AHTD TRC TRANSPORTATION RESEARCH COMMITTEE

TRC9108

Development of an Acceptance Sampling Plan and Pay Adjustment Schedule

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Final Report

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DEVELOPMENT OF AN ACCEPTANCE SAMPLING PLAN AND PAY ADJUSTMENT SCHEDULE (RESEARCH PROJECT NO. TRC 9108)

FINAL REPORT

Submitted to

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
MATERIALS AND RESEARCH DIVISION

By

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TABLE OF CONTENTS

DEVELOPMENT OF AN ACCEPTANCE SAMPLING PLAN AND PAY ADJUSTMENT SCHEDULE

I. RESEARCH PROPOSAL

Problem Statement

Construction pay adjustments are used by most highway agencies. Although primarily thought of in connection with quality assurance (QA) type of construction contracts, they are also used by many agencies with the more traditional method oriented specifications to establish payment when it becomes prudent to accept construction that does not fully comply with the specifications.

The Arkansas State Highway and Transportation Department traditionally has used pass/fail specifications with pay adjustment for substantially complying work that at some point has been determined to be in non-compliance with specifications. Current AHTD procedure for a lot that fails to meet specifications require the Resident Engineer to perform the following tasks:

1. Sample near the non-complying sample
2. Average samples and check for non-compliance
3. Isolate area of non-compliance

It becomes obvious that one failing test report can generate many more tests within the lot before an area of non-compliance can be isolated. Recently, the Arkansas State Highway and Transportation Department amended the specifications regarding non-complying work. This specification (SS-105-2) requires pay adjustments for the following items:

1. Asphalt content
2. Aggregate gradation
3. Percent passing the #200 sieve
4. Field density

Objective of the Study

The objective of this study is to provide the Arkansas State Highway and Transportation Department with an acceptance plan that considers the use of pay adjustments according to the Department's current specifications and acceptance testing.

Program of Work

The Principal Investigator will develop the pay adjustment schedule for acceptance of materials not meeting specifications. The acceptance of such materials will be based on performance and service life which can be anticipated. The development of pay adjustment schedules and acceptance plans will include a performance review of previous jobs that have applied pay adjustments to non-conforming work. The Department will be responsible for locating the specific sites on these projects.

An acceptance plan will be developed for use within the framework of current AHTD specifications and acceptance testing.

Work Plan

The project will be completed in 8 months, including the writing of the final report. The stages will proceed as follows:

1. Obtaining pertinent literature and other information regarding the study area (or plan) of the project.

2. Sample sites as selected by the Arkansas State Highway and Transportation Department.

3. Performance review of specific locations (chosen by the Arkansas State Highway and Transportation Department) of previous jobs that have applied pay adjustments to non-conforming work.

4. Cumulative laboratory analysis of collected specimens as to parameters specified by the Arkansas State Highway and Transportation Department (i.e., as required: asphalt content, aggregate gradation, percent passing the #200 sieve, and field density). Laboratory analysis will be furnished by the Arkansas State Highway and Transportation Department.

5. Data review and statistical analysis.

6. Recommendations and final report.

II. RESEARCH RESULTS

A. Review of the Literature and Current Practices

A review of current acceptance and testing specifications was conducted. Following are items related to acceptance sampling and pay adjustments as stated in the AHTD Standard Specifications for Highway Construction, 1991 Edition.

1. A quality control lot for aggregate gradation and asphalt cement content shall be 1,000 tons. A quality control lot for density shall be 300 tons (Page 194).

2. The minimum test frequency for quality control sampling shall be 1 per 1,000 tons for aggregate gradation and asphalt cement content and 1 per 300 tons for density (Page 193).

3. More frequent sampling and testing may be required whenever the test results indicate that the material is widely varying or consistently marginal (Page 194).

4. If either quality control or acceptance results indicate that material is outside the specified tolerances, further evaluation will be made, in accordance with subsection 410.09, to determine its acceptability (Page 194).

Section 410.09 beginning on page 239 specifies acceptance of the pavement and adjustments. The following apply to acceptance with respect to asphalt content, aggregate gradation, and density.

* The minimum frequency of sampling and testing for acceptance will be in accordance with the Department's "Manual of Field Sampling and Testing Procedures".

* Investigation of and adjustments for non-complying work will be based on the quality control lot.

* All sampling and testing for acceptance and/or adjustment will be performed by the Department.

For asphalt content and/or gradation, the following apply:

1. Acceptance of the pavement mixture with respect to asphalt content and/or aggregate gradation will be based on the results of extraction tests or nuclear gauge results and belt or dry batch gradations.

2. When the results of either quality control or acceptance tests indicate that the mixture is outside the specified tolerances, further evaluation of the mixture will be made to determine its acceptability by dividing the quality control lot into three equal sub-lots and taking a sample from each sub-lot.

3. The sample shall be obtained by the Contractor at locations selected by the Engineer, and at no cost to the State.

4. If extraction test results for a sub-lot are within the specified tolerances the sub-lot will be accepted.

5. If extraction test results for a sub-lot are outside the specified tolerances, two additional samples shall be taken from the sub-lot near the location of the original sample.

6. If the test result for both samples are within the specified tolerances, the sub-lot will be accepted.

7. If the test results for either of these samples are outside the specified tolerances, the sub-lot will be considered non-complying.

8. When a sub-lot is found to be non-complying, but within the limits specified in 410.09(c), it may be left in place at a reduced cost to the State.

9. The cost adjustment will be determined in accordance with 410.09(c) using the test results of all three samples.

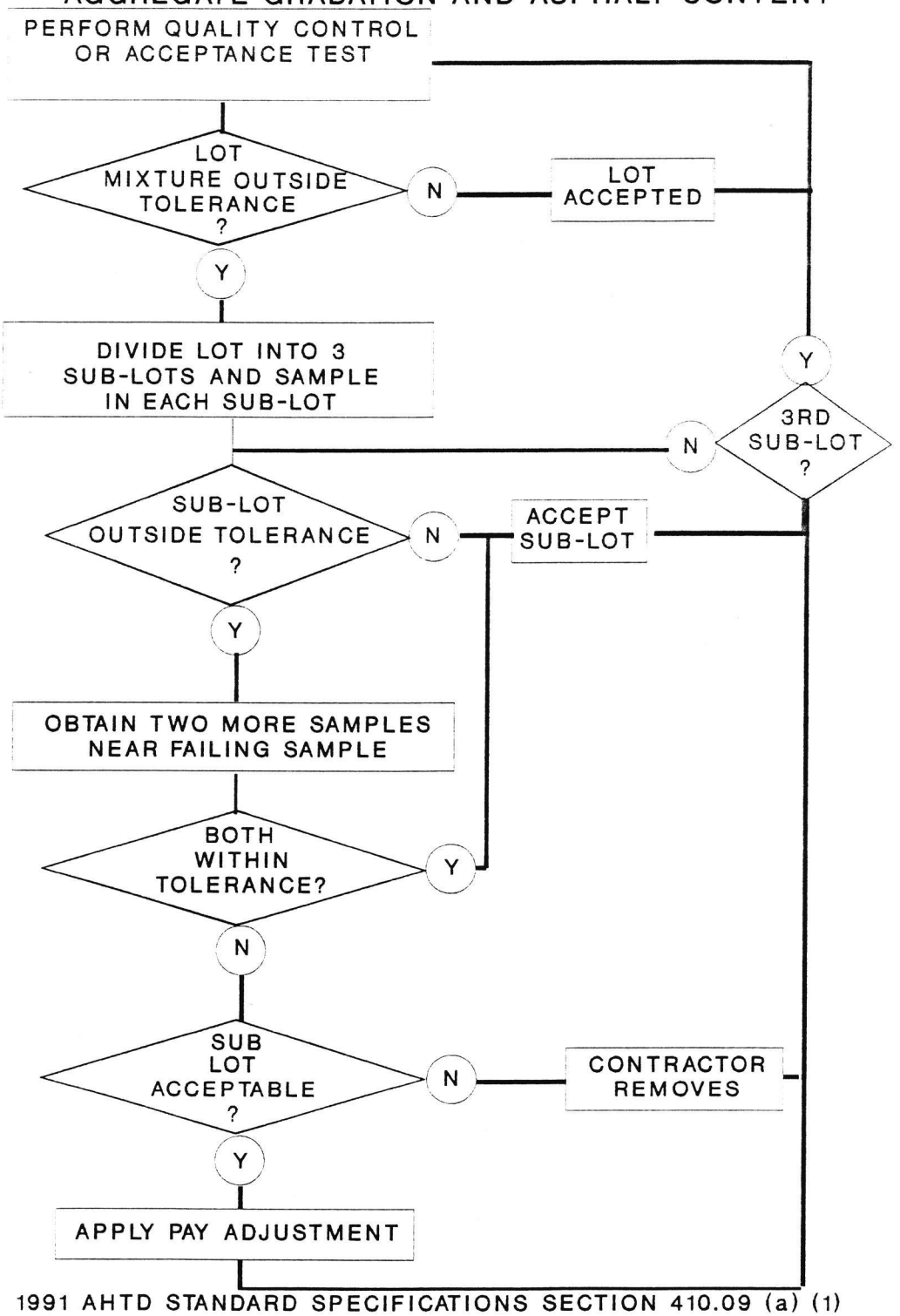
10. The number of deviations for the cost adjustment will be calculated by summing the maximum deviation of each of the samples and dividing the sum by the number of complying and non-complying samples.

11. In the event non-complying material is found to be unacceptable relative to asphalt content or aggregate gradation and it is determined that the pavement must be removed, the area to be removed shall be isolated by taking additional cores at 50' intervals, beginning 25' each direction from the location of the failing samples, until complying specimens are obtained.

A flow chart showing these steps is given on the next page.

ACCEPTANCE OF THE PAVEMENT

AGGREGATE GRADATION AND ASPHALT CONTENT



1991 AHTD STANDARD SPECIFICATIONS SECTION 410.09 (a) (1)

The following steps apply to acceptance of pavement with respect to field density.

1. Acceptance of the pavement with respect to field density will be based on the density determined for each lot placed.

2. If non-complying densities are obtained during the establishment of the optimum rolling pattern, the mix placed while using the unsatisfactory rolling pattern will be considered as a separate lot(s) for testing and evaluation.

3. A sample for density determination shall be taken in each lot on the day following placement.

4. Each lot of the compacted mix will be accepted when the density of the sample obtained from the lot is equal to or greater than the minimum specified density.

5. If a field density determination is below the minimum specified value, two additional samples shall be taken from the quality control lot near the location of the original sample.

6. If the average value of these three samples equals or exceeds the minimum specified value, the lot will be accepted.

7. If this average is below the minimum specified value, the lot will be considered non-complying.

8. When a lot is found to be non-complying, but within the limits specified in 410.09(c), it may be left in place at a reduced cost to the State.

9. The cost adjustment will be determined in accordance with 410.09(c) using the average density of the three samples.

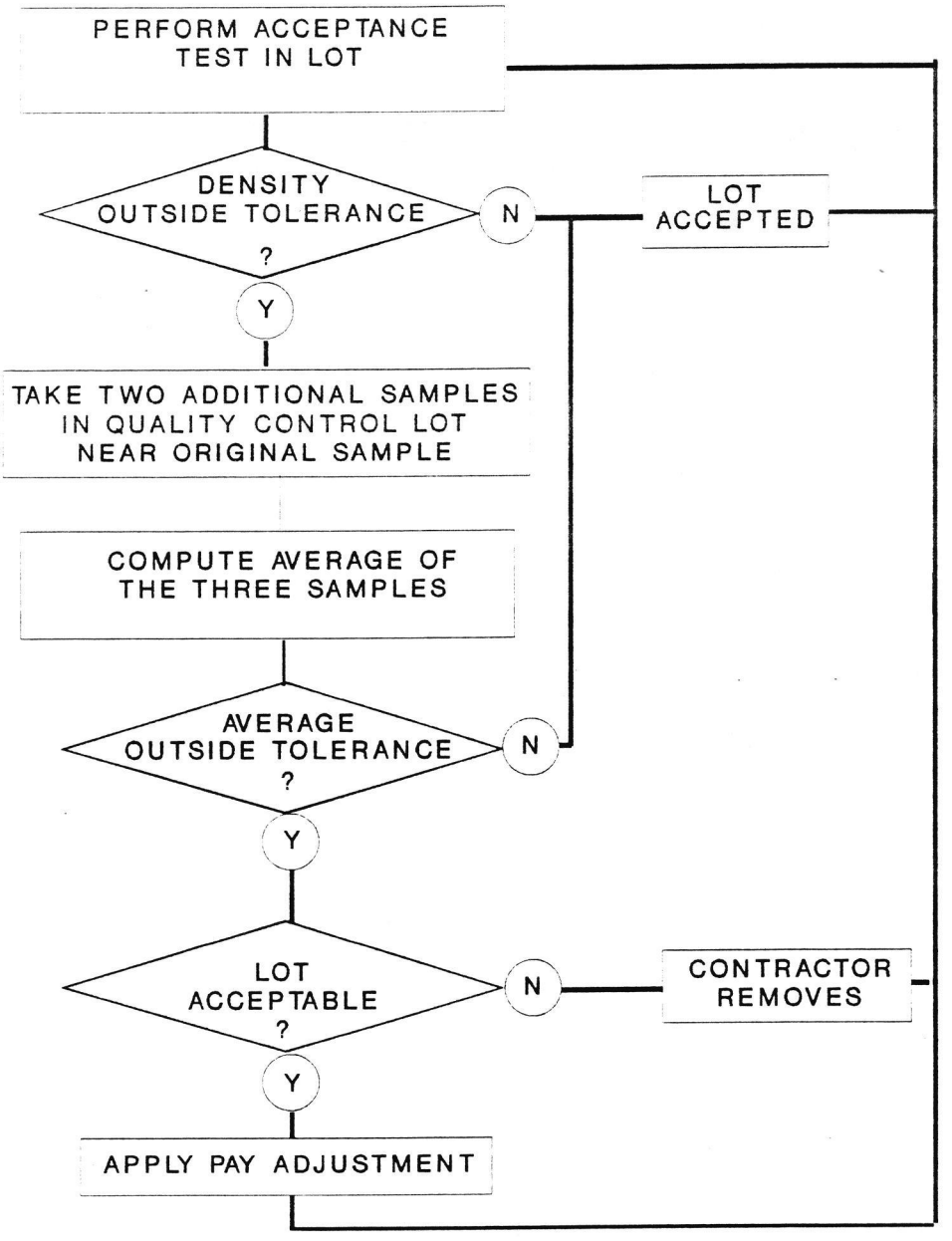
10. Any adjustment will be for the entire quantity of the lot.

11. In the event non-complying material is found to be unacceptable relative to density and it is determined that the pavement must be removed, the area to be removed shall be isolated by taking additional cores at 50' intervals, beginning 25' each direction from the location of the failing samples, until complying specimens are obtained.

A flow chart showing these steps is given on the next page.

ACCEPTANCE OF THE PAVEMENT

DENSITY



BASED ON 1991 AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION - SECTION 410.09 (a) (2)

Section 410.09(c) Adjustments.

Adjustments will be made by reducing the contract cost of the items used in the lot or sub-lot in accordance with the schedules below. Adjustments will be applied to all components of the course for the entire quantity of the lot or sub-lot. Adjustment will be accomplished by Change Order and will be shown on progress and final estimates as a separate item deduction. When the number of deviations for asphalt content, aggregate gradation, or density exceeds the maximum specified below, or when an accumulation of deviations result in a reduction of the contract cost of the work greater than 50% that lot or sub-lot will not be accepted. **Continuous production of material not qualifying for 100% payment will not be allowed.**

(1) For asphalt cement content, the contract cost of all items in the mix will be reduced by 10.0% for each deviation outside the specified tolerance, up to a maximum of 4 deviations. One deviation is 0.1%.

(2) For aggregate gradation on sieves above the #200, the contract cost of all items in the mix will be reduced by 5.0% for each deviation outside the specified tolerance up to a maximum of 8 deviations. One deviation is 1%.

(3) For aggregate gradation on the minus #200 material, the contract cost of all items in the mix will be reduced by 2.0% for each deviation outside the specified range up to a maximum of 20 deviations. One deviation is 0.1%.

(4) For field density on all asphalt concrete courses, the contract cost of all items in the mix will be reduced by 2.0% for each deviation outside the specified range up to a maximum of 20 deviations. One deviation is 0.1%.

Pay adjustments are summarized in the table on the next page.

PAY ADJUSTMENT

BASED ON AHTD 1991 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION - SECTION 410.09 (c)

MEASURE	DEVIATION	REDUCTION PER DEVIATION	MAXIMUM DEVIATIONS	MAXIMUM REDUCTION
ASPHALT CEMENT CONTENT	0.1%	10%	4	40%
AGGREGATE GRADATION ABOVE #200	1.0%	5%	8	40%
AGGREGATE GRADATION #200 SIEVE	0.1%	2%	20	40%
DENSITY	0.1%	2%	20	40%

A survey instrument was developed to collect data from several states on acceptance and pay adjustment plans for asphalt pavement. Materials/Research and construction divisions were surveyed resulting in nineteen responses from fifteen states. Survey results are contained in Appendix I of this report. Following are some conclusions supported by the survey responses and the policies and procedures submitted with the survey responses.

1. Highway and Transportation Departments have written policy regarding asphalt pavement material and/or completed asphalt pavement that does not comply with specifications but is of sufficient quality to leave in place.

2. Pay adjustments are applied to pavement that does not comply with specifications but is of sufficient quality to leave in place.

3. Most pay adjustments are made according to a predetermined schedule for deviation from specifications.

4. Pavement characteristics cited most often as factors in pay adjustments were density, asphalt cement content, aggregate gradation, and roughness.

5. The quantity of mix to be pay adjusted that was cited most often in the survey was the amount of material represented by the test.

6. Eight of nineteen respondents indicated that additional testing would be done to isolate the area of non-complying work for acceptance with price reduction. Sixteen of nineteen respondents would do additional testing to isolate the area of non-complying work for removal of the pavement.

7. The frequency of acceptance testing for density, asphalt cement content, and aggregate gradation was the same for "interstate type" and "normal type" work for all respondents. A frequency of 5 or more acceptance tests per day's production for density was indicated by the majority of respondents. There was no clear pattern of frequency of acceptance testing for asphalt cement content and aggregate gradation.

8. Most respondents indicated that pay adjustments had been made in their state in 1990.

9. Rolling straightedge, profilograph, and Mays Ride Meter were used to test for roughness for acceptance and pay adjustment.

10. A review of density as a basis for acceptance and pay adjustment was completed using plans from several states. The results from this review are presented in Appendix I.

B. Samples from Non-Complying Pavement

In August, 1991 core samples were taken from a 300 foot section of a pay adjusted pavement, Job 90045, in Benton County. Density measurements from these cores were used in a simulation study discussed later in this report.

C. Performance Review of Pay Adjusted Areas

Several areas which had been pay adjusted were examined but quantitative measures of quality characteristics were not obtained. It was decided that any meaningful research on this topic would require much more time and effort than was allocated for this study.

D. Laboratory Analyses of Samples

Laboratory analyses of the samples was provided by the Arkansas Highway and Transportation Department. Data sheets are included in Appendix II of this report.

E. Data Review and Statistical Analyses

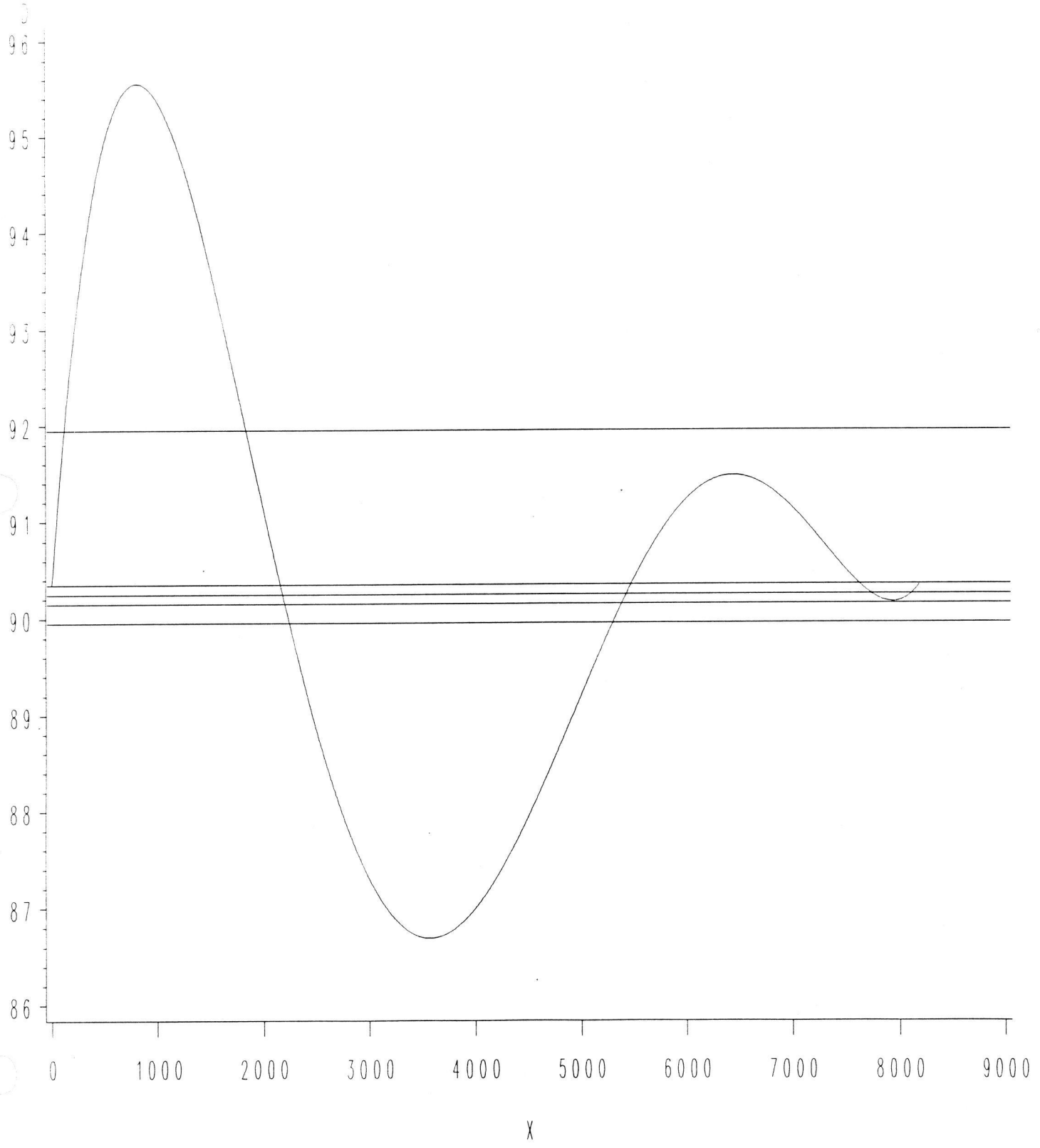
In order to approximate the long-term behavior of various sampling plans, a Simulation Test Strip (STS) was modeled using density measurements taken from Job 90045. In consultation with AHTD research staff, it was decided that 8,184 linear feet of highway 12 feet wide and two inches thick would be used to represent a day's production, approximately 1,200 tons, of type II asphalt hot mix surface course pavement. The density measurements from Job 90045 were spaced proportionally over this strip as shown in the following diagram.

Distance:	0	1364	2728	4092	5456	6820	8184
Density:	90.3	94.5	87.3	88.1	89.6	91.6	90.3

A fifth degree polynomial fitted to these points was taken as a model for the density over the STS. The SAS code to fit the polynomial and the resulting polynomial coefficients are contained in Appendix II. This polynomial, which will be called the STS density curve, is shown in the D (density) vs. X (distance in feet) graph on the following page.

ASPHALT SAMPLING CURVE

DENSITY AT X FEET INTO THE 8,184 FOOT STRIP



The AHTD Standard Specifications for Highway Construction, 1991 edition, page 205, states that the field requirement for minimum density is 92 % theoretical. These specifications further state (page 243) that

> "(4) For field density on all asphalt concrete courses, the contract cost of all items in the mix will be reduced by 2.0% for each deviation outside the specified range up to a maximum of 20 deviations. One deviation is 0.1%."

Therefore, the density measure for pavement acceptance and pay adjustment must be 91.95 or above for 100% pay and below 89.95 for 0% pay. Densities greater than or equal to 89.95 and less than 91.95 require payment ranging from 60 to 98 percent of contract price. For example, a 60% payment would be made for a density of 90.0 which corresponds to density measurements, d, in the range $89.95 \leq d < 90.05$; a 62% payment would be made for $90.05 \leq d < 90.15$, etc.

To determine the probability of randomly selecting a distance corresponding to a possible pay adjustment it is necessary to solve the equation $D(x)-k=0$ where $k=89.95, 90.05, 90.15, \ldots, 91.85, 91.95$ and $D(x)$ is the STS density curve. For example, $D(x)-91.95=0$ has two real solutions (rounded to the nearest integer) $x=119$ and $x=1836$ and, from the graph, $D(x)$ is greater than 91.95 for all x between these two values. Thus, the probability of 100% pay is

$$(1836-119)/8184 = 1717/8184 = .2097996.$$

The equation $D(x)-89.95=0$ has real solutions $x=2241$ and $x=5295$. The interval from 2241 to 5295 corresponds to the region of 0% pay because the density over this range is less than 90. The probability of 0% pay is therefore

$$(5295-2241)/8184 = 3054/8184 = .3731672.$$

The solutions of $D(x)-k=0$ for the values of k specified above are given in Table 1 on the following page and probabilities for possible percent pay values are shown in Table 2. A distribution showing the expected number in each pay category for 100 trials is given after the tables.

Table 1. Solutions of D(x)-k=0 where D(x) is the Simulation Test Strip (STS) density polynomial and k assumes values as shown.

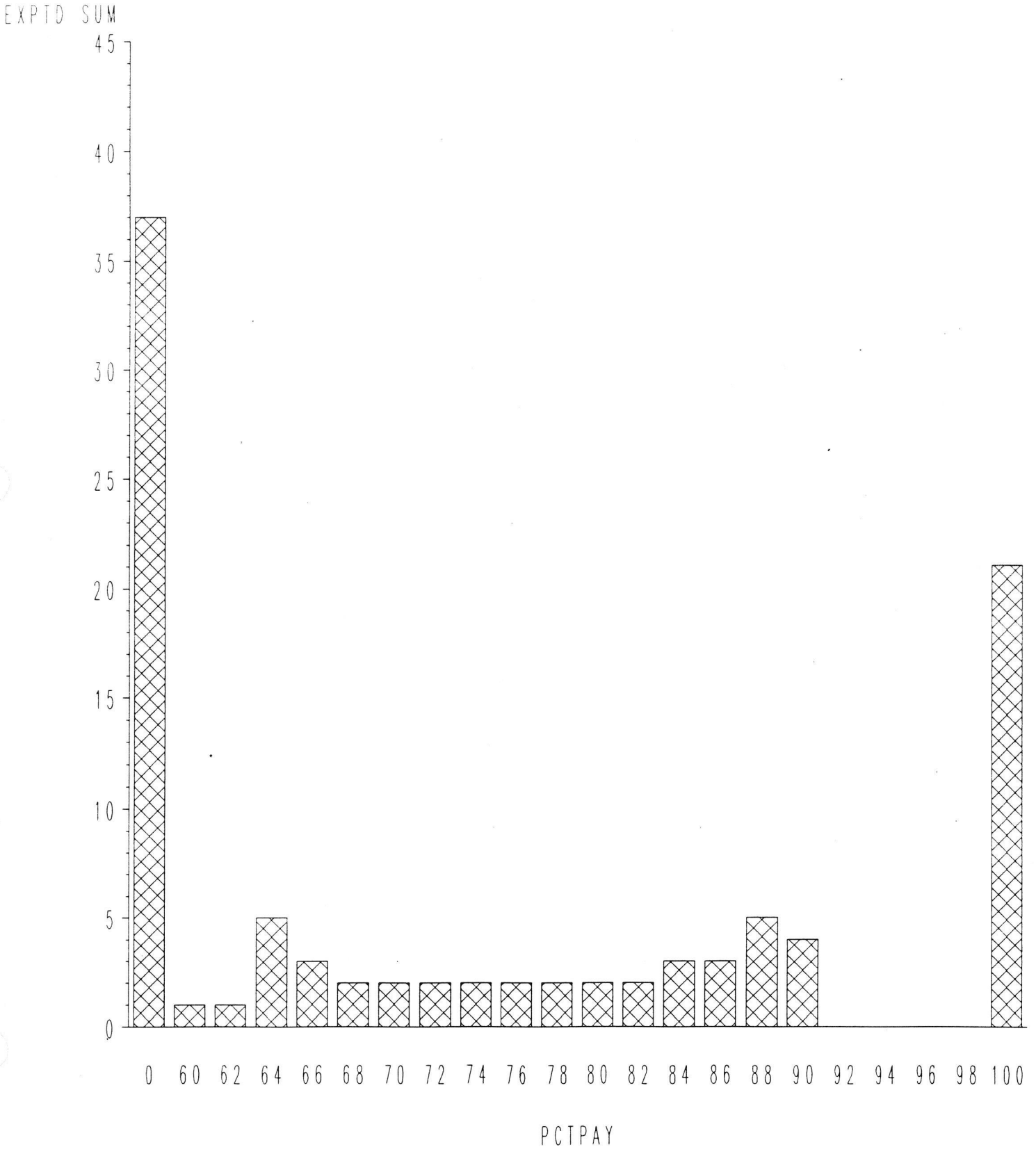
k	Solutions				
91.95	119	1836			
91.85	111	1856			
91.75	103	1875			
91.65	95	1895			
91.55	87	1914			
91.45	80	1934	6299	6583	
91.35	71	1954	6124	6766	
91.25	64	1974	6016	6884	
91.15	56	1994	5930	6981	
91.05	49	2014	5855	7067	
90.95	42	2034	5789	7147	
90.85	35	2054	5728	7223	
90.75	27	2074	5671	7298	
90.65	20	2094	5617	7373	
90.55	14	2115	5566	7449	
90.45	7	2135	5517	7530	
90.35	0	2156	5470	7619	
90.25		2177	5424	7729	8110
90.15		2198	5380		
90.05		2219	5337		
89.95		2241	5295		

Table 2. Probabilities for the percent of contract price that would be paid according to densities from the STS density polynomial.

Percent Pay	Probability
100	1717/8184 = .2098
98	28/8184 = .0034
96	27/8184 = .0033
94	28/8184 = .0034
92	27/8184 = .0033
90	311/8184 = .0380
88	387/8184 = .0473
86	253/8184 = .0309
84	211/8184 = .0258
82	188/8184 = .0230
80	173/9194 = .0211
78	164/8184 = .0200
76	160/8184 = .0195
74	156/8184 = .0191
72	154/8184 = .0188
70	157/8184 = .0192
68	164/8184 = .0200
66	251/8184 = .0307
64	446/8184 = .0544
62	64/8184 = .0078
60	64/8184 = .0078
0	3654/8184 = .3732

SAMPLING DISTRIBUTION FOR THE TEST STRIP

EXPECTED NUMBER IN EACH PAY CATEGORY FOR 100 TRIALS



Three simulations were designed to assess different methods of sampling and different sample sizes. For convenience, the three methods will be called **strip, sub-lot,** and **1,000 foot sub-lot sampling.** For strip and sub-lot sampling methods, data was collected for sample sizes of 1, 2, 3, 4, and 5. For each sample size, 100 density measures were obtained. Each measure is the mean of N densities, where N = 1 or 2 or 3 or 4 or 5, corresponding to distances within the 8,184 foot strip. The distances were determined by random selection using the Uniform Probability Distribution. For strip sampling, the only constraint on the distance chosen was that it be within the 8,184 foot strip. For sub-lot sampling, the 8,184 foot test strip was divided into N sub-lots, where N is the sample size, and one density measurement was randomly selected in each sub-lot. For the 1,000 foot sub-lot sampling method, a location within each 1,000 foot strip was chosen at random using the Uniform Probability Distribution and the density was computed at that point. This density was used to compute a pay adjustment in each 1,000 foot sub-lot. In sub-lots 3 and 6, for densities below 89.95 corresponding to 0 percent pay, two additional densities were selected at random from within the sub-lot and averaged with the failing density. A new pay adjustment was computed based on the average of the three densities.

Bar charts of the results of the simulations are presented on the following pages. The data generated in the simulations is contained in Appendix II. Charts and data with titles "Asphalt Sampling Simulation" are from the strip sampling method, those with title "Asphalt Sub-Lot Sampling Simulation" are from the sub-lot sampling method, and those with title "Asphalt 1000 Foot Sub-Lot Sampling Simulation" are from the 1000 foot sub-lot method.

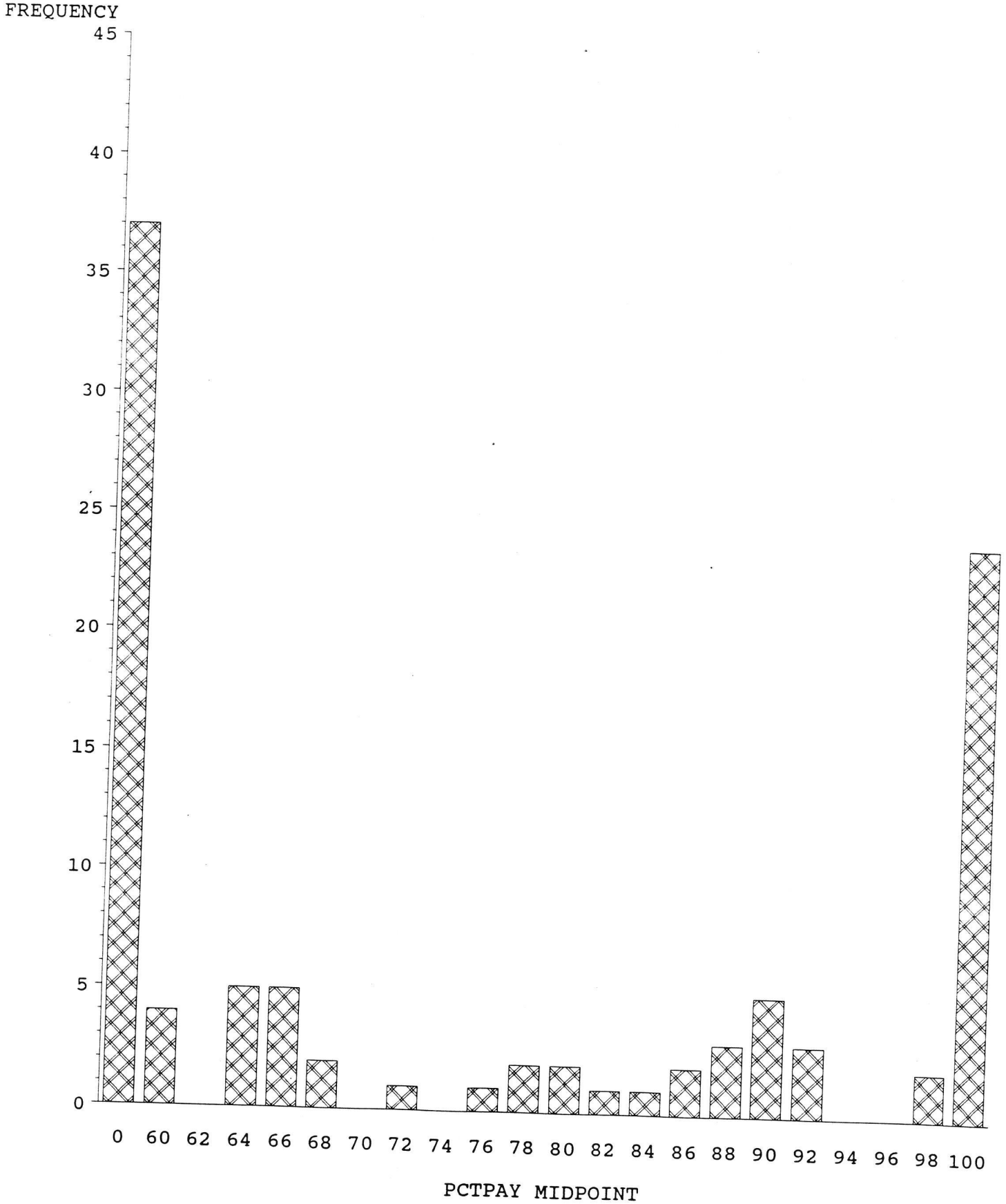
Charts from the strip sampling method tend to hold the basic shape of the chart for samples of size 1. The number of trials that result in 0% or 100% pay are reduced for samples of size 4 and 5, but not significantly.

Charts from the sub-lot sampling method show a significant change of shape as the sample size increases. No trials resulted in 100% pay for samples of size 4 and 5 and the number of trials with 0% pay was much smaller for samples of size 5. Of course, another run of the simulation might result in a quite different outcome, but results from several runs suggest that the output displayed here is typically what can be expected from this method.

Charts from the 1,000 foot sub-lot sampling method clearly indicate that this sampling method is better than the other two. Areas of non-complying work would definitely be removed by this method of sampling. The pay adjustments appear to be a fair representation of the quality of work represented by the Simulation Test Strip.

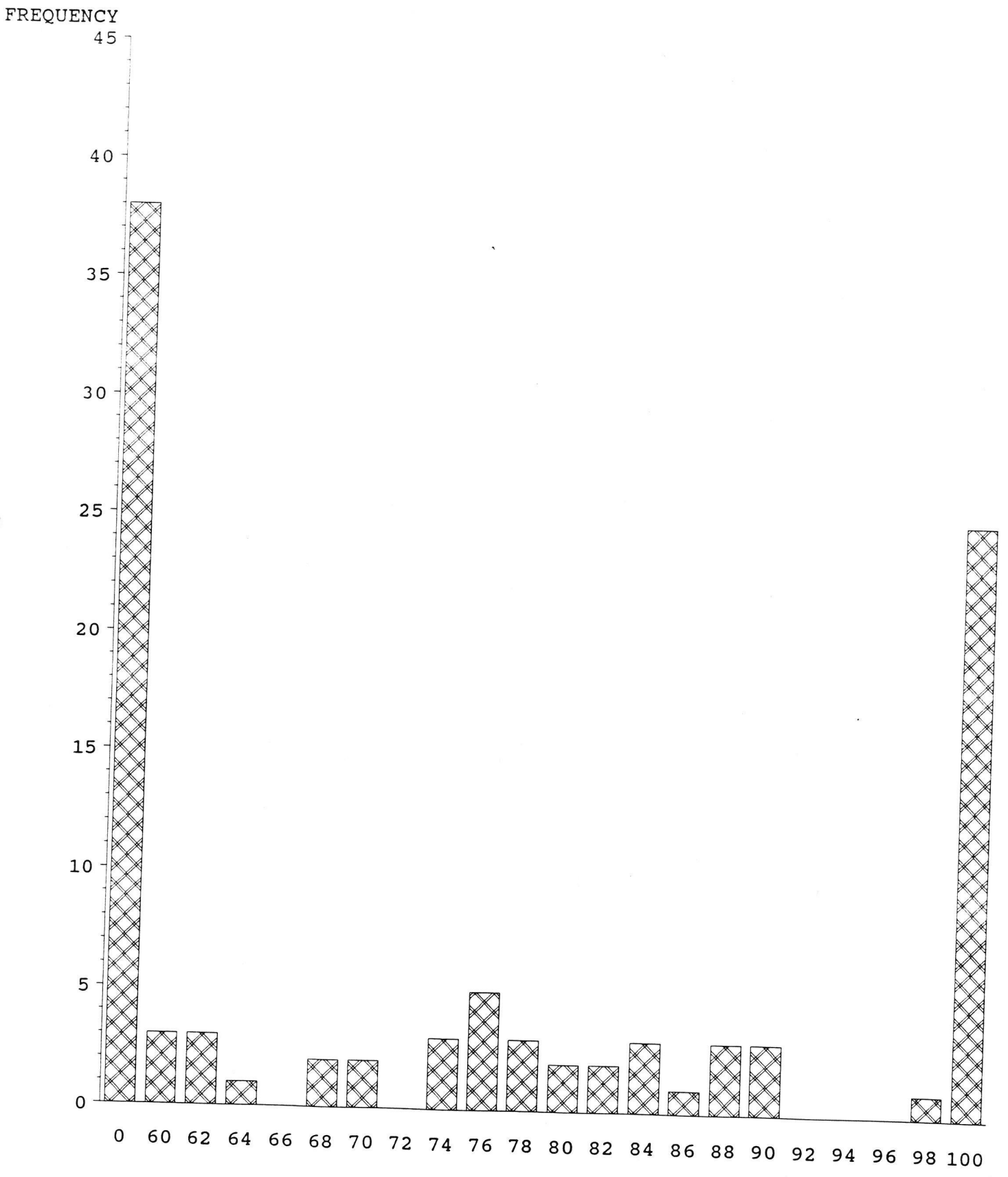
ASPHALT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 1



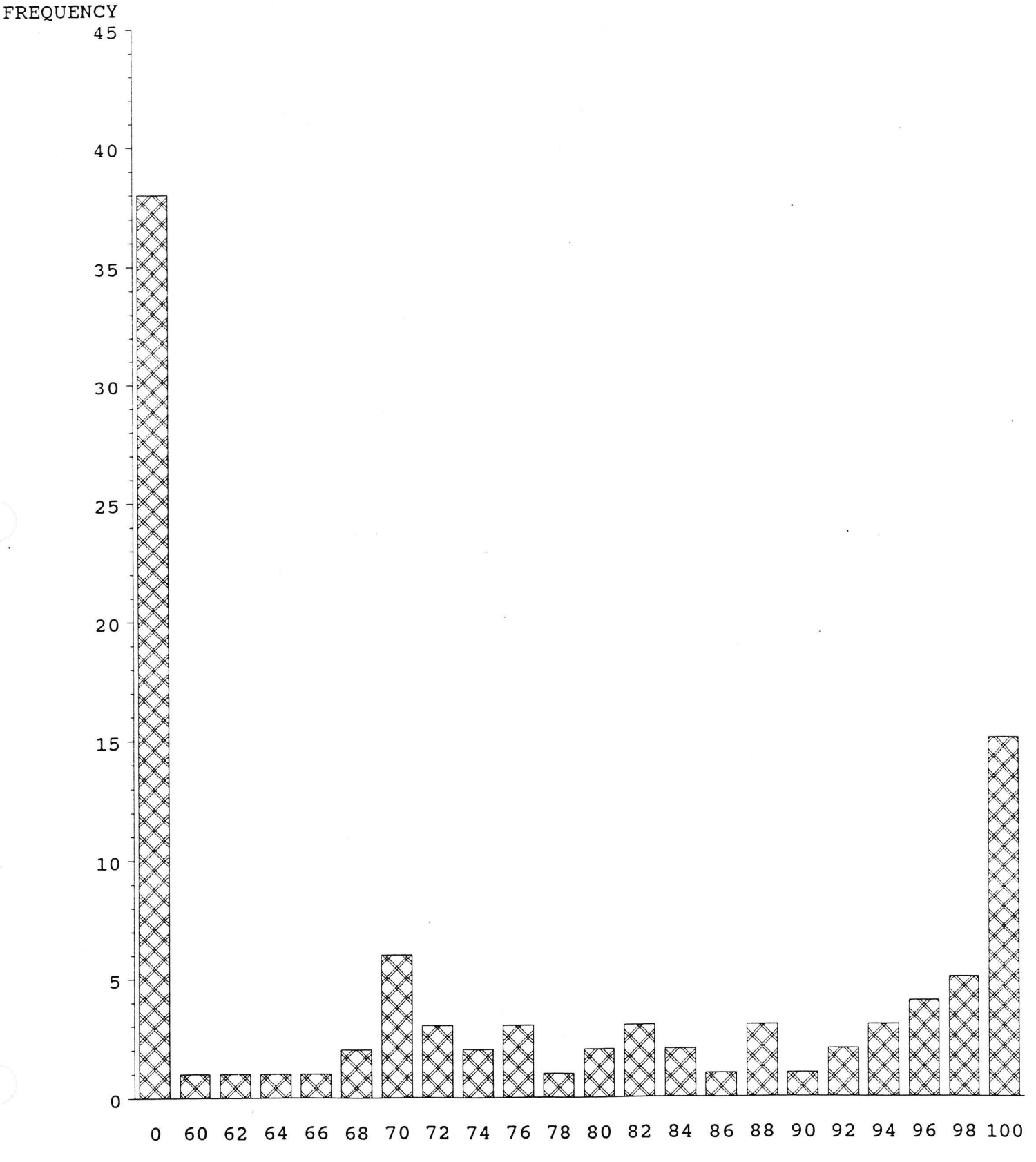
ASPHALT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 2



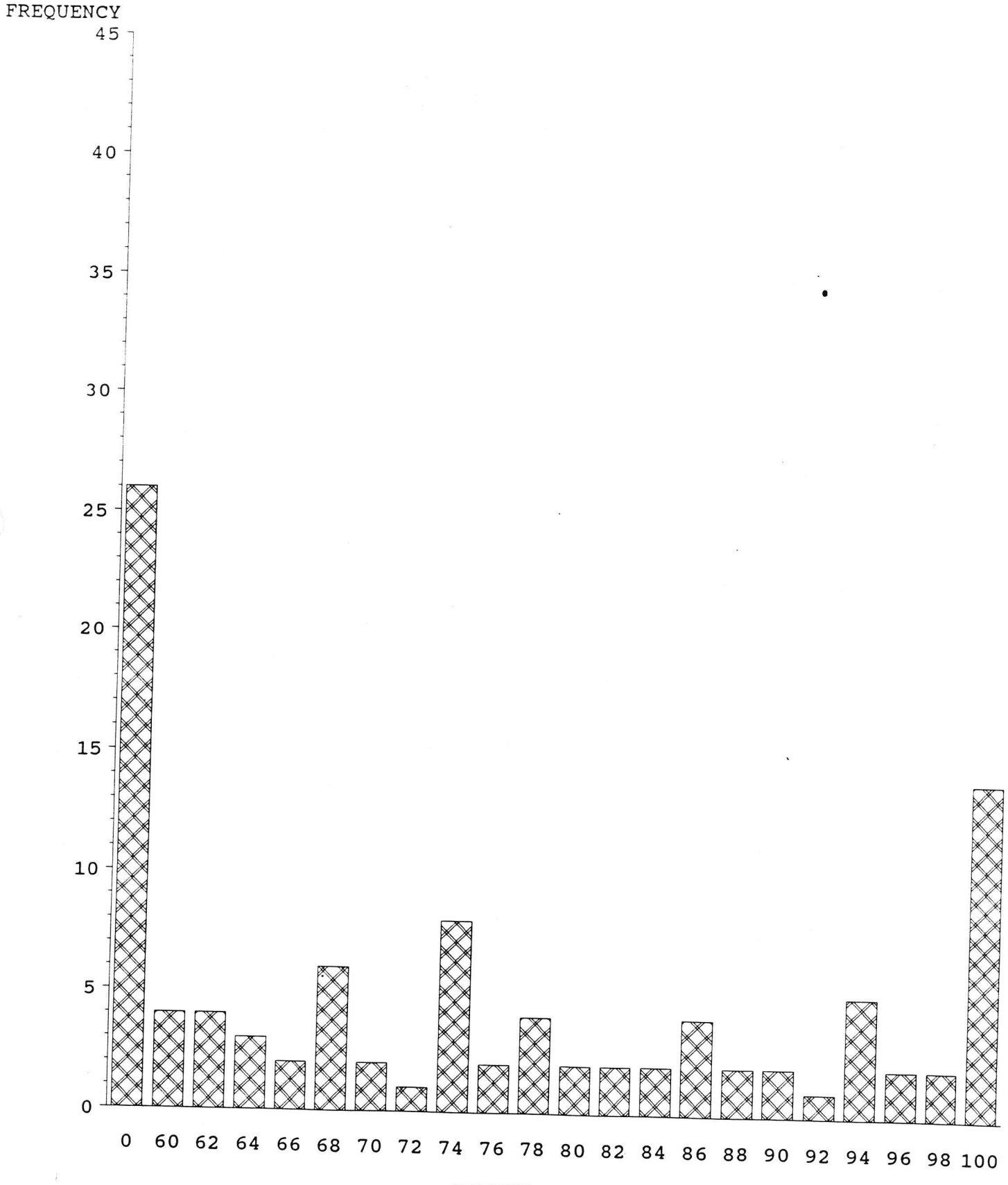
ASPHALT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 3



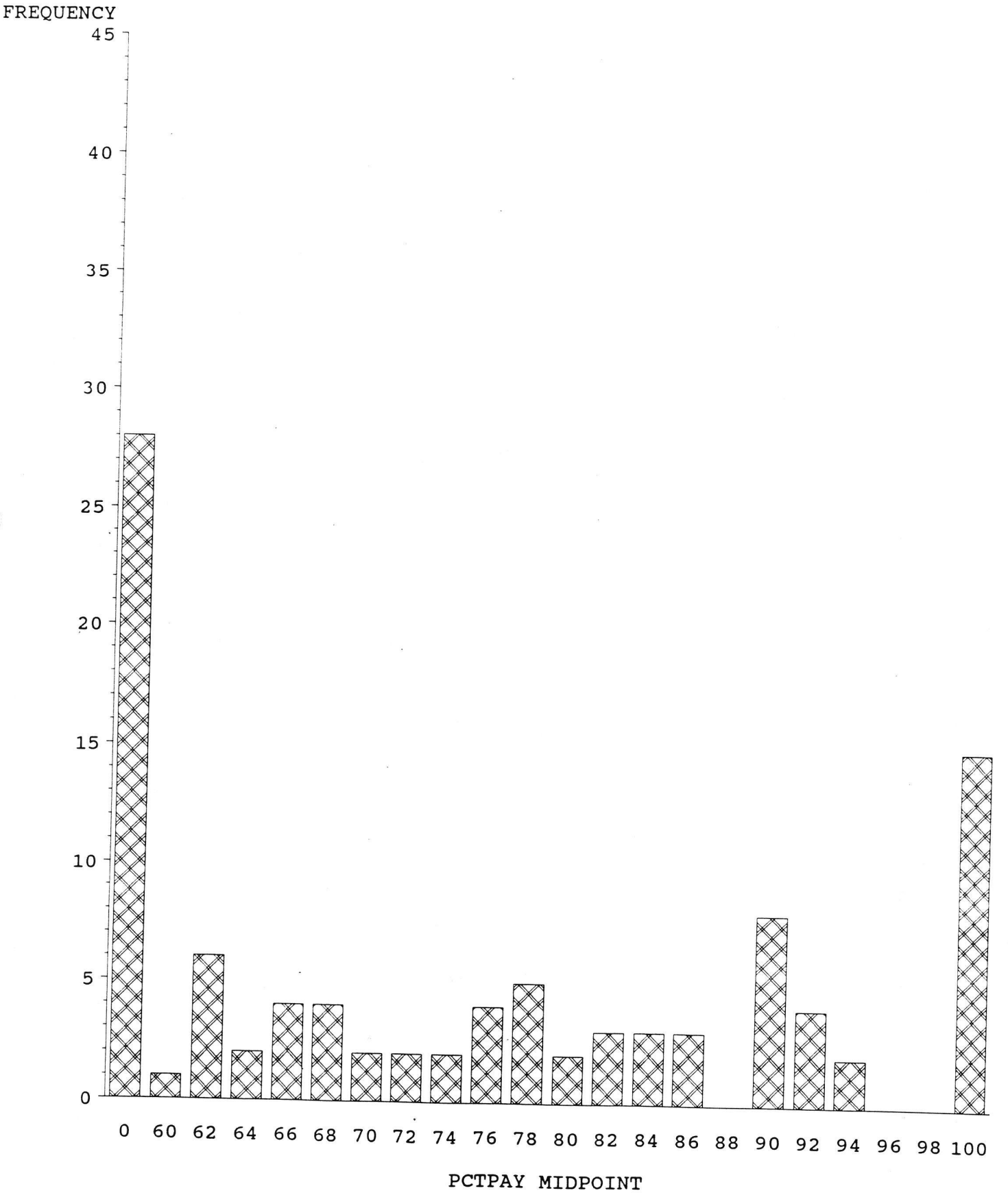
ASPHALT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 4



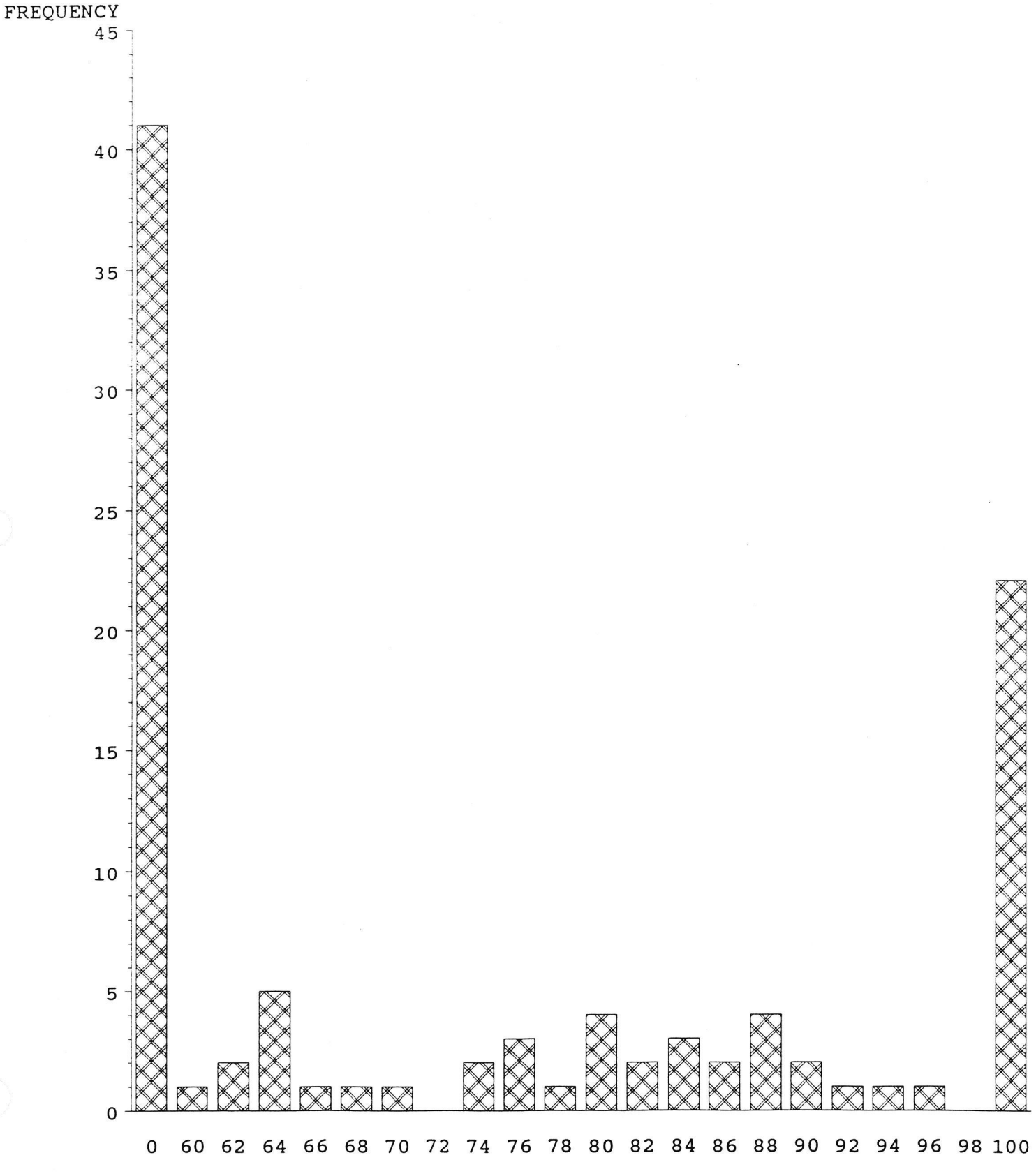
ASPHALT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 5



