ATT-56/22, Part II, STRATIFIED RANDOM TEST SITES FOR ACP PROJECTS

1.0 SCOPE

This procedure is used on ACP projects to select a coring test site in each of the segments of a lot.

2.0 EQUIPMENT

Computer, or Calculator, with 10 random number tables

Data sheet: Stratified Random Test Sites (such as MAT 6-82)

3.0 PROCEDURE

Each lot is divided into equal segments and one or more core(s) is obtained from each segment. Each coring site is randomly selected before coring begins. The data sheet MAT 6-82, is used to select random core sites.

The following table shows the minimum required core thickness.

LIFT	DESIGN LIFT THICKNESS mm	AGGREGATE TOPSIZE µm	MINIMUM CORE THICKNESS mm
Top Lift	all	all	30 *
Lower Lifts	> 35 mm	all	30 *
Lower Lifts	<35 mm	16,000	25 **
		12,500	20 **
		10,000	20 **

**** If core thickness is < 30 mm, randomly select another core site.***

***** If requirements are not met, select another core location closer to the wheelpath.***

3.1 Consistent Mat Width and Thickness

If the Widths and Thickness of the mat were consistent throughout the lot:
COMPLETE THE HEADER INFORMATION

1. Record the Contract & Project #'s at the top of the form as shown in Figure #1.
2. For each lot, complete the following:
   a) The Lot Number and the Lot Date (day, month and year)
   b) For the lane(s) paved. Enter NBL, SBL, EBL or WBL.
   For multi-lane projects, indicate beside the lane identifier the location of the mat using RS for Right Shoulder, R for Right Mat, C for Centre Mat, L for Left Mat and LS for Left Shoulder.
   c) The beginning and ending station of the Lot (lines "A" and "B").
   d) The width of the paved lane to the nearest 0.1 m (line "C").
3. Calculate the *LOT LENGTH* as follows:

   Lot Length = Ending Station - Beginning Station

   On selective overlay projects, use the above formula to calculate the length of each overlaid area and then total the lengths, or subtract the total length of the gaps from the above result. ***Show these lengths in the Remarks section.***

   If more than one lane was placed, use the above formula to calculate the length of each paved lane and then total the lengths.
4. Calculate the "Length of each Segment" on line "D" using the formula:

   Length of Segment = Length of Lot / 5 (or desired No. of Segments)

COMPLETE THE SEGMENT CALCULATIONS

5. Transfer the beginning station of the lot (line "A") to the Beginning Station of Segment 1 (line "E").
6. Calculate the "Beginning Station of Segments" 2, 3, 4, 5, 6, etc. (line "E") as follows (adjust the calculations and use the bottom part of the form for segments 6 or more):

   = Length of Segment (line "D") + Beginning Station of Previous Segment

   For **selective overlay** projects, if there are gap(s) between the beginning station of one segment and the beginning station of the next segment and/or if the beginning station of the next segment falls on a gap, **add the length of the gap(s)** to the above result. (see Figure 3 example)

   If more than one lane was placed, a segment may start on one lane and end on another. In this case, calculate it as follows:

   a) Subtract the beginning station of the segment from the ending station of the first lane.
   b) Subtract the result of step (a) from the length of the segment.
   c) Add the result of step (b) above to the beginning station of the next lane.

Alberta Transportation MAT 6-82/22	STRATIFIED RANDOM TEST SITES ATT-56, Part II

CONTRACT NO.	11223	PROJECT	Hwy 70:08	ACP - Lift 1 - 50mm

LOT NO.	12	DATE LAID	6-Jul-2010	LANE	EBL
A. BEGINNING STATION	07+183	B. END STATION	13+239	C[1]. MAT WIDTH	5.0
D. LENGTH OF SEGMENTS (B-A) / 5		1211.2 m			

