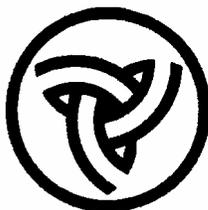


# DEMONSTRATING THE USE OF PERFORMANCE-BASED WARRANTIES ON HIGHWAY CONSTRUCTION PROJECTS IN ILLINOIS



**PHYSICAL RESEARCH REPORT NO. 146  
JUNE 2004**



**Illinois Department of Transportation**

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<p>16. Abstract</p> <p>State legislation was passed in Illinois in 1999 that required the use of performance-based warranties on at least 20 highway construction contracts arising out of the Department's 5-year project program for fiscal years 2000 through 2004. The warranty period was required to be at least 5 years, and 10 of the contracts had to be designed for a 30-year life cycle.</p> <p>Warranty specifications were developed for concrete pavements, bituminous (asphalt) pavements, and bituminous overlays. Detailed performance requirements and corrective actions for pavements in non-compliance were given in the specifications. The warranty specifications were included on 27 construction projects in FY 2000-2004, and 19 of the projects were designed for a 30-year life cycle.</p> <p>Included in the report are results of a brief survey conducted with the resident engineers on warranty construction projects. Over half of the projects were still under construction at the time of the report. Therefore, few conclusions can be made as to the effectiveness of the warranty specifications. The projects will be monitored, and further analyses will be made in the future to determine whether the specifications should be used on future IDOT projects.</p>			
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IN ILLINOIS**

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June 2004

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The contents of this report reflect the views of the author, who is responsible for the facts and accuracy of the data presented herein. The content does not necessarily reflect the official views or policies of the Illinois Department of Transportation. This report does not constitute a standard, specification, or regulation.

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## **Executive Summary**

State legislation was passed in 1999 that required the use of performance-based warranties on at least 20 highway construction contracts in fiscal years 2000 through 2004. The warranty period was required to be at least 5 years, and 10 of the contracts had to be designed for a 30-year life cycle.

To comply with the legislation, warranty specifications were developed for concrete pavements, bituminous (asphalt) pavements, and bituminous overlays. Detailed performance requirements and corrective actions for pavements in non-compliance were given in the specifications. The warranty specifications were included on 27 construction projects in FY 2000-2004, and 19 of the projects were designed for a 30-year life cycle.

Fourteen of the projects are still under construction, and none of the completed projects have reached the end of the 5-year warranty period. For this reason, it is difficult to determine what, if any, benefit the Department has gained through use of the warranty specifications. The projects continue to be monitored, and future analyses will be performed to determine whether warranty specifications are appropriate for use on future highway construction projects.

## **Introduction**

The following report is written in response to Section 38 of Senate Bill 1028, passed by the 91st session of the Illinois General Assembly and effective on July 1, 1999. This bill was one of the cornerstones of Illinois FIRST -- a Fund for Infrastructure, Roads, Schools and Transit. This five-year, \$12 billion public works program was designed primarily to address Illinois' aging and deteriorating roads and bridges, unfunded highway construction projects, dilapidated mass transit systems and school construction and repair needs.

Section 38 of the bill amended the Illinois Highway Code by adding Section 4-410 as follows:

Sec. 4-410. Demonstration project. The Department shall implement a demonstration project, under which 20 of the contracts arising out of the Department's 5-year project program for fiscal years 2000 through 2004 shall have a performance-based warranty of at least 5 years, and 10 of those contracts shall be designed for a 30-year life cycle.

To comply with the legislation, the Department developed a series of warranty specifications. This report details the development of the specifications and their use on state highway construction projects.

## **Background**

Recently, many states throughout the country have decided to investigate the use of warranties on highway construction projects. This has primarily been a response to premature failures that have received a large amount of media attention and have resulted in a great inconvenience to the traveling public during repairs.

Historically, in the State of Illinois, express written pavement warranties have not been commonly used. However, implied warranties have long been a part of highway construction contracts. The Department's standard specifications contain a number of provisions dealing with the obligation of the contractor to complete the project in a workmanlike manner using proper materials. Certain legal remedies are available to the Department in cases where projects are not built to specification. Relevant sections of the Department's Standard

Specifications for Road and Bridge Construction include Articles 105.03, 107.34, 108.11, and 109.08.

Before 1991, Federal Highway Administration (FHWA) policy limited the use of warranties on Federal-aid projects to electrical and mechanical equipment. Federal funding requirements precluded states from using Federal funding for maintenance activities. Since the use of warranties could indirectly lead to Federal funding being used for maintenance, the FHWA disallowed their use on highway construction projects.

In 1990, the FHWA sponsored a team of American pavement experts on a tour of European countries. This tour revealed many innovative contracting practices, including the use of warranties. As a result, warranties were approved for use on an experimental basis under Special Experimental Project No. 14 (SEP-14), *Innovative Contracting Practices*. Eight states participated in the evaluation of warranties under SEP-14.

After a trial period, the FHWA published a Final Rule with regard to warranties in the April 19, 1996 *Federal Register*. The Final Rule requires that warranty provisions must be for a specific construction project or feature. Routine maintenance items are still not eligible, and warranties are prohibited for items not within the contractor's control.

Hereafter, warranties are no longer considered experimental for National Highway System (NHS) projects. However, approval of the State's warranty specification by the FHWA division office is required. With the FHWA funding hurdle removed, the use of warranties on highway construction projects has become more widespread nationwide in recent years.

### **Development of Warranty Specifications**

In response to the legislation, an Illinois Department of Transportation (IDOT) Pavement Warranty Committee was formed to begin development of warranty specifications. The committee consisted of representatives of the IDOT Bureaus of Materials and Physical Research, Construction, and Design and Environment, as well as District 4, District 6, and the Director of Highway's office. An FHWA member was also included on the committee.

Warranty specifications from the States of Indiana, Wisconsin, and Michigan were reviewed. These states had experience with warranties under SEP-14, with Michigan being the leading user of warranties in the nation. Telephone interviews with knowledgeable personnel in these states were also conducted. The information obtained was used in the development of a framework for IDOT's warranty specifications.

Historically, states have used method specifications in highway construction. The contractor is told what materials to use and how they are used in the construction. State personnel observe the construction and perform quality assurance testing to ensure that the contractor is following the specifications. As part of the warranty specification, some states have allowed contractors to use innovative practices to provide the necessary quality during construction. The philosophy is that, ultimately, how a pavement performs is the most important factor. The specific materials and methods used in the construction are secondary. However, IDOT decided not to allow this for warranties of short duration. If projects were warranted for the entire 20- or 30-year life cycle of the pavement, a different, less restrictive specification would have been used. The IDOT specification is an add-on that can easily be inserted into existing contracts without requiring extensive modification.

The warranty is designed to be a means of risk transference from IDOT to the contractor in order to protect the Department from premature failures. One of the keys in the development of the warranty specification was the definition of performance parameters and the designated warranty work required for each distress that might occur during the warranty period. A certain amount of distress is expected to occur on any pavement over time. These common distresses are not covered by the pavement warranty. The goal of the warranty is to protect the Department from any unexpected pavement failures that can be attributed to inferior materials or workmanship. Failures due to design defects, due to the Department's routine maintenance operations, or due to the occurrence of acts of nature that the finished work was not designed to withstand are not covered. It is anticipated that 90 to 95% of projects will require no corrective action under the warranty specification.

Warranted distresses are as defined in the Strategic Highway Research Program's nationally accepted "Distress Identification Manual for the Long-Term Pavement Performance Project" (SHRP-P-338). This document is readily available and specifically defines various types of pavement distress and associated severity levels (when applicable).

Historical pavement performance data on Illinois pavements was obtained from the Department's Illinois Pavement Feedback System (IPFS) and Illinois Roadway Information System (IRIS). This historical distress data was reviewed to examine the amount and severity of various distresses that occur at a given age for various pavement types. Statistical analyses were performed, and the results were then used to set the thresholds at which corrective actions are required. Warranted distresses include various types of cracking, ride (international roughness index (IRI)), and rutting (where appropriate). Required warranty work for each distress, based on current Department practice, is also described in the warranty specification.

Within a month, draft warranty specifications were created. A joint IDOT/industry working group was formed to review the specifications and recommend changes. Members of the various pavement associations were invited to review the draft specifications and provide the Department with feedback. Originally, specifications were written for bituminous and portland cement concrete pavements. Later, specifications were written for bituminous overlays. There was some unwillingness on the part of industry to warrant overlays. The Department agreed not to warrant reflective cracking, a distress observed on overlays that is caused by stresses that propagate from the underlying pavement and cannot be controlled by the contractor.

Different warranty lengths were considered, but ultimately a 5-year warranty period was agreed upon for all pavement types. Discussions with representatives of the surety industry revealed that it would be difficult if not impossible for contractors to obtain warranty bonds of a longer duration.

Copies of the warranty specifications for concrete pavements, bituminous concrete pavements, and bituminous concrete overlays are included in Appendices B through D. The Federal Highway Administration approved the warranty specifications for use on Federal-aid projects in a letter to IDOT dated December 6, 1999 (Appendix E). A warranty was also developed later for use on concrete bridge decks and bridge approach pavement (Appendix F).

## Warranty Projects

The legislation mandated that warranties be included on 20 of the contracts arising out of the Department's FY 2000-2004 Proposed Highway Improvement Program. The 5-year program document was published in the spring of 1999, prior to the passing of the legislation. Therefore, it was necessary to select projects from the existing program that would include warranties. Many of these projects already had plans and specifications developed and were ready for letting in FY 2000. Fortunately, the warranty specification was able to be inserted into the project documents without requiring any major modifications to the plans or other specifications.

A list of pavement warranty candidate projects was developed. It was agreed the first few projects would be kept simple in scope, and would not include projects that involve new or unique designs, or projects that incorporate any controversial materials or design methods. The requirement that 10 of the projects be designed for a 30-year life cycle made it necessary to make modifications to some of the existing projects. Movement from the standard 20-year design life to a 30-year design life required development of extended life pavement design and material specifications. The extended life designs include a thicker pavement cross section and more strict requirements for the materials used in the construction. Extended life pavement designs were developed for both concrete and bituminous pavement. A 40-year design concrete project was also included, since that project was already in the planning stage prior to the legislation.

