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FIELD EVALUATION OF THE TEXAS SEAL COAT DESIGN METHOD

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16. Abstract

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A preconstruction field evaluation of site involving a visual evaluation and surface texture test was performed. Specific construction data were gathered from district records which consisted of aggregate spread rates, asphalt shot rates, aggregate and asphalt sources and type. Postconstruction evaluations were conducted at intervals which allowed as many environmental cycles as possible.

The data gathered in the course of this study provide the necessary information for further design method refinement and design curve adjustments. Included in this report is the present seal coat design method.

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by

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Research Study Number 2-9-81-297

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PREFACE

Seal coats have for the past decade played an extremely important role in the highway maintenance activities of the State of Texas. Any efforts made to improve the chances of assuring and/or increasing seal coat performance can have a positive economic impact.

In effort to increase the potential for success, a seal coat design method was produced under Research Project 2-9-74-214. The design criteria, however, was based on limited laboratory and field information. The data gathered for this report represent about a three-year effort to field verify and correct where necessary, the criteria used in the design method.

The request by the Federal Highway Administration to nationally distribute this manual indicates the widespread interest in proper seal coat design and construction. It was the desire of the authors to further refine this method for increased reliability.

IMPLEMENTATION STATEMENT

The revised seal coat design manual should provide field personnel adequate information to determine approximate quantities of aggregate and asphalt for successful seal coat construction. This design manual has been field evaluated for Texas graded aggregates 3 and 4, but has only limited information for any other grade. However, as a starting point, it should provide good information for any aggregate. It is recognized that the surface of a pavement changes within a given construction section and it will be necessary for field personnel to adjust quantities as the surface required.

OBJECTIVES

The purpose of this investigation was to field evaluate the design procedure recommended in Research Report 214-25, "Field Manual on Design and Construction of Seal Coats." While a number of grade 4 aggregate sections were used, the primary objective of this program was aimed at adjusting the design criteria for grade 3 aggregate. The results of this study are intended to provide initial design quantities for field personnel.

ABSTRACT

The information contained in this report represents data collected on over 80 seal coats in seven districts in Texas. The sections included variables such as a range of traffic concentration, climate and road surface conditions. All projects used in this study were constructed in 1982 and 1983.

A preconstruction field evaluation of site involving a visual evaluation and surface texture test was performed. Specific construction data were gathered from district records which consisted of aggregate spread rates, asphalt shot rates, aggregate and asphalt sources and type. Postconstruction evaluations were conducted at intervals which allowed as many environmental cycles as possible.

The data gathered in the course of this study provide the necessary information for further design method refinement and design curve adjustments. Included in this report is the present seal coat design method.

Keywords: Seal Coats, Asphalt, Seal Coat Design

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INTRODUCTION

The Texas State Department of Highways and Public Transportation (SDHPT) and the Texas Transportation Institute (TTI) through their cooperative research program have developed a seal coat* design procedure. This design procedure is based on a modification (1) of the original Kearby Method (2) and includes separate design curves for seal coats made from lightweight (high friction) manufactured aggregates and normal aggregates (3).

A review of the historical development of this method has indicated that the design procedure has been verified by a limited field performance study which considered aggregate in a narrow size range (4). Field observations made on normal weight aggregate seal coats of relatively large maximum size aggregate have indicated that the existing design procedure calls for inadequate asphalt. In an attempt to determine the validity of the design and/or to alter the method, an additional field verification study was undertaken. The study consisted of visual evaluation of seal coats placed in eight districts (Figure 1) as a part of the districts' normal seal coat program. Details of this field evaluation and subsequent analyses of data are described below.

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*A seal coat is a bituminous surface that results from one or more successive alternative applications of bituminous binder and cover aggregate to an existing paved surface. A surface treatment is a bituminous surface that results from one or more successive alternative applications of bituminous binder and cover stone to a prepared compacted gravel, crushed stone, stabilized soil or similar base.

HISTORICAL DEVELOPMENT OF EXISTING SEAL COAT DESIGN METHOD

Methods available for the design of asphalt quantity and aggregate spread rate for seal coats and surface treatments have been summarized by the Asphalt Institute (5). Three methods are presented by the Asphalt Institute and are referred to as design method for one-sized aggregate, design method for graded aggregate and design method for multiple surface treatments. These methods are based on references 1,2,4,5,6,7,8,9,10,11,12,13. The design method for one-sized aggregate is based on Hanson's work (9), the design for a graded aggregate seal coat is based on work performed by Lovering (6) while the method for multiple surface treatments is based on studies by Kearby (2) and Benson and Gallaway (1).

A review of SDHPT practices (14) indicates that the Kearby method also referred to as the "board" method appears to be the most popular method utilized in Texas. The Asphalt Institute (5) further suggests that this method be utilized for final design quantities when the aggregate has been selected and available for design.

In order to obtain a comparison of the existing design methods, asphalt and aggregate design quantities for SDHPT Grade 4 lightweight aggregate (Item 303) (15) were determined by Hanson's Method as described in reference 5 and by the Modified Kearby Method as developed by Benson and Gallaway and described in Reference 16. These values for the extreme fine and coarse side and the median of the gradation specification are shown in Table 1. In general, the aggregate rates determined by the modified Kearby Method are in agreement with proven field experience gained by SDHPT and the research team. Thus, those aggregate quantities determined by Hanson's method are greater than required. The asphalt quantities resulting from both methods are lower than those generally utilized for high friction manufactured lightweight aggregate seal coats in Texas. Therefore, it appears as if adjustments should be made in these design methods for prediction of asphalt quantities for lightweight aggregates.

An additional comparison of existing seal coat design methods was made on aggregates obtained from trial field sections placed on State Highway 95 District 14 (Table 2) (14). Hanson's and Lovering's design calculations were performed according to the procedure given in Reference 5 while the Modified Kearby Method was performed according to the procedure given in Reference 16. The fourth method, whose results are shown in Table 2, is a modification of the Kearby Method as described in an unpublished memorandum by J. W. Livingston of District 19 (Atlanta) of SDHPT. Of the methods investigated, the Modified Kearby Method again appears to be the best predictor of aggregate quantity while the Lovering and District 19 method give the best prediction of the asphalt quantity. Inaccuracies in determination of aggregate bulk specific gravity may be responsible for the unusually high aggregate quantities predicted by Hanson's method.

In order to more accurately predict the quantities of asphalt required for a particular lightweight aggregate seal coat, a modification of the existing Kearby Method was developed and reported in Reference 3. These modifications include the development of correction factors for traffic volume and surface condition as well as a shift in the relationship between percentage of embedment and average mat thickness (Figure 2). A single design methodology and equation was suggested for use, however, depending on the selection of the aggregate (lightweight or normal weight), a different relationship between percentage of embedment and average mat thickness was suggested (Figure 2).

As indicated above, field verification of the design method was performed on a limited basis and is reported in Reference 4. This study provided data which allowed the design curve to be corrected. Available field data were obtained from four field trail experimental projects containing sixty sections. Unfortunately, each project contained a single aggregate and the aggregates utilized represented a narrow size range. The field verification study reported in the report obtained data on over eighty projects which contained aggregates over an extended size range.

FIELD EVALUATION

In an attempt to obtain verification of the proposed seal coat design in excess of eighty seal coat sections were evaluated in eight of the twenty five highway districts in Texas. The location of the districts are shown on Figure 1. The locations were selected to insure that variables of climate and traffic might be included in the study (Figure 3).

Preconstruction, construction and post construction data were obtained on each section (Tables 3 and 4) (Appendix C). Preconstruction information obtained included; project limits, traffic volume, surface texture (Appendix A), and visual condition survey (17) (Appendix B). Asphalt shot quantities, aggregate spread quantities and asphalt shot temperatures were obtained from construction records.

Post construction visual condition surveys were performed by the project team using the form shown on Figure 4. These surveys were performed when possible after the first summer (approximately 3 months), first winter (approximately 9 months), second winter (approximately 21 months) and during the third summer (approximately 24 months). Data collected included a visual determination of aggregate embedment depth, bleeding, raveling and overall visual condition scores in the outer wheel path (OWP), between the wheel path (BWP) and at the center line (CL).

The visual data were summarized and combined with preconstruction, construction and laboratory measured properties of the aggregates as shown on Table 3 and 4. These data formed the basis for the analysis presented below.

ANALYSIS OF FIELD DATA

The equation utilized to determine asphalt quantity by the existing Texas seal coat design method is shown below.

$$A = 5.61E \left(1 - \frac{W}{62.4G}\right) (T) + V$$

A = asphalt quantity, gals per sq. yd. at $60^{o}F$

E = embedment depth, inches

where

E = ed, inches

e = aggregate embedment, percent (Figure 2)

d = average aggregate or mat depth, inches

$$d = \frac{1.33Q}{W}, \text{ inches}$$

Q = aggregate quantity determined from board test, lbs per sq. yd.

W = dry loose unit weight, lbs. per cu. ft.

G = dry bulk specific gravity of aggregate

T = traffic correction factor (Table 5)

V = correction for surface condition (Table 6)

The quantities "T" and "V" are adjustments to the asphalt quantity for traffic and surface condition of the pavement upon which the seal coat is to be placed.

The quantity "$1 - \frac{W}{62.4G}$" is a calculation which determines the percent air voids in the seal coat aggregate as if it were placed in a container without any form of compaction. Theoretically, this is the volume available for the asphalt to fill.

The quantity "E" is the depth of the asphalt in the seal coat. This quantity is derived from use of Figure 2 which allows the engineer to determine the desired percent embedment depth, "e", based on "d", the expected average depth of the aggregate.

The values of "W" and "G" are unit weight and specific gravity of the aggregate which can be measured in the laboratory; thus, it appears as if "E", "T" and "V" are the variables that may be changed to improve the design equations prediction of asphalt quantity. The terms "T" and "V" have been defined in the literature cited above. A rather extensive field testing program would be required to reliably change the values of "T" and "V". Thus the current values have been accepted; however, the use of surface texture measurements as an indication of what value to select for "V" has been developed (Figures 5 and 6, Table 7).

Adjustment of Percent Aggregate Embedment Versus Mat Thickness Relationship

The relationship between percent aggregate embedment and average mat thickness is the logical variable in the proposed design equation to alter, if field performance is to correlate with design method. A methodology as described below was developed and utilized to make the desired correlation.

Values of "W" and "G" were determined from laboratory tests on aggregates utilized on the various field projects. The values of "T" and "V" were obtained from Tables 5 and 6 by using the field determined traffic and surface texture as shown in Table 3. The value of "A" was obtained from field construction records and corrected for temperature (Table 3).

The value of "E" is a function of "e" and "d". Since "d" can be obtained from laboratory tests performed on the aggregates, the only unknown in the design equation becomes "e". Thus, the following relationship results.

$$e = \frac{A - V}{5.61(d)\left(1 - \frac{W}{62.6G}\right)(T)}$$

Calculated values of e and d are shown on Table 3. Field performance of the individual projects are shown on Table 4. Performance information representative of a minimum of 12 months to a maximum of 24 months after construction was utilized to develop the correlation between percent aggregate embedment, mat thickness and pavement performance (Figure 7). Performance at ages of 2 to 3 years or (2 summers) is desirable but not available during the duration of this research project. Figures 8-11 suggests that nearly maximum aggregate embedment is obtained after two summers provided adequate asphalt qualities are utilized.

A correlation between percent aggregate embedment, mat thickness and performance (Figure 12) is reported in Reference 4 based on four field trial experimental sections containing sixty sections (4). Because of the limited number of aggregates utilized on the projects,

a different methodology was utilized to obtain the designed relationships.

PRESENT PRACTICE

Information obtained on the eighty seal coat projects reported in this project allow for comparison between existing practice in Texas as compared with the suggested design method presented in Reference 4. Figures 13 and 14 compare aggregate and asphalt quantities actually used with those suggested by the design method. In general, less aggregate and less asphalt is used for the larger maximum size cover aggregate than recommended by the proposed design method. Seal coats prepared with relatively small size aggregates utilized more aggregate and less asphalt than recommended by the proposed design method. Raveling of seal coats constructed with larger maximum size cover stone is a problem on some Texas highways. In addition, field engineers have indicated that the suggested design method over estimates the asphalt demand for the smaller sized aggregate.

NEW DESIGN CURVE

Figure 7 contains the suggested design curve for normal weight aggregates based on information presented in Reference 4 and data collected in this study. For the smaller sized coverstone a reduction in asphalt is suggested and a slight increase is suggested for the larger sized coverstone. This has been accomplished by increasing the slope of the relationship between aggregate embedment (e) and average mat thickness (d) (Figure 7). The proposed location of the e versus d relationship is based on the following:

A. For aggregate which produce average mat thickness of about 0.25-0.30 inches:
    1. Field experience has suggested that the existing design curve over estimates the asphalt spray quantity required for normal weight.

2. Field performance data reported in Reference 14 suggests a location as shown for the existing design curve.
3. Field performance data collected in this study suggests a new location.

B. For aggregates which produce average mat thickness of about 0.40 inches:

1. Field experience has suggested that presently used asphalt spray quantities are not adequate as raveling often occurs and fog seals are applied (Figure 7).

The data scatter as shown on Figures 7 and 12 appear to be excessive. It should be remembered, however, that data from visual observations (field embedment depth) are an intergral part of the calculations. Additionally, it is not unusual to find field asphalt quantities varying $\pm$ 0.03 gallons per square yard (5,14) and surface characteristic of the pavement upon which the seal coat is to be placed to vary considerably (Figure 5). For example, surface texture measurements from State Highway 6 in District 2 have coefficients of variation of the order of 40 percent. Common coefficients of variation associated with asphalt concrete quality control are of the order of 5 to 20 percent (19).

An example to illustrate the variability of the design asphalt quantity associated with the selection of "e" is given below if one assumes that aggregate "C" has been utilized from a trial field section. For an "e" of 0.39 the design asphalt content is 0.32 gallons per square yard. If the value of "e" is varied 7 percentage points, the resulting design asphalt content varies $\pm$ 0.05 gallons per square yard. It is logical to assume that the factors "T" and "V" may be in error and/or the visual evaluation procedure could account for this variation.

VARIATION IN ASPHALT SURFACE DEMAND

As discussed above, the equation for determining asphalt quantity includes the term "V" which is a correction factor dependent on the characteristics of the old pavement upon which the seal coat is to be

placed. According to the design method included in this report, "V" will vary from -0.06 to +0.06 gallons per square yard according to those factors described on Table 6 and Figure 6. Under most conditions the correction factor "V" is applied for a considerable length of pavement or in most cases for the entire section of highway to be seal coated. Occasionally, a different "V" and "T" will be utilized for 4-lane facilities when traffic volumes and/or lane surface textures differ.

Recent field work in District 23 of the SDHPT has illustrated the importance of altering the quantity of asphalt not only in the longitudinal direction but also the transverse direction (18). Variations in asphalt quantities across the pavement are required due to the effect of traffic. The asphalt demand in the wheel path is usually reduced from that required outside the wheel paths. It is not uncommon to find highways whose wheel paths have a tendency to bleed while slight raveling occurs between the wheel path and/or near the edges of the lane.

Surface texture measurements made by the putty method have been obtained on 120 pavements most of which are pavements containing limestone rock asphalt in either seal coat or cold mixed cold laid operations. The average difference in surface texture between the wheel path and in the wheel path is 0.010 cubic inches per square inch. The values ranged from +0.076 to -0.097*. The standard deviation for the 120 sections is 0.024. A surface texture difference of 0.010 represents about 0.06 gallons per square yard of asphalt (Figure 6) from a theoretical standpoint.

Figures 15-18 also indicate the difference in asphalt demand for wheel paths versus pavement areas between wheel paths. Note that maximum embedment depths are obtained in the wheel paths after about two summers of traffic, while areas between wheel paths have not reached the degree of embedment in the wheel path after 5 years of traffic.

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*A positive difference indicates there is more texture between the wheel paths than in the wheel path.

In order to achieve the variation in asphalt quantity desired, District 23 has experimented with spray nozzles and methods to measure spray bar outputs. Results to date indicate that a one size reduction in the spray nozzle results in about the desired asphalt variation.

CONCLUSIONS AND RECOMMENDATIONS

Adjustment of the original Kearby Curve (2) by Benson and Gallaway (1) was in the direction of increased asphalt. The adjustment by Epps and Gallaway (14) for lightweight aggregate is also in the direction of increased asphalt. This correlation was made based on increased asphalt embedment depth to insure that the high friction lightweight aggregate would not be overturned and subsequently ravel under the action of traffic. Synthetic lightweight aggregate seal coat trial field sections placed in 1971 and 1972 in four Districts of SDHPT and visually examined in 1976 indicate that on the average the design method proposed for lightweight aggregate results in a slight over-estimate of asphalt quantity. It should be noted, however, that no adjustments were made in the transverse distribution of asphalt.

Field performance results from the study have been used together with information presented in Reference 4 and 14 to revise design relationships. Figure 19 contains the revised curves for both normal weight and lightweight aggregates. The methodology for using the design curves is given in Appendix D. Field techniques for seal coat construction are given in references 20 and 21. Field performance data collected in this study suggests the location shown.

Consideration should be given to varying the asphalt quantity both longitudinally and transversely if demanded by the pavement upon which the seal coat is to be placed. This variation is included in the proposed design equation by the factor "V". Surface texture measurements may provide a basis for determining the magnitude of this correction factor.

Additional field verification is required particularly for normal weight aggregate seal coats. Engineers are encouraged to utilize the suggested design method together with surface texture measurements to establish seal coat asphalt and aggregate requirements. Visual evaluations at various time intervals after construction should be made by a survey team to establish seal coat performance and refine the design procedure. Seal coat projects should be selected such that the aggregate depth (mat thickness) extends beyond the range of 0.25 to 0.45 as data from the study presented herein covers aggregate gradations in this range.

Data presented on Figure 12 indicate that different design curves should be used for emulsions and asphalt cement binders. Additional field data need to be collected prior to establishing this relationship. In the interim it is suggested that several districts place trial sections be placed using the approach given below.

1. Use the same design curve as for asphalt cements
2. Adjust for the amount of water present in the emulsion
3. Multiply by a factor of 0.80
4. Adjust for spray temperature

For example, the design method indicates that 0.30 gallons per square yard of asphalt cement will be required for a particular project. If the emulsion proposed has 30 percent water, the corrected quantity would be $\frac{0.30}{0.70}$ = 0.43 gallons per square yard
Multiplying 0.43 x 0.80 gives the amount of emulsion to be sprayed on the surface (0.34 gallons per square yard). If the emulsion were to be sprayed at 140^{o}F, the temperature correction would be 0.98. Thus, $\frac{0.30}{0.70}$ or 0.35 gallons per square yards of emulsion would be sprayed at 140^{o}F. The 0.80 factor may be low, particularly for high friction aggregate and for large sized stone.

REFERENCES

1. Benson, F. J. and B. M. Gallaway, "Retention of Cover Stone by Asphalt Surface Treatments", Bulletin 133, Texas Engineering Experiment Station, Texas A&M, September, 1953.

2. Kearby, J. P., "Tests and Theories on Penetration Surfaces", Proceedings, Highway Research Board, Vol. 32, 1953.

3. Epps, J. A., Gallaway, B. M., and Brown, M. R., "Synthetic Aggregate Seal Coats", Research Report 83-2F, Texas Transportation Insttitue, May 1974.

4. Epps, J. A., Chaffin, C. W. and Hill, A. J., "Field Evaluation of a Seal Coat Design Method", Research Report 214-23, Texas Transportation Institute, August, 1980.

5. _____, "Asphalt Surface Treatments and Asphalt Penetration Macadam", The Asphalt Institute, Manual Series No. 13, November, 1969.

6. Hveem, F. N., W. R. Lovering, and G. B. Sherman, "The Design of Seal Coats and Surface Treatments", California Highways and Public Works, July-august, 1949.

7. McLeod, N. W., "Basic Principles for the Design and Construction of Seal Coats and Surface Treatments with Cutback Asphalts and Asphalt Cements", Proceedings, Association of Asphalt Paving Technologists, Supplement to Vol. 29, 1960.

8. McLeod, N. W., "A General Method of Design of Seal Coats and Surface Treatments", Proceedings, Association of Asphalt Paving Technologists, Vol. 38, 1969.

9. Hanson, F. M., "Bituminous Surface Treatments of Rural Highways", Proceedings, New Zealand Society of Civil Engineers, Vol. XXI, 1934-35.

10. Hanson, F. M., "Symposium on Seal Coats on Surface Treatments for Existing Bituminous Surfaces", Proceedings, Association of Asphalt Paving Technologists, Vol. 24, 1955.

11. Kersten, M. S. and E. L. Skok, Jr., "Criteria for Seal Coating Bituminous Surfaces", Minnesota Department of Highways, Interim Report, University of Minnesota, 1969.

12. "Full-Scale Road Experiments with Surface Treatments", National Institute for Road Research, Bulletin No. 2, January, 1957.

13. "Bituminous Surface Treatments for Newly Constructed Rural Roads", National Institute for Road Research, Pretoria, South Africa, 1971.

14. Epps, J. A. and B. M. Gallaway, "Synthetic Aggregate Seal Coats - Current Texas Highway Department Practices", Research Report 83-1, Texas Transportation Institute, May, 1972.

15. 1972 Standard Specifications for Construction of Highways, Streets and Bridges, Texas Highway Department, January, 1972.

16. Monismith, C. L., "Asphalt Paving Mixtures--Properties, Design and Performance", The Institute of Transportation and Traffic Engineering, University of California, 1961.

17. Epps, J. A., Meyer, A. L., Larrimore, E. I. and Jones, J. L., "Roadway Maintenance Evaluation User's Manual", Reserach Report 151-2, Texas Transportation Institute, September, 1974.

18. Arthur, J. M., "Personal Communication", District 23, SDHPT, 1976.

19. Kuhn, S. H. and R. H. Walker, "Rational Quality Assurance", HRB Record No. 385, 1972.

20. Epps, J. A., Gallaway, B. M. and Hughes, C. H., "Field Manual on Design and Construction of Seal Coats", Research Report 214-25, Texas Transportation Institute, July, 1981.

21. Epps, J. A., Gallaway, B. M. and Hughes, C.H., "Field manual on Design and Construction of Seal Coats, represented by U. S. Department of Transportation's Technology Sharing Program, 1983.

Table 1. Design Asphalt and Aggregate Quantities for Texas Highway Department Grade 4 Lightweight Aggregates.

Aggregate Identification	Grading	Hanson's Method*		Modified Karby Method**	
		Aggregate Sq. Yds/Cu. Yd.	Asphalt Gal/Sq. Yd.	Aggregate Sq. Yds/Cu. Yd.	Asphalt Gal/Sq. Yd.
	Fine	105	0.21	115	0.22
A	Medium	95	0.23	---	----
	Coarse	85	0.25	130	0.26
	Fine	100	0.21	145	0.21
B	Medium	90	0.23	---	----
	Coarse	80	0.24	120	0.26
	Fine	110	0.20	140	0.19
D	Medium	100	0.21	---	----
	Coarse	90	0.23	125	0.22
	Fine	70	0.22	140	0.22
H	Medium	65	0.24	---	----
	Coarse	60	0.26	135	0.23

*Quantities determined for traffic volumes between 500 and 1000 vehicles per day, a slightly oxidized surface and no aggregate waste.

**Quantities determined for moderate traffic, a slightly porous, slightly oxidized surface, and no aggregate waste.

Table 2. Design Asphalt and Aggregate Quantities for Aggregates Used on 14SH95 Project.

Aggregate Identification	Hanson's Method (1)		Loverings' Method (2)		Modified Kearby Method (3)		Texas Highway Dept. (4) Dist. 19 Method	
	Aggregate Sq. Yds/Cu. Yds.	Asphalt Gal/Sq. Yds.	Aggregate Sq. Yds/Cu. Yds.	Asphalt Gal/Sq. Yds.	Aggregate Sq. Yds/Cu. Yds.	Asphalt Gal/Sq. Yds.	Aggregate Sq. Yds/Cu. Yds.	Asphalt Gal/Sq. Yds.
A	95	0.23	110	0.33	145	0.20	110	0.30
B	70	0.28	110	0.33	140	0.23	95	0.32
D	80	0.26	110	0.33	115	0.27	110	0.36
H	60	0.27	125	0.29	110	0.35	120	0.45
M	85	0.26	120	0.31	140	0.20	110	0.17

(1) Quantities determined for 500-1000 vehicles per day, a slightly porous, slightly oxidized surface and no aggregate waste.

(2) Quantities determined for 500-1000 vehicles per day, a slight porous, slightly oxidized surface and no aggregate waste.

(3) Quantities determined for moderate traffic, a slightly porous, slightly oxidized surface and no aggregate waste.

(4) Method developed by District 19, Atlanta based on Kearby Method.

Table 3. Preconstruction and Construction Data.

Project		Traffic			Surface Text					Asphalt Shot Quantities		Loose Unit Weight$_3$ lbs/ft^3	Sp. Gr. Aggr.	Average Mat. Depth	Percent Aggr. Embed
Dist.	Highway No.	ADT	ADT/Lane	Cor Fac	OWP	BWP	IWP	PRS	Cor Fac	Act.(Job)	Cor 60^{0}F	(W)	(G)	(d)	(e)
3	SH 79 (Clay)	2,600	13,000	1.0	.005	.022	.005	83	-.03	0.328	0.302	86.4	2.53	0.284	0.46
3	FM 2393	480	240	1.1	.041	.030	.040	90	+.06	0.325	0.299	86.4	2.53	0.284	0.30
3	US 380	4,300	2,150	1.0	.016	.013	.011	88	0	0.325	0.299	86.4	2.53	0.284	0.41
3	SH 79 (Archer)	1,350	675	1.05	.047	.088	.044	65	+.06	0.335	0.308	86.4	2.53	0.284	0.33
3	SH 79 (Archer)	1,750	875	1.05	.036	.026	.026	89	+.03	0.318	0.293	86.4	2.53	0.284	0.35
3	SH 25	810	405	1.1	.042	.023	.036	65	+.06	0.334	0.307	86.4	2.53	0.284	0.31
3	FM 2075	180	90	1.2	.013	.021	.014	95	-.03	0.325	0.299	86.4	2.53	0.284	0.38
3	FM 3109	190	95	1.2	.036	.036	.026	95	+.03	0.346	0.318	86.4	2.53	0.284	0.33
3	FM 701	430	215	1.15	.028	.040	.041	81	+.03	0.394	0.362	85.9	2.53	0.477	0.24
3	SH 25	640	320	1.1	.044	.050	.032	72	+.06	0.300	0.276	86.4	2.53	0.284	0.27
3	US 183	550	275	1.1	.032	.023	.019	92	+.03	0.371	0.341	84.2	2.53	0.381	0.30
3	US 82/183	2,500	1,250	1.0	.022	.026	.018	70	0	0.334	0.307	84.2	2.53	0.381	0.30
5	SH 137	1,550	775	1.05	.010	.009	.007	66	-.03	0.330	0.303	*	*	*	*
5	US 82	2,000	1,000	1.0	.003	.021	.001	68	-.06	0.330	0.303	*	*	*	*
5	FM 788	820	410	1.1	.008	.023	.004	60	-.03	0.330	0.303	*	*	*	*
5	FM 1760	340	170	1.15	.018	.030	.020	85	0	0.360	0.331	*	*	*	*
5	FM 168	900	450	1.1	.012	.044	.037	73	-.03	0.330	0.303	*	*	*	*

Table 3. Preconstruction and Construction Data. (Continued)

Project		Traffic			Surface Text					Asphalt Shot Quantities		Loose Unit Weight, lbs/ft^3	Sp. Gr. Aggr.	Average Mat. Depth	Percent Aggr. Embed
Dist.	Highway No.	ADT	ADT/Lane	Cor Fac	OWP	BWP	IWP	PRS	Cor Fac	Act.(Job)	Cor $60^{o}F$	(W)	(G)	(d)	(e)
5	FM 298	250	125	1.15	.022	.044	.016	--	0	0.360	0.331	*	*	*	*
5	SH 86	690	345	1.1	.052	.074	.041	85	+.06	0.320	0.294	*	*	*	*
5	SH 114	930	465	1.1	.051	.065	.044	53	+.06	0.330	0.303	*	*	*	*
5	FM 145 (Swisher)	700	350	1.1	.020	.061	.036	88	0	0.324	0.298	83.5	2.60	0.253	0.39
5	FM 145 (Swisher)	500	250	1.1	.022	.075	.041	60	0	0.329	0.303	83.5	2.60	0.253	0.40
6	FM 1053	1,050	525	1.05	.047	.079	.065	83	+.06	0.430	0.396	88.86	2.51	0.315	0.40
6	FM 181	580	290	1.1	.057	.074	.063	73	+.06	0.500	0.460	87.12	2.51	0.415	0.35
6	FM 1967	130	65	1.2	.036	.056	.038	55	+.03	0.500	0.460	87.12	2.51	0.415	0.35
6	US 87	2,550	1,275	1.0	.006	.042	.002	45	-.03	0.490	0.450	87.12	2.51	0.415	0.47
6	FM 829	430	215	1.15	.021	.044	.028	43	0	0.460	0.423	87.12	2.51	0.215	0.36
6	SH 349	480	240	1.15	.041	.055	.039	95	+.06	0.420	0.386	88.86	2.51	0.315	0.37
6	US 67	640	320	1.1	.054	.084	.049	91	+.06	0.400	0.368	88.86	2.51	0.315	0.37
6	FM 1053	990	495	1.1	.063	.043	.060	68	+.06	0.377	0.347	88.86	2.51	0.315	0.34
6	FM 1379	240	120	1.15	.045	.081	.061	70	+.06	0.520	0.478	87.12	2.51	0.415	0.35
6	US 385	1,400	700	1.05	.032	.052	.007	81	+.03	0.360	0.331	88.86	2.51	0.315	0.37

Table 3. Preconstruction and Construction Data. (Continued)

Project		Traffic			Surface Text					Asphalt Shot Quantities		Loose Unit Weight$_3$ lbs/ft^3	Sp. Gr. Aggr.	Average Mat. Depth	Percent Aggr. Embed
Dist.	Highway No.	ADT	ADT/Lane	Cor Fac	OWP	BWP	IWP	PRS	Cor Fac	Act.(Job)	Cor 60^{0}F	(W)	(G)	(d)	(e)
6	SH 349	840	420	1.1	.019	.087	.015	95	0	0.492	0.453	87.12	2.51	0.415	0.40
6	FM 829	280	140	1.15	.020	.028	.036	43	0	0.520	0.478	87.12	2.51	0.415	0.40
6	FM 2212	300	150	1.15	.038	.051	.042	78	+.03	0.526	0.484	87.12	2.51	0.415	0.38
6	FM 2002	230	115	1.15	.018	.022	.013	40	0	0.519	0.477	87.12	2.51	0.415	0.40
11	US 259	6,000	3,000	1.0	.021	.011	.016	78	0	0.337	0.310	*	*	*	*
11	US 59	13,900	6,950	1.0	.013	.011	.006	93	-.03	0.500	0.460	*	*	*	*
11	FM 2864	490	245	1.15	.044	.064	.045	85	+.06	0.411	0.378	*	*	*	*
11	SH 21	2,500	1,250	1.0	.041	.070	.036	78	+.06	0.368	0.339	*	*	*	*
13	US 90	1,500	750	1.05	.009	.033	.015	88	-.03	0.270	0.248	73.9	2.50	0.264	0.34
13	FM 531	250	125	1.15	.069	.069	.040	100	+.06	0.400	0.368	81.1	2.51	0.387	0.26
13	FM 533	130	65	1.2	.049	.099	.068	85	+.06	0.420	0.386	81.1	2.51	0.387	0.26
13	FM 966	430	215	1.15	.018	.018	.023	100	0	0.390	0.358	81.1	2.51	0.387	0.30
13	FM 238	110	55	1.2	.039	.056	.061	98	+.03	0.420	0.386	81.1	2.51	0.387	0.28
13	FM 239	400	200	1.15	.035	.022	.020	80	+.03	0.390	0.358	81.1	2.51	0.387	0.27
13	SH 72	1,200	600	1.05	.030	.078	.018	88	+.03	0.270	0.248	83.9	2.51	0.252	0.32

Table 3. Preconstruction and Construction Data. (Continued)

Project		Traffic			Surface Text					Asphalt Shot Quantities		Loose Unit Weight, lbs/ft^3	Sp. Gr. Aggr.	Average Mat. Depth	Percent Aggr. Embed
Dist.	Highway No.	ADT	ADT/Lane	Cor Fac	OWP	BWP	IWP	PRS	Cor Fac	Act.(Job)	Cor 60^oF	(W)	(G)	(d)	(e)
13	FM 710	710	355	1.1	.038	.032	.021	90	+.03	0.380	0.349	81.10	2.50	0.387	0.28
13	FM 441 (Wharton)	120	60	1.2	.050	.035	.048	57	+.06	0.430	0.396	81.1	2.50	0.387	0.27
13	FM 441 (Wharton)	120	60	1.2	.051	.035	.027	87	+.06	0.430	0.396	81.1	2.50	0.387	0.27
13	FM 961 (Wharton)	300	150	1.15	.095	.090	.070	100	+.06	0.420	0.386	81.1	2.50	0.387	0.27
13	US 87	110	55	1.2	.036	.056	.013	92	+.03	0.230	0.211	83.9	2.51	0.252	0.23
13	FM 961 (Wharton)	350	175	1.15	.073	.101	.065	85	+.06	0.430	0.396	81.1	2.51	0.387	0.28
13	FM 1161	710	355	1.1	.056	.044	.019	88	+.06	0.280	0.256	73.9	2.50	0.248	0.23
13	FM 2067	180	90	1.2	.060	.127	.075	88	+.06	0.410	0.377	81.1	2.51	0.387	0.25
13	FM 234	210	105	1.15	.078	.091	.064	68	+.06	0.400	0.368	81.1	2.50	0.339	0.26
13	FM 532	510	255	1.1	.059	.079	.067	95	+.06	0.420	0.386	81.1	2.50	0.339	0.28
13	FM 236	700	350	1.1	.020	.033	.032	85	0	0.370	0.340	81.1	2.50	0.339	0.30
13	FM 404	7,000	3,500	1.0	.001	.009	.002	63	-.06	0.220	0.202	83.9	2.50	0.239	0.40
13	FM 3131	160	80	1.2	.035	.049	.035	88	+.03	0.390	0.358	73.9	2.50	0.248	0.35
13	FM 710	100	50	1.2	.044	.049	.028	80	+.06	0.400	0.368	73.9	2.50	0.248	0.33
15	SH 97	1,140	570	1.05	.033	.071	.071	90	+.03	0.350	0.322	82.3	2.53	0.381	0.27
15	FM 539	630	315	1.1	.075	.074	.056	83	+.06	0.340	0.313	82.3	2.53	0.381	0.22

Table 3. Preconstruction and Construction Data. (Continued)

Project		Traffic			Surface Text					Asphalt Shot Quantities		Loose Unit Weight, lbs/ft^3	Sp. Gr. Aggr.	Average Mat. Depth	Percent Aggr. Embed
Dist.	Highway No.	ADT	ADT/Lane	Cor Fac	OWP	BWP	IWP	PRS	Cor Fac	Act.(Job)	Cor 60^{o}F	(W)	(G)	(d)	(e)
15	FM 2505 (Wilson)	50	25	1.2	.051	.076	.065	83	+.06	0.370	0.340	82.3	2.53	0.381	0.23
15	FM 2505 (Wilson)	220	110	1.15	.031	.030	.026	95	+.03	0.370	0.340	82.3	2.53	0.381	0.29
15	FM 1346	850	425	1.1	.013	.034	.017	92	-.03	0.450	0.309	79.4	2.53	0.408	0.27
15	LP 1604	920	460	1.1	.015	.009	.011	83	-.03	0.400	0.368	82.3	2.53	0.381	0.35
23	FM 2131	150	75	1.2	.079	.083	.054	95	+.06	0.253	0.233	98.0	2.68	0.142	0.44
23	FM 2028	150	75	1.2	.035	.049	.031	78	+.03	0.367	0.252	98.6	2.68	0.189	0.43
23	US 190	800	400	1.1	.024	.066	.040	78	+.03	0.529	0.363	*	*	*	*
23	US 190 (McCulloch)	400	200	1.15	.104	.107	.089	87	+.06	0.326	0.224	98.6	2.68	0.189	0.33
23	FM 45	810	405	1.1	.049	.089	.056	87	+.06	0.557	0.382	*	*	*	*
23	FM 500	470	235	1.15	.070	.087	.087	87	+.06	0.352	0.241	100.0	2.81	0.129	0.51
23	FM 569	700	350	1.1	.063	.096	.075	90	+.06	0.249	0.229	98.0	2.68	0.142	0.47
23	SH 16	530	265	1.1	.028	.034	.035	90	+.03	0.420	0.288	*	*	*	*
23	SH 36	1,430	715	1.05	.014	.006	.007	100	-.03	0.406	0.279	*	*	*	*
23	FM 1476	440	220	1.15	.040	.078	.065	90	+.06	0.304	0.209	98.6	2.68	0.189	0.30
23	FM 2125	415	208	1.15	.064	.096	.074	88	+.06	0.381	0.261	98.6	2.68	0.189	0.40

Table 3. Preconstruction and Construction Data. (Continued)

Project		Traffic			Surface Text					Asphalt Shot Quantities		Loose Unit Weight, lbs/ft^3	Sp. Gr. Aggr.	Average Mat. Depth	Percent Aggr. Embed
Dist.	Highway No.	ADT	ADT/Lane	Cor Fac	OWP	BWP	IWP	PRS	Cor Fac	Act.(Job)	Cor 60^oF	(W)	(G)	(d)	(e)
23	FM 1467	135	68	1.2	.029	.045	.017	78	+.03	0.332	0.228	98.0	2.68	0.142	0.50
23	US 84/67	1,170	585	1.05	.015	.046	.026	88	0	0.397	0.373	*	*	*	*
23	FM 581	150	75	1.2	.056	.073	.039	70	+.06	0.319	0.219	98.0	2.68	0.142	0.40
23	FM 2131	225	113	1.15	.036	.056	.026	68	+.03	0.396	0.272	98.6	2.68	0.189	
23	FM 2525	350	175	1.15	.040	.036	.039	80	+.03	0.339	0.233	*	*	*	*
23	US 183/190	1,100	550	1.05	.009	.007	.014	85	-.03	0.471	0.323	*	*	*	*

*Light weight aggregate was used on this job but was not included in this project.

Table 4. Post Construction Visual Condition Survey.

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
3	SH 79 (1)	2600	1.0	10	10	9	2	4	10	90	75	30	4
3	FM 2393	480	1.0	10	7	9	10	10	10	60	40	40	9
3	US 380	4300	0.7	10	10	10	10	10	10	30	35	35	10
3	US 380	4300	1.8	10	9	10	9	10	10	50	40	30	8
3	SH 79 (2)	1350	0.7	9	8	9	10	10	10	40	30	35	8
3	SH 79 (2)	1750	1.8	10	8	10	10	10	10	35	40	50	8
3	SH 79 (3)	1750	0.7	7	9	10	10	10	10	35	30	30	8
3	SH 79 (3)	1750	1.8	8	10	10	10	10	10	70	50	50	7
3	SH 25 (1)	810	0.7	8	8	8	10	10	10	35	25	30	8
3	SH 25 (1)	810	1.8	8	8	9	9	10	10	50	40	35	7
3	FM 2075	180	0.7	6	5	9	7	8	10	35	35	30	4
3	FM 3109	190	1.8	4	2	10	10	10	10	50	35	30	4
3	FM 701	430	0.9	10	6	9	4	10	10	65	40	35	6
3	SH 25 (2)	640	0.9	10	10	10	8	10	10	70	60	60	8
3	US 183	550	0.9	10	8	9	10	10	10	65	35	20	9
3	US 82/183	2500	1.0	10	9	7	8	10	10	70	35	40	8

(Continued)

Table 4. (Continued)

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
5	SH 137	1550	0.6	8	8	6	10	10	10	35	25	25	8
5	SH 137	1550	1.7	9	8	6	7	10	10	90	55	40	6
5	US 82	2000	0.7	10	10	7	9	10	10	45	30	30	8
5	US 82	2000	1.8	8	7	8	8	8	10	85	85	50	4
5	FM 78	820	0.8	9	8	9	10	10	10	30	25	25	8
5	FM 788	820	1.8	9	7	7	10	10	10	50	40	50	8
5	FM 1760	340	0.8	9	9	10	9	10	10	20	20	20	8
5	FM 1760	340	1.7	9	9	9	10	10	10	75	75	70	7
5	FM 168	900	0.8	9	9	10	10	10	10	30	25	25	9
5	FM 168	900	1.7	9	9	7	10	10	10	55	50	45	9
5	FM 298	250	0.8	10	9	10	10	10	10	20	20	20	9
5	FM 298	250	1.7	8	9	9	3	4	7	95	75	70	3
5	SH 86	690	0.8	8	7	8	10	10	10	20	20	20	7
5	SH 86	690	1.7	8	8	8	10	10	10	65	50	55	7
5	SH 114 (1)	930	0.8	9	7	7	10	10	10	35	25	20	9
5	SH 114 (1)	930	1.7	9	7	7	10	10	10	70	40	35	9

(Continued)

Table 4. (Continued)

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
5	US 380	3300	0.8	7	6	5	4	10	10	90	35	35	6
5	SH 214	1900	0.8	9	9	7	5	10	10	95	60	45	6
5	SH 114 (2)	5100	0.8	10	10	9	10	10	10	50	45	30	9
5	FM 145 (1)	700	0.9	7	6	6	6	8	8	85	40	35	4
5	FM 145 (2)	500	0.9	8	6	6	6	10	10	90	45	45	5
6	FM 1053	1050	1.0	9	10	10	8	10	10	85	40	35	6
6	FM 1053	1050	2.1	10	10	10	10	10	10	70	60	60	8
6	FM 181	580	0.8	10	10	10	10	10	10	30	30	25	10
6	FM 181	580	1.8	10	10	10	10	10	10	70	50	50	9
6	FM 1967	130	0.7	10	10	10	10	10	10	35	25	25	10
6	FM 1967	130	1.8	10	10	10	10	10	10	65	45	45	9
6	US 87	2550	0.7	8	9	4	9	10	10	30	20	15	7
6	US 87	2550	1.8	9	10	7	3	10	10	95	65	55	6

(Continued)

Table 4. (Continued)

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
6	FM 829	430	0.7	9	9	9	9	10	10	40	30	25	8
6	FM 829	430	1.8	10	10	10	8	10	10	65	60	60	9
6	SH 349	480	1.0	10	10	10	10	10	10	35	25	25	10
6	SH 349	480	2.1	10	10	10	10	10	10	60	50	50	10
6	US 67	640	1.0	10	10	10	10	10	10	65	45	25	7
6	US 67	640	2.1	10	10	10	8	10	10	90	70	65	8
6	FM 1053	990	1.0	10	10	10	10	10	10	65	50	50	8
6	FM 1379	240	0.9	9	9	9	9	10	10	75	55	55	9
6	US 385	1400	1.0	10	10	10	10	10	10	70	60	60	8
6	SH 349	840	1.0	10	10	7	7	10	10	90	50	40	8
6	FM 829	280	0.9	9	10	6	10	10	10	75	70	65	8
6	FM 2212	300	0.9	9	9	8	10	10	10	65	50	55	8
6	FM 2002	230	0.9	9	10	8	10	10	10	55	50	50	8

(Continued)

Table 4. (Continued)

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
11	US 259	Good	0.8	9	5	6	10	10	10	85	70	60	8
11	US 59	13,900	0.8	10	10	10	10	10	10	85	75	70	10
11	FM 2864	490	0.8	10	6	7	10	10	10	70	50	50	8
11	SH 21	1500	0.6	9	9	9	10	10	10	45	30	30	9
13	US 90	1500	0.6	9	9	9	10	10	10	45	30	30	9
13	US 90	1500	1.0	9	9	8	4	9	10	90	60	30	5
13	FM 531	250	0.6	9	7	9	10	10	10	30	30	30	10
13	FM 531	250	1.0	7	4	8	10	10	10	45	40	50	6
13	FM 533	130	0.6	10	9	9	10	10	9	35	30	30	8
13	FM 533	130	1.0	6	4	4	10	10	9	60	60	70	4
13	FM 966	430	0.6	10	8	9	10	10	10	35	30	30	10
13	FM 966	430	1.0	8	6	3	10	10	10	65	50	50	6
13	FM 238	110	0.6	9	8	8	10	10	10	30	30	30	8
13	FM 238	110	1.0	8	6	8	10	10	10	65	50	50	7
13	FM 239	400	0.6	10	9	10	10	10	10	45	30	30	10

(Continued)

Table 4. (Continued)

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
13	FM 239	400	1.0	10	9	10	8	10	10	75	70	60	8
13	SH 72	1200	0.6	9	8	9	10	10	10	45	35	35	9
13	SH 72	1200	1.0	9	8	9	9	10	10	70	50	50	9
13	FM 710	710	0.6	10	10	10	10	10	10	35	30	30	10
13	FM 710	710	1.0	10	10	10	3	8	4	95	75	75	4
13	FM 441 (1)	120	0.6	10	10	10	10	10	10	45	30	35	10
13	FM 441 (1)	120	1.0	9	6	6	10	10	10	75	70	70	7
13	FM 441 (2)	120	0.6	10	10	10	10	10	10	45	30	35	10
13	FM 441 (2)	120	1.0	10	8	9	7	10	10	80	70	70	6
13	FM 961 (1)	300	0.6	10	10	10	10	10	10	35	30	30	10
13	FM 961 (1)	300	1.0	10	10	10	5	10	9	70	70	65	7
13	US 87	110	0.8	10	10	8	10	10	10	70	50	30	9
13	FM 961 (2)	350	0.8	6	5	5	10	10	10	40	30	30	7
13	FM 961 (2)	350	1.0	6	5	5	8	7	7	75	70	65	6
13	FM 1161	710	0.8	10	10	10	8	10	10	75	60	55	8

(Continued)

Table 4. (Continued)

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
13	FM 2067	180	0.6	9	7	8	10	10	10	35	30	30	8
13	FM 2067	180	1.1	7	8	8	10	10	10	65	60	60	6
13	FM 234	210	0.6	10	10	10	10	10	10	40	35	30	10
13	FM 234	210	1.0	10	10	10	8	9	9	80	80	80	9
13	FM 532	510	0.8	7	4	7	10	10	10	60	45	50	7
13	FM 236	700	0.8	7	6	6	10	10	10	80	60	50	8
13	FM 404	7000	0.8	10	10	10	5	7	10	95	90	85	8
13	FM 3131	160	0.8	10	10	10	9	10	10	95	85	80	10
13	FM 710	100	0.8	10	10	10	6	8	9	95	85	80	8
15	SH 97	1140	0.5	10	9	9	10	10	10	30	25	25	9
15	SH 97	1140	1.7	10	10	8	10	10	10	75	70	55	9
15	FM 539	630	0.5	10	10	9	10	10	10	30	25	25	10
15	FM 539	630	1.7	4	4	4	10	10	10	40	40	40	5
15	FM 2505 (1)	50	0.5	9	9	8	10	10	10	30	25	25	9

(Continued)

Table 4. (Continued)

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
15	FM 2505 (1)	50	1.7	9	7	7	10	10	10	60	50	50	8
15	FM 2505 (2)	220	0.5	9	9	9	10	10	10	30	25	25	9
15	FM 2505 (2)	220	1.7	10	10	10	10	10	10				8
15	FM 1346	850	0.7	8	9	9	10	10	10	60	35	35	9
15	FM 1346	850	1.7	10	10	10	10	10	10	70	50	50	9
15	LP 1604	920	0.7	10	10	10	10	10	10	40	30	30	10
15	LP 1604	920	1.7	10	10	10	9	10	10	70	60	55	9
23	FM 2131	150	0.8	9	4	6	10	10	10	35	30	30	6
23	FM 2131	150	1.8	10	10	10	8	9	9	95	85	85	8
23	FM 2028	150	1.8	10	10	10	8	9	9	90	80	80	9
23	US 190 (1)	800	1.8	10	10	10	10	10	10	60	50	40	9
23	US 190 (2)	40	1.8	10	10	8	9	10	10	70	65	65	8
23	FM 45	810	1.8	10	10	10	9	10	10	85	70	65	9
23	FM 500	470	1.8	10	8	9	10	10	10	50	40	45	8
23	FM 569	700	0.8	10	10	10	8	10	6	85	75	90	6
23	FM 569	700	1.8	10	10	10	4	4	4	95	90	95	6

(Continued)

Table 4. (Continued)

Project				Visual Condition Survey									
				Aggr. Retention			Bleeding			Embedment Depth, Percent			
District	Highway No.	ADT	Age, Yrs.	OWP	BWP	CL	OWP	BWP	CL	OWP	BWP	CL	Overall
23	SH 16	530	0.8	10	10	10	9	10	10	45	40	50	10
23	SH 16	530	1.8	10	10	10	10	10	10	70	60	50	8
23	SH 36	1430	0.8	10	10	10	9	10	10	50	40	40	10
23	SH 36	1430	1.8	10	10	9	8	10	10	90	65	55	8
23	FM 1476	440	0.8	10	10	10	7	10	9	85	70	75	6
23	FM 1476	440	1.8	10	10	10	8	10	10	90	70	60	8
23	FM 2125	415	0.8	6	4	5	10	10	10				5
23	FM 1467	135	0.5	9	9	9	10	10	10	45	40	40	8
23	FM 1467	135	0.8	6	7	9	10	10	10	50	40	40	8
23	US 84/67	1170	0.8	10	9	10	10	10	10	70	60	55	9
23	FM 581	150	0.5	10	9	10	10	10	10	45	30	40	9
23	FM 581	150	0.8	10	10	10	10	10	10	70	65	60	9
23	FM 2131	225	0.8	8	4	6	10	10	10	35	30	30	6
23	FM 2525	350	0.8	10	10	10	10	10	10	40	30	30	10
23	US 183/190	1100	0.5	10	10	10	10	10	10	35	30	30	10
23	US 183/190	1100	0.8	9	9	8	10	10	10	70	60	55	9

Table 5. Asphalt Application Rate - Correction Due to Traffic.

	Traffic - Vehicles Per Day Per Lane				
	over 1,000	500 to 1,000	250 to 500	100 to 250	Under 100
Traffic Factor (T)	1.00	1.05	1.10	1.15	1.20

Table 6. Asphalt Application Rate Correction Due to Existing Pavement Surface Condition.

Description of Existing Surface	Asphalt Quantity Correction gal/sq. yd.
Flushed asphalt surface	-0.06
Smooth, nonporous surface	-0.03
Slightly porous, slightly oxidized surface	0.00
Slightly pocked, porous, oxidized surface	+0.03
Badly pocked, porous, oxidized surface	+0.06

Table 7. Asphalt Application Rate Correction Due to Existing Pavement Surface Condition.

Description of Existing Surface	Approximate Surface Texture, Cubic inch per square inch	Asphalt Quantity Correction, gallons per square yard
Flushed Asphalt Surface	0.001 to 0.005	-0.06
Smooth, Nonporous Surface	0.005 to 0.015	-0.03
Slightly Porous, Slightly Oxidized Surface	0.015 to 0.025	0.00
Slighlty Porous, Oxidized Surface	0.025 to 0.040	+0.03
Badly Pocked, Porous, Oxidized Surface	0.040 and above	+0.06

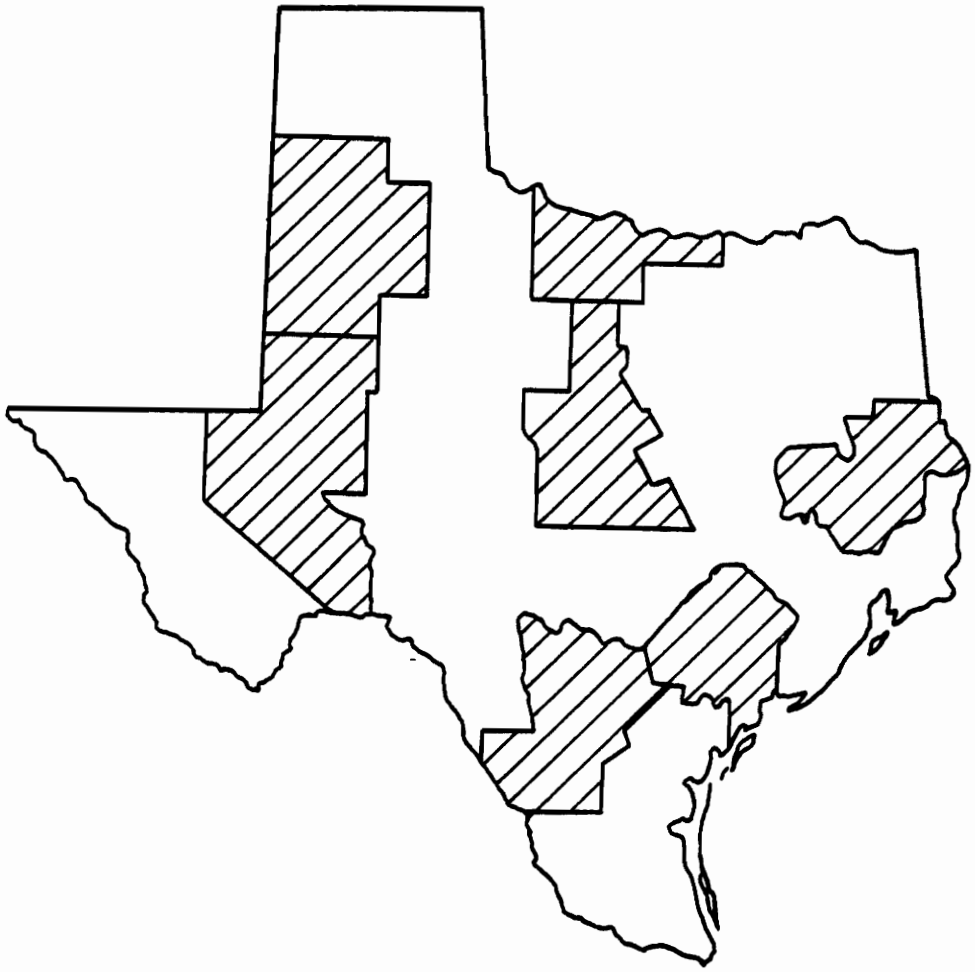


Figure 1. Location of Field Test Sections by Districts.

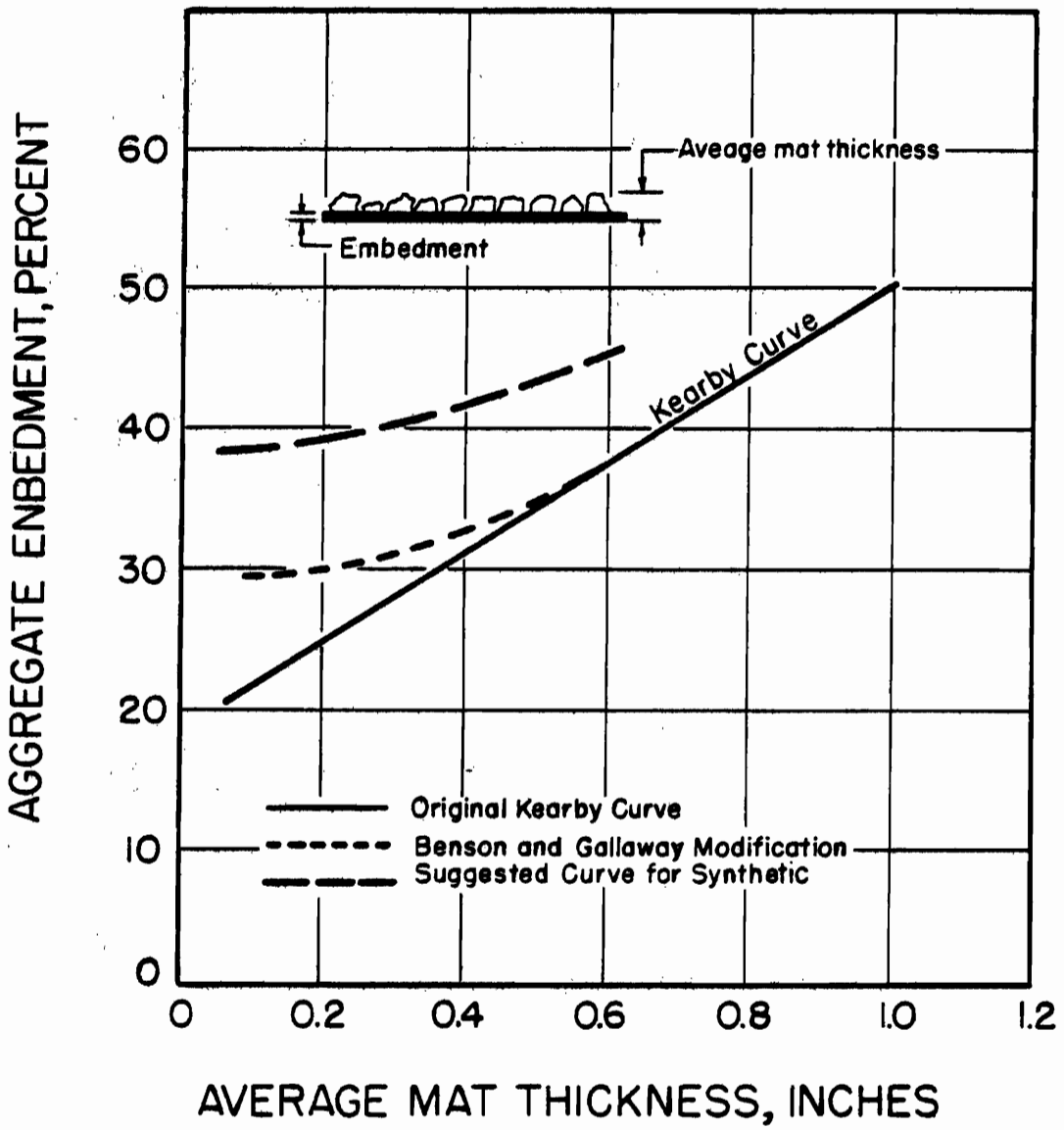
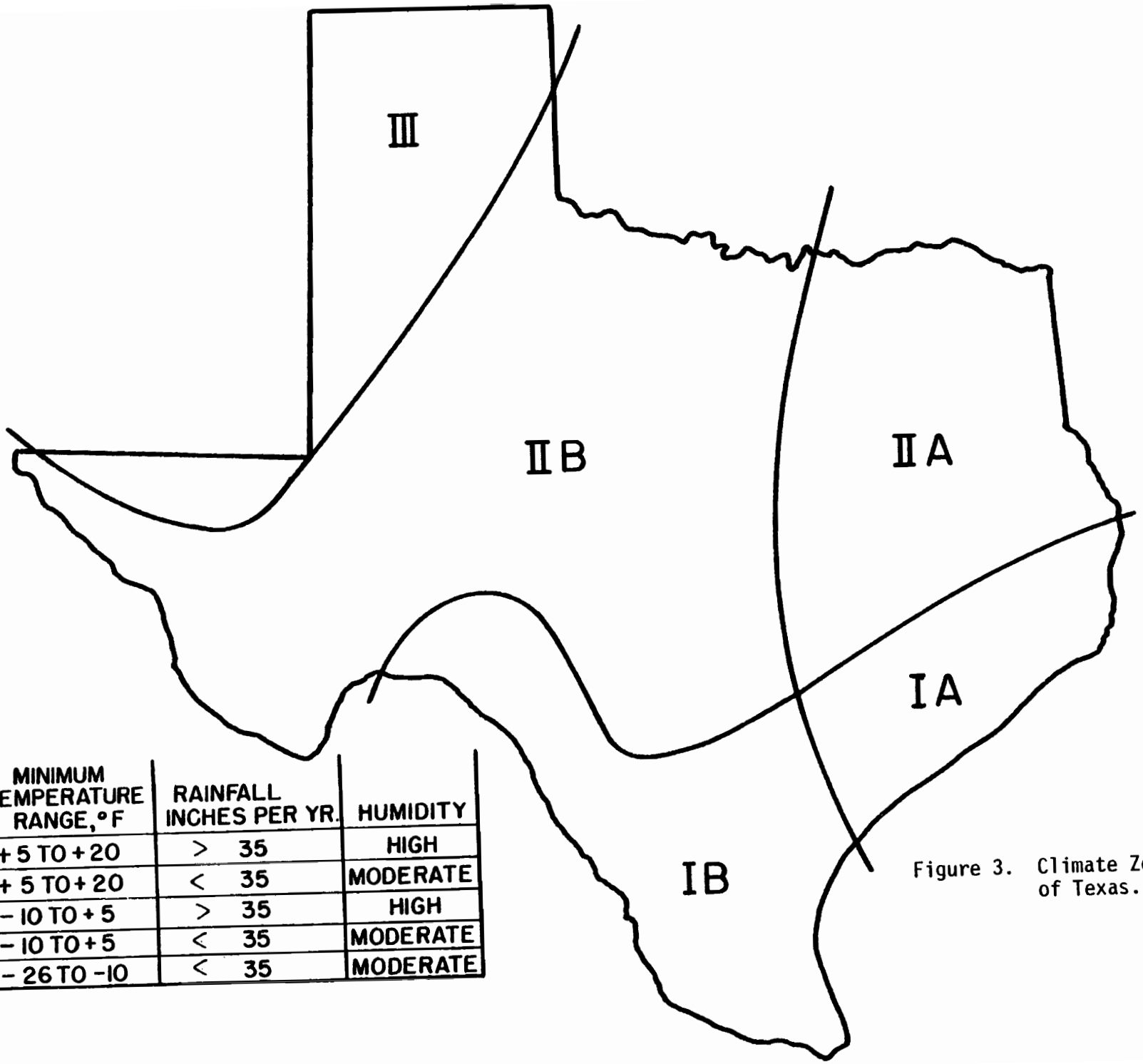


Figure 2. Relation of Percent Embedment to Mat Thickness for Determining Quantity of Asphalt.



ZONE	MINIMUM TEMPERATURE RANGE, °F	RAINFALL INCHES PER YR.	HUMIDITY
IA	+5 TO +20	> 35	HIGH
IB	+5 TO +20	< 35	MODERATE
IIA	-10 TO +5	> 35	HIGH
IIB	-10 TO +5	< 35	MODERATE
III	-26 TO -10	< 35	MODERATE

Figure 3. Climate Zones of Texas.

A. JOB IDENTIFICATION

District No._____ Highway No._____ County_____

Control No._____ Section No._____ Job No._____

_____miles N W E W of _____(nearest town);

Mile Post_____to Mile Post_____. Traffic, ADT/lane_____

Trial Field Section No._____ Date Sealed_____

B. MATERIALS AND DESIGN

Aggregate Source_____ Aggregate Quantity_____

Asphalt Source_____ Asphalt Quantity_____
(gal./sq.yd.)

Length of Section Evaluated_____miles

C. EVALUATION

1. Overall Visual Inspection

0 2 4 6 8 10

Very Poor | Poor | Fair | Good | Very Good

2. Aggregate Retention

0 2 4 6 8 10

OWP: Entire Aggr. Loss | Considerable Aggr. Loss | Slight Loss | No Loss

BWP: 0 2 4 6 8 10

C_L: 0 2 4 6 8 10

3. Bleeding

OWP: 0 2 4 6 8 10

Excess | Mod. | Slight | None

BWP: 0 2 4 6 8 10

Excess | Mod. | Slight | None

C_L: 0 2 4 6 8 10

Excess | Mod. | Slight | None

4. Embedment Depth

_____OWP

_____BWP

_____C_L

COMMENTS:

Figure 4. Seal Coat Visual Evaluation Form.

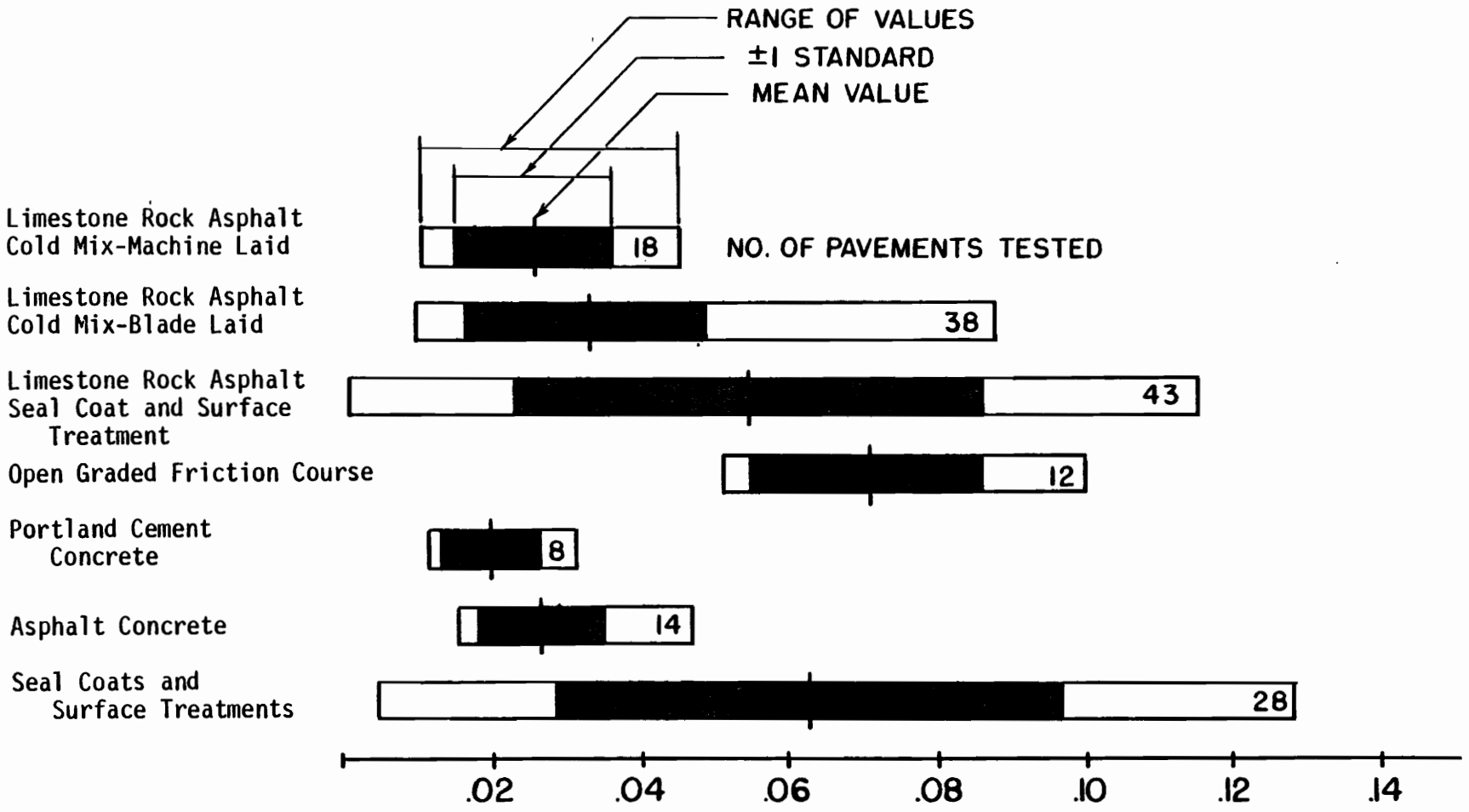


Figure 5. Typical Values of Surface Texture as Measured by Putty Test.

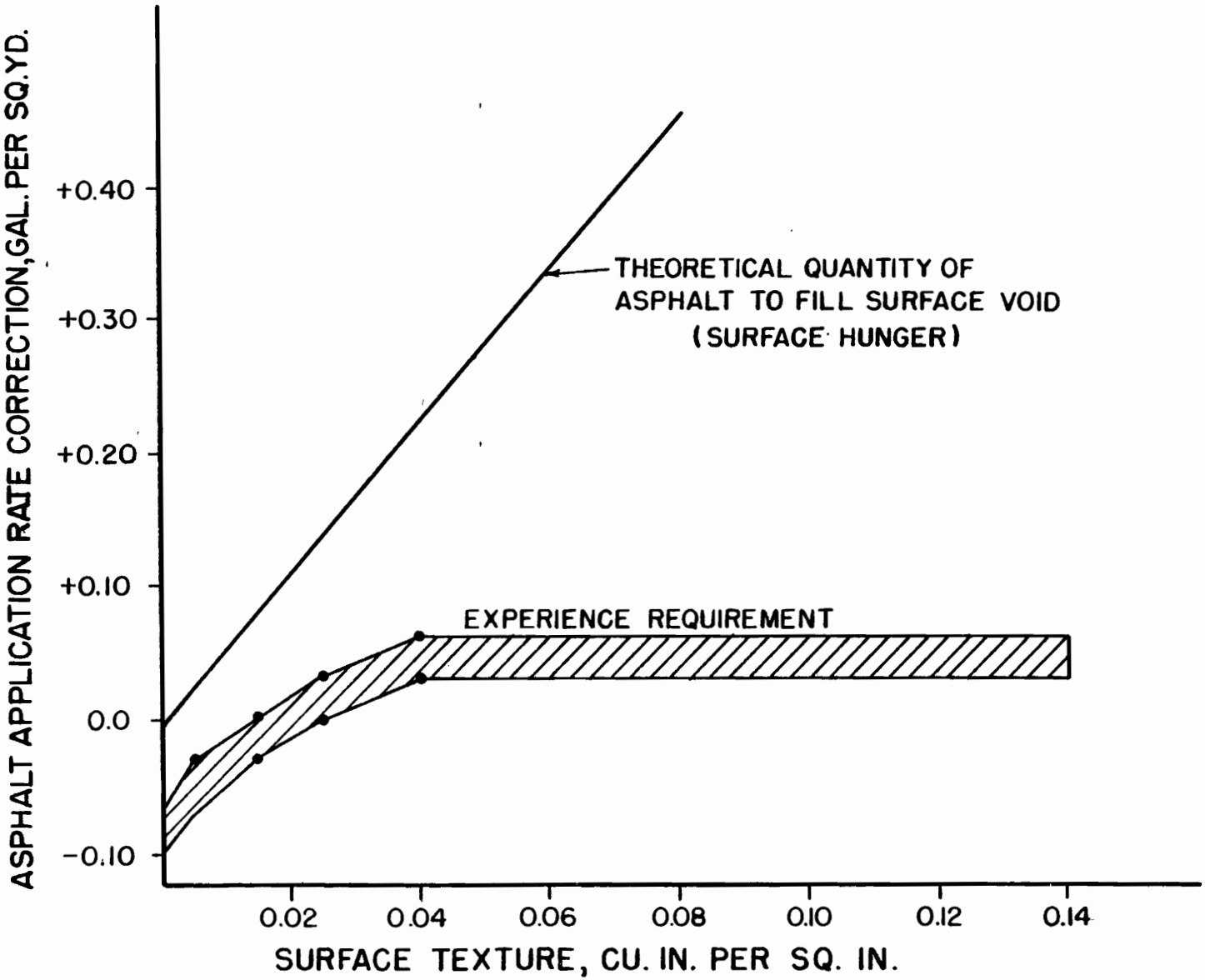


Figure 6. Asphalt Application Rate Correction for Pavements of Various Surface Textures.

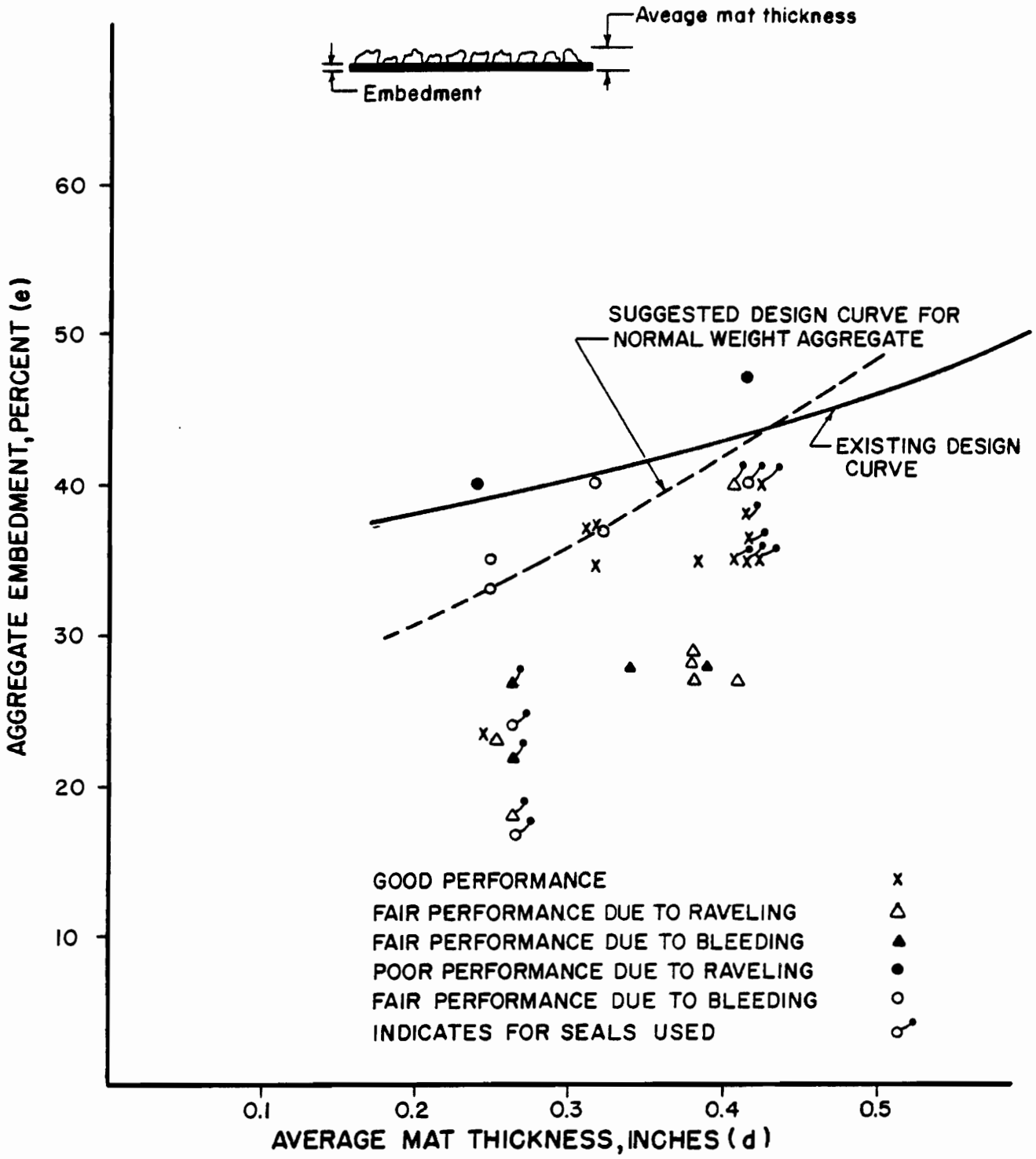


Figure 7. Relationship Between Aggregate Embedment and Average Mat Thickness.

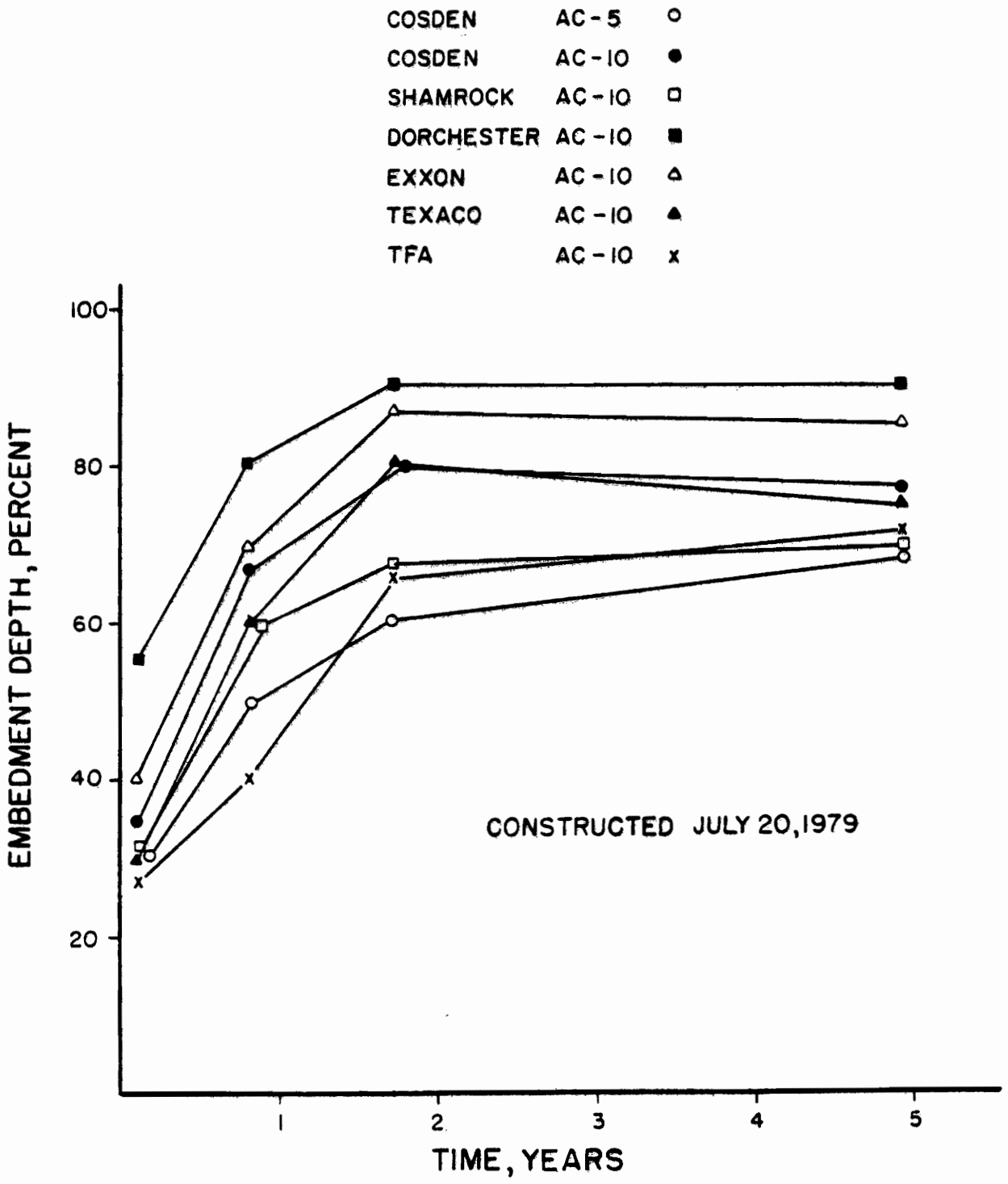


Figure 8. Field Embedment Depth in OWP vs. Age -District 5, Project 5-SH86.

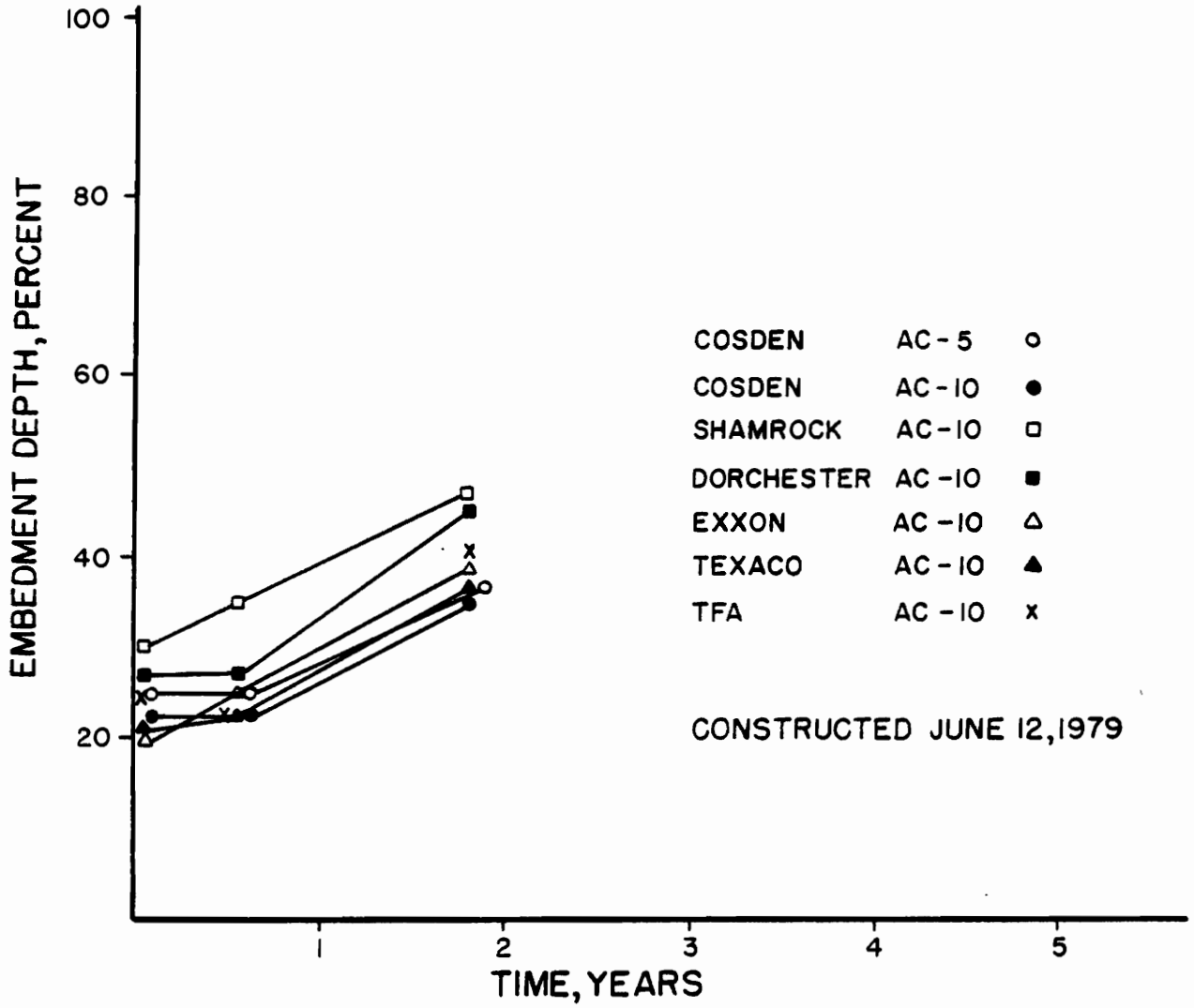


Figure 9. Field embedment Depth in OWP vs. Age - District 6, Project 6-US285.

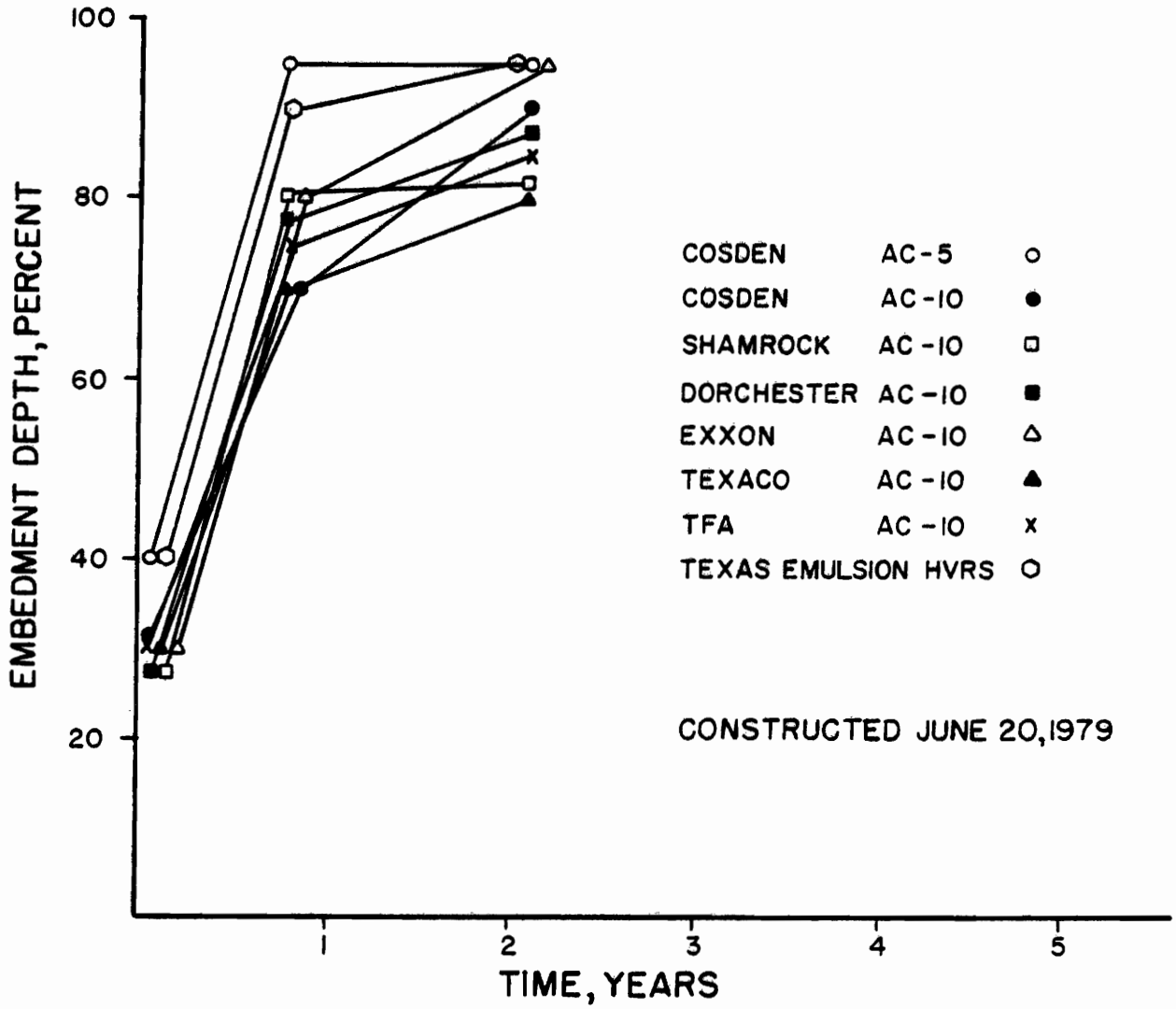


Figure 10. Field Embedment Depth in OWP vs. Age - District 15, Project 15-SD123.

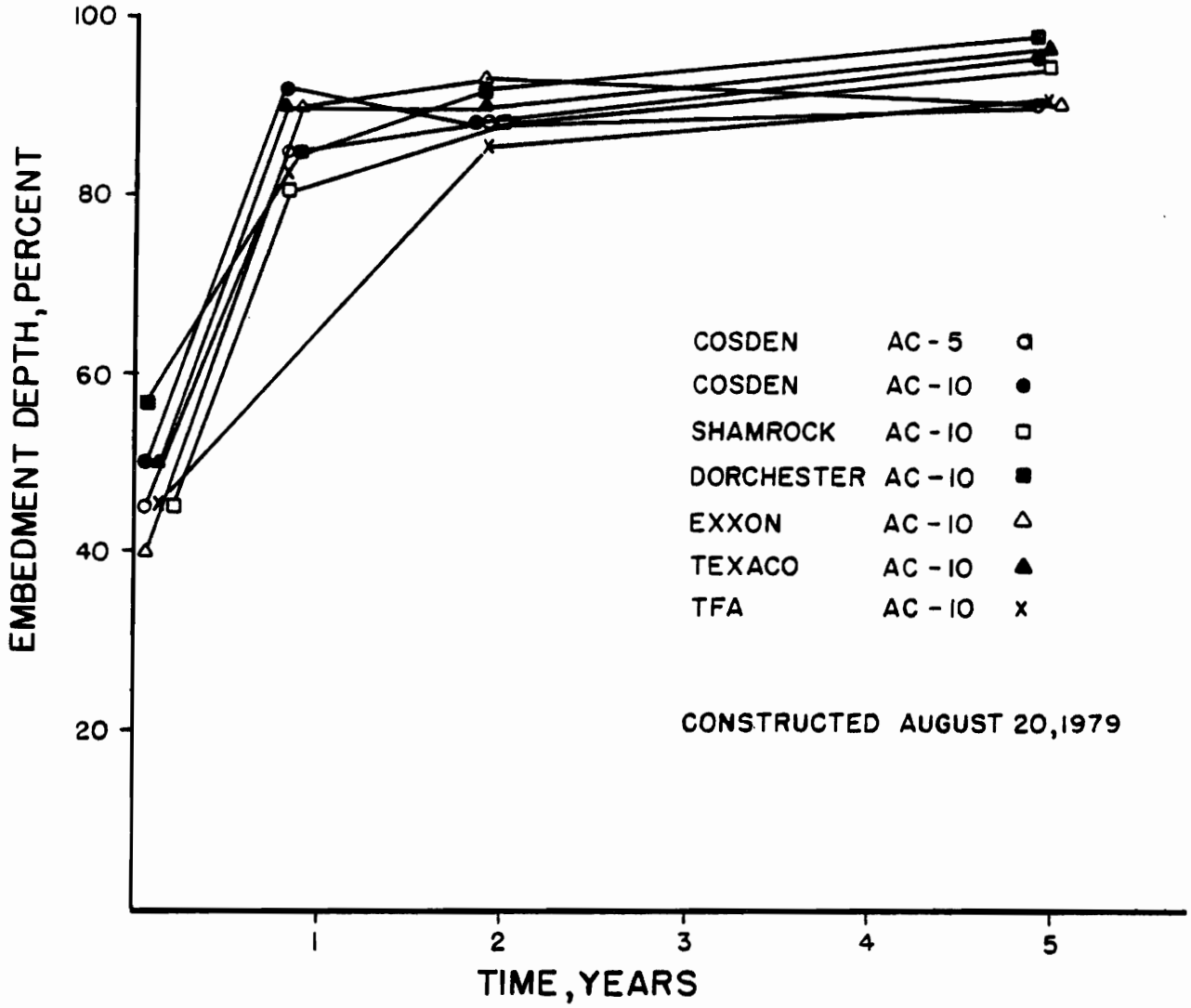


Figure 11. Field Embedment Depth in OWP vs. Age - District 20, Project 20-SH321.

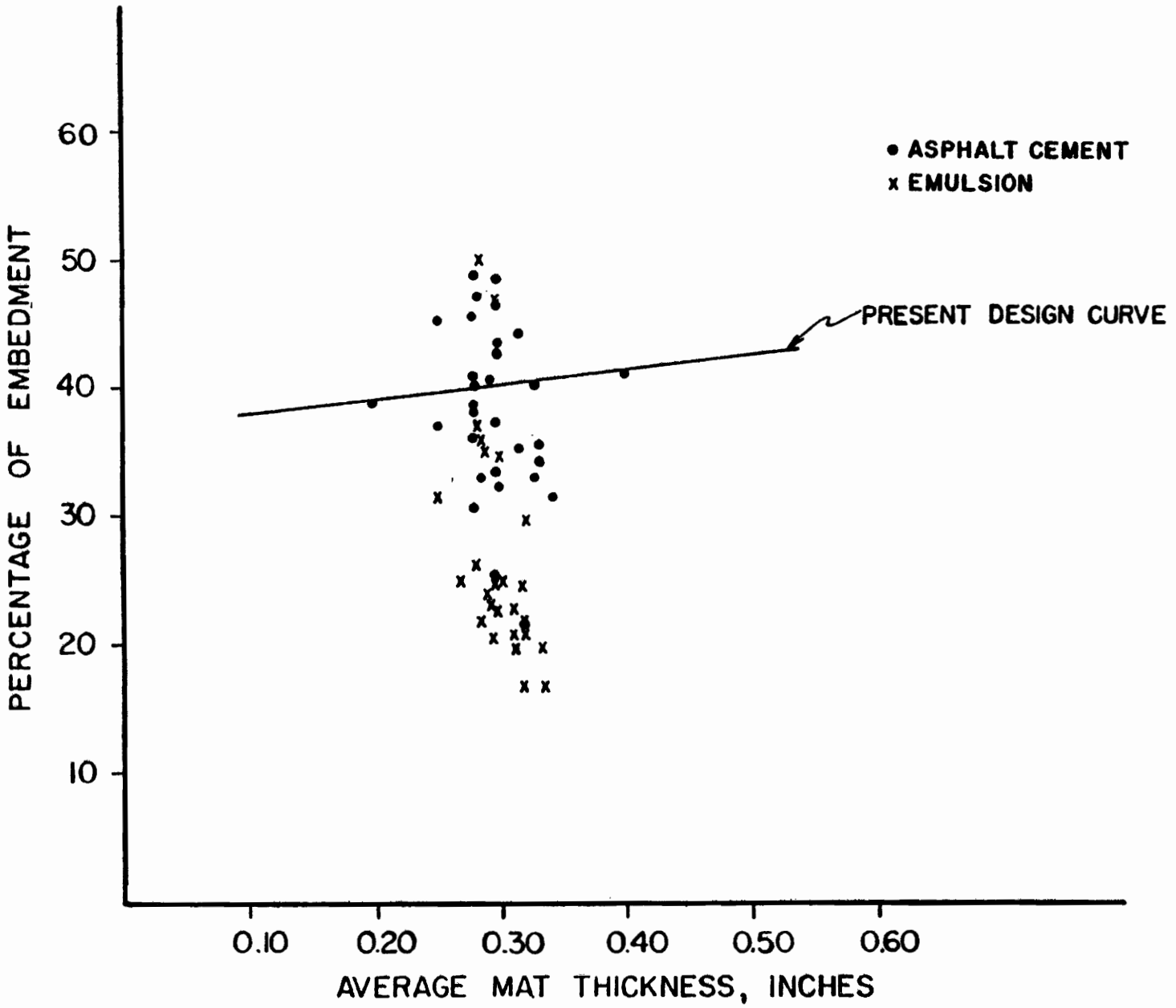


Figure 12. Relationship Between Percentage of Embedment and Average Mat Thickness.

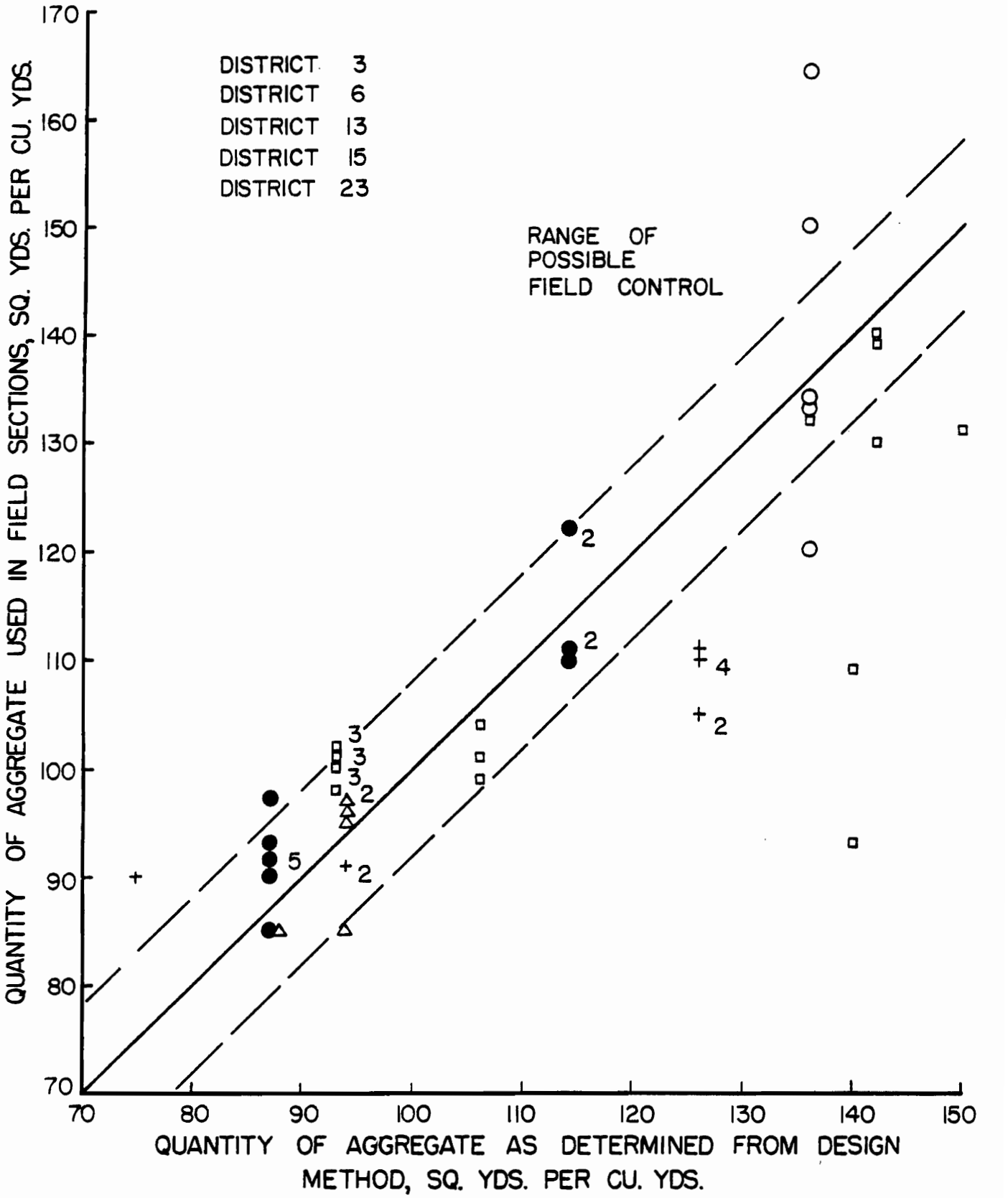


Figure 13. Relationship Between Aggregate Quantities Used for Construction Versus Determined from Design Method.

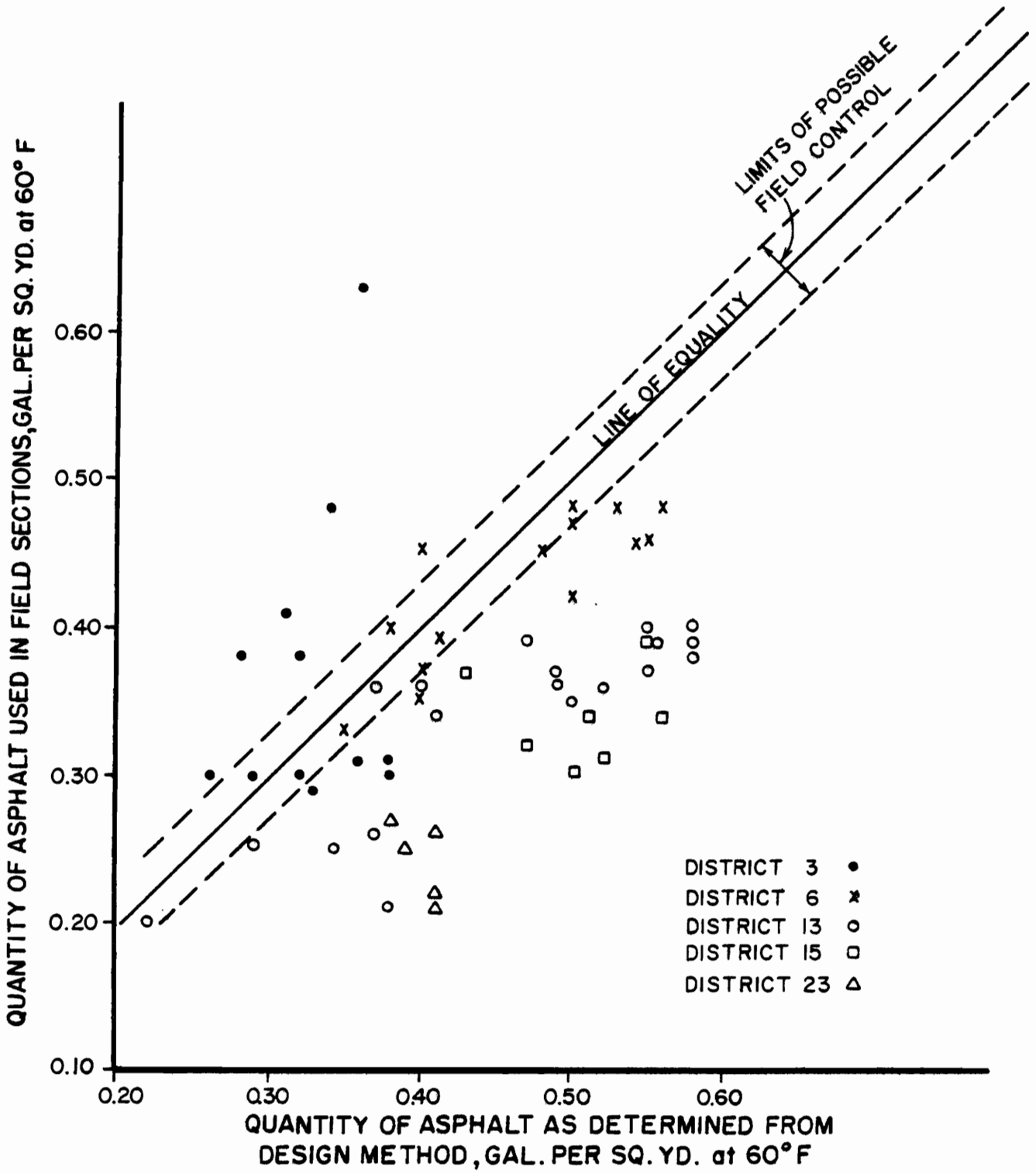


Figure 14. Relationship Between Asphalt Quantities Used for Construction versus Determined from Design Method.

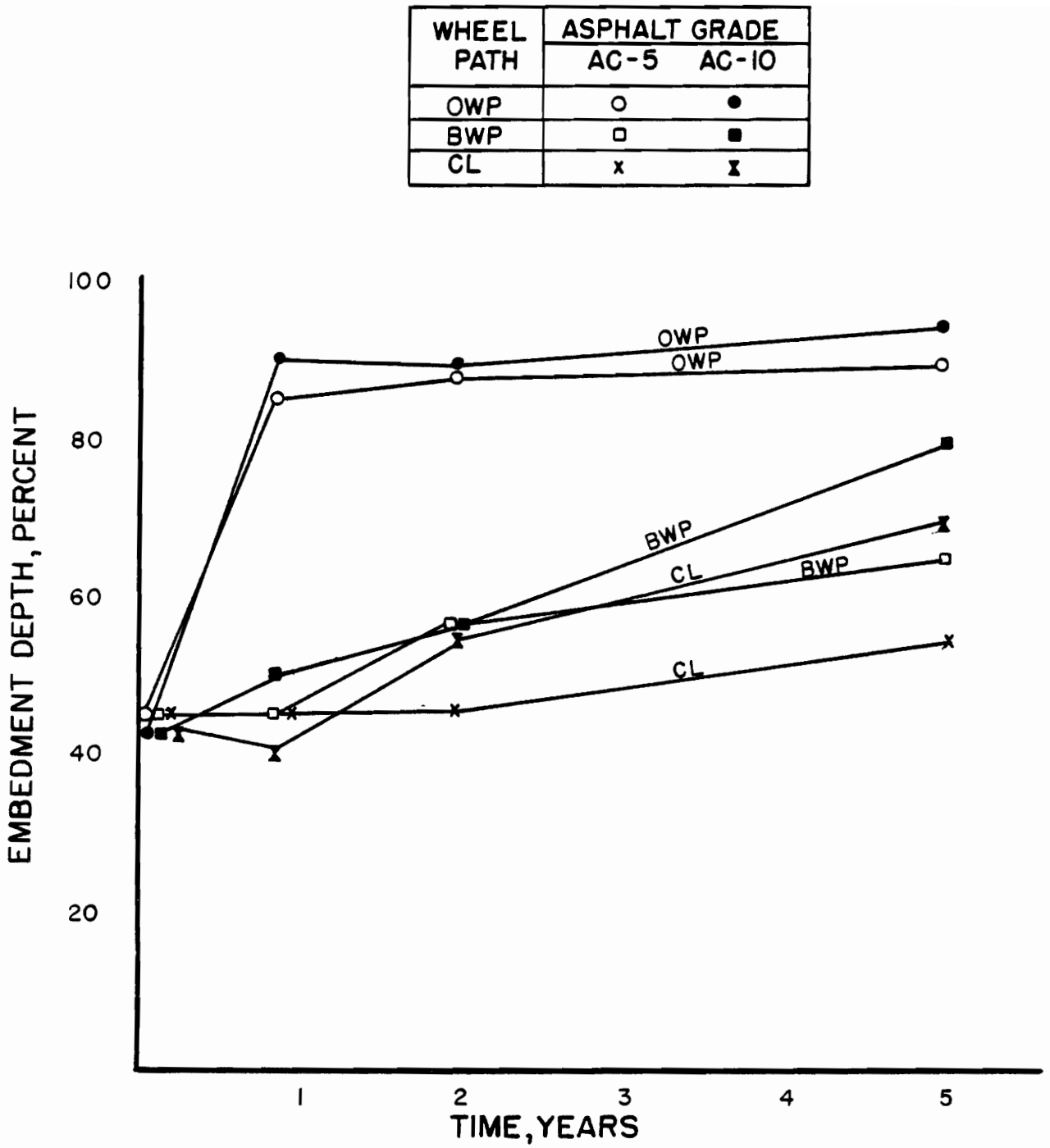


Figure 15. Field Embedment Depth vs. Age AC-5 from Refinery Casden District 5, Project 5-SH86.

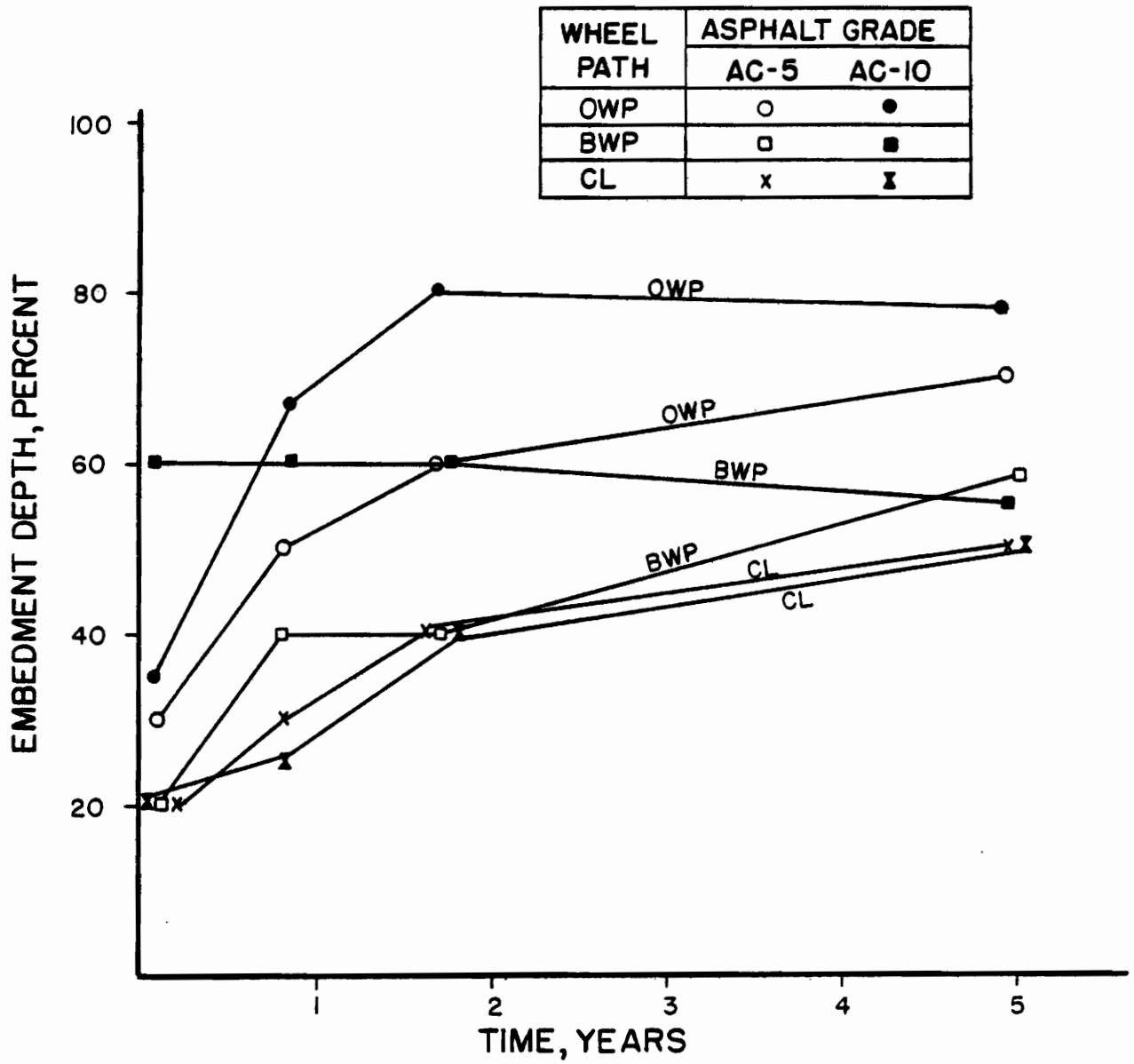


Figure 16. Field Embedment Depth vs. Age AC-5 from Refinery Cosden District 20, Project 20-SH321.

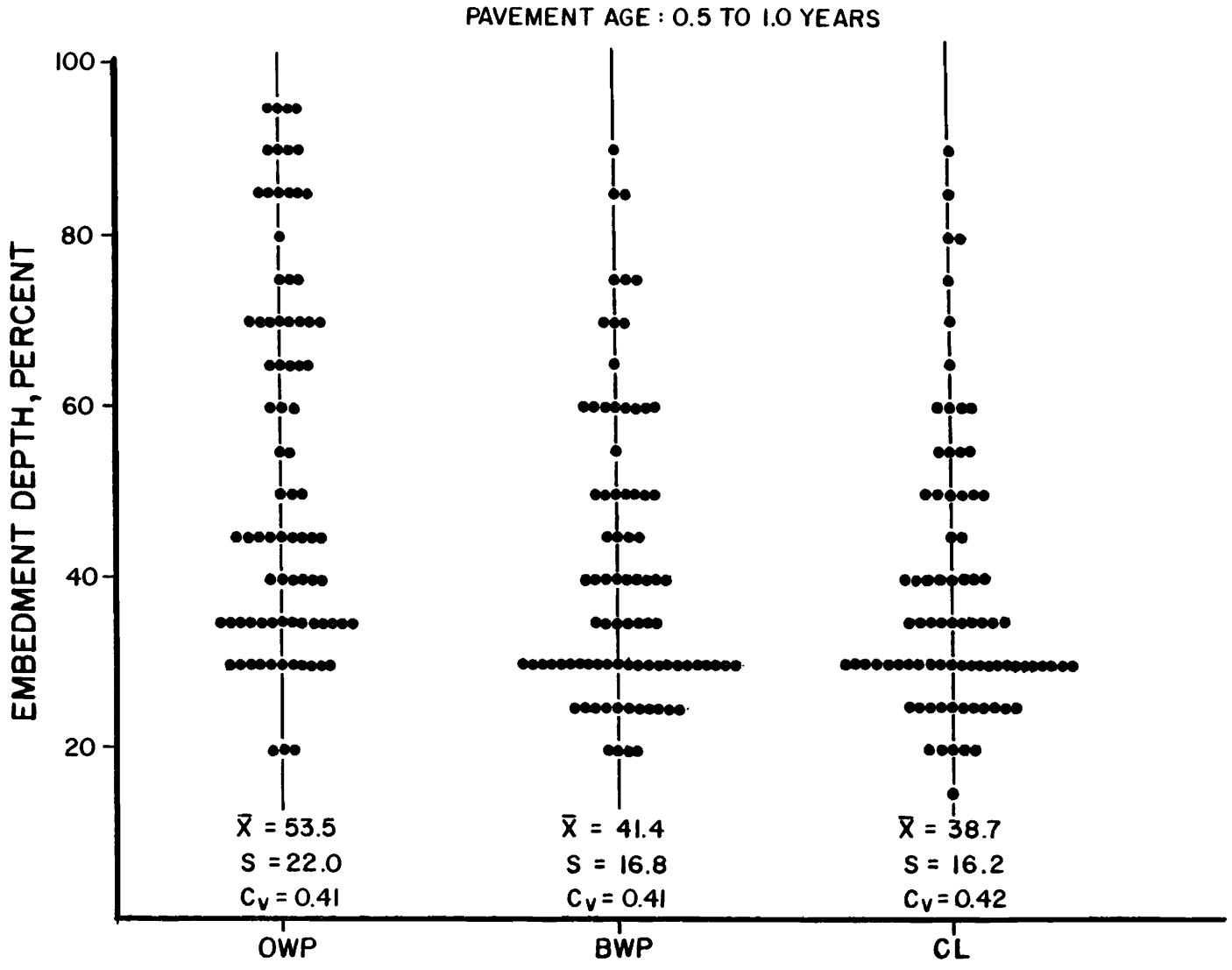


Figure 17. Aggregate Embedment in the Field versus Location Across Pavements.

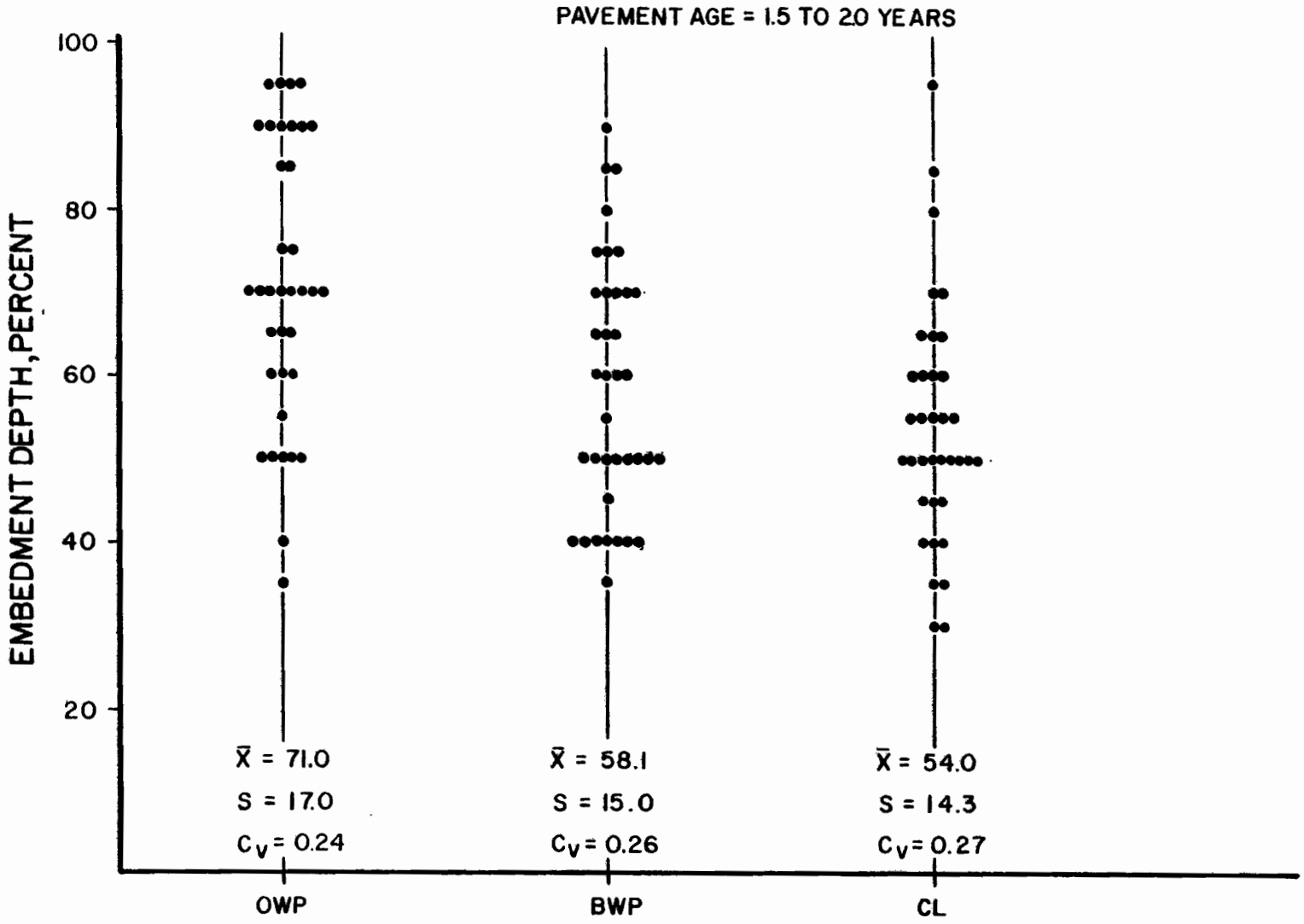


Figure 18. Aggregate Embedment in the Field versus Location Across Pavement.

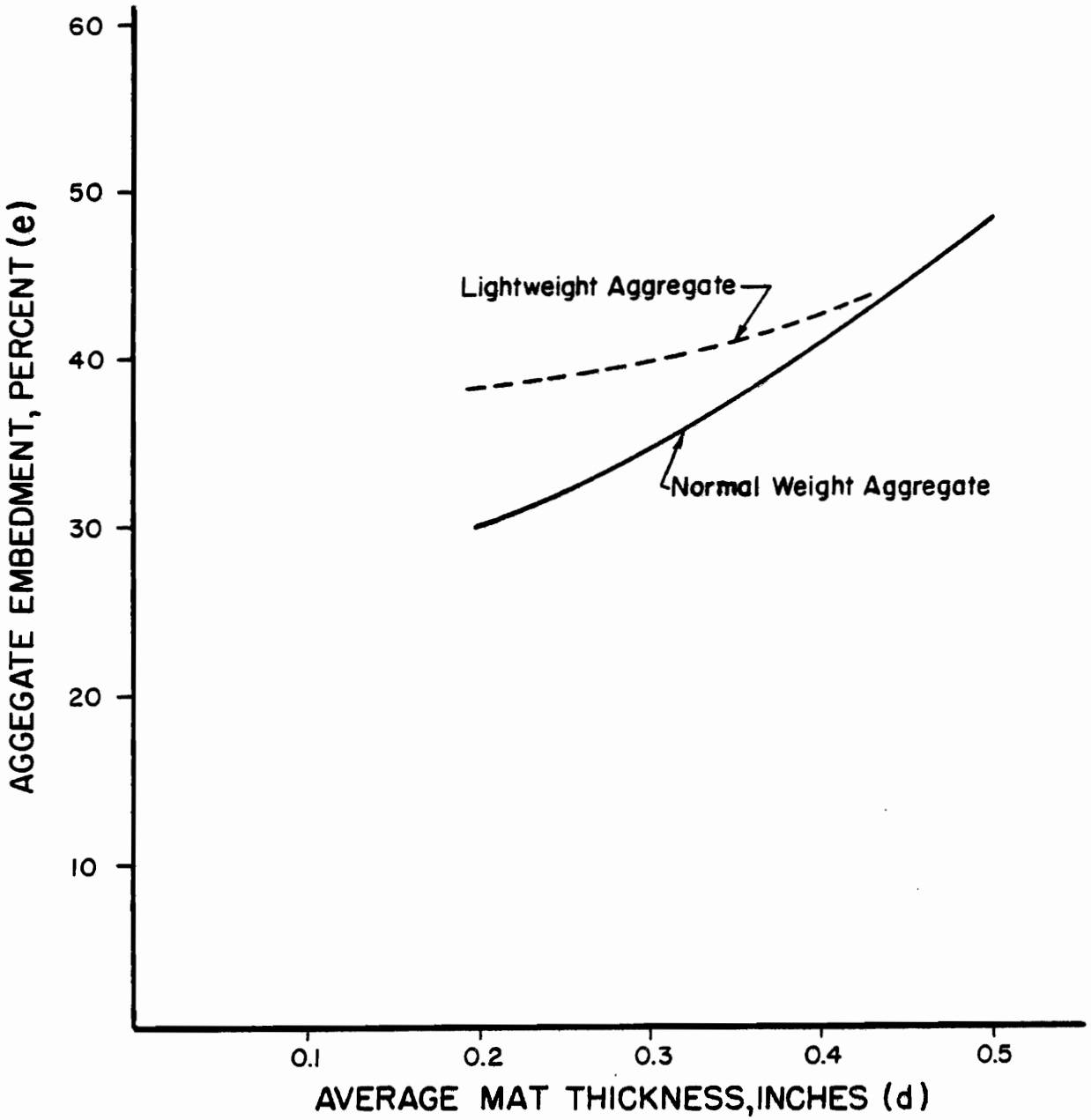


Figure 19. Seal Coat Design Curves.

APPENDIX A

MEASUREMENT OF TEXTURE DEPTH BY THE SILICONE PUTTY METHOD

Scope

This method describes a procedure for determining the average macrotexture depth of a selected portion of a highway pavement surface.

Summary of Method

A known volume of silicone putty is formed into an approximate sphere and placed on the pavement surface. A 6 inch plate with a 4 in. diameter by 1/16 in. deep recess is centered over the putty and pressed down in firm contact with the surface. The average diameter of the resulting flat-topped ring of putty is recorded. The volume of putty is selected so that on a smooth, flat surface with no texture, the silicone putty will completely fill the recess giving a 4 in. diameter flat topped circle. A decrease in diameter of the deformed putty is related to an increase in texture depth thus giving a rapid and simple index of pavement macrotexture.

Significance

The friction between a tire and the highway surface required for various vehicle maneuvers on a wet pavement, particularly in braking, depends in part on the thickness of the water film between the contact surfaces. This thickness, in turn, is controlled by the water drainage characteristics of the pavement as well as tire tread design and condition. Pavement drainage is influenced strongly by its surface macrotexture, one measure of which is the so-called texture depth. Additionally, an important contribution to friction at the tire-pavement interface is the hysteresis energy losses which occur as

a result of cyclic deformation of the tread rubber; these are also influenced by texture depth.

The texture depth determined by this method is a number representing the ratio of the volume of the putty used to the resultant measured circular area covered. Accordingly, it is only an indirect measure of pavement macrotexture wavelength and ampertude, and gives no information on shape, distribution or other factors which may influence pavement surface drainage or hysteresis losses. Additionally, it is assumed that the putty completely fills all voids under the measured circular area.

Apparatus

The apparatus required for calibration and texture depth measurement consists of the following:

1. A circular plate 6 in. diameter x 1 in. thick machined from flat acrylic plastic sheet* with a centrally machined 4 in. diameter x 1/16 in. deep recess on one side.
2. 50 pound (22.6kg) weight with convenient handle.**
3. Steel wire bristle brush.
4. Stiff bristle general utility scrubbing brush.
5. 250 ml polyethylene "squeeze" washing or dispensing bottle fitted with a delivery tip drawn to give a fine directed stream of dewetting agent.
6. Synthetically produced, wear resistant, cellulose, polyurethane, or other type of polymer foam sponge suitable for quick removal of excess dewetting agent from the pavement surface.

---

*Plastic sheets, usually known as "Plexiglas", manufactured by the Rohm & Haas Co., Philadephia, Pa., or "Lucite", manufactured by E. I. du Pont de Nemours Co., Wilmington, Delaware, have been used satisfactorily.

**Such weights made by Fairbanks-Morse have been found to be satisfactory for the purpose.

7. An engineers scale capable of measuring putty diameter to 0.01 in.
8. A metal pry bar (for separation of the circular plate from the pavement at the end of test).
9. 3 oz seamless tin plate containers with fitted lid (such as used in ASTM D6).
10. Flat plateglass plate for use as a reference check surface, approximately 8 in x 8 in x 1/2 in.

Materials

The following materials are required to conduct this test.

1. A filled high viscosity polysiloxane polymer, known as silicone putty.* Approximately 15.9 g of this material will be required to completely fill the recess in the test plate on a flat surface. It is usually possible to completely remove the putty from most pavement surfaces after a test is completed, and reuse this material in subsequent tests. However, it has proven to beadvantageous to provide a number of pre-weighed putty specimens at the test site, transported in the covered 3 oz containers described in 9 above.

2. Dilute solution of dioctyl sodium sulfosuccinate for use as a wetting and parting agent between the pavement surface and silicone putty test specimen. This solution can be made by mixing 5 ml of 75 percent aqueous Aerosol OT solution** with 5 gal (19:1) of distilled water.

*A material marketed as "silly putty" available from Arnold Clark, Inc., Box 741, New Haven, Conn. has been found suitable for this purpose.

Sampling

It is well known that in a given nominally uniform section of highway pavement, surface macrotexture may vary significantly from spot to spot. On the other hand, the area covered by the putty in this test is only a small fraction of the total pavement surface to be evaluated. Accordingly, appropriate selection of test locations will be a significant factor in achieving the objective of this test procedure. In a given section of pavement, putty depth measurement shall be made on at least 10 different locations. These may be selected as follows:

1. Random sampling procedure (preferred method). On a diagram of the pavement surface section to be measured, place a rectangular grid producing at least 1000 square cells, each designating a location on the pavement surface, and number these cells serially by any systematic method. Select 10 of these numbers from a table of random digits, and make tests at the center of the cell numbers so indicated.

2. Selective sampling (for preliminary or quick evaluation tests only). Visually inspect the pavement section to be evaluated, and select, on the basis of such observation, 10 locations which appear to be most representative of the texture of the entire section.

Procedure

At the locations selected for texture depth measurements, proceed as follows:

1. Remove all loose stones, other debris and contaminants by vigorous application of the steel wire brush.

2. Remove remaining sand and dust from the surface by careful dry brushing with the scrubbing brush.

3. Wet a section at least as large as the test plate with a spray of dilute Aerosol OT solution from a squeeze bottle.

**Available from many general laboratory supply house.

4. Remove excess Aerosol OT solution by dropping or wiping the surface with the sponge.

5. Form silicone putty into an approximate sphere and place on the pavement surface.

6. Center the recess of the test plate over the putty and press the plate down in firm contact with the road surface. Use of the 50 pound weight to exert pressure for approximately 1 minute will usually suffice to bring the edges of the test plate into contact with the pavement surface. Time intervals over 5 min. should be avoided.

7. Make four diameter measurements with an angular spacing of 45 deg., with an engineers scale to the nearest 0.01 in. (0.25 mm). The average of these readings is taken as the diameter of the pressed-down circle of putty.

8. Remove the test plate from the pavement surface, using a pry bar if necessary. At the same time the putty also should be removed from the surface. In most instances, complete removal of the putty can be achieved by lightly pressing the putty ball against the few fragments which may try to cling to the surface. In the few cases where more than a few hundredths of a gram of putty cannot be removed, it will be necessary to use a fresh putty specimen of the correct weight.

Calculation of Texture Depth

Texture depth is calculated from the putty diameter by the following equation:

$$Tp = \frac{1}{D^2} - 0.0625$$

where Tp = texture depth, inches

D = average putty circle diameter, inches

or

$$Tp = \frac{2.54}{D^2} - 0.1588$$

where Tp = texture depth, cm.

D = average putty circle diameter, cm.

APPENDIX B

VISUAL CONDITION SURVEY

The preconstruction visual evaluation was performed in accordance to practices set forth in Research Report 151-2 (Reference 17). The form used for this evaluation is shown in Figure 1-B.

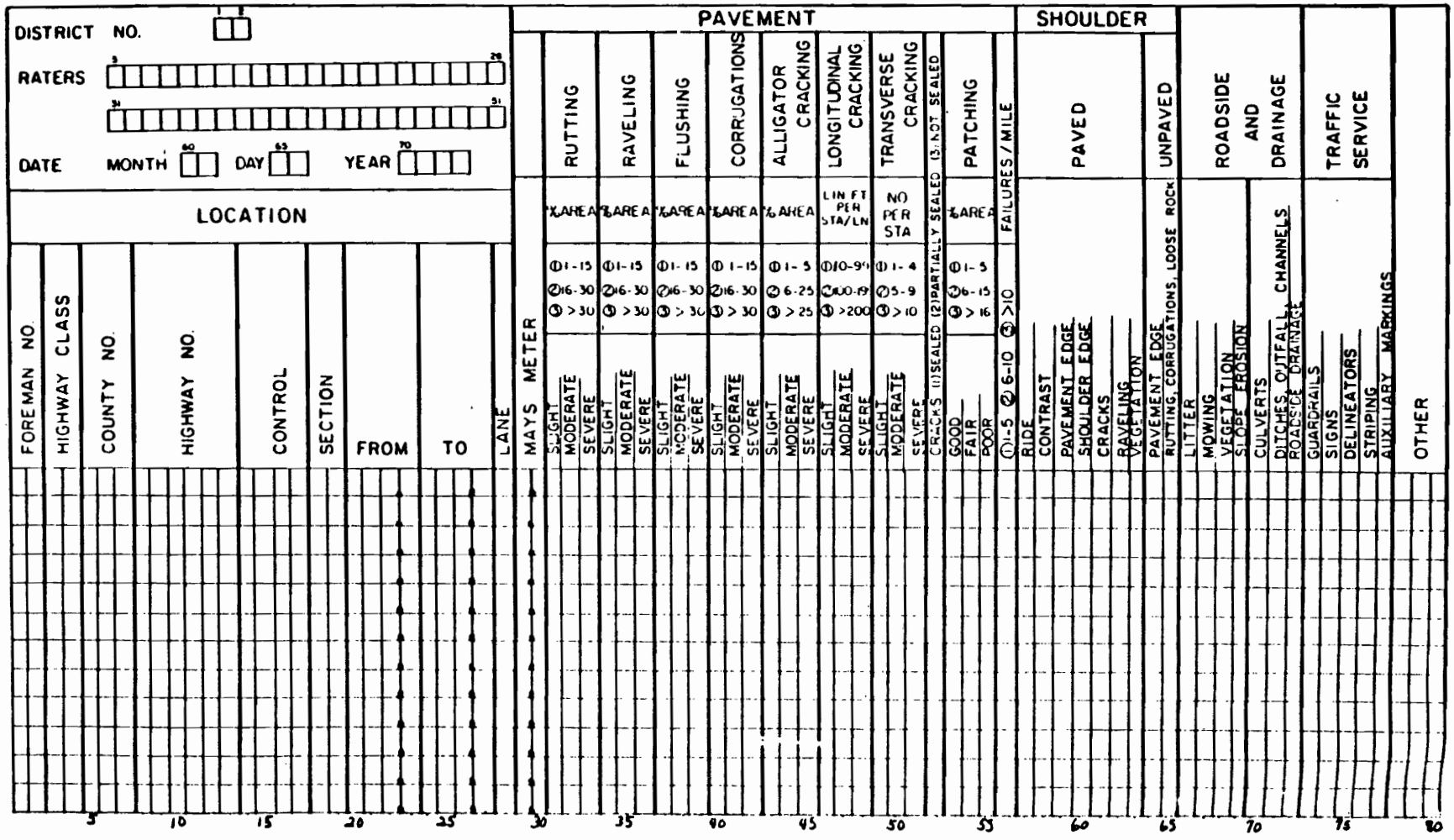


Figure 1-B. Maintenance Rating Form for Flexible Pavements.

APPENDIX C

PRECONSTRUCTION, CONSTRUCTION AND POST CONSTRUCTION DATA

DISTRICT_## 3 COUNTY_## YOUNG HWY NO._## FM 2075

LOCATION_## AT MP 4 IN THE EBL NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/25/82

TEXTURE LOCATION_## AT MILE POST 4 IN THE EBL

OWP_##	3.60	3.55	3.60	.	AVERAGE_##	3.58
BWP_##	3.55	3.55	3.60	.	AVERAGE_##	3.57
IWP_##	3.70	3.75	3.80	.	AVERAGE_##	3.75

TEXTURE LOCATION_## 25 FT EAST OF MP 4 IN THE EBL

OWP_##	3.60	3.65	3.60	.	AVERAGE_##	3.62
BWP_##	3.65	3.70	3.70	.	AVERAGE_##	3.68
IWP_##	3.60	3.60	3.60	.	AVERAGE_##	3.60

TEXTURE LOCATION_## IN THE WEST BOUND LANE

OWP_##	3.75	3.70	3.70	.	AVERAGE_##	3.72
BWP_##	3.10	3.10	3.20	.	AVERAGE_##	3.13
IWP_##	3.50	3.50	3.40	.	AVERAGE_##	3.47

AGGREGATE RATE_## 1/105 DES 1/100

SHOT QUANTITY AVG_## 0.325 HI_## 0.356 LOW_## 0.276

ASPHALT GRADE/PROD_## AC-10/AM.PET.

AGGREGATE GRADE/PROD_## B PB GR 4A

DATE CONSTRUCTED_## 09/10/82 AVG DAILY TRAFFIC_## 180

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 4

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 4	OWP_##10	OWP_## 50
BWP_## 2	BWP_##10	BWP_## 35
CL_##10	CL_##10	CL_## 30

****

EVALUATION DATE_## 5/11/83

OVERALL VISUAL RETENTION_## 4

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 6	OWP_## 7	OWP_## 35
BWP_## 5	BWP_## 8	BWP_## 35
CL_## 9	CL_##10	CL_## 30

DISTRICT_## 3 COUNTY_## CLAY HWY NO._## FM 2393

LOCATION_## AT MP 12 BETWEEN DEAN & JOLLY NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/24/92

TEXTURE LOCATION_## AT MP 12 IN THE WEST BOUND LANE

OWP_##	3.05	3.05	3.10	3.15	AVERAGE_##	3.09
BWP_##	3.15	3.10	3.20	3.10	AVERAGE_##	3.14
IWP_##	3.15	3.00	3.10	3.15	AVERAGE_##	3.10

TEXTURE LOCATION_## 25 FT WEST OF MP 12

OWP_##	3.10	3.00	3.05	3.10	AVERAGE_##	3.06
BWP_##	3.30	3.25	3.20	3.25	AVERAGE_##	3.25
IWP_##	2.90	2.90	2.90	2.90	AVERAGE_##	2.90

TEXTURE LOCATION_## IN THE EAST BOUND LANE

OWP_##	3.15	3.10	3.35	3.10	AVERAGE_##	3.18
BWP_##	3.40	3.45	3.50	3.50	AVERAGE_##	3.46
IWP_##	3.40	3.40	3.30	3.35	AVERAGE_##	3.36

AGGREGATE RATE_## 1/111 DES 1/110

SHOT QUANTITY AVG_## 0.325 DES 0.300 HI_## 0.350 LOW_## 0.303

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## 3 PB GR4A

DATE CONSTRUCTED_## 06/18/93 AVG DAILY TRAFFIC_## 480

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_## 7	BWP_##10	BWP_## 40
CL_## 9	CL_##10	CL_## 40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 3 COUNTY_## YOUNG HWY NO._## FM 3109

LOCATION_## NORTH BOUND LANE AT MP 8 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/23/83

TEXTURE LOCATION_## 30 FT SOUTH OF MP 8

OWP_##	3.10	3.20	3.15	3.10	AVERAGE_## 3.14
BWP_##	3.10	3.10	3.00	3.15	AVERAGE_## 3.09
IWP_##	3.40	3.40	3.45	3.35	AVERAGE_## 3.40

TEXTURE LOCATION_## AT MP 8

OWP_##	3.25	3.30	3.20	3.25	AVERAGE_## 3.25
BWP_##	3.40	3.25	3.25	3.30	AVERAGE_## 3.30
IWP_##	3.40	3.45	3.45	3.45	AVERAGE_## 3.44

TEXTURE LOCATION_## 30 FT NORTH OF MP 8

OWP_##	3.10	3.20	3.20	3.15	AVERAGE_## 3.16
BWP_##	3.20	3.20	3.15	3.10	AVERAGE_## 3.16
IWP_##	3.20	3.20	3.25	3.30	AVERAGE_## 3.24

AGGREGATE RATE_## 1/110 DES 1/100

SHOT QUANTITY AVG_## 0.346 DES 0.350 HI_## 0.364 LOW_## 0.338

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## B PB GR4A

DATE CONSTRUCTED_## 08/11/83 AVG DAILY TRAFFIC_## 190

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 35
BWP_## 7	BWP_##10	BWP_## 30
CL_## 9	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 3 COUNTY_## YOUNG HWY NO._## FM 701

LOCATION_## EAST BOUND LANE AT MP 2 NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 05/23/83

TEXTURE LOCATION_## 100 FT WEST OF MP 2

OWP_##	3.20	3.20	3.20	3.25	AVERAGE_##	3.21
BWP_##	2.90	2.90	2.95	3.05	AVERAGE_##	2.95
IWP_##	3.25	3.20	3.30	3.25	AVERAGE_##	3.25

TEXTURE LOCATION_## 50 FT WEST OF MP 2

OWP_##	3.70	3.65	3.60	3.70	AVERAGE_##	3.66
BWP_##	3.25	3.30	3.25	3.30	AVERAGE_##	3.28
IWP_##	3.05	3.05	3.05	3.05	AVERAGE_##	3.05

TEXTURE LOCATION_## AT MP 2

OWP_##	3.00	3.10	3.00	3.10	AVERAGE_##	3.10
BWP_##	3.10	3.10	3.20	3.10	AVERAGE_##	3.13
IWP_##	3.00	3.05	3.00	3.05	AVERAGE_##	3.03

AGGREGATE RATE_## 1/90 DES 1/92

SHOT QUANTITY AVG_## 0.394 DES 0.350 HI_## 0.416 LOW_## 0.377

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## S P9 GR2

DATE CONSTRUCTED_## 08/11/83 AVG DAILY TRAFFIC_## 430

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 4	OWP_## 65
BWP_## 6	BWP_##10	BWP_## 40
CL_## 9	CL_##10	CL_## 35

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 3 COUNTY_## ARCHER HWY NO._## SH 25

LOCATION_## AT MP 30 BY WINDTHORST NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/25/82

TEXTURE LOCATION_## AT MP 30 IN THE EAST BOUND LANE

OWP_##	3.10	3.10	3.10	.	AVERAGE_##	3.10
BWP_##	3.20	3.20	3.10	.	AVERAGE_##	3.17
IWP_##	3.20	3.05	3.10	.	AVERAGE_##	3.12

TEXTURE LOCATION_## 25 FT EAST OF MP 30

OWP_##	3.10	3.00	3.15	.	AVERAGE_##	3.08
BWP_##	3.20	3.25	3.20	.	AVERAGE_##	3.22
IWP_##	3.30	3.30	3.00	.	AVERAGE_##	3.20

TEXTURE LOCATION_## AT MP 30 IN THE WEST BOUND LANE

OWP_##	3.05	3.10	3.10	.	AVERAGE_##	3.08
BWP_##	3.40	3.40	3.35	.	AVERAGE_##	3.83
IWP_##	3.25	3.20	3.20	.	AVERAGE_##	3.22

AGGREGATE RATE_## 1/105 DES 1/110

SHOT QUANTITY AVG_## 0.334 HI_## 0.351 LOW_## 0.304

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## B PB 4A

DATE CONSTRUCTED_## 09/29/82 AVG DAILY TRAFFIC_## 810

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_## 9	OWP_## 50
BWP_## 8	BWP_##10	BWP_## 40
CL_## 9	CL_##10	CL_## 35

****

EVALUATION DATE_## 5/11/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_##10	OWP_## 35
BWP_## 8	BWP_##10	BWP_## 25
CL_## 8	CL_##10	CL_## 30

DISTRICT_## 3 COUNTY_## ARCHER HWY NO._## SH 25

LOCATION_## SOUTH BOUND LANE AT MP 12 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/23/83

TEXTURE LOCATION_## 50 FT WEST OF MP 12

OWP_##	3.15	3.10	3.20	3.10	AVERAGE_##	3.14
BWP_##	2.95	2.90	2.90	3.00	AVERAGE_##	2.94
IWP_##	3.20	3.15	3.30	3.15	AVERAGE_##	3.20

TEXTURE LOCATION_## AT MP 12

OWP_##	2.90	2.95	2.95	2.95	AVERAGE_##	2.94
BWP_##	3.10	3.10	3.10	3.15	AVERAGE_##	3.11
IWP_##	3.30	3.25	3.30	3.30	AVERAGE_##	3.29

TEXTURE LOCATION_## 50 FT EAST OF MP 12

OWP_##	3.15	3.15	3.05	3.10	AVERAGE_##	3.11
BWP_##	2.80	2.85	3.00	2.95	AVERAGE_##	2.90
IWP_##	3.20	3.25	3.35	3.35	AVERAGE_##	3.29

AGGREGATE RATE_## 1/106 DES 1/110

SHOT QUANTITY AVG_## 0.300 HI_## 0.313 LOW_## 0.276

ASPHALT GRADE/PROD_## AC-5/KERR MCGEE

AGGREGATE GRADE/PROD_## B PB 4A MOD

DATE CONSTRUCTED_## 08/01/83 AVG DAILY TRAFFIC_## 640

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 70
BWP_##10	BWP_##10	BWP_## 60
CL_##10	CL_##10	CL_## 60

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 3 COUNTY_## CLAY HWY NO._## SH 79

LOCATION_## AT MP 22 NEAR DEAN NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/24/82

TEXTURE LOCATION_## AT MP 22 IN THE NORTH BOUND LANE

OWP_##	3.80	3.75	3.85	3.90	AVERAGE_##	3.83
BWP_##	3.55	3.60	3.55	3.55	AVERAGE_##	3.56
IWP_##	3.65	3.70	3.80	3.65	AVERAGE_##	3.70

TEXTURE LOCATION_## 25 FT SOUTH OF MP 22

OWP_##	3.90	3.90	3.85	3.95	AVERAGE_##	3.90
BWP_##	3.55	3.55	3.65	3.60	AVERAGE_##	3.59
IWP_##	3.90	3.90	3.90	3.90	AVERAGE_##	3.90

TEXTURE LOCATION_## IN THE SOUTH BOUND LANE

OWP_##	3.80	3.75	3.85	3.80	AVERAGE_##	3.80
BWP_##	3.10	3.15	3.20	3.10	AVERAGE_##	3.14
IWP_##	4.00	3.90	3.90	3.95	AVERAGE_##	3.94

AGGREGATE RATE_## 1/110 DES 1/110

SHOT QUANTITY AVG_## 0.328 DES 0.300 HI_## 0.353 LOW_## 0.307

ASPHALT GRADE/PROD_## AC-10/AM.PET.

AGGREGATE GRADE/PROD_## B PB GR4A

DATE CONSTRUCTED_## 06/20/83 AVG DAILY TRAFFIC_## 2600

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 4

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 2	OWP_## 90
BWP_##10	BWP_## 4	BWP_## 75
CL_## 9	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 3 COUNTY_## ARCHER HWY NO._## SH 79

LOCATION_## AT MP 22 SOUTH OF ARCHER CITY NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/25/82

TEXTURE LOCATION_## AT MP 22 IN THE NBL

OWP_##	3.00	2.95	3.05	.	AVERAGE_##	3.00
BWP_##	3.20	3.20	3.15	.	AVERAGE_##	3.18
IWP_##	3.30	3.30	3.30	.	AVERAGE_##	3.30

TEXTURE LOCATION_## 25 FT NORTH OF MP 22 IN THE NBL

OWP_##	3.20	3.20	3.15	.	AVERAGE_##	3.18
BWP_##	3.40	3.45	3.45	.	AVERAGE_##	3.43
IWP_##	3.50	3.55	3.50	.	AVERAGE_##	3.52

TEXTURE LOCATION_## AT MP 22 IN THE SOUTH BOUND LANE

OWP_##	3.40	3.30	3.35	.	AVERAGE_##	3.35
BWP_##	3.50	3.55	3.40	.	AVERAGE_##	3.48
IWP_##	3.35	3.30	3.25	.	AVERAGE_##	3.30

AGGREGATE RATE_## 1/110

SHOT QUANTITY AVG_## 0.318 HI_## 0.363 LOW_## 0.291

ASPHALT GRADE/PROD_## AC-5 /AM.PET.

AGGREGATE GRADE/PROD_## 3 PB 4A

DATE CONSTRUCTED_## 09/29/82 AVG DAILY TRAFFIC_## 1750

EVALUATION DATE_## 5/11/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 7	OWP_##10	OWP_## 35
BWP_## 9	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_##10	OWP_## 70
BWP_##10	BWP_##10	BWP_## 50
CL_##10	CL_##10	CL_## 50

DISTRICT_## 3 COUNTY_## ARCHER HWY NO._## SH 79

LOCATION_## AT MP 30 N OF OLNEY NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/25/82

TEXTURE LOCATION_## SECTION HAS FABRIC UNDER OLD SEAL COAT

OWP_##	2.90	2.80	2.90	.	AVERAGE_##	2.87
BWP_##	2.40	2.40	2.40	.	AVERAGE_##	2.40
IWP_##	3.30	3.20	3.30	.	AVERAGE_##	3.27

TEXTURE LOCATION_## N.A.

OWP_##	2.90	2.90	2.85	.	AVERAGE_##	2.88
BWP_##	2.60	2.65	2.55	.	AVERAGE_##	2.60
IWP_##	2.80	2.85	2.85	.	AVERAGE_##	2.83

TEXTURE LOCATION_## N.A.

OWP_##	3.40	3.20	3.35	.	AVERAGE_##	3.32
BWP_##	2.80	2.70	2.75	.	AVERAGE_##	2.75
IWP_##	3.05	3.10	3.05	.	AVERAGE_##	3.07

AGGREGATE RATE_## 1/119 DES 1/110

SHOT QUANTITY AVG_## 0.335 HI_## 0.346 LOW_## 0.321

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## 3 PB GR4A

DATE CONSTRUCTED_## 09/23/82 AVG DAILY TRAFFIC_## 1350

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 35
BWP_## 8	BWP_##10	BWP_## 40
CL_##10	CL_##10	CL_## 50

****

EVALUATION DATE_## 5/11/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 40
BWP_## 8	BWP_##10	BWP_## 30
CL_## 9	CL_##10	CL_## 35

DISTRICT_## 3 COUNTY_## THROCKMORTON HWY NO._## US 183

LOCATION_## EAST BOUND LANE AT 24 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/23/83

TEXTURE LOCATION_## 50 FT WEST OF MP 24

OWP_##	2.95	3.00	3.10	3.05	AVERAGE_##	3.03
BWP_##	3.50	3.50	3.55	3.45	AVERAGE_##	3.50
IWP_##	3.70	3.75	3.70	3.75	AVERAGE_##	3.73

TEXTURE LOCATION_## AT MP 24

OWP_##	3.30	3.30	3.30	3.40	AVERAGE_##	3.33
BWP_##	3.40	3.35	3.40	3.30	AVERAGE_##	3.36
IWP_##	3.45	3.40	3.40	3.40	AVERAGE_##	3.41

TEXTURE LOCATION_## 50 FT EAST OF MP 24

OWP_##	3.50	3.40	3.40	3.40	AVERAGE_##	3.43
BWP_##	3.20	3.45	3.40	3.50	AVERAGE_##	3.39
IWP_##	3.40	3.40	3.40	3.40	AVERAGE_##	3.40

AGGREGATE RATE_## 1/91 DES 1/90

SHOT QUANTITY AVG_## 0.371 DES 0.350 HI_## 0.389 LOW_## 0.351

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## B PB GR3

DATE CONSTRUCTED_## 08/13/83 AVG DAILY TRAFFIC_## 550

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 65
BWP_## 8	BWP_##10	BWP_## 35
CL_## 9	CL_##10	CL_## 20

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 3 COUNTY_## YOUNG HWY NO._## US 380

LOCATION_## AT MP 34 NE OF GRAHAM NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/25/82

TEXTURE LOCATION_## AT MP 34 IN THE EAST BOUND LANE

OWP_##	3.90	3.85	3.80	.	AVERAGE_##	3.85
BWP_##	3.90	3.80	3.75	.	AVERAGE_##	3.82
IWP_##	3.65	3.70	3.75	.	AVERAGE_##	3.70

TEXTURE LOCATION_## 25 FT EAST OF MP 34 IN THE EBL

OWP_##	3.80	3.75	3.70	.	AVERAGE_##	3.75
BWP_##	3.60	3.60	3.60	.	AVERAGE_##	3.60
IWP_##	3.60	3.60	3.50	.	AVERAGE_##	3.57

TEXTURE LOCATION_## AT MP 34 IN THE WBL

OWP_##	3.10	3.10	3.10	.	AVERAGE_##	3.10
BWP_##	3.50	3.45	3.50	.	AVERAGE_##	3.48
IWP_##	3.85	3.80	3.85	.	AVERAGE_##	3.83

AGGREGATE RATE_## 1/110

SHOT QUANTITY AVG_## 0.325 HI_## 0.35 LOW_## 0.29

ASPHALT GRADE/PROD_## AC-10/AM.PET.

AGGREGATE GRADE/PROD_## CLB P9 4A

DATE CONSTRUCTED_## 09/09/82 AVG DAILY TRAFFIC_## 4300

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 9	OWP_## 50
BWP_## 9	BWP_##10	BWP_## 40
CL_##10	CL_##10	CL_## 30

****

EVALUATION DATE_## 5/11/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 30
BWP_##10	BWP_##10	BWP_## 35
CL_##10	CL_##10	CL_## 35

DISTRICT_## 3 COUNTY_## BAYLOR HWY NO._## US 82 183

LOCATION_## WEST BOUND LANE AT MP 20 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/23/83

TEXTURE LOCATION_## 50 FT EAST OF MP 20

OWP_##	3.20	3.20	3.30	3.25	AVERAGE_##	3.24
BWP_##	3.20	3.15	3.20	3.15	AVERAGE_##	3.18
IWP_##	3.45	3.40	3.30	3.40	AVERAGE_##	3.39

TEXTURE LOCATION_## AT MP 20

OWP_##	3.50	3.40	3.40	3.50	AVERAGE_##	3.45
BWP_##	3.30	3.40	3.45	3.35	AVERAGE_##	3.38
IWP_##	3.60	3.50	3.50	3.50	AVERAGE_##	3.53

TEXTURE LOCATION_## 50 FT WEST OF MP 20

OWP_##	3.55	3.60	3.70	3.65	AVERAGE_##	3.63
BWP_##	3.50	3.55	3.55	3.50	AVERAGE_##	3.53
IWP_##	3.65	3.60	3.65	3.65	AVERAGE_##	3.64

AGGREGATE RATE_## 1/91 DES 1/90

SHOT QUANTITY AVG_## 0.334 HI_## 0.344 LOW_## 0.317

ASPHALT GRADE/PROD_## AC-10/KERR-MCGEE

AGGREGATE GRADE/PROD_## 3 PB GR3

DATE CONSTRUCTED_## 07/29/83 AVG DAILY TRAFFIC_## 2500

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 70
BWP_## 9	BWP_##10	BWP_## 35
CL_## 7	CL_##10	CL_## 40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 5 COUNTY_##SWISHER HWY NO._## FM 145

LOCATION_## WEST BOUND LANE AT MP 18 NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 05/26/83

TEXTURE LOCATION_## 25 FT EAST OF MP 18

OWP_##	3.45	3.50	3.45	3.45	AVERAGE_##	3.46
BWP_##	2.90	2.90	2.90	3.00	AVERAGE_##	2.93
IWP_##	3.40	3.10	3.10	3.05	AVERAGE_##	3.16

TEXTURE LOCATION_## AT MP 18

OWP_##	3.50	3.50	3.55	3.45	AVERAGE_##	3.50
BWP_##	2.60	2.65	2.60	2.65	AVERAGE_##	2.63
IWP_##	3.15	3.00	3.10	3.25	AVERAGE_##	3.13

TEXTURE LOCATION_## 25 FT WEST OF MP 18

OWP_##	3.40	3.30	3.45	3.45	AVERAGE_##	3.40
BWP_##	2.55	2.60	2.45	2.50	AVERAGE_##	2.53
IWP_##	3.00	3.00	3.15	3.05	AVERAGE_##	3.05

AGGREGATE RATE_## 1/120

SHOT QUANTITY AVG_## 0.329 HI_## 0.346 LOW_## 0.302

ASPHALT GRADE/PROD_## AC-5/AM. PET.

AGGREGATE GRADE/PROD_## PB.GR4.MOD/JAKE DIEL,THRASHER PIT

DATE CONSTRUCTED_## 07/22/83 AVG DAILY TRAFFIC_## 500

EVALUATION DATE_## 6/28/84

OVERALL VISUAL RETENTION_## 5

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_## 6	OWP_## 90
BWP_## 6	BWP_##10	BWP_## 45
CL_## 6	CL_##10	CL_## 45

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_** 5 COUNTY_**SWISHER HWY NO._** FM 145 2

LOCATION_** EAST BOUND LANE AT MP 10 NUMBER OF EVALUATIONS_** 1

TEXTURE READING DATE_** 05/26/83

TEXTURE LOCATION_** 25 FT EAST OF MP 10

OWP_**	3.40	3.50	3.50	3.50	AVERAGE_**	3.48
BWP_**	2.90	2.85	2.90	2.80	AVERAGE_**	2.86
IWP_**	3.20	3.30	3.15	3.00	AVERAGE_**	3.16

TEXTURE LOCATION_** AT MP 10

OWP_**	3.50	3.45	3.55	3.50	AVERAGE_**	3.50
BWP_**	2.70	2.80	2.65	2.60	AVERAGE_**	2.69
IWP_**	3.10	3.15	3.10	3.10	AVERAGE_**	3.11

TEXTURE LOCATION_** 25 FT WEST OF MP 10

OWP_**	3.50	3.45	3.50	3.50	AVERAGE_**	3.49
BWP_**	3.00	3.00	3.05	3.00	AVERAGE_**	3.01
IWP_**	3.25	3.20	3.35	3.30	AVERAGE_**	3.28

AGGREGATE RATE_** 1/120

SHOT QUANTITY AVG_** 0.324 HI_** 0.341 LOW_** 0.302

ASPHALT GRADE/PROD_** AC-5/AM. PET.

AGGREGATE GRADE/PROD_** PB.GR4.MOD./JAKE DIEL.THRASHER PIT

DATE CONSTRUCTED_** 07/19/83 AVG DAILY TRAFFIC_** 700

EVALUATION DATE_** 6/29/84

OVERALL VISUAL RETENTION_** 4

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_** 7	OWP_** 6	OWP_** 85-90
BWP_** 6	BWP_** 8	BWP_** 40
CL_** 6	CL_** 8	CL_** 35

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EVALUATION DATE_**

OVERALL VISUAL RETENTION_** 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_** 0	OWP_** 0	OWP_**
BWP_** 0	BWP_** 0	BWP_**
CL_** 0	CL_** 0	CL_**

DISTRICT_## 5 COUNTY_## CASTRO HWY NO._## FM 168

LOCATION_## AT MP 28 S OF HART NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/13/82

TEXTURE LOCATION_## AT MILE POST 28 IN THE SOUTH BOUND

OWP_##	3.80	3.80	3.85	3.80	AVERAGE_##	3.81
BWP_##	3.05	2.90	3.00	3.00	AVERAGE_##	2.99
IWP_##	3.10	3.00	2.95	3.00	AVERAGE_##	3.01

TEXTURE LOCATION_## 25 FT NORTH OF MP 28 SOUTH BOUND LANE

OWP_##	3.60	3.65	3.80	3.85	AVERAGE_##	3.73
BWP_##	2.90	2.90	2.80	2.85	AVERAGE_##	2.86
IWP_##	2.80	2.75	3.00	3.00	AVERAGE_##	2.89

TEXTURE LOCATION_## AT MILE POST 28 NORTH BOUND

OWP_##	3.40	3.50	3.50	3.45	AVERAGE_##	3.46
BWP_##	3.25	3.40	3.35	3.30	AVERAGE_##	3.33
IWP_##	3.60	3.65	3.60	3.60	AVERAGE_##	3.61

AGGREGATE RATE_## 1/120

SHOT QUANTITY AVG_## 0.33 HI_## 0.35 LOW_## 0.30

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## PB.GR4.MOD./ARISTERA,WESCOTT PIT

DATE CONSTRUCTED_## 08/26/82 AVG DAILY TRAFFIC_## 900

EVALUATION DATE_## 6/29/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 50-60
BWP_## 9	BWP_##10	BWP_## 50
CL_## 7	CL_##10	CL_## 45

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EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 30
BWP_## 9	BWP_##10	BWP_## 25
CL_##10	CL_##10	CL_## 25

DISTRICT_## 5 COUNTY_## BAILEY HWY NO._## FM 1760

LOCATION_## AT MP 6 W FM 1731 NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/13/82

TEXTURE LOCATION_## AT MILE POST 6 WEST BOUND

OWP_##	3.40	3.45	3.45	3.55	AVERAGE_##	3.46
BWP_##	3.40	3.20	3.40	3.25	AVERAGE_##	3.31
IWP_##	3.55	3.60	3.70	3.60	AVERAGE_##	3.61

TEXTURE LOCATION_## 25 FT EAST OF MILE POST 6 WEST BOUND

OWP_##	3.40	3.40	3.45	3.60	AVERAGE_##	3.46
BWP_##	3.25	3.20	3.20	3.30	AVERAGE_##	3.24
IWP_##	3.50	3.40	3.40	3.50	AVERAGE_##	3.45

TEXTURE LOCATION_## 50 FT EAST OF MILE POST 6 WEST BOUND

OWP_##	3.65	3.65	3.60	3.70	AVERAGE_##	3.65
BWP_##	3.25	3.25	3.25	3.40	AVERAGE_##	3.29
IWP_##	3.40	3.40	3.40	3.45	AVERAGE_##	3.41

AGGREGATE RATE_## 1/120

SHOT QUANTITY AVG_## 0.36 HI_## 0.39 LOW_## 0.33

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## GR4.MOD./TS&G, MANSFIELD PIT

DATE CONSTRUCTED_## 09/01/82 AVG DAILY TRAFFIC_## 340

EVALUATION DATE_## 6/29/84

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 75
BWP_## 9	BWP_##10	BWP_## 75
CL_## 9	CL_##10	CL_## 70

****

EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_## 9	OWP_## 20
BWP_## 9	BWP_##10	BWP_## 20
CL_##10	CL_##10	CL_## 20

DISTRICT_## 5 COUNTY_## LAMB HWY NO._## FM 298

LOCATION_## AT MP 4 W OF SUDAN NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/13/82

TEXTURE LOCATION_## AT MILE POST 4 IN THE EAST BOUND LANE

OWP_##	3.30	3.25	3.30	3.30	AVERAGE_##	3.29
BWP_##	3.00	3.00	3.05	3.00	AVERAGE_##	3.01
IWP_##	3.65	3.60	3.60	3.65	AVERAGE_##	3.63

TEXTURE LOCATION_## 25 FT WEST OF MILE POST 4 EAST BOUND

OWP_##	3.40	3.50	3.55	3.50	AVERAGE_##	3.49
BWP_##	3.15	3.10	3.15	3.25	AVERAGE_##	3.16
IWP_##	3.50	3.55	3.50	3.40	AVERAGE_##	3.49

TEXTURE LOCATION_## 50 FT WEST OF MILE POST 4 EAST BOUND

OWP_##	3.50	3.55	3.50	3.60	AVERAGE_##	3.54
BWP_##	3.05	3.10	2.95	3.10	AVERAGE_##	3.05
IWP_##	3.63	3.55	3.55	3.55	AVERAGE_##	3.58

AGGREGATE RATE_## 1/120

SHOT QUANTITY AVG_## 0.36 HI_## 0.40 LOW_## 0.34

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## GR4.MOD./TS&G,MANSFIELD PIT

DATE CONSTRUCTED_## 08/27/82 AVG DAILY TRAFFIC_## 250

EVALUATION DATE_## 6/29/84

OVERALL VISUAL RETENTION_## 3

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_## 3	OWP_##90-100
BWP_## 9	BWP_## 4	BWP_##70-80
CL_## 9	CL_## 7	CL_## 70

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EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 20
BWP_## 9	BWP_##10	BWP_## 20
CL_##10	CL_##10	CL_## 20

DISTRICT_** 5 COUNTY_** HALE HWY NO._** FM 788

LOCATION_** AT MP 16 NE OF PLAINVIEW NUMBER OF EVALUATIONS_** 2

TEXTURE READING DATE_** 08/13/82

TEXTURE LOCATION_** AT MILE POST 16 IN THE WEST BOUND LANE

OWP_**	3.80	3.95	3.90	3.90	AVERAGE_**	3.89
BWP_**	3.50	3.55	3.55	3.60	AVERAGE_**	3.55
IWP_**	3.85	3.80	3.85	3.90	AVERAGE_**	3.85

TEXTURE LOCATION_** 25 FT WEST OF MILE POST 16 WEST BOUND

OWP_**	3.80	3.85	3.80	3.80	AVERAGE_**	3.81
BWP_**	3.40	3.35	3.30	3.35	AVERAGE_**	3.35
IWP_**	3.90	3.85	4.00	3.90	AVERAGE_**	3.91

TEXTURE LOCATION_** AT MILE POST 16 EAST BOUND LANE

OWP_**	3.60	3.65	3.60	3.55	AVERAGE_**	3.60
BWP_**	3.20	3.45	3.35	3.30	AVERAGE_**	3.33
IWP_**	3.90	3.90	3.85	3.80	AVERAGE_**	3.86

AGGREGATE RATE_** 1/120

SHOT QUANTITY AVG_** 0.33 HI_** 0.33 LOW_** 0.31

ASPHALT GRADE/PROD_** AC-5 /AM.PET.

AGGREGATE GRADE/PROD_** PB.GR4.MOD./ARISTERA WESCOTT PIT

DATE CONSTRUCTED_** 08/25/82 AVG DAILY TRAFFIC_** 820

EVALUATION DATE_** 6/28/84

OVERALL VISUAL RETENTION_** 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_** 9	OWP_**10	OWP_** 50
BWP_** 7	BWP_**10	BWP_** 40
CL_** 7	CL_**10	CL_** 50

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EVALUATION DATE_** 5/ 0/83

OVERALL VISUAL RETENTION_** 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_** 9	OWP_**10	OWP_** 30
BWP_** 8	BWP_**10	BWP_** 25
CL_** 9	CL_**10	CL_** 25

DISTRICT_## 5 COUNTY_##LUBBOCK-HOCKLEY HWY NO._## SH 114

LOCATION_## WEST BOUND LANE AT MP 0 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/26/83

TEXTURE LOCATION_## 25 FT EAST OF MP 0

OWP_##	4.00	4.00	3.90	4.00	AVERAGE_##	3.98
BWP_##	3.60	3.60	3.60	3.55	AVERAGE_##	3.59
IWP_##	3.95	3.85	3.85	3.85	AVERAGE_##	3.88

TEXTURE LOCATION_## AT MP 0

OWP_##	3.90	4.00	4.00	4.00	AVERAGE_##	3.98
BWP_##	3.40	3.45	3.50	3.50	AVERAGE_##	3.46
IWP_##	3.85	3.80	3.80	3.70	AVERAGE_##	3.79

TEXTURE LOCATION_## 25 FT WEST OF MP 0

OWP_##	4.00	4.00	4.00	4.00	AVERAGE_##	4.00
BWP_##	3.55	3.50	3.55	3.65	AVERAGE_##	3.56
IWP_##	4.00	3.95	3.85	3.85	AVERAGE_##	3.91

AGGREGATE RATE_## 1/130

SHOT QUANTITY AVG_## 0.325 HI_## 0.338 LOW_## 0.296

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## GR4.MOD./FEATHER LITE CORP.,RANGER PIT

DATE CONSTRUCTED_## 08/23/83 AVG DAILY TRAFFIC_## 5100

EVALUATION DATE_## 6/29/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 50
BWP_##10	BWP_##10	BWP_## 45
CL_## 9	CL_##10	CL_## 30

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EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 5 COUNTY_## COCHRAN HWY NO._## SH 114

LOCATION_## AT MP 14 W OF MORTON NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/13/82

TEXTURE LOCATION_## AT MILE POST 14 IN THE WEST BOUND LANE

OWP_##	3.10	3.05	3.15	3.00	AVERAGE_##	3.08
BWP_##	2.90	2.70	2.75	2.80	AVERAGE_##	2.79
IWP_##	3.15	3.20	3.20	3.15	AVERAGE_##	3.18

TEXTURE LOCATION_## 25 FT. EAST OF MILE POST 14 WEST BOUND

OWP_##	3.10	2.95	3.10	3.05	AVERAGE_##	3.05
BWP_##	2.90	2.90	2.80	2.80	AVERAGE_##	2.85
IWP_##	3.10	3.10	3.10	3.20	AVERAGE_##	3.13

TEXTURE LOCATION_## AT MP 14 IN THE EBL

OWP_##	2.80	2.80	2.80	2.75	AVERAGE_##	2.79
BWP_##	2.65	2.85	2.80	2.70	AVERAGE_##	2.75
IWP_##	2.90	2.80	2.85	2.90	AVERAGE_##	2.86

AGGREGATE RATE_## 1/120

SHOT QUANTITY AVG_## 0.33 HI_## 0.35 LOW_## 0.21

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## PB.GR4.MOD./ARISTERA WESCOTT PIT

DATE CONSTRUCTED_## 09/08/82 AVG DAILY TRAFFIC_## 930

EVALUATION DATE_## 6/29/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 70
BWP_## 7	BWP_##10	BWP_## 40
CL_## 7	CL_##10	CL_## 35

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EVALUATION DATE_## 5/ 0/93

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 35
BWP_## 7	BWP_##10	BWP_## 25
CL_## 7	CL_##10	CL_## 20

DISTRICT_## 5 COUNTY_## TERRY HWY NO._## SH 137

LOCATION_## AT MP 6 SE OF BROWNFIELD NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## AT MILE POST 6 IN THE SOUTH BOUND LANE

OWP_##	3.55	3.60	3.60	3.60	AVERAGE_##	3.59
BWP_##	3.75	3.80	3.80	3.75	AVERAGE_##	3.78
IWP_##	3.70	3.70	3.70	3.70	AVERAGE_##	3.70

TEXTURE LOCATION_## 25 FT FROM MILE POST 6 IN THE STH BOUND

OWP_##	3.90	3.80	3.70	3.85	AVERAGE_##	3.81
BWP_##	3.80	3.80	3.85	3.70	AVERAGE_##	3.79
IWP_##	3.80	3.80	3.70	3.70	AVERAGE_##	3.75

TEXTURE LOCATION_## 50 FT FROM MILE POST 6 IN THE S.B.

OWP_##	3.70	3.75	3.80	3.80	AVERAGE_##	3.76
BWP_##	3.70	3.70	3.60	3.65	AVERAGE_##	3.66
IWP_##	3.90	3.90	3.90	3.85	AVERAGE_##	3.89

AGGREGATE RATE_## 1/120

SHOT QUANTITY AVG_## 0.33 HI_## 0.35 LOW_## 0.31

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## PB.GR4.MOD./ARISTERA WESCOTT PIT

DATE CONSTRUCTED_## 10/02/82 AVG DAILY TRAFFIC_## 1550

EVALUATION DATE_## 6/28/84

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_## 7	OWP_## 90
BWP_## 8	BWP_##10	BWP_## 55
CL_## 6	CL_##10	CL_## 40

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EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_##10	OWP_## 35
BWP_## 8	BWP_##10	BWP_## 25
CL_## 6	CL_##10	CL_## 25

DISTRICT_## 5 COUNTY_##GAINES HWY NO._## SH 214

LOCATION_## EAST BOUND LANE AT MP 14 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/26/83

TEXTURE LOCATION_## 25 FT WEST OF MP 14

OWP_##	3.85	3.80	3.80	3.80	AVERAGE_##	3.81
BWP_##	2.90	2.90	2.90	2.85	AVERAGE_##	2.89
IWP_##	3.60	3.65	3.60	3.50	AVERAGE_##	3.59

TEXTURE LOCATION_## AT MP 14

OWP_##	3.70	3.80	3.70	3.75	AVERAGE_##	3.74
BWP_##	3.00	2.95	3.00	3.00	AVERAGE_##	2.99
IWP_##	3.80	3.70	3.75	3.70	AVERAGE_##	3.74

TEXTURE LOCATION_## 25 FT EAST OF MP 14

OWP_##	4.00	3.95	4.00	3.95	AVERAGE_##	3.98
BWP_##	2.80	2.80	2.90	2.75	AVERAGE_##	2.81
IWP_##	3.80	3.70	3.60	3.65	AVERAGE_##	3.69

AGGREGATE RATE_## 1/130

SHOT QUANTITY AVG_## 0.343 HI_## 0.359 LOW_## 0.324

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## GR4.MOD./FEATHER LITE CORP.RANGER PIT

DATE CONSTRUCTED_## 09/26/83 AVG DAILY TRAFFIC_## 1900

EVALUATION DATE_## 6/29/84

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_## 5	OWP_##90-100
BWP_## 9	BWP_##10	BWP_## 60
CL_## 7	CL_##10	CL_## 45

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EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 5 COUNTY_## PARMER HWY NO._## SH 86

LOCATION_## AT MP 6 W OF BOVINA NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/13/82

TEXTURE LOCATION_## AT MILE POST 6 IN THE EAST BOUND LANE

OWP_##	2.80	2.75	2.75	2.75	AVERAGE_##	2.76
BWP_##	2.50	2.50	2.40	2.60	AVERAGE_##	2.50
IWP_##	2.80	2.90	2.90	2.90	AVERAGE_##	2.88

TEXTURE LOCATION_## 25 FT EAST OF MILE POST 6 EAST BOUND

OWP_##	3.10	3.20	2.95	3.10	AVERAGE_##	3.09
BWP_##	3.00	3.00	2.95	3.20	AVERAGE_##	3.04
IWP_##	3.00	3.10	2.95	3.00	AVERAGE_##	3.01

TEXTURE LOCATION_## 50 FT EAST OF MILE POST 6 EAST BOUND

OWP_##	3.10	3.00	3.00	3.05	AVERAGE_##	3.04
BWP_##	2.60	2.55	2.65	2.55	AVERAGE_##	2.59
IWP_##	3.40	3.45	3.45	3.45	AVERAGE_##	3.44

AGGREGATE RATE_## 1/120

SHOT QUANTITY AVG_## 0.32 HI_## 0.34 LOW_## 0.29

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## PB.GR4.MOD./ARISTERA,WESCOTT PIT

DATE CONSTRUCTED_## 09/01/82 AVG DAILY TRAFFIC_## 690

EVALUATION DATE_## 6/28/84

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_##10	OWP_## 60-70
BWP_## 8	BWP_##10	BWP_## 50
CL_## 8	CL_##10	CL_## 55

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EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_##10	OWP_## 20
BWP_## 7	BWP_##10	BWP_## 20
CL_## 8	CL_##10	CL_## 20

DISTRICT_## 5 COUNTY_##TERRY HWY NO._## US 380

LOCATION_## WEST BOUND LANE AT MP 14 NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 05/26/83

TEXTURE LOCATION_## 25 FT EAST OF MP 14

OWP_##	3.60	3.60	3.55	3.50	AVERAGE_##	3.56
BWP_##	3.10	3.20	3.25	3.20	AVERAGE_##	3.19
IWP_##	3.50	3.55	3.65	3.45	AVERAGE_##	3.54

TEXTURE LOCATION_## AT MP 14

OWP_##	3.85	3.90	3.85	3.80	AVERAGE_##	3.85
BWP_##	3.00	3.00	3.05	2.95	AVERAGE_##	3.00
IWP_##	3.40	3.30	3.40	3.40	AVERAGE_##	3.38

TEXTURE LOCATION_## 25 FT WEST OF MP 14

OWP_##	3.75	3.80	3.80	3.75	AVERAGE_##	3.79
BWP_##	3.20	3.10	3.00	3.00	AVERAGE_##	3.08
IWP_##	3.05	3.10	3.00	3.10	AVERAGE_##	3.06

AGGREGATE RATE_## 1/130

SHOT QUANTITY AVG_## 0.326 HI_## 0.338 LOW_## 0.301

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## GR4.MOD./FEATHERLITE CORP.RANGER PIT

DATE CONSTRUCTED_## 08/25/83 AVG DAILY TRAFFIC_## 3300

EVALUATION DATE_## 6/29/84

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 7	OWP_## 4	OWP_## 90
BWP_## 6	BWP_##10	BWP_## 35
CL_## 5	CL_##10	CL_## 35

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EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 5 COUNTY_## YOAKUM HWY NO._## US 82

LOCATION_## AT MP 14 SW OF PLAINS NUMBER OF EVALUATIONS_## 3

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## AT MILE POST 14 IN THE EAST BOUND LANE

OWP_##	3.90	4.00	4.00	4.00	AVERAGE_##	3.98
BWP_##	3.80	3.80	3.85	3.85	AVERAGE_##	3.83
IWP_##	3.95	3.90	3.90	4.00	AVERAGE_##	3.94

TEXTURE LOCATION_## 25 FT EAST OF MILE POST 14

OWP_##	4.00	3.90	3.85	3.95	AVERAGE_##	3.93
BWP_##	2.80	2.85	2.60	2.60	AVERAGE_##	2.69
IWP_##	4.00	4.00	4.00	4.00	AVERAGE_##	4.00

TEXTURE LOCATION_## 50 FT EAST OF MILE POST 14

OWP_##	3.80	3.80	3.85	3.90	AVERAGE_##	3.84
BWP_##	3.85	3.80	3.85	3.90	AVERAGE_##	3.85
IWP_##	4.00	4.00	4.00	4.00	AVERAGE_##	4.00

AGGREGATE RATE_## 1/120

SHOT QUANTITY AVG_## 0.33 HI_## 0.37 LOW_## 0.26

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## PB.GR4.MOD./ARISTERA WESCOTT PIT

DATE CONSTRUCTED_## 09/15/82 AVG DAILY TRAFFIC_## 2000

EVALUATION DATE_## 6/28/84

OVERALL VISUAL RETENTION_## 4

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_## 8	OWP_## 80-90
BWP_## 7	BWP_## 8	BWP_## 90-90
CL_## 8	CL_##10	CL_## 50

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EVALUATION DATE_## 5/ 0/85

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 9	OWP_## 45
BWP_##10	BWP_##10	BWP_## 30
CL_## 7	CL_##10	CL_## 30

DISTRICT_## 6 COUNTY_##CRANE HWY NO._## FM 1053

LOCATION_## SOUTH BOUND LANE AT MP 4 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/24/83

TEXTURE LOCATION_## 25 FT SOUTH OF MP 4

OWP_##	2.85	2.85	2.65	2.80	AVERAGE_##	2.79
BWP_##	2.55	2.60	2.75	2.50	AVERAGE_##	2.60
IWP_##	2.80	2.80	2.65	2.80	AVERAGE_##	2.76

TEXTURE LOCATION_## AT MP 4

OWP_##	3.00	2.90	2.85	2.90	AVERAGE_##	2.91
BWP_##	2.80	2.70	2.65	2.70	AVERAGE_##	2.71
IWP_##	2.80	2.85	2.90	2.90	AVERAGE_##	2.86

TEXTURE LOCATION_## 25 FT NORTH OF MP 4

OWP_##	2.80	2.75	2.65	2.80	AVERAGE_##	2.75
BWP_##	2.30	2.30	2.40	2.25	AVERAGE_##	2.31
IWP_##	2.90	3.00	3.00	2.95	AVERAGE_##	2.96

AGGREGATE RATE_## 1/122

SHOT QUANTITY AVG_## 0.377 HI_## 0.420 LOW_## 0.350

ASPHALT GRADE/PROD_## AC-10/AM. PET.

AGGREGATE GRADE/PROD_## GR4.MOD/TRANS PECOS MAT.

DATE CONSTRUCTED_## 06/17/83 AVG DAILY TRAFFIC_## 990

EVALUATION DATE_## 6/12/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 55
BWP_##10	BWP_##10	BWP_## 40
CL_##10	CL_##10	CL_## 40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 6 COUNTY_## CRANE HWY NO._## FM 1053

LOCATION_## BETWEEN PECOS R. & SH 329 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## NB LANE BTWN THE PECOS R. AND SH 329

OWP_##	3.00	3.10	2.95	3.15	AVERAGE_##	3.05
BWP_##	2.55	2.55	2.70	2.60	AVERAGE_##	2.60
IWP_##	2.90	3.00	3.05	2.95	AVERAGE_##	2.98

TEXTURE LOCATION_## IN THE NORTH LANE

OWP_##	3.05	2.95	3.00	2.95	AVERAGE_##	2.99
BWP_##	2.80	2.75	2.65	2.70	AVERAGE_##	2.73
IWP_##	2.60	2.65	2.60	2.60	AVERAGE_##	2.61

TEXTURE LOCATION_## IN THE NORTH BOUND LANE

OWP_##	3.00	3.00	2.90	3.15	AVERAGE_##	3.01
BWP_##	2.65	2.60	2.70	2.70	AVERAGE_##	2.66
IWP_##	2.80	2.80	2.80	2.80	AVERAGE_##	2.80

AGGREGATE RATE_## 1/111

SHOT QUANTITY AVG_## 0.43 HI_## 0.45 LOW_## 0.39

ASPHALT GRADE/PROD_## AC5/AM.PET.

AGGREGATE GRADE/PROD_## CL B TY PA GR4 MOD./HOBAN

DATE CONSTRUCTED_## 05/10/82 AVG DAILY TRAFFIC_## 1050

EVALUATION DATE_## 6/12/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_##10	BWP_##10	BWP_## 50
CL_##10	CL_##10	CL_## 50

****

EVALUATION DATE_## 5/ 0/85

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_## 8	OWP_## 85
BWP_##10	BWP_##10	BWP_## 40
CL_##10	CL_##10	CL_## 35-40

DISTRICT_## 6 COUNTY_##MIDLAND HWY NO._## FM 1379

LOCATION_## NORTH BOUND LANE AT MP 2 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/24/83

TEXTURE LOCATION_## 25 FT SOUTH OF MP 2

OWP_##	3.25	3.30	3.35	3.30	AVERAGE_##	3.30
BWP_##	2.40	2.60	2.55	2.60	AVERAGE_##	2.54
IWP_##	2.80	2.80	2.75	2.85	AVERAGE_##	2.80

TEXTURE LOCATION_## AT MP 2

OWP_##	3.05	3.10	3.05	3.05	AVERAGE_##	3.06
BWP_##	2.60	2.55	2.60	2.55	AVERAGE_##	2.58
IWP_##	3.10	3.00	3.10	3.10	AVERAGE_##	3.08

TEXTURE LOCATION_## 25 FT NORTH OF MP 2

OWP_##	2.90	2.80	2.85	2.70	AVERAGE_##	2.79
BWP_##	2.90	2.80	2.80	2.80	AVERAGE_##	2.80
IWP_##	2.60	2.60	2.80	2.65	AVERAGE_##	2.66

AGGREGATE RATE_## 1/92

SHOT QUANTITY AVG_## 0.52 HI_## 0.549 LOW_## 0.485

ASPHALT GRADE/PROD_## AC-10/AM. PET.

AGGREGATE GRADE/PROD_## GR3.MOD/TRANS PECOS MAT.

DATE CONSTRUCTED_## 07/06/83 AVG DAILY TRAFFIC_## 240

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_## 9	OWP_## 60-70
BWP_## 9	BWP_##10	BWP_## 50-60
CL_## 9	CL_##10	CL_## 50-60

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 6 COUNTY_## ANDREWS HWY NO._## FM 181

LOCATION_## AT MP 12 NW OF FRANKEL CITY NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## AT MILE POST 12 IN THE NB LANE

OWP_##	2.85	2.90	2.80	2.90	AVERAGE_##	2.86
BWP_##	2.75	2.70	2.70	2.75	AVERAGE_##	2.73
IWP_##	2.80	2.75	2.75	2.70	AVERAGE_##	2.75

TEXTURE LOCATION_## 25 FEET NORTH OF MILE POST 12

OWP_##	2.70	2.75	2.95	2.80	AVERAGE_##	2.80
BWP_##	2.80	2.61	2.65	2.70	AVERAGE_##	2.69
IWP_##	2.95	3.00	2.90	2.95	AVERAGE_##	2.95

TEXTURE LOCATION_## AT MILE POST 12 IN THE NB LANE

OWP_##	3.00	3.00	3.05	3.00	AVERAGE_##	3.01
BWP_##	2.75	2.70	2.70	2.70	AVERAGE_##	2.71
IWP_##	2.70	2.80	2.75	2.75	AVERAGE_##	2.75

AGGREGATE RATE_## 1/85

SHOT QUANTITY AVG_## 0.50 HI_## 0.58 LOW_## 0.45

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## PB.GR3.MOD/HOBAN

DATE CONSTRUCTED_## 08/27/82 AVG DAILY TRAFFIC_## 580

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_##10	BWP_##10	BWP_## 50
CL_##10	CL_##10	CL_## 40-50

****

EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 30
BWP_##10	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 25

DISTRICT_## 6 COUNTY_## ANDREWS HWY NO._## FM 1967

LOCATION_## AT MILE POST 4 NEAR FRANKEL CITY NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## AT MILE POST 4 IN THE EB LANE

OWP_##	3.00	3.00	3.10	3.10	AVERAGE_##	3.05
BWP_##	2.70	2.60	2.80	2.70	AVERAGE_##	2.70
IWP_##	3.10	3.20	3.05	3.00	AVERAGE_##	3.09

TEXTURE LOCATION_## 25 FEET EAST OF MILE POST 4

OWP_##	2.95	2.95	2.95	3.05	AVERAGE_##	2.98
BWP_##	3.10	3.10	3.05	3.00	AVERAGE_##	3.06
IWP_##	3.40	3.30	3.40	3.40	AVERAGE_##	3.38

TEXTURE LOCATION_## AT MILE POST 4 IN THE WB LANE

OWP_##	3.55	3.50	3.50	3.60	AVERAGE_##	3.54
BWP_##	2.85	2.95	2.90	3.10	AVERAGE_##	2.95
IWP_##	3.00	3.00	2.90	3.00	AVERAGE_##	2.98

AGGREGATE RATE_## 1/93

SHOT QUANTITY AVG_## 0.50 HI_## 0.54 LOW_## 0.45

ASPHALT GRADE/PROD_## AC5/AM.PET.

AGGREGATE GRADE/PROD_## CL B TY PA GR3 MOD/HOBAN

DATE CONSTRUCTED_## 08/26/82 AVG DAILY TRAFFIC_## 130

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 50-60
BWP_##10	BWP_##10	BWP_## 30-40
CL_##10	CL_##10	CL_## 30-40

****

EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 35
BWP_##10	BWP_##10	BWP_## 25
CL_##10	CL_##10	CL_## 25

DISTRICT_## 6 COUNTY_##MARTIN HWY NO._## FM 2002

LOCATION_## WEST BOUND LANE AT MP 16 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/26/83

TEXTURE LOCATION_## 25 FT WEST OF MP 16

OWP_##	3.35	3.50	3.60	3.40	AVERAGE_##	3.46
BWP_##	3.45	3.40	3.45	3.40	AVERAGE_##	3.43
IWP_##	3.50	3.50	3.50	3.55	AVERAGE_##	3.51

TEXTURE LOCATION_## AT MP 16

OWP_##	3.50	3.50	3.45	3.45	AVERAGE_##	3.48
BWP_##	3.30	3.30	3.30	3.25	AVERAGE_##	3.29
IWP_##	3.60	3.50	3.50	3.65	AVERAGE_##	3.56

TEXTURE LOCATION_## 25 FT EAST OF MP 16

OWP_##	3.70	3.60	3.60	3.65	AVERAGE_##	3.64
BWP_##	3.60	3.60	3.55	3.70	AVERAGE_##	3.61
IWP_##	3.90	3.90	3.80	3.85	AVERAGE_##	3.86

AGGREGATE RATE_## 1/92

SHOT QUANTITY AVG_## 0.519 HI_## 0.551 LOW_## 0.467

ASPHALT GRADE/PROD_## AC-10/AM. PET.

AGGREGATE GRADE/PROD_## GR3.MOD/TRANS PECOS MAT.

DATE CONSTRUCTED_## 07/11/83 AVG DAILY TRAFFIC_## 230

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 40-50
BWP_##10	BWP_##10	BWP_## 40
CL_## 8	CL_##10	CL_## 40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 6 COUNTY_##MARTIN HWY NO._## FM 2212

LOCATION_## NORTH BOUND LANE AT MP 4 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/25/83

TEXTURE LOCATION_## 25 FT SOUTH OF MP 4

OWP_##	3.30	3.20	3.20	3.20	AVERAGE_##	3.23
BWP_##	3.05	3.05	3.10	3.10	AVERAGE_##	3.08
IWP_##	2.90	2.90	2.90	2.90	AVERAGE_##	2.90

TEXTURE LOCATION_## AT MP 4

OWP_##	2.95	3.05	3.10	3.00	AVERAGE_##	3.03
BWP_##	2.90	2.95	2.90	2.95	AVERAGE_##	2.93
IWP_##	3.15	3.05	3.15	3.20	AVERAGE_##	3.14

TEXTURE LOCATION_## 50 FT SOUTH OF MP 4

OWP_##	3.25	3.20	3.20	3.05	AVERAGE_##	3.18
BWP_##	2.95	2.90	2.80	2.90	AVERAGE_##	2.89
IWP_##	3.30	3.20	3.20	3.30	AVERAGE_##	3.25

AGGREGATE RATE_## 1/92

SHOT QUANTITY AVG_## 0.526 HI_## 0.568 LOW_## 0.504

ASPHALT GRADE/PROD_## AC-10/AM. PET.

AGGREGATE GRADE/PROD_## GR3.MOD/TRANS PECOS MAT

DATE CONSTRUCTED_## 07/08/83 AVG DAILY TRAFFIC_## 300

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 50-60
BWP_## 9	BWP_##10	BWP_## 40
CL_## 8	CL_##10	CL_## 40-50

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EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 6 COUNTY_##MARTIN HWY NO._## FM 829

LOCATION_## NORTH BOUND LANE AT MP 2 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/25/83

TEXTURE LOCATION_## 25 FT NORTH OF MP 2

OWP_##	3.55	3.55	3.55	3.50	AVERAGE_##	3.54
BWP_##	3.35	3.40	3.40	3.30	AVERAGE_##	3.36
IWP_##	3.10	3.10	3.25	3.20	AVERAGE_##	3.16

TEXTURE LOCATION_## AT MP 2

OWP_##	3.40	3.45	3.50	3.40	AVERAGE_##	3.44
BWP_##	3.20	3.35	3.40	3.30	AVERAGE_##	3.31
IWP_##	3.25	3.30	3.20	3.20	AVERAGE_##	3.24

TEXTURE LOCATION_## 25 FT SOUTH OF MP 2

OWP_##	3.45	3.45	3.50	3.40	AVERAGE_##	3.45
BWP_##	3.30	3.30	3.30	3.35	AVERAGE_##	3.31
IWP_##	3.20	3.10	3.10	3.20	AVERAGE_##	3.15

AGGREGATE RATE_## 1/92

SHOT QUANTITY AVG_## 0.52 HI_## 0.56 LOW_## 0.48

ASPHALT GRADE/PROD_## AC-10/AM. PET.

AGGREGATE GRADE/PROD_## GR3.MOD/TRANS PECOS MAT

DATE CONSTRUCTED_## 07/14/83 AVG DAILY TRAFFIC_## 290

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 60-70
BWP_##10	BWP_##10	BWP_## 60
CL_## 6	CL_##10	CL_## 50-60

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 6 COUNTY_## MARTIN HWY NO._## FM 829

LOCATION_## AT MP 28 NW OF DIX NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## AT MILE POST 28

OWP_##	3.80	3.70	3.80	3.60	AVERAGE_##	3.73
BWP_##	3.05	3.00	3.00	3.05	AVERAGE_##	3.03
IWP_##	3.45	3.35	3.45	3.45	AVERAGE_##	3.43

TEXTURE LOCATION_## 25 FT SOUTH OF MILE POST 28

OWP_##	3.25	3.20	3.15	3.30	AVERAGE_##	3.23
BWP_##	3.00	3.00	2.90	3.05	AVERAGE_##	2.99
IWP_##	3.20	3.25	3.40	3.25	AVERAGE_##	3.29

TEXTURE LOCATION_## 50 FT SOUTH OF MILE POST 28

OWP_##	3.45	3.50	3.40	3.40	AVERAGE_##	3.44
BWP_##	3.20	3.20	3.25	3.15	AVERAGE_##	3.20
IWP_##	3.20	3.20	3.45	3.20	AVERAGE_##	3.26

AGGREGATE RATE_## 1/90

SHOT QUANTITY AVG_## 0.46 HI_## 0.53 LOW_## 0.31

ASPHALT GRADE/PROD_## AC-10/AM.PET.

AGGREGATE GRADE/PROD_## CLB.TY.PA.GR3.MOD/HOBAN

DATE CONSTRUCTED_## 08/20/82 AVG DAILY TRAFFIC_## 430

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 50-60
BWP_##10	BWP_##10	BWP_## 50
CL_##10	CL_##10	CL_## 50

****

EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_## 9	OWP_## 40
BWP_## 9	BWP_##10	BWP_## 30
CL_## 9	CL_##10	CL_## 25

DISTRICT_## 6 COUNTY_##MIDLAND HWY NO._## SH 349

LOCATION_## NORTH BOUND LANE AT MP 20 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/24/83

TEXTURE LOCATION_## 25 FT SOUTH OF MP 20

OWP_##	3.90	3.85	3.85	3.80	AVERAGE_##	3.85
BWP_##	2.60	2.55	2.60	2.70	AVERAGE_##	2.61
IWP_##	3.75	3.85	3.90	3.90	AVERAGE_##	3.85

TEXTURE LOCATION_## AT MP 20

OWP_##	3.30	3.40	3.45	3.30	AVERAGE_##	3.36
BWP_##	2.60	2.60	2.65	2.60	AVERAGE_##	2.61
IWP_##	3.60	3.40	3.40	3.60	AVERAGE_##	3.50

TEXTURE LOCATION_## 25 FT NORTH OF MP 20

OWP_##	3.30	3.30	3.30	3.30	AVERAGE_##	3.30
BWP_##	2.60	2.50	2.50	2.65	AVERAGE_##	2.56
IWP_##	3.50	3.50	3.40	3.40	AVERAGE_##	3.45

AGGREGATE RATE_## 1/92

SHOT QUANTITY AVG_## 0.492 HI_## 0.530 LOW_## 0.461

ASPHALT GRADE/PROD_## AC-10/AM. PET.

AGGREGATE GRADE/PROD_## GR3.MOD/TRANS PECOS MAT

DATE CONSTRUCTED_## 06/29/83 AVG DAILY TRAFFIC_## 840

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 7	OWP_## 80-90
BWP_##10	BWP_##10	BWP_## 40
CL_## 7	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 6 COUNTY_## PECOS HWY NO._## SH 349

LOCATION_## NORTH OF PECOS RIVER NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## IN THE NB LANE NORTH OF THE PECOS RIV.

OWP_##	3.10	3.20	3.10	3.15	AVERAGE_##	3.14
BWP_##	2.85	2.90	2.80	2.90	AVERAGE_##	2.86
IWP_##	3.10	3.05	3.00	3.00	AVERAGE_##	3.04

TEXTURE LOCATION_## IN THE NB LANE NORTH OF PECOS RIVER

OWP_##	3.05	3.15	3.05	3.00	AVERAGE_##	3.06
BWP_##	2.90	2.95	3.10	3.00	AVERAGE_##	2.99
IWP_##	3.15	3.15	3.15	3.15	AVERAGE_##	3.15

TEXTURE LOCATION_## IN THE NB LANE NORTH OF PECOS RIVER

OWP_##	3.10	3.15	3.10	3.15	AVERAGE_##	3.13
BWP_##	2.90	2.90	2.85	2.95	AVERAGE_##	2.90
IWP_##	3.20	3.20	3.25	3.25	AVERAGE_##	3.23

AGGREGATE RATE_## 1/110

SHOT QUANTITY AVG_## 0.42 HI_## 0.45 LOW_## 0.41

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## CL.3.TY.PA.GR4.MOD./HOBAN

DATE CONSTRUCTED_## 05/24/82 AVG DAILY TRAFFIC_## 480

EVALUATION DATE_## 6/12/84

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH	
OWP_##10	OWP_##10	OWP_##	50
BWP_##10	BWP_##10	BWP_##	40
CL_##10	CL_##10	CL_##	40

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EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH	
OWP_##10	OWP_##10	OWP_##	35
BWP_##10	BWP_##10	BWP_##	25
CL_##10	CL_##10	CL_##	25

DISTRICT_## 6 COUNTY_##UPTON HWY NO._## US 385

LOCATION_## SOUTH BOUND LANE AT MP 2 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/24/83

TEXTURE LOCATION_## 25 FT NORTH OF MP 2

OWP_##	3.65	3.70	3.75	3.60	AVERAGE_##	3.68
BWP_##	2.90	2.95	2.85	2.75	AVERAGE_##	2.86
IWP_##	3.75	3.70	3.60	3.50	AVERAGE_##	3.64

TEXTURE LOCATION_## AT MP 2

OWP_##	3.15	3.10	3.05	3.10	AVERAGE_##	3.10
BWP_##	3.00	2.85	2.90	2.85	AVERAGE_##	2.90
IWP_##	3.80	3.90	3.85	3.90	AVERAGE_##	3.86

TEXTURE LOCATION_## 25 FT SOUTH OF MP 2

OWP_##	3.05	3.00	2.95	2.95	AVERAGE_##	2.99
BWP_##	3.10	3.15	3.05	3.10	AVERAGE_##	3.10
IWP_##	3.95	4.00	3.90	3.80	AVERAGE_##	3.91

AGGREGATE RATE_## 1/122

SHOT QUANTITY AVG_## 0.360 HI_## 0.390 LOW_## 0.300

ASPHALT GRADE/PROD_## AC-10/AM. PET.

AGGREGATE GRADE/PROD_## GR4.MOD/TRANS PECOS MAT

DATE CONSTRUCTED_## 06/21/83 AVG DAILY TRAFFIC_## 1400

EVALUATION DATE_## 6/12/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_##10	BWP_##10	BWP_## 50
CL_##10	CL_##10	CL_## 50

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_## 6 COUNTY_## CRANE HWY NO._## US 67

LOCATION_## SW OF MCCAMEY SBL NUMBER OF EVALUATIONS_## 3

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## IN THE SB LANE

OWP_##	2.90	2.90	2.80	2.90	AVERAGE_##	2.88
BWP_##	2.45	2.50	2.50	2.55	AVERAGE_##	2.50
IWP_##	3.00	3.00	2.90	2.95	AVERAGE_##	2.96

TEXTURE LOCATION_## IN THE SOUTH BOUND LANE

OWP_##	2.90	2.85	2.90	2.95	AVERAGE_##	2.90
BWP_##	2.75	2.70	2.75	2.80	AVERAGE_##	2.75
IWP_##	3.00	2.90	2.95	2.90	AVERAGE_##	2.94

TEXTURE LOCATION_## IN THE SBL

OWP_##	2.95	3.10	3.05	2.95	AVERAGE_##	3.01
BWP_##	2.60	2.55	2.60	2.60	AVERAGE_##	2.59
IWP_##	3.25	3.00	3.10	3.05	AVERAGE_##	3.10

AGGREGATE RATE_## 1/111

SHOT QUANTITY AVG_## 0.40 HI_## 0.42 LOW_## 0.39

ASPHALT GRADE/PROD_## AC-5/AM.PET.

AGGREGATE GRADE/PROD_## CL B TY PA GR4 MOD./ HOBAN

DATE CONSTRUCTED_## / / AVG DAILY TRAFFIC_## 640

EVALUATION DATE_## 6/12/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 80-90
BWP_##10	BWP_##10	BWP_## 60
CL_##10	CL_##10	CL_## 50-60

****

EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 65
BWP_##10	BWP_##10	BWP_## 45
CL_##10	CL_##10	CL_## 25

DISTRICT_## 6 COUNTY_## MARTIN HWY NO._## US 87

LOCATION_## AT MP 4 NEAR ACKERLY NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/12/82

TEXTURE LOCATION_## AT MP 4 1ST MP S OF FM 2002 NB T. LANE

OWP_##	3.90	3.80	3.80	3.85	AVERAGE_##	3.84
BWP_##	3.20	3.20	3.15	3.10	AVERAGE_##	3.16
IWP_##	4.00	4.00	4.00	4.00	AVERAGE_##	4.00

TEXTURE LOCATION_## AT MP 4 IN THE NORTH BOUND T. LANE

OWP_##	3.60	3.70	3.75	3.65	AVERAGE_##	3.68
BWP_##	3.10	3.10	3.00	3.05	AVERAGE_##	3.06
IWP_##	3.90	3.95	3.80	3.90	AVERAGE_##	3.89

TEXTURE LOCATION_## AT MILE POST 4 IN THE NB TRAVEL LANE

OWP_##	3.90	3.95	4.00	4.00	AVERAGE_##	3.96
BWP_##	3.00	3.05	3.00	3.15	AVERAGE_##	3.05
IWP_##	3.90	3.90	3.90	3.90	AVERAGE_##	3.90

AGGREGATE RATE_## 1/97

SHOT QUANTITY AVG_## 0.49 HI_## 0.50 LOW_## 0.45

ASPHALT GRADE/PROD_## AC-10/AM.PET.

AGGREGATE GRADE/PROD_## PB.GRD.MOD/HOBAN

DATE CONSTRUCTED_## / / AVG DAILY TRAFFIC_## 2550

EVALUATION DATE_## 6/13/84

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_## 3	OWP_## 90
BWP_##10	BWP_##10	BWP_## 50-60
CL_## 7	CL_##10	CL_## 40-50

****

EVALUATION DATE_## 5/ 0/83

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_## 9	OWP_## 30
BWP_## 9	BWP_##10	BWP_## 20
CL_## 4	CL_##10	CL_## 15

DISTRICT_##11 COUNTY_## NACOGDOCHES HWY NO._## FM 2964

LOCATION_## SBL AT MP 2 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/18/83

TEXTURE LOCATION_## AT MILE POST 2

OWP_##	3.25	3.15	3.10	3.10	AVERAGE_##	3.15
BWP_##	2.40	2.40	2.45	2.45	AVERAGE_##	2.43
IWP_##	3.20	3.15	3.10	3.20	AVERAGE_##	3.16

TEXTURE LOCATION_## 30 FEET SOUTH OF MILE POST 2

OWP_##	3.20	3.20	3.30	3.20	AVERAGE_##	3.23
BWP_##	3.15	3.25	3.20	3.05	AVERAGE_##	3.16
IWP_##	3.10	3.10	3.15	3.25	AVERAGE_##	3.15

TEXTURE LOCATION_## READING 3

OWP_##	2.85	2.80	2.85	2.75	AVERAGE_##	2.81
BWP_##	2.80	2.90	2.85	2.80	AVERAGE_##	2.84
IWP_##	2.80	2.80	2.85	2.90	AVERAGE_##	2.84

AGGREGATE RATE_## 1/140

SHOT QUANTITY AVG_## 0.411 HI_## LOW_##

ASPHALT GRADE/PROD_## CRS-2/TEXAS EMULSION

AGGREGATE GRADE/PROD_## LT.WT.GR4/TXI

DATE CONSTRUCTED_## 07/19/83 AVG DAILY TRAFFIC_## 490

EVALUATION DATE_## 5/ 1/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_## 6	BWP_##10	BWP_## 40
CL_## 7	CL_##10	CL_##

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##11 COUNTY_## NACOGDOCHES HWY NO._## SH 21

LOCATION_## EBL AT MP 24 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/18/83

TEXTURE LOCATION_## AT MILE POST 24

OWP_##	3.05	3.10	3.10	3.10	AVERAGE_##	3.09
BWP_##	2.70	2.80	2.75	2.70	AVERAGE_##	2.74
IWP_##	3.30	3.30	3.30	3.40	AVERAGE_##	3.33

TEXTURE LOCATION_## 25 FEET WEST OF MILE POST 24

OWP_##	3.15	3.20	3.20	3.20	AVERAGE_##	3.19
BWP_##	2.65	2.65	2.60	2.60	AVERAGE_##	2.63
IWP_##	3.10	3.10	3.30	3.15	AVERAGE_##	3.16

TEXTURE LOCATION_## 50 FEET WEST OF MILE POST 24

OWP_##	3.10	3.00	3.10	3.05	AVERAGE_##	3.06
BWP_##	2.90	2.85	2.85	2.95	AVERAGE_##	2.89
IWP_##	2.90	3.00	3.20	3.20	AVERAGE_##	3.08

AGGREGATE RATE_## 1/110

SHOT QUANTITY AVG_## 0.368 HI_##0.376 LOW_## 0.357

ASPHALT GRADE/PROD_## AC-5/TEXACO/PORT NUECHES

AGGREGATE GRADE/PROD_## GR3 MOD. LT.WT./TXI

DATE CONSTRUCTED_## 08/23/83 AVG DAILY TRAFFIC_## 2500

EVALUATION DATE_## 5/ 1/84

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_##10	OWP_## 40-50
BWP_## 5	BWP_##10	BWP_## 40
CL_## 6	CL_##10	CL_## 35-40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##11 COUNTY_## NACOGDOCHES HWY NO._## US 59

LOCATION_## SBTL AT MP 32 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/18/83

TEXTURE LOCATION_## AT MILE POST 31.1

OWP_##	3.80	3.80	3.95	3.90	AVERAGE_##	3.84
BWP_##	3.90	3.95	4.00	4.00	AVERAGE_##	3.96
IWP_##	4.00	3.98	4.00	4.00	AVERAGE_##	4.00

TEXTURE LOCATION_## 25 FEET NORTH OF MILE POST 31.1

OWP_##	3.50	3.50	3.55	3.60	AVERAGE_##	3.54
BWP_##	3.80	3.80	3.85	3.90	AVERAGE_##	3.84
IWP_##	3.75	3.80	3.80	3.90	AVERAGE_##	3.81

TEXTURE LOCATION_## 50 FEET NORTH OF MILE POST 31.1

OWP_##	3.50	3.55	3.55	3.50	AVERAGE_##	3.53
BWP_##	3.20	3.20	3.30	3.25	AVERAGE_##	3.24
IWP_##	3.60	3.65	3.70	3.75	AVERAGE_##	3.68

AGGREGATE RATE_## 1/110

SHOT QUANTITY AVG_## 0.50 HI_## LOW_##

ASPHALT GRADE/PROD_## CRS-2/TEXAS EMULSIONS

AGGREGATE GRADE/PROD_## LT.WT.GR3/TXI

DATE CONSTRUCTED_## 07/26/83 AVG DAILY TRAFFIC_## 13900

EVALUATION DATE_## 5/ 1/84

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 80
BWP_##10	BWP_##10	BWP_## 70
CL_##10	CL_##10	CL_## 60-70

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##11 COUNTY_## NACOGDOCHES HWY NO._## US 259

LOCATION_## NBL AT MP 6 NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 05/18/83

TEXTURE LOCATION_## AT MILE POST 6

OWP_##	3.40	3.40	3.45	3.40	AVERAGE_##	3.41
BWP_##	3.60	3.55	3.60	3.55	AVERAGE_##	3.58
IWP_##	3.50	3.55	3.50	3.50	AVERAGE_##	3.51

TEXTURE LOCATION_## 25 FEET NORTH OF MILE POST 6

OWP_##	3.50	3.55	3.55	3.55	AVERAGE_##	3.54
BWP_##	3.75	3.70	3.65	3.80	AVERAGE_##	3.73
IWP_##	3.45	3.60	3.55	3.60	AVERAGE_##	3.55

TEXTURE LOCATION_## 25 FEET SOUTH OF MILE POST 6

OWP_##	3.50	3.45	3.40	3.40	AVERAGE_##	3.44
BWP_##	3.80	3.75	3.80	3.80	AVERAGE_##	3.79
IWP_##	3.60	3.65	3.70	3.75	AVERAGE_##	3.68

AGGREGATE RATE_## 1/110

SHOT QUANTITY AVG_## 0.337 HI_## 0.346 LOW_## 0.325

ASPHALT GRADE/PROD_## AC-10/TEXACO

AGGREGATE GRADE/PROD_## PB-3 MOD./TXI

DATE CONSTRUCTED_## 08/26/83 AVG DAILY TRAFFIC_## 6000

EVALUATION DATE_## 5/ 1/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 70-80
BWP_## 5	BWP_##10	BWP_## 60
CL_## 6	CL_##10	CL_##

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## WHARTON HWY NO._## FM 1161

LOCATION_## WBL AT MP 8 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/19/83

TEXTURE LOCATION_## AT MP 8

OWP_##	2.50	2.40	2.50	2.55	AVERAGE_##	2.49
BWP_##	2.60	2.60	2.60	2.55	AVERAGE_##	2.59
IWP_##	3.40	3.30	3.40	3.35	AVERAGE_##	3.36

TEXTURE LOCATION_## 25 FEET EAST OF MILE POST 8

OWP_##	3.25	3.20	3.35	3.20	AVERAGE_##	3.25
BWP_##	3.35	3.30	3.30	3.25	AVERAGE_##	3.30
IWP_##	3.50	3.65	3.55	3.60	AVERAGE_##	3.58

TEXTURE LOCATION_## 25 FEET WEST OF MP 8

OWP_##	3.00	3.00	3.10	2.90	AVERAGE_##	3.00
BWP_##	3.20	3.30	3.30	3.40	AVERAGE_##	3.30
IWP_##	3.60	3.60	3.55	3.55	AVERAGE_##	3.58

AGGREGATE RATE_## 1/131

SHOT QUANTITY AVG_## 0.28 HI_## 0.30 LOW_## 0.28

ASPHALT GRADE/PROD_## AC-10 /EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR4./AZROCK

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 710

EVALUATION DATE_## 5/ 8/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 70-80
BWP_##10	BWP_##10	BWP_## 60
CL_##10	CL_##10	CL_## 50-60

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## GONZALES HWY NO._## FM 2067

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/09/82

TEXTURE LOCATION_## AT MP 4 SBL

OWP_##	3.30	3.25	3.30	3.30	AVERAGE_##	3.29
BWP_##	2.30	2.40	2.20	2.30	AVERAGE_##	2.30
IWP_##	2.80	2.90	2.75	2.90	AVERAGE_##	2.84

TEXTURE LOCATION_## AT MP 4 NBL

OWP_##	2.50	2.40	2.40	2.35	AVERAGE_##	2.41
BWP_##	2.40	2.50	2.40	2.55	AVERAGE_##	2.46
IWP_##	2.50	2.70	2.60	2.60	AVERAGE_##	2.60

TEXTURE LOCATION_## 30 FT NORTH OF MP 4 SBL

OWP_##	2.85	3.00	2.80	2.90	AVERAGE_##	2.89
BWP_##	2.10	2.15	2.20	2.05	AVERAGE_##	2.13
IWP_##	2.65	2.70	2.65	2.60	AVERAGE_##	2.65

AGGREGATE RATE_## 1/101

SHOT QUANTITY AVG_## 0.41 HI_## 0.44 LOW_## 0.39

ASPHALT GRADE/PROD_## AC-5 /EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB. GR3./SERVTEX

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 190

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 35
BWP_## 7	BWP_##10	BWP_## 30
CL_## 8	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## JACKSON HWY NO._## FM 234

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/19/82

TEXTURE LOCATION_## AT MP 10 SBL

OWP_##	2.20	2.35	2.25	2.30	AVERAGE_##	2.28
BWP_##	2.15	2.10	2.20	2.10	AVERAGE_##	2.14
IWP_##	2.60	2.50	2.50	2.60	AVERAGE_##	2.55

TEXTURE LOCATION_## 30 FT SOUTH OF MP 10 SBL

OWP_##	2.20	2.25	2.20	2.20	AVERAGE_##	2.21
BWP_##	2.10	1.90	2.05	2.10	AVERAGE_##	2.04
IWP_##	2.30	2.30	2.30	2.40	AVERAGE_##	2.33

TEXTURE LOCATION_## 230 FT SOUTH OF MP 10 SBL

OWP_##	3.50	3.60	3.40	3.60	AVERAGE_##	3.53
BWP_##	3.50	3.50	3.40	3.50	AVERAGE_##	3.48
IWP_##	3.55	3.50	3.60	3.50	AVERAGE_##	3.54

AGGREGATE RATE_## 1/101

SHOT QUANTITY AVG_## 0.40 HI_## 0.42 LOW_## 0.34

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## GR3.LRA/WHITE'S MINES

DATE CONSTRUCTED_## 07/ 8/2 AVG DAILY TRAFFIC_## 210

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 40
BWP_##10	BWP_##10	BWP_## 30-35
CL_##10	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## DEWITT HWY NO._## FM 236

LOCATION_## SBL AT MP 4 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/17/83

TEXTURE LOCATION_## AT MILE POST 4

OWP_##	3.55	3.40	3.40	3.50	AVERAGE_##	3.46
BWP_##	3.10	3.35	3.35	3.30	AVERAGE_##	3.28
IWP_##	3.25	3.20	3.05	3.05	AVERAGE_##	3.14

TEXTURE LOCATION_## 20 FEET NORTH OF MILE POST 4

OWP_##	3.50	3.50	3.55	3.60	AVERAGE_##	3.54
BWP_##	3.25	3.20	3.25	3.20	AVERAGE_##	3.23
IWP_##	3.10	3.10	3.10	3.05	AVERAGE_##	3.09

TEXTURE LOCATION_## 20 FEET SOUTH OF MILE POST 4

OWP_##	3.40	3.45	3.45	3.50	AVERAGE_##	3.45
BWP_##	3.25	3.20	3.20	3.05	AVERAGE_##	3.18
IWP_##	3.58	3.60	3.55	3.50	AVERAGE_##	3.56

AGGREGATE RATE_## 1/104

SHOT QUANTITY AVG_## 0.37 HI_## 0.39 LOW_## 0.33

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB. GR3./WHITE'S

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 700

EVALUATION DATE_## 5/ 8/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 7	OWP_##10	OWP_## 60-80
BWP_## 6	BWP_##10	BWP_## 50-60
CL_## 6	CL_##10	CL_## 40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## DEWITT HWY NO._## FM 238

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/10/82

TEXTURE LOCATION_## AT MP 2 WBL

OWP_##	3.00	3.00	3.10	3.10	AVERAGE_##	3.05
BWP_##	2.70	2.80	2.85	2.75	AVERAGE_##	2.78
IWP_##	2.80	2.75	2.85	2.80	AVERAGE_##	2.80

TEXTURE LOCATION_## 30 FT WEST OF MP 2 WBL

OWP_##	3.00	2.90	2.85	2.95	AVERAGE_##	2.93
BWP_##	2.75	2.80	2.80	2.95	AVERAGE_##	2.83
IWP_##	2.85	2.80	2.90	2.90	AVERAGE_##	2.86

TEXTURE LOCATION_## 40 FT EAST OF MP 2 WBL

OWP_##	3.40	3.50	3.40	3.40	AVERAGE_##	3.43
BWP_##	3.10	3.15	3.10	3.10	AVERAGE_##	3.11
IWP_##	3.00	2.80	2.80	2.85	AVERAGE_##	2.86

AGGREGATE RATE_## 1/98

SHOT QUANTITY AVG_## 0.42 HI_## 0.43 LOW_## 0.41

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR3./SERVTEX

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 110

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 30
BWP_## 8	BWP_##10	BWP_## 30
CL_## 8	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## DEWITT HWY NO._## FM 239

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/10/82

TEXTURE LOCATION_## AT MP 2 SBL

OWP_##	3.50	3.40	3.35	3.35	AVERAGE_##	3.40
BWP_##	3.20	3.15	3.20	3.25	AVERAGE_##	3.20
IWP_##	3.25	3.30	3.25	3.35	AVERAGE_##	3.29

TEXTURE LOCATION_## AT MP 2 NBL

OWP_##	3.20	3.15	3.10	3.25	AVERAGE_##	3.18
BWP_##	3.60	3.70	3.70	3.70	AVERAGE_##	3.68
IWP_##	3.60	3.65	3.60	3.60	AVERAGE_##	3.61

TEXTURE LOCATION_## 15 FT NORTH OF MP 2

OWP_##	3.00	3.10	3.05	3.10	AVERAGE_##	3.06
BWP_##	3.40	3.40	3.50	3.50	AVERAGE_##	3.45
IWP_##	3.50	3.60	3.65	3.60	AVERAGE_##	3.59

AGGREGATE RATE_## 1/100

SHOT QUANTITY AVG_## 0.39 HI_## 0.44 LOW_## 0.35

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR3./SERVTEX

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 400

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 45
BWP_## 9	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## JACKSON HWY NO._## FM 3131

LOCATION_## WBL AT MP 10 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/19/83

TEXTURE LOCATION_## AT MILE POST 10

OWP_##	3.10	3.20	3.15	3.10	AVERAGE_##	3.14
BWP_##	2.90	2.90	3.00	2.90	AVERAGE_##	2.93
IWP_##	3.20	3.15	3.25	3.20	AVERAGE_##	3.20

TEXTURE LOCATION_## 25 FEET EAST OF MP 10

OWP_##	3.20	3.20	3.15	3.20	AVERAGE_##	3.19
BWP_##	2.85	2.85	2.80	2.90	AVERAGE_##	2.85
IWP_##	3.30	3.30	3.40	3.30	AVERAGE_##	3.33

TEXTURE LOCATION_## 25 FEET WEST OF MILE POST 10

OWP_##	3.25	3.30	3.25	3.30	AVERAGE_##	3.28
BWP_##	3.20	3.30	3.20	3.15	AVERAGE_##	3.21
IWP_##	3.10	3.10	3.00	3.10	AVERAGE_##	3.08

AGGREGATE RATE_## 1/93

SHOT QUANTITY AVG_## 0.39 HI_## 0.42 LOW_## 0.36

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR4./AZROCK

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 160

EVALUATION DATE_## 5/ 8/84

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 9	OWP_## 90
BWP_##10	BWP_##10	BWP_## 70-80
CL_##10	CL_##10	CL_## 70

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## VICTORIA HWY NO._## FM 404

LOCATION_## NBL AT MP 4 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/17/83

TEXTURE LOCATION_## 20 FEET SOUTH OF MILE POST 4

OWP_##	3.90	3.90	3.90	3.80	AVERAGE_##	3.88
BWP_##	3.75	3.80	3.80	3.70	AVERAGE_##	3.76
IWP_##	3.80	3.85	3.90	3.90	AVERAGE_##	3.86

TEXTURE LOCATION_## READING 2

OWP_##	4.00	4.00	4.00	4.00	AVERAGE_##	4.00
BWP_##	3.65	3.70	3.70	3.70	AVERAGE_##	3.69
IWP_##	4.00	4.00	4.00	4.00	AVERAGE_##	4.00

TEXTURE LOCATION_## READING 3

OWP_##	4.00	4.00	4.00	4.00	AVERAGE_##	4.00
BWP_##	3.75	3.80	3.80	3.75	AVERAGE_##	3.78
IWP_##	4.00	4.00	4.00	4.00	AVERAGE_##	4.00

AGGREGATE RATE_## 1/139

SHOT QUANTITY AVG_## 0.22 HI_## 0.23 LOW_## 0.22

ASPHALT GRADE/PROD_## AC-10/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR4./WHITE'S

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 7000

EVALUATION DATE_## 5/ 8/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 5	OWP_##90-100
BWP_##10	BWP_## 7	BWP_## 80-90
CL_##10	CL_##10	CL_## 70-80

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## WHARTON HWY NO._## FM 441

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/24/82

TEXTURE LOCATION_## AT MP 16 EBL

OWP_##	2.90	2.90	2.90	2.90	AVERAGE_##	2.90
BWP_##	3.15	3.30	3.25	3.20	AVERAGE_##	3.23
IWP_##	3.10	3.15	3.10	3.10	AVERAGE_##	3.11

TEXTURE LOCATION_## AT MP 16 WBL

OWP_##	3.00	3.00	3.00	3.00	AVERAGE_##	3.00
BWP_##	3.30	3.30	3.25	3.20	AVERAGE_##	3.26
IWP_##	2.90	2.80	2.90	2.80	AVERAGE_##	2.83

TEXTURE LOCATION_## 30 FT EAST OF MP 16

OWP_##	3.05	3.05	3.00	3.00	AVERAGE_##	3.03
BWP_##	3.10	3.15	3.15	3.10	AVERAGE_##	3.13
IWP_##	3.10	3.05	3.05	3.10	AVERAGE_##	3.08

AGGREGATE RATE_## 1/100

SHOT QUANTITY AVG_## 0.43 HI_## 0.45 LOW_## 0.40

ASPHALT GRADE/PROD_## AC-5 /EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## GR3 LRA/WHITE'S MINES

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 120

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 45
BWP_##10	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 35

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## WHARTON HWY NO._## FM 441

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/24/82

TEXTURE LOCATION_## AT MP 12 SBL

OWP_##	3.05	3.10	3.20	3.10	AVERAGE_## 3.11
BWP_##	3.40	3.40	3.40	3.35	AVERAGE_## 3.39
IWP_##	3.40	3.30	3.40	3.35	AVERAGE_## 3.36

TEXTURE LOCATION_## AT MP 12 NBL

OWP_##	2.60	2.80	2.80	2.85	AVERAGE_## 2.76
BWP_##	2.80	2.75	2.75	2.70	AVERAGE_## 2.75
IWP_##	3.20	3.20	3.20	3.15	AVERAGE_## 3.19

TEXTURE LOCATION_## 30 FT SOUTH OF MP 12 SBL

OWP_##	3.05	3.00	3.00	3.05	AVERAGE_## 3.03
BWP_##	3.45	3.45	3.45	3.45	AVERAGE_## 3.45
IWP_##	3.45	3.45	3.50	3.45	AVERAGE_## 3.46

AGGREGATE RATE_## 1/100

SHOT QUANTITY AVG_## 0.43 HI_## 0.45 LOW_## 0.40

ASPHALT GRADE/PROD_## AC-5 /EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## LRA GR3 /WHITE'S MINES

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 120

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 45
BWP_##10	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 35

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## LAVACA HWY NO._## FM 531

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/05/82

TEXTURE LOCATION_## AT MP 4 SBL

OWP_##	3.00	3.00	2.90	2.90	AVERAGE_##	2.95
BWP_##	2.75	2.70	2.80	2.65	AVERAGE_##	2.73
IWP_##	2.80	2.80	2.80	2.75	AVERAGE_##	2.79

TEXTURE LOCATION_## AT MP 4 NBL

OWP_##	2.75	2.70	2.70	2.80	AVERAGE_##	2.74
BWP_##	2.60	2.60	2.60	2.60	AVERAGE_##	2.60
IWP_##	3.30	3.35	3.35	3.35	AVERAGE_##	3.34

TEXTURE LOCATION_## 0.5M FROM US 77A SBL

OWP_##	2.60	2.60	2.60	2.60	AVERAGE_##	2.60
BWP_##	3.00	2.90	2.95	2.90	AVERAGE_##	2.94
IWP_##	3.30	3.30	3.20	3.20	AVERAGE_##	3.25

AGGREGATE RATE_## 1/102

SHOT QUANTITY AVG_## 0.40 HI_## 0.45 LOW_## 0.38

ASPHALT GRADE/PROD_## AC-5 /EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR3./SERVTEX

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 250

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 30
BWP_## 7	BWP_##10	BWP_## 30
CL_## 9	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## LAVACA HWY NO._## FM 532

LOCATION_## WBL AT MP 18 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/17/83

TEXTURE LOCATION_## 40 FEET WEST OF MILE POST 18

OWP_##	2.72	2.80	2.75	2.81	AVERAGE_##	2.77
BWP_##	2.62	2.65	2.50	2.50	AVERAGE_##	2.57
IWP_##	2.62	2.70	2.78	2.65	AVERAGE_##	2.69

TEXTURE LOCATION_## AT MILE POST 18

OWP_##	2.90	2.95	2.90	3.00	AVERAGE_##	2.94
BWP_##	2.80	2.70	2.65	2.65	AVERAGE_##	2.70
IWP_##	2.90	2.80	2.90	2.85	AVERAGE_##	2.84

TEXTURE LOCATION_## 80 FEET WEST OF MILE POST 18

OWP_##	2.80	2.90	2.95	2.90	AVERAGE_##	2.89
BWP_##	2.80	2.60	2.70	2.72	AVERAGE_##	2.71
IWP_##	2.80	2.75	2.82	2.85	AVERAGE_##	2.81

AGGREGATE RATE_## 1/99

SHOT QUANTITY AVG_## 0.42 HI_## 0.45 LOW_## 0.39

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR3./WHITE'S

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 510

EVALUATION DATE_## 5/ 9/84

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 7	OWP_##10	OWP_## 50
BWP_## 4	BWP_##10	BWP_## 30-40
CL_## 7	CL_##10	CL_## 40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## GONZALES HWY NO._## FM 533

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/06/82

TEXTURE LOCATION_## AT MP 4 NEBL

OWP_##	3.20	3.20	3.15	3.10	AVERAGE_##	3.16
BWP_##	2.50	2.40	2.50	2.50	AVERAGE_##	2.48
IWP_##	3.10	2.90	3.10	3.25	AVERAGE_##	3.09

TEXTURE LOCATION_## 30 FT SW OF 1ST MEA. NEBL

OWP_##	2.90	2.90	2.80	2.95	AVERAGE_##	2.89
BWP_##	2.25	2.20	2.20	2.10	AVERAGE_##	2.19
IWP_##	2.40	2.45	2.40	2.45	AVERAGE_##	2.43

TEXTURE LOCATION_## AT MP 2 NEBL

OWP_##	2.90	2.95	2.80	3.00	AVERAGE_##	2.91
BWP_##	2.80	2.85	2.85	2.75	AVERAGE_##	2.81
IWP_##	2.80	2.80	2.75	2.75	AVERAGE_##	2.78

AGGREGATE RATE_## 1/101

SHOT QUANTITY AVG_## 0.42 HI_## 0.44 LOW_## 0.37

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR3./SERVTEX

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 130

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 35
BWP_## 9	BWP_##10	BWP_## 30
CL_## 9	CL_## 9	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## JACKSON HWY NO._## FM 710

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/20/82

TEXTURE LOCATION_## AT MP 8 SBL

OWP_##	3.30	3.40	3.25	3.35	AVERAGE_##	3.33
BWP_##	2.95	3.00	2.95	3.00	AVERAGE_##	2.98
IWP_##	3.30	3.20	3.15	3.25	AVERAGE_##	3.23

TEXTURE LOCATION_## 30 FT SOUTH OF MP 8 SBL

OWP_##	2.75	2.80	2.90	2.90	AVERAGE_##	2.84
BWP_##	3.35	3.30	3.30	3.30	AVERAGE_##	3.31
IWP_##	3.50	3.55	3.40	3.55	AVERAGE_##	3.50

TEXTURE LOCATION_## 30 FT NORTH OF MP 8 SBL

OWP_##	3.30	3.30	3.30	3.25	AVERAGE_##	3.29
BWP_##	3.40	3.50	3.45	3.45	AVERAGE_##	3.45
IWP_##	3.65	3.70	3.70	3.65	AVERAGE_##	3.68

AGGREGATE RATE_## 1/101

SHOT QUANTITY AVG_## 0.38 HI_## 0.38 LOW_## 0.37

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## GR3 LRA /WHITE'S MINES

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 710

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 35
BWP_##10	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## JACKSON HWY NO._## FM 710

LOCATION_## SBL AT MP 4 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/19/83

TEXTURE LOCATION_## AT MILE POST 4

OWP_##	3.00	2.80	2.85	2.90	AVERAGE_##	2.89
BWP_##	2.90	2.95	2.85	2.95	AVERAGE_##	2.91
IWP_##	3.30	3.20	3.30	3.20	AVERAGE_##	3.25

TEXTURE LOCATION_## 25 FEET NORTH OF MILE POST 4

OWP_##	3.20	3.20	3.25	3.20	AVERAGE_##	3.21
BWP_##	3.00	2.90	3.10	3.05	AVERAGE_##	3.01
IWP_##	3.40	3.40	3.45	3.40	AVERAGE_##	3.41

TEXTURE LOCATION_## 25 FEET SOUTH OF MP 4

OWP_##	3.10	3.10	3.10	3.15	AVERAGE_##	3.11
BWP_##	3.00	3.10	3.05	3.10	AVERAGE_##	3.06
IWP_##	3.30	3.35	3.35	3.30	AVERAGE_##	3.33

AGGREGATE RATE_## 1/119

SHOT QUANTITY AVG_## 0.40 HI_## 0.42 LOW_## 0.38

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR4./AZROCK

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 100

EVALUATION DATE_## 5/ 8/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 6	OWP_## 90
BWP_##10	BWP_## 8	BWP_## 80
CL_##10	CL_## 9	CL_## 70

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## WHARTON HWY NO._## FM 961

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/25/82

TEXTURE LOCATION_## AT MP 12 SBL

OWP_##	2.60	2.60	2.50	2.60	AVERAGE_##	2.58
BWP_##	2.50	2.45	2.50	2.55	AVERAGE_##	2.50
IWP_##	2.60	2.65	2.65	2.60	AVERAGE_##	2.63

TEXTURE LOCATION_## 30 FEET SOUTH OF MP 12 SBL

OWP_##	2.65	2.65	2.65	2.70	AVERAGE_##	2.66
BWP_##	2.80	2.85	3.00	3.05	AVERAGE_##	2.93
IWP_##	2.90	2.90	2.85	2.90	AVERAGE_##	2.89

TEXTURE LOCATION_## 30 FT SOUTH OF MP 12 NBL

OWP_##	2.35	2.25	2.35	2.30	AVERAGE_##	2.31
BWP_##	2.35	2.30	2.20	2.10	AVERAGE_##	2.24
IWP_##	2.70	2.70	2.80	2.70	AVERAGE_##	2.73

AGGREGATE RATE_## 1/102

SHOT QUANTITY AVG_## 0.42 HI_## 0.45 LOW_## 0.33

ASPHALT GRADE/PROD_## AC-5 EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## GR3 LRA/WHITE'S MINES

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 300

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 35
BWP_##10	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## WHARTON HWY NO._## FM 961

LOCATION_## WBL AT MP 6 NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/19/83

TEXTURE LOCATION_## AT MILE POST 6

OWP_##	2.85	2.80	2.90	2.75	AVERAGE_##	2.83
BWP_##	2.30	2.25	2.30	2.25	AVERAGE_##	2.28
IWP_##	2.75	2.70	2.75	2.70	AVERAGE_##	2.73

TEXTURE LOCATION_## READING 2

OWP_##	2.55	2.60	2.45	2.55	AVERAGE_##	2.54
BWP_##	2.60	2.50	2.70	2.60	AVERAGE_##	2.60
IWP_##	2.70	2.70	2.75	2.80	AVERAGE_##	2.74

TEXTURE LOCATION_## READING 3

OWP_##	2.70	2.80	2.90	2.70	AVERAGE_##	2.78
BWP_##	2.55	2.50	2.50	2.60	AVERAGE_##	2.54
IWP_##	3.00	3.00	2.90	2.85	AVERAGE_##	2.94

AGGREGATE RATE_## 1/102

SHOT QUANTITY AVG_## 0.43 HI_## 0.44 LOW_## 0.40

ASPHALT GRADE/PROD_## AC-5/EXXON

AGGREGATE GRADE/PROD_## PB.GR3./SERVTEX

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 350

EVALUATION DATE_## 5/ 8/84

OVERALL VISUAL RETENTION_## 7

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 6	OWP_##10	OWP_## 40-45
BWP_## 5	BWP_##10	BWP_## 30-40
CL_## 5	CL_##10	CL_## 30-40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## LAVACA HWY NO._## FM 966

LOCATION_## NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 08/06/82

TEXTURE LOCATION_## AT MP 2 SBL

OWP_##	3.45	3.40	3.35	3.45	AVERAGE_##	3.41
BWP_##	3.60	3.70	3.70	3.75	AVERAGE_##	3.69
IWP_##	3.40	3.40	3.40	3.45	AVERAGE_##	3.41

TEXTURE LOCATION_## AT MP 2 NBL

OWP_##	3.85	3.90	3.85	3.85	AVERAGE_##	3.86
BWP_##	3.80	3.85	3.80	3.80	AVERAGE_##	3.81
IWP_##	3.70	3.65	3.65	3.70	AVERAGE_##	3.68

TEXTURE LOCATION_## AT MP 4 SBL

OWP_##	3.30	3.35	3.30	3.25	AVERAGE_##	3.30
BWP_##	3.10	3.00	3.10	3.00	AVERAGE_##	3.05
IWP_##	3.20	3.05	3.10	3.15	AVERAGE_##	3.13

AGGREGATE RATE_## 1/100

SHOT QUANTITY AVG_## 0.39 HI_## 0.42 LOW_## 0.37

ASPHALT GRADE/PROD_## AC-5/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR3./SERVTEX

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 430

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 35
BWP_## 8	BWP_##10	BWP_## 30
CL_## 9	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## DEWITT HWY NO._## SH 72

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/11/82

TEXTURE LOCATION_## AT MP 8 SWBL

OWP_##	3.20	3.30	3.20	3.30	AVERAGE_##	3.25
BWP_##	2.60	2.60	2.70	2.55	AVERAGE_##	2.61
IWP_##	3.45	3.60	3.55	3.60	AVERAGE_##	3.55

TEXTURE LOCATION_## AT MP 8 NEBL

OWP_##	3.20	3.40	3.30	3.35	AVERAGE_##	3.31
BWP_##	2.75	2.75	2.80	2.60	AVERAGE_##	2.73
IWP_##	3.50	3.50	3.50	3.55	AVERAGE_##	3.51

TEXTURE LOCATION_##

OWP_##	.	.	.	.	AVERAGE_##	.
BWP_##	.	.	.	.	AVERAGE_##	.
IWP_##	.	.	.	.	AVERAGE_##	.

AGGREGATE RATE_## 1/130

SHOT QUANTITY AVG_## 0.27 HI_## 0.33 LOW_## 0.24

ASPHALT GRADE/PROD_## AC-10/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB.GR4./SERVTEX

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 1200

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 45
BWP_## 8	BWP_##10	BWP_## 35
CL_## 9	CL_##10	CL_## 35

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## DEWITT HWY NO._## US 87

LOCATION_## WBL AT MP 14 NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 05/17/83

TEXTURE LOCATION_## AT MILE POST 14

OWP_##	3.20	3.32	3.50	3.40	AVERAGE_##	3.36
BWP_##	2.65	2.62	2.60	2.60	AVERAGE_##	2.62
IWP_##	3.40	3.45	3.42	3.35	AVERAGE_##	3.41

TEXTURE LOCATION_## 25 FEET WEST OF MILE POST 14

OWP_##	2.97	3.25	3.20	3.30	AVERAGE_##	3.03
BWP_##	3.15	3.20	3.20	3.18	AVERAGE_##	3.18
IWP_##	3.65	3.70	3.70	3.80	AVERAGE_##	3.71

TEXTURE LOCATION_## 50 FEET WEST OF MILE POST 14

OWP_##	3.20	3.20	3.15	3.20	AVERAGE_##	3.19
BWP_##	2.95	2.95	2.95	2.90	AVERAGE_##	2.94
IWP_##	3.80	3.85	3.80	3.80	AVERAGE_##	3.81

AGGREGATE RATE_## 1/140

SHOT QUANTITY AVG_## 0.23 HI_## 0.24 LOW_## 0.2

ASPHALT GRADE/PROD_## AC-10/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## PB. GR4./SERVTEX

DATE CONSTRUCTED_## 07/ /83 AVG DAILY TRAFFIC_## 110

EVALUATION DATE_## 5/ 8/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60-80
BWP_##10	BWP_##10	BWP_## 50
CL_## 8	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##13 COUNTY_## LAVACA HWY NO._## US 90

LOCATION_## NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/04/82

TEXTURE LOCATION_## AT MP 20 EBL

OWP_##	3.75	3.75	3.75	3.85	AVERAGE_##	3.78
BWP_##	3.30	3.30	3.30	3.30	AVERAGE_##	3.30
IWP_##	3.60	3.60	3.65	3.70	AVERAGE_##	3.64

TEXTURE LOCATION_## 15 FT EAST OF MP 20 EBL

OWP_##	3.70	3.75	3.80	3.70	AVERAGE_##	3.74
BWP_##	3.30	3.25	3.20	3.25	AVERAGE_##	3.25
IWP_##	3.60	3.50	3.55	3.50	AVERAGE_##	3.54

TEXTURE LOCATION_## AT MP 22 EBL

OWP_##	3.65	3.75	3.65	3.70	AVERAGE_##	3.69
BWP_##	3.10	3.20	3.10	3.20	AVERAGE_##	3.15
IWP_##	3.60	3.55	3.60	3.60	AVERAGE_##	3.59

AGGREGATE RATE_## 1/132

SHOT QUANTITY AVG_## 0.27 HI_##0.23 LOW_##0.22

ASPHALT GRADE/PROD_## AC-10/EXXON-BAYTOWN

AGGREGATE GRADE/PROD_## GR4.LRA/WHITE'S MINES

DATE CONSTRUCTED_## 07/ /82 AVG DAILY TRAFFIC_## 1500

EVALUATION DATE_## 2/16/83

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 45
BWP_## 9	BWP_##10	BWP_## 30
CL_## 9	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##15 COUNTY_## BEXAR HWY NO._## FM 1346

LOCATION_## AT LOOP 1604 EAST BOUND LANE NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 09/00/82

TEXTURE LOCATION_## 1 MILE FROM LOOP 1604 EBL

OWP_##	3.40	3.50	3.50	3.45	AVERAGE_##	3.46
BWP_##	3.20	3.30	3.30	3.15	AVERAGE_##	3.24
IWP_##	3.35	3.30	3.40	3.40	AVERAGE_##	3.36

TEXTURE LOCATION_## 15 FT. EAST OF ABOVE

OWP_##	3.70	3.75	3.70	3.80	AVERAGE_##	3.74
BWP_##	3.10	3.30	3.00	3.00	AVERAGE_##	3.10
IWP_##	3.60	3.55	3.60	3.65	AVERAGE_##	3.60

TEXTURE LOCATION_## 1 MILE WEST OF LOOP 1604 EBL

OWP_##	3.70	3.65	3.65	3.70	AVERAGE_##	3.68
BWP_##	3.30	3.30	3.35	3.30	AVERAGE_##	3.31
IWP_##	3.60	3.60	3.70	3.70	AVERAGE_##	3.65

AGGREGATE RATE_## 1/85

SHOT QUANTITY AVG_## 0.45 HI_## LOW_##

ASPHALT GRADE/PROD_## HFVRS/RIFFE PET.

AGGREGATE GRADE/PROD_## GR 3 MOD PC/AFFILIATED LIMEST

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 850

EVALUATION DATE_## 5/23/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_##10	BWP_##10	BWP_## 40
CL_##10	CL_##10	CL_## 40

****

EVALUATION DATE_## 4/ 0/83

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_##10	OWP_## 60
BWP_## 9	BWP_##10	BWP_## 35
CL_## 9	CL_##10	CL_## 35

DISTRICT_##15 COUNTY_## WILSON HWY NO._## FM 2505

LOCATION_## BETWEEN FM 3161 AND FM 541 NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 09/00/82

TEXTURE LOCATION_## AT MP 12 SBL

OWP_##	3.40	3.40	3.40	3.50	AVERAGE_##	3.43
BWP_##	3.30	3.40	3.30	3.25	AVERAGE_##	3.31
IWP_##	3.15	3.20	3.20	3.10	AVERAGE_##	3.16

TEXTURE LOCATION_## AT MP 12 NBL

OWP_##	3.10	3.15	3.10	3.10	AVERAGE_##	3.11
BWP_##	3.30	3.20	3.25	3.25	AVERAGE_##	3.25
IWP_##	3.60	3.55	3.65	3.50	AVERAGE_##	3.58

TEXTURE LOCATION_##

OWP_##	.	.	.	.	AVERAGE_##	.
BWP_##	.	.	.	.	AVERAGE_##	.
IWP_##	.	.	.	.	AVERAGE_##	.

AGGREGATE RATE_## 1/96

SHOT QUANTITY AVG_## 0.37 HI_## 0.38 LOW_## 0.36

ASPHALT GRADE/PROD_## AC-10/TFA

AGGREGATE GRADE/PROD_## GR 3 MOD PC/MCDONOUGH LIMESTONE

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 220

EVALUATION DATE_## 5/23/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_##
BWP_##10	BWP_##10	BWP_##
CL_##10	CL_##10	CL_##

****

EVALUATION DATE_## 2/17/83

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 30
BWP_## 9	BWP_##10	BWP_## 25
CL_## 9	CL_##10	CL_## 25

DISTRICT_##15 COUNTY_## WILSON HWY NO._## FM 2505

LOCATION_## BETWEEN FM 541 AND THE END NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 09/00/82

TEXTURE LOCATION_## 1.5 MILES FROM FM 541 NBL

OWP_##	3.00	2.90	3.00	3.10	AVERAGE_##	3.00
BWP_##	2.70	2.65	2.80	2.60	AVERAGE_##	2.69
IWP_##	2.90	3.00	2.90	2.95	AVERAGE_##	2.94

TEXTURE LOCATION_## 1.5 MILES FROM FM 541 SBL

OWP_##	2.90	3.00	2.90	2.90	AVERAGE_##	2.93
BWP_##	2.65	2.70	2.65	2.75	AVERAGE_##	2.69
IWP_##	2.70	2.70	2.65	2.60	AVERAGE_##	2.66

TEXTURE LOCATION_##

OWP_##	.	.	.	.	AVERAGE_##	.
BWP_##	.	.	.	.	AVERAGE_##	.
IWP_##	.	.	.	.	AVERAGE_##	.

AGGREGATE RATE_## 1/97

SHOT QUANTITY AVG_## 0.37 HI_## LOW_##

ASPHALT GRADE/PROD_## AC-10/TFA

AGGREGATE GRADE/PROD_## GR3 MOD PC/MCDONOUGH LIMESTONE

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 50

EVALUATION DATE_## 5/23/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 50
BWP_## 7	BWP_##10	BWP_## 40
CL_## 7	CL_##10	CL_## 40

****

EVALUATION DATE_## 2/17/83

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 30
BWP_## 9	BWP_##10	BWP_## 25
CL_## 8	CL_##10	CL_## 25

DISTRICT_##15 COUNTY_## WILSON HWY NO._## FM 539

LOCATION_## AT MP 10 NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 09/00/82

TEXTURE LOCATION_## 30 FT WEST OF MP 10 SWBL

OWP_##	2.90	2.90	2.95	2.85	AVERAGE_##	2.90
BWP_##	2.75	2.70	2.80	2.70	AVERAGE_##	2.74
IWP_##	3.00	3.05	3.10	3.00	AVERAGE_##	3.04

TEXTURE LOCATION_## AT MP 10 SWBL

OWP_##	2.70	2.65	2.70	2.70	AVERAGE_##	2.69
BWP_##	2.60	2.60	2.60	2.55	AVERAGE_##	2.59
IWP_##	2.80	2.85	2.90	3.00	AVERAGE_##	2.89

TEXTURE LOCATION_## AT MP 10 NEBL

OWP_##	2.25	2.70	2.55	2.50	AVERAGE_##	2.50
BWP_##	2.80	2.85	2.70	2.90	AVERAGE_##	2.81
IWP_##	2.85	2.70	2.70	2.80	AVERAGE_##	2.76

AGGREGATE RATE_## 1/97

SHOT QUANTITY AVG_## 0.34 HI_## 0.35 LOW_## 0.32

ASPHALT GRADE/PROD_## AC-10/TFA

AGGREGATE GRADE/PROD_## GR 3 MOD PC/MCDONOUGH LIMESTONE

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 630

EVALUATION DATE_## 5/23/84

OVERALL VISUAL RETENTION_## 5

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 4	OWP_##10	OWP_## 30
BWP_## 4	BWP_##10	BWP_## 30
CL_## 4	CL_##10	CL_## 30

****

EVALUATION DATE_## 2/17/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 30
BWP_##10	BWP_##10	BWP_## 25
CL_## 9	CL_##10	CL_## 25

DISTRICT_##15 COUNTY_## BEXAR HWY NO._## LP 1604

LOCATION_## 2 MILES EAST OF IH 37 NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 09/00/82

TEXTURE LOCATION_## 2 MI EAST OF IH 37 EBL

OWP_##	3.55	3.60	3.50	3.55	AVERAGE_##	3.55
BWP_##	3.60	3.60	3.60	3.60	AVERAGE_##	3.60
IWP_##	3.90	3.85	3.80	3.90	AVERAGE_##	3.86

TEXTURE LOCATION_## 2 MI EAST OF IH 37 WBL

OWP_##	3.65	3.65	3.60	3.60	AVERAGE_##	3.63
BWP_##	3.85	3.85	3.95	3.95	AVERAGE_##	3.90
IWP_##	3.55	3.60	3.50	3.45	AVERAGE_##	3.53

TEXTURE LOCATION_##

OWP_##	.	.	.	.	AVERAGE_##	.
BWP_##	.	.	.	.	AVERAGE_##	.
IWP_##	.	.	.	.	AVERAGE_##	.

AGGREGATE RATE_## 1/85

SHOT QUANTITY AVG_## 0.40 HI_## LOW_##

ASPHALT GRADE/PROD_## AC-10/TFA

AGGREGATE GRADE/PROD_## GR 3 MOD PC/MCDONOUGH LIMESTONE

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 920

EVALUATION DATE_## 5/23/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 9	OWP_## 70
BWP_##10	BWP_##10	BWP_## 60
CL_##10	CL_##10	CL_## 50-60

****

EVALUATION DATE_## 4/ 0/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 40
BWP_##10	BWP_##10	BWP_## 30-35
CL_##10	CL_##10	CL_## 30

DISTRICT_##15 COUNTY_## WILSON HWY NO._## SH 97

LOCATION_## AT MP 8 NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 09/00/82

TEXTURE LOCATION_## AT MP 8 NEBL

OWP_##	3.30	3.25	3.30	3.40	AVERAGE_##	3.31
BWP_##	2.70	2.70	2.65	2.70	AVERAGE_##	2.69
IWP_##	2.70	2.80	2.70	2.70	AVERAGE_##	2.73

TEXTURE LOCATION_## AT MP 8 SWBL

OWP_##	3.00	3.10	2.90	3.10	AVERAGE_##	3.03
BWP_##	2.70	2.70	2.70	2.60	AVERAGE_##	2.68
IWP_##	2.60	2.60	2.55	2.60	AVERAGE_##	2.59

TEXTURE LOCATION_## 15 FT SW OF MP 8 NEBL

OWP_##	3.40	3.30	3.40	3.40	AVERAGE_##	3.38
BWP_##	2.85	2.85	2.80	2.90	AVERAGE_##	2.85
IWP_##	2.85	2.90	2.95	2.90	AVERAGE_##	2.90

AGGREGATE RATE_## 1/95

SHOT QUANTITY AVG_## 0.35 HI_## 0.36 LOW_## 0.33

ASPHALT GRADE/PROD_## AC-10/TFA

AGGREGATE GRADE/PROD_## GR 3 MOD PC/MCDONOUGH LIMESTONE

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 1140

EVALUATION DATE_## 5/23/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60-70
BWP_##10	BWP_##10	BWP_## 60
CL_## 8	CL_##10	CL_## 40-50

****

EVALUATION DATE_## 2/17/83

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 30
BWP_## 9	BWP_##10	BWP_## 25
CL_## 9	CL_##10	CL_## 25

DISTRICT_##23 COUNTY_##BROWN HWY NO._## FM 1467

LOCATION_##AT MILE POST 20 IN THE SOUTH BOUND LANE NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 05/27/83

TEXTURE LOCATION_##25 FEET NORTH OF MILE POST 20

OWP_##	3.40	3.35	3.35	3.30	AVERAGE_##	3.35
BWP_##	3.30	3.25	3.20	3.30	AVERAGE_##	3.26
IWP_##	3.60	3.60	3.80	3.60	AVERAGE_##	3.65

TEXTURE LOCATION_##AT MILE POST 20

OWP_##	3.55	3.70	3.65	3.60	AVERAGE_##	3.63
BWP_##	3.20	3.30	3.20	3.30	AVERAGE_##	3.25
IWP_##	3.90	3.90	3.90	3.90	AVERAGE_##	3.90

TEXTURE LOCATION_##25 FEET SOUTH OF MILE POST 20

OWP_##	2.90	2.95	3.05	2.90	AVERAGE_##	2.95
BWP_##	2.70	2.60	2.60	2.70	AVERAGE_##	2.65
IWP_##	3.00	3.10	3.10	3.10	AVERAGE_##	3.08

AGGREGATE RATE_## 1/181 DESIGN 1/170

SHOT QUANTITY AVG_## 0.332/WP DES.30/WP.292/OP.387 HI_## 0.367 LOW_## 0.291

ASPHALT GRADE/PROD_## HFRS/RIFFE,BROWNWOOD

AGGREGATE GRADE/PROD_## TYPE B GR5A/WHITE'S MINES

DATE CONSTRUCTED_## 07/29/83 AVG DAILY TRAFFIC_## 135

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 6	OWP_##10	OWP_## 40
BWP_## 7	BWP_##10	BWP_## 30
CL_## 9	CL_##10	CL_## 30

****

EVALUATION DATE_## 1/11/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 45
BWP_## 9	BWP_##10	BWP_## 40
CL_## 9	CL_##10	CL_## 40

DISTRICT_##23 COUNTY_## COMANCHE HWY NO._## FM 1476

LOCATION_## NBL SO OF PROCTOR @ MP 4 NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/11/82

TEXTURE LOCATION_## NBL SO OF PROCTOR

OWP_##	3.20	3.20	3.10	3.25	AVERAGE_##	3.19
BWP_##	2.60	2.50	2.60	2.50	AVERAGE_##	2.55
IWP_##	2.65	2.60	2.60	2.60	AVERAGE_##	2.61

TEXTURE LOCATION_## NBL

OWP_##	2.95	2.90	2.90	2.95	AVERAGE_##	2.93
BWP_##	2.75	2.80	2.90	2.90	AVERAGE_##	2.84
IWP_##	3.10	3.05	3.10	3.00	AVERAGE_##	3.06

TEXTURE LOCATION_## NBL

OWP_##	3.30	3.25	3.20	3.30	AVERAGE_##	3.26
BWP_##	2.60	2.60	2.60	2.65	AVERAGE_##	2.61
IWP_##	2.70	2.70	2.75	2.75	AVERAGE_##	2.73

AGGREGATE RATE_## 1/164 DESIGN 1/191

SHOT QUANTITY AVG_## 0.304 HI_## 0.337 LOW_## 0.283

ASPHALT GRADE/PROD_## HFRS

AGGREGATE GRADE/PROD_## GR.4 MOD/WHITE'S MINES

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 440

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 80
BWP_##10	BWP_##10	BWP_## 60
CL_##10	CL_##10	CL_## 50

****

EVALUATION DATE_## 5/10/83

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 7	OWP_## 95
BWP_##10	BWP_##10	BWP_## 70
CL_##10	CL_## 9	CL_## 75

DISTRICT_##23 COUNTY_## McCULLOCH HWY NO._## FM 2028

LOCATION_## TAKEN @ END OF COMPLETED SECTION EBL NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/10/82

TEXTURE LOCATION_## EBL WEST OF BRADY

OWP_##	3.20	3.30	3.35	3.40	AVERAGE_##	3.13
BWP_##	3.10	3.10	3.05	3.10	AVERAGE_##	3.09
IWP_##	3.00	3.10	3.10	3.10	AVERAGE_##	3.08

TEXTURE LOCATION_## EBL

OWP_##	3.20	3.20	3.15	3.25	AVERAGE_##	3.20
BWP_##	3.10	3.10	3.25	3.15	AVERAGE_##	3.15
IWP_##	3.25	3.40	3.30	3.40	AVERAGE_##	3.34

TEXTURE LOCATION_## EBL

OWP_##	3.25	3.35	3.30	3.20	AVERAGE_##	3.28
BWP_##	2.75	2.80	2.70	2.70	AVERAGE_##	2.74
IWP_##	3.40	3.35	3.40	3.35	AVERAGE_##	3.38

AGGREGATE RATE_## 1/150 DESIGN 1/191

SHOT QUANTITY AVG_## 0.367 HI_## 0.482 LOW_## 0.272

ASPHALT GRADE/PROD_## HFRS/TEXAS EMULSIONS

AGGREGATE GRADE/PROD_## GR.4 MOD/WHITE'S MINES

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 150

EVALUATION DATE_## 5/28/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 80-90
BWP_##10	BWP_## 9	BWP_## 70
CL_##10	CL_## 9	CL_## 70

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##23 COUNTY_##BROWN HWY NO._## FM 2125

LOCATION_##AT MILE POST 2 IN THE SOUTH BOUND LANE NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/27/83

TEXTURE LOCATION_##25 FEET NORTH OF MILE POST 2

OWP_##	2.95	2.90	2.85	2.90	AVERAGE_##	2.90
BWP_##	2.60	2.60	2.60	2.50	AVERAGE_##	2.58
IWP_##	2.70	2.60	2.75	2.60	AVERAGE_##	2.66

TEXTURE LOCATION_##AT MILE POST 2

OWP_##	2.80	2.70	2.65	2.70	AVERAGE_##	2.71
BWP_##	2.75	2.70	2.60	2.65	AVERAGE_##	2.68
IWP_##	2.70	2.70	2.70	2.65	AVERAGE_##	2.69

TEXTURE LOCATION_##25 FEET SOUTH OF MILE POST 2

OWP_##	2.90	2.85	2.70	2.85	AVERAGE_##	2.83
BWP_##	2.30	2.30	2.25	2.25	AVERAGE_##	2.28
IWP_##	2.80	2.80	2.80	2.70	AVERAGE_##	2.78

AGGREGATE RATE_## 1/133 DESIGN 1/145

SHOT QUANTITY AVG_## 0.381/WP DES.33/WP.327/OP.432 HI_## 0.423 LOW_## 0.331

ASPHALT GRADE/PROD_## HFRS/RIFFE,BROWNWOOD

AGGREGATE GRADE/PROD_## TP.B GR.4 MOD/WHITE'S MINES

DATE CONSTRUCTED_## 08/01/83 AVG DAILY TRAFFIC_## 415

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_## 5

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 6	OWP_##10	OWP_##
BWP_## 4	BWP_##10	BWP_##
CL_## 5	CL_##10	CL_##

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##23 COUNTY_## COLEMAN HWY NO._## FM 2131

LOCATION_## TAKEN @ END OF COMPLETED SECTION NBL NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/10/82

TEXTURE LOCATION_## NBL NORTH OF SHIELDS

OWP_##	2.60	2.60	2.60	2.55	AVERAGE_##	2.59
BWP_##	2.50	2.65	2.60	2.55	AVERAGE_##	2.58
IWP_##	2.85	2.85	2.80	2.80	AVERAGE_##	2.83

TEXTURE LOCATION_## NBL

OWP_##	2.60	2.65	2.60	2.65	AVERAGE_##	2.63
BWP_##	2.55	2.50	2.55	2.50	AVERAGE_##	2.53
IWP_##	3.00	3.00	3.00	3.05	AVERAGE_##	3.01

TEXTURE LOCATION_## NBL

OWP_##	2.80	2.80	2.75	2.70	AVERAGE_##	2.76
BWP_##	2.90	2.60	2.70	2.80	AVERAGE_##	2.75
IWP_##	2.95	2.95	3.00	2.90	AVERAGE_##	2.95

AGGREGATE RATE_## 1/187 DESIGN 1/252

SHOT QUANTITY AVG_## 0.253 HI_## 0.304 LOW_## 0.230

ASPHALT GRADE/PROD_## AC-3/COSDEN

AGGREGATE GRADE/PROD_##GR.5 MOD/WHITE'S MINES

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 150

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 80-90
BWP_##10	BWP_## 9	BWP_## 70-80
CL_##10	CL_## 9	CL_## 70-80

****

EVALUATION DATE_## 5/29/83

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 9	OWP_##10	OWP_## 30-40
BWP_## 4	BWP_##10	BWP_## 30
CL_## 6	CL_##10	CL_## 30

DISTRICT_##23 COUNTY_##COLEMAN HWY NO._## FM 2131

LOCATION_##AT MILE POST 2 IN THE SOUTH BOUND LANE NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 05/27/83

TEXTURE LOCATION_##25 FEET NORTH OF MILE POST 2

OWP_##	3.15	3.15	3.00	3.10	AVERAGE_##	3.10
BWP_##	2.95	3.00	3.00	3.05	AVERAGE_##	3.00
IWP_##	3.40	3.40	3.50	3.45	AVERAGE_##	3.44

TEXTURE LOCATION_##AT MILE POST 2

OWP_##	3.00	3.05	3.05	3.05	AVERAGE_##	3.04
BWP_##	2.80	2.80	2.85	2.70	AVERAGE_##	2.79
IWP_##	3.35	3.40	3.30	3.30	AVERAGE_##	3.34

TEXTURE LOCATION_##25 FEET SOUTH OF MILE POST 2

OWP_##	3.40	3.40	3.40	3.40	AVERAGE_##	3.40
BWP_##	2.90	2.90	3.00	2.80	AVERAGE_##	2.90
IWP_##	3.40	3.40	3.20	3.35	AVERAGE_##	3.34

AGGREGATE RATE_## 1/134 DESIGN 1/145

SHOT QUANTITY AVG_## 0.396/WP DES.36/WP.349/OP.461 HI_## 0.429 LOW_## 0.373

ASPHALT GRADE/PROD_## HFRS/RIFFE,BROWNWOOD

AGGREGATE GRADE/PROD_## TY.B GR.4 MOD/WHITE'S MINES

DATE CONSTRUCTED_## 08/03/83 AVG DAILY TRAFFIC_## 225

EVALUATION DATE_## 5/28/84

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 8	OWP_##10	OWP_## 30-40
BWP_## 4	BWP_##10	BWP_## 30
CL_## 6	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##23 COUNTY_##BROWN HWY NO._## FM 2525

LOCATION_##AT MILE POST 2 IN THE WEST BOUND LANE NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 05/27/83

TEXTURE LOCATION_##25 FEET EAST OF MILE POST 2

OWP_##	3.20	3.20	3.20	3.20	AVERAGE_##	3.20
BWP_##	3.20	3.35	3.25	3.30	AVERAGE_##	3.28
IWP_##	3.00	3.00	3.00	2.95	AVERAGE_##	2.99

TEXTURE LOCATION_##AT MILE POST 2

OWP_##	2.90	3.10	3.10	3.10	AVERAGE_##	3.05
BWP_##	3.10	3.10	3.20	3.25	AVERAGE_##	3.16
IWP_##	2.70	2.80	2.80	2.80	AVERAGE_##	2.78

TEXTURE LOCATION_##25 FEET WEST OF MILE POST 2

OWP_##	3.10	3.20	3.00	3.10	AVERAGE_##	3.10
BWP_##	3.00	3.15	3.15	3.15	AVERAGE_##	3.11
IWP_##	3.60	3.60	3.70	3.70	AVERAGE_##	3.65

AGGREGATE RATE_## 1/174 DESIGN 1/170

SHOT QUANTITY AVG_## 0.339/WP DES.33/WP.299/OP.395 HI_## 0.387 LOW_## 0.299

ASPHALT GRADE/PROD_## HFRS/RIFFE,BROWNWOOD

AGGREGATE GRADE/PROD_## LT.WT.GR.5/FEATHERLITE,RANGER

DATE CONSTRUCTED_## 07/29/83 AVG DAILY TRAFFIC_## 350

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 40
BWP_##10	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 30

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##23 COUNTY_## SAN SABA HWY NO._## FM 45

LOCATION_## NBL NORTH OF SAN SABA NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/10/82

TEXTURE LOCATION_## AT END OF SECTION COMPLETED NBL

OWP_##	3.25	3.20	3.30	3.35	AVERAGE_##	3.28
BWP_##	2.75	2.75	2.70	2.70	AVERAGE_##	2.73
IWP_##	2.90	2.95	3.15	3.05	AVERAGE_##	3.01

TEXTURE LOCATION_## NBL

OWP_##	3.00	3.00	3.05	3.00	AVERAGE_##	3.01
BWP_##	2.55	2.45	2.50	2.45	AVERAGE_##	2.49
IWP_##	2.90	2.90	2.90	2.90	AVERAGE_##	2.90

TEXTURE LOCATION_## NBL

OWP_##	2.70	2.70	2.70	2.75	AVERAGE_##	2.71
BWP_##	2.55	2.40	2.45	2.50	AVERAGE_##	2.48
IWP_##	2.85	2.85	2.80	2.80	AVERAGE_##	2.83

AGGREGATE RATE_## 1/119 DESIGN 1/120

SHOT QUANTITY AVG_## 0.557 HI_## 0.625 LOW_## 0.455

ASPHALT GRADE/PROD_## HFRS/TEXAS EMULSIONS

AGGREGATE GRADE/PROD_## LT.WT.GR.4/RANGER

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 910

EVALUATION DATE_## 5/28/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 9	OWP_## 70-80
BWP_##10	BWP_##10	BWP_## 60
CL_##10	CL_##10	CL_## 50-60

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##23 COUNTY_## SAN SABA HWY NO._## FM 500

LOCATION_## NBL NW OF SAN SABA NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/10/82

TEXTURE LOCATION_## TAKEN @ END OF SECTION NBL

OWP_##	2.75	2.85	2.85	2.75	AVERAGE_##	2.80
BWP_##	2.30	2.25	2.25	2.25	AVERAGE_##	2.26
IWP_##	2.80	2.80	2.80	2.85	AVERAGE_##	2.81

TEXTURE LOCATION_## NBL

OWP_##	2.60	2.65	2.70	2.65	AVERAGE_##	2.65
BWP_##	2.50	2.50	2.50	2.45	AVERAGE_##	2.49
IWP_##	2.60	2.60	2.65	2.65	AVERAGE_##	2.63

TEXTURE LOCATION_## NBL

OWP_##	2.80	2.80	2.80	2.75	AVERAGE_##	2.79
BWP_##	2.95	3.05	3.00	3.05	AVERAGE_##	3.01
IWP_##	2.40	2.35	2.30	2.30	AVERAGE_##	2.34

AGGREGATE RATE_## 1/123 DESIGN 1/278

SHOT QUANTITY AVG_## 0.352 HI_## 0.425 LOW_## 0.244

ASPHALT GRADE/PROD_## HFRS

AGGREGATE GRADE/PROD_## GR.5 MOD/BARRON CORP

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 470

EVALUATION DATE_## 5/28/84

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 40
BWP_## 8	BWP_##10	BWP_## 30
CL_## 9	CL_##10	CL_## 30-40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##23 COUNTY_## EASTLAND HWY NO._## FM 569

LOCATION_## 1 MI NORTH OF SH 206 SBL N OF PIONEER NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/11/82

TEXTURE LOCATION_## SBL NORTH OF PIONEER

OWP_##	2.70	2.80	2.80	2.80	AVERAGE_##	2.78
BWP_##	2.55	2.55	2.60	2.60	AVERAGE_##	2.58
IWP_##	2.80	2.80	2.80	2.80	AVERAGE_##	2.80

TEXTURE LOCATION_## SBL

OWP_##	2.80	2.90	2.80	2.80	AVERAGE_##	2.83
BWP_##	2.60	2.55	2.55	2.50	AVERAGE_##	2.55
IWP_##	2.70	2.65	2.70	2.70	AVERAGE_##	2.69

TEXTURE LOCATION_## SBL

OWP_##	2.90	2.80	2.85	2.85	AVERAGE_##	2.85
BWP_##	2.40	2.35	2.40	2.40	AVERAGE_##	2.39
IWP_##	2.60	2.65	2.65	2.55	AVERAGE_##	2.61

AGGREGATE RATE_## 1/234 DESIGN 1/252

SHOT QUANTITY AVG_## 0.249 HI_## 0.268 LOW_## 0.209

ASPHALT GRADE/PROD_## AC-3/COSDEN

AGGREGATE GRADE/PROD_## GR.5 MOD/WHITE'S MINES

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 700

EVALUATION DATE_## 5/28/84

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 4	OWP_## 80-90
BWP_##10	BWP_## 4	BWP_## 80
CL_##10	CL_## 4	CL_## 90

****

EVALUATION DATE_## 5/10/83

OVERALL VISUAL RETENTION_## 6

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 85
BWP_##10	BWP_##10	BWP_## 75
CL_##10	CL_## 6	CL_## 90-95

DISTRICT_##23 COUNTY_##LAMPASAS HWY NO._## FM 581

LOCATION_##AT MILE POST 12 IN THE NORTH BOUND LANE NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 05/27/83

TEXTURE LOCATION_##25 FEET SOUTH OF MILE POST 12

OWP_##	2.70	2.70	2.70	2.70	AVERAGE_##	2.70
BWP_##	2.50	2.55	2.50	2.60	AVERAGE_##	2.54
IWP_##	3.15	3.10	3.10	3.15	AVERAGE_##	3.13

TEXTURE LOCATION_##AT MILE POST 12

OWP_##	3.15	3.15	3.15	3.25	AVERAGE_##	3.18
BWP_##	2.60	2.80	2.80	2.70	AVERAGE_##	2.73
IWP_##	3.30	3.25	3.30	3.30	AVERAGE_##	3.29

TEXTURE LOCATION_##25 FEET NORTH OF MILE POST 12

OWP_##	2.85	2.90	2.80	2.80	AVERAGE_##	2.84
BWP_##	2.90	2.90	2.90	2.90	AVERAGE_##	2.90
IWP_##	3.00	3.05	3.00	2.90	AVERAGE_##	2.99

AGGREGATE RATE_## 1/175 DESIGN 1/170

SHOT QUANTITY AVG_## 0.319/WP DES.30/WP.281/OP.372 HI_## 0.351 LOW_## 0.298

ASPHALT GRADE/PROD_## HFRS/RIFFE,BROWNWOOD

AGGREGATE GRADE/PROD_## TY.B GR 5A/WHITE'S MINES

DATE CONSTRUCTED_## 08/16/83 AVG DAILY TRAFFIC_## 150

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_##10	BWP_##10	BWP_## 50-60
CL_##10	CL_##10	CL_## 50

****

EVALUATION DATE_## 1/11/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 45
BWP_## 9	BWP_##10	BWP_## 30
CL_##10	CL_##10	CL_## 40

DISTRICT_##23 COUNTY_## COMANCHE HWY NO._## SH 16

LOCATION_## NBL NORTH OF DE LEON @ MP8 NUMBER OF EVALUATIONS_## 4

TEXTURE READING DATE_## 08/11/82

TEXTURE LOCATION_## NBL NORTH OF DE LEON

OWP_##	3.55	3.60	3.40	3.55	AVERAGE_##	3.53
BWP_##	3.20	3.30	3.25	3.30	AVERAGE_##	3.26
IWP_##	3.05	3.10	3.10	3.00	AVERAGE_##	3.06

TEXTURE LOCATION_## NBL

OWP_##	2.75	2.80	2.95	2.85	AVERAGE_##	2.81
BWP_##	3.40	3.35	3.25	3.35	AVERAGE_##	3.34
IWP_##	3.35	3.40	3.40	3.35	AVERAGE_##	3.38

TEXTURE LOCATION_## NBL

OWP_##	3.60	3.60	3.60	3.65	AVERAGE_##	3.61
BWP_##	3.15	2.95	3.05	3.05	AVERAGE_##	3.05
IWP_##	3.25	3.15	3.20	3.20	AVERAGE_##	3.20

AGGREGATE RATE_## 1/119

SHOT QUANTITY AVG_## 0.420 HI_## 0.641 LOW_## 0.284

ASPHALT GRADE/PROD_## HFRS/TEXAS EMULSIONS

AGGREGATE GRADE/PROD_## LT.WT.GR.4/RANGER

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 530

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_##10	BWP_##10	BWP_## 50
CL_##10	CL_##10	CL_## 40

****

EVALUATION DATE_## 5/10/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 9	OWP_## 45
BWP_##10	BWP_##10	BWP_## 40
CL_##10	CL_##10	CL_## 50

DISTRICT_##23 COUNTY_## COMANCHE HWY NO._## SH 36

LOCATION_## WBL SO OF CHUCKSVILLE @ MP2 NUMBER OF EVALUATIONS_## 2

TEXTURE READING DATE_## 08/11/82

TEXTURE LOCATION_## WBL SOUTH OF CHUCKSVILLE

OWP_##	3.50	3.50	3.50	3.60	AVERAGE_##	3.53
BWP_##	3.80	3.75	3.80	3.90	AVERAGE_##	3.81
IWP_##	3.80	3.75	3.80	3.90	AVERAGE_##	3.81

TEXTURE LOCATION_## WBL

OWP_##	3.60	3.55	3.55	3.55	AVERAGE_##	3.56
BWP_##	3.80	3.85	3.90	3.85	AVERAGE_##	3.85
IWP_##	3.80	3.80	3.75	3.80	AVERAGE_##	3.79

TEXTURE LOCATION_## WBL

OWP_##	3.70	3.65	3.75	3.85	AVERAGE_##	3.74
BWP_##	3.80	3.80	3.85	3.85	AVERAGE_##	3.83
IWP_##	3.80	3.70	3.65	3.75	AVERAGE_##	3.73

AGGREGATE RATE_## 1/141

SHOT QUANTITY AVG_## 0.406 HI_## 0.438 LOW_## 0.359

ASPHALT GRADE/PROD_## HFRS

AGGREGATE GRADE/PROD_## LT.WT.GR4/RANGER

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 1430

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 8	OWP_## 90
BWP_##10	BWP_##10	BWP_## 60
CL_## 9	CL_##10	CL_## 50

****

EVALUATION DATE_## 5/10/83

OVERALL VISUAL RETENTION_##10

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 9	OWP_## 50
BWP_##10	BWP_##10	BWP_## 40
CL_##10	CL_##10	CL_## 40

DISTRICT_##23 COUNTY_## McCULLOCH HWY NO._## US 190

LOCATION_## TAKEN @ END OF COMPLETED SECTION EBL NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/10/82

TEXTURE LOCATION_## EBL NE OF BRADY

OWP_##	2.50	2.35	2.30	2.35	AVERAGE_##	2.38
BWP_##	2.35	2.25	2.40	2.40	AVERAGE_##	2.35
IWP_##	2.65	2.50	2.65	2.60	AVERAGE_##	2.60

TEXTURE LOCATION_## EBL

OWP_##	2.50	2.55	2.55	2.70	AVERAGE_##	2.58
BWP_##	2.60	2.45	2.50	2.40	AVERAGE_##	2.49
IWP_##	2.45	2.50	2.60	2.45	AVERAGE_##	2.50

TEXTURE LOCATION_## EBL

OWP_##	2.40	2.40	2.40	2.35	AVERAGE_##	2.39
BWP_##	2.50	2.40	2.35	2.50	AVERAGE_##	2.44
IWP_##	2.60	2.60	2.65	2.55	AVERAGE_##	2.60

AGGREGATE RATE_## 1/150 DESIGN 1/191

SHOT QUANTITY AVG_## 0.326 HI_## 0.379 LOW_## 0.300

ASPHALT GRADE/PROD_## HFRS

AGGREGATE GRADE/PROD_## GR.4 MOD/WHITE'S MINES

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 400

EVALUATION DATE_## 5/28/84

OVERALL VISUAL RETENTION_## 8

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_## 9	OWP_## 50-70
BWP_##10	BWP_##10	BWP_## 60
CL_## 8	CL_##10	CL_## 50-60

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##23 COUNTY_## McCULLOCH HWY NO._## US 190

LOCATION_## TAKEN @ END OF COMPLETED SECTION EBL NUMBER OF EVALUATIONS_## 1

TEXTURE READING DATE_## 08/10/82

TEXTURE LOCATION_## EBL SOUTHWEST OF BRADY

OWP_##	3.25	3.20	3.25	3.20	AVERAGE_##	3.23
BWP_##	2.75	2.80	2.65	2.85	AVERAGE_##	2.76
IWP_##	3.20	3.20	3.30	3.20	AVERAGE_##	3.23

TEXTURE LOCATION_## EBL

OWP_##	3.45	3.45	3.45	3.40	AVERAGE_##	3.44
BWP_##	2.70	2.80	2.70	2.75	AVERAGE_##	2.74
IWP_##	3.20	3.20	3.20	3.25	AVERAGE_##	3.21

TEXTURE LOCATION_## EBL

OWP_##	3.55	3.55	3.50	3.50	AVERAGE_##	3.53
BWP_##	2.85	2.85	2.85	2.90	AVERAGE_##	2.86
IWP_##	2.90	2.95	2.95	2.90	AVERAGE_##	2.93

AGGREGATE RATE_##1/120

SHOT QUANTITY AVG_## 0.529 HI_## 0.643 LOW_## 0.434

ASPHALT GRADE/PROD_## HFRS/TEXAS EMULSIONS

AGGREGATE GRADE/PROD_## LT.WT.GR.4/FEATHERLITE RANGER

DATE CONSTRUCTED_## 09/ /82 AVG DAILY TRAFFIC_## 800

EVALUATION DATE_## 5/28/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_##10	BWP_##10	BWP_## 50
CL_##10	CL_##10	CL_## 40

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

DISTRICT_##23 COUNTY_## COLEMAN HWY NO._## US84 67

LOCATION_## AT MILE POST 4 IN THE EB TRAVEL LANE NUMBER OF EVALUATIONS_##

TEXTURE READING DATE_## 05/27/83

TEXTURE LOCATION_## 25 FT WEST OF MILE POST 4

OWP_##	3.30	3.30	3.30	3.30	AVERAGE_##	3.30
BWP_##	2.85	2.90	2.90	2.90	AVERAGE_##	2.89
IWP_##	3.35	3.35	3.34	3.35	AVERAGE_##	3.35

TEXTURE LOCATION_## AT MILE POST 4

OWP_##	3.55	3.60	3.60	3.60	AVERAGE_##	3.59
BWP_##	3.05	3.15	3.05	3.00	AVERAGE_##	3.06
IWP_##	3.30	3.15	3.15	3.15	AVERAGE_##	3.19

TEXTURE LOCATION_## 25 FT EAST OF MILE POST 4

OWP_##	3.75	3.85	3.90	4.00	AVERAGE_##	3.88
BWP_##	3.10	3.20	3.20	3.10	AVERAGE_##	3.15
IWP_##	3.50	3.50	3.60	3.50	AVERAGE_##	3.53

AGGREGATE RATE_## 1/124 DES 1/125

SHOT QUANTITY AVG_## 0.397/WP DES.36/WP.343/OP.454 HI_## 0.421 LOW_## 0.377

ASPHALT GRADE/PROD_## HFRS/RIFFE PET, BROWNWOOD

AGGREGATE GRADE/PROD_## LT.WT.GR4./FEATHERLITE.RANGER

DATE CONSTRUCTED_## 08/13/83 AVG DAILY TRAFFIC_## 1170

EVALUATION DATE_## 5/29/84

OVERALL VISUAL RETENTION_## 9

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_##10	OWP_##10	OWP_## 60
BWP_## 9	BWP_##10	BWP_## 50
CL_##10	CL_##10	CL_## 40-50

****

EVALUATION DATE_##

OVERALL VISUAL RETENTION_## 0

AGGREGATE RETENTION	BLEEDING	EMBEDMENT DEPTH
OWP_## 0	OWP_## 0	OWP_##
BWP_## 0	BWP_## 0	BWP_##
CL_## 0	CL_## 0	CL_##

APPENDIX D

SEAL COAT DESIGN METHOD

Laboratory Tests

Dry Loose Unit Weight. The dry loose unit weight determination shall be made in accordance with Tex-404-A (ASTM C29 shoveling method) except that the aggregate shall be tested in an oven-dry condition.

Bulk Specific Gravity. The bulk specific gravity shall be made in accordance with Tex-403-A (ASTM C127) for all natural aggregate and by the test method Tex 433-A (Appendix E) for synthetic aggregates.

Board Test. Place a sufficient quantity of aggregate on a board of known area such that full coverage one stone in depth is obtained. A one-half square yard area is a convenient laboratory size. The weight of the aggregates applied in this area is obtained and converted to units of pounds per square yard. Good lighting is recommended and care should be taken to place the aggregate only one stone deep.

Calculations

The quantity of aggregate expressed in terms of square yards of road surface that can be covered with a cubic yard of aggregate and the quantity of asphalt in gallons per square yard can be found as described below:

Aggregate Quantity

$$S = \frac{27W}{Q}$$

$$A = 5.61E \left(1 - \frac{W}{62.4G}\right) (T) + V$$

where:

S = Quantity of aggregate required, sq. yds. per cu. yd.

W = Dry loose unit weight, lbs. per cu. ft.

Q = Aggregate quantity determined from board test, lbs. per sq. yd.

A = Asphalt quantity, gallons per sq. yd. @ $60^{o}F$

E = Embedment depth obtained from Figure D-1 as follows:

$$E = ed$$

where:

e = Aggregate embedment, percent (Figure D-1)

d = Average map depth, inches

$$= \frac{1.33Q}{W}$$

G = Dry bulk specific gravity of aggregate

T = Traffic correction factor obtained from Table D-1

V = Correction of surface condition obtained from Table D-2

5.61 = (7.48) (9/12), or conversion factor

Note: Asphalt quantities calculated by these methods are for asphalt cement. Appropriate corrections must be made where a cutback or an emulsion is used as illustrated in the examples given below.

Sample Calculations

Given:

(W) Dry loose unit weight of aggregate = 52.4 lbs/cu.ft.

(G) Dry bulk specific gravity of aggregate = 1.57

(Q) Quantity of aggregate (board test) = 9.7 lbs./sq.yd.

Traffic = 700 vehicles per day per lane

Roadway Surface Condition + slightly pocked, porous, oxidized

Quantity of Aggregate

$$S = \frac{27W}{Q} = \frac{27(52.4)}{97} = 146 \text{ sq. yds.}$$ (square yards of roadway surface per 1 cubic yard of aggregate)

Quantity of Asphalt

$$A = 5.61E \left(1 - \frac{W}{62.4G}\right) (T) + V$$

$$d = \frac{1.33Q}{W} = \frac{1.33(9.7)}{52.4} = .246 \text{ inches}$$

e = 40 percent from Figure D-1

E = ed = .40(.246) = 0.0985 inches

T = 1.05 from Table D-1

V = +0.03 from Table D-2

$$A = 5.61 (0.0985) \left(1 - \frac{52.4}{62.4(1.57)}\right) (1.05) + 0.03$$

A = 0.30 gallons of asphalt per square yard of roadway surface

If an emulsion or cutback is to be used, the quantity to be utilized must be corrected for the amount of volatiles present in the asphalt material. The approximate amount of volatiles present in those cutbacks recommended for use in seal coats is shown on Table D-3. For example, the seal coat design method suggests that 0.30 gallons per square yard of residual asphalt cement is required.

Theoretically the amount of RC-250 to be placed on the pavement is

$$\frac{0.30}{.75} = 0.40 \text{ gallons per square yard}$$

However, field experience indicates that bleeding is likely if the theoretical amount is utilized. Thus, it is recommended that the calculated theoretical value be reduced and the method described below be utilized to calculate the amount of cutback to be used.

$$A_{recommended} = A + K\ (A_{theoretical} - A)$$

where:

$A_{recommended}$ = recommended quantity of cutback or emulsified asphalt to be used in field

A = residual quantity of asphalt obtained from the design method given above

$A_{theoretical}$ = theoretical quantity of cutback or emulsified asphalt obtained by dividing A by the quantity of residual asphalt in the cutback (Table D-3) or emulsion and as described above.

K = correction factor based on field experience

It should be noted that correction factors (K) have not been verified for cutbacks by carefully controlled field experiments and therefore should be used as guidelines only: Suggested K factors for cutbacks are as follows:

K = 0.70 for spring construction

K = 0.60 for summer construction

K = 0.80 for fall construction

K = 0.90 for winter construction

If the RC-250 is to be placed in the fall, the quantity to be used is

$$A_{recommended} = 0.30 + 0.80 \left(\frac{0.30}{0.75} - 0.30\right)$$

$A_{recommended}$ = 0.38 gallons of RC-250 per square yard of roadway surface

Field trail sections placed in Texas and reported in reference 4 suggest that reduced quantities of emulsion (as compared to the theoretical value calculated) can be utilized successfully. Thus, it is recommended that the calculated theoretical value be reduced and the method outlined above be utilized.

It should be noted that corrective factors (K) have not been verified by extensive controlled field experiments and therefore should be used as guidelines only. Suggested K factors for emulsions are as follows:

K = 0.60 for spring construction

K = 0.40 for summer construction

K = 0.70 for fall construction

K = 0.90 for winter construction

Assuming that the design method suggests that 0.30 gallons per square yard is required, the amount of an RS-2H emulsion that contains 70 percent residual asphalt that should be used in the summer is

$$A_{recommended} = 0.30 + 0.40 \left(\frac{0.30}{0.70} - 0.30\right)$$

$A_{recommended}$ = 0.35 gallons of EA-CRS-2h emulsion per square yard of roadway surface.

It should be noted that the quantity of asphalt to be sprayed from the asphalt distributor must be corrected for temperature in order

that the proper quantity will be retained on the roadway as measured at 60°F. If the design quantity of asphalt cement was 0.30 and the spray temperature was 340°F, the temperature correction factor would be 0.9057 (D-4). Thus, $\frac{0.30}{0.9057}$ or 0.33 gallons of asphalt cement per square yard would be sprayed at 340°F in order to have 0.30 gallons per square yard on a 60°F surface. Temperature correction factors for asphalt cement are shown in Table D-4, for cutbacks in Table D-5 and for emulsions in Table D-6.

Environmental Considerations

Experience shows that the ideal environment for the construction of seal coats is hot, dry weather with no rain for the next several days. Thus, the two most important environmental factors are temperature and moisture. Wind velocity is also a factor to be considered.

Both road surface and atmospheric temperatures are important because they influence how well the cover aggregate can be embeded in the binder and then how soon the roadway can be reopened to traffic. Soon after the asphalt is shot, its temperature will approach that of the roadway surface temperature. At this temperature the asphalt will be much more viscous (thicker) than at the spraying temperature. If the road surface is cool, the binder may become so viscour (depending on the type and grade of asphalt) that it will become nearly impossible to obtain adequate adhesion between the aggregate and asphalt and proper aggregate embedment during the rolling operation. The net result will be aggregate loss when the roadway is opened to

traffic. Aggregate loss may also cause windshield damage and even result in loss of friction. On the other hand, if the road surface temperature is too high and the asphalt is low in viscosity a longer time will be required to cool the mat to the point where traffic will no longer dislodge the aggregate particles. During hot, sunny weather, the most critical time of day to reopen a new seal coat job to traffic is between midday and late afternoon when the pavement surface temperature is highest. This problem will be most serious when dark colored aggregates are used and the area is one of the high solar flux.

Asphalt emulsions have relatively low viscosities at low temperature as compared to asphalt cement. This physical feature of emulsions allows this asphalt material to satisfactorily adhere to the aggregate and to obtain adequate embedment at lower road surface temperatures.

Wet aggregates will not adhere to asphalt cements. However, wet aggregates can be used with asphalt cements provided the water evaporated from the aggregate surface and adequate adhesion is obtained prior to finish rolling and opening to traffic. If wet aggregates and asphalt cements are to be used successfully, they should be used on hot, low humidity days. Wind will speed aggregate drying and thus promote adhesion. Similar reasons dictate that asphalt cement should not be sprayed on top of a wet pavement surface.

The problems with moisture are reduced considerably if cationic asphalt emulsions are used. If properly compounded and used, such emulsions tend to displace surface water and allow the binder to make direct contact with the aggregate surface. However, an excess of

moisture may slow the emulsion break and the evaporation of the separated water which may still present problems.

Wind speed is also a consideration. A light breeze may help evaporate moisture (or the solvent from cutbacks). High winds may distort the distributor spray pattern making it impossible to obtain uniform asphalt coverage. Also, in some areas the dust carried by high winds will have detrimental effects.

Specific limits for the environmental conditions prevailing during construction are given in Table D-7. If these limits are carefully observed the chance of successfully placing a seal coat is greatly improved.

Aggregate Embedment

The seal coat design method, the construction operations and considerations for climatic conditions should be aimed at providing adhesion between the asphalt binder and the aggregate and proper embedment of the aggregate into the asphalt film. Improper adhesion and/or inadequate embedment depth will result in loss of coverstone aggregate. Suggested percent embedment depths during the life of seal coats are listed below:

immediately after construction	30 ± 10%
start of cool weather (first year)	35 ± 10%
start of cold weather (first year)	45 ± 10%
after two years of service	70 ± 10%

For low traffic facilities aggregate embedment immediately after construction should be in the range of 30 to 40 percent while 20 to 30 percent embedment is the preferred range for high traffic volume facilities.

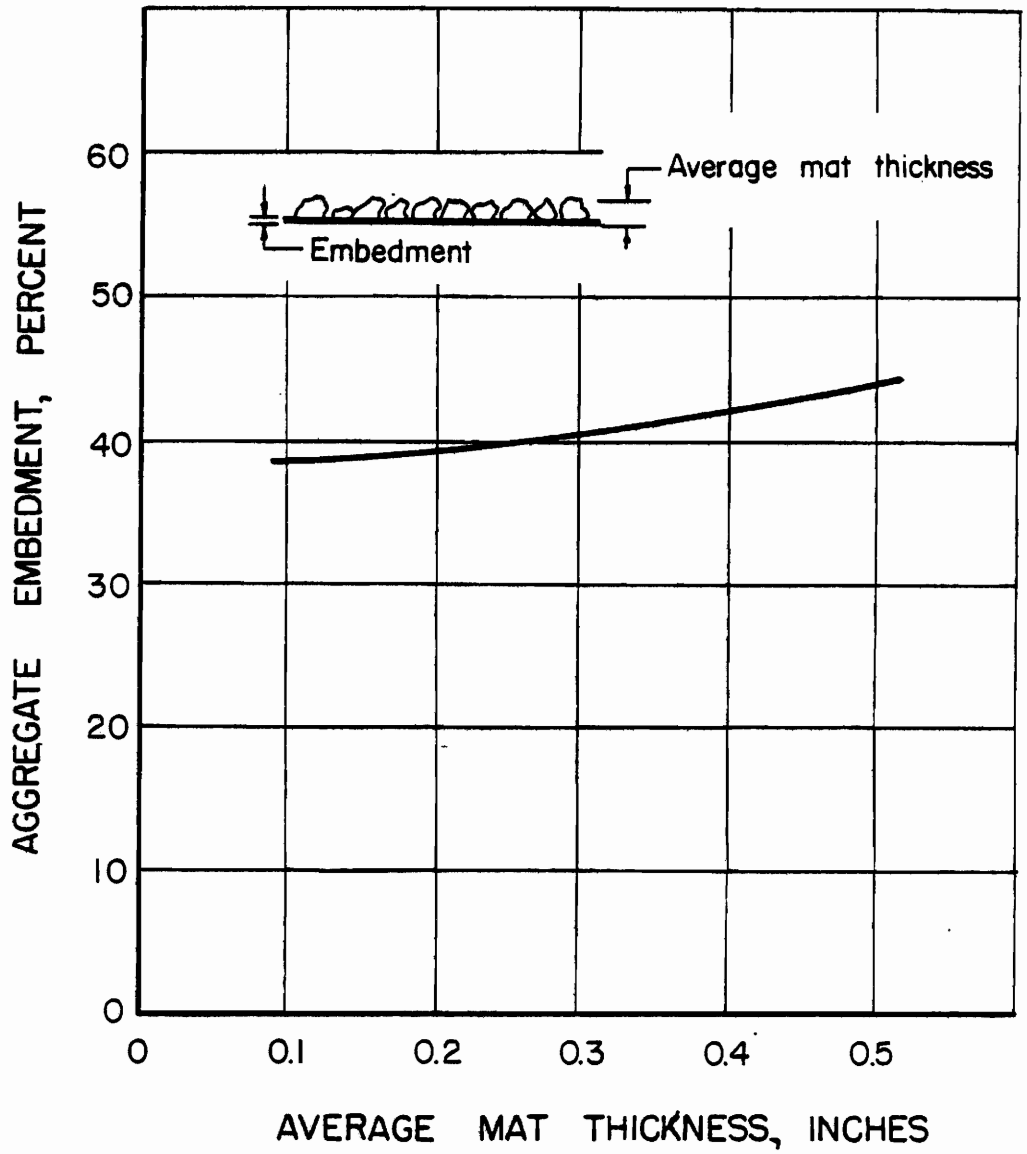

Figure D-1. Relation of Percent Embedment to Average Mat Thickness for Determining Quantity of Asphalt for Lightweight Aggregate Seals.

Table D-1. Asphalt Application Rate - Correction Due to Traffic.

	Traffic - Vehicles Per Day Per Lane				
	over 1,000	500 to 1,000	250 to 500	100 to 250	Under 100
Traffic Factor (T)	1.00	1.05	1.10	1.15	1.20

Table D-2. Asphalt Application Rate Correction Due to Existing Pavement Surface Condition.

Description of Existing Surface	Asphalt Quantity Correction gal/sq. yd.
Flushed asphalt surface	-0.06
Smooth, nonporous surface	-0.03
Slightly porous, slightly oxidized surface	0.00
Slightly pocked, porous, oxidized surface	+0.03
Badly pocked, porous, oxidized surface	+0.06

Table D-3. Approximate Quantity of Cutter Stock in Cutbacks Commonly Used for Seal Coat Operations.

Type of Grade Of Cutback	Approximate Quantity of Cutter Stock, percent	
	by weight	by volume
RC-2	18	23
RC-250	18	23
RC-3	11	14
RC-4	8	12
RC-5	6	9
MC-800	11	14
MC-3000	6	8

Table D-4. Temperature-Volume Corrections for Asphalt Contents.*

t	M	t	M	t	M	t	M	t	M
0	1.0211	50	1.0035	100	0.9861	150	0.9689	200	0.9520
1	1.0208	51	1.0031	101	0.9857	151	0.9686	201	0.9516
2	1.0204	52	1.0028	102	0.9854	152	0.9682	202	0.9513
3	1.0201	53	1.0024	103	0.9851	153	0.9679	203	0.9509
4	1.0197	54	1.0021	104	0.9847	154	0.9675	204	0.9506
5	1.0194	55	1.0017	105	0.9844	155	0.9672	205	0.9503
6	1.0190	56	1.0014	106	0.9840	156	0.9669	206	0.9499
7	1.0186	57	1.0010	107	0.9837	157	0.9665	207	0.9496
8	1.0183	58	1.0007	108	0.9833	158	0.9662	208	0.9493
9	1.0179	59	1.0003	109	0.9830	159	0.9658	209	0.9489
10	1.0176	60	1.0000	110	0.9826	160	0.9655	210	0.9486
11	1.0172	61	0.9997	111	0.9823	161	0.9652	211	0.9483
12	1.0169	62	0.9993	112	0.9819	162	0.9648	212	0.9479
13	1.0165	63	0.9990	113	0.9816	163	0.9645	213	0.9476
14	1.0162	64	0.9986	114	0.9813	164	0.9641	214	0.9472
15	1.0158	65	0.9983	115	0.9809	165	0.9638	215	0.9469
16	1.0155	66	0.9979	116	0.9806	166	0.9635	216	0.9466
17	1.0151	67	0.9976	117	0.9802	167	0.9631	217	0.9462
18	1.0148	68	0.9972	118	0.9799	168	0.9628	218	0.9459
19	1.0144	69	0.9969	119	0.9795	169	0.9624	219	0.9456
20	1.0141	70	0.9965	120	0.9792	170	0.9621	220	0.9452
21	1.0137	71	0.9962	121	0.9788	171	0.9618	221	0.9449
22	1.0133	72	0.9958	122	0.9785	172	0.9614	222	0.9446
23	1.0130	73	0.9955	123	0.9782	173	0.9611	223	0.9442
24	1.0126	74	0.9951	124	0.9778	174	0.9607	224	0.9439
25	1.0123	75	0.9948	125	0.9775	175	0.9604	225	0.9436
26	1.0119	76	0.9944	126	0.9771	176	0.9601	226	0.9432
27	1.0116	77	0.9941	127	0.9768	177	0.9597	227	0.9429
28	1.0112	78	0.9937	128	0.9764	178	0.9594	228	0.9426
29	1.0109	79	0.9934	129	0.9761	179	0.9590	229	0.9422
30	1.0105	80	0.9930	130	0.9758	180	0.9587	230	0.9419
31	1.0102	81	0.9927	131	0.9754	181	0.9584	231	0.9416
32	1.0098	82	0.9923	132	0.9751	182	0.9580	232	0.9412
33	1.0095	83	0.9920	133	0.9747	183	0.9577	233	0.9409
34	1.0091	84	0.9916	134	0.9744	184	0.9574	234	0.9405
35	1.0088	85	0.9913	135	0.9740	185	0.9570	235	0.9402
36	1.0084	86	0.9909	136	0.9737	186	0.9567	236	0.9399
37	1.0081	87	0.9906	137	0.9734	187	0.9563	237	0.9395
38	1.0077	88	0.9902	138	0.9730	188	0.9560	238	0.9392
39	1.0074	89	0.9899	139	0.9727	189	0.9557	239	0.9389
40	1.0070	90	0.9896	140	0.9723	190	0.9553	240	0.9385
41	1.0067	91	0.9892	141	0.9720	191	0.9550	241	0.9382
42	1.0063	92	0.9889	142	0.9716	192	0.9547	242	0.9379
43	1.0060	93	0.9885	143	0.9713	193	0.9543	243	0.9375
44	1.0056	94	0.9882	144	0.9710	194	0.9540	244	0.9372
45	1.0053	95	0.9878	145	0.9706	195	0.9536	245	0.9369
46	1.0049	96	0.9875	146	0.9703	196	0.9533	246	0.9365
47	1.0046	97	0.9871	147	0.9699	197	0.9530	247	0.9362
48	1.0042	98	0.9868	148	0.9696	198	0.9526	248	0.9359
49	1.0038	99	0.9864	149	0.9693	199	0.9523	249	0.9356

t	M	t	M	t	M	t	M	t	M
250	0.9352	300	0.9187	350	0.9024	400	0.8864	450	0.8705
251	0.9349	301	0.9184	351	0.9021	401	0.8861	451	0.8702
252	0.9346	302	0.9181	352	0.9018	402	0.8857	452	0.8699
253	0.9342	303	0.9177	353	0.9015	403	0.8854	453	0.8696
254	0.9339	304	0.9174	354	0.9011	404	0.8851	454	0.8693
255	0.9336	305	0.9171	355	0.9008	405	0.8848	455	0.8690
256	0.9332	306	0.9167	356	0.9005	406	0.8845	456	0.8687
257	0.9329	307	0.9164	357	0.9002	407	0.8841	457	0.8683
258	0.9326	308	0.9161	358	0.8998	408	0.8838	458	0.8680
259	0.9322	309	0.9158	359	0.8995	409	0.8835	459	0.8677
260	0.9319	310	0.9154	360	0.8992	410	0.8832	460	0.8674
261	0.9316	311	0.9151	361	0.8989	411	0.8829	461	0.8671
262	0.9312	312	0.9148	362	0.8986	412	0.8826	462	0.8668
263	0.9309	313	0.9145	363	0.8982	413	0.8822	463	0.8665
264	0.9306	314	0.9141	364	0.8979	414	0.8819	464	0.8661
265	0.9302	315	0.9138	365	0.8976	415	0.8816	465	0.8658
266	0.9299	316	0.9135	366	0.8973	416	0.8813	466	0.8655
267	0.9296	317	0.9132	367	0.8969	417	0.8810	467	0.8652
268	0.9293	318	0.9128	368	0.8966	418	0.8806	468	0.8649
269	0.9289	319	0.9125	369	0.8963	419	0.8803	469	0.8646
270	0.9286	320	0.9122	370	0.8960	420	0.8800	470	0.8643
271	0.9283	321	0.9118	371	0.8957	421	0.8797	471	0.8640
272	0.9279	322	0.9115	372	0.8953	422	0.8794	472	0.8636
273	0.9276	323	0.9112	373	0.8950	423	0.8791	473	0.8633
274	0.9273	324	0.9109	374	0.8947	424	0.8787	474	0.8630
275	0.9269	325	0.9105	375	0.8944	425	0.8784	475	0.8627
276	0.9266	326	0.9102	376	0.8941	426	0.8781	476	0.8624
277	0.9263	327	0.9099	377	0.8937	427	0.8778	477	0.8621
278	0.9259	328	0.9096	378	0.8934	428	0.8775	478	0.8618
279	0.9256	329	0.9092	379	0.8931	429	0.8772	479	0.8615
280	0.9253	330	0.9089	380	0.8928	430	0.8768	480	0.8611
281	0.9250	331	0.9086	381	0.8924	431	0.8765	481	0.8608
282	0.9246	332	0.9083	382	0.8921	432	0.8762	482	0.8605
283	0.9243	333	0.9079	383	0.8918	433	0.8759	483	0.8602
284	0.9240	334	0.9076	384	0.8915	434	0.8756	484	0.8599
285	0.9236	335	0.9073	385	0.8912	435	0.8753	485	0.8596
286	0.9233	336	0.9070	386	0.8908	436	0.8749	486	0.8593
287	0.9230	337	0.9066	387	0.8905	437	0.8746	487	0.8590
288	0.9227	338	0.9063	388	0.8902	438	0.8743	488	0.8587
289	0.9223	339	0.9060	389	0.8899	439	0.8740	489	0.8583
290	0.9220	340	0.9057	390	0.8896	440	0.8737	490	0.8580
291	0.9217	341	0.9053	391	0.8892	441	0.8734	491	0.8577
292	0.9213	342	0.9050	392	0.8889	442	0.8731	492	0.8574
293	0.9210	343	0.9047	393	0.8886	443	0.8727	493	0.8571
294	0.9207	344	0.9044	394	0.8883	444	0.8724	494	0.8568
295	0.9204	345	0.9040	395	0.8880	445	0.8721	495	0.8565
296	0.9200	346	0.9037	396	0.8876	446	0.8718	496	0.8562
297	0.9197	347	0.9034	397	0.8873	447	0.8715	497	0.8559
298	0.9194	348	0.9031	398	0.8870	448	0.8712	498	0.8556
299	0.9190	349	0.9028	399	0.8867	449	0.8709	499	0.8552

*Specific gravity of materials at 60°F above 0.966.

t = Observed temperature in degrees Fahrenheit.

M = Multiplier for correcting oil volumes to the basis of 60°F.

Table D-5. Temperature-Volume Correction for Cutback Asphalts.*

t	M	t	M	t	M	t	M	t	M
0	1.0241	50	1.0040	100	0.9842	150	0.9647	200	0.9456
1	1.0237	51	1.0036	101	0.9838	151	0.9643	201	0.9452
2	1.0233	52	1.0032	102	0.9834	152	0.9639	202	0.9448
3	1.0229	53	1.0028	103	0.9830	153	0.9635	203	0.9444
4	1.0225	54	1.0024	104	0.9826	154	0.9632	204	0.9441
5	1.0221	55	1.0020	105	0.9822	155	0.9628	205	0.9437
6	1.0217	56	1.0016	106	0.9818	156	0.9624	206	0.9433
7	1.0213	57	1.0012	107	0.9814	157	0.9620	207	0.9429
8	1.0209	58	1.0008	108	0.9810	158	0.9616	208	0.9425
9	1.0205	59	1.0004	109	0.9806	159	0.9612	209	0.9422
10	1.0201	60	1.0000	110	0.9803	160	0.9609	210	0.9418
11	1.0197	61	0.9996	111	0.9799	161	0.9605	211	0.9414
12	1.0193	62	0.9992	112	0.9795	162	0.9601	212	0.9410
13	1.0189	63	0.9988	113	0.9791	163	0.9597	213	0.9407
14	1.0185	64	0.9984	114	0.9787	164	0.9593	214	0.9403
15	1.0181	65	0.9980	115	0.9783	165	0.9589	215	0.9399
16	1.0177	66	0.9976	116	0.9779	166	0.9585	216	0.9395
17	1.0173	67	0.9972	117	0.9775	167	0.9582	217	0.9391
18	1.0168	68	0.9968	118	0.9771	168	0.9578	218	0.9388
19	1.0164	69	0.9964	119	0.9767	169	0.9574	219	0.9384
20	1.0160	70	0.9960	120	0.9763	170	0.9570	220	0.9380
21	1.0156	71	0.9956	121	0.9760	171	0.9566	221	0.9376
22	1.0152	72	0.9952	122	0.9756	172	0.9562	222	0.9373
23	1.0148	73	0.9948	123	0.9752	173	0.9559	223	0.9369
24	1.0144	74	0.9944	124	0.9748	174	0.9555	224	0.9365
25	1.0140	75	0.9940	125	0.9744	175	0.9551	225	0.9361
26	1.0136	76	0.9936	126	0.9740	176	0.9547	226	0.9358
27	1.0132	77	0.9932	127	0.9736	177	0.9543	227	0.9354
28	1.0128	78	0.9929	128	0.9732	178	0.9539	228	0.9350
29	1.0124	79	0.9925	129	0.9728	179	0.9536	229	0.9346
30	1.0120	80	0.9921	130	0.9725	180	0.9532	230	0.9343
31	1.0116	81	0.9917	131	0.9721	181	0.9528	231	0.9339
32	1.0112	82	0.9913	132	0.9717	182	0.9524	232	0.9335
33	1.0108	83	0.9909	133	0.9713	183	0.9520	233	0.9331
34	1.0104	84	0.9905	134	0.9709	184	0.9517	234	0.9328
35	1.0100	85	0.9901	135	0.9705	185	0.9513	235	0.9324
36	1.0096	86	0.9897	136	0.9701	186	0.9509	236	0.9320
37	1.0092	87	0.9893	137	0.9697	187	0.9505	237	0.9316
38	1.0088	88	0.9889	138	0.9693	188	0.9501	238	0.9313
39	1.0084	89	0.9885	139	0.9690	189	0.9498	239	0.9309
40	1.0080	90	0.9881	140	0.9686	190	0.9494	240	0.9305
41	1.0076	91	0.9877	141	0.9682	191	0.9490	241	0.9301
42	1.0072	92	0.9873	142	0.9678	192	0.9486	242	0.9298
43	1.0068	93	0.9869	143	0.9674	193	0.9482	243	0.9294
44	1.0064	94	0.9865	144	0.9670	194	0.9478	244	0.9290
45	1.0060	95	0.9861	145	0.9666	195	0.9475	245	0.9286
46	1.0056	96	0.9857	146	0.9662	196	0.9471	246	0.9283
47	1.0052	97	0.9854	147	0.9659	197	0.9467	247	0.9279
48	1.0048	98	0.9850	148	0.9655	198	0.9463	248	0.9275
49	1.0044	99	0.9846	149	0.9651	199	0.9460	249	0.9272

t	M	t	M	t	M	t	M	t	M
250	0.9268	300	0.9083	350	0.8902	400	0.8724	450	0.8550
251	0.9264	301	0.9080	351	0.8899	401	0.8721	451	0.8547
252	0.9260	302	0.9076	352	0.8895	402	0.8717	452	0.8543
253	0.9257	303	0.9072	353	0.8891	403	0.8714	453	0.8540
254	0.9253	304	0.9069	354	0.8888	404	0.8710	454	0.8536
255	0.9249	305	0.9065	355	0.8884	405	0.8707	455	0.8533
256	0.9245	306	0.9061	356	0.8881	406	0.8703	456	0.8529
257	0.9242	307	0.9058	357	0.8877	407	0.8700	457	0.8526
258	0.9238	308	0.9054	358	0.8873	408	0.8696	458	0.8522
259	0.9234	309	0.9050	359	0.8870	409	0.8693	459	0.8519
260	0.9231	310	0.9047	360	0.8866	410	0.8689	460	0.8516
261	0.9227	311	0.9043	361	0.8863	411	0.8686	461	0.8512
262	0.9223	312	0.9039	362	0.8859	412	0.8682	462	0.8509
263	0.9219	313	0.9036	363	0.8856	413	0.8679	463	0.8505
264	0.9216	314	0.9032	364	0.8852	414	0.8675	464	0.8502
265	0.9212	315	0.9029	365	0.8848	415	0.8672	465	0.8498
266	0.9208	316	0.9025	366	0.8845	416	0.8668	466	0.8495
267	0.9205	317	0.9021	367	0.8841	417	0.8665	467	0.8492
268	0.9201	318	0.9018	368	0.8838	418	0.8661	468	0.8488
269	0.9197	319	0.9014	369	0.8834	419	0.8658	469	0.8485
270	0.9194	320	0.9010	370	0.8831	420	0.8654	470	0.8481
271	0.9190	321	0.9007	371	0.8827	421	0.8651	471	0.8478
272	0.9186	322	0.9003	372	0.8823	422	0.8647	472	0.8474
273	0.9182	323	0.9000	373	0.8820	423	0.8644	473	0.8471
274	0.9179	324	0.8996	374	0.8816	424	0.8640	474	0.8468
275	0.9175	325	0.8992	375	0.8813	425	0.8637	475	0.8464
276	0.9171	326	0.8989	376	0.8809	426	0.8633	476	0.8461
277	0.9168	327	0.8985	377	0.8806	427	0.8630	477	0.8457
278	0.9164	328	0.8981	378	0.8802	428	0.8626	478	0.8454
279	0.9160	329	0.8978	379	0.8799	429	0.8623	479	0.8451
280	0.9157	330	0.8974	380	0.8795	430	0.8619	480	0.8447
281	0.9153	331	0.8971	381	0.8792	431	0.8616	481	0.8444
282	0.9149	332	0.8967	382	0.8788	432	0.8612	482	0.8440
283	0.9146	333	0.8963	383	0.8784	433	0.8609	483	0.8437
284	0.9142	334	0.8960	384	0.8781	434	0.8605	484	0.8433
285	0.9138	335	0.8956	385	0.8777	435	0.8602	485	0.8430
286	0.9135	336	0.8952	386	0.8774	436	0.8599	486	0.8427
287	0.9131	337	0.8949	387	0.8770	437	0.8595	487	0.8423
288	0.9127	338	0.8945	388	0.8767	438	0.8592	488	0.8420
289	0.9124	339	0.8942	389	0.8763	439	0.8588	489	0.8416
290	0.9120	340	0.8938	390	0.8760	440	0.8585	490	0.8413
291	0.9116	341	0.8934	391	0.8756	441	0.8581	491	0.8410
292	0.9113	342	0.8931	392	0.8753	442	0.8578	492	0.8406
293	0.9109	343	0.8927	393	0.8749	443	0.8574	493	0.8403
294	0.9105	344	0.8924	394	0.8746	444	0.8571	494	0.8399
295	0.9102	345	0.8920	395	0.8742	445	0.8567	495	0.8396
296	0.9098	346	0.8916	396	0.8738	446	0.8564	496	0.8393
297	0.9094	347	0.8913	397	0.8735	447	0.8560	497	0.8389
298	0.9091	348	0.8909	398	0.8731	448	0.8557	498	0.8386
299	0.9087	349	0.8906	399	0.8728	449	0.8554	499	0.8383

*Specific gravity of materials at 60°F of 0.850 to 0.966.

t = Observed temperature in degrees Fahrenheit.

M = Multiplier for correcting oil volumes to the basis of 60°F.

Table D-6. Temperature-Volume Corrections for Emulsified Asphalts.

Sp. Gr. 60/60°F	A.P.I. Gravity* Degrees	Pounds** per Gallon	Gallons*** per Pound	Gallons*** per Ton
0.855	34.0	7.119	0.1405	280.9
60	33.0	.161	.1396	279.3
65	32.1	.203	.1388	277.7
70	31.1	.244	.1380	276.1
75	30.2	.286	.1372	274.5
80	29.3	.328	.1365	272.9
85	28.4	.369	.1357	271.4
90	27.5	.411	.1349	269.9
95	26.6	.453	.1342	268.4
0.900	25.7	.494	.1334	266.9
05	24.9	.536	.1327	265.4
10	24.0	.578	.1320	263.9
15	23.1	.620	.1312	262.5
20	22.3	.661	.1305	261.1
25	21.5	.703	.1298	259.6
30	20.7	.745	.1291	258.2
35	19.8	.786	.1284	256.9
40	19.0	.828	.1278	255.5
45	18.2	.870	.1271	254.1
50	17.5	.911	.1264	252.8
55	16.7	.953	.1257	251.5
60	15.9	.995	.1251	250.2
65	15.1	8.036	.1244	248.9
70	14.4	.078	.1238	247.6
75	13.6	.120	.1232	246.3
80	12.9	.162	.1225	245.0
85	12.2	.203	.1219	243.8
90	11.4	.245	.1213	242.6
95	10.7	.287	.1207	241.4
1.000	10.0	.328	.1201	240.2
05	9.3	.370	.1195	239.0
10	8.6	.412	.1189	237.8
15	7.9	.453	.1183	236.6
20	7.2	.495	.1177	235.4
25	6.6	.537	.1171	234.3
30	5.9	.578	.1166	233.1
35	5.2	.620	.1160	232.0
40	4.6	.662	.1154	230.9
45	3.9	.704	.1149	229.8
50	3.3	.745	.1143	228.7
55	2.6	.787	.1138	227.6
60	2.0	.829	.1133	226.5
65	1.4	.870	.1127	225.5
70	.7	.912	.1122	224.4
75	.1	.954	.1117	223.4
76	0.0	.962	.1116	223.2

* A.P.I. Gravity, Degrees = $\frac{141.5}{\text{S.P. Gr. } 60°/60°\text{F.}} - 131.5$

** For Lbs per Imperial Gallon multiply values in this column by 1.20094.

*** For Imperial Gallons per Lb or per Ton multiply values in these columns by 0.83268.

t = Observed temperature in degrees Fahrenheit.

M = Multiplier for correcting volumes to the basis of 60°F.

Table D-7. Temperature Limitations for Asphalt Selection at the Time of Construction.

Temperature Limitations, °F	AC	Anionic	Cationic
Min. Surf Temp. for 2 Days Prior	70	60	60
Min Ambient Temp. for 7 Days After	70	60	60
(With moderate traffic after construction) No rainfall in 48 hours			

APPENDIX E

BULK SPECIFIC GRAVITY

The value of the bulk specific gravity of the aggregate is required to calculate the asphalt cement requirement in seal coats. The bulk specific gravity of normal weight aggregates can be determined by ASTM method C127 "Specific Gravity and Absorption of Coarse Aggregate". The specific gravity of synthetic (lightweight) aggregates or aggregates with high water absorption should be determined by the test method described below.

Scope. This method of test is intended for use in determining dry bulk specific gravity of synthetic coarse aggregate.

Apparatus. The apparatus shall consist of the following:

(a) Balance--A balance having a capacity of 3 kilograms or more and a sensitivity of 0.1 gram or less.

(b) Container--A glass small mouth quart Mason jar fitted with a pycnometer cap.

Sample. A sample of sufficient size to yield approximately 400 grams after being oven dried shall be selected, by the method of quartering, from the aggregate to be tested.

Procedure.

(a) The test shall be conducted at a temperature of 72 $\pm$ 5^{o}F.

(b) The sample shall be dried in an oven at a temperature of 105^{o}C for a minimum of 24 hours. The sample shall then be allowed to cool to room temperature in a desiccator.

(c) The weight of the pycnometer jar and cap shall be determined to the nearest 0.1 gram.

(d) The weight of the pycnometer completely filled with distilled water shall be obtained to the nearest 0.1 gram. Match marks shall be used on the jar and cap to insure that the same volume is obtained throughout the test.

(e) The dry sample shall be placed in the pycnometer and the total weight determined to the nearest 0.1 gram.

(f) The jar shall be filled with distilled water. The top shall then be placed on the jar with the match mark coinciding the water added to fill the jar and top completely. The pycnometer with sample and water shall then be weighed to the nearest 0.1 gram. With a little practice, the first weighing can be accomplished two minutes after the water is first introduced into the container. Weighings shall then be made at intervals of 4, 6, 8, 10, 20, 30, 60, 90 and 120 minutes from the beginning of the test, taking care to agitate the sample by rolling and shaking the jar and then add water as required to return the water level to the reference level before each weighing is made.

Calculations. A curve with time (to at least 10 minutes) as the absicissa and weight of pycnometer plus sample plus water as the ordinate shall be plotted on rectangular coordinate paper. This curve shall be extended back to include zero time and the weight of pyconometer plus sample plus initial water read from the curve. The dry bulk specific gravity shall be calculated by dividing the oven dry weight of the sample by the bulk volume of the sample determined at zero time.