

CONRAD AIRPORT

Branch: 46A APRON **A-1**

Length: 500 LF **Width:** 190 LF **Area:** 95,000 SF **Last Const:** 2002 **Family:** ACAM
From: TAXIWAY 1 **To:** TAXIWAY 2 **Surface:** AAC

Inspections

Samples Surveyed: 5 **Total Samples:** 22 **Last Inspection Date:** 10/9/2012 **PCI:** 75

Sample # 1		Area: 5,000 SF																		
	<table border="0"> <tr> <th style="text-align: left;">Distress Description</th> <th style="text-align: left;">Severity</th> <th style="text-align: left;">Quantity</th> </tr> <tr> <td>DEPRESSION</td> <td>L</td> <td>30 SF</td> </tr> <tr> <td>LONGITUDINAL/TRANSVERSE CRACKING</td> <td>L</td> <td>144 LF</td> </tr> <tr> <td>LONGITUDINAL/TRANSVERSE CRACKING</td> <td>M</td> <td>3 LF</td> </tr> <tr> <td>RAVELING</td> <td>L</td> <td>50 SF</td> </tr> <tr> <td>WEATHERING</td> <td>L</td> <td>5,000 SF</td> </tr> </table>	Distress Description	Severity	Quantity	DEPRESSION	L	30 SF	LONGITUDINAL/TRANSVERSE CRACKING	L	144 LF	LONGITUDINAL/TRANSVERSE CRACKING	M	3 LF	RAVELING	L	50 SF	WEATHERING	L	5,000 SF	
Distress Description	Severity	Quantity																		
DEPRESSION	L	30 SF																		
LONGITUDINAL/TRANSVERSE CRACKING	L	144 LF																		
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RAVELING	L	50 SF																		
WEATHERING	L	5,000 SF																		
Sample # 5		Area: 5,000 SF																		
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DEPRESSION	L	50 SF																		
LONGITUDINAL/TRANSVERSE CRACKING	L	268 LF																		
RAVELING	L	100 SF																		
WEATHERING	L	5,000 SF																		
Sample # 9		Area: 5,000 SF																		
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Distress Description	Severity	Quantity																		
LONGITUDINAL/TRANSVERSE CRACKING	L	288 LF																		
WEATHERING	L	5,000 SF																		
Sample # 15		Area: 5,000 SF																		
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Distress Description	Severity	Quantity																		
DEPRESSION	L	20 SF																		
LONGITUDINAL/TRANSVERSE CRACKING	L	314 LF																		
WEATHERING	L	5,000 SF																		
Sample # 19		Area: 5,000 SF																		
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Distress Description	Severity	Quantity																		
DEPRESSION	L	20 SF																		
LONGITUDINAL/TRANSVERSE CRACKING	L	269 LF																		
WEATHERING	L	5,000 SF																		

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	L	456 SF	0.48%	3.14
LONGITUDINAL/TRANSVERSE CRACKING	L	4,875 LF	5.13%	15.05
LONGITUDINAL/TRANSVERSE CRACKING	M	11 LF	0.01%	4.00
RAVELING	L	570 SF	0.60%	1.95
WEATHERING	L	95,000 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 90.0 % Climate/Durability 10.0 % Other

CONRAD AIRPORT

Branch: 46R RUNWAY

R-3

Length: 4,600 LF Width: 75 LF Area: 345,000 SF Last Const: 2002 Family: ACRML
 From: 10+00 To: 56+00 Surface: AC

Inspections

Samples Surveyed: 7 Total Samples: 71 Last Inspection Date: 10/9/2012 **PCI: 72**