Below is a summary table of the projects let to date that have included performance-based 5-year warranties. The legislation required that 20 warranty projects be included in the demonstration project. The Department let 27 warranty projects in the FY 2000-04 time period.

<b>Project Type</b>	<b>Number of Projects</b>
Bituminous Overlay	3
Bituminous (20-Year Design)	2
Bituminous (30-Year Design)	6
Concrete (20-Year Design)	3
Concrete (30-Year Design)	12
Concrete (40-Year Design)	1
<b>TOTAL</b>	<b>27</b>

Of the 27 projects that have been let, 19 were designed for a 30-year life cycle (or greater). Thirteen of the 30-year designs are concrete pavements, and six are bituminous. Four other 30-year concrete projects and one other 40-year concrete project were deferred from the FY 2000-2004 time period due to a lack of funding. Additional project details, such as contract number, location, letting date, and pavement type are included in Appendix G.

The pavement warranty was included as its own separate bid item on each contract. This gives an indication of what additional cost is associated with use of the pavement warranty. However, it is still possible that prospective contractors are increasing the costs of other pay items to hedge against the possibility of future costs for corrective work. Thus, the warranty pay item cost does not truly reflect the cost of the warranty. For concrete pavements, the warranty pay item cost ranged from \$70 to \$121,100, with an average of \$22,413. As a percentage of total project cost, the warranty bid cost ranged from 0.00 to 0.43 percent. Most of the concrete projects had either a 30-year or 40-year design life. Thus, a 5-year warranty period is rather short in relation to the design life of the pavement. It is unlikely that pavement failures requiring warranty work will occur during this period.

For bituminous pavements, the warranty pay item cost ranged from \$20,600 to \$108,252, with an average of \$51,988. As a percentage of total project cost, the warranty cost ranged from 0.06 to 0.80 percent. Again, all but two of the bituminous projects had a 30-year design life. For bituminous overlays, the warranty pay item cost ranged from \$25,000 to \$63,050, with an average of \$43,098. As a percentage of total project cost, the warranty cost ranged from 1.14 to 2.38 percent. Bituminous overlays are expected to last for a period of 10 to 15 years. A 5-year warranty covers a greater portion of an overlay's design life. Therefore, the inherent risk to the contractor is somewhat higher than for new construction, and the cost to the Department is higher as a result.

The warranty pay item cost data seem to indicate that the cost of implementing pavement warranties is rather low. However, as mentioned previously, the actual cost of the pavement warranty is impossible to determine, as additional costs could be included in other construction pay items. The true cost of the pavement warranty is indeterminable.

There will also be a substantial future cost to the Department in terms of both dollars and personnel for the administration of the warranty contracts. Distress data will be collected as part of the normal pavement management data collection process. This data is collected using the Department's data collection vehicles. Surveys are performed every year on the interstate system, and every other year for other routes on the primary system. District personnel will be required to review the digital images and additional data collected by the data collection vehicles and determine whether or not the warranty requirements are being met.

If distresses are evident from the digital images, a more detailed manual distress survey would need to be performed. This would require the use of Department personnel and could require lane closures. A thorough distress survey of the entire project will also need to be performed near the end of the 5-year warranty project to determine if any corrective action is needed. If each District has only a few warranty projects to monitor, this workload may be acceptable. If each District has numerous warranty projects, then the effort to monitor the projects would be much greater, and would best be accomplished by dedicated personnel.

## Survey of Resident Engineers

It is difficult to assess the effectiveness of the warranty specifications since none of the projects have reached the end of their 5-year warranty period, and many of the projects are still under construction. To gain knowledge of their experience with warranties, a survey of resident construction engineers involved with overseeing the warranty projects was conducted. Listed below are the survey questions and a summary of the responses.

1. At the start of the project, were all parties (Department, contractors, consultants, etc.) aware that the project included a warranty specification?

*All respondents indicated that all parties involved were aware that the project included a warranty specification. On many of the projects, the warranty specification was discussed at a pre-bid or pre-construction meeting to raise awareness of the new specification.*

2. Did the contractor do more extensive quality control testing or pay more attention to construction details because of the warranty?

*Out of 13 responses, only 1 indicated that the contractor paid more attention to construction details because of the warranty. On this project, the contractor added steel reinforcement and paid greater attention to joint details after some mid-panel cracking of concrete slabs.*

*On most of the projects, construction was done according to standard practices. Required quality control testing and inspection activities were performed, but no additional testing was apparent. It was hypothesized that contractors, concerned that the warranty requirements might not be met, would make a greater effort to ensure a quality product.*

3. Do you think the Department paid a significantly higher project cost because the project had a warranty?

*Only 3 out of 12 respondents believed that the warranty significantly increased the project cost. The warranty pay item cost seemed to be fairly low on all projects. However, it is possible that the costs for other pay items were increased because of the warranty.*

4. Did the Department get a higher quality product because a warranty was used?

*Only 1 of the 13 respondents felt that the Department was getting a higher quality product because of the warranty. Construction seemed to proceed as would normally be expected, with no extraordinary efforts taken by the contractors specifically because of the warranty.*

5. Should the Department continue the use of pavement warranties? Bridge warranties?

*Despite the perception that the Department was not receiving a higher quality product by using warranties, 8 of the 12 resident engineers indicated that they should be used on projects in the future. It seems that the protection that the warranty provides the Department is appealing.*

6. Please provide any other comments that you might have with regard to the use of pavement or bridge warranties or the particulars of the warranty specifications.

*Many of the survey respondents provided insightful comments regarding the use of warranties. Some of these comments are given below.*

- *Longer warranty lengths are necessary for the Department to realize any real benefit. Many distresses due to materials or workmanship may not appear within the 5-year warranty period.*
- *Enforcement of the warranty specification may be difficult. When distresses occur, disputes between the contractor and the Department are inevitable.*
- *Warranties might eventually get contractors to do better work, especially if corrective action was required on past projects.*
- *Need to see results from the first few warranty projects before making a decision on whether or not to use warranties in the future.*
- *Warranties for bituminous overlays are impractical.*

## Summary and Recommendations

In accordance with legislation passed in 1999, performance-based warranties were included on 27 projects in the Department's FY 2000-2004 Proposed Highway Improvement Program. The warranties are for a 5-year duration, and 19 of the projects were designed for a 30-year life cycle.

The cost of the warranty pay item on these contracts ranged from \$70 to \$121,100. As a percentage of total project cost, the warranty cost ranged from 0.00 to 2.38 percent. At first glance, the cost of the warranty to the Department would seem to be insignificant. However, it is assumed that the costs of other pay items on the warranty contracts may have been increased to cover the potential costs of corrective work that may need to be performed on the projects. There will also be a substantial future cost to the Department in terms of both dollars and personnel for the administration of the warranty contracts.

Any benefit realized by the Department through the use of the warranty is unclear at this point. None of the projects have reached the end of their 5-year warranty period, and many of the projects are still under construction. There were no major changes made by contractors during the construction operations on warranty projects. The amount and types of quality control testing being performed on warranty projects is the same as that on jobs let without warranties. Thus, the Department is receiving the same product that it would get if the projects did not include warranties.

The effectiveness of the warranty will not be known until distresses occur that require corrective action. It is also very possible that distresses due to defects in materials and workmanship will not become evident until after the 5-year warranty period has expired. The 5-year warranty covers only between 17 and 33 percent of the warranted project's expected life.

At this time, it is recommended that a decision on whether or not to continue the use of warranties be deferred until more performance data is available on existing projects. The Department will continue to monitor the initial set of warranty projects, and will conduct further analyses in the future to determine the cost-effectiveness of the use of warranties.

## **APPENDIX A. WARRANTY LEGISLATION**

**91st General Assembly  
Summary of SB1028**

**Senate Sponsors:**

PHILIP.

**House Sponsors:**

MADIGAN, MJ-DANIELS-CURRIE-SCHOENBERG

**Short description:**

VEH CD-REGISTRATION FEES-INCRE

**Synopsis of Bill as introduced:**

Amends the State Finance Act, the Use Tax Act, the Service Use Tax Act, the Service Occupation Tax Act, the Retailers' Occupation Tax Act, the Motor Fuel Tax Law, the Regional Transportation Authority Act, the Illinois Highway Code, and the Illinois Vehicle Code. Makes technical changes.

HOUSE AMENDMENT NO. 1. (House recedes May 21, 1999)

Adds an immediate effective date.

CONFERENCE COMMITTEE REPORT NO. 1.

Recommends that the House recede from H-am1.

