

# 2026 NDOT Asphalt Field Technician I/II

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## Binder & Emulsion Sampler Recertification

This is a five-year recertification for those who have previously taken the Asphalt Field Technician I & II Training and the Binder/Emulsion Certification. Your responsibility is to read and understand this document and complete and pass the quiz at the end with a minimum score of 80%. After completion, e-mail your completed quiz to [amanda.shinkle@nebraska.gov](mailto:amanda.shinkle@nebraska.gov). If you have any questions, feel free to contact any of the Quality Assurance Staff listed below. There is a HMA Reference Guide included for your use.

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# Mix Types

We are currently using 5 main mix types and 1 base mix.

## 5 Main Types of Mixes

				
SPR	SRM	SPS	LC	SLX
<u>High RAP Mix</u>	<u>Special (Warm) Reclamation Mix</u>	<u>Shoulder Mix</u>	<u>Leveling Course</u>	<u>All Purpose Mix</u>

### SPR: Standard Paving Recycle Mix

High Recycle Mix (Up to 55% RAP)  
For Low, Medium, Medium+ Volume Roadways  
60% of NDOT Annual Tonnage  
Improved In-Place Density  
Increased Joint Density  
Great Rut Resistance  
High Strength Mix

### SRM: Special (Warm) Reclamation Mix

Base Mix  
Used as base in lieu of HLSS or Cold Foam  
Typically 4-5" Lift  
Coarser High Strength Mix  
35%-65% RAP  
0.9% Warm Mix Additive Required  
Can compact at lower temperatures

## SPS: Standard Paved Shoulder Mix

Shoulder Mix  
Very Economical  
Designed to allow high RAP – Max. 65%

## LC: Leveling Course Mix

Leveling Course or SAMI Layer  
Fine gradation mix for thin lift of asphalt  
Can place 5/8"-1"+ Thick  
Higher Binder Content  
Helps Prevent Roller Bumps  
Up to 35% RAP

## SLX: Surface Laminate Xtreme Thin Mix

Placed 1-2" Thick (Fine Gradation), now used in many thickness applications up to 6 inch  
Min. 20% 1/4" Crushed Rock Chips  
20-35% Fractionated RAP  
Works in all applications

## PG Binder/Emulsion/Hydrated Lime - Warm Mix Additives

Projects will typically have the following grades: 58S-34, 58H-34, 58V-34 or 58E-34



With these grades, the contractor will still be allowed to blend grades only when transitioning to an asphalt mixture requiring a different grade of binder and if NDOT is notified and approves it. When going from a lower grade to a higher, the blended material must meet the specifications required by the NDOT Rheology Lab for the first sample. Every subsequent sample must meet the specified grades requirements.

Binder is sampled by the certified contractor representative in observance of NDOT staff in 1 two-quart container after a minimum of 1 gallon is poured to waste. The metal containers are available from the NDOT Supply Base. One two-quart sample is required for every 200 tons or fraction thereof, of each grade of binder used on the project for each supplier – minimum 1 sample for each type of binder used on the project. Containers must be kept dry and free from contaminants. Do not allow spilled material on the container to be cleaned with any type of solvent. Binder samples must reach the Lincoln Bituminous Rheology Lab within 10 days of being sampled. Print the AASHTOWare Project label and include it with the sample.

Emulsion is sampled at a rate of 1 sample for each type of emulsion (for each supplier if more than one) used per project, regardless of the amount used on the project. One sample consists of 1 – one-quart sample taken by the certified contractor representative in observance of NDOT inspection staff. The sample is taken after a minimum of one gallon is poured to waste. The plastic containers are available from the NDOT Supply Base. The containers must be kept dry and free from contaminants. Do not allow spilled material on the container to be cleaned with any type of solvent. Emulsion samples must reach the Lincoln Bituminous Rheology Lab within 5 days of being sampled. Print the AASHTOWare Project label and include it with the sample.

The pay item for Hydrated Lime (used as a Binder Anti-strip agent) has been changed to Hydrated Lime/Warm Mix Asphalt and is paid 1 unit for each 1 ton of Hot Mix Asphalt that contains anti-strip agents.

## Random Sampling Schedule (RSS):

If you do not receive a RSS or it is lost or compromised, contact your District QA Manager.

