NorthEast Transportation Training & Certification Program

HMA Gyratory Volumetric Properties Test Report (T 312, T 166)

Date/Time:	Lab/Location:	
Weather:	Date Rec'd #:	Random Sample: Yes No
Project:	Lab Login #:	Lot #:
Contract #:	Material ID:	Sublot #:
Contractor:	Material #:	Sample Location:
Pay Item #:	Sample #:	Station:
Source:	Sample Type: QC A-V IA DR Other	Offset:
Plant Type:	Sampled By/Cert. #:	

Bulk Specific Gravity of Compacted HMA (T 166)

	1	2	3
Specimen #:	1	2	3
Estimated Single Axle Loads (ESALs):			
Mass of Dry Specimen in Air (A):			
Mass of Specimen at SSD (B):			
Mass of Specimen in Water (C): (@ 77 +/- 1.8 °F)			
Bulk Specific Gravity of Specimen at Nmax ($G_{mb}@N_{max}$): (A / (B - C))			

Density of HMA by Means of Gyratory Compactor (T 312)

Height at N_{ini} (Hi):			
Height at N_{des} (Hd):			
Height at N_{max} (Hm):			
%G_{mm} at N_{ini}: $(((G_{mb}@N_{max} * (Hm / Hi)) / G_{mm}) * 100)$			
%G_{mm} at N_{des} (E): $(((G_{mb}@N_{max} * (Hm / Hd)) / G_{mm}) * 100)$			
%G_{mm} at N_{max} (F): $((G_{mb}@Nmax / G_{mm}) * 100)$			

Volumetric Analysis of Compacted HMA

				Average	Specification
Theoretical Maximum Specific Gravity (G_{mm}): (From T 209)					
Percent Minus 75 μm of Sample (75 μm):					
Percent PG Binder of Sample (P_b):					
Bulk Specific Gravity of Combined Aggregate (G_{sb}):					
Specific Gravity of PG Binder (G_b):					
Bulk Specific Gravity at N_{des} (G_{mb}): $(G_{mb}@N_{max}*(\%G_{mm}@N_{des}/\%G_{mm}@N_{max}))$				Average	Specification
Percent Voids in Mix (P_a): $(100 * ((G_{mm} - G_{mb}@N_{des}) / G_{mm}))$					
Voids in the Mineral Agg. (VMA): $(100-((G_{mb}@N_{des} * (100 - P_b)) / G_{sb}))$					
Voids Filled with Asphalt (VFA): $((100 * (VMA - P_a)) / VMA)$					
Effective Agg. Specific Gravity (Gse): $(100 - P_b) / ((100 / G_{mm}) - (P_b / G_b))$					
Percent Binder Absorbed: (Pba): $(100 *((G_{se} - G_{sb}) / (G_{sb} * G_{se})) * G_b)$					
Percent Binder Effective: (Pbe): $(P_b - ((P_{ba} / 100) * (100 - P_b)))$					
Fines to Effective Asphalt Ratio: $(75 μm/ P_{be})$					

Comments:

Tested by:	Reviewed by:
Certification #:	Certification #:
Date:	Date:

Results Within Specification Limits: ☐   Results Outside Specification Limits: ☐