

# Marshall Worksheet

4/30/2003

S.P. \_\_\_\_\_ T.H. \_\_\_\_\_ Contractor \_\_\_\_\_  
 Test # \_\_\_\_\_ Date Sampled \_\_\_\_\_ Mix Designation \_\_\_\_\_  
 MDR # \_\_\_\_\_ Sample Ton Number \_\_\_\_\_

## Maximum Specific Gravity ( $G_{mm}$ )

..... AASHTO T209 Mn/DOT Modified (Mn/DOT Lab Manual Method 1807)

Container ID A) Weight of sample & container with screen in air, g B) Weight of container with screen in air, g C) Sample weight in air (A - B), g D) Weight of sample & container with screen in H <sub>2</sub> O, g E) Weight of container with screen in H <sub>2</sub> O F) Weight of sample in H <sub>2</sub> O (D - E), g G) Volume of sample (C - F) $G_{mm}$ = Max. Specific Gravity, (C/G)	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td></tr> </table>											Record to the nearest 0.1g           (1) Record to the nearest 0.001

## Bulk Specific Gravity ( $G_{mb}$ ).. AASHTO T166 Mn/DOT Modified (Mn/DOT Lab Manual Method 1806)

Specimen ID Height, mm (inch) a) Weight in air, g b) Weight in water, g c) Weight SSD, g d) Volume (c - b) e) $G_{mb}$ (a/d) f) Ave. of 3 Marshall $G_{mb}$ = g) Diff. from Ave. $G_{mb}$ (e - f)	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="width: 33%; height: 15px;"> </td><td style="width: 33%; height: 15px;"> </td><td style="width: 33%; height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> <tr><td style="height: 15px;"> </td><td style="height: 15px;"> </td><td style="height: 15px;"> </td></tr> </table>																															Record to the nearest 0.1g           Record to the nearest 0.001 <b>(2)</b>  If any g > 0.020, recalculate Ave. $G_{mb}$ using two specimens and redo g. If any of the two g > 0.020, redo the three pucks again.

## Air Voids - Individual & Isolated (calculation)

..... AASHTO T269 Mn/DOT Modified (Mn/DOT Lab Manual Method 1808)

A) $G_{mm}$ = (1)	<table border="1" style="width: 100%; height: 15px;"> <tr><td> </td></tr> </table>		Record to the nearest 0.001
B) $G_{mb}$ = (2)	<table border="1" style="width: 100%; height: 15px;"> <tr><td> </td></tr> </table>		
<b>Isolated Air Voids</b> $\left(\frac{(A - B)}{A}\right) \times 100, \%$	<table border="1" style="width: 100%; height: 15px;"> <tr><td> </td></tr> </table>		Record to the nearest 0.1%

Technician \_\_\_\_\_

Date Tested \_\_\_\_\_