

GADSDEN INDEPENDENT SCHOOL DISTRICT

PAVEMENT ANALYSIS REPORT

FOR

RIVERSIDE, SUNLAND PARK, DESERT VIEW

AND CHAPARRAL ELEMENTARY

SCHOOLS

FEBRUARY 8, 2012

Prepared for:

GADSDEN INDEPENDENT SCHOOL DISTRICT

4950 MC NUTT ROAD

SANTA TERESA, NM 88008

Prepared by:


BOHANNAN HUSTON, INC.

425 S. TELSHOR BLVD., C#103

LAS CRUCES, NM 88011

BHI PROJECT # 20120280

PREPARED BY:

 2/8/12

David M. Shields, C.E.T.

Date

TABLE OF CONTENTS

1 INTRODUCTION2

1.1 Scope of Work2

1.2 Project Locations and Description.....2

 1.2.1 Desert View Elementary2

 1.2.2 Sunland Park Elementary.....6

 1.2.3 Riverside Elementary School.....11

 1.2.4 Chaparral Elementary14

2 RESULTS AND RECOMMENDATIONS SUMMARY.....19

2.1 Desert View Elementary School (4th Priority)19

2.2 Sunland Park Elementary School (3rd Priority)20

2.3 Riverside Elementary School (2nd Priority).....20

2.4 Chaparral Elementary School (1st Priority)21

LIST OF FIGURES

Figure 1 – Desert View Elementary School3

Figure 2 - Desert View Elementary Main Circle Drive.....4

Figure 3 – Desert View Elementary School Main Circle Drive4

Figure 4 - Desert View Faculty Parking5

Figure 5 - Desert View Bus Drop Off.....5

Figure 6 - Desert View Parent Student Drop Off6

Figure 7 – Sunland Park Elementary School.....7

Figure 8 - Sunland Park ES Main Circle Drive.....8

Figure 9 - Sunland Park ES Main Circle Drive.....8

Figure 10 - Sunland Park ES Parent / Visitor Parking9

Figure 11 - Sunland Park ES Faculty Parking10

Figure 12 - Sunland Park ES Bus Drop Off.....10

Figure 13 – Riverside Elementary School11

Figure 14 - Riverside ES Main Circle Drive12

Figure 15 - Riverside ES Visitor Parking13

Figure 16 - Riverside ES Student Drop Off (Chama Ln.).....13

Figure 17 - Riverside ES Student Drop Off 9chama Ln.).....14

Figure 18 – Chaparral Elementary School15

Figure 19 - Chaparral ES Main Parking Entrance16

Figure 20 - Chaparral ES Main Parking Exit.....16

Figure 21 - Chaparral ES Faculty Parking17

Figure 22 - Chaparral ES Gravel Parking18

Figure 23 - Chaparral ES Bus Drop Off.....18

Figure 24 - Chaparral ES Dumpster Area19

Figure 25 - Project Vicinity Map24

1 INTRODUCTION

This pavement inspection report evaluates and summarizes results of an onsite inspection of the existing asphalt pavement surfacing at Riverside, Desert View, Sunland Park and Chaparral Elementary Schools within the Gadsden Independent School District (GISD). The objective of this report is to establish a needs assessment of the four school's existing asphalt pavement for the purpose of prioritizing a repair or replacement schedule for the District.

The four schools included in this report are all over 24 years old. The main parking lots and original circle drive student drop off paving areas correspond with the age of the facility. All of the schools have separate bus drop off, parent drop off, visitor parking and faculty parking areas. Most of the schools have added new paved bus drop offs and parent student drop off facilities to each school after the original school construction. Each of the separate functions of the pavement areas will addressed separately in the report.

1.1 SCOPE OF WORK

Tasks completed as part of this study include:

- Evaluate the existing asphalt surface condition.
- Note any distinct wear patterns.
- Propose repairs to the surface that could extend the useful life of the pavement.
- Recommend complete replacement where damage is beyond typical repair or preservation.

1.2 PROJECT LOCATIONS AND DESCRIPTION

1.2.1 DESERT VIEW ELEMENTARY

Desert View Elementary School is located at 1105 Valle Vista Dr. in Sunland Park, NM. The school was built in 1988. The entrance to the main parking and parent student drop off are accessed from Valle Vista Drive and utilize a circle drive for parent drop offs with separate visitor and facility parking areas to the East and West of the circle drive. A separate bus drop off was constructed in January of 2006 which also enters and exits from Valle Vista Drive. A new parent drop off was constructed in September 2007 which has a separate entrance from Valle Vista Drive and connects to the main entrance circle drive.