	SEGMENT NO.		1	2	3	4	5
			A	A+D	A+2D	A+3D	A+4D
E.	BEGINNING STATION OF SEGMENT		07+183	08+394	09+605	10+817	12+028
	MAT		Lt	Lt	Lt	Lt	Lt
	MATCHING MAT (YES or NO)		No	No	No	No	No
F.	**LENGTH RANDOM NO.**		0.56	0.97	0.22	0.60	0.61
G.	DISTANCE FROM BEGINNING STATION OF SEGMENT	D x F	678	1175	266	727	739
H.	**STATION OF SEGMENT TEST SITE**	G + E	**07+861**	**09+569**	**09+872**	**11+543**	**12+767**
C[2].	MAT WIDTH (m)		5.0	5.0	5.0	5.0	5.0
C[3].	ADJUSTED MAT WIDTH	IF Matching Mat = Yes (C^2 - 0.5) IF Matching Mat = No (C^2 - 0.8)	4.2	4.2	4.2	4.2	4.2
I.	**WIDTH RANDOM NO.**		0.95	0.40	0.09	0.97	0.52
J.	ADJUSTED MAT WIDTH x WIDTH RANDOM #	C^3 x I	4.0	1.7	0.4	4.1	2.2
K.	**LOCATION FROM CENTERLINE (m)**	Matching Mat (I * J) NON-Matching Mat (I * J) + 0.3	**4.3**	**2.0**	**0.7**	**4.4**	**2.5**

COMMENTS:

			from	to	total length
Randoms calculated by the consultant	Lt	EBL	07+183	13+239	6056
					0
					0
					0
No coring within 0.5m from the shoulder					0
No coring within 0.3m from edge of non-matching mat cl					0
Coring should in the sections between 0.3 to 4.5m				**TOTAL**	**6056**
Phone (or email) randoms to the Contractor (Fred from FREDS SAND & GRAVEL @ 1-780-555-4444)					

R. SOILY
MATERIALS TECHNOLOGIST

see ATT-56, Part II, STRATIFIED RANDOM TEST SITES FOR ACP PROJECTS

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FIGURE 1

7. Determine the Length and Width Random Numbers for each segment using:

   a) one of the supplied Random Number Tables and choose the corresponding day of production, as shown in Figure 2, or

   b) the random number generator in a computer or calculator,

   Record the Length and Width Random Numbers in columns 1 to 5.

8. Calculate the "Dist. from Beginning Station of Segment (DxF)" on line "G" using the formula: ***= Length of Segment x Length Random Number***

ATT-56 RANDOM NUMBER TABLE									
SEGMENT	LENGTH					WIDTH			
	1	2	3	4	5	1	2	3	4
DAY 1	0.79	0.40	0.09	0.90	0.85	0.17	0.92	0.93	0.34
DAY 2	0.42	0.18	0.38	0.63	0.14	0.80	0.67	0.83	0.52
DAY 3	0.06	0.85	0.09	0.21	0.17	0.79	0.28	0.69	0.05
DAY 4	0.69	0.10	0.30	0.56	0.10	0.80	0.30	0.84	0.08
DAY 5	0.86	0.48	0.30	0.90	0.55	0.86	0.90	0.58	0.35
DAY 6	0.13	0.87	0.03	0.18	0.87	0.89	0.89	0.61	0.36
DAY 7	0.96	0.04	0.39	0.96	0.72	0.65	0.62	0.01	0.32
DAY 8	0.59	0.47	0.44	0.15	0.50	0.61	0.60	0.71	0.06
DAY 9	0.99	0.21	0.96	0.56	0.58	0.11	0.33	0.06	0.60
DAY 10	0.02	0.63	0.73	0.63	0.47	0.97	0.39	0.34	0.30
DAY 11	0.19	0.74	0.80	0.61	0.10	0.38	0.26	0.92	0.43
DAY 12	0.56	0.97	0.22	0.60	0.61	0.95	0.40	0.09	0.97
DAY 13	0.52	0.14	0.34	0.12	0.65	0.45	0.71	0.26	0.29
DAY 14	0.48	0.34	0.66	0.79	0.51	0.82	0.83	0.13	0.12
DAY 15	0.17	0.32	0.67	0.65	0.38	0.03	0.91	0.44	0.44
DAY 16	0.75	0.66	0.58	0.26	0.10	0.61	0.39	0.96	0.72
DAY 17	0.39	0.19	0.21	0.48	0.03	0.08	0.24	0.46	0.82
DAY 18	0.19	0.28	0.54	0.26	0.87	0.91	0.94	0.53	0.21
DAY 19	0.56	0.95	0.51	0.93	0.02	0.90	0.57	0.98	0.03
DAY 20	0.66	0.61	0.49	0.03	0.05	0.08	0.03	0.20	0.75
DAY 21	0.19	0.44	0.97	0.77	0.54	0.68	0.64	0.61	0.15
DAY 22	0.72	0.92	0.72	0.30	0.77	0.40	0.57	0.19	0.03
DAY 23	0.23	0.92	0.84	0.62	0.67	0.30	0.05	0.89	0.04
DAY 24	0.29	0.65	0.72	0.57	0.22	0.46	0.81	0.37	0.10
DAY 25	0.83	0.98	0.91	0.19	0.61	0.54	0.61	0.60	0.85
DAY 26	0.96	0.43	0.26	0.10	0.66	0.89	0.53	0.90	0.25
DAY 27	0.58	0.89	0.58	0.08	0.17	0.18	0.18	0.21	0.35
DAY 28	0.86	0.62	0.34	0.83	0.06	0.67	0.09	0.10	0.99
DAY 29	0.81	0.75	0.83	0.74	0.37	0.97	0.86	0.24	0.86

