October
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UNIVERSITY AVENUE CORRIDOR STUDY

PHASE B | DETAILED EVALUATION OF ALTERNATIVES

CN LC00290

U.S. Department of Transportation
Federal Highway Administration

New Mexico Department of Transportation

Bohannan Huston

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FINAL REPORT OCTOBER 2019

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Table of Contents

Figures

Tables

Appendices

EXECUTIVE SUMMARY

Project Overview

The University Avenue Corridor Study Phase B is being led by the New Mexico Department of Transportation (NMDOT). The project corridor crosses through both the jurisdiction of the City of Las Cruces and the Town of Mesilla and the roadway corridor is owned and maintained by the NMDOT. The Study is being funded through the State and Federal (Federal Highway Administration (FHWA)) program; therefore, the project development process will follow the NMDOT Location Study Procedures (2015).

Purpose and Need

The purpose and need for the University Avenue Corridor Study is based on physical deficiencies, safety concerns, and economic development opportunities. The Purpose of the project is to provide an enhanced multi-modal transportation corridor along University Avenue between Main Street and Avenida de Mesilla, including the integration of bicycle and pedestrian facilities.

Public and Agency Involvement

In compliance with the NMDOT Location Study Procedures, a Public Involvement Plan (PIP) was prepared for the project. As defined in the PIP, there were two public meetings held during Phase B to present and discuss preferred alternatives being evaluated. In addition, there were two project team meetings to discuss issues during alternative selection.

Alternatives Considered

In response to the project purpose and need, along with stakeholder and public input, seven roadway alternatives were developed during Phase A. The Phase A Study recommended that both Typical Section F and G (as well as the no-build alternative) be further evaluated:

- **Alternative F** includes 2-driving lanes, in-road bicycle lanes, curb and gutter, a sidewalk on the north side and a multi-use path on the south side. This typical section requires at least 60.5 feet of right-of-way from back of sidewalk to back of sidewalk.
- **Alternative G** includes 2-driving lanes, in-road bicycle lanes, curb and gutter, and sidewalks on both sides. This alternative was developed to address the right-of-way limitations within the majority of the corridor and requires 44-50 feet of right-of-way.

Drainage alternatives were developed based on two grouping categories, west and east of the College Lateral which is a high point that divides the roadway drainage. Thus, Alternatives W1 and W2 address drainage west of this location and E1 and E2 address drainage to the east.

- **W1** provides one pond that is located at the west end of the corridor at the southeast corner of University Avenue and Avenida de Mesilla
- **W2** provides two ponds, one at the west end of the corridor at the southeast corner of University Avenue and Avenida de Mesilla and a second pond on or near the Zia Middle School field.
- **E1** provides one pond at the east end of the corridor at the northwest corner of University Avenue and Main Street (west of the railroad).
- **E2** provides two ponds, one at the east end of the corridor at the northwest corner of University Avenue and Main Street (west of the railroad), and a second pond at the northwest corner of University Avenue and Stanford Street.

Detailed Evaluation of Alternatives

The detailed evaluation of alternatives further analyzes Alternative F and Alternative G including consideration of right-of-way needs, conceptual engineering plans, engineering feasibility, preliminary cost, operations, potential environmental impacts, community concerns and preferences, and geotechnical investigations.

Recommendations

Alternative F was selected for roadway improvements. The buffer between the roadway and pedestrian path with vary based on available right-of-way.

The recommended drainage improvements consist of Alternatives **W2** and **E2** which will allow for ponding at the main existing topographic low points along the corridor. The final location and configuration of proposed ponds, particularly for the western portion of the corridor, is flexible and subject to change based on further coordination with land owners that will be conducted during design.

The proposed improvements will also include upgrading the existing signalized intersections at Avenida de Mesilla and at Main Street as well as coordination with the railroad for improvements needed for the at-grade railroad crossing.

1 INTRODUCTION

1.1 Project Description and Background

This study documents the findings of the Phase B Detailed Evaluation of Alternatives phase for the University Avenue Corridor Study. The study evaluates the transportation needs to enhance the existing two-lane roadway from Avenida de Mesilla to Main Street. The corridor is highly used by pedestrians and bicyclists with access to Zia Middle School, local neighborhoods, and as a gateway to the Town of Mesilla.

This study examines opportunities to provide enhanced multi-modal transportation options along the corridor with the key issues addressed in the study to include physical deficiencies in roadway infrastructure, safety concerns related to multi-modal conflicts, lack of sufficient bicycle and pedestrian facilities, and drainage implications

The initial University Avenue Phase A Corridor Study was led by the Mesilla Valley Metropolitan Planning Organization (MPO) and resulted in two preferred alternatives for further study. Phase B is now being led by the New Mexico Department of Transportation (NMDOT) with funding to continue the project through to design and construction. The Phase A document can be found at the Mesilla Valley MPO website at mesillavalleympo.org.

The two preferred alternatives recommended in Phase A are as follows:

- **Alternative F**, which includes 2-driving lanes, in-road bicycle lanes, curb and gutter, a sidewalk on the north side and a multi-use path on the south side. This typical section requires at least 60.5 feet of right-of-way from back of sidewalk to back of sidewalk.
- **Alternative G**, which includes 2-driving lanes, in-road bicycle lanes, curb and gutter, and sidewalks on both sides. This alternative was developed to address the right-of-way limitations within the majority of the corridor and requires 44-50 feet of right-of-way.

Alternative G was favored by stakeholders to be implemented along most of the corridor, with opportunities to expand the typical section to accomplish Alternative F where right-of-way allows.

Prior to the Phase A Study, the corridor was studied in the late 1990s by NMDOT. The lack of pedestrian and bicycle facilities has been a concern for the past 15 years due to the location of Zia Middle School and the daily access by students. There were no recommendations or roadway design

Figure 1.1.1 University Avenue Corridor

completed in this initial study. Therefore, the 2015 planning funds were allocated to develop a set of alternatives for the University Avenue corridor for further study.

1.2 Project Area

The study area along University Avenue is located between Main Street in the City of Las Cruces on the eastern end and Avenida de Mesilla (NM 28) in the Town of Mesilla on the western end. This section of University Avenue provides local access to Zia Middle School and residential neighborhoods. University Avenue also connects the Town of Mesilla and the New Mexico State University (NMSU) campus area, southeast Las Cruces, and Interstate 10 (I-10). Outside the study area, University Avenue extends east to I-25 and then transitions into Dripping Springs Road. The intersection of University Avenue and Main Street is the western terminus of University Avenue regionally.

Figure 1.3.1 illustrates the project location and study limits.

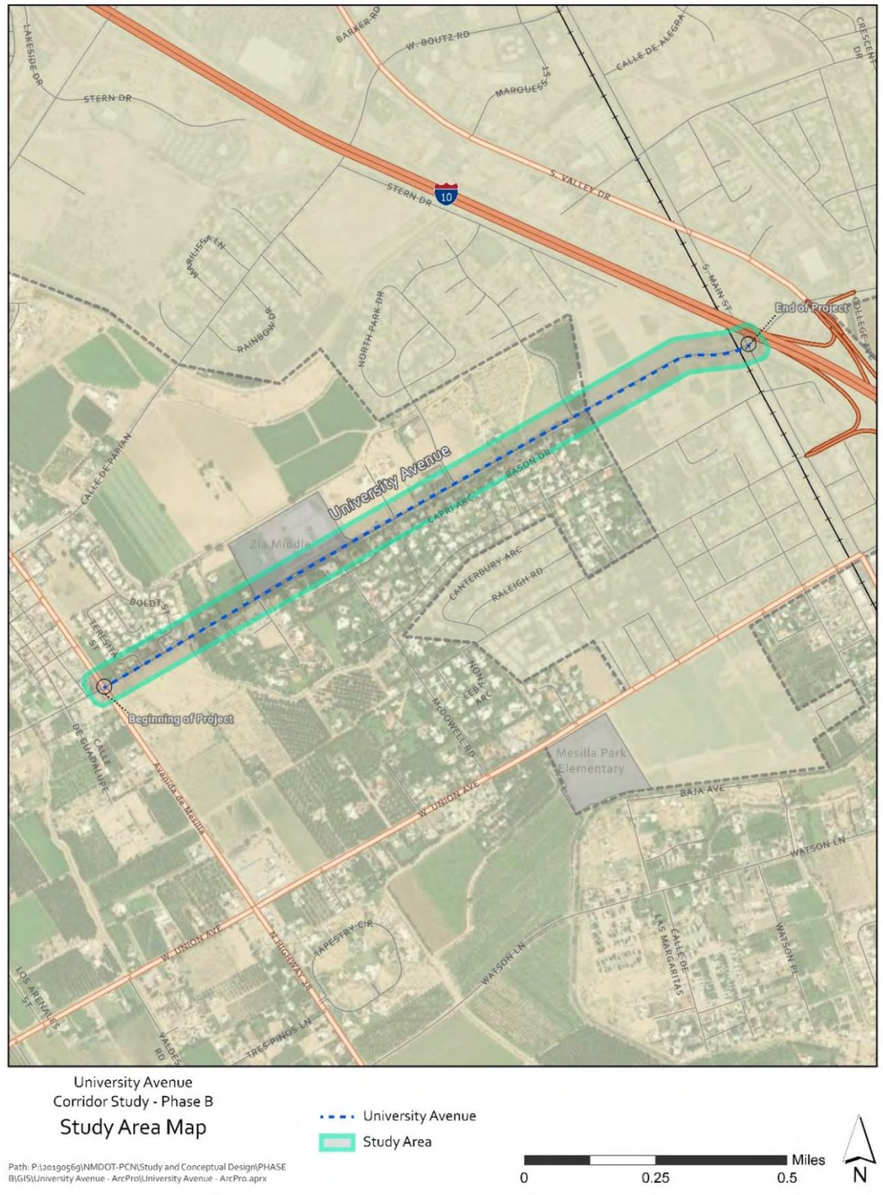
University Avenue is owned and managed by the NMDOT as a state road and is designated as New Mexico 101 (NM 101). The project corridor crosses through both the jurisdiction of the City of Las Cruces and the Town of Mesilla. Given the multi-jurisdictional component of University Avenue, stakeholders from various agencies are fully-involved in decision-making processes as the preferred alternatives for final design and construction are determined.

1.3 Study Process

The project development process follows the NMDOT Location Study Procedures (2015) which includes three distinct study phases as described below.

- The Initial Evaluation of Alternatives (Phase A) begins by developing a range of potential alternatives that respond to an established project need. Phase A was completed in 2016 with recommendations including two (2) alternatives suitable for the corridor depending on available right-of-way.
- Detailed Evaluation of Alternatives (Phase B) further evaluates the preferred alternatives identified in Phase A including “the development of conceptual engineering plans, right-of-way requirements, costs, performance data, environmental and social effects, and geotechnical investigations.”

Figure 1.3.1 Study Area Map



- Environmental Documentation (Phase C) “involves the preparation of an environmental document and subsequent processing in accordance with NEPA.”
- Preliminary Design (Phase D) follows the three study phases and will include “the preparation of detailed plans, specifications, and estimates that will be used for project construction.”