Figure 1 – Desert View Elementary School

The main circle drive entrance to Desert View appears to be part of the original construction of the school building and is showing signs of disintegration and wear. Raveling and weathering of the pavement is evident by a rough jagged pavement surface. Pavement aggregate polishing is also apparent and is due to prolonged traffic use over the surface. The turn out to Valle Vista Dr. shows the most extensive surface damage with various potholes and repairs. This portion of asphalt paving has reached the extent of its expected useful life and will require complete removal and replacement of the asphalt surface.



Figure 2 - Desert View Elementary Main Circle Drive



Figure 3 – Desert View Elementary School Main Circle Drive

The Faculty and Parent/Visitor parking lots east and west of the circle drive show less wear than the main circle drive, but do exhibit signs of raveling and weathering. Much of the asphalt binder has been lost over the years and reveals a rough aggregate finish. Typically these two parking areas only experience light vehicle traffic with only limited heavy truck traffic. A 1" asphalt surface overlay would extend the useful life cycle by 8 to 10 years or a crack repair and a pavement preservation slurry seal treatment could be used to extend it 6 to 8 years. The 1" asphalt surface overlay would provide extended useful life and overall

improved performance. However the crack repair and pavement preservation treatment would be recommended as a minimum maintenance objective.



Figure 4 - Desert View Faculty Parking

The bus drop off to the east of the main circle drive is relatively new and is in good condition. Removal of the accumulation of sand and debris from the concrete gutter pans is needed and a regular schedule of general sweeping and cleaning of all drainage paths should be implemented in the school maintenance program. A pavement preservation slurry treatment within the next 6 to 8 years is recommended.



Figure 5 - Desert View Bus Drop Off

The student drop off on the west side is also new and in good condition. Typical sand and debris removal along the gutter pans and drainage paths is also recommended. A pavement preservation slurry treatment within the next 6 to 8 years will extend the pavement life cycle. Associated curb and gutters, sidewalks, ramps and drainage structures appeared in good condition and only regular cleaning is required. New striping and marking will be required after any pavement preservation treatment is completed.



Figure 6 - Desert View Parent Student Drop Off

1.2.2 SUNLAND PARK ELEMENTARY

Sunland Park Elementary is located at 305 Alto Vista Drive in Sunland Park. This school was also built in 1988 and has the same general configuration as Desert View ES. The main entrance is a circle drive accessed from Alto Vista Drive with a separate bus drop off located on the eastern side of campus. A Visitor / Parent parking lot is situated between the main entrance circle drive and the bus drop off. A much larger parking area, designated for faculty is located west of the main entrance. The faculty parking area was expanded in September of 2007.



Figure 7 – Sunland Park Elementary School

The Main Circle Drive entrance is in poor condition and is weathered and raveled extensively. Many pothole and patches are apparent throughout the driving surface, as are ruts and large deposits of fine sand particles and debris. A pavement section located at the main entrance, from Alto Vista Drive to the apparent right of way will require complete removal and replacement as soon as funding allows.



Figure 8 - Sunland Park ES Main Circle Drive



Figure 9 - Sunland Park ES Main Circle Drive

The Parent/ Visitor parking to the east is also weathered and has lost a major portion of binder material which has left portions of the aggregate exposed. There were no signs of major cracking or asphalt displacement, which would indicate the underlying substrate material is in good condition. Due to the relative light traffic this parking lot experiences, a complete removal and replacement could be delayed by a 1" asphalt surface overlay or pavement preservation slurry treatment. As with the other schools, the 1" overlay option would greatly extend the service life of the parking lot, but may not be financially feasible

within the next 2 to 4 years. At a minimum, the pavement preservation treatment should be scheduled within the next 2 to 4 years.



Figure 10 - Sunland Park ES Parent / Visitor Parking

The Faculty parking area west of the circle drive also appears to be original to the school building and appears to experience much of the same wear that the parent / visitor parking area has. The binder material has disintegrated over the years and left a rough pavement surface. There are some areas of pothole patches, but no major longitudinal cracking is evident. With a general sand and debris removal program implemented, the expected useful life can be extended with a pavement preservation slurry applied within the next 4 to 6 years. The expansion of the faculty parking area that was complete in 2004 is in good condition and no immediate action is required. Pavement preservation slurry should be scheduled within the next 8 to 10 years.