NEBRASKA DEPART											
Asphaltic Concrete Pavement											
Project No:		NH-80-4(139)				Name of Road:				Asphalt Weight:	
Control No.		61429				65000					
Lot Number	Sublot Number	Ton to be Sampled		8 ft	12 ft	14 ft	16 ft	FAA/CAA	Cold Feed	Recuts:	Distance to Core
Lot Number	Sublot Number	Lot	PJT	Distance from Edge	Distance from Edge	Distance from Edge	Distance from Edge	Field Density	Joint Density*	Distance to Core	TSR
1	1	611	611	7	4	8	15	-29		94	
1	2	1111	1111	0	10	9	5	-89		9	OUT
1	3	2707	2707	3	12	2	15	-99		8	X
1	4	3066	3066	3	8	12	15	71		-2	
1	5	4239	4239	1	12	14	11	-80	X	20	X
2	1	910	5910	0	10	3	0	-1		54	IN
2	2	1513	6513	0	0	4	1	15		-93	
2	3	2294	7294	6	4	5	15	-43		-3	
2	4	3866	8866	0	12	8	6	-21	X	42	X
2	5	4339	9339	6	1	9	4	8		-42	
3	1	539	10539	4	2	7	0	-77		39	
3	2	1521	11521	7	8	5	2	-62		-74	OUT
3	3	2518	12518	4	11	6	0	-35		14	
3	4	3638	13638	7	8	12	12	-50		44	
3	5	4134	14134	4	5	1	0	-65	X	-93	X
4	1	517	15517	2	8	8	1	-48		-78	

Sublot size is 1000 tons, with a full lot equaling 5000 tons. For Urban projects, see the Special Provisions. All asphalt bag samples, (with the corresponding cold feed samples), and cores delivered to the branch laboratories are required to have individual AASHTOWare Project sample identification included with the sample, along with a copy of the contractor's Superpave software results. The laboratories prefer to have a digital copy of the entire updated Superpave software sent to them each time a sample is delivered.

The "Ton to be Sampled" column indicates, that is the tonnage that should be in the truck from which the sample is taken.

For densities, if the contractor chooses to cut cores for the entire project, they should send the one indicated by the "Field Density" column to the branch lab for each lot. If they choose to use a gauge, they must send all the cores cut from lot 1 to correlate their gauge and the others core they cut from the project. The additional cores should be at a minimum, 1 for every 15 density tests with the gauge. Any density readings taken with a gauge that are below 90% must have a core cut at that location. Additionally, all recuts must be 5 cores and they must all be sent to the branch labs for verification. There are multiple "Distance from Edge" columns for varying width areas and is used to indicate the transverse location on the roadway to take field densities. The "Distance to Core" is the longitudinal distance ahead station, (positive number), or back station, (negative number), to the density location from the original HMA sample station. The "Recuts: Distance to Core" is the longitudinal distance for recuts from the original HMA sample station, if requested by the contractor within one day of the completion of a lot. Use the original "Distance to Edge" value for the recuts. If the contractor requests recuts, they must be used to calculate incentive/disincentive values for the entire lot.

**Starting December 2025 Lettings: NDOT no longer allows cold feed material for acceptance testing. Please review your contract:**

If your contract was let before December 2025. The “FAA/CAA Cold Feed” column indicates the subplot sample that must be submitted to the appropriate NDOT laboratory for verification testing, this sample must also have the accompanying cold feed sample. The Type SPS mixes do not require cold feed sampling.

“Joint Density” indicates the location where an additional density shall be taken for the subplot indicated. It shall be at the same station as the subplot density sample, but shall be taken 1” from the edge indicated on the RSS. “Out” is the shoulder side edge and “In” is the centerline side edge. There is a column on the Superpave software for this information and a separate pay factor is calculated for Joint Density. If the contractor chooses to use a gauge for Joint Densities, they must cut a joint core in Lot 1 to establish a correlation. Additional correlation check cores must be cut every 3<sup>rd</sup> lot to verify the gauge correlation value and submitted for verification along with the Joint Density submitted for verification testing.

Joint Densities are always taken a maximum 1” from the seam or edge.