1.4 Context Sensitive Solutions

The NMDOT Location Study Procedures were followed including a context-sensitive public outreach effort. The corridor exists within a rural, residential setting with a middle school. The input of nearby residents, school representatives, and local jurisdictions were heard and considered through stakeholder and public meetings.

1.5 Public and Agency Involvement

Two public meetings and numerous individual agency and stakeholder meetings were held to share information on the preferred alternatives, potential impacts, traffic concerns, drainage solutions, and collect input for further consideration. The primary agencies and stakeholders engaged to support the NMDOT include the following:

- City of Las Cruces
- Town of Mesilla
- Las Cruces Public School District (LCPS)
- Mesilla Valley Metropolitan Planning Organization (MVMPO)
- RoadRUNNER Transit
- Elephant Butte Irrigation District (EBID)
- Doña Ana County
- New Mexico State University (NMSU)
- BNSF Railway

1.6 Purpose and Need

The purpose and need for the University Avenue Corridor Study is based on physical deficiencies, safety concerns, and economic development opportunities. The Purpose of the project is to provide an enhanced multi-modal transportation corridor along University Avenue between Main Street and Avenida de Mesilla, including the integration of bicycle and pedestrian facilities.

2 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

In compliance with the NMDOT Location Study Procedures, public and stakeholder outreach was conducted for Phase B of the Study. The goal of this process was to gather feedback from the public and stakeholders in an effort to ensure preferred alternatives meet the needs of the community. A Project Team was established at the beginning of the project in addition to the selection of participating agencies and stakeholders. Agencies are understood to be entities that have some level of jurisdiction over the project area and stakeholders are groups who may have interest in the project.

Table 2.1.1 Project Team, Agencies, and Stakeholders

Project Team	
New Mexico Department of Transportation	Bohannan Huston, Inc.
Mesilla Valley Metropolitan Planning Organization	Federal Highway Administration
Agencies	
City of Las Cruces	Town of Mesilla
Elephant Butte Irrigation District	Doña Ana County
State Historic Preservation Office	
Stakeholders	
Las Cruces Public Schools	RoadRUNNER Transit
New Mexico State University	BNSF Railway

Primary activities included meetings with stakeholders and presentations to the public and advisory committees. The following is a summary of public involvement and agency coordination during Phase B.

2.1 Preliminary Outreach

2.1.1 Public Involvement

A **public information meeting** was held in the La Mesilla Community Center on June 5, 2019. The meeting had about 40 attendees including Project Team members from the NMDOT and Bohannan Huston. The meeting was an open house format. The Project Team gave a brief presentation to review the initial Phase A Study and discussed the updated data collection and analysis for the Phase B Study. Preliminary results for the traffic analysis, multi-modal level of service, crash analysis, drainage investigation, and right-of-way data collection were also presented. Information boards were available for viewing and Project Team members were available to answer questions. Display boards included details on the purpose and need, study limits, Phase A results and preferred alternatives, and Phase B analysis. A summary of comments / questions is provided below with a copy of the entire summary included in **Appendix A**.

- Concerns of lighting
- Concerns of cars speeding
- Concerns of noise
- Concerns for increases in bicycle accidents
- Discussion on right-of-way changes

Figure 2.1.1 La Mesilla Community Center

2.1.2 Agency Coordination

A **stakeholder meeting** was held on May 16, 2019 at the NMDOT District 1 Solano Complex. The purpose of the meeting was to discuss the Phase B Study and provide input on project related issues. The Project Team gave a brief presentation review on the initial Phase A Study and discussed the updated data collection and analysis for the Phase B Study. The Project Team also presented preliminary results for the traffic analysis, multi-modal level of service, crash analysis, drainage investigation, and right-of-way data collection. A summary of comments / questions is provided below with a copy of the entire summary included in **Appendix A.** Key issues discussed at the meeting are as follows:

- Multi-modal considerations
- Roadway design
- Traffic and safety
- Drainage

Subsequent to the Project Team Meeting, ongoing coordination with the Project Team was maintained via email. This allowed continued input on project development. In addition to the Project Team meetings, presentations on the Study have been made to the Technical Advisory Committee (TAC), the Bicycle and Pedestrian Facilities Advisory Committee (BPAC), Las Cruces Public Schools, and the Policy Committee throughout the process. Input received from these committees has been used to inform the Study. Presentations were made on the following dates with copies of the presentations included in **Appendix A**.

- Bicycle and Pedestrian Advisory Committee (BPAC) meeting was held on May 21, 2019
- Las Cruces Public Schools operations team meeting was held on June 4, 2019
- Meeting with the NMDOT Las Cruces Patrol supervisor on June 5, 2019
- Technical Advisory Committee meeting was held on June 6, 2019
- Policy Committee meeting took place on June 12, 2019

All input received during Public Involvement Meetings and Project Team Meetings have been considered throughout the planning process and integrated into the final recommendations, as appropriate.

2.2 Final Outreach

Public and agency involvement following the initial draft submittal will include additional presentations to the public, stakeholders, and advisory committees.

2.2.1 Public Involvement

A second public information meeting was held on September 10, 2019 at the La Mesilla Community Center. The meeting had over 50 attendees including Project Team members from NMDOT and Bohannan Huston. The meeting was an open house format with a presentation to present the preferred roadway and drainage alternatives. Information boards were available for viewing and Project Team members were available to answer questions. A summary of the comments is provided below with a copy of the entire summary included in **Appendix A**.

- Concerns about pedestrian safety
- Concerns about ponding maintenance
- Questions about storm drain options

Additional meetings with property owner meetings were held in the month of August to discuss proposed drainage and ponding options.

2.2.2 Agency Coordination

The second stakeholder meeting was held on September 5, 2019 at the NMDOT District 1 Solano Complex. The Phase B study evaluated the preferred alternatives in further detail and the preferred alternative selected for construction was presented to the stakeholder group. The Project Team also presented drainage alternatives that were developed as part of the Phase B Study.

Additional presentations were made on the following dates:

- Bicycle and Pedestrian Facilities Advisory Committee (BPAC) meeting was held on May 21, 2019
- Las Cruces Public Schools operations team meeting was held on September 17, 2019
- Technical Advisory Committee meeting was held on September 5, 2019
- Policy Committee meeting was on September 11, 2019

3 PURPOSE AND NEED

The purpose and need for the University Avenue Corridor Study is based on physical deficiencies, safety concerns, and economic development opportunities. The Purpose of the project is to provide an enhanced multi-modal transportation corridor along University Avenue between Main Street and Avenida de Mesilla, including the integration of bicycle and pedestrian facilities. University Avenue is currently a 2-lane road with no shoulders and no pedestrian or bicycle facilities.

3.1 Physical Deficiencies

Physical deficiencies of the existing roadway geometry were identified during the analysis of existing conditions and include the geometric compliance regarding horizontal, vertical, and intersection sight distance issues, as described below.

1. Horizontal Geometry – five of 11 of the horizontal curves within the corridor do not meet the desired design speed of 40 mph. These are located near the entrances to Zia Middle School and at the approach to the at-grade railroad crossing near Main Street.
2. Vertical Geometry – of the 14 vertical curves, two have insufficient K-values for a 40 MPH design speed. The first is over the Laguna Lateral located east of Boldt Street and the second is located at the railroad crossing just west of the Main Street intersection.
3. Intersection Sight Distance – 12 of the 27-access points had sight distance violations related to obstructions such as walls, fences, and vegetation.

3.2 Safety

Based on a review of the crash history and multi-modal conditions along the corridor, the following safety issues were observed:

The analysis indicates that property damage related crashes were higher than the County average and the crash rate involving bicyclists was substantially higher than the National and State averages.

The corridor shows a higher risk of rear end crashes. This could be a result of congestion (especially near Zia Middle School during pick up and drop off times), differential in speed, and/or a lack of sight distance at intersections during times of congestion.

Additionally, results from the multi-modal level of service analysis indicate there is notable potential to improve bicyclist and pedestrian comfort and safety as the existing roadway does not have facilities for bicycle or pedestrian traffic.

Figure 3.2.1 Zia Middle School Student

3.3 Economic Development

The University Avenue corridor supports improved **system linkage** for the traveling public between the Town of Mesilla and the City of Las Cruces. With major destinations such as the Las Cruces Convention Center and the NMSU campus near the eastern end, this linkage is critical. It provides a direct connection for tourists and business visitors to gain access to such tourist destinations as Mesilla Plaza and all the associated retail and restaurants. An improved and defined corridor results in comfortable travel for all modes of transportation and also allows opportunities for wayfinding for non-residents.

The focus on multi-modal facilities as part of the preferred alternatives directly aligns with the goals and objectives of the City's recently-completed Active Transportation Plan. This Plan, as well as the Mesilla Valley Metropolitan Planning Organizations master transportation plans from previous years, have identified this corridor as part of the Multi-Use Loop Trail. Enhancing this section of the loop with bicycle facilities could bring further opportunities for bicycle-related tourism to the entire region.

4 EXISTING CONDITIONS AND CONSTRAINTS

4.1 Existing Physical Condition and Roadway Infrastructure

University Avenue is a 2-lane road with no shoulders and no pedestrian or bicycle facilities. The road is located within an area that is predominantly residential and provides access to an existing middle school. The corridor does not contain curb and gutter, resulting in water runoff to flow off the existing roadway into adjacent ditches or properties. The existing pavement is in fair condition but is showing signs of deterioration. Along with physical deficiencies, there are safety concerns identified based on the potential for pedestrian, bicycle, and vehicular interaction due to the lack of adequate multi-modal facilities. Railroad infrastructure is present in the study area and will require agency coordination during final design.

4.2 Traffic Analysis

An analysis of the traffic operations for the existing conditions was performed for the corridor. The analysis evaluates the capacity of key intersections under existing AM and PM peak hour traffic volumes.

Key intersections include:

1. Avenida de Mesilla
2. Teresita Street
3. Boldt Street
4. Camino Castillo
5. McDowell Place
6. Camino del Rey
7. Old Farm Road
8. Stanford Street
9. Bowman Avenue
10. Main Street

Two signalized intersections are located on the ends of the study area corridor, Avenida de Mesilla and Main Street. All other intersections along the corridor are two-way stop-controlled.

Traffic counts were collected at all intersections from 6:30 AM to 9:30 AM and 3:00 PM to 6:00 PM on Wednesday March 20, 2019 while school was in session. Existing traffic counts are located in **Appendix B**.