Figure 11 - Sunland Park ES Faculty Parking

The separate Bus Drop Off east of the main entrance is in good condition, with the exception of accumulation of fine sand particles. General pavement sweeping of the top surface and along the curb line will allow for appropriate drainage flow patterns and improve general appearance. A pavement preservation treatment should be scheduled within the next 6 to 8 years to extend the pavement performance.



Figure 12 - Sunland Park ES Bus Drop Off

1.2.3 RIVERSIDE ELEMENTARY SCHOOL

Riverside Elementary is located 4085 McNutt Road in Sunland Park. The facility was constructed in 1987 and it is assumed the original circle drive and adjacent parking lots were constructed at the same time. Main access to the Parent/ Visitor and faculty parking are from McNutt Road. The Parent Student drop off and additional Parent/ Visitor Parking lots access from Chama Lane. The separate Bus Drop Off enters and exits from the rear of the property along Mt. Christo Rey Blvd. The Bus drop off also has paved service parking area adjoining the drop off.



Figure 13 – Riverside Elementary School

The Main Circle Drive entrance pavement surface is deteriorated and has many potholes and large areas of pavement patches throughout. Longitudinal cracks are prevalent throughout the circle drive as well loss of much of the asphalt binder material. The entrance to the circle drive should be scheduled for complete removal and replacement. Additional cost will need to be anticipated for some rework of the substrate base course material and the replacement of traffic signal sensors at the McNutt and Main Circle drive intersection. The remaining pavement surface of the Circle Drive would benefit

from a 1" asphalt surface overlay to extend the service life of the pavement. A replacement and overlay time frame would be expected to be to be completed within the next 2 to 4 years.



Figure 14 - Riverside ES Main Circle Drive

The adjacent Visitor and Faculty parking areas are in similar condition with loss of asphalt binder material, weathering and longitudinal cracking. However, due to the limited use of these parking areas, complete removal and replacement could be delayed by a 1" asphalt surface overlay or crack sealing and pavement preservation slurry treatment. If either option is applied within the next 2 to 4 years, the complete removal and replacement could be extended by 8 to 10.



Figure 15 - Riverside ES Visitor Parking

The additional Parent / Visitor parking area which is accessed from Chama Lane, was constructed in January of 2006 and is in good condition, with the exception of fine sand particles and minor debris. As a preventative measure, pavement preservation slurry within 6 to 8 years should be scheduled.



Figure 16 - Riverside ES Student Drop Off (Chama Ln.)



Figure 17 - Riverside ES Student Drop Off 9chama Ln.)

A new Parent / Student Drop Off was also constructed in 2006 and remains in good condition. As with the adjacent Visitor Parking area, the new Student Drop Off should be scheduled for a pavement preservation slurry treatment and restriping within the next 6 to 8 years.

The Bus Drop off at the rear of the property fronting Mt. Cristo Rey Blvd. is also relatively new and is in good condition with only typical sweeping and maintenance required. Pavement preservation slurry should be scheduled within 4 to 6 years to prolong its useful life.

1.2.4 CHAPARRAL ELEMENTARY

Chaparral Elementary School is located at 300 Lisa Drive in Chaparral and is the oldest of the four schools investigated in this report. Chaparral ES was constructed in 1980 and the parking lot pavement condition is potentially over 30 years old. The main parent / visitor parking lot is shared with the parent student drop off, which are accessed from Lisa Drive. Immediately west of the parent / student drop off and general parking area are two other parking facilities, one is designated for visitor parking and the other for faculty parking. The Faculty parking is currently paved and the Visitor parking is gravel surfacing only. There is a separate bus drop off on the West end of the campus which is accessed from the Chaparral Middle School access road.

