Attachment 2.05.3(3)-8
Road and Structure Agreements and Letter

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Montrose County and Peabody Right of Way Agreement

AGREEMENT

THIS AGREEMENT made this 2nd day of August, 1988, between the COUNTY OF MONTROSE, State of Colorado, ("County") and PEABODY COAL COMPANY, 1300 South Yale, Flagstaff, Arizona, ("Peabody"),

W I T N E S S E T H :

In consideration of the mutual covenants and payments hereinafter contained, the parties agree as follows:

1. The County hereby grants to Peabody the right to use the County road right-of-way as described in Exhibit "A", attached hereto and incorporated herein by this reference, for mining and related purposes. This use shall include temporary closure and the tearing up and removal of said County road. This use is temporary and is projected to cover the period of time of the mining permit and any renewal thereof, but in no event shall the closure exceed fifteen (15) years.

2. After completion of mining and related activities subject to this Agreement, Peabody shall reconstruct the gravel road with its own equipment, supplies and labor at its expense. This reconstruction shall include, but not be limited to the engineering and reconstruction of said County road from the bottom of the pit to the finished road surface in accordance with Engineering Standards described in Exhibit "D", attached hereto and incorporated herein by this reference. The reconstruction shall be completed within a reasonable time after the conclusion of all mining and related activities by Peabody affecting this right-of-way.

3. Peabody further agrees to conduct an engineering study to determine a plan and a design for both short and long term corrective measures to repair approximately one-half (½) mile of Montrose County Road AA described in Exhibit "B", attached hereto and incorporated herein by this reference and approximately one-quarter (¼) mile of Montrose County Road 26.50 described in Exhibit "C", attached hereto and incorporated herein by this reference. Said engineering study shall be completed within one (1) year from the date of this Agreement. After said engineering study is prepared, Peabody shall determine the corrective measures to be taken and notify the County. The County and Peabody shall then agree upon a time schedule and the manner in which the work shall be performed. Peabody shall assume all costs for said engineering and reconstruction for the described Montrose County Road AA and 26.50 Road in accordance with this section. Further, Peabody shall construct side ditches along that portion of Road AA described in Exhibit "B" to control runoff water as a short term corrective measure. Initiation of the long term corrective measure shall begin on or before September 1, 1989.

4. This Agreement is expressly conditioned upon no landowners being landlocked by the closure of the county road right-of-way as described in Exhibit "A". Further, this Agreement is expressly conditioned upon Peabody

acquiring, at its expense, the necessary permits, if any, required by the State of Colorado and/or the United States of America. Peabody agrees to reclaim all mining sites subject to this Agreement pursuant to the Reclamation Provisions, if any, of the referenced permits.

5. Peabody agrees to provide all necessary liability and property insurance for Peabody's operations upon the described premises. Peabody hereby holds the County harmless from any and all claims, damages, or demands whatsoever arising out of Peabody's operation on the described premises and hereby agrees to indemnify the County if there should be any damages arising therefrom.

6. In the event of default of any of the parties, in any of the terms hereof, the non-defaulting party shall have all rights and remedies allowed by law. The non-defaulting party shall give the defaulting party written notice by certified mail and the defaulting shall have thirty (30) days to correct said default to avoid the remedy or remedies elected by the non-defaulting party. In addition thereto, such non-defaulting party shall be entitled to recover its reasonable attorney's fees incurred in the enforcement of its rights hereunder. This Agreement shall be subject to and enforced pursuant to the laws of the State of Colorado.

7. This Agreement or any interest herein shall not be assigned, sublet or transferred without the prior written consent of the parties. No amendment to this Agreement shall be valid unless in writing and executed by all parties hereto. The parties do not assume any duty, obligation or liability of any kind not expressly stated in this Agreement.

THIS AGREEMENT shall be binding upon the parties hereto, their successors, and assigns.

IN WITNESS WHEREOF, the parties have hereunto set their hands on the day and year first above written.

ATTEST:

BY _____
Ruth E. Heath, County Clerk
and Recorder

BY _____
Deputy Clerk

COUNTY OF MONTROSE,
STATE OF COLORADO

BY _____
Arthur G. Schmalz, Chairman

ATTEST:

BY _____
Secretary

PEABODY COAL COMPANY

BY _____
President, Western Division

EXHIBIT "A"

Approxmimately 3,100 feet of 5th Street an east-west county road through the center of Section 6 T46N, R15W; more specifically described as east from the SW corner of the SW¼ of the NW¼ to the SE corner of the W½ of the W½ of the SE¼ of the NE¼.

EXHIBIT "B"

Approximately 3,500 feet of county road "AA" more specifically described as west from a point 160 feet west from the SW corner of the SE¼ of the SE¼ of Section 25; T47N; R16W for a distance of approximately 3,500 feet.

EXHIBIT "C"

Approximately the south 1,320 feet of County Road 26.50 more specifically described as running along the north south centerline of Section 25; T47N; R16W.

EXHIBIT "D"

Engineering Standards

EXHIBIT "D"

Engineering Standards

From:

American Association of State Highway

And

Transportation Officials

Guide For

Design of Pavement Structures

1986

Chapter 4 Low Volume Road Design

For

Aggregate-Surface Roads

Chapter 4
LOW-VOLUME ROAD DESIGN

Pavement structural design for low-volume roads is divided into three categories:

(1) flexible pavements,

(2) rigid pavements, and

(3) aggregate-surfaced roads.

This chapter covers the design of low-volume roads for these three surface types using procedures based on design charts (nomographs) and design catalogs. These two procedures are covered in Sections 4.1 and 4.2, respectively. For surface treatment or chip seal pavement structures, the procedures for flexible pavements may be used.

Because the primary basis for all rational pavement performance prediction methods is cumulative heavy axle load applications, it is necessary in this Guide to use the 18-kip equivalent single axle load (ESAL) design approach for low-volume roads, regardless of how low the traffic level is or what the distribution is between automobiles and trucks.

Since many city streets and county roads that fall under the low-volume category may still carry significant levels of truck traffic, the maximum number of 18-kip ESAL applications considered for flexible and rigid pavement design is 700,000 to 1 million. The practical minimum traffic level that can be considered for any flexible or rigid pavement during a given performance period is about 50,000 18-kip ESAL applications. For the aggregate-surfaced (gravel) roads used for many county and forest roads, the maximum traffic level considered is 200,000 18-kip ESAL applications, while the practical minimum level (during a single performance period) is 10,000.

4.1 DESIGN CHART PROCEDURES

4.1.1 Flexible and Rigid Pavements

The low-volume road design chart procedures for flexible and rigid pavements are basically the same as those for highway pavement design. The low-volume road procedure basically relies on the set of design requirements (developed in Chapter 2) as well as the basic step-by-step procedures described in Chapter 3. The primary difference in the design for low-volume roads is the level of reliability that may be used. Because of their relative low usage and the associated low level of risk, the level of reliability recommended for low-volume road design is 50 percent. The user may, however, design for higher levels of 60 to 80 percent, depending on the actual projected level of traffic and the feasibility of rehabilitation, importance of corridor, etc.

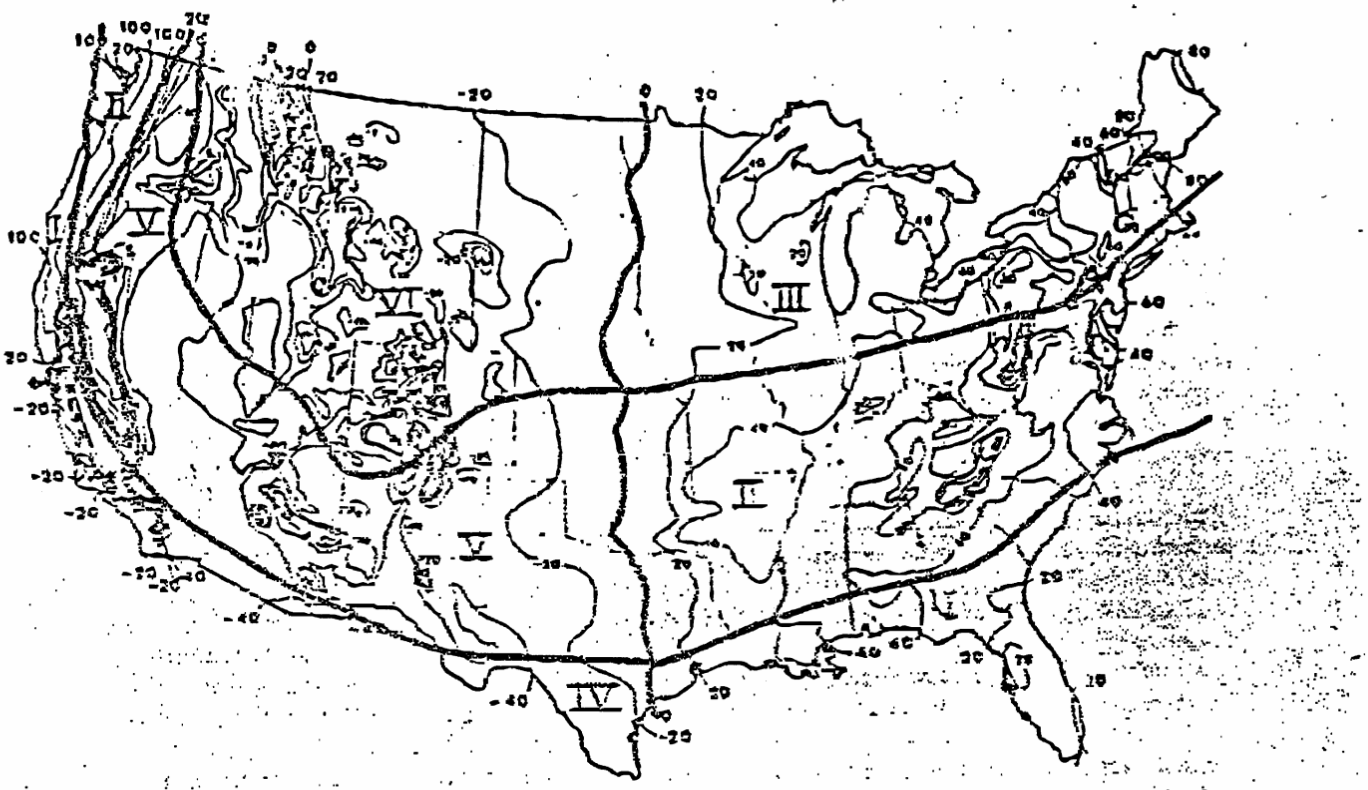
If, in estimating an effective resilient modulus of the roadbed material (M_R) or an effective modulus of subgrade reaction (k), it is not possible to determine the lengths of the seasons or even the seasonal roadbed soil resilient moduli, the following suggestions should be considered.

Season Lengths. Figure 4.1 provides a map showing six different climatic regions of the United States and the environmental characteristics associated with each. Based on these regional characteristics, Table 4.1 may be used to define the season lengths needed for determining the effective roadbed soil resilient modulus (Section 2.3.1) for flexible pavement design or the effective modulus of subgrade reaction (Section 3.2.1) for rigid pavement design.

Seasonal Roadbed Soil Resilient Moduli. Table 4.2 provides roadbed soil resilient modulus values that may be used for low-volume road design if the user can classify the general quality of the roadbed material as a foundation for the pavement structure. If the suggested values in this table are combined with the suggested season lengths identified in the previous section, effective roadbed soil resilient modulus values (for flexible pavement design only) can be generated for each of the six U.S. climatic regions. These M_R values are presented in Table 4.3.

4.1.2 Aggregate-Surfaced Roads

The basis for treating the effects of seasonal moisture changes on roadbed soil resilient modulus, M_R, is the same for aggregate-surfaced road design as it is for flexible or rigid pavement design. Unlike the flexible or rigid design procedures, however, the design chart-based procedure for aggregate-surfaced roads requires a graphical solution. It is important to note that the



REGION	CHARACTERISTICS
I	Wet, no freeze
II	Wet, freeze–thaw cycling
III	Wet, hard-freeze, spring thaw
IV	Dry, no freeze
V	Dry, freeze–thaw cycling
VI	Dry, hard freeze, spring thaw

Figure 4.1. The six climatic regions in the United States (12).

T. ble 4.1. Suggested seasons length (months) for the six U.S. climatic regions.

U.S. Climatic Region	Season (Roadbed Soil Moisture Condition)			
	Winter (Roadbed Frozen)	Spring-Thaw (Roadbed Saturated)	Spring/Fall (Roadbed Wet)	Summer (Roadbed Dry)
I	0.0*	0.0	7.5	4.5
II	1.0	0.5	7.0	3.5
III	2.5	1.5	4.0	4.0
IV	0.0	0.0	4.0	8.0
V	1.0	0.5	3.0	7.5
VI	3.0	1.5	3.0	4.5

*Number of months for the season.

Table 4.2. Suggested seasonal roadbed soil resilient moduli, M_R (psi), as a function of the relative quality of the roadbed material.

Relative Quality of Roadbed Soil	Season (Roadbed Soil Moisture Condition)			
	Winter (Roadbed Frozen)	Spring-Thaw (Roadbed Saturated)	Spring/Fall (Roadbed Wet)	Summer (Roadbed Dry)
Very Good	20,000*	2,500	8,000	20,000
Good	20,000	2,000	6,000	10,000
Fair	20,000	2,000	4,500	6,500
Poor	20,000	1,500	3,300	4,900
Very Poor	20,000	1,500	2,500	4,000

*Values shown are Resilient Modulus in psi.

Table 4.3. Effective roadbed soil resilient modulus values, M_R (psi), that may be used in the design of flexible pavements for low-volume roads. Suggested values depend on the U.S. climatic region and the relative quality of the roadbed soil.

U.S. Climatic Region	Relative Quality of Roadbed Soil				
	Very Poor	Poor	Fair	Good	Very Good
I	2,800*	3,700	5,000	6,800	9,500
II	2,700	3,400	4,500	5,500	7,200
III	2,700	3,000	4,000	4,400	5,700
IV	3,200	4,100	5,600	7,900	11,700
V	3,100	3,700	5,000	6,000	8,200
VI	2,800	3,100	4,000	4,500	5,700

*Effective Resilient Modulus in psi

effective modulus of the roadbed soil developed for flexible pavement design should *not* be used in lieu of the procedure described here.

The primary design requirements for aggregate-surfaced roads (*17*) include:

(1) the predicted future traffic, w_{18} (Section 2.1.2), for the period,

(2) the lengths of the seasons (Section 2.3.1; or criteria in Section 4.1.1 may be used if better information is not available),

(3) seasonal resilient moduli of the roadbed soil (Section 2.3.1 or general criteria in Section 4.1.1 may be used if better information is not available),

(4) elastic modulus, E_{BS} (psi), of aggregate base layer, (Section 2.3.3),

(5) elastic modulus, E_{SB} (psi), of aggregate subbase layer (Section 2.3.3),

(6) design serviceability loss, ΔPSI (Section 2.2.1),

(7) allowable rutting, RD (inches), in surface layer (Section 2.2.2), and

(8) aggregate loss, GL (inches), of surface layer (Section 2.2.3).

These design requirements are used in conjunction with the computational chart in Table 4.4 and the design nomographs for serviceability (Figure 4.2) and rutting (Figure 4.3). An example of the application of certain steps of this procedure is presented in Table 4.5.

Step 1: Select four levels of aggregate base thickness, D_{BS}, which should bound the probable solution. For this, four separate tables, identical to Table 4.4, should be prepared. Enter each of the four trial base thickness, D_{BS}, in the upper left-hand corner of each of the four tables (D_{BS} = 8 inches is used in the example).

Step 2: Enter the design serviceability loss as well as the allowable rutting in the appropriate boxes of each of the four tables.

Step 3: Enter the appropriate seasonal resilient (elastic) moduli of the roadbed (M_R) and the aggregate base material, E_{BS} (psi), in Columns 2 and 3, respectively, of Table 4.4. The base modulus values may be proportional to the resilient modulus of the roadbed soil during a given season. A constant value of 30,000 psi was used in the example, however, since a portion of the aggregate base material will be converted into an equivalent thickness of subbase material (which will provide some shield against the environmental moisture effects).

Table 4.4. **Chart for computing total pavement damage (for both serviceability and rutting criteria) based on a trial aggregate base thickness.**

TRIAL BASE THICKNESS, D_{BS} (Inches) _____				Serviceability Criteria ΔPSI = _____		Rutting Criteria RD(inches) = _____	
(1) Season (Roadbed Moisture Condition)	(2) Roadbed Resilient Modulus, M_R(psi)	(3) Base Elastic Modulus, E_{BS}(psi)	(4) Projected 18-kip ESAL Traffic, w_{18}	(5) Allowable 18-kip ESAL Traffic, $(W_{18})_{PSI}$	(6) Seasonal Damage, $\frac{w_{18}}{(W_{18})_{PSI}}$	(7) Allowable 18 kip ESAL Traffic, $(W_{18})_{RUT}$	(8) Seasonal Damage $\frac{w_{18}}{(W_{18})_{RUT}}$
Winter (Frozen)							
Spring/Thaw (Saturated)							
Spring/Fall (Wet)							
Summer (Dry)							
		Total Traffic =		Total Damage =		Total Damage =	

Example:

D_{BS} = 8 inches

E_{BS} = 30,000 psi

M_R = 4,900 psi

ΔPSI = 3.0

Solution: $W_{18_{PSI}}$ = 16,000 (ESAL)

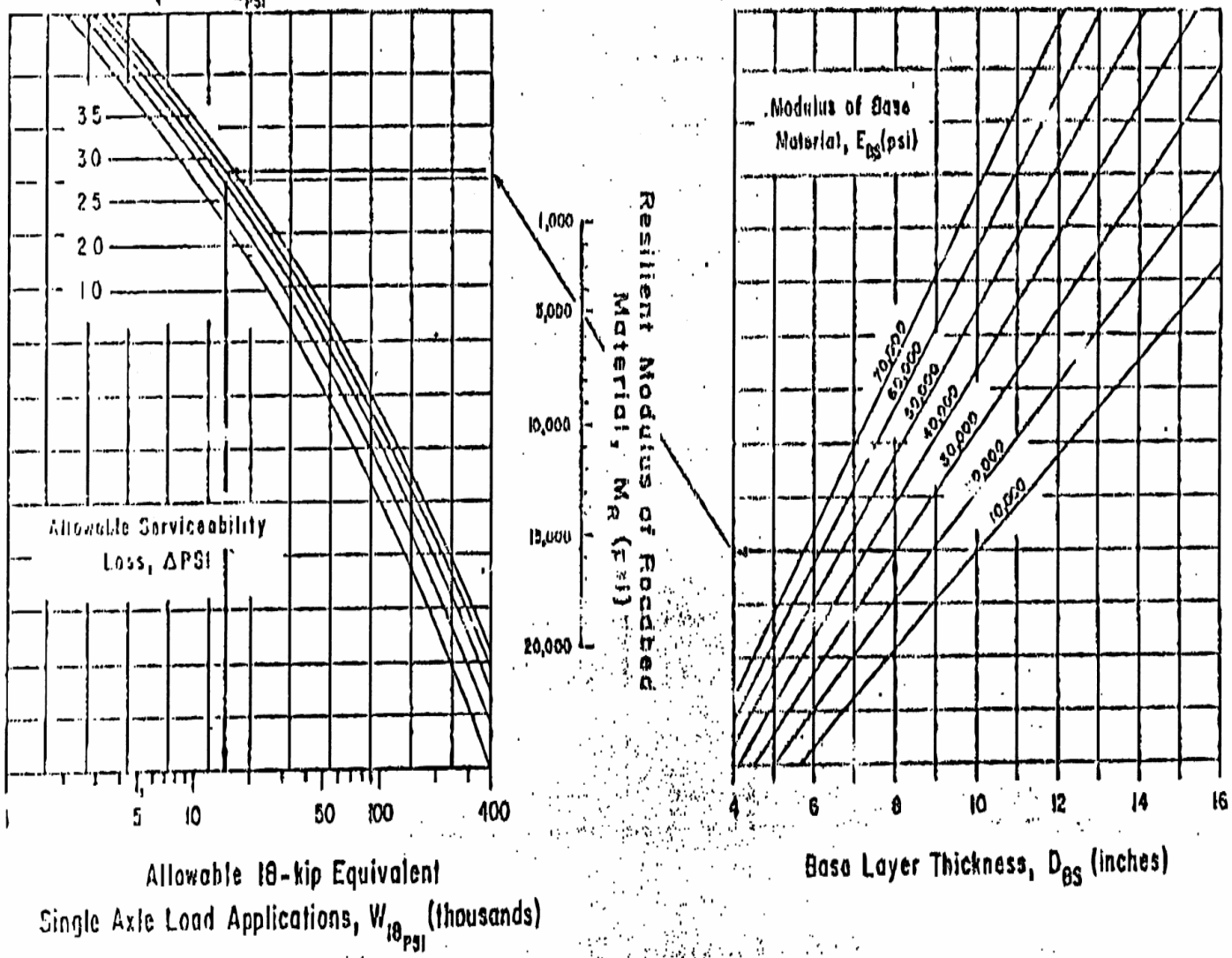


Figure 4.2. Design chart for aggregate-surfaced roads considering allowable serviceability loss.

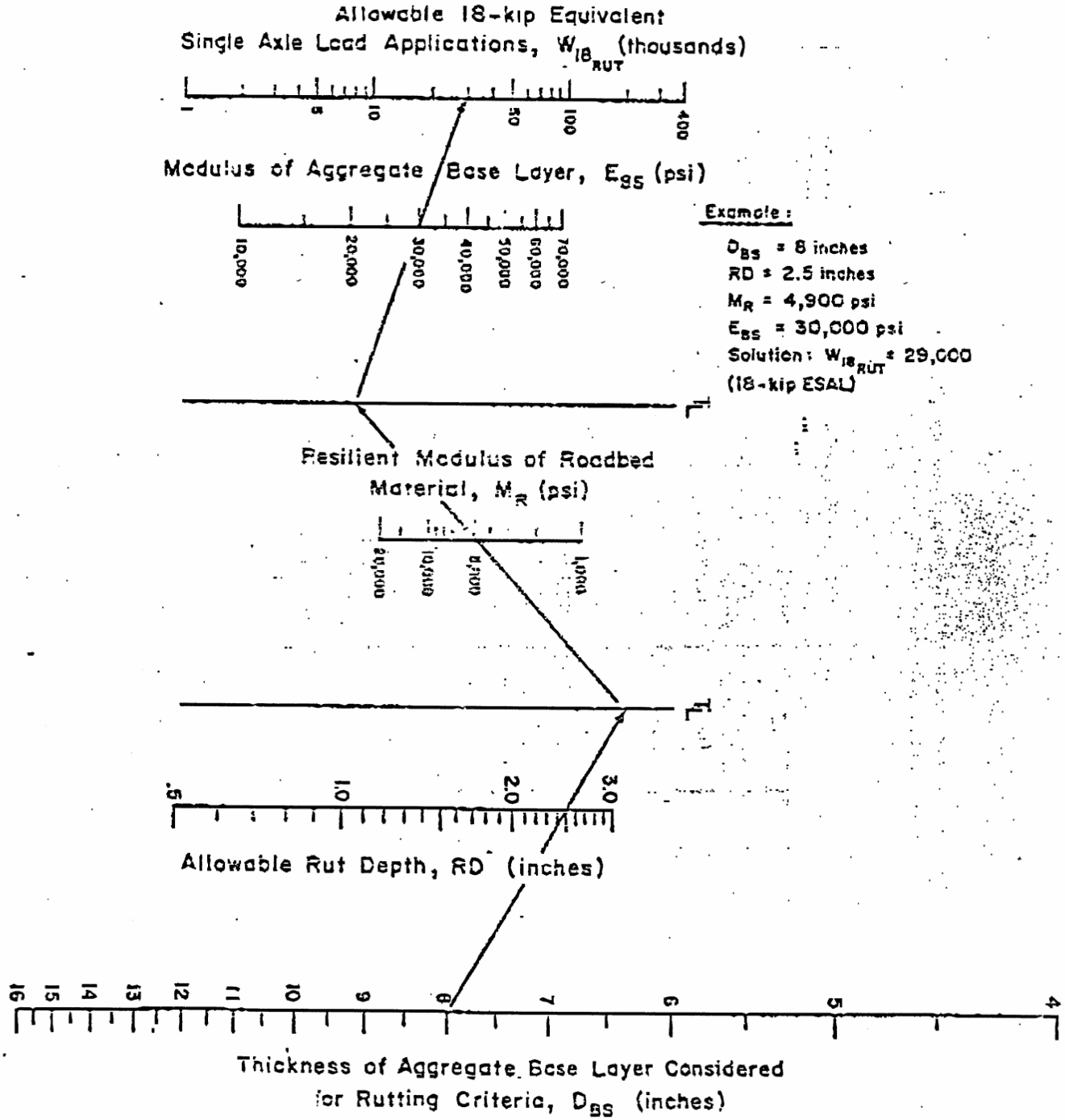


Figure 4.3. Design chart for aggregate-surfaced roads considering allowable rutting.

Table 4.5. Example application of chart for computing total pavement damage (for both serviceability and rutting criteria) based on a trial aggregate base thickness.

TRIAL BASE THICKNESS, D_{BS} (inches) 0				Serviceability Criteria ΔPSI = 3.0		Rutting Criteria RD(inches) = 2.5	
(1) Season (Roadbed Moisture Condition)	(2) Roadbed Resilient Modulus, M_R(psi)	(3) Base Elastic Modulus, E_{BS}(psi)	(4) Projected 18-kip ESAL Traffic, w_{18}	(5) Allowable 18-kip ESAL Traffic, $(W_{18})_{PSI}$	(6) Seasonal Damage, $\frac{w_{18}}{(W_{18})_{PSI}}$	(7) Allowable 18-kip ESAL Traffic, $(W_{18})_{RUT}$	(8) Seasonal Damage $\frac{w_{18}}{(W_{18})_{RUT}}$
Winter (Frozen)	20,000	30,000	4,400	400,000	0.01	130,000	0.03
Spring/Thaw (Saturated)	1,500	30,000	2,600	4,900	0.53	8,400	0.31
Spring/Fall (Wet)	3,300	30,000	7,000	8,400	0.83	20,000	0.35
Summer (Dry)	4,900	30,000	7,000	16,000	0.44	29,000	0.24
		Total Traffic =	21,000	Total Damage =	1.81	Total Damage =	0.93

Step 4: Enter the seasonal 18-kip ESAL traffic in Column 4 of Table 4.4. Assuming that truck traffic is distributed evenly throughout the year, the lengths of the seasons should be used to proportion the total projected 18-kip ESAL traffic to each season. If the road is load-zoned (restricted) during certain critical periods, the total traffic may be distributed only among those seasons when truck traffic is allowed. (Total traffic of 21,000 18-kip ESAL applications and a seasonal pattern corresponding to U.S. Climatic Region III was used in the example in Table 4.5.)

Step 5: Within each of the four tables, estimate the allowable 18-kip ESAL traffic for each of the four seasons using the serviceability-based nomograph in Figure 4.2, and enter in Column 5. If the resilient modulus of the roadbed soil (during the frozen season) is such that the allowable traffic exceeds the upper limit of the nomograph, assume a practical value of 500,000 18-kip ESAL.

Step 6: Within each of the four tables, estimate the allowable 18-kip ESAL traffic for each of the four seasons using the rutting-based nomograph in Figure 4.3, and enter in Column 7. Again, if the resilient modulus of the roadbed soil is such that the allowable traffic exceeds the upper limit of the nomograph, assume a practical value of 500,000 18-kip ESAL.

Step 7: Compute the seasonal damage values in each of the four tables for the serviceability criteria by dividing the projected seasonal traffic (Column 4) by the allowable traffic in that season (Column 5). Enter these seasonal damage values in Column 6 of Table 4.4 corresponding to serviceability criteria. Next, follow these same instructions for rutting criteria, i.e., divide Column 4 by Column 7 and enter in Column 8.

Step 8: Compute the total damage for both the serviceability and rutting criteria by adding the seasonal damages. When this is accomplished for all four tables (corresponding to the four trial base thicknesses), a graph of total damage versus base layer thickness should be prepared. The average base layer thickness, $\bar{D}_{BS}$, required is determined by interpolating in this graph for a total damage equal to 1.0. Figure 4.4 provides an example in which the design is controlled by the serviceability criteria: $\bar{D}_{BS}$ is equal to 10 inches.

Step 9: The base layer thickness determined in the last step should be used for design if the effects of aggregate loss are negligible. If, however, aggregate loss is significant, then the design thickness is determined using the following equation:

$$D_{BS} = \bar{D}_{BS} + (0.5 \times GL)$$

where

GL = total estimated aggregate (gravel) loss (in inches) over the performance period.

If, for example, the total estimated gravel loss was 2 inches and the average base thickness required was 10 inches, the design thickness of the aggregate base layer would be

$$D_{BS} = 10 + (0.5 \times 2) = 11 \text{ inches}$$

Step 10: The final step of the design chart procedure for aggregate-surfaced roads is to convert a portion of the aggregate base layer thickness to an equivalent thickness of subbase material. This is accomplished with the aid of Figure 4.5. Select the final base thickness desired, D_{BS_f} (6 inches is used in the example). Draw a line to the estimated modulus of the subbase material, E_{SB} (15,000 psi is used in the example). Go across and through the scale corresponding to the reduction in base thickness, $D_{BS_r} - D_{BS_f}$ (11 minus 6 equal to 5 inches is used in the example). Then, for the known modulus of the base material, E_{BS} (30,000 psi in the example), determine the required subbase thickness, D_{SB} (8 inches).

4.2 DESIGN CATALOG

The purpose of this Section is to provide the user with a means for identifying reasonable pavement structural designs suitable for low-volume roads. The catalog of designs presented here covers aggregate-surfaced roads as well as both flexible and rigid pavements. It is important to note, however, that although the structural designs presented represent precise solutions using the design procedure described in the previous section, they are based on a unique set of assumptions relative to design requirements and environmental conditions. The following specific assumptions apply to all three types of structural designs considered:

(1) All designs are based on the structural requirement for one performance period, regardless of the time interval. The range of traffic levels for the flexible and rigid pavement designs is between 50,000 and 1,000,000 18-kip ESAL applications. The allowable range of relative traffic for aggregate-surfaced road design is between 10,000 and 100,000 18-kip ESAL applications.

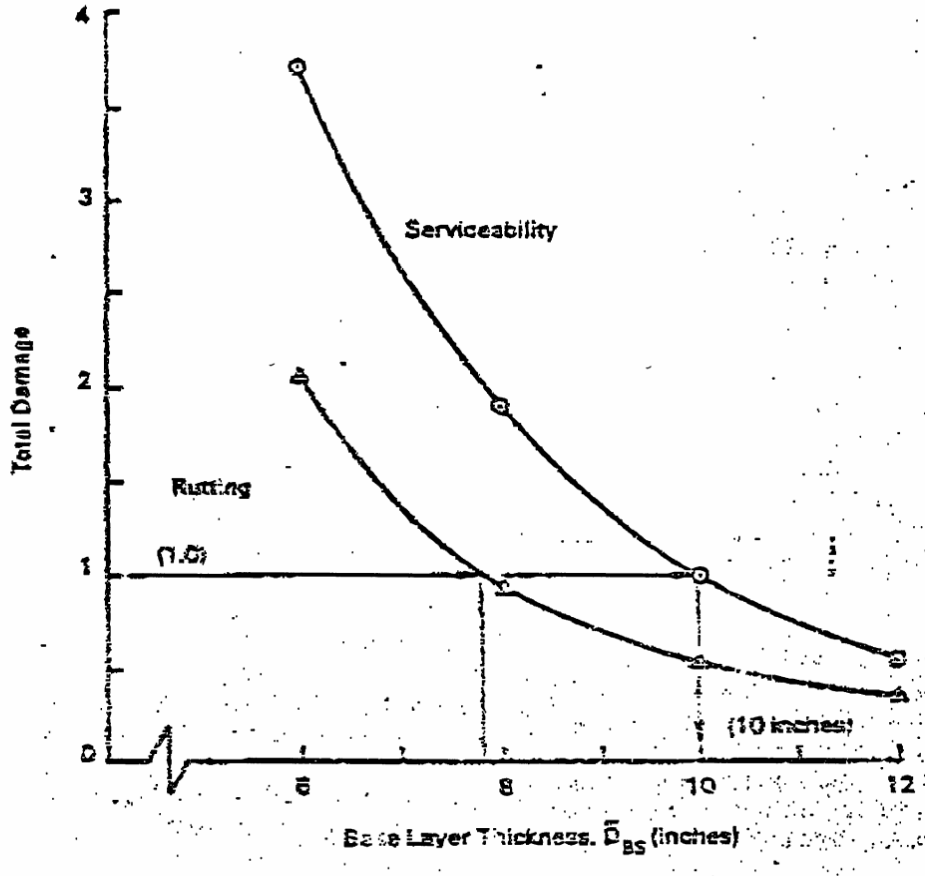


Figure 4.4. Example growth of total damage versus base layer thickness for both serviceability and rutting criteria.

(2) All designs presented are based on either a 50 or 75 percent level of reliability.

(3) The designs are for environmental conditions corresponding to all six of the U.S. climatic regions (see map in Figure 4.1).

(4) The designs are for five qualitative levels of roadbed soil strength or support capability: Very Good, Good, Fair, Poor, and Very Poor. Table 4.2 indicates the levels of roadbed soil resilient modulus that were used for each soil classification. Table 4.1 indicates the actual lengths of the seasons used to quantify the effects of each of the six climatic regions on pavement performance.

(5) The terminal serviceability for the flexible and rigid pavement designs is 1.5 and the overall design serviceability loss used for aggregate-surfaced roads is 3.0. (Thus, if the initial serviceability of an aggregate-surfaced road was 3.5, the corresponding terminal serviceability inherent in the design solution is 0.5.)

4.2.1 Flexible Pavement Design Catalog

Tables 4.6 and 4.7 present a catalog of flexible pavement SN values (structural numbers) that may be used for the design of low-volume roads when the more detailed design approach is not possible. Table 4.6 is based on the 50 percent reliability level and Table 4.7 is based on a 75 percent level. The range of SN values shown for each condition is based on a specific range of 18-kip ESAL applications at each traffic level:

High	700,000	to	1,000,000
Medium	400,000	to	600,000
Low	50,000	to	300,000

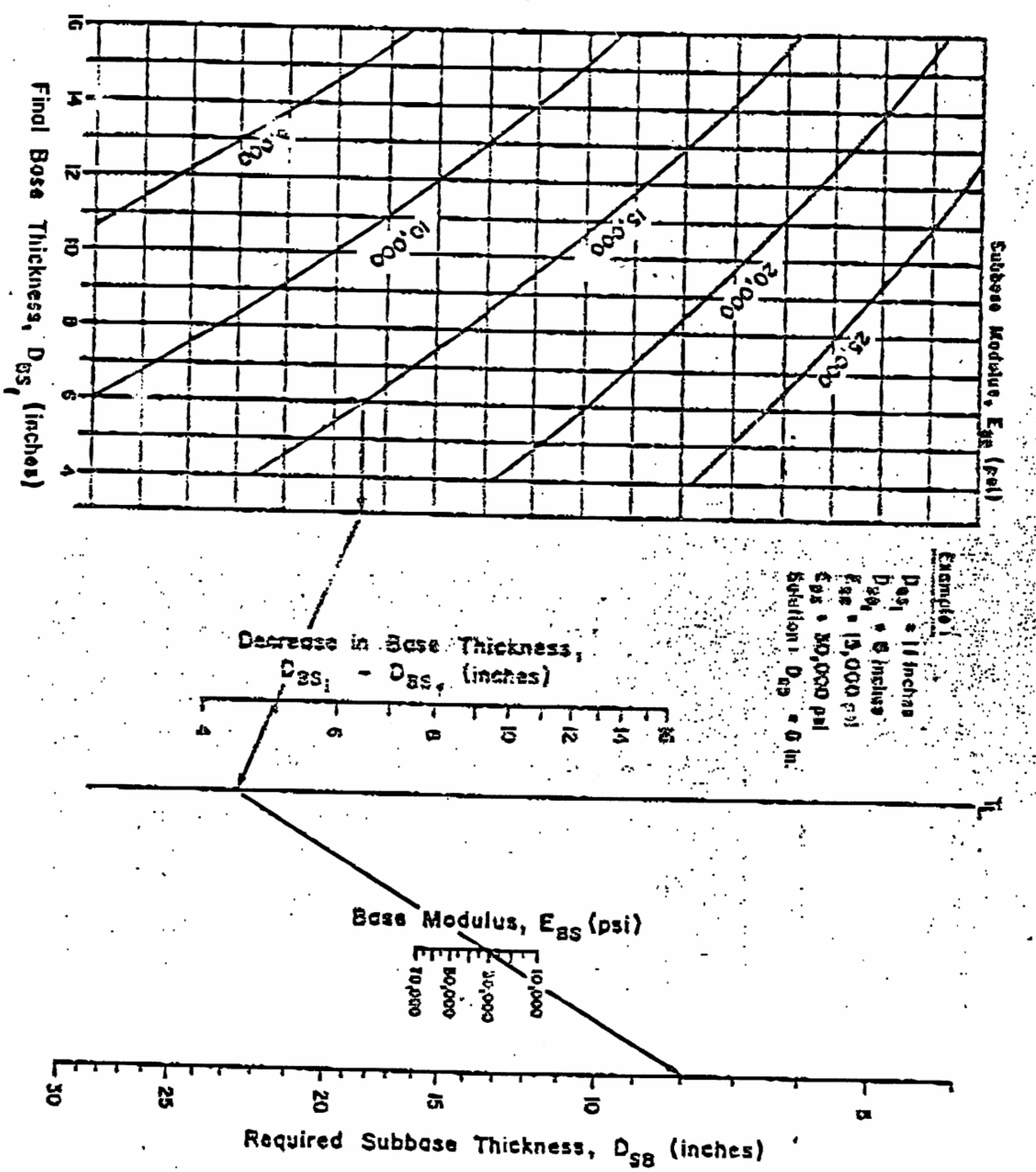


Figure 4.5. Chart to convert a portion of the aggregate base layer thickness to an equivalent thickness of subbase.

Table 4.6. Flexible pavement design catalog for low-volume roads: recommended ranges of structural number (SN) for the six U.S. climatic regions, three levels of axle load traffic and five levels of roadbed soil quality. Inherent reliability: 50 percent.

Relative Quality of Roadbed Soil	Traffic Level	U.S. Climatic Region I	II	III	IV	V	VI
Very Good	High	2.3 - 2.6*	2.5 - 2.7	2.8 - 3.0	2.1 - 2.3	2.4 - 2.6	2.8 - 3.0
	Medium	2.1 - 2.3	2.3 - 2.5	2.5 - 2.7	1.9 - 2.1	2.2 - 2.4	2.5 - 2.7
	Low	1.5 - 2.0	1.7 - 2.2	1.9 - 2.4	1.4 - 1.8	1.6 - 2.1	1.9 - 2.4
Good	High	2.6 - 2.8	2.8 - 3.0	3.0 - 3.2	2.5 - 2.7	2.7 - 2.9	3.0 - 3.2
	Medium	2.4 - 2.6	2.6 - 2.8	2.8 - 3.0	2.2 - 2.4	2.5 - 2.7	2.7 - 2.9
	Low	1.7 - 2.3	1.9 - 2.4	2.0 - 2.7	1.6 - 2.1	1.8 - 2.4	2.0 - 2.6
Fair	High	2.9 - 3.1	3.0 - 3.2	3.1 - 3.3	2.6 - 3.0	2.9 - 3.1	3.1 - 3.3
	Medium	2.6 - 2.8	2.8 - 3.0	2.9 - 3.1	2.5 - 2.7	2.6 - 2.8	2.8 - 3.0
	Low	2.0 - 2.6	2.0 - 2.6	2.1 - 2.8	1.9 - 2.4	1.9 - 2.5	2.1 - 2.7
Poor	High	3.2 - 3.4	3.3 - 3.5	3.4 - 3.6	3.1 - 3.3	3.2 - 3.4	3.4 - 3.6
	Medium	3.0 - 3.2	3.0 - 3.2	3.1 - 3.4	2.8 - 3.0	2.9 - 3.2	3.1 - 3.3
	Low	2.2 - 2.8	2.2 - 2.9	2.3 - 3.0	2.1 - 2.7	2.2 - 2.8	2.3 - 3.0
Very Poor	High	3.5 - 3.7	3.6 - 3.7	3.5 - 3.7	3.3 - 3.5	3.4 - 3.6	3.5 - 3.7
	Medium	3.2 - 3.4	3.3 - 3.5	3.3 - 3.5	3.1 - 3.3	3.1 - 3.3	3.2 - 3.4
	Low	2.4 - 3.1	2.4 - 3.1	2.4 - 3.1	2.3 - 3.0	2.3 - 3.0	2.4 - 3.1

*Recommended range of structural number (SN).

Table 4.7. Flexible pavement design catalog[1]: low-volume roads: recommended ranges of structural number (SN) for six U.S. climatic regions, three levels of axle load traffic and five levels of roadbed soil quality. Inherent reliability: 75 percent.

Relative Quality of Roadbed Soil	Traffic Level	U.S. Climatic Region I	II	III	IV	V	VI
Very Good	High	2.6 - 2.7*	2.8 - 2.9	3.0 - 3.2	2.4 - 2.5	2.7 - 2.8	3.0 - 3.2
	Medium	2.3 - 2.5	2.5 - 2.7	2.7 - 3.0	2.1 - 2.3	2.4 - 2.6	2.7 - 3.0
	Low	1.6 - 2.1	1.8 - 2.3	2.0 - 2.6	1.5 - 2.0	1.7 - 2.2	2.0 - 2.6
Good	High	2.9 - 3.0	3.0 - 3.2	3.3 - 3.4	2.7 - 2.8	3.0 - 3.1	3.3 - 3.4
	Medium	2.6 - 2.8	2.7 - 3.0	3.0 - 3.2	2.4 - 2.6	2.6 - 2.9	2.9 - 3.2
	Low	1.9 - 2.4	2.0 - 2.6	2.2 - 2.8	1.8 - 2.3	2.0 - 2.5	2.2 - 2.8
Fair	High	3.2 - 3.3	3.3 - 3.4	3.4 - 3.6	3.0 - 3.2	3.2 - 3.3	3.4 - 3.5
	Medium	2.8 - 3.1	2.9 - 3.2	2.7 - 3.3	2.7 - 3.0	2.8 - 3.1	3.0 - 3.3
	Low	2.1 - 2.7	2.2 - 2.8	2.3 - 2.9	2.0 - 2.6	2.1 - 2.7	2.3 - 2.9
Poor	High	3.5 - 3.6	3.6 - 3.7	3.7 - 3.9	3.4 - 3.5	3.5 - 3.6	3.7 - 3.8
	Medium	3.1 - 3.4	3.2 - 3.5	3.4 - 3.6	3.0 - 3.3	3.1 - 3.4	3.3 - 3.6
	Low	2.4 - 3.0	2.4 - 3.0	2.5 - 3.2	2.3 - 2.8	2.3 - 2.9	2.5 - 3.2
Very Poor	High	3.8 - 3.9	3.8 - 4.0	3.8 - 4.0	3.6 - 3.8	3.7 - 3.8	3.8 - 4.0
	Medium	3.4 - 3.7	3.5 - 3.8	3.5 - 3.7	3.3 - 3.6	3.3 - 3.6	3.4 - 3.7
	Low	2.6 - 3.2	2.6 - 3.3	2.6 - 3.3	2.5 - 3.1	2.5 - 3.1	2.6 - 3.3

*Recommended range of structural number (SN).

Once a design structural number is selected, it is up to the user to identify an appropriate combination of flexible pavement layer thicknesses which will provide the desired load-carrying capacity. This may be accomplished using the criteria for layer coefficients (a_i-values) presented in Section 2.3.5 and the general equation for structural number:

$$SN = a_1D_1 + a_2D_2 + a_3D_3$$

a_1, a_2, a_3 = layer coefficient for surface, base, and subbase course materials, respectively, and

D_1, D_2, D_3 = thickness (in inches) of surface, base, and subbase course, respectively.

4.2.2 Rigid Pavement Design Catalog

Tables 4.8 and 4.9 present the catalog of portland cement pavement slab thicknesses that may be used for the design of low-volume roads when the more detailed design approach is not possible. Table 4.8 is based on a 50 percent reliability level and Table 4.9 is based on a 75 percent level. The assumptions inherent in these design catalogs are as follows:

(1) Jointed (reinforced or unreinforced) concrete pavement ($J = 3.2$).

(2) Slab thickness design recommendations apply to all six U.S. climatic regions.

(3) Subbase is 6 inches of high quality granular subbase (For very good subgrade and low traffic, this layer may be ommitted).

(4) Mean PCC modulus of rupture (S'_c) is 600 psi.

(5) Mean PCC elastic modulus (E_c) is 5,000,000 psi.

(6) There are no tied concrete shoulders (or curbs) required.

(7) Drainage (moisture) conditions are fair ($C_d = 1.0$).

(8) The 18-kip ESAL traffic levels are

High	700,000 to 1,000,000
Medium	400,000 to 600,000
Low	50,000 to 300,000

(9) The levels of roadbed soil quality and corresponding ranges of effective modulus of subgrade reaction (k-value) are:

Very Good	greater than 550 pci
Good	400 to 550 pci
Fair	250 to 350 pci
Poor	150 to 250 pci
Very Poor	less than 150 pci

It should be noted that although the minimum slab thickness shown is 5 inches, the user should consider the use of a thicker slab since an overloaded truck may, in some cases, severely damage thin slab pavements.

4.2.3 Aggregate-Surface Road Design Catalog

Table 4.10 presents a catalog of aggregate base layer thicknesses that may be used for the design of low-volume roads when the more detailed design approach is not possible. The thicknesses shown are based on specific ranges of 18-kip ESAL applications at traffic levels:

High	60,000 to 100,000
Medium	30,000 to 60,000
Low	10,000 to 30,000

One other assumption inherent in these base thickness recommendations is that the effective resilient modulus of the aggregate base material is 30,000 psi, regardless of the quality of the roadbed soil. This value should be used as input to the nomograph in Figure 4.5 to convert a portion of the aggregate base thickness to an equivalent thickness of subbase material with an intermediate modulus value between the base and roadbed soil.

Table 4.8. Rigid pavement design catalog for low-volume roads: recommended minimum PCC slab thickness (inches) for three levels of axle load traffic and five levels of roadbed soil quality. Inherent reliability: 50 percent.

Relative Quality of Roadbed Soil	Traffic Level		
	Low	Medium	High
Very Good	5	5 ½	6
Good	5	5 ½	6
Fair	5	5 ½	6 ½
Poor	5	6	6 ½
Very Poor	5	6	6 ½

Table 4.9. Rigid pavement design catalog for low-volume roads: recommended minimum PCC slab thickness (inches) for three levels of axle load traffic and five levels of roadbed soil quality. Inherent reliability: 75 percent.

Relative Quality of Roadbed Soil	Traffic Level		
	Low	Medium	High
Very Good	5	5 ½	6 ½
Good	5	5 ½	7
Fair	6	6	7
Poor	6	6	7
Very Poor	6	6	7

Table 4.10. Aggregate surfaced road design catalog: recommended aggregate base thickness (in inches) for the six U.S. climatic regions, five relative qualities of roadbed soil and three levels of traffic.

Relative Quality of Roadbed Soil	Traffic Level	U.S. Climatic Region I	II	III	IV	V	VI
Very Good	High	8*	10	15	7	9	15
	Medium	6	8	11	6	7	11
	Low	4	4	6	4	4	6
Good	High	11	12	17	10	11	17
	Medium	8	9	12	7	9	12
	Low	4	6	7	4	5	7
Fair	High	13	14	17	12	13	17
	Medium	11	11	12	10	10	12
	Low	6	6	7	6	5	7
Poor	High	**	**	**	**	**	**
	Medium	**	**	**	15	15	**
	Low	9	10	9	8	8	9
Very Poor	High	**	**	**	**	**	**
	Medium	**	**	**	**	**	**
	Low	11	11	10	8	8	9

* Thicknesses of aggregate base required (in inches).

**Higher type pavement design recommended.

REFERENCES FOR PART II

1. "Flexible Pavement Designer's Manual - Part I," Texas State Department of Highways and Public Transportation, Highway Division, 1972.

2. "Design Manual For Controlled Access Highways," Texas Highway Department, January 1960.

3. Van Til, C.J., McCullough, B.F., Vallerga, B.A. and Hicks, R.G., "Evaluation of AASHO Interim Guides for Design of Pavement Structures," NCHRP Report 128, 1972.

4. American Concrete Institute, "Building Code Requirements For Reinforced Concrete," (ACI 318-77).

5. Rada, Gonzalo and Witczak, M.W., "A Comprehensive Evaluation of Laboratory Resilient Modulus Results for Granular Material," TRB Paper, 1981.

6. McCullough, B.F. and Elliott, Gary E., "CRC Pavement Design Manual," Austin Research Engineers, Inc., October 1979.

7. McCullough, B.F., "An Evaluation of Terminal Anchorage Installations on Rigid Pavements," Research Report No. 39-4F, Texas Highway Department, September 1966.

8. "Mass Concrete for Dams and Other Massive Structures," *Proceedings*, Journal of the American Concrete Institute, Vol. 67, April 1970.

9. Portland Cement Association, "Thickness Design for Concrete Highway and Street Pavements," 1984.

10. Majidzadeh, Kamran, "Observations of Field Performance of Continuously Reinforced Concrete Pavements in Ohio," Report No. Ohio-DOT-12-77, Ohio Department of Transportation, September 1978.

11. Kaplar, C.W., "A Laboratory Freezing Test to Determine the Relative Frost Susceptibility of Soils," *Technical Report TR 250*, Cold Regions Research and Engineering Laboratory (CRREL), U.S. Army Corps of Engineers, 1974.

12. Lister, N.W., "Deflection Criteria for Flexible Pavements and Design of Overlays," *Proceedings*, Third International Conference on Structural Design of Asphalt Pavements, Ann Arbor, 1972.

13. Finn, F.N. and Saraf, C.L., "Development of pavement Structural Subsystems," NCHRP Project No. 1-10B, Woodward-Clyde Consultants, February 1977.

14. Carey, W. and Irick, P., "The Pavement Serviceability Performance Concept," Highway Research Board Record 250, 1920.

15. Roberts, F.L., McCullough, B.F., Williamson, H.J., and Wallin, W.R., "A Pavement Design and Management System for Forest Service Roads: A Working Model-Phase II," Research Report 43, Council for Advanced Transportation Studies, University of Texas at Austin, February 1977.

16. McCullough, B.F. and D.R. Luhr, "A Pavement Design and Management System for Forest Service Roads: Implementation - Phase III," Research Report 60, Council for Advanced Transportation Studies, University of Texas at Austin, Janaury 1979.

17. McCullough, B.F. and Luhr, D.R., "The New Chapter 50" Revisions to the Transportation Engineering Handbook and New Pavement Design and Management System; Draft Report Project FSH 7709.11, submitted by the Center for Transportation Research to Forest Service, June 1982.

REFERENCES FOR PART II

1. "Flexible Pavement Designer's Manual - Part I," Texas State Department of Highways and Public Transportation, Highway Division, 1972.

2. "Design Manual For Controlled Access Highways," Texas Highway Department, January 1960.

3. Van Til, C.J., McCullough, B.F., Vallerga, B.A. and Hicks, R.G., "Evaluation of AASHO Interim Guides for Design of Pavement Structures," NCHRP Report 128, 1972.

4. American Concrete Institute, "Building Code Requirements For Reinforced Concrete," (ACI 318-77).

5. Rada, Gonzalo and Witczak, M.W., "A Comprehensive Evaluation of Laboratory Resilient Modulus Results for Granular Material," TRB Papers, 1981.

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9. Portland Cement Association, "Thickness Design for Concrete Highway and Street Pavements," 1984.

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15. Roberts, F.L., McCullough, B.F., Williamson, H.J., and Wallin, W.R., "A Pavement Design and Management System for Forest Service Roads: A Working Model-Phase II," Research Report 43, Council for Advanced Transportation Studies, University of Texas at Austin, February 1977.

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17. McCullough, B.F. and Luhr, D.R., "The New Chapter 50" Revisions to the Transportation Engineering Handbook and New Pavement Design and Management System: Draft Report Project FSH 7709.11, submitted by the Center for Transportation Research to Forest Service, June 1982.

Montrose County Authorization of Mining Within 100 Feet of BB Road, 2700 Road, and West 5th Road

BOOK 913 PAGE 512

STATE OF COLORADO, COUNTY OF MONTROSE
RECORDED AT 3:54 O'CLOCK P M 1-30-96
RECEPTION 614583 RUTH E. HEATH, RECORDER

No. 2 -96

FEB 01 1996

RESOLUTION

A RESOLUTION AUTHORIZING MINE OPERATIONS WITHIN ONE HUNDRED FEET OF BB ROAD, 27.00 ROAD AND WEST 5TH ROAD RIGHTS-OF-WAY

RECITALS

WHEREAS, WESTERN FUELS-COLORADO, LLC, conducts mining operations through its New Horizon Mine in the West End of Montrose County, Colorado proximate to the Town of Nucla and specifically in the vicinity of BB Road, 27.00 Road and West 5th Road; and

WHEREAS, the Colorado Division of Minerals and Geology, in its regulations, sets forth criteria for the approval of permits to conduct mining operations such as Western Fuels-Colorado conducts at the New Horizon Mine; and

WHEREAS, one criteria contained in the Division of Minerals and Geology's regulations is that the "proposed permit area" not lie "within one hundred feet, measured horizontally, of the outside right-of-way line of any public road"; and

WHEREAS, the Division of Minerals and Geology's regulations do allow mining within one hundred feet of the public road if the applicant for the permit "obtains necessary approvals of the authority with jurisdiction over the public road", and

WHEREAS, in order to satisfy the Division of Minerals and Geology's regulations, Western Fuels-Colorado has applied to Montrose County for permission and approval to conduct mining operations within one hundred feet of BB Road, 27.00 Road and West 5th Road in the West End of Montrose County and proximate to the Town of Nucla, Colorado; and

WHEREAS, several landowners affected by the mining adjacent to said BB Road, 27.00 Road and West 5th Road have indicated support of County approval of this Resolution; and

WHEREAS, the real property hereinof concern is platted upon Exhibit "A" attached hereto and incorporated herein by reference; and

WHEREAS, the County Commissioners find that the proposed mining operations within one hundred feet of BB Road, 27.00 Road and West 5th Road are in the public interest since such operations would allow greater recovery of coal, prolong the life of a mine which is important to the local economy, pay more royalties to affected landowners, and not jeopardize the safety of the public traveling along said public roads;

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of the County of Montrose, Colorado, as follows:

1. That the County hereby grants its approval to Western Fuels-Colorado to conduct surface mining operations within one hundred feet of BB Road, 27.00 Road and West 5th Road as designated upon Exhibit "A" attached hereto.

2. That the effective date hereof shall be the date of the adoption of this Resolution No. 2-96.

ADOPTED THIS 29th day of January, 1996.

BOARD OF COUNTY COMMISSIONERS
COUNTY OF MONTROSE, COLORADO

David Gann, Chairman

Melvin W. Staats, Vice-Chairman

Cindy K. Bowen, Commissioner

ATTEST:

County Clerk and Recorder

Connie I. Hunt, Deputy Clerk

WESTERNF.UEL

Montrose County Special Use Permit for Coal Mine Expansion

NEW HORIZON 2 MINE EXPANSION
SPECIAL USE
(SU-99-0834)

Re: ***Notice of Decision***

Applicant: **Western Fuels-Colorado, LLC (Robert L. Wade, Mine Manager)**
Owner: Carl N. & Theresa L. Benson, James K. & Ruth E. Johnson, Harry Curtis Lloyd, James & Mariellen Martin, Frank E. & Mary Lou Morgan, Western Fuels-Colorado
Location: 27646 W. 5th [BB Road & 27 Road]
Size: Propose to add 476 acres to the current 332 acre mine site
Zoning: General Agricultural (A)
Proposal: **Special Use For a Coal Mine Expansion**

The above captioned Special Use was approved by the Board of County Commissioners at a continued public hearing on **October 21, 1999**. The Board made findings; and based on those findings, **APPROVED** the Special Use subject to conditions:

FINDINGS:

1. That the proposed project is located outside the area covered by the Uncompahgre Valley Master Plan, however a finding of conformity with "good planning practice" may be appropriate, and
2. That the application materials have been found to present a clear picture of how uses are to be developed and arranged on the site, and
3. That if the mine operator conducts the strip coal mining operation in conformance with the recommended conditions, it may be determined that the proposed expansion project can be conducted in conformance with the design standards of the County Zoning Regulations and other applicable County regulations, and
4. That the application materials and the staff report identify appropriate conditions and mitigation criteria, and
5. That the proposed special use will promote the best interest of the general public's health, safety, and welfare, and
6. That the applicant has forwarded all pertinent technical information that was requested, and
7. That documentation which discusses the adequacy of the applicant's financial resources to implement the project have not been submitted, and
8. That the Planning Commission has conducted a noticed public hearing at which sufficient public testimony, staff analysis, and application review criteria were available for evaluation.

CONDITIONS:

CONDITIONS PRECEDENT:

(to be completed prior to relocation of the Colorado Cooperative Company's West Lateral Ditch)

1. Obtain written agreement between Western Fuels-Colorado and Colorado Cooperative Company, or obtain other enforceable right, authorizing the relocation of the West Lateral Ditch; and provide a copy to the County Land Use Department.

(to be completed prior to expansion of mining operations north of BB Road or west of 27.00 Road)

2. Obtain County Driveway and Access Permits for the proposed six driveway accesses/crossings.
3. Obtain approval/confirmation from the San Miguel Basin Weed Control Board that the weed control plan will meet their requirements for the control of noxious weeds.
4. Provide a copy of the Storm Water Discharge Permit or the NPDES Permit from the Colorado Department of Public and Health & Environment, if applicable.
5. Provide a copy of the Fugitive Dust Control Permit from the Colorado Department of Public and Health & Environment.
6. Provide a written conflict resolution procedure that will effectively manage and mitigate citizen complaints that might arise from operation of the mine.
7. The Main BB Road Detour shall be designed such that the minimum sight distance is maximized to the extent practicable. The Road shall be designed and constructed such that it may be posted at 25 MPH. The design shall be submitted the County Engineer for approval. Maintenance of the Detour shall remain the responsibility of Western Fuels-Colorado for its operational life.
8. The 27.00 Road Crossing shall be designed by Western Fuels-Colorado and shall be constructed only after obtaining approval of the design from the County Engineer.

CONDITIONS SUBSEQUENT:

(to be complied with during the life of the project)

1. Operate the piped section of the relocated West Lateral Ditch in conformance with the agreement between Western Fuels-Colorado and Colorado Cooperative Company or other enforceable right obtained by Western Fuels authorizing relocation of the West Lateral Ditch. Alternatively, if agreement or other enforceable right is not obtained, the West Lateral Ditch shall be operated pursuant to Section IV. 6. D. (6) (d), Montrose County Zoning Resolution.
2. Conduct Fugitive Dust Control measures in compliance with the Colorado Department of Public and Health & Environment's Fugitive Dust Control Permit.
3. Conduct weed control measures in compliance with the San Miguel Basin Weed Control Board's weed control plan.

4. Reconstruction/paving of BB Road and 27.00 Road shall be in compliance with the latest edition of CDOT Standards for Road and Bridge Construction. Compaction test acceptance criteria shall not be less than 90% AASHTO T-180 for general fill and shall not be less than 95% AASHTO T-180 in the top five (5) feet directly below asphalt. The general fill compaction shall apply from five (5) feet to fifteen (15) feet below asphalt with no geotextile. Compaction below fifteen (15) feet shall be to the extent practical within the capability of the mining equipment. Inspection of the backfill, including that portion done with mining equipment, and road construction shall be performed by an independent Colorado Registered Professional Engineer. The general mine backfill inspection below the fifteen foot depth shall consist of a random weekly site inspection to assure that no unnecessary void spaces are left in the backfill by mining equipment from the pit floor to within fifteen feet of the surface. The mine will try to handle the backfill material which will be directly under the reconstructed BB & 27.00 Road right-of-ways in a manner that minimizes voids that could cause differential settling. A signed and sealed inspection report of the mine backfill shall be submitted upon completion of the mine backfill. Inspections and compaction testing of the top fifteen feet shall be performed in accordance with the then current Montrose County Road Construction Standards and Procedures. Said construction shall be warranted by Western Fuels-Colorado for structural integrity for a period of five (5) years following completion of construction.
5. Prior to the closure of BB Road or 27.00 Road, provide a financial guarantee in an amount to be determined by the County Engineer sufficient to guarantee the structural integrity of the reconstruction/paving of each road to extend for a period of five (5) years following the completion of construction.
6. Conduct storm water discharge in conformance with the Storm Water Discharge Permit or the NPDES Permit from the Colorado Department of Public and Health & Environment, if applicable.
7. Conduct conflict resolution in accordance with the procedures provided so as to effectively manage and mitigate citizen complaints that might arise from operation of the mine.
8. Conduct the mining operations in compliance with the noise control standards for industrial zones set forth in §25-12-103 C.R.S.
9. Pursuant to IV. 6. d. (6), Montrose County Zoning Resolution, the Special Use shall be conducted in conformance with the following design guidelines:

(a) Dogs and other pets shall not be permitted to interfere with livestock or the care of livestock on adjoining agricultural lands and suitable and enforceable protective covenants or deed restrictions will be provided therefore.

(b) Roads will be located a sufficient distance back from property boundaries so that normal maintenance of such roads, including snow removal, will not damage boundary fences.

(c) Fences shall be constructed which separate the development from adjoining agricultural lands or stock drives. Such newly constructed fences and existing fences serving the same purpose shall be maintained and any breaks in such fences shall be at a properly maintained metal or wood gates or cattle guards. A method of notification of the lot owner's duty to maintain such fences shall be provided on subdivision plats and in subdivision covenants.

(d) Where irrigation ditches cross or adjoin the land proposed to be developed, adequate provisions shall be made to insure that the use of such ditches, including the maintenance thereof, can continue uninterrupted. Ditch rights of way shall not be interfered with and a maintenance easement of at least twenty-five (25) feet from the edges of the ditch banks shall be preserved. No one shall impede any irrigation system in any way, including but not limited to irrigation water, waste (return or tail) water, structures, ditches, etc.

(e) If the land will not be permanently occupied by the land use change applicant, provision shall be made for a person or institution to represent the owner and act on behalf of said owner in case of a ditch washout or similar emergency.

(f) New and existing culverts are to be maintained in such a manner so as to allow continual flow of irrigation water, return water, waste water and on-site and-off site run-off.

(g) Existing historical easements utilized to gain access to ditches, headgates and fences for maintenance or operational purposes shall be preserved or replaced with alternate easements suitable for a continuation of the historic use.

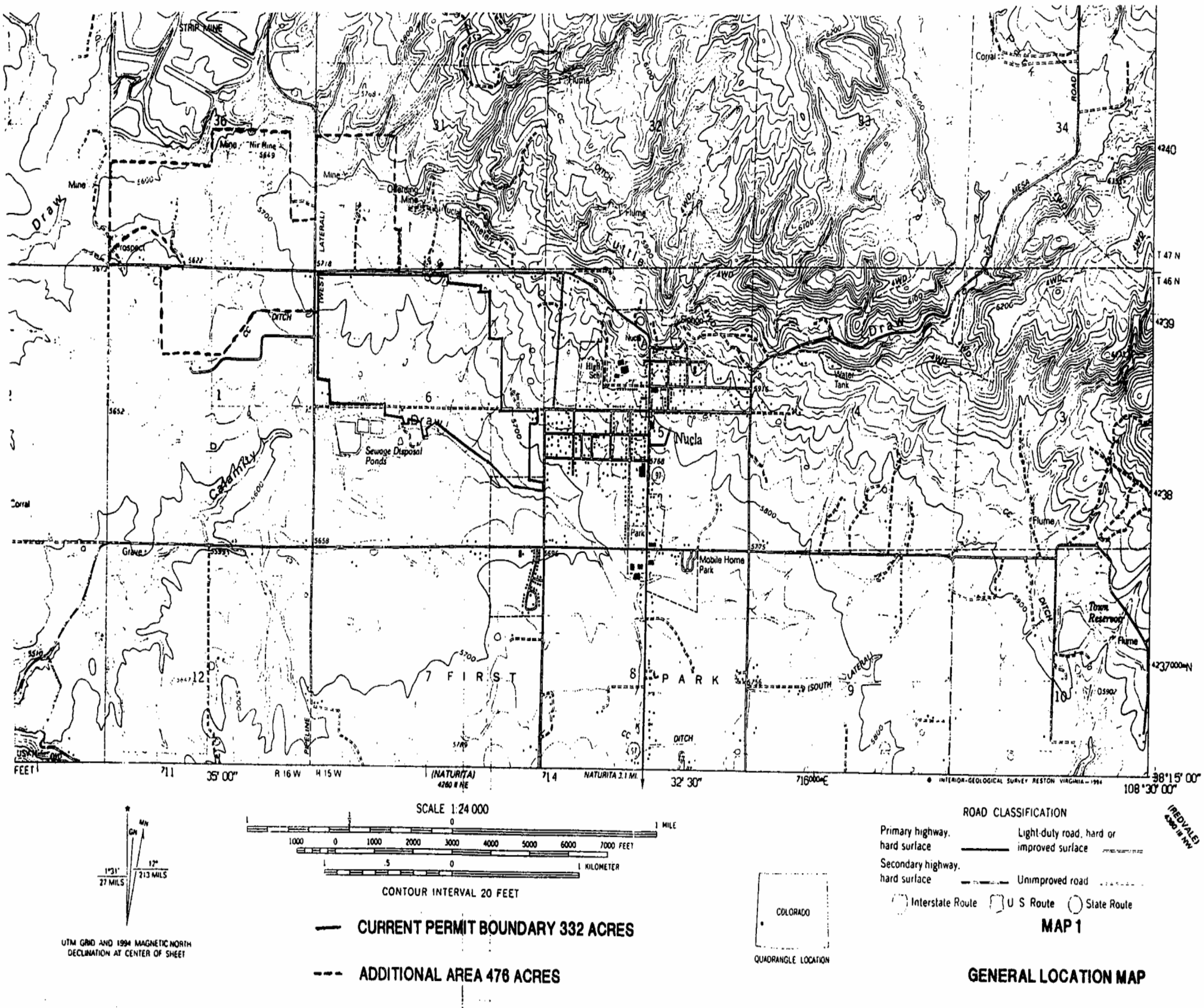
NOTE: *Failure to complete the Conditions Precedent within the time period specified, or failure to comply with the Conditions Subsequent during the life of the mine may constitute grounds for revision or revocation of the Special Use by the Board of County Commissioners.*

R L Gibbons 2/15/05

County Planner date

encl: Public Notice w/Legal Description, Location Map, Site Development Plan

cc: Applicant, Planning Commission Chairman, G.I.S., Connie Hunt (via e-mail)



STRIP MINE
Mine
Nucla
Sewage Disposal Ponds
Water Tank
Mobile Home Park
Town Reservoir
Flume
Corral
F I R S T
P A R K
T 47 N
T 46 N
R 16 W
R 15 W
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
UTM GRID AND 1994 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
ROAD CLASSIFICATION
Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U S Route
State Route
COLORADO
QUADRANGLE LOCATION
CURRENT PERMIT BOUNDARY 332 ACRES
ADDITIONAL AREA 476 ACRES
MAP 1
GENERAL LOCATION MAP

PUBLIC NOTICE

Notice is hereby given that a public hearing will be held by the Montrose County Board of County Commissoiners in the Commissioner's Boardroom, 161 Townsend Avenue, Montrose, Colorado on Monday, October 18, 1999 at 3:00 p.m. to consider a Special Use application for Western Fuels- New Horizon 2 Mine. Said amendment would enlarge the permit area from 332 acres to 476 acres.

Legal Description:

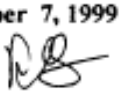
A tract of land located in Section 1 of Township 46 North, Range 16 West, Section 6 of Township 46 North, Range 17 West, Section 31 of Township 47 North, Range 17 West, and Section 36 of Township 47 North, Range 16 West, all of the New Mexico Principal Meridian in the County of Montrose in the State of Colorado being more particularly described as follows:

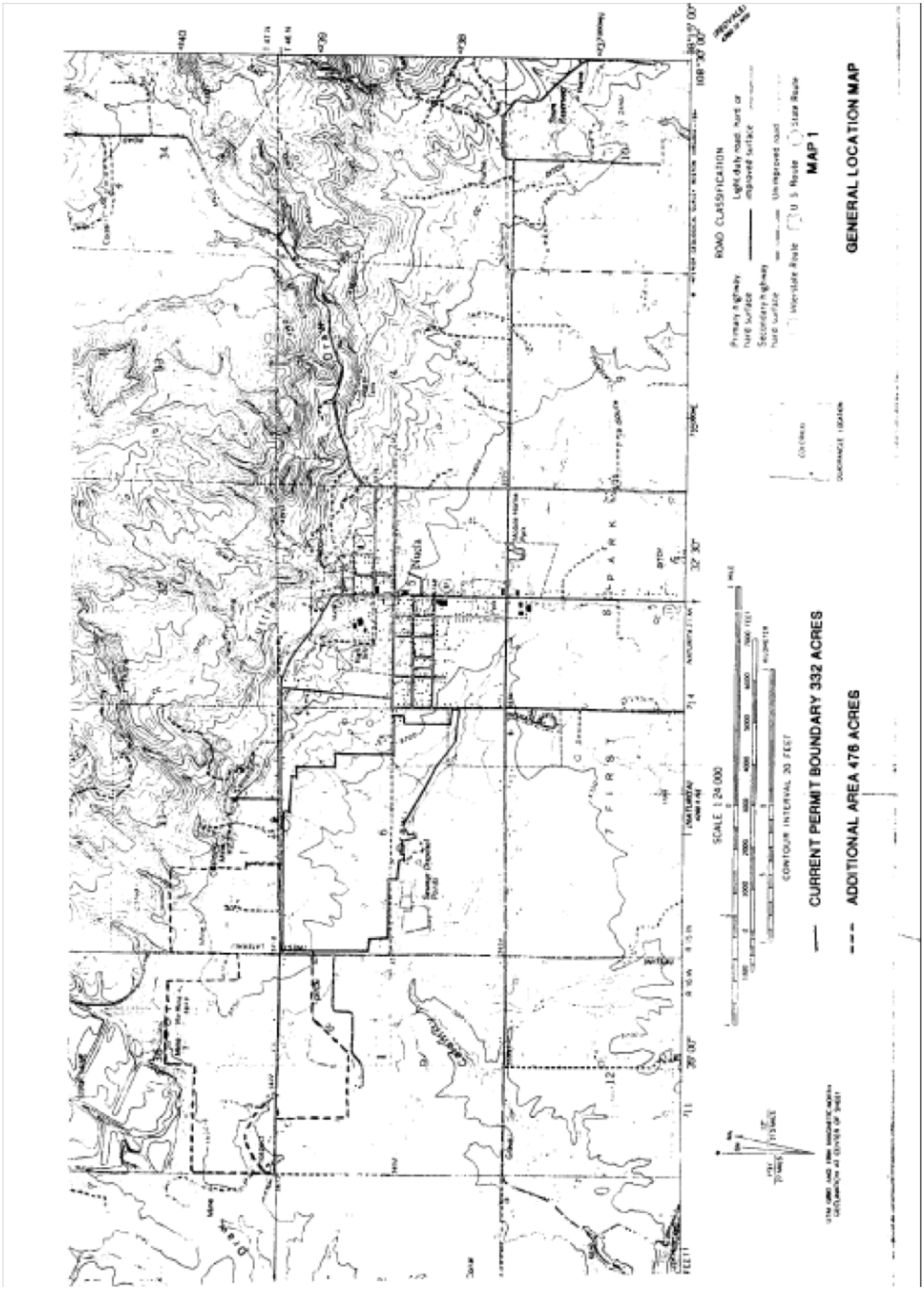
Beginning at the West quarter corner of said Section 31 thence along the East-West centerline of said Section 31 S 88e28'41" E a distance of 1058.36'; thence S 87e52'09" E a distance of 1039.22'; thence S 01e55'10" W a distance of 1808.32'; thence S 89e31'55" E a distance of 100.55'; thence S 1e47'36" W a distance of 859.42'; thence S 88e12'54" E a distance of 1239.87'; thence S 00e00'00" E a distance of 185.93'; thence S 84e09'25" E a distance of 887.74'; thence S 04e00'51" W a distance of 139.34'; thence N 90e00'00" E a distance of 241.94'; thence S 02e07'42" W a distance of 893.62'; thence S 89e01'04" E a distance of 350.05'; thence S 02e11'34" W a distance of 1332.98'; thence S88e31'41"E a distance of 467.15'; thence S 88e52'33" E a distance of 266.96'; thence S 85e45'31" E a distance of 116.88'; thence S 00e00'00" E a distance of 261.56'; thence N 90e00'00" W a distance of 179.45'; thence S 02e02'55" W a distance of 1106.71'; thence S 83e02'07" E a distance of 305.24'; thence S 02e17'26" W a distance of 150.50'; thence N 83e02'07" W a distance of 331.47'; thence N 82e41'39" W a distance of 348.63'; thence N 53e38'46" W a distance of 394.59'; thence N 53e24'20" W a distance of 417.08'; thence N 59e39'16" W a distance of 509.76'; thence N 59e30'54" W a distance of 1051.16'; thence N 84e50'49" W a distance of 27.46'; thence S 63e22'12" W a distance of 274.01'; thence S 15e47'44" E a distance of 125.37'; thence S 73e48'00" W a distance of 99.94'; thence N 15e49'29" W a distance of 319.40'; thence N 84e30'27" W a distance of 325.70'; thence S 00e00'00" E a distance of 88.44'; thence N 90e00'00" W a distance of 102.00'; thence N 00e01'03" W a distance of 98.27'; thence N 85e22'15" W a distance of 120.35'; thence N 84e40'59" W a distance of 372.03'; thence N 02e10'16" E a distance of 193.41'; thence N 88e20'18" W a distance of 1392.69'; thence N 01e25'33" W a distance of 537.73'; thence N 81e57'04" W a distance of 445.05' to the East line of said Section 1; thence Along said East section line N 02e02'08" E a distance of 1225.46' to the centerline of the CC Ditch; thence along said ditch the following courses S 86e25'30" W a distance of 158.55'; thence N 86e17'48" W a distance of 480.63'; thence N 88e50'26" W a distance of 840.46'; thence S 58e53'56" W a distance of 190.63'; thence S 37e02'24" W a distance of 185.40'; thence S 44e47'37" W a distance of 479.20'; thence S 50e29'02" W a distance of 203.79'; thence S 46e05'32" W a distance of 127.89' to the South line of the N1/2, N1/2, SE1/4, NE1/4 of said Section 1; thence along said South line and the South line of the N1/2, N1/2, NE1/4, NW1/4 of said section N 87e29'44" W a distance of 1640.40'; thence along the West line of said N1/2, N1/2, NE1/4, NW1/4 and along the westerly line of Government Lot 3 of said Section 1 N 02e14'05" E a distance of 1656.92' to the southerly line of said Section 36; thence along said southerly Section line S 87e27'09" E a distance of 586.64'; thence departing said southerly line N 37e05'49" W a distance of 594.21'; thence N 57e43'55" W a distance of 689.00'; thence S 70e01'05" W a distance of 700.00'; thence S 59e56'05" W a distance of 332.00' to the westerly line of said Section 36; thence along said westerly line N 02e16'05" E a distance of 1605.50'; thence parallel with the East-West centerline of said Section 36 S 87e27'40" E a distance of 2623.59'; thence N 02e03'35" E 678.26' to the Center 1/4 Corner of said Section 36; thence along the East-West centerline of said section S 87e27'40" E 1983.89' to the easterly line of the W1/2, NE1/4, NE1/4 of said Section 36; thence along said easterly line S 02e17'44" W a distance of 1318.22'; thence S 87e27'25" E a distance of 59.49'; thence S 02e22'27" W a distance of 300.00'; thence S 87e27'25" E a distance of 600.00' to the easterly line of said Section 36; thence along said easterly Section line N 02e22'27" E a distance of 1618.26' to the Point of Beginning, having an area of 35,207,509.44 square feet or 808.253 acres.

The application documents and maps may be reviewed at Montrose County Land Use Office, 317 S. 2nd Street, Montrose, Colorado and the Courthouse Annex, 300 Main Street Nucla, Colorado during regular business hours.

BY ORDER OF
MONTROSE COUNTY BOARD OF COUNTY COMMISSIONERS

Publish: Daily Press
October 7, 1999




GENERAL LOCATION MAP
MAP 1
CURRENT PERMIT BOUNDARY 332 ACRES
ADDITIONAL AREA 476 ACRES
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
ROAD CLASSIFICATION

R. L. (Lance) Wade
Mine Manager

Western Fuels-Colorado
P.O. Box 628
Nucla, Colorado 81424

Telephone 970/864-2165
Fax 970/864-2168

July 24, 2006

To Whom it May Concern:

As per Rule 2.05.5(1)(b), I, Lance Wade, Mine Manager for Western Fuels-Colorado, New Horizon Mine, who has authority to act on the behalf of the New Horizon Mine, here by notify you that WFC intends to keep all buildings and structures listed in "Table 2.05.3(3)-4 Buildings Inventory." It should be noted that WFC is owner of the land on which these buildings reside.

Sincerely.

Lance Wade
Mine Manager
New Horizon Mine

F:\Eng\DATA\WP\2005 NH2_PERMIT\letter to retain all building 24july06.wpd

Carl Benson Letter of Approval for Remaining Portion of Detour Road

Carl N Benson
4101 E. Ashler Hills
Cave Creek, AZ 85331

Oct 14, 2003

Mr. Lance Wade
Mine Manager
Western Fuels Colorado
New Horizon Mine
P.O. Box 628
Nucla, CO 81424

Dear Mr. Wade:

I request that Western Fuels Colorado modify its permit to allow the reclamation backfill contours and grades be changed to maximize the amount of farmable land. This would also simplify the irrigation of the ground as well. If the State requires landowner approval for WFC to deviate from the Approximate Original Contours reclamation guidelines, consider this letter to grant such approval.

On a somewhat related matter, I would like the BB Detour Road to remain unreclaimed where it crosses my property. Portions of the road will be useful for a number of agricultural functions such as parking farm machinery or stacking hay.

If you have any questions or comments, please contact me.

Sincerely,

Carl N. Bud Benson

Carl (Bud) N Benson

Del-Mont Consultants, Inc. Design of 2700 Road and Haul Road Crossing Approved by Montrose County in 2007