IV. Physical Condition of the Existing Facility

The information presented in this section of the report is a compilation of right-of-way maps, an identified centerline, and a physical inspection of the St. Francis Drive corridor.

A. Typical Section

In general, St. Francis Drive is a six-lane roadway (three travel lanes in each direction) with median and left turn lanes at major intersections. There are currently no identified on-street bicycle lanes throughout the corridor. Prior to a maintenance project in 2005 that re-striped the south end of the corridor to three lanes in each direction; the shoulder south of St. Michael's Drive was utilized as bike lane. A sidewalk of varying widths is adjacent to the traveled way from West San Mateo Road to Alamo Drive. There are no sidewalks along St. Francis Drive from Old Agua Fria/Rabbit Road to San Mateo Road.

The typical sections are shown in Figure 14.

B. Right-of Way

The right-of-way width varies throughout the corridor. The right-of-way and centerline were re-created from right-of-way acquisition maps created prior to the construction of the roadway in 1961 and therefore should be considered approximate as final right-of-way acquisition activities likely resulted in changes from these original engineering drawings. No right-of-way survey was conducted for this study.

The right-of-way width south of St. Michael's Drive ranges from 250 feet to 300 feet until the Interstate. Between San Mateo and Cordova the right-of-way is 150 feet. From Cordova to Pen Road the right-of-way is between 100 and 105 feet. Just north of Cerrillos the right-of-way width is 155 feet but quickly reduces back to between 95 and 150 feet to Alameda. North of Alameda the right-of-way expands to 170 to 225 feet due to historical drainage facilities. North of the Guadalupe interchange the right-of-way returns to 150 feet.

A graphic showing the right-of-way widths determined from the right-of-way acquisition maps are shown in Figure 15 through Figure 17.

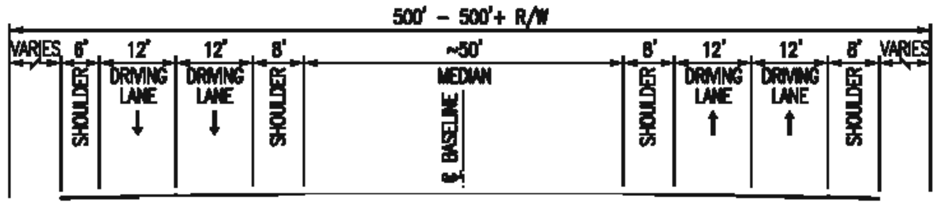
C. Geometrics

The St. Francis Drive corridor was originally constructed in the 1960's. Throughout its history this roadway has been evolving as has the community that it services. During this time roadway design standards have been modified and revised many times. The existing geometric elements were evaluated against the 2004 AASHTO Policy on Geometric Design of Highways and Streets (Green Book).

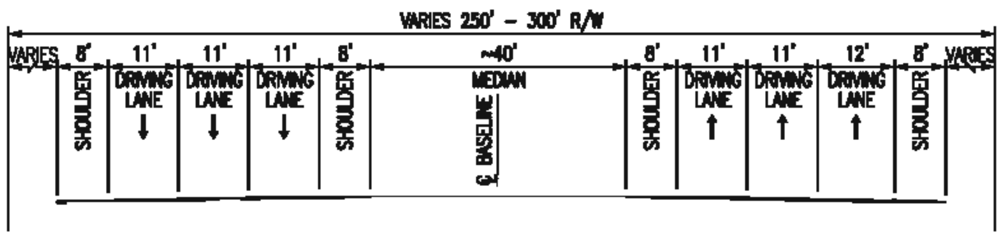
1. Horizontal Curvature

Horizontal geometry data for St. Francis Drive was not available from roadway plans. The roadway centerline was reconstructed using available right-of-way maps and assuming the location of the centerline of the facility. There are six horizontal curves in this corridor. The curve data is presented in Table 10. AASHTO provides superelevation tables for both high speed facilities and low speed urbanized facilities. For the analysis of this corridor, that is highly urbanized, with relatively low & variable speeds, the existing curves were evaluated against the Low-Speed Urban Streets superelevation tables.[5] All curve superelevation within the corridor is acceptable based on the low speed urban design criteria. Curve 6 has a posted speed that is at the upper limit of the low speed urban criteria. As a point of reference, this curve was evaluated against the standard AASHTO superelevation tables[6]. It was assumed that the value of the maximum superelevation is 6% as is the state of the practice for facilities located to the north of Interstate 40. The existing superelevation was estimated using cross sections developed from the existing ground digital terrain model. Based on the determined superelevation rate of curve 6, 4.0%, the design speed of this curve is in excess of 55 miles per hour.

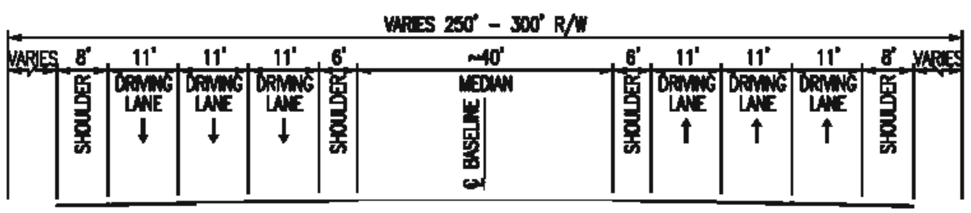
[5] A Policy on Geometric Design of Highways and Streets, 2004 edition, Exhibit 3-16, pg 151.
[6] A Policy on Geometric Design of Highways and Streets, 2004 edition, Exhibit 3-26, pg 168.



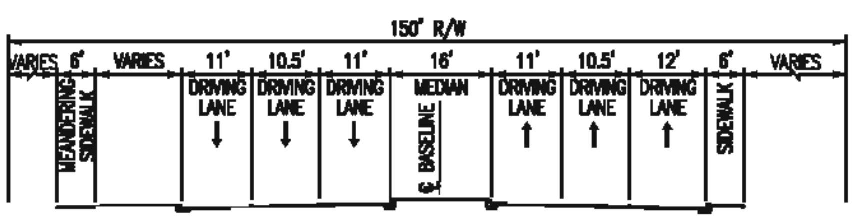
TYPICAL SECTION 1
RABBIT ROAD TO
NORTH OF MERGE



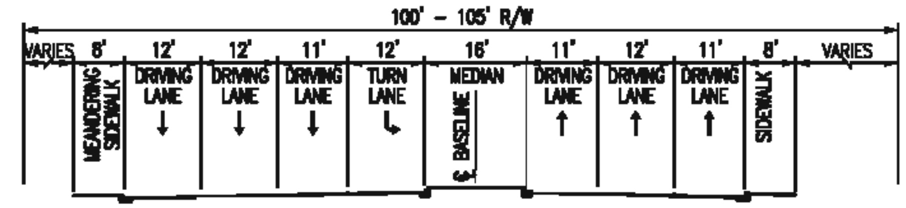
TYPICAL SECTION 2
NORTH OF MERGE TO
SOUTH OF SAWMILL ROAD



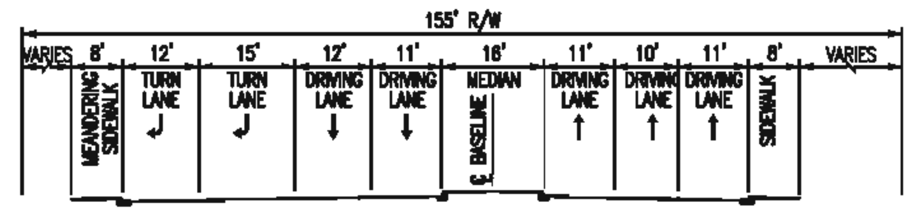
TYPICAL SECTION 3
SOUTH OF SAWMILL ROAD TO
ST. MICHAELS DRIVE RAMPS



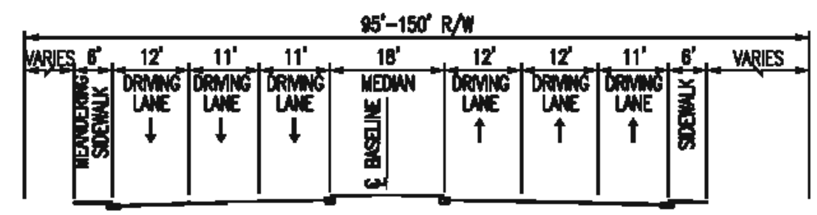
TYPICAL SECTION 4
WEST SAN MATEO ROAD
TO WEST CORDOVA ROAD



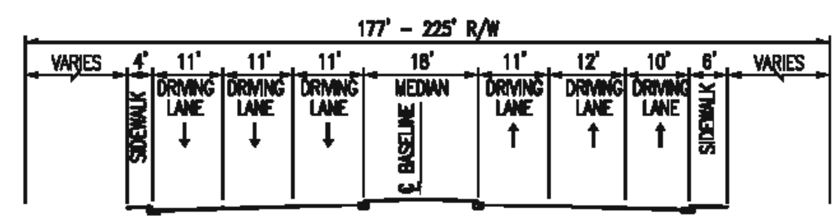
TYPICAL SECTION 5
WEST CORDOVA ROAD
TO CERRILLOS ROAD



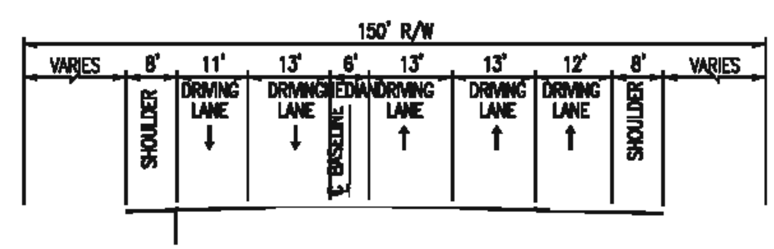
TYPICAL SECTION 6
SOUTH OF CERRILLOS ROAD
TO MERCER ST.



TYPICAL SECTION 7
NORTH OF MERCER ST. TO
SOUTH OF CAMINO DE LAS CRUCITAS



TYPICAL SECTION 8
SOUTH OF CAMINO DE LAS CRUCITAS
TO NORTH OF ALAMO DR.

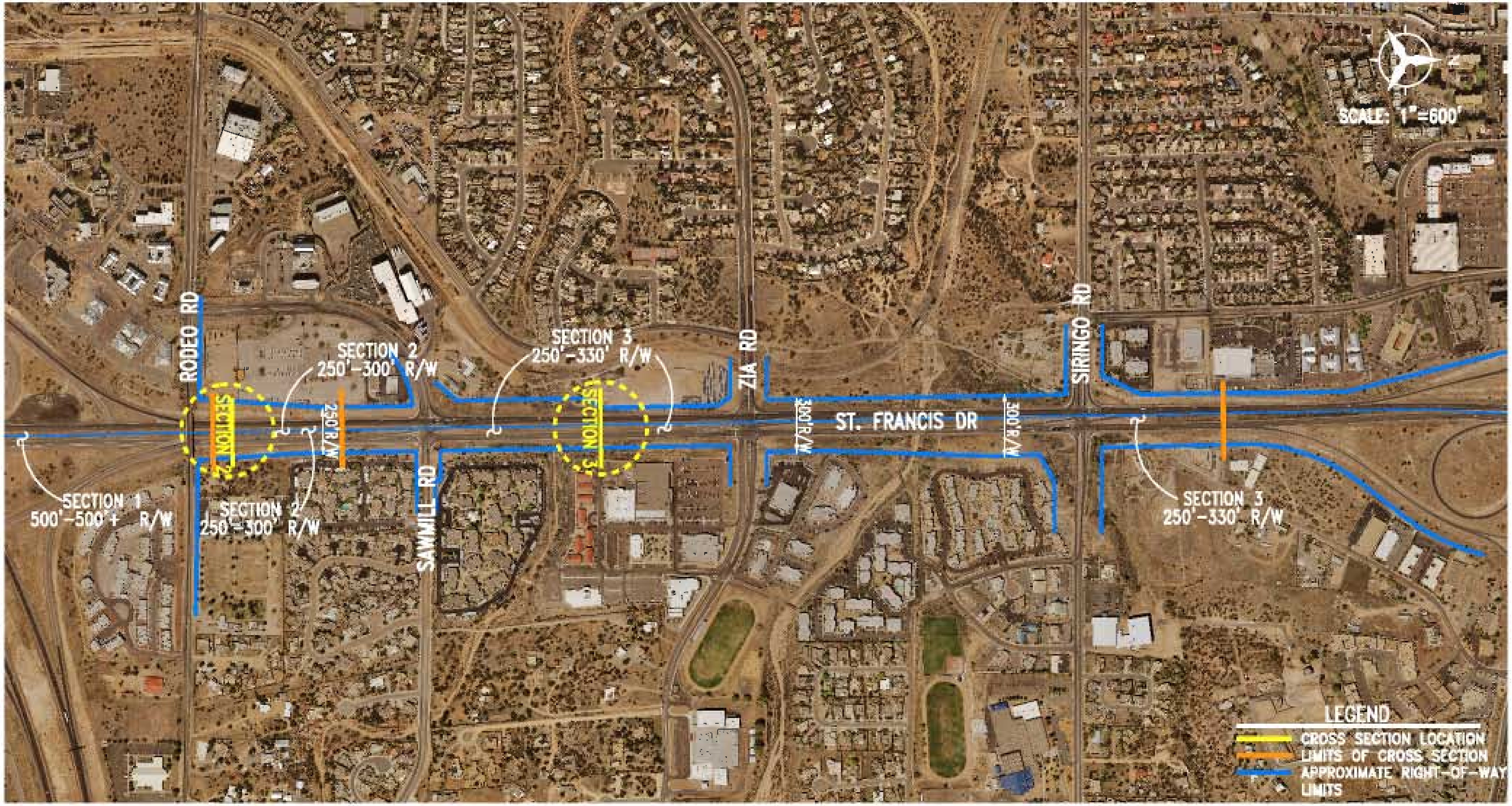


TYPICAL SECTION 9
NORTH OF ALAMO DR.
TO NORTH GUADALUPE ST.

ST. FRANCIS DRIVE CORRIDOR STUDY
INITIAL EVALUATION OF ALTERNATIVES

DESIGNWORKSHOP

FIGURE 14
EXISTING TYPICAL SECTIONS



ST. FRANCIS DRIVE CORRIDOR STUDY
INITIAL EVALUATION OF ALTERNATIVES

FIGURE 15
RIGHT-OF-WAY
SOUTHERN PORTION

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ST. FRANCIS DRIVE CORRIDOR STUDY
INITIAL EVALUATION OF ALTERNATIVES

FIGURE 16
RIGHT-OF-WAY
CENTRAL PORTION

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ST. FRANCIS DRIVE CORRIDOR STUDY
INITIAL EVALUATION OF ALTERNATIVES

SOUTHWEST PLANNING & MARKETING | Parametrix | HDR | DESIGNWORKSHOP | Bohannan ▲ Huston | NMDOT

FIGURE 17
RIGHT-OF-WAY
NORTHERN PORTION

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Table 10 – Horizontal Curvature						
Curve Number	PC Station	PT Station	Radius (ft)	Curve Length (ft)	Estimated Superelevation (%)	Posted Speed (mph)
1	156+47	167+25	2,965	1,077	4.4	35
2	175+20	187+93	2,187	1,273	1.4	35
3	209+27	220+28	3,274	1,101	2.0	35
4	229+09	237+86	3,274	876	Varies	35
5	224+50	249+92	3,240	542	3.0	35
6	256+06	277+92	3,000	2,186	4.0	45

Another horizontal design element that is generally evaluated is the length of horizontal curves within a roadway facility. As discussed in the 2004 edition of the AASHTO Green Book, pages 229-230, this control does not lend itself to theoretical derivation; rather, it is based on design experience. As stated in the Green Book, inefficient curve design and poor combinations of curvature can limit capacity, increase travel time and operating costs. AASHTO recommends that for main highways the minimum length of curve, $L_{c\ min}$ is equal to 15 times the design speed of the facility. For curves 1 thru 5, $L_{c\ min}$ is 525 feet. The value for curve 6 is 675. All of the existing curves have adequate length of curvature.

2. Vertical Curvature

Vertical geometry data for St. Francis Drive was not available from roadway plans. The roadway centerline was reconstructed using available right-of-way maps and assuming the location of the centerline of the facility. A roadway profile was created based on the existing digital terrain model (DTM). A vertical profile was created that was a best fit of the existing ground profile. There are 30 vertical points of intersection with in the corridor. The vertical curve data is presented in Table 11. It was assumed that the design speed for the vertical curves was 5 mph greater than the currently posted speed limits of 45mph and 35mph within this corridor. The Green Book makes recommendations based on design speeds for the ratio of the vertical curve length to the algebraic difference in grade across vertical curves[7]. This "k"-value was computed for each vertical curve in the corridor and compared to the recommended value. Additionally, based on the existing k-value the effective design speed of each vertical curve was computed. All of the vertical curves, except one, are adequate for the design speed. The vertical curve located 199+02 varies from the recommended k-value. The design speed at this location is 40 mph and the vertical curve has a k-value that corresponds to a 37-mph design speed. There were two locations where vertical points of intersection were constructed without a vertical curve. Stopping sight distance was also calculated throughout this corridor. Figure 18 shows a plot of the required stopping sight distance, increasing and decreasing stations, and a plot of the available stopping sight distance. The stopping sight distance throughout the corridor appears to exceed the minimum recommended stopping sight distance.

[7] A Policy on Geometric Design of Highways and Streets, 2004 edition, Exhibits 3-72, pg 272 & 3-75, pg 277.

Table 11 – Vertical Curvature						
Stations		K Value		Effective Design Speed (mph)	Comment	Attributes
Start	End	Road (ft/%)	Policy (ft/%)			
10+00.000	23+92.798				Road value varies from controlling criteria, grade break without a curve	10+00.000 to 10+05.044, grade=0.00(%); 10+05.044 to 23+92.798, grade=-2.90 (%)
23+92.798	28+92.798	208.33	96	76	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
36+95.980	41+95.980	357.14	96	80	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
42+09.050	44+09.050	142.86	84	59	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
44+69.795	49+69.795	416.67	96	80	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
53+15.345	58+15.345	217.39	84	67	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
64+50.497	69+50.497	200.00	96	74	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
75+55.572	80+55.572	227.27	84	68	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
84+97.886	94+97.886	204.08	96	75	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
105+38.625	113+38.625	275.86	84	72	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
121+98.832	126+98.832	227.27	84	68	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
129+20.023	134+20.023	200.00	96	74	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
134+75.570	139+75.570	200.00	84	66	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
141+26.141	146+26.141	125.00	96	57	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
148+13.953	153+13.953	294.12	84	74	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
157+27.070	162+27.070	625.00	84	80	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
162+27.070	175+06.791				Road value varies from controlling criteria, grade break without a curve	162+27.070 to 168+66.931, grade=0.00 (%); 168+66.931to 175+06.791, grade=0.20(%)
175+06.791	180+06.791	384.62	84	80	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
188+56.046	193+56.046	454.55	96	80	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
194+50.000	197+30.000	88.05	84	51	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
199+02.000	202+02.000	54.15	64	37	Road value varies from controlling criteria	Design speed=40 (mph); type of curve=sag;
203+05.000	205+45.000	88.24	44	51	Road value is within controlling criteria	Design speed=40 (mph); type of curve=crest;
216+21.480	221+21.480	324.68	44	76	Road value is within controlling criteria	Design speed=40 (mph); type of curve=crest;
221+22.777	223+72.777	227.27	64	80	Road value is within controlling criteria	Design speed=40 (mph); type of curve=sag;
228+46.017	230+46.017	65.57	44	46	Road value is within controlling criteria	Design speed=40 (mph); type of curve=crest;
230+90.000	234+50.000	70.18	64	42	Road value is within controlling criteria	Design speed=40 (mph); type of curve=sag;
234+50.000	259+13.078				Road value varies from controlling criteria, grade break without a curve	234+50.000 to 248+48.931, grade=1.28 (%); 248+48.931to 259+13.078, grade=1.70(%)
259+13.078	264+13.078	166.67	96	67	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
271+67.723	276+67.723	111.11	84	55	Road value is within controlling criteria	Design speed=50 (mph); type of curve=crest;
277+96.634	282+96.634	125.00	96	57	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;
285+48.736	290+48.736	333.33	96	80	Road value is within controlling criteria	Design speed=50 (mph); type of curve=sag;

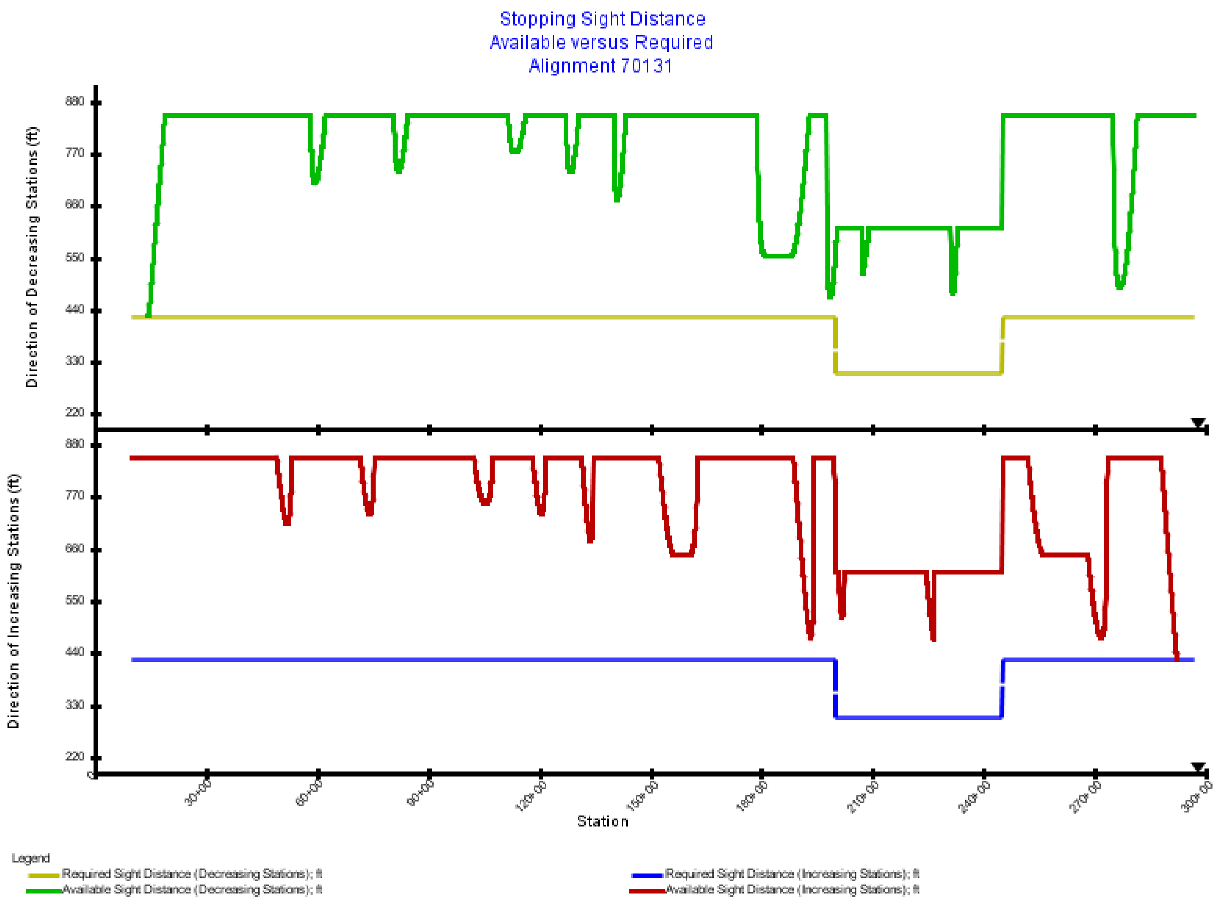

Figure 18 – Stopping Sight Distance

The tangent grades along this corridor were also evaluated. There are a few locations where the longitudinal slope of the roadway appears to be very flat. However, because the profile was developed by best fitting a profile to the existing terrain model instead of recreating it from As-Built plans the slopes may not reflect the actual slopes. Unless drainage issues are occurring at these locations, the longitudinal slope appears to be adequate. The following table lists that longitudinal slope along this corridor.

Table 12 – Longitudinal Slopes					
Stations		Tangent Grade		Comment	Attributes
Start	End	Road (%)	Policy (%)		
10+00.000	10+05.044	0.00	0.30 to 6.00	Road value may vary from recommended values, check drainage	Class=arterial; design speed=50 (mph); length=5.04 (ft); Additional policy allowance=1.00 (%)
10+05.044	23+92.798	2.90	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=1,387.75 (ft)
28+92.798	36+95.980	0.50	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=803.18 (ft)
41+95.980	42+09.050	0.90	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=13.07 (ft); Additional policy allowance=1.00 (%)
44+09.050	44+69.795	0.50	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=60.74 (ft); Additional policy allowance=1.00 (%)
49+69.795	53+15.345	0.70	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=345.55 (ft); Additional policy allowance=1.00 (%)
58+15.345	64+50.497	1.60	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=635.15 (ft)
69+50.497	75+55.572	0.90	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=605.08 (ft)
80+55.572	84+97.886	1.30	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=442.31 (ft); Additional policy allowance=1.00 (%)
94+97.886	105+38.625	3.60	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=1,040.74 (ft)
113+38.625	121+98.832	0.70	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=860.21 (ft)
126+98.832	129+20.023	1.50	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=221.19 (ft); Additional policy allowance=1.00 (%)
134+20.023	134+75.570	1.00	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=55.55 (ft); Additional policy allowance=1.00 (%)
139+75.570	141+26.141	1.50	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=150.57 (ft); Additional policy allowance=1.00 (%)
146+26.141	148+13.953	2.50	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=187.81 (ft); Additional policy allowance=1.00 (%)
153+13.953	157+27.070	0.80	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=413.12 (ft); Additional policy allowance=1.00 (%)
162+27.070	168+66.931	0.00	0.30 to 5.00	Road value may vary from recommended values, check drainage	Class=arterial; design speed=50(mph); length=639.86 (ft)
168+66.931	175+06.791	0.20	0.30 to 5.00	Road value may vary from recommended values, check drainage	Class=arterial; design speed=50(mph); length=639.86 (ft)
180+06.791	188+56.046	1.10	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=849.26 (ft)

Stations		Tangent Grade		Comment	Attributes
Start	End	Road (%)	Policy (%)		
193+56.046	194+50.000	0.00	0.30 to 6.00	Road value may vary from recommended values, check drainage	Class=arterial; design speed=50(mph); length=93.95 (ft); Additional Policy allowance=1.00 (%)
197+30.000	199+02.000	3.18	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=172.00 (ft); Additional policy allowance=1.00 (%)
202+02.000	203+05.000	2.36	0.30 to 7.00	Road value is within controlling criteria	Class=arterial; design speed=40(mph); length=103.00 (ft); Additional policy allowance=1.00 (%)
205+45.000	216+21.480	0.36	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=40(mph); length=1,076.48 (ft)
221+21.480	221+22.777	1.90	0.30 to 7.00	Road value is within controlling criteria	Class=arterial; design speed=40(mph); length=1.30 (ft); Additional policy allowance=1.00 (%)
223+72.777	228+46.017	0.80	0.30 to 7.00	Road value is within controlling criteria	Class=arterial; design speed=40(mph); length=473.24 (ft); Additional policy allowance=1.00 (%)
230+46.017	230+90.000	3.85	0.30 to 7.00	Road value is within controlling criteria	Class=arterial; design speed=40(mph); length=43.98 (ft); Additional policy allowance=1.00 (%)
234+50.000	245+00.000	1.28	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=40(mph); length=1,398.93 (ft)
245+00.000	248+48.931	1.28	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=1,398.93 (ft)
248+48.931	259+13.078	1.70	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=1,064.15 (ft)
264+13.078	271+67.723	4.70	0.30 to 5.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=754.64 (ft)
276+67.723	277+96.634	0.20	0.30 to 6.00	Road value may vary from recommended values, check drainage	Class=arterial; design speed=50(mph); length=128.91 (ft); Additional policy allowance=1.00 (%)
282+96.634	285+48.736	4.20	0.30 to 6.00	Road value is within controlling criteria	Class=arterial; design speed=50(mph); length=252.10 (ft); Additional policy allowance=1.00 (%)
290+48.736	296+75.679	5.70	0.30 to 5.00	Road value varies from controlling criteria	Class=arterial; design speed=50(mph); length=626.94 (ft)

D. Access

Intersection spacing, median breaks, and driveway frequency can have a deleterious effect on traffic flow if the number and spacing of the access points becomes excessive for a given roadway functional classification. In general, as a roadway increases in traffic flow and functional priority, such as a principal arterial like St. Francis Drive, more efficient traffic operations result from fewer median breaks and driveways. As St. Francis Drive has evolved as a major travel corridor as well as a significant employment and commercial corridor, the number and spacing of the access points are greater than would be desired to serve the anticipated future travel demand.

1. Existing Access Location Inventory

Through the use of aerial photos and a visual inspection of the corridor, the existing access locations were inventoried. A summary of the inventory is shown in Figure 19.

From Old Agua Fria/Rabbit Road on the south to San Mateo Road , St. Francis Drive is access-controlled, i.e., there are no access points except at specific locations where the access control allows. These locations are: the interstate ramps, the Old Agua Fria/Rabbit Road, Sawmill, Zia and Siringo Road intersections, and the St. Michael's Drive interchange.

On the north end, from the NM 599 interchange to Alamo Drive there are only two access points along the corridor, the Guadalupe interchange and the Viento/Calle Mejia right-in/right-out intersection. The high speed of traffic and the high traffic volumes on St. Francis Drive (US 84/285) coming southbound down the hill prior to Viento make this intersection a likely candidate for closure for safety concerns due to the slow exit speeds from the minor street and the high speed of southbound US 84/285 traffic.

In the approximately 3.9 mile stretch between San Mateo Road and Alamo Drive there are a total of 103 curb cuts and 15 median breaks, not including access points for signalized intersections. Of the 103 curb cuts, 13 are blocked by landscaping or walls or serve partial lots and may be State right-of-way, resulting in a total of 90 active curb cuts. This results in an average access spacing of 23 per mile, or one access point every 225 feet.

DRIVEWAY TABLE				
	STATION	OFFSET	DESCRIPTION	USED
1	137+25.78	RT	B	Y
2	143+22.81	RT	H	Y
3	147+22.27	RT	H	Y
4	147+76.62	RT	B	Y
• 5	148+35.00	RT	B	Y
6	148+93.37	RT	B	Y
7	150+00.86	RT	H	Y
• 8	150+71.22	RT	V	Y
9	151+20.56	RT	V	Y
10	152+68.93	RT	B	Y
11	153+25.60	RT	H	Y
12	153+79.84	RT	B	Y
• 13	154+24.20	RT	B	Y
14	154+68.43	RT	B	Y
15	155+04.63	RT	B	Y
16	155+48.61	RT	V	Y
• 17	155+76.53	RT	V	Y
18	156+06.00	RT	B	Y
19	156+76.73	RT	B	Y
20	158+60.33	RT	B	Y
21	159+61.20	RT	V	Y
22	160+24.72	RT	B-Blocked w/landscaping	N
23	161+25.25	RT	H	Y
24	173+61.64	RT	B	Y
25	175+29.21	RT	B	Y
26	176+99.65	RT	B	Y
27	180+69.68	RT	B	Y

DRIVEWAY TABLE				
	STATION	OFFSET	DESCRIPTION	USED
28	181+18.21	RT	B	Y
• 29	182+02.25	RT	B	Y
30	182+39.59	RT	B	Y
• 31	182+80.81	RT	B	Y
32	183+57.22	RT	B	Y
33	184+35.41	RT	B	Y
34	185+17.26	RT	B	Y
35	186+04.70	RT	B	Y
36	187+12.60	RT	B	Y
37	187+93.62	RT	B-Rt in/out	Y
38	189+49.24	RT	B-Rt In/out	Y
39	190+11.22	RT	B	Y
40	196+56.80	RT	B	Y
41	197+60.34	RT	B	Y
42	199+60.71	RT	V	Y
• 43	201+65.79	RT	B	Y
44	201+97.06	RT	H	Y
45	202+69.39	RT	H	Y
46	204+65.41	RT	H-Blocked w/landscaping	N
• 47	210+69.88	RT	B-Gated	Y
48	211+07.97	RT	P	N
49	211+44.32	RT	P	N
50	212+35.30	RT	P	Y
51	212+90.89	RT	P	Y
52	215+00.72	RT	B-Blocked w/landscaping	Y
• 53	215+61.52	RT	Alley	Y
54	220+93.30	RT	V-Fence/building	N

DRIVEWAY TABLE				
	STATION	OFFSET	DESCRIPTION	USED
55	221+86.68	RT	B-Blocked w/wall	N
56	224+61.72	RT	B-Circle In	Y
57	225+90.24	RT	B-Circle out	Y
58	229+34.17	RT	B	Y
59	229+89.08	RT	B	Y
60	234+32.07	RT	B	Y
61	234+87.27	RT	H	Y
• 62	281+68.56	LT	H (Viento del Norte - Not Shown)	Y
63	235+49.55	LT	B	Y
64	231+59.99	LT	B	Y
• 65	230+94.09	LT	B	Y
66	230+12.45	LT	B	Y
67	229+15.15	LT	H	Y
68	225+03.58	LT	H	Y
69	222+27.88	LT	H	Y
70	220+49.81	LT	H	Y
71	219+15.98	LT	B	Y
72	216+60.83	LT	B	Y
73	215+02.99	LT	H	Y
74	214+51.70	LT	H	Y
75	214+00.40	LT	H	Y
76	213+46.89	LT	H	Y
77	212+92.98	LT	H	Y
78	212+51.17	LT	H	Y
79	212+06.93	LT	H-B	Y
80	211+53.81	LT	H-B	Y
81	211+08.96	LT	H	Y

DRIVEWAY TABLE				
	STATION	OFFSET	DESCRIPTION	USED
82	209+99.93	LT	H	Y
83	209+56.19	LT	B	Y
84	208+66.84	LT	B	Y
85	208+10.51	LT	B-Blocked w/parking bumpers	N
86	203+48.09	LT	P-Blocked w/fence	N
87	202+21.29	LT	B	Y
88	201+75.49	LT	B	Y
89	199+76.74	LT	Alley	Y
• 90	189+77.79	LT	B	Y
91	188+70.64	LT	B	Y
92	186+47.66	LT	B	Y
• 93	185+69.23	LT	B	Y
94	184+05.59	LT	B-Rt in/out	Y
95	183+98.06	LT	B	Y
• 96	161+85.14	LT	B	Y
97	159+12.16	LT	B	Y
98	156+72.62	LT	H	N
99	155+87.40	LT	H	Y
100	145+37.20	LT	H	Y
• 101	143+37.72	LT	H	Y
102	139+53.18	LT	H-Blocked w/wall	N
• 103	136+42.84	LT	H-Rt in/out-Temp blocked	N

• POTENTIAL FOR CLOSURE

ST. FRANCIS DRIVE CORRIDOR STUDY
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FIGURE 19
EXISTING
ACCESS LOCATIONS

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2. Access Management Criteria and Goals

St. Francis Drive was constructed in the early 1960's and was, in some locations, located on an alignment that bisected an established neighborhood street network. This resulted in a significant number of individual residences and parcels having their only property access directly onto St. Francis Drive.

In addition, as the large governmental employment centers developed along the corridor, support businesses, as well as neighborhood and larger commercial centers, developed to take advantage of the large number of employees in the area, as well as the high traffic volumes that the U.S. Highway brought to the area. This commercial development contributed to the large number of access points along the corridor.

As the right-of-way through the corridor, particularly in the areas with high driveway density, is extremely limited, there are no opportunities for frontage roads to be constructed to eliminate driveway interaction with through traffic flows while providing sufficient turning radii for entering and exiting vehicles that would utilize the frontage road.

In the evaluation of access management, access must be maintained to all properties whose only access is directly onto St. Francis Drive; however the access may be restricted to right-in/right-out only, as is the case for most of the driveways on the corridor.

If a parcel serving a business, or a City street intersection, has direct access to another driveway or City street with access to St. Francis Drive, and a change in access would result in limited out-of-direction travel, then the access point to that commercial parcel or City Street will be considered for modification.

Correspondingly, if a business has multiple access points onto St. Francis Drive, and/or can be conveniently and adequately serviced through other access points on St. Francis Drive or other City streets with access to St. Francis Drive, those driveways will be considered for modification.

Removal or change in access to driveways or City streets will be considered only if there are direct alternate routes for traffic to use to their destination with no substantial change in traffic patterns or performance anticipated.

3. NMDOT State Access Management Manual

Access to New Mexico State highways is governed by the NMDOT's *State Access Management Manual* (SAMM). The SAMM, adopted in 2001, decades after the majority of access points were allowed onto St. Francis Drive, establishes the preferred policy for intersection and driveway spacing.

For an urban principal arterial, such as St. Francis Drive, with a posted speed of 35 MPH, the SAMM permits full access at one-quarter mile spacing, or every 1,320 feet. Partial access is permitted every 325 feet, or approximately 16 per mile. For the portion of the corridor posted at 45 MPH, full access is permitted at the same spacing of four per mile (1,320 feet) and partial access is allowed every 450 feet, or approximately 12 per mile.

It can be seen comparing the existing average access spacing on St. Francis Drive of 23 per mile and the SAMM criteria just listed of 12 or 16 per mile, that access spacing on St. Francis Drive does not satisfy the SAMM criteria. Indeed, given the parcel configuration of the corridor, SAMM criteria cannot be met, without substantial investments in right-of-way and public and business owner hostility.

The access management criteria discussed above in Section IV.D.2 will be applied to determine the number of access points that can be eliminated, modified, or combined in order to promote more efficient traffic flow with the least disruption to the existing property owners and traffic patterns. An initial application of the access management criteria in Section IV.D.2 above results in the closure or modification of 15 driveways; reducing the total number of driveways to 75, or 19 per mile, or 1 driveway every 275 feet.

In addition, six median breaks (out of a total of 15 on the corridor) have been identified as potential closures.

E. Pavement

Visual inspection of the corridor indicates much of the pavement is in good condition with isolated areas of longitudinal cracking and pavement repair. The pavement will require maintenance based on its age but it is in good condition.

F. Drainage

1. Existing Conditions

Drainage in the project area generally flows east to west with a large amount of runoff originating from the Sangre de Cristo Mountains. There are approximately 20 drainage structures that cross under St. Francis Drive between Rabbit Road and Highway 599. Table 13 provides a list of existing crossing structures in the area as well as other drainage infrastructure noted during site visits. The structures are generally identified by arroyo or street intersections with St. Francis Drive, starting with the south end of the project. The locations of these structures are shown in Figure 20 and Figure 21.

The existing structures range in size and are constructed of various materials including corrugated metal pipe (CMP), high density polyethylene (HDPE), reinforced concrete pipe (RCP), concrete box culverts (CBC), and concrete pipe (CP). Table 13 also lists notable curb drop inlets (CDI) and median drop inlets (MDI) in the area. The largest existing structure along the St. Francis Drive Corridor is a bridge located at the Arroyo de los Chamisos crossing and the smallest structure is an 18" CMP located north of West Alameda St. The crossing structures along St. Francis Drive consist of both smaller structures conveying local flow from one side of an intersection to the other and larger arroyo crossings such as bridges and CBCs. This summary does not include potential storm drain systems which were undetected from the field visit.

The information provided in Table 13 was obtained from the site visits and supplemented with previous published data. The main source of previous data used was two drainage management plans completed by Bohannan Huston, Inc. (BHI) in the late 1990s. The first Drainage Management Plan is the *Santa Fe River Watershed Drainage Management Plan* completed by BHI in March 1997. This study mainly focuses on basins and watersheds north of the intersection of Cerrillos and St. Francis Drive. The second Drainage Management Plan was completed for the Arroyo de los Chamisos Watershed. This report was completed by BHI, June 1998 and focused on basins and watersheds south of the Cerrillos and St. Francis Drive intersection.

Data from these 2 reports is summarized on Table 14 which shows the location, contributing area and additional information of various arroyo crossings of St. Francis Drive. Table 14 also includes the reported values for the 100-yr storm event as well as future conditions 100-yr flows.

In addition to the existing structures noted on Table 13, an existing drainage situation has been identified by the public on St. Francis Drive at Camino Sierra Vista. During storm events runoff reaching this location can cover the intersection. These flows originate northeast of the St. Francis Drive/Camino Sierra Vista intersection near the Railyard Development. The runoff is from the outfall of a subsurface detention pond under a portion of the Railyard site and overland flow from an adjacent basin. The flow discharges into Alarid St. and flows south to the intersection of Alarid St. and Camino Sierra Vista. Here the flow turns west and flows along the north side of Camino Sierra Vista. At the intersection of Camino Sierra Vista and St. Francis Drive the runoff spreads throughout the intersection. The issue has been identified by local citizens as a concern and should be further investigated as part of any potential alternatives for the St. Francis Drive Corridor Study. It should be noted that the post-development flow rate leaving the Railyard site and reaching the St. Francis Drive/Camino Sierra Vista intersection is actually lower than the pre-Railyard developed conditions flow (due to the underground detention pond).

2. Recommendations

The majority of existing storm drain inlets are in good condition with no major structural or clogging issues noted during field investigation. However, a number of existing culverts or crossing structures have experienced considerable sediment buildup, as noted in Table 13. Table 15 presents recommendations for these structures. In addition, the previously published Drainage Management Plans provided recommendations for upsizing or other improvements to many of the existing structures under St. Francis Drive. These are also summarized in Table 15.

Location ID	Arroyo or Street Intersections with St. Francis from South to North	Existing Structure	Description	Exact Location
1	Rabbit Road/Old Aqua Fria	Pond & Arroyo in median	South of I-25	Between St Francis and Rabbit Road
1a	Arroyo del la Paz	1-36" CMP	South of Airport Rd.	
1b	Sawmill Arroyo	60" SD system through I-25 / St. Francis Interchange	North of Airport Rd.	
2	I-25	4' x 4' Inlet	North of I-25 on the east side	North of I-25 in median
3	Sawmill	4'x4' Drop Inlet	Flows to culvert on north end of Sawmill.	SE corner of intersection
4	Sawmill	18"? CMP	Runs Parallel to St. Francis & N/S across Sawmill - filling w/sediment, unable to measure entire diameter	E side of intersection across Sawmill
5	Arroyo Chaparral (North of Sawmill/South of Zia)	4- 8' wide x 6' tall CBCs	Flows east to west under St. Francis	North of Sawmill RD and South of Zia RD
6	Zia	4' x 2.5' inlet	Flows north. Partially brush covered.	SE corner of intersection
7	Zia	14"? CMP	Filling with sediment, unable to measure entire diameter.	E side of intersection across Zia
8	Arroyo De Los Chamisos	1-90'x6'	Bridge; Measurement taken from Los Chamisos DMP	North of Zia and South of Siringo
9	Siringo	4' CMP	Measurement taken from the Los Chamisos DMP, 1998; runs north/south under Siringo on the west side	NW corner of Siringo and St. Francis
10	Siringo	5' x1.5' Inlet	Looks like Pond flows to this structure	SE corner of intersection
11	Siringo	2 inlets	storm drain	NW of Siringo
12	Arroyo De Los Amigos (Siringo)	1- 10' wide x 6' tall CBC	Flows SW under St. Francis	NE corner of intersection
13	Siringo	22" Cor Plastic Pipe- not HDPE	North of the 10' x 6' CBC, flows to the CBC	NE corner of intersection
14	St. Michaels Dr	2- 4' x 4' MDIs and 2- 5' x 1.2' CDIs on St. Michaels (N and S sides of St Michaels)	St. Francis passes over St. Michaels Drive	East side of St. Francis
15	N. of St. Michaels Dr.	storm drain inlets		West side of St. Francis
15a	South of W San Mateo	no structure located in field	2 - 48" RCP per Arroyo del Los Chamisos Watershed Management Plan	
16	NW Branch of Arroyo De Los Pinos	1-90" CMP on east, transitions to RCP on west	Flows from an arroyo on the east and passes under St. Francis Flowing West and out flows south of Professional Center	North of W San Mateo/South of Columbia; starts on the east side of St. Francis
17	NW Branch of Arroyo De Los Pinos	storm drain inlets	CDIs	At south entrance to Professional Center, on E and W sides of St Francis
18	South of Camino Del Monte Rey	30" RCP	30" culvert from E of St Francis, flows east to west and outlets to a rip rap drainage swale, then flow enters a 30" RCP flowing south under Professional Center	E and W side of St. Francis N of W. San Mateo @ Professional Center
18	South of Camino Del Monte Rey	storm drain inlets	2' x 5' MDI on W side of St Francis, 1.5' x 5' CDI on E side of St Francis, flow to 30" culvert out letting to rip rap drainage swale	W side of St. Francis N of W. San Mateo @ Professional Center
19	Alta Vista	storm drain inlets	CDIs	North and south of Alta Vista along east side of St. Francis, on Alta Vista just E of St Francis
20	Alta Vista	4' x 3' Inlet	Flow direction unknown	SE of St. Francis/Alta Vista Intersection
21	Alta Vista-Cordova	storm drain inlet	double CDI (10' x 1')	SE of Cordova and St. Francis intersection
22	Between Cordova and Cerrillos	storm drain inlets	CDI on E side, MDI on W side of St Francis	east and west sides of St. Francis
23	Cerrillos Rd	only storm drains	Water seems to flow along the road or the SFS Track side arroyos	various
24	Paseo De Peralta/Hickox St.	only storm drains	inlets both east and west	various
25	Manhattan	only storm drains	inlets both east and west	various between Paseo de Peralta and Manhattan
26	Aqua Fria St.	only storm drains	inlets both east and west	On St Francis and Agua Fria at intersection
27	Dunlap St.	only storm drains	inlets both east and west	On St Francis, both N and S of Dunlap
28	Roybal	only storm drains	inlets both east and west	On St Francis, both N and S of Roybal
29	Santa Fe River Arroyo	4-8' x 6' CBCs	Not Measured b/c steep slope and water in the arroyo; size taken from Santa Fe River Report	SE of St. Francis/W. Alameda Intersection
30	W. Alameda St.	storm drain inlets		On St Francis and W Alameda at intersection
31	Las Mascaras	storm drain inlets		On St Francis and Las Mascaras at intersection
32	Arroyo Mascares	5- 10' wide x 6' tall CBCs	Flows east to west under St. Francis and ends up in Santa Fe River Arroyo further downstream	North of Las Mascaras
33	North of W. Alameda St. and Las Mascares	24" CMP	Flows to CBC	E of St Francis, slightly North of the CBCs
34	North of W. Alameda St. and Las Mascares	18" CMP	Flows to CBC	E of St Francis, slightly South of the CBCs
35	Camino de Las Crucitas/Paseo De Peralta	storm drain inlets	CDIs	various
36	Lower Canada Rincon (Alamo Dr.)	1-7.5' x 4' CBC (see note 1)	Flows east to west under St. Francis	SE of St. Francis/Alamo Intersection
36	Alamo Dr.	24" CMP	Feeds directly into the CBC from the North	SE of St. Francis/Alamo Intersection
37	Alamo Dr.	36" CMP	Crosses under Alamo and flows south toward the CBC. Some sediment buildup.	Parallel to St. Francis under Alamo St. on the east
38	N of Alamo Dr.	drainage swales	swales draining to MDIs, out letting ultimately to 4' x 7.5' CBC (?)	gore areas of St Francis
39	Upper Canada Rincon (Adjacent to Viento)	120" CMP (see note 2)	Outlets to channel between St. Francis and Cemetery. Approximately 50% full of sediment.	Between NB St. Francis on-ramp from Guadalupe St and Santa Fe National Cemetery just north of Alamo Dr.
40	Alamo Dr.	15' CBC	Accepts flow from channel between St. Francis and Cemetery. Flow reaches channel from St. Francis via rundowns.	Between NB St. Francis and Santa Fe National Cemetery
41	Alamo Dr. to Paseo de Peralta	ditch	Ditch runs parallel to St. Francis on west side. Concrete wall in channel with break/hole to allow flows through.	
42	Camino de Las Crucitas	5- 6' x 4.5' CBC	carries flow from ditch under Camino de Las Crucitas	W of St Francis across Camino de Las Crucitas, runs N-S
43	Avenida Rincon to HWY 599	Arroyo on the West side of St. Francis	Flows north to south	West of St. Francis between HWY 599 and Avendia Rincon
44	Avenida Rincon to HWY 599	Various	Taking small local flows under St. Francis	Under St. Francis Flowing west

Notes:
1. Santa Fe River Watershed Drainage Management Plan lists as 1 - 8' x 7' CBC; measured in field as 7.5' x 4' CBC.
2. Santa Fe River Watershed Drainage Management Plan lists as 4 - 6' x 4' CBC; measured in field as 120" CMP.
3. Additional structures are listed in the Santa Fe River and Arroyo de los Chamisos Watershed Drainage Management Plans. However, they were not located in the field and may have been replaced.
4. Detailed study needed during design to verify exact locations of infrastructure.

Table 13 – Existing Drainage Structures – Field Inventory

Location ID	Arroyo/Crossing	100 yr Flow (cfs)	Future 100 yr Flow (cfs)	Existing Structure	Contributing Basin Area (acres)	Reference Study
1a	La Paz at St. Francis	64	67	1-36" CMP	34	Los Chamisos
1b	Sawmill Arroyo near I-25	211	221	1-60" RCP SD	168	Los Chamisos
5	Chaparral Arroyo at St. Francis	1202	1422	4-8'x6' CBC	1594	Los Chamisos
8	Arroyo De Los Chamisos	3474	4094	1-90'x6' Bridge	3814	Los Chamisos
12	Los Amigos at St. Francis	430	575	1-10'x6' CBC	306	Los Chamisos
15a	Culvert at St. Francis	256	325	2-48" RCP	114	Los Chamisos
16	NW Arroyo De Los Pinos	786	857	1-90" RCP	513	Los Chamisos
29	Santa Fe River at St. Francis Dr.	4468	4691	4-8'x6' CBC	21574	Santa Fe River
32	Arroyo Mascaras at St. Francis Dr.	2867	3155	5-10'x 6' CBC	2906	Santa Fe River
36	Canada Rincon at St. Francis Dr.(Lower)	571	690	1-8'x7' CBC	723	Santa Fe River
39	Canada Rincon at St. Francis Dr.(Upper)	605	730	4-6'x4' CBC	787	Santa Fe River

1. Reference Study:
Los Chamisos = Arroyo de los Chamisos Watershed Drainage Management Plans, June 1998, Bohannan Huston, Inc.
Santa Fe River = Santa Fe River Watershed Drainage Management Plan, March 1997, Bohannan Huston, Inc.

Table 14 – Documented Arroyo Crossing – 100-Year Flows

Location ID	Location	Proposed Improvements	Reference
North of 1a	La Paz Tributary (Crossing St. Francis)	add 1-30" CP to the location of the existing 30" CMP	Chamisos
4	Sawmill	Address sediment issues	St. Francis
7	Zia	Address sediment issues	St. Francis
8	Arroyo de los Chamisos (North of Zia and South of Siringo)	Address erosion Issues	St. Francis
15a	Between St. Michaels Dr. and W. San Mateo	add 1-48" CP	Chamisos
16	NW Branch of Arroyo de los Pinos (North of W San Mateo/South of Columbia; starts on the east side of St. Francis)	add 1-90" CP	Chamisos
29	Santa Fe River (SE of St. Francis/W. Alameda Intersection)	Bridge	Santa Fe
36	Lower Canada Rincon (SE of St. Francis/Alamo Intersection)	add a 1-5' x 7' CBC	Santa Fe
37	Alamo	Address sediment issues	St. Francis
39	Adjacent to Viento Segundo Dr	Address sediment issues	St. Francis
N/A	Camino Seirra Vista	Address flooding issues	St. Francis

References:
Los Chamisos = Arroyo de los Chamisos Watershed Drainage Management Plans, June 1998, Bohannan Huston, Inc.
Santa Fe River = Santa Fe River Watershed Drainage Management Plan, March 1997, Bohannan Huston, Inc.
St. Francis = St. Francis Corridor Study Field Work

Table 15 – Recommended Drainage Improvements

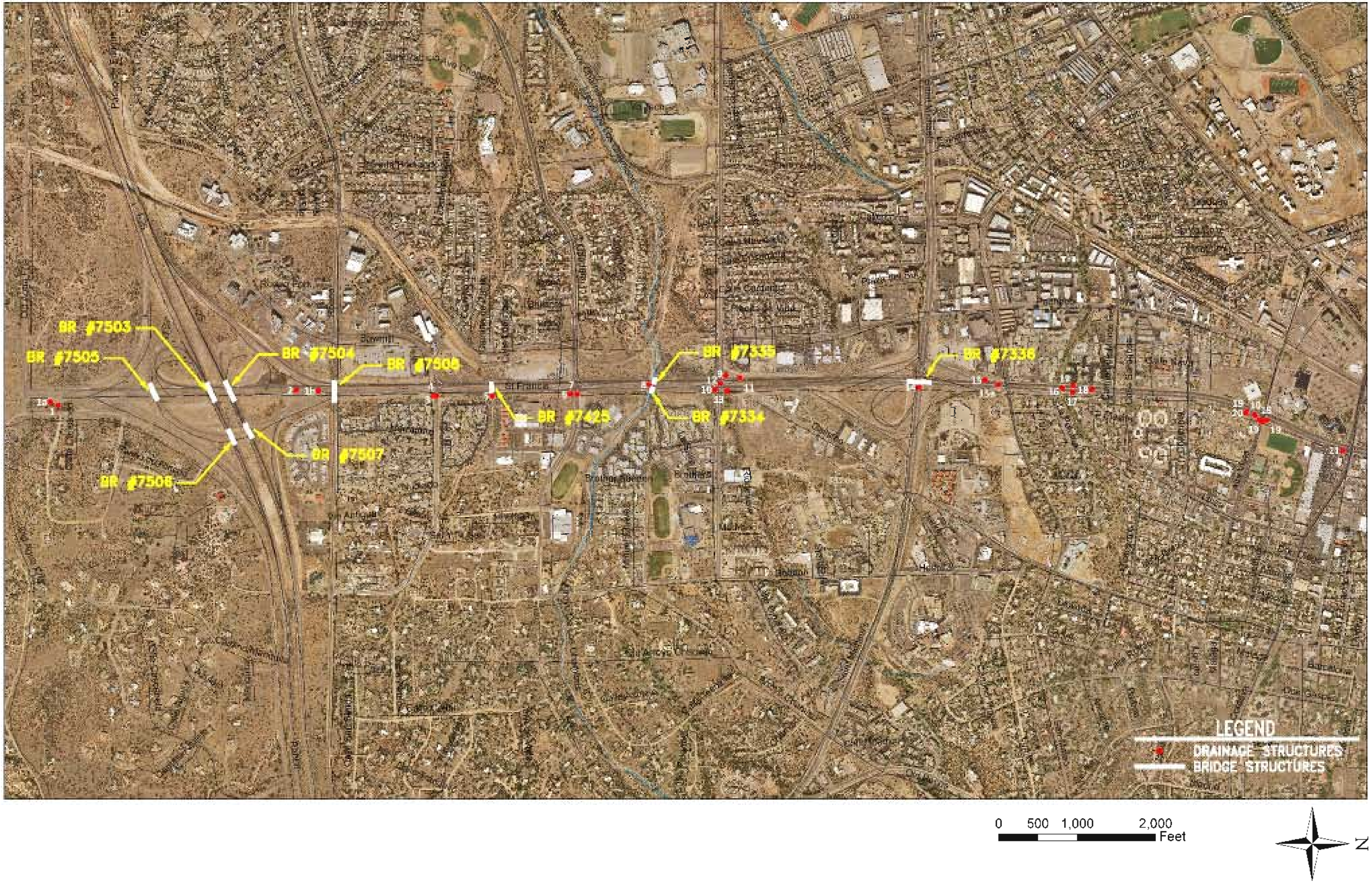

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FIGURE 20
DRAINAGE AND
BRIDGE STRUCTURES

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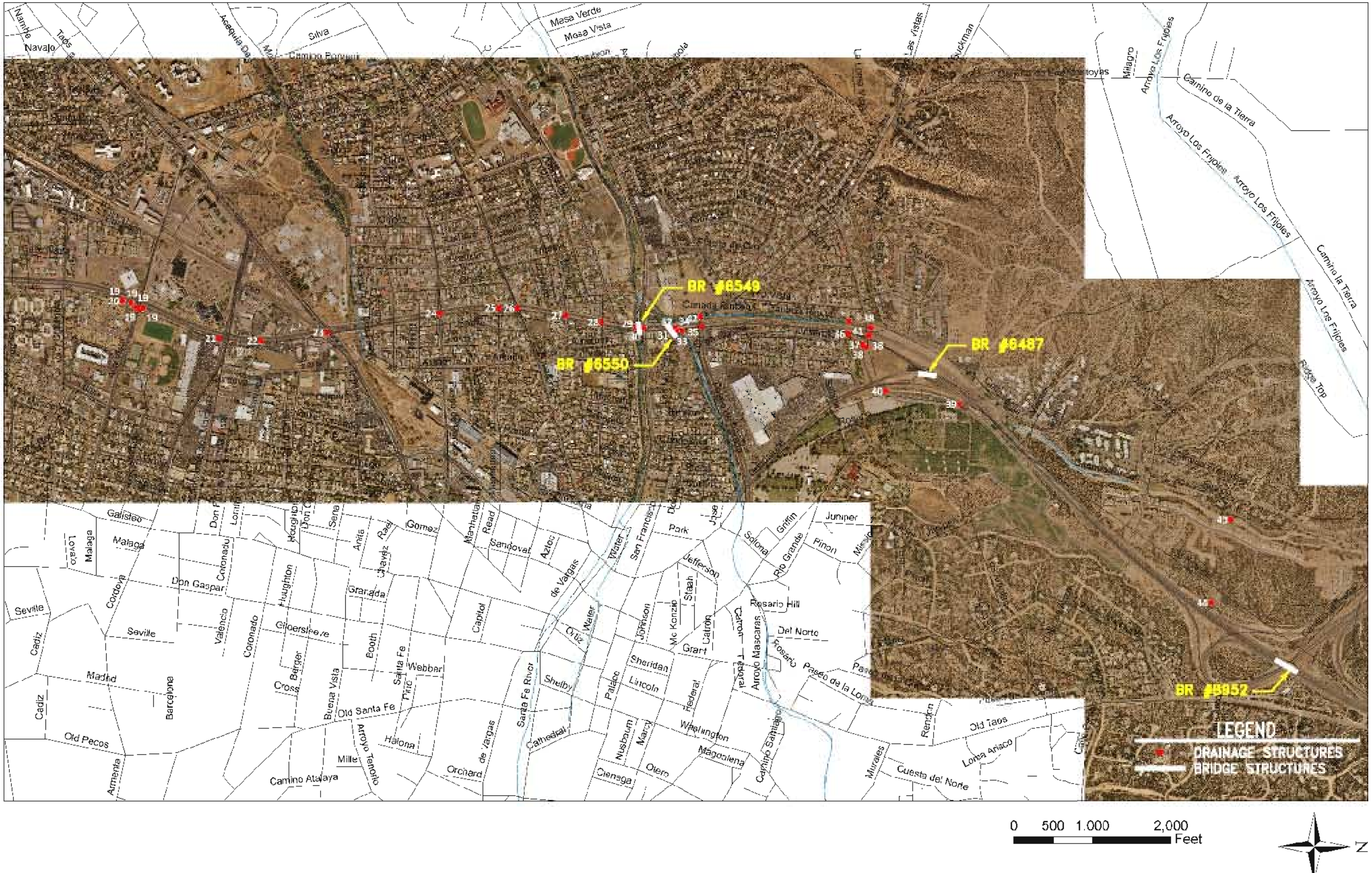

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FIGURE 21
DRAINAGE AND BRIDGE STRUCTURES

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G. Structures

1. Existing Bridges

Information regarding the existing structures located within the safety corridor, including location, year built, geometry, structure, sufficiency and deficiency, may be found in Table 16. Complete DOT bridge inspection reports for all bridges are available in Appendix B. Vehicular bridges are rated and a Sufficiency Rating is assigned to each. The Sufficiency Rating is indicative of a bridge's sufficiency to remain in service. The Sufficiency Rating is also used to define the level of federal funds available for a bridge. Federal funds are available for the rehabilitation of bridges with a Sufficiency Rating of 80 or less. Bridges with a Sufficiency Rating of 50 or less may qualify for replacement funds. The bridge structures are shown in Figure 20 and Figure 21.

Bridge No	Year Built	County	Location	Feature Intersected	Facility Carried	Mile Post	Structure Length	Lanes On	Lanes Under	Skew	Span						Min Vertical Underclearance	Width Curb to Curb	Width Out to Out	Deck		Superstructure		Substructure		Sufficiency Rating	Deficiency Status	Traffic Safety Features	Condition					Inventory Rating	Operating Rating
						[mi]	[ft]			[deg]	No. Spans	Span 1	Span 2	Span 3	Span 4	Span 5	[ft]	[ft]	[ft]	Deck Type	Wearing Surface	Structure Type	Pier Cap Type	Abutment Type	Foundation Type				Deck	Super-structure	Sub-structure	Channel/ Channel Protection	Culvert		
6487	1964	Santa Fe	1.93 Mi N Jct St Fran-Cer	US-84/285, NBL	84/SB Off Ramp	1.500	118.1'	2	2	66.00°	1 Simple	116.0'					15.9'	20.3'	24.0'	Concrete - Cast in place	Monolithic Concrete	4 Welded Steel Girders	---	Full Height Concrete Abutments		62.2	Functionally Obsolete	0	5	5	5	N/A	N/A	HS19.8	HS30.7
6549	1964	Santa Fe	Junction of St. Francis/Alameda	Santa Fe River	US 84/285	164.650	42.3'	6	0	15.00°	4 Cell CBC	10.0'	10.0'	10.0'	10.0'		0.0'	0.0'	0.0'	N/A	N/A	(4) 10'x6'x98'				82	Not Deficient	0	N/A	N/A	N/A	7	7	HS19.8	HS24.8
6550	1964	Santa Fe	0.1 Mi N of W Alameda St	Arroyo Las Mascaras	US 84/285	164.900	77.1'	6	0	45.00°	5 Cell CBC	10.0'	10.0'	10.0'	10.0'	10.0'	0.0'	0.0'	0.0'	N/A	N/A	(5) 10'x6'x135'				77.8	Not Deficient	0	N/A	N/A	N/A	7	7	HS19.8	HS24.8
7334	1973	Santa Fe	1.06 Mi N of Jct I-25	Arroyo Chamisos	US-84/285 NBL	162.660	99.7'	3	0	15.00°	3 Continuous	30.0'	38.0'	30.0'			0.0'	41.3'	45.9'	Concrete - Cast in place	Epoxy Overlay	Concrete Slab	Concrete Pier Caps	Stub Abutments	Steel Piles	80.3	Not Deficient	1	7	6	7	7	N/A	HS19.8	HS35.7
7335	1973	Santa Fe	1.06 Mi N of Jct I-25	Arroyo Chamisos	US-84/285 NBL	162.660	102.0'	3	0	15.00°	3 Continuous	30.0'	38.0'	30.0'			0.0'	42.0'	45.9'	Concrete - Cast in place	Epoxy Overlay	Concrete Slab	Concrete Pier Caps	Stub Abutments	Steel Piles	80.2	Not Deficient	1	6	6	6	7	N/A	HS19.8	HS33.7
7336	1974	Santa Fe	NM 466 & US 84/285 IC	NM 466 St. Michael's	US-84/285 St. Francis	163.740	119.1'	6	4	0.00°	1 Simple	120.0'					16.1'	92.2'	94.2'	Concrete - Cast in place	Bituminous	Concrete Slab Deck Arch		Full Height Concrete Abutments		96	Not Deficient	1/0	6	6	7	N/A	N/A	HS19.8	HS36.7
7425	1973	Santa Fe	0.66 Mi N of Jct I-25	Unnamed Waterway	US-84	163.024	34.1'	6	0	0.00°	4 Cell CBC	6.0'	6.0'	6.0'	6.0'		0.0'	0.0'	0.0'	N/A	N/A	(4) 8'x6'x226'				67	Not Deficient	0	N/A	N/A	N/A	7	7	HS19.8	HS35.7
7503	1974	Santa Fe	Junction I-25/St Francis	US-84 285	I-25 NBL	282.620	285.1'	2	4	24.00°	4 Simple	47.0'	93.0'	93.0'	47.0'		16.4'	50.2'	52.2'	Concrete - Cast in place	Bituminous	4 AASHTO Girders in 1 & 4; 7 Girders in 2 & 3	Concrete Pier Caps	Stub Abutments		67.2	Structurally Deficient	1/0	5	4	4	N/A	N/A	HS19.8	HS32.8
7504	1974	Santa Fe	Junction I-25/St Francis	US-84 285	I-25 SBL	282.600	285.1'	2	4	25.00°	4 Simple	47.0'	93.0'	93.0'	48.0'		16.2'	43.0'	48.9'	Concrete - Cast in place	Bituminous	4 AASHTO Girders in 1 & 4; 7 Girders in 2 & 3	Concrete Pier Caps	Stub Abutments		68.5	Structurally Deficient	1/0	5	4	4	N/A	N/A	HS19.8	HS32.8
7505	1974	Santa Fe	I-25 Ramp to St Francis	US-84	Ramp to NBL US-84	0.341	275.9'	2	4	24.00°	4 Simple	40.0'	93.0'	97.0'	47.0'		16.2'	24.0'	26.9'	Concrete - Cast in place	Bituminous	3 AASHTO Girders in 1 & 4; 4 Girders in 2 & 3	Concrete Hammerhead Piers	Stub Abutments		80.5	Functionally Obsolete	1/0	6	6	6	N/A	N/A	HS19.8	HS32.8
7506	1974	Santa Fe	I-25 St Francis I/C, S.F.	US-84-285 Under Ramp C	I-25 NBL	282.810	175.9'	2	2	16.00°	3 Simple	43.0'	83.0'	45.0'			16.2'	42.0'	44.9'	Concrete - Cast in place	Bituminous	4 AASHTO Girders in 1 & 3; 5 Girders in 2	Separate Concrete Pier Caps	Stub Abutments	Separate Columns	68.2	Structurally Deficient	1	6	4	5	N/A	N/A	HS19.9	HS32.9
7507	1974	Santa Fe	I-25 Off Ramp to St Francis	US-84-285 Under Ramp C	I-25 SBL	282.810	173.9'	2	2	6.00°	3 Simple	45.0'	80.0'	45.0'			17.9'	42.0'	44.9'	Concrete - Cast in place	Asphalt overlay	4 AASHTO Girders in 1 & 3; 5 Girders in 2	Concrete Pier Caps	Stub Abutments	Concrete Columns	69.5	Structurally Deficient	1	6	4	4	N/A	N/A	HS19.8	HS32.8
7508	1974	Santa Fe	0.1 Mi N of Jct I-25/US 84	US-84 NBL/SBL	Rodeo Road	4.100	259.2'	2	4	0.00°	4 Simple	60.0'	93.0'	93.0'	40.0'		328.1'	32.2'	34.4'	Concrete - Cast in place	Asphalt overlay	4 AASHTO Girders in 2&3	Concrete Pier Caps	Stub Abutments		87.4	Not Deficient	1/0	6	6	6	N/A	N/A	HS19.8	HS32.8
8952	2001	Santa Fe	Jct US 84/285 and NM 599	NM 599	US 84/285	1664.958	113.2'	4	2	0.00°	1 Simple	112.7'					16.4'	109.9'	125.0'	Concrete - Cast in place	Monolithic Concrete	Type 63 Modified Prestressed Concrete Girders		Concrete Abutments		91.1	Not Deficient	1	7	7	7	N/A	N/A	HS19.1	HS32.1

Table 16 – Bridge Conditions Summary

Sufficiency Ratings are determined using the sufficiency rating formula. This formula is defined in the U.S. Department of Transportation's report titled "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges". The numeric value is a percentage in which 100 percent represents an entirely sufficient bridge and zero percent represents a totally insufficient bridge. The sufficiency rating formula utilizes the following four components to calculate the overall Sufficiency Rating for a bridge. The four components of the sufficiency rating listed in descending order of importance are:

- Structural Adequacy and Safety
- Serviceability and Functional Obsolescence
- Essentiality for Public Use
- Special Reductions.

These four components are composed of multiple items that are used to calculate the overall Sufficiency Rating. Three items that characterize the overall existing physical condition of the bridge are the Condition Ratings of the superstructure, substructure and the deck. The Condition Rating is a numerical value ranging from zero to nine with a zero representing a failed condition and a nine representing an excellent condition. The Condition Ratings of the superstructure and substructure have a much greater influence on the overall Sufficiency Rating than the Condition Rating of the deck.

In addition to the Sufficiency Rating, the Federal Highway Administration (FHWA) classifies bridges as deficient or not deficient using a formula that considers both structural capacity and geometric configuration. Bridges classified as deficient may be structurally deficient or functionally obsolete. A bridge that is in poor condition due to deterioration or damage to the substructure, superstructure or deck is considered structurally deficient. The classification of functionally obsolete refers to a bridge with a configuration that is not adequate for the traffic it serves or a bridge with geometric characteristics such as clearances, widths and roadway alignment that no longer meet current geometric design standards. Thus a bridge that is classified as deficient may be in good condition and have adequate structural capacity if it is classified as functionally obsolete rather than structurally deficient.

The inventory rating of a bridge reflects the safe load carrying capacity of the bridge for normal service conditions. The operating rating of a bridge is a measurement of the maximum permissible load of a bridge for occasional use. All of the structures within this corridor satisfy the load-carrying requirements and do not require load restriction posting. All of the structures have an HS19.8 load rating or higher with the exception of 8952, which has an Inventory Rating of HS19.1.

Several of the structures within the corridor do not have required safety features. Structures lacking required safety features include 6487 near the Junction of St. Francis Drive and

Guadalupe Road, 7336 at the Junction of NM 466 and US 84, 7503 and 7504 at the Junction of I-25 and St. Francis Drive, and 7505 at the I-25 ramp to St. Francis Drive. Structures 6487, 6549, 6550 and 7425 need all the safety features brought up to standard, including bridge rail, transition, approach rail, and approach rail ends. For structures 7336 and 7508, the transition, approach rail, and approach rail ends all need to be brought up to standard. Structure 7503 has substandard transitions and approach rail ends. Structure 7504 needs an updated transition. Structure 7505 has substandard approach rail ends.

Within this corridor, eight structures are not deficient, two are functionally obsolete, and four are structurally deficient. Bridges 6487 and 7505 are functionally obsolete due to inadequate deck geometry. Bridges 7503, 7504, 7506 and 7507 are structurally deficient. Bridge 7503 is structurally deficient due to deteriorated girder ends and pier caps which needs repair as soon as possible and which contribute to low condition ratings for these elements. Bridge 7504 has low condition ratings for superstructure and substructure due to deterioration of girder ends and pier caps. Bridge 7506 has a low superstructure condition rating due to spalling and deterioration of the girder ends. Bridge 7507 has low superstructure and substructure ratings. The girder ends are deteriorated with spalls up to 2’ x 6” and exposed rebar up to 1’. Pier caps have cracks, spalls up to 1’ x 4” with 14” of exposed rebar, and delamination up to 53’ x 3’.

Bridges 6487, 7506, and 7507 have dirt and cinder build up at the joints, but the joints are in good shape and are not leaking. Bridges 7503 and 8952 have dirt and cinder build up at the joints with locations of isolated joint failure. Bridges 7336 and 7504 have dirt and cinder build up at the joints. Bridge 7336 has large areas of loss of adhesion and deformed seals. Bridge 7504 needs the joint at the center of the bridge replaced.

Several of the structures have erosion issues which need to be addressed. Erosion repair is recommended at the following bridges and locations: Bridge 7503 at the NW abutment, Bridge 7334 at the abutments, Bridge 7335 at the abutment corners, Bridge 8952 at the slope paving at the Southwest corner.

Bridge 8952 requires MSE retaining wall repair at the south abutment. Isolated MSE panels are misaligned with a separation of panels and should be repaired.

One of the bridge structures has issues with the bearings that need to be addressed. The moveable bearings at structure 7504 have heavy rust with minor section loss. Some of these bearings are slightly tilted and could be frozen. Painting and resetting the bearings is recommended by the inspection team.

Bridge 7507 needs repairs at the girder ends, pier caps, and abutments. Bridge 7508 has a girder that needs repair. Structures 6549 and 6550 requires repair work on the top slab and parapet at the inlet.