Year: 2022							Estimated Cost:	\$1,985	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive	\$29	\$0	\$0	\$0	\$29		90	90	
R-1	Preventive	\$1,760	\$0	\$0	\$0	\$1,760		85	85	
T-1	Preventive	\$197	\$0	\$0	\$0	\$197		86	86	
Plan Year: 2023							Estimated Cost:	\$2,472	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive	\$104	\$0	\$0	\$0	\$104		89	89	
R-1	Preventive	\$2,125	\$0	\$0	\$0	\$2,125		84	84	
T-1	Preventive	\$243	\$0	\$0	\$0	\$243		85	85	
Plan Year: 2024							Estimated Cost:	\$164,577	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive + Global MR	\$177	\$33,950	\$0	\$0	\$34,128		88	91	
R-1	Preventive + Global MR	\$2,489	\$112,199	\$0	\$0	\$114,689		82	86	
T-1	Preventive + Global MR	\$291	\$15,470	\$0	\$0	\$15,761		84	87	
Plan Year: 2025							Estimated Cost:	\$1,932	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive	\$24	\$0	\$0	\$0	\$24		90	90	
R-1	Preventive	\$1,717	\$0	\$0	\$0	\$1,717		85	85	
T-1	Preventive	\$191	\$0	\$0	\$0	\$191		86	86	
Plan Year: 2026							Estimated Cost:	\$2,419	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive	\$99	\$0	\$0	\$0	\$99		89	89	
R-1	Preventive	\$2,082	\$0	\$0	\$0	\$2,082		84	84	
T-1	Preventive	\$238	\$0	\$0	\$0	\$238		85	85	
Plan Year: 2027							Estimated Cost:	\$2,902	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive	\$173	\$0	\$0	\$0	\$173		88	88	
R-1	Preventive	\$2,443	\$0	\$0	\$0	\$2,443		83	83	
T-1	Preventive	\$286	\$0	\$0	\$0	\$286		84	84	
Plan Year: 2028							Estimated Cost:	\$3,391	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive	\$248	\$0	\$0	\$0	\$248		88	88	
R-1	Preventive	\$2,811	\$0	\$0	\$0	\$2,811		81	82	
T-1	Preventive	\$332	\$0	\$0	\$0	\$332		83	83	
Plan Year: 2029							Estimated Cost:	\$165,498	PCI	
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total		Before	After	
A-1	Preventive + Global MR	\$323	\$33,950	\$0	\$0	\$34,273		87	89	
R-1	Preventive + Global MR	\$3,176	\$112,199	\$0	\$0	\$115,375		80	84	
T-1	Preventive + Global MR	\$380	\$15,470	\$0	\$0	\$15,849		82	85	

BROADUS AIRPORT (62)

FIFTEEN YEAR PROJECTIONS **ESTIMATED AVERAGE ANNUAL COST: \$37,327**

Plan Year: 2030 Estimated Cost: \$2,846 PCI

Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Preventive	\$168	\$0	\$0	\$0	\$168	88	88
R-1	Preventive	\$2,397	\$0	\$0	\$0	\$2,397	83	83
T-1	Preventive	\$280	\$0	\$0	\$0	\$280	84	84

Plan Year: 2031 Estimated Cost: \$3,334 PCI

Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Preventive	\$241	\$0	\$0	\$0	\$241	88	88
R-1	Preventive	\$2,765	\$0	\$0	\$0	\$2,765	82	82
T-1	Preventive	\$328	\$0	\$0	\$0	\$328	83	83

Plan Year: 2032 Estimated Cost: \$3,821 PCI

Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Preventive	\$316	\$0	\$0	\$0	\$316	87	87
R-1	Preventive	\$3,130	\$0	\$0	\$0	\$3,130	81	81
T-1	Preventive	\$375	\$0	\$0	\$0	\$375	82	82

Plan Year: 2033 Estimated Cost: \$4,890 PCI

Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Preventive	\$391	\$0	\$0	\$0	\$391	86	86
R-1	Preventive	\$4,078	\$0	\$0	\$0	\$4,078	79	79
T-1	Preventive	\$421	\$0	\$0	\$0	\$421	81	81