Sample #	Distress Description	Severity	Quantity	Area:
Sample # 3	LONGITUDINAL/TRANSVERSE CRACKING	L	309 LF	4,875 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	5 LF	
	LONGITUDINAL/TRANSVERSE CRACKING	H	1 LF	
	RAVELING	L	49 SF	
	WEATHERING	L	4,875 SF	
Sample # 13	ALLIGATOR CRACKING	L	100 SF	4,875 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	287 LF	
	RAVELING	L	49 SF	
	WEATHERING	L	4,875 SF	
	WEATHERING	L	4,875 SF	
Sample # 23	LONGITUDINAL/TRANSVERSE CRACKING	L	304 LF	4,875 SF
	RAVELING	L	49 SF	
	WEATHERING	L	4,875 SF	
	WEATHERING	L	4,875 SF	
Sample # 33	LONGITUDINAL/TRANSVERSE CRACKING	L	271 LF	4,875 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	20 LF	
	RAVELING	L	49 SF	
	WEATHERING	L	4,875 SF	
	WEATHERING	L	4,875 SF	
Sample # 43	LONGITUDINAL/TRANSVERSE CRACKING	L	226 LF	4,875 SF
	RAVELING	L	49 SF	
	WEATHERING	L	4,875 SF	
	WEATHERING	L	4,875 SF	
Sample # 53	LONGITUDINAL/TRANSVERSE CRACKING	L	240 LF	4,875 SF
	WEATHERING	L	4,875 SF	
	WEATHERING	L	4,875 SF	
Sample # 63	LONGITUDINAL/TRANSVERSE CRACKING	L	264 LF	4,875 SF
	LONGITUDINAL/TRANSVERSE CRACKING	M	5 LF	
	RAVELING	L	49 SF	
	WEATHERING	L	4,875 SF	
	WEATHERING	L	4,875 SF	

CONRAD AIRPORT

Branch: 46R

RUNWAY

R-3

Extrapolated Distress Quantities*				
Distress Description	Severity	Quantity	Density	Deduct
ALLIGATOR CRACKING	L	1,011 SF	0.29%	10.64
LONGITUDINAL/TRANSVERSE CRACKING	L	19,219 LF	5.57%	15.96
LONGITUDINAL/TRANSVERSE CRACKING	M	303 LF	0.09%	4.00
LONGITUDINAL/TRANSVERSE CRACKING	H	10 LF	0.00%	7.50
RAVELING	L	2,972 SF	0.86%	2.40
WEATHERING	L	345000 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		
23.0 % Load	77.0 % Climate/Durability	0.0 % Other

CONRAD AIRPORT

Branch: 46T TAXIWAY T-4

Length: 320 LF Width: 25 LF Area: 23,040 SF Last Const: 2002 Family: ACRML
 From: A-1 To: R-3 & HANGARS Surface: AAC

Inspections

Samples Surveyed: 3 Total Samples: 6 Last Inspection Date: 10/9/2012 **PCI: 62**

Sample # 1 Area: 4,000 SF

Distress Description	Severity	Quantity
ALLIGATOR CRACKING	L	3 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	48 LF
RAVELING	L	200 SF
RAVELING	M	112 SF
RUTTING	L	250 SF
WEATHERING	L	4,000 SF

Sample # 3 Area: 3,400 SF

Distress Description	Severity	Quantity
BLOCK CRACKING	L	20 SF
DEPRESSION	L	100 SF
DEPRESSION	H	5 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	119 LF
RAVELING	L	170 SF
WEATHERING	L	3,400 SF

Sample # 5 Area: 4,120 SF

Distress Description	Severity	Quantity
DEPRESSION	L	30 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	3 LF
LONGITUDINAL/TRANSVERSE CRACKING	L	138 LF
RAVELING	L	170 SF
WEATHERING	L	3,400 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
ALLIGATOR CRACKING	L	6 SF	0.03%	7.00
BLOCK CRACKING	L	40 SF	0.17%	4.71
DEPRESSION	L	260 SF	1.13%	7.36
DEPRESSION	H	10 SF	0.04%	12.00
LONGITUDINAL/TRANSVERSE CRACKING	L	616 LF	2.67%	9.20
RAVELING	L	1,080 SF	4.69%	6.56
RAVELING	M	224 SF	0.97%	7.79
RUTTING	L	500 SF	2.17%	18.92
WEATHERING	L	21,600 SF	93.75%	5.91

* 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

33.0 % Load 43.0 % Climate/Durability 24.0 % Other

CONRAD AIRPORT

FIRST YEAR LOCAL: 2013 **LOCAL REPAIR COST: \$1,881**

Section	Distress Description	Severity	Quantity	Work Description	Quantity	Cost	Policy
A-1	L & T CR	M	11 LF	Crack Sealing - AC	11 LF	\$28.50	PREV.
R-3	L & T CR	H	10 LF	Crack Sealing - AC	10 LF	\$25.27	PREV.
R-3	L & T CR	M	303 LF	Crack Sealing - AC	303 LF	\$758.24	PREV.
T-4	DEPRESSION	H	10 SF	Patching - AC Deep	27 SF	\$1,069.11	PREV.

