REINFORCED CONCRETE BRIDGE APPROACHES

The Standard Specifications are revised as follows:

SECTION 609, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 609 – ~~Blank~~ *REINFORCED CONCRETE BRIDGE APPROACHES*

609.01 Description. *This work shall consist of constructing reinforced concrete bridge approaches, RCBA, on a prepared subgrade and subbase in accordance with 105.03.*

MATERIALS

609.02 Materials. *Materials shall be in accordance with the following:*

Coarse Aggregate, Class D or Higher, Size No. 53..... 904
*Concrete, Class C *..... 702*
Curing Materials..... 912.01
Joint Materials..... 906.02(a)1
Reinforcing Bars, Epoxy Coated..... 910.01
Support Devices..... 910.01(b)9
** Coarse Aggregate shall be Class AP, Size No. 8*

CONSTRUCTION REQUIREMENTS

609.03 General Requirements. *Subgrade shall be prepared in accordance with 207. Subbase shall be prepared in accordance with 302.*

609.04 Forms. *Forms shall be either steel or wood and shall be in accordance with 508.04(c)1 or 508.04(c)2.*

609.05 Joints. *Longitudinal construction joints will only be permitted as shown on the plans. The Type I-A joint will be constructed as shown on the plans.*

609.06 Reinforcing Bars. *Furnishing and placement of reinforcing bars shall be in accordance with 703.*

609.07 Thickness. *The depth of the RCBA will be checked by the Engineer prior to pouring, by making stringline measurements every 1 meter (3 feet) across the width of the approach. Any location deficient in depth by 13 mm (1/2 in.) or more shall be corrected prior to placing the concrete.*

609.08 Concrete Placement. *The subbase shall be uniformly moist at the time of concrete placement. Delivery and placement of concrete shall be in accordance with 702.*

609.9 Finishing. *The RCBA shall be finished with equipment in accordance with 508.04(c)3 and 508.04(c)4. The operations shall be controlled so that an excess of mortar and*

water is not worked to the top. Long handled floats may be used to smooth and fill in open textured areas. The edges of formed RCBA shall be tooled or chamfered.

The finished RCBA surface shall be textured with a double thickness burlap drag or a minimum 1.2 m (4 ft) wide turf drag. Immediately after the finishing operation is complete and before the surface film has formed, the surface of the RCBA shall be textured by transverse grooving in accordance with 504.03. The grooves may be formed by mechanized equipment using a vibrating beam roller, a series of discs or other approved device. Manual tools such as fluted floats, spring steel tined rakes, or finned floats with a single row of fins may be used. The grooves shall be relatively uniform and smooth and shall be formed without tearing the surface or bringing coarse aggregate to the top.

All areas of hardened RCBA which do not conform to the requirements due to either a deficiency in the grooving or a rough open textured surface shall be corrected. Corrections shall be made by cutting transverse grooves in the hardened surface with an approved cutting machine and retexturing to a satisfactory finish as directed.

609.10 Curing. *RCBA shall be wet cured in accordance with 702 or shall have liquid membrane forming curing compound applied to exposed surfaces within 30 min after the finishing operations have been completed. The edges of the RCBA shall be cured immediately upon removal of the forms. The edge shall be covered with curing materials equal to the material used on the surface or banked with soil 300 mm (12 in.) wide or greater.*

When conditions arise which prevent timely application of curing materials the surfaces shall be kept wet with a fine spray of water. The fine spray of water shall continue until application of curing materials is resumed.

Liquid membrane forming curing compound shall be applied in a continuous uniform film at a rate not less than 1 L/3.7 m^2 (1 gal./150 ft^2). Additional applications, if needed, shall follow the previous application within 30 min. The curing compound may be warmed in a water bath during cold weather at a temperature not exceeding 38°C (100°F). Thinning with solvents will not be permitted. Non-uniform film rates will result in the discontinuance of that application method.

A new coat of curing compound shall be applied to areas damaged by rain or other means during the curing period. The recoating shall be applied as soon as possible and at a rate equal to that specified for the original coat.

609.11 Smoothness. *The smoothness of the surface of the RCBA will be measured by means of a 3 m (10 ft) long straightedge as soon as practical following curing or completion of adjoining roadway or structure sections. All surface variations shall be corrected to 3 mm (1/8 in.) or less.*

Smoothness variations outside specified tolerances shall be corrected in accordance with 502.20.

