BURNS MUNICIPAL AIRPORT

This report describes how your Pavement Maintenance Management Program (PMMP) was developed. Your Program was developed as part of the Oregon Continuous Aviation System Plan sponsored in part by the Oregon Department of Aviation and the Federal Aviation Administration (FAA). The information and data contained in this report ensures you comply with the requirements of FAA Grant Assurance Number 11 which states that any airport requesting federal funds for pavement improvement projects must have implemented a pavement maintenance management program.

DATA COLLECTION

To determine how your pavements were constructed and their age, a records review was conducted. Figure BU-1 shows the records review results. This figure identifies pavement boundaries, dimensions, pavement layer types, thicknesses and dates of construction. The most recent construction date for each pavement can also be found in the Section Condition Report in Appendix 2. Figure BU-1 and the information contained in Appendices 1, 2 and 4 ensure that your airport complies with the "pavement inventory" requirement of FAA's PMMP guidelines.

The pavements at your airport were divided into branches, sections and sample units in accordance with the methodology outlined in the current edition of ASTM D5430, *Standard Test Method for Airport Condition Index Surveys*. The branches, sections and sample units established at your airport are shown in Figure BU-2. A Branch Condition Report showing all branches, their associated areas, and their area-weighted average condition is provided in Appendix 1. Additionally, the Appendix 2 Section Condition Report provides information used to define each branch and section in the PAVER database.

Using the branch, section and sample unit divisions established, a visual condition survey was conducted at Burns Municipal Airport in June 2017. During the inspection, pavement defects were identified and measured in accordance with the methodology outlined in ASTM D5430. This inspection ensures your airport complies with the "detailed inspection" requirement of FAA's PMMP guidelines. After collection, the data were entered into the PAVER software for analysis. These data are reproduced in the Re-Inspection Report attached as Appendix 4.

The PAVER database updated during this project ensures your airport complies with the "record keeping and information retrieval" requirements of FAA's PMMP guidelines.

Figure BU-1. Airport Layout, Dimensions and Pavement Cross-Sections.