FIGURE 2

9. Calculate the “Station of Segment Test Site” on line "H" as follows:

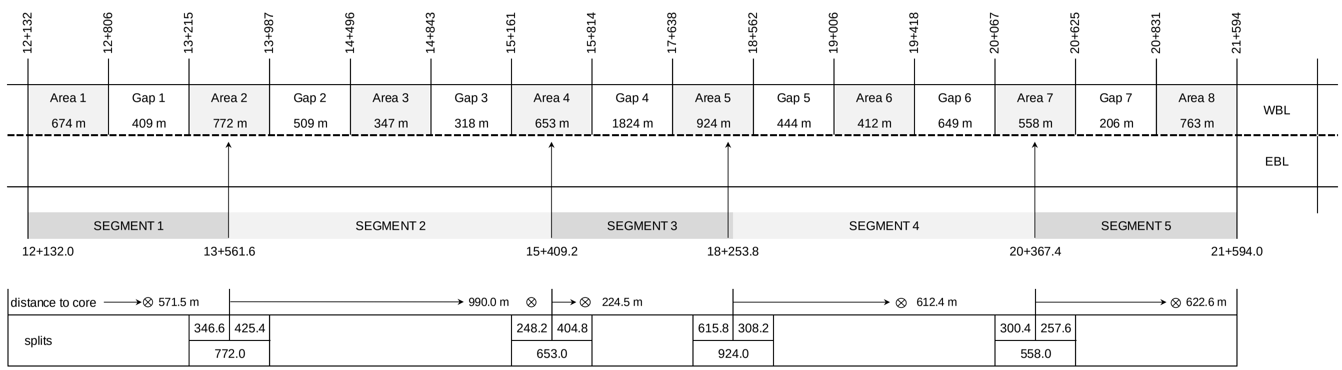
Distance from Beginning Station of Segment + Beginning Station of Segment

For **selective overlay** projects, if there are gap(s) between the beginning station of one segment and the calculated station of the segment test site, and/or if the calculated station of the segment test site falls on a gap, **add the length of the gap(s)** to the above result.

FIGURE 3 shows an example of a lot in a selective overlay project with consistent mat width and thickness. It also shows the calculation of the beginning and ending station of each segment. FIGURE 4 shows the completed data sheet for the same lot.

EXAMPLE OF ONE LOT IN A SELECTIVE OVERLAY PROJECT WITH CONSISTENT MAT WIDTH AND THICKNESS

CALCULATION OF BEGINNING STATIONS OF SEGMENTS



AREA NO.	BEGINNING STATION	BEGINNING STATION	LENGTH (m)
1	12+132	12+806	674 m
2	13+215	13+987	772 m
3	13+496	13+843	347 m
4	15+161	15+814	653 m
5	17+638	18+562	924 m
6	19+006	19+418	412 m
7	20+067	20+625	558 m
8	20+831	21+594	763 m
TOTAL			**5103 m**

SEGMENT LENGTHS = 5103 / 5	**1020.6 m**

GAP NO.	BEGINNING STATION	BEGINNING STATION	LENGTH (m)
1	12+806	13+215	409 m
2	13+987	14+496	509 m
3	14+843	15+161	318 m
4	15+814	17+638	1824 m
5	18+562	19+006	444 m
6	19+418	20+067	649 m
7	20+625	20+831	206 m
8			
TOTAL			**4359 m**