Recommends that the bill be amended as follows:

Deletes reference to:

35 ILCS 505/2	from Ch. 120, par. 418
55 ILCS 5/5-1035.1	from Ch. 34, par. 5-1035.1
65 ILCS 5/8-11-1	from Ch. 24, par. 8-11-1
65 ILCS 5/8-11-15	from Ch. 24, par. 8-11-15
70 ILCS 3615/4.03	from Ch. 111 2/3, par. 704.03
70 ILCS 3615/4.03.1	from Ch. 111 2/3, par. 704.03.1
605 ILCS 5/4-201.4	from Ch. 121, par. 4-201.4

Adds reference to:

30 ILCS 105/5.491 new	
30 ILCS 105/6z-48 new	
70 ILCS 3615/4.13	from Ch. 111 2/3, par. 704.13
605 ILCS 5/4-410 new	
625 ILCS 5/2-123	from Ch. 95 1/2, par. 2-123
625 ILCS 5/3-305	from Ch. 95 1/2, par. 3-305
625 ILCS 5/3-403	from Ch. 95 1/2, par. 3-403
625 ILCS 5/3-607	from Ch. 95 1/2, par. 3-607
625 ILCS 5/3-619	from Ch. 95 1/2, par. 3-619
625 ILCS 5/3-804	from Ch. 95 1/2, par. 3-804
625 ILCS 5/3-804.02	from Ch. 95 1/2, par. 3-804.02
625 ILCS 5/3-805	from Ch. 95 1/2, par. 3-805
625 ILCS 5/3-806.1	from Ch. 95 1/2, par. 3-806.1
625 ILCS 5/3-806.3	from Ch. 95 1/2, par. 3-806.3
625 ILCS 5/3-807	from Ch. 95 1/2, par. 3-807
625 ILCS 5/3-808	from Ch. 95 1/2, par. 3-808
625 ILCS 5/3-809	from Ch. 95 1/2, par. 3-809
625 ILCS 5/3-809.1	from Ch. 95 1/2, par. 3-809.1
625 ILCS 5/3-810	from Ch. 95 1/2, par. 3-810
625 ILCS 5/3-811	from Ch. 95 1/2, par. 3-811
625 ILCS 5/3-812	from Ch. 95 1/2, par. 3-812
625 ILCS 5/3-814.1	from Ch. 95 1/2, par. 3-814.1
625 ILCS 5/3-815	from Ch. 95 1/2, par. 3-815
625 ILCS 5/3-818	from Ch. 95 1/2, par. 3-818
625 ILCS 5/3-819	from Ch. 95 1/2, par. 3-819
625 ILCS 5/3-820	from Ch. 95 1/2, par. 3-820

625 ILCS 5/3-821  
625 ILCS 5/3-824.5 new

from Ch. 95 1/2, par. 3-821

Deletes everything. Amends the State Finance Act. Incrementally reduces the amount of Road Fund moneys that may be appropriated to the Secretary of State. Creates the Motor Vehicle License Plate Fund, to be used to provide new license plates for motor vehicles. Amends the 4 occupation and use tax Acts. Terminates the transfer of occupation and use tax proceeds into the Motor Fuel Tax Fund. Amends the Motor Fuel Tax Law to adjust the amount of tax proceeds that are transferred to the Grade Crossing Protection Fund, the State Construction Account Fund, the Road Fund, and local governments. Amends the Regional Transportation Authority Act. Increases the limit on the amount of bonds the Authority may have outstanding at any time. Authorizes the issuance of additional bonds for Strategic Capital Improvement Projects. Requires the State to provide Additional Financial Assistance. Amends the Illinois Highway Code. Creates an IDOT demonstration project. Under the project, 20 of the contracts arising out of the Department's 5-year project program for fiscal years 2000 through 2004 shall have a performance-based warranty of at least 5 years, and at least 10 of those contracts shall be designed for a 30-year life cycle. Amends the Illinois Vehicle Code. Increases registration and certain other fees and taxes. Makes other changes. Effective July 1, 1999.

**Last action on Bill:** PUBLIC ACT..... 91-0037

**Last action date:** 99-06-15

**Location:** Senate

**Amendments to Bill:** AMENDMENTS ADOPTED: HOUSE - 1 SENATE - 0

Following is the part of the legislation that amends the Illinois Highway Code.

SB1028 Enrolled -96- LRB9106061PTpk  
1 Strategic Capital Improvement Projects, but which project is  
2 not included in an approved Plan, the Authority must notify  
3 the Governor of the intended obligation. No project costs  
4 incurred prior to approval of the Plan including that project  
5 may be paid from the proceeds of bonds or notes for Strategic  
6 Capital Improvement Projects issued under Section 4.04 of  
7 this Act.  
8 (Source: P.A. 86-16.)  
  
9 Section 38. The Illinois Highway Code is amended by  
10 adding Section 4-410 as follows:  
  
11 (605 ILCS 5/4-410 new)  
12 Sec. 4-410. Demonstration project. The Department shall  
13 implement a demonstration project, under which 20 of the  
14 contracts arising out of the Department's 5-year project  
15 program for fiscal years 2000 through 2004 shall have a  
16 performance-based warranty of at least 5 years, and 10 of  
17 those contracts shall be designed for a 30-year life cycle.

**APPENDIX B. WARRANTY FOR CONCRETE PAVEMENTS**

## **WARRANTY FOR CONCRETE PAVEMENTS (BDE)**

Effective: January 1, 2000

**Description.** This work shall consist of providing a warranty for concrete pavement constructed with the following pay items \_\_\_(1)\_\_. The warranty will include the concrete pavement and joints between the mainline pavement and adjacent structures, such as shoulders, curb and gutter, tapers, and ramps if the adjacent structures are like items. The pavement has been designed for a \_\_\_(2)\_\_. Current traffic information is shown on the plans.

The Contractor warrants that all work completed under the above contract pay items, including all materials and workmanship furnished by the Contractor and subcontractors, shall comply with the contract, and that the work shall be free from defects or failures for a period of 5 years after commencement of the warranty period. The Contractor does not warrant the work against failures due to design defects (including unanticipated significant increases in traffic volume), due to the Department's routine maintenance operations, or due to the occurrence of acts of nature that the finished work was not designed to withstand.

The Contractor guarantees that after receipt of notice from the Department as provided herein, he/she shall perform the warranty work as specified in the notice in accordance with the warranty work actions specified herein including all necessary incidental work to complete the action and restore the complete facility, and damage to adjoining structures caused by failure of the warranted work, including but not limited to removal, engineering, material procurement, reinstallation, or replacement at the Contractor's cost and expense. The Department's remedies under this warranty are not exclusive but are in addition to any other remedies provided by this contract or law. The additional obligations undertaken by the Contractor to provide this express warranty and to perform in accordance herewith shall be secured by a performance and payment bond provided by the Contractor in a form furnished by the Department, and said bond to remain in full force and effect for the duration of the warranty period.

### **Definitions.**

**Conflict Resolution Team (CRT).** A three-member team responsible for resolving disputes between the Department and the Contractor regarding any claims of non-compliance of the warranty requirements.

**Preventive Maintenance.** Any activity on the pavement surface to extend the pavement life or prevent the development of higher distress levels. This includes joint and crack sealing and bump grinding.

**Routine Maintenance.** Any activity to maintain the right-of-way which is not part of the pavement structure. This includes snow removal, de-icing, anti-icing, repairs to safety appurtenances, drainage structures, pavement markings and markers, mowing, and sign maintenance.

**Warranty Bond.** A bond that guarantees the concrete pavement installed under the contract, against defects in materials and/or workmanship or preventive maintenance needs which may develop after the Warranty Period Start Date for the specified warranty period. The warranty bond shall be in force continuously from the date of the first Warranty Period Start Date until release from the warranty on the last warranted section.

**Warranty Period.** A 5-year duration initiating on the Warranty Period Start Date.

**Warranty Period Start Date.** The date the Engineer approves the request for commencement of the warranty period will constitute the start date for the warranty period for the project or stage of construction.

**Warranty Work.** Corrective action taken to bring the concrete pavement into compliance for release of the warranty bond. If corrective action is required, the entire section or sections will be repaired.

**Working Days.** Any calendar day between May 1 and November 30 inclusive except Saturdays, Sundays, or legal holidays observed by the Contractor's entire workforce in Illinois.

**Commencement of Warranty Period.** Unless the Contractor requests warranty commencement as herein provided, the Warranty Period Start Date shall be the date of final inspection. The Contractor may request the warranty commence when the pavement or stage of construction is substantially completed. For the request to be approved, substantial completion means that all pavement lane markings (temporary or permanent), abutting shoulder and/or curb and gutter, and safety items such as guardrail must be installed, and the pavement is opened to continuous traffic. The date the Engineer approves the request is then the Warranty Period Start Date for the pavement or stage of construction.

Commencement of warranty does not relieve the Contractor of any remaining or contractual obligations. Approval of the Warranty Period Start Date shall not be construed as final acceptance of the work of the contract not subject to approval.

**Warranty Bond.** The Contractor shall furnish the Department a performance and payment bond with good and sufficient sureties in the full amount of \$ \_\_\_(3)\_\_\_ as the penal sum. The surety shall be acceptable to the Department, shall waive notice of any changes and extensions of time, and shall submit its bond on the form furnished by the Department. The bond will ensure completion of required warranty work, including payments for all labor, equipment, materials, and closure periods used to remediate any warranted pavement distresses. If there are multiple Warranty Period Start Dates, the warranty bond shall be in effect from the Warranty Period Start Date on the first stage of construction until the release from the warranty period on the last stage.

The warranted concrete pavement will be measured according to specific parameters, as defined in the table entitled "Warranted Pavement Distresses". At the end of the warranty period and remedy of any distress occurring within the warranty period, the Contractor will be released, in writing, from further warranty work or

responsibility under this contract, provided all previous warranty work under this contract has been completed and approved by the Department.

**Warranty Requirements.** The Department will notify the Contractor of the need for corrective action. The Contractor shall perform corrective action promptly as defined in the notification. The notification will provide for a requested start date for performance of corrective action covered by the notice, and for a number of working days estimated to complete the corrective action. The Department and Contractor may agree upon a start date and reasonable period of performance to define prompt completion.

The Contractor shall provide the designated warranty work for each section for the extent and severity parameters in the following table. The distress parameters are defined in SHRP's "Distress Identification Manual for the Long-Term Pavement Performance Project" (SHRP-P-338).

**Warranted Pavement Distresses**

PARAMETER		EXTENT	SEVERITY	WARRANTY WORK
Cracking	Transverse	10 lin. ft.	Moderate	Patch <sup>1/</sup>
		Any within section	High	
	Longitudinal	10 lin. ft.	Moderate	Patch Full Length of Distressed Lane
		Any within section	High	
	Corner Breaks	Any within section	Moderate	Patch <sup>1/</sup>
		Any within section	High	
International Roughness Index (IRI)		Within section <sup>2/</sup>	Avg. 150 in./mi.	Pavement Grinding
Spalling	Longitudinal Joints, Transverse Joints & High Steel <sup>3/</sup>	10 lin. ft.	Moderate	Partial-Depth Patch 150% of Distressed Area using Polymer Concrete or Approved Equivalent
		Any within section	High	
Scaling		50 sq. ft.	All severity levels	Patch 150% Length and Full Width of Distressed Lane <sup>1/</sup>
Patch/Patch Deterioration		100 sq. ft.	Moderate	Patch <sup>1/</sup>
		Any within section	High	
Punchouts; in CRC pavement only		Any within section	Moderate	Patch <sup>1/</sup>
		Any within section	High	

- 1/ Patching shall be full-lane width and full-depth according to Section 442. Class A patches shall be used for CRC pavement and Class B patches shall be used for jointed concrete pavement.
- 2/ IRI shall be measured in each wheelpath using ¼ car model then averaged for section.
- 3/ High Steel Spalling is defined as cracking, breaking, chipping, or fraying of the slab directly over reinforcing steel in Continuously Reinforced Concrete (CRC) pavement.

