SPECIAL PROVISION
FOR
BITUMINOUS CRACK TREATMENT IN FLORIDA
WITH WARRANTY

A. Description- This work consists of furnishing all labor, equipment, and materials necessary for the treatment of cracks in bituminous pavements by the Cut and Seal Method and/or the Overband Crack Fill Method.

1. **Cut and Seal Method** consists of cutting a reservoir at the crack in the existing bituminous surface, cleaning the cut surfaces, and placing the specified materials into the reservoir to prevent the intrusion of water and incompressibles into the crack.

2. **Overband Crack Fill Method** consists of cleaning the crack in bituminous pavements and placing the specified materials into and over the crack to eliminate water infiltration.

B. Materials-

1. **Cut and Seal Method-** The material shall meet the requirement of ASTM D6690, Type I with the softening point requirement increased to 185º F (85º C) minimum.

   The following documents will be provided:

   a. Certificate of Analysis, which is a signed statement that the product supplied meets specification requirements and includes actual test results for the lot number of the product supplied, showing that specification requirements have been met.

   b. Certificate that Backer Rods for Use With Hot-Poured Sealant in Crack Channels meet ASTM D5249.

2. **Overband Crack Fill Method-** The material shall be supplied in solid form that when melted and applied will resist cold weather cracking and hot weather flow, tracking, or tire pick-up. The material shall meet the general requirements of ASTM D5078 and the following properties when heated and sampled at 400º F (204º C).

   - **Softening Point** (ASTM D36) – **200º F (93.3º C) minimum**
   - **Cone Penetration** (ASTM D5329) @ 25º C – **20 to 55**
   - **Resilience** (ASTM D5329) – **30% minimum**

- **Ductility** (ASTM D113) @ 25º C – **30 cm minimum**
- **Flexibility** (ASTM D3111 modified),
  3 x 25 x 150 mm specimen, 25 mm diameter mandrel, 90 deg bend,
  10 seconds - **Pass at -1º C**

Certificate of Analysis, which is a signed statement that the product meets specification requirements and includes actual test results for the lot number of the product supplied, showing that specification requirements have been met.

C. Construction Methods-

1. **General-** All single transverse cracks in the traveled lanes shall be sealed by the Cut and Seal Method. All other cracks in the traveled lanes and the shoulder areas may be filled by the Overband Crack Fill Method or the Cut and Seal Method. Cracks shall be filled or sealed the same day they are cleaned and prepared.

2. **Cut and Seal Method-** The configuration of the reservoir used for the Cut and Seal Method will be the choice of the Contractor with the following exceptions:

   - A maximum reservoir width of ¾ inch will be allowed.
   - Minimum reservoir width is ½ inch.
   - Reservoir depth shall be ¾ inch (+/-) ¼ inch.
   - Reservoir cutting should remove at least ⅛ inch from each side of the crack.
   - The cut reservoir should have vertical, intact sides with no loosely bonded aggregate.
   - Following cutting, the reservoir shall be cleaned with oil and moisture free compressed air with a minimum pressure of 90 psi.
   - The reservoirs are to be inspected after cleaning to assure that the surfaces are clean, dry, and free of dirt, debris, adhered fines, or other contamination.
   - If reservoirs are not clean and dry, they shall be re-cleaned to achieve the required condition.
   - Sealant shall be applied to slightly overfill the reservoir and then struck off using a “V” shaped squeeqe to flush with the pavement surface. Maximum overlap beyond crack edges is 1½ inches per side, and maximum thickness of sealant on the surface is 1/16 inch.

3. **Overband Crack Fill Method-** The specified material shall be applied using an application wand followed by a “V” shaped squeegee or by a round application head having a concave underside.

- When using an overband configuration, the sealant shall be struck-off flush with the pavement surface to create a seal width no greater than 3 inches and sealant "film" thickness shall be ⅛ inch (± 1/16 inch).
- Cracks shall be cleaned with oil and moisture free compressed air with a minimum pressure of 90 psi to remove dirt, dust, debris, or other contaminants prior to applying the crack sealant material.
- A hot air lance should be used to remove surface moisture such as dew if needed.

