



**PORTLAND CEMENT CONCRETE MIX DESIGN<sup>1</sup>  
TRIAL BATCH SUMMARY**

Project: NV FLH 3-2(4) Scenic Hwy. Date: 10/1/96  
 Contractor: M. M. Constr. Co. Concrete for: Box culvert  
 Concrete producer: Roadway Ready Mix Class of concrete: A(PE)  
Reno, NV Mix designation: \_\_\_\_\_

• **COMPRESSIVE STRENGTH (28 DAY)**

Minimum average strength required<sup>2</sup> ( $f_c$ ) 26.49 megapascals (MPa)  
 Design strength specified ( $f_c'$ ) 25 MPa

• **PROPORTIONS**

Material	Specific Gravity (SSD)	SSD Mass per m <sup>3</sup> (kg)	Absolute Volume (m <sup>3</sup> )	Tolerance % ( $\pm$ )	Admixtures	Dosage per m <sup>3</sup> (mL)
Cement	3.15	<u>362</u>	<u>0.115</u>	1	Air entrainment	<u>76.9</u>
Water	1.00	<u>147</u>	<u>0.147</u>	1	Water reducer	_____
Coarse aggregate <sup>3</sup>	<u>2.73</u>	<u>1237</u>	<u>0.453</u>	2	Retarder	_____
Fine aggregate <sup>3</sup>	<u>2.72</u>	<u>638</u>	<u>0.234</u>	2	Color	_____
Total air			<u>0.050</u>		Accelerator	_____
Other					Other	_____
<b>Totals</b>		<u>2384 kg</u>	<u>0.999 m<sup>3</sup></u>			

• **PROPERTIES**

Water/cement ratio (by mass)<sup>4</sup> 0.41 Theoretical unit mass 2384 kg/m<sup>3</sup>  
 Measured unit mass 2378 kg/m<sup>3</sup> Measured air content 5.3 percent  
 Measured slump 100 mm

• **MEASURED COMPRESSIVE STRENGTH**

Individual 7-day, MPa 16.97, 14.03, 17.76 Average (7 day): 16.25 MPa  
 Individual 28-day, MPa 30.27, 30.74, 27.76 Average (28 day): 29.66 MPa

<sup>1</sup> For normal mass portland cement concrete (2300 - 2500 kg/m<sup>3</sup>).

<sup>2</sup> See page 5.

<sup>3</sup> Bulk SSD.

<sup>4</sup> The water/cement ratio for modified concrete is the ratio of the mass of water to the combined masses of portland cement and cement substitute.

• **SIGNATURES** Contractor: J. M. Good  
 Mix Designer: C. Charles