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U.S. Department of Transportation
Federal Highway Administration
Federal Lands Highway

WORKSHEET FOR A HVEEM MIX DESIGN
AASHTO T 246

Project: _____ Date: _____

Contractor: _____ Class & Grading of mixture: _____

Asphalt supplier: _____ Grade of asphalt: _____

Sources for: Aggregates: _____ Mineral filler: _____

Testing laboratory name: _____ Phone: _____

Testing performed by: _____

Testing reported by: _____

☐ English ☐ Metric

SUMMARY OF THE PROPOSED JOB-MIX-FORMULA

1. Percent asphalt by mass of total mix[1], (P_b) _____
2. Air voids (V_a) _____
3. Voids in mineral aggregate (VMA) _____
4. Maximum specific gravity (G_{mm}) _____
5. Recommended plant mixing temperature, _____
   (Attach Temperature Viscosity Curve)
6. Effective specific gravity of aggregate (G_{se}) _____
7. Stabilometer value _____
8. Specific gravity of binder (G_b) _____
9. Specific gravity of mineral filler _____
10. Dust-to-Binder ratio (DP) _____
11. Moisture susceptibility test results: [2]
    a. Dry strength,
    b. Wet strength,
    c. Index of retained strength, %

Gradation Designation: _____ Is RAP included in Mix Design? ☐ Yes ☐ No

GRADATION TARGET VALUES AND ALLOWABLE DEVIATIONS				SPECIFIC GRAVITY AND ABSORPTION			
Sieve Sizes	Job Mix Formula Target Value [3]	Target Value Specification Range %	Allowable Deviation[4] %		Fine Aggregate (AASHTO T 84)	Coarse Aggregate (AASHTO T 85)	Combined Aggregate
				Bulk SG (G_{sb})			
				Bulk SSD SG			
				Apparent SG (G_{sb})			
				Absorption	%	%	%
No. 200							

[1] Establish asphalt cement content (percent by mass of mix) to the nearest 0.01 percent.
[2] See contract for moisture susceptibility test method: AASTHO T 165/T 167 or AASHTO T 283.
[3] Establish target values to the nearest 0.1 percent as a part of the job mix formula.
[4] Allowable deviations plus or minus from established target values.

WORKSHEET FOR A HVEEM MIX DESIGN (Continued)

Material Stockpile	Stockpile Description	Blend Ratio
A	_____	_____ %
B	_____	_____ %
C	_____	_____ %
D	_____	_____ %
E	_____	_____ %
	Total	0 %

Stockpile Gradation

Sieve Size	Stockpile A %	Stockpile B %	Stockpile C %	Stockpile D %	Stockpile E %	Blended Stockpile Gradation	Job Mix Formula Target Values	Specification Limits
No. 200								

Aggregate Properties

Property	Result	Specification	Property	Result	Specification
LA Abrasion, % - Grading ____ AASHTO T 96			Fractured Faces, % - Select ASTM D 5821		
Sodium Sulfate Soundness, % AASHTO T 104			Sand Equivalent AASHTO T 176, Alt method #2, reference method		
Durability index (Coarse) AASHTO T 210			Other:		
Durability index (Fine) AASHTO T 210			Other:		

WORKSHEET FOR A HVEEM MIX DESIGN (Continued)

Trial Number	1			2			3		
% Asphalt by mass of total mix, (P_b)									
Effective Binder Content (P_{be})									
Specimen height,									
Stabilometer value									
Bulk specific gravity, (G_{mb})									
Bulk unit mass,									
Max. specific gravity, (G_{mm})									
Dust-to-Binder ratio, (DP)									
% Air voids, (V_a)									
% Voids in mineral aggregate, (VMA)									
Average Stabilometer value									
Average % Air voids, (V_a)									
Average % Voids in mineral aggregate, (VMA)									
Average Bulk Unit Mass									

Trial Number	4			5			6		
% Asphalt by mass of total mix, (P_b)									
Effective Binder Content (P_{be})									
Specimen height,									
Stabilometer value									
Bulk specific gravity, (G_{mb})									
Bulk unit mass,									
Max. specific gravity, (G_{mm})									
Dust-to-Binder ratio, (DP)									
% Air voids, (V_a)									
% Voids in mineral aggregate, (VMA)									
Average Stabilometer value									
Average % Air voids, (V_a)									
Average Voids in mineral aggregate, (VMA)									
Average Bulk Unit Mass									

Test Results for Each of the Individual Moisture Susceptibility Test Specimens

Percent asphalt binder: _____ ☐ AASHTO T 165/T 167 ☐ AASHTO T 283

Antistrip, type, amount: _____

Specimen Dia: ☐ 6 inch ☐ 4 inch

Freeze cycle: ☐ Yes ☐ No

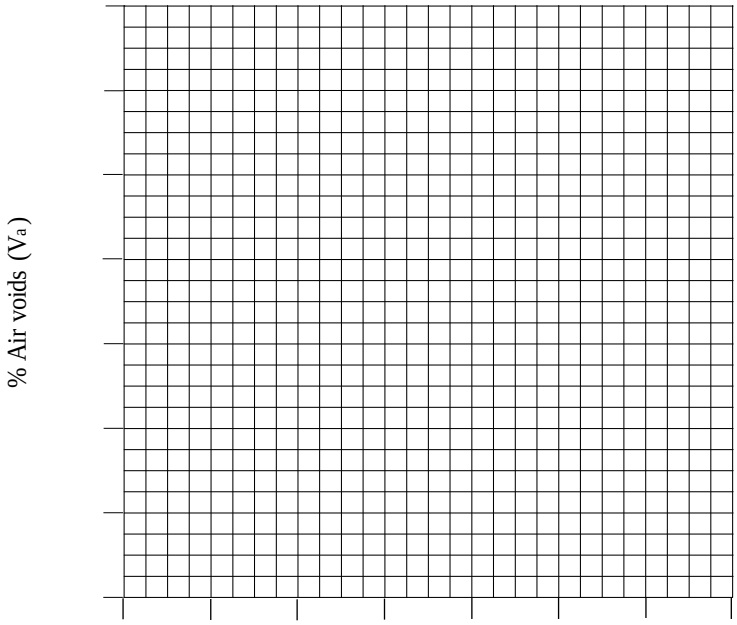
Sample I.D.								Average
Height	**Dry**							
	Wet							
Bulk Specific Gravity	**Dry**							
	Wet							
Air Voids	**Dry**							
	Wet							
Strength	**Dry**							
	Wet							
Retained Strength, %								

WORKSHEET FOR A HVEEM MIX DESIGN (Continued)

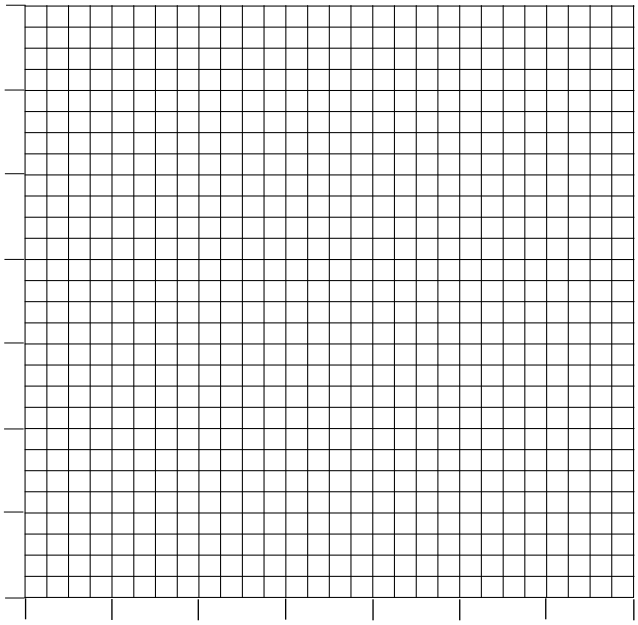
graph it

Design Curves for Proposed Job Mix Formula (JMF)