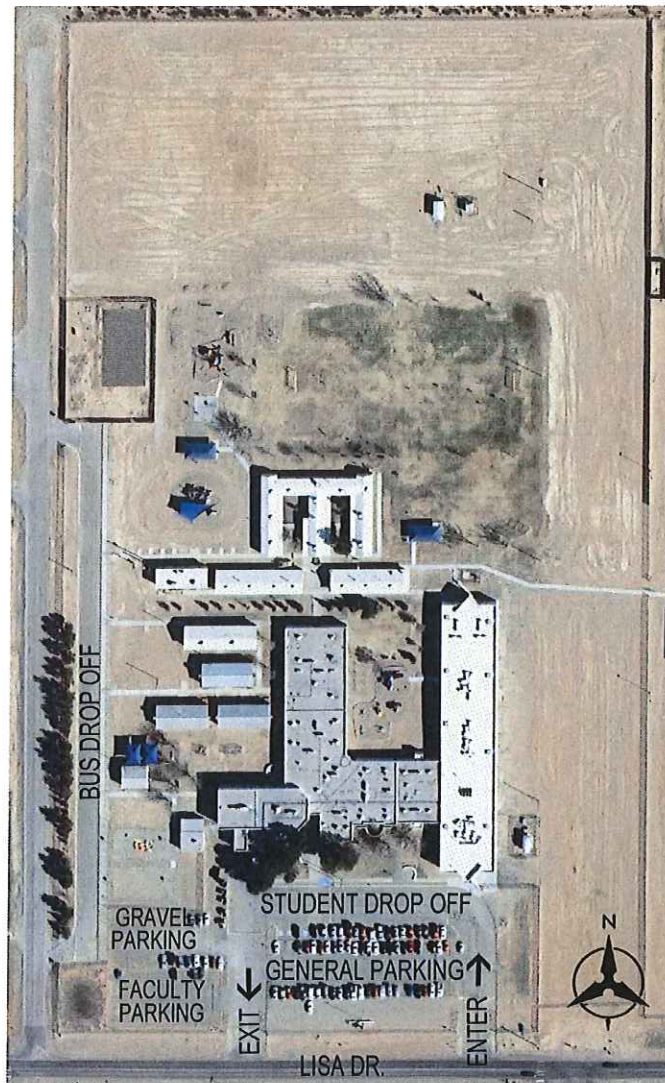


Figure 18 – Chaparral Elementary School

The Main parking and parent student drop off is in a dilapidated state with many longitudinal and transverse cracks throughout. As expected for the age of the asphalt pavement, much of the binder material has been lost over time and the driving surface is rough and worn with ruts and surface disintegration. The main access from Lisa Drive is in very poor condition and is in need of immediate repair. Large potholes and broken pavement sections impede traffic to and from the facility and should be a priority for complete replacement. The asphalt curb on the east end of the parking lot is broken with various sections missing in many areas along its length. Potholes and temporary repairs are also evident throughout the pavement surface. It is recommended that the entire parking surface be removed and replaced. Additional installation of curb and gutters, as well as sidewalks should be included as part of the overall project. This parking facility is generally

inadequate to handle the current volume of traffic and additional parking should be considered. The overall condition of this parking facility warrants complete removal and replacement as soon as practical for the District.



Figure 19 - Chaparral ES Main Parking Entrance



Figure 20 - Chaparral ES Main Parking Exit

The adjacent Faculty parking area west of the main entrance / exit is in fair condition and appears to have been added after the main school was constructed. A regular maintenance and sweeping schedule to remove the sand and debris from the storm water flow paths is needed. The existing pavement receives light vehicle traffic and the expected

useful life can be extended by applying a 1" asphalt surface overlay or pavement preservation treatment within the next 2 to 4 years.



Figure 21 - Chaparral ES Faculty Parking

The other gravel parking area is also used for overflow parking due to the high volume of traffic the main parking area experiences. In order to better serve the facility, this gravel surface parking could be paved with curb & gutter and sidewalks constructed to relieve some of the congestion to the pavement for the main entrance and in turn help extend the life of main parking pavement. It is recommended to pave the gravel parking and include a designated and separate trash dumpster pick up area that will utilize reinforced concrete dumpster pads with either concrete paving or thickened asphalt paving up to and directly in front of the dumpsters. This would ensure that the direct loading from heavy trucks would be confined to the thickened wear surface or concrete pad and would alleviate any settling and cracking on less rigid wear surfacing. It is recommended to complete this work within the next 2 to 4 years.