If the Contractor disputes the Department's request for corrective action and the Contractor and the Department are not able to resolve the matter between themselves, either party may seek resolution of the dispute by the Conflict Resolution Team (CRT). If the Contractor fails to promptly complete the warranty work specified in the notice or as specified by the CRT, or otherwise breaches its obligations under this provision, the Department may declare the Contractor to be in default, and may proceed to terminate the rights of the Contractor and to cause the completion of the work in the manner approved in Article 108.10 of the Standard Specifications. The Contractor agrees to indemnify and hold harmless the Department on account of a default, including but not limited to the cost and expense of any future warranty work required.

The Contractor may undertake preventive maintenance at his/her discretion. Preventive maintenance and warranty work shall be coordinated with the Department and performed at no cost to the Department. Prior to proceeding with any work, the Contractor shall obtain a permit from the Department. The Department may restrict the time of work according to the traffic needs of the facility.

Evaluation of the warranted concrete pavement will be in 0.10-mile (0.16-km) sections. Warranty work by the Contractor shall be approved by the Department and meet the same requirements of the original warranted pavement specified herein. Replacing any pavement shall be full-lane width to a depth not to exceed the warranted pavement. The warranty work is warranted for the remainder of the warranty period.

**Rights and Responsibilities of the Department.** The Department:

- a. Is responsible for notifying the Contractor, in writing, of any required warranty work.
- b. Reserves the right to approve the date(s) and time(s) requested by the Contractor to perform preventive maintenance and warranty work.
- c. Reserves the right to approve all materials and methods used in preventive maintenance and warranty work.
- d. Reserves the right to determine if warranty work performed by the Contractor meets the contract requirements.
- e. Reserves the right to perform, or have performed, routine maintenance during the warranty period. This routine maintenance will not relieve the Contractor from meeting the warranty requirement of this Special Provision.
- f. Reserves the right to perform or have performed, any emergency repairs deemed necessary by the Department. Any such emergency repairs undertaken will not relieve the Contractor from meeting the warranty requirements of this Special Provision. The Department shall document the emergency repair.

**Rights and Responsibilities of the Contractor.** The Contractor:

- a. Shall unconditionally warrant to the Department that the concrete pavement shall be free of defects in materials and workmanship as defined by the warranty requirements as set forth above, for a period of five years from the concrete pavement Warranty Period Start Date.
- b. Shall submit the Warranty Bond to the Department on a form furnished by the Department prior to the Warranty Period Start Date.
- c. Is responsible for insuring that all warranty work described herein is performed. If warranty work or preventive maintenance performed by the Contractor necessitates a corrective action to restore pavement markings, adjacent lanes, roadway shoulders, etc., then such corrective action to those areas shall be the responsibility of the Contractor.
- d. Shall retain all records for a period of 1 year beyond the end of the warranty period or completion of any warranted repairs, whichever is later.
- e. Is responsible for replacing all temporary repairs, resulting from the concrete pavement being in non-compliance with the warranty requirements, with Department approved materials and methods.
- f. Has the right to perform preventive maintenance. The Contractor shall submit a permit form and a written course of action proposing preventive maintenance. Approval of the Department must be obtained prior to the anticipated commencement of any preventive maintenance.
- g. Shall submit a permit form and a written course of action proposing appropriate corrective measures for the needed warranty work. Approval by the Department must be obtained prior to the anticipated commencement of any warranty work.
- h. Shall follow all traffic control and work zone safety requirements of the contract when any preventive maintenance or warranty work is performed.
- i. Shall complete all warranty work and preventive maintenance in a neat and uniform manner and shall meet the requirements specified in the contract.
- j. Is required to supply to the Department original documentation pursuant to Section 107 of the Standard Specifications in effect at the time this contract was awarded that all insurance required by the contract is in effect during the period(s) that any warranty work is being performed.
- k. Is responsible for all costs of all repairs to the concrete pavement resulting from deficiencies in materials or workmanship.

**Conflict Resolution Team.** The responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Department and the Contractor regarding the pavement distress experienced, the extent and severity thereof, and the warranty work required to be performed in accordance with the warranty requirements. The CRT will also mediate disputes related to unanticipated significant increases in traffic. It is the intention of the parties that the CRT be assembled with the full cooperation of both parties, and that the Contractor and Department will devote their full attention to the prompt consideration of the matter by the CRT. Neither party shall neglect its obligation of good faith hereunder nor shall unreasonable delay be imposed that would hinder the prompt decision of the CRT. The decision of the CRT shall be final and binding on the Contractor and Department.

The CRT will consist of three members:

- a. One selected, provided, and compensated by the Department.
- b. One selected, provided, and compensated by the Contractor.
- c. One qualified third party, mutually selected by the Department and the Contractor. Compensation for the third party member will be equally shared by the Department and the Contractor.

**Basis of Payment.** This work will be paid for at the lump sum price for CONCRETE PAVEMENT WARRANTY. Payment will be made at the commencement of the warranty period, after the Warranty Bond form has been submitted. *(as a separate bid item)*

Notes:

- (1) Insert pay item that warranty will cover (Portland Cement Concrete Pavement or Continuously Reinforced Portland Cement Concrete Pavement.)
- (2) Insert design life of pavement (20 years or 30 years).
- (3) Insert the value of the bond.

**APPENDIX C. WARRANTY FOR BITUMINOUS CONCRETE PAVEMENTS**

## **WARRANTY FOR BITUMINOUS CONCRETE PAVEMENTS (BDE)**

Effective: January 1, 2000

**Description.** This work shall consist of providing a warranty for bituminous concrete pavement constructed with the following pay items \_\_\_(1)\_\_. The warranty will include the bituminous concrete pavement and joints between the mainline pavement and adjacent structures, such as shoulders, curb and gutter, tapers, and ramps if the adjacent structures are like items. The mixture design requirements outlined in the plans are minimum specification requirements which may be enhanced by the Contractor at his/her expense. The pavement has been designed for a 20-year design life. Current traffic information is shown on the plans.

The Contractor warrants that all work completed under the above contract pay items, including all materials and workmanship furnished by the Contractor and subcontractors, shall comply with the contract, and that the work shall be free from defects or failures for a period of 5 years after commencement of the warranty period. The Contractor does not warrant the work against failures due to design defects (including unanticipated significant increases in traffic volume), due to the Department's routine maintenance operations, or due to the occurrence of acts of nature that the finished work was not designed to withstand.

The Contractor guarantees that after receipt of notice from the Department as provided herein, he/she shall perform the warranty work specified in the notice in accordance with the warranty work actions specified herein including all necessary incidental work to complete the action and restore the complete facility, and damage to adjoining structures caused by failure of the warranted work, including but not limited to removal, engineering, material procurement, reinstallation, or replacement at the Contractor's cost and expense. The Department's remedies under this warranty are not exclusive but are in addition to any other remedies provided by this contract or law. The additional obligations undertaken by the Contractor to provide this express warranty and to perform in accordance herewith shall be secured by a performance and payment bond provided by the Contractor in a form furnished by the Department, and said bond to remain in full force and effect for the duration of the warranty period.

### **Definitions.**

**Conflict Resolution Team (CRT).** A three-member team responsible for resolving disputes between the Department and the Contractor regarding any claims of non-compliance of the warranty requirements.

**Preventive Maintenance.** Any activity on the pavement surface to extend the pavement life or prevent the development of higher distress levels. This includes joint and crack sealing and bump grinding.

**Routine Maintenance.** Any activity to maintain the right-of-way which is not part of the pavement structure. This includes snow removal, de-icing, anti-icing, repairs to safety appurtenances, drainage structures, pavement markings and markers, mowing, and sign maintenance.

**Warranty Bond.** A bond that guarantees the bituminous concrete pavement installed under the contract, against defects in materials and/or workmanship or preventive maintenance needs which may develop after the Warranty Period Start Date for the specified warranty period. The warranty bond shall be in force continuously from the date of the first Warranty Period Start Date until release from the warranty on the last warranted section.

**Warranty Period.** A 5-year duration initiating on the Warranty Period Start Date.

**Warranty Period Start Date.** The date the Engineer approves the request for commencement of the warranty period will constitute the start date for the warranty period for the project or stage of construction.

**Warranty Work.** Corrective action taken to bring the bituminous concrete pavement into compliance for release of the warranty bond. If corrective action is required, the entire section or sections will be repaired.

**Working Days.** Any calendar day between May 1 and November 30 inclusive except Saturdays, Sundays, or legal holidays observed by the Contractor's entire workforce in Illinois.

**Commencement of Warranty Period.** Unless the Contractor requests warranty commencement as hereinafter provided, the Warranty Period Start Date shall be the date of final inspection. The Contractor may request the warranty commence when the pavement or stage of construction is substantially completed. For the request to be approved, substantial completion means that all pavement lane markings (temporary or permanent), abutting shoulder and/or curb and gutter, and safety items such as guardrail must be installed, and the pavement is opened to continuous public traffic. The date the Engineer approves the request is then the Warranty Period Start Date for the pavement or stage of construction.

Commencement of warranty does not relieve the Contractor of any remaining or contractual obligations. Approval of the Warranty Period Start Date shall not be construed as final acceptance of the work of the contract not subject to approval.

