North Carolina Department of Transportation
Division of Highways
Field and A.A.S.H.T.O. Density Determinations

M&T Form 504 E
Rev. 10/2014

Contract: _____ County: _____ Date: _____ Test No: _____

Test Location & Type _____
(Sta; Lane) (Rdwy. or Shldr.) (Embank., Subg., or Base)

_____ _____
Dist. from C/L; Rt or Lt (Dist. below Subg. Elev.)

Random Test Site Location Calculations					
Begin Sta.:		Ending Sta.:	Length:	Width:	
Random No.		Random (Calculations)		Test Site Location	
Length	Width	Random No. x Length	Random no. x Width	Station	Offset

Road Density Determination **Volumetric Test** (short test only)

Volume of Hole: 2nd Reading: _____ Empty Mold & Collar: _____

1st Reading: _____ Mold w/Soil: _____

(In-Place Vol.) Difference: _____ ft^3 Compacted Vol. of Soil: _____ ft^3

Wet Density: $\frac{\text{Wet Wt. Soil (g)}}{\text{Volume x 453.6}}$ _____ = _____ lb. /ft^3

% Moisture: Wt. Wet Soil (g) _____
Wt. Dry Soil (g) _____ $\left\{\frac{\text{Wt. Water (g)}}{\text{Wt. of Dry Soil (g)}}\right\}$ x 100 = _____ = _____ % (moisture)
Wt. Water (g) _____

Dry Density: $\left\{\frac{\text{Wet Density}}{100 + \%\text{ moisture}}\right\}$ x 100 _____ = _____ lb. /ft^3 (Dry Road Density)

A.A.S.H.T.O. Density Determination

Wet Density: $\frac{\text{Wet Wt. Soil (g) x 30}}{453.6}$ _____ = _____ lb. /ft^3

% Moisture: Wt. Wet Soil (g) _____
Wt. Dry Soil (g) _____ $\left\{\frac{\text{Wt. Water (g)}}{\text{Wt. of Dry Soil (g)}}\right\}$ x 100 = _____ = _____ % (moisture)
Wt. Water (g) _____

Dry Density: $\left\{\frac{\text{Wet Density}}{100 + \%\text{ moisture}}\right\}$ x 100 _____ = _____ lb. /ft^3 (Dry AASHTO Density)

Percent Compaction

$\left\{\frac{\text{(Compacted Vol. of Soil)}\ \text{Dry Road Density}}{\text{Dry A.A.S.H.T.O. Density (In-Place Vol.)}}\right\}$ x 100 _____ = _____%

*Print Name Legibly w/HiCAMS No.: _____

Signatures *Certified Technician: _____

Resident Engineer: _____

*By providing this data under my signature and/or HiCAMS certification number, I attest to the accuracy and validity of the data contained on this form and certify that no deliberate misrepresentation of test results, in any manner, has occurred.