FIFTEEN YEAR PROJECTIONS **ESTIMATED AVERAGE ANNUAL COST: \$81,360**

Plan Year: 2013		Estimated Cost: \$216,789					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Global MR + Preventive	\$3,314	\$23,750	\$0	\$0	\$27,064	74	79	
R-3	Global MR + Preventive	\$15,289	\$86,251	\$0	\$0	\$101,539	71	74	
T-1	Major Below Critical	\$0	\$0	\$39,600	\$0	\$39,600	0	100	
T-2	Major Below Critical	\$0	\$0	\$39,600	\$0	\$39,600	0	100	
T-4	Global MR + Preventive	\$3,226	\$5,760	\$0	\$0	\$8,986	61	65	

Plan Year: 2014		Estimated Cost: \$19,002					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Preventive	\$2,340	\$0	\$0	\$0	\$2,340	77	77	
R-3	Preventive	\$13,842	\$0	\$0	\$0	\$13,842	73	73	
T-4	Preventive	\$2,819	\$0	\$0	\$0	\$2,819	63	63	

Plan Year: 2015		Estimated Cost: \$22,833					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Preventive	\$3,411	\$0	\$0	\$0	\$3,411	74	74	
R-3	Preventive	\$16,073	\$0	\$0	\$0	\$16,073	72	72	
T-4	Preventive	\$3,349	\$0	\$0	\$0	\$3,349	61	61	

Plan Year: 2016		Estimated Cost: \$114,527					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Preventive	\$4,485	\$0	\$0	\$0	\$4,485	72	72	
R-3	Preventive	\$18,111	\$0	\$0	\$0	\$18,111	70	71	
T-4	Major Below Critical	\$0	\$0	\$91,932	\$0	\$91,932	59	100	

Plan Year: 2017		Estimated Cost: \$26,721					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Preventive	\$5,870	\$0	\$0	\$0	\$5,870	70	70	
R-3	Preventive	\$20,851	\$0	\$0	\$0	\$20,851	70	70	

Plan Year: 2018		Estimated Cost: \$160,233					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Global MR + Preventive	\$8,315	\$27,533	\$0	\$0	\$35,848	67	72	
R-3	Global MR + Preventive	\$24,397	\$99,988	\$0	\$0	\$124,385	69	71	

Plan Year: 2019		Estimated Cost: \$27,805					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Preventive	\$5,955	\$0	\$0	\$0	\$5,955	70	70	
R-3	Preventive	\$21,792	\$0	\$0	\$0	\$21,792	70	70	
T-4	Preventive	\$58	\$0	\$0	\$0	\$58	88	88	

Plan Year: 2020		Estimated Cost: \$34,353					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Preventive	\$8,576	\$0	\$0	\$0	\$8,576	68	68	
R-3	Preventive	\$25,627	\$0	\$0	\$0	\$25,627	69	69	
T-4	Preventive	\$150	\$0	\$0	\$0	\$150	85	85	

Plan Year: 2021		Estimated Cost: \$40,725					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Preventive	\$11,205	\$0	\$0	\$0	\$11,205	66	66	
R-3	Preventive	\$29,282	\$0	\$0	\$0	\$29,282	68	68	
T-4	Preventive	\$238	\$0	\$0	\$0	\$238	82	82	

Plan Year: 2022		Estimated Cost: \$47,251					PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After	
A-1	Preventive	\$13,871	\$0	\$0	\$0	\$13,871	64	64	
R-3	Preventive	\$32,996	\$0	\$0	\$0	\$32,996	68	68	
T-4	Preventive	\$385	\$0	\$0	\$0	\$385	79	79	