**Warranty Bond.** The Contractor shall furnish the Department a performance and payment bond with good and sufficient sureties in the full amount of \$ \_\_\_(2)\_\_\_ as the penal sum. The surety shall be acceptable to the Department, shall waive notice of any changes and extensions of time, and shall submit its bond on the form furnished by the Department. The bond will ensure completion of required warranty work, including payments for all labor, equipment, materials, and closure periods used to remediate any warranted pavement distresses. If there are multiple Warranty Period Start Dates, the warranty bond shall be in effect from the Warranty Period Start Date on the first stage of construction until the release from the warranty period on the last stage.

The warranted bituminous concrete pavement will be measured according to specific parameters, as defined in the table entitled "Warranted Pavement Distresses." At the end of the warranty period and remedy of any distress occurring within the

warranty period, the Contractor will be released, in writing, from further warranty work or responsibility under this contract, provided all previous warranty work under this contract has been completed and approved by the Department.

**Warranty Requirements.** The Department will notify the Contractor of the need for corrective action. The Contractor shall perform corrective action promptly as defined in the notification. The notification will provide for a requested start date for performance of corrective action covered by the notice, and for a number of working days estimated to complete the corrective action. The Department and Contractor may agree upon a start date and reasonable period of performance to define prompt completion.

The Contractor shall provide the designated warranty work for each section for the extent and severity parameters in the following table. The distress parameters are defined in SHRP's "Distress Identification Manual for the Long-Term Pavement Performance Project" (SHRP-P-338).

### Warranted Pavement Distresses

PARAMETER		EXTENT	SEVERITY	WARRANTY WORK
Fatigue Cracking		50 sq.ft.	Moderate	Patch 150% of Distressed Area <sup>1/</sup>
		Any within section	High	
Block Cracking		100 sq. ft.	Moderate	Mill & Replace <sup>2/</sup>
		Any within section	High	
Transverse Cracking		10 lin. ft.	Moderate	Seal <sup>3/</sup>
		Any within section	High	
Longitudinal Cracking	Within the Lane	10 lin. ft.	Moderate	Seal <sup>3/</sup>
		Any within section	High	
	Centerline Deterioration	10 lin. ft.	High	
	Edgeline	10 lin. ft.	High	
International Roughness Index (IRI)		Within section <sup>4/</sup>	Avg. 110 in./mi.	Mill & Replace <sup>2/</sup>
Potholes & Shoving		Any within section	All severity levels	Patch 150% of Distressed Area <sup>1/</sup>
Bleeding & Flushing & Raveling		500 sq. ft.	Moderate	Mill & Replace <sup>2/</sup>
		Any within section	High	
Rut Depth		Any within section <sup>5/</sup>	0.30 in.	Mill & Replace <sup>2/</sup>

1/ Patching shall be according to Article 442.09, Class D Patching.

2/ Milling shall be according to Article 440.03, Bituminous Surface Removal for Subsequent Resurfacing.

3/ Sealing shall be according to Section 451.

4/ IRI measured in each wheelpath using ¼ car model then averaged for section.

5/ Rutting shall be measured with a 4 ft. straightedge.

If the Contractor disputes the Department's request for corrective action and the Contractor and the Department are not able to resolve the matter between themselves, either party may seek resolution of the dispute by the Conflict Resolution Team (CRT). If the Contractor fails to promptly complete the warranty work specified in the notice or as specified by the CRT, or otherwise breaches its obligations under this provision, the Department may declare the Contractor to be in default, and may proceed to terminate the rights of the Contractor and to cause the completion of the work in the manner approved in Article 108.10 of the Standard Specifications. The Contractor agrees to indemnify and hold harmless the Department on account of a default, including but not limited to the cost and expense of any future warranty work required.

The Contractor may undertake preventive maintenance at his/her discretion. Preventive maintenance and warranty work shall be coordinated with the Department and performed at no cost to the Department. Prior to proceeding with any work, the Contractor shall obtain a permit from the Department. The Department may restrict the time of work according to the traffic needs of the facility.

Evaluation of the warranted bituminous concrete pavement will be in 0.10-mile (0.16 km) sections. Warranty work by the Contractor shall be approved by the Department and meet the same requirements of the original warranted pavement specified herein. Replacing any pavement shall be full-lane width to a depth not to exceed the warranted pavement. The warranty work is warranted for the remainder of the warranty period.

**Rights and Responsibilities of the Department.** The Department:

- a. Is responsible for notifying the Contractor, in writing, of any required warranty work.
- b. Reserves the right to approve the date(s) and time(s) requested by the Contractor to perform preventive maintenance and warranty work.
- c. Reserves the right to approve all materials and methods used in preventive maintenance and warranty work.
- d. Reserves the right to determine if warranty work performed by the Contractor meets the contract requirements.
- e. Reserves the right to perform, or have performed, routine maintenance during the warranty period. This routine maintenance will not relieve the Contractor from meeting the warranty requirement of this Special Provision.
- f. Reserves the right to perform or have performed, any emergency repairs deemed necessary by the Department. Any such emergency repairs undertaken will not relieve the Contractor from meeting the warranty requirements of this Special Provision. The Department shall document the emergency repair.

**Rights and Responsibilities of the Contractor.** The Contractor:

- a. Shall unconditionally warrant to the Department that the bituminous concrete pavement shall be free of defects in materials and workmanship as defined by the warranty requirements as set forth above, for a period of five years from the bituminous concrete pavement Warranty Period Start Date .
- b. Shall submit the Warranty Bond to the Department on a form furnished by the Department prior to the Warranty Period Start Date.
- c. Is responsible for insuring that all warranty work described herein is performed. If warranty work or preventive maintenance performed by the Contractor necessitates a corrective action to restore pavement markings, adjacent lanes, roadway shoulders, etc., then such corrective action to those areas shall be the responsibility of the Contractor.
- d. Shall retain all records for a period of 1 year beyond the end of the warranty period or completion of any warranted repairs, whichever is later.
- e. Is responsible for replacing all temporary repairs, resulting from the bituminous concrete pavement being in non-compliance with the warranty requirements, with Department approved materials and methods.
- f. Has the right to perform preventive maintenance. The Contractor shall submit a permit form and a written course of action proposing preventive maintenance. Approval of the Department must be obtained prior to the anticipated commencement of any preventive maintenance.
- g. Shall submit a permit form and a written course of action proposing appropriate corrective measures for the needed warranty work. Approval by the Department must be obtained prior to the anticipated commencement of any warranty work.
- h. Shall follow all traffic control and work zone safety requirements of the contract when any preventive maintenance or warranty work is performed.
- i. Shall complete all warranty work and preventive maintenance in a neat and uniform manner and shall meet the requirements specified in the contract.
- j. Is required to supply to the Department original documentation pursuant to Section 107 of the Standard Specifications in effect at the time this contract was awarded that all insurance required by the contract is in effect during the period(s) that any warranty work is being performed.
- k. Is responsible for all costs of all repairs to the bituminous concrete pavement resulting from deficiencies in materials or workmanship.

**Conflict Resolution Team.** The responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Department and the Contractor regarding the pavement distress experienced, the extent and severity thereof, and the warranty work required to be performed in accordance with the warranty requirements. The CRT will also mediate disputes related to unanticipated significant increases in traffic. It is the intention of the parties that the CRT be assembled with the full cooperation of both parties, and that the Contractor and Department will devote their full attention to the prompt consideration of the matter by the CRT. Neither party shall neglect its obligation of good faith hereunder nor shall unreasonable delay be imposed that would hinder the prompt decision of the CRT. The decision of the CRT shall be final and binding on the Contractor and Department.

The CRT will consist of three members:

- a. One selected, provided, and compensated by the Department.
- b. One selected, provided, and compensated by the Contractor.
- c. One qualified third party, mutually selected by the Department and the Contractor. Compensation for the third party member will be equally shared by the Department and the Contractor.

**Basis of Payment.** This work will be paid for at the lump sum price for BITUMINOUS CONCRETE PAVEMENT WARRANTY. Payment will be made at the commencement of the warranty period, after the Warranty Bond form has been submitted. *(as a separate bid item)*

Notes:

- (1) Insert pay item that warranty will cover (Bituminous Concrete Pavement (Full-Depth) or Bituminous Concrete Binder Course and Bituminous Concrete Surface Course, Class I, for pavements constructed on rubblized pavements).
- (2) Insert the value of the bond.

**APPENDIX D. WARRANTY FOR BITUMINOUS CONCRETE OVERLAYS**

## **WARRANTY FOR BITUMINOUS CONCRETE OVERLAYS (BDE)**

Effective: January 1, 2000

**Description.** This work shall consist of providing a warranty for bituminous concrete overlay constructed with the following pay items \_\_\_(1)\_\_. The warranty will include the bituminous concrete overlay and joints between the mainline pavement and adjacent structures, such as shoulders, curb and gutter, tapers, and ramps if the adjacent structures are like items. The mixture design requirements outlined in the plans are minimum specification requirements which may be enhanced by the Contractor at his/her expense. Current traffic information is shown on the plans.

The Contractor warrants that all work completed under the above contract pay items, including all materials and workmanship furnished by the Contractor and subcontractors, shall comply with the contract, and that the work shall be free from defects or failures for a period of 5 years after commencement of the warranty period. The Contractor does not warrant the work against failures due to design defects (including unanticipated significant increases in traffic volume), due to the Department's routine maintenance operations, or due to the occurrence of acts of nature that the finished work was not designed to withstand.

The Contractor guarantees that after receipt of notice from the Department as provided herein, he/she shall perform the warranty work as specified in the notice in accordance with the warranty work actions specified herein including all necessary incidental work to complete the action and restore the complete facility, and damage to adjoining structures caused by failure of the warranted work, including but not limited to removal, engineering, material procurement, reinstallation, or replacement at the Contractor's cost and expense. The Department's remedies under this warranty are not exclusive but are in addition to any other remedies provided by this contract or law. The additional obligations undertaken by the Contractor to provide this express warranty and to perform in accordance herewith shall be secured by a performance and payment bond provided by the Contractor in a form furnished by the Department, and said bond to remain in full force and effect for the duration of the warranty period.