Existing intersection traffic volumes were analyzed using the Synchro version 10 software, that uses the signalized and unsignalized intersection methodology from the Sixth Edition of the Highway Capacity Manual (HCM). Intersection operational performance is determined using Level of Service (LOS), which is expressed using letters A to F, with LOS A being the best and F being the worst. The HCM defined LOS for signalized and unsignalized intersection as follows:

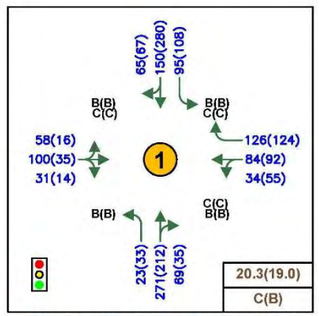
Table 4.2.1 Level of Service Definitions

Level of Service	Definition	Signalized (sec/veh)	Unsignalized (sec/veh)
A	Most vehicles do not stop.	<10	<10
B	Some vehicles stop.	>10 and <20	>10 and <15
C	Significant numbers of vehicles stop.	>20 and <35	>15 and <25
D	Many vehicles stop.	>35 and <55	>25 and <35
E	Limit of acceptable delay.	>55 and <80	>35 and <50
F	Unacceptable delay.	>80	>50

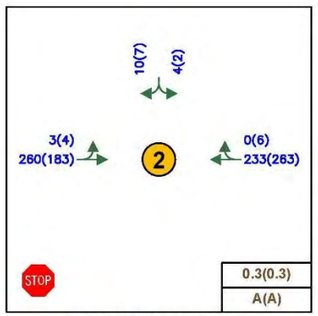
The City of Las Cruces and NMDOT has established LOS D as the generally acceptable level of service in urban areas and when intersections operate below this level, improvements are considered, where feasible.

The results are summarized in **Table 4.4.2** and **Table 4.4.3** and shown graphically in **Figure 4.2.1**. The analysis indicates that under existing 2019 conditions, all signalized and unsignalized intersections operate at level of service C or better with minimal queueing and delay.

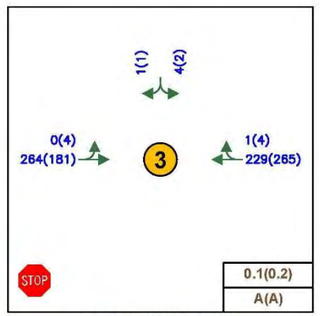
Figure 4.2.1 Existing (2019) Peak Hour Traffic Volumes



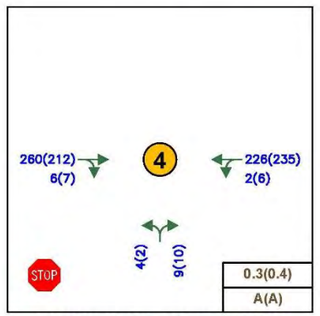
AVENIDA DE MESILLA/UNIVERSITY



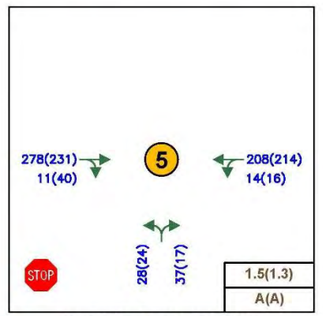
UNIVERSITY/TERESITA



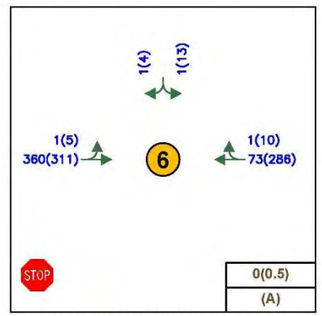
UNIVERSITY/BOLDT



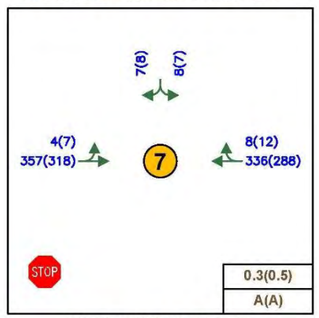
CAMINO CASTILLO/UNIVERSITY



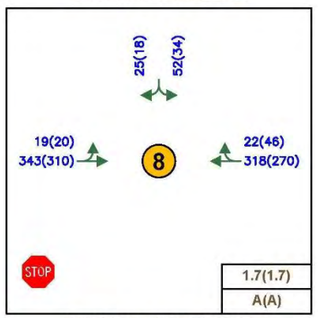
MCDOWELL/UNIVERSITY



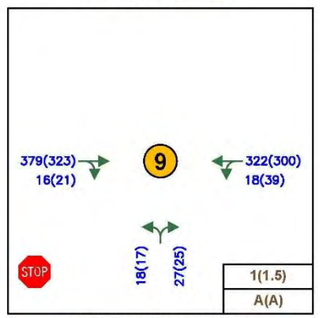
UNIVERSITY/CAMINO DEL REY



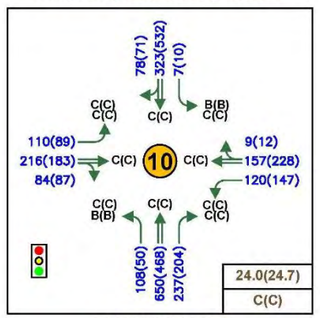
UNIVERSITY/OLD FARM



UNIVERSITY/STANFORD



BOWMAN/UNIVERSITY



MAIN/UNIVERSITY

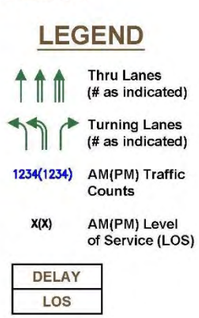


Table 4.2.2 Existing Signalized Intersection Capacity Analysis Results

Signalized Intersections	2019 AM Peak			2019 PM Peak		
	Delay (sec.)	V/C	LOS	Delay (sec.)	V/C	LOS
1. Avenida de Mesilla and University	20.3	0.48	C	19.0	0.45	B
10. Main and University	24.0	0.50	C	24.7	0.52	C

Table 4.2.3 Existing Unsignalized Intersection Results

Intersection/Movement	2019 AM Peak				2019 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
2. University and Teresita	0.3	-	-	-	0.3	-	-	-
EB Left	7.7	0.01	0	A	7.9	0.01	0	A
SB Approach	10.3	0.02	25	B	10.5	0.02	0	B
3. University and Boldt	0.1	-	-	-	0.2	-	-	-
EB Left	0	-	0	A	7.9	0.01	0	A
SB Approach	11.4	0.01	0	B	11.4	0.01	0	B
4. Camino Castillo and University	0.3	-	-	-	0.4	-	-	-
NB Approach	10.5	0.02	25	B	10.8	0.03	25	B
WB Left	7.8	0.01	0	A	8	0.01	0	A
5. McDowell and University	1.5	-	-	-	1.3	-	-	-
NB Approach	11.8	0.12	25	B	14.1	0.14	25	B
WB Left	7.9	0.01	0	A	8.2	0.02	25	A
6. University and Camino del Rey	0	-	-	-	0.5	-	-	-
	7.4	0.01	0	A	8.4	0.01	0	A
EB Left	10.3	0.01	0	B	17.7	0.09	25	C
SB Approach								
7. University and Old Farm	0.3	-	-	-	0.5	-	-	-
EB Left	8.1	0.01	0	A	8.4	0.01	0	A
SB Approach	13.4	0.04	25	B	16.1	0.07	25	C
8. University and Stanford	1.7	-	-	-	1.7	-	-	-
EB Left	8.1	0.02	25	A	8.5	0.03	25	A
SB Approach	15.8	0.21	25	C	20	0.25	50	C
9. Bowman and University	1	-	-	-	1.5	-	-	-
NB Approach	13.6	0.11	25	B	17.4	0.18	25	C
WB Left	8.3	0.02	25	A	8.6	0.06	25	A

* – HCM 95th percentile queue rounded to next 25-foot increment

4.3 Multi-Modal

There are currently no bicycle facilities within the study limits along University Avenue. Sidewalks currently exist along both sides of Avenida de Mesilla, on the South side of University Avenue west of Avenida de Mesilla, and on the North side of University Avenue between Avenida de Mesilla and the Laguna Lateral (east of Boldt St). The rest of the corridor does not have sidewalk or bicycle facilities. Adding pedestrian and bicycle facilities along the University Avenue corridor will improve access to surrounding areas, including Zia Middle School. ADA ramps currently exist at all corners of both signalized intersections with exception of the northwest quadrant of the University Avenue and Main Street intersection.

Table 4.2.4 Multi-Modal Level of Service Scoring

LOS	Numerical Score
A	≤ 2.00
B	> 2.00 and ≤ 2.75
C	> 2.75 and ≤ 3.50
D	> 3.50 and ≤ 4.25
E	> 4.25 and ≤ 5.00
F	≥ 5.00

4.3.1 Multi-Modal Level of Service

This study employs multi-modal LOS analysis, which evaluates the quality of bicycle and pedestrian facilities as they are impacted by the adjacent roadway. The multi-modal LOS analysis utilizes formulas and procedures contained in the National Cooperative Highway Research Program's "Multimodal Level of Service Analysis for Urban Streets."

Similar to standard LOS scoring, multi-modal LOS scoring assigns an "A" for best and "F" for worst bicycle and pedestrian infrastructure quality. **Table 4.2.4** shows the numerical scores associated with each level.

4.3.1.1 *Bicycle Analysis*

The multi-modal LOS analysis conducted for this study evaluates the presence and quality of bicycle infrastructure as it contributes to the comfort and safety of the bicycle user.

Criteria used in the analysis include:

1. Number of vehicle travel lanes
2. Median type
3. Average daily traffic
4. Speed limit
5. Percentage of heavy vehicles
6. Width of the outside vehicle lane
7. Width of the bicycle lane buffer
8. Width of the bicycle lane
9. Width of on-street parking
10. Pavement condition
11. Percentage of on-street parking that is occupied

The results of the bicycle LOS analysis are displayed in **Table 4.3.1** below. Under the existing condition of the roadway, the roadway operates at an acceptable LOS scoring LOS D.

Table 4.3.1 Bicycle Level of Service Results

Criteria	Existing
Number of Lanes	1
Median Type	Undivided
Average Weekday Daily Traffic	4,534
Speed Limit	35 MPH
Percent Heavy Vehicles	2
Outside Lane Width	11 feet
Bicycle Lane Buffer Width	N/A
Bicycle Lane Width	N/A
On-Street Parking Width	N/A
Pavement Condition	4
OSPA	0
Level of Service Score	**4.06**
Level of Service	**D**

4.3.1.2 *Pedestrian Analysis*

The multi-modal LOS analysis conducted for this study evaluates the presence and quality of pedestrian infrastructure as it contributes to the comfort and safety of the pedestrian.

The pedestrian LOS analysis evaluates similar criteria to the bicycle LOS analysis, in addition to the following:

1. Signals per mile
2. Sidewalk width
3. Sidewalk buffer width
4. Tree spacing

The percentage of heavy vehicles and pavement condition are not evaluated in the pedestrian LOS analysis.

The results of the pedestrian LOS analysis are displayed in **Table 4.3.2** below. Under existing conditions, the roadway does not operate at an acceptable pedestrian LOS scoring LOS E.