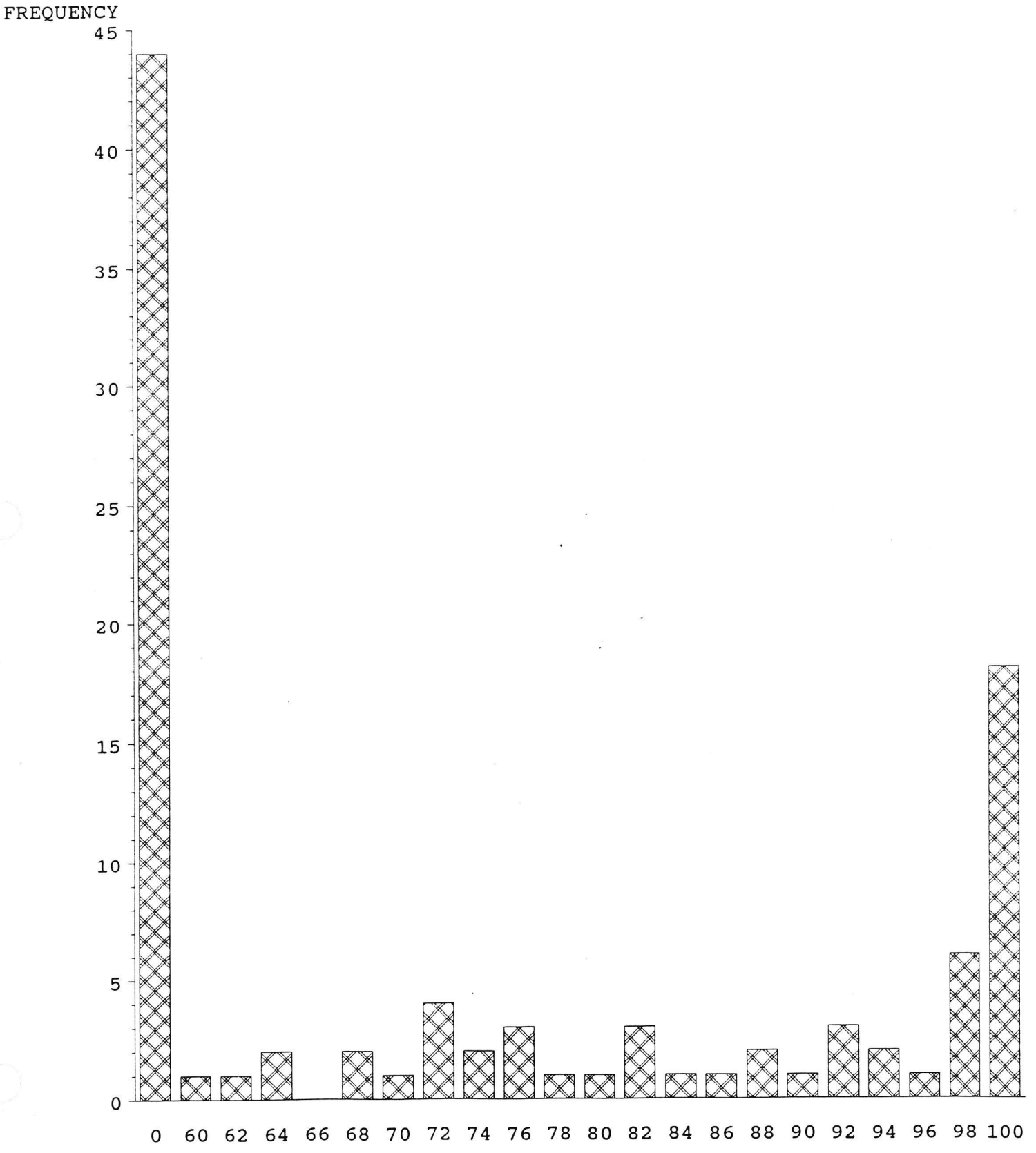
ASPHALT SUB-LOT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 1



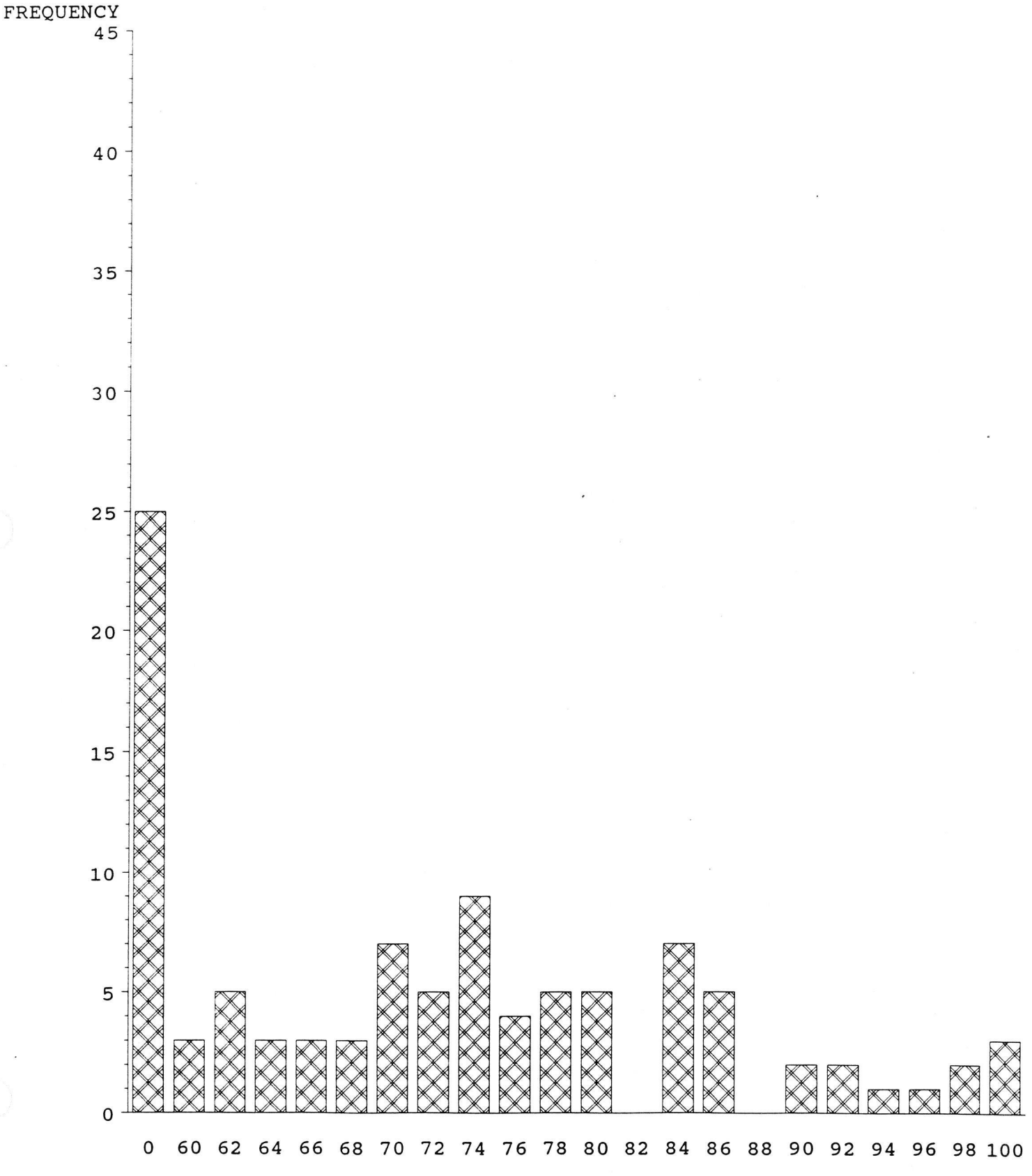
ASPHALT SUB–LOT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 2



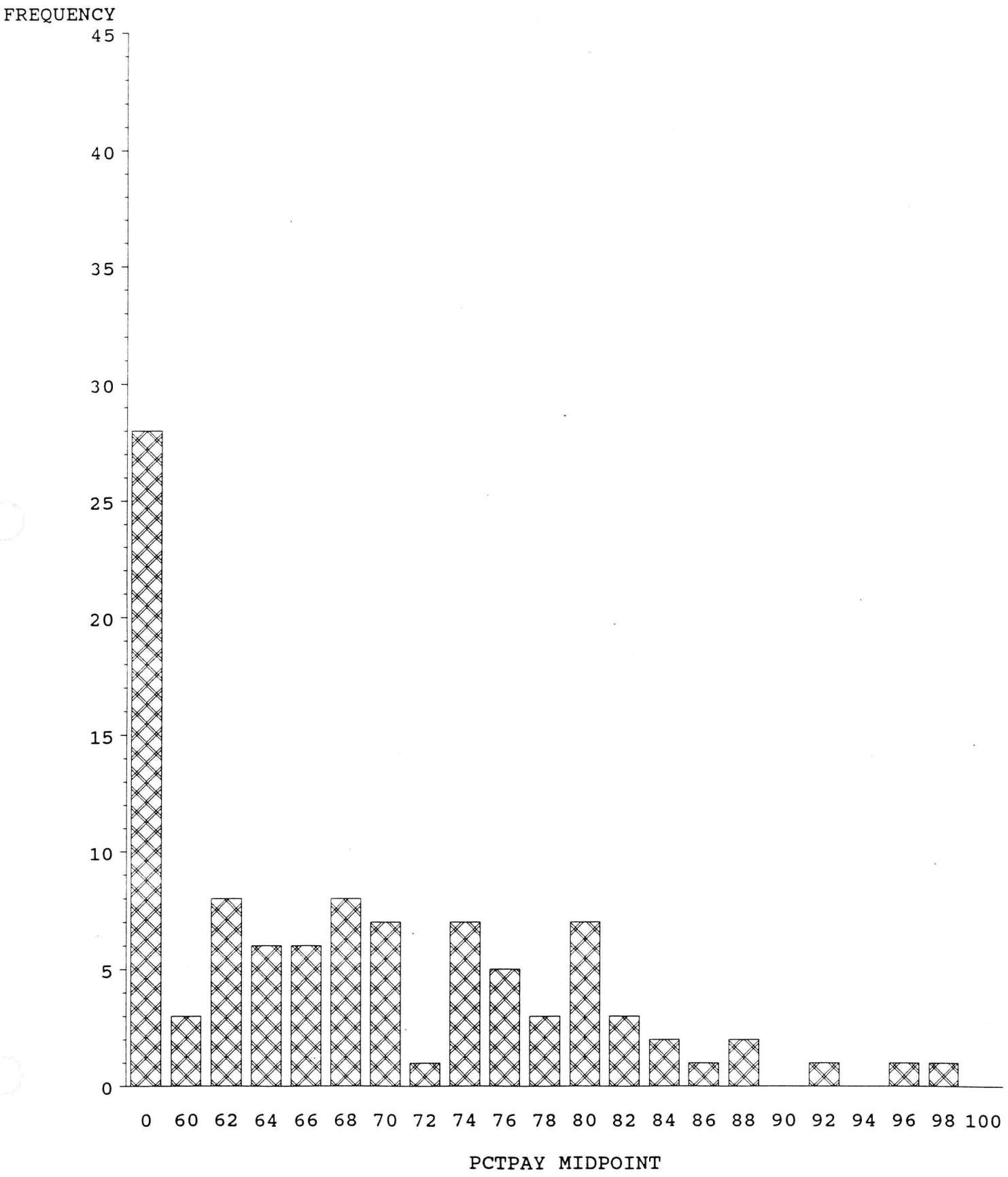
ASPHALT SUB-LOT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 3



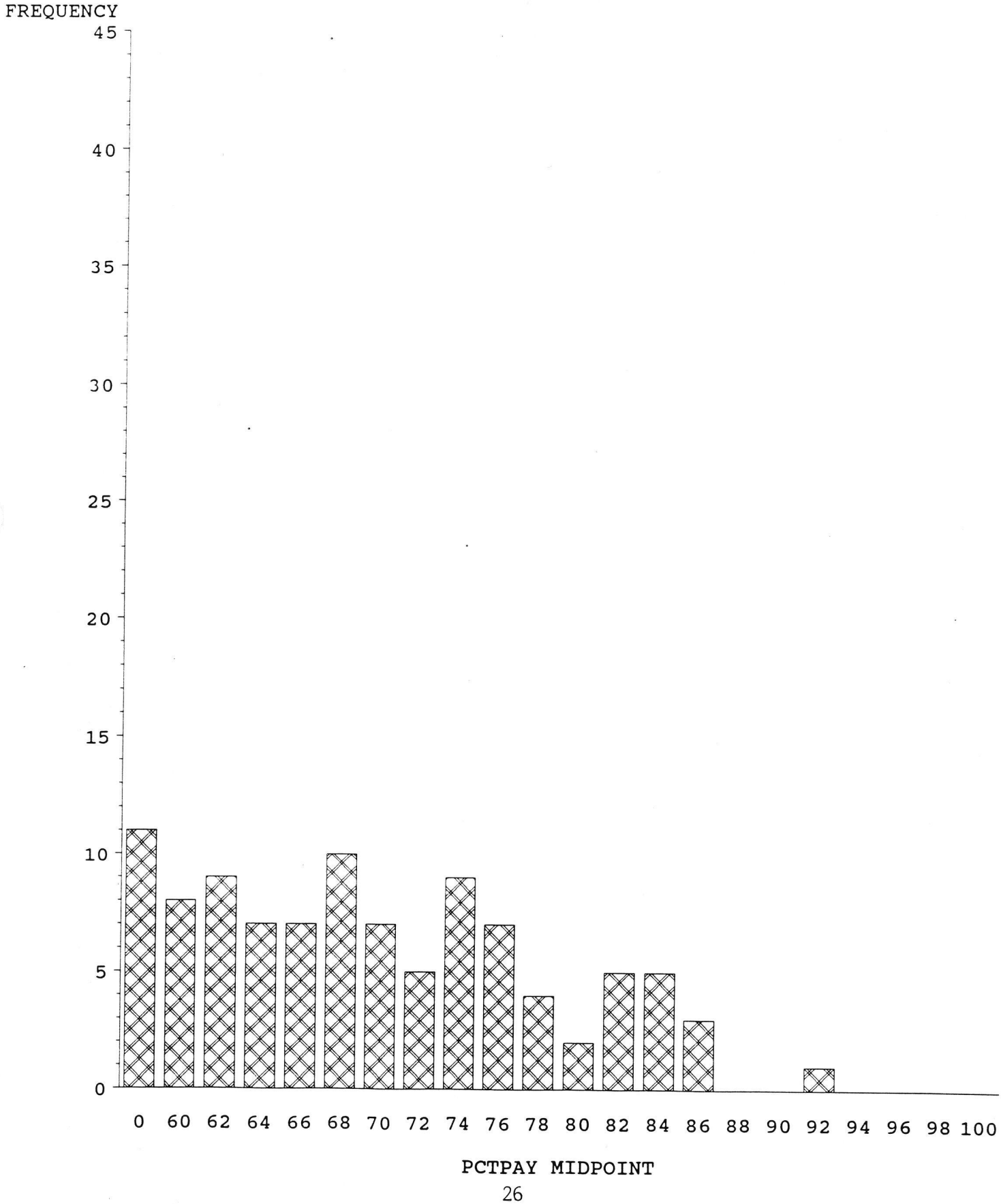
ASPHALT SUB-LOT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 4



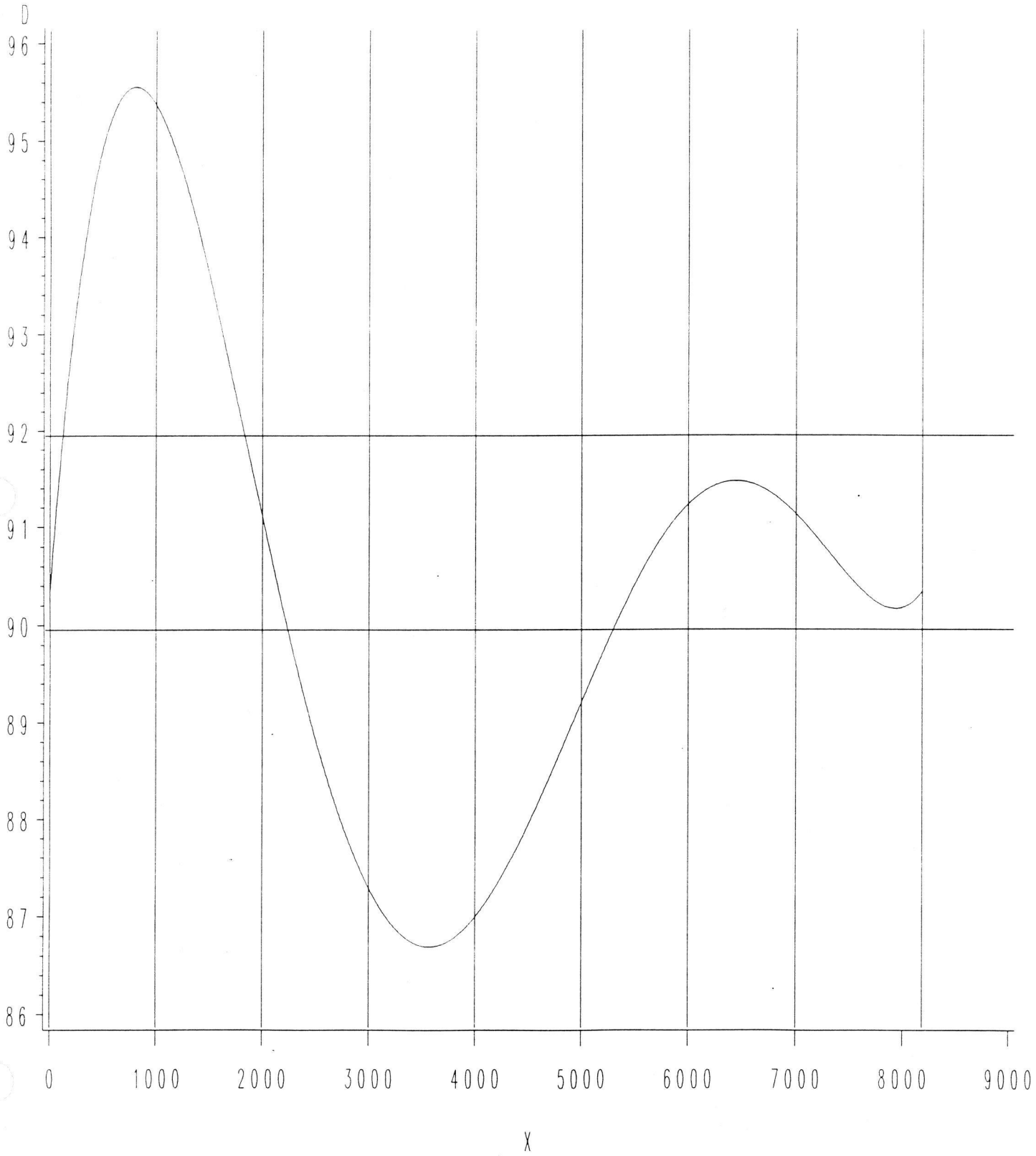
ASPHALT SUB-LOT SAMPLING SIMULATION

CHART FOR SAMPLES OF SIZE 5



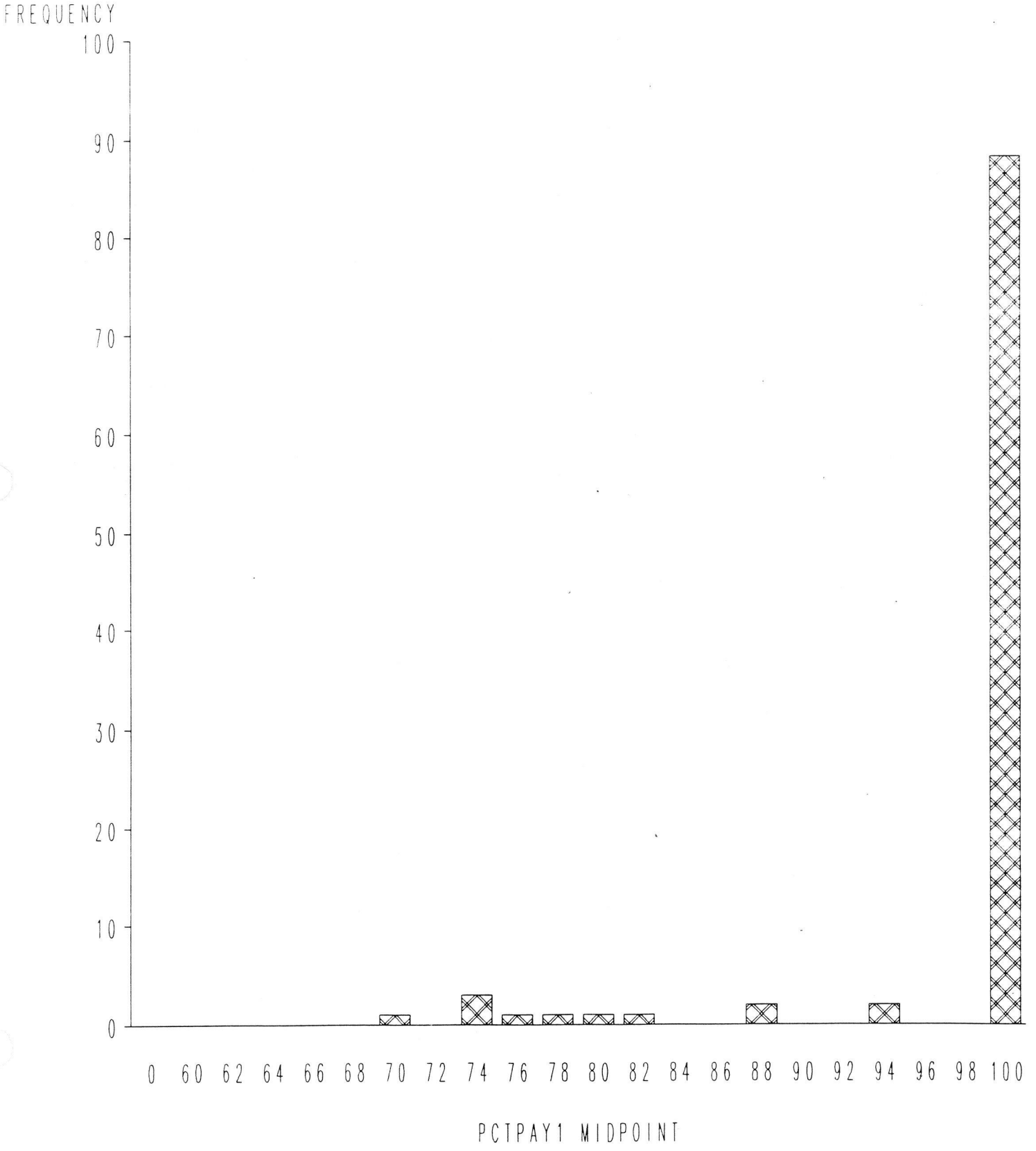
ASPHALT SAMPLING CURVE

DENSITY AT X FEET INTO THE 8,184 FOOT STRIP



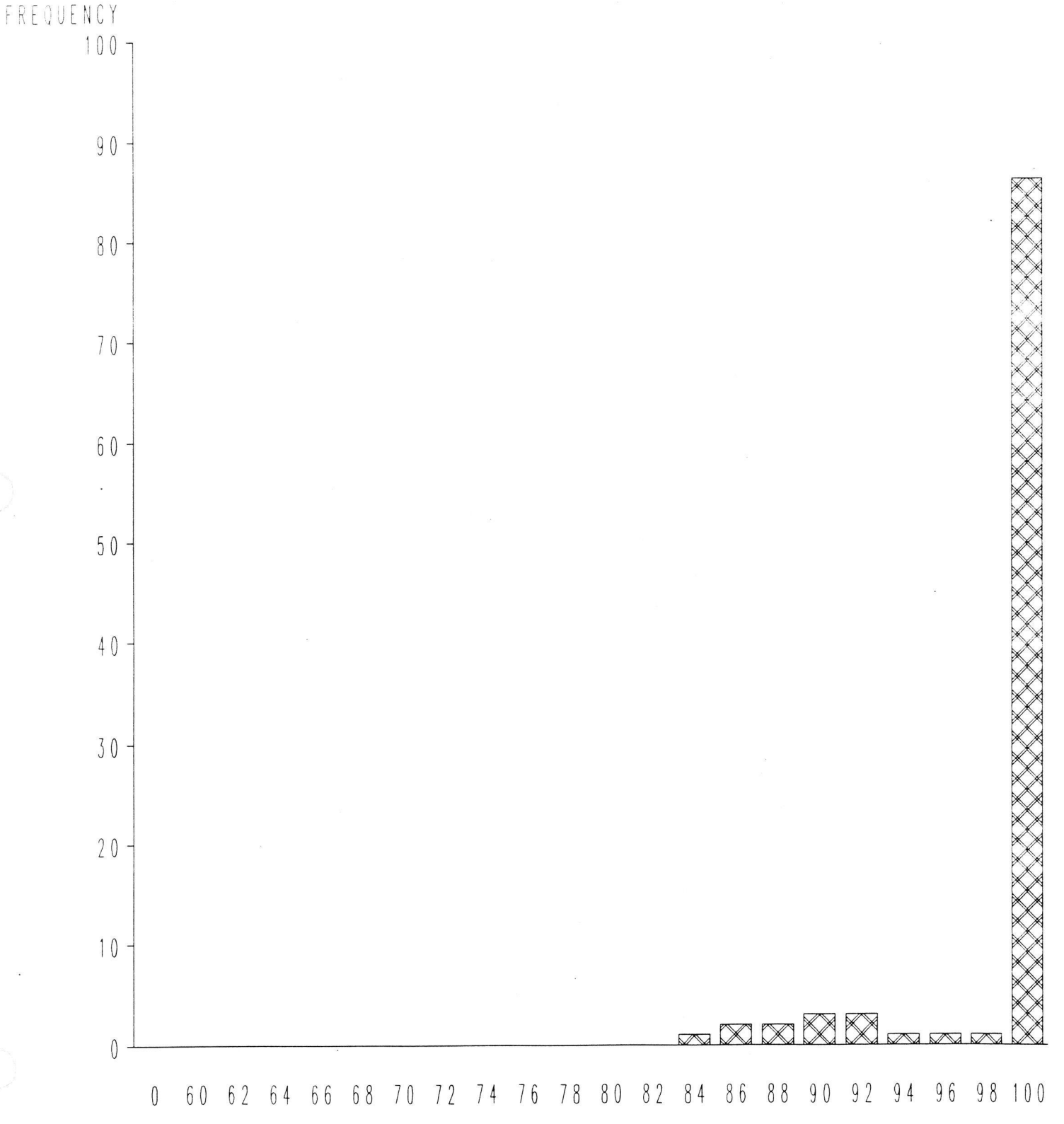
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 1



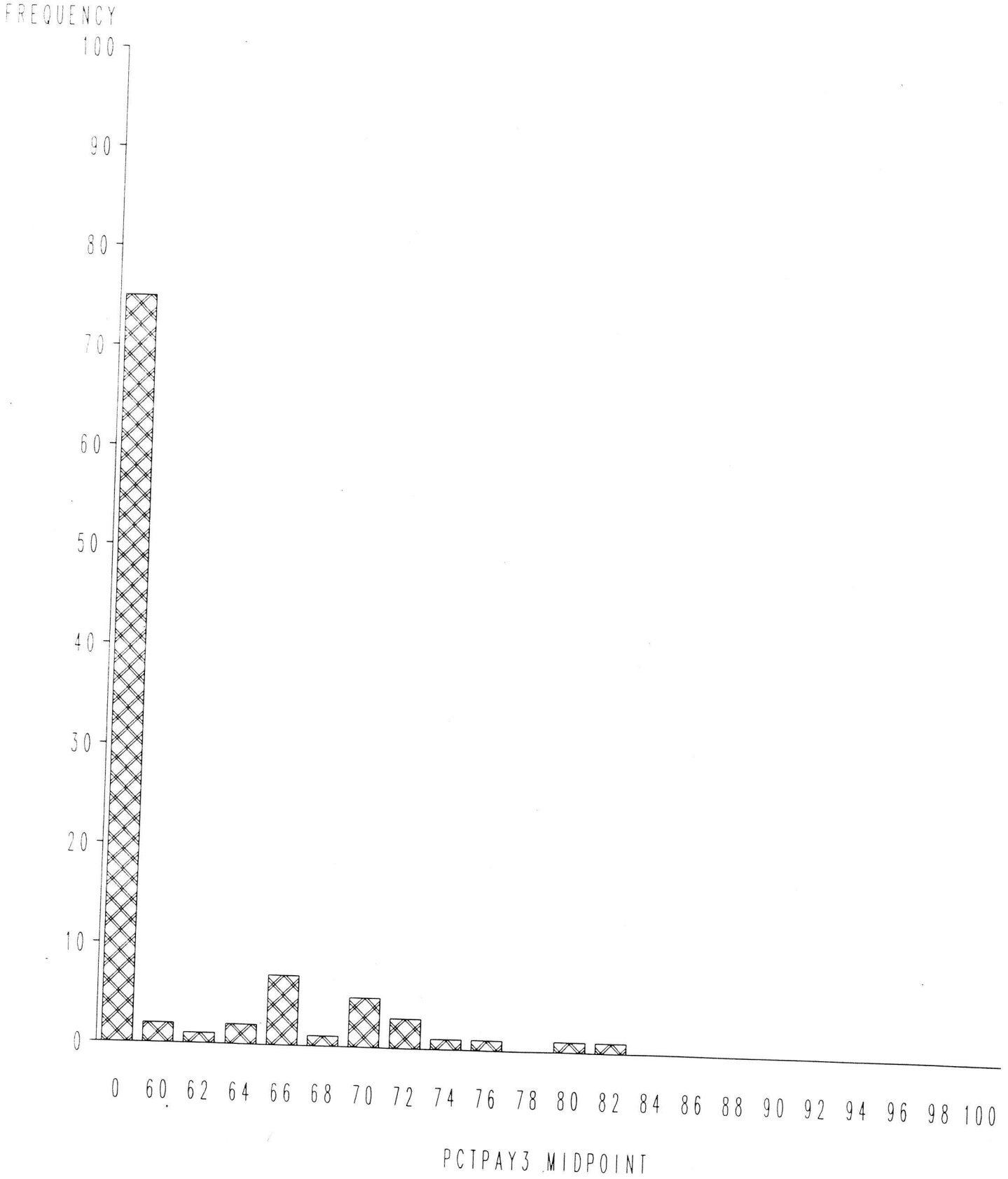
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 2



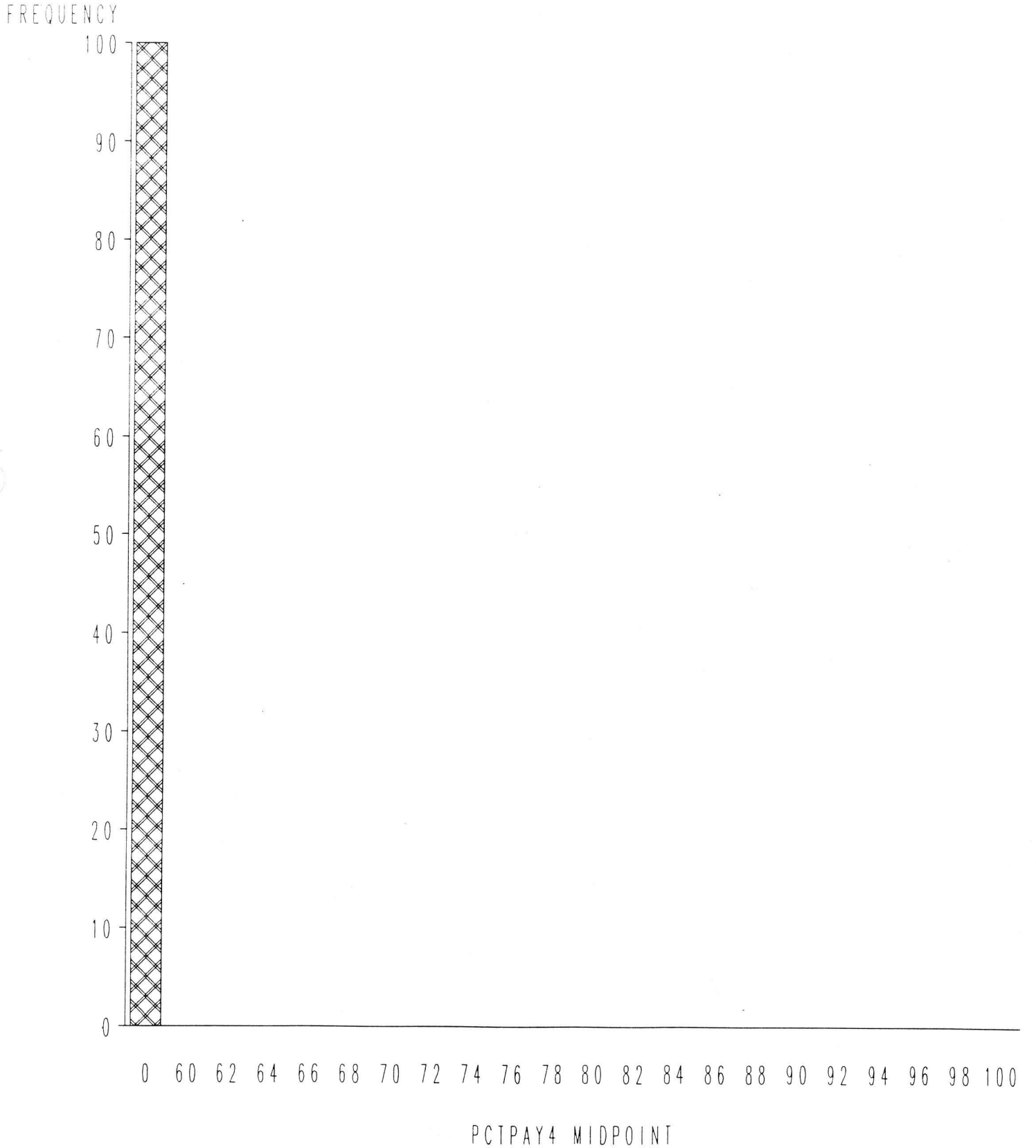
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 3



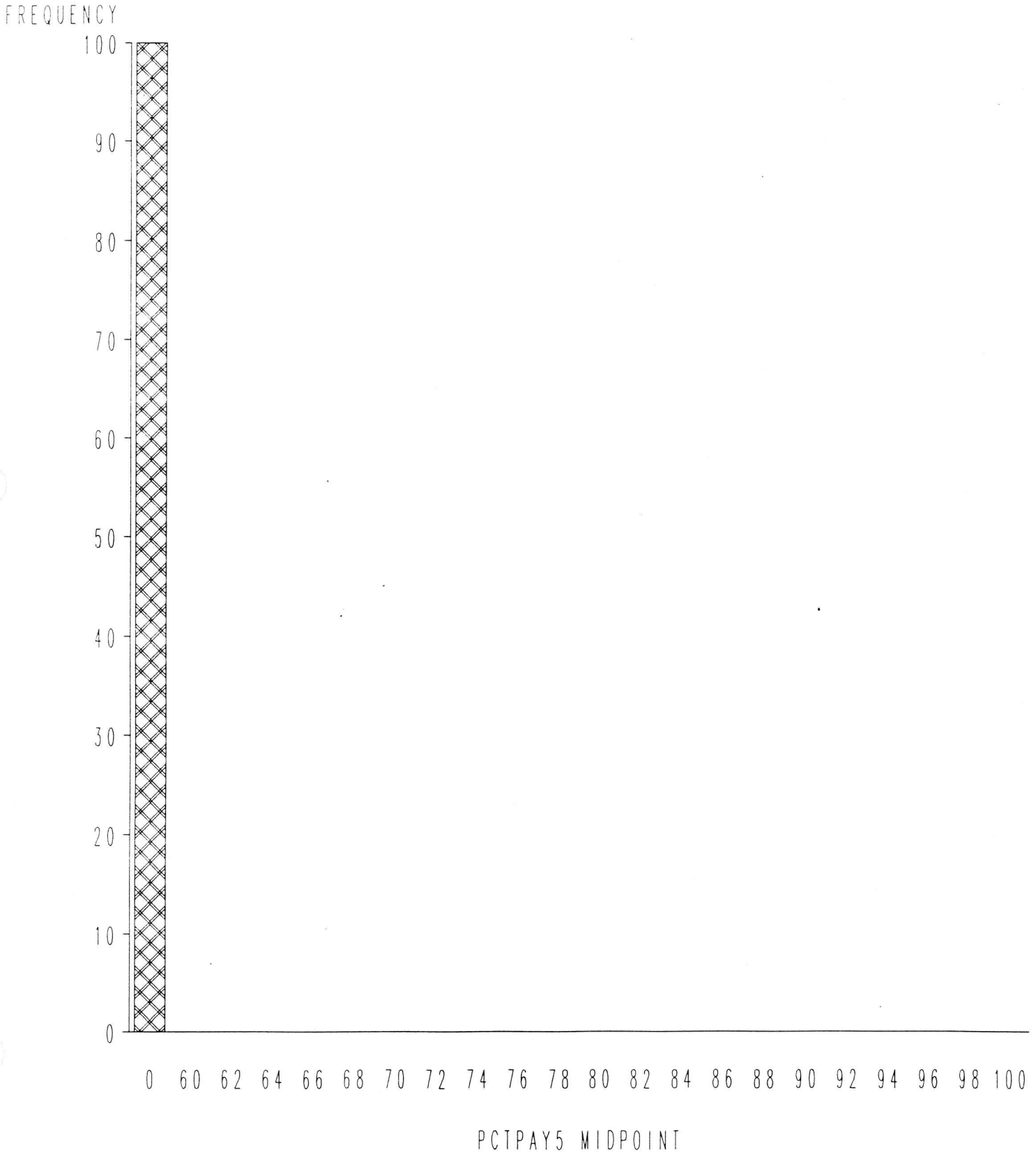
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 4



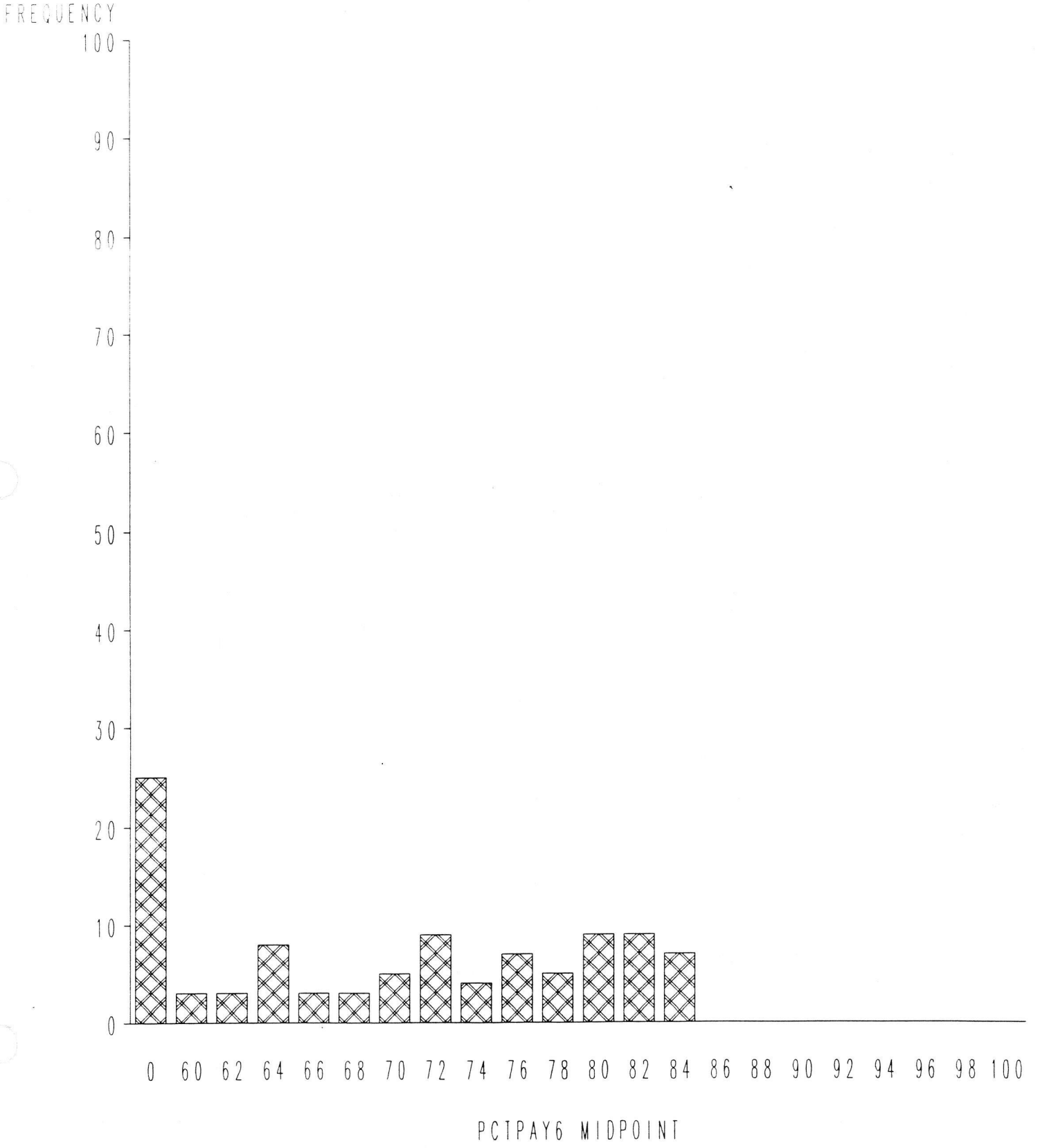
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 5



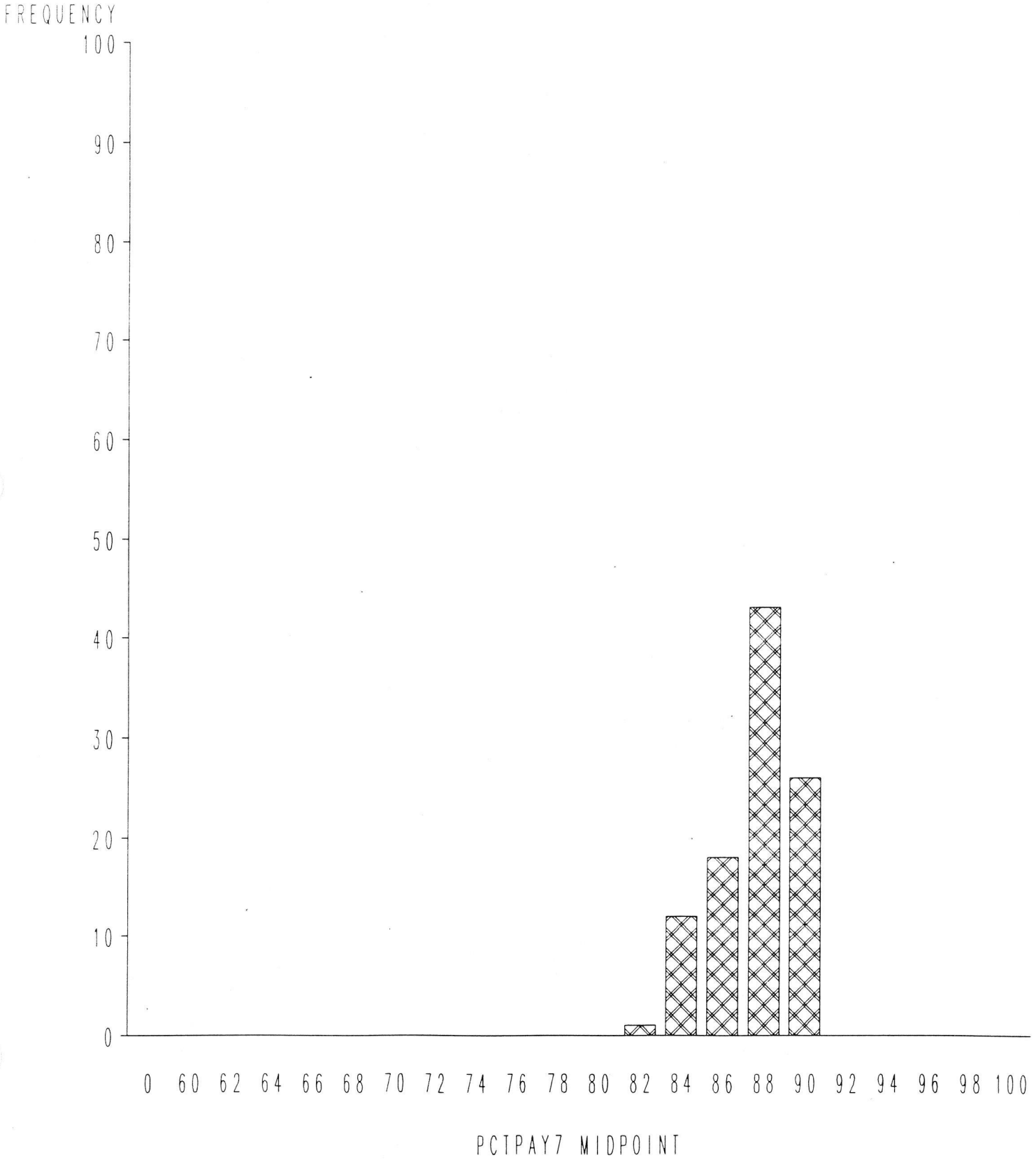
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 6



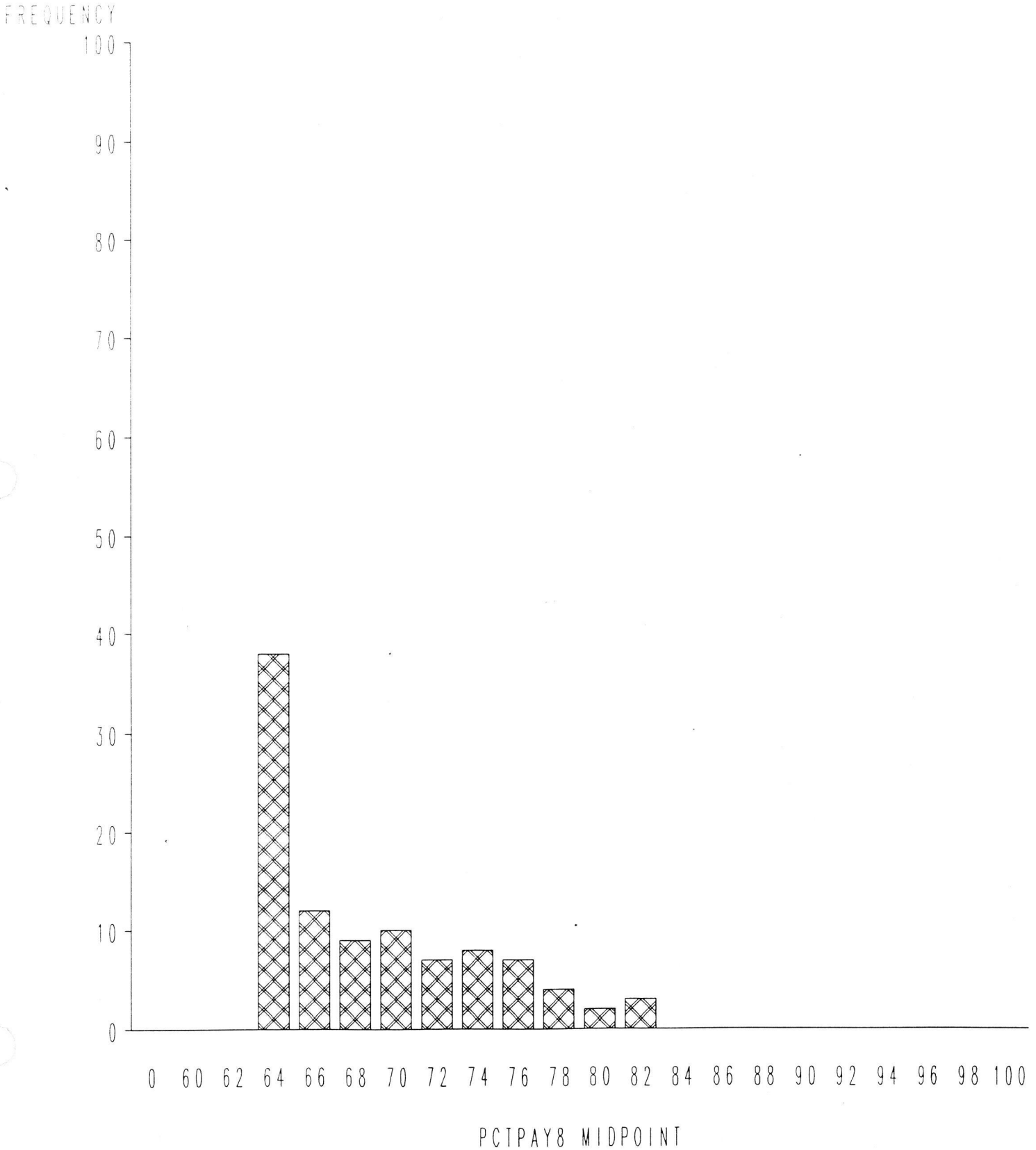
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 7



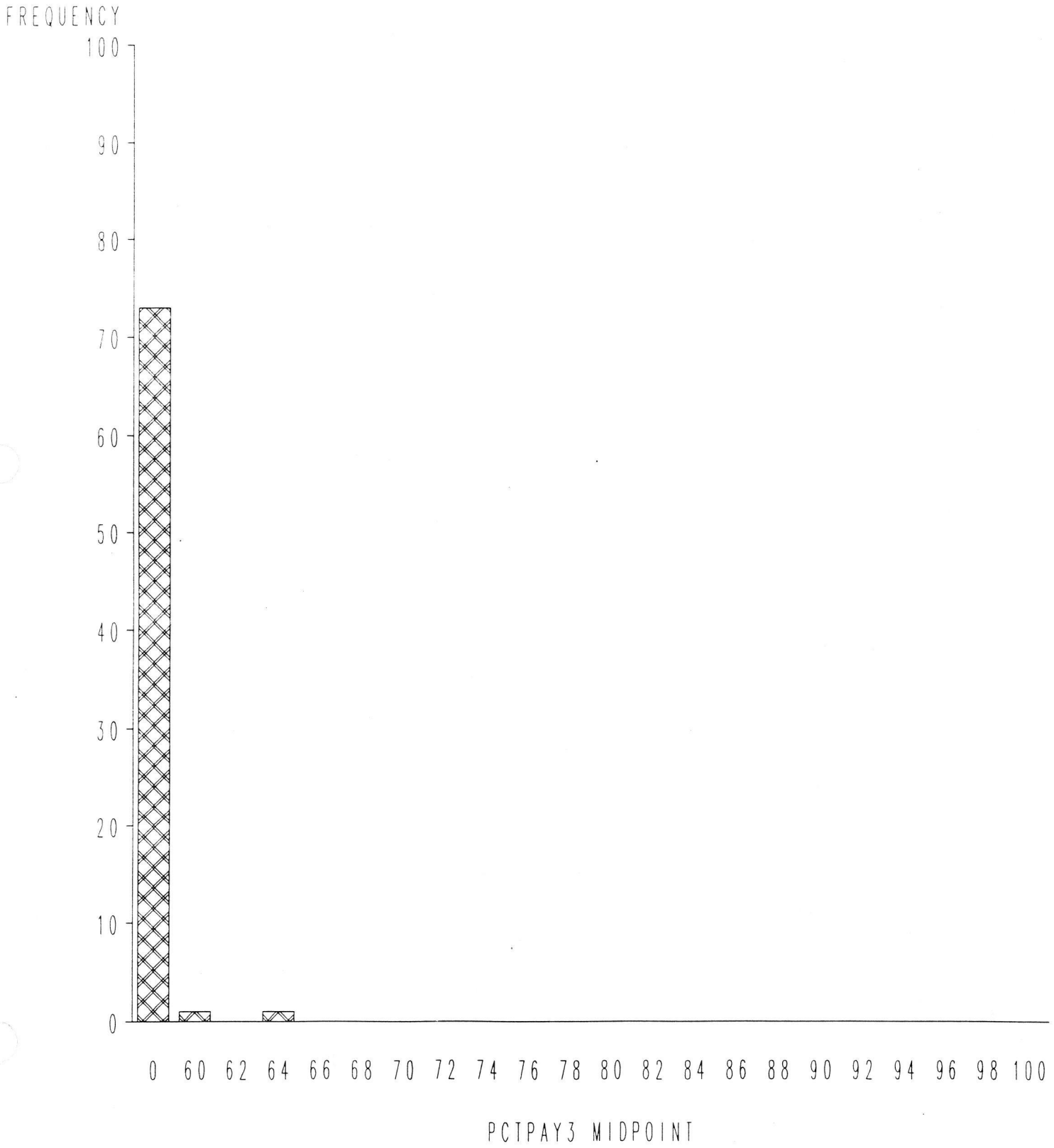
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 8



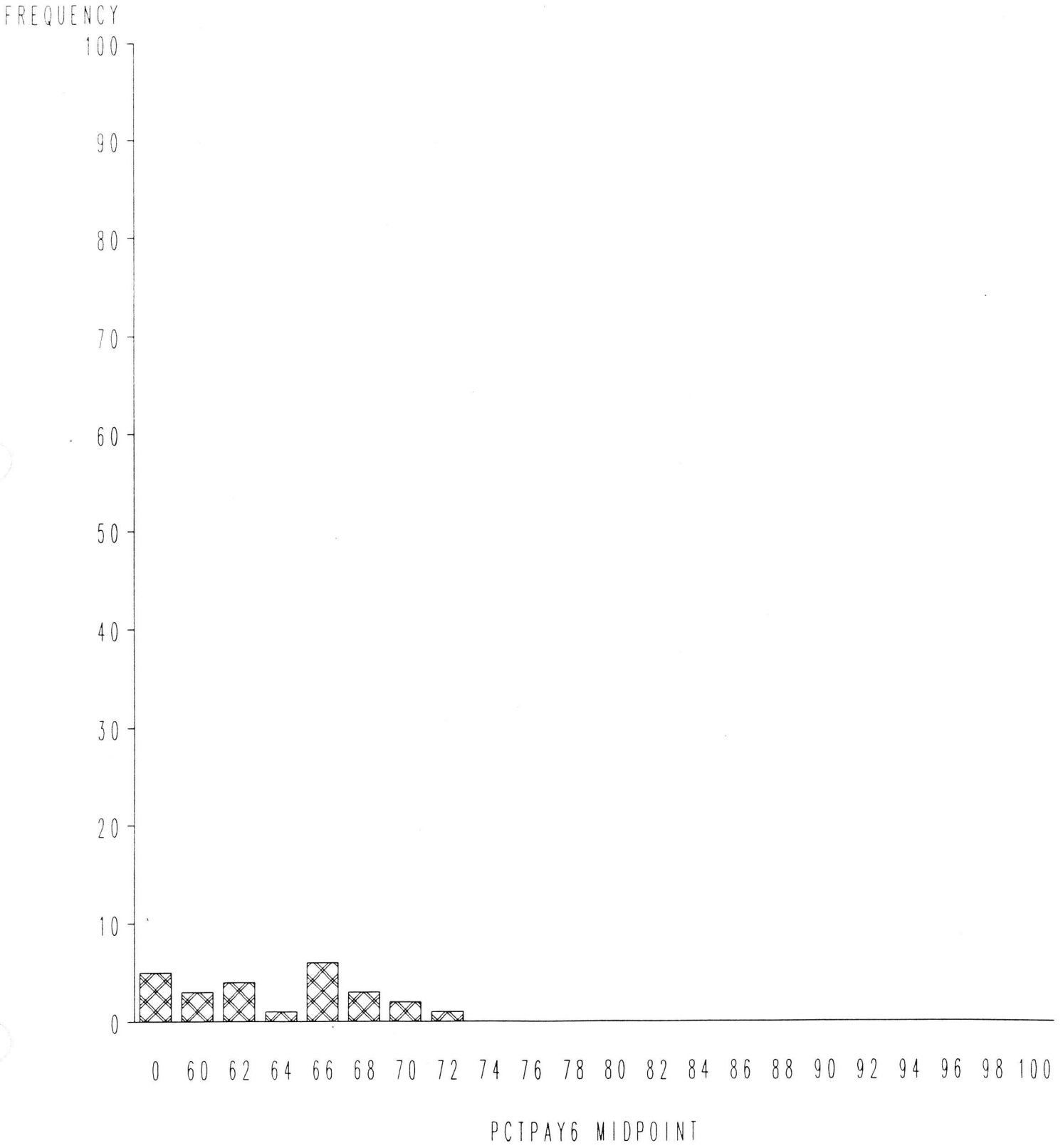
ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 3 AFTER AVERAGING
TWO MORE RANDOM DENSITIES WITH FAILING DENSITY



ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION

CHART FOR PERCENT PAY IN SUB-LOT 6 AFTER AVERAGING
TWO MORE RANDOM DENSITIES WITH FAILING DENSITY



F. Recommendations

Results from the survey of Highway and Transportation Departments from several states and the simulations performed in this study suggest that larger sample sizes generally result in a more accurate estimate of the quality of asphalt paving work. The following steps are recommended as a point of departure toward an acceptance sampling and pay adjustment plan that will be fair to all concerned and accurately reflect the actual quality of the pavement.