SEGMENT NO.	BEGINNING STATION		SEGMENT LENGTH		CALCULATED END STATION	GAP NO.		GAP LENGTH		NEW END STATION	GAP NO.		GAP LENGTH		NEW END STATION
1	12+132.0	+	1020.6 m	=	13+152.6	1.	+	409 m	=	13+561.6		+		=	13+561.6
2	13+561.6	+	1020.6 m	=	14+582.2	2.	+	509 m	=	15+091.2	3.	+	318 m	=	15+409.2
3	15+409.2	+	1020.6 m	=	16+429.8	4.	+	1824 m	=	18+253.8		+		=	18+253.8
4	18+253.8	+	1020.6 m	=	19+274.4	5.	+	444 m	=	19+718.4	6.	+	649 m	=	20+367.4
5	20+367.4	+	1020.6 m	=	21+388.0	7.	+	206 m	=	21+594.0		+		=	21+594.0

SEGMENT NO. 1 The CALCULATED END STATION falls on GAP NO. 1, therefore add the GAP LENGTH TO calculate the NEW END STATION

SEGMENT NO. 2 The CALCULATED END STATION falls on GAP NO. 2 & 3, therefore add ***both GAP LENGTHS*** TO calculate the NEW END ST

SEGMENT NO. 3 The CALCULATED END STATION falls on GAP NO. 4, therefore add the GAP LENGTH TO calculate the NEW END STATION

SEGMENT NO. 4 The CALCULATED END STATION falls on GAP NO. 5 & 6, therefore add ***both GAP LENGTHS*** TO calculate the NEW END ST

SEGMENT NO. 5 The CALCULATED END STATION falls on GAP NO. 7, therefore add the GAP LENGTH TO calculate the NEW END STATION

FIGURE 3

ATT-56, Part II, FIGURE 3

FIGURE 3

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STRATIFIED RANDOM TEST SITES

ATT-56, Part II

CONTRACT NO.	**112233**	**PROJECT**	**Hwy 22:36**	**ACP - Lift 1 - 50mm**	
LOT NO.	12	**DATE LAID**	6-Jul-2010	**LANE**	WBL
A. BEGINNING STATION	12+132	**B. END STATION**	21+594	**MAT WIDTH**	5.0 m
C. TOTAL PAVED LENGTH	**5103 m**	**TOTAL LENGTH OF GAPS (m)**		**4359 m**	
D. LENGTH OF SEGMENTS	**C / 5**	**1020.6 m**			

			1	2	3	4	5
	SEGMENT NO.		**1**	**2**	**3**	**4**	**5**
			A	A+D	A+2D	A+3D	A+4D
E.	BEGINNING STATION OF SEGMENT		12+132.0	13+561.6	15+409.2	18+253.8	20+367.4
	MAT	Rt / Lt	**Rt**	**Rt**	**Rt**	**Lt**	**Lt**
	MATCHING MAT (YES or NO)	Yes / No	**No**	**No**	**No**	**Yes**	**Yes**
F.	LENGTH RANDOM NO.		0.56	0.97	0.22	0.60	0.61
G.	DISTANCE FROM BEGINNING STATION	D x F	571.5	990.0	224.5	612.4	622.6
H.	**STATION OF SEGMENT TEST SITE**	G + E	**12+704**	**15+379**	**15+634**	**19+310**	**21+196**
	MAT WIDTH		5.0	5.0	5.0	5.0	5.0
I.	WIDTH RANDOM NO.		0.95	0.40	0.09	0.97	0.52
J.	WIDTH OF MAT TESTED	IF Matching Mat = Yes (C - 0.5) IF Matching Mat = No (C - 0.8)	4.2	4.2	4.2	4.5	4.5
K.	**LOCATION FROM CENTERLINE (m)**	Matching Mat (I * J)	**4.3**	**2.0**	**0.7**		
		NON-Matching Mat (I * J) + 0.3				**4.4**	**2.3**

COMMENTS:

GAPS				SELECTIVE OVERLAY				
gap	from	to	total length			from	to	total length
1	12+806	13+215	409	Rt	NBL	12+132	12+806	674
2	13+987	14+496	509	Rt	NBL	13+215	13+987	772
3	14+843	15+161	318	Rt	NBL	13+496	13+843	347
4	15+814	17+638	1824	Rt	NBL	15+161	15+814	653
5	18+562	19+006	444	Rt	NBL	17+638	18+562	924
6	19+418	20+067	649	Rt	NBL	19+006	19+418	412
7	20+625	20+831	206	Rt	NBL	20+067	20+625	558
				Rt	NBL	20+831	21+594	763
TOTAL LENGTH OF GAPS			**4359 m**	**TOTAL LENGTH OF OVERLAYS**				**5103 m**

Phone randoms to the Contractor (Fred from FREDS SAND & GRAVEL @ 1-780-555-4444)