Figure 22 - Chaparral ES Gravel Parking

The Bus Drop Off also appears to have been added after the original school construction and is fair condition. It was noted that there were some longitudinal and transverse cracking throughout the driving surface. The overall surface appeared to be in fair condition with 1" asphalt surface overlay or crack sealing and pavement preservation treatment recommended within the next 2 to 4 years. A 1" asphalt overlay could replace the pavement preservation treatment for this section and would greatly extend the expected useful life of the surface. Restriping and marking would be required upon completion.



Figure 23 - Chaparral ES Bus Drop Off



Figure 24 - Chaparral ES Dumpster Area

It should also be noted that additional parking could be utilized on the south end of the main parking lot, parallel to Lisa Drive. Approximately 22 additional parking spaces could be constructed in this area and provide relief for the overcrowding of the main parking area. These additional parking spaces could be incorporated into the design of the reconstruction of the main parking area.

2 RESULTS AND RECOMMENDATIONS SUMMARY

2.1 DESERT VIEW ELEMENTARY SCHOOL (4TH PRIORITY)

- Main Circle Drive Entrance – Poor Condition - Complete removal and replacement of asphalt surface 2 to 4 years.
Complete Asphalt Removal & Replacement \$78,000
- Faculty and Parent / Visitor Parking – Fair Condition – 1" asphalt surface overlay or crack repair and pavement preservation slurry sealer 2 to 4 years.
1" Asphalt Overlay \$7,500 each (X2)
Crack Repair & Pavement Preservation Slurry treatment \$3,500 each (X2)
- Bus Drop Off – Good Condition - pavement preservation slurry within 6 to 8 years.
Pavement Preservation Slurry Treatment \$2,000
- Student Drop Off – Good Condition – pavement preservation slurry within 6 to 8 years.

Pavement Preservation Slurry Treatment \$3,000

- All pavement areas to receive regular surface sweeping and general sand and debris clean up.

Total Estimated Cost **\$90,000** (add \$8,000 for 1" overlay option)

2.2 SUNLAND PARK ELEMENTARY SCHOOL (3RD PRIORITY)

- Main Circle Drive – Poor Condition – Complete pavement removal and replacement within the next 2 to 4 years.

Complete Removal & Replacement \$78,000

- Parent / Visitor Parking – Fair Condition – Pavement preservation slurry seal or 1" asphalt overlay within 2 to 4 years.

Pavement Preservation Slurry Treatment \$3,000

1" Asphalt Overlay \$7,500 each

- Faculty Parking – Fair Condition- Pavement preservation slurry treatment or 1" asphalt surface overlay within 4 to 6 years.

Pavement Preservation Slurry Treatment \$3,000

1" Asphalt Overlay \$7,500

- Faculty Parking Addition – Good Condition – Pavement preservation slurry seal within 8 to 10 years.

Pavement Preservation Slurry Treatment \$3,000

- Bus Drop Off – Good Condition – Pavement preservation slurry seal within 6 to 8 years.

Pavement Preservation Slurry Treatment \$5,500

- All pavement areas to receive regular surface sweeping and general sand and debris clean up.

Total Estimated Construction Cost **\$ 92,500** (add \$9,000 for 1" overlay option)

2.3 RIVERSIDE ELEMENTARY SCHOOL (2ND PRIORITY)

- Main Circle Drive – Poor Condition – Complete pavement removal and replacement within 2 to 4 years.

Complete R & R \$78,000

- Faculty Parking – Fair Condition – Crack repair and pavement preservation treatment within or 1" asphalt overlay within 2 to 4 years.

Slurry Treatment \$3,000

1" Overlay \$7,500

- Visitor Parking – Fair Condition - Crack repair and pavement preservation treatment or 1" asphalt overlay within 2 to 4 years.

Slurry Treatment \$3,000

1" Overlay \$7,500

- Visitor Parking (Chama Lane) – Good Condition – Pavement preservation treatment within 6 to 8 years.

Slurry Treatment \$5,000

- Student Drop Off (Chama Lane) – Good Condition- Pavement preservation treatment within 6 to 8 years.

Slurry Treatment \$4,500

- Bus Drop Off (Mt. Cristo Rey) – Good Condition- Pavement preservation treatment within 4 to 6 years.

Slurry Treatment \$7,500

Total Estimated Construction Cost **\$101,000** (add \$9,000 for 1" overlay option)

2.4 CHAPARRAL ELEMENTARY SCHOOL (1ST PRIORITY)

- Main Parking and Parent Student Drop Off – Poor Condition- Complete removal and Replacement including turnouts within the next 1 to 3 years.