### **Definitions.**

**Conflict Resolution Team (CRT).** A three-member team responsible for resolving disputes between the Department and the Contractor regarding any claims of non-compliance of the warranty requirements.

**Preventive Maintenance.** Any activity on the pavement surface to extend the pavement life or prevent the development of higher distress levels. This includes joint and crack sealing and bump grinding.

**Routine Maintenance.** Any activity to maintain the right-of-way which is not part of the pavement structure. This includes snow removal, de-icing, anti-icing, repairs to safety appurtenances, drainage structures, pavement markings and markers, mowing, and sign maintenance.

**Warranty Bond.** A bond that guarantees the bituminous concrete overlay installed under the contract, against defects in materials and/or workmanship or preventive maintenance needs which may develop after the Warranty Period Start Date for the specified warranty period. The warranty bond shall be in force from the date of the first Warranty Period Start Date until release from the warranty on the last warranted section.

**Warranty Period.** A 5-year duration initiating on the Warranty Period Start Date.

**Warranty Period Start Date.** The date the Engineer approves the request for commencement of the warranty period will constitute the start date for the warranty period for the project or stage of construction.

**Warranty Work.** Corrective action taken to bring the bituminous concrete overlay into compliance for release of the warranty bond. If corrective action is required, the entire section or sections will be repaired.

**Working Days.** Any calendar day between May 1 and November 30 inclusive except Saturdays, Sundays, or legal holidays observed by the Contractor's entire workforce in Illinois.

**Commencement of Warranty Period.** Unless the Contractor requests warranty commencement as hereinafter provided, the Warranty Period Start Date shall be the date of final inspection. The Contractor may request the warranty commence when the pavement or stage of construction is substantially completed. For the request to be approved, substantial completion means that all pavement lane markings (temporary or permanent), abutting shoulder and/or curb and gutter, and safety items such as guardrail must be installed, and the pavement is opened to continuous traffic. The date the Engineer approves the request is then the Warranty Period Start Date for the pavement or stage of construction.

Commencement of warranty does not relieve the Contractor of any remaining or contractual obligations. Approval of the Warranty Period Start Date shall not be construed as final acceptance of the work of the contract not subject to approval.

**Warranty Bond.** The Contractor shall furnish the Department a performance and payment bond with good and sufficient sureties in the full amount of \$ \_\_\_(2)\_\_\_ as the penal sum. The surety shall be acceptable to the Department, shall waive notice of any changes and extensions of time, and shall submit its bond on the form furnished by the Department. The bond will ensure completion of required warranty work, including payments for all labor, equipment, materials, and closure periods used to remediate any warranted pavement distresses. If there are multiple Warranty Period Start Dates, the warranty bond shall be in effect from the Warranty Period Start Date on the first stage of construction until the release from the warranty period on the last stage.

The warranted bituminous concrete overlay will be measured according to specific parameters, as defined in the table entitled "Warranted Pavement Distresses." At the end of the warranty period and remedy of any distress occurring within the warranty period, the Contractor will be released, in writing, from further warranty work or

responsibility under this contract, provided all previous warranty work under this contract has been completed and approved by the Department.

**Warranty Requirements** The Department will notify the Contractor of the need for corrective action. The Contractor shall perform corrective action promptly as defined in the notification. The notification will provide for a requested start date for performance of corrective action covered by the notice, and for a number of working days estimated to complete the corrective action. The Department and Contractor may agree upon a start date and reasonable period of performance to define prompt completion.

The Contractor shall provide the designated warranty work for each section for the extent and severity parameters in the following table. The distress parameters are defined in SHRP's "Distress Identification Manual for the Long-Term Pavement Performance Project" (SHRP-P-338).

**Warranted Pavement Distresses**

PARAMETER		EXTENT	SEVERITY	WARRANTY WORK
Fatigue Cracking		50 sq.ft.	Moderate	Patch 150% of Distressed Area <sup>1/</sup>
		Any within section	High	
Block Cracking		100 sq. ft.	Moderate	Mill & Replace <sup>2/</sup>
		Any within section	High	
Longitudinal Cracking; not caused by reflective cracking	Within the Lane	10 lin ft.	Moderate	Seal <sup>3/</sup>
		Any within section	High	
	Centerline Deterioration	10 lin ft.	High	
	Edgeline	10 lin ft.	High	
International Roughness Index (IRI)		Within section <sup>4/</sup>	Avg. 150 in./mi.	Mill & Replace <sup>2/</sup>
Potholes & Shoving		Any within section	All severity levels	Patch 150% of Distressed Area <sup>1/</sup>
Bleeding & Flushing & Raveling		500 sq. ft.	Moderate	Mill & Replace <sup>2/</sup>
		Any within section	High	
Rut Depth		Any within section <sup>5/</sup>	0.30 in.	Mill & Replace <sup>2/</sup>

- 1/ Patching shall be according to Article 442.09, Class D Patching.
- 2/ Milling shall be according to Article 440.03, Bituminous Surface Removal for Subsequent Resurfacing.
- 3/ Sealing shall be according to Section 451.
- 4/ IRI shall be measured in each wheelpath using ¼ car model then averaged for section.
- 5/ Rutting shall be measured with a 4 ft. straightedge.

If the Contractor disputes the Department's request for corrective action and the Contractor and the Department are not able to resolve the matter between themselves, either party may seek resolution of the dispute by the Conflict Resolution Team (CRT). If the Contractor fails to promptly complete the warranty work specified in the notice or as specified by the CRT, or otherwise breaches its obligations under this provision, the

Department may declare the Contractor to be in default, and may proceed to terminate the rights of the Contractor and to cause the completion of the work in the manner approved in Article 108.10 of the Standard Specifications. The Contractor agrees to indemnify and hold harmless the Department on account of a default, including but not limited to the cost and expense of any future warranty work required.

The Contractor may undertake preventive maintenance at his/her discretion. Preventive maintenance and warranty work shall be coordinated with the Department and performed at no cost to the Department. Prior to proceeding with any work, the Contractor shall obtain a permit from the Department. The Department may restrict the time of work according to the traffic needs of the facility.

Evaluation of the warranted bituminous concrete overlay will be in 0.10-mile (0.16 km) sections. Warranty work by the Contractor shall be approved by the Department and meet the same requirements of the original warranted pavement specified herein. Replacing any pavement shall be full-lane width to a depth not to exceed the warranted pavement. The warranty work is warranted for the remainder of the warranty period.

**Rights and Responsibilities of the Department.** The Department:

- a. Is responsible for notifying the Contractor, in writing, of any required warranty work.
- b. Reserves the right to approve the date(s) and time(s) requested by the Contractor to perform preventive maintenance and warranty work.
- c. Reserves the right to approve all materials and methods used in preventive maintenance and warranty work.
- d. Reserves the right to determine if warranty work performed by the Contractor meets the contract requirements.
- e. Reserves the right to perform, or have performed, routine maintenance during the warranty period. This routine maintenance will not relieve the Contractor from meeting the warranty requirement of this Special Provision.
- f. Reserves the right to perform or have performed, any emergency repairs deemed necessary by the Department. Any such emergency repairs undertaken will not relieve the Contractor from meeting the warranty requirements of this Special Provision. The Department shall document the emergency repair.

**Rights and Responsibilities of the Contractor.** The Contractor:

- a. Shall unconditionally warrant to the Department that the bituminous concrete overlay shall be free of defects in materials and workmanship as defined by the warranty requirements as set forth above, for a period of five years from the bituminous concrete overlay Warranty Period Start Date.
- b. Shall submit the Warranty Bond to the Department on a form furnished by the Department prior to Warranty Period Start Date.
- c. Is responsible for insuring that all warranty work described herein is performed. If warranty work or preventive maintenance performed by the Contractor necessitates a corrective action to restore pavement markings, adjacent lanes, roadway shoulders, etc., then such corrective action to those areas shall be the responsibility of the Contractor.
- d. Shall retain all records for a period of 1 year beyond the end of the warranty period or completion of any warranted repairs, whichever is later.
- e. Is responsible for replacing all temporary repairs, resulting from the bituminous concrete overlay being in non-compliance with the warranty requirements, with Department approved materials and methods.
- f. Has the right to perform preventive maintenance. The Contractor shall submit a permit form and a written course of action proposing preventive maintenance. Approval of the Department must be obtained prior to the anticipated commencement of any preventive maintenance.
- g. Shall submit a permit form and a written course of action proposing appropriate corrective measures for the needed warranty work. Approval by the Department must be obtained prior to the anticipated commencement of any warranty work.
- h. Shall follow all traffic control and work zone safety requirements of the contract when any preventive maintenance or warranty work is performed.
- i. Shall complete all warranty work and preventive maintenance in a neat and uniform manner and shall meet the requirements specified in the contract.
- j. Is required to supply to the Department original documentation pursuant to Section 107 of the Standard Specifications in effect at the time this contract was awarded that all insurance required by the contract is in effect during the period(s) that any warranty work is being performed.
- k. Is responsible for all costs of all repairs to the bituminous concrete overlay resulting from deficiencies in materials or workmanship.

**Conflict Resolution Team.** The responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Department and the Contractor regarding the pavement distress experienced, the extent and severity thereof, and the warranty work required to be performed in accordance with the warranty requirements. The CRT will also mediate disputes related to unanticipated significant increases in traffic. It is the intention of the parties that the CRT be assembled with the full cooperation of both parties, and that the Contractor and Department will devote their full attention to the prompt consideration of the matter by the CRT. Neither party shall neglect its obligation of good faith hereunder nor shall unreasonable delay be imposed that would hinder the prompt decision of the CRT. The decision of the CRT shall be final and binding on the Contractor and Department.

The CRT will consist of three members:

- a. One selected, provided, and compensated by the Department.
- b. One selected, provided, and compensated by the Contractor.
- c. One qualified third party, mutually selected by the Department and the Contractor. Compensation for the third party member will be equally shared by the Department and the Contractor.