Acceptance Sampling Procedure for Density

1. For acceptance, a Lot shall consist of one day's production or portion thereof as dictated by special circumstances.

2. Divide the Lot into sub-lots. Each sub-lot will consist of a section of highway (single or double lane) 1,000 feet in length.

3. Choose at random one location within each sub-lot and measure the density.

4. If the density within a sub-lot is less than 89.95, take two additional samples at locations chosen at random within the sub-lot and average the three samples.

5. If the average of the three samples is less than 89.95, the pavement will be removed according to 410.09 (a) (2) of the AHTD Standard Specifications for Highway Construction, 1991 edition.

6. If the average of the three samples is greater than or equal to 89.95, take the average of the three samples as the density for this sub-lot.

7. Pay adjustments, if necessary, will be made on the amount of material in the sub-lot containing non-conforming but acceptable work.

Acceptance Sampling Procedure for Asphalt Cement Content

1. For acceptance, a Lot shall consist of one day's production or portion thereof as dictated by special circumstances.

2. Divide the Lot into sub-lots. Each sub-lot will consist of a section of highway (single or double lane) 1,000 feet in length.

3. Choose at random one location within each sub-lot and measure the asphalt cement content.

4. If the asphalt cement content within a sub-lot is outside the specified tolerance, take two additional samples at locations chosen at random and average the three samples.

5. If the average of the three samples is outside the specified tolerance, the pavement will be removed according to 410.09 (a) (2) of the AHTD Standard Specifications for Highway Construction, 1991 edition.

6. If the average of the three samples is within the specified tolerance, take the average of the three samples as the asphalt cement content for this sub-lot.

7. Pay adjustments, if necessary, will be made on the amount of material in the sub-lot containing non-conforming but acceptable work.

Acceptance Sampling Procedure for Aggregate gradation

1. For acceptance, a Lot shall consist of one day's production or portion thereof as dictated by special circumstances.

2. Divide the Lot into sub-lots. Each sub-lot will consist of a section of highway (single or double lane) 1,000 feet in length.

3. Choose at random one location within each sub-lot and measure the aggregate gradations.

4. If the aggregate gradation, for any applicable sieve size, within a sub-lot is outside the specified tolerance, take two additional samples at locations chosen at random within the sub-lot and average the three samples. Data for all applicable sieve sizes for all three samples should be used to form the averages.

5. If the average of the three samples, for any applicable sieve size, is outside the specified tolerance, the pavement will be removed according to 410.09 (a) (2) of the AHTD Standard Specifications for Highway Construction, 1991 edition.

6. If the average of the three samples is within the specified tolerance, take the average of the three samples as the aggregate gradation measurement for this sub-lot.

7. Pay adjustments, if necessary, will be made on the amount of material in the sub-lot containing non-conforming but acceptable work.

G. Implementation Statement

The procedure outlined above could be refined as needed during implementation. The sampling rate suggested would help identify areas of non-compliance and more accurately reflect the actual quality of the pavement. Longer pavement life and better service to the public would be realized if pavement parameters are held close to design requirements.

The sampling rate for density suggested above could be realized without undue increases in time required for sampling if a nuclear density gauge is used. Hand-held calculators are available which are capable of the random selection suggested. These calculators could also be used to store the measurements for further processing if needed. It is possible to program the calculators to process the data and calculate the pay adjustment immediately.

The sub-lot size for acceptance sampling may need to be revised before implementation or as experience is gained with a plan. For example, asphalt cement content may not be as variable as density and aggregate gradation. If this were found to be the case, the lot size for acceptance sampling for asphalt cement content could be increased.

It is suggested that a pilot project in one or more districts be conducted to refine the plan and establish procedures. The pilot project would probably yield better results if there were close cooperation among AHTD research staff, district engineer(s), and asphalt contractors. A uniform procedure for acceptance sampling and pay adjustment could then be implemented in all districts within the State.

APPENDIX
I

SURVEY
ASPHALT ACCEPTANCE / PAY ADJUSTMENT

OBJECTIVES

1. COLLECT DATA FROM SEVERAL STATES ON ACCEPTANCE AND PAY ADJUSTMENT PLANS FOR ASPHALT PAVEMENT.
2. COMPARE THE ARKANSAS PLAN WITH RESULTS FROM OTHER STATES.

PARTICIPATING STATES

ALABAMA
ARKANSAS
CALIFORNIA
FLORIDA *
GEORGIA
KENTUCKY *
LOUISIANA *
MISSOURI
MISSISSIPPI
OKLAHOMA *
SOUTH CAROLINA
TENNESSEE
TEXAS
VIRGINIA
WEST VIRGINIA

* RESPONSE FROM BOTH MATERIALS/RESEARCH AND CONSTRUCTION

QUESTIONNAIRE

Regarding

Pay Adjustments for Asphalt Pavement Construction

PART I.

1. Does your agency have a written policy regarding asphalt paving materials and/or completed asphalt pavement that does not comply with specifications but is of sufficient quality to leave in place?

   yes_____ no_____

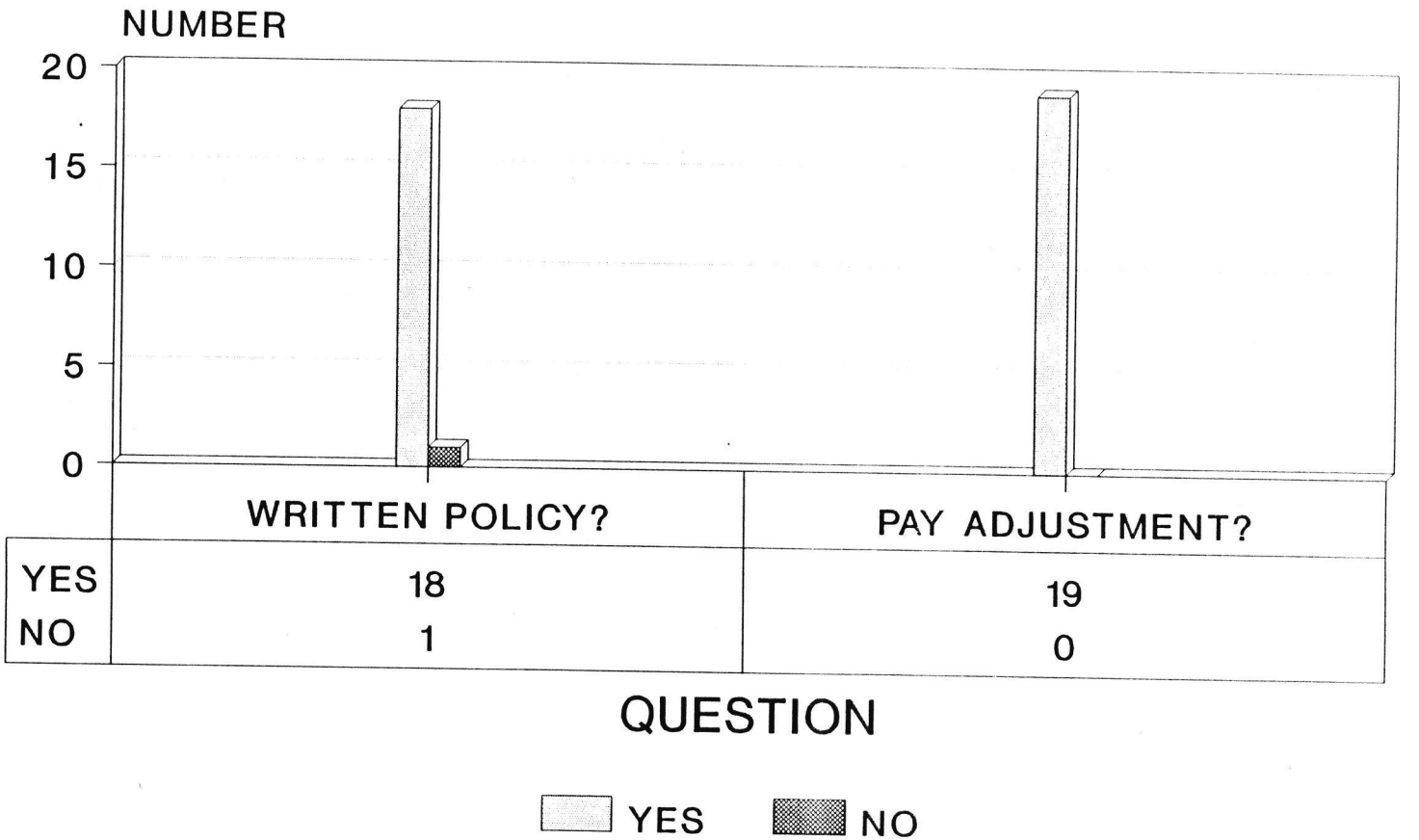
   Please attach a copy of this policy if available.

2. If the pavement under conditions mentioned above is accepted and allowed to remain in place, is a pay adjustment applied?

   yes_____ no_____

Pay Adjustment-Asphalt-Part I

Questions 1 and 2



3. If a pay adjustment is made, how is it determined?

   a. amount negotiated on a case by case basis

   b. adjustment based on a predetermined schedule for deviation from specification for that pay item

   c. adjustment applied at project completion determined by deviation from statistically accepted variance from specifications

   d. other

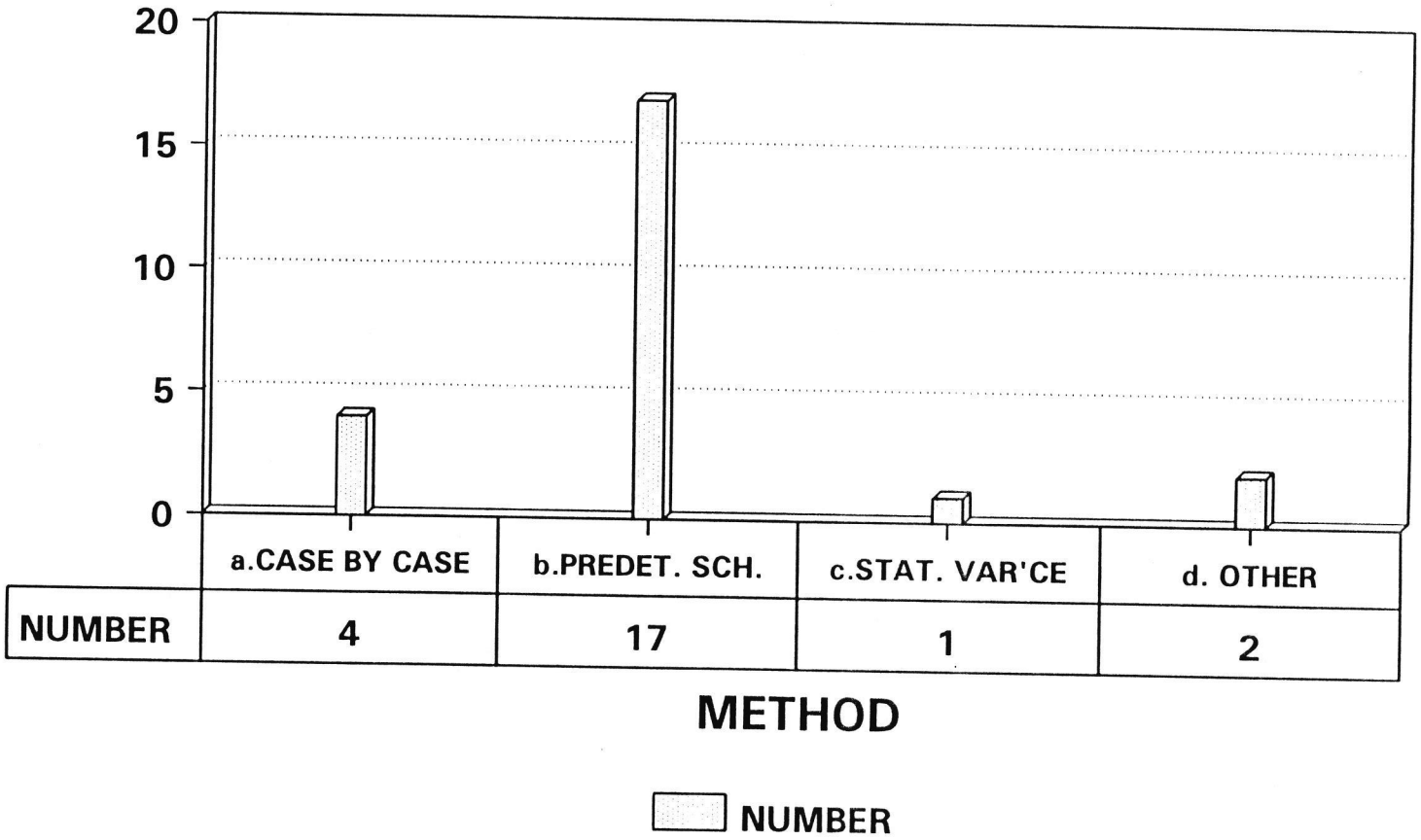
      _____

      _____

   Please furnish a copy of the adjustment practice if available.

Pay Adjustment-Asphalt-Part I

3. How is pay adjustment determined?



4. Please mark the following items that pay adjustments may be applied:

   a. _____pavement density

   b. _____asphalt content of the mix

   c. _____aggregate gradation of the mix

   d. _____pavement thickness

   e. _____mix segregation

   f. _____field air voids

   g. _____stockpile gradation

   h. _____field stability

   i. _____field retained strength index

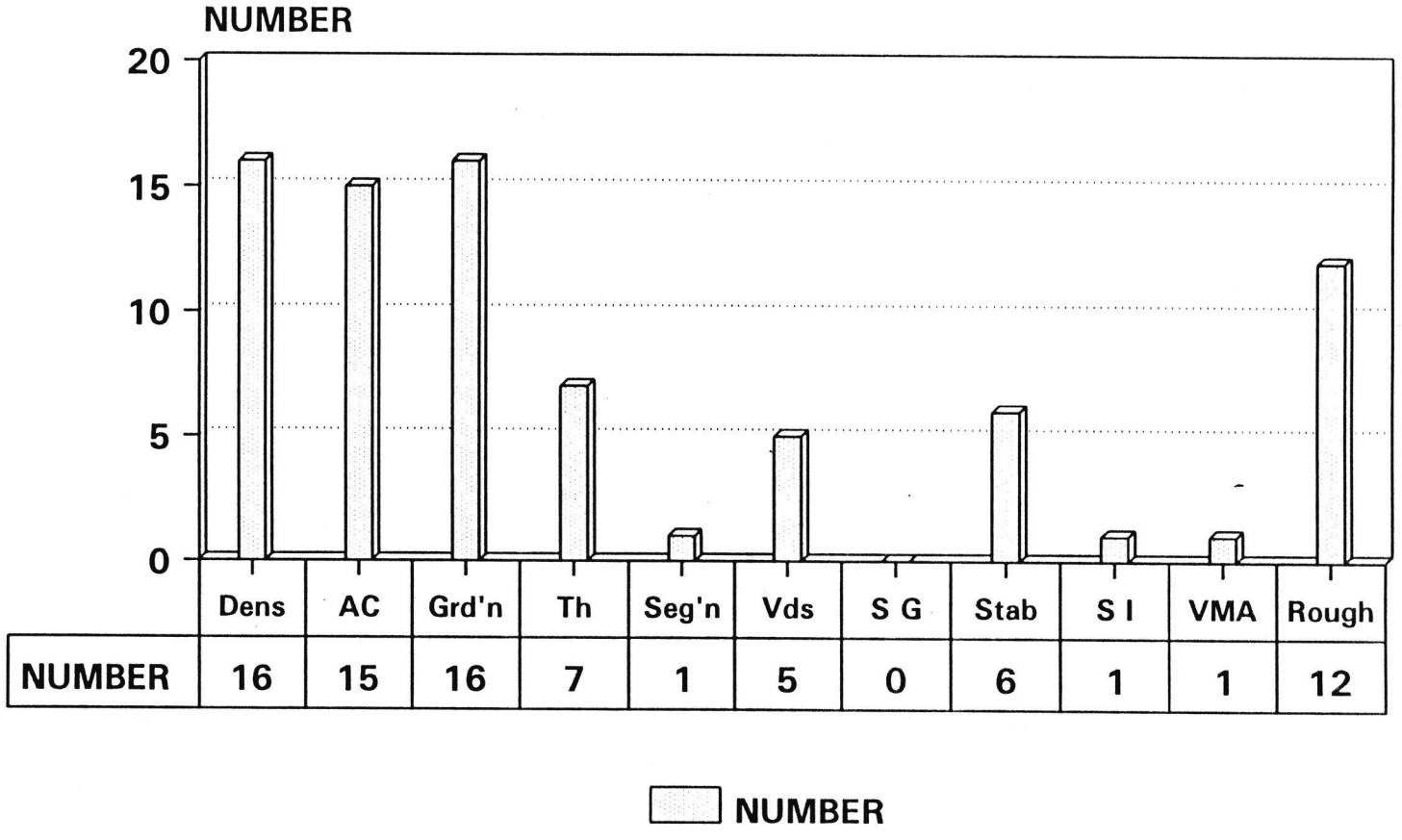
   j. _____field VMA

   k. _____surface roughness

Please furnish any written documents available regarding each item marked.

Pay Adjustment-Asphalt-Part I

4. Pay adjustments applied to what?



5. How is the quantity of the mix to be adjusted determined?

   a. varies with specification item but follows the amount of material represented by that test

   b. adjustment made on the amount of material placed during that day of production

   c. adjustment made using all tests at project completion

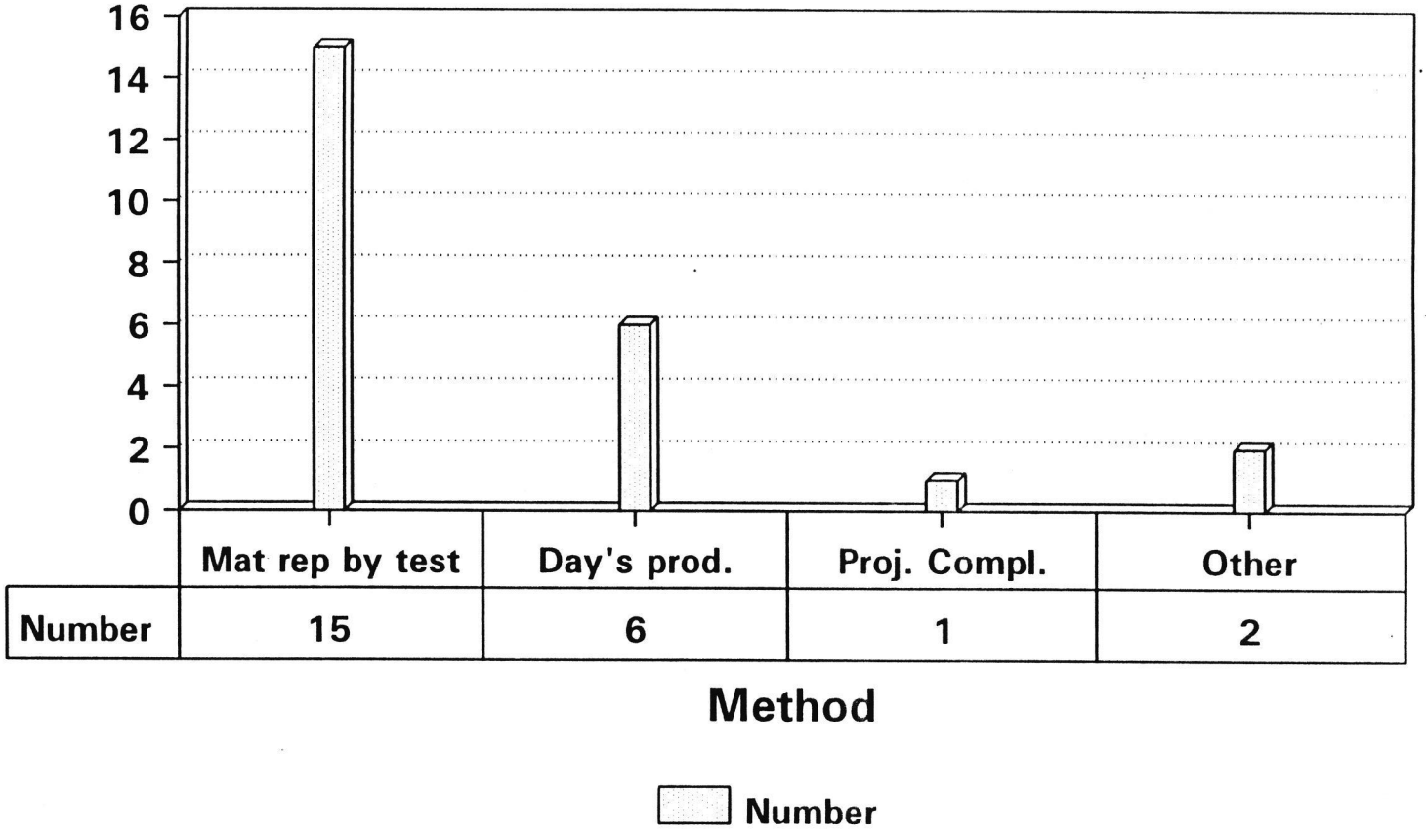
   d. other

   _____

   _____

Pay Adjustment-Asphalt-Part I

5. Quantity of mix adjusted?



6. Is any effort made to isolate the area of non complying material or pavement by additional testing:

   a. for acceptance with price reduction

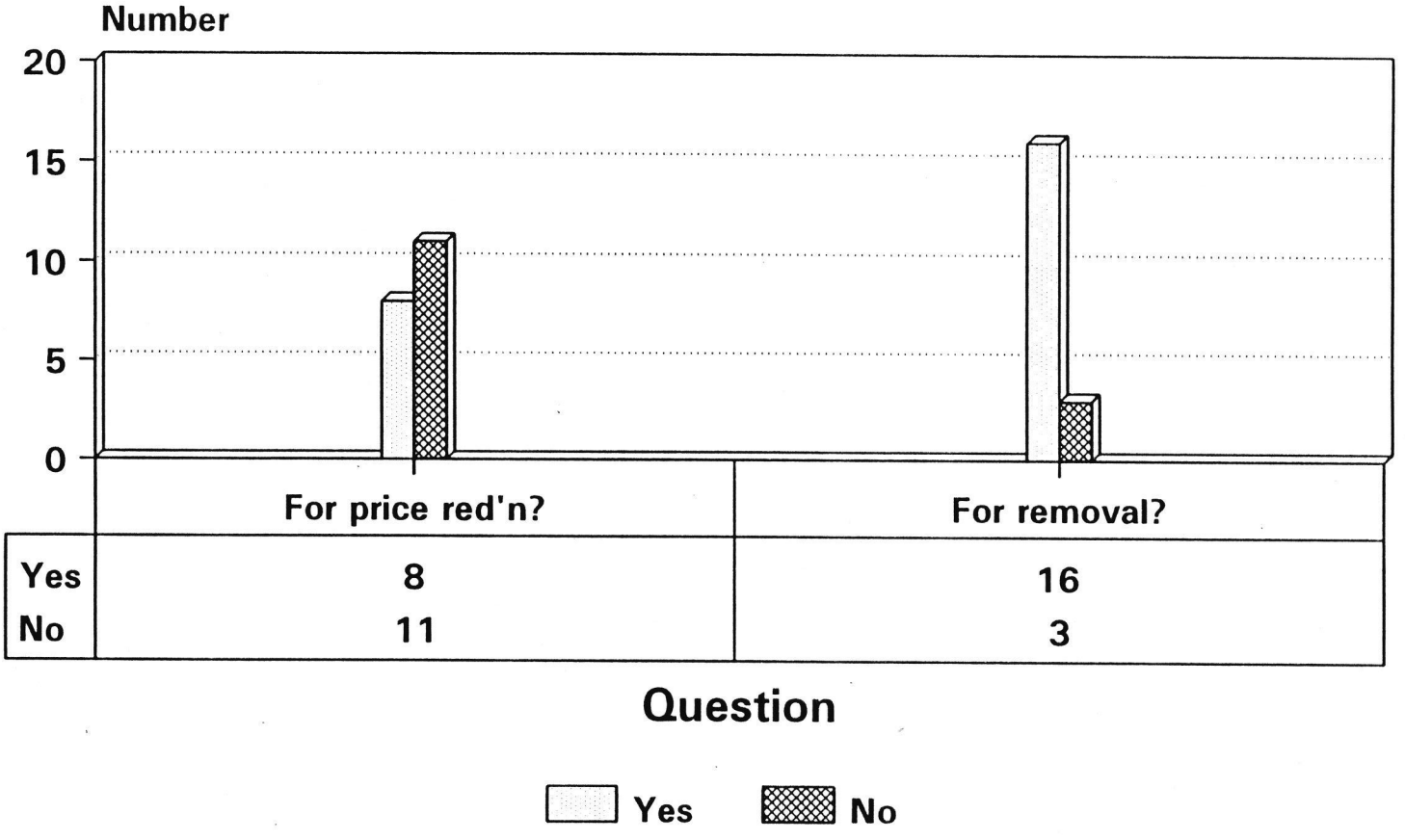
      yes_____ no_____

   b. for removal

      yes_____ no_____

Pay Adjustment-Asphalt-Part I

6. Isolate for more testing?



7. Please show the acceptance frequency of testing for the following items:

Item	"Interstate type" work	"Normal type" work
a. pavement density	_____	_____
b. asphalt content	_____	_____
c. aggregate grad.	_____	_____
d. thickness	_____	_____
e. field air voids	_____	_____
f. field VMA	_____	_____
g. stockpile grad	_____	_____
h. field stability	_____	_____
i. field retained strength index	_____	_____

Pay Adjustment-Asphalt-Part I
Frequency of Acceptance Testing-Density

Respondent	Interstate	Normal
Hartog - AL	-	-
Blackwell - AR	1/1,200 Tons *	Same
Sykes - CA	>= 2/500 Tons	Same
Payne - FL	1/1,000 Ft.	Same
Smith - FL	1/1,000 Ft.	Same
Collins - GA	5/day's prod'n	Same
Gravely - KY	1/1,200 SY	Same
Walker - KY	1/1,200 SY	Same
Carey - LA	5/1,000 Tons	Same
Poche - LA	5/1,000 Tons	Same
Brenner - MO	4 cores/day	Same
Jordan - MS	5/day's prod'n	Same
Coffman - OK	3/1,000 Tons	Same
Toney - OK	3/1,000 Tons	Same
Fletcher - SC	5 cores/day	Same
Crabtree - TN	5/day's prod'n	Same
Boswell - TX	5/day	Same
Winfrey - VA	5/day's prod'n	Same
Robson _ W VA	5/1,000 lin. ft.	Same

* On projects which Contractor QC tests are also run.

Pay Adjustment-Asphalt-Part I

Frequency of Acceptance Testing-Asph. Content

Respondent	Interstate	Normal
Hartog - AL	1/2 day's prod'n	Same
Blackwell - AR	1/4,000 Tons	Same
Sykes - CA	500 Tons	Same
Payne - FL	1,000 Tons	Same
Smith - FL	1,000 Tons	Same
Collins - GA	5/day's prod'n	Same
Gravely - KY	3/day	Same
Walker - KY	3/day	Same
Carey - LA	2/1,000 Tons	Same
Poche - LA	5/lot+(2/lot QC)	Same
Brenner - MO	Plant Calibr.	Same
Jordan - MS	3/day's prod'n	Same
Coffman - OK	1,000 Tons	Same
Toney - OK	1,000 Tons	Same
Fletcher - SC	4 cores/day	Same
Crabtree - TN	1,000 Tons	Same
Boswell - TX	5/day	Same
Winfrey - VA	4/lot(2,000-4,000T)	Same
Robson _ W VA	10% contr. act.	Same

Pay Adjustment-Asphalt-Part I

Frequency of Acceptance Testing-Aggr Grad'n

Respondent	Interstate	Normal
Hartog - AL	-	-
Blackwell - AR	1/4,000 Tons	Same
Sykes - CA	500 Tons	Same
Payne - FL	1,000 Tons	Same
Smith - FL	1,000 Tons	Same
Collins - GA	5/day's prod'n	Same
Gravely - KY	3/day	Same
Walker - KY	3/day	Same
Carey - LA	2/1,000 Tons	Same
Poche - LA	1/lot+(2/lot QC)	Same
Brenner - MO	500 Tons	Same
Jordan - MS	1/day's prod'n	Same
Coffman - OK	1,000 Tons	Same
Toney - OK	1,000 Tons	Same
Fletcher - SC	4 cores/day	Same
Crabtree - TN	1,000 Tons	Same
Boswell - TX	5/day	Same
Winfrey - VA	4/lot(2,000-4,000T)	Same

Pay Adjustment-Asphalt-Part I
Frequency of Testing-Thickness

Respondent	Interstate	Normal
Hartog - AL	NA	NA
Blackwell - AR	NA	NA
Sykes - CA	Continuous stab behind paver	Same
Payne - FL	1 core/200 ft. roadway	1 core/200 ft. shoulder
Smith - FL	1/200 ft.	Same
Collins - GA	1/1,000 ft.	Same
Gravely - KY	1/1,000 ft.	Same
Walker - KY	1/1,000 ft.	Same
Carey - LA	NA	NA
Poche - LA	5/lot	Same
Brenner - MO	Periodic rodwy insp.	Same
Jordan _ MS	5/lot	Same
Coffman - OK	NA	NA
Toney - OK	NA	NA
Fletcher - SC	NA	NA
Crabtree - TN	NA	NA
Boswell _ TX	NA	5 smpls/day
Winfrey - VA	4/lot	Same
Robson _ W VA	5/2,000 ft.	Same

Pay Adjustment-Asphalt-Part I
Frequency of Testing-Fld Air Voids

Respondent	Interstate	Normal
Hartog - AL	1/2 day's prd'n*	Same
Blackwell - AR	1/4,000 Tons	NA
Sykes - CA	NA	NA
Payne - FL	NA	NA
Smith - FL	1/4,000 tons	Same
Collins - GA	NA	NA
Gravely - KY	1/day	NA
Walker - KY	1/project	NA
Carey - LA	4/lot	Same
Poche - LA	4/lot	Same
Brenner - MO	NA	NA
Jordan _ MS	3/day's prd'n	Same
Coffman - OK	NA	NA
Toney - OK	1,000 tons	Same
Fletcher - SC	1/day	Same
Crabtree - TN	NA	NA
Boswell _ TX	5/day	Same
Winfrey - VA	1/10,000 tons	Same
Robson _ W VA	NA	NA

* Lab air voids

Pay Adjustment-Asphalt-Part I
Frequency of Testing-Field VMA

Respondent	Interstate	Normal
Hartog - AL	NA	NA
Blackwell - AR	NA	NA
Sykes - CA	?	?
Payne - FL	NA	NA
Smith - FL	At design only	Same
Collins - GA	NA	NA
Gravely - KY	1/day	NA
Walker - KY	1/project	NA
Carey - LA	NA	NA
Poche - LA	4/lot	Same
Brenner - MO	NA	NA
Jordan _ MS	3/day's prd'n	Same
Coffman - OK	NA	NA
Toney - OK	NA	NA
Fletcher - SC	NA	NA
Crabtree - TN	NA	NA
Boswell _ TX	NA	5/day
Winfrey - VA	1/10,000 tons	Same
Robson _ W VA	NA	NA

Pay Adjustment-Asphalt-Part I
Frequency of Testing-Stockpile Grd'n

Respondent	Interstate	Normal
Hartog - AL	NA	NA
Blackwell - AR	NA	NA
Sykes - CA	Never	Never
Payne - FL	NA	NA
Smith - FL	1/1,000 tons	Same
Collins - GA	NA	NA
Gravely - KY	2/day	Same
Walker - KY	NA	NA
Carey - LA	NA	NA
Poche - LA	Design & Q C	Same
Brenner - MO	NA	NA
Jordan _ MS	NA	NA
Coffman - OK	NA	NA
Toney - OK	NA	NA
Fletcher - SC	NA	NA
Crabtree - TN	NA	NA
Boswell _ TX	NA	5/day
Winfrey - VA	NA	NA
Robson _ W VA	NA	NA

Pay Adjustment-Asphalt-Part I
Frequency of Testing-Field Stability

Respondent	Interstate	Normal
Hartog - AL	NA	NA
Blackwell - AR	1/day, 1st 3 days	NA
Sykes - CA	500 tons	Same
Payne - FL	NA	NA
Smith - FL	1/4,000 tons	Same
Collins - GA	NA	NA
Gravely - KY	1/day	NA
Walker - KY	1/project	NA
Carey - LA	4/lot	Same
Poche - LA	4/lot	Same
Brenner - MO	NA	NA
Jordan _ MS	3/day's prd'n	Same
Coffman - OK	NA	NA
Toney - OK	1,000 tons	Same
Fletcher - SC	1/day	NA
Crabtree - TN	NA	NA
Boswell _ TX	5/day	Same
Winfrey - VA	1/10,000 tons	Same
Robson _ W VA	NA	NA

Pay Adjustment-Asphalt-Part I
Frequency of Testing-Strength Index

Respondent	Interstate	Normal
Hartog - AL	NA	NA
Blackwell - AR	1/day, 1st 3 days	NA
Sykes - CA	?	?
Payne - FL	NA	NA
Smith - FL	NA	NA
Collins - GA	NA	NA
Gravely - KY	1/day	NA
Walker - KY	1/project	NA
Carey - LA	NA	NA
Poche - LA	TSR=75% min	Design(new)
Brenner - MO	NA	NA
Jordan _ MS	one test/week	Same
Coffman - OK	NA	NA
Toney - OK	NA	NA
Fletcher - SC	2/week	NA
Crabtree - TN	NA	NA
Boswell _ TX	NA	5/day
Winfrey - VA	TSR=75% min	Same
Robson _ W VA	NA	NA

8. Please estimate the number of jobs requiring pay adjustments due to non specification material in 1990.

9. What instrument is used for acceptance of pavements for roughness?

_____

10. What are your current roughness requirements for your Interstate type pavements?

_____

Pay Adjustment-Asphalt-Part I

jobs requiring pay adjustment - 1990

Respondent	Number
Hartog - AL	20
Blackwell - AR	27
Sykes - CA	No idea
Payne - FL	60 of 200
Smith - FL	NA
Collins - GA	75
Gravely - KY	50
Walker - KY	81
Carey - LA	20%
Poche - LA	< 12
Brenner - MO	NA
Jordan _ MS	20%
Coffman - OK	< 5%
Toney - OK	NA
Fletcher - SC	6
Crabtree - TN	NA
Boswell _ TX	None
Winfrey - VA	About 5%
Robson _ W VA	< 5%

Pay Adjustment-Asphalt-Part I

Instrument for acceptance of roughness

Respondent	Instrument
Hartog - AL	California Profilograph
Blackwell - AR	10 ft. Rolling Straightedge
Sykes - CA	Profilograph and Straightedge
Payne - FL	15 ft. Rolling Straightedge
Smith - FL	15 ft. Rolling Straightedge
Collins - GA	Mays Meter
Gravely - KY	Mays Meter
Walker - KY	ASTM E 1082
Carey - LA	10 ft. Rolling Straightedge
Poche - LA	10 ft. Rolling Straightedge
Brenner - MO	Profilometer
Jordan _ MS	Profilograph
Coffman - OK	California Profilograph
Toney - OK	California Profilograph
Fletcher - SC	Mays Ride Meter
Crabtree - TN	Mays Meter
Boswell _ TX	Traveling Straightedge
Winfrey - VA	California Profilograph
Robson _ W VA	NA

Pay Adjustment-Asphalt-Part I
Roughness requirement for interstate type

Respondent	Requirement
Hartog - AL	P.I.=3.0 - 6.0 for 100% pay
Blackwell - AR	1/8 inch in 10 feet
Sykes - CA	Profilograph: 5 in/mi (>2000 ft. rad) 10 in/mi (1-2000 ft. rad) Straightedge: .01 ft/ft (longitudinal) .02 ft/ft (transversely)
Payne - FL	3/16 inch requires correction
Smith - FL	3/16 inch requires correction
Collins - GA	30 or more requires correction
Gravely - KY	Rideability index >= 3.6
Walker - KY	Rideability index >= 3.6
Carey - LA	< 1/8 in. in 10 ft. for 100% pay
Poche - LA	All same with more than 1 lift
Brenner - MO	105% for PI<3; 100% for 3<=PI<=10
Jordan _ MS	7 inches/mile
Coffman - OK	7 inches without pay adjustment
Toney - OK	Less than 6.5 in/mi for full pay
Fletcher - SC	100% pay for 40 in. or less/mile
Crabtree - TN	35 in/mi req'd; price red'n over 40
Boswell _ TX	1/8 inch in 10 ft. for 100% pay
Winfrey - VA	10 inches or less/mile
Robson _ W VA	NA

QUESTIONNAIRE
Regarding

Pay adjustments for Asphalt Pavement Construction

PART II.

Problem #1

A. If an asphalt plant produced 500 tons of asphalt surface mix to a state job on an Interstate for that day, and the asphalt content by one test was found to be 0.5% above the mix design value, which of the following actions would be taken (use your current specification requirement for asphalt content):

Please check all applicable statements.

1._____ Core the area and perform extraction test(s) to verify test result

2._____ Remove the 500 tons of mix

3._____ Apply a price reduction

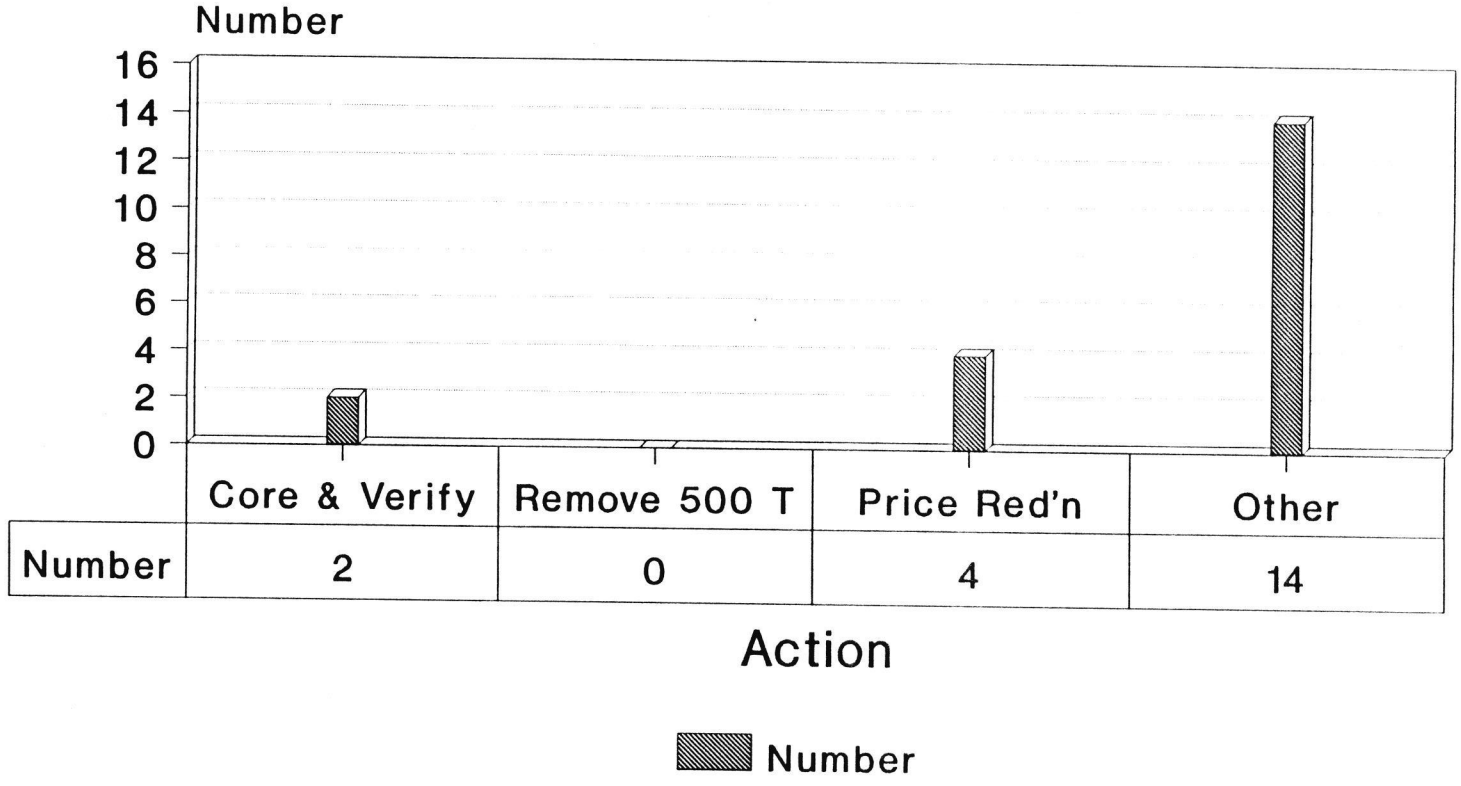
a.___of___% for the 500 tons
b.___factor for this in calculating statistical acceptance at end of job

4._____ Other_____

Pay Adjustment-Asphalt-Prt II

P 1A - A.C. 0.5% Above Mix Design

Which Action Taken?



Problem #1

A. If an asphalt plant produced 500 tons of asphalt surface mix to a state job on an Interstate for that day, and the asphalt content by one test was found to be 0.5% above the mix design value, which of the following actions would be taken (use your current specification requirement for asphalt content):

_____1. Core the area and perform extraction test(s) to verify test result

Brenner - MO X
Poche - LA X
Blackwell - AR X

_____2. Remove the 500 tons of mix

_____3. Apply a price reduction
a. ___of ___% for the 500 tons

Jordan - MS X 10%
Fletcher - SC - pay 95% of the unit bid price for surface mix
Toney - OK 6%
Gravely - KY - X

b. ___factor for this in calculating statistical acceptance at end of job

_____4. Other

Blackwell- AR - Isolate and remove non-complying area

Hartzog - AL - No price reduction for 0.5% above M Design (see attached s.p. #910, page 3)

Brenner - MO - Review plant operations

Robson - WV - Material is evaluated based on a moving average concept. (per attachment 1 & 2)

Poche - LA - May require pay reduction or removal

Winfrey - VA - Asphalt content and aggregate gradations are accepted based on the results of 4 samples per lot (2000/4000 ton lot) if the result is outside the job mix plus/minus tolerance band an adjustment will be made up to 25%

Crabtree - TN - Pay factor = 100% for deviation of 0.0-0.55 for 500 tons

Payne - FL - Leave in place at full pay (see table 331-5)

Toney - OK - May be accepted with 0% reduction if next test OK

Smith - FL - (table 331-6 - Standard Spec)

Collins - GA - No payment reduction when only one test shows 0.5% deviation (attached specs)

Sykes - CA - If mix appears to be incapable of performing as intended, it is removed

Boswell - TX - Leave in place - 0.5% deviation allowed with 100% pay

Walker - KY - Perform check test on remaining portion. If failure is confirmed, evaluate situation to see if high percent AC will be a problem (rutting, bleeding, etc.). There is no provision for a pay adjustment based on a single test unless the deviation exceeds 0.5%. If the materials is deemed to be able to perform, it will be accepted at 100% pay.

Carey - LA - We run two extractions per lot. No action would be taken on basis of one result.

B. If 500 tons of asphalt pavement were placed on an Interstate during one day and one density core was taken showing 98.1% density (fm Rice Sp G), which of the following action(s) would be taken:

1._____ Nothing, 98.1% density is acceptable

2._____ Nothing, the pavement would have been removed from Part A

3._____ The area of noncompliance for density would be isolated by coring on each side of test location starting at an interval of ____ ft. This would continue until:

a._____the average of all density tests pass
b._____a passing density test is reported on each side
c._____other _____

After isolation which of the following applies:

a._____remove area of noncompliance
b._____apply price reduction of ____% for the tonnage of mix in the area of noncompliance
c._____other_____

4._____ Apply a price reduction of ____% for the 500 tons

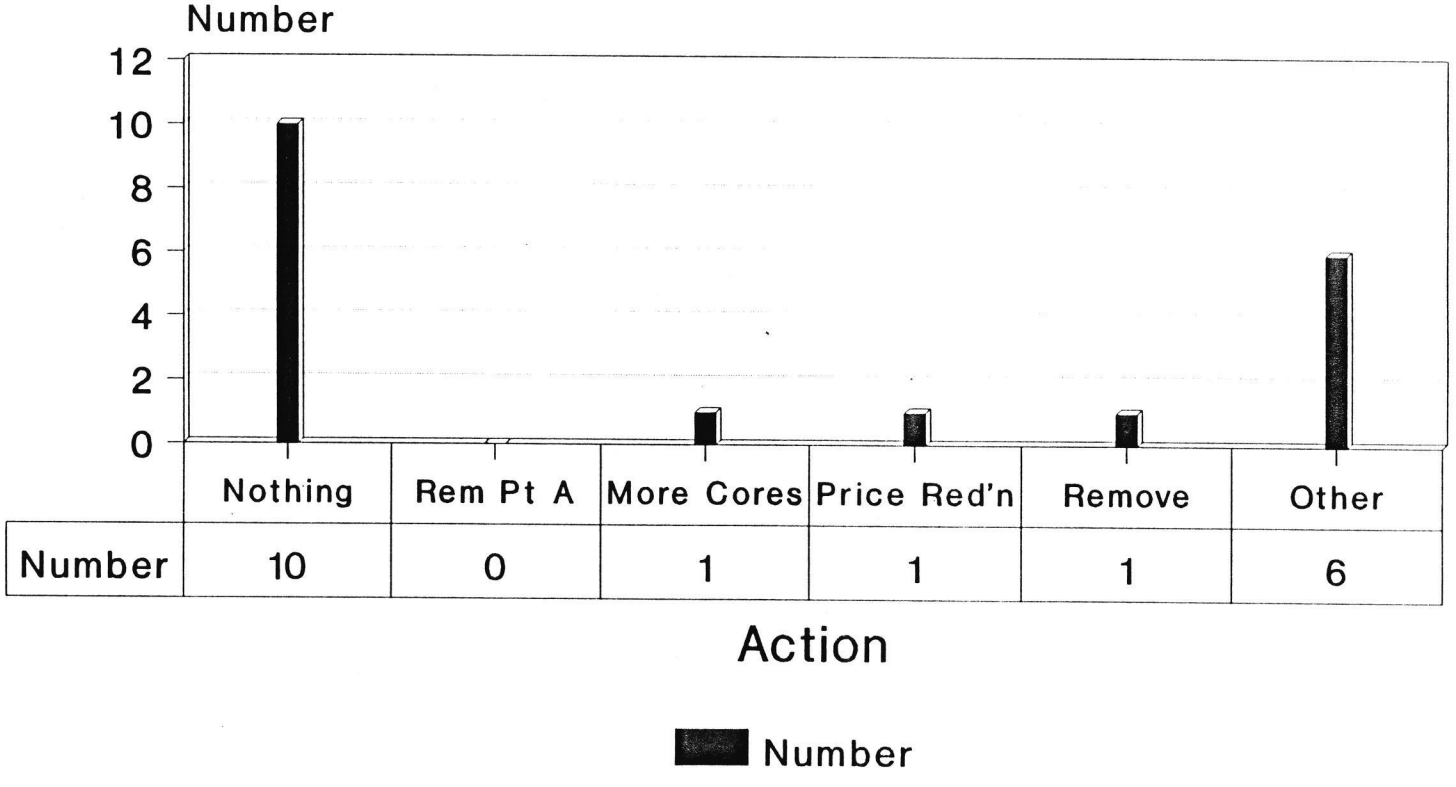
5._____ Remove entire 500 tons and replace

6._____ Other_____

Pay Adjustment-Asphalt-Prt II

P 1B - 98.1% Density fm One Core

Which Action Taken?



Problem #1

B. If 500 tons of asphalt pavement were placed on an Interstate during one day and one density core was taken showing 98.1% density (fm Rice Sp G), which of the following action(s) would be taken:

_____1. Nothing, 98.1% density is acceptable

Hartzog - AL - X

Brenner - MO - X (98% min AASH to T167 laboratory specimen)

Poche - LA - X

Winfrey - VA - X (Density is determined by the use of a nuclear density gage - (see spec sec 320)

Payne - FL - X (see table 330-3)

Smith - FL - X

Collins - GA - X

Gravely - KY - X Density not used

Walker - KY - X (98% of solid should indicate to an inspector that something is a miss, but it is doubtful that any action would be taken)

Carey - LA - X

_____2. Nothing, the pavement would have been removed from Part A

_____3. The area of noncompliance for density would be isolated by coring on each side of test location starting at an interval of _____ft. This would continue until:

Blackwell - AR - X - 25 ft.

a._____the average of all density tests pass

b._____a passing density test is reported on each side

Jordon - MS - X (10ft core tests show results within which the pavement may remain in place. After replacement, a new density test value is established for the lot. The price adjustment in Part A is not assessed if the material is removed under Part B.

c._____other _____

_____

After isolation which of the following applies:

a. _____remove area of noncompliance

Jordan - MS - X

b. _____apply price reduction of ____% for the tonnage of mix in the area of noncompliance

c. _____ other_____

_____

_____4. Apply a price reduction of ___% for the 500 tons

Jordan - MS - This would depend on the new density test value for the lot after replacement of the area removed.

_____5. Remove entire 500 tons and replace

Toney - OK - X

_____6. Other _____

_____

Blackwell - AR - Quote from AHTD 408.05 (HT) Specs:

Robson - WVA - If results of 5 density tests on a lot indicates that at least 85% of the lot has been compacted to the specified density as determined by the Quality Index, the lot will be accepted. If less than 85% of the lot has been compacted to specified density, the lot will be paid for at an adjusted price.(att 4&5)

Fletcher - SC -South Carolina density specifications not based on percent of Rice Specific Gravity (see attached specs)

Toney - OK- Realistically a second set of tests would be performed before a decision was made.

Collins - GA- Specifications require minimum of five tests;

would not use one test for acceptance

Sykes - CA- Rice SpG is not used in this state

Boswell - TX- One density test would not be used, but rather an average of random selected spots over total days (1 lot) production. Or, 500 tons (short day production) could be averaged with next day production.

Problem #2

1500 tons of surface mix is placed on an Interstate. Density Tests of 91.7%, 90.7%, and 95% of Rice Maximum Specific Gravity are reported with the lst test representing the first 500 tons, the 2nd test representing the second 500 tons, etc. Please indicate which of the following would apply (use your current density requirements):

1._____ The 1500 tons would be accepted because the average of the 3rd test reports are 92.5%

2._____ A price reduction of ___% would be applied for ___tons of surface mix.

3._____ A price reduction of ___% would be applied for ___tons of surface mix. A price reduction of ___% would be applied for ___tons of surface mix. ___tons would be accepted.

4._____ The first 500 tons would be accepted with a price reduction of ___%. The second 500 tons would be removed. The third 500 tons is acceptable.

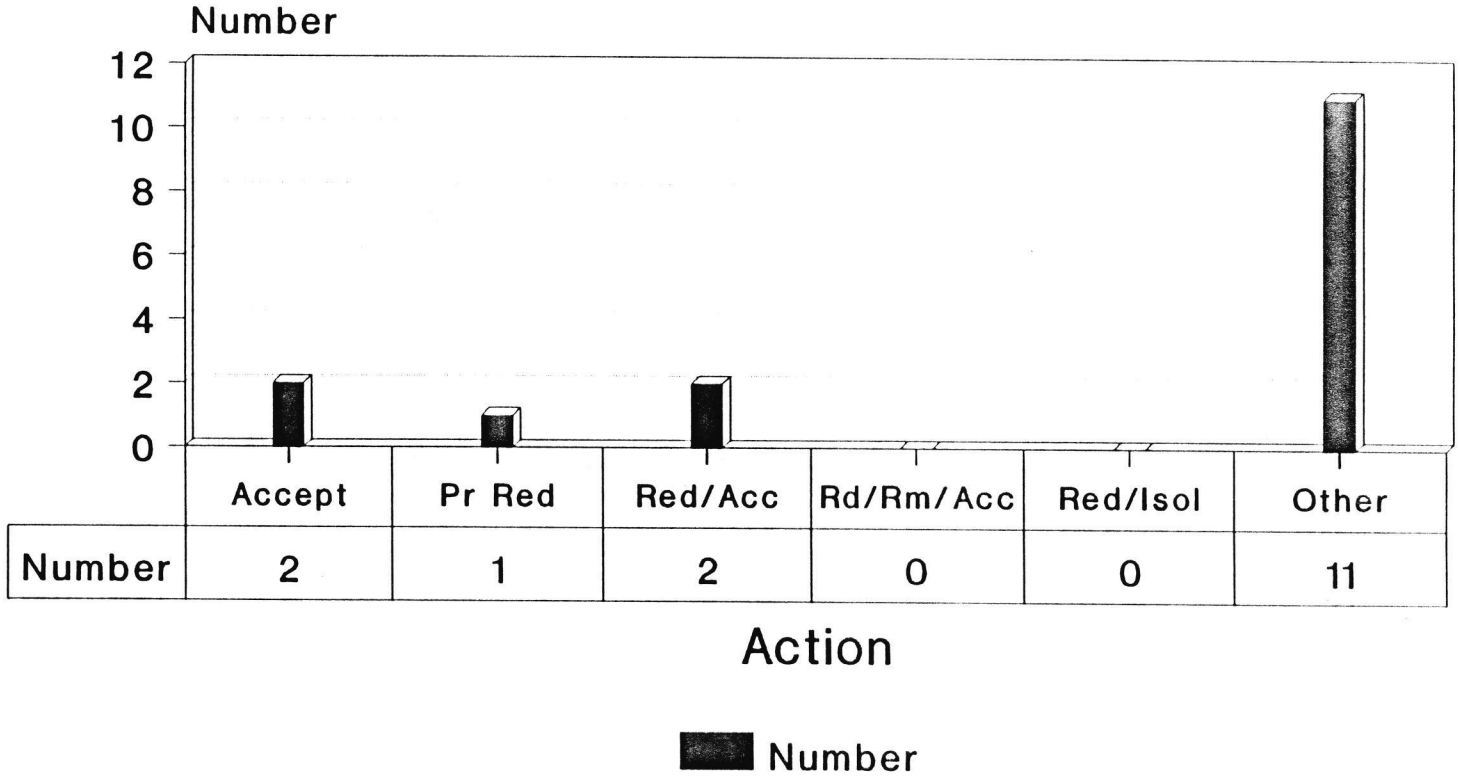
5._____ Price reductions would be applied for sections 1 and 2 after the area of noncompliance is determined.