Complete R & R \$275,000

- Faculty Parking – Fair Condition – Pavement preservation treatment within 2 to 4 years.

Slurry Treatment \$3,500

- Bus Drop Off – Fair Condition – Crack repair and Pavement preservation treatment or 1" asphalt overlay within 2 to 4 years.

Crack Seal & Slurry Treatment \$5,000

1" Asphalt Overlay \$13,000

- Pave existing gravel parking area

New asphalt paving \$42,000

- Construction of additional parking adjacent to Lisa Drive and pave gravel parking area.

New Asphalt Paving \$42,000

Total Estimated Construction Cost **\$283,500** (add \$8,000 for 1" overlay option & \$84,000 for paving 2 new parking areas)

The priority rating assigned to each school is based on the condition of the asphalt pavement at the time of inspection and the severity of deterioration. The district may have different priority rating based on each particular schools needs or future planning or expansion criteria.

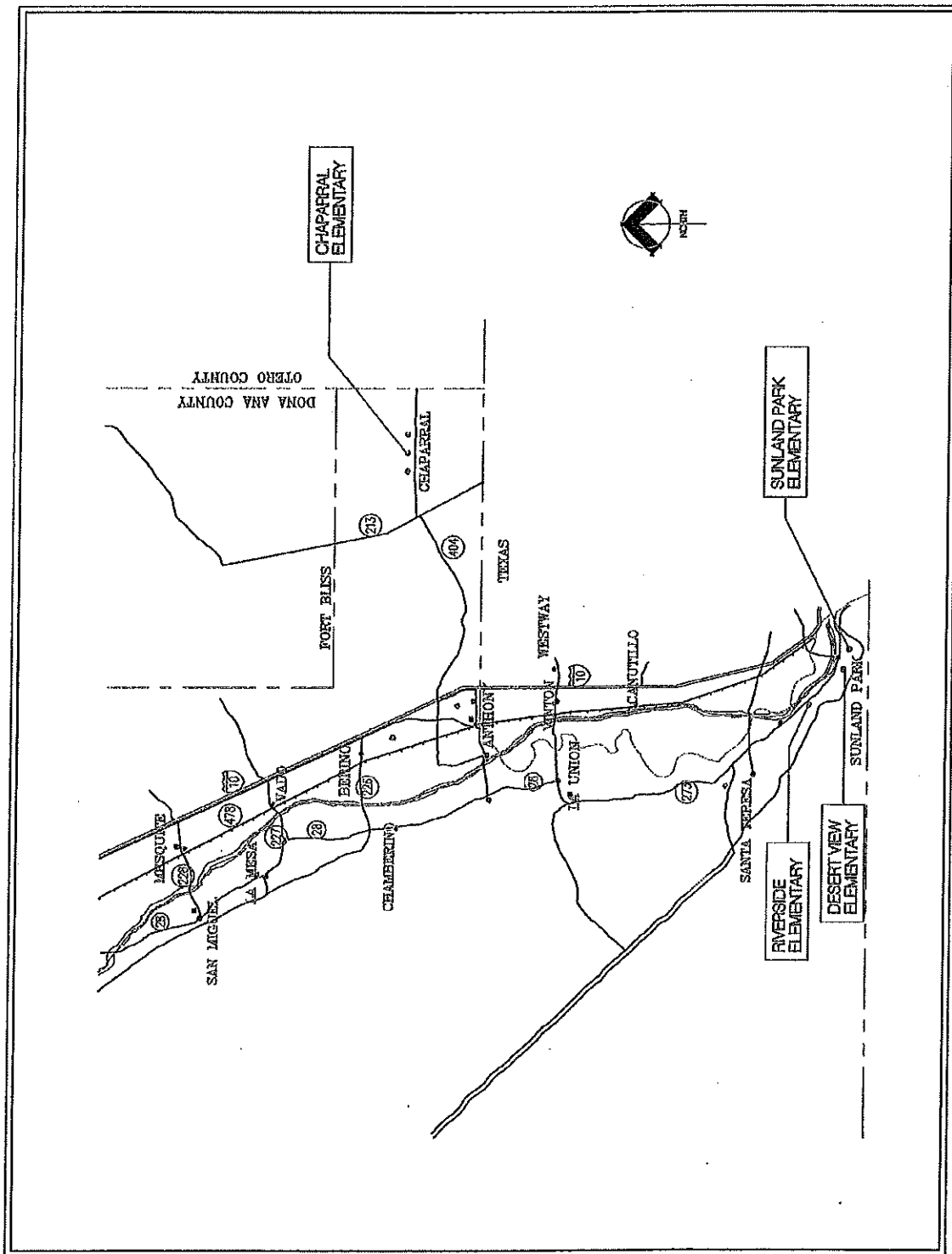
| | Complete Pavement R & R | Crack Seal | Pavement Preservation Treatment | 1" Asphalt Overlay | Estimated Cost W/ Pavement Preservation | Estimated Cost W/ 1" Overlay |
|-------------------------|-------------------------|------------|---------------------------------|--------------------|---|------------------------------|
| Main Circle Drive | X | | | | \$78,000.00 | \$78,000.00 |
| Parent/ Visitor Parking | | X | X | X | \$3,500.00 | \$7,500.00 |
| Faculty Parking | | X | X | X | \$3,500.00 | \$7,500.00 |
| Student Drop Off | | | X | | \$3,000.00 | \$3,000.00 |
| Bus Drop Off | | | X | | \$2,000.00 | \$2,000.00 |
| | | | | | | |
| | | | | Total Cost | \$90,000.00 | \$98,000.00 |
| DESERT VIEW ES | | | | | | |

| | Complete Pavement R & R | Crack Seal | Pavement Preservation Treatment | 1" Asphalt Overlay | Estimated Cost W/ Pavement Preservation | Estimated Cost W/ 1" Overlay |
|--------------------------|-------------------------|------------|---------------------------------|--------------------|---|------------------------------|
| Main Circle Drive | X | | | | \$78,000.00 | \$78,000.00 |
| Parent/ Visitor Parking | | | X | X | \$3,000.00 | \$7,500.00 |
| Faculty Parking | | | X | X | \$3,000.00 | \$7,500.00 |
| Faculty Parking Addition | | | X | | \$3,000.00 | \$3,000.00 |
| Bus Drop Off | | | X | | \$5,500.00 | \$5,500.00 |
| | | | | | | |
| | | | | Total Cost | \$92,500.00 | \$101,500.00 |
| SUNLAND PARK ES | | | | | | |

PAVEMENT ANALYSIS REPORT

| | Complete Pavement R & R | Crack Seal | Pavement Preservation Treatment | 1" Asphalt Overlay | Estimated Cost W/ Pavement Preservation | Estimated Cost W/ 1" Overlay |
|-------------------------------|-------------------------|------------|---------------------------------|--------------------|---|------------------------------|
| Circle Drive | X | | | | \$78,000.00 | \$78,000.00 |
| Parent / Visitor Parking | | | X | X | \$3,000.00 | \$7,500.00 |
| Faculty Parking | | | X | X | \$3,000.00 | \$7,500.00 |
| Visitor Parking (Chama Ln) | | | X | | \$5,000.00 | \$5,000.00 |
| Student Drop Off (Chama Ln) | | | X | | \$4,500.00 | \$4,500.00 |
| Bus Drop Off (Mt. Cristo Rey) | | | X | | \$7,500.00 | \$7,500.00 |
| | | | | Total Cost | \$101,000.00 | \$110,000.00 |
| RIVERSIDE ES | | | | | | |

| | Complete Pavement R & R | Crack Seal | Pavement Preservation Treatment | 1" Asphalt Overlay | Estimated Cost W/ Pavement Preservation | Estimated Cost W/ 1" Overlay |
|-------------------------|-------------------------|------------|---------------------------------|--------------------|---|------------------------------|
| Main Parking & Drop Off | X | | | | \$275,000.00 | \$275,000.00 |
| Faculty Parking | | | X | | \$3,500.00 | \$3,500.00 |
| Bus Drop Off | | X | X | X | \$5,000.00 | \$13,000.00 |
| Gravel Parking | X | | | | \$42,000.00 | \$42,000.00 |
| Construct New Parking | X | | | | \$42,000.00 | \$42,000.00 |
| | | | | Total Cost | \$367,500.00 | \$375,500.00 |
| CHAPARRALES | | | | | | |



VICINITY MAP

Figure 25 - Project Vicinity Map