4. **Documentation Provided by the Contractor-** The Contractor shall provide a daily report to the Owner's Authorized Representative with the following information:
   - Job number and route number or road/street name
   - Date, air temperature, weather conditions in am and pm
   - Beginning and ending locations for the day, to include lane and direction
   - Amount of materials used for the day, including lot number
   - Traffic control typically used, number of traffic control moves, and checks conducted on the traffic control
   - Unique or different situations on the project
   - Contractor's authorized signature

5. **Pre-Construction On-Site Meeting-** A pre-construction meeting between the Contractor and the Owner's Authorized Representative will be held on-site prior to beginning any work. The agenda for the meeting will include a review of:
   - The Contractor's typical reservoir detail drawing
   - The Contractor's detailed work schedule
   - The traffic control plan
   - Documentation requirements and submittal to the project office

6. **Protecting the Work-** Traffic shall not be allowed on the treated pavement areas until the material has cooled sufficiently to prevent tracking by the vehicle tires. If required for earlier opening to traffic application of detackifying solution. Any damage by traffic to the treated pavement areas shall be repaired by the Contractor at no expense to the Owner. If the existing pavement markings are obliterated as a result of the crack treatment work, temporary pavement markings shall be placed before the roadway is opened to traffic.

7. **Weather Conditions-** Pavement temperature shall not be lower than 40º F when applying sealant to the prepared cracks. Rain should not be imminent

when applying sealant. After a rain, the pavement and crack surfaces must be dry prior to applying sealant. If applying sealant at night, or at low temperatures below the dew point, assure that moisture is not forming on the crack surfaces. If moisture is present, sealing should not be performed until the crack surfaces are dry.

8. **Sealant Melting and Application-** The sealant shall be melted, heated, and applied using a melter(s) that meet requirements of the sealant product manufacturer. Melters used must be indirectly heated, have effective agitation, and have calibrated temperature controls and readouts. Sealant is to be applied within the temperature range specified by the sealant product manufacturer.

D. Measurement and Payment- The completed work, as measured for Crack Treatment, will be paid for at the contract unit price for the following contract items:

Contract Item (Pay Item)	**Pay Unit**
Crack Treatment Lane.....	lane-mile
Crack Treatment Ramp……	lane-mile

The unit price shall include all documentation, materials, equipment, and labor necessary for the preparation, filling and sealing of the cracks. A lane-mile shall consist of the driving lanes including individual mainline lanes and auxiliary lanes (passing lanes and turn lanes). The driving lanes will include any adjacent paved shoulders. Ramp lanes (acceleration and deceleration) with adjacent paved shoulders will be paid for separately.

SPECIAL PROVISION
FOR
BITUMINOUS CRACK TREATMENT FLORIDA WARRANTY
(Pavement Preservation)

1. General Description- The warranty for a bituminous crack treatment shall consist of the warranty form, initial acceptance, warranty bond, warranty performance criteria, and the rights and responsibilities of the Owner and Contractor.

2. Definitions-

a. Acceptance Date of Warranted Work - The date when the warranted work is complete, has been determined by the Owner to be in compliance with the contract specifications and is continuously open to traffic. This is the date of initial acceptance and constitutes the start date for the warranty period. There may be more than one acceptance date of warranted work for a project.

b. Warranty Bond - A surety which guarantees that the warranty requirements will be met.

c. Driving Lane(s) - The delineated pavement surface used by traffic. Each of the following is considered a separate driving lane:
- Each individual mainline lane
- The sum of all ramp lanes and the associated acceleration and deceleration lanes
- The sum of all auxiliary lanes, such as passing lanes and turn lanes

Approaches and driveways are not considered driving lanes for the purpose of this special provision.

d. Warranted Work - Work that is guaranteed that will not exceed the specified thresholds of the performance criteria during the warranty period.

e. Warranty Work - If the thresholds are exceeded during the warranty period, corrective action will be completed by the Contractor to bring the warranted work back into compliance for release of the warranty. All costs will be borne by the Contractor including traffic control, mobilization, pavement marking and/or other related work.

3. Initial Acceptance- The Owner and the Contractor will jointly review all completed warranted work, or a portion thereof, as determined by the Owner. If the work does not meet contract requirements, the Contractor shall make all necessary corrections, at their expense, prior to initial acceptance. Initial acceptance will occur as soon as the Owner's Authorized Representative determines that all contract requirements have been met for the warranted work. The date on which initial acceptance occurs is termed the Acceptance Date of Warranted Work.

Initial acceptance will be documented and executed jointly by the Owner and the Contractor on a form furnished by the Owner. A copy of the form will be sent to the Contractor's warranty bond surety agent by the Owner. The initial acceptance, nor any prior inspection, acceptance, or approval, by the Owner diminishes the Contractor's responsibility under this warranty.

The Owner's Authorized Representative may accept the work and begin the warranty period to accommodate special limitations or staged construction, excluding any area needing corrective work.

4. Warranty Bond- The Contractor shall furnish a single term warranty bond of the amount stipulated prior to contract award. The effective starting date of the warranty bond shall be the Acceptance Date of Warranted Work. The warranty bond will be released at the end of the warranty period, or after all warranty work has been satisfactorily completed, whichever is latest.

