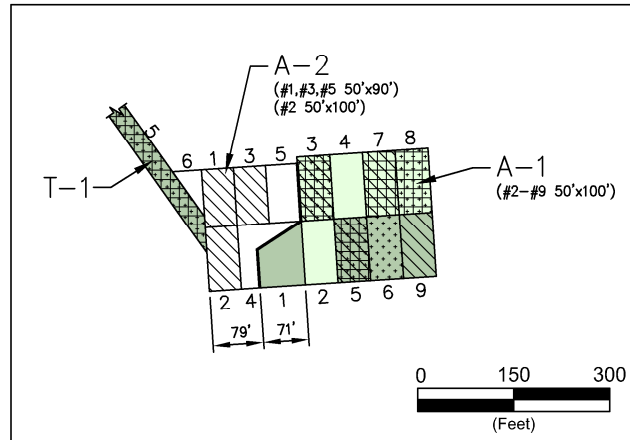
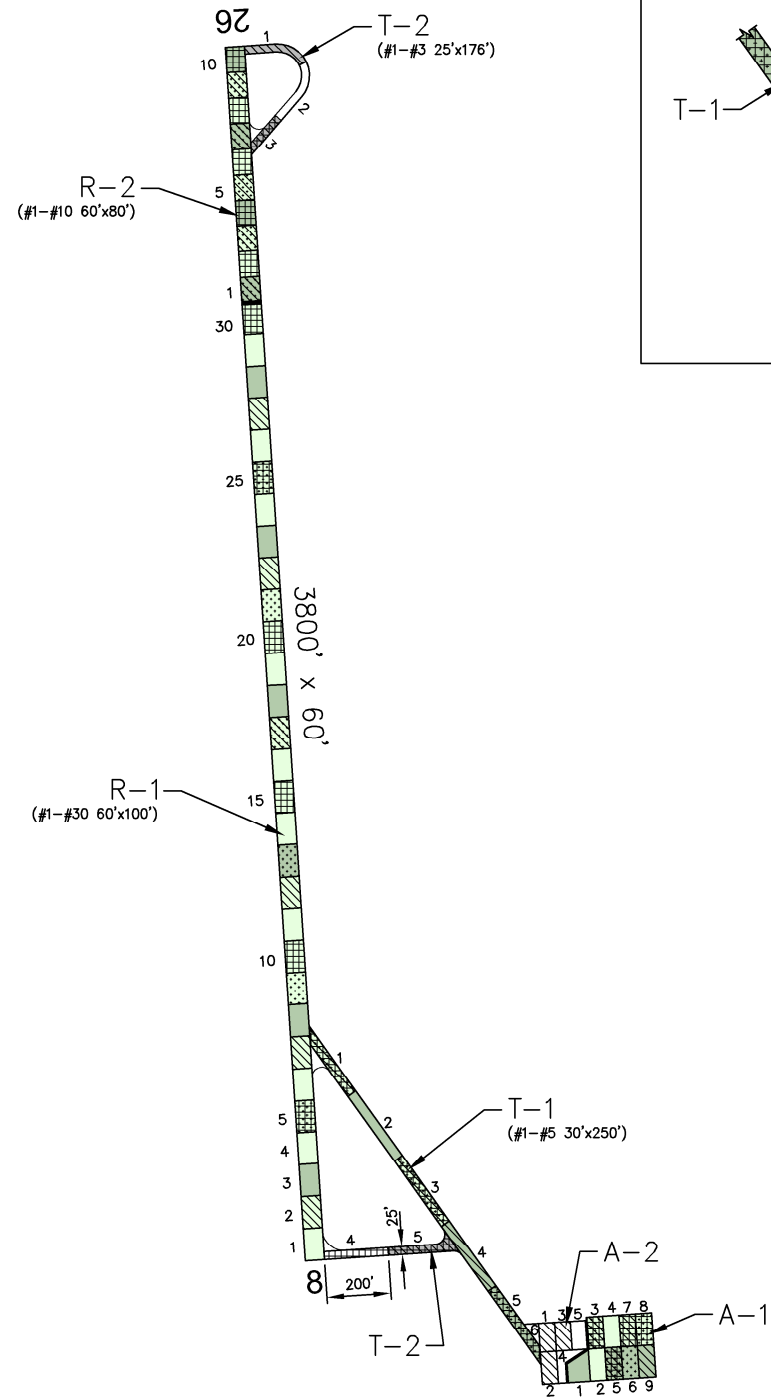


# CULBERTSON



# 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-1	E-7	F7		8" P-208	P-609, 1.5" AC	1.5" P-401, P-609	12,500			1,3,4,5
R-2		CBR=5		8" P-208	3" P-401		12,500			2,3,4,5
<b>TAXIWAYS</b>										
T-1	E-7	F7		8" P-208	P-609, 1.5" AC	1.5" P-401, P-609	12,500			1,3,4,5
T-2		CBR=5		8" P-208	3" P-401		12,500			2,3,4,5
<b>APRONS</b>										
A-1	E-7	F7, CBR=5		8" P-208	P-609, 1.5" AC	1.5" P-401, P-609	12,500			1,3,4,5
A-2			6" P-152	11.5" P-208	4.5" P-403	P-609	12,500			4,5

**REMARKS:**

- ADAP-01, 1976, OVERLAY RUNWAY, CONNECTING TAXIWAY, AND APRON.
- AIP-02, 1993, OVERLAY ALL PAVEMENTS; WIDEN AND EXTEND RUNWAY; CONSTRUCT TAXIWAY (T-2); PAVEMENT STRENGTH PER DESIGN REPORT.
- AIP-03, 2001, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS.
- AIP-006-2009, MILL AND OVERLAY RUNWAY, TAXIWAYS, AND APRON; EXPAND APRON (A-2).
- AIP-009-2014, CRACK SEAL, FOG SEAL, AND REMARK ALL PAVEMENTS.

**LEGEND**

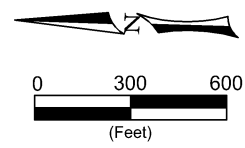
- 2003 SURVEY AREA
- 2006 SURVEY AREA
- 2009 SURVEY AREA (NOT SURVEYED)
- 2012 SURVEY AREA
- 2015 SURVEY AREA
- MAINTAIN: PCI > 60
- TRANSITION: PCI 45 TO 60
- RECONSTRUCT: PCI < 45

DATE OF PAVEMENT STRENGTH SURVEY:	SEPT. 23, 1983
EVALUATED BY:	C. NEW
DATE OF MOST RECENT PAVEMENT CONDITION SURVEY:	SEPT. 1, 2015
EVALUATED BY:	B. BURKLAND
LOCATION:	CULBERTSON MONTANA

**MONTANA AVIATION SYSTEM PLAN  
2015 UPDATE - PAVEMENT CONDITION INDEXES**

**BIG SKY FIELD  
(S85)**

Date: DECEMBER 2015      Prepared For: MONTANA DEPARTMENT OF TRANSPORTATION      Prepared By: RPA Robert Peccia & Associates, Inc.



CULBERTSON

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# CULBERTSON AIRPORT

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9/1/2015



**A-1**, Surface detail with depressions



**A-1**, Overview



**R-1**, Overview



**R-1**, Surface detail with open core hole



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# CULBERTSON AIRPORT

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9/1/2015



**R-2, Overview**



**R-2, Surface detail with raveling**



**T-1, Surface detail with gouge**



**T-1, Overview**

# CULBERTSON AIRPORT

Branch: 34A

APRON

**A-1**

**Length:** 271 LF    **Width:** 200 LF    **Area:** 47,000 SF    **Last Const. :** 2009    **Family:** ACAM15  
**From:** ENTIRE APRON    **To:**    **Surface:** AAC

**Inspections**

**Samples Surveyed:** 4    **Total Samples:** 9    **Last Inspection Date (RPA)** 9/1/2015    **PCI:** 89

**Sample # 3**    **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	64 LF
WEATHERING	L	50 SF
RAVELING	L	25 SF
DEPRESSION	L	16 SF
PATCHING	L	6 SF
SWELLING	L	4 SF

**Sample # 5**    **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	41 LF
WEATHERING	L	75 SF
RAVELING	L	25 SF
DEPRESSION	L	20 SF
OIL SPILLAGE	N	1 SF

**Sample # 6**    **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	52 LF
WEATHERING	L	70 SF
RAVELING	L	25 SF
PATCHING	L	3 SF

**Sample # 8**    **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	28 LF
WEATHERING	L	50 SF
RAVELING	L	25 SF
PATCHING	L	6 SF
OIL SPILLAGE	N	6 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	435 LF	0.93 %	4.79
OIL SPILLAGE	N	16 SF	0.03 %	2.00
PATCHING	L	35 SF	0.07 %	2.00
RAVELING	L	235 SF	0.50 %	1.77
SWELLING	L	9 SF	0.02 %	1.00
DEPRESSION	L	85 SF	0.18 %	0.63
WEATHERING	L	576 SF	1.22 %	0.55

\* 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                      72.0 % Climate/Durability                      28.0 % Other

# CULBERTSON AIRPORT

Branch: 34R

**RUNWAY**

**R-1**

**Length:** 3,000 LF **Width:** 60 LF **Area:** 180,000 SF **Last Const. :** 2009 **Family:** ACRML15  
**From:** STA 0+00 RWY 7-25 **To:** STA 30+00 RWY 7-25 **Surface:** AC

**Inspections**

**Samples Surveyed:** 6 **Total Samples:** 30 **Last Inspection Date (RPA)** 9/1/2015 **PCI:** **86**

**Sample # 5** **Area:** 6000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	181 LF
WEATHERING	L	120 SF
RAVELING	L	30 SF
PATCHING	H	1 SF

**Sample # 9** **Area:** 6000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	230 LF
WEATHERING	L	120 SF
RAVELING	L	30 SF

**Sample # 13** **Area:** 6000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	154 LF
WEATHERING	L	120 SF
DEPRESSION	L	2 SF
RAVELING	M	2 SF

**Sample # 17** **Area:** 6000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	73 LF
WEATHERING	L	120 SF
RAVELING	L	30 SF

**Sample # 21** **Area:** 6000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	64 LF
WEATHERING	L	120 SF
RAVELING	L	15 SF
PATCHING	L	2 SF

**Sample # 25** **Area:** 6000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	91 LF
WEATHERING	L	120 SF
RAVELING	L	60 SF
DEPRESSION	L	1 SF
PATCHING	M	1 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
PATCHING	H	5 SF	0.00 %	15.50
LONGITUDINAL/TRANSVERSE CRACKING	L	3965 LF	2.20 %	7.95
PATCHING	M	5 SF	0.00 %	6.20
RAVELING	M	10 SF	0.01 %	4.00
PATCHING	L	10 SF	0.01 %	2.00
RAVELING	L	825 SF	0.46 %	1.69
WEATHERING	L	3600 SF	2.00 %	0.68
DEPRESSION	L	15 SF	0.01 %	0.30

\* 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 99.0 % Climate/Durability 1.0 % Other



# CULBERTSON AIRPORT

Branch: 34R

**RUNWAY**

**R-2**

**Length:** 800 LF **Width:** 60 LF **Area:** 48,000 SF **Last Const. :** 2009  
**From:** STA 30+00 RWY 7-25 **To:** STA 38+00 RWY 7-25

**Family:** ACRML15  
**Surface:** AC

## Inspections

**Samples Surveyed:** 5      **Total Samples:** 10      **Last Inspection Date (RPA)** 9/1/2015      **PCI:** 90

<b>Sample # 1</b>	<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4800 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	44 LF	
	WEATHERING	L	96 SF	
	OIL SPILLAGE	N	1 SF	
<b>Sample # 3</b>	<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4800 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	82 LF	
	WEATHERING	L	96 SF	
	RAVELING	L	10 SF	
<b>Sample # 5</b>	<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4800 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	146 LF	
	WEATHERING	L	96 SF	
	PATCHING	L	1 SF	
<b>Sample # 7</b>	<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4800 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	129 LF	
	WEATHERING	L	96 SF	
	DEPRESSION	L	13 SF	
<b>Sample # 9</b>	<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>	<b>Area:</b> 4800 SF
	LONGITUDINAL/TRANSVERSE CRACKING	L	86 LF	
	WEATHERING	L	96 SF	
	RAVELING	L	10 SF	

## Extrapolated Distress Quantities\*

<b>Distress Description</b>	<b>Severity</b>	<b>Quantity</b>	<b>Density</b>	<b>Deduct</b>
LONGITUDINAL/TRANSVERSE CRACKING	L	974 LF	2.03 %	7.49
OIL SPILLAGE	N	2 SF	0.00 %	2.00
PATCHING	L	2 SF	0.00 %	2.00
RAVELING	L	40 SF	0.08 %	1.00
WEATHERING	L	960 SF	2.00 %	0.68
DEPRESSION	L	26 SF	0.05 %	0.30

\* 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**                                      83.0 % **Climate/Durability**                                      17.0 % **Other**

**CULBERTSON AIRPORT**

Branch: 34T

**TAXIWAY**

**T-1**

**Length:** 1,250 LF **Width:** 20 LF **Area:** 25,000 SF **Last Const. :** 2009 **Family:** ACRML15  
**From:** RUNWAY 7-25 **To:** APRON **Surface:** AC

**Inspections**

**Samples Surveyed:** 3 **Total Samples:** 5 **Last Inspection Date (RPA)** 9/1/2015 **PCI:** 85

**Sample # 1** **Area:** 7000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	61 LF
WEATHERING	L	80 SF
RAVELING	L	45 SF
RAVELING	M	2 SF

**Sample # 3** **Area:** 7000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	157 LF
WEATHERING	L	80 SF
RAVELING	L	45 SF
PATCHING	L	1 SF
PATCHING	M	1 SF

**Sample # 5** **Area:** 5000 SF

Distress Description	Severity	Quantity
LONGITUDINAL/TRANSVERSE CRACKING	L	123 LF
WEATHERING	L	80 SF
RAVELING	L	45 SF
PATCHING	L	1 SF
RAVELING	M	1 SF

**Extrapolated Distress Quantities\***

Distress Description	Severity	Quantity	Density	Deduct
LONGITUDINAL/TRANSVERSE CRACKING	L	449 LF	1.79 %	6.87
PATCHING	M	1 SF	0.01 %	6.20
RAVELING	M	4 SF	0.02 %	4.00
RAVELING	L	178 SF	0.71 %	2.14
PATCHING	L	3 SF	0.01 %	2.00
WEATHERING	L	316 SF	1.26 %	0.56

\* 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 100.0 % Climate/Durability 0.0 % Other