6._____ Other_____

Pay Adjustment-Asphalt-Prt II

P 2 - 92.5% Av Density fm 3 Cores

Which Action Taken?



Problem #2

1500 tons of surface mix is placed on an Interstate. Density Tests of 91.7%, 90.7%, and 95% of Rice Maximum Specific Gravity are reported with the 1st test representing the first 500 tons, the 2nd test representing the second 500 tons, etc. Please indicate which of the following would apply (use your current density requirements):

_____1. The 1500 tons would be accepted because the average of the 3 test reports are 92.5%.

Jordan - MS - X Except that our specs are based on a 5 test average

Gravely - KY - X

_____2. A price reduction of ___% would be applied for ___ tons of surface mix.

Brenner - MO - X 3% 1,500

_____3. A price reduction of ___% would be applied for ___ tons of surface mix. A price reduction of ___% would be applied for ___tons of surface mix. ___tons would be accepted.

Crabtree - TN - 0.9%, 500, 3.9%, 500, 500

Toney - OK - 2%, 500, 17%, 500, 500

_____4. The first 500 tons would be accepted with a price reduction of ___%. The second 500 tons would be removed. The third 500 tons is acceptable.

_____5. Price reductions would be applied for sections 1 and 2 after the area of noncompliance is determined.

_____6. Other _____

_____

Please furnish any written procedures regarding this policy.

_____enclosed

Blackwell - AR - pg 215 408.05(b)

Hartzog - AL - At present time density deficiencies are not subject to price reductions.

Robson -WVA - The acceptance would be based on the statistical evaluation of the tests in the

lot and the first 500 tons would not be treated as a separate area.

Poche - LA - Price reduction on average of 5/lot (see spec)

Fletcher - SC - (Same response as to Prob 1) South Carolina density specifications not based on percent of Rice Specific Gravity.

Payne - FL - We test density based on 1000 sublots (5000 lots) since we were less than 96% they would be at 75% pay (see table 330-3)

Smith - FL - (See attached specs)

Collins - GA - Specifications require minimum of five density tests per lot (ordinarily one day's production). Acceptance Schedule based on degree of compaction. Target density determined through construction of a "control strip". Target density must be a minimum of 95% of theoretical specific gravity of voidless mix which is ordinarily determined in laboratory by Rice Method. Actual density must be within 97.5% of target density in order to receive full payment.

Sykes - CA - Rice Sp G not used in this state.

Boswell - TX - One days production lab density is averaged over five lots/day to determine penalty.

Walker - KY - We have no provision for pay adjustment for density. For the example cited, project personnel would be expected to determine if the in-place density can be improved, or if the 95% value is a flier, etc. After all reasonable efforts to achieve 94% of solid have been exhausted, the project engineer may establish a target density based on values achieved.

Carey - LA - We base acceptance on average of five cores per lot, as compared with plan 5 bnrig. gravity. We accept or price adjust the entire lot based upon 96% target density.

Problem #3

1500 tons of surface mix are placed. The contractor runs 3 density tests showing 92.5%, 92.1%, and 92.7% of Rice Maximum SpG. The state performs one test showing a density of 91.6%.

Would this 1500 tons be accepted without a pay adjustment?

_____yes _____no

Would this 1500 tons be accepted with a pay adjustment?

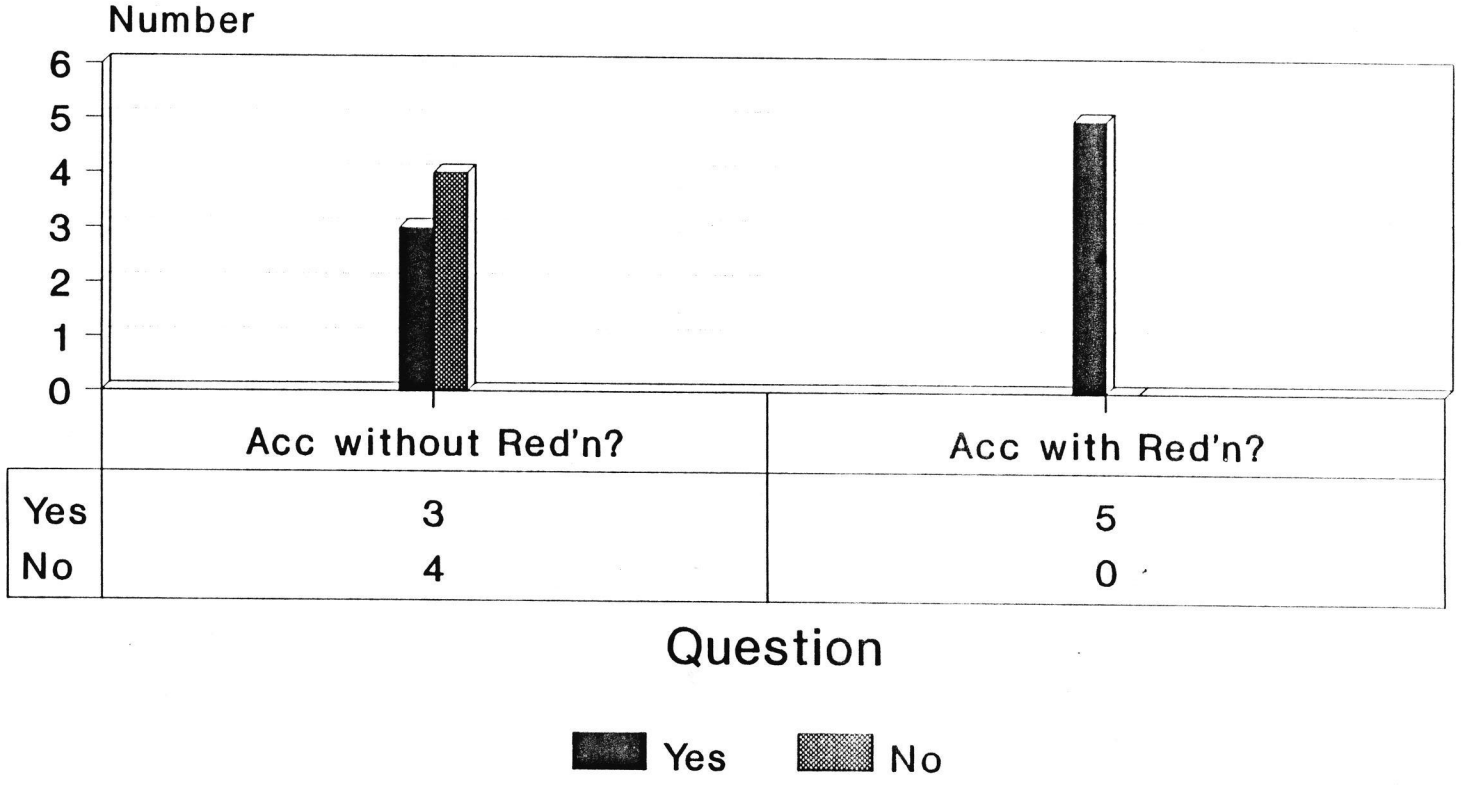
_____yes _____no

Briefly explain what steps would be taken in this case._____

Pay Adjustment-Asphalt-Prt II

P 3 91.6% Density fm One Core

What Action Taken?



Problem #3.

1500 tons of surface mix are placed. The contractor runs 3 density tests showing 92.5%, 92.1% and 92.7% of Rice Maximum SpG. The state performs one test showing a density of 91.6%.

Blackwell - AR - (quote from 410.09 of the specifications)

Would this 1500 tons be accepted without a pay adjustment?

		yes	no
Brenner	**- MO**		**X**
Payne	**- FL**		**X**
Toney	**- OK**		**X**
Collins	**- GA**		**X**
Gravely	**- KY**		**X**
Boswell	**- TX**		**X**
Walker	**- KY**		**X**

Would this 1500 tons be accepted with a pay adjustment?

		yes	no
Brenner	**- MO**		**X**
Crabtree	**- TN**		**X**
Payne	**- FL**		**X**
Toney	**- OK**		**X**
Collins	**- GA**		**X**
Walker	**- KY**		**NA would be accepted at 100% pay**

Briefly explain what steps would be taken in this case.

Brenner - MO - Payment based on results of state test. Deduction for 91.6% or 8.4% voids is 10%.

Robson -WVA - The departments tests are used for a statistical similarity check with the contractor's testing and are not used specifically for acceptance or rejection of the material. If the department's tests are not similar to the contractors's, then the Quality Control System is evaluated for problems.

Poche - LA - (see LA specs)

Jordan - MS - Contractor's test results are not used for acceptance.

Fletcher - SC - (same response) South Carolina density specifications not based on percent of Rice Specific Gravity (see attached specs)

Crabtree - TN - All acceptance tests are performed by state % reduction =(92-91.6) x3 = 1.2%.

Payne - FL - (same response as to Prob 2) We test density based on 1000 sub lots (5000 lots). Since we were less than 96% they would be at 75% pay - (see table 330-3)

Toney - OK - 5% pay reductions. Contractor may request referee tests. Discrepancies in procedures would be evaluated.

Smith - FL - Florida Department Transportation specifications require the density to be tested by FDOT personnel at a frequency of 1/1000 ft. (attached specs)

Collins - GA - Contractor tests are not ever used for acceptance purposes; also a minimum of 5 D.O.T. acceptance tests would be taken for a particular lot. (attached specs)

Sykes - CA - Rice Sp G is not used in this state

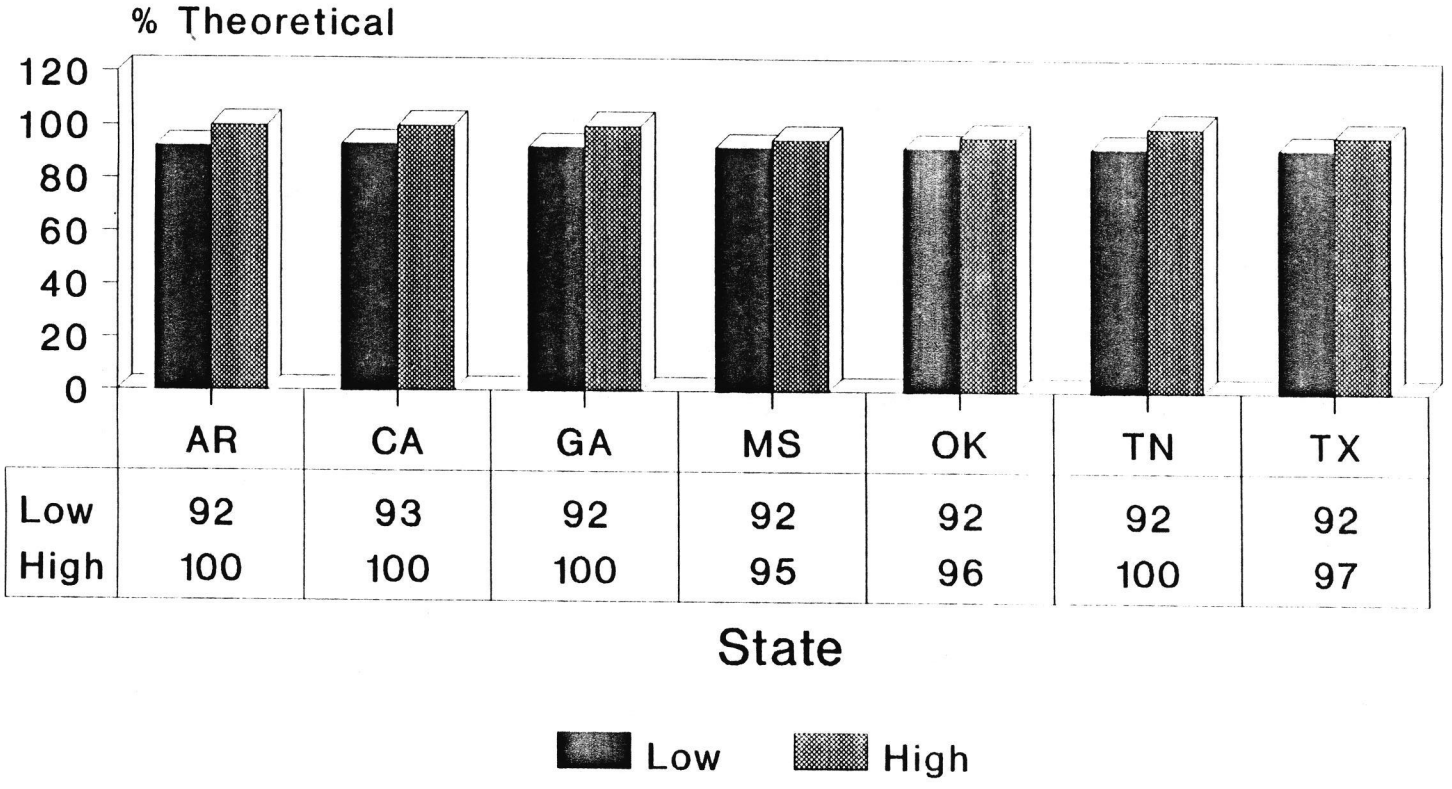
Boswell - TX - Average density on 5 lots/day is used

Walker - KY - Contractors do not run densities. Again, project personnel would determine if additional density can be achieved or if an adjusted minimum value will be established.

Carey - LA - The state runs all "acceptance" tests. For density the state averages five cores. Seldom does the state waive its results.

Pay Adjustment - Density

Comparison of State Plans
Density Range for 100% Pay

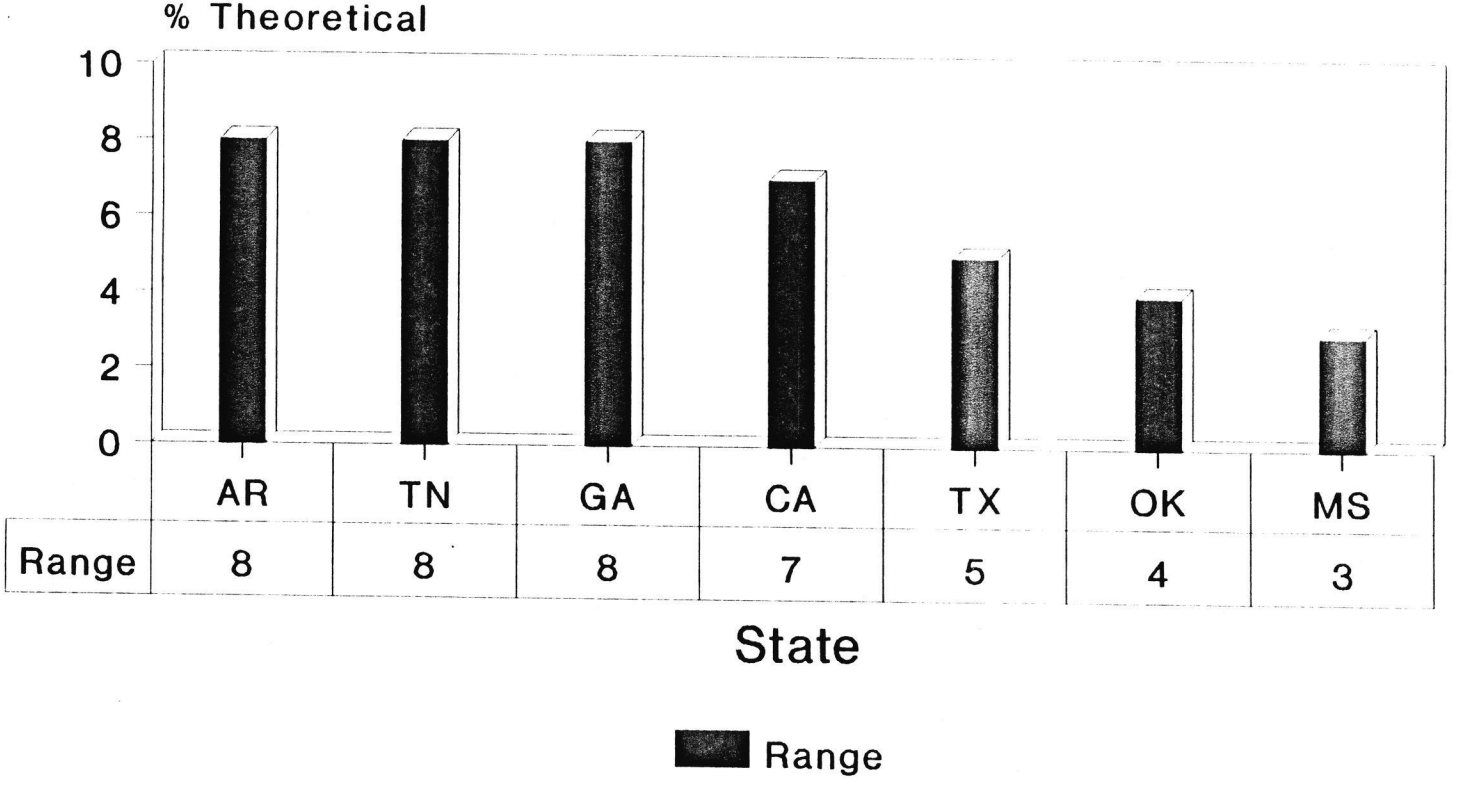


	AR	CA	GA	MS	OK	TN	TX
Low	92	93	92	92	92	92	92
High	100	100	100	95	96	100	97

Pay Adjustment - Density

Comparison of State Plans

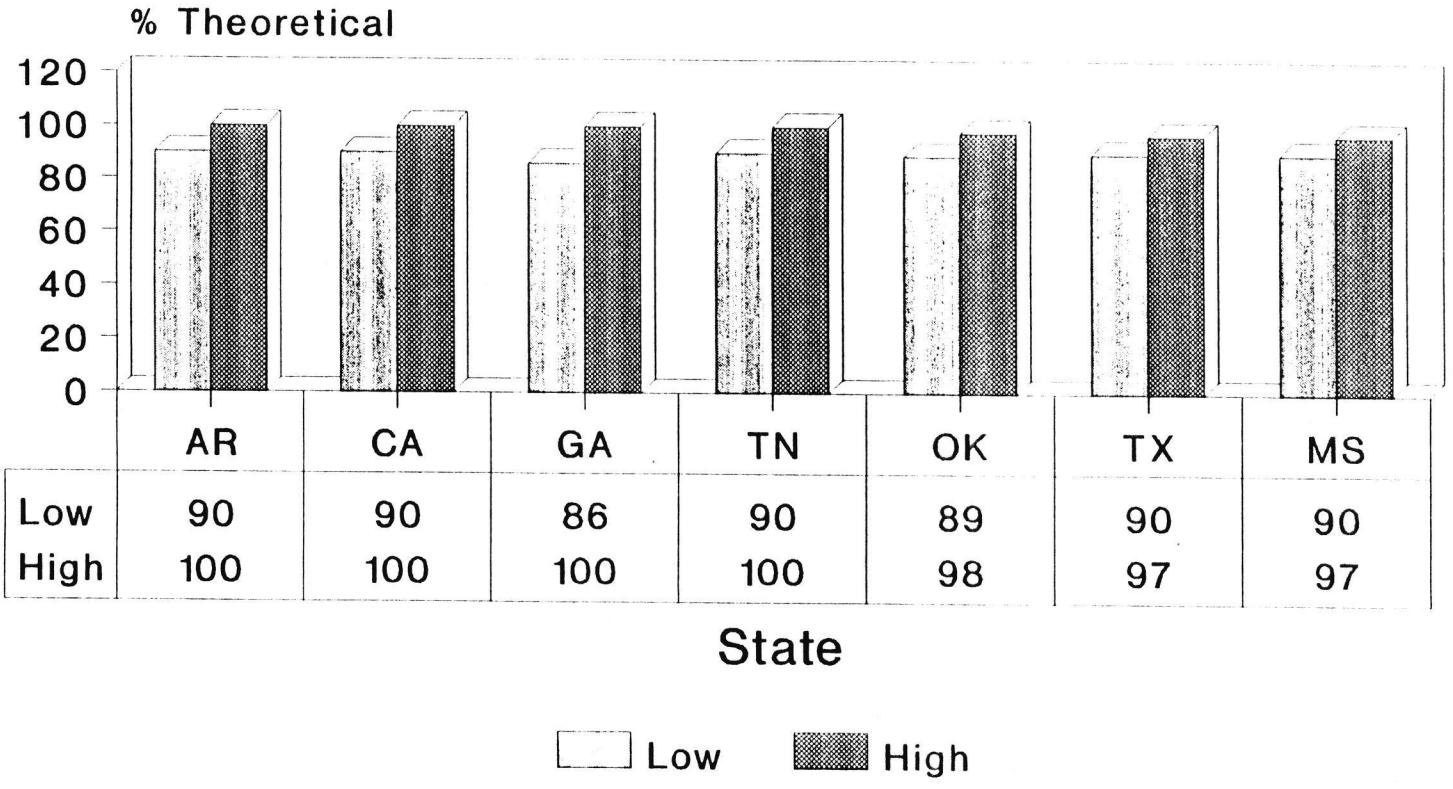
Density Range for 100% Pay



Pay Adjustment - Density

Comparison of State Plans

Range for Acceptance with Adjustment

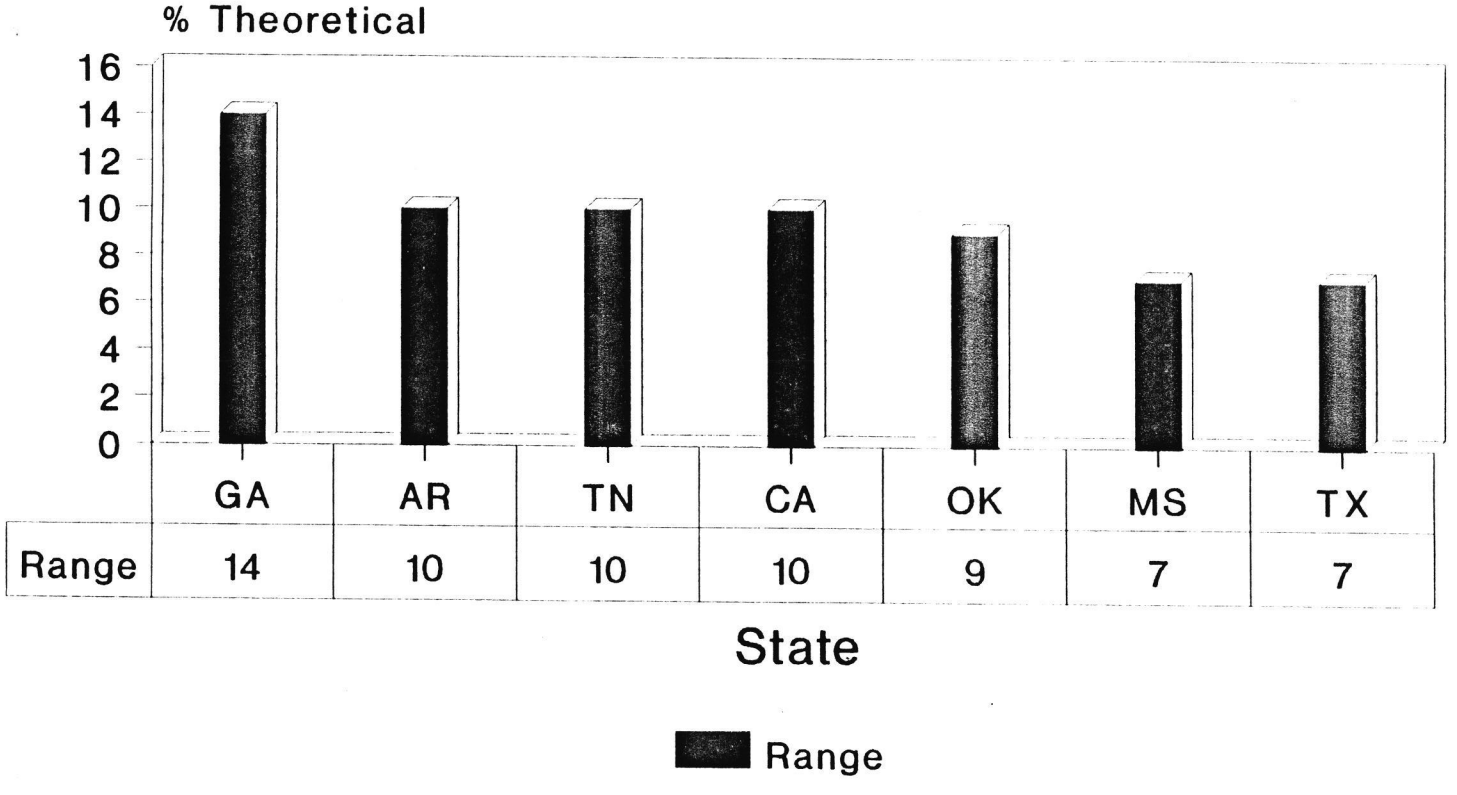


	AR	CA	GA	TN	OK	TX	MS
Low	90	90	86	90	89	90	90
High	100	100	100	100	98	97	97

Pay Adjustment - Density

Comparison of State Plans

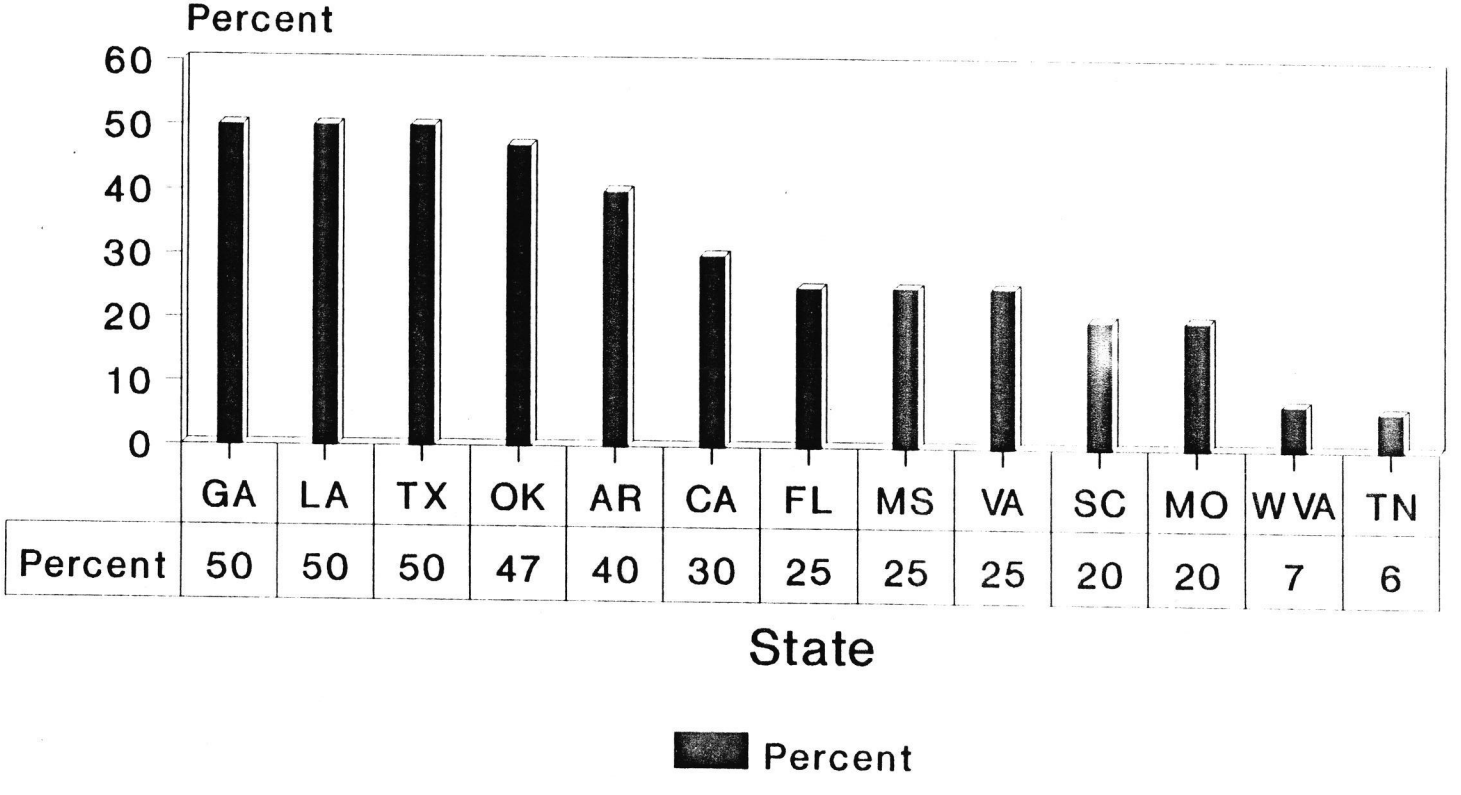
Range for Acceptance with Adjustment



Pay Adjustment - Density

Comparison of State Plans

Maximum Pay Reduction



APPENDIX
II

```
TITLE 'SIMULATION OF ASPHALT PAVEMENT';
OPTIONS PAGESIZE=64 NODATE NONUMBER;
DATA DENSITY;
INPUT X Y;
CARDS;
0     90.3
1364  94.5
2728  87.3
4092  88.1
5456  89.6
6820  91.6
8184  90.3
;
PROC PRINT;
TITLE2 'LISTING OF DISTANCES AND DENSITIES';
PROC NLIN DATA=DENSITY METHOD=MARQUARDT CONVERGEOBJ=10E-12;
TITLE2 '5TH DEGREE POLYNOMIAL FIT OF THE DATA';
PARMS A0=90.3 A1=.1 A2=-.01 A3=.01 A4=-.001 A5=.0001;
MODEL Y=A5*X**5 + A4*X**4 + A3*X**3 + A2*X**2
+ A1*X + A0;
DER.A0=1; DER.A1=X; DER.A2=X**2; DER.A3=X**3; DER.A4=X**4;
DER.A5=X**5;
OUTPUT OUT=DENS P=YHAT R=YRESID;
PROC PLOT DATA=DENS;
TITLE2 'PLOT OF PREDICTED VS ACTUAL VALUES';
  PLOT Y*X='A' YHAT*X='P' / OVERLAY;
  PLOT YRESID*X;
RUN;
```

SIMULATION OF ASPHALT PAVEMENT
LISTING OF DISTANCES AND DENSITIES

OBS	X	Y
1	0	90.3
2	1364	94.5
3	2728	87.3
4	4092	88.1
5	5456	89.6
6	6820	91.6
7	8184	90.3

SIMULATION OF ASPHALT PAVEMENT
5TH DEGREE POLYNOMIAL FIT OF THE DATA

Non-Linear Least Squares Iterative Phase
Dependent Variable Y Method: Marquardt

Iter	A0	A1	A2	Sum of Squares
	A3	A4	A5	
0	90.300000	0.100000	-0.010000	1.58628485E31
	0.010000	-0.001000	0.000100	
1	139.641041	-1.327046	0.001391	170085
	-0.0000004837	6.7852483E-11	-3.314758E-15	
2	90.348160	0.015002	-0.0000135005	2.143128
	3.96988072E-9	-4.777191E-13	2.0385853E-17	
3	90.348160	0.015002	-0.0000135005	2.143128
	3.96988072E-9	-4.777191E-13	2.0385853E-17	

NOTE: Convergence criterion met.

Non-Linear Least Squares Summary Statistics Dependent Variable Y

Source	DF	Sum of Squares	Mean Square
Regression	6	57037.906872	9506.317812
Residual	1	2.143128	2.143128
Uncorrected Total	7	57040.050000	
(Corrected Total)	6	33.637143	

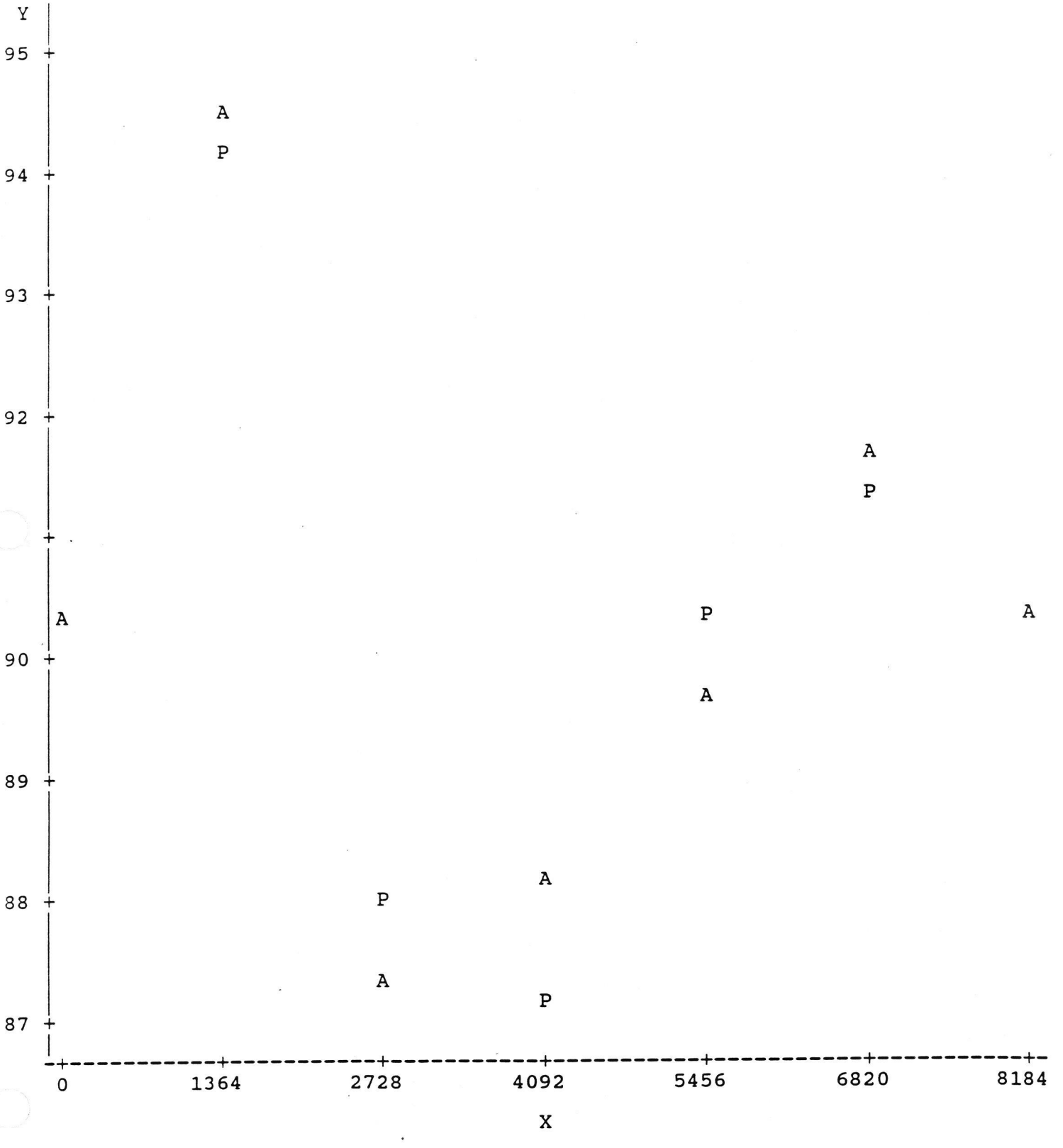
Parameter	Estimate	Asymptotic Std. Error	Asymptotic 95 % Confidence Interval Lower	Upper
A0	90.34816017	1.4631501301	71.757374611	108.93894572
A1	0.01500250	0.0056013677	-0.056168478	0.08617348
A2	-0.00001350	0.0000052461	-0.000080158	0.00005316
A3	0.00000000	0.0000000018	-0.000000018	0.00000003
A4	-0.00000000	0.0000000000	-0.000000000	0.00000000
A5	0.00000000	0.0000000000	-0.000000000	0.00000000

Asymptotic Correlation Matrix

Corr	A0	A1	A2	A3	A4	A5
A0	1	-0.397513	0.2253881	-0.161187	0.1285846	-0.109168
A1	-0.397513	1	-0.963612	0.9165623	-0.875562	0.8411277
A2	0.2253881	-0.963612	1	-0.988563	0.9675332	-0.945081
A3	-0.161187	0.9165623	-0.988563	1	-0.994297	0.9824366
A4	0.1285846	-0.875562	0.9675332	-0.994297	1	-0.99665
A5	-0.109168	0.8411277	-0.945081	0.9824366	-0.99665	1

SIMULATION OF ASPHALT PAVEMENT
PLOT OF PREDICTED VS ACTUAL VALUES

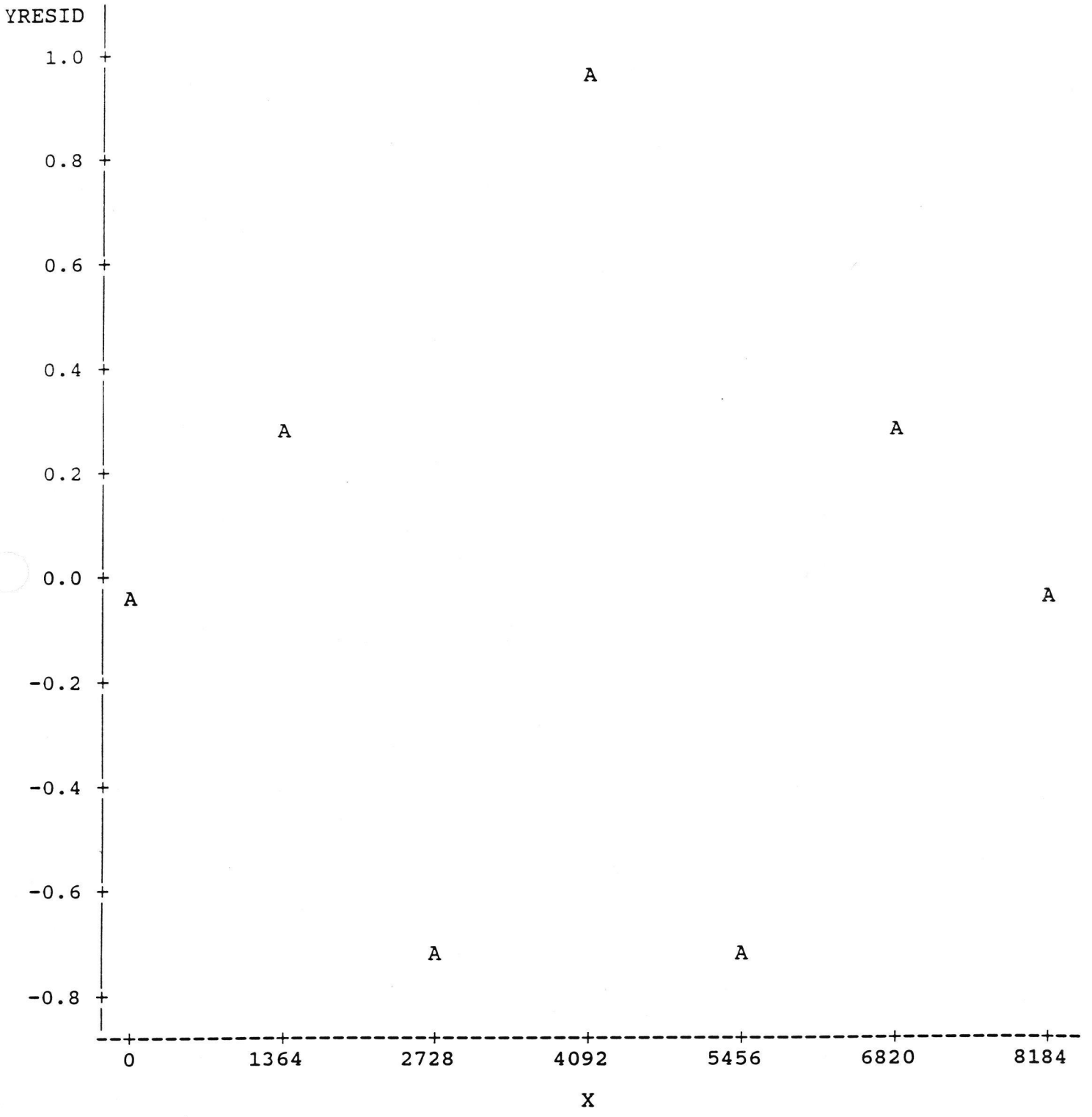
Plot of Y*X. Symbol used is 'A'.
Plot of YHAT*X. Symbol used is 'P'.



NOTE: 2 obs hidden.

SIMULATION OF ASPHALT PAVEMENT
PLOT OF PREDICTED VS ACTUAL VALUES

Plot of YRESID*X. Legend: A = 1 obs, B = 2 obs, etc.



```
TITLE 'ASPHALT SAMPLING SIMULATION DENSITY CURVE';
OPTIONS PAGESIZE=64 NODATE;
DATA PAY;
X=0;
DO UNTIL (X>=8184);
    D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
    X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
    OUTPUT;
    X+10;
END;
GOPTIONS DISPLAY CBACK=WHITE COLORS=(BLACK) DEVICE=VGA;
LIBNAME AHTD 'C:\MYSAS\';
SYMBOLS1 I=SPLINES C=BLACK;
PROC GPLOT DATA=PAY GOUT=AHTD.CURVE;
TITLE 'ASPHALT SAMPLING CURVE';
TITLE2 'SAMPLE POINTS EVERY 10 FEET';
PLOT D*X / VREF=89.95 91.95;
RUN;
```

```
TITLE 'ASPHALT SAMPLING SIMULATION';
OPTIONS PAGESIZE=64 NODATE;
DATA PAY;
N=0;
DO UNTIL (N>=100);
 X=10000*RANUNI(0);
  IF X<8184 THEN DO;
   N+1;
    D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
     X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
      DEVTN= 92-ROUND(D,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
     IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
    OUTPUT;
  END;
END;
PROC PRINT DATA=PAY;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZE 1';
DATA PAY2;
N=0;
DO UNTIL (N>=200);
 X=10000*RANUNI(0);
  IF X<8184 THEN DO;
   N+1;
    D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
     X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
      IF N=1 THEN DO; MN2=0; END;
     IF MOD(N+1,2)=0 THEN DO; MN2+1; END;
    OUTPUT;
  END;
END;
KEEP N X D MN2;
PROC PRINT DATA=PAY2;
TITLE2 'DATA FOR SAMPLES OF SIZE 2';
PROC SUMMARY DATA=PAY2;
CLASS MN2;
VAR X D;
OUTPUT OUT=MPAY2 MEAN=MX MD;
DATA MPAY2; SET MPAY2;
 IF MN2=. THEN DELETE;
   DEVTN= 92-ROUND(MD,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
      IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
PROC PRINT DATA=MPAY2;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZES 2';
DATA PAY3;
N=0;
DO UNTIL (N>=300);
 X=10000*RANUNI(0);
  IF X<8184 THEN DO;
   N+1;
    D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
     X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
      IF N=1 THEN DO; MN3=0; END;
     IF MOD(N+2,3)=0 THEN DO; MN3+1; END;
    OUTPUT;
  END;
END;
KEEP N X D MN3;
PROC PRINT DATA=PAY3;
TITLE2 'DATA FOR SAMPLES OF SIZE 3';
PROC SUMMARY DATA=PAY3;
CLASS MN3;
VAR X D;
```

```
OUTPUT OUT=MPAY3 MEAN=MX MD;
DATA MPAY3; SET MPAY3;
 IF MN3=. THEN DELETE;
   DEVTN= 92-ROUND(MD,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
      IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
PROC PRINT DATA=MPAY3;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZES 3';
DATA PAY4;
N=0;
DO UNTIL (N>=400);
 X=10000*RANUNI(0);
  IF X<8184 THEN DO;
   N+1;
    D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
     X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
      IF N=1 THEN DO; MN4=0; END;
     IF MOD(N+3,4)=0 THEN DO; MN4+1; END;
    OUTPUT;
  END;
END;
KEEP N X D MN4;
PROC PRINT DATA=PAY4;
TITLE2 'DATA FOR SAMPLES OF SIZE 4';
PROC SUMMARY DATA=PAY4;
CLASS MN4;
VAR X D;
OUTPUT OUT=MPAY4 MEAN=MX MD;
DATA MPAY4; SET MPAY4;
 IF MN4=. THEN DELETE;
   DEVTN= 92-ROUND(MD,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
      IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
PROC PRINT DATA=MPAY4;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZES 4';
DATA PAY5;
N=0;
DO UNTIL (N>=500);
 X=10000*RANUNI(0);
  IF X<8184 THEN DO;
   N+1;
    D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
     X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
      IF N=1 THEN DO; MN5=0; END;
     IF MOD(N+4,5)=0 THEN DO; MN5+1; END;
    OUTPUT;
  END;
END;
KEEP N X D MN5;
PROC PRINT DATA=PAY5;
TITLE2 'DATA FOR SAMPLES OF SIZE 5';
PROC SUMMARY DATA=PAY5;
CLASS MN5;
VAR X D;
OUTPUT OUT=MPAY5 MEAN=MX MD;
DATA MPAY5; SET MPAY5;
 IF MN5=. THEN DELETE;
   DEVTN= 92-ROUND(MD,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
      IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
PROC PRINT DATA=MPAY5;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZES 5';
GOPTIONS NODISPLAY DEVICE=HPLJS2;
```

```
LIBNAME AHTD 'C:\MYSAS\';
PATTERN1 V=X3;
PROC GCHART DATA=PAY GOUT=AHTD.SIM1;
TITLE 'ASPHALT SAMPLING SIMULATION';
TITLE2 'CHART FOR SAMPLES OF SIZE 1';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
PROC GCHART DATA=MPAY2 GOUT=AHTD.SIM1;
TITLE2 'CHART FOR SAMPLES OF SIZE 2';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
PROC GCHART DATA=MPAY3 GOUT=AHTD.SIM1;
TITLE2 'CHART FOR SAMPLES OF SIZE 3';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
PROC GCHART DATA=MPAY4 GOUT=AHTD.SIM1;
TITLE2 'CHART FOR SAMPLES OF SIZE 4';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
PROC GCHART DATA=MPAY5 GOUT=AHTD.SIM1;
TITLE2 'CHART FOR SAMPLES OF SIZE 5';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
RUN;
```

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZE 1

OBS	N	X	D	DEVTN	PCTPAY
1	1	2499.61	88.8359	3.2	0
2	2	5445.36	90.2962	1.7	66
3	3	3742.47	86.7464	5.3	0
4	4	2948.27	87.4114	4.6	0
5	5	6338.62	91.4619	0.5	90
6	6	6522.07	91.4664	0.5	90
7	7	3399.51	86.7447	5.3	0
8	8	3321.15	86.8042	5.2	0
9	9	606.89	95.3045	-3.3	100
10	10	2585.98	88.5072	3.5	0
11	11	2309.66	89.6369	2.4	0
12	12	5309.39	89.9853	2.0	60
13	13	6435.68	91.4746	0.5	90
14	14	7125.07	90.9777	1.0	80
15	15	6210.67	91.4090	0.6	88
16	16	7602.42	90.3678	1.6	68
17	17	5795.83	90.9611	1.0	80
18	18	4786.13	88.6584	3.3	0
19	19	4277.02	87.4660	4.5	0
20	20	404.55	94.4580	-2.5	100
21	21	1184.44	94.8812	-2.9	100
22	22	4301.45	87.5150	4.5	0
23	23	353.28	94.1308	-2.1	100
24	24	1854.62	91.8547	0.1	98
25	25	2103.28	90.6060	1.4	72
26	26	8102.27	90.2427	1.8	64
27	27	3408.26	86.7395	5.3	0
28	28	2219.78	90.0483	2.0	60
29	29	2859.75	87.6345	4.4	0
30	30	163.07	92.4524	-0.5	100
31	31	130.48	92.0845	-0.1	100
32	32	923.22	95.4819	-3.5	100
33	33	5770.51	90.9210	1.1	78
34	34	496.56	94.9264	-2.9	100
35	35	6150.54	91.3700	0.6	88
36	36	1487.70	93.6665	-1.7	100
37	37	611.13	95.3154	-3.3	100
38	38	4062.50	87.0890	4.9	0
39	39	2717.11	88.0558	3.9	0
40	40	1912.54	91.5600	0.4	92
41	41	5048.76	89.3378	2.7	0
42	42	1310.35	94.4276	-2.4	100
43	43	4663.34	88.3465	3.7	0
44	44	738.71	95.5257	-3.5	100
45	45	4955.15	89.0960	2.9	0
46	46	7701.90	90.2720	1.7	66
47	47	2147.57	90.3911	1.6	68
48	48	8071.41	90.2163	1.8	64
49	49	4897.36	88.9460	3.1	0
50	50	2684.01	88.1641	3.8	0
51	51	4822.14	88.7512	3.2	0
52	52	6509.19	91.4688	0.5	90
53	53	7259.84	90.8012	1.2	76
54	54	6740.64	91.3681	0.6	88
55	55	2982.23	87.3338	4.7	0
56	56	2888.18	87.5596	4.4	0
57	57	2825.69	87.7283	4.3	0
58	58	6317.29	91.4560	0.5	90
59	59	223.15	93.0666	-1.1	100

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZE 1

OBS	N	X	D	DEVTN	PCTPAY
60	60	6027.88	91.2624	0.7	86
61	61	5739.25	90.8696	1.1	78
62	62	867.60	95.5336	-3.5	100
63	63	7016.18	91.1097	0.9	82
64	64	2223.18	90.0324	2.0	60
65	65	4370.02	87.6583	4.3	0
66	66	7974.94	90.1703	1.8	64
67	67	6975.76	91.1552	0.8	84
68	68	8063.34	90.2104	1.8	64
69	69	4120.23	87.1803	4.8	0
70	70	1852.63	91.8648	0.1	98
71	71	3991.77	86.9885	5.0	0
72	72	8032.99	90.1917	1.8	64
73	73	1908.41	91.5809	0.4	92
74	74	499.60	94.9394	-2.9	100
75	75	843.55	95.5462	-3.5	100
76	76	7625.45	90.3437	1.7	66
77	77	2967.22	87.3676	4.6	0
78	78	569.31	95.1968	-3.2	100
79	79	6840.07	91.2900	0.7	86
80	80	4813.38	88.7286	3.3	0
81	81	693.36	95.4757	-3.5	100
82	82	234.82	93.1765	-1.2	100
83	83	2469.02	88.9579	3.0	0
84	84	4788.37	88.6642	3.3	0
85	85	1834.13	91.9590	0.0	100
86	86	474.74	94.8285	-2.8	100
87	87	1910.46	91.5705	0.4	92
88	88	2861.62	87.6295	4.4	0
89	89	5466.12	90.3415	1.7	66
90	90	4247.81	87.4089	4.6	0
91	91	4714.02	88.4742	3.5	0
92	92	2235.05	89.9771	2.0	60
93	93	2675.28	88.1933	3.8	0
94	94	2263.89	89.8441	2.2	0
95	95	4195.88	87.3116	4.7	0
96	96	1530.06	93.4692	-1.5	100
97	97	3570.48	86.6939	5.3	0
98	98	162.86	92.4501	-0.5	100
99	99	342.19	94.0535	-2.1	100
100	100	5439.71	90.2838	1.7	66

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 2

OBS	N	X	D	MN2
1	1	2845.49	87.6732	1
2	2	2155.12	90.3548	1
3	3	7723.14	90.2547	2
4	4	4324.55	87.5624	2
5	5	2959.13	87.3861	3
6	6	6249.78	91.4296	3
7	7	1885.60	91.6969	4
8	8	5198.49	89.7163	4
9	9	643.47	95.3896	5
10	10	731.93	95.5199	5
11	11	211.74	92.9561	6
12	12	6183.03	91.3922	6
13	13	7097.80	91.0119	7
14	14	5204.02	89.7299	7
15	15	8000.72	90.1775	8
16	16	6422.98	91.4743	8
17	17	5445.36	90.2962	9
18	18	4569.20	88.1149	9
19	19	1126.50	95.0585	10
20	20	3308.44	86.8161	10
21	21	4571.40	88.1202	11
22	22	7236.78	90.8320	11
23	23	6380.95	91.4703	12
24	24	6613.84	91.4382	12
25	25	3353.12	86.7772	13
26	26	6124.55	91.3503	13
27	27	2706.59	88.0898	14
28	28	5772.93	90.9249	14
29	29	473.06	94.8206	15
30	30	7581.01	90.3912	15
31	31	4536.77	88.0371	16
32	32	305.48	93.7802	16
33	33	1854.93	91.8531	17
34	34	5234.45	89.8048	17
35	35	4826.96	88.7636	18
36	36	4910.90	88.9812	18
37	37	1592.05	93.1723	19
38	38	3363.41	86.7693	19
39	39	7848.18	90.1815	20
40	40	4053.88	87.0761	20
41	41	6061.15	91.2952	21
42	42	4420.40	87.7686	21
43	43	4464.31	87.8678	22
44	44	3416.09	86.7351	22
45	45	3552.91	86.6942	23
46	46	1650.67	92.8847	23
47	47	7895.43	90.1689	24
48	48	1189.39	94.8650	24
49	49	385.52	94.3423	25
50	50	6277.84	91.4419	25
51	51	5472.09	90.3543	26
52	52	4645.93	88.3031	26
53	53	8056.39	90.2056	27
54	54	1148.52	94.9937	27
55	55	3956.60	86.9435	28
56	56	6847.10	91.2838	28
57	57	3241.00	86.8893	29
58	58	7869.19	90.1748	29
59	59	6528.77	91.4650	30

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 2

OBS	N	X	D	MN2
60	60	4374.85	87.6687	30
61	61	5015.50	89.2521	31
62	62	873.32	95.5297	31
63	63	2322.50	89.5797	32
64	64	1083.53	95.1753	32
65	65	7200.78	90.8797	33
66	66	6499.45	91.4703	33
67	67	1264.13	94.6040	34
68	68	5739.84	90.8705	34
69	69	1511.15	93.5579	35
70	70	3477.22	86.7084	35
71	71	1701.57	92.6308	36
72	72	536.34	95.0846	36
73	73	5287.88	89.9341	37
74	74	5817.54	90.9945	37
75	75	7475.51	90.5166	38
76	76	7637.94	90.3311	38
77	77	7480.65	90.5102	39
78	78	2526.37	88.7315	39
79	79	437.63	94.6434	40
80	80	5764.55	90.9113	40
81	81	1404.93	94.0365	41
82	82	1781.65	92.2261	41
83	83	269.93	93.4895	42
84	84	2696.86	88.1216	42
85	85	3976.43	86.9685	43
86	86	7144.77	90.9526	43
87	87	358.00	94.1630	44
88	88	5407.53	90.2121	44
89	89	7051.41	91.0684	45
90	90	7593.22	90.3778	45
91	91	6233.72	91.4216	46
92	92	87.56	91.5608	46
93	93	3897.53	86.8755	47
94	94	6144.33	91.3654	47
95	95	3184.07	86.9647	48
96	96	3605.16	86.6963	48
97	97	1295.17	94.4867	49
98	98	478.61	94.8464	49
99	99	2814.84	87.7591	50
100	100	3882.77	86.8601	50
101	101	6755.61	91.3576	51
102	102	502.51	94.9517	51
103	103	1687.19	92.7028	52
104	104	7958.84	90.1676	52
105	105	1614.46	93.0631	53
106	106	2569.13	88.5694	53
107	107	4668.02	88.3583	54
108	108	7437.87	90.5646	54
109	109	5403.25	90.2025	55
110	110	3484.34	86.7062	55
111	111	1667.79	92.7997	56
112	112	6501.74	91.4700	56
113	113	3753.20	86.7529	57
114	114	4249.66	87.4125	57
115	115	3157.35	87.0045	58
116	116	671.76	95.4426	58
117	117	6637.71	91.4277	59
118	118	876.40	95.5275	59