5. Rights and Responsibilities of the Owner- The Owner:

a. Reserves the right to approve the time, traffic control and methods for performing any warranty work by permit through the Owner's permit process.

b. Reserves the right to approve the schedule proposed by the Contractor to perform warranty work.

c. Reserves the right to approve all materials and specifications used in warranty work.

d. Reserves the right to determine if warranty work performed by the Contractor meets the contract specifications.

e. Reserves the right to perform, or have performed, routine maintenance during the warranty period, which routine maintenance will not diminish the Contractor's responsibility under the warranty.

f. Reserves the right, if the Contractor is unable, to make immediate emergency repairs to the pavement to prevent an unsafe road condition caused by defective warranted work as determined by the Owner. The Owner will attempt to notify the Contractor that action is required to address an unsafe condition. The Owner will record the time and date of the attempts for Contractor notification. However, should the Contractor be unable to comply with this requirement, to the Owner's satisfaction and within the required time frame specified by the Owner, the Owner will perform, or have performed any emergency repairs deemed necessary. Any such emergency repairs undertaken will not relieve the Contractor from meeting the warranty requirements of this Special Provision. Any costs associated with such emergency repairs will be paid by the Contractor.

g. Is responsible for monitoring the pavement throughout the warranty period and will provide the Contractor any written reports of the crack treatment condition and/or maintenance activities related to pavement performance when requested.

h. Is responsible for notifying the Contractor, in writing, of any corrective action required to meet the warranty requirements.

6. Rights and Responsibilities of the Contractor- The Contractor:

a. Shall warrant to the Owner that the warranted work will be free of defects as measured by the performance parameters and specified threshold values for each. The warranty bond shall be described on a form furnished by the Owner. The completed form shall be submitted to the Owner prior to award of contract.

b. Is responsible for performing all warranty work including, but not limited to, maintaining traffic and restoring all associated pavement features, at the Contractor's expense.

c. Is responsible for performing all temporary or emergency repairs, resulting from being in non-compliance with the warranty requirements, using Owner approved materials and methods.

d. Shall notify the Owner and submit a written course of action for performing the needed warranty work, ten calendar days prior to commencement of said warranty work, except in the case of emergency repairs as detailed in this special provision. The submittal must propose a schedule for performing the warranty work and the materials and methods to be used.

e. Shall follow an Owner approved maintaining traffic plan when performing warranty work.

f. Is required to supply to the Owner original documentation that all insurance required by the contract is in effect during the period(s) that warranty work is being performed.

g. Shall furnish to the Owner, in addition to the regular performance and lien bond for the contract, supplemental performance and lien bonds covering any warranty work being performed. These supplemental bonds shall be furnished prior to beginning any warranty work, using Owner approved forms. These supplemental bonds shall be in the amount required by the Owner to cover the costs of warranty work.

h. Shall complete all warranty work required by this special provision and prior to conclusion of the warranty period, or as otherwise agreed to by the Owner.

i. Shall be liable during the warranty period in the same manner as Contractors currently are liable for their construction related activities with the Owner. This liability shall arise and continue only during the period when the Contractor is performing warranty work. This liability is in addition to the Contractor performing and/or paying for any required warranty work, and shall include liability for injuries and/or damages and any expenses resulting therefrom which are not attributable to normal wear and tear of traffic and weather, but are due to non-compliant materials, faulty workmanship, and to the operations of the Contractor.

7. Evaluation Method- The Owner will conduct pavement evaluations by dividing the project into segments. Each individual driving lane will be divided into segments of 528 feet for measuring and quantifying the condition parameters. Evaluation may include use of both the Owner's Pavement Management System and/or field pavement condition reviews. This evaluation may be waived in emergency situations.

The beginning point for laying out segments will be the Point of Beginning (POB) of the project. Segments will be laid out consecutively to the Point of Ending (POE) of the project. The original segmentation of the project will be used for all successive reviews throughout the warranty period. Measurements and calculations are defined in the Pavement Performance Warranty Appendix.

8. Warranty Requirements- Warranty work will be required when the following two criteria are both met as a result of a failure to meet the performance parameters.

Criteria 1 - The threshold limit for a performance parameter is exceeded, and

Criteria 2 - The maximum allowable number of defective segments is exceeded for one or more performance parameters for a driving lane, unless otherwise noted in the appendices.

Specific threshold limits and segment limits are covered in the appendices.

During the warranty period, the Contractor will not be held responsible for pavement distresses that are caused by factors beyond his control and unrelated to design decisions made by the Contractor, pavement construction or materials. These include, but are not limited to: chemical and fuel spills, vehicle fires, and any testing by the Owner, such as coring. Other factors considered to be beyond the control of the Contractor which may contribute to pavement distress will be considered by the Owner's Authorized Representative on a case by case basis upon receipt of a written request from the Contractor.