No coring within 0.5m from the shoulder — R. SOILY

No coring within 0.3m from edge of non-matching mat cl — MATERIALS TECHNOLOGIST

see ATT-56, Part II, STRATIFIED RANDOM TEST SITES FOR ACP PROJECTS

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FIGURE 4

10. If more than one lane was placed, and if a segment starts on one lane and ends on another, the result of the above formula may fall beyond the first lane of the segment. In this case, calculate the Station of Segment Test Site (line "H") as follows:

    a) Subtract the beginning station of the segment from the ending station of the first lane.

    b) Subtract the result of step (a) from the Distance from Beginning Station of Segment.

    c) Add the result of step (b) above to the beginning station of the next lane.

11. ***ADJUSTED MAT WIDTH (Line "J")***
    Adjust the Actual Mat Width so that NO CORES are taken from either:

    The SHOULDER:
    Subtract from the width, 0.5 m, to ensure that
    NO CORES are being taken within 0.5 m of the SHOULDER.

    The CENTERLINE:
    If this is a ***NON-Matching Mat:*** also subtract 0.3 m to ensure that
    NO CORES are being taken within 0.3 m from the CENTERLINE

12. Determine the ***"Location from Centerline"*** on Line "K" for each Segment Test Site.

    MATCHING MAT:
    Location from Centerline = Adj Mat Width x Width Random #

    NON-MATCHING MAT:
    Location from Centerline = (Adj Mat Width x Width Random #) + 0.3 m

The following example shows the required adjustments to the calculated site locations for a ***5.0 m wide NON-Matching Mat:***

Segment Number	1	2	3	4	5
Matching Mat	**No**	**No**	**No**	**No**	**No**
Mat Width	5.0	5.0	5.0	5.0	5.0
Allowed Cores in Mat @	0.3 - 4.5 m	0.3 - 4.5 m	0.3 - 4.5 m	0.3 - 4.5 m	0.3 - 4.5 m
Adjusted Mat Width (-0.8m) for Cores	4.2	4.2	4.2	4.2	4.2
Width Random #	0.95	0.4	0.09	0.97	0.52
Calculated Location (adj mat width x Random #	4.0	1.7	0.4	4.1	2.2
Corrected Core Location (m) (min ± 0.3 m from center-line) (min ± 0.5 m from shoulder)	***+4.3***	***+2.0***	***+0.7***	***+4.4***	***+2.5***

The following example shows the required adjustments to the calculated site locations for a ***5.0 m wide Matching Mat:***

Segment Number	1	2	3	4	5
Matching Mat	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Mat Width	5.0	5.0	5.0	5.0	5.0
Allowed Cores in Mat @	0.0 - 4.5 m	0.0 - 4.5 m	0.0 - 4.5 m	0.0 - 4.5 m	0.0 - 4.5 m
Adjusted Mat Width (-0.5m) for Cores	4.5	4.5	4.5	4.5	4.5
Width Random #	0.95	0.4	0.09	0.97	0.52
Calculated Location (adj mat width x Random #	4.3	1.8	0.4	4.4	2.3
Corrected Core Location (m) (min ± 0.5 m from shoulder)	***+4.3***	***+1.8***	***+0.4***	***+4.4***	***+2.3***

3.1.1 Quality Control Testing With Nuclear Density Gauge

For each of the five segments:

1. Use a separate portion of a form such as MAT 6-82 and change the word "Lot" to Segment and "Segment" to Sub-Segment.
2. Transfer to lines "A" and "B" the beginning and ending station of the segment.
3. Divide the length of the segment by 3 and record as Length of Sub-Segments (line "D").
4. Calculate the beginning station of each of the three sub-segments (line "E") as described in Section 3.1, steps 5 and 6.
5. Calculate the station (line "H") and location (line "K") of each of the 3 sub-segment test sites as described in Section 3.1, steps 7 to 12.

3.2 Varied Mat Width and/or Thickness

If the lot contains separate areas of varying thickness and/or width, the lot is divided in 5 segments weighted according to the volume of mix in each area.

In this case, a segment may be comprised of two or more small areas and large areas may represent more than one segment.

Figure 5 shows a typical example of a lot in a selective overlay project with varying mat width and thickness.

3.2.1 Segment End Station

Use a table similar to Figure 6 to determine the End Station of each segment as follows:

1. For each area, obtain the Beginning and Ending Station, Mat Width and Design Lift Thickness (columns "A", "B", "D" and "E", respectively).