**CULBERTSON AIRPORT****FIFTEEN YEAR PROJECTIONS: ESTIMATED AVERAGE ANNUAL COST: \$28,118**

PLAN YEAR: 2016			ESTIMATED COST:			\$85,653	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Prev. & Seal Coat	\$180	\$7,000			\$7,180	83	89
R-1	Prev. & Seal Coat	\$1,142	\$50,400			\$51,542	84	90
R-2	Prev. & Seal Coat	\$139	\$13,440			\$13,579	87	95
A-1	Prev. & Seal Coat	\$192	\$13,160			\$13,352	86	94
PLAN YEAR: 2017			ESTIMATED COST:			\$736	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-1	Basic Prev.	\$07				\$7	90	90
R-1	Basic Prev.	\$617				\$617	87	87
T-1	Basic Prev.	\$112				\$112	86	86
PLAN YEAR: 2018			ESTIMATED COST:			\$1,659	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-1	Basic Prev.	\$183				\$183	86	87
R-1	Basic Prev.	\$1,153				\$1,153	84	84
R-2	Basic Prev.	\$139				\$139	87	87
T-1	Basic Prev.	\$184				\$184	83	83
PLAN YEAR: 2019			ESTIMATED COST:			\$2,532	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
A-1	Basic Prev.	\$355				\$355	83	83
R-1	Basic Prev.	\$1,639				\$1,639	82	82
T-1	Basic Prev.	\$248				\$248	81	81
R-2	Basic Prev.	\$290				\$290	84	85
PLAN YEAR: 2020			ESTIMATED COST:			\$3,615	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-2	Basic Prev.	\$427				\$427	82	82
T-1	Basic Prev.	\$388				\$388	79	79
R-1	Basic Prev.	\$2,277				\$2,277	80	80
A-1	Basic Prev.	\$523				\$523	80	80
PLAN YEAR: 2021			ESTIMATED COST:			\$103,384	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Prev. & Seal Coat	\$585	\$8,115			\$8,700	77	81
R-1	Prev. & Seal Coat	\$3,747	\$58,428			\$62,175	78	82
R-2	Prev. & Seal Coat	\$552	\$15,581			\$16,133	80	85
A-1	Prev. & Seal Coat	\$1,120	\$15,256			\$16,376	77	84
PLAN YEAR: 2022			ESTIMATED COST:			\$3,575	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-2	Basic Prev.	\$438				\$438	82	83
R-1	Basic Prev.	\$2,216				\$2,216	80	80
T-1	Basic Prev.	\$386				\$386	79	79
A-1	Basic Prev.	\$535				\$535	80	81
PLAN YEAR: 2023			ESTIMATED COST:			\$6,082	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Basic Prev.	\$596				\$596	78	78
R-1	Basic Prev.	\$3,799				\$3,799	78	78
A-1	Basic Prev.	\$1,114				\$1,114	78	78
R-2	Basic Prev.	\$573				\$573	80	80
PLAN YEAR: 2024			ESTIMATED COST:			\$8,805	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Basic Prev.	\$797				\$797	76	76
A-1	Basic Prev.	\$1,762				\$1,762	75	75
R-2	Basic Prev.	\$965				\$965	79	79
R-1	Basic Prev.	\$5,281				\$5,281	77	77
PLAN YEAR: 2025			ESTIMATED COST:			\$11,484	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Basic Prev.	\$993				\$993	75	75
R-1	Basic Prev.	\$6,707				\$6,707	75	75
A-1	Basic Prev.	\$2,404				\$2,404	73	73
R-2	Basic Prev.	\$1,380				\$1,380	77	77



PLAN YEAR: 2026			ESTIMATED COST:			\$127,045	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-1	Prev. & Seal Coat	\$8,138	\$67,734			\$75,871	74	77
T-1	Prev. & Seal Coat	\$1,192	\$9,407			\$10,599	74	76
A-1	Prev. & Seal Coat	\$3,052	\$17,686			\$20,738	70	76
R-2	Prev. & Seal Coat	\$1,775	\$18,062			\$19,837	76	79
PLAN YEAR: 2027			ESTIMATED COST:			\$11,870	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-1	Basic Prev.	\$6,947				\$6,947	76	76
A-1	Basic Prev.	\$2,478				\$2,478	73	73
R-2	Basic Prev.	\$1,417				\$1,417	77	77
T-1	Basic Prev.	\$1,028				\$1,028	75	75
PLAN YEAR: 2028			ESTIMATED COST:			\$14,716	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Basic Prev.	\$1,240				\$1,240	74	74
R-2	Basic Prev.	\$1,839				\$1,839	76	76
R-1	Basic Prev.	\$8,469				\$8,469	74	74
A-1	Basic Prev.	\$3,168				\$3,168	71	71
PLAN YEAR: 2029			ESTIMATED COST:			\$18,277	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
T-1	Basic Prev.	\$1,464				\$1,464	73	73
R-2	Basic Prev.	\$2,259				\$2,259	74	75
A-1	Basic Prev.	\$4,500				\$4,500	68	69
R-1	Basic Prev.	\$10,054				\$10,054	73	73
PLAN YEAR: 2030			ESTIMATED COST:			\$22,335	PCI	
SectionID	Maintenance	Local	Global	Major<Crit	Major>Crit	Total	before	after
R-2	Basic Prev.	\$2,689				\$2,689	73	73
T-1	Basic Prev.	\$1,711				\$1,711	71	71
R-1	Basic Prev.	\$11,785				\$11,785	72	72
A-1	Basic Prev.	\$6,150				\$6,150	66	66