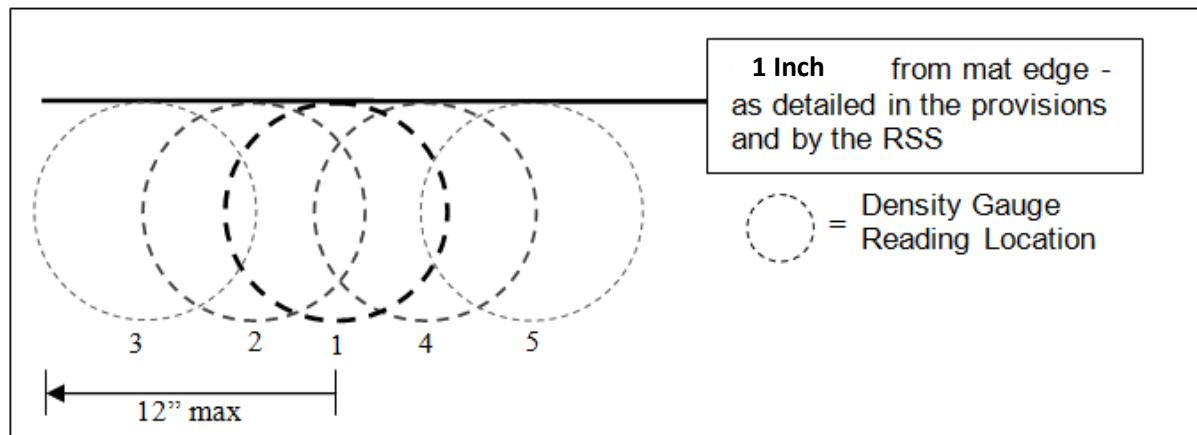


Figure 2: Asphalt density gauge reading pattern less than 6" from mat edge

The “TSR” column indicates when you need to notify the contractor to make Tensile Strength Ratio, (TSR) gyratory pucks to be sent to The Hot Mix Asphalt Mix Design Laboratory in Lincoln. A AASHTOWare Project identification is required to be created by the inspection staff. TSR’s are not required to be made for SPS mix.

# Hot Mix Asphalt Reference Guide

## I Mix Design Submittal

Submitted to Hot Mix Asphalt Design Laboratory by the contractor on NDOT Mix Design Submittal form – available on NDOT website.

Attachment A: Mix Design Submittal form

Approved Mix Design in OnBase by the Hot Mix Asphalt Design Laboratory Lab - labeled as Approval Letter in NDOT Mat Material Acceptance Documentation – includes Job Mix Formula (JMF) number.

Attachment B: Approval Letter

Any mix design changes shall be submitted on the NDOT Mix Design Submittal form to the Hot Mix Asphalt Design Laboratory Lab thru the consultant.

## II Emulsion and Binder Sampling

Emulsion – One 1 Quart sample per type of emulsion per project for each supplier. Delivered to Bituminous Rheology Laboratory within 5 days of obtaining sample.

Binder – One 2 Quart sample per 200 tons binder or portion thereof, per binder grade for each project (for each supplier if more than one). Delivered to Bituminous Rheology Laboratory within 10 days of obtaining sample.

Both to be tested at the Bituminous Rheology Laboratory in Lincoln.

## III Production Sampling and Testing, and Cold Feed Sampling and Testing, and Density

Acceptance Testing – contractor will sample and test all Control Strip samples, unless waived, and all subplot samples from mainline or shoulder paving (not drives or intersections). Sample size should be 75 lbs. – split into 2 representative portions and properly identified. Possession of the verification split sample shall be maintained in a clean, dry, and secure location.

### Sample Identification

HMA Samples

One Unique Sample ID# for each verified subplot sample – If Cold Feed is required by contract the Cold Feed samples do not have a separate ID#.

Density Cores

One Unique Sample ID# for each verified subplot core or Joint Density core.

All samples shall be marked as Complete (if all results correlate), or Fail (if any test results do not correlate), and authorized upon completion of tests in AASHTOWare Project.

Tensile Strength Ratio Specimens

One Unique Sample ID# for each set of 6 TSR's

Documentation of TSR results to be entered on NDOT Lab Summary Software by Hot Mix Asphalt Design Laboratory in OnBase.

Verification Testing - if contractor runs a Control Strip – all 3 Control Strip samples shall be verified – contractor chooses location within each of the three 200-ton sections. Control Strip must be accepted prior to full production.

If Control Strip is waived, Sublot 1-1 and all sublots identified with an "X" in the FAA/CAA Cold Feed column shall be verified at the indicated tonnage on the Random Sample Schedule (RSS).

Attachment I: Random Sample Schedule

### **Cold Feed Sampling is not allowed for material acceptance for project lettings after Dec 2025**

#### Cold Feed Sampling

Shall be taken to represent the material taken for the HMA sample. Must be taken before the truck with the tonnage shown on the RSS is loaded.

Contractor must take minimum 1 Cold Feed for FAA/CAA testing per lot as identified on RSS.

Contractor may take Cold Feed for FAA/CAA on any other sublots they choose.

Verification Testing – test the same subplot Cold Feed for FAA/CAA as the HMA sample, as indicated on the RSS.

#### Density Testing

Contractor will choose cores or density gage.

Cores – contractor will test 1 for every subplot plus 1 Joint Density per lot at locations indicated on RSS. Cores shall be properly identified and maintain possession in a climate controlled, secure location after completion of contractor testing.

Verification – 1 per subplot as indicated on RSS, plus 1 Joint Density per lot.

Gage - contractor will cut minimum first 3 cores in first lot and lot 1 Joint Density core, and run gage in same location, as indicated on RSS, for correction factor determination (gage results before cutting cores). Joint Density will have a separate correction factor. Correction factor verification cores will be cut for every 15<sup>th</sup> density and at the Joint Density in the same lot.

Usually cores are cut at 1-1, 1-2, 1-3, 1JD, 4-1, 4JD, 7-1, 7JD, 10-1, 10JD, etc. for verification and gage correlation.

