Oregon Department of Transportation

BLIND RANDOM DENSITY

SPECIAL PROVISIONS REFERENCE

00745.49(b-2) Random Testing - Replace the paragraph of this subsection that begins with "Determine the density of each sublot by averaging…" with the following paragraphs:

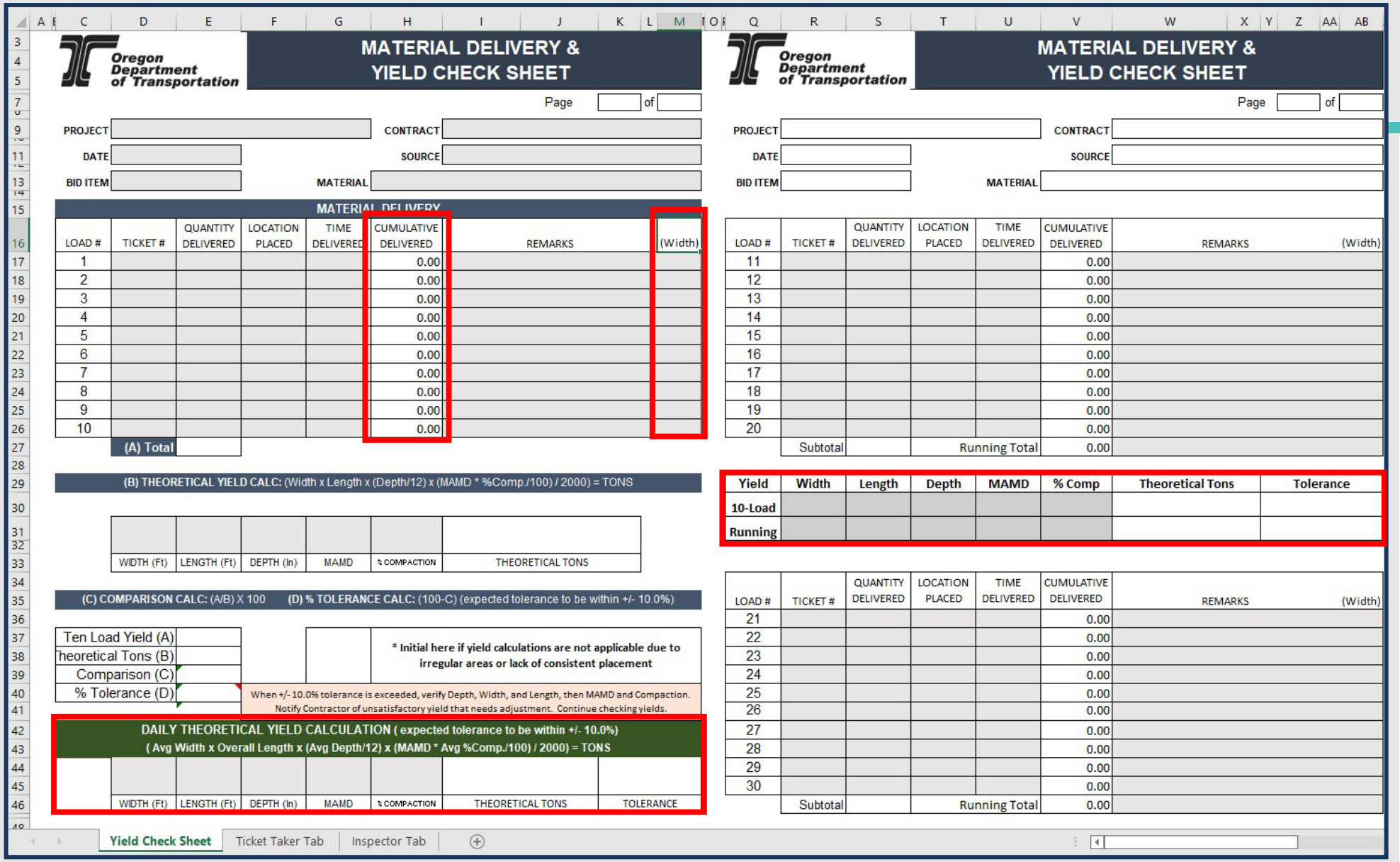
Correspond lots and **compaction sublots** with those defined in 00745.02. **Provide one density test location for each compaction sublot.** Notify the Engineer when rolling operations are completed in a compaction sublot and it is ready for test location identification. The Engineer will use stratified random numbers to locate the QC tests according to ODOT TM 400 Annex. ODOT TM 400 Annex is available from the Engineer. The Engineer will mark where the QC tests are to be performed.

