STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION 896

QC/QA CONCRETE PAVEMENT WITH WARRANTY

April 15, 2005

896.01 General. Construct a portland cement concrete pavement on a prepared surface according to these specifications and in reasonably close conformity with the lines, grades and typical sections shown on the plans or established by the Engineer. Use conventional concrete paving equipment, methods and materials as specified in Supplemental Specification 888, except as modified by this specification. Warrant the concrete pavement surface for seven years.

896.02 Maintenance Bond. When the successful Bidder provides the Department with the performance and payment bonds specified in 103.05, also furnish a maintenance bond for seven years in the amount of 40 percent of the price bid for the entire pavement area that is to be warranted.

The Surety that underwrites the maintenance bond is required to have an A.M. Best rating of "A-" or better. Include the cost of the maintenance bond in the pay item for the premium for the contract performance bond and the payment bond.

The effective date of the maintenance bond is the date the Department's Form C-85 is issued for the pavement. The Department will issue a final C-85 within 30 days after all of the pavement items, including all safety items, are completed and accepted, and the pavement is open to traffic. The Department will issue a partial C-85 within 30 days after the pavement is completed and accepted, and all safety items are in place to allow the pavement to be safely open to traffic during the winter months from December 1 to April 30. The Department will not write more than one C-85 each calendar year except with approval of the Director.

The Department will notify the Surety after a final or partial Form C-85 is issued. After the Final C-85 is issued, the Department will also establish all final quantities for the project and the project will be finalized using standard procedures. The maintenance bond will expire seven years from the issuance of Form C-85.

Maintain the liability insurance specified in 107.12, insuring against Contractor or Contractor authorized operations negligently performed during the warranty period. This insurance will be in effect throughout the warranty period. Send a copy of the Certificate of Insurance to the District each year.

896.03 Warranty Item and Remedial Actions. Warranty items and Remedial Actions are specified in Table A. The warranty applies to the entire concrete pavement (including but not limited to the mainline pavement lanes, shoulders, acceleration/deceleration lanes, collector/distributors and ramps). The warranty does not apply to structural problems below the pavement placed as part of this project, provided the structural problem is not the fault of the Contractor. The Threshold Levels are based on the 0.1 mile (160 m) Segments described in 896.04.

Meeting the minimum requirements and guidelines of this specification are not to be construed as a warranty, expressed or implied, as to the materials properties and workmanship efforts required to meet the performance criteria set forth in Table A.

The design designation in the plan is an indication of the level of traffic expected on this project. Design information, criteria, and calculations are on file in the District office. The Department will waive the warranty requirements of a Section if the Equivalent 18,000 pound Single Axle Loads (ESAL's), calculated using current information and established Department procedures, exceeds the design calculated ESAL's, prorated for the period of years specified in the pay item, by 20 percent or more.

Provide a maintenance free pavement. Perform routine maintenance during the warranty period, but limit routine maintenance to repairs authorized by the Department.

When performing any work required or allowed by this specification during the warranty period, provide traffic control according to current Department policy, the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, and obtain Departmental approval for the time the work will be performed. Any major change in Department construction traffic control policy will be considered a changed condition.

The Engineer will approve portland cement concrete, joint sealer material, or other materials used for Remedial Action work. For Remedial Action work, the Engineer may approve alternatives to the extent or type of specified Remedial Action.

Any pavement markings or raised pavement markers (RPM) removed or obliterated while performing a Remedial Action will be replaced with pavement markings or RPMs equal to or better than the original products at the Contractor's cost.

All Remedial Actions will be performed on or before November 15. If an appeal process goes to step 3, the District may revise the date for the completion of the Remedial Action for the appealed item. Prior to performance of a Remedial Action, submit a Remedial Action plan to the Engineer for approval. State in the plan when and how the Remedial Action will be done, what material will be used and how traffic will be controlled while performing the Remedial Action. Warrant Remedial Action work for the remainder of the warranty period.

The Department will perform emergency work repairing pavement distresses that are

hazardous to the traveling public. If the emergency work is extensive, the Department may authorize the Contractor to do the repairs. The District Construction Engineer (DCE) will determine if the distress is or is not the fault of the Contractor. If the DCE determines the distress is the fault of the Contractor, the cost of this emergency work, including traffic control, will be paid by the Contractor. The Contractor is not responsible for pavement damage beyond the Contractor's control (i.e., car fire, oil spill, etc.). The Contractor may appeal the DCE's determination according to 896.05.

896.04 Annual Review. During the warranty period, the Remedial Work will be performed at no cost to the State and will be based on the annual review by the Department. The project will be divided into 1 mile (1600 m) Sections. The width of each Section will be the width of a single lane or shoulder. Divided each section into 0.1 mile (160 m) Segments.

Each year, between March 1 and April 30, the project will be reviewed by a District Review Team (DRT). The DRT will notify the Contractor of the scheduled review. The Contractor or any other interested party may attend the annual review, for observation only. The DRT will record any comments by the Contractor or other interested party. The DRT will select at least two Segments in each Section to review, but may review the entire section. The results will be issued in writing to the Contractor within 15 days after the completion of the review,.

The District Deputy Director may waive this yearly review for all or part of the project based on the results of a preliminary review by a member of the DRT. Any such waiver will be in writing to the Contractor.