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 2

OBS	N	X	D	MN2
119	119	1196.11	94.8429	60
120	120	7435.64	90.5675	60
121	121	118.07	91.9377	61
122	122	2180.34	90.2343	61
123	123	3151.56	87.0135	62
124	124	707.85	95.4946	62
125	125	6492.86	91.4712	63
126	126	1938.80	91.4267	63
127	127	542.65	95.1074	64
128	128	5898.88	91.1101	64
129	129	3397.91	86.7457	65
130	130	2899.75	87.5300	65
131	131	82.09	91.4909	66
132	132	7524.86	90.4561	66
133	133	2559.18	88.6066	67
134	134	6173.79	91.3862	67
135	135	5262.93	89.8741	68
136	136	3416.52	86.7349	68
137	137	6096.00	91.3267	69
138	138	3505.66	86.7007	69
139	139	504.82	94.9613	70
140	140	289.56	93.6532	70
141	141	2911.15	87.5014	71
142	142	679.48	95.4552	71
143	143	4577.82	88.1357	72
144	144	3208.94	86.9302	72
145	145	7014.41	91.1118	73
146	146	894.66	95.5123	73
147	147	6837.34	91.2924	74
148	148	3101.42	87.0967	74
149	149	6454.69	91.4744	75
150	150	6240.42	91.4250	75
151	151	3620.97	86.6989	76
152	152	5367.07	90.1201	76
153	153	3569.18	86.6939	77
154	154	6593.49	91.4461	77
155	155	3261.50	86.8652	78
156	156	4932.33	89.0368	78
157	157	2145.75	90.3999	79
158	158	2335.73	89.5212	79
159	159	7031.01	91.0925	80
160	160	2513.64	88.7809	80
161	161	7193.25	90.8896	81
162	162	2136.67	90.4437	81
163	163	4434.54	87.8002	82
164	164	2671.29	88.2067	82
165	165	6709.17	91.3887	83
166	166	4885.90	88.9163	83
167	167	4590.38	88.1663	84
168	168	845.61	95.5454	84
169	169	2681.84	88.1713	85
170	170	3625.21	86.6997	85
171	171	6348.94	91.4644	86
172	172	1310.62	94.4266	86
173	173	2514.50	88.7775	87
174	174	1599.15	93.1378	87
175	175	7152.95	90.9420	88
176	176	1327.33	94.3602	88
177	177	3018.34	87.2561	89

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 2

OBS	N	X	D	MN2
178	178	2658.08	88.2516	89
179	179	6678.83	91.4066	90
180	180	2335.04	89.5242	90
181	181	1519.87	93.5171	91
182	182	3445.45	86.7206	91
183	183	1295.07	94.4871	92
184	184	4068.15	87.0976	92
185	185	7515.35	90.4675	93
186	186	709.14	95.4961	93
187	187	5111.15	89.4971	94
188	188	7407.41	90.6042	94
189	189	6029.61	91.2642	95
190	190	1671.38	92.7817	95
191	191	6009.35	91.2430	96
192	192	6950.41	91.1826	96
193	193	2319.25	89.5941	97
194	194	179.08	92.6241	97
195	195	3957.98	86.9452	98
196	196	2640.30	88.3130	98
197	197	5071.26	89.3954	99
198	198	1751.96	92.3766	99
199	199	4171.69	87.2682	100
200	200	4269.97	87.4521	100

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 2

OBS	MN2	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
1	1	1	2	2500.31	89.0140	3.0	0
2	2	1	2	6023.85	88.9085	3.1	0
3	3	1	2	4604.45	89.4079	2.6	0
4	4	1	2	3542.05	90.7066	1.3	74
5	5	1	2	687.70	95.4547	-3.5	100
6	6	1	2	3197.38	92.1742	-0.2	100
7	7	1	2	6150.91	90.3709	1.6	68
8	8	1	2	7211.85	90.8259	1.2	76
9	9	1	2	5007.28	89.2055	2.8	0
10	10	1	2	2217.47	90.9373	1.1	78
11	11	1	2	5904.09	89.4761	2.5	0
12	12	1	2	6497.39	91.4543	0.5	90
13	13	1	2	4738.83	89.0637	2.9	0
14	14	1	2	4239.76	89.5073	2.5	0
15	15	1	2	4027.03	92.6059	-0.6	100
16	16	1	2	2421.13	90.9086	1.1	78
17	17	1	2	3544.69	90.8289	1.2	76
18	18	1	2	4868.93	88.8724	3.1	0
19	19	1	2	2477.73	89.9708	2.0	60
20	20	1	2	5951.03	88.6288	3.4	0
21	21	1	2	5240.78	89.5319	2.5	0
22	22	1	2	3940.20	87.3015	4.7	0
23	23	1	2	2601.79	89.7895	2.2	0
24	24	1	2	4542.41	92.5170	-0.5	100
25	25	1	2	3331.68	92.8921	-0.9	100
26	26	1	2	5059.01	89.3287	2.7	0
27	27	1	2	4602.45	92.5997	-0.6	100
28	28	1	2	5401.85	89.1136	2.9	0
29	29	1	2	5555.09	88.5320	3.5	0
30	30	1	2	5451.81	89.5669	2.4	0
31	31	1	2	2944.41	92.3909	-0.4	100
32	32	1	2	1703.01	92.3775	-0.4	100
33	33	1	2	6850.12	91.1750	0.8	84
34	34	1	2	3501.99	92.7373	-0.7	100
35	35	1	2	2494.18	90.1331	1.9	62
36	36	1	2	1118.96	93.8577	-1.9	100
37	37	1	2	5552.71	90.4643	1.5	70
38	38	1	2	7556.72	90.4239	1.6	68
39	39	1	2	5003.51	89.6208	2.4	0
40	40	1	2	3101.09	92.7774	-0.8	100
41	41	1	2	1593.29	93.1313	-1.1	100
42	42	1	2	1483.39	90.8055	1.2	76
43	43	1	2	5560.60	88.9605	3.0	0
44	44	1	2	2882.77	92.1876	-0.2	100
45	45	1	2	7322.32	90.7231	1.3	74
46	46	1	2	3160.64	91.4912	0.5	90
47	47	1	2	5020.93	89.1205	2.9	0
48	48	1	2	3394.62	86.8305	5.2	0
49	49	1	2	886.89	94.6666	-2.7	100
50	50	1	2	3348.80	87.3096	4.7	0
51	51	1	2	3629.06	93.1546	-1.2	100
52	52	1	2	4823.02	91.4352	0.6	88
53	53	1	2	2091.79	90.8162	1.2	76
54	54	1	2	6052.95	89.4614	2.5	0
55	55	1	2	4443.80	88.4543	3.5	0
56	56	1	2	4084.76	92.1348	-0.1	100
57	57	1	2	4001.43	87.0827	4.9	0
58	58	1	2	1914.56	91.2235	0.8	84
59	59	1	2	3757.05	93.4776	-1.5	100

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 2

OBS	MN2	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
60	60	1	2	4315.88	92.7052	-0.7	100
61	61	1	2	1149.21	91.0860	0.9	82
62	62	1	2	1929.71	91.2540	0.7	86
63	63	1	2	4215.83	91.4490	0.6	88
64	64	1	2	3220.77	93.1088	-1.1	100
65	65	1	2	3148.83	87.1379	4.9	0
66	66	1	2	3803.47	90.9735	1.0	80
67	67	1	2	4366.48	89.9964	2.0	60
68	68	1	2	4339.73	88.3045	3.7	0
69	69	1	2	4800.83	89.0137	3.0	0
70	70	1	2	397.19	94.3073	-2.3	100
71	71	1	2	1795.32	91.4783	0.5	90
72	72	1	2	3893.38	87.5330	4.5	0
73	73	1	2	3954.54	93.3120	-1.3	100
74	74	1	2	4969.38	89.1946	2.8	0
75	75	1	2	6347.56	91.4497	0.6	88
76	76	1	2	4494.02	88.4095	3.6	0
77	77	1	2	5081.34	89.0700	2.9	0
78	78	1	2	4096.92	87.9510	4.0	0
79	79	1	2	2240.74	89.9605	2.0	60
80	80	1	2	4772.32	89.9367	2.1	0
81	81	1	2	4664.96	90.6667	1.3	74
82	82	1	2	3552.91	88.0035	4.0	0
83	83	1	2	5797.53	90.1525	1.8	64
84	84	1	2	2718.00	91.8558	0.1	98
85	85	1	2	3153.53	87.4355	4.6	0
86	86	1	2	3829.78	92.9455	-0.9	100
87	87	1	2	2056.82	90.9577	1.0	80
88	88	1	2	4240.14	92.6511	-0.7	100
89	89	1	2	2838.21	87.7539	4.2	0
90	90	1	2	4506.94	90.4654	1.5	70
91	91	1	2	2482.66	90.1188	1.9	62
92	92	1	2	2681.61	90.7923	1.2	76
93	93	1	2	4112.25	92.9818	-1.0	100
94	94	1	2	6259.28	90.0507	1.9	62
95	95	1	2	3850.50	92.0230	0.0	100
96	96	1	2	6479.88	91.2128	0.8	84
97	97	1	2	1249.16	91.1091	0.9	82
98	98	1	2	3299.14	87.6291	4.4	0
99	99	1	2	3411.61	90.8860	1.1	78
100	100	1	2	4220.83	87.3602	4.6	0

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	D	MN3
1	1	3181.74	86.9681	1
2	2	7670.44	90.2998	1
3	3	6161.81	91.3780	1
4	4	805.32	95.5533	2
5	5	3742.33	86.7463	2
6	6	1393.12	94.0873	2
7	7	136.70	92.1566	3
8	8	613.44	95.3212	3
9	9	6527.51	91.4653	3
10	10	7372.89	90.6498	4
11	11	2201.32	90.1349	4
12	12	7253.17	90.8101	4
13	13	2311.17	89.6301	5
14	14	7158.91	90.9343	5
15	15	2424.25	89.1415	5
16	16	7598.66	90.3719	6
17	17	4803.02	88.7019	6
18	18	2548.63	88.6464	6
19	19	6849.21	91.2819	7
20	20	3233.95	86.8980	7
21	21	7481.04	90.5097	7
22	22	3900.85	86.8791	8
23	23	5169.00	89.6429	8
24	24	1021.78	95.3189	8
25	25	2547.18	88.6519	9
26	26	6555.71	91.4583	9
27	27	2923.52	87.4708	9
28	28	3000.27	87.2944	10
29	29	7989.42	90.1739	10
30	30	4688.92	88.4107	10
31	31	924.85	95.4799	11
32	32	2357.45	89.4261	11
33	33	7252.13	90.8115	11
34	34	3975.11	86.9668	12
35	35	4861.69	88.8535	12
36	36	917.55	95.4885	12
37	37	4572.11	88.1219	13
38	38	1516.62	93.5323	13
39	39	346.59	94.0844	13
40	40	2731.58	88.0096	14
41	41	1061.71	95.2294	14
42	42	5195.64	89.7092	14
43	43	2992.49	87.3112	15
44	44	1459.63	93.7945	15
45	45	1922.75	91.5081	15
46	46	2267.90	89.8258	16
47	47	7754.52	90.2315	16
48	48	928.27	95.4756	16
49	49	7110.60	90.9959	17
50	50	1227.78	94.7349	17
51	51	2394.46	89.2669	17
52	52	4513.99	87.9832	18
53	53	4155.75	87.2404	18
54	54	889.36	95.5170	18
55	55	6772.45	91.3452	19
56	56	4230.72	87.3763	19
57	57	4479.90	87.9037	19
58	58	2299.52	89.6824	20
59	59	518.42	95.0165	20

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	D	MN3
60	60	3570.09	86.6939	20
61	61	7020.30	91.1050	21
62	62	281.77	93.5893	21
63	63	5426.67	90.2549	21
64	64	7873.87	90.1735	22
65	65	5981.40	91.2121	22
66	66	1461.72	93.7851	22
67	67	388.19	94.3589	23
68	68	1599.88	93.1343	23
69	69	3727.71	86.7380	23
70	70	3082.34	87.1310	24
71	71	629.16	95.3586	24
72	72	253.55	93.3468	24
73	73	5704.92	90.8108	25
74	74	5258.83	89.8641	25
75	75	7899.63	90.1683	25
76	76	3385.60	86.7536	26
77	77	1835.21	91.9536	26
78	78	2989.23	87.3184	26
79	79	7169.06	90.9212	27
80	80	1251.10	94.6517	27
81	81	4372.22	87.6631	27
82	82	7576.83	90.3959	28
83	83	3908.77	86.8877	28
84	84	3015.33	87.2624	28
85	85	3058.74	87.1753	29
86	86	4990.17	89.1867	29
87	87	3091.06	87.1151	29
88	88	7734.18	90.2462	30
89	89	2133.84	90.4574	30
90	90	6279.66	91.4427	30
91	91	1421.06	93.9662	31
92	92	2340.34	89.5009	31
93	93	4863.04	88.8570	31
94	94	7335.43	90.6998	32
95	95	1037.96	95.2841	32
96	96	3110.73	87.0805	32
97	97	6401.42	91.4728	33
98	98	1183.22	94.8851	33
99	99	3293.14	86.8312	33
100	100	5024.83	89.2762	34
101	101	575.30	95.2154	34
102	102	2029.57	90.9701	34
103	103	8068.02	90.2138	35
104	104	4924.70	89.0170	35
105	105	5716.15	90.8303	35
106	106	5913.85	91.1298	36
107	107	2633.52	88.3367	36
108	108	3691.31	86.7204	36
109	109	5284.25	89.9254	37
110	110	3488.46	86.7050	37
111	111	8167.67	90.3196	37
112	112	6715.16	91.3849	38
113	113	6598.61	91.4442	38
114	114	3617.42	86.6982	38
115	115	4855.70	88.8380	39
116	116	6824.04	91.3039	39
117	117	6811.83	91.3141	39
118	118	7073.23	91.0421	40

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	D	MN3
119	119	4667.49	88.3569	40
120	120	5324.93	90.0220	40
121	121	7316.87	90.7247	41
122	122	1261.77	94.6127	41
123	123	2699.52	88.1129	41
124	124	2805.17	87.7869	42
125	125	7488.10	90.5009	42
126	126	7573.67	90.3994	42
127	127	6710.02	91.3882	43
128	128	1649.91	92.8885	43
129	129	2032.14	90.9573	43
130	130	6537.31	91.4631	44
131	131	1965.87	91.2898	44
132	132	4775.73	88.6317	44
133	133	4738.00	88.5351	45
134	134	5166.10	89.6356	45
135	135	5596.41	90.6100	45
136	136	7777.67	90.2163	46
137	137	5883.11	91.0889	46
138	138	4344.33	87.6037	46
139	139	3486.37	86.7056	47
140	140	2397.13	89.2555	47
141	141	3261.42	86.8653	47
142	142	5610.03	90.6364	48
143	143	329.80	93.9642	48
144	144	1818.10	92.0407	48
145	145	3662.74	86.7096	49
146	146	6192.66	91.3983	49
147	147	5960.68	91.1880	49
148	148	5346.81	90.0732	50
149	149	4862.09	88.8546	50
150	150	1087.58	95.1648	50
151	151	7405.50	90.6067	51
152	152	7955.21	90.1671	51
153	153	758.08	95.5392	51
154	154	1936.57	91.4380	52
155	155	1171.38	94.9230	52
156	156	5083.55	89.4268	52
157	157	1999.73	91.1194	53
158	158	5255.65	89.8564	53
159	159	2002.73	91.1043	53
160	160	2758.84	87.9248	54
161	161	5866.84	91.0663	54
162	162	6962.61	91.1696	54
163	163	6986.55	91.1433	55
164	164	4820.66	88.7474	55
165	165	1190.40	94.8617	55
166	166	7562.35	90.4122	56
167	167	6845.29	91.2854	56
168	168	513.70	94.9977	56
169	169	7834.01	90.1870	57
170	170	740.65	95.5272	57
171	171	6061.07	91.2952	57
172	172	932.39	95.4704	58
173	173	7132.69	90.9680	58
174	174	7507.95	90.4765	58
175	175	3152.68	87.0117	59
176	176	7899.63	90.1683	59
177	177	4509.44	87.9725	59

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	D	MN3
178	178	1653.96	92.8684	60
179	179	5430.69	90.2638	60
180	180	880.08	95.5247	60
181	181	4218.54	87.3534	61
182	182	4765.87	88.6064	61
183	183	1449.93	93.8381	61
184	184	1811.31	92.0753	62
185	185	4507.02	87.9668	62
186	186	5042.32	89.3212	62
187	187	5515.15	90.4458	63
188	188	4953.79	89.0925	63
189	189	3270.65	86.8549	63
190	190	5805.54	90.9762	64
191	191	1121.30	95.0733	64
192	192	7933.21	90.1658	64
193	193	8043.34	90.1975	65
194	194	8121.98	90.2628	65
195	195	1936.21	91.4398	65
196	196	2400.13	89.2428	66
197	197	3084.25	87.1275	66
198	198	5676.44	90.7602	66
199	199	1796.31	92.1515	67
200	200	7331.18	90.7055	67
201	201	3615.88	86.6980	67
202	202	5111.53	89.4981	68
203	203	2939.46	87.4323	68
204	204	1241.26	94.6872	68
205	205	7332.42	90.7038	69
206	206	1527.15	93.4829	69
207	207	1901.20	91.6176	69
208	208	3218.60	86.9175	70
209	209	1162.78	94.9500	70
210	210	882.63	95.5227	70
211	211	3885.60	86.8630	71
212	212	3054.73	87.1830	71
213	213	164.42	92.4671	71
214	214	5326.48	90.0257	72
215	215	2839.95	87.6885	72
216	216	5477.16	90.3653	72
217	217	1946.77	91.3864	73
218	218	3887.51	86.8650	73
219	219	7761.10	90.2270	73
220	220	1567.68	93.2900	74
221	221	1150.42	94.9879	74
222	222	2763.24	87.9114	74
223	223	6814.48	91.3119	75
224	224	1226.27	94.7402	75
225	225	4645.78	88.3027	75
226	226	4485.17	87.9159	76
227	227	3656.85	86.7077	76
228	228	8183.92	90.3434	76
229	229	1498.62	93.6161	77
230	230	2768.00	87.8969	77
231	231	38.95	90.9122	77
232	232	6903.99	91.2302	78
233	233	1462.23	93.7828	78
234	234	1721.99	92.5280	78
235	235	4351.18	87.6182	79
236	236	8039.52	90.1952	79

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	D	MN3
237	237	6120.67	91.3472	79
238	238	154.30	92.3559	80
239	239	279.78	93.5727	80
240	240	1788.98	92.1888	80
241	241	3331.37	86.7952	81
242	242	2500.41	88.8327	81
243	243	4193.16	87.3067	81
244	244	1744.85	92.4126	82
245	245	6663.32	91.4150	82
246	246	786.64	95.5508	82
247	247	6298.40	91.4497	83
248	248	5772.74	90.9246	83
249	249	6032.52	91.2671	83
250	250	2198.65	90.1476	84
251	251	5816.40	90.9927	84
252	252	4231.63	87.3780	84
253	253	1942.40	91.4085	85
254	254	6410.37	91.4736	85
255	255	7686.89	90.2849	85
256	256	8146.82	90.2919	86
257	257	130.49	92.0845	86
258	258	97.58	91.6871	86
259	259	5542.34	90.5019	87
260	260	2918.75	87.4825	87
261	261	6738.81	91.3694	87
262	262	4200.64	87.3203	88
263	263	4529.94	88.0209	88
264	264	5925.14	91.1443	88
265	265	1041.53	95.2762	89
266	266	3120.32	87.0642	89
267	267	3416.54	86.7349	89
268	268	4358.37	87.6334	90
269	269	4750.10	88.5660	90
270	270	5287.32	89.9327	90
271	271	6385.91	91.4710	91
272	272	2345.05	89.4802	91
273	273	5570.56	90.5589	91
274	274	6473.79	91.4732	92
275	275	1568.35	93.2868	92
276	276	7438.36	90.5639	92
277	277	6284.06	91.4444	93
278	278	3043.84	87.2044	93
279	279	994.76	95.3720	93
280	280	4968.47	89.1305	94
281	281	7276.15	90.7793	94
282	282	5930.21	91.1507	94
283	283	4191.34	87.3034	95
284	284	295.93	93.7047	95
285	285	6326.67	91.4587	95
286	286	2933.12	87.4475	96
287	287	356.98	94.1561	96
288	288	1336.23	94.3244	96
289	289	4516.35	87.9887	97
290	290	6485.12	91.4721	97
291	291	3606.52	86.6965	97
292	292	6391.11	91.4717	98
293	293	8022.98	90.1867	98
294	294	7681.22	90.2900	98
295	295	2585.81	88.5078	99

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	D	MN3
296	296	732.34	95.5202	99
297	297	6112.05	91.3402	99
298	298	4701.56	88.4426	100
299	299	5482.69	90.3771	100
300	300	5834.36	91.0196	100

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 3

OBS	MN3	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
1	1	1	3	5671.33	89.5486	2.5	0
2	2	1	3	1980.26	92.1290	-0.1	100
3	3	1	3	2425.88	92.9810	-1.0	100
4	4	1	3	5609.13	90.5316	1.5	70
5	5	1	3	3964.78	89.9020	2.1	0
6	6	1	3	4983.44	89.2400	2.8	0
7	7	1	3	5854.74	89.5632	2.4	0
8	8	1	3	3363.88	90.6136	1.4	72
9	9	1	3	4008.80	89.1937	2.8	0
10	10	1	3	5226.21	88.6264	3.4	0
11	11	1	3	3511.48	91.9058	0.1	98
12	12	1	3	3251.45	90.4363	1.6	68
13	13	1	3	2145.10	91.9129	0.1	98
14	14	1	3	2996.31	90.9827	1.0	80
15	15	1	3	2124.96	90.8713	1.1	78
16	16	1	3	3650.23	91.8443	0.2	96
17	17	1	3	3577.61	91.6659	0.3	94
18	18	1	3	3186.37	90.2469	1.8	64
19	19	1	3	5161.03	88.8750	3.1	0
20	20	1	3	2129.35	90.4643	1.5	70
21	21	1	3	4242.91	91.6497	0.4	92
22	22	1	3	5105.66	91.7235	0.3	94
23	23	1	3	1905.26	91.4104	0.6	88
24	24	1	3	1321.68	91.9454	0.1	98
25	25	1	3	6287.79	90.2811	1.7	66
26	26	1	3	2736.68	88.6752	3.3	0
27	27	1	3	4264.13	91.0787	0.9	82
28	28	1	3	4833.64	88.1820	3.8	0
29	29	1	3	3713.32	87.8257	4.2	0
30	30	1	3	5382.56	90.7154	1.3	74
31	31	1	3	2874.81	90.7747	1.2	76
32	32	1	3	3828.04	91.0215	1.0	80
33	33	1	3	3625.93	91.0630	0.9	82
34	34	1	3	2543.23	91.8206	0.2	96
35	35	1	3	6236.29	90.0204	2.0	60
36	36	1	3	4079.56	88.7290	3.3	0
37	37	1	3	5646.79	88.9833	3.0	0
38	38	1	3	5643.73	89.8425	2.2	0
39	39	1	3	6163.85	90.4853	1.5	70
40	40	1	3	5688.55	89.8070	2.2	0
41	41	1	3	3759.39	91.1501	0.8	84
42	42	1	3	5955.65	89.5624	2.4	0
43	43	1	3	3464.02	91.7446	0.3	94
44	44	1	3	4426.30	90.4615	1.5	70
45	45	1	3	5166.84	89.5936	2.4	0
46	46	1	3	6001.70	89.6363	2.4	0
47	47	1	3	3048.31	87.6088	4.4	0
48	48	1	3	2585.98	92.2138	-0.2	100
49	49	1	3	5272.03	89.7653	2.2	0
50	50	1	3	3765.49	91.3642	0.6	88
51	51	1	3	5372.93	92.1043	-0.1	100
52	52	1	3	2730.50	91.9293	0.1	98
53	53	1	3	3086.04	90.6934	1.3	74
54	54	1	3	5196.10	90.0536	1.9	62
55	55	1	3	4332.53	91.5841	0.4	92
56	56	1	3	4973.78	92.2318	-0.2	100
57	57	1	3	4878.58	92.3365	-0.3	100
58	58	1	3	5191.01	92.3050	-0.3	100
59	59	1	3	5187.25	88.3842	3.6	0

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 3

OBS	MN3	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
60	60	1	3	2654.91	92.8856	-0.9	100
61	61	1	3	3478.11	89.9326	2.1	0
62	62	1	3	3786.88	89.7877	2.2	0
63	63	1	3	4579.87	88.7977	3.2	0
64	64	1	3	4953.35	92.0718	-0.1	100
65	65	1	3	6033.85	90.6334	1.4	72
66	66	1	3	3720.27	89.0435	3.0	0
67	67	1	3	4247.79	89.8517	2.1	0
68	68	1	3	3097.42	90.5392	1.5	70
69	69	1	3	3586.92	91.9348	0.1	98
70	70	1	3	1754.67	92.4634	-0.5	100
71	71	1	3	2368.25	88.8377	3.2	0
72	72	1	3	4547.86	89.3598	2.6	0
73	73	1	3	4531.79	89.4928	2.5	0
74	74	1	3	1827.12	92.0631	-0.1	100
75	75	1	3	4228.84	91.4516	0.5	90
76	76	1	3	5441.98	88.3223	3.7	0
77	77	1	3	1435.19	90.8084	1.2	76
78	78	1	3	3362.73	92.5137	-0.5	100
79	79	1	3	6170.45	89.7202	2.3	0
80	80	1	3	741.02	92.7058	-0.7	100
81	81	1	3	3341.64	87.6448	4.4	0
82	82	1	3	3064.94	93.1262	-1.1	100
83	83	1	3	6034.56	91.2138	0.8	84
84	84	1	3	4082.23	89.5061	2.5	0
85	85	1	3	5346.55	91.0557	0.9	82
86	86	1	3	2791.63	91.3545	0.6	88
87	87	1	3	5066.63	89.7846	2.2	0
88	88	1	3	4885.24	88.8285	3.2	0
89	89	1	3	2526.13	89.6917	2.3	0
90	90	1	3	4798.59	88.7107	3.3	0
91	91	1	3	4767.17	90.5034	1.5	70
92	92	1	3	5160.17	91.7747	0.2	96
93	93	1	3	3440.89	91.3403	0.7	86
94	94	1	3	6058.28	90.3535	1.6	68
95	95	1	3	3604.65	90.8223	1.2	76
96	96	1	3	1542.11	91.9760	0.0	100
97	97	1	3	4869.33	88.7191	3.3	0
98	98	1	3	7365.10	90.6495	1.4	72
99	99	1	3	3143.40	91.7894	0.2	96
100	100	1	3	5339.53	89.9464	2.1	0

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	D	MN4
1	1	5672.66	90.7534	1
2	2	3909.24	86.8882	1
3	3	1615.97	93.0557	1
4	4	6575.39	91.4524	1
5	5	6502.12	91.4699	2
6	6	4218.31	87.3530	2
7	7	7467.07	90.5273	2
8	8	6217.55	91.4129	2
9	9	5572.85	90.5635	3
10	10	1249.07	94.6591	3
11	11	516.26	95.0079	3
12	12	6753.56	91.3590	3
13	13	8080.39	90.2234	4
14	14	2716.17	88.0588	4
15	15	6302.44	91.4511	4
16	16	395.77	94.4054	4
17	17	3132.74	87.0436	5
18	18	6357.36	91.4662	5
19	19	7954.79	90.1671	5
20	20	1588.57	93.1892	5
21	21	6845.32	91.2854	6
22	22	5588.85	90.5952	6
23	23	6247.00	91.4282	6
24	24	8081.32	90.2242	6
25	25	5751.08	90.8893	7
26	26	4773.61	88.6262	7
27	27	6609.16	91.4401	7
28	28	2577.07	88.5400	7
29	29	7068.71	91.0476	8
30	30	7963.71	90.1683	8
31	31	3160.86	86.9991	8
32	32	3770.34	86.7641	8
33	33	3008.76	87.2763	9
34	34	1154.10	94.9768	9
35	35	822.01	95.5522	9
36	36	2966.03	87.3703	9
37	37	5625.03	90.6651	10
38	38	7135.38	90.9646	10
39	39	1011.80	95.3392	10
40	40	6284.01	91.4444	10
41	41	1686.05	92.7085	11
42	42	865.99	95.5346	11
43	43	3819.82	86.8016	11
44	44	1844.92	91.9041	11
45	45	136.27	92.1516	12
46	46	355.47	94.1458	12
47	47	5153.00	89.6028	12
48	48	3378.09	86.7587	12
49	49	1658.51	92.8458	13
50	50	7403.49	90.6093	13
51	51	499.42	94.9386	13
52	52	4930.96	89.0332	13
53	53	4924.93	89.0176	14
54	54	2918.00	87.4844	14
55	55	2757.92	87.9276	14
56	56	6012.37	91.2462	14
57	57	4478.81	87.9011	15
58	58	8109.19	90.2495	15
59	59	865.56	95.5349	15

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	D	MN4
60	60	3383.72	86.7549	15
61	61	2796.86	87.8110	16
62	62	1647.13	92.9022	16
63	63	4632.98	88.2710	16
64	64	1003.74	95.3550	16
65	65	5058.80	89.3635	17
66	66	3009.22	87.2753	17
67	67	6758.93	91.3552	17
68	68	3983.80	86.9780	17
69	69	506.14	94.9668	18
70	70	676.02	95.4496	18
71	71	7684.18	90.2874	18
72	72	4923.32	89.0134	18
73	73	6581.07	91.4505	19
74	74	3883.24	86.8606	19
75	75	7171.63	90.9178	19
76	76	2546.46	88.6546	19
77	77	2077.54	90.7323	20
78	78	5558.45	90.5346	20
79	79	1987.80	91.1793	20
80	80	5359.91	90.1036	20
81	81	1156.14	94.9705	21
82	82	1013.67	95.3355	21
83	83	311.17	93.8243	21
84	84	5549.83	90.5172	21
85	85	6325.23	91.4583	22
86	86	7314.30	90.7281	22
87	87	2099.63	90.6239	22
88	88	1148.88	94.9926	22
89	89	3091.75	87.1139	23
90	90	572.56	95.2070	23
91	91	6105.69	91.3349	23
92	92	825.39	95.5516	23
93	93	289.66	93.6541	24
94	94	2886.99	87.5627	24
95	95	7727.35	90.2514	24
96	96	6633.70	91.4295	24
97	97	4278.58	87.4691	25
98	98	142.68	92.2251	25
99	99	7131.02	90.9701	25
100	100	1071.40	95.2058	25
101	101	6181.84	91.3914	26
102	102	5416.18	90.2315	26
103	103	5972.79	91.2022	26
104	104	4824.87	88.7583	26
105	105	1831.47	91.9726	27
106	106	7932.00	90.1658	27
107	107	8037.07	90.1939	27
108	108	7390.35	90.6267	27
109	109	4267.16	87.4466	28
110	110	1747.93	92.3971	28
111	111	7655.39	90.3140	28
112	112	1546.92	93.3893	28
113	113	7457.11	90.5399	29
114	114	152.95	92.3408	29
115	115	2118.38	90.5324	29
116	116	6949.65	91.1834	29
117	117	7148.81	90.9474	30
118	118	36.48	90.8776	30

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	D	MN4
119	119	3598.78	86.6956	30
120	120	2960.05	87.3840	30
121	121	4978.86	89.1574	31
122	122	689.69	95.4706	31
123	123	4433.84	87.7987	31
124	124	2984.08	87.3297	31
125	125	8079.24	90.2225	32
126	126	5997.69	91.2303	32
127	127	5464.29	90.3375	32
128	128	476.33	94.8359	32
129	129	2550.79	88.6382	33
130	130	1087.43	95.1652	33
131	131	4430.90	87.7921	33
132	132	4564.39	88.1033	33
133	133	4471.13	87.8834	34
134	134	385.53	94.3424	34
135	135	6296.95	91.4492	34
136	136	1578.44	93.2382	34
137	137	1404.63	94.0378	35
138	138	739.14	95.5260	35
139	139	6414.14	91.4738	35
140	140	6246.62	91.4281	35
141	141	2038.91	90.9236	36
142	142	5217.13	89.7623	36
143	143	3034.72	87.2226	36
144	144	1753.74	92.3676	36
145	145	3505.84	86.7006	37
146	146	2297.42	89.6918	37
147	147	7055.98	91.0629	37
148	148	5049.37	89.3393	37
149	149	3406.26	86.7407	38
150	150	7954.16	90.1670	38
151	151	2942.35	87.4254	38
152	152	3837.28	86.8166	38
153	153	8167.90	90.3199	39
154	154	643.66	95.3900	39
155	155	8090.34	90.2318	39
156	156	7.26	90.4564	39
157	157	6283.21	91.4441	40
158	158	4789.62	88.6674	40
159	159	4994.32	89.1974	40
160	160	687.02	95.4667	40
161	161	5122.53	89.5259	41
162	162	4629.05	88.2612	41
163	163	6458.36	91.4742	41
164	164	163.36	92.4555	41
165	165	5764.82	90.9118	42
166	166	1971.76	91.2601	42
167	167	7129.42	90.9721	42
168	168	4628.22	88.2592	42
169	169	1789.18	92.1878	43
170	170	5384.59	90.1602	43
171	171	5685.22	90.7760	43
172	172	5290.51	89.9404	43
173	173	3014.70	87.2637	44
174	174	1045.91	95.2663	44
175	175	654.98	95.4125	44
176	176	1410.62	94.0118	44
177	177	4971.18	89.1375	45

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	D	MN4
178	178	3389.13	86.7513	45
179	179	7887.70	90.1703	45
180	180	3806.24	86.7906	45
181	181	6691.79	91.3992	46
182	182	4213.62	87.3442	46
183	183	4163.29	87.2535	46
184	184	2293.28	89.7105	46
185	185	4924.73	89.0171	47
186	186	3515.48	86.6987	47
187	187	6830.48	91.2984	47
188	188	3543.48	86.6949	47
189	189	6831.98	91.2971	48
190	190	778.54	95.5485	48
191	191	846.16	95.5451	48
192	192	2153.38	90.3632	48
193	193	4979.18	89.1582	49
194	194	6937.77	91.1959	49
195	195	821.12	95.5523	49
196	196	41.23	90.9440	49
197	197	1750.86	92.3822	50
198	198	853.53	95.5417	50
199	199	6173.75	91.3861	50
200	200	5816.62	90.9931	50
201	201	5106.20	89.4845	51
202	202	7154.58	90.9399	51
203	203	7208.76	90.8692	51
204	204	2263.59	89.8455	51
205	205	1112.24	95.0987	52
206	206	3314.81	86.8101	52
207	207	3474.60	86.7093	52
208	208	6174.93	91.3869	52
209	209	3241.09	86.8892	53
210	210	7939.79	90.1660	53
211	211	5708.68	90.8173	53
212	212	4143.15	87.2187	53
213	213	215.20	92.9899	54
214	214	1159.15	94.9612	54
215	215	2059.91	90.8194	54
216	216	184.79	92.6838	54
217	217	6050.85	91.2854	55
218	218	3743.85	86.7472	55
219	219	5271.52	89.8948	55
220	220	905.25	95.5019	55
221	221	3376.31	86.7599	56
222	222	7603.38	90.3668	56
223	223	1715.32	92.5616	56
224	224	1840.31	91.9275	56
225	225	6952.64	91.1802	57
226	226	338.67	94.0284	57
227	227	3451.47	86.7180	57
228	228	5085.54	89.4319	57
229	229	4518.10	87.9929	58
230	230	127.26	92.0467	58
231	231	7984.97	90.1727	58
232	232	7751.75	90.2334	58
233	233	6509.26	91.4688	59
234	234	6246.16	91.4278	59
235	235	3034.46	87.2231	59
236	236	3157.93	87.0036	59

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	D	MN4
237	237	1495.60	93.6301	60
238	238	7358.07	90.6695	60
239	239	6181.76	91.3914	60
240	240	1959.63	91.3213	60
241	241	5119.27	89.5177	61
242	242	835.15	95.5491	61
243	243	3948.86	86.9340	61
244	244	5772.96	90.9249	61
245	245	1117.79	95.0832	62
246	246	6003.98	91.2372	62
247	247	6430.31	91.4745	62
248	248	7422.72	90.5842	62
249	249	3741.88	86.7460	63
250	250	5133.34	89.5533	63
251	251	1032.26	95.2966	63
252	252	4355.38	87.6271	63
253	253	2873.27	87.5985	64
254	254	3248.63	86.8801	64
255	255	2329.12	89.5503	64
256	256	3156.22	87.0062	64
257	257	2392.63	89.2747	65
258	258	3210.80	86.9278	65
259	259	7293.70	90.7558	65
260	260	5757.26	90.8994	65
261	261	4061.70	87.0878	66
262	262	3427.28	86.7292	66
263	263	3412.88	86.7369	66
264	264	5853.70	91.0477	66
265	265	2933.02	87.4477	67
266	266	5275.14	89.9035	67
267	267	4897.20	88.9456	67
268	268	5655.06	90.7213	67
269	269	3836.90	86.8163	68
270	270	1568.69	93.2852	68
271	271	4588.81	88.1624	68
272	272	788.93	95.5514	68
273	273	6427.49	91.4744	69
274	274	669.47	95.4387	69
275	275	1785.39	92.2071	69
276	276	7105.19	91.0027	69
277	277	4977.05	89.1527	70
278	278	7978.93	90.1712	70
279	279	3644.08	86.7041	70
280	280	4579.51	88.1398	70
281	281	6991.51	91.1378	71
282	282	2342.47	89.4915	71
283	283	5386.21	90.1639	71
284	284	4827.14	88.7641	71
285	285	3260.51	86.8663	72
286	286	1125.52	95.0613	72
287	287	5221.65	89.7734	72
288	288	2880.96	87.5784	72
289	289	4976.95	89.1525	73
290	290	7734.25	90.2461	73
291	291	1044.20	95.2702	73
292	292	4591.99	88.1702	73
293	293	556.91	95.1566	74
294	294	5739.35	90.8697	74
295	295	7939.23	90.1660	74

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	D	MN4
296	296	1152.18	94.9826	74
297	297	2.51	90.3857	75
298	298	6206.64	91.4067	75
299	299	2501.81	88.8272	75
300	300	4565.32	88.1055	75
301	301	4977.15	89.1530	76
302	302	7186.86	90.8980	76
303	303	1480.58	93.6992	76
304	304	3566.06	86.6939	76
305	305	5780.15	90.9364	77
306	306	2126.50	90.4929	77
307	307	7503.14	90.4824	77
308	308	4423.11	87.7746	77
309	309	4845.91	88.8127	78
310	310	7367.50	90.6570	78
311	311	7250.90	90.8131	78
312	312	6232.67	91.4211	78
313	313	3823.52	86.8047	79
314	314	6244.50	91.4270	79
315	315	1532.06	93.4597	79
316	316	2722.52	88.0384	79
317	317	8101.13	90.2417	80
318	318	7622.99	90.3462	80
319	319	344.47	94.0696	80
320	320	5903.67	91.1165	80
321	321	1562.64	93.3143	81
322	322	4730.65	88.5164	81
323	323	7242.11	90.8249	81
324	324	7742.03	90.2404	81
325	325	1062.12	95.2284	82
326	326	3115.50	87.0724	82
327	327	8053.36	90.2037	82
328	328	2983.00	87.3321	82
329	329	1475.36	93.7231	83
330	330	7006.23	91.1211	83
331	331	1522.87	93.5030	83
332	332	3749.13	86.7504	83
333	333	5969.86	91.1988	84
334	334	1914.16	91.5517	84
335	335	6446.29	91.4746	84
336	336	3767.04	86.7619	84
337	337	7023.21	91.1016	85
338	338	5700.09	90.8023	85
339	339	6534.21	91.4638	85
340	340	6782.80	91.3373	85
341	341	2966.56	87.3691	86
342	342	924.68	95.4801	86
343	343	6299.42	91.4501	86
344	344	6703.77	91.3920	86
345	345	2986.44	87.3245	87
346	346	504.84	94.9614	87
347	347	3286.65	86.8378	87
348	348	1506.72	93.5785	87
349	349	7737.21	90.2439	88
350	350	6870.02	91.2629	88
351	351	1018.56	95.3255	88
352	352	7382.82	90.6366	88
353	353	7543.30	90.4342	89
354	354	1362.87	94.2151	89

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	D	MN4
355	355	532.81	95.0716	89
356	356	2932.46	87.4491	89
357	357	2222.38	90.0361	90
358	358	4702.08	88.4440	90
359	359	3936.70	86.9195	90
360	360	1289.70	94.5077	90
361	361	2989.07	87.3187	91
362	362	4918.00	88.9996	91
363	363	5979.89	91.2104	91
364	364	1398.41	94.0646	91
365	365	1802.18	92.1217	92
366	366	6288.88	91.4463	92
367	367	6514.67	91.4678	92
368	368	7939.37	90.1660	92
369	369	5211.59	89.7486	93
370	370	7522.74	90.4586	93
371	371	5191.82	89.6997	93
372	372	7709.69	90.2655	93
373	373	2856.17	87.6442	94
374	374	5866.83	91.0663	94
375	375	662.49	95.4264	94
376	376	4909.55	88.9777	94
377	377	4023.09	87.0314	95
378	378	5904.91	91.1181	95
379	379	1007.16	95.3484	95
380	380	8004.49	90.1789	95
381	381	529.40	95.0589	96
382	382	6260.20	91.4344	96
383	383	3987.30	86.9826	96
384	384	1843.62	91.9107	96
385	385	7031.90	91.0915	97
386	386	5046.69	89.3324	97
387	387	2490.24	88.8729	97
388	388	6390.39	91.4716	97
389	389	534.42	95.0776	98
390	390	7419.41	90.5885	98
391	391	5076.70	89.4094	98
392	392	27.84	90.7554	98
393	393	4724.93	88.5019	99
394	394	4237.84	87.3898	99
395	395	787.86	95.5511	99
396	396	832.83	95.5498	99
397	397	6273.59	91.4402	100
398	398	7706.30	90.2683	100
399	399	2116.89	90.5397	100
400	400	5656.88	90.7246	100

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 4

OBS	MN4	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
1	1	1	4	4443.31	90.5374	1.5	70
2	2	1	4	6101.27	90.1908	1.8	64
3	3	1	4	3522.93	92.8974	-0.9	100
4	4	1	4	4373.69	91.0347	1.0	80
5	5	1	4	4758.36	90.4665	1.5	70
6	6	1	4	6690.62	90.8832	1.1	78
7	7	1	4	4927.73	89.8739	2.1	0
8	8	1	4	5490.90	88.7448	3.3	0
9	9	1	4	1987.72	91.2939	0.7	86
10	10	1	4	5014.05	92.1033	-0.1	100
11	11	1	4	2054.20	91.7372	0.3	94
12	12	1	4	2255.71	90.6647	1.3	74
13	13	1	4	3623.10	91.8567	0.1	98
14	14	1	4	4153.30	88.9189	3.1	0
15	15	1	4	4209.32	90.1101	1.9	62
16	16	1	4	2520.18	91.0848	0.9	82
17	17	1	4	4702.69	88.7430	3.3	0
18	18	1	4	3447.41	92.4293	-0.4	100
19	19	1	4	5045.60	89.4709	2.5	0
20	20	1	4	3745.92	90.6375	1.4	72
21	21	1	4	2007.70	93.6619	-1.7	100
22	22	1	4	4222.01	91.9507	0.0	100
23	23	1	4	2648.85	92.3018	-0.3	100
24	24	1	4	4384.43	90.7244	1.3	74
25	25	1	4	3155.92	91.4675	0.5	90
26	26	1	4	5598.92	90.3958	1.6	68
27	27	1	4	6297.72	90.7397	1.3	74
28	28	1	4	3804.35	90.8867	1.1	78
29	29	1	4	4169.52	91.1491	0.9	82
30	30	1	4	3436.03	88.9761	3.0	0
31	31	1	4	3271.62	89.9391	2.1	0
32	32	1	4	5004.39	91.6565	0.3	94
33	33	1	4	3158.38	89.9247	2.1	0
34	34	1	4	3183.01	91.7283	0.3	94
35	35	1	4	3701.13	93.1164	-1.1	100
36	36	1	4	3011.13	90.0690	1.9	62
37	37	1	4	4477.15	89.1987	2.8	0
38	38	1	4	4535.01	87.7874	4.2	0
39	39	1	4	4227.29	91.5995	0.4	92
40	40	1	4	4188.54	91.1939	0.8	84
41	41	1	4	4093.33	90.4292	1.6	68
42	42	1	4	4873.55	90.3508	1.6	68
43	43	1	4	4537.38	90.7661	1.2	76
44	44	1	4	1531.55	92.9886	-1.0	100
45	45	1	4	5013.56	88.2124	3.8	0
46	46	1	4	4340.50	88.9268	3.1	0
47	47	1	4	4703.54	88.4272	3.6	0
48	48	1	4	2652.51	93.1885	-1.2	100
49	49	1	4	3194.83	91.7126	0.3	94
50	50	1	4	3648.69	92.5758	-0.6	100
51	51	1	4	5433.28	90.2848	1.7	66
52	52	1	4	3519.14	90.0012	2.0	60
53	53	1	4	5258.18	88.7728	3.2	0
54	54	1	4	904.76	92.8636	-0.9	100
55	55	1	4	3992.87	90.8573	1.1	78
56	56	1	4	3633.83	90.4040	1.6	68
57	57	1	4	3957.08	90.3396	1.7	66
58	58	1	4	5095.52	90.1114	1.9	62
59	59	1	4	4736.95	89.2808	2.7	0

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 4

OBS	MN4	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
60	60	1	4	4248.77	91.7531	0.2	96
61	61	1	4	3919.06	90.7314	1.3	74
62	62	1	4	5243.70	92.0948	-0.1	100
63	63	1	4	3565.72	89.8057	2.2	0
64	64	1	4	2901.81	87.7588	4.2	0
65	65	1	4	4663.60	89.4644	2.5	0
66	66	1	4	4188.89	87.9004	4.1	0
67	67	1	4	4690.10	89.2545	2.7	0
68	68	1	4	2695.83	90.9538	1.0	80
69	69	1	4	3996.88	92.5307	-0.5	100
70	70	1	4	5294.89	88.5420	3.5	0
71	71	1	4	4886.83	89.8893	2.1	0
72	72	1	4	3122.16	89.8198	2.2	0
73	73	1	4	4586.85	90.7098	1.3	74
74	74	1	4	3846.92	92.7937	-0.8	100
75	75	1	4	3319.07	89.6813	2.3	0
76	76	1	4	4302.66	90.1110	1.9	62
77	77	1	4	4958.22	89.9216	2.1	0
78	78	1	4	6424.24	90.4260	1.6	68
79	79	1	4	3580.65	89.9325	2.1	0
80	80	1	4	5493.07	91.4435	0.6	88
81	81	1	4	5319.36	90.7240	1.3	74
82	82	1	4	3803.50	89.9591	2.0	60
83	83	1	4	3438.40	91.2744	0.7	86
84	84	1	4	4524.34	90.2467	1.8	64
85	85	1	4	6510.07	91.1763	0.8	84
86	86	1	4	4223.61	91.4228	0.6	88
87	87	1	4	2071.16	90.6756	1.3	74
88	88	1	4	5752.15	91.8672	0.1	98
89	89	1	4	3092.86	91.7925	0.2	96
90	90	1	4	3037.72	89.9768	2.0	60
91	91	1	4	3821.34	90.3983	1.6	68
92	92	1	4	5636.28	91.3004	0.7	86
93	93	1	4	6408.96	90.0431	2.0	60
94	94	1	4	3573.76	90.7786	1.2	76
95	95	1	4	4734.91	90.9192	1.1	78
96	96	1	4	3155.13	91.3466	0.7	86
97	97	1	4	5239.80	90.1921	1.8	64
98	98	1	4	3264.59	91.4577	0.5	90
99	99	1	4	2645.87	91.7482	0.3	94
100	100	1	4	5438.42	90.7432	1.3	74

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
1	1	2259.18	89.8657	1
2	2	3141.18	87.0299	1
3	3	5552.72	90.5231	1
4	4	3158.16	87.0033	1
5	5	2939.57	87.4320	1
6	6	7626.57	90.3426	2
7	7	3498.70	86.7023	2
8	8	5213.03	89.7522	2
9	9	5470.95	90.3519	2
10	10	3975.51	86.9673	2
11	11	2266.84	89.8306	3
12	12	3517.16	86.6984	3
13	13	6278.87	91.4424	3
14	14	856.41	95.5402	3
15	15	4677.11	88.3810	3
16	16	2031.12	90.9624	4
17	17	838.79	95.5480	4
18	18	897.89	95.5092	4
19	19	4952.35	89.0887	4
20	20	4989.79	89.1857	4
21	21	8129.47	90.2712	5
22	22	2990.49	87.3156	5
23	23	4017.53	87.0236	5
24	24	7810.67	90.1978	5
25	25	1475.89	93.7207	5
26	26	6983.77	91.1464	6
27	27	7813.96	90.1962	6
28	28	1551.93	93.3655	6
29	29	241.43	93.2374	6
30	30	161.09	92.4307	6
31	31	4545.61	88.0582	7
32	32	3083.26	87.1293	7
33	33	4050.88	87.0716	7
34	34	1665.90	92.8090	7
35	35	771.41	95.5458	7
36	36	6563.79	91.4560	8
37	37	3189.26	86.9574	8
38	38	5563.64	90.5451	8
39	39	1304.88	94.4490	8
40	40	5773.85	90.9263	8
41	41	4120.44	87.1806	9
42	42	497.82	94.9318	9
43	43	4940.43	89.0578	9
44	44	5243.00	89.8257	9
45	45	6090.19	91.3217	9
46	46	4365.22	87.6480	10
47	47	5217.22	89.7625	10
48	48	5487.49	90.3874	10
49	49	7509.13	90.4750	10
50	50	5735.89	90.8639	10
51	51	2988.54	87.3199	11
52	52	6676.88	91.4077	11
53	53	101.18	91.7319	11
54	54	6569.88	91.4542	11
55	55	5376.21	90.1410	11
56	56	4752.72	88.5727	12
57	57	8043.75	90.1977	12
58	58	6445.66	91.4746	12
59	59	785.68	95.5506	12

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
60	60	3101.86	87.0959	12
61	61	458.35	94.7497	13
62	62	61.52	91.2209	13
63	63	1175.36	94.9104	13
64	64	1355.19	94.2469	13
65	65	26.81	90.7408	13
66	66	6244.59	91.4271	14
67	67	7745.28	90.2380	14
68	68	6954.29	91.1785	14
69	69	5580.23	90.5782	14
70	70	3018.18	87.2565	14
71	71	6570.62	91.4539	15
72	72	5199.97	89.7199	15
73	73	5884.13	91.0903	15
74	74	7336.99	90.6977	15
75	75	5704.79	90.8106	15
76	76	6204.29	91.4053	16
77	77	4831.14	88.7744	16
78	78	1823.81	92.0116	16
79	79	3672.09	86.7128	16
80	80	7027.50	91.0966	16
81	81	2790.07	87.8310	17
82	82	6312.43	91.4544	17
83	83	2707.78	88.0859	17
84	84	3983.14	86.9772	17
85	85	3040.09	87.2118	17
86	86	309.44	93.8110	18
87	87	2551.41	88.6359	18
88	88	5742.75	90.8754	18
89	89	6836.51	91.2931	18
90	90	741.43	95.5279	18
91	91	1281.21	94.5400	19
92	92	1764.35	92.3138	19
93	93	6561.92	91.4566	19
94	94	5914.19	91.1302	19
95	95	3413.42	86.7366	19
96	96	7620.76	90.3485	20
97	97	4309.64	87.5317	20
98	98	3517.04	86.6984	20
99	99	160.22	92.4212	20
100	100	7217.49	90.8576	20
101	101	5788.54	90.9497	21
102	102	2026.80	90.9839	21
103	103	2538.68	88.6842	21
104	104	6288.34	91.4461	21
105	105	5269.46	89.8898	21
106	106	3140.81	87.0305	22
107	107	6026.33	91.2608	22
108	108	3194.16	86.9505	22
109	109	5452.07	90.3109	22
110	110	7665.78	90.3041	22
111	111	1726.91	92.5033	23
112	112	4335.75	87.5857	23
113	113	2509.26	88.7980	23
114	114	6900.44	91.2337	23
115	115	6530.98	91.4645	23
116	116	1001.53	95.3593	24
117	117	357.20	94.1576	24
118	118	5908.96	91.1234	24

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
119	119	1920.54	91.5193	24
120	120	4479.59	87.9029	24
121	121	489.60	94.8960	25
122	122	376.81	94.2871	25
123	123	1731.56	92.4798	25
124	124	7005.97	91.1214	25
125	125	1594.93	93.1584	25
126	126	1517.62	93.5276	26
127	127	5196.00	89.7101	26
128	128	3105.19	87.0901	26
129	129	4260.37	87.4333	26
130	130	6457.03	91.4743	26
131	131	5798.45	90.9652	27
132	132	846.31	95.5451	27
133	133	5227.91	89.7888	27
134	134	7236.77	90.8320	27
135	135	6345.99	91.4637	27
136	136	7671.00	90.2993	28
137	137	2587.04	88.5033	28
138	138	1043.49	95.2718	28
139	139	1583.76	93.2125	28
140	140	7934.34	90.1658	28
141	141	423.36	94.5658	29
142	142	1376.63	94.1574	29
143	143	4216.96	87.3504	29
144	144	1519.20	93.5202	29
145	145	2805.26	87.7866	29
146	146	2168.07	90.2928	30
147	147	3805.91	86.7903	30
148	148	5086.24	89.4337	30
149	149	1502.71	93.5972	30
150	150	7515.01	90.4679	30
151	151	6237.38	91.4235	31
152	152	3766.80	86.7617	31
153	153	5704.43	90.8099	31
154	154	6394.30	91.4721	31
155	155	1612.60	93.0722	31
156	156	4726.86	88.5068	32
157	157	5213.81	89.7541	32
158	158	6800.04	91.3237	32
159	159	7091.55	91.0196	32
160	160	7456.90	90.5402	32
161	161	2187.82	90.1988	33
162	162	5662.05	90.7341	33
163	163	6806.94	91.3181	33
164	164	797.71	95.5528	33
165	165	5207.93	89.7396	33
166	166	4849.46	88.8218	34
167	167	1231.43	94.7221	34
168	168	2612.70	88.4104	34
169	169	2400.05	89.2432	34
170	170	7293.95	90.7554	34
171	171	7243.78	90.8226	35
172	172	933.94	95.4684	35
173	173	3016.40	87.2602	35
174	174	3868.96	86.8463	35
175	175	3809.68	86.7933	35
176	176	563.62	95.1787	36
177	177	2215.12	90.0701	36