Allow 30 minutes for the Engineer to locate the final test locations after completion of finish rolling and any additional time required for testing, prior to opening the travel lane to traffic. Have the CDT locate and document the test locations not identified within this time frame.

Points of Interest for Blind Random Density

- Still some concerns regarding time management – balancing Blind Random and other inspection responsibilities
- Reconcile yields daily with number of tests taken to ensure that any missing tests are recovered ASAP
- Use the ticket taker to record the station at each random tonnage to be located later by an inspector for the CDT
- Tablets are a good field tool to run the calculations and help keep track of the ongoing changes

BLIND RANDOM DENSITY WORKBOOK



Oregon Department of Transportation

MATERIAL DELIVERY & YIELD CHECK SHEET

Page ____ of ____

PROJECT ____ CONTRACT ____

DATE ____ SOURCE ____

BID ITEM ____ MATERIAL ____

MATERIAL DELIVERY

LOAD #	TICKET #	QUANTITY DELIVERED	LOCATION PLACED	TIME DELIVERED	CUMULATIVE DELIVERED	REMARKS	(Width)
1					0.00		
2					0.00		
3					0.00		
4					0.00		
5					0.00		
6					0.00		
7					0.00		
8					0.00		
9					0.00		
10					0.00		
	(A) Total						

(B) THEORETICAL YIELD CALC: (Width x Length x (Depth/12) x (MAMD * %Comp./100) / 2000) = TONS

WIDTH (Ft)	LENGTH (Ft)	DEPTH (In)	MAMD	% COMPACTION	THEORETICAL TONS

(C) COMPARISON CALC: (A/B) X 100 **(D) % TOLERANCE CALC:** (100-C) (expected tolerance to be within +/- 10.0%)

Ten Load Yield (A)	
Theoretical Tons (B)	
Comparison (C)	
% Tolerance (D)	

* Initial here if yield calculations are not applicable due to irregular areas or lack of consistent placement

When +/- 10.0% tolerance is exceeded, verify Depth, Width, and Length, then MAMD and Compaction. Notify Contractor of unsatisfactory yield that needs adjustment. Continue checking yields.

DAILY THEORETICAL YIELD CALCULATION (expected tolerance to be within +/- 10.0%)
(Avg Width x Overall Length x (Avg Depth/12) x (MAMD * Avg %Comp./100) / 2000) = TONS

WIDTH (Ft)	LENGTH (Ft)	DEPTH (In)	MAMD	% COMPACTION	THEORETICAL TONS	TOLERANCE

Oregon Department of Transportation

MATERIAL DELIVERY & YIELD CHECK SHEET

Page ____ of ____

PROJECT ____ CONTRACT ____

DATE ____ SOURCE ____

BID ITEM ____ MATERIAL ____

LOAD #	TICKET #	QUANTITY DELIVERED	LOCATION PLACED	TIME DELIVERED	CUMULATIVE DELIVERED	REMARKS	(Width)
11					0.00		
12					0.00		
13					0.00		
14					0.00		
15					0.00		
16					0.00		
17					0.00		
18					0.00		
19					0.00		
20					0.00		
	Subtotal		Running Total		0.00		

Yield	Width	Length	Depth	MAMD	% Comp	Theoretical Tons	Tolerance
10-Load							
Running							

LOAD #	TICKET #	QUANTITY DELIVERED	LOCATION PLACED	TIME DELIVERED	CUMULATIVE DELIVERED	REMARKS	(Width)
21					0.00		
22					0.00		
23					0.00		
24					0.00		
25					0.00		
26					0.00		
27					0.00		
28					0.00		
29					0.00		
30					0.00		
	Subtotal		Running Total		0.00		

Yield Check Sheet | Ticket Taker Tab | Inspector Tab

The Yield Tab has the updates from the 2021 Forum, including the 10-load and running yield options with each 10 loads. We also included the daily yield check and columns for cumulative tons delivered and width.

RECOMMENDED BLIND RANDOM WORKBOOK INSPECTOR TAB

Blind Random Numbers for ACP Density

Project Name:									Contract Number:	
Project Manager:			Description:				Mix Design Number:		Bid Item No.:	Lot:

Lot - Sublot L	S	#	Three Random Digits	Date	Random Tonnage	Asphalt Tonnage to Date (Cumulative Tonnage from Previous Shift)	Adjusted Daily Random Tonnage	Test Station / Ticket Taker or Calculated	Two Random Digits (D)	Width of Panel Feet (E)	Distance From Right Edge ((E-2)*D)+1	Sublot Size 200 Tons
		1	0.638	05/10/22	128		128	100+64	0.19	14.0	3.3	0
		2	0.705		341		341		0.76			200
		3	0.260		452		452		0.59			400
		4	0.403		681		681		0.49			600
		5	0.804		961		961		0.46			800
		1	0.666		1133		1133		0.63			1000
		2	0.319		1264		1264		0.90			1200
		3	0.211	05/11/22	1442	1402.23	40		0.97			1400
		4	0.489		1698		296		0.20			1600
		5	0.601		1920		518		0.05			1800
		1	0.057		2011		609		0.08			2000
		2	0.855		2371		969		0.93			2200
		3	0.873		2575		1173		0.88			2400
		4	0.827		2765		1363		0.49			2600
		5	0.253		2851	2819.46	32		0.63			2800
		1	0.635		3127		308		0.92			3000
		2	0.292		3258		439		0.94			3200
		3	0.653		3531		712		0.52			3400
		4	0.476		3695		876		0.22			3600
		5	0.068		3814		995		0.56			3800

The Inspector Tab is updated daily and resets the random tonnage to account for the delivery tickets restarting at zero each shift. This makes it easier for the Inspector to keep track of the test tonnages without additional calculations. This tab should be updated daily by the Inspector or QCCS, who will then transfer the appropriate information to the Ticket Taker Tab.

