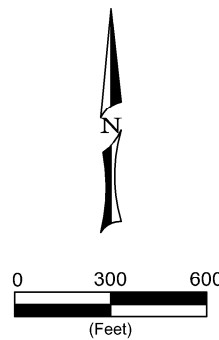
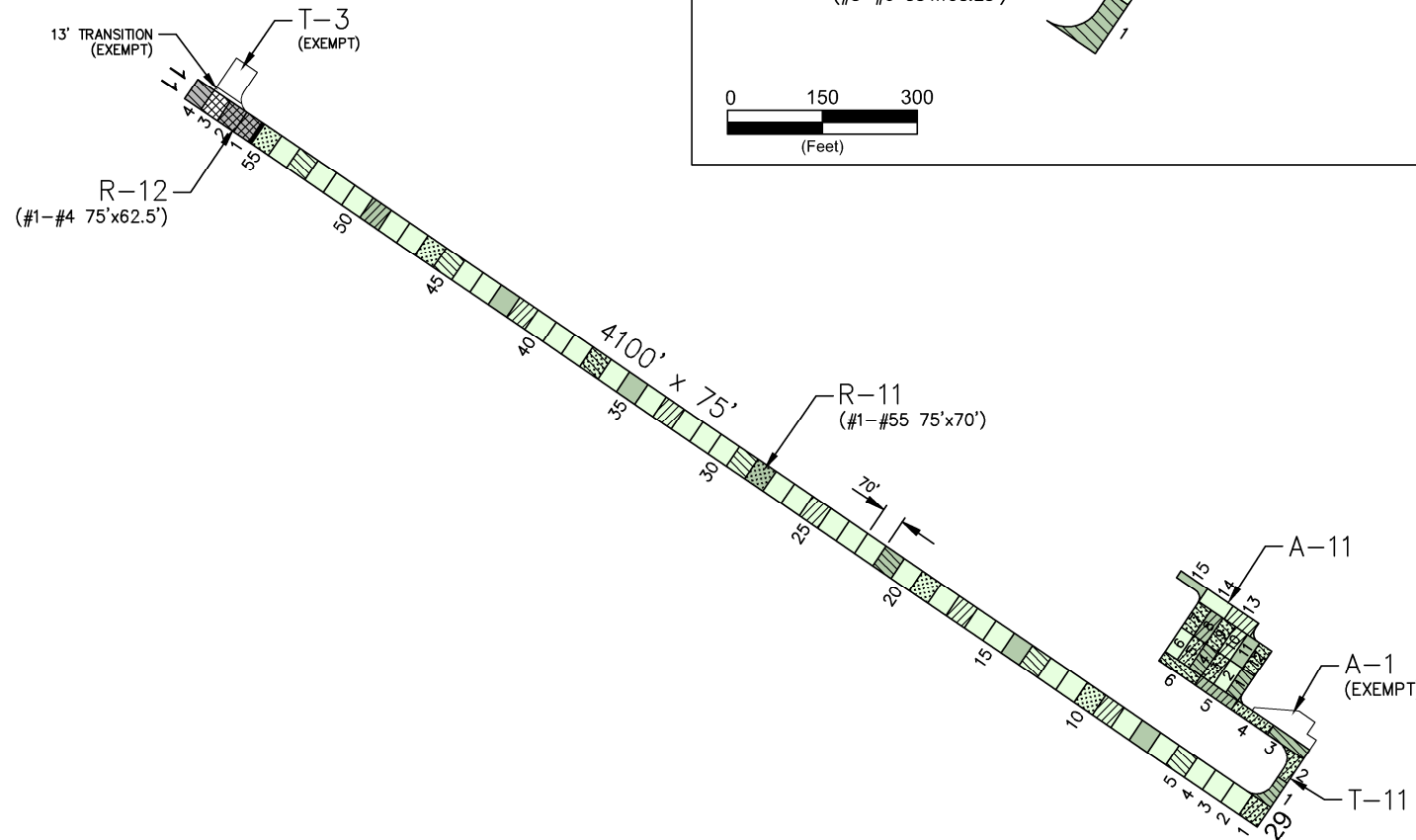
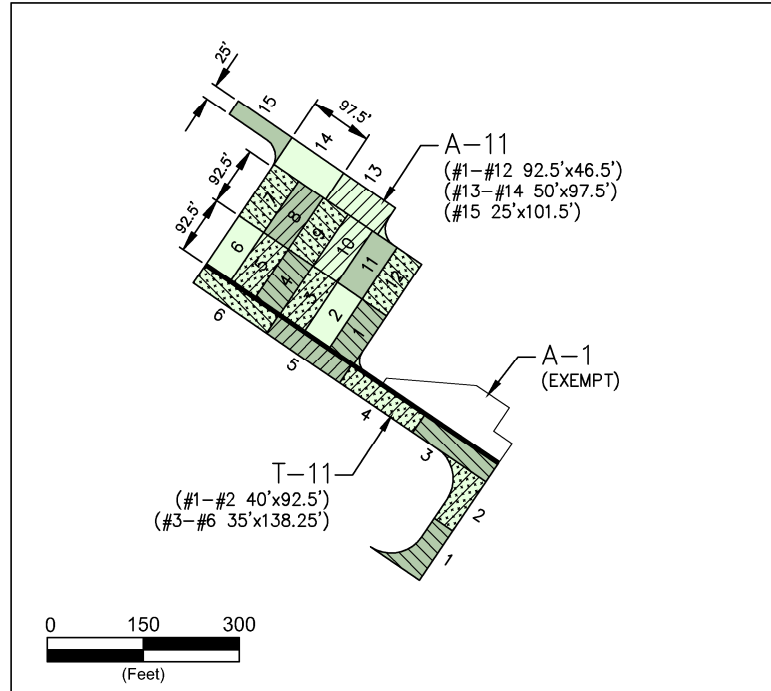