   NOTE: The lift thickness must be converted to metres
   e.g. 50 mm = 0.050 m, 75 mm = 0.075 m.

2. Calculate the length in metres of each area (column "C") as follows:

   Length = Ending Station of Area - Beginning Station of Area

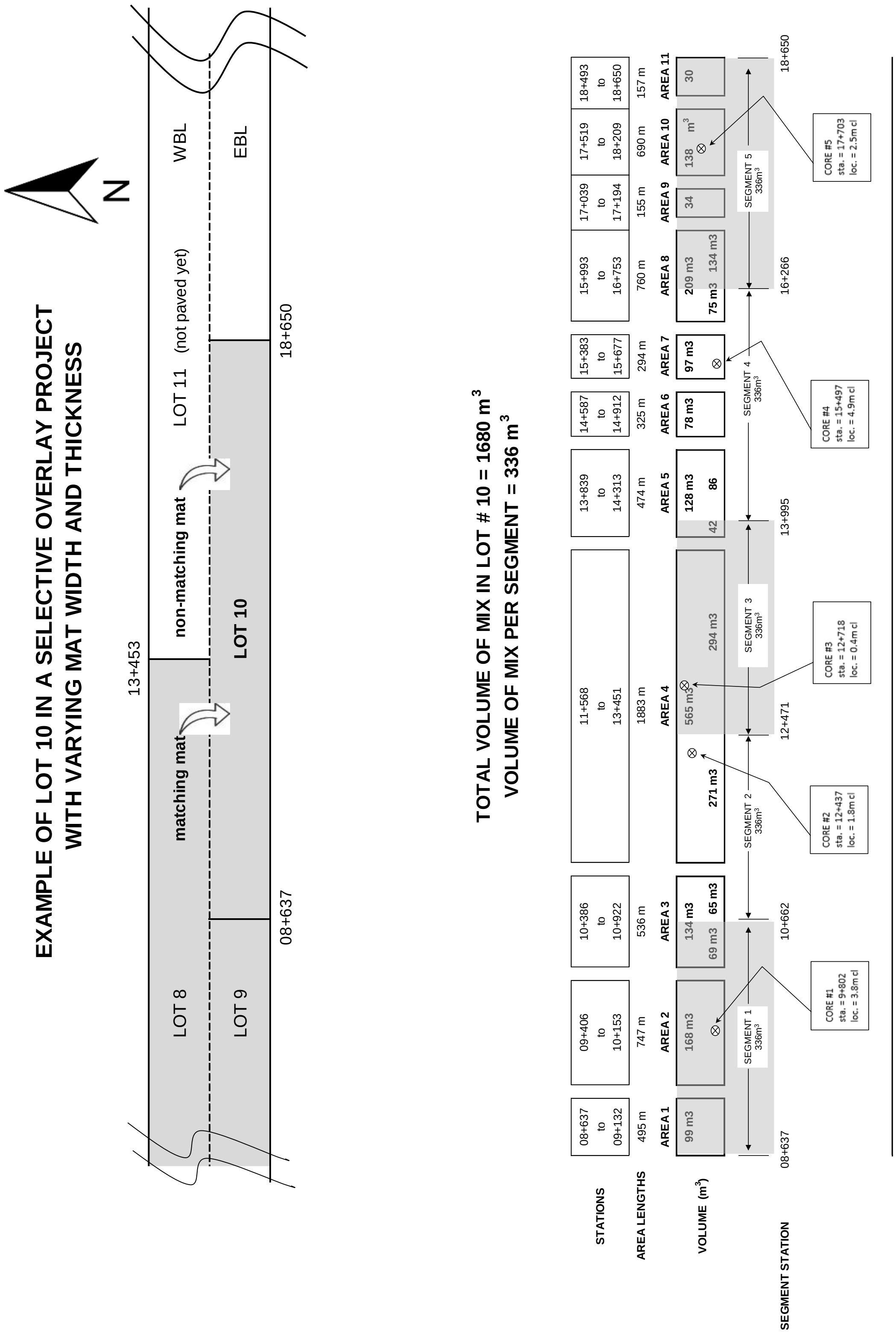
EXAMPLE OF LOT 10 IN A SELECTIVE OVERLAY PROJECT
WITH VARYING MAT WIDTH AND THICKNESS
TOTAL VOLUME OF MIX IN LOT # 10 = 1680 m3
VOLUME OF MIX PER SEGMENT = 336 m3
LOT 8
LOT 9
LOT 10
LOT 11 (not paved yet)
matching mat
non-matching mat
WBL
EBL
N
08+637
13+453
18+650
STATIONS
AREA LENGTHS
VOLUME (m3)
SEGMENT STATION

FIGURE 5

3. Calculate the volume of mix in m³ in each area (column "F") using the formula:

   Volume (m^3) = Length x Width x Thickness

4. Calculate the total volume of mix laid in the lot (line "G") by totalling the volume of mix in all areas, e.g. $F_1 + F_2 + F_3$, etc.