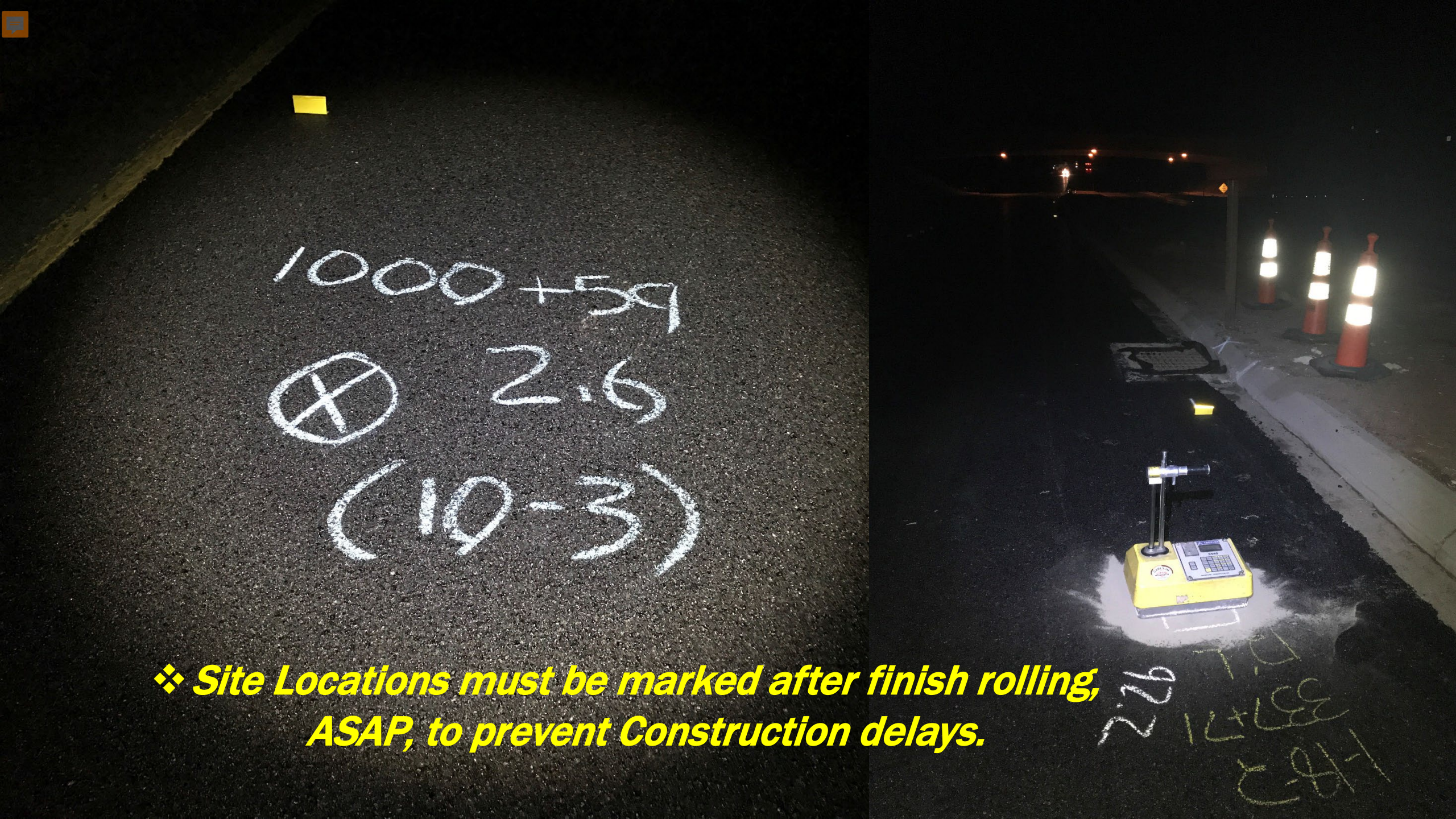
RECOMMENDED BLIND RANDOM WORKBOOK TICKET TAKER TAB

Blind Random Numbers for ACP Density

Project Name:							**Contract Number**			
Project Manager:				**Description:**		**Mix Design Number:**	**Bid Item**	**Date**		
Random # * (A)	Random Tonnage *	Lot-Sublot-Test #	Load Number	Beginning Station (B)	Ending Station (C)	Test Station ((C-B)*A)+B	Random # * (D)	Panel Width (E)	Transverse Location ((E-2)*D)+1	
0.638	128						0.19			
0.705	341						0.76			
0.260	452						0.59			
0.403	681						0.49			
0.804	961						0.46			
0.666	1133						0.63			
0.319	1264						0.90			
0.211	1442						0.97			
0.489	1698						0.20			
0.601	1920						0.05			

* Random Number and Random Tonnage provided to you daily by the Inspector or QCCS

- Depending on the office and the personnel on the project this form has been used by the Ticket Taker and/or by the Inspector that is locating and marking the test locations in the field.



❖ ***Site Locations must be marked after finish rolling, ASAP, to prevent Construction delays.***