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Plan Year: 2023		Estimated Cost: \$202,253				PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Global MR + Preventive	\$16,610	\$31,918	\$0	\$0	\$48,529	62	66
R-3	Global MR + Preventive	\$37,139	\$115,914	\$0	\$0	\$153,053	67	68
T-4	Preventive	\$671	\$0	\$0	\$0	\$671	77	77

Plan Year: 2024		Estimated Cost: \$50,059				PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Preventive	\$14,451	\$0	\$0	\$0	\$14,451	64	64
R-3	Preventive	\$34,673	\$0	\$0	\$0	\$34,673	68	68
T-4	Preventive	\$935	\$0	\$0	\$0	\$935	75	75

Plan Year: 2025		Estimated Cost: \$57,486				PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Preventive	\$17,351	\$0	\$0	\$0	\$17,351	62	62
R-3	Preventive	\$38,957	\$0	\$0	\$0	\$38,957	67	67
T-4	Preventive	\$1,177	\$0	\$0	\$0	\$1,177	74	74

Plan Year: 2026		Estimated Cost: \$65,715				PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Preventive	\$20,341	\$0	\$0	\$0	\$20,341	60	61
R-3	Preventive	\$43,976	\$0	\$0	\$0	\$43,976	66	66
T-4	Preventive	\$1,398	\$0	\$0	\$0	\$1,398	72	72

Plan Year: 2027		Estimated Cost: \$76,125				PCI		
Section	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	Before	After
A-1	Preventive	\$24,378	\$0	\$0	\$0	\$24,378	59	59
R-3	Preventive	\$50,149	\$0	\$0	\$0	\$50,149	65	65
T-4	Preventive	\$1,599	\$0	\$0	\$0	\$1,599	71	71

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10/9/2012



A-1, Overview



A-1, Surface detail with cracking



A-1, Surface with depression



R-3, Overview

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R-3, Surface detail alligator cracking from over rolling



R-3, Surface detail medium severity crack



T-4, Connector taxiway overview



T-4, Hangar area overview

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10/9/2012

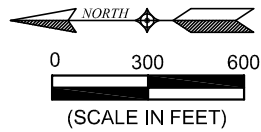
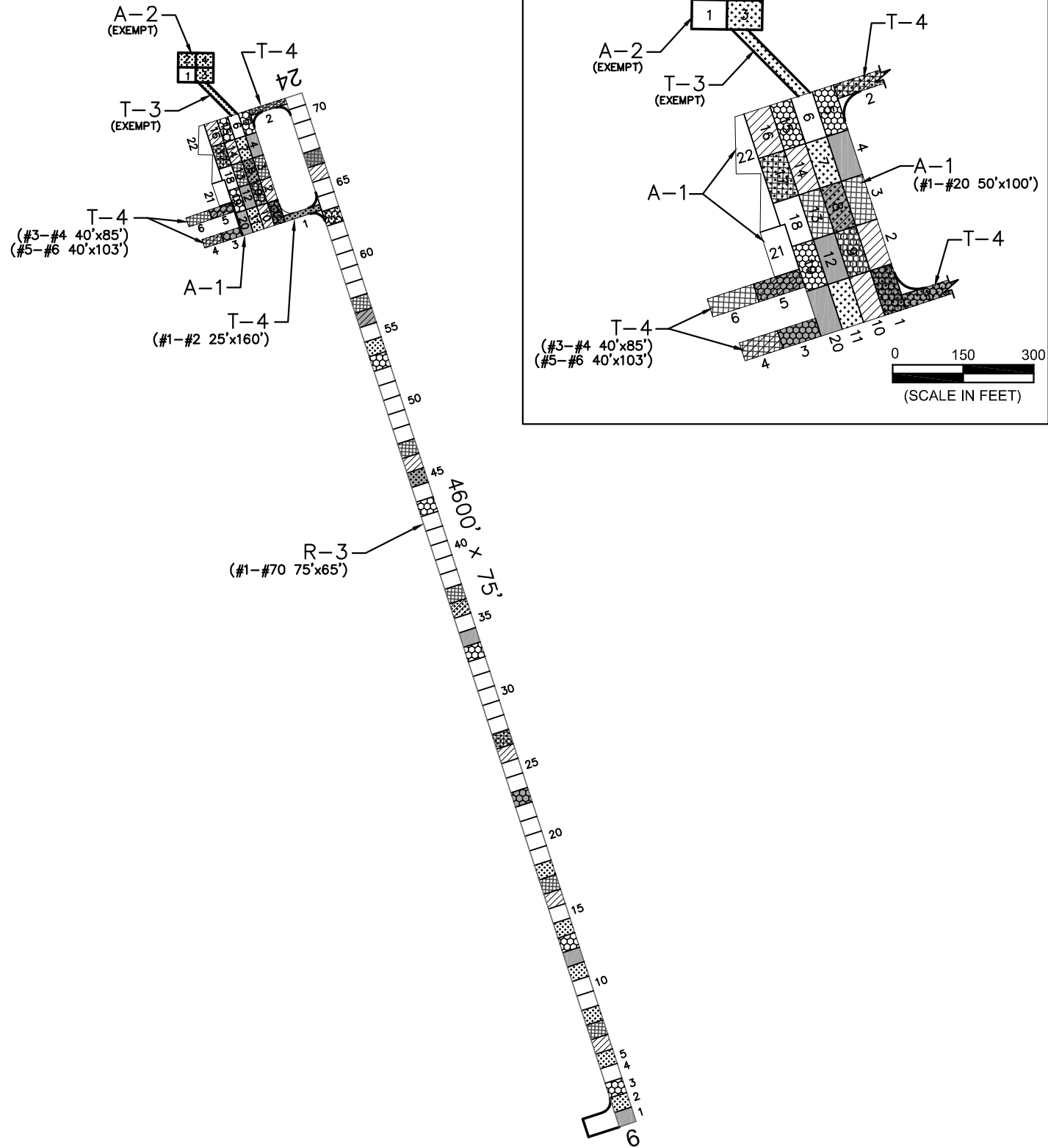


T-4, Surface detail depression with alligator cracking



T-4, Surface detail raveling

CONRAD



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-3	E-7	F7, CBR=2	8" P-154 WITH FABRIC	3" P-208	3.5" P-401		12,500			1, 2, 3
TAXIWAYS										
T-3	E-7	F7, CBR=2	6" P-154	6" P-208	3" AC		16,000			
T-4	E-7	F7, CBR=2		10" P-208	2" P-401	2.5" P-401	12,500			2, 3
APRONS										
A-1	E-7	F7, CBR=2		10" P-208	2" AC	2.5" P-401	12,500			1, 2, 3
A-2	E-7	F7, CBR=2	6" P-154	6" P-208	3" AC	1" P-402	22,000			1

REMARKS:

- 1 AIP-001, 1988, P-402 OVERLAY
- 2 AIP-003, 2002, RECONSTRUCT RUNWAY 6-24 (R-3), OVERLAY TAXIWAYS A & B (T-4), OVERLAY APRON (A-1).
- 3 AIP-004, 2008, CRACK SEAL, FOG SEAL, REMARK RUNWAY 6-24 (R-3), TAXIWAYS (T-3, T-4), AND APRON (A-1).

LEGEND

- 1997 SURVEY AREA
- 2000 SURVEY AREA (NOT SURVEYED)
- 2003 SURVEY AREA
- 2006 SURVEY AREA
- 2009 SURVEY AREA
- 2012 SURVEY AREA

DATE OF PAVEMENT STRENGTH SURVEY:	DEC. 4, 1989
EVALUATED BY:	J. STYBA
DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	OCT. 9, 2012
EVALUATED BY:	M. BECKHOFF

**MONTANA AVIATION SYSTEM PLAN
2012 UPDATE - PAVEMENT CONDITION INDEXES**

CONRAD AIRPORT

CONRAD MONTANA

DATE: NOV. 2012

PREPARED BY:

CONRAD