Gage results below 90% are inaccurate and a core must be cut in that location.

Core results below 90% shall not be used to establish or verify correction factor.

Verification – If using gage, every core cut shall be verified.

## **IV QA/QC Lab Verification Testing**

#### Contractor Test Results

Entered on correct version of NDOT Superpave Software and e-mailed to verification testing laboratory and project staff promptly upon completion of tests (Usually daily).

Attachment J: Superpave Software

#### Verification Laboratory Test Results

Entered on correct version of NDOT Lab Summary Software and e-mailed to contractor and project staff promptly upon completion of tests (Usually the day tests are complete). The NDOT Lab Summary Software is JMF specific and is provided by the NDOT Hot Mix Asphalt Design Laboratory in OnBase in

NDOT Mat Material Acceptance Documentation as Test Summary. This document should be filled out in OnBase and updated as a revision, as results are entered.

Attachment K: Lab Summary Software

Test Results

HMA Sample and Cold Feed Correlating Results

All results correlate – contractor's results are used for pay factor determinations.

Density Correlating Results

Contractor's results used for pay factor determination. Verify correction factors are calculated correctly.

HMA Sample and Cold Feed Non-Correlating Results

An Independent Assurance (IA) Review is required for those tests.

Notify contractor and project staff promptly via e-mail.

Attachment L: IA E-mail example

Check and record all contractor's equipment and procedures used to obtain sample and test material.

Test a biased split sample of material to verify results.

Include contractor and verification lab's IA Review results on NDOT Lab Summary Software.

Notify contractor and project staff of findings and test results via e-mail.

Attachment M: Findings E-mail

Upload all correspondence to OnBase.

Testing of additional sublots in that lot may be required. Can seek guidance from NDOT.

If Air Voids or FAA test results do not correlate, the verification lab's results must be used to calculate pay factors. These values will be required to be entered in the appropriate Red Box on the contractor's NDOT Superpave Software.

All other non-correlating results will consider the findings of the IA Review and additional subplot test results to determine which results will be used for pay factors on a case by case basis.

Density Non-Correlating Results

Notify contractor and project staff promptly via e-mail.

The core shall be dried and an IA Review performed at the contractor's lab with the core.

Check and record all contractor's equipment and procedures used to obtain sample and test material.

If the contractor's new results correlate with the verification results, those results shall be used for pay factor calculations. If not, the verification lab's results shall be used for pay factor calculations.

Include contractor and verification lab's IA Review results on NDOT Lab Summary Software.

Notify contractor and project staff of findings and test results via e-mail.

Upload all correspondence to OnBase.

#### Density Re-cuts

Contractor may request re-cuts on any lot or Joint Density with a pay factor less than 1.00.

Re-cuts must be completed by the working day following completion of the lot testing or Joint Density testing.

Lot density re-cuts are all 5 cores in the lot – **gauge not allowed** – and must use all 5 re-cut cores to calculate pay factors. Must be in location as indicated on RSS – distance from edge does not change from original density location.

Joint Density re-cuts must be a core – **gauge not allowed** – and must use the re-cut to calculate pay factor. Must be in location as indicated on RSS – In or Out does not change from original joint density location.

All re-cut cores are verified at verification testing laboratory.

#### Referee Testing

The contractor may request Referee Testing on any non-correlating result.

Will be performed at NDOT Laboratory if enough material remains in the verification lab's split HMA sample or Cold Feed sample for the subplot with non-correlating results.

### **V Final Details**

#### Final Lot

HMA samples, Cold Feed Samples, and Joint Densities for mainline or shoulder paving shall be taken at the tonnage indicated on the RSS.

If one or more HMA samples are taken, a minimum of 3 lot density samples are required to calculate lot average density.

The final subplot tonnage may be greater than normal subplot size if the next sample isn't acquired based on the RSS tonnage.

#### Project Completion

Review contractor's final NDOT Superpave Software to verify:

Everything filled in correctly

All pay factors are calculated correctly

**Red Boxes** are filled in if necessary

Reported tonnage is correct

Create an AASHTOWare Project Sample ID# and select the correct template for this sample. This is a field authorized sample.

BAF003001 Asphaltic Concrete Final Summary/Pay Factor-Field

Upload the Superpave Software Excel file to OnBase in NDOT Mat Material Acceptance Documentation with the correct Sample ID# as Superpave Software.

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**Resources**

## Standard Specifications for Highway Construction

## Sections 500, 1028, 1080, 1081, and 1082

## Material Sampling Guide

## Sections 2, 3, 4, and 28

## Attachments

## Attachments - A

State of Nebraska Department of Transportation Materials and Research Division		CONTRACTOR MIX DESIGN SUBMITTAL FORM	
Form must be filled out completely			
Project No.:		Mix Type:	
Project Name.:		Grading Band:	
Control No.:		Binder Type:	
Contractor:		Binder Grade:	
		Compaction Temperature:	
Comments: _____			
Tested by:			
Submitted by:			
Phone No.:			
Fax No.:			
Date:			
Note: These submittal sheets shall be the first two pages of the submittal package for mix design verification. Attached to these sheets will be your lab worksheets for at least the 4 point design and all other pertinent design information.			