Table 4.3.2 Pedestrian Level of Service Results

Criteria	Existing
Number of Lanes	1
Signals per Mile	4
Median Type	Undivided
Average Weekday Daily Traffic	4,534
Speed Limit	35 MPH
Outside Lane Width	11 feet
Bicycle Lane Buffer Width	N/A
Bicycle Lane Width	N/A
On-Street Parking Width	N/A
OSPA	0
Sidewalk Width	N/A
Sidewalk Buffer Width	N/A
Tree Spacing	N/A
Level of Service Score	**4.68**
Level of Service	**E**

4.4 Geometry

4.4.1 HORIZONTAL

The existing horizontal geometry of the corridor was analyzed by replicating the roadway centerline using both photogrammetry and existing survey data and comparing the properties of the horizontal alignment to criteria referenced in the American Association of State Highway and Transportation Officials (AASHTO) 2011 Geometric Design of Highways and Streets “Green Book”.

The University Avenue corridor includes 11 horizontal curves and the desired design speed for the corridor is 40 miles per hour (MPH). Horizontal curve conditions are summarized in **Table 4.4.1.**

Table 4.4.1 Existing Horizontal Curves

HC #	PI STA	LENGTH (FT)	RADIUS (FT)	SUPER	MAX DESIGN SPEED (MPH)	RELATIVE LOCATION
1	108+04.95	168.08	10000	NC	**55**	East of Boldt St
2	109+99.89	99.726	5500	NC	**40**	West of Laguna Lateral
3	118+51.26	232.796	12000	NC	**60**	Camino Castillo Intersection
4	121+41.34	91.724	2500	NC	**25**	Transition to Center Left Turn Lane West of Zia MS
5	122+55.03	135.635	2500	NC	**25**	
6	129+36.68	76.715	1500	NC	**15**	Transition from Center Left Turn Lane East of Zia MS
7	132+95.45	369.216	9000	NC	**50**	West of Camino del Rey
8	154+92.30	111.033	7000	NC	**45**	Stanford St Intersection
9	157+54.70	178.898	10000	NC	**55**	East of Bowman St
10	167+45.98	424.47	800	NC	**10**	Approach to Main St
11	172+04.06	401.767	750	2.00%	**15**	

Almost half of the horizontal curves within the corridor do not meet the desired design speed of 40 MPH, however six existing curves are above the design speed. Horizontal curve numbers 4, 5, and 6 are located near the entrances to Zia Middle School and have radii sufficient for design speeds of 15 mph and 25 mph. Although these curves do not meet the 40 MPH desired design speed, eastbound traffic is not affected by these curves and the travel speed of westbound traffic is expected to be lower than the design speed during school drop-off and pick-up times where congestion creates reduced travel speeds. Also, horizontal curve numbers 10 and 11 are located at the approach to the at-grade railroad crossing at Main Street which is a signalized intersection. As such, travel speeds are expected to be lower than the design speed in this location due to this being a minor road approach to a signalized intersection where drivers may be required to come to a stop if the signal is red or if the train is crossing.

Existing turn bay lengths, including deceleration taper lengths, were collected at the signalized intersections of University Avenue/Avenida de Mesilla and University Avenue/Main Street. These lengths were analyzed using 95th percentile queue lengths to determine if the existing turn bay dimensions meet the minimum criteria established in the State Access Management Manual (SAMM). **Table 4.4.2** shows the minimum requirements for turn bay dimensions as outlined in the SAMM. All existing turn lanes at both signalized intersections were found to be sub-standard when compared to these criteria.

Table 4.4.2 Minimum Requirements for Turn Bay Lengths (SAMM)

Roadway Name	Posted Speed (MPH)	Minimum Deceleration Taper (ft)	Minimum Deceleration Distance (ft) Left Turn	Minimum Deceleration Distance (ft) Right Turn
University Ave	35	100	250	230
Avenida de Mesilla	35	100	250	230
Main St	40	125	325	300

Since all turn bays within the study area are sub-standard when compared to the SAMM criteria, a new comparison was created using AASHTO's minimum braking distance criteria. When using these criteria, only the right turn bay for westbound traffic approaching Avenida de Mesilla is considered to have sufficient available space for a vehicle to brake and the remaining 7 turn bays within the study area are deficient. See **Table 4.4.3**, and **Table 4.4.4** for additional details.

Table 4.4.3 Avenida de Mesilla Intersection Turn Bay Lengths

Turning Movement	Existing Deceleration Taper (ft)	Existing Lane Length (ft)	Existing Queue Distance (ft) per HCS	Available Deceleration Distance (ft)	Minimum Braking Distance per AASHTO
Southbound Left	30	43	25	48	145
Southbound Right	-				
Westbound Left	65	97	125	37	115
Westbound Right	-				
Northbound Left	85	95	75	105	145
Northbound Right	88	86	200	-26	145
Eastbound Left	75	95	100	70	115
Eastbound Right	-				

Table 4.4.4 Main Street Intersection Turn Bay Lengths

Turning Movement	Existing Deceleration Taper (ft)	Existing Lane Length (ft)	Existing Queue Distance (ft) per HCS	Available Deceleration Distance (ft)	Minimum Braking Distance per AASHTO
Southbound Left	45	105	75	75	115
Southbound Right	-				
Westbound Left	-				
Westbound Right	150	102	125	127	115
Northbound Left	60	63	25	98	115
Northbound Right	-				
Eastbound Left	-				
Eastbound Right	-				

4.4.2 VERTICAL

The existing vertical geometry of the corridor was evaluated against AASHTO 2011 criteria using information obtained from existing survey data. The University Avenue corridor within the study area includes 14 vertical curves. Of these vertical curves, two have insufficient K-values for a 40 MPH design speed. The first vertical curve with an insufficient K-value is over the Laguna Lateral located east of Boldt St and has a maximum effective design speed of 30 mph. The other vertical curve with an insufficient K-value is located at the railroad crossing just west of the Main St intersection and has a maximum effective design speed of 25 mph. Despite these two insufficient vertical curves, an analysis of the vertical alignment along University Avenue does not indicate any sight distance violations related to vertical alignment.

Table 4.4.5 Existing Vertical Curves

VC #	PVI STA	LENGTH (FT)	CREST/SAG	Δ GRADE	K-VALUE	MAX DESIGN SPEED (MPH)	RELATIVE LOCATION
1	101+40.00	64	CREST	1.39%	46.15	40	East of Avenida de Mesilla
2	109+20.00	120	SAG	1.82%	65.78	40	East of Boldt St
3	110+57.62	60	CREST	3.05%	19.7	30	Over Laguna Lateral
4	111+99.96	200	SAG	0.78%	257.6	80	East of Laguna Lateral
5	129+69.47	200	CREST	1.11%	179.46	60	East of Zia Middle School
6	134+00.00	200	SAG	0.81%	248.02	80	Camino del Rey Intersection
	150+87.16	60	SAG	0.82%	73.49	40	West of Stanford St
8	154+66.62	100	SAG	0.89%	111.74	50	Stanford St Intersection
9	156+00.00	50	SAG	0.76%	66.05	40	Bowman St Intersection
10	156+58.35	50	CREST	0.95%	52.5	40	
11	160+08.66	100	CREST	1.13%	88.47	50	East of Bowman St
12	165+70.30	160	SAG	0.85%	188.34	70	West of Main St
13	167+20.00	100	CREST	0.63%	157.84	60	
14	172+98.36	40	CREST	3.21%	12.47	25	At-Grade Railroad Crossing

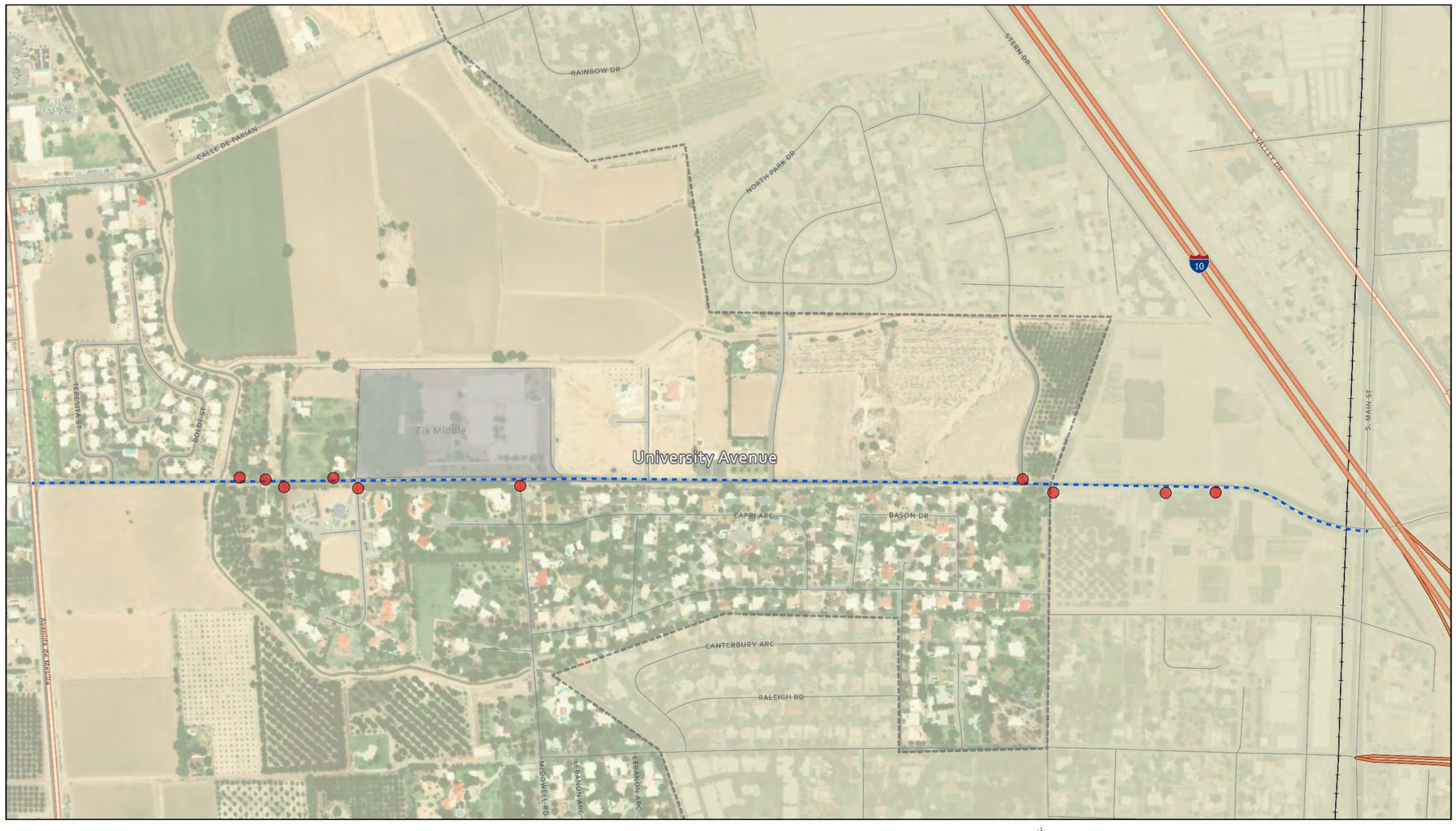
Vertical curve conditions are summarized in **Table 4.4.5**. In addition to the vertical curves shown in **Table 4.4.5**, there are multiple points of vertical intersections (PVI) throughout the corridor without vertical curves. For these PVIs, the difference in grade is less than 0.5% making vertical curves unnecessary for the design speed.

4.4.3 Intersection Sight Distance

The intersection sight distances of driveways and access points along University Avenue were assessed according to criteria in the AASHTO 2011 “Green Book”. The design vehicle used to analyze each intersection was a combination truck as it is the most conservative option. Minimum sight distance values are based on a 40 MPH design speed. Intersection sight distances were checked horizontally and vertically. University Avenue has 27 access points, excluding the signalized intersections of Avenida de Mesilla and Main Street. Of these 27 access points, 12 had sight distance violations related to obstructions such as walls, fences, and vegetation (see **Figure 4.4.2**). See **Table 4.4.6** for a summary of the required sight distances for the corridor and **Appendix C** for the analysis performed at each intersection.

Figure 4.4.1 University Avenue and Bowman Street

Figure 4.4.2 Intersection Sight Distance Obstructions



Bohannan Huston

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Sight Distance Obstructions
University Avenue

N

0 475 950 Feet

University Avenue
Corridor Study - Phase B

Sight Distance Obstructions

Table 4.4.6 Minor Roads with Stop Control

Design Speed: 40 MPH			
Design Vehicle: Passenger Car			
	Case	Maneuver	Required Sight Distance, ft
	B1	Left Turn from Minor Rd	445
	B2	Right Turn from Minor Rd	385
	B3	Crossing from Minor Rd	385
	F	Left Turn from Major Rd	325
Design Vehicle: Single Unit Truck			
	Case	Maneuver	Required Sight Distance, ft
	B1	Left Turn from Minor Rd	560
	B2	Right Turn from Minor Rd	500
	B3	Crossing from Minor Rd	500
	F	Left Turn from Major Rd	385
Design Vehicle: Combination Truck			
	Case	Maneuver	Required Sight Distance, ft
	B1	Left Turn from Minor Rd	680
	B2	Right Turn from Minor Rd	620
	B3	Crossing from Minor Rd	620
	F	Left Turn from Major Rd	445

4.5 Safety

The existing safety conditions of the corridor were evaluated in three ways: nominal, perceived, and substantive. Nominal safety is the measure to which designs meet applicable design standards (geometric compliance). Perceived safety is the subjective measure of the level of comfort experienced by users of a facility. Substantive safety is the measure of the historical crash record, irrespective of

Figure 4.4.3 Crash Density Map

whether the design standards are met or not. Consideration of these three safety measures individually and in aggregate is important when assessing existing conditions and potential improvements.

4.5.1 Nominal Safety

The existing University Avenue corridor was evaluated utilizing the AASHTO 2011 "Green Book" and the AASHTO Roadside Design Guide. The following is a summary of the evaluation results with more detailed information found in **Section 4.5.3** of this report:

- The existing typical section meets minimum criteria for current design standards with exception to shoulder widths throughout the corridor.
- Nearly half of the horizontal curves, 5 out of 11, do not meet desired design speed criteria.
- Two vertical curves do not meet desired design speed criteria.
- Nearly half of the corridor's access points, 12 out of 27, do not meet desired intersection sight distance criteria.

4.5.2 Perceived Safety

Perceived Safety is based solely on the perspective of the users of the facility and as such is anecdotal in nature. While there may not be either a nominal or substantive safety concern, perceived safety issues may preclude some users from using the facility, because to them perception is reality. Discussions with stakeholders and public input during the initial public outreach revealed the following perceived safety issues:

- Members of the public expressed concerns regarding speeding and racing taking place along the corridor.
- There is currently no street lighting along the corridor and there were questions regarding the addition of street lighting.
- There are concerns that bicycle accidents will increase due to the addition of bicycle facilities along the corridor.

4.5.3 Substantive Safety

The purpose of collecting and analyzing historical crash data is to identify possible crash patterns and to determine the probable cause of those crashes. The crash analysis includes patterns related to roadway conditions; time of day, weather conditions, types of crashes, locations, (i.e. roadway, intersections, etc.), crash severity and driver characteristics.

A five-year crash history for 2013 to 2017 was obtained from the NMDOT Traffic Safety Division and is represented in **Figure 4.4.3** with the dataset available in **Appendix D**.

A total of 60 crashes were reported on University Avenue between the intersections of Avenida de Mesilla and Main Street. **Table 4.5.1** shows a breakdown of these reported crashes by location and by year between 2013 and 2017.

Table 4.5.1 University Avenue Crash Data by Year

YEAR	NUMBER OF CRASHES			
	AVENIDA DE MESILLA INTERSECTION	UNIVERSITY CORRIDOR	MAIN ST INTERSECTION	TOTAL
2013	0	2	5	7
2014	1	2	8	11
2015	2	4	6	12
2016	1	2	13	16
2017	0	6	8	14
TOTAL	**4**	**16**	**40**	**60**

The majority of the crashes occurred at the Main Street intersection (40), four occurred at the Avenida de Mesilla intersection, and 16 occurred within the corridor between the two intersections.

Crash rates were determined to create a comparison between crashes from one location to the other. These rates are based on data such as traffic volumes, length of road sections considered, and a period of time in years. The typical crash rate equation for roadway segments computes rates per 100 million vehicle miles (RMVM).

The crash rate calculated for University Avenue corridor between the intersections of Avenida de Mesilla and Main Street (excluding the intersections) is 128.6 per 100 million vehicle miles. Compared to data reported in the 2016 New Mexico Traffic Crash Annual Report, University Avenue has a 10-20% lower crash rate than the national, state, and county crash rates. (The national crash rate is 229 per 100 million vehicle miles, New Mexico is 162 per 100 million vehicle miles, and the crash rate for Doña Ana County is 142.5 per 100 million vehicle miles.) The University Avenue corridor also has substantially lower crash rates when it comes to fatal crashes, injury crashes, and pedestrian crashes. However, property damage only crashes were higher than the county average and the crash rate involving bicyclists was substantially higher than the national and state averages, despite there only being one crash involving a bicyclist in the 5-year analysis period between 2013-2017. See **Table 4.5.2** for additional comparison information.

Table 4.5.2 Crash Rates Comparison per 100 Million Vehicle Miles

	Avenida de Mesilla Intersection	Main St Intersection	University Corridor	Total
Percent of Daytime (7am To 7pm) Crashes:	3.3%	53.3%	11.7%	68.3%
Percent of Night Time (7pm To 7am) Crashes:	3.3%	15.0%	13.3%	31.7%
Percent of Clear Weather Crashes:	6.7%	66.7%	25.0%	98.3%
Percent of Inclement Weather Crashes:	0.0%	1.7%	0.0%	1.7%

$$R = \frac{C \times 100{,}000{,}000}{V \times 365 \times N \times L}$$

The variables in this equation are:

R = Roadway Departure crash rate for the road segment expressed as crashes per 100 million vehicle-miles of travel.
C = Total number of roadway departure crashes in the study period
V = Traffic volumes using Average Annual Daily Traffic (AADT) volumes
N = Number of years of data
L = Length of the roadway segment in miles

Table 4.5.3 Reported Crash Summary Statistics

	University Avenue Corridor (2013-2017)	New Mexico Traffic Crash Annual Report 2016		
		National	New Mexico	Doña Ana County
Total Crash Rate:	128.6	229	162	142.5
Fatal Crash Rate:	0	1.08	1.3	0.69
Injury Crash Rate:	17.5	99	74	46.41
Property Damage Only Crash Rate:	102.9	147.1	111	95.4
Pedestrian Involved Crash Rate:	0	2.93	2.1	1.88
Bicyclist Involved Crash Rate:	8.57	2.04	1.3	-

The following tables describe the results of the crash statistics for the study area. The largest single type of crash is classified as rear end crashes, most of which occurred at the Main Street Intersection. See **Table 4.5.2**, **Table 4.5.4**, and **Table 4.5.5** for crash statistics information.

Table 4.5.4 Crash Type Statistics

Crash Type	Avenida de Mesilla Intersection	Main St Intersection	University Corridor	Total
Percent Angle Crashes:	3.3%	10.0%	1.7%	15.0%
Percent Rear-End Crashes:	0.0%	26.7%	10.0%	36.7%
Percent Head-On Crashes:	3.3%	11.7%	1.7%	16.7%
Percent Side Swipe Crashes:	0.0%	18.3%	1.7%	20.0%
Percent Fixed Object Crashes:	0.0%	0.0%	3.3%	3.3%
Percent Pedestrian Crashes:	0.0%	0.0%	0.0%	0.0%
Percent Bicyclist Crashes:	0.0%	0.0%	1.7%	1.7%
Percent Other Crashes:	0.0%	1.7%	5.0%	6.7%
Total Crash Types:	**6.7%**	**68.3%**	**25.0%**	**100.0%**

Table 4.5.5 Crash Severity Statistics

	Avenida de Mesilla Intersection	Main St Intersection	University Corridor	Total
Percent Property Damage Crashes:	6.7%	38.3%	20.0%	65.0%
Percent Severe Injury Crashes:	0.0%	0.0%	1.7%	1.7%
Percent Injury Crashes:	0.0%	30.0%	3.3%	33.3%
Percent Fatal Crashes:	0.0%	0.0%	0.0%	0.0%
Total Crash Severity:	**6.7%**	**68.3%**	**25.0%**	**100.0%**

Of the 60 crashes documented between 2013 and 2017, 68% occurred during the daytime, 98% occurred during clear weather conditions, and 35% were crashes resulting in injury. The crash data shows no documented fatal crashes between 2013 and 2017.

The University Avenue corridor, excluding the intersections of Avenida de Mesilla and Main Street, shows a higher risk of rear end crashes. This could be a result of congestion (especially near Zia Middle School during pick up and drop off times), differential in speed, and/or a lack of sight distance at intersections during times of congestion.

4.6 Right-of-Way and Property Ownership

The existing University Avenue roadway is located within NMDOT right-of-way, it is dedicated as NM 101 and is documented with the NMDOT Right-of-Way Maps for project number SP-SM-4510(200) & TPO-4510(2). In general, the existing right-of-way width is approximately 50’ wide from Avenida de Mesilla to the Laguna Lateral crossing and approximately 43’ wide from Laguna Lateral crossing to McDowell Road. The right-of-way width on the south side of University Avenue widens from McDowell Road to the College Lateral crossing. In this area of the corridor the right-of-way width varies but, in some areas, appears to be as much as 100’ wide. From the College Lateral crossing to Bowman Road, the right-of-way width is approximately 43’ wide, however, the College Lateral parallels University Avenue in this area in an easement that is approximately 30’ wide. East of Bowman Road the existing right-of-way is approximately 80’ wide and then widens even more as it approaches the Main Street intersection. A copy of the Maps is included in **Appendix E**.

The EBID College Lateral that parallels University Avenue on the south side of the roadway from Bowman Road west until it crosses under University is within an existing easement that appears to be approximately 30’ wide from the edge of the existing University Avenue right-of-way limits.

The University Avenue corridor crosses BNSF railroad tracks just west of Main Street. There is an existing Rail Road easement that is approximately 100’ wide that parallels Main Street, this is shown on Sheet 17 of 21 in the Right-of-Way maps for NMDOT project no I-10-2(28)136 which is also included in **Appendix E**.

4.7 Drainage

The existing corridor lacks drainage facilities. Due to existing topographic conditions along the corridor and limited roadway longitudinal slope, runoff ponds at localized low spots within the right-of-way including on the existing pavement in various locations. **Figure 4.7.1** shows an overview of the drainage patterns in the area. At the west end of the study area, the existing roadway has a very mild slope (less than 0.1%) from where it crosses over the Laguna Lateral toward Avenida de Mesilla. Between where University Avenue crosses over the Laguna Lateral and the College Lateral crossing of University Avenue to the east, the roadway slopes mildly towards a low stretch in the vicinity of the Camino Castillo intersection south of Zia Middle School. East of the College Lateral the roadway slopes toward a low stretch of road just west of the Stanford Street intersection. From that low point the existing roadway rises slightly to cross over a private irrigation pipe associated with the New Mexico State University (NMSU) research farm then slopes down towards the railroad, located parallel to and west of Main Street. At the east end of the corridor there are low points on both sides of University Avenue that result in standing water within the right-of-way and, at times, on the roadway. The low area on the south side of University Avenue at this location periodically requires pumping by District 1 maintenance crews.

In addition to the major roadway low points described above, the NMDOT Patrol Foreman has indicated that ponding occurs in the vicinity of the western most Zia Middle School entrance and along the NMSU research farm (east of Bowman Street). Existing topographic conditions, including the general lack of positive drainage outfalls along the corridor, explain the ponding at these locations as well as predicts additional localized ponding in the vicinity of the low points described above.

Based on a review of topographic mapping generated from 2018 Doña Ana County LiDAR data and discussions with the NMDOT Patrol Foreman, areas along the corridor and outside University Avenue right-of-way (referred to as “offsite”) generally either drain away from University Avenue or are

self-retained (i.e. are lower than the roadway, are designed and/or constructed with retention ponds). Exceptions include two specific locations. Local topography is such that offsite flows from a portion of the Zia Middle School site and the Camino del Rey roadway (within the Los Reyes subdivision) drain towards University Avenue as determined by existing mapping. These areas are shown on the Existing Conditions Drainage Overview Map.

Existing outfall facilities in the vicinity of the study area are summarized below. Please note flows on University Avenue do not currently outfall to these facilities.

Existing Storm Drain with Avenida de Mesilla – The existing storm drain system in Avenida de Mesilla, constructed in the early 1990s, consists of a gravity system that begins south of the University Avenue intersection and drains to a pump station to the south. This pump station pumps north to a curb drop inlet approximately 600-feet north of the University Avenue intersection and discharges to a separate gravity system that discharges to the Park Drain (another 4,300-feet to the north).

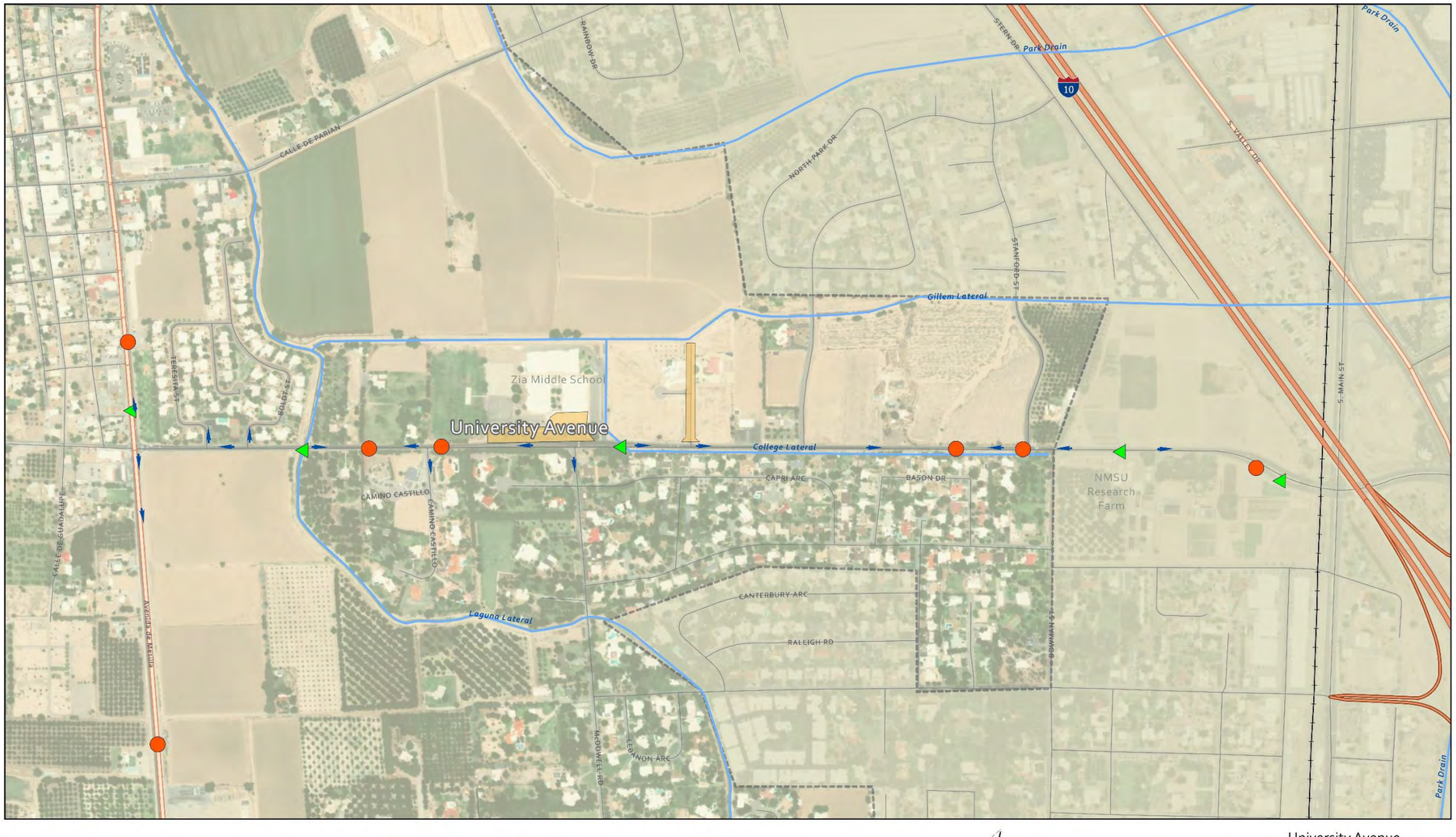
Park Drain – This EBID drain facility is located north and east of the University Avenue study corridor as it winds its way through the valley, generally flowing from north to south. It crosses University Avenue approximately 0.2 miles east of the Main Street intersection. Agricultural drains are open channels that were originally constructed to drain groundwater and agricultural runoff. EBID generally accepts stormwater drainage into their drain facilities when properly coordinated.

College Lateral – This EBID irrigation delivery facility crosses University Avenue just east of Zia Middle School is currently pressure piped along the corridor.

Gillem Lateral – This EBID irrigation delivery facility is located north of Zia Middle School and generally parallels the corridor. It does not currently flow all the way to a drain (as it did historically).

Laguna Lateral – This EBID irrigation delivery facility is an open channel that crosses University Avenue through a culvert, approximately 0.2 miles east of the Avenida de Mesilla intersection.

Figure 4.7.1 Drainage Overview



4.8 Utilities

4.8.1 City of Las Cruces – Waterline

There is an existing waterline that runs the underground along the southern edge of the University Avenue roadway from Avenida de Mesilla to Bowman Street. Based on as-built information the waterline is 10" A.C. pipe and is buried approximately 4 feet below the surface of the roadway. At the Bowman intersection, the waterline crosses under University Avenue at a 45-degree angle then parallels the northern edge of the University Avenue roadway west of Bowman Street. There is an existing fire hydrant on the north side of University Avenue just east of Stanford Street and another one on the east side of Bowman Street just south of University Avenue.

4.8.2 City of Las Cruces – Sanitary Sewer

There is an existing sanitary sewer line that runs underground along the northern edge of University Avenue roadway from Teresita Street to the City of Las Cruces pump station that is located near Bowman Street on the north side of University Avenue. Based on as built information the sanitary sewer line is 36" in diameter and ranges in depth from 4 feet to 10 feet below the surface of the roadway. Manholes are located on the line approximately every 500 feet apart. There are two sanitary sewer lines that continue east of the pump station to Main Street.

There is an existing sanitary sewer force main that runs underground below the road surface along the approximate centerline of the University Avenue roadway from Avenida de Mesilla to the Las Cruces pump station that is located near Bowman Street on the north side of University Avenue. Based on as built information, the force main is 10" C-900 pipe and is buried approximately 4 feet below the surface of the roadway. It is separated by approximately 5 feet from the waterline.

Then on the southern side of Bowman Street at station 21+50 to station 26+50 subsurface parallel heading west and crossing into W. University Avenue, the City of Las Cruces has a 2" steel line that has a 90 degree bend heading north approximately 50' then it bends westerly to the W. University Avenue right of way, to a manhole located on the City of Las Cruces easement. Then at Bowman Street south side subsurface at station 23+50 tying into the 2" steel line going south out of the right of way is 325' ¾' service line.

4.8.3 El Paso Electric

El Paso Electric has parallel aerial electric facilities, 3 phase 24KVA located on the north side of University Avenue starting near the Main Street intersection and heading west along University Avenue to the City of Las Cruces Pump Station. At the pump station El Paso Electric's aerial 3 phase 24KVA line crosses University Avenue diagonally to the southeast side and runs parallel with University Avenue just off the edge of pavement and irrigation ditch and private property owner's right of way to Avenida de Mesilla. Approximately 2 tenths of a mile from the intersection of University Avenue and Main Street, El Paso Electric has an aerial takeoff pole with 3 phase crossing University Avenue north to south. Then at the City of Las Cruces' s pump station, El Paso Electric has an aerial service line crossing to a pole located on the east side of the ditch at Bowman. From Bowman and University Avenue going west along University Avenue, El Paso Electric has a single-phase aerial crossing southeast to northwest. Then just past Old Farm Road, El Paso Electric has an aerial crossing University Avenue from southeast to northwest single phase 1/0. Then crossing at University Avenue east to west aerial, El Paso Electric as a single phase #2 ACSR line. Four poles south on University Avenue, El Paso Electric has a single-phase aerial crossing for a customer's underground service. Continuing southeasterly on University Avenue, past McDowell Road, El Paso Electric has underground conduits feeding private customers and caution lights. Then continuing southeasterly El Paso Electric has a single-phase aerial service crossing on University Avenue from east to west. Then at 2 poles southeast on W. University Avenue past Laguna Lateral Ditch, El Paso Electric has a single-phase aerial crossing for a private customer. From the intersection of Boldt Street and W. University, El Paso Electric aerial facility continues south easterly parallel to W. University Avenue and crosses NM 28. There are multiple underground crossings throughout W. University Avenue that belong to El Paso Electric and are not identified by stationing or street names.

4.8.4 Zia Natural Gas

Zia Natural Gas has a subsurface Plastic PE facility crossing University Avenue from south to north at Bowman Street then heading parallel on University Avenue and exiting the right of way at Stanford Street. Zia Natural Gas's Plastic PE enters University's right of way at Old Farm Road and crosses University Avenue to the southeast side of W. University and runs parallel along the roadway. South of Old Farm Road, Zia Natural Gas has a Plastic ABS facility subsurface crossing University Avenue from the north to south and then running parallel along University Avenue to McDowell Road and then heading

south east along McDowell Road. At McDowell Road, Zia Natural Gas's Plastic PE runs parallel on the southeasterly side of University Avenue to Avenida de Mesilla.

Joe Martinez of Doña Ana Mutual Domestic Water Consumers Association (MDWCA); responded via email: "MDWCA does not have any utilities in this area."

This information is based on actual supplied records from the utility owner's maps. See **Appendix F** for existing utilities exhibits.

4.9 Social, Cultural, and Environmental Conditions

An analysis of potential social, cultural, and environmental issues was completed for the study area to establish existing conditions and identify constraints. The following presents existing conditions based on research and site visits.

4.9.1 Social and Economic Conditions

4.9.1.1 *Demographic Profile*

The study corridor incudes land area in the City of Las Cruces and the Town of Mesilla but is more closely focused within US Census Tract 11.02. Below is a snapshot of the demographic and economic conditions within the study area plus a comparison to the region and the state. Compared to the state of New Mexico, the percent of Hispanics is higher with a lower median family income and higher per capita poverty rate.

Table 4.9.1 Demographic Profile for the Study Area (2010 US Census)

Characteristics	New Mexico	Doña Ana County	Census Tract – 11.02	Mesilla	Las Cruces
2010 Population					
Total Population	2,059,179	209,233	3,145	1,772	97,618
Median Age (years)	36.7	32.4	36.6	44.7	32.4
Percent Under 18	25%	27%	13%	13%	23%
Percent Over 64	13%	12%	11%	13%	14%
Annual Population Growth Rate					
2015-2020	1.3%	1.4%	--	--	--
Race Status (Percent)					
White	68%	74%	95%	68%	75%
Black / African American	2.1%	1.7%	0.5%	0.3%	2.4%
Native American	9.4%	1.5%	1.0%	1.4%	1.7%
Asian	1.4%	1.1%	0.6%	0.4%	1.6%
Hawaiian / Pacific Islander	0.1%	0.1%	0.0%	0.0%	0.1%
Some Other Race	15%	19%	0.0%	26%	15%
Two or More races	3.7%	3.0%	1.8%	4.0%	3.5%
Percent Hispanic / Latino	46%	66%	58%	73%	57%

Table 4.9.2 Economic Profile for the Study Area (2010 US Census)

Characteristic	New Mexico	Doña Ana County	Census Tract – 11.02	Mesilla	Las Cruces
Housing					
Owner-Occupied	69%	64 %	56%	90%	58%
Renter-Occupied	32%	36%	44%	10%	43%
2009-2013 Income and Poverty					
Median Family Income	$54,513	$44,518	$48,125	$78,295	$40,040
Family Poverty Rate	16%	22%	16%	38%	17%
Per Capita Income	$23,763	$19,565	$29,764	$33,076	$21,460
Per Capita Poverty Rate	20%	27%	24%	9%	17%

4.9.1.2 *Land Use Plans, Community Cohesion, and Connectivity*

This corridor is a primary travel route between the City of Las Cruces and Town of Mesilla. It connects the historic Mesilla Plaza and area shops to the Las Cruces Convention Center. It links the two communities both for residents and tourists. Local plans align with the proposed improvements and specifically identify the need for improved bicycle facilities.

Town of Mesilla Comprehensive Plan (2017) includes reference to the University Avenue Corridor Study Phase A and the recommendation for a multi-use path and bicycle lanes several times within the document. Las Cruces Active Transportation Plan (2018) identifies this corridor as having bicycle facilities in the future and as a segment of the future Multi-Use Loop Trail. RoadRunner Transit with the City of Las Cruces also provides service along University Avenue. This service is primarily for residents but could support tourism as well. Any multi-modal enhancements to this corridor will create lasting value for both communities improving connectivity and economic development opportunities.

4.9.1.3 *Visual Resources*

The visual landscape of the University Avenue corridor is residential in nature, with the presence of Zia Middle School near the center of the corridor, the Fabian Botanical Gardens and a railroad corridor on the east end, with some scattered agricultural land throughout. There are currently no street lights in the area and no landscaping. Overall, the corridor is not an important or unique visual landmark.

4.9.2 Natural Environment

4.9.2.1 *Vegetation*

The Project area lies within the Mexican Highland Section of New Mexico's Basin and Range Province. This province is characterized by narrow mountain ranges that separate internally drained structural basins and valleys of major drainages (Hawley 1986). Topographically, the study area lies within the Mesilla Valley, a narrow sub-valley of the Rio Grande. The project area falls within the Rio Grande floodplain and an associated floodplain-riparian biotic zone (Dick-Peddie 1994); however, the natural setting has been significantly altered by the urban development of the corridor. In the absence of such development, vegetation associated with Chihuahuan Desert Scrub Community would be prominent (Dick-Peddie 1994), inclusive of mesquite (Prosopis sp.), creosote bush (*Larrea tridentata*), and/or four-wing saltbush (*Atriplex canescens*). Due to urban development, flora present within the corridor is likely limited to commercial agricultural fields and orchards, as well as landscaping associated with residential and municipal properties adjacent to the roadway.

4.9.2.1.1 *Noxious Weeds*

Under the Noxious Weeds Management Act, the New Mexico Department of Agriculture maintains a list of invasive plant species that have a detrimental effect to native plant species. Such noxious weeds are grouped by classes that are subject to differential levels of management and control: Class A species have limited distributions within the state or are not present throughout the state, Class B species are limited in distribution to specific parts of the state, and Class C species are wide-spread throughout the state. Class C species that are likely to occur within the project corridor include Siberian elm (*Ulmus pumila*) and tree of heaven (*Ailanthus altissima*).

4.9.2.1.2 *Water Resources*

The study area is located approximately three miles east from the Rio Grande, which flows through the region and supplies irrigation water to the agricultural activities in the area. Within the study area, there are irrigation ditches owned/managed by the Elephant Butte Irrigation District (EBID). The major EBID ditch (College Lateral) travels along University Avenue on the south side from the Zia Middle School east to Bowman Street. Incorporated into this major irrigation ditch is a berm, of various heights, which provides a buffer for the adjacent residents. There are other EBID facilities in the vicinity of the

study area, some with connections to this major ditch. There are also some privately-owned irrigation ditches that serve adjacent properties, some of which are still functional and others which have been abandoned. The irrigation ditches are identified in **Figure 4.7.1.**

4.9.2.1.3 *Floodplain Management*

Protection of floodplains is required by Executive Order 11988, Floodplain Management, which requires that potential impacts to floodplains be assessed to reduce the risk of flood loss, minimize impacts from flooding on human safety, and protect the natural resource value of healthy floodplains.

The project corridor has been mapped by the Federal Emergency Management Agency (FEMA) on Flood Insurance Rate Maps, Community-Panel Number 35013C1093G (**Appendix G)**. The corridor is in Flood Zone X, which is designated by FEMA as having a moderate or minimal risk of flooding.

4.9.2.1.4 *Surface Water and Wetlands*

Any surface water or wetlands found in the area are expected to be contained within the irrigation ditches and are not regulated by the USACE under Section 404 of the Clean Water Act.

4.9.2.1.5 *Groundwater*

Groundwater within the project area generally ranges from approximately 10 feet (near the Rio Grande) to 300 feet or more (closer to Las Cruces) below the land surface.

4.9.2.2 *Wildlife*

The project corridor is likely to support a diversity of native fauna inclusive of insects, reptiles, mammals, and avian species. Insects that are likely to be present include harvester ants (*Pogonomyrmex spp*.), butterflies (*Lepidoptera*), flies (*Diptera*), and bees (*Hymenoptera*). Reptiles that occur regularly in the vicinity of the project area include eastern fence lizard (*Sceloporus undulatus*), New Mexico whiptail (*Aspidoscelis neomexicanas*), and garter snake (*Thamnophis spp*.). Mammals that are likely to be present within the project area include striped skunk (*Mephitis mephitis*), rock squirrel (*Spermophilus variegatus*), and desert cottontail (*Sylvilagus audubonii*). Avian species likely occurring within the project corridor may include American kestrel (*Falco sparverius*), Gambel's quail (*Callipepla gambelii*), northern flicker (*Colaptes auratus*), great-tailed grackle (*Quiscalus mexicanus*), and white-winged dove (*Zenaida asiatica*).

4.9.2.3 *Threatened and Endangered Species*

The Endangered Species Act of 1973 regulates the protection of endangered, threatened, and proposed species and their critical habitats. In addition, the State of New Mexico also lists species as endangered, threatened, and sensitive.

Threatened and endangered species (flora and fauna) and their habitat are protected by federal and state legislation. At the federal level, the United States Department of Interior's (DOI) Fish and Wildlife Service (USFWS) and the United States Department of Commerce's (DOC) National Oceanic and Atmospheric Administration (NOAA) Fisheries Division jointly administer the Federal Endangered Species Act (16 U.S.C. 1531-1543). Under the New Mexico Wildlife Conservation Act (WCA), the New Mexico Department of Game and Fish (NMDGF) is tasked with maintaining the Biota Information System of New Mexico (BISON-M), serving as the list of threatened, endangered and sensitive wildlife species, while the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) Forestry Division has statutory responsibility for the State Endangered Plant Species List.

State listings include 25 species of wildlife and seven plant species as threatened or endangered in Doña Ana County (EMNRD 2019, NMDGF 2019). The USFWS Information for Planning and Consultation (IPaC) lists no designated or proposed critical habitat for federally protected species associated with the project corridor (USFWS 2019). However, IPaC (USFWS 2019) does list five species as potentially affected by activities in the project corridor, inclusive of four avian species (least tern [*Sterna antillarum*], northern aplomado falcon [*Falco femoralis septentrionalis*], southwestern willow flycatcher [*Empidonax traillii extimus*], and yellow-billed cuckoo [*Coccyzus americanus*]), and one plant species (Sneed's pincushion cactus [*Coryphantha sneedii*]).

4.9.2.4 *Soils and Prime Farmland*

US Congressional Public Law 95-87 (Federal Register January 32, 1978: Part 657) requires the Natural Resource Conservation Service (NRCS) to identify and locate prime and unique farmlands. These farmlands are protected in accordance with the Farmland Protection Act of 1981. Prime farmlands are defined as land that has the best combination of physical and chemical characteristics for producing food and agricultural crops. Unique farmlands are land under cultivation other than prime farmland that is used for production of high value food and fiber crops.

Based on soils information reviewed from NRCS, the study area is made up of 83.2 percent farmland of statewide importance but there is no prime or unique farmland within the corridor. As

represented in **Table 4.9.3**, there are seven major soil types within the study area with additional information provided on the characteristics for each of these soil types (USDA NRCS).

4.9.2.5 *Air Quality*

The Clean Air Act (NMED, 2013e; USEPA, 2013d) of 1970 established National Ambient Air Quality Standards (NAAQs) to protect public health from impacts associated with six criteria pollutants. According to the New Mexico Environment Air Quality Bureau, there are two nonattainment areas within Doña Ana County. One is in Anthony, NM, where there is a particulate matter 10 microns or less in size (PM10) nonattainment area, designated by US Environmental Protection Agency (EPA) in 1991. The other area currently includes a portion of Sunland Park, NM as nonattainment of the 8-hour ozone standard with an effective date of August 3, 2018 (83 FR 25776). The study area is not included within the boundary of either of these non-attainment areas and remains in attainment of all six criteria pollutants. However, Doña Ana County does hold a Natural Events Actions Plan (NEAP) under US Environmental Protection Agency that will need to be adhered to during construction.

Table 4.9.3 Major Soil Types that Intersect the Project Corridor

Map Unit Name	Percentage	Soil Characteristics
Agua silt loam, 0 to 2 percent slopes	15.2	Well drained soils with slow runoff, moderate permeability, intermittently moist. Used for livestock grazing and irrigated cropland.
Belen clay, 0 to 1 percent slopes	13.1	Well drained soils with slow to very slow runoff and slow to very slow permeability. Relict mottles indicate drainage was restricted in the past. Used for cultivated crops and permanent pasture where irrigated.
Brazito very fine sandy loam, thick surface, 0 to 1 percent slopes	1.9	Well to excessively well drained soils with slow surface runoff and rapid permeability. Used for livestock grazing, irrigated cropland and urban land.
Glendale loam, 0 to 1 percent slopes	13.1	Well drained soils with medium runoff and moderately slow permeability. Used for livestock grazing and irrigated cropland.
Glendale clay loam, 0 to 1 percent slopes	22.3	Well drained soils with medium runoff and moderately slow permeability. Used for livestock grazing and irrigated cropland.
Harkey loam, 0 to 1 percent slopes	16.8	Well drained soils with slow runoff and moderate permeability. Used for irrigated crops.
Harkey clay loam, 0 to 1 percent slopes	17.7	Well drained soils with slow runoff and moderate permeability. Used for irrigated crops.

4.9.3 Cultural Resources

The consideration of cultural resources is an important aspect of the existing conditions for a given project area. In this instance, cultural resources may include historic buildings, structures, objects, archaeological sites, historic districts, and Section 4(f) properties. Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, requires federal agencies to consider the effect of an undertaking on historic properties listed on or eligible for listing on the National Register of Historic Places (NRHP). NHPA requires that all federal actions be studied to determine if the project would have: no effect, no adverse effect, or an adverse effect on historic resources (36 CFR 800.3).

The New Mexico Cultural Resource Information Systems (NMCRIS) as well as the current listings of the NRHP and the New Mexico State Register of Cultural Properties (NMSRCP) were consulted to determine the presence of any documented cultural resources within the project vicinity. The records search identified 125 cultural resources located within 1,640 feet (500 meters) of the project area, inclusive of two historic districts listed on the NRHP (Mesilla National Register Historic District [NR#82003323] and Mesilla Park Historic District [NR#16000161]), one NMSRCP listed property (Butterfield Overland Mail Route [SR#173]), 114 historic buildings, one historic structure (HCPI#42095), six historic acequias (Mesilla Lateral [LA#104973/HCPI#42173], Laguna Lateral [LA#105645], College Lateral [LA#105646], and three unnamed community ditches [LA#105647, HCPI#42600 and HCPI#43654]), and one archaeological site (Reyes Family Residence [LA#105644]). Many of these resources are listed as contributing or non-contributing elements to the Mesilla Park Historic District which overlaps with the eastern extent of the project area.

Historic maps and aerial imagery (1936 through 1980) were also consulted in order to evaluate the historic built environment of the project area. This evaluation indicates that the general alignment for University Avenue was present by 1936; however, the present configuration of University Avenue was constructed between 1966 and 1972, with the designation listed as NM 101 by 1978. Minimal commercial and residential build out of the project corridor occurred prior to 1936 with substantial residential build out occurring between 1936 and 1972. Additional historic transportation infrastructure predating 1936 within the project corridor includes Avenida de Mesilla (NM 28), South Main Street (NM 478), as well as a segment of the BNSF El Paso Subdivision mainline, the alignment of which dates to 1881 (Myrick 1990). Based on this evaluation, the potential exists for historic buildings, structures and objects (those 50 years of age or older) to be present throughout the project corridor, with the highest density present in the eastern extent of the project area.

4.9.3.1 *Sections 4(f)*

Section 4(f) of the 1966 Department of Transportation Act included provisions that stipulated restricted use of publicly-owned parks, recreation areas, wildlife refuges, and historical sites for transportation projects.

One potential Section 4(f) resource exists within the project corridor: Town of Mesilla Parque Conmemorativo on the northeast corner of University Avenue and Avenida de Mesilla.

4.9.4 Hazardous Materials

Contamination of soils or waterways is a concern related to right-of-way acquisition and construction activity due to liability with regard to cleanup and human health issues. A review of Environmental Protection Agency (EPA) Region 6 data determined that no Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conversation and Recovery Act (RCRA) sites exist along the project corridor. The only leaking underground storage tank (LUST) located near the corridor is the gas station at 2920 S NM 28 with a status of “cleanup, responsible party.”

5 DESCRIPTION OF STUDY ALTERNATIVES

5.1 Initial Roadway Alternatives

In response to the project purpose and need, along with stakeholder and public input, seven separate initial alternatives were evaluated for the initial alternative analysis, plus the no-build alternative for comparison purposes. With the lack of pedestrian and bicycle facilities being one of the main physical deficiencies along the corridor, the initial set of alternatives included a combination of different pedestrian, bicycle, and drainage facilities.

Below is a summary of each alternative and its associated benefits and issues. Alternatives A through E were not selected for further evaluation but can be viewed in the Phase A document on the Mesilla Valley MPO website at mesillavalleympo.org.

5.1.1 No Build

24-foot right-of-way / 12-foot driving lanes

Under the NMDOT Location Study Procedures and in alignment with the National Environmental Policy Act (NEPA), the no-build alternative is always considered for comparison purposes. The no-build alternative would not propose any improvements on the corridor and leave the roadway in its existing condition.

5.1.2 Alternative A

38-foot right-of-way / 12-foot driving lanes / 5-foot bike lanes / curb and gutter

Alternative A is the narrowest of alternatives considered. It does provide in-road bicycle facilities but does not provide dedicated pedestrian facilities; therefore, it doesn't meet the purpose and need for the project. It was not recommended for further analysis.

5.1.3 Alternative B

43-foot right-of-way / 12-foot driving lanes / 10-foot multi-use on one side / curb and gutter

Alternative B doesn't provide dedicated in-road bicycle facilities which was requested by many stakeholders as a priority. The multi-use trail does provide bicycle/pedestrian access; however, it only provides it on one side of the roadway and all users must share the same facility. This combined use for bicycles and pedestrians and the limitation of providing it along one side of the corridor was not supported by stakeholder/public input. It was not recommended for further analysis.

5.1.4 Alternative C

50.5-foot right-of-way / 12-foot driving lanes / 6-foot sidewalk / 10-foot multi-use trail / curb and gutter

Alternative C includes pedestrian access on both sides of the corridor. It also provides a separate opportunity for bicyclists and pedestrians with both a sidewalk and multi-use trail. It doesn't, however, include in-road bicycle facilities for commuter-type users. This was represented as a priority by stakeholder/public input. It was not recommended for further analysis.

5.1.5 Alternative D

46- foot right-of-way / 12-foot driving lanes / 5-foot bike lanes / 6-foot sidewalk on one side / curb and gutter

Alternative D does include in-road bicycle facilities but only provides pedestrian access along one side with a 6-foot sidewalk. This is limiting for this corridor given the school is the north side and the residential areas are on the south side. This land use pattern makes it difficult to establish which side would benefit from the pedestrian access the most. Therefore, this alternative was not recommended for further evaluations.

5.1.6 Alternative E

48-foot right-of-way / 12-foot driving lanes / 5-foot bike lane on one side / 10-foot multi-use trail on one side curb and gutter

Alternative E was created to provide options for bicyclists; however, with the concept of a one-way bicycle lane in the roadway was not supported by the stakeholder/public input. In addition, pedestrian access is only provided on one side of the corridor and as previously discussed this is not complementary with the land use along University Blvd. It was not recommended for further evaluations.

5.2 Preferred Roadway Alternatives

The following Alternatives F and G were selected as preferred alternatives for further evaluation in Phase B. Below is a summary of the two preferred alternatives.

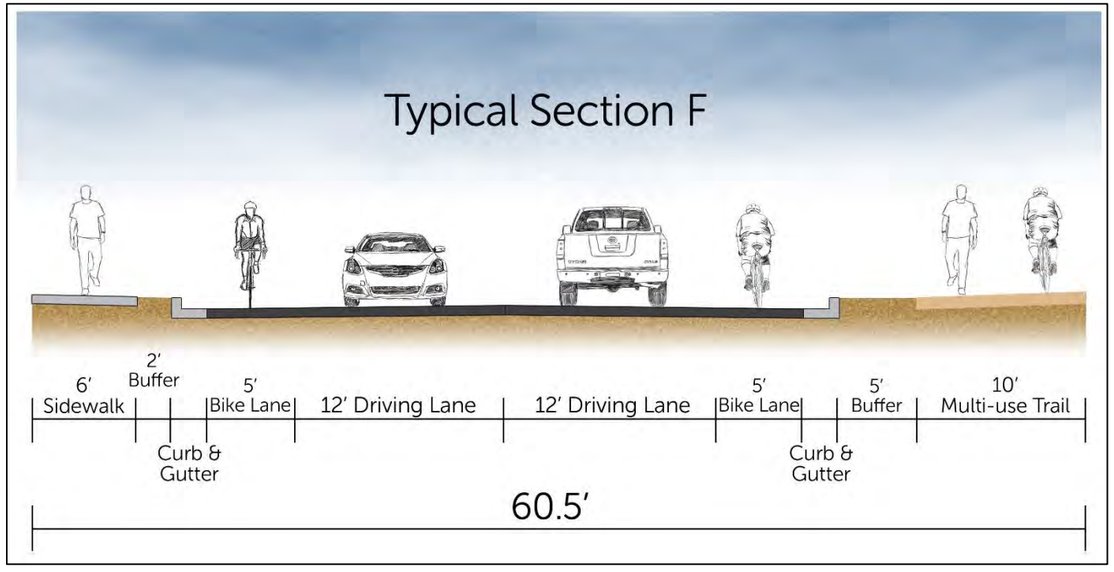
5.2.1 ALTERNATIVE F

60.5-foot right-of-way / 12-foot driving lanes / 5-foot bike lanes / 6-foot sidewalk on one side / