CHINOOK AIRPORT

Branch: 58A **APRON** **A-1A**

Length: 656 LF **Width:** 141 LF **Area:** 92,627 SF **Last Const. :** 1991 **Family:** 9ACAM
From: A-1B **To:** END **Surface:** AC

Inspections

Samples Surveyed: 5 **Total Samples:** 18 **Last Inspection Date:** 6/16/2009 **PCI: 52**

Sample # 3 **Area:** 5750 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	213 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	134 LF
WEATHERING/RAVELING	L	230 SF
DEPRESSION	L	35 SF
WEATHERING/RAVELING	M	30 SF
LONGITUDINAL/TRANSVERSE CRACKING	H	9 LF
SHOVING	L	8 SF
OIL SPILLAGE	N	3 SF

Sample # 5 **Area:** 5015 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	344 LF
WEATHERING/RAVELING	L	200 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	18 LF
ALLIGATOR CRACKING	M	29 SF
WEATHERING/RAVELING	M	27 SF
PATCHING	L	4 SF
DEPRESSION	M	4 SF
OIL SPILLAGE	N	1 SF

Sample # 9 **Area:** 5015 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	371 LF
WEATHERING/RAVELING	L	200 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	27 LF
WEATHERING/RAVELING	M	50 SF
ALLIGATOR CRACKING	L	14 SF
PATCHING	L	4 SF
DEPRESSION	M	4 SF

Sample # 13 **Area:** 5025 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	405 LF
WEATHERING/RAVELING	L	201 SF
WEATHERING/RAVELING	M	67 SF
DEPRESSION	L	48 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	6 LF
PATCHING	L	15 SF
DEPRESSION	M	4 SF
PATCHING	M	3 SF

Sample # 16 **Area:** 5025 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	401 LF
BLEEDING	N	150 SF
LONGITUDINAL/TRANSVERSE CRACKING	M	39 LF
WEATHERING/RAVELING	L	100 SF
POLISHED AGGREGATE	N	10 SF
LONGITUDINAL/TRANSVERSE CRACKING	H	2 LF
DEPRESSION	L	2 SF
OIL SPILLAGE	N	2 SF
PATCHING	L	1 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	6220 LF	6.71 %	18.14
ALLIGATOR CRACKING	M	104 SF	0.11 %	10.93
LONGITUDINAL/TRANSVERSE CRACKING	M	803 LF	0.87 %	10.55
LONGITUDINAL/TRANSVERSE CRACKING	H	39 LF	0.04 %	7.50
ALLIGATOR CRACKING	L	50 SF	0.05 %	7.00
WEATHERING/RAVELING	M	624 SF	0.67 %	6.81
PATCHING	M	11 SF	0.01 %	6.20
WEATHERING/RAVELING	L	3339 SF	3.60 %	5.65
DEPRESSION	M	43 SF	0.05 %	5.20

CHINOOK AIRPORT

Branch: 58A **APRON** **A-1A**

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
BLEEDING	N	538 SF	0.58 **%**	3.47
SHOVING	L	29 SF	0.03 **%**	2.00
OIL SPILLAGE	N	22 SF	0.02 **%**	2.00
PATCHING	L	86 SF	0.09 **%**	2.00
DEPRESSION	L	305 SF	0.33 **%**	1.88
POLISHED AGGREGATE	N	36 SF	0.04 **%**	1.50

* 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

20.0 **% Load** 62.0 **% Climate/Durability** 18.0 **% Other**

CHINOOK AIRPORT

Branch: 58A **APRON** **A-1B**

Length: 390 LF **Width:** 100 LF **Area:** 39,000 SF **Last Const. :** 2006 **Family:** 9ACAM
From: T-1 **To:** A-1A **Surface:** AAC

Inspections

Samples Surveyed: 4 **Total Samples:** 8 **Last Inspection Date:** 6/16/2009 **PCI: 82**

Sample # 1 **Area:** 5750 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	26 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	4 LF
PATCHING	L	4 SF
OIL SPILLAGE	N	3 SF
DEPRESSION	L	2 SF
WEATHERING/RAVELING	L	2 SF
DEPRESSION	M	2 SF

Sample # 2 **Area:** 5750 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	16 LF
LONGITUDINAL/TRANSVERSE CRACKING	M	3 LF
WEATHERING/RAVELING	M	6 SF
PATCHING	L	3 SF
DEPRESSION	M	3 SF
WEATHERING/RAVELING	L	2 SF
OIL SPILLAGE	N	1 SF

Sample # 4 **Area:** 5750 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	8 LF
PATCHING	L	4 SF
OIL SPILLAGE	N	3 SF
DEPRESSION	L	2 SF
DEPRESSION	M	2 SF
WEATHERING/RAVELING	M	1 SF
BLEEDING	N	1 SF

Sample # 6 **Area:** 5750 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	6 LF
WEATHERING/RAVELING	L	4 SF
OIL SPILLAGE	N	4 SF
PATCHING	L	3 SF
DEPRESSION	L	2 SF
DEPRESSION	M	1 SF
WEATHERING/RAVELING	M	1 SF
BLEEDING	N	1 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
DEPRESSION	M	14 SF	0.03 %	5.20
WEATHERING/RAVELING	M	14 SF	0.03 %	4.00
LONGITUDINAL/TRANSVERSE CRACKING	M	12 LF	0.03 %	4.00
LONGITUDINAL/TRANSVERSE CRACKING	L	95 LF	0.24 %	3.36
OIL SPILLAGE	N	19 SF	0.05 %	2.00
PATCHING	L	24 SF	0.06 %	2.00
WEATHERING/RAVELING	L	14 SF	0.03 %	1.00
DEPRESSION	L	10 SF	0.03 %	0.30
BLEEDING	N	3 SF	0.01 %	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** 66.0 **% Climate/Durability** 34.0 **% Other**

CHINOOK AIRPORT

Branch: 58R **RUNWAY** **R-1**

Length: 4,000 LF **Width:** 75 LF **Area:** 300,000 SF **Last Const. :** 2006 **Family:** 9ACRMU

From: STA 0+00 RWY 8/26 **To:** STA 40+00 RWY 8/26 **Surface:** AAC

Inspections

Samples Surveyed: 7 **Total Samples:** 60 **Last Inspection Date:** 6/16/2009 **PCI: 87**

Sample # 7 **Area:** 4950 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	34 LF
WEATHERING/RAVELING	L	50 SF

Sample # 15 **Area:** 4950 SF

Distress Description	Severity	Quantity
WEATHERING/RAVELING	L	50 SF
LONGITUDINAL/TRANSVERSE CRACKING	L	7 LF
WEATHERING/RAVELING	M	10 SF
OIL SPILLAGE	N	3 SF

Sample # 23 **Area:** 4950 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	154 LF
WEATHERING/RAVELING	L	50 SF
WEATHERING/RAVELING	M	6 SF
OIL SPILLAGE	N	1 SF

Sample # 31 **Area:** 4950 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	78 LF
WEATHERING/RAVELING	L	50 SF
WEATHERING/RAVELING	M	4 SF
PATCHING	L	1 SF

Sample # 39 **Area:** 4950 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	76 LF
WEATHERING/RAVELING	L	50 SF
WEATHERING/RAVELING	M	15 SF

Sample # 47 **Area:** 4950 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	20 LF
WEATHERING/RAVELING	L	50 SF
WEATHERING/RAVELING	M	4 SF

Sample # 55 **Area:** 4950 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	75 LF
WEATHERING/RAVELING	L	50 SF
WEATHERING/RAVELING	M	10 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	3845 LF	1.28 %	5.57
WEATHERING/RAVELING	M	424 SF	0.14 %	4.28
WEATHERING/RAVELING	L	3030 SF	1.01 %	2.63
OIL SPILLAGE	N	35 SF	0.01 %	2.00
PATCHING	L	9 SF	0.00 %	2.00

* 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** 88.0 **% Climate/Durability** 12.0 **% Other**

CHINOOK AIRPORT

Branch: 58T **TAXIWAY** **T-1**

Length: 2,945 LF **Width:** 35 LF **Area:** 103,075 SF **Last Const. :** 2006 **Family:** 9ACRMU
From: APRON **To:** RWY 8/26 **Surface:** AAC

Inspections

Samples Surveyed: 5 **Total Samples:** 21 **Last Inspection Date:** 6/16/2009 **PCI: 92**

Sample # 2 **Area:** 5005 SF

Distress Description	Severity	Quantity
WEATHERING/RAVELING	L	50 SF
WEATHERING/RAVELING	M	5 SF
OIL SPILLAGE	N	2 SF

Sample # 7 **Area:** 5005 SF

Distress Description	Severity	Quantity
WEATHERING/RAVELING	L	50 SF

Sample # 12 **Area:** 5005 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	17 LF
WEATHERING/RAVELING	L	50 SF

Sample # 17 **Area:** 5005 SF

Distress Description	Severity	Quantity
WEATHERING/RAVELING	L	50 SF
SWELLING	L	6 SF
WEATHERING/RAVELING	M	6 SF
PATCHING	L	1 SF

Sample # 22 **Area:** 4656 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	41 LF
WEATHERING/RAVELING	L	32 SF
WEATHERING/RAVELING	M	12 SF

Extrapolated Distress Quantities*

Distress Description	Severity	Quantity	Density	Deduct
WEATHERING/RAVELING	M	96 SF	0.09 %	4.00
LONGITUDINAL/TRANSVERSE CRACKING	L	242 LF	0.24 %	3.32
WEATHERING/RAVELING	L	969 SF	0.94 %	2.52
OIL SPILLAGE	N	8 SF	0.01 %	2.00
PATCHING	L	4 SF	0.00 %	2.00
SWELLING	L	25 SF	0.02 %	1.00

* 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** 80.0 **% Climate/Durability** 20.0 **% Other**

CHINOOK AIRPORT

FIRST YEAR LOCAL:2010 LOCAL REPAIR COST: $14,305

Section	Distress Description	Severity	Quantity	Work Description	Quantity	Cost	Policy
A-1A	L & T CR	H	40 LF	Crack Sealing - AC	40 LF	$59	PREV.
A-1A	OIL SPILLAGE	N	22 SF	Patching - AC Shallow	45 SF	$663	PREV.
A-1A	PATCHING	M	11 SF	Patching - AC Deep	28 SF	$1,034	PREV.
A-1A	L & T CR	M	804 LF	Crack Sealing - AC	804 LF	$1,205	PREV.
A-1A	DEPRESSION	M	44 SF	Patching - AC Deep	74 SF	$2,717	PREV.
A-1A	ALLIGATOR CR	M	104 SF	Patching - AC Deep	150 SF	$5,514	PREV.
A-1B	L & T CR	M	12 LF	Crack Sealing - AC	12 LF	$18	PREV.
A-1B	OIL SPILLAGE	N	19 SF	Patching - AC Shallow	41 SF	$601	PREV.
A-1B	DEPRESSION	M	14 SF	Patching - AC Deep	33 SF	$1,198	PREV.
R-1	OIL SPILLAGE	N	35 SF	Patching - AC Shallow	63 SF	$935	PREV.
T-1	OIL SPILLAGE	N	9 SF	Patching - AC Shallow	24 SF	$360	PREV.

FIFTEEN YEAR PROJECTIONS: ESTIMATED AVERAGE ANNUAL COST: $78,353

PLAN YEAR: 2010 ESTIMATED COST: $14,305

SectionI	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI before	PCI after
A-1A	Basic Prev.	$11,193				$11,193	50	50
A-1B	Basic Prev.	$1,817				$1,817	80	80
R-1	Basic Prev.	$935				$935	86	86
T-1	Basic Prev.	$360				$360	90	90

PLAN YEAR: 2011 ESTIMATED COST: $206,528

SectionI	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI before	PCI after
A-1A	Reconstruct			$201,888		$201,888	47	100
A-1B	Basic Prev.	$933				$933	77	77
R-1	Basic Prev.	$3,286				$3,286	83	83
T-1	Basic Prev.	$421				$421	88	88

PLAN YEAR: 2012 ESTIMATED COST: $6,441

SectionI	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI before	PCI after
A-1B	Basic Prev.	$1,224				$1,224	74	74
R-1	Basic Prev.	$4,384				$4,384	81	81
T-1	Basic Prev.	$833				$833	85	85

PLAN YEAR: 2013 ESTIMATED COST: $8,497

SectionI	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI before	PCI after
A-1B	Basic Prev.	$1,506				$1,506	71	71
R-1	Basic Prev.	$5,772				$5,772	79	79
T-1	Basic Prev.	$1,219				$1,219	83	83

PLAN YEAR: 2014 ESTIMATED COST: $11,148

SectionI	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI before	PCI after
A-1A	Basic Prev.	$351				$351	88	88
A-1B	Basic Prev.	$1,699				$1,699	68	68
R-1	Basic Prev.	$7,500				$7,500	77	77
T-1	Basic Prev.	$1,598				$1,598	81	81

PLAN YEAR: 2015 ESTIMATED COST: $14,158

SectionI	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI before	PCI after
A-1A	Basic Prev.	$899				$899	84	84
A-1B	Basic Prev.	$1,842				$1,842	65	65
R-1	Basic Prev.	$9,292				$9,292	74	74
T-1	Basic Prev.	$2,124				$2,124	78	78

PLAN YEAR: 2016 ESTIMATED COST: $680,725

SectionI	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI before	PCI after
A-1A	Prev. & Fog Seal	$1,413	$18,526			$19,939	81	88
A-1B	Basic Prev.	$1,986				$1,986	63	63
R-1	Prev. & Thin AC	$11,160	$480,001			$491,161	72	83
T-1	Prev. & Thin AC	$2,720	$164,920			$167,640	76	88

PLAN YEAR: 2017 ESTIMATED COST: $8,263

SectionI	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	PCI before	PCI after
A-1A	Basic Prev.	$900				$900	84	84
A-1B	Basic Prev.	$2,138				$2,138	60	60
R-1	Basic Prev.	$4,390				$4,390	81	81
T-1	Basic Prev.	$835				$835	85	85

CHINOOK AIRPORT

PLAN YEAR: 2018					ESTIMATED COST:	$10,853	PCI	
SectionI	**Maintenance**	**Local**	**Global**	**Major<Crit**	**Major>Crit**	**Total**	**before**	**after**
A-1A	Basic Prev.	$1,415				$1,415	81	81
A-1B	Basic Prev.	$2,447				$2,447	57	57
R-1	Basic Prev.	$5,772				$5,772	79	79
T-1	Basic Prev.	$1,219				$1,219	83	83

PLAN YEAR: 2019					ESTIMATED COST:	$13,954	PCI	
SectionI	**Maintenance**	**Local**	**Global**	**Major<Crit**	**Major>Crit**	**Total**	**before**	**after**
A-1A	Basic Prev.	$2,091				$2,091	78	78
A-1B	Basic Prev.	$2,765				$2,765	54	54
R-1	Basic Prev.	$7,500				$7,500	77	77
T-1	Basic Prev.	$1,598				$1,598	81	81

PLAN YEAR: 2020					ESTIMATED COST:	$17,300	PCI	
SectionI	**Maintenance**	**Local**	**Global**	**Major<Crit**	**Major>Crit**	**Total**	**before**	**after**
A-1A	Basic Prev.	$2,789				$2,789	74	74
A-1B	Basic Prev.	$3,095				$3,095	51	51
R-1	Basic Prev.	$9,292				$9,292	74	74
T-1	Basic Prev.	$2,124				$2,124	78	78

PLAN YEAR: 2021					ESTIMATED COST:	$119,548	PCI	
SectionI	**Maintenance**	**Local**	**Global**	**Major<Crit**	**Major>Crit**	**Total**	**before**	**after**
A-1A	Prev. & Fog Seal	$3,462	$18,526			$21,988	72	78
A-1B	Reconstruct			$83,670		$83,670	48	100
R-1	Basic Prev.	$11,168				$11,168	72	72
T-1	Basic Prev.	$2,722				$2,722	76	76

PLAN YEAR: 2022					ESTIMATED COST:	$18,888	PCI	
SectionI	**Maintenance**	**Local**	**Global**	**Major<Crit**	**Major>Crit**	**Total**	**before**	**after**
A-1A	Basic Prev.	$2,789				$2,789	74	74
R-1	Basic Prev.	$12,754				$12,754	69	69
T-1	Basic Prev.	$3,345				$3,345	74	74

PLAN YEAR: 2023					ESTIMATED COST:	$21,248	PCI	
SectionI	**Maintenance**	**Local**	**Global**	**Major<Crit**	**Major>Crit**	**Total**	**before**	**after**
A-1A	Basic Prev.	$3,459				$3,459	72	72
R-1	Basic Prev.	$13,796				$13,796	66	66
T-1	Basic Prev.	$3,992				$3,992	71	71

PLAN YEAR: 2024					ESTIMATED COST:	$23,433	PCI	
SectionI	**Maintenance**	**Local**	**Global**	**Major<Crit**	**Major>Crit**	**Total**	**before**	**after**
A-1A	Basic Prev.	$3,974				$3,974	69	69
A-1B	Basic Prev.	$147				$147	88	88
R-1	Basic Prev.	$14,844				$14,844	64	64
T-1	Basic Prev.	$4,467				$4,467	68	68

CHINOOK AIRPORT

5/16/2009

A1-A, overview with weeping stains

A1-A, surface detail with crack

A1-B, overview

A1-B, surface detail

CHINOOK AIRPORT

5/16/2009

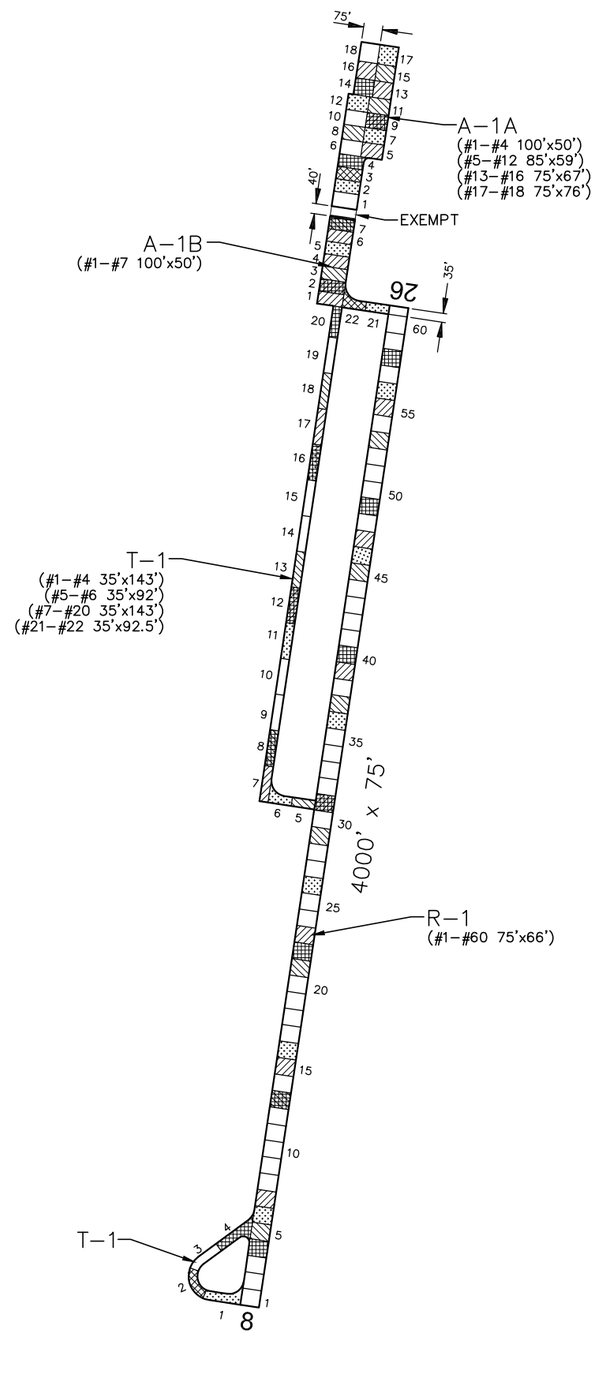
T-1, overview

R-1, surface detail with rodent damage

R-1, surface detail with paving joint

R-1, overview with cracks

CHINOOK



PAVEMENT STRENGTH SURVEY/PAVEMENT CONDITION SURVEY

CHINOOK

PAVE. IDENT.	SOIL CLASS	SUB GRADE CLASS	SUBBASE COURSE	BASE COURSE	SURFACE COURSE	OVERLAY	PAVEMENT STRENGTH MAX. GROSS LOAD (LBS) SINGLE	DUAL	DUAL TAN.	REMARKS
RUNWAYS										
R–1	E–7	F7		10" P–208	3" P–401	2" P–401,FABRIC	12,500			1 2
TAXIWAYS										
T–1	E–7	F7		10" P–208	3" P–401	2" P–401,FABRIC	12,500			1 2
APRONS										
A–1A	E–7	F7		10" P–208	3" P–401	P–609	12,500			1 2
A–1B	E–7	F7		10" P–208	3" P–401	2" P–401,FABRIC	12,500			1 2

REMARKS:

1 AIP–03 & –04, 1991 & '92, ALL NEW CONSTRUCTION.

2 AIP–007–2005/008–2006, REHABILITATE RUNWAY 8–26 (CROWN RESTORATION AND OVERLAY); OVERLAY TAXIWAY (T–1) AND APRON (A–1B); FOG SEAL APRON (A–1A).

LEGEND

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

DATE OF PAVEMENT STRENGTH SURVEY:	
EVALUATED BY:	
DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	JUNE 16, 2009
EVALUATED BY:	B. BURKLAND

MONTANA AVIATION SYSTEM PLAN
2009 UPDATE - PAVEMENT CONDITION INDEXES

EDGAR G. OBIE FIELD

PREPARED FOR: MONTANA AERONAUTICS DIVISION

CHINOOK
MONTANA

DATE: NOV. 2009

PREPARED BY: RPA