## Attachments - A

Project No.:											Fill out and submit online only.		
Project Name:													
MIX PROPERTIES AND VOLUMETRICS													
Desired Aggregate Blend													
Aggregate Type	%	PIT LOADS (%)		SFC		SFC		W		W/B		W/C	
		100	100	100	100	100	100	100	100	100	100	100	100
Total												W/C Location in Section Drawing	
Desired Proportions													
PROPOSED TITE BINDER AND FAP Amounts													
Bottom to Add in lbs. <input type="text"/> 0.0000 %													
FAP to Add in lbs. <input type="text"/> 0.0000 %													
Total Binder <input type="text"/> 0.0000 %													
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## Attachments - B

addition of 5% of type asphalt binder for a total of 10% total mix has been deducted by the contractor to be the target asphalt binder content.

This constitutes verification of the primary gradient and uppercut criteria values, proposed

## REMARKS

## Attachments - I

NEBRASKA DEPARTMENT OF ROADS

#### Asphaltic Concrete Pavement Random Sampling Schedule

Project No: STP-59-6[101] <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="4" data-kind="parent">Name of Road: Asphalt Weight: 32000</th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="4" data-kind="parent">JCT. N-57 - JCT. N-15 Asphalt Type: SPR</th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-cs="4" data-kind="parent">Page: 1 of 1 Lot Size: 5000 Tons</th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th>				Name of Road: Asphalt Weight: 32000				JCT. N-57 - JCT. N-15 Asphalt Type: SPR				Page: 1 of 1 Lot Size: 5000 Tons				
8 ft 12 ft 14 ft 0 ft				8 ft 12 ft 14 ft 0 ft				8 ft 12 ft 14 ft 0 ft				8 ft 12 ft 14 ft 0 ft				
Lot Number	Sublot Number	Ton to be Sampled		PJT	Distance from Edge	Distance from Edge	Distance from Edge	Distance from Edge	Distance to Core	FIAA / CAA Cold Feed	Distance to Core	FIAA / CAA Cold Feed	Distance to Core	FIAA / CAA Cold Feed	Distance to Core	FIAA / CAA Cold Feed
		Lot	Sublot													
1	1	505	505	8	5	10	0	-47		-35						
1	2	1425	1425	3	7	0	0	51		-68						
1	3	2401	2401	7	0	13	0	-59	X	-27	X	X				
1	4	3204	3204	5	10	5	0	94		68						
1	5	4788	4788	2	6	11	0	-80		-8						
2	1	496	5496	6	11	7	0	67		34	OUT					
2	2	1680	6680	5	6	9	0	-40		93						
2	3	2139	7139	3	9	5	0	-41		-54						
2	4	3918	8916	6	9	1	0	-96		-78						
2	5	4566	9566	2	2	8	0	-42	X	-82	X					
3	1	358	10358	6	9	9	0	-91	X	71	X					
3	2	1696	11696	4	3	5	0	-70		92	IN					
3	3	277	1277	7	4	6	0	-36		53						
3	4	3934	13934	4	6	12	0	-44		-40						
3	5	4195	14195	0	7	0	0	20		-33						
4	1	326	15326	0	12	1	0	-74	X	-6	X					
4	2	1963	16963	3	1	8	0	-41		51						
4	3	2757	17757	6	4	4	0	54		68						
4	4	3411	18411	8	6	1	0	65		13						
4	5	4779	19779	6	8	13	0	85		-94	IN					
5	1	371	20371	3	8	7	0	6		49						
5	2	1448	21448	7	2	8	0	-18		-64	IN					
5	3	2855	22855	1	7	8	0	-39		95						
5	4	3168	23168	2	5	14	0	25		-16						
5	5	4294	24294	3	5	11	0	-27	X	1	X					

## Attachments - I

Asphaltic [File] [Print] [Close]

Project No: STP-59-6(101)  
Control No. 32126

Name of Road: Asphalt Weight: 32000

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8 ft   12 ft   14 ft   0 ft

Lot Number	Sublot Number	Ton to be Sampled		PJT	Distance from Edge	Distance from Edge	Distance from Edge	Distance from Edge	Distance to Core	FAA/CAA Cold Feed	Recuts:	Distance to Core	Field Density	Joint Density*	TSR
		Lot													
1	1	505	505	505	8	5	10	0	-47			-35	IN		
1	2	1425	1425	1425	3	7	0	0	51			-68			
1	3	2401	2401	2401	7	0	13	0	-59	X	-27	X	X		
1	4	3204	3204	3204	5	10	5	0	94			68			
1	5	4788	4788	4788	2	6	11	0	-80			-8			
2	1	496	5496	5496	6	11	7	0	67		34	OUT			
2	2	1680	6680	6680	5	6	9	0	-40			93			
2	3	2139	7139	7139	3	9	5	0	-41			-54			
2	4	3916	8916	8916	6	9	1	0	-96			-78			
2	5	4566	9566	9566	2	2	8	0	-42	X	-82	X			



## Attachments - J

AutoSave [File] [Print] [Close] Letting After Nov 1, 2020 QC Superpave - Excel [Search]

File Home Insert Draw Page Layout Formulas Data Review View Developer Help OnBase Reporting PGraph

V10 Version 4.3

NEBRASKA DEPARTMENT OF TRANSPORTATION  
2021 SUPERPAVE SOFTWARE - LETTING AFTER NOV 1, 2020

PROJECT NUMBER:	NEBRASKA	MIX TYPE:
NAME OF ROAD:	Good Life. Great Journey	IMF NUMBER:
CONTROL NUMBER:	DEPARTMENT OF TRANSPORTATION	BINDER SOURCE & GRADE:
CONTRACTOR:		COMPACTATION TEMPERATURE:
LAB TECHNICIAN:		BULK SPECIFIC GRAVITY OF AGG.:
LAB NUMBER:		FAA ADD. SPECIFIC GRAVITY:
PROJECT MANAGER:		Version 4.3

Mix Design Targets

% FAAC Bm off	% FAAC Cold Feed	% CAA Bm off	% CAA Cold Feed	Refr (Temp)	Density @ 90°C	% Binder	Dust / Bright Bits	% VMA	% VFA	34°	1/2"	3/8"	No. 4	No. 6	No. 16	No. 30	No. 50	No. 200
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Enter your targets in the appropriate column

Binder Correction Factor 0.00

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## Attachments - J

PROJECT NUMBER:		NAME OF ROAD:		MIX TYPE:		JMF NUMBER:		BINDER SOURCE & GRADE:		COMPACTATION TEMPERATURE:		BULK SPECIFIC GRAVITY OF AGG.:		FAA ADD. SPECIFIC GRAVITY:									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16								
NEBRASKA DEPARTMENT OF TRANSPORTATION SUPERPAVE SOFTWARE CONTROL STRIP																							
NEBRASKA				Good Life. Great Journey																			
DEPARTMENT OF TRANSPORTATION																							
SAMPLE ID				DATE / LOCATION				MIX VOLUMETRICS AND PROPERTIES								GRADATION (Percent Passing)							
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26								
Sample Number	JMF	Date	Station/Lift/Lane	%FAA Barn/dfl	%FAA Cold Feed	%CAA Barn/dfl	%CAA Cold Feed	Rise (mm)	Density @100s	%Wet@100s	%Binder	Dust / Binder Ratio	%WMA	%MFA	3/4"	1/2"	3/8"	No. 4	No. 6	No. 16	No. 30	No. 50	No. 200
CS-1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
CS-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
CS-3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A		
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A		
																Allow Agg. Adjust. (+/-)							
Page 1	Lab Calculations Control Strip 1																						

## Attachments - J

## Attachments - J

PROJECT NUMBER:	NAME OF ROAD:	DATE:	Lab Calculations 1-1				
CONTRACTOR:	LAB TECHNICIAN:	LAB NUMBER:	NEBRASKA Good Life. Great Journey.				
STATION NUMBER:			DEPARTMENT OF TRANSPORTATION				
Gyratory Bulk Gravity		Maximum Mix Gravity		Fine Aggregate Angularity (FAA)		Grad. Sample Wt.	
Wt. Air	Cont. and Mix wt.	Container in air	0.0	Burn-off	Cold Feed	Sieve Wt., gm	
Wt. SSD	Container in air	0.0				% Ret.	
Wt. Water	Mix in air	0.0				% Pass.	
Volume	Mix in water	0					
Gmb	Mix Volume	0.0					
Gmm	Gmb	D/B	%VMA	%VFA			
Ht., mm	Gmb	%Gmm	%Air Voids				
N des =							
DO NOT GUL in unless directed by NDOT.							
NDOT Air Voids Results:							
NDOT Binder Results:							
NDOT Dust/Binder Results:							
NDOT FAA Results:							
NDOT CAA Results:							
Remarks:							
Burn CF		CAA Burn CF		One		Two	
Gradation Chart SIEVE SIZES RAISED TO .45 POWER							
Page 2							