Burns Municipal Airport

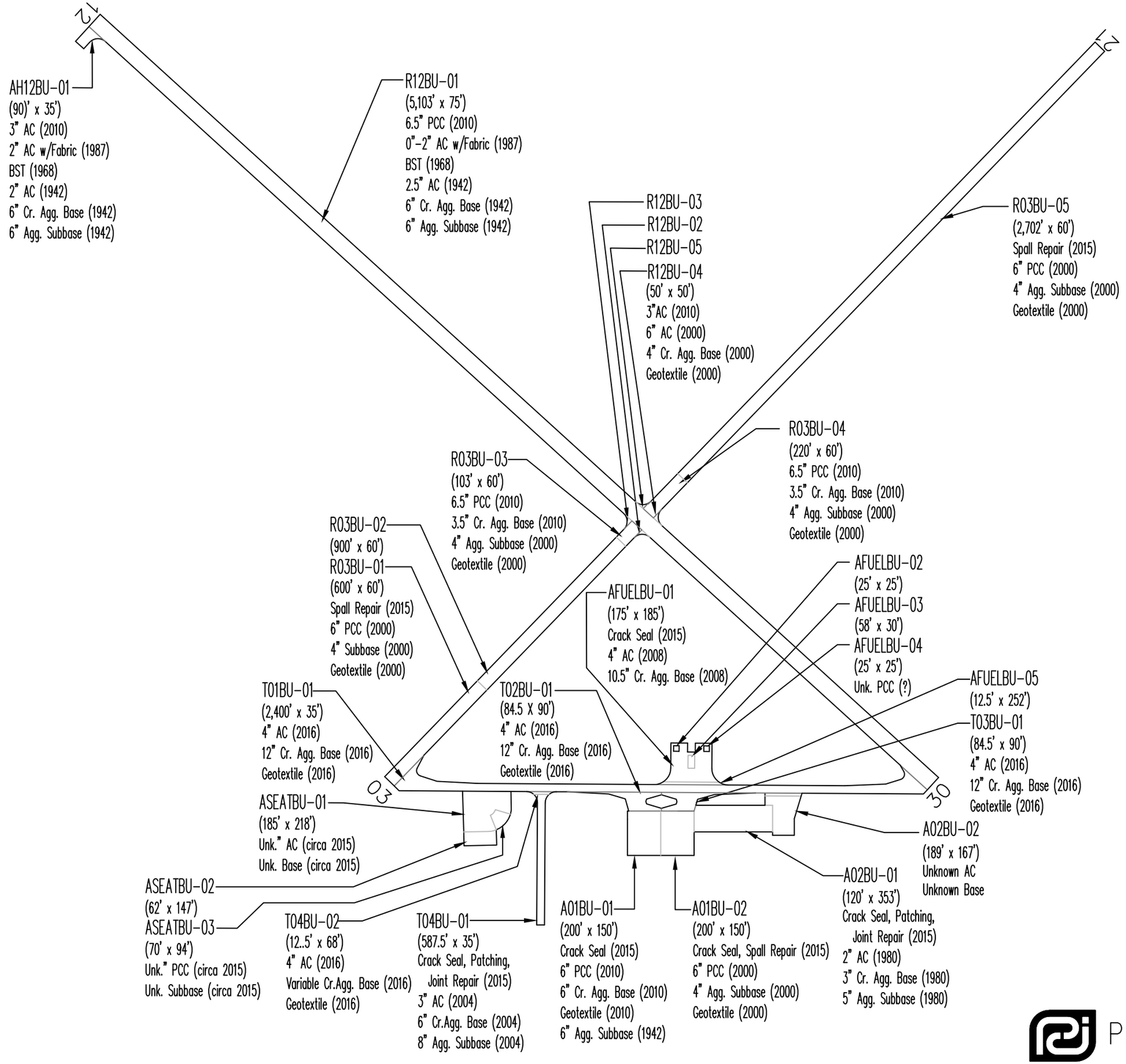

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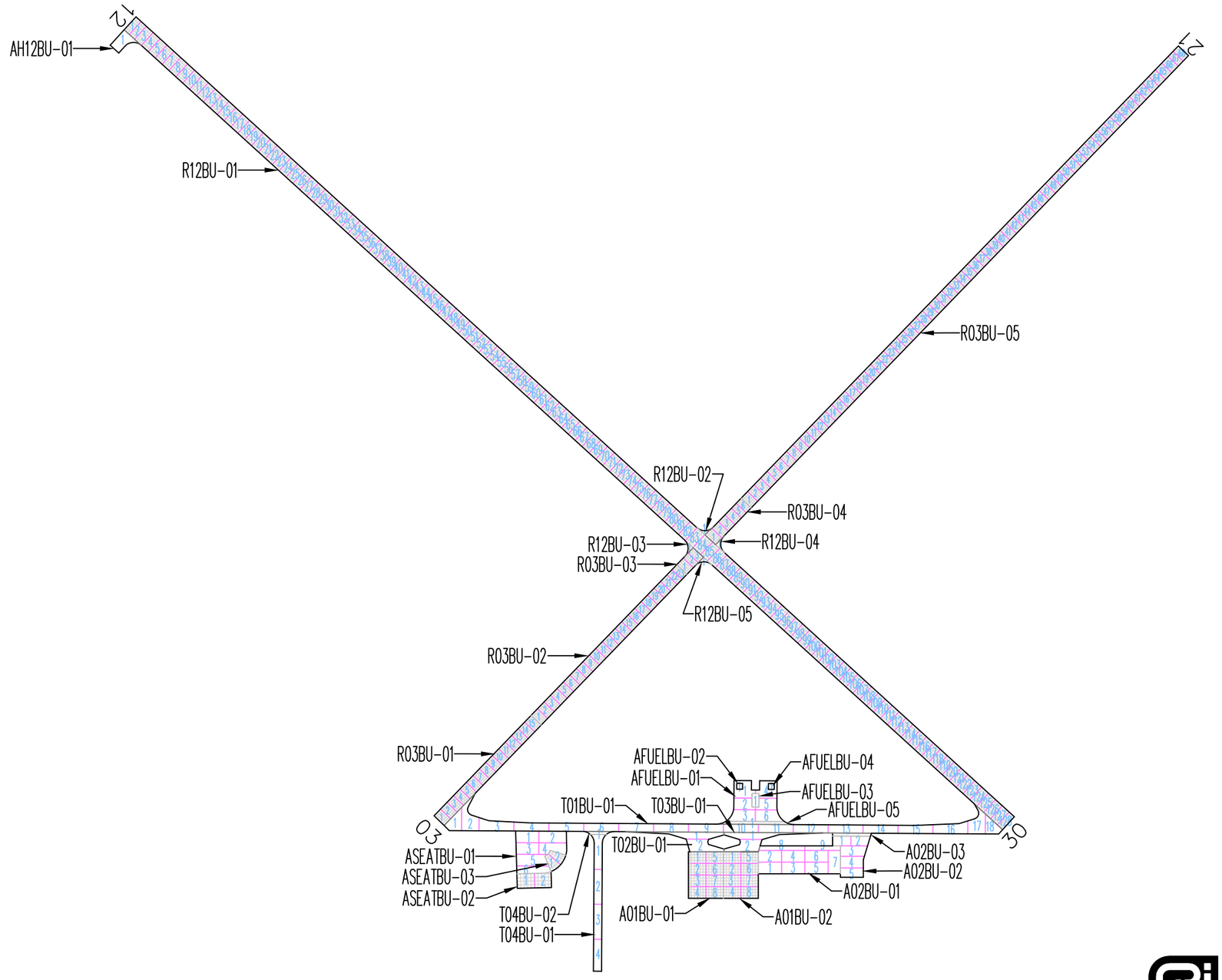
Figure BU-2. Pavement Branch, Section and Sample Unit Layout.
Burns Municipal Airport



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RESULTS

Using the data collected during the visual inspection, the PAVER software was used to calculate an area-weighted average Pavement Condition Index (PCI) for each pavement section inspected using the sample units evaluated. Using each section's PCI, a Pavement Condition Rating (PCR) was assigned. The PCIs measured during this inspection are shown in Table 1. The table also contains PCIs from past inspections as well as projected PCIs for 2022 and 2027. The projections were based on pavement deterioration models developed by PAVER using the inspection data from other pavements in the same airport category as your airport, located in the same climatic region, and with the same surface type and use.

The Branch Condition Report in Appendix 1 summarizes current pavement condition by branch while the Section Condition Report in Appendix 2 lists pavement condition by section. The current Pavement Condition Rating (PCR) is shown graphically in Figure BU-3.

Table 1. Past, Present and Future Pavement Condition Indices.

Branch	Section	Inspections			Forecast	
		2011	2014	2017	2022	2027
A01BU	01	92	94	97	91	86
A01BU	02	88	90	96	90	85
A02BU	01	47	45	31	23	15
A02BU	02	88	63	63	60	55
A02BU	03	---	---	100	84	75
AFUELBU	01	100	92	76	70	66
AFUELBU	02	---	---	89	85	81
AFUELBU	03	---	---	95	89	85
AFUELBU	04	---	---	81	79	77
AFUELBU	05	---	---	100	86	68
AH12BU	01			100	86	68
ASEATBU	01	---	---	99	84	75
ASEATBU	02	---	---	99	93	87
ASEATBU	03	---	---	99	93	87
R03BU	01	90	85	91	86	81
R03BU	02	91	89	98	93	88
R03BU	03	95	95	100	95	90
R03BU	04	97	96	100	95	90
R03BU	05	94	92	100	95	90
R12BU	01	96	97	99	94	89
R12BU	02	100	100	100	87	82
R12BU	03	100	100	96	83	82
R12BU	04	100	100	100	87	82
R12BU	05	100	100	100	87	82

