

REPLACES	PENNSYLVANIA DEPARTMENT OF TRANSPORTATION	PART	SECTION	PAGE
DATED		C	2	2-1
SUBJECT	FINALS UNIT MANUAL	DATE May 1, 2012		
PROCEDURE FOR STATISTICAL AUDIT OF QUANTITIES – MANUAL SELECTION OF ITEMS				

A. Selection of the contract items to be audited.


1. Select the largest valued items that total at least 30% of the final total contract amount. Exclude non-work lump sum items including, but not limited to, mobilization, inspector's field office, maintenance and protection of traffic, survey items.
2. Random sample the remaining contract items.
 - a. Print the list of construction items or a Crystal Report of Final Quantities.
 - (1) List of all items (excluding non-work lump sum items) sorted by the largest item total with an accumulative total which will show you the 30% mark.
 - b. Number all remaining items that do not fall under A.2.a.(1) above.
 - c. To determine the sample size, take 10% of the last line number and round-off to the next highest whole number.
 - d. Use the Random Number Table in PTM 1 to identify the contract items that will be audited as a part of this sample:
 - (1) To determine the first contract item to be audited, enter the Random Number Table at the line number corresponding to the current date or the date that the audit was initiated and multiply the decimal fraction in Column X by the last line number on estimate and round-off to the nearest whole number.
 - (2) The whole number obtained by A.2.d.(1) above will be the line number of the report referenced by 2.a. above for the contract item to be audited.
 - (3) Continue this process using consecutive decimal fractions from Random Number Table until the required sample of items as determined in A.2.c., is obtained.
3. In addition to the items identified for audit by A.1. and A.2. above, all work order items that are price adjustments should be audited.

B. Selection of the Item Estimate Book / Items Quantities Report line items comprising a contract item.

PART	SECTION	PAGE	DATE
C	2	2-2	May 1, 2012

1. Consecutively number the plan station line items for each selected contract item in the left margin of the Items Estimate Book / Items Quantities Book.
 2. To determine the sample size, take 10% of the total number of line items counted and round-off to the highest whole number.
 3. Use the Random Number Table in PTM 1 to identify the plan stations that will be audited for each contract item in this sample:
 - (1) To determine the first line item to be audited, enter Random Number Table at the line number used in A.2.d(1) and multiply the decimal fraction in Column Y by the line number and round-off to the nearest whole number.
 - (2) Continue this process using consecutive decimal fractions from Random Number Table until the required sample as determined in A.2.c., is obtained.
 4. Circle the line item numbers selected for audit.
- C. Sample audit forms are shown on the following pages. These forms are provided to assist in the determination and identification of items to be audited, using the methods described in this section.

Sample Audit Forms (Continued)

Item No.	Random Audit Item Sheet	Random Table			
0000-0000	(X) x No. Of Items = Line Item To Audit (Round To Nearest Whole No.)	-X-	-Y-	-X-	-Y-
	(Y) x No. Of Lines For Item = Item Line To Audit (Audit 10% Of Lines For Item) (Round To Nearest Whole No.)	1- 0.29	R 0.66	51- 0.87	L 0.36
		2- 0.74	R 0.49	52- 0.34	L 0.19
		3- 0.89	L 0.79	53- 0.37	R 0.33
		4- 0.60	R 0.39	54- 0.97	L 0.79
		5- 0.88	R 0.31	55- 0.13	R 0.56
		6- 0.72	L 0.54	56- 0.85	R 0.64
		7- 0.12	R 0.08	57- 0.14	L 0.04
		8- 0.09	L 0.94	58- 0.99	R 0.74
		9- 0.62	L 0.11	59- 0.40	L 0.76
		10- 0.71	R 0.59	60- 0.37	L 0.09
		11- 0.36	L 0.38	61- 0.90	R 0.74
		12- 0.57	R 0.49	62- 0.09	L 0.70
		13- 0.35	R 0.90	63- 0.66	L 0.97
		14- 0.69	L 0.63	64- 0.89	L 0.55
		15- 0.59	R 0.68	65- 0.67	L 0.44
		16- 0.06	L 0.03	66- 0.02	R 0.65
		17- 0.08	L 0.70	67- 0.93	R 0.17
		18- 0.67	L 0.68	68- 0.40	R 0.50
		19- 0.83	R 0.97	69- 0.44	R 0.15
		20- 0.54	R 0.58	70- 0.03	L 0.60
		21- 0.82	R 0.50	71- 0.19	L 0.37
		22- 0.66	R 0.73	72- 0.92	L 0.45
		23- 0.06	L 0.27	73- 0.20	L 0.85
		24- 0.03	L 0.13	74- 0.05	R 0.56
		25- 0.55	L 0.29	75- 0.46	R 0.58
		26- 0.64	L 0.77	76- 0.43	R 0.91
		27- 0.30	R 0.57	77- 0.97	L 0.55
		28- 0.51	R 0.67	78- 0.06	R 0.51
		29- 0.29	R 0.09	79- 0.72	L 0.78
		30- 0.63	R 0.82	80- 0.95	L 0.36
		31- 0.53	L 0.86	81- 0.16	L 0.61
		32- 0.99	R 0.22	82- 0.29	R 0.47
		33- 0.02	R 0.89	83- 0.48	R 0.15
		34- 0.61	L 0.87	84- 0.73	R 0.64
		35- 0.76	R 0.16	85- 0.05	L 0.94
		36- 0.87	L 0.77	86- 0.43	L 0.05
		37- 0.41	L 0.10	87- 0.87	R 0.98
		38- 0.28	R 0.23	88- 0.37	L 0.71
		39- 0.22	L 0.18	89- 0.94	L 0.26
		40- 0.21	L 0.94	90- 0.57	L 0.63
		41- 0.27	L 0.52	91- 0.26	R 0.80
		42- 0.39	R 0.91	92- 0.01	L 0.79
		43- 0.57	L 0.10	93- 0.83	R 0.59
		44- 0.82	L 0.12	94- 0.71	L 0.21
		45- 0.14	L 0.94	95- 0.65	L 0.63
		46- 0.50	R 0.58	96- 0.65	L 0.87
		47- 0.93	L 0.03	97- 0.72	R 0.92
		48- 0.43	L 0.29	98- 0.85	L 0.78
		49- 0.99	L 0.36	99- 0.04	L 0.46
		50- 0.61	R 0.25	100- 0.29	L 0.95
	Page ____ Of ____	S.R. _____ Contract No. _____			