**Basis of Payment.** This work will be paid for at the lump sum price for BITUMINOUS CONCRETE OVERLAY WARRANTY. Payment will be made at the commencement of the warranty period, after the Warranty Bond form has been submitted. *(as a separate bid item)*

Notes:

- (1) Insert pay item that warranty will cover (Bituminous Concrete Binder Course and Bituminous Concrete Surface Course, Class I.)
- (2) Insert the value of the bond.

**APPENDIX E. FHWA APPROVAL LETTER**



U.S. Department of  
Transportation

Illinois Division

3250 Executive Park Drive  
Springfield, Illinois 62703

**Federal Highway  
Administration**

December 6, 1999

HET-IL

Mr. James C. Slifer, Director of Highways  
Illinois Department of Transportation  
2300 South Dirksen Parkway  
Springfield, Illinois 62764

Dear Mr. Slifer:

Subject: Warranty Specifications

Please accept our compliments on the warranty specifications for full-depth asphalt, concrete pavements, and asphalt overlays. The development of these specifications was through a cooperative process including industry and this office.

We have reviewed the specifications and find them fully acceptable for use on Federal-aid projects.

We look forward to working with you to continue to refine and improve these specifications in the future.

Sincerely yours,

/s/ H. M. Wakefield

H. M. Wakefield  
Engineering Technology Team Leader

For: Ronald C. Marshall, P.E.  
Division Administrator

cc: Mr. William T. Sunley, Deputy Director of Highways  
Mr. Dave Lippert, Bureau of Materials and Physical Research  
Mr. Michael Hine, Bureau of Design and Environment

**APPENDIX F. 5-YEAR WARRANTY FOR CONCRETE BRIDGE DECKS AND  
BRIDGE APPROACH PAVEMENTS**

## **5-YEAR WARRANTY FOR CONCRETE BRIDGE DECKS AND BRIDGE APPROACH PAVEMENT (BDE)**

Effective: June 29, 2001

**Description.** This work shall consist of providing a warranty for concrete bridge decks and bridge approach pavement constructed with the following pay items: bridge approach pavement, concrete superstructure, portland cement concrete pavement, reinforcement bars, epoxy coated, removal of existing superstructures, neoprene expansion joint, bridge joint system (expansion), bridge joint system (fixed), protective coat, bridge deck grooving, bar splicers, floor drains, and drainage scuppers. The structures covered under this warranty are those with the following structure numbers: \_\_\_(1)\_\_\_ *Designer — plans need to be reviewed for exact pay codes and structure numbers.*

Any changes, additions or deletions in the course of construction shall also be warranted. The mixture design requirements and cross-section details outlined in the plans are minimum specification requirements that may be enhanced by the Contractor at his/her expense. Any enhancements shall not alter the proposed profile grade and must be approved by the Department.

The Contractor warrants that all work completed under the above contract pay items by the Contractor and all subcontractors shall comply with the contract, and that the work shall be free from defects or failures for a period of 5 years after commencement of the warranty period. The Contractor does not warrant the work against failures due to the Department's routine maintenance operations, or due to the occurrence of acts of nature that the finished work was not designed to withstand.

The Contractor guarantees that after receipt of notice from the Department as provided herein, he/she shall perform the warranty work as specified in the notice in accordance with the warranty work actions specified herein including all necessary incidental work to complete the action and restore the complete facility, and damage to adjoining structures caused by failure of the warranted work, including but not limited to removal, engineering, material procurement, reinstallation, or replacement at the Contractor's cost and expense. The Department's remedies under this warranty are not exclusive but are in addition to any other remedies provided by this contract or law. The additional obligations undertaken by the Contractor to provide this express warranty and to perform in accordance herewith shall be secured by a performance and payment bond provided by the Contractor in a form furnished by the Department, and said bond to remain in full force and effect for the duration of the warranty period.

### **Definitions.**

**Conflict Resolution Team (CRT).** A three-member team responsible for resolving disputes between the Department and the Contractor regarding any claims of non-compliance of the warranty requirements.

**Preventive Maintenance.** Any activity on the pavement surface or bridge to extend the facility life or prevent the development of higher distress levels. This includes joint and crack sealing and bump grinding.

**Routine Maintenance.** Any activity to maintain the right-of-way that is not part of the pavement or bridge structure. This includes snow removal, de-icing, anti-icing, repairs to safety appurtenances, drainage structures, pavement markings and markers, mowing, and sign maintenance.

**Warranty Bond.** A bond that guarantees the bridge and the adjacent 200 feet of pavement on either side installed under the contract against defects in materials and/or workmanship or preventive maintenance needs which may develop after the Warranty Period Start Date for the specified warranty period. The warranty bond shall be in force continuously from the date of the first Warranty Period Start Date until release from the warranty on the last warranted section.

**Warranty Period.** A 5-year duration initiating on the Warranty Period Start Date.

**Warranty Period Start Date.** The date the Engineer approves the request for commencement of the warranty period will constitute the start date for the warranty period for the project or stage of construction.

**Warranty Work.** Corrective action taken to bring the pavement or structures into compliance for release of the warranty bond. If corrective action is required, the entire section or sections will be repaired.

**Working Days (Not Related to Original Contract).** Any calendar day between May 1 and November 30 inclusive except Saturdays, Sundays, or legal holidays observed by the Contractor's entire workforce in Illinois.

**Commencement of Warranty Period.** Unless the Contractor requests warranty commencement as herein provided, the Warranty Period Start Date shall be the date of final inspection. The Contractor may request the warranty commence when the pavement or structures or stage of construction is substantially completed. For the request to be approved, substantial completion means that all pavement lane markings (temporary or permanent), abutting shoulder and/or curb and gutter, and safety items such as guardrail must be installed, and the pavement is opened to continuous traffic. The date the Engineer approves the request is then the Warranty Period Start Date for the pavement, bridge, or stage of construction.

Commencement of warranty does not relieve the Contractor of any remaining or contractual obligations. Approval of the Warranty Period Start Date shall not be construed as final acceptance of the work of the contract not subject to approval.

**Warranty Bond Requirements.** The Contractor shall furnish the Department a performance and payment bond with good and sufficient sureties in the full amount of \$ \_\_\_(2)\_\_\_ as the penal sum. The surety shall be acceptable to the Department, shall waive notice of any changes and extensions of time, and shall submit its bond on the form furnished by the Department. The bond will insure completion of required warranty work, including payments for all labor, equipment, materials, and closure periods used to remediate any warranted pavement distresses. If there are multiple Warranty Period

Start Dates, the warranty bond shall be in effect from the Warranty Period Start Date on the first stage of construction until the release from the warranty period on the last stage.

The warranted concrete bridge approach pavement will be measured according to specific parameters, as defined in the table entitled "Warranted Concrete Bridge Approach Pavement Distresses". The warranted concrete bridge deck will also be measured according to specific parameters, as defined in the table entitled "Warranted Concrete Bridge Deck Distresses". At the end of the warranty period and remedy of any distress occurring within the warranty period, the Contractor will be released, in writing, from further warranty work or responsibility under this contract, provided all previous warranty work under this contract has been completed and approved by the Department.

**Warranty Requirements.** The Department will notify the Contractor of the need for corrective action. The Contractor shall perform corrective action promptly as defined in the notification. The notification will provide for a requested start date for performance of corrective action covered by the notice, and the number of working days estimated to complete the corrective action. The Department and Contractor shall agree upon a start date and reasonable period of performance to define prompt completion.

The Contractor shall provide the designated warranty work for each section for the extent and severity parameters in the following table. The distress parameters are defined in the Strategic Highway Research Program's (SHRP's) "Distress Identification Manual for the Long-Term Pavement Performance Project" (SHRP-P-338), when such parameters are defined within said document.

### Warranted Concrete Bridge Approach Pavement Distresses

PARAMETER		EXTENT	SEVERITY	WARRANTY WORK
International Roughness Index (IRI)		Within bridge section <sup>1/</sup>	Avg. 180 in./mi.	Approach Grinding, Repair, or Replacement <sup>2/</sup>
Spalling	Longitudinal Joints, Transverse Joints & High Steel <sup>3/</sup>	10 lin. Ft.	Moderate	Partial-Depth Patch 150% of Distressed Area using Polymer Concrete or Approved Equivalent
		Any within section	High	
Scaling		50 sq. ft.	All severity levels	Patch 150% Length and Full Width of Distressed Lane <sup>4/</sup>
Punchouts; in CRC pavement Only		Any within section	Moderate	Patch <sup>4/</sup>
			High	

- 1/ IRI shall be measured in each wheelpath using ¼ car model then averaged for each lane over the total bridge section, defined as the area including the bridge deck and the pavement 200 ft. on either side.
- 2/ Grinding shall be performed according to Section 407.09 and shall not reduce design thickness by more than ¼ inch.
- 3/ High Steel Spalling is defined as cracking, breaking, chipping, or fraying of the slab directly over reinforcing steel in the bridge approach pavement.
- 4/ Patching shall be full-lane width and full-depth according to Section 442. Class A patches shall be used for CRC pavement and Class B patches shall be used for jointed concrete pavement.

### Warranted Concrete Bridge Deck Distresses

PARAMETER		EXTENT	SEVERITY	WARRANTY WORK
International Roughness Index (IRI)		Within bridge section <sup>1/</sup>	Avg. 180 in./mi.	Deck Grinding, Deck Repair, or Replacement <sup>2/</sup>
Spalling	Bridge Joints	3 lin. Ft.	Moderate	Partial-Depth Patch 150% of Distressed Area using Polymer Concrete or Approved Equivalent
		Any within section	High	
Scaling or Delamination with Loss of Material – Bridge Deck		1 sq. ft.	All severity levels	Partial-Depth Patch 150% of Distressed Area using Polymer Concrete or Approved Equivalent
Patch/Patch Deterioration		1 sq. ft.	Moderate	Partial-Depth Patch 150% of Distressed Area using Polymer Concrete or Approved Equivalent
		Any within section	High	
Extrusion Above Pavement Surface or Loss of Joint Seal		2 lin. ft.	Any	Replace Joint Seal
Scaling with Loss of Material – Parapet Wall		3 sq. ft.	All severity levels	Patch

1/ IRI shall be measured in each wheelpath using ¼ car model then averaged for each lane over the total bridge section, defined as the area including the bridge deck and the pavement 200 ft. on either side.