## Attachments - K

PROJECT NUMBER:	NAME OF ROAD:	DATE TESTED:	NEBRASKA DEPARTMENT OF TRANSPORTATION INITIAL JOB MIX FORMULA - NOV 2020 LETTING				
CONTRACTOR:	TEST LOCATOR:		MVR MATERIALS & PROCESS				
TEST LOCATION:	PROJECT MANAGER:		MIX TYPE: JMF NUMBER: MATERIAL SOURCE & GRADE: COMPACTATION TEMPERATURE: BULK SPECIFIC GRAVITY OF AGG.: FAA AGG. SPECIFIC GRAVITY:				
DATE RECEIVED:			Version 2021-2.1				
Mix Design Targets		Wt/M3des	Wt/M3coldtest	Wt/M3hottest	Wt/M3ref	Wt/Bm3	
Contractor's Targets							
Gyratory Bulk Gravity		Maximum Mix Gravity		Fine Aggregate Angularity (FAA)		Grad. Sample Wt.	
Wt. Air	Cont. and Mix wt.	Container in air	0.0	Burn-off	Cold Feed	Sieve Wt., gm	% Ret.
Wt. SSD	Container in air	0.0				% Pass.	
Wt. Water	Mix in air	0.0					
Volume	Mix in water	0					
Gmb	Mix Volume	0.0					
Gmm	Gmb	D/B	%VMA	%VFA			
Ht., mm	Gmb	%Gmm	%Air Voids				
N des =							
Remarks:							
Burn CF		CAA Burn CF		One		Two	
Gradation Chart SIEVE SIZES RAISED TO .45 POWER							
Page 1							

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## Attachments - K

NEBRASKA DEPARTMENT OF TRANSPORTATION ASPHALTIC CONCRETE LAB TESTS 1-14																					
PROJECT NUMBER: NAME OF ROAD: CONTROL NUMBER: CONTRACTOR: LAB TECHNICIAN: TEST LOCATION: PROJECT MANAGER:				MIX TYPE: JMF NUMBER: BINDER SOURCE & GRADE: COLD MIXTURE TEMPERATURE: BULK SPECIFIC GRAVITY OF AGG.: FAA AGG. SPECIFIC GRAVITY: YEAR:																	
Production Tensile Strength Ratio - Lot		Percent		Production Tensile Strength Ratio - Lot		Percent		Production Tensile Strength Ratio - Lot		Percent											
SUBLLOT #		DATE / LOCATIONS		MATERIALS AND PROPERTIES				GRADUATION (Percent Passing)													
Sample Number	LAB # / Field #	Date Received / Sampled	S-M Number Sta./Lift/Lane	%M Sand	%M Cali/Fine	%G Sand	%G Cali/Fine	Res./Gross Dens./gM	Wt/gM	%Bd Dust/Bd Rate	%M.A.	%M.A.	%M.A.	1/2"	3/8"	No. 4	No. 6	No. 10	No. 30	No. 50	No. 200
1	IMR																				
2	Contractor	1																			
3	Contractor	2																			
4	Contractor	3																			
5	Contractor	4																			
6	Contractor	5																			
7	Contractor	6																			
8	Contractor	7																			
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AASHTO T30, T366, T209, T245, T269, T304, T308, T283, T312, DS823  
\*All Specifications are minimums, except for Air Voids and Gradations