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
178	178	4682.14	88.3937	36
179	179	900.32	95.5069	36
180	180	1535.57	93.4431	36
181	181	6892.99	91.2410	37
182	182	7129.06	90.9726	37
183	183	6576.06	91.4522	37
184	184	1340.44	94.3073	37
185	185	2371.87	89.3636	37
186	186	1471.66	93.7400	38
187	187	1057.21	95.2401	38
188	188	6435.28	91.4746	38
189	189	545.68	95.1181	38
190	190	2483.43	88.9001	38
191	191	1347.04	94.2804	39
192	192	3266.50	86.8596	39
193	193	3185.81	86.9623	39
194	194	3029.58	87.2330	39
195	195	1076.00	95.1944	39
196	196	3694.24	86.7216	40
197	197	6926.90	91.2072	40
198	198	7613.44	90.3562	40
199	199	6712.90	91.3864	40
200	200	512.97	94.9947	40
201	201	2405.94	89.2183	41
202	202	8074.10	90.2184	41
203	203	7255.93	90.8064	41
204	204	3212.35	86.9257	41
205	205	3986.12	86.9811	41
206	206	4685.28	88.4016	42
207	207	1326.79	94.3624	42
208	208	3991.12	86.9877	42
209	209	3682.35	86.7167	42
210	210	7306.34	90.7388	42
211	211	5613.44	90.6429	43
212	212	1213.35	94.7848	43
213	213	7348.84	90.6818	43
214	214	5244.34	89.8289	43
215	215	4532.13	88.0261	43
216	216	7015.86	91.1101	44
217	217	6018.07	91.2522	44
218	218	7279.28	90.7751	44
219	219	369.03	94.2366	44
220	220	5995.51	91.2279	44
221	221	5959.64	91.1867	45
222	222	2742.12	87.9765	45
223	223	8075.58	90.2196	45
224	224	4575.46	88.1300	45
225	225	1809.51	92.0844	45
226	226	1378.09	94.1512	46
227	227	4985.21	89.1739	46
228	228	7049.42	91.0708	46
229	229	2187.58	90.1999	46
230	230	1531.94	93.4603	46
231	231	5678.60	90.7641	47
232	232	5609.97	90.6363	47
233	233	142.45	92.2225	47
234	234	4682.09	88.3935	47
235	235	7347.03	90.6843	47
236	236	4996.15	89.2021	48

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
237	237	7765.43	90.2241	48
238	238	569.99	95.1989	48
239	239	189.81	92.7358	48
240	240	1191.29	94.8588	48
241	241	6446.10	91.4746	49
242	242	6494.99	91.4709	49
243	243	5526.90	90.4702	49
244	244	665.26	95.4314	49
245	245	1389.10	94.1045	49
246	246	3399.56	86.7447	50
247	247	7301.56	90.7452	50
248	248	955.70	95.4378	50
249	249	6912.76	91.2215	50
250	250	6623.56	91.4341	50
251	251	6905.27	91.2290	51
252	252	5629.39	90.6733	51
253	253	3363.92	86.7689	51
254	254	1982.79	91.2045	51
255	255	1192.06	94.8562	51
256	256	3470.52	86.7107	52
257	257	698.31	95.4825	52
258	258	5210.89	89.7469	52
259	259	2943.47	87.4228	52
260	260	5326.10	90.0248	52
261	261	7668.53	90.3016	53
262	262	5190.26	89.6958	53
263	263	3217.68	86.9187	53
264	264	2756.63	87.9316	53
265	265	925.60	95.4790	53
266	266	3750.43	86.7512	54
267	267	2337.97	89.5113	54
268	268	6740.72	91.3680	54
269	269	6332.23	91.4602	54
270	270	4786.25	88.6587	54
271	271	4005.31	87.0068	55
272	272	1876.16	91.7450	55
273	273	3455.77	86.7162	55
274	274	171.93	92.5482	55
275	275	3444.27	86.7211	55
276	276	7450.73	90.5481	56
277	277	5189.19	89.6932	56
278	278	679.85	95.4557	56
279	279	5649.23	90.7105	56
280	280	2240.33	89.9526	56
281	281	3560.95	86.6939	57
282	282	885.67	95.5202	57
283	283	6142.67	91.3642	57
284	284	5303.42	89.9712	57
285	285	2035.60	90.9401	57
286	286	4793.63	88.6777	58
287	287	7988.85	90.1738	58
288	288	6351.78	91.4650	58
289	289	729.83	95.5180	58
290	290	8103.32	90.2437	58
291	291	1008.30	95.3462	59
292	292	2798.55	87.8061	59
293	293	6635.56	91.4287	59
294	294	6609.93	91.4398	59
295	295	6171.08	91.3843	59

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
296	296	6577.53	91.4517	60
297	297	5617.22	90.6502	60
298	298	7580.25	90.3920	60
299	299	6542.44	91.4618	60
300	300	1678.64	92.7456	60
301	301	513.78	94.9980	61
302	302	6915.21	91.2190	61
303	303	1800.27	92.1314	61
304	304	971.67	95.4125	61
305	305	5200.37	89.7209	61
306	306	5515.39	90.4462	62
307	307	930.25	95.4731	62
308	308	830.00	95.5506	62
309	309	4153.60	87.2366	62
310	310	710.23	95.4974	62
311	311	4923.04	89.0127	63
312	312	3805.58	86.7900	63
313	313	3677.95	86.7150	63
314	314	1787.06	92.1986	63
315	315	2925.92	87.4649	63
316	316	1684.05	92.7185	64
317	317	5908.42	91.1227	64
318	318	6963.50	91.1686	64
319	319	712.65	95.5002	64
320	320	1933.04	91.4559	64
321	321	5859.72	91.0563	65
322	322	5666.47	90.7422	65
323	323	6662.58	91.4154	65
324	324	7203.52	90.8761	65
325	325	7689.17	90.2829	65
326	326	6435.58	91.4746	66
327	327	1623.05	93.0210	66
328	328	5997.97	91.2306	66
329	329	4090.28	87.1319	66
330	330	1254.48	94.6394	66
331	331	1651.58	92.8802	67
332	332	1541.58	93.4147	67
333	333	4812.50	88.7263	67
334	334	6982.96	91.1473	67
335	335	6100.62	91.3307	67
336	336	2138.19	90.4364	68
337	337	2488.03	88.8817	68
338	338	5358.53	90.1004	68
339	339	7510.92	90.4729	68
340	340	7084.61	91.0282	68
341	341	3000.55	87.2938	69
342	342	4579.84	88.1406	69
343	343	7198.78	90.8823	69
344	344	5863.78	91.0620	69
345	345	5081.55	89.4217	69
346	346	5596.34	90.6098	70
347	347	1304.32	94.4512	70
348	348	2750.60	87.9502	70
349	349	6173.69	91.3861	70
350	350	6910.61	91.2237	70
351	351	6528.74	91.4650	71
352	352	2261.67	89.8543	71
353	353	6766.03	91.3500	71
354	354	541.49	95.1033	71

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
355	355	7640.37	90.3287	71
356	356	1103.91	95.1215	72
357	357	2912.28	87.4985	72
358	358	3948.51	86.9336	72
359	359	4814.87	88.7324	72
360	360	6929.45	91.2045	72
361	361	525.14	95.0426	73
362	362	5931.73	91.1526	73
363	363	51.58	91.0866	73
364	364	6190.76	91.3971	73
365	365	2431.89	89.1097	73
366	366	7594.89	90.3760	74
367	367	5242.26	89.8239	74
368	368	4761.80	88.5960	74
369	369	3780.11	86.7709	74
370	370	6416.04	91.4739	74
371	371	4749.46	88.5644	75
372	372	6470.31	91.4735	75
373	373	4996.51	89.2031	75
374	374	5080.47	89.4190	75
375	375	8087.60	90.2294	75
376	376	7902.29	90.1679	76
377	377	2781.77	87.8555	76
378	378	4627.96	88.2585	76
379	379	7113.17	90.9927	76
380	380	909.94	95.4970	76
381	381	2557.91	88.6114	77
382	382	3413.63	86.7365	77
383	383	2371.62	89.3647	77
384	384	1959.32	91.3229	77
385	385	1054.82	95.2457	77
386	386	7296.80	90.7516	78
387	387	7463.49	90.5318	78
388	388	7617.73	90.3517	78
389	389	2672.73	88.2019	78
390	390	269.63	93.4870	78
391	391	2190.35	90.1868	79
392	392	38.17	90.9014	79
393	393	5714.22	90.8269	79
394	394	4995.27	89.1999	79
395	395	3036.63	87.2187	79
396	396	5797.23	90.9633	80
397	397	1174.26	94.9139	80
398	398	4034.98	87.0484	80
399	399	6059.69	91.2938	80
400	400	4264.93	87.4422	80
401	401	5474.85	90.3603	81
402	402	1858.24	91.8362	81
403	403	2822.07	87.7385	81
404	404	4943.59	89.0660	81
405	405	7473.27	90.5195	81
406	406	487.28	94.8857	82
407	407	3742.10	86.7462	82
408	408	7000.20	91.1280	82
409	409	44.20	90.9852	82
410	410	3352.31	86.7778	82
411	411	575.30	95.2154	83
412	412	5954.49	91.1806	83
413	413	8027.46	90.1888	83

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
414	414	2806.99	87.7816	83
415	415	7402.61	90.6105	83
416	416	5329.68	90.0332	84
417	417	6429.56	91.4745	84
418	418	6212.16	91.4099	84
419	419	2501.55	88.8282	84
420	420	3422.50	86.7317	84
421	421	2634.75	88.3324	85
422	422	6277.50	91.4418	85
423	423	5262.65	89.8734	85
424	424	3181.34	86.9687	85
425	425	7921.15	90.1661	85
426	426	5870.27	91.0711	86
427	427	7930.31	90.1658	86
428	428	3625.02	86.6996	86
429	429	7766.09	90.2237	86
430	430	6095.71	91.3265	86
431	431	7403.05	90.6099	87
432	432	7830.68	90.1884	87
433	433	7817.72	90.1943	87
434	434	1176.63	94.9063	87
435	435	5575.92	90.5696	87
436	436	6134.38	91.3579	88
437	437	5563.02	90.5438	88
438	438	4542.58	88.0509	88
439	439	1609.74	93.0862	88
440	440	1105.17	95.1181	88
441	441	635.01	95.3716	89
442	442	1303.27	94.4553	89
443	443	20.25	90.6465	89
444	444	7785.30	90.2117	89
445	445	7168.90	90.9214	89
446	446	1417.94	93.9799	90
447	447	6072.09	91.3054	90
448	448	554.31	95.1479	90
449	449	2464.34	88.9768	90
450	450	4571.30	88.1200	90
451	451	5592.72	90.6028	91
452	452	4105.55	87.1563	91
453	453	576.86	95.2201	91
454	454	6953.76	91.1791	91
455	455	7392.21	90.6242	91
456	456	4891.24	88.9302	92
457	457	2230.33	89.9991	92
458	458	28.79	90.7690	92
459	459	487.71	94.8876	92
460	460	5761.75	90.9068	92
461	461	1745.79	92.4078	93
462	462	7401.55	90.6119	93
463	463	8009.97	90.1810	93
464	464	5975.34	91.2051	93
465	465	3898.91	86.8770	93
466	466	6447.67	91.4746	94
467	467	2897.77	87.5351	94
468	468	4712.70	88.4708	94
469	469	598.39	95.2820	94
470	470	6465.93	91.4738	94
471	471	6057.71	91.2920	95
472	472	5074.78	89.4044	95

ASPHALT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	D	MN5
473	473	4162.04	87.2513	95
474	474	6124.00	91.3498	95
475	475	1250.46	94.6540	95
476	476	2163.23	90.3160	96
477	477	5445.75	90.2971	96
478	478	2509.15	88.7984	96
479	479	2515.56	88.7734	96
480	480	3054.69	87.1831	96
481	481	6377.76	91.4699	97
482	482	7432.18	90.5719	97
483	483	3055.20	87.1821	97
484	484	3429.80	86.7279	97
485	485	5141.07	89.5728	97
486	486	6145.05	91.3659	98
487	487	548.43	95.1277	98
488	488	5555.55	90.5288	98
489	489	2982.30	87.3336	98
490	490	6250.76	91.4300	98
491	491	7750.28	90.2344	99
492	492	6325.14	91.4583	99
493	493	5658.75	90.7281	99
494	494	1347.59	94.2781	99
495	495	919.01	95.4868	99
496	496	4078.13	87.1129	100
497	497	3544.42	86.6948	100
498	498	78.82	91.4487	100
499	499	4359.35	87.6355	100
500	500	8130.11	90.2719	100

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 5

OBS	MN5	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
1	1	1	5	3410.16	88.3708	3.6	0
2	2	1	5	5156.95	88.8232	3.2	0
3	3	1	5	3519.28	90.3785	1.6	68
4	4	1	5	2741.99	92.0588	-0.1	100
5	5	1	5	4884.81	89.7058	2.3	0
6	6	1	5	3350.43	92.0752	-0.1	100
7	7	1	5	2823.41	90.1228	1.9	62
8	8	1	5	4479.08	90.8668	1.1	78
9	9	1	5	4178.38	90.4635	1.5	70
10	10	1	5	5662.99	89.8274	2.2	0
11	11	1	5	4342.54	90.4109	1.6	68
12	12	1	5	4625.93	90.5783	1.4	72
13	13	1	5	615.45	93.1737	-1.2	100
14	14	1	5	5908.51	90.1356	1.9	62
15	15	1	5	6139.30	90.7545	1.2	76
16	16	1	5	4711.76	90.0002	2.0	60
17	17	1	5	3766.70	88.3121	3.7	0
18	18	1	5	3236.31	92.0286	0.0	100
19	19	1	5	3787.02	91.2355	0.8	84
20	20	1	5	4565.03	89.5715	2.4	0
21	21	1	5	4382.36	90.3907	1.6	68
22	22	1	5	5095.83	89.1714	2.8	0
23	23	1	5	4400.67	90.3170	1.7	66
24	24	1	5	2733.56	92.0125	0.0	100
25	25	1	5	2239.77	93.1885	-1.2	100
26	26	1	5	4107.24	89.8471	2.2	0
27	27	1	5	5091.08	91.7189	0.3	94
28	28	1	5	4163.93	91.4906	0.5	90
29	29	1	5	2068.28	91.4761	0.5	90
30	30	1	5	4015.59	90.1164	1.9	62
31	31	1	5	4743.10	90.7079	1.3	74
32	32	1	5	6257.83	90.2289	1.8	64
33	33	1	5	4132.49	91.5087	0.5	90
34	34	1	5	3677.52	90.3906	1.6	68
35	35	1	5	3774.55	89.4382	2.6	0
36	36	1	5	1979.35	92.5185	-0.5	100
37	37	1	5	4862.08	91.4674	0.5	90
38	38	1	5	2398.65	92.8946	-0.9	100
39	39	1	5	2380.99	90.1059	1.9	62
40	40	1	5	5092.09	90.9332	1.1	78
41	41	1	5	4986.89	88.8300	3.2	0
42	42	1	5	4198.38	89.4414	2.6	0
43	43	1	5	4790.42	90.7929	1.2	76
44	44	1	5	5335.55	91.7204	0.3	94
45	45	1	5	4632.46	89.9195	2.1	0
46	46	1	5	3426.45	91.6112	0.4	92
47	47	1	5	4692.03	90.5401	1.5	70
48	48	1	5	2942.53	92.4440	-0.4	100
49	49	1	5	4104.47	92.5903	-0.6	100
50	50	1	5	5038.63	91.1167	0.9	82
51	51	1	5	3814.69	90.9464	1.1	78
52	52	1	5	3529.86	89.8775	2.1	0
53	53	1	5	3951.74	90.0653	1.9	62
54	54	1	5	4789.52	89.5499	2.5	0
55	55	1	5	2590.69	88.9474	3.1	0
56	56	1	5	4241.87	91.2720	0.7	86
57	57	1	5	3585.66	90.8979	1.1	78
58	58	1	5	5593.48	91.2156	0.8	84
59	59	1	5	4644.68	91.4810	0.5	90

ASPHALT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 5

OBS	MN5	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
60	60	1	5	5599.22	91.3403	0.7	86
61	61	1	5	3080.26	92.6964	-0.7	100
62	62	1	5	2427.89	92.8408	-0.8	100
63	63	1	5	3423.91	88.4362	3.6	0
64	64	1	5	3440.33	92.3932	-0.4	100
65	65	1	5	6616.29	90.8746	1.1	78
66	66	1	5	3880.27	91.4995	0.5	90
67	67	1	5	4217.85	91.4998	0.5	90
68	68	1	5	4916.06	90.1839	1.8	64
69	69	1	5	5144.90	89.3601	2.6	0
70	70	1	5	4547.11	91.1242	0.9	82
71	71	1	5	4747.66	91.6202	0.4	92
72	72	1	5	3941.80	89.8981	2.1	0
73	73	1	5	3026.22	91.5577	0.4	92
74	74	1	5	5559.02	89.4081	2.6	0
75	75	1	5	5876.87	89.7779	2.2	0
76	76	1	5	4667.03	90.5543	1.4	72
77	77	1	5	2271.46	90.2562	1.7	66
78	78	1	5	5064.08	90.6648	1.3	74
79	79	1	5	3194.93	89.6668	2.3	0
80	80	1	5	4266.22	90.3323	1.7	66
81	81	1	5	4514.40	89.9041	2.1	0
82	82	1	5	2925.22	90.1046	1.9	62
83	83	1	5	4953.37	90.9954	1.0	80
84	84	1	5	4779.09	89.6955	2.3	0
85	85	1	5	5055.48	89.3565	2.6	0
86	86	1	5	6257.48	89.8974	2.1	0
87	87	1	5	5960.80	91.2937	0.7	86
88	88	1	5	3790.98	91.6314	0.4	92
89	89	1	5	3382.55	92.3213	-0.3	100
90	90	1	5	3016.00	91.5060	0.5	90
91	91	1	5	4924.22	90.9565	1.0	80
92	92	1	5	2679.97	91.0985	0.9	82
93	93	1	5	5406.31	90.2566	1.7	66
94	94	1	5	4224.49	90.8473	1.2	76
95	95	1	5	4533.80	90.7903	1.2	76
96	96	1	5	3137.68	89.0736	2.9	0
97	97	1	5	5087.20	89.1049	2.9	0
98	98	1	5	4296.42	91.1572	0.8	84
99	99	1	5	4400.15	92.4372	-0.4	100
100	100	1	5	4038.16	88.6328	3.4	0

```
TITLE 'ASPHALT SUB-LOT SAMPLING SIMULATION';
OPTIONS PAGESIZE=64 NODATE;
DATA PAY;
N=0;
DO UNTIL (N>=100);
 X=10000*RANUNI(0);
  IF X<8184 THEN DO;
   N+1;
    D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
     X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
      DEVTN= 92-ROUND(D,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
     IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
    OUTPUT;
  END;
END;
PROC PRINT DATA=PAY;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZE 1';
DATA PAY2;
N=0; X=9000; MN2=0;
DO UNTIL (N>=200);
 DO UNTIL (0<X<4092);
 X=10000*RANUNI(0);
 END;
 N+1; MN2+1;
 D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
 X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
 OUTPUT;
  DO UNTIL (4092<X<8184);
  X=10000*RANUNI(0);
  END;
  N+1;
  D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
  X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
  OUTPUT;
END;
KEEP N X D MN2;
PROC PRINT DATA=PAY2;
TITLE2 'DATA FOR SAMPLES OF SIZE 2';
PROC SUMMARY DATA=PAY2;
CLASS MN2;
VAR X D;
OUTPUT OUT=MPAY2 MEAN=MX MD;
DATA MPAY2; SET MPAY2;
 IF MN2=. THEN DELETE;
   DEVTN= 92-ROUND(MD,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
      IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
PROC PRINT DATA=MPAY2;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZES 2';
DATA PAY3;
N=0; X=9000; MN3=0;
DO UNTIL (N>=300);
 DO UNTIL (0<X<2728);
 X=10000*RANUNI(0);
 END;
 N+1; MN3+1;
 D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
 X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
 OUTPUT;
  DO UNTIL (2728<X<5456);
  X=10000*RANUNI(0);
  END;
  N+1;
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  D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
  X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
  OUTPUT;
   DO UNTIL (5456<X<8184);
   X=10000*RANUNI(0);
   END;
   N+1;
   D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   OUTPUT;
END;
KEEP N X D MN3;
PROC PRINT DATA=PAY3;
TITLE2 'DATA FOR SAMPLES OF SIZE 3';
PROC SUMMARY DATA=PAY3;
CLASS MN3;
VAR X D;
OUTPUT OUT=MPAY3 MEAN=MX MD;
DATA MPAY3; SET MPAY3;
 IF MN3=. THEN DELETE;
   DEVTN= 92-ROUND(MD,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
      IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
PROC PRINT DATA=MPAY3;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZES 3';
DATA PAY4;
N=0; X=9000; MN4=0;
DO UNTIL (N>=400);
 DO UNTIL (0<X<2046);
 X=10000*RANUNI(0);
 END;
 N+1; MN4+1;
 D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
 X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
 OUTPUT;
  DO UNTIL (2046<X<4092);
  X=10000*RANUNI(0);
  END;
  N+1;
  D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
  X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
  OUTPUT;
   DO UNTIL (4092<X<6138);
   X=10000*RANUNI(0);
   END;
   N+1;
   D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   OUTPUT;
   DO UNTIL (6138<X<8184);
   X=10000*RANUNI(0);
   END;
   N+1;
   D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   OUTPUT;
END;
KEEP N X D MN4;
PROC PRINT DATA=PAY4;
TITLE2 'DATA FOR SAMPLES OF SIZE 4';
PROC SUMMARY DATA=PAY4;
CLASS MN4;
VAR X D;
OUTPUT OUT=MPAY4 MEAN=MX MD;
DATA MPAY4; SET MPAY4;
```

```
 IF MN4=. THEN DELETE;
   DEVTN= 92-ROUND(MD,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
      IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
PROC PRINT DATA=MPAY4;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZES 4';
DATA PAY5;
N=0; X=9000; MN5=0;
DO UNTIL (N>=500);
 DO UNTIL (0<X<1636.8);
 X=10000*RANUNI(0);
 END;
 N+1; MN5+1;
 D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
 X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
 OUTPUT;
  DO UNTIL (1636.8<X<3273.6);
  X=10000*RANUNI(0);
  END;
  N+1;
  D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
  X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
  OUTPUT;
   DO UNTIL (3273.6<X<4910.4);
   X=10000*RANUNI(0);
   END;
   N+1;
   D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   OUTPUT;
   DO UNTIL (4910.4<X<6547.2);
   X=10000*RANUNI(0);
   END;
   N+1;
   D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   OUTPUT;
   DO UNTIL (6547.2<X<8184);
   X=10000*RANUNI(0);
   END;
   N+1;
   D=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   OUTPUT;
END;
KEEP N X D MN5;
PROC PRINT DATA=PAY5;
TITLE2 'DATA FOR SAMPLES OF SIZE 5';
PROC SUMMARY DATA=PAY5;
CLASS MN5;
VAR X D;
OUTPUT OUT=MPAY5 MEAN=MX MD;
DATA MPAY5; SET MPAY5;
 IF MN5=. THEN DELETE;
   DEVTN= 92-ROUND(MD,.1);
      IF DEVTN<=0 THEN PCTPAY=100;
      IF DEVTN>2 THEN PCTPAY=0;
      IF 0<DEVTN<=2 THEN PCTPAY=100-(20*DEVTN);
PROC PRINT DATA=MPAY5;
TITLE2 'RESULTS FOR 100 SAMPLES OF SIZES 5';
GOPTIONS NODISPLAY DEVICE=HPLJS2;
LIBNAME AHTD 'C:\MYSAS\';
PATTERN1 V=X3;
PROC GCHART DATA=PAY GOUT=AHTD.SIM2;
TITLE  'ASPHALT SUB-LOT SAMPLING SIMULATION';
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```
TITLE2 'CHART FOR SAMPLES OF SIZE 1';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
PROC GCHART DATA=MPAY2 GOUT=AHTD.SIM2;
TITLE2 'CHART FOR SAMPLES OF SIZE 2';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
PROC GCHART DATA=MPAY3 GOUT=AHTD.SIM2;
TITLE2 'CHART FOR SAMPLES OF SIZE 3';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
PROC GCHART DATA=MPAY4 GOUT=AHTD.SIM2;
TITLE2 'CHART FOR SAMPLES OF SIZE 4';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
PROC GCHART DATA=MPAY5 GOUT=AHTD.SIM2;
TITLE2 'CHART FOR SAMPLES OF SIZE 5';
VBAR PCTPAY/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2 RAXIS=0 TO 45 BY 5;
RUN;
```

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZE 1

OBS	N	X	D	DEVTN	PCTPAY
1	1	1589.80	93.1833	-1.2	100
2	2	7716.77	90.2597	1.7	66
3	3	1754.02	92.3662	-0.4	100
4	4	2927.96	87.4600	4.5	0
5	5	1077.41	95.1908	-3.2	100
6	6	4312.27	87.5371	4.5	0
7	7	4081.23	87.1177	4.9	0
8	8	7079.20	91.0348	1.0	80
9	9	2991.40	87.3136	4.7	0
10	10	5361.78	90.1079	1.9	62
11	11	6781.21	91.3385	0.7	86
12	12	1129.67	95.0494	-3.0	100
13	13	5538.65	90.4944	1.5	70
14	14	5743.98	90.8775	1.1	78
15	15	3074.12	87.1461	4.9	0
16	16	6248.04	91.4287	0.6	88
17	17	4220.79	87.3576	4.6	0
18	18	547.70	95.1252	-3.1	100
19	19	5252.03	89.8476	2.2	0
20	20	3793.22	86.7805	5.2	0
21	21	946.74	95.4509	-3.5	100
22	22	6272.16	91.4396	0.6	88
23	23	1909.34	91.5762	0.4	92
24	24	3503.84	86.7011	5.3	0
25	25	306.15	93.7854	-1.8	100
26	26	6300.03	91.4503	0.5	90
27	27	5038.14	89.3105	2.7	0
28	28	3424.49	86.7306	5.3	0
29	29	899.25	95.5079	-3.5	100
30	30	7835.60	90.1864	1.8	64
31	31	7841.74	90.1839	1.8	64
32	32	586.30	95.2481	-3.2	100
33	33	2303.94	89.6625	2.3	0
34	34	3516.51	86.6985	5.3	0
35	35	3856.78	86.8345	5.2	0
36	36	7734.28	90.2461	1.8	64
37	37	697.00	95.4807	-3.5	100
38	38	154.43	92.3574	-0.4	100
39	39	1002.55	95.3573	-3.4	100
40	40	3917.45	86.8974	5.1	0
41	41	5287.31	89.9327	2.1	0
42	42	3225.43	86.9087	5.1	0
43	43	3447.77	86.7196	5.3	0
44	44	1360.19	94.2262	-2.2	100
45	45	41.89	90.9532	1.0	80
46	46	1233.19	94.7159	-2.7	100
47	47	2629.28	88.3516	3.6	0
48	48	4356.90	87.6303	4.4	0
49	49	3182.45	86.9671	5.0	0
50	50	7860.87	90.1772	1.8	64
51	51	34.05	90.8435	1.2	76
52	52	4008.07	87.0105	5.0	0
53	53	2804.45	87.7889	4.2	0
54	54	3386.41	86.7531	5.2	0
55	55	6660.25	91.4166	0.6	88
56	56	1171.04	94.9241	-2.9	100
57	57	4108.96	87.1618	4.8	0
58	58	4593.17	88.1731	3.8	0
59	59	834.79	95.5492	-3.5	100

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZE 1

OBS	N	X	D	DEVTN	PCTPAY
60	60	935.22	95.4667	-3.5	100
61	61	2730.26	88.0138	4.0	0
62	62	5362.98	90.1107	1.9	62
63	63	2807.20	87.7810	4.2	0
64	64	6328.41	91.4592	0.5	90
65	65	5971.71	91.2009	0.8	84
66	66	7091.55	91.0196	1.0	80
67	67	3441.73	86.7222	5.3	0
68	68	1037.03	95.2862	-3.3	100
69	69	4723.17	88.4974	3.5	0
70	70	3303.82	86.8205	5.2	0
71	71	5922.74	91.1412	0.9	82
72	72	7788.71	90.2097	1.8	64
73	73	1000.33	95.3616	-3.4	100
74	74	7242.34	90.8246	1.2	76
75	75	3751.96	86.7521	5.2	0
76	76	7026.69	91.0976	0.9	82
77	77	7302.76	90.7436	1.3	74
78	78	7254.03	90.8090	1.2	76
79	79	1619.53	93.0382	-1.0	100
80	80	4187.87	87.2971	4.7	0
81	81	7539.38	90.4388	1.6	68
82	82	5818.45	90.9958	1.0	80
83	83	6009.89	91.2435	0.8	84
84	84	7320.27	90.7201	1.3	74
85	85	6200.27	91.4029	0.6	88
86	86	3025.97	87.2404	4.8	0
87	87	4017.64	87.0238	5.0	0
88	88	2485.06	88.8936	3.1	0
89	89	778.01	95.5483	-3.5	100
90	90	3140.09	87.0317	5.0	0
91	91	506.26	94.9673	-3.0	100
92	92	4507.92	87.9689	4.0	0
93	93	6027.15	91.2617	0.7	86
94	94	1873.62	91.7579	0.2	96
95	95	6894.53	91.2395	0.8	84
96	96	2240.69	89.9509	2.0	60
97	97	4245.20	87.4039	4.6	0
98	98	3931.79	86.9137	5.1	0
99	99	5006.55	89.2290	2.8	0
100	100	101.02	91.7299	0.3	94

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 2

OBS	N	X	MN2	D
1	1	2860.31	1	87.6330
2	2	6303.04	1	91.4513
3	3	1194.31	2	94.8488
4	4	4781.74	2	88.6471
5	5	2723.42	3	88.0356
6	6	5718.79	3	90.8348
7	7	3159.73	4	87.0008
8	8	6281.35	4	91.4433
9	9	998.02	5	95.3659
10	10	5748.34	5	90.8847
11	11	257.84	6	93.3847
12	12	8045.09	6	90.1985
13	13	2089.73	7	90.6724
14	14	7458.37	7	90.5383
15	15	297.72	8	93.7189
16	16	5360.75	8	90.1055
17	17	2454.53	9	89.0167
18	18	6609.11	9	91.4401
19	19	3628.97	10	86.7005
20	20	5431.60	10	90.2658
21	21	2870.73	11	87.6052
22	22	7954.27	11	90.1670
23	23	2598.98	12	88.4598
24	24	7032.33	12	91.0910
25	25	1878.19	13	91.7346
26	26	7433.53	13	90.5702
27	27	1891.44	14	91.6672
28	28	7762.21	14	90.2263
29	29	3317.76	15	86.8073
30	30	5490.74	15	90.3943
31	31	3657.57	16	86.7080
32	32	7147.58	16	90.9489
33	33	3110.68	17	87.0806
34	34	4928.41	17	89.0266
35	35	2460.36	18	88.9930
36	36	6789.98	18	91.3317
37	37	1464.49	19	93.7725
38	38	6354.69	19	91.4656
39	39	852.20	20	95.5424
40	40	4295.32	20	87.5026
41	41	701.16	21	95.4862
42	42	6205.15	21	91.4058
43	43	2847.75	22	87.6671
44	44	5762.74	22	90.9084
45	45	3400.87	23	86.7439
46	46	4852.92	23	88.8308
47	47	2261.72	24	89.8540
48	48	6722.52	24	91.3802
49	49	2397.88	25	89.2524
50	50	5293.29	25	89.9470
51	51	1033.63	26	95.2936
52	52	6822.73	26	91.3050
53	53	2230.16	27	89.9998
54	54	6804.33	27	91.3203
55	55	2059.28	28	90.8225
56	56	6820.11	28	91.3072
57	57	3026.33	29	87.2397
58	58	4256.19	29	87.4251
59	59	3367.63	30	86.7662

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 2

OBS	N	X	MN2	D
60	60	7890.76	30	90.1697
61	61	2075.79	31	90.7409
62	62	5020.02	31	89.2638
63	63	3500.52	32	86.7019
64	64	6800.49	32	91.3234
65	65	3837.11	33	86.8165
66	66	5822.86	33	91.0025
67	67	2716.17	34	88.0588
68	68	5716.13	34	90.8302
69	69	1381.82	35	94.1354
70	70	7125.66	35	90.9769
71	71	311.86	36	93.8296
72	72	8153.82	36	90.3009
73	73	2586.29	37	88.5060
74	74	7095.38	37	91.0149
75	75	158.41	38	92.4013
76	76	6235.72	38	91.4226
77	77	3543.56	39	86.6949
78	78	4922.30	39	89.0108
79	79	855.21	40	95.5409
80	80	7195.45	40	90.8867
81	81	622.78	41	95.3438
82	82	4481.66	41	87.9077
83	83	1986.97	42	91.1835
84	84	7097.01	42	91.0129
85	85	3091.37	43	87.1146
86	86	4278.54	43	87.4690
87	87	1990.72	44	91.1647
88	88	4687.23	44	88.4065
89	89	3609.16	45	86.6969
90	90	5213.67	45	89.7538
91	91	2225.03	46	90.0237
92	92	7323.48	46	90.7158
93	93	1676.64	47	92.7555
94	94	7048.15	47	91.0723
95	95	2537.10	48	88.6903
96	96	6983.91	48	91.1462
97	97	3800.13	49	86.7858
98	98	5253.76	49	89.8518
99	99	2131.49	50	90.4688
100	100	5650.28	50	90.7124
101	101	3019.11	51	87.2546
102	102	5754.31	51	90.8946
103	103	3348.57	52	86.7808
104	104	7067.46	52	91.0491
105	105	2211.57	53	90.0867
106	106	6458.71	53	91.4742
107	107	3472.07	54	86.7101
108	108	6960.68	54	91.1716
109	109	274.79	55	93.5309
110	110	4553.07	55	88.0760
111	111	2128.21	56	90.4846
112	112	4362.66	56	87.6426
113	113	1221.37	57	94.7572
114	114	4969.36	57	89.1328
115	115	338.38	58	94.0263
116	116	4129.36	58	87.1954
117	117	1389.68	59	94.1020
118	118	4927.78	59	89.0250

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 2

OBS	N	X	MN2	D
119	119	976.85	60	95.4038
120	120	5178.43	60	89.6664
121	121	1272.25	61	94.5738
122	122	5634.85	61	90.6836
123	123	3706.87	62	86.7274
124	124	7263.64	62	90.7961
125	125	570.23	63	95.1997
126	126	8003.32	63	90.1785
127	127	1373.62	64	94.1701
128	128	4675.56	64	88.3771
129	129	1503.57	65	93.5932
130	130	6635.06	65	91.4289
131	131	1407.84	66	94.0239
132	132	7374.76	66	90.6473
133	133	2231.25	67	89.9948
134	134	7097.76	67	91.0119
135	135	469.71	68	94.8048
136	136	6523.67	68	91.4661
137	137	2443.10	69	89.0635
138	138	7402.38	69	90.6108
139	139	2123.55	70	90.5073
140	140	5818.16	70	90.9954
141	141	2094.13	71	90.6508
142	142	4717.64	71	88.4834
143	143	2186.02	72	90.2073
144	144	5555.96	72	90.5296
145	145	1911.39	73	91.5658
146	146	5970.37	73	91.1994
147	147	1101.70	74	95.1275
148	148	5534.31	74	90.4855
149	149	577.85	75	95.2231
150	150	5332.52	75	90.0398
151	151	3351.54	76	86.7784
152	152	4329.09	76	87.5718
153	153	1595.02	77	93.1579
154	154	5567.01	77	90.5519
155	155	1603.22	78	93.1180
156	156	7868.25	78	90.1750
157	157	1350.75	79	94.2652
158	158	7227.39	79	90.8445
159	159	1903.90	80	91.6038
160	160	5898.58	80	91.1097
161	161	3307.67	81	86.8168
162	162	5854.75	81	91.0492
163	163	2654.79	82	88.2629
164	164	6591.31	82	91.4469
165	165	600.74	83	95.2883
166	166	6886.73	83	91.2471
167	167	2258.01	84	89.8711
168	168	4351.81	84	87.6195
169	169	4040.02	85	87.0557
170	170	4386.84	85	87.6947
171	171	1187.33	86	94.8718
172	172	4211.38	86	87.3401
173	173	1200.98	87	94.8266
174	174	4923.69	87	89.0144
175	175	2561.19	88	88.5990
176	176	4161.23	88	87.2499
177	177	1852.48	89	91.8655

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 2

OBS	N	X	MN2	D
178	178	6555.73	89	91.4583
179	179	2725.20	90	88.0299
180	180	7600.24	90	90.3702
181	181	2490.74	91	88.8710
182	182	8092.11	91	90.2334
183	183	2122.34	92	90.5131
184	184	4582.44	92	88.1469
185	185	2638.69	93	88.3186
186	186	6822.72	93	91.3050
187	187	2796.91	94	87.8109
188	188	5644.65	94	90.7020
189	189	1042.52	95	95.2740
190	190	7729.05	95	90.2501
191	191	2568.61	96	88.5713
192	192	7452.34	96	90.5460
193	193	1368.74	97	94.1906
194	194	4188.08	97	87.2975
195	195	105.50	98	91.7852
196	196	7881.79	98	90.1716
197	197	2661.10	99	88.2413
198	198	4239.51	99	87.3930
199	199	2413.74	100	89.1855
200	200	5858.60	100	91.0547

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 2

OBS	MN2	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
1	1	1	2	4581.67	89.5422	2.5	0
2	2	1	2	2988.02	91.7480	0.3	94
3	3	1	2	4221.10	89.4352	2.6	0
4	4	1	2	4720.54	89.2221	2.8	0
5	5	1	2	3373.18	93.1253	-1.1	100
6	6	1	2	4151.47	91.7916	0.2	96
7	7	1	2	4774.05	90.6054	1.4	72
8	8	1	2	2829.24	91.9122	0.1	98
9	9	1	2	4531.82	90.2284	1.8	64
10	10	1	2	4530.29	88.4832	3.5	0
11	11	1	2	5412.50	88.8861	3.1	0
12	12	1	2	4815.65	89.7754	2.2	0
13	13	1	2	4655.86	91.1524	0.8	84
14	14	1	2	4826.82	90.9467	1.1	78
15	15	1	2	4404.25	88.6008	3.4	0
16	16	1	2	5402.57	88.8285	3.2	0
17	17	1	2	4019.54	88.0536	3.9	0
18	18	1	2	4625.17	90.1623	1.8	64
19	19	1	2	3909.59	92.6191	-0.6	100
20	20	1	2	2573.76	91.5225	0.5	90
21	21	1	2	3453.16	93.4460	-1.4	100
22	22	1	2	4305.25	89.2877	2.7	0
23	23	1	2	4126.89	87.7874	4.2	0
24	24	1	2	4492.12	90.6171	1.4	72
25	25	1	2	3845.59	89.5997	2.4	0
26	26	1	2	3928.18	93.2993	-1.3	100
27	27	1	2	4517.24	90.6600	1.3	74
28	28	1	2	4439.70	91.0648	0.9	82
29	29	1	2	3641.26	87.3324	4.7	0
30	30	1	2	5629.20	88.4679	3.5	0
31	31	1	2	3547.91	90.0024	2.0	60
32	32	1	2	5150.50	89.0126	3.0	0
33	33	1	2	4829.99	88.9095	3.1	0
34	34	1	2	4216.15	89.4445	2.6	0
35	35	1	2	4253.74	92.5562	-0.6	100
36	36	1	2	4232.84	92.0652	-0.1	100
37	37	1	2	4840.84	89.7605	2.2	0
38	38	1	2	3197.06	91.9120	0.1	98
39	39	1	2	4232.93	87.8528	4.1	0
40	40	1	2	4025.33	93.2138	-1.2	100
41	41	1	2	2552.22	91.6258	0.4	92
42	42	1	2	4541.99	91.0982	0.9	82
43	43	1	2	3684.95	87.2918	4.7	0
44	44	1	2	3338.98	89.7856	2.2	0
45	45	1	2	4411.42	88.2253	3.8	0
46	46	1	2	4774.26	90.3698	1.6	68
47	47	1	2	4362.40	91.9139	0.1	98
48	48	1	2	4760.50	89.9183	2.1	0
49	49	1	2	4526.95	88.3188	3.7	0
50	50	1	2	3890.89	90.5906	1.4	72
51	51	1	2	4386.71	89.0746	2.9	0
52	52	1	2	5208.01	88.9149	3.1	0
53	53	1	2	4335.14	90.7805	1.2	76
54	54	1	2	5216.38	88.9409	3.1	0
55	55	1	2	2413.93	90.8034	1.2	76
56	56	1	2	3245.44	89.0636	2.9	0
57	57	1	2	3095.37	91.9450	0.1	98
58	58	1	2	2233.87	90.6109	1.4	72
59	59	1	2	3158.73	91.5635	0.4	92

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 2

OBS	MN2	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
60	60	1	2	3077.64	92.5351	-0.5	100
61	61	1	2	3453.55	92.6287	-0.6	100
62	62	1	2	5485.26	88.7617	3.2	0
63	63	1	2	4286.77	92.6891	-0.7	100
64	64	1	2	3024.59	91.2736	0.7	86
65	65	1	2	4069.31	92.5110	-0.5	100
66	66	1	2	4391.30	92.3356	-0.3	100
67	67	1	2	4664.51	90.5034	1.5	70
68	68	1	2	3496.69	93.1354	-1.1	100
69	69	1	2	4922.74	89.8371	2.2	0
70	70	1	2	3970.85	90.7513	1.2	76
71	71	1	2	3405.88	89.5671	2.4	0
72	72	1	2	3870.99	90.3685	1.6	68
73	73	1	2	3940.88	91.3826	0.6	88
74	74	1	2	3318.01	92.8065	-0.8	100
75	75	1	2	2955.18	92.6315	-0.6	100
76	76	1	2	3840.32	87.1751	4.8	0
77	77	1	2	3581.02	91.8549	0.1	98
78	78	1	2	4735.74	91.6465	0.4	92
79	79	1	2	4289.07	92.5548	-0.6	100
80	80	1	2	3901.24	91.3568	0.6	88
81	81	1	2	4581.21	88.9330	3.1	0
82	82	1	2	4623.05	89.8549	2.1	0
83	83	1	2	3743.73	93.2677	-1.3	100
84	84	1	2	3304.91	88.7453	3.3	0
85	85	1	2	4213.43	87.3752	4.6	0
86	86	1	2	2699.35	91.1059	0.9	82
87	87	1	2	3062.33	91.9205	0.1	98
88	88	1	2	3361.21	87.9245	4.1	0
89	89	1	2	4204.11	91.6619	0.3	94
90	90	1	2	5162.72	89.2000	2.8	0
91	91	1	2	5291.42	89.5522	2.4	0
92	92	1	2	3352.39	89.3300	2.7	0
93	93	1	2	4730.70	89.8118	2.2	0
94	94	1	2	4220.78	89.2564	2.7	0
95	95	1	2	4385.78	92.7620	-0.8	100
96	96	1	2	5010.47	89.5587	2.4	0
97	97	1	2	2778.41	90.7440	1.3	74
98	98	1	2	3993.65	90.9784	1.0	80
99	99	1	2	3450.31	87.8171	4.2	0
100	100	1	2	4136.17	90.1201	1.9	62

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	MN3	D
1	1	338.69	1	94.0285
2	2	4036.18	1	87.0501
3	3	5772.55	1	90.9243
4	4	2017.51	2	91.0303
5	5	5288.17	2	89.9348
6	6	5954.48	2	91.1806
7	7	1897.05	3	91.6387
8	8	4503.55	3	87.9587
9	9	5928.17	3	91.1481
10	10	1475.43	4	93.7228
11	11	4439.65	4	87.8117
12	12	6017.62	4	91.2517
13	13	1175.09	5	94.9112
14	14	3170.94	5	86.9839
15	15	7986.49	5	90.1731
16	16	1902.16	6	91.6127
17	17	5156.45	6	89.6114
18	18	7946.49	6	90.1663
19	19	71.84	7	91.3577
20	20	4093.25	7	87.1366
21	21	5910.95	7	91.1260
22	22	1897.76	8	91.6351
23	23	3007.75	8	87.2784
24	24	5653.02	8	90.7175
25	25	1665.93	9	92.8089
26	26	5091.52	9	89.4472
27	27	5540.37	9	90.4979
28	28	1636.23	10	92.9561
29	29	4564.63	10	88.1039
30	30	5923.49	10	91.1422
31	31	1994.50	11	91.1457
32	32	2728.11	11	88.0206
33	33	7641.49	11	90.3275
34	34	2572.56	12	88.5567
35	35	2792.64	12	87.8234
36	36	7450.98	12	90.5477
37	37	1929.14	13	91.4757
38	38	4166.25	13	87.2586
39	39	8183.83	13	90.3433
40	40	261.85	14	93.4198
41	41	2734.07	14	88.0018
42	42	6755.38	14	91.3577
43	43	1961.72	15	91.3108
44	44	2930.48	15	87.4539
45	45	6875.88	15	91.2574
46	46	116.11	16	91.9141
47	47	5010.91	16	89.2403
48	48	7169.58	16	90.9205
49	49	2116.75	17	90.5403
50	50	2945.17	17	87.4187
51	51	8045.87	17	90.1990
52	52	217.31	18	93.0104
53	53	2973.13	18	87.3542
54	54	5881.97	18	91.0873
55	55	980.39	19	95.3978
56	56	3731.71	19	86.7402
57	57	7269.32	19	90.7885
58	58	1808.77	20	92.0882
59	59	4702.31	20	88.4445

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	MN3	D
60	60	7559.54	20	90.4154
61	61	2160.21	21	90.3304
62	62	4698.95	21	88.4361
63	63	7611.45	21	90.3583
64	64	627.25	22	95.3542
65	65	5047.15	22	89.3336
66	66	5741.18	22	90.8728
67	67	26.70	23	90.7392
68	68	4596.17	23	88.1804
69	69	6814.23	23	91.3121
70	70	2371.62	24	89.3647
71	71	4653.66	24	88.3224
72	72	5872.85	24	91.0747
73	73	855.63	25	95.5406
74	74	4266.54	25	87.4453
75	75	6733.07	25	91.3732
76	76	2242.65	26	89.9419
77	77	5422.68	26	90.2460
78	78	6641.35	26	91.4260
79	79	1143.10	27	95.0099
80	80	4889.24	27	88.9250
81	81	6317.76	27	91.4561
82	82	2689.48	28	88.1459
83	83	3681.39	28	86.7163
84	84	8073.23	28	90.2177
85	85	489.35	29	94.8949
86	86	3732.64	29	86.7407
87	87	7871.87	29	90.1740
88	88	1411.61	30	94.0075
89	89	3957.56	30	86.9447
90	90	6958.51	30	91.1740
91	91	1587.38	31	93.1950
92	92	5452.19	31	90.3111
93	93	6578.82	31	91.4513
94	94	357.02	32	94.1564
95	95	5019.88	32	89.2634
96	96	7880.72	32	90.1718
97	97	2218.03	33	90.0565
98	98	3596.09	33	86.6953
99	99	5464.07	33	90.3370
100	100	1533.78	34	93.4516
101	101	3358.34	34	86.7731
102	102	7118.77	34	90.9856
103	103	1015.79	35	95.3312
104	104	4153.36	35	87.2362
105	105	5854.38	35	91.0487
106	106	1687.18	36	92.7029
107	107	4250.59	36	87.4143
108	108	5760.90	36	90.9054
109	109	302.71	37	93.7585
110	110	4664.50	37	88.3494
111	111	6687.62	37	91.4016
112	112	1562.80	38	93.3135
113	113	3252.52	38	86.8755
114	114	5764.56	38	90.9113
115	115	1299.93	39	94.4683
116	116	4016.04	39	87.0216
117	117	5731.20	39	90.8560
118	118	732.97	40	95.5208

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	MN3	D
119	119	5116.31	40	89.5102
120	120	5893.88	40	91.1035
121	121	1412.57	41	94.0033
122	122	3985.97	41	86.9809
123	123	6298.86	41	91.4499
124	124	1722.17	42	92.5271
125	125	4654.23	42	88.3238
126	126	6065.09	42	91.2989
127	127	1507.60	43	93.5744
128	128	3006.48	43	87.2811
129	129	7094.04	43	91.0165
130	130	1642.90	44	92.9231
131	131	4230.15	44	87.3752
132	132	5980.05	44	91.2105
133	133	1861.60	45	91.8191
134	134	4008.76	45	87.0115
135	135	5720.86	45	90.8384
136	136	2294.20	46	89.7063
137	137	3248.91	46	86.8798
138	138	7125.62	46	90.9770
139	139	1909.18	47	91.5770
140	140	2907.06	47	87.5116
141	141	8139.97	47	90.2835
142	142	1926.19	48	91.4906
143	143	2828.99	48	87.7190
144	144	7869.74	48	90.1746
145	145	1709.82	49	92.5893
146	146	4340.97	49	87.5966
147	147	6433.08	49	91.4746
148	148	720.89	50	95.5092
149	149	2943.42	50	87.4229
150	150	7258.62	50	90.8028
151	151	2453.61	51	89.0204
152	152	2778.46	51	87.8654
153	153	6633.81	51	91.4295
154	154	578.03	52	95.2237
155	155	4087.79	52	87.1280
156	156	6196.45	52	91.4006
157	157	1735.36	53	92.4606
158	158	3649.17	53	86.7055
159	159	5785.13	53	90.9443
160	160	960.25	54	95.4308
161	161	4870.19	54	88.8755
162	162	5545.34	54	90.5081
163	163	764.43	55	95.5426
164	164	3503.89	55	86.7011
165	165	7686.22	55	90.2855
166	166	422.32	56	94.5600
167	167	3236.73	56	86.8945
168	168	7508.13	56	90.4763
169	169	1081.55	57	95.1803
170	170	3872.62	57	86.8499
171	171	6548.78	57	91.4602
172	172	1547.39	58	93.3870
173	173	2767.75	58	87.8977
174	174	6191.43	58	91.3975
175	175	1556.86	59	93.3419
176	176	5254.13	59	89.8527
177	177	8173.74	59	90.3283

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	MN3	D
178	178	113.54	60	91.8832
179	179	3031.71	60	87.2287
180	180	5956.49	60	91.1830
181	181	2096.19	61	90.6407
182	182	3006.24	61	87.2816
183	183	6205.52	61	91.4061
184	184	708.10	62	95.4949
185	185	4866.82	62	88.8668
186	186	6071.23	62	91.3046
187	187	360.65	63	94.1809
188	188	2970.78	63	87.3595
189	189	6321.81	63	91.4573
190	190	614.80	64	95.3246
191	191	4064.58	64	87.0921
192	192	6487.37	64	91.4719
193	193	282.83	65	93.5980
194	194	3204.58	65	86.9361
195	195	6065.03	65	91.2989
196	196	2008.16	66	91.0771
197	197	3172.64	66	86.9814
198	198	6940.19	66	91.1934
199	199	2401.59	67	89.2367
200	200	3163.81	67	86.9946
201	201	7094.68	67	91.0158
202	202	2151.00	68	90.3746
203	203	2917.72	68	87.4851
204	204	7738.62	68	90.2429
205	205	2335.19	69	89.5235
206	206	3803.38	69	86.7883
207	207	5530.67	69	90.4780
208	208	384.30	70	94.3346
209	209	5351.84	70	90.0849
210	210	5459.61	70	90.3273
211	211	1647.71	71	92.8994
212	212	2990.85	71	87.3148
213	213	7555.69	71	90.4198
214	214	165.80	72	92.4821
215	215	4333.62	72	87.5813
216	216	5945.55	72	91.1697
217	217	1995.33	73	91.1415
218	218	3390.68	73	86.7503
219	219	6196.21	73	91.4005
220	220	833.24	74	95.5497
221	221	3190.50	74	86.9556
222	222	5808.14	74	90.9801
223	223	1472.74	75	93.7351
224	224	4244.82	75	87.4031
225	225	7693.22	75	90.2794
226	226	2470.63	76	88.9514
227	227	4077.83	76	87.1125
228	228	7357.87	76	90.6698
229	229	1684.54	77	92.7160
230	230	3975.73	77	86.9676
231	231	5619.12	77	90.6538
232	232	248.82	78	93.3044
233	233	3151.43	78	87.0137
234	234	7342.07	78	90.6909
235	235	574.71	79	95.2136
236	236	4147.19	79	87.2256

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	MN3	D
237	237	6171.05	79	91.3843
238	238	720.07	80	95.5083
239	239	5439.51	80	90.2833
240	240	5908.74	80	91.1231
241	241	1302.24	81	94.4593
242	242	4408.07	81	87.7413
243	243	5645.10	81	90.7028
244	244	1030.03	82	95.3014
245	245	5165.77	82	89.6348
246	246	5779.82	82	90.9359
247	247	116.29	83	91.9164
248	248	3793.48	83	86.7807
249	249	5898.28	83	91.1093
250	250	2290.53	84	89.7229
251	251	4634.43	84	88.2745
252	252	5568.17	84	90.5542
253	253	639.67	85	95.3817
254	254	4239.83	85	87.3936
255	255	7774.82	85	90.2181
256	256	1753.24	86	92.3702
257	257	4528.96	86	88.0185
258	258	5958.13	86	91.1849
259	259	1310.66	87	94.4264
260	260	3894.79	87	86.8726
261	261	8047.67	87	90.2001
262	262	439.89	88	94.6554
263	263	5115.56	88	89.5083
264	264	7826.06	88	90.1905
265	265	1688.36	89	92.6970
266	266	2895.50	89	87.5408
267	267	7557.63	89	90.4176
268	268	1883.84	90	91.7059
269	269	3158.87	90	87.0022
270	270	6441.26	90	91.4746
271	271	641.79	91	95.3861
272	272	4276.74	91	87.4655
273	273	7872.21	91	90.1739
274	274	2074.25	92	90.7486
275	275	4467.58	92	87.8753
276	276	6081.87	92	91.3143
277	277	1667.89	93	92.7992
278	278	3455.03	93	86.7165
279	279	5660.62	93	90.7315
280	280	184.33	94	92.6791
281	281	4825.80	94	88.7606
282	282	5840.59	94	91.0287
283	283	395.06	95	94.4011
284	284	4907.29	95	88.9718
285	285	5494.54	95	90.4024
286	286	1418.39	96	93.9779
287	287	3104.19	96	87.0919
288	288	5905.32	96	91.1187
289	289	2234.09	97	89.9816
290	290	3635.25	97	86.7019
291	291	7241.61	97	90.8255
292	292	1390.94	98	94.0966
293	293	4724.06	98	88.4997
294	294	6938.14	98	91.1955
295	295	346.76	99	94.0857

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 3

OBS	N	X	MN3	D
296	296	4086.72	99	87.1263
297	297	6604.13	99	91.4421
298	298	267.06	100	93.4649
299	299	4290.74	100	87.4934
300	300	6960.73	100	91.1716

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 3

OBS	MN3	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
1	1	1	3	3382.47	90.6676	1.3	74
2	2	1	3	4420.06	90.7152	1.3	74
3	3	1	3	4109.59	90.2485	1.8	64
4	4	1	3	3977.57	90.9288	1.1	78
5	5	1	3	4110.84	90.6894	1.3	74
6	6	1	3	5001.70	90.4635	1.5	70
7	7	1	3	3358.68	89.8735	2.1	0
8	8	1	3	3519.51	89.8770	2.1	0
9	9	1	3	4099.27	90.9180	1.1	78
10	10	1	3	4041.45	90.7340	1.3	74
11	11	1	3	4121.36	89.8313	2.2	0
12	12	1	3	4272.06	88.9759	3.0	0
13	13	1	3	4759.74	89.6925	2.3	0
14	14	1	3	3250.43	90.9265	1.1	78
15	15	1	3	3922.69	90.0073	2.0	60
16	16	1	3	4098.87	90.6916	1.3	74
17	17	1	3	4369.26	89.3860	2.6	0
18	18	1	3	3024.14	90.4839	1.5	70
19	19	1	3	3993.81	90.9755	1.0	80
20	20	1	3	4690.21	90.3160	1.7	66
21	21	1	3	4823.54	89.7082	2.3	0
22	22	1	3	3805.19	91.8535	0.1	98
23	23	1	3	3812.37	90.0772	1.9	62
24	24	1	3	4299.38	89.5872	2.4	0
25	25	1	3	3951.75	91.4531	0.5	90
26	26	1	3	4768.89	90.5380	1.5	70
27	27	1	3	4116.70	91.7970	0.2	96
28	28	1	3	4814.70	88.3600	3.6	0
29	29	1	3	4031.29	90.6032	1.4	72
30	30	1	3	4109.23	90.7087	1.3	74
31	31	1	3	4539.46	91.6525	0.3	94
32	32	1	3	4419.21	91.1972	0.8	84
33	33	1	3	3759.40	89.0296	3.0	0
34	34	1	3	4003.63	90.4034	1.6	68
35	35	1	3	3674.51	91.2054	0.8	84
36	36	1	3	3899.56	90.3408	1.7	66
37	37	1	3	3884.95	91.1699	0.8	84
38	38	1	3	3526.63	90.3668	1.6	68
39	39	1	3	3682.39	90.7819	1.2	76
40	40	1	3	3914.38	92.0448	0.0	100
41	41	1	3	3899.13	90.8114	1.2	76
42	42	1	3	4147.16	90.7166	1.3	74
43	43	1	3	3869.37	90.6240	1.4	72
44	44	1	3	3951.03	90.5029	1.5	70
45	45	1	3	3863.74	89.8897	2.1	0
46	46	1	3	4222.91	89.1877	2.8	0
47	47	1	3	4318.74	89.7907	2.2	0
48	48	1	3	4208.31	89.7947	2.2	0
49	49	1	3	4161.29	90.5535	1.4	72
50	50	1	3	3640.97	91.2450	0.8	84
51	51	1	3	3955.29	89.4385	2.6	0
52	52	1	3	3620.76	91.2508	0.7	86
53	53	1	3	3723.22	90.0368	2.0	60
54	54	1	3	3791.93	91.6048	0.4	92
55	55	1	3	3984.85	90.8431	1.2	76
56	56	1	3	3722.39	90.6436	1.4	72
57	57	1	3	3834.31	91.1635	0.8	84
58	58	1	3	3502.19	90.8941	1.1	78
59	59	1	3	4994.91	91.1743	0.8	84

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 3

OBS	MN3	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
60	60	1	3	3033.92	90.0983	1.9	62
61	61	1	3	3769.32	89.7761	2.2	0
62	62	1	3	3882.05	91.8888	0.1	98
63	63	1	3	3217.74	90.9992	1.0	80
64	64	1	3	3722.25	91.2962	0.7	86
65	65	1	3	3184.14	90.6110	1.4	72
66	66	1	3	4040.33	89.7506	2.2	0
67	67	1	3	4220.02	89.0824	2.9	0
68	68	1	3	4269.11	89.3675	2.6	0
69	69	1	3	3889.75	88.9299	3.1	0
70	70	1	3	3731.92	91.5823	0.4	92
71	71	1	3	4064.75	90.2113	1.8	64
72	72	1	3	3481.66	90.4110	1.6	68
73	73	1	3	3860.74	89.7641	2.2	0
74	74	1	3	3277.29	91.1618	0.8	84
75	75	1	3	4470.26	90.4725	1.5	70
76	76	1	3	4635.45	88.9112	3.1	0
77	77	1	3	3759.80	90.1125	1.9	62
78	78	1	3	3580.77	90.3363	1.7	66
79	79	1	3	3630.98	91.2745	0.7	86
80	80	1	3	4022.77	92.3049	-0.3	100
81	81	1	3	3785.14	90.9678	1.0	80
82	82	1	3	3991.88	91.9574	0.0	100
83	83	1	3	3269.35	89.9355	2.1	0
84	84	1	3	4164.37	89.5172	2.5	0
85	85	1	3	4218.11	90.9978	1.0	80
86	86	1	3	4080.11	90.5246	1.5	70
87	87	1	3	4417.70	90.4997	1.5	70
88	88	1	3	4460.50	91.4514	0.5	90
89	89	1	3	4047.16	90.2185	1.8	64
90	90	1	3	3827.99	90.0609	1.9	62
91	91	1	3	4263.58	91.0085	1.0	80
92	92	1	3	4207.90	89.9794	2.0	60
93	93	1	3	3594.51	90.0824	1.9	62
94	94	1	3	3616.91	90.8228	1.2	76
95	95	1	3	3598.96	91.2584	0.7	86
96	96	1	3	3475.97	90.7295	1.3	74
97	97	1	3	4370.32	89.1697	2.8	0
98	98	1	3	4351.05	91.2639	0.7	86
99	99	1	3	3679.20	90.8847	1.1	78
100	100	1	3	3839.51	90.7100	1.3	74

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	MN4	D
1	1	1845.37	1	91.9018
2	2	2565.23	1	88.5839
3	3	5145.11	1	89.5829
4	4	6691.17	1	91.3996
5	5	602.01	2	95.2917
6	6	2687.16	2	88.1536
7	7	4102.99	2	87.1522
8	8	8110.36	2	90.2507
9	9	690.02	3	95.4710
10	10	3967.52	3	86.9571
11	11	5483.95	3	90.3798
12	12	7568.75	3	90.4049
13	13	1640.48	4	92.9351
14	14	2851.48	4	87.6569
15	15	4547.64	4	88.0630
16	16	7498.07	4	90.4886
17	17	958.95	5	95.4328
18	18	2869.15	5	87.6094
19	19	5228.07	5	89.7892
20	20	7984.16	5	90.1725
21	21	1633.87	6	92.9677
22	22	3304.50	6	86.8199
23	23	5440.31	6	90.2851
24	24	6250.23	6	91.4298
25	25	517.58	7	95.0132
26	26	2465.44	7	88.9724
27	27	4308.80	7	87.5300
28	28	7818.00	7	90.1942
29	29	42.32	8	90.9592
30	30	3093.85	8	87.1101
31	31	5381.93	8	90.1541
32	32	7835.11	8	90.1866
33	33	1883.80	9	91.7060
34	34	3859.08	9	86.8367
35	35	4922.60	9	89.0115
36	36	7115.36	9	90.9899
37	37	1684.24	10	92.7176
38	38	2376.87	10	89.3421
39	39	4864.98	10	88.8621
40	40	7224.46	10	90.8484
41	41	1838.63	11	91.9361
42	42	2170.20	11	90.2826
43	43	4516.38	11	87.9888
44	44	6558.05	11	91.4577
45	45	25.02	12	90.7151
46	46	2973.30	12	87.3538
47	47	6003.08	12	91.2362
48	48	6947.69	12	91.1855
49	49	894.22	13	95.5127
50	50	2826.06	13	87.7272
51	51	5159.41	13	89.6189
52	52	7827.43	13	90.1899
53	53	395.69	14	94.4050
54	54	2543.93	14	88.6642
55	55	5680.10	14	90.7668
56	56	6285.76	14	91.4451
57	57	225.85	15	93.0922
58	58	4080.12	15	87.1160
59	59	5539.38	15	90.4959

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	MN4	D
60	60	6733.47	15	91.3730
61	61	989.35	16	95.3819
62	62	3573.99	16	86.6939
63	63	4379.28	16	87.6783
64	64	6693.33	16	91.3983
65	65	1778.21	17	92.2436
66	66	3536.43	17	86.6956
67	67	5038.06	17	89.3102
68	68	7008.80	17	91.1182
69	69	1844.35	18	91.9070
70	70	3483.18	18	86.7066
71	71	4137.17	18	87.2086
72	72	7751.09	18	90.2339
73	73	440.39	19	94.6580
74	74	3445.63	19	86.7205
75	75	4438.50	19	87.8092
76	76	6292.81	19	91.4477
77	77	1396.34	20	94.0735
78	78	3780.46	20	86.7712
79	79	5375.67	20	90.1398
80	80	7765.74	20	90.2239
81	81	347.79	21	94.0928
82	82	2733.73	21	88.0029
83	83	4805.98	21	88.7095
84	84	6887.78	21	91.2461
85	85	1029.22	22	95.3032
86	86	4002.50	22	87.0029
87	87	4096.40	22	87.1416
88	88	6171.34	22	91.3845
89	89	1410.67	23	94.0116
90	90	4046.72	23	87.0655
91	91	5879.01	23	91.0832
92	92	7498.69	23	90.4878
93	93	1523.65	24	93.4993
94	94	2445.03	24	89.0555
95	95	5930.78	24	91.1514
96	96	7596.14	24	90.3746
97	97	1499.86	25	93.6104
98	98	3835.39	25	86.8150
99	99	5472.09	25	90.3544
100	100	7226.09	25	90.8462
101	101	1821.22	26	92.0248
102	102	4070.09	26	87.1005
103	103	5131.85	26	89.5495
104	104	7651.33	26	90.3179
105	105	437.11	27	94.6407
106	106	3404.05	27	86.7420
107	107	4886.83	27	88.9187
108	108	7985.45	27	90.1728
109	109	143.57	28	92.2353
110	110	4049.36	28	87.0694
111	111	5990.36	28	91.2222
112	112	7499.80	28	90.4865
113	113	1831.95	29	91.9701
114	114	3843.31	29	86.8221
115	115	5434.82	29	90.2730
116	116	6970.56	29	91.1609
117	117	935.93	30	95.4658
118	118	3392.09	30	86.7494

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	MN4	D
119	119	4425.64	30	87.7803
120	120	7551.06	30	90.4252
121	121	94.00	31	91.6424
122	122	3278.22	31	86.8467
123	123	5608.97	31	90.6343
124	124	7474.45	31	90.5180
125	125	1113.38	32	95.0955
126	126	2811.05	32	87.7699
127	127	5849.99	32	91.0424
128	128	7858.54	32	90.1780
129	129	42.45	33	90.9610
130	130	2693.67	33	88.1321
131	131	5000.26	33	89.2128
132	132	7369.28	33	90.6546
133	133	146.53	34	92.2688
134	134	2831.62	34	87.7116
135	135	4810.37	34	88.7208
136	136	8124.66	34	90.2658
137	137	1191.99	35	94.8565
138	138	3900.51	35	86.8787
139	139	4842.58	35	88.8040
140	140	7684.66	35	90.2869
141	141	1751.35	36	92.3798
142	142	3620.91	36	86.6989
143	143	4665.44	36	88.3518
144	144	7188.56	36	90.8957
145	145	1608.08	37	93.0943
146	146	3035.91	37	87.2202
147	147	4625.31	37	88.2520
148	148	7586.44	37	90.3852
149	149	1657.72	38	92.8497
150	150	3594.07	38	86.6951
151	151	4484.45	38	87.9142
152	152	7715.09	38	90.2611
153	153	1669.89	39	92.7892
154	154	3767.30	39	86.7621
155	155	4980.34	39	89.1613
156	156	7846.82	39	90.1820
157	157	1890.35	40	91.6727
158	158	2488.12	40	88.8814
159	159	4546.91	40	88.0613
160	160	7524.71	40	90.4562
161	161	1116.13	41	95.0879
162	162	2066.67	41	90.7860
163	163	5787.32	41	90.9478
164	164	8102.34	41	90.2428
165	165	523.70	42	95.0371
166	166	2473.67	42	88.9391
167	167	4670.56	42	88.3646
168	168	6347.44	42	91.4640
169	169	1296.40	43	94.4819
170	170	2968.86	43	87.3638
171	171	5811.60	43	90.9854
172	172	7076.85	43	91.0377
173	173	503.97	44	94.9578
174	174	3109.06	44	87.0834
175	175	5933.77	44	91.1552
176	176	7966.98	44	90.1688
177	177	1961.24	45	91.3132

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	MN4	D
178	178	3566.15	45	86.6939
179	179	4309.08	45	87.5306
180	180	6297.65	45	91.4495
181	181	1573.59	46	93.2616
182	182	2637.77	46	88.3218
183	183	4962.55	46	89.1152
184	184	7142.64	46	90.9553
185	185	1326.03	47	94.3654
186	186	3950.36	47	86.9358
187	187	4201.90	47	87.3226
188	188	7671.26	47	90.2991
189	189	65.27	48	91.2710
190	190	3898.76	48	86.8769
191	191	4642.45	48	88.2945
192	192	6380.66	48	91.4703
193	193	132.39	49	92.1067
194	194	2910.08	49	87.5040
195	195	4372.36	49	87.6634
196	196	7158.33	49	90.9351
197	197	1279.71	50	94.5457
198	198	3777.43	50	86.7690
199	199	4530.56	50	88.0223
200	200	7594.11	50	90.3768
201	201	875.09	51	95.5285
202	202	3720.29	51	86.7341
203	203	4684.48	51	88.3996
204	204	6662.55	51	91.4154
205	205	1504.91	52	93.5869
206	206	3788.60	52	86.7771
207	207	5991.65	52	91.2236
208	208	6300.73	52	91.4506
209	209	1973.30	53	91.2523
210	210	2811.96	53	87.7673
211	211	4480.00	53	87.9039
212	212	7070.49	53	91.0454
213	213	1710.61	54	92.5854
214	214	3910.04	54	86.8891
215	215	5659.13	54	90.7287
216	216	7153.88	54	90.9408
217	217	1349.75	55	94.2693
218	218	2407.71	55	89.2108
219	219	5647.66	55	90.7076
220	220	7552.21	55	90.4239
221	221	1958.95	56	91.3248
222	222	4002.30	56	87.0027
223	223	5540.58	56	90.4983
224	224	6288.43	56	91.4461
225	225	892.17	57	95.5146
226	226	3390.63	57	86.7503
227	227	5905.22	57	91.1185
228	228	7461.25	57	90.5347
229	229	1723.03	58	92.5228
230	230	2921.04	58	87.4769
231	231	5537.26	58	90.4915
232	232	7950.71	58	90.1667
233	233	874.12	59	95.5292
234	234	3268.84	59	86.8569
235	235	5575.01	59	90.5678
236	236	7344.27	59	90.6880

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	MN4	D
237	237	1292.87	60	94.4956
238	238	2313.92	60	89.6179
239	239	5751.02	60	90.8891
240	240	7377.67	60	90.6434
241	241	1574.62	61	93.2567
242	242	3891.94	61	86.8696
243	243	4918.92	61	89.0020
244	244	6886.51	61	91.2473
245	245	370.48	62	94.2461
246	246	2957.96	62	87.3888
247	247	5759.15	62	90.9025
248	248	7537.58	62	90.4410
249	249	1516.90	63	93.5310
250	250	2272.72	63	89.8037
251	251	4298.96	63	87.5100
252	252	6769.43	63	91.3475
253	253	518.90	64	95.0184
254	254	2699.09	64	88.1143
255	255	5998.53	64	91.2312
256	256	8047.75	64	90.2001
257	257	55.23	65	91.1362
258	258	2387.61	65	89.2961
259	259	4571.25	65	88.1198
260	260	7123.55	65	90.9796
261	261	1871.11	66	91.7707
262	262	2155.74	66	90.3519
263	263	5968.99	66	91.1978
264	264	7183.75	66	90.9020
265	265	1792.10	67	92.1729
266	266	3067.91	67	87.1578
267	267	5544.32	67	90.5060
268	268	6911.13	67	91.2231
269	269	1826.21	68	91.9994
270	270	3672.57	68	86.7130
271	271	5676.83	68	90.7609
272	272	7735.44	68	90.2452
273	273	942.41	69	95.4570
274	274	2610.62	69	88.4179
275	275	4451.04	69	87.8375
276	276	7624.63	69	90.3445
277	277	1988.96	70	91.1735
278	278	3228.55	70	86.9047
279	279	5885.19	70	91.0917
280	280	7249.97	70	90.8144
281	281	1456.93	71	93.8067
282	282	3730.91	71	86.7398
283	283	4899.08	71	88.9505
284	284	6180.19	71	91.3904
285	285	363.00	72	94.1967
286	286	2200.24	72	90.1401
287	287	5735.19	72	90.8627
288	288	7790.90	72	90.2084
289	289	1126.90	73	95.0573
290	290	2091.95	73	90.6615
291	291	5443.46	73	90.2920
292	292	6276.19	73	91.4413
293	293	1232.80	74	94.7172
294	294	3696.33	74	86.7225
295	295	6012.39	74	91.2462

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	MN4	D
296	296	7721.24	74	90.2562
297	297	77.32	75	91.4292
298	298	2566.62	75	88.5788
299	299	4127.44	75	87.1922
300	300	7670.55	75	90.2997
301	301	1541.16	76	93.4166
302	302	2515.29	76	88.7744
303	303	4598.49	76	88.1861
304	304	7137.52	76	90.9618
305	305	107.59	77	91.8108
306	306	3662.51	77	86.7095
307	307	4784.57	77	88.6544
308	308	7086.47	77	91.0259
309	309	1989.99	78	91.1683
310	310	3362.60	78	86.7699
311	311	5682.05	78	90.7703
312	312	7537.15	78	90.4415
313	313	1991.46	79	91.1609
314	314	3092.31	79	87.1129
315	315	4341.24	79	87.5972
316	316	6982.20	79	91.1481
317	317	1807.88	80	92.0927
318	318	2127.44	80	90.4884
319	319	4300.27	80	87.5126
320	320	7559.95	80	90.4150
321	321	342.32	81	94.0544
322	322	3800.97	81	86.7864
323	323	4168.08	81	87.2619
324	324	7992.05	81	90.1747
325	325	265.66	82	93.4529
326	326	2689.58	82	88.1456
327	327	5857.60	82	91.0533
328	328	7803.59	82	90.2015
329	329	469.03	83	94.8016
330	330	2720.77	83	88.0440
331	331	5141.20	83	89.5731
332	332	8019.04	83	90.1848
333	333	1074.81	84	95.1973
334	334	2780.33	84	87.8598
335	335	4918.65	84	89.0013
336	336	6293.34	84	91.4479
337	337	810.38	85	95.5533
338	338	3321.51	85	86.8039
339	339	5197.24	85	89.7132
340	340	7181.63	85	90.9048
341	341	1300.65	86	94.4655
342	342	3932.00	86	86.9140
343	343	5348.76	86	90.0777
344	344	7914.10	86	90.1666
345	345	1895.79	87	91.6451
346	346	2089.27	87	90.6747
347	347	5486.30	87	90.3848
348	348	6714.36	87	91.3855
349	349	1421.30	88	93.9652
350	350	3507.41	88	86.7003
351	351	5358.56	88	90.1004
352	352	6484.16	88	91.4722
353	353	1098.65	89	95.1357
354	354	3179.27	89	86.9717

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 4

OBS	N	X	MN4	D
355	355	4792.61	89	88.6751
356	356	6926.83	89	91.2072
357	357	1875.17	90	91.7500
358	358	2586.36	90	88.5058
359	359	5388.01	90	90.1680
360	360	6341.48	90	91.4626
361	361	744.99	91	95.5306
362	362	3551.90	91	86.6943
363	363	4171.15	91	87.2673
364	364	7596.71	91	90.3740
365	365	2015.94	92	91.0382
366	366	3417.77	92	86.7342
367	367	5096.32	92	89.4594
368	368	6236.39	92	91.4230
369	369	1010.92	93	95.3410
370	370	2546.41	93	88.6548
371	371	5681.33	93	90.7690
372	372	7775.65	93	90.2176
373	373	502.13	94	94.9500
374	374	3634.25	94	86.7016
375	375	6077.33	94	91.3102
376	376	7313.56	94	90.7291
377	377	1515.00	95	93.5399
378	378	3055.38	95	87.1817
379	379	5552.43	95	90.5225
380	380	6241.04	95	91.4253
381	381	724.66	96	95.5130
382	382	3376.86	96	86.7596
383	383	5699.25	96	90.8008
384	384	6914.34	96	91.2199
385	385	1571.98	97	93.2693
386	386	2551.02	97	88.6373
387	387	4156.28	97	87.2413
388	388	7077.68	97	91.0367
389	389	1482.43	98	93.6908
390	390	2270.13	98	89.8155
391	391	4943.20	98	89.0650
392	392	6670.31	98	91.4113
393	393	1233.35	99	94.7153
394	394	2144.26	99	90.4070
395	395	5166.23	99	89.6359
396	396	6542.66	99	91.4618
397	397	1601.30	100	93.1274
398	398	3440.16	100	86.7230
399	399	5374.63	100	90.1374
400	400	7742.90	100	90.2397

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 4

OBS	MN4	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
1	1	1	4	4061.72	90.3671	1.6	68
2	2	1	4	3875.63	90.2121	1.8	64
3	3	1	4	4427.56	90.8032	1.2	76
4	4	1	4	4134.42	89.7859	2.2	0
5	5	1	4	4260.08	90.7510	1.2	76
6	6	1	4	4157.23	90.3756	1.6	68
7	7	1	4	3777.46	90.4274	1.6	68
8	8	1	4	4088.30	89.6025	2.4	0
9	9	1	4	4445.21	89.6361	2.4	0
10	10	1	4	4037.64	90.4425	1.6	68
11	11	1	4	3770.81	90.4163	1.6	68
12	12	1	4	3987.27	90.1226	1.9	62
13	13	1	4	4176.78	90.7622	1.2	76
14	14	1	4	3726.37	91.3203	0.7	86
15	15	1	4	4144.70	90.5193	1.5	70
16	16	1	4	3908.99	90.2881	1.7	66
17	17	1	4	4340.37	89.8419	2.2	0
18	18	1	4	4303.95	89.0140	3.0	0
19	19	1	4	3654.33	90.1588	1.8	64
20	20	1	4	4579.55	90.3021	1.7	66
21	21	1	4	3693.82	90.5128	1.5	70
22	22	1	4	3824.87	90.2081	1.8	64
23	23	1	4	4708.77	90.6620	1.3	74
24	24	1	4	4373.90	91.0202	1.0	80
25	25	1	4	4508.36	90.4065	1.6	68
26	26	1	4	4668.62	89.7482	2.3	0
27	27	1	4	4178.36	90.1186	1.9	62
28	28	1	4	4420.78	90.2533	1.7	66
29	29	1	4	4520.16	90.0565	1.9	62
30	30	1	4	4076.18	90.1052	1.9	62
31	31	1	4	4113.91	89.9104	2.1	0
32	32	1	4	4408.24	91.0214	1.0	80
33	33	1	4	3776.42	89.7401	2.3	0
34	34	1	4	3978.30	89.7418	2.3	0
35	35	1	4	4404.93	90.2065	1.8	64
36	36	1	4	4306.57	89.5815	2.4	0
37	37	1	4	4213.93	89.7379	2.3	0
38	38	1	4	4362.83	89.4300	2.6	0
39	39	1	4	4566.09	89.7236	2.3	0
40	40	1	4	4112.52	89.7679	2.2	0
41	41	1	4	4268.11	91.7661	0.2	96
42	42	1	4	3503.84	90.9512	1.0	80
43	43	1	4	4288.43	90.9672	1.0	80
44	44	1	4	4378.44	90.8413	1.2	76
45	45	1	4	4033.53	89.2468	2.8	0
46	46	1	4	4079.14	90.4135	1.6	68
47	47	1	4	4287.39	89.7307	2.3	0
48	48	1	4	3746.78	89.4781	2.5	0
49	49	1	4	3643.29	89.5523	2.4	0
50	50	1	4	4295.45	89.9285	2.1	0
51	51	1	4	3985.60	90.5194	1.5	70
52	52	1	4	4396.47	90.7595	1.2	76
53	53	1	4	4083.94	89.4922	2.5	0
54	54	1	4	4608.41	90.2860	1.7	66
55	55	1	4	4239.33	91.1529	0.8	84
56	56	1	4	4447.56	90.0680	1.9	62
57	57	1	4	4412.32	90.9795	1.0	80
58	58	1	4	4533.01	90.1645	1.8	64
59	59	1	4	4265.56	90.9105	1.1	78

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 4

OBS	MN4	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
60	60	1	4	4183.87	91.4115	0.6	88
61	61	1	4	4318.00	90.0939	1.9	62
62	62	1	4	4156.29	90.7446	1.3	74
63	63	1	4	3714.50	90.5480	1.5	70
64	64	1	4	4316.07	91.1410	0.9	82
65	65	1	4	3534.41	89.8829	2.1	0
66	66	1	4	4294.90	91.0556	0.9	82
67	67	1	4	4328.87	90.2650	1.7	66
68	68	1	4	4727.76	89.9296	2.1	0
69	69	1	4	3907.17	90.5142	1.5	70
70	70	1	4	4588.17	89.9961	2.0	60
71	71	1	4	4066.78	90.2218	1.8	64
72	72	1	4	4022.33	91.3520	0.6	88
73	73	1	4	3734.63	91.8630	0.1	98
74	74	1	4	4665.69	90.7355	1.3	74
75	75	1	4	3610.48	89.3750	2.6	0
76	76	1	4	3948.11	90.3347	1.7	66
77	77	1	4	3910.28	89.5501	2.4	0
78	78	1	4	4642.95	89.7875	2.2	0
79	79	1	4	4101.80	89.2548	2.7	0
80	80	1	4	3948.88	90.1272	1.9	62
81	81	1	4	4075.85	89.5693	2.4	0
82	82	1	4	4154.11	90.7133	1.3	74
83	83	1	4	4087.51	90.6509	1.3	74
84	84	1	4	3766.78	90.8766	1.1	78
85	85	1	4	4127.69	90.7438	1.3	74
86	86	1	4	4623.88	90.4059	1.6	68
87	87	1	4	4046.43	91.0225	1.0	80
88	88	1	4	4192.86	90.5595	1.4	72
89	89	1	4	3999.34	90.4974	1.5	70
90	90	1	4	4047.76	90.4716	1.5	70
91	91	1	4	4016.19	89.9665	2.0	60
92	92	1	4	4191.61	89.6637	2.3	0
93	93	1	4	4253.58	91.2456	0.8	84
94	94	1	4	4381.82	90.9228	1.1	78
95	95	1	4	4090.96	90.6674	1.3	74
96	96	1	4	4178.78	91.0733	0.9	82
97	97	1	4	3839.24	90.0462	2.0	60
98	98	1	4	3841.52	90.9956	1.0	80
99	99	1	4	3771.63	91.5550	0.4	92
100	100	1	4	4539.75	90.0569	1.9	62

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
1	1	664.15	1	95.4294
2	2	1928.59	1	91.4785
3	3	3832.61	1	86.8125
4	4	6401.27	1	91.4728
5	5	7454.29	1	90.5435
6	6	277.68	2	93.5551
7	7	2078.07	2	90.7297
8	8	3483.80	2	86.7064
9	9	6482.90	2	91.4724
10	10	6857.00	2	91.2749
11	11	1527.44	3	93.4815
12	12	2093.21	3	90.6553
13	13	3626.53	3	86.7000
14	14	6462.88	3	91.4740
15	15	8014.96	3	90.1831
16	16	784.16	4	95.5502
17	17	2339.91	4	89.5028
18	18	3521.10	4	86.6977
19	19	4953.68	4	89.0922
20	20	6640.56	4	91.4264
21	21	1612.91	5	93.0707
22	22	2885.12	5	87.5675
23	23	4784.74	5	88.6548
24	24	6115.08	5	91.3427
25	25	7708.30	5	90.2666
26	26	1391.71	6	94.0934
27	27	3026.84	6	87.2386
28	28	3827.05	6	86.8077
29	29	5420.38	6	90.2409
30	30	6979.19	6	91.1515
31	31	1346.79	7	94.2814
32	32	2767.80	7	87.8975
33	33	3907.11	7	86.8859
34	34	5263.99	7	89.8766
35	35	7931.47	7	90.1658
36	36	1339.14	8	94.3126
37	37	2301.89	8	89.6717
38	38	4704.07	8	88.4490
39	39	6093.51	8	91.3246
40	40	7444.38	8	90.5562
41	41	597.69	9	95.2801
42	42	2114.38	9	90.5519
43	43	4353.79	9	87.6237
44	44	5733.27	9	90.8595
45	45	8117.71	9	90.2583
46	46	251.49	10	93.3284
47	47	2180.88	10	90.2317
48	48	3873.21	10	86.8505
49	49	6201.85	10	91.4039
50	50	8052.73	10	90.2032
51	51	811.49	11	95.5533
52	52	1804.86	11	92.1081
53	53	3652.10	11	86.7063
54	54	6079.59	11	91.3123
55	55	7542.68	11	90.4350
56	56	362.54	12	94.1936
57	57	3025.35	12	87.2417
58	58	4433.34	12	87.7975
59	59	6505.55	12	91.4694

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
60	60	6834.19	12	91.2951
61	61	1179.22	13	94.8980
62	62	3077.18	13	87.1404
63	63	4575.24	13	88.1295
64	64	6093.49	13	91.3246
65	65	6762.06	13	91.3529
66	66	785.88	14	95.5507
67	67	2676.40	14	88.1895
68	68	4407.56	14	87.7401
69	69	5793.08	14	90.9568
70	70	7275.93	14	90.7796
71	71	1322.82	15	94.3783
72	72	3031.01	15	87.2301
73	73	4414.58	15	87.7557
74	74	5575.60	15	90.5690
75	75	6650.03	15	91.4218
76	76	1112.64	16	95.0976
77	77	2882.59	16	87.5741
78	78	3690.94	16	86.7202
79	79	5957.96	16	91.1847
80	80	7401.47	16	90.6120
81	81	1261.24	17	94.6146
82	82	2444.98	17	89.0558
83	83	3305.97	17	86.8185
84	84	5102.59	17	89.4753
85	85	6763.98	17	91.3515
86	86	1393.32	18	94.0865
87	87	2147.72	18	90.3904
88	88	4774.76	18	88.6292
89	89	6248.85	18	91.4291
90	90	6847.22	18	91.2837
91	91	1548.47	19	93.3819
92	92	1864.75	19	91.8031
93	93	4330.03	19	87.5738
94	94	5233.80	19	89.8032
95	95	7901.74	19	90.1680
96	96	1062.01	20	95.2287
97	97	2218.95	20	90.0521
98	98	4763.80	20	88.6011
99	99	6294.06	20	91.4482
100	100	6806.17	20	91.3188
101	101	483.36	21	94.8681
102	102	2184.97	21	90.2123
103	103	3425.40	21	86.7302
104	104	5720.25	21	90.8373
105	105	7401.79	21	90.6116
106	106	130.48	22	92.0845
107	107	2683.32	22	88.1664
108	108	3337.73	22	86.7897
109	109	6110.91	22	91.3393
110	110	6697.38	22	91.3959
111	111	1216.00	23	94.7757
112	112	2552.10	23	88.6332
113	113	3308.28	23	86.8162
114	114	4954.30	23	89.0938
115	115	7015.07	23	91.1110
116	116	812.65	24	95.5532
117	117	2632.54	24	88.3401
118	118	4355.53	24	87.6274

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
119	119	6212.03	24	91.4098
120	120	7277.37	24	90.7777
121	121	372.94	25	94.2621
122	122	2748.70	25	87.9560
123	123	3485.43	25	86.7059
124	124	5838.78	25	91.0261
125	125	7829.74	25	90.1889
126	126	536.99	26	95.0870
127	127	2817.96	26	87.7502
128	128	3632.67	26	86.7013
129	129	5136.89	26	89.5622
130	130	7018.17	26	91.1075
131	131	671.81	27	95.4427
132	132	2444.08	27	89.0595
133	133	4752.81	27	88.5730
134	134	4949.25	27	89.0807
135	135	7798.56	27	90.2042
136	136	1097.23	28	95.1395
137	137	2939.74	28	87.4316
138	138	4550.25	28	88.0693
139	139	5261.68	28	89.8710
140	140	6821.19	28	91.3063
141	141	1358.53	29	94.2331
142	142	2194.48	29	90.1673
143	143	3287.19	29	86.8373
144	144	5991.59	29	91.2236
145	145	6612.69	29	91.4387
146	146	826.42	30	95.5514
147	147	2876.17	30	87.5909
148	148	3847.60	30	86.8260
149	149	5503.54	30	90.4214
150	150	7338.55	30	90.6956
151	151	340.28	31	94.0399
152	152	2048.07	31	90.8781
153	153	4708.00	31	88.4589
154	154	5151.09	31	89.5980
155	155	7129.70	31	90.9718
156	156	1342.29	32	94.2998
157	157	3024.56	32	87.2433
158	158	4379.80	32	87.6794
159	159	5811.06	32	90.9846
160	160	7887.02	32	90.1705
161	161	959.09	33	95.4326
162	162	2078.07	33	90.7297
163	163	3970.24	33	86.9606
164	164	5395.00	33	90.1838
165	165	8039.92	33	90.1955
166	166	754.02	34	95.5367
167	167	2045.00	34	90.8933
168	168	4155.35	34	87.2396
169	169	5296.47	34	89.9546
170	170	7731.76	34	90.2480
171	171	575.47	35	95.2159
172	172	3256.75	35	86.8706
173	173	4425.22	35	87.7793
174	174	5483.82	35	90.3795
175	175	6625.14	35	91.4334
176	176	317.07	36	93.8694
177	177	1768.59	36	92.2924

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
178	178	4841.78	36	88.8020
179	179	5480.95	36	90.3734
180	180	6862.57	36	91.2698
181	181	1525.50	37	93.4906
182	182	2409.04	37	89.2052
183	183	4406.84	37	87.7385
184	184	5007.76	37	89.2321
185	185	7276.96	37	90.7782
186	186	1100.05	38	95.1319
187	187	3160.92	38	86.9990
188	188	4287.61	38	87.4871
189	189	6014.54	38	91.2485
190	190	6932.52	38	91.2014
191	191	1474.61	39	93.7265
192	192	2296.70	39	89.6951
193	193	4867.13	39	88.8676
194	194	6425.27	39	91.4744
195	195	7423.03	39	90.5838
196	196	589.23	40	95.2565
197	197	3000.51	40	87.2939
198	198	3907.88	40	86.8867
199	199	5320.40	40	90.0113
200	200	7954.58	40	90.1671
201	201	1199.21	41	94.8326
202	202	2944.84	41	87.4195
203	203	4712.29	41	88.4698
204	204	5747.39	41	90.8831
205	205	6568.30	41	91.4547
206	206	314.89	42	93.8528
207	207	2149.35	42	90.3825
208	208	3407.54	42	86.7400
209	209	5521.73	42	90.4595
210	210	7539.61	42	90.4386
211	211	1437.87	43	93.8920
212	212	2005.21	43	91.0919
213	213	4434.61	43	87.8004
214	214	5489.27	43	90.3912
215	215	7845.01	43	90.1827
216	216	661.68	44	95.4250
217	217	2611.13	44	88.4160
218	218	4525.25	44	88.0097
219	219	6252.43	44	91.4308
220	220	8107.15	44	90.2475
221	221	1316.64	45	94.4028
222	222	2564.60	45	88.5863
223	223	3392.60	45	86.7491
224	224	5153.30	45	89.6035
225	225	6912.48	45	91.2218
226	226	775.23	46	95.5473
227	227	1773.13	46	92.2693
228	228	4649.67	46	88.3124
229	229	6359.58	46	91.4666
230	230	8087.42	46	90.2293
231	231	1424.18	47	93.9525
232	232	2612.73	47	88.4103
233	233	3313.62	47	86.8112
234	234	5103.33	47	89.4773
235	235	8075.81	47	90.2197
236	236	1330.83	48	94.3462

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
237	237	1884.13	48	91.7044
238	238	4603.68	48	88.1988
239	239	5792.43	48	90.9558
240	240	8100.01	48	90.2406
241	241	1568.94	49	93.2840
242	242	3043.30	49	87.2054
243	243	3626.20	49	86.6999
244	244	5071.39	49	89.3958
245	245	6862.14	49	91.2702
246	246	641.39	50	95.3853
247	247	1668.13	50	92.7979
248	248	4137.24	50	87.2087
249	249	5525.43	50	90.4671
250	250	7819.92	50	90.1933
251	251	258.08	51	93.3868
252	252	1639.43	51	92.9403
253	253	4578.31	51	88.1369
254	254	6010.24	51	91.2439
255	255	7478.54	51	90.5129
256	256	779.58	52	95.5489
257	257	3184.98	52	86.9634
258	258	3494.90	52	86.7033
259	259	5631.39	52	90.6771
260	260	7270.18	52	90.7873
261	261	909.99	53	95.4969
262	262	2962.84	53	87.3776
263	263	4724.76	53	88.5014
264	264	4989.56	53	89.1851
265	265	6640.19	53	91.4265
266	266	895.10	54	95.5119
267	267	3273.24	54	86.8521
268	268	3876.03	54	86.8533
269	269	5539.75	54	90.4966
270	270	7460.74	54	90.5353
271	271	1143.06	55	95.0101
272	272	2466.61	55	88.9676
273	273	4417.08	55	87.7612
274	274	6313.28	55	91.4547
275	275	7577.59	55	90.3950
276	276	743.81	56	95.5297
277	277	2780.35	56	87.8598
278	278	4273.46	56	87.4590
279	279	6290.98	56	91.4470
280	280	7249.77	56	90.8146
281	281	1343.52	57	94.2948
282	282	2494.04	57	88.8579
283	283	3659.65	57	86.7086
284	284	5064.31	57	89.3776
285	285	7705.52	57	90.2690
286	286	328.25	58	93.9528
287	287	2570.34	58	88.5649
288	288	3664.79	58	86.7103
289	289	5708.61	58	90.8172
290	290	7664.85	58	90.3050
291	291	334.72	59	94.0001
292	292	2016.55	59	91.0351
293	293	4118.21	59	87.1769
294	294	5471.00	59	90.3520
295	295	6803.88	59	91.3206

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
296	296	1501.42	60	93.6031
297	297	1754.49	60	92.3639
298	298	4833.09	60	88.7795
299	299	5246.88	60	89.8351
300	300	7143.58	60	90.9541
301	301	288.31	61	93.6430
302	302	2692.44	61	88.1361
303	303	3734.39	61	86.7417
304	304	5400.31	61	90.1959
305	305	7636.79	61	90.3322
306	306	1205.12	62	94.8127
307	307	1917.26	62	91.5359
308	308	4551.93	62	88.0733
309	309	5896.15	62	91.1065
310	310	7903.18	62	90.1678
311	311	65.14	63	91.2692
312	312	2145.99	63	90.3987
313	313	3953.95	63	86.9402
314	314	5670.62	63	90.7497
315	315	7802.56	63	90.2020
316	316	1120.94	64	95.0743
317	317	2790.76	64	87.8289
318	318	4417.80	64	87.7628
319	319	6542.02	64	91.4620
320	320	6710.29	64	91.3880
321	321	286.32	65	93.6267
322	322	2642.72	65	88.3046
323	323	4322.19	65	87.5575
324	324	5595.69	65	90.6086
325	325	7479.60	65	90.5115
326	326	196.77	66	92.8069
327	327	2243.49	66	89.9380
328	328	4654.77	66	88.3251
329	329	5798.35	66	90.9650
330	330	6758.47	66	91.3555
331	331	621.20	67	95.3401
332	332	2826.37	67	87.7264
333	333	4247.45	67	87.4082
334	334	5475.25	67	90.3612
335	335	7158.58	67	90.9348
336	336	138.27	68	92.1747
337	337	2852.20	68	87.6549
338	338	3965.35	68	86.9544
339	339	5889.71	68	91.0978
340	340	8035.53	68	90.1930
341	341	151.99	69	92.3302
342	342	1641.71	69	92.9290
343	343	4470.98	69	87.8831
344	344	5660.48	69	90.7312
345	345	6988.78	69	91.1408
346	346	1394.87	70	94.0798
347	347	2888.65	70	87.5584
348	348	3382.87	70	86.7554
349	349	5090.31	70	89.4441
350	350	7962.84	70	90.1681
351	351	235.70	71	93.1846
352	352	2341.86	71	89.4942
353	353	4901.72	71	88.9574
354	354	5052.98	71	89.3486

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
355	355	7836.04	71	90.1862
356	356	1609.94	72	93.0852
357	357	1903.19	72	91.6074
358	358	4434.87	72	87.8010
359	359	5558.76	72	90.5353
360	360	7228.63	72	90.8428
361	361	1283.98	73	94.5295
362	362	2645.93	73	88.2935
363	363	3725.96	73	86.7371
364	364	6064.57	73	91.2985
365	365	8061.46	73	90.2091
366	366	1583.38	74	93.2144
367	367	1942.42	74	91.4084
368	368	3708.81	74	86.7283
369	369	5046.47	74	89.3319
370	370	7467.09	74	90.5273
371	371	1225.99	75	94.7411
372	372	2044.41	75	90.8963
373	373	4710.90	75	88.4663
374	374	5934.02	75	91.1555
375	375	7744.73	75	90.2384
376	376	1524.13	76	93.4971
377	377	1856.35	76	91.8459
378	378	3623.81	76	86.6994
379	379	5510.10	76	90.4352
380	380	7822.93	76	90.1919
381	381	1552.34	77	93.3635
382	382	2035.72	77	90.9395
383	383	3621.84	77	86.6990
384	384	6306.49	77	91.4525
385	385	7997.28	77	90.1764
386	386	1076.63	78	95.1928
387	387	1862.36	78	91.8152
388	388	4059.95	78	87.0851
389	389	5529.39	78	90.4753
390	390	6595.55	78	91.4454
391	391	1632.02	79	92.9768
392	392	3019.92	79	87.2529
393	393	4304.49	79	87.5212
394	394	5806.84	79	90.9782
395	395	6719.41	79	91.3822
396	396	1464.75	80	93.7713
397	397	3256.93	80	86.8704
398	398	4616.60	80	88.2305
399	399	5806.74	80	90.9780
400	400	7411.98	80	90.5982
401	401	1085.42	81	95.1704
402	402	1822.71	81	92.0172
403	403	4169.69	81	87.2647
404	404	6334.02	81	91.4607
405	405	7332.46	81	90.7038
406	406	612.33	82	95.3184
407	407	2797.44	82	87.8093
408	408	3306.39	82	86.8181
409	409	6074.20	82	91.3074
410	410	7121.64	82	90.9820
411	411	434.55	83	94.6270
412	412	2556.18	83	88.6179
413	413	3661.13	83	86.7091

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
414	414	5721.95	83	90.8402
415	415	7265.41	83	90.7937
416	416	641.68	84	95.3859
417	417	3139.46	84	87.0327
418	418	3747.12	84	86.7492
419	419	6014.43	84	91.2484
420	420	6749.93	84	91.3616
421	421	554.75	85	95.1493
422	422	2016.96	85	91.0331
423	423	4248.14	85	87.4095
424	424	5758.49	85	90.9014
425	425	7665.29	85	90.3046
426	426	1369.35	86	94.1880
427	427	2225.36	86	90.0222
428	428	4112.91	86	87.1683
429	429	5833.42	86	91.0182
430	430	7783.28	86	90.2129
431	431	86.45	87	91.5467
432	432	2612.31	87	88.4118
433	433	4864.29	87	88.8603
434	434	6376.52	87	91.4697
435	435	8068.59	87	90.2142
436	436	655.99	88	95.4144
437	437	2145.68	88	90.4002
438	438	4437.13	88	87.8061
439	439	5017.03	88	89.2561
440	440	7171.42	88	90.9181
441	441	715.67	89	95.5036
442	442	2565.07	89	88.5845
443	443	3330.62	89	86.7958
444	444	5565.01	89	90.5478
445	445	7915.36	89	90.1665
446	446	540.41	90	95.0994
447	447	2598.16	90	88.4628
448	448	3837.61	90	86.8169
449	449	6341.95	90	91.4627
450	450	6775.69	90	91.3428
451	451	883.03	91	95.5224
452	452	2280.04	91	89.7704
453	453	3842.73	91	86.8215
454	454	6346.48	91	91.4638
455	455	7210.95	91	90.8663
456	456	165.30	92	92.4766
457	457	2210.13	92	90.0935
458	458	3646.60	92	86.7048
459	459	6038.35	92	91.2730
460	460	7461.58	92	90.5342
461	461	871.63	93	95.5309
462	462	2140.40	93	90.4257
463	463	3778.34	93	86.7697
464	464	6060.34	93	91.2945
465	465	8030.14	93	90.1902
466	466	1192.01	94	94.8564
467	467	3165.98	94	86.9914
468	468	4250.52	94	87.4141
469	469	5444.43	94	90.2941
470	470	7619.76	94	90.3496
471	471	385.48	95	94.3421
472	472	3115.51	95	87.0723

ASPHALT SUB-LOT SAMPLING SIMULATION
DATA FOR SAMPLES OF SIZE 5

OBS	N	X	MN5	D
473	473	3759.56	95	86.7570
474	474	6314.82	95	91.4552
475	475	8171.95	95	90.3257
476	476	207.64	96	92.9158
477	477	2684.19	96	88.1635
478	478	3975.15	96	86.9668
479	479	5217.88	96	89.7641
480	480	7842.78	96	90.1835
481	481	988.67	97	95.3832
482	482	3128.09	97	87.0512
483	483	3901.94	97	86.8803
484	484	6466.72	97	91.4738
485	485	7446.91	97	90.5530
486	486	1088.43	98	95.1626
487	487	2985.62	98	87.3263
488	488	3823.25	98	86.8045
489	489	6381.71	98	91.4704
490	490	6805.76	98	91.3191
491	491	1552.38	99	93.3633
492	492	2671.93	99	88.2046
493	493	4038.02	99	87.0528
494	494	6497.74	99	91.4705
495	495	6715.39	99	91.3848
496	496	191.53	100	92.7535
497	497	2543.47	100	88.6659
498	498	4584.44	100	88.1518
499	499	4979.19	100	89.1583
500	500	6761.55	100	91.3533

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 5

OBS	MN5	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
1	1	1	5	4056.18	91.1473	0.9	82
2	2	1	5	3835.89	90.7477	1.3	74
3	3	1	5	4345.00	90.4988	1.5	70
4	4	1	5	3647.88	90.4538	1.5	70
5	5	1	5	4621.23	90.1805	1.8	64
6	6	1	5	4129.03	89.9064	2.1	0
7	7	1	5	4243.43	89.8215	2.2	0
8	8	1	5	4376.60	90.8628	1.1	78
9	9	1	5	4183.37	90.9147	1.1	78
10	10	1	5	4112.03	90.4035	1.6	68
11	11	1	5	3978.14	91.2230	0.8	84
12	12	1	5	4232.19	90.3995	1.6	68
13	13	1	5	4337.44	90.5691	1.4	72
14	14	1	5	4187.77	90.6434	1.4	72
15	15	1	5	4198.81	90.2710	1.7	66
16	16	1	5	4209.12	90.2377	1.8	64
17	17	1	5	3775.75	90.2631	1.7	66
18	18	1	5	4282.37	91.1638	0.8	84
19	19	1	5	4175.76	90.5460	1.5	70
20	20	1	5	4229.00	91.3298	0.7	86
21	21	1	5	3843.15	90.6519	1.3	74
22	22	1	5	3791.96	89.9552	2.0	60
23	23	1	5	3809.15	90.0860	1.9	62
24	24	1	5	4258.02	90.7417	1.3	74
25	25	1	5	4055.12	90.0278	2.0	60
26	26	1	5	3828.54	90.0416	2.0	60
27	27	1	5	4123.30	90.4720	1.5	70
28	28	1	5	4134.02	90.3635	1.6	68
29	29	1	5	3888.90	90.7800	1.2	76
30	30	1	5	4078.46	90.2170	1.8	64
31	31	1	5	3875.43	90.7893	1.2	76
32	32	1	5	4488.94	90.0755	1.9	62
33	33	1	5	4088.47	90.7004	1.3	74
34	34	1	5	3996.52	90.7745	1.2	76
35	35	1	5	4073.28	90.3358	1.7	66
36	36	1	5	3854.19	91.3214	0.7	86
37	37	1	5	4125.22	90.0890	1.9	62
38	38	1	5	4299.13	90.4136	1.6	68
39	39	1	5	4497.35	90.8695	1.1	78
40	40	1	5	4154.52	89.9231	2.1	0
41	41	1	5	4234.40	90.6119	1.4	72
42	42	1	5	3786.62	90.3747	1.6	68
43	43	1	5	4242.39	90.6716	1.3	74
44	44	1	5	4431.53	90.7058	1.3	74
45	45	1	5	3867.92	90.1127	1.9	62
46	46	1	5	4329.01	91.5650	0.4	92
47	47	1	5	4105.94	89.7742	2.2	0
48	48	1	5	4342.22	91.0892	0.9	82
49	49	1	5	4034.39	89.5710	2.4	0
50	50	1	5	3958.42	91.2105	0.8	84
51	51	1	5	3992.92	91.2442	0.8	84
52	52	1	5	4072.20	90.1360	1.9	62
53	53	1	5	4045.47	90.3975	1.6	68
54	54	1	5	4208.97	90.0498	2.0	60
55	55	1	5	4383.52	90.7177	1.3	74
56	56	1	5	4267.67	90.6220	1.4	72
57	57	1	5	4053.41	89.9016	2.1	0
58	58	1	5	3987.37	90.0701	1.9	62
59	59	1	5	3748.87	90.7769	1.2	76

ASPHALT SUB-LOT SAMPLING SIMULATION
RESULTS FOR 100 SAMPLES OF SIZES 5

OBS	MN5	_TYPE_	_FREQ_	MX	MD	DEVTN	PCTPAY
60	60	1	5	4095.89	91.1071	0.9	82
61	61	1	5	3950.45	89.8098	2.2	0
62	62	1	5	4294.73	91.1392	0.9	82
63	63	1	5	3927.65	89.9120	2.1	0
64	64	1	5	4316.36	90.7032	1.3	74
65	65	1	5	4065.30	90.1218	1.9	62
66	66	1	5	3930.37	90.6781	1.3	74
67	67	1	5	4065.77	90.3541	1.6	68
68	68	1	5	4176.21	89.6150	2.4	0
69	69	1	5	3782.79	91.0029	1.0	80
70	70	1	5	4143.91	89.6012	2.4	0
71	71	1	5	4073.66	90.2342	1.8	64
72	72	1	5	4147.08	90.7743	1.2	76
73	73	1	5	4356.38	90.2135	1.8	64
74	74	1	5	3949.64	90.2420	1.8	64
75	75	1	5	4332.01	91.0995	0.9	82
76	76	1	5	4067.46	90.5339	1.5	70
77	77	1	5	4302.73	90.5262	1.5	70
78	78	1	5	3824.78	91.2028	0.8	84
79	79	1	5	4296.53	90.0223	2.0	60
80	80	1	5	4511.40	90.0897	1.9	62
81	81	1	5	4148.86	91.3234	0.7	86
82	82	1	5	3982.40	90.4470	1.6	68
83	83	1	5	3927.84	90.3176	1.7	66
84	84	1	5	4058.52	90.3555	1.6	68
85	85	1	5	4048.73	90.9596	1.0	80
86	86	1	5	4264.86	90.5219	1.5	70
87	87	1	5	4401.63	90.1005	1.9	62
88	88	1	5	3885.45	90.7590	1.2	76
89	89	1	5	4018.34	90.3197	1.7	66
90	90	1	5	4018.76	90.6369	1.4	72
91	91	1	5	4112.65	90.8889	1.1	78
92	92	1	5	3904.39	90.2164	1.8	64
93	93	1	5	4176.17	90.8422	1.2	76
94	94	1	5	4334.54	89.9811	2.0	60
95	95	1	5	4349.46	89.9904	2.0	60
96	96	1	5	3985.53	89.5987	2.4	0
97	97	1	5	4386.47	90.2683	1.7	66
98	98	1	5	4216.95	90.4166	1.6	68
99	99	1	5	4295.09	90.2952	1.7	66
100	100	1	5	3812.04	90.0166	2.0	60

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TITLE 'ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION';
OPTIONS PAGESIZE=64 NODATE;
DATA PAY;
N=0; X=9000;
DO UNTIL (N>=100);
 DO UNTIL (0<X<1000);
 X=10000*RANUNI(0);
 END; X1=X;
 D1=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
 X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
  DO UNTIL (1000<X<2000);
  X=10000*RANUNI(0);
  END; X2=X;
  D2=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
  X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   DO UNTIL (2000<X<3000);
   X=10000*RANUNI(0);
   END; X3=X;
   D3=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   DO UNTIL (3000<X<4000);
   X=10000*RANUNI(0);
   END; X4=X;
   D4=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   DO UNTIL (4000<X<5000);
   X=10000*RANUNI(0);
   END; X5=X;
   D5=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   DO UNTIL (5000<X<6000);
   X=10000*RANUNI(0);
   END; X6=X;
   D6=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   DO UNTIL (6000<X<7000);
   X=10000*RANUNI(0);
   END;  X7=X;
   D7=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   DO UNTIL (7000<X<8184);
   X=10000*RANUNI(0);
   END; X8=X;
   N+1;
   D8=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   OUTPUT;
END;
PROC PRINT DATA=PAY;
VAR X1 X2 X3 X4 X5 X6 X7 X8;
TITLE2 '100 RANDOM DISTANCES FOR EACH SUB-LOT ';
PROC PRINT DATA=PAY;
VAR D1 D2 D3 D4 D5 D6 D7 D8;
TITLE2 '100 RANDOM DENSITIES FOR EACH SUB-LOT ';
DATA PAYA; SET PAY;
   DEVTN1= 92-ROUND(D1,.1);
      IF DEVTN1<=0 THEN PCTPAY1=100;
      IF DEVTN1>2 THEN PCTPAY1=0;
      IF 0<DEVTN1<=2 THEN PCTPAY1=100-(20*DEVTN1);
   DEVTN2= 92-ROUND(D2,.1);
      IF DEVTN2<=0 THEN PCTPAY2=100;
      IF DEVTN2>2 THEN PCTPAY2=0;
      IF 0<DEVTN2<=2 THEN PCTPAY2=100-(20*DEVTN2);
   DEVTN3= 92-ROUND(D3,.1);
      IF DEVTN3<=0 THEN PCTPAY3=100;
      IF DEVTN3>2 THEN PCTPAY3=0;
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      IF 0<DEVTN3<=2 THEN PCTPAY3=100-(20*DEVTN3);
   DEVTN4= 92-ROUND(D4,.1);
      IF DEVTN4<=0 THEN PCTPAY4=100;
      IF DEVTN4>2 THEN PCTPAY4=0;
      IF 0<DEVTN4<=2 THEN PCTPAY4=100-(20*DEVTN4);
   DEVTN5= 92-ROUND(D5,.1);
      IF DEVTN5<=0 THEN PCTPAY5=100;
      IF DEVTN5>2 THEN PCTPAY5=0;
      IF 0<DEVTN5<=2 THEN PCTPAY5=100-(20*DEVTN5);
   DEVTN6= 92-ROUND(D6,.1);
      IF DEVTN6<=0 THEN PCTPAY6=100;
      IF DEVTN6>2 THEN PCTPAY6=0;
      IF 0<DEVTN6<=2 THEN PCTPAY6=100-(20*DEVTN6);
   DEVTN7= 92-ROUND(D7,.1);
      IF DEVTN7<=0 THEN PCTPAY7=100;
      IF DEVTN7>2 THEN PCTPAY7=0;
      IF 0<DEVTN7<=2 THEN PCTPAY7=100-(20*DEVTN7);
   DEVTN8= 92-ROUND(D8,.1);
      IF DEVTN8<=0 THEN PCTPAY8=100;
      IF DEVTN8>2 THEN PCTPAY8=0;
      IF 0<DEVTN8<=2 THEN PCTPAY8=100-(20*DEVTN8);
PROC PRINT DATA=PAYA;
VAR DEVTN1-DEVTN8;
TITLE2 'DEVIATIONS FOR 100 SAMPLES';
PROC PRINT DATA=PAYA;
VAR PCTPAY1-PCTPAY8;
TITLE2 'PERCENT PAY FOR 100 SAMPLES';
GOPTIONS NODISPLAY CBACK=WHITE COLORS=(BLACK) DEVICE=VGA;
LIBNAME AHTD 'C:\MYSAS\';
PATTERN1 V=X3 C=BLACK;
PROC GCHART DATA=PAYA GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 1';
VBAR PCTPAY1/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
PROC GCHART DATA=PAYA GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 2';
VBAR PCTPAY2/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
PROC GCHART DATA=PAYA GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 3';
VBAR PCTPAY3/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
PROC GCHART DATA=PAYA GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 4';
VBAR PCTPAY4/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
PROC GCHART DATA=PAYA GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 5';
VBAR PCTPAY5/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
PROC GCHART DATA=PAYA GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 6';
VBAR PCTPAY6/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
PROC GCHART DATA=PAYA GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 7';
VBAR PCTPAY7/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
PROC GCHART DATA=PAYA GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 8';
VBAR PCTPAY8/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
DATA PAYA3; SET PAY;
X=9000;
  IF D3<89.95 THEN DO;
   DO UNTIL (2000<X<3000);
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    X=10000*RANUNI(0);
    END; X32=X;
    D32=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
    X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
    DO UNTIL (2000<X<3000);
    X=10000*RANUNI(0);
    END; X33=X;
    D33=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
    X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
    MD3=(D3+D32+D33)/3;
    DEVTN3= 92-ROUND(MD3,.1);
       IF DEVTN3<=0 THEN PCTPAY3=100;
       IF DEVTN3>2 THEN PCTPAY3=0;
       IF 0<DEVTN3<=2 THEN PCTPAY3=100-(20*DEVTN3);
  END;
PROC PRINT DATA=PAYA3;
VAR X3 X32 X33 D3 D32 D33 MD3 DEVTN3 PCTPAY3;
TITLE2 'DISTANCES,DENSITIES AND PAY FOR SUB-LOT 3 AFTER AVERAGING';
TITLE3 'TWO MORE RANDOM DENSITIES WITH FAILING DENSITY';
DATA PAYA6; SET PAY;
X=9000;
  IF D6<89.95 THEN DO;
   DO UNTIL (5000<X<6000);
   X=10000*RANUNI(0);
   END; X62=X;
   D62=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   DO UNTIL (5000<X<6000);
   X=10000*RANUNI(0);
   END; X63=X;
   D63=(2.0385853E-17)*X**5 - (4.777191E-13)*X**4 + (3.96988072E-9)*
   X**3 - (.0000135005)*X**2 + (.015002)*X + 90.348160;
   MD6=(D6+D62+D63)/3;
   DEVTN6= 92-ROUND(MD6,.1);
      IF DEVTN6<=0 THEN PCTPAY6=100;
      IF DEVTN6>2 THEN PCTPAY6=0;
      IF 0<DEVTN6<=2 THEN PCTPAY6=100-(20*DEVTN6);
  END;
PROC PRINT DATA=PAYA6;
VAR X6 X62 X63 D6 D62 D63 MD6 DEVTN6 PCTPAY6;
TITLE2 'DISTANCES,DENSITIES AND PAY FOR SUB-LOT 6 AFTER AVERAGING';
TITLE3 'TWO MORE RANDOM DENSITIES WITH FAILING DENSITY';
PROC GCHART DATA=PAYA3 GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 3 AFTER AVERAGING';
TITLE3 'TWO MORE RANDOM DENSITIES WITH FAILING DENSITY';
VBAR PCTPAY3/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
PROC GCHART DATA=PAYA6 GOUT=AHTD.SIM3;
TITLE2 'CHART FOR PERCENT PAY IN SUB-LOT 6 AFTER AVERAGING';
TITLE3 'TWO MORE RANDOM DENSITIES WITH FAILING DENSITY';
VBAR PCTPAY6/TYPE=FREQ MIDPOINTS=0 60 TO 100 BY 2
AXIS = 0 TO 100 BY 10;
RUN;
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ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
100 RANDOM DISTANCES FOR EACH SUB-LOT