5. Determine the volume of mix required for each segment (line"H") using the formula:

$$\textit{Segment Mix Volume } (m^3) = \frac{\textit{Lot Volume}}{5 \textit{ Segments}}$$

6. For Segment 1, add as many Area Volumes (column "F") as required to equal or exceed the Segment Volume (line "H"). For the following segments, add the volume exceeding the previous segment volume (column "J") to as many Area Volumes as required to equal or exceed the Segment Volume.

	A	B	C	D	E	F	I	J	K		L
AREA No.	Beginning Station	Ending Station	Area Length m	Mat Width m	Mat Thickness m	Volume of Area m^3	Total Area Volumes Previous	Volume Exceeding Segment Volume	Distance from End Station of Area	SEGMENT	End Station of Segment
			B - A			C x D x E	J + F I ≥ H	I - H	J / D x E *		B - K
1	8+637	9+132	495	4.0	0.050	99					
2	9+406	10+153	747	4.5	0.050	168					
3	10+386	10+922	536	5.0	0.050	134	401	65	260	1	10+662
4	11+568	13+451	1883	5.0	0.060	565	630	294	980	2	12+471
5	13+839	14+313	474	4.5	0.060	128	422	86	318	3	13+944
6	14+587	14+912	325	4.0	0.060	78					
7	15+383	15+677	294	5.5	0.060	97					
8	15+993	16+753	760	5.5	0.050	209	470	134	487	4	16+266
9	17+039	17+194	155	5.5	0.040	34					
10	17+519	18+209	690	5.0	0.040	138					
11	18+483	18+650	167	4.5	0.040	30	336	0	0	5	18+650
G.	TOTAL VOLUME OF MIX IN LOT (sum(1-11))				m^3	1680			*		
H.	VOLUME OF MIX per SEGMENT (G / 5)				m^3	336					

* These value are from the area on which the segment ends

FIGURE 6

7. Subtract the Segment Volume (line "H") from the volume calculated in step 6. The result (column "J") is the volume of the combined segment areas which exceeds the segment volume.

8. Calculate the Distance from the End Station of the last Area in the segment to the end of the segment (column "K") as follows:

   a) Multiply the Mat Width (column "D") by the Mat Thickness (column "E") of the area on which the segment ends.

   b) Divide the volume exceeding the segment volume (column "J") by the result of step (a) above.

9. Calculate the End Station of the segment (column "L") by subtracting the Distance from the End Station of Area (column "K") from the Ending Station of the area on which the segment ends (column "B").

3.2.2 Station of Segment Test Site

1. Determine the “Length Random Number (M)” for each segment using one of the supplied number tables (and choosing the corresponding day of production), or by using the random number generation of a computer (or calculator).

   Record these Random Numbers in column "M", as shown below.

	M	N	O	P	Q	R
Seg. No.	Length Random No.	Volume of Mix from Beginning of Segment to Core Site M.H	Whole or Partial Area Volumes from Beginning of Segment * O ≤ N	Volume Required from Next Area N - O	Distance from Beginning Station of Site Area or Segment P / D*.E*	Station of Segment Test Site Q + A or L**
1	0.56	188	99	188 - 99 = 89	89 / (4.5 x 0.05) = 396	396 + (9+406) = 9+802
2	0.97	326	65	326 - 65 = 261	261 / (5.0 x 0.06) = 870	870 + (11+568) = 12+438
3	0.22	74	-	-	74 / (5.0 x 0.06) = 247	247 + (12+471) =12+718
4	0.60	202	86 + 78 = 164	202 - 164 = 38	38 / (5.5 x 0.06) = 115 m	115 + (15+383) = 15+498
5	0.61	205	134 + 34 = 168	205 - 168 = 37	37 / (5.0 x 0.04) = 185	185 + (17+519) = 17+704
Refer to data In Figure 5			* If O > N, enter 0		* Those values are from the area on which the test site is located.	** Use "L" if "Q" is the distance from the start of the segment

FIGURE 7

2. Calculate the "Volume of Mix from the Beginning of the Segment to the Core Site" (column "N") as follows:

   = Length Random No. (column "M") x Volume of Mix per Segment (Line "H" of Fig. 5)

3. Total the Volume of as many whole or partial areas required from the beginning of the segment so that the total is closest to but not exceeding column "N". Record the total volume in column "0".