9. Conflict Resolution Team- The sole responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Owner and the Contractor regarding application or fulfillment of the warranty requirements. The CRT will consist of five members:

a. Two members selected and compensated by the Owner.

b. Two members selected and compensated by the Contractor.

c. One member mutually selected by the Owner and the Contractor. Compensation for the third party member will be equally shared by the Owner and the Contractor.

If a dispute arises on the application or fulfillment of the terms of this warranty, either party may serve written notice that appointment of a CRT is required.

At least three members of the CRT must vote in favor of a motion to make a decision. If agreement cannot be reached, the CRT may decide to conduct a forensic investigation. The CRT will determine the scope of work and select the party to conduct the investigation. All costs related to the forensic investigation will be shared proportionally between the Contractor and the Owner based on the determined cause of the condition.

10. **Emergency Repairs-** If the Owner determines that emergency repairs are necessary for public safety, the Owner or its agent may take repair action. Emergency repairs will be authorized by the Owner's Authorized Representative.

Prior to emergency repairs, the Owner will document the basis for the emergency action. In addition, the Owner will preserve evidence of the defective condition.

11. **Non-Extension of Contract-** This Special Provision shall not be construed as extending or otherwise affecting the claim process and statute of limitation applicable to this Contract**.**

12. **Measurement and Payment-** All costs, including engineering and maintaining traffic costs, associated with meeting the requirements of this special provision are considered to be included in the contract unit prices for the warranted work regardless of when such costs are incurred throughout the warranty period. These costs include but are not limited to, all materials, labor and equipment necessary to complete required warranty work.

PAVEMENT PERFORMANCE WARRANTY APPENDIX
FOR BITUMINOUS CRACK TREATMENT IN FLORIDA

A1. Application- This appendix is applicable for pavement performance warranties on bituminous crack treatment. The work consists of furnishing all labor, equipment, and materials necessary to treat cracks in bituminous surfaces.

A.2 Definitions-

Abrasion - The wearing away of overband sealant material by tire friction.

Adhesion - The bonding of a sealant material to crack sidewalls and the pavement surface.

Cohesion - The resistance of a sealant material to internal rupture.

Overband - A type of finish in which sealant material is allowed to completely cover prepared cracks by extending onto the pavement surface.

Non-Working Cracks - Cracks that experience relatively little horizontal or vertical movement as a result of temperature change or traffic loading. As a general rule, movement is less than ⅛ inch.

Reservoir - A uniform rectangular channel resulting from a crack routing or sawing operation.

Treatment Failure - The degree which a crack treatment is not performing its function. This includes areas along the sealed or filled crack exhibiting loss of adhesion or cohesion or pull-out of sealant material. Sealant materials displaying abrasion are not performing, unless there is a definable upheaval in the pavement profile along crack edges that allows the wearing away of material.

Working Cracks - Cracks that experience considerable horizontal or vertical movement as a result of temperature change or traffic loading. In general, movement greater than, or equal to ⅛ inch.

A.3 Warranty Requirements- If any of the following minimum performance criteria are not met, warranty work is required. The warranty work shall be performed prior to conclusion of the warranty period or within such other time frame as agreed to by the Owner and the Contractor, unless safety concerns dictate otherwise.

One segment (528 feet in length) per one lane-mile will be selected to review in detail. The same driving lane will be reviewed for measuring the performance of the crack treatment. One segment will be reviewed for any projects or remaining portions of a project less than 1 mile, but greater than 2 segments (1056 feet).

A separate measurement and calculation of treatment failure will be made for material placed in a saw and seal configuration and material placed in an overband configuration. The measurement will define the amount of failure as a percentage of the total length of cracks in the segment by the following formula:

$$\left(\frac{\text{Length of Failure}}{\text{Total Length of Cracks}}\right) \times 100 = \text{Percent Failure}$$

a. **Single Segment Failure-** The allowable threshold limit for material failure shall not exceed 30% of any one segment.

   Corrective action for this parameter requires the Contractor to reseal the entire deficient segment plus all other deficient segments that exceed 30% failure within that mile, including shoulders unless the shoulders, or portions thereof, were exempted in the proposal from treatment due to a high concentration of cracks.

b. **Multiple Segment Failure-** The allowable threshold limit for material failure shall not exceed 10% of all segment evaluated.

   Corrective action for this parameter requires the Contractor to reseal the entire project location, including shoulders unless the shoulders, or portions thereof, were exempted in the proposal from treatment due to a high concentration of cracks.

c. **Catastrophic Failure-** If at any time during the warranty period, 30% of the cracks treated as part of the entire contract fail, the Contractor will correct all failures as soon as conditions permit.

This Appendix shall not be construed as extending or otherwise affecting the claim process and statute of limitation applicable to the Contract