2/ Grinding shall be performed according to Section 407.09 and shall not reduce design thickness by more than ¼ inch.

If the Contractor disputes the Department's request for corrective action and the Contractor and the Department are not able to resolve the matter between themselves, either party may seek resolution of the dispute by the Conflict Resolution Team (CRT). If the Contractor fails to promptly complete the warranty work specified in the notice or as specified by the CRT, or otherwise breaches its obligations under this provision, the Department may declare the Contractor to be in default, and may proceed to terminate the rights of the Contractor and to cause the completion of the work in the manner approved in Article 108.10 of the Standard Specifications. The Contractor agrees to indemnify and hold harmless the Department on account of a default, including but not limited to the cost and expense of any future warranty work required.

The Contractor may undertake preventive maintenance at his/her discretion. Preventive maintenance and warranty work shall be coordinated with the Department and performed at no cost to the Department. Prior to proceeding with any work, the Contractor shall obtain a permit from the Department. The Department may restrict the time of work according to the traffic needs of the facility. All traffic control must be according to the current Department specifications, standards, and policies at the time the work is performed, and must be approved by the Department prior to the start of work. One lane of traffic in each direction must remain open at all times.

Evaluation of the warranted concrete bridge decks and bridge approach pavement will be by total bridge section, defined as the area including the bridge deck and the pavement 200 ft. on either side. Warranty work by the Contractor shall be approved by the Department and meet the same requirements of the original warranted item specified herein. Replacing any pavement shall be full-lane width to a depth not to exceed the pavement items warranted. The warranty work is warranted for the remainder of the warranty period.

**Rights and Responsibilities of the Department.** The Department:

- a. Is responsible for notifying the Contractor, in writing, of any required warranty work.
- b. Reserves the right to approve the date(s) and time(s) requested by the Contractor to perform preventive maintenance and warranty work.
- c. Reserves the right to approve all materials and methods used in preventive maintenance and warranty work.
- d. Reserves the right to determine if warranty work performed by the Contractor meets the contract requirements.
- e. Reserves the right to perform, or have performed, routine maintenance during the warranty period. This routine maintenance will not relieve the Contractor from meeting the warranty requirement of this Special Provision.
- f. Reserves the right to perform or have performed, any emergency repairs deemed necessary by the Department. Any such emergency repairs undertaken will not relieve the Contractor from meeting the warranty requirements of this Special Provision. The Department shall document the emergency repair.

**Rights and Responsibilities of the Contractor.** The Contractor:

- a. Shall unconditionally warrant to the Department that the concrete bridge deck and approach pavement shall be free of defects in materials and workmanship as defined by the warranty requirements as set forth above, for a period of five years from the Warranty Period Start Date.
- b. Shall submit the Warranty Bond to the Department on a form furnished by the Department prior to the Warranty Period Start Date.
- c. Is responsible for insuring that all warranty work described herein is performed. If warranty work or preventive maintenance performed by the Contractor necessitates a corrective action to restore pavement markings, adjacent lanes, roadway shoulders, etc., then such corrective action to those areas shall be the responsibility of the Contractor.
- d. Shall retain all records for a period of 1 year beyond the end of the warranty period or completion of any warranted repairs, whichever is later.
- e. Is responsible for replacing all temporary repairs, resulting from the warranted items being in non-compliance with the warranty requirements, with Department approved materials and methods.
- f. Has the right to perform preventive maintenance. The Contractor shall submit a permit form and a written course of action proposing preventive maintenance. Approval of the Department must be obtained prior to the anticipated commencement of any preventive maintenance.
- g. Shall submit a permit form and a written course of action proposing appropriate corrective measures for the needed warranty work. Approval by the Department must be obtained prior to the anticipated commencement of any warranty work.
- h. Shall follow all traffic control and work zone safety requirements of the contract when any preventive maintenance or warranty work is performed.
- i. Shall complete all warranty work and preventive maintenance in a neat and uniform manner and shall meet the requirements specified in the contract.
- j. Is required to supply to the Department original documentation pursuant to Section 107 of the Standard Specifications in effect at the time this contract was awarded that all insurance required by the contract is in effect during the period(s) that any warranty work is being performed.
- k. Is responsible for all costs of all repairs to the warranted items resulting from deficiencies in materials or workmanship.

**Conflict Resolution Team.** The responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Department and the Contractor regarding the pavement or bridge distress experienced, the extent and severity thereof, and the warranty work required to be performed in accordance with the warranty requirements. The CRT will also mediate disputes related to unanticipated significant increases in traffic. It is the intention of the parties that the CRT be assembled with the full cooperation of both parties, and that the Contractor and Department will devote their full attention to the prompt consideration of the matter by the CRT. Neither party shall neglect its obligation of good faith hereunder nor shall unreasonable delay be imposed that would hinder the prompt decision of the CRT. The decision of the CRT shall be final and binding on the Contractor and Department.

The CRT will consist of three members:

- a. One selected, provided, and compensated by the Department.
- b. One selected, provided, and compensated by the Contractor.
- c. One qualified third party, mutually selected by the Department and the Contractor. Compensation for the third party member will be equally shared by the Department and the Contractor.

**Basis of Payment.** This work will be paid for at the lump sum price for CONCRETE BRIDGE DECKS AND BRIDGE APPROACH PAVEMENT WARRANTY. Payment will be made at the commencement of the warranty period, after the Warranty Bond form has been submitted (*as a separate bid item*).

Notes:

- (1) Insert structure numbers under warranty.
- (2) Insert the value of the bond.

## **APPENDIX G. WARRANTY PROJECT DETAILS**

<b>Contract</b>	<b>D</b>	<b>Route</b>	<b>Location</b>	<b>County</b>	<b>Letting Date</b>	<b>Item</b>	<b>Pavement Type</b>
60121	1	US 45 & IL 120	Intersection of US 45 & IL 120 (Belvidere Road) in Grayslake	Lake	01/21/00	101	Jointed (20-yr.)
90279	5	US 51	From 0.96 km north of Macon to the Shelby County line	Macon	01/21/00	103	Full-Depth (20-yr.)
72294	6	I-155	Northwest of Lincoln, Northerly to Southeast of Emden	Logan	01/21/00	15	Bit. Overlay
92435	6	IL 336	South of IL 61 at Mendon, Northeast to Loraine Road, South of Loraine	Adams	01/21/00	90	Full-Depth (20-yr.)
84790	2	IL 2	From Harlem Blvd. To Auburn Ave. in Rockford	Winnebago	11/17/00	734	Jointed (20-Yr.)
66044	3	I-80 WB	From 4.7 km East of IL 47 to the Will County Line	Grundy	11/17/00	109	CRC (30-Yr.)
70044	5	I-70	IL 1 to Indiana State line	Clark	10/19/01	1P	Unbonded CRC Overlay & Bridges (30-yr.)
60746	1	US 20	US 20 (Lake Street) west of Addison Road to Walnut St.	DuPage	12/14/01	3X	Jointed (20-yr.)
70059	5	I-70	From IL 1 to Marshall, MP 136 to 146	Clark	06/14/02	60	Bit. Overlay of Rubblized (30-Yr.)
60748	1	US 12/20/45	IL 171 to 87th St.	Cook	09/20/02	61	Jointed (30-yr.)
60401	1	I-290/IL 53	IL 72 to Devon	Cook-DuPage	11/08/02	7P	40-yr. PCC
82385	1	US 30	IL 83 to Sauk Trail	Cook	11/08/02	87	Jointed (30-yr.)
62277	1	US 30	IL 394 to IL 83	Cook	11/08/02	88	Jointed (30-yr.)
66051	3	I-80 EB	Morris to Will County Line	Grundy-Will	11/08/02	3	CRC (30-Yr.)
68144	4	I-155	MP 11.25 to 17.23	Tazewell	11/08/02	63	Overlay of Full-Depth HMA
72535	6	IL 29	Rochester to Berry	Sangamon	11/08/02	94	Extended Life HMA (30-yr. Life Cycle)
72450	6	I-155	MP 8.22 SB & 8.98 NB to 11.25	Logan	11/08/02	8	Overlay of Full-Depth HMA
82470	1	IL 120	Dot St. to IL 31	McHenry	01/17/03	73	30-yr. PCC
76384	8	IL 255	IL 143 to IL 140 in East Alton	Madison	04/25/03	4P	Extended Life HMA (30-yr. Life Cycle)
68195	4	I-74	I-474 to Pinecrest Dr., Riverfront Drive interchange reconstruction	Tazewell	04/25/03	18P	30-yr. PCC
76543	8	IL 255	IL 140 to Forsterburg Rd.	Madison	06/13/03	96	Extended Life HMA (30-yr. Life Cycle)
64362	2	IL 26	Bloody Gulch Rd. to US 30	Lee	04/25/03	131	Extended Life HMA (30-yr. Life Cycle)
98630	9	US 45	Saline River to Muddy	Saline	09/19/03	10	Extended Life HMA (30-yr. Life Cycle)

<b>Contract</b>	<b>D</b>	<b>Route</b>	<b>Location</b>	<b>County</b>	<b>Letting Date</b>	<b>Item</b>	<b>Pavement Type</b>
68196	4	I-74	EB and WB from Monroe Ave. to west of Industrial Spur	Peoria/ Tazewell	06/11/04	1P	30-yr. PCC
68197	4	I-74	EB lanes from west of Sterling Ave. to Nebraska Ave.	Peoria	06/11/04	2P	30-yr. PCC
68198	4	I-74	EB and WB from Nebraska Ave. to just north of Monroe	Peoria	06/11/04	3P	30-yr. PCC
68199	4	I-74	EB lanes from Illinois River to east of Washington St.	Tazewell	06/11/04	4P	30-yr. PCC