Figure BU-3. Pavement Condition in June 2017.
Burns Municipal Airport

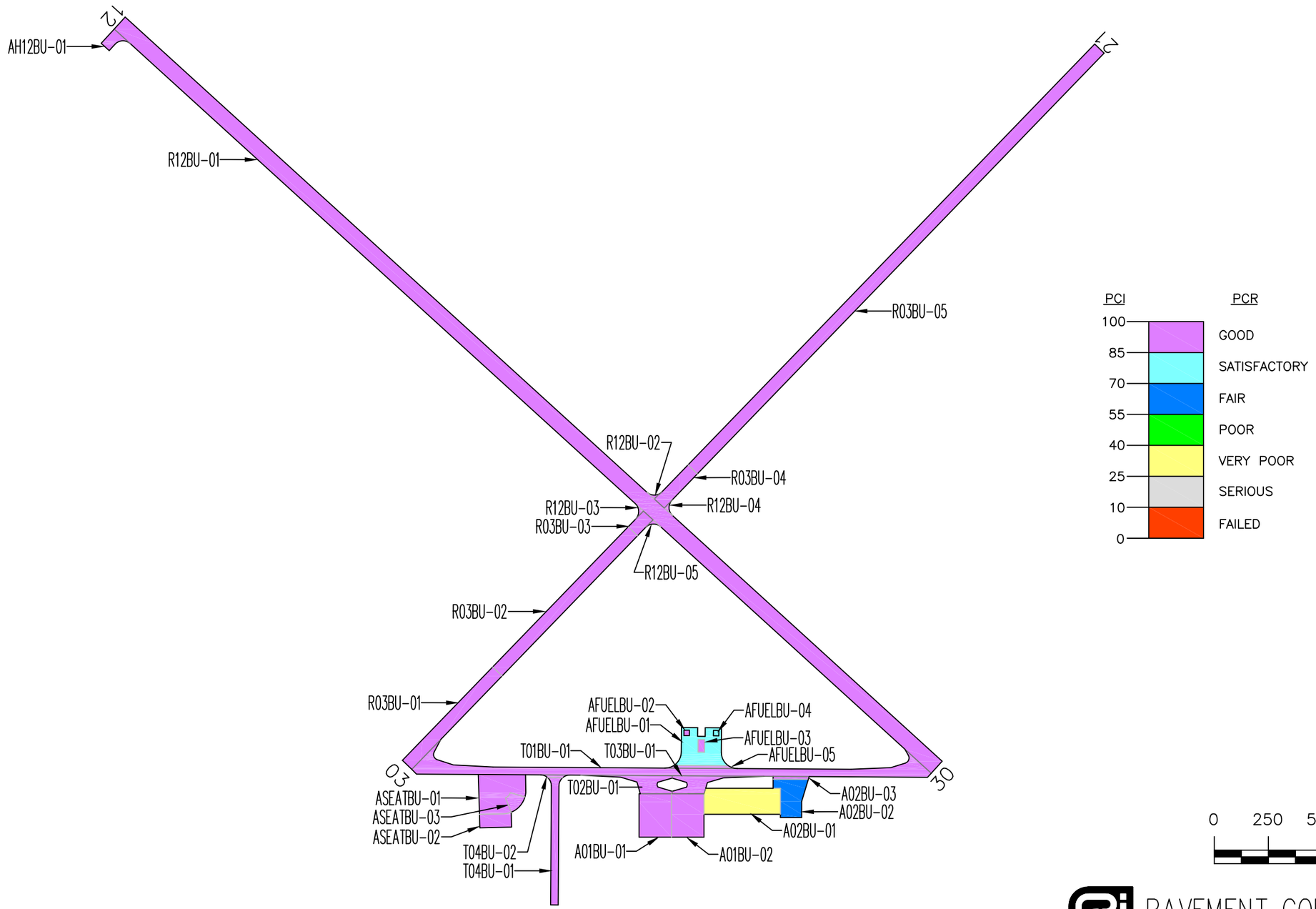

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Table 1. Past, Present and Future Pavement Condition Indices.

Branch	Section	Inspections			Forecast	
		2011	2014	2017	2022	2027
T01BU	01	---	---	100	92	82
T02BU	01	---	---	100	92	82
T03BU	01	---	---	100	92	82
T04BU	01	83	78	87	78	72
T04BU	02	---	---	100	92	82

Section PCIs at Burns Municipal Airport range from a low of 31 (a PCR of "Very Poor") to a high of 100 (a PCR of "Good"). The area-weighted average PCI for all airport pavements is 94, corresponding to an overall PCR of "Good". Figure BU-4 shows how much pavement area is associated with each Pavement Condition Rating category and also shows pavement condition distribution from the inspections conducted in 2011 and 2014.

The primary distresses observed during the inspection of asphalt concrete pavements were: longitudinal and transverse cracking, depressions, and patching, with isolated occurrences of raveling, alligator cracking and weathering. The primary distresses observed during the inspection of portland cement concrete pavements were: corner spalls, joint spalls, small patches, linear cracks, corner breaks, and shrinkage cracks, with an isolated occurrence of faulting.

A graphical representation of the projected PCIs listed in Table 1 is shown in Figure BU-5.

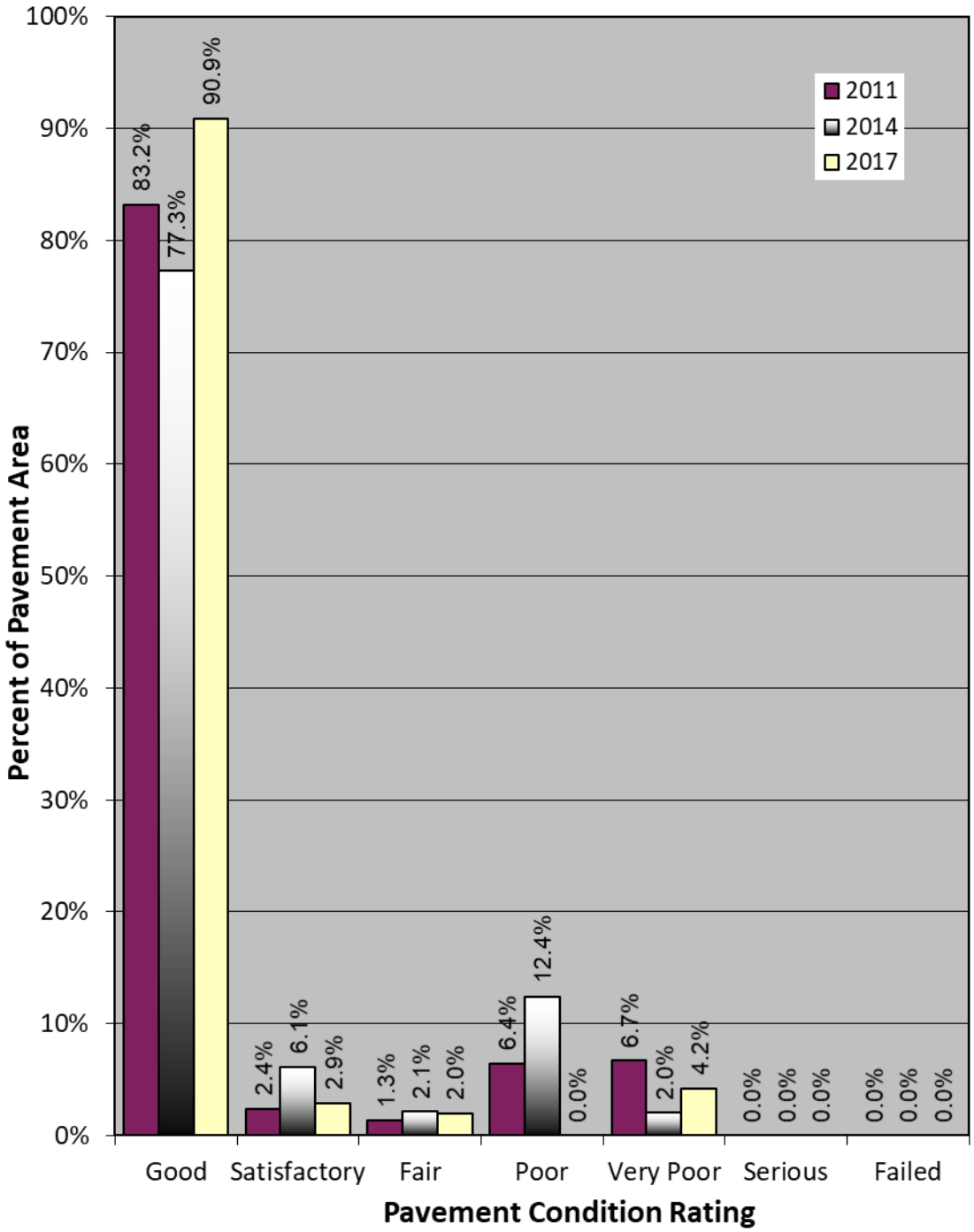
RECOMMENDATIONS

Data collected during the visual condition survey were used by the PAVER software to generate the Network Maintenance Report contained in Appendix 3. This report identifies, for each pavement section, the recommended localized maintenance activities (i.e.-crack sealing, patching) that should be completed to repair the defects observed during the visual inspection. The repair quantities identified in the report were extrapolated to cover the entire pavement section, based on the distresses measured in the inspected sample units. If the repair activities identified are completed, the pavement deterioration rate will be slowed.

The recommended localized maintenance activities to be applied are selected by the PAVER software based on a Distress Maintenance Policy established for the Oregon airport system. The report results indicate that, over your entire airport, the following quantities of localized maintenance are needed:

- 2,269 linear feet of asphalt concrete crack sealing
- 144 linear feet of asphalt concrete wide crack repair

Figure BU-4. Distribution of Pavement Condition
Burns Municipal Airport



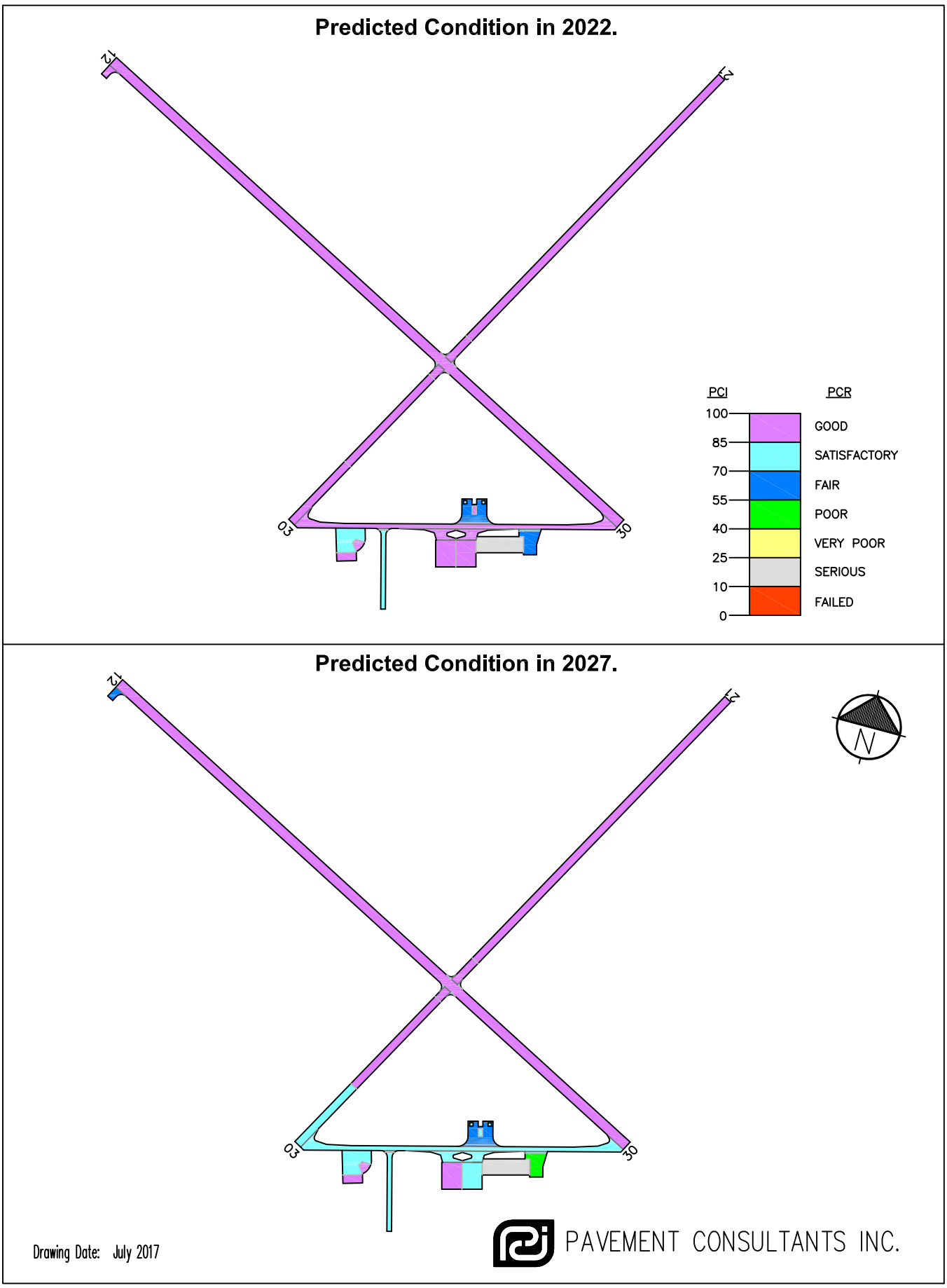


Figure BU-5. Future Pavement Condition.

- 353 square feet of deep (full-depth) asphalt concrete patching
- 22 square feet of shallow asphalt concrete patching

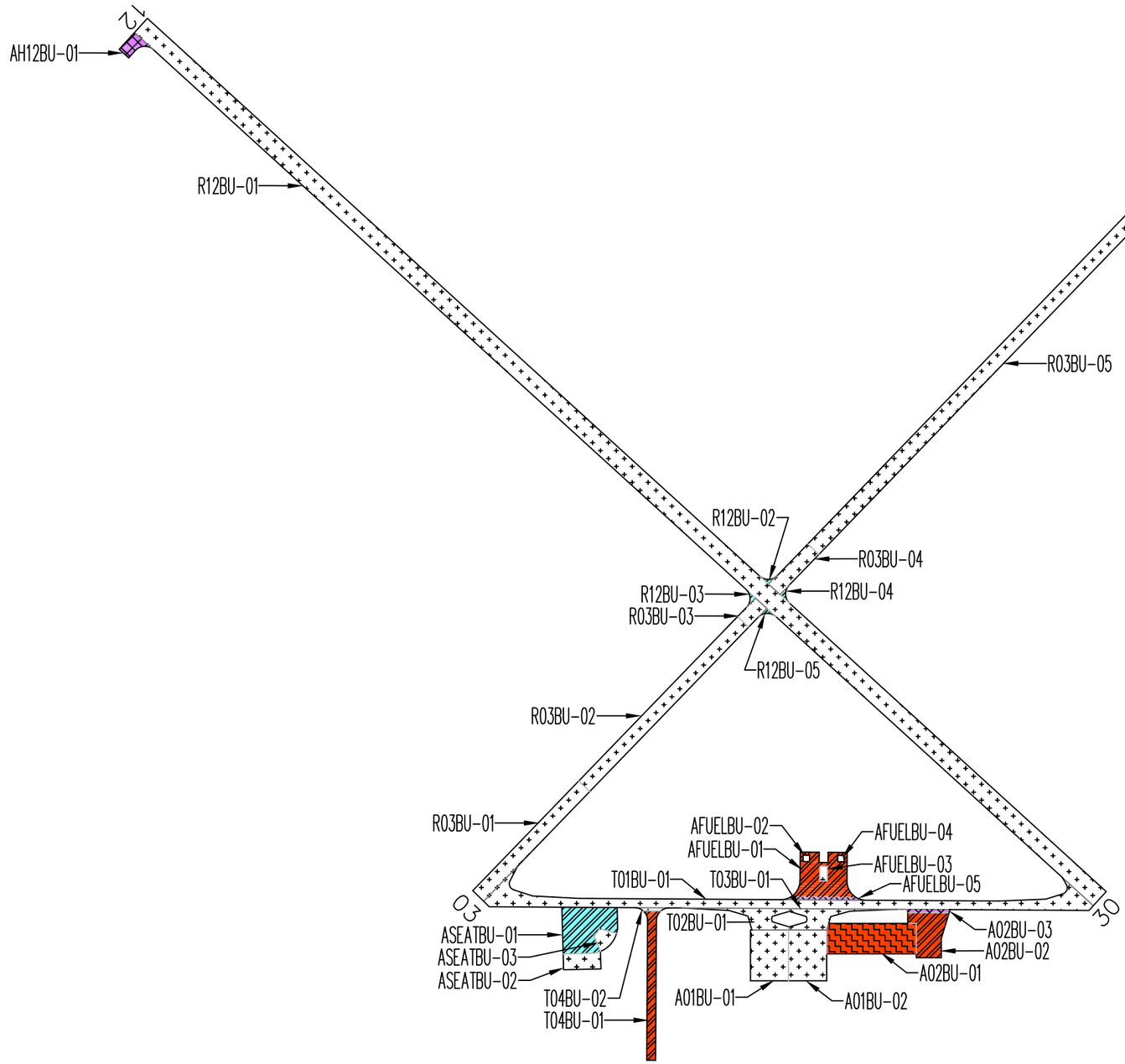
The PAVER software can also identify and schedule recommended global (applied over an entire section) maintenance activities such as fog seals, slurry seals and other surface treatments, as well as major rehabilitation activities such as asphalt concrete overlays and complete reconstruction. PAVER schedules global maintenance on a user-defined interval. To schedule major rehabilitation PAVER uses pavement deterioration models developed during this project. These models are used to estimate future pavement condition and to schedule rehabilitation based on a trigger PCI.

During this project a 5-year program outlining recommended global maintenance and rehabilitation was developed. The program begins in the year 2018 to allow time for project development. These recommendations are presented in Table 2, which identifies the pavement section requiring rehabilitation, the year the action should be completed, the type of action, and an associated cost. This information is also presented graphically in Figure BU-6.

Table 2. Five-Year Global Maintenance and Rehabilitation Plan.

Year	Branch	Section	Action	Area (sf)	Unit Cost ($/sf)	Total Cost ($)
2018	A02BU	01	4" AC over 12" Crushed Aggregate Base over Geotextile	42,261	$10.50	$443,741
2018	A02BU	02	Slurry Seal	20,291	$0.31	$6,290
2018	AFUELBU	01	Slurry Seal	29,128	$0.31	$9,030
2018	T04BU	01	Slurry Seal	20,952	$0.31	$6,495
					2018 Total	$465,535
2021	ASEATBU	01	Slurry Seal	32,129	$0.31	$9,960
2021	R12BU	02	Slurry Seal	422	$0.31	$131
2021	R12BU	03	Slurry Seal	575	$0.31	$178
2021	R12BU	04	Slurry Seal	575	$0.31	$178
2021	R12BU	05	Slurry Seal	500	$0.31	$155
					2021 Total	$10.602
2022	A02BU	03	Fog Seal	2,141	$0.19	$407
2022	AFUELBU	05	Fog Seal	3,484	$0.19	$662
2022	AH12BU	01	Fog Seal	5,011	$0.19	$952
					2022 Total	$2,021
					TOTAL	$478,178

Figure BU-6. Five-Year Pavement Management Plan.
Burns Municipal Airport



ACTION TIMING

- 2018
- 2019
- 2020
- 2021
- 2022

ACTION

- FOG SEAL
- SLURRY SEAL
- OVERLAY
- RECONSTRUCT
- ROUTINE MAINTENANCE

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If the global maintenance and/or rehabilitation activities recommended in Table 2 are not completed, the localized maintenance activities identified in the Network Maintenance Report (Appendix 3) for that section should be done. Additionally, for those sections not listed in Table 2 as requiring global maintenance or rehabilitation, the localized maintenance activities outlined in the Network Maintenance Report should be completed. By completing the localized maintenance activities, pavement condition is improved, life is extended, deterioration is slowed and the length of time until major repair or rehabilitation is required is increased.

INSPECTION SCHEDULE

To comply with the inspection schedule requirement of FAA Grant Assurance Number 11, a detailed visual inspection should be conducted every 3 years using the methodology described in ASTM D5430. The next scheduled detailed visual inspection should take place in 2020.

In addition, the FAA requires that a drive-by inspection be conducted monthly to detect unforeseen changes in pavement condition. The results of each drive-by inspection should be recorded and kept in a file. At a minimum, the date of the inspection and an indication of any maintenance performed since the last drive-by inspection should be recorded.