OBS	X1	X2	X3	X4	X5	X6	X7	X8
1	428.768	1945.30	2305.97	3701.35	4028.20	5458.98	6977.60	7852.27
2	872.938	1227.26	2832.60	3995.91	4598.55	5026.38	6972.49	7997.91
3	988.495	1200.69	2897.89	3231.21	4278.65	5853.33	6216.83	7334.23
4	791.202	1663.22	2710.92	3101.79	4273.52	5692.99	6726.00	7460.45
5	746.141	1359.46	2886.61	3731.71	4503.25	5551.16	6417.15	7674.34
6	588.274	1096.91	2547.66	3854.15	4142.53	5153.72	6173.25	7234.89
7	469.000	1307.09	2988.58	3577.01	4611.47	5495.19	6201.27	7484.15
8	999.915	1296.09	2603.66	3358.11	4552.35	5900.14	6122.98	7850.45
9	855.500	1868.25	2593.91	3794.44	4242.56	5757.62	6461.53	7513.07
10	703.545	1782.83	2714.19	3702.71	4989.47	5323.77	6511.89	7206.66
11	864.546	1477.33	2593.26	3282.18	4196.17	5108.37	6110.62	7907.60
12	626.961	1512.95	2676.08	3640.16	4357.46	5649.99	6670.31	7504.54
13	38.016	1686.19	2990.26	3618.75	4157.35	5338.89	6729.32	7427.52
14	443.951	1618.86	2832.48	3371.86	4641.92	5875.02	6932.94	7337.12
15	664.737	1049.63	2925.70	3798.54	4401.39	5541.38	6464.34	7560.79
16	494.255	1901.94	2364.40	3588.25	4176.49	5188.37	6405.48	8047.38
17	182.372	1486.16	2165.74	3962.19	4733.10	5675.64	6331.48	8068.07
18	126.869	1927.83	2806.05	3423.57	4260.25	5564.95	6483.80	7307.82
19	186.421	1247.05	2411.26	3975.58	4304.91	5317.60	6317.46	7017.99
20	797.567	1155.67	2186.27	3961.90	4975.57	5587.76	6410.61	7936.77
21	807.295	1362.51	2378.47	3509.06	4891.12	5877.57	6715.64	7795.63
22	593.868	1348.66	2646.43	3152.37	4354.90	5584.80	6143.22	7676.11
23	938.163	1944.99	2653.14	3071.22	4997.78	5939.15	6089.50	7986.03
24	384.113	1616.85	2441.88	3789.44	4402.93	5459.04	6176.63	7517.91
25	996.092	1039.67	2157.06	3756.47	4803.97	5486.57	6146.48	7332.95
26	265.915	1622.64	2497.18	3949.36	4213.35	5853.85	6847.96	7604.80
27	836.181	1368.61	2124.54	3827.19	4078.82	5962.46	6549.91	8023.86
28	951.628	1146.44	2978.75	3654.57	4802.28	5686.86	6545.99	7287.99
29	542.234	1788.08	2974.78	3910.91	4452.22	5869.39	6015.56	7255.34
30	26.793	1199.53	2498.63	3598.36	4633.67	5175.83	6109.14	7545.95
31	131.906	1283.74	2718.52	3882.41	4428.92	5066.05	6915.91	7736.50
32	745.338	1079.57	2135.08	3646.99	4879.84	5866.68	6405.16	8081.15
33	254.881	1778.78	2504.18	3253.96	4369.96	5498.59	6252.23	7251.10
34	273.751	1045.52	2781.13	3520.43	4286.22	5024.44	6792.84	8060.40
35	652.758	1330.09	2858.49	3479.42	4455.65	5731.61	6324.36	7605.73
36	822.628	1341.98	2313.29	3510.81	4146.73	5838.76	6239.43	8064.79
37	693.589	1193.19	2360.20	3356.09	4155.59	5535.79	6556.56	7819.91
38	359.377	1955.78	2653.73	3158.82	4805.18	5235.84	6915.31	7386.02
39	258.942	1318.88	2116.96	3288.30	4065.58	5416.56	6118.52	8038.41
40	828.355	1730.42	2714.90	3412.08	4374.85	5870.01	6399.93	7620.98
41	151.156	1602.23	2565.52	3852.92	4218.00	5196.00	6191.16	7498.60
42	364.097	1123.32	2176.58	3952.80	4252.76	5858.46	6436.23	7062.31
43	330.735	1423.24	2837.63	3573.51	4592.48	5407.04	6242.88	7988.90
44	765.254	1802.17	2134.15	3796.06	4720.14	5628.50	6270.78	7380.85
45	872.398	1512.02	2487.24	3568.51	4064.49	5538.98	6777.99	8149.27
46	885.678	1885.57	2683.04	3078.16	4157.46	5991.01	6796.96	7893.86
47	637.109	1287.24	2665.33	3417.42	4411.01	5634.55	6143.20	8078.26
48	841.707	1683.61	2100.92	3170.55	4542.70	5817.45	6644.03	7749.95
49	9.717	1059.66	2224.80	3938.27	4475.40	5412.09	6770.13	7457.94
50	988.878	1483.25	2277.85	3241.27	4718.20	5140.69	6788.81	7790.88
51	309.494	1974.62	2177.49	3402.76	4430.31	5583.51	6716.29	8114.20
52	265.915	1780.37	2539.88	3745.72	4845.77	5227.75	6916.21	7348.87
53	446.115	1568.26	2786.71	3227.59	4961.25	5797.33	6219.05	8083.23
54	558.747	1502.68	2347.90	3611.90	4126.42	5805.43	6956.69	7535.87
55	24.701	1132.56	2113.29	3823.31	4927.77	5614.47	6436.97	7139.11
56	555.485	1658.13	2120.35	3227.00	4562.66	5793.96	6594.71	7704.92
57	708.094	1914.34	2346.32	3508.20	4632.03	5186.46	6603.15	8026.27
58	607.449	1124.84	2621.96	3562.80	4278.61	5786.89	6285.19	8046.58
59	823.932	1959.57	2580.28	3637.77	4580.44	5423.07	6809.81	7053.77

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
100 RANDOM DISTANCES FOR EACH SUB-LOT

OBS	X1	X2	X3	X4	X5	X6	X7	X8
60	75.658	1682.51	2566.96	3100.85	4146.18	5400.21	6684.35	7317.50
61	578.823	1907.68	2547.85	3041.90	4365.05	5246.81	6284.21	7618.39
62	185.225	1087.79	2275.60	3910.90	4771.52	5405.25	6304.16	7233.91
63	176.742	1751.92	2514.82	3895.25	4897.71	5270.56	6082.03	7425.40
64	101.502	1568.04	2462.79	3424.19	4868.17	5645.50	6700.07	7640.67
65	857.926	1629.21	2573.40	3485.69	4299.61	5703.18	6125.81	7427.19
66	751.628	1826.81	2984.53	3709.12	4764.16	5189.72	6248.77	8000.50
67	744.705	1174.59	2990.08	3760.39	4567.20	5742.18	6186.49	7506.93
68	355.712	1408.31	2350.94	3294.16	4208.60	5695.48	6836.98	7800.31
69	692.992	1722.40	2165.39	3336.53	4821.68	5193.87	6223.89	7779.78
70	227.913	1211.36	2275.01	3124.09	4002.66	5047.58	6449.51	7315.59
71	385.416	1518.66	2735.77	3057.83	4027.95	5615.79	6172.77	7855.87
72	599.896	1292.40	2970.53	3664.45	4217.57	5588.96	6030.93	7212.35
73	95.192	1155.12	2015.46	3051.08	4102.08	5338.61	6210.29	7303.96
74	497.938	1472.47	2206.52	3207.04	4113.83	5222.57	6335.50	7653.12
75	709.791	1207.78	2068.15	3482.30	4637.40	5067.04	6796.10	7955.59
76	279.614	1527.90	2969.25	3336.99	4832.73	5892.48	6150.47	8116.30
77	946.535	1185.88	2705.98	3689.08	4015.20	5414.45	6734.99	7222.98
78	744.651	1196.14	2659.00	3832.95	4169.86	5937.09	6529.70	7575.88
79	27.000	1374.02	2008.05	3110.37	4032.43	5598.68	6240.61	7162.81
80	876.761	1017.85	2448.64	3003.98	4042.63	5128.48	6455.44	7893.17
81	223.006	1033.89	2853.07	3268.62	4355.39	5396.34	6442.24	7605.32
82	430.512	1479.96	2163.23	3542.16	4012.27	5841.93	6981.02	7858.55
83	218.540	1312.71	2427.16	3704.16	4257.21	5861.66	6586.53	7855.60
84	903.794	1015.94	2376.54	3715.43	4889.91	5582.48	6492.04	7229.41
85	541.712	1023.04	2251.00	3386.32	4263.34	5093.23	6452.74	8082.98
86	170.667	1278.71	2102.96	3296.82	4908.58	5234.68	6126.17	7550.27
87	786.148	1726.56	2641.72	3447.59	4685.82	5719.80	6265.37	7989.68
88	144.147	1503.83	2568.44	3803.86	4090.68	5785.93	6220.80	7835.44
89	160.919	1094.33	2380.60	3772.25	4292.34	5995.03	6711.75	7710.81
90	920.030	1215.27	2175.90	3623.95	4704.53	5599.74	6006.99	7900.59
91	30.961	1930.59	2555.50	3171.42	4086.07	5186.48	6633.56	7485.50
92	56.202	1082.37	2396.88	3695.57	4542.86	5828.61	6641.45	7113.46
93	699.246	1763.84	2599.46	3505.80	4103.37	5347.35	6182.18	7423.71
94	250.754	1179.35	2143.92	3548.91	4705.10	5288.11	6067.31	7752.36
95	73.877	1296.28	2696.83	3959.94	4058.52	5683.82	6959.05	7289.75
96	122.788	1931.55	2172.94	3701.93	4192.16	5328.82	6324.38	7510.47
97	796.515	1726.23	2233.93	3730.33	4932.24	5974.67	6945.63	8174.48
98	44.806	1492.85	2780.94	3132.81	4173.30	5445.51	6884.02	7768.97
99	320.094	1589.80	2939.53	3639.13	4324.95	5250.32	6022.34	7413.30
100	706.167	1851.29	2075.30	3152.42	4213.77	5941.72	6679.49	8141.69

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
100 RANDOM DENSITIES FOR EACH SUB-LOT

OBS	D1	D2	D3	D4	D5	D6	D7	D8
1	94.5957	91.3938	89.6534	86.7248	87.0387	90.3260	91.1532	90.1801
2	95.5300	94.7367	87.7089	86.9940	88.1862	89.2802	91.1588	90.1766
3	95.3835	94.8276	87.5347	86.9014	87.4692	91.0472	91.4125	90.7014
4	95.5518	92.8224	88.0757	87.0961	87.4591	90.7898	91.3779	90.5357
5	95.5314	94.2292	87.5637	86.7402	87.9580	90.5199	91.4740	90.2962
6	95.2538	95.1403	88.6501	86.8320	87.2177	89.6046	91.3858	90.8345
7	94.8014	94.4404	87.3198	86.6940	88.2179	90.4037	91.4035	90.5058
8	95.3624	94.4831	88.4429	86.7733	88.0743	91.1118	91.3490	90.1807
9	95.5407	91.7852	88.4782	86.7814	87.3988	90.9000	91.4741	90.4703
10	95.4893	92.2200	88.0652	86.7254	89.1849	90.0193	91.4683	90.8719
11	95.5356	93.7141	88.4806	86.8425	87.3121	89.4901	91.3390	90.1672
12	95.3536	93.5495	88.1906	86.7031	87.6315	90.7119	91.4113	90.4807
13	90.8992	92.7078	87.3161	86.6985	87.2431	90.0547	91.3757	90.5780
14	94.6766	93.0415	87.7092	86.7631	88.2931	91.0777	91.2009	90.6975
15	95.4305	95.2578	87.4655	86.7845	87.7265	90.5000	91.4739	90.4140
16	94.9164	91.6138	89.3959	86.6946	87.2767	89.6911	91.4732	90.1999
17	92.6586	93.6736	90.3039	86.9504	88.5227	90.7588	91.4600	90.2138
18	92.0421	91.4823	87.7843	86.7311	87.4330	90.5477	91.4723	90.7368
19	92.7008	94.6664	89.1959	86.9674	87.5221	90.0047	91.4560	91.1077
20	95.5528	94.9720	90.2061	86.9501	89.1489	90.5930	91.4736	90.1659
21	95.5534	94.2165	89.3352	86.6999	88.9298	91.0813	91.3846	90.2058
22	95.2696	94.2737	88.2917	87.0122	87.6260	90.5872	91.3646	90.2946
23	95.4628	91.3954	88.2686	87.1516	89.2064	91.1619	91.3211	90.1730
24	94.3335	93.0513	89.0685	86.7777	87.7299	90.3261	91.3880	90.4644
25	95.3696	95.2803	90.3455	86.7550	88.7043	90.3854	91.3670	90.7031
26	93.4551	93.0230	88.8455	86.9346	87.3437	91.0479	91.2830	90.3653
27	95.5488	94.1911	90.5025	86.8078	87.1140	91.1901	91.4599	90.1871
28	95.4438	94.9999	87.3415	86.7071	88.7000	90.7789	91.4610	90.7634
29	95.1059	92.1934	87.3505	86.8901	87.8402	91.0699	91.2496	90.8072
30	90.7405	94.8315	88.8397	86.6955	88.2727	89.6599	91.3378	90.4311
31	92.1011	94.5304	88.0512	86.8598	87.7876	89.3821	91.2183	90.2444
32	95.5308	95.1854	90.4514	86.7049	88.9006	91.0661	91.4731	90.2240
33	93.3586	92.2406	88.8179	86.8739	87.6582	90.4109	91.4307	90.8129
34	93.5220	95.2672	87.8574	86.6978	87.4843	89.2752	91.3295	90.2084
35	95.4082	94.3492	87.6379	86.7077	87.8480	90.8567	91.4581	90.3643
36	95.5521	94.3011	89.6207	86.6996	87.2248	91.0260	91.4245	90.2115
37	95.4761	94.8525	89.4141	86.7748	87.2401	90.4885	91.4581	90.1933
38	94.1723	91.3408	88.2665	87.0022	88.7074	89.8082	91.2189	90.6324
39	93.3944	94.3939	90.5393	86.8361	87.0937	90.2324	91.3455	90.1946
40	95.5510	92.4855	88.0629	86.7374	87.6687	91.0708	91.4727	90.3483
41	92.3208	93.1228	88.5829	86.8309	87.3524	89.7101	91.3974	90.4879
42	94.2040	95.0676	90.2522	86.9388	87.4185	91.0545	91.4746	91.0553
43	93.9711	93.9566	87.6949	86.6939	88.1714	90.2110	91.4262	90.1738
44	95.5430	92.1218	90.4559	86.7826	88.4897	90.6717	91.4390	90.6392
45	95.5304	93.5538	88.8849	86.6939	87.0920	90.4951	91.3410	90.2950
46	95.5202	91.6971	88.1673	87.1386	87.2433	91.2229	91.3262	90.1692
47	95.3762	94.5171	88.2269	86.7344	87.7477	90.6831	91.3646	90.2217
48	95.5469	92.7207	90.6176	86.9845	88.0512	90.9943	91.4247	90.2347
49	90.4927	95.2343	90.0248	86.9213	87.8933	90.2224	91.3469	90.5389
50	95.3828	93.6870	89.7804	86.8890	88.4848	89.5718	91.3327	90.2085
51	93.8114	91.2457	90.2479	86.7428	87.7907	90.5846	91.3842	90.2546
52	93.4551	92.2326	88.6797	86.7483	88.8123	89.7884	91.2180	90.6818
53	94.6878	93.2873	87.8409	86.9059	89.1118	90.9635	91.4138	90.2257
54	95.1627	93.5973	89.4677	86.6973	87.1905	90.9760	91.1759	90.4430
55	90.7105	95.0410	90.5572	86.8045	89.0250	90.6449	91.4746	90.9598
56	95.1518	92.8477	90.5228	86.9067	88.0991	90.9582	91.4457	90.2695
57	95.4949	91.5508	89.4746	86.7001	88.2686	89.6864	91.4425	90.1882
58	95.3060	95.0632	88.3774	86.6939	87.4692	90.9471	91.4448	90.1994
59	95.5519	91.3217	88.5281	86.7025	88.1421	90.2469	91.3158	91.0656

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
100 RANDOM DENSITIES FOR EACH SUB-LOT

OBS	D1	D2	D3	D4	D5	D6	D7	D8
60	91.4076	92.7262	88.5775	87.0977	87.2239	90.1956	91.4035	90.7238
61	95.2261	91.5846	88.6493	87.2082	87.6477	89.8350	91.4445	90.3510
62	92.6884	95.1643	89.7906	86.8901	88.6209	90.2070	91.4517	90.8358
63	92.5994	92.3768	88.7763	86.8731	88.9470	89.8925	91.3145	90.5807
64	91.7359	93.2883	88.9831	86.7308	88.8703	90.7036	91.3943	90.3284
65	95.5394	92.9907	88.5535	86.7058	87.5113	90.8077	91.3513	90.5784
66	95.5352	91.9963	87.3287	86.7285	88.6020	89.6945	91.4291	90.1775
67	95.5304	94.9128	87.3165	86.7575	88.1101	90.8745	91.3944	90.4777
68	94.1475	94.0218	89.4544	86.8301	87.3349	90.7942	91.2927	90.2032
69	95.4752	92.5260	90.3056	86.7907	88.7500	89.7048	91.4164	90.2150
70	93.1118	94.7916	89.7933	87.0579	87.0032	89.3347	91.4745	90.7264
71	94.3416	93.5228	87.9964	87.1770	87.0383	90.6474	91.3855	90.1788
72	95.2861	94.4974	87.3601	86.7102	87.3516	90.5954	91.2655	90.8644
73	91.6573	94.9736	91.0406	87.1901	87.1507	90.0541	91.4088	90.7420
74	94.9323	93.7363	90.1105	86.9328	87.1698	89.7757	91.4611	90.3162
75	95.4969	94.8038	90.7786	86.7068	88.2819	89.3846	91.3269	90.1672
76	93.5713	93.4793	87.3629	86.7903	88.7786	91.1016	91.3699	90.2568
77	95.4512	94.8765	88.0918	86.7194	87.0204	90.2277	91.3720	90.8503
78	95.5303	94.8428	88.2485	86.8128	87.2650	91.1593	91.4648	90.3969
79	90.7435	94.1684	91.0777	87.0811	87.0447	90.6144	91.4251	90.9293
80	95.5272	95.3270	89.0408	87.2864	87.0595	89.5410	91.4743	90.1693
81	93.0651	95.2931	87.6526	86.8572	87.6271	90.1869	91.4746	90.3648
82	94.6052	93.7021	90.3160	86.6950	87.0163	91.0307	91.1494	90.1780
83	93.0223	94.4183	89.1294	86.7261	87.4271	91.0590	91.4486	90.1789
84	95.5034	95.3309	89.3435	86.7316	88.9267	90.5826	91.4713	90.8418
85	95.1041	95.3162	89.9033	86.7531	87.4391	89.4515	91.4744	90.2255
86	92.5346	94.5495	90.6076	86.8275	88.9751	89.8054	91.3516	90.4261
87	95.5507	92.5050	88.3081	86.7196	88.4029	90.8365	91.4367	90.1740
88	92.2418	93.5920	88.5720	86.7887	87.1325	90.9456	91.4147	90.1864
89	92.4289	95.1472	89.3261	86.7654	87.4966	91.2274	91.3871	90.2646
90	95.4856	94.7782	90.2554	86.6994	88.4501	90.6165	91.2404	90.1681
91	90.7998	91.4683	88.6204	86.9832	87.1253	89.6865	91.4296	90.5042
92	91.1494	95.1782	89.2566	86.7222	88.0516	91.0111	91.4259	90.9923
93	95.4837	92.3165	88.4581	86.7006	87.1528	90.0744	91.3917	90.5829
94	93.3218	94.8976	90.4087	86.6945	88.4516	89.9346	91.3010	90.2330
95	91.3844	94.4824	88.1217	86.9476	87.0830	90.7735	91.1734	90.7611
96	91.9939	91.4634	90.2695	86.7251	87.3049	90.0312	91.4581	90.4734
97	95.5527	92.5067	89.9823	86.7394	89.0365	91.2044	91.1877	90.3294
98	90.9936	93.6428	87.8580	87.0435	87.2711	90.2965	91.2497	90.2218
99	93.8922	93.1833	87.4321	86.7028	87.5632	89.8435	91.2567	90.5965
100	95.4925	91.8716	90.7434	87.0121	87.3445	91.1650	91.4062	90.2855

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
DEVIATIONS FOR 100 SAMPLES

BS	DEVTN1	DEVTN2	DEVTN3	DEVTN4	DEVTN5	DEVTN6	DEVTN7	DEVTN8
1	-2.6	0.6	2.3	5.3	5.0	1.7	0.8	1.8
2	-3.5	-2.7	4.3	5.0	3.8	2.7	0.8	1.8
3	-3.4	-2.8	4.5	5.1	4.5	1.0	0.6	1.3
4	-3.6	-0.8	3.9	4.9	4.5	1.2	0.6	1.5
5	-3.5	-2.2	4.4	5.3	4.0	1.5	0.5	1.7
6	-3.3	-3.1	3.3	5.2	4.8	2.4	0.6	1.2
7	-2.8	-2.4	4.7	5.3	3.8	1.6	0.6	1.5
8	-3.4	-2.5	3.6	5.2	3.9	0.9	0.7	1.8
9	-3.5	0.2	3.5	5.2	4.6	1.1	0.5	1.5
10	-3.5	-0.2	3.9	5.3	2.8	2.0	0.5	1.1
11	-3.5	-1.7	3.5	5.2	4.7	2.5	0.7	1.8
12	-3.4	-1.5	3.8	5.3	4.4	1.3	0.6	1.5
13	1.1	-0.7	4.7	5.3	4.8	1.9	0.6	1.4
14	-2.7	-1.0	4.3	5.2	3.7	0.9	0.8	1.3
15	-3.4	-3.3	4.5	5.2	4.3	1.5	0.5	1.6
16	-2.9	0.4	2.6	5.3	4.7	2.3	0.5	1.8
17	-0.7	-1.7	1.7	5.0	3.5	1.2	0.5	1.8
18	0.0	0.5	4.2	5.3	4.6	1.5	0.5	1.3
19	-0.7	-2.7	2.8	5.0	4.5	2.0	0.5	0.9
20	-3.6	-3.0	1.8	5.0	2.9	1.4	0.5	1.8
21	-3.6	-2.2	2.7	5.3	3.1	0.9	0.6	1.8
22	-3.3	-2.3	3.7	5.0	4.4	1.4	0.6	1.7
23	-3.5	0.6	3.7	4.8	2.8	0.8	0.7	1.8
24	-2.3	-1.1	2.9	5.2	4.3	1.7	0.6	1.5
25	-3.4	-3.3	1.7	5.2	3.3	1.6	0.6	1.3
26	-1.5	-1.0	3.2	5.1	4.7	1.0	0.7	1.6
27	-3.5	-2.2	1.5	5.2	4.9	0.8	0.5	1.8
8	-3.4	-3.0	4.7	5.3	3.3	1.2	0.5	1.2
9	-3.1	-0.2	4.6	5.1	4.2	0.9	0.8	1.2
30	1.3	-2.8	3.2	5.3	3.7	2.3	0.7	1.6
31	-0.1	-2.5	3.9	5.1	4.2	2.6	0.8	1.8
32	-3.5	-3.2	1.5	5.3	3.1	0.9	0.5	1.8
33	-1.4	-0.2	3.2	5.1	4.3	1.6	0.6	1.2
34	-1.5	-3.3	4.1	5.3	4.5	2.7	0.7	1.8
35	-3.4	-2.3	4.4	5.3	4.2	1.1	0.5	1.6
36	-3.6	-2.3	2.4	5.3	4.8	1.0	0.6	1.8
37	-3.5	-2.9	2.6	5.2	4.8	1.5	0.5	1.8
38	-2.2	0.7	3.7	5.0	3.3	2.2	0.8	1.4
39	-1.4	-2.4	1.5	5.2	4.9	1.8	0.7	1.8
40	-3.6	-0.5	3.9	5.3	4.3	0.9	0.5	1.7
41	-0.3	-1.1	3.4	5.2	4.6	2.3	0.6	1.5
42	-2.2	-3.1	1.7	5.1	4.6	0.9	0.5	0.9
43	-2.0	-2.0	4.3	5.3	3.8	1.8	0.6	1.8
44	-3.5	-0.1	1.5	5.2	3.5	1.3	0.6	1.4
45	-3.5	-1.6	3.1	5.3	4.9	1.5	0.7	1.7
46	-3.5	0.3	3.8	4.9	4.8	0.8	0.7	1.8
47	-3.4	-2.5	3.8	5.3	4.3	1.3	0.6	1.8
48	-3.5	-0.7	1.4	5.0	3.9	1.0	0.6	1.8
49	1.5	-3.2	2.0	5.1	4.1	1.8	0.7	1.5
50	-3.4	-1.7	2.2	5.1	3.5	2.4	0.7	1.8
51	-1.8	0.8	1.8	5.3	4.2	1.4	0.6	1.7
52	-1.5	-0.2	3.3	5.3	3.2	2.2	0.8	1.3
53	-2.7	-1.3	4.2	5.1	2.9	1.0	0.6	1.8
54	-3.2	-1.6	2.5	5.3	4.8	1.0	0.8	1.6
55	1.3	-3.0	1.4	5.2	3.0	1.4	0.5	1.0
6	-3.2	-0.8	1.5	5.1	3.9	1.0	0.6	1.7
7	-3.5	0.4	2.5	5.3	3.7	2.3	0.6	1.8
8	-3.3	-3.1	3.6	5.3	4.5	1.1	0.6	1.8
59	-3.6	0.7	3.5	5.3	3.9	1.8	0.7	0.9

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
DEVIATIONS FOR 100 SAMPLES

OBS	DEVTN1	DEVTN2	DEVTN3	DEVTN4	DEVTN5	DEVTN6	DEVTN7	DEVTN8
60	0.6	-0.7	3.4	4.9	4.8	1.8	0.6	1.3
61	-3.2	0.4	3.4	4.8	4.4	2.2	0.6	1.6
62	-0.7	-3.2	2.2	5.1	3.4	1.8	0.5	1.2
63	-0.6	-0.4	3.2	5.1	3.1	2.1	0.7	1.4
64	0.3	-1.3	3.0	5.3	3.1	1.3	0.6	1.7
65	-3.5	-1.0	3.4	5.3	4.5	1.2	0.6	1.4
66	-3.5	0.0	4.7	5.3	3.4	2.3	0.6	1.8
67	-3.5	-2.9	4.7	5.2	3.9	1.1	0.6	1.5
68	-2.1	-2.0	2.5	5.2	4.7	1.2	0.7	1.8
69	-3.5	-0.5	1.7	5.2	3.2	2.3	0.6	1.8
70	-1.1	-2.8	2.2	4.9	5.0	2.7	0.5	1.3
71	-2.3	-1.5	4.0	4.8	5.0	1.4	0.6	1.8
72	-3.3	-2.5	4.6	5.3	4.6	1.4	0.7	1.1
73	0.3	-3.0	1.0	4.8	4.8	1.9	0.6	1.3
74	-2.9	-1.7	1.9	5.1	4.8	2.2	0.5	1.7
75	-3.5	-2.8	1.2	5.3	3.7	2.6	0.7	1.8
76	-1.6	-1.5	4.6	5.2	3.2	0.9	0.6	1.7
77	-3.5	-2.9	3.9	5.3	5.0	1.8	0.6	1.1
78	-3.5	-2.8	3.8	5.2	4.7	0.8	0.5	1.6
79	1.3	-2.2	0.9	4.9	5.0	1.4	0.6	1.1
80	-3.5	-3.3	3.0	4.7	4.9	2.5	0.5	1.8
81	-1.1	-3.3	4.3	5.1	4.4	1.8	0.5	1.6
82	-2.6	-1.7	1.7	5.3	5.0	1.0	0.9	1.8
83	-1.0	-2.4	2.9	5.3	4.6	0.9	0.6	1.8
84	-3.5	-3.3	2.7	5.3	3.1	1.4	0.5	1.2
85	-3.1	-3.3	2.1	5.2	4.6	2.5	0.5	1.8
86	-0.5	-2.5	1.4	5.2	3.0	2.2	0.6	1.6
87	-3.6	-0.5	3.7	5.3	3.6	1.2	0.6	1.8
88	-0.2	-1.6	3.4	5.2	4.9	1.1	0.6	1.8
89	-0.4	-3.1	2.7	5.2	4.5	0.8	0.6	1.7
90	-3.5	-2.8	1.7	5.3	3.5	1.4	0.8	1.8
91	1.2	0.5	3.4	5.0	4.9	2.3	0.6	1.5
92	0.9	-3.2	2.7	5.3	3.9	1.0	0.6	1.0
93	-3.5	-0.3	3.5	5.3	4.8	1.9	0.6	1.4
94	-1.3	-2.9	1.6	5.3	3.5	2.1	0.7	1.8
95	0.6	-2.5	3.9	5.1	4.9	1.2	0.8	1.2
96	0.0	0.5	1.7	5.3	4.7	2.0	0.5	1.5
97	-3.6	-0.5	2.0	5.3	3.0	0.8	0.8	1.7
98	1.0	-1.6	4.1	5.0	4.7	1.7	0.8	1.8
99	-1.9	-1.2	4.6	5.3	4.4	2.2	0.7	1.4
100	-3.5	0.1	1.3	5.0	4.7	0.8	0.6	1.7

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
PERCENT PAY FOR 100 SAMPLES

OBS	PCTPAY1	PCTPAY2	PCTPAY3	PCTPAY4	PCTPAY5	PCTPAY6	PCTPAY7	PCTPAY8
1	100	88	0	0	0	66	84	64
2	100	100	0	0	0	0	84	64
3	100	100	0	0	0	80	88	74
4	100	100	0	0	0	76	88	70
5	100	100	0	0	0	70	90	66
6	100	100	0	0	0	0	88	76
7	100	100	0	0	0	68	88	70
8	100	100	0	0	0	82	86	64
9	100	96	0	0	0	78	90	70
10	100	100	0	0	0	60	90	78
11	100	100	0	0	0	0	86	64
12	100	100	0	0	0	74	88	70
13	78	100	0	0	0	62	88	72
14	100	100	0	0	0	82	84	74
15	100	100	0	0	0	70	90	68
16	100	92	0	0	0	0	90	64
17	100	100	66	0	0	76	90	64
18	100	90	0	0	0	70	90	74
19	100	100	0	0	0	60	90	82
20	100	100	64	0	0	72	90	64
21	100	100	0	0	0	82	88	64
22	100	100	0	0	0	72	88	66
23	100	88	0	0	0	84	86	64
24	100	100	0	0	0	66	88	70
25	100	100	66	0	0	68	88	74
26	100	100	0	0	0	80	86	68
27	100	100	70	0	0	84	90	64
28	100	100	0	0	0	76	90	76
29	100	100	0	0	0	82	84	76
30	74	100	0	0	0	0	86	68
31	100	100	0	0	0	0	84	64
32	100	100	70	0	0	82	90	64
33	100	100	0	0	0	68	88	76
34	100	100	0	0	0	0	86	64
35	100	100	0	0	0	78	90	68
36	100	100	0	0	0	80	88	64
37	100	100	0	0	0	70	90	64
38	100	86	0	0	0	0	84	72
39	100	100	70	0	0	64	86	64
40	100	100	0	0	0	82	90	66
41	100	100	0	0	0	0	88	70
42	100	100	66	0	0	82	90	82
43	100	100	0	0	0	64	88	64
44	100	100	70	0	0	74	88	72
45	100	100	0	0	0	70	86	66
46	100	94	0	0	0	84	86	64
47	100	100	0	0	0	74	88	64
48	100	100	72	0	0	80	88	64
49	70	100	60	0	0	64	86	70
50	100	100	0	0	0	0	86	64
51	100	84	64	0	0	72	88	66
52	100	100	0	0	0	0	84	74
53	100	100	0	0	0	80	88	64
54	100	100	0	0	0	80	84	68
55	74	100	72	0	0	72	90	80
56	100	100	70	0	0	80	88	66
57	100	92	0	0	0	0	88	64
58	100	100	0	0	0	78	88	64
59	100	86	0	0	0	64	86	82

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
PERCENT PAY FOR 100 SAMPLES

BS	PCTPAY1	PCTPAY2	PCTPAY3	PCTPAY4	PCTPAY5	PCTPAY6	PCTPAY7	PCTPAY8
60	88	100	0	0	0	64	88	74
61	100	92	0	0	0	0	88	68
62	100	100	0	0	0	64	90	76
63	100	100	0	0	0	0	86	72
64	94	100	0	0	0	74	88	66
65	100	100	0	0	0	76	88	72
66	100	100	0	0	0	0	88	64
67	100	100	0	0	0	78	88	70
68	100	100	0	0	0	76	86	64
69	100	100	66	0	0	0	88	64
70	100	100	0	0	0	0	90	74
71	100	100	0	0	0	72	88	64
72	100	100	0	0	0	72	86	78
73	94	100	80	0	0	62	88	74
74	100	100	62	0	0	0	90	66
75	100	100	76	0	0	0	86	64
76	100	100	0	0	0	82	88	66
77	100	100	0	0	0	64	88	78
78	100	100	0	0	0	84	90	68
79	74	100	82	0	0	72	88	78
80	100	100	0	0	0	0	90	64
81	100	100	0	0	0	64	90	68
82	100	100	66	0	0	80	82	64
83	100	100	0	0	0	82	88	64
84	100	100	0	0	0	72	90	76
85	100	100	0	0	0	0	90	64
86	100	100	72	0	0	0	88	68
7	100	100	0	0	0	76	88	64
8	100	100	0	0	0	78	88	64
89	100	100	0	0	0	84	88	66
90	100	100	66	0	0	72	84	64
91	76	90	0	0	0	0	88	70
92	82	100	0	0	0	80	88	80
93	100	100	0	0	0	62	88	72
94	100	100	68	0	0	0	86	64
95	88	100	0	0	0	76	84	76
96	100	90	66	0	0	60	90	70
97	100	100	60	0	0	84	84	66
98	80	100	0	0	0	66	84	64
99	100	100	0	0	0	0	86	72
100	100	98	74	0	0	84	88	66

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
DISTANCES,DENSITIES AND PAY FOR SUB-LOT 3 AFTER AVERAGING
TWO MORE RANDOM DENSITIES WITH FAILING DENSITY

OBS	X3	X32	X33	D3	D32	D33	MD3	DEVTN3	PCTPAY3
1	2305.97	2576.36	2026.46	89.6534	88.5426	90.9856	89.7272	2.3	0
2	2832.60	2847.10	2759.10	87.7089	87.6688	87.9240	87.7672	4.2	0
3	2897.89	2277.17	2608.16	87.5347	89.7835	88.4267	88.5816	3.4	0
4	2710.92	2569.46	2399.89	88.0757	88.5682	89.2438	88.6293	3.4	0
5	2886.61	2375.44	2834.19	87.5637	89.3482	87.7045	88.2055	3.8	0
6	2547.66	2151.94	2071.18	88.6501	90.3701	90.7637	89.9279	2.1	0
7	2988.58	2994.65	2169.31	87.3198	87.3065	90.2869	88.3044	3.7	0
8	2603.66	2134.60	2803.03	88.4429	90.4537	87.7930	88.8966	3.1	0
9	2593.91	2398.14	2241.48	88.4782	89.2513	89.9473	89.2256	2.8	0
10	2714.19	2900.64	2742.01	88.0652	87.5278	87.9769	87.8566	4.1	0
11	2593.26	2896.45	2996.61	88.4806	87.5384	87.3023	87.7738	4.2	0
12	2676.08	2034.84	2256.69	88.1906	90.9439	89.8771	89.6705	2.3	0
13	2990.26	2067.11	2356.17	87.3161	90.7838	89.4317	89.1772	2.8	0
14	2832.48	2910.08	2034.17	87.7092	87.5040	90.9472	88.7201	3.3	0
15	2925.70	2210.02	2083.38	87.4655	90.0940	90.7036	89.4210	2.6	0
16	2364.40	2162.19	2923.08	89.3959	90.3209	87.4719	89.0629	2.9	0
17	2165.74	.	.	90.3039	.	.	.	.	.
18	2806.05	2035.79	2609.82	87.7843	90.9391	88.4207	89.0481	3.0	0
19	2411.26	2500.58	2464.32	89.1959	88.8320	88.9769	89.0016	3.0	0
20	2186.27	.	.	90.2061	.	.	.	.	.
21	2378.47	2623.14	2461.04	89.3352	88.3732	88.9902	88.8995	3.1	0
22	2646.43	2403.57	2139.15	88.2917	89.2283	90.4317	89.3172	2.7	0
23	2653.14	2441.51	2127.94	88.2686	89.0700	90.4860	89.2749	2.7	0
24	2441.88	2912.07	2736.57	89.0685	87.4990	87.9939	88.1872	3.8	0
25	2157.06	.	.	90.3455	.	.	.	.	.
26	2497.18	2507.65	2517.28	88.8455	88.8042	88.7667	88.8055	3.2	0
27	2124.54	.	.	90.5025	.	.	.	.	.
28	2978.75	2682.81	2294.05	87.3415	88.1681	89.7070	88.4055	3.6	0
29	2974.78	2987.31	2940.93	87.3505	87.3226	87.4288	87.3673	4.6	0
30	2498.63	2694.27	2121.80	88.8397	88.1301	90.5158	89.1619	2.8	0
31	2718.52	2376.72	2118.07	88.0512	89.3427	90.5339	89.3093	2.7	0
32	2135.08	.	.	90.4514	.	.	.	.	.
33	2504.18	2834.80	2697.07	88.8179	87.7028	88.1209	88.2138	3.8	0
34	2781.13	2666.15	2037.28	87.8574	88.2241	90.9317	89.0044	3.0	0
35	2858.49	2815.92	2177.77	87.6379	87.7560	90.2465	88.5468	3.5	0
36	2313.29	2127.21	2140.53	89.6207	90.4895	90.4251	90.1784	1.8	64
37	2360.20	2779.51	2614.41	89.4141	87.8623	88.4043	88.5602	3.4	0
38	2653.73	2698.96	2580.00	88.2665	88.1147	88.5291	88.3034	3.7	0
39	2116.96	.	.	90.5393	.	.	.	.	.
40	2714.90	2222.46	2481.50	88.0629	90.0357	88.9078	89.0021	3.0	0
41	2565.52	2667.74	2435.32	88.5829	88.2187	89.0956	88.6324	3.4	0
42	2176.58	.	.	90.2522	.	.	.	.	.
43	2837.63	2275.16	2249.61	87.6949	89.7926	89.9097	89.1324	2.9	0
44	2134.15	.	.	90.4559	.	.	.	.	.
45	2487.24	2732.34	2146.90	88.8849	88.0072	90.3944	89.0955	2.9	0
46	2683.04	2118.98	2435.55	88.1673	90.5295	89.0946	89.2638	2.7	0
47	2665.33	2344.79	2319.12	88.2269	89.4813	89.5947	89.1010	2.9	0
48	2100.92	.	.	90.6176	.	.	.	.	.
49	2224.80	.	.	90.0248	.	.	.	.	.
50	2277.85	2536.69	2873.59	89.7804	88.6918	87.5977	88.6900	3.3	0
51	2177.49	.	.	90.2479	.	.	.	.	.
52	2539.88	2146.13	2406.42	88.6797	90.3980	89.2163	89.4313	2.6	0
53	2786.71	2554.13	2219.83	87.8409	88.6256	90.0480	88.8382	3.2	0
54	2347.90	2199.16	2399.98	89.4677	90.1452	89.2435	89.6188	2.4	0
55	2113.29	.	.	90.5572	.	.	.	.	.
56	2120.35	.	.	90.5228	.	.	.	.	.
57	2346.32	2482.06	2509.06	89.4746	88.9055	88.7987	89.0596	2.9	0
58	2621.96	2750.06	2479.47	88.3774	87.9518	88.9159	88.4151	3.6	0

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
DISTANCES,DENSITIES AND PAY FOR SUB-LOT 3 AFTER AVERAGING
TWO MORE RANDOM DENSITIES WITH FAILING DENSITY

OBS	X3	X32	X33	D3	D32	D33	MD3	DEVTN3	PCTPAY3
59	2580.28	2712.21	2027.70	88.5281	88.0716	90.9795	89.1930	2.8	0
60	2566.96	2939.80	2893.18	88.5775	87.4315	87.5468	87.8519	4.1	0
61	2547.85	2868.57	2817.09	88.6493	87.6110	87.7526	88.0043	4.0	0
62	2275.60	2263.24	2809.64	89.7906	89.8471	87.7740	89.1372	2.9	0
63	2514.82	2450.06	2246.46	88.7763	89.0349	89.9243	89.2452	2.8	0
64	2462.79	2458.22	2317.03	88.9831	89.0016	89.6040	89.1962	2.8	0
65	2573.40	2957.38	2319.61	88.5535	87.3902	89.5925	88.5121	3.5	0
66	2984.53	2578.96	2948.38	87.3287	88.5330	87.4112	87.7576	4.2	0
67	2990.08	2746.02	2887.47	87.3165	87.9644	87.5615	87.6141	4.4	0
68	2350.94	2115.16	2235.76	89.4544	90.5481	89.9738	89.9921	2.0	60
69	2165.39	.	.	90.3056	.	.	.	.	.
70	2275.01	2118.68	2418.28	89.7933	90.5309	89.1664	89.8302	2.2	0
71	2735.77	2175.93	2970.69	87.9964	90.2553	87.3597	88.5371	3.5	0
72	2970.53	2317.21	2293.21	87.3601	89.6032	89.7108	88.8914	3.1	0
73	2015.46	.	.	91.0406	.	.	.	.	.
74	2206.52	.	.	90.1105	.	.	.	.	.
75	2068.15	.	.	90.7786	.	.	.	.	.
76	2969.25	2040.59	2591.76	87.3629	90.9152	88.4861	88.9214	3.1	0
77	2705.98	2252.82	2500.12	88.0918	89.8950	88.8338	88.9402	3.1	0
78	2659.00	2072.38	2794.13	88.2485	90.7578	87.8190	88.9418	3.1	0
79	2008.05	.	.	91.0777	.	.	.	.	.
80	2448.64	2853.91	2467.95	89.0408	87.6503	88.9622	88.5511	3.4	0
81	2853.07	2828.73	2685.31	87.6526	87.7197	88.1598	87.8440	4.2	0
82	2163.23	.	.	90.3160	.	.	.	.	.
83	2427.16	2751.16	2045.59	89.1294	87.9484	90.8904	89.3228	2.7	0
84	2376.54	2426.61	2607.73	89.3435	89.1317	88.4282	88.9678	3.0	0
85	2251.00	2547.76	2465.89	89.9033	88.6497	88.9705	89.1745	2.8	0
86	2102.96	.	.	90.6076	.	.	.	.	.
87	2641.72	2636.92	2835.39	88.3081	88.3248	87.7011	88.1113	3.9	0
88	2568.44	2162.54	2330.50	88.5720	90.3192	89.5442	89.4785	2.5	0
89	2380.60	2428.13	2712.29	89.3261	89.1253	88.0713	88.8409	3.2	0
90	2175.90	.	.	90.2554	.	.	.	.	.
91	2555.50	2520.30	2886.05	88.6204	88.7549	87.5651	88.3135	3.7	0
92	2396.88	2785.51	2450.03	89.2566	87.8444	89.0351	88.7120	3.3	0
93	2599.46	2271.21	2274.54	88.4581	89.8107	89.7954	89.3547	2.6	0
94	2143.92	.	.	90.4087	.	.	.	.	.
95	2696.83	2728.22	2406.16	88.1217	88.0203	89.2174	88.4531	3.5	0
96	2172.94	.	.	90.2695	.	.	.	.	.
97	2233.93	.	.	89.9823	.	.	.	.	.
98	2780.94	2015.85	2397.27	87.8580	91.0386	89.2549	89.3839	2.6	0
99	2939.53	2128.18	2902.36	87.4321	90.4848	87.5234	88.4801	3.5	0
100	2075.30	.	.	90.7434	.	.	.	.	.

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
DISTANCES,DENSITIES AND PAY FOR SUB-LOT 6 AFTER AVERAGING
TWO MORE RANDOM DENSITIES WITH FAILING DENSITY

OBS	X6	X62	X63	D6	D62	D63	MD6	DEVTN6	PCTPAY6
1	5458.98	.	.	90.3260	.	.	.	.	.
2	5026.38	5962.89	5270.87	89.2802	91.1906	89.8932	90.1213	1.9	62
3	5853.33	.	.	91.0472	.	.	.	.	.
4	5692.99	.	.	90.7898	.	.	.	.	.
5	5551.16	.	.	90.5199	.	.	.	.	.
6	5153.72	5774.29	5776.53	89.6046	90.9270	90.9306	90.4874	1.5	70
7	5495.19	.	.	90.4037	.	.	.	.	.
8	5900.14	.	.	91.1118	.	.	.	.	.
9	5757.62	.	.	90.9000	.	.	.	.	.
10	5323.77	.	.	90.0193	.	.	.	.	.
11	5108.37	5477.16	5319.99	89.4901	90.3653	90.0104	89.9552	2.0	60
12	5649.99	.	.	90.7119	.	.	.	.	.
13	5338.89	.	.	90.0547	.	.	.	.	.
14	5875.02	.	.	91.0777	.	.	.	.	.
15	5541.38	.	.	90.5000	.	.	.	.	.
16	5188.37	5494.12	5675.01	89.6911	90.4015	90.7577	90.2834	1.7	66
17	5675.64	.	.	90.7588	.	.	.	.	.
18	5564.95	.	.	90.5477	.	.	.	.	.
19	5317.60	.	.	90.0047	.	.	.	.	.
20	5587.76	.	.	90.5930	.	.	.	.	.
21	5877.57	.	.	91.0813	.	.	.	.	.
22	5584.80	.	.	90.5872	.	.	.	.	.
23	5939.15	.	.	91.1619	.	.	.	.	.
24	5459.04	.	.	90.3261	.	.	.	.	.
25	5486.57	.	.	90.3854	.	.	.	.	.
26	5853.85	.	.	91.0479	.	.	.	.	.
27	5962.46	.	.	91.1901	.	.	.	.	.
28	5686.86	.	.	90.7789	.	.	.	.	.
29	5869.39	.	.	91.0699	.	.	.	.	.
30	5175.83	5849.63	5415.08	89.6599	91.0419	90.2291	90.3103	1.7	66
31	5066.05	5210.75	5446.13	89.3821	89.7466	90.2979	89.8089	2.2	0
32	5866.68	.	.	91.0661	.	.	.	.	.
33	5498.59	.	.	90.4109	.	.	.	.	.
34	5024.44	5756.56	5615.40	89.2752	90.8983	90.6467	90.2734	1.7	66
35	5731.61	.	.	90.8567	.	.	.	.	.
36	5838.76	.	.	91.0260	.	.	.	.	.
37	5535.79	.	.	90.4885	.	.	.	.	.
38	5235.84	5509.47	5794.45	89.8082	90.4339	90.9590	90.4003	1.6	68
39	5416.56	.	.	90.2324	.	.	.	.	.
40	5870.01	.	.	91.0708	.	.	.	.	.
41	5196.00	5309.52	5881.46	89.7101	89.9856	91.0866	90.2608	1.7	66
42	5858.46	.	.	91.0545	.	.	.	.	.
43	5407.04	.	.	90.2110	.	.	.	.	.
44	5628.50	.	.	90.6717	.	.	.	.	.
45	5538.98	.	.	90.4951	.	.	.	.	.
46	5991.01	.	.	91.2229	.	.	.	.	.
47	5634.55	.	.	90.6831	.	.	.	.	.
48	5817.45	.	.	90.9943	.	.	.	.	.
49	5412.09	.	.	90.2224	.	.	.	.	.
50	5140.69	5660.88	5036.88	89.5718	90.7320	89.3072	89.8703	2.1	0
51	5583.51	.	.	90.5846	.	.	.	.	.
52	5227.75	5289.78	5883.35	89.7884	89.9386	91.0892	90.2721	1.7	66
53	5797.33	.	.	90.9635	.	.	.	.	.
54	5805.43	.	.	90.9760	.	.	.	.	.
55	5614.47	.	.	90.6449	.	.	.	.	.
56	5793.96	.	.	90.9582	.	.	.	.	.
57	5186.46	5171.28	5617.31	89.6864	89.6486	90.6504	89.9951	2.0	60
58	5786.89	.	.	90.9471	.	.	.	.	.

ASPHALT 1000 FOOT SUB-LOT SAMPLING SIMULATION
DISTANCES,DENSITIES AND PAY FOR SUB-LOT 6 AFTER AVERAGING
TWO MORE RANDOM DENSITIES WITH FAILING DENSITY

OBS	X6	X62	X63	D6	D62	D63	MD6	DEVTN6	PCTPAY6
59	5423.07	.	.	90.2469	.	.	.	.	.
60	5400.21	.	.	90.1956	.	.	.	.	.
61	5246.81	5487.83	5373.56	89.8350	90.3881	90.1350	90.1193	1.9	62
62	5405.25	.	.	90.2070	.	.	.	.	.
63	5270.56	5454.77	5125.70	89.8925	90.3168	89.5340	89.9144	2.1	0
64	5645.50	.	.	90.7036	.	.	.	.	.
65	5703.18	.	.	90.8077	.	.	.	.	.
66	5189.72	5361.64	5349.14	89.6945	90.1076	90.0786	89.9602	2.0	60
67	5742.18	.	.	90.8745	.	.	.	.	.
68	5695.48	.	.	90.7942	.	.	.	.	.
69	5193.87	5931.53	5412.98	89.7048	91.1524	90.2244	90.3605	1.6	68
70	5047.58	5102.39	5424.16	89.3347	89.4749	90.2493	89.6863	2.3	0
71	5615.79	.	.	90.6474	.	.	.	.	.
72	5588.96	.	.	90.5954	.	.	.	.	.
73	5338.61	.	.	90.0541	.	.	.	.	.
74	5222.57	5486.16	5609.56	89.7757	90.3845	90.6355	90.2652	1.7	66
75	5067.04	5671.77	5382.86	89.3846	90.7518	90.1563	90.0976	1.9	62
76	5892.48	.	.	91.1016	.	.	.	.	.
77	5414.45	.	.	90.2277	.	.	.	.	.
78	5937.09	.	.	91.1593	.	.	.	.	.
79	5598.68	.	.	90.6144	.	.	.	.	.
80	5128.48	5720.38	5072.52	89.5410	90.8375	89.3987	89.9257	2.1	0
81	5396.34	.	.	90.1869	.	.	.	.	.
82	5841.93	.	.	91.0307	.	.	.	.	.
83	5861.66	.	.	91.0590	.	.	.	.	.
84	5582.48	.	.	90.5826	.	.	.	.	.
85	5093.23	5729.10	5808.29	89.4515	90.8524	90.9804	90.4281	1.6	68
86	5234.68	5248.85	5643.90	89.8054	89.8399	90.7006	90.1153	1.9	62
87	5719.80	.	.	90.8365	.	.	.	.	.
88	5785.93	.	.	90.9456	.	.	.	.	.
89	5995.03	.	.	91.2274	.	.	.	.	.
90	5599.74	.	.	90.6165	.	.	.	.	.
91	5186.48	5882.56	5678.70	89.6865	91.0881	90.7643	90.5130	1.5	70
92	5828.61	.	.	91.0111	.	.	.	.	.
93	5347.35	.	.	90.0744	.	.	.	.	.
94	5288.11	5582.07	5920.85	89.9346	90.5818	91.1388	90.5518	1.4	72
95	5683.82	.	.	90.7735	.	.	.	.	.
96	5328.82	.	.	90.0312	.	.	.	.	.
97	5974.67	.	.	91.2044	.	.	.	.	.
98	5445.51	.	.	90.2965	.	.	.	.	.
99	5250.32	5737.63	5281.83	89.8435	90.8668	89.9196	90.2100	1.8	64
100	5941.72	.	.	91.1650	.	.	.	.	.