   If the "Volume of the Whole or Partial Area Volumes" on which the core is to be located equals or exceeds the volume in column "N", enter "0" (zero) in column "0".

4. Subtract the Volume in column "0" from the Volume of Mix form the beginning of segment (column "N"). Record as "Volume Required from Next Area" (column "P").

5. Calculate the "Distance from the Beginning Station of Site Area or Segment" (column "Q") that the core site is to be located as follows:

   a) Multiply the Mat Width in m (column "D") by the Mat Thickness in m (column "E") of the area on which the core site is to be located.

   b) Divide the Volume Required from the Next Area (column "P") by the result of step (a) above.

   c) Calculate the station of segment test site (column "R") by adding the result of step 5 (c) above to the beginning station of the area (column "A") or the segment (column "L") on which the core is to be located.

3.2.3 Location of Segment Test Site

1. For each segment, record on line "C2" the width of the mat on which the core is to be located.

3. Use a Random Number Table or a computer (or calculator) to generate random numbers to determine each segment's "Width (Random Number)" (line "J").

4. Following Figure 8, calculate Line "K" & Line "L", to determine the core location of each segment test site from the established centreline of the project.

Alberta Transportation

MAT 6-82 / 22

ATT-56 Part II

STRATIFIED RANDOM TEST SITES

SELECTIVE OVERLAY
(VARYING MAT WIDTH & THICKNESS)

CONTRACT NO.	**11223**		**ACP - Lift 1 - 60mm**

LOT NO.	10	**DATE LAID**	29-Sep-13	**LANE**	EBL
A. BEGINNING STATION	08+637	**B. END STATION**	18+650	**C[1]. TOTAL MAT WIDTH**	4.5 - 5.5
D. VOLUME OF SEGMENTS F / 5		**336 m^3**			

		1	2	3	4	5
	SEGMENT NO.	**1**	**2**	**3**	**4**	**5**
		A	A+D	A+2D	A+3D	A+4D
E.	BEGINNING STATION OF SEGMENT or AREA	09+406	09+742	01+416	01+752	02+088
D^2.	TOTAL VOLUME OF MIX IN LOT m^3	**1680**				
	LANE	**Rt**	**Rt**	**Rt**	**Rt**	**Rt**
	MATCHING MAT (YES or NO)	**Yes**	**Yes**	**Yes**	**No**	**No**
F.	**LENGTH RANDOM NO.**	0.56	0.97	0.22	0.60	0.61
D^3.	VOLUME OF MIX FROM BEGINNING OF SEGMENT (m^3) D*F	188	326	74	202	205
G.	DISTANCE FROM BEGINNING STA. OR SEG.	396	869	246	114	184
H.	**STATION OF SEGMENT TEST SITE** G+E	**09+802**	**12+437**	**12+718**	**15+497**	**17+703**
C^2.	TOTAL MAT WIDTH (m)	4.50	5.00	5.00	5.50	5.00
I.	**WIDTH RANDOM NO.**	0.95	0.40	0.09	0.97	0.52
J.	ADJUSTED MAT WIDTH — If Matching-Mat (C^2 - 0.5); NON-Matching Mat (C^2 - 0.8)	4.0	4.5	4.5	4.7	4.2
K.	**LOCATION FROM CENTERLINE (m)** — Matching Mat (I * J)	**3.8**	**1.8**	**0.4**		
	NON-Matching Mat (I * J) + 0.3				**4.9**	**2.5**

COMMENTS:

Matching Mat - Cores may be taken within 0.3m from the Centerline

No Cores to be taken within 0.5m from the Shoulder.

ATT-56 RANDOM TEST SITE LOCATIONS, Part II Stratified Random Test Sites for ACP

SELECTIVE OVERLAY - VARYING MAT WIDTH & THICKNESS

TOM JONES

MATERIALS TECHNOLOGIST

C: \ My Documents \ FORMS AT 2011 \ RANDOMS 2017 \ RANDOMS AT 2017 \ RANDOMS 2017

FIGURE 8