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## Attachments - K

LAB TEST 1																									
PROJECT NUMBER: NAME OF ROAD: CONTROL NUMBER: CONTRACTOR: LAB TECHNICIAN: LAB ID #: DATE RECEIVED:				MIX TYPE: JMF NUMBER: BINDER SOURCE & GRADE: COLD MIXTURE TEMPERATURE: BULK SPECIFIC GRAVITY OF AGG.: FAA AGG. SPECIFIC GRAVITY: S-M NUMBER:				SUBLLOT																	
DATE TESTED:																									
Gyratory Bulk Gravity		Maximum Mix Gravity		Fine Aggregate Angularity (FAA)		Coarse Aggregate Angularity (CAA)		Grad. Sample Wt.:																	
Wt. Air		Cont. and Mix wt.		Cylinder Volume	Burn-off	Cylinder Weight	Burn-off	1"	3/4"	1/2"	3/8"	1/4"	# 8	# 16	# 30	# 50	# 100	# 200							
Wt. SSD		Container in air	0.0	Cylinder Weight	Cold Feed	Mix in air	Cold Feed																		
Wt. Water		Mix in air	0.0	Specific Gravity		Container in water																			
Volume		Cont./Mix in water	0	Cyl. & Agg. Wt. #1		Mix in water																			
Gmb		Container in water	0.0	Cyl. & Agg. Wt. #2		Mix Volume																			
		Average FAA		Average FAA		Gmm																			
						Gmb																			
						D/B																			
						%VMA																			
						%Gmm																			
						%Air Voids																			
N des =		Ht., mm	Gmb	%Gmm	%Air Voids																				
Contractor required to use these results.												Gradation Chart SEIVE SIZES RAISED TO .45 POWER													
NDOT Air Void Results:												<table border="1"> <tr> <td>Calibrated Binder Content</td> <td>From Ticket</td> </tr> <tr> <td>Correction Factor</td> <td></td> </tr> <tr> <td>Total Binder Content</td> <td></td> </tr> </table>				Calibrated Binder Content	From Ticket	Correction Factor		Total Binder Content					
Calibrated Binder Content	From Ticket																								
Correction Factor																									
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NDOT Binder Results:												<table border="1"> <tr> <td>Burn-Off Oven Results</td> <td></td> </tr> <tr> <td>Calibrated Binder Content</td> <td></td> </tr> <tr> <td>Correction Factor</td> <td></td> </tr> <tr> <td>Total Binder Content</td> <td></td> </tr> </table>				Burn-Off Oven Results		Calibrated Binder Content		Correction Factor		Total Binder Content			
Burn-Off Oven Results																									
Calibrated Binder Content																									
Correction Factor																									
Total Binder Content																									
NDOT FAA Results:												<table border="1"> <tr> <td>Burn-Off Oven Weights</td> <td></td> </tr> <tr> <td>Empty Basket</td> <td></td> </tr> <tr> <td>Full Basket</td> <td></td> </tr> <tr> <td>Weight of Sample</td> <td></td> </tr> <tr> <td>Weigh Back Weight</td> <td></td> </tr> </table>				Burn-Off Oven Weights		Empty Basket		Full Basket		Weight of Sample		Weigh Back Weight	
Burn-Off Oven Weights																									
Empty Basket																									
Full Basket																									
Weight of Sample																									
Weigh Back Weight																									
NDOT CAA Results:												<table border="1"> <tr> <td>Burn-Off CF</td> <td></td> </tr> <tr> <td>CAA Burn:</td> <td>One</td> </tr> <tr> <td>CAA CF:</td> <td>Two</td> </tr> </table>				Burn-Off CF		CAA Burn:	One	CAA CF:	Two				
Burn-Off CF																									
CAA Burn:	One																								
CAA CF:	Two																								
Remarks:																									

Page 3

## Attachments - L

### Letter for an IA Review

Contractor X,

The Lot 2-4 aggregate gradation results do not correlate with the branch lab's results on the  $\frac{1}{2}$ " and #4 sieves. Please have your technician check the equipment used for this test. An IA review will be scheduled on a biased sample today or tomorrow. The remaining split samples from Lot 2 will be delivered to the branch lab for possible testing.

Thank you,

Quality Assurance Manager  
State Branch Lab

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## Attachments - M

### Follow-up Letter

Contractor X,

I performed an IA review on the splitting, washing and sieving in the lab located north of Fremont on 10-21-10. **A #10 or #16 cover sieve is needed for the wash test.** I couldn't find any other issues with the equipment or technicians techniques. The IA sample and subsequent samples are within testing tolerances for gradations.

The Norfolk Branch Lab air voids for sample 3-2 do not correlate with your technicians results. Be advised the Norfolk Branch Lab results shall be used for single test results and when calculating running average of 4 tests for air voids. I will request the remaining split samples from lot 3 be delivered to the branch lab for testing. I plan to be at this lab tomorrow for IA review of equipment and procedures related to the RICE test and gyratory compaction.

Thank you,

Quality Assurance Manager  
State Branch Lab

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# 2026 NDOT Asphalt Field Technician I/II & Binder & Emulsion Sampler Recertification Quiz

NAME \_\_\_\_\_

1. When a PG binder or Asphalt Emulsion sample is taken, how much material is required to pass through the sample valve first?
  - a. Just until a steady stream is flowing thru the valve
  - b. Two Quarts
  - c. One Gallon
  - d. Two Gallons
  
2. How often are Joint Densities required to be taken by the contractor?
  - a. 1 Joint Density every subplot or 1000 tons.
  - b. 1 Joint Density randomly per project.
  - c. 1 Joint Density for each Lot or 5000 tons.
  - d. 1 Joint Density per day of production.
  
3. Where is the Type SPS Mix used ?
  - a. Mainline Paving
  - b. Shoulder Paving
  - c. Curb and Gutter paving with Flumes
  - d. All the above
  
4. Are Tensile Strength Ratio (TSR) sample pucks required for a SPS mix?
  - a) Yes
  - b) No
  
5. The frequency a binder sample should be obtained is:
  - a) every 200 tons of binder used or fraction thereof
  - b) every 1000 tons of binder used or fraction thereof
  - c) every 750 tons of asphalt used
  - d) on every tanker that delivers binder to the project

**Please print and fill out or save test as PDF and email to [amanda.shinkle@nebraska.gov](mailto:amanda.shinkle@nebraska.gov) for your 5 year recertification**