# HARLEM



# 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.	
<b>RUNWAYS</b>										
R-11	E-7	CBR=2	10.5"(MIN)P-154	6" P-208	3" P-401	P-608	12,500			3,4,5
R-12	E-7	CBR=2	10.5"P-154	6" P-208	3" P-401	P-608	12,500			3,4,5
<b>TAXIWAYS</b>										
T-11	E-7	CBR=2	10.5"P-154	6" P-208	3" P-401	P-608	12,500			3,4,5
T-3	E-7	CBR=2		8.5" P-208	1.5" P-609	1"P-402,P-608	8,000			1,2,3,4,5
<b>APRONS</b>										
A-1	E-7	CBR=2		8.5" P-208	1.5" P-609	1" P-402	8,000			1
A-11	E-7	CBR=2	10.5"P-154	6" P-208	3" P-401	P-608	12,500			3,4,5

**REMARKS:**

- AIP-01, 1983, CONSTRUCT RUNWAY, CONNECTING TAXIWAY, AND APRON.
- AIP-02, 1992, P-402 OVERLAY RUNWAY AND TAXIWAY.
- AIP-004-2003, RECONSTRUCT AND WIDEN RUNWAY; CONSTRUCT NEW TAXIWAY (T-11) AND APRON (A-11).
- AIP-008-2010, CRACK REPAIR, CRACK SEAL, FOG SEAL, AND REMARK RUNWAY (R-11,R-12), TAXIWAYS (T-3,T-11), AND APRON (A-11).
- AIP-010-2015, CRACK SEAL, SEAL COAT, AND REMARK ALL PAVEMENTS [INSPECTED AFTER MAINTENANCE PROJECT].

<b>LEGEND</b> [Grid] 2003 SURVEY AREA (NOT SURVEYED) [Solid] 2006 SURVEY AREA [Diagonal] 2009 SURVEY AREA [Cross-hatch] 2012 SURVEY AREA [Dotted] 2015 SURVEY AREA [Green] MAINTAIN: PCI > 60 [Yellow] TRANSITION: PCI 45 TO 60 [Red] RECONSTRUCT: PCI < 45	DATE OF PAVEMENT STRENGTH SURVEY:	SEPT. 23, 1987	<b>MONTANA AVIATION SYSTEM PLAN</b> <b>2015 UPDATE - PAVEMENT CONDITION INDEXES</b> <b>HARLEM AIRPORT</b> <b>(48S)</b>	
	EVALUATED BY:	C. NEW		
	DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	OCT. 5, 2015	Date:	DECEMBER 2015
	EVALUATED BY:	S. MARKWARDT	Prepared For:	MONTANA MDT* DEPARTMENT OF TRANSPORTATION
LOCATION:	HARLEM MONTANA	Prepared By:	RPA Robert Peccia & Associates, Inc.	

HARLEM

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# HARLEM AIRPORT

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9/30/2015



**A-11**, Overview



**A-11**, Surface detail with tie down



**R-11**, Surface detail with core hole



**R-11**, Overview

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# HARLEM AIRPORT

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9/30/2015



**T-11, Overview**



**T-11, Surface detail with depression**

**HARLEM AIRPORT**

Branch: 17A

APRON

**A-11**

**Length:** 235 LF **Width:** 280 LF **Area:** 65,320 SF **Last Const. :** 2003 **Family:** ACAM15  
**From:** T-12 **To:** TIEDOWNS **Surface:** AC

**Inspections**

**Samples Surveyed:** 5 **Total Samples:** 15 **Last Inspection Date (RPA)** 9/30/2015 **PCI:** 85

**Sample # 3** **Area:** 4321 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	45 LF
RAVELING	L	21 SF
DEPRESSION	L	15 SF

**Sample # 5** **Area:** 4301 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	49 LF
RAVELING	L	21 SF
DEPRESSION	L	16 SF
PATCHING	L	3 SF

**Sample # 7** **Area:** 4301 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	103 LF
RAVELING	L	21 SF
PATCHING	L	1 SF
BLEEDING	N	1 SF
OIL SPILLAGE	N	1 SF

**Sample # 9** **Area:** 4301 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	86 LF
RAVELING	L	21 SF
PATCHING	L	11 SF

**Sample # 12** **Area:** 4301 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	231 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	31 LF
OIL SPILLAGE	N	22 SF
RAVELING	L	21 SF
DEPRESSION	L	12 SF
PATCHING	L	9 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	1560 LF	2.39 %	8.44
LONGITUDINAL/TRANSVERSE CRACKING	M	94 LF	0.14 %	4.30
PATCHING	L	73 SF	0.11 %	2.00
OIL SPILLAGE	N	70 SF	0.11 %	1.99
RAVELING	L	319 SF	0.49 %	1.75
DEPRESSION	L	130 SF	0.20 %	0.78
BLEEDING	N	3 SF	0.00 %	0.00

\* 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                      86.0 % Climate/Durability                      14.0 % Other





# HARLEM AIRPORT

**FIFTEEN YEAR PROJECTIONS: ESTIMATED AVERAGE ANNUAL COST: \$65,421**

PLAN YEAR: 2016			ESTIMATED COST:			\$222,584	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-11	Prev. & Seal Coat	\$4,515	\$80,850			\$85,365	79	83
T-11	Prev. & Seal Coat	\$1,465	\$7,889			\$9,354	70	73
A-11	Prev. & Thin AC	\$492	\$127,374			\$127,865	82	100
PLAN YEAR: 2017			ESTIMATED COST:			\$4,071	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-11	Basic Prev.	\$2,793				\$2,793	81	81
T-11	Basic Prev.	\$1,278				\$1,278	71	72
PLAN YEAR: 2018			ESTIMATED COST:			\$6,022	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-11	Basic Prev.	\$4,534				\$4,534	79	79
T-11	Basic Prev.	\$1,488				\$1,488	70	70
PLAN YEAR: 2019			ESTIMATED COST:			\$8,883	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-11	Basic Prev.	\$2,032				\$2,032	68	69
A-11	Basic Prev.	\$200				\$200	87	87
R-11	Basic Prev.	\$6,651				\$6,651	77	77
PLAN YEAR: 2020			ESTIMATED COST:			\$11,818	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-11	Basic Prev.	\$2,699				\$2,699	66	67
A-11	Basic Prev.	\$451				\$451	84	84
R-11	Basic Prev.	\$8,668				\$8,668	76	76
PLAN YEAR: 2021			ESTIMATED COST:			\$117,734	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-11	Basic Prev.	\$693				\$693	81	81
T-11	Prev. & Seal Coat	\$3,511	\$9,145			\$12,656	64	69
R-11	Prev. & Seal Coat	\$10,657	\$93,727			\$104,385	75	78
PLAN YEAR: 2022			ESTIMATED COST:			\$13,086	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-11	Basic Prev.	\$1,391				\$1,391	78	78
R-11	Basic Prev.	\$8,950				\$8,950	76	76
T-11	Basic Prev.	\$2,745				\$2,745	67	67
PLAN YEAR: 2023			ESTIMATED COST:			\$16,913	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-11	Basic Prev.	\$11,066				\$11,066	75	75
T-11	Basic Prev.	\$3,579				\$3,579	65	65
A-11	Basic Prev.	\$2,268				\$2,268	75	76
PLAN YEAR: 2024			ESTIMATED COST:			\$20,988	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-11	Basic Prev.	\$13,243				\$13,243	73	74
A-11	Basic Prev.	\$3,141				\$3,141	73	73
T-11	Basic Prev.	\$4,604				\$4,604	62	62
PLAN YEAR: 2025			ESTIMATED COST:			\$153,376	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-11	Reconstruct			\$133,791		\$133,791	59	100
R-11	Basic Prev.	\$15,569				\$15,569	72	72
A-11	Basic Prev.	\$4,016				\$4,016	71	71
PLAN YEAR: 2026			ESTIMATED COST:			\$303,701	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-11	Prev. & Seal Coat	\$18,177	\$108,656			\$126,833	71	74
A-11	Prev. & Thin AC	\$5,688	\$171,180			\$176,868	69	82
PLAN YEAR: 2027			ESTIMATED COST:			\$17,528	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-11	Basic Prev.	\$16,212				\$16,212	72	72
A-11	Basic Prev.	\$1,316				\$1,316	79	79

PLAN YEAR: 2028		ESTIMATED COST:				\$21,391	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-11	Basic Prev.	\$109				\$109	87	88
A-11	Basic Prev.	\$2,346				\$2,346	76	76
R-11	Basic Prev.	\$18,936				\$18,936	71	71
PLAN YEAR: 2029		ESTIMATED COST:				\$26,915	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-11	Basic Prev.	\$23,322				\$23,322	70	70
A-11	Basic Prev.	\$3,365				\$3,365	74	74
T-11	Basic Prev.	\$228				\$228	84	85
PLAN YEAR: 2030		ESTIMATED COST:				\$36,300	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-11	Basic Prev.	\$336				\$336	82	82
R-11	Basic Prev.	\$31,577				\$31,577	68	68
A-11	Basic Prev.	\$4,387				\$4,387	71	72