609.12 Opening to Traffic. *RCBA may be opened to traffic after 14 days. The RCBA may be opened earlier if test beams indicate a modulus of rupture of 3800 kPa (550 psi) or greater.*

The Contractor and Engineer will conduct an inspection of the new RCBA for any damage. The inspection and all necessary repairs shall be completed prior to opening to traffic.

609.13 Method of Measurement. *Reinforced concrete bridge approaches will be measured by the square meter (square yard). Dense graded subbase will be measured in accordance with 302.08. Reinforcing bars will be measured in accordance with 703.07.*

Subgrade preparation will not be measured for payment. Finishing and curing of the RCBA will not be measured for payment. Construction joints will not be measured.

609.14 Basis of Payment. *Reinforced concrete bridge approaches will be paid for at the contract unit price per square meter (square yard). Dense graded subbase will be paid for in accordance with 302.09. Reinforcing bars will be paid for in accordance with 703.08.*

Payment will be made under:

Pay Item	*Metric Pay Unit Symbol (English Pay Unit Symbol)*
Reinforced Concrete Bridge Approach, _____ thickness	*mm (in.)……m2 (SYS)*

The cost of all materials, water, equipment, and all labor for the compaction of the subgrade, shall be included in the cost of the RCBA.

The cost of finishing, furnishing and placing curing materials shall be included in the cost of the RCBA.

The cost of corrections for smoothness or re-texturing shall be included in the cost of RCBA.

The cost of all labor and materials for the placement of construction joints shall be included in the cost of the RCBA.

SECTION 906, BEGIN LINE 191, DELETE AND INSERT AS FOLLOWS:

(b) Type BS2, BS6, BS8, BS9, *and* BS11~~, and 1-A~~. Materials shall be in accordance with ASTM D 3542. The dimension and tolerance requirements shall be as specified in the following table for the type or types of joints specified.

Item No. 39-2 Cont.
Mr. Miller
Date: 2/13/03

REVISION TO 1999 STANDARD SPECIFICATIONS

SECTION 906, CONTINUED.

EXPANSION JOINT TYPE	SEAL WIDTH	SEAL HEIGHT	JOINT WIDTH @ INSTALLATION
BS2	41 mm (1 5/8 in.) ± 3 mm (± 1/8 in.)	41 mm (1 5/8 in.) ± 3 mm (± 1/8 in.)	22 mm (7/8 in.) + 3 mm, - 6 mm (+ 1/8 in., - 1/4 in.)
BS6	64 mm (2 1/2 in.) - 0, + 6 mm (- 0, + 1/4 in.)	64 mm (2 1/2 in.) + 10 mm, - 3 mm (+ 3/8, - 1/8 in.)	38 mm (1 1/2 in.) + 3 mm, - 6 mm (+ 1/8 in., - 1/4 in.)
BS8	76 mm (3 in.) - 0, + 6 mm (- 0, + 1/4 in.)	83 mm (3 1/4 in.) ± 6 mm (± 1/4 in.)	48 mm (1 7/8 in.) + 3 mm, - 6 mm (+ 1/8 in., 1/4 in.)
BS9	100 mm (4 in.) - 0, + 6 mm (- 0, + 1/4 in.)	111 mm (4 3/8 in.) ± 10 mm (± 3/8 in.)	64 mm (2 1/2 in.) + 3 mm, - 6 mm (+ 1/8 in., - 1/4 in.)
BS11	127 mm (5 in.) - 0, + 6 mm (- 0, + 1/4 in.)	128 mm (5 1/8 in.) ± 6 mm (± 1/4 in.)	75 mm (3 in.) + 3 mm, - 6 mm (+ 1/8 in., - 1/4 in.)
~~1 A~~	~~16 mm~~ ~~(5/8 in.)~~ ~~± 2 mm~~ ~~(± 1/16 in.)~~	~~17 mm~~ ~~(11/16 in.)~~ ~~± 3 mm~~ ~~(± 1/8 in.)~~	~~6 mm~~ ~~(1/4 in.)~~ ~~- 0, + 3 mm~~ ~~(- 0, + 1/8 in.)~~