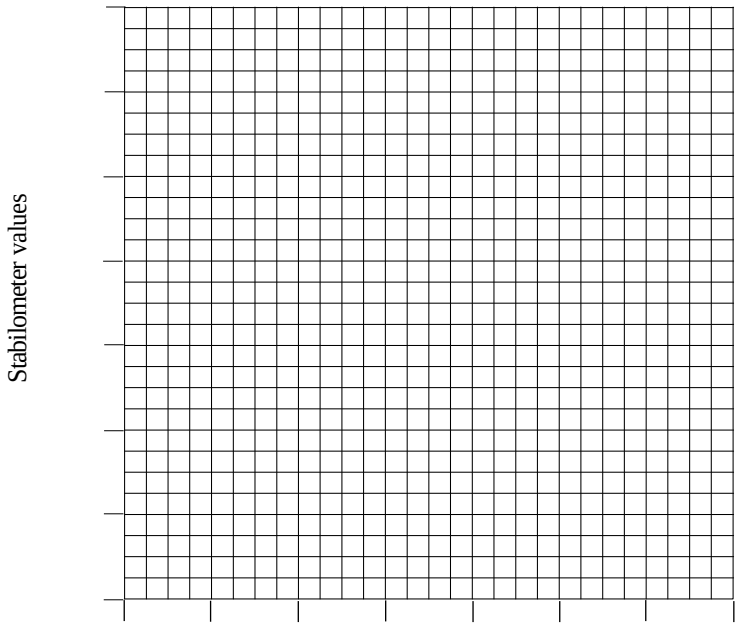
AIR VOIDS (V_a)



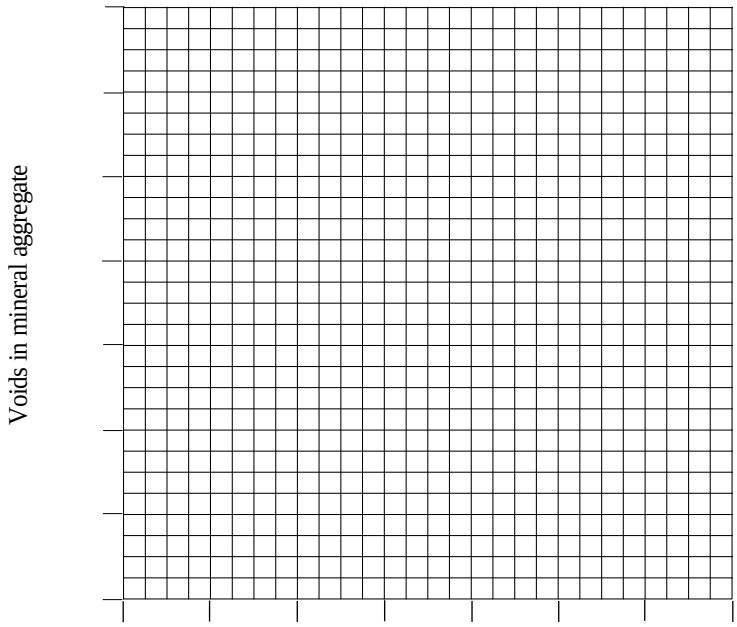
UNIT MASS



S-VALUE



VMA



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RECLAIMED ASPHALT PAVEMENT (RAP) DATA SHEET

Location: _____ Sampled by: _____

Tested by: _____ Date: _____

	RAP 1		RAP 2	
% of RAP in Mixture				
Sieve Size	**Dry Gradation**	**T 308 Burned Gradation**	**Dry Gradation**	**T 308 Burned Gradation**

AC by % mix, Pb		
	Specific Gravity	**Specific Gravity**
Gmm		
Gse Gse = (100 – Pb)/(10/Gmm – Pb/Gb)		
Gsb Gsb = Gse/(((Pba*Gse)/(100*Gb)) + 1)		
Pba = (assumed)	1.00	1.00
Gb = (assumed)	1.010	1.010

Remarks: