PHYSICAL RESOURCE ENGINEERING, INC.
4655 N. Flowing Wells Road
P.O. BOX 36985
Tucson AZ 85740

PHONE (520) 690-1669 FAX (520) 690-1769

June 13, 2002

San Ignacio Vistas, Inc.
P.O. Box 1150
Green Valley, Arizona 85622-1150

RE: PAVEMENT CONDITION OF SUBDIVISION STREETS SAN IGNACIO VISTAS

GENERAL

This development is comprised of roughly 2.67 miles of roads nominally 26 feet wide. These were constructed in late 1995 or thereabouts and have recently been seal-coated. The roads are built atop four to seven inches of aggregate base course and the asphaltic concrete is nominally two inches thick.

SITE VISIT

A cursory site visit was completed on Wednesday, June 12, 2002. Daniel White and Robert Wood were present for Physical Resource Engineering, Inc. and Vernon Kliewer represented the homeowner's association. The site visit was comprised of a review of information and a brief inspection of all the streets in the subdivision. The roads appear in good repair with no visible distortion. Some surface cracks were noted in the pavement at various locations, some have been filled others had not. The attached table summarizes these observations. The cracks are mostly shrinkage cracks running perpendicular to the road with some lane-joint cracks in cul-de-sacs and areas of widened pavement.

PAVEMENT LIFE AND REPLACEMENT ESTIMATE

Given the condition of the pavement after roughly seven years of use, the relatively low daily traffic/loads and a regular program of roadway repair, a 30 year pavement life is possible.

At the end of the serviceable life of the pavement it is envisaged that the following work will be needed:

1) Milling of the outer edges of pavement to enable the new pavement to match the existing curb;
2) Filling of cracks in existing pavement with an asphalt emulsion slurry;
3) Applying a tack coat on the existing pavement to ensure an adequate bond between old pavement and new pavement; and
4) Placing a 1 1/2 inch layer of wearing course atop the existing pavement.

Estimated costs for this work are summarized below:

OVERLAY ESTIMATE

Assumptions:

1)Pavement nominally 26 feet wide and 2.67 miles long.
2)Milled surface 4 feet wide on either side of pavement tapered from 1 1/2 inch depth at gutter line to 0.0 inches four feet from gutter.

Seal Cracks	14,098 LF @ $0.80/LF	11,278
Mill Pavement	12,532 SY @ $1.10/SY	13,785
Tack Coat	40,726 SY @ $0.27/SY	10,996
1 1/2" Wearing Course	40,726 SY @ $3.20/SY	130,323
Inspection/Testing	48 hrs @ $40.00/hr	1,920
Contingency @ 15%		25,245
		$ 193,547

where:
LF = Linear Feet
SY = Square Yard

Recognize that the quantities given are crude estimates. Given the budgetary limitations of this project, it was impossible to review improvement plans and calculate actual pavement areas for each road. All costs are in 2002 dollars with no provision for escalation.

FUTURE MAINTENANCE AND REPAIR

We believe that a regular program of monitoring and repair should enable you to achieve a long service life for your pavement. The concept of resealing the pavement every 4 to five years is a good one. This should also include the sealing of cracks. Cracks less than 1/8 inch wide may either be ignored or, if intrusion of water is a concern, filled with the use of a squeegee, with emulsified or cut-back asphalt covered with sand. Cracks more than 1/4 inch wide should be filled with an asphalt emulsion slurry or a light grade of cutback asphalt and fine sand.

We hope this information is of benefit to you in your endeavors.

Sincerely,

Daniel White, P.E.
Principal Engineer

Robert E Wood

Robert Wood, P.E.
Civil Engineer

SAN IGNACIO VISTAS

CRACKING OF ASPHALT PAVEMENT

JUNE 12, 2002

Street	Address	Type	Aperture	Filled
Harvest Moon	4791	T	1/8"	No
	4887	T	1/8"	Partially
View Ridge	4839	T	0	Yes
	Calle Tres	T	1/4"	No
Vista Ridge	1644-1668	T/L	<1/8"	Partially
	1692	L	<1/8"	Partially
Desert Sunset	4772	T	0	Yes
Meadow Ridge	4901	T/L	0	Yes
	4781	T	<1/8"	Yes
Prairie Hills	4879	T	1/4"	No
	4771	L	1/8"	Partially
Gloria Vista	4737	T	<1/4"	Partially
Vista Ridge Ct	4783	T	<1/8"	Yes
Hidden Crest Ct	1413	L	1/4"	Partially
Desert Grove Ct	4673	L	<1/4"	No
Sonoran View/Vista Ridge		T	1/8"	Partially

Note: locations and apertures are approximate

L = Longitudinal T = Transverse

San Ignacio Vistas, Inc.
P.O Box 1150
Green Valley AZ 85622-1150

Private Streets

Total miles = 2.67
Total acres = 11.04
Design speed = 25 MPH
General plans accepted 3-16-95
Paving and Sewer plans—G-94-153 (Sep 02 1995)
Pavement design—rough grading, approved 6-30-95

Apparently, rough grading surfacing began in September 1995

General Information

1. All construction and test methods—Pima Co/City of Tucson standard specifications for public improvements (PC/COT SSPI) 1988 Edition
2. Aggregate Base course shall conform to PC/COT SSPI Section 303
3. Asphaltic concrete shall conform to PC/COT SSPI Section 406, MIX #2 specifications
4. Final design of the pavement course thickness shall be performed after the construction of subgrade and prior to pavement

From 2/17B G-94-153

Recommended Flexible Pavement Section
Desert Grove Court
Hidden Crest Court
King Arthur's Court
Meadow Ridge Drive, Station 0+00 to 5+20
Gloria View Drive, Station 0+00 to 5+20
Prairie Hills Drive, Station 0+00 to 6+40
Harvest Moon Drive, Station 0+00 to 5+55

Asphaltic Concrete (Inches)	Aggregate Base Course (Inches)
2	4.0

View Ridge Drive
(Vista Ridge Drive)

Station	Asphaltic Concrete (Inches)	Aggregate Base Course (Inches)
0+00 to 2+31	2	7.0
or alternate	3	4.0
2+31 to 9+46	2	6.5
9+46 to 11+87	2	6.0
11+87 to 14+14	2	5.5
14+14 to 25+93	2	4.0