896.05 Appeal Process. The Contractor may appeal a finding of the DRT. Submit any appeal, in writing, to the DCE, within 15 days after receipt of the written results of the DRT.

The DCE will evaluate the Contractor's appeal. This evaluation will include reviewing the disputed area in the field and consulting with the Office of Construction Administration. The evaluation may also include reviewing test data, obtaining samples, or interviewing Department (District or Central Office) or Contractor employees. The DCE's written determination will be issued to the Contractor within 45 days after the DCE receives the appeal.

If the Contractor disagrees with the DCE's determination, the Contractor may appeal the determination using step three of the Dispute Resolution and Administrative Claim process.

896.06 Concrete Mix Design. The concrete mix design used in the concrete pavement will meet the minimum requirements of Supplemental Specification 888.

896.07 Construction. In addition to the maximum joint spacing specified for Item 451 and 452, 12 feet (3.6m) is the minimum spacing for both types of pavement .

Construct the completed surface to meet Supplemental Specification 888, unless the surface tolerance requirement for the portland cement concrete pavement is modified elsewhere in the contract documents for this project.

Notify the Engineer a minimum of 24 hours prior to start of any concrete paving.

896.08 Basis of Payment. The requirements of SS888.18 and SS888.19 will apply. Payment for accepted quantities completed in place will be made at the contract price for:

Item	Unit	Description
896	Square yard (Square Meter)	Portland Cement Concrete Pavement (7 year warranty)

TABLE A – WARRANTY ITEMS AND REMEDIAL ACTIONS

Distress Type	**Threshold Level** (per Segment)	**Remedial Action**
Joint Sealer (1) (10)	Any pre-formed sealer not in its intended position, twisted or rolled, missing, not adhering to sides of joint or exhibiting compression set. Any hot poured sealer exhibiting adhesive failure (debonding) or cohesive failure (material splitting) or both or completely missing material.	Remove, prepare and replace the sealant in kind
Cracking (2)	Any transverse or diagonal cracks in 452 plain portland cement concrete pavement that touch two or more boundaries of the slab; or that touch one boundary of the slab and are 1/16 inch (1.5 mm) wide or wider at any point:	
	One transverse or diagonal crack per panel	(5)
	Two or more transverse or diagonal cracks per panel	(6)
	Any transverse or diagonal cracks in 451 reinforced portland cement concrete pavement that touch two or more boundaries of the slab and are open or spalled at the surface to a width of 1/4 inch (6 mm) over a distance equal to at least one-half the crack length; or that touch one boundary of the slab and are at least 4 feet (1.2 m) long and are open or spalled at the surface to a width of 1/4 inch (6 mm) over a distance equal to at least one-half the crack length:	
	One transverse or diagonal crack per panel	(5)
	Two or more transverse or diagonal cracks per panel	(6)
	Any longitudinal cracks:	
	> 15 inches (380 mm) from a longitudinal joint	(6)
	< 15 inches (380 mm) from a longitudinal joint	(7)
Disintegrated Areas (3)	Total surface distress greater than one (1) square foot (0.09 square meters)	(8)
Faulting (4)	Any faulting greater than 3/16 inch (5 mm)	(9)

(1) Joint sealer criteria for determining failure will differ depending on whether the transverse joint material (pre-formed elastomeric sealer 705.11) or longitudinal joint material (hot applied sealer, 705.04) is being evaluated.

(2) This distress is defined as any type of cracking (longitudinal, transverse or diagonal) meeting the applicable threshold level.

(3) A disintegrated area includes all types of surface disintegration. Surface disintegration is defined as, but not limited to, joint spalling, scaling, high steel mesh (if applicable), and mud or cement balls. For this specification, aggregate popouts are **not** considered to be surface disintegration.

(4) Differential settlement of one slab in relation to the adjacent slab on either side of a transverse joint or crack. Faulting is measured in the wheel path.

(5) Restore load transfer in the wheel tracks per Item 258 or make a full depth repair the full width of the lane according to Item 255 or replace concrete slab full depth from transverse joint to transverse joint. If restoring load transfer per Item 258 conform to standard drawings for spacing of dowels. Repairs with Item 255 using Type Y-Y joints per Standard Construction Drawings are permitted provided the repair limits are more than 7 feet (2.1 m) from any transverse joint.

(6) Replace concrete slab full depth from transverse joint to transverse joint or make a full depth repair the full width of the lane per Item 255. Repairs with Item 255 using Type Y-Y joints per Standard Construction Drawings are permitted provided the repair limits are more than 7 feet (2.1 m) from any transverse joint.

(7) Rout and seal crack with hot applied joint sealer.

(8) Repair with Item 256, full depth repair the full width of the lane per Item 255 or slab replacement as directed by the Engineer depending on the extent of deterioration. Repairs with Item 255 using Type Y-Y joints per Standard Construction Drawings are permitted provided the repair limits are more than 7 feet (2.1 m) from any transverse joint.

(9) Repair joints or cracks with Item 255 using Type Y-Y joints per Standard Construction Drawings or, for joints only, subseal in accordance with SS 811 or 812 and diamond grind full width Item 257, if necessary.

(10) If transverse and longitudinal contraction joints were not sealed under 896.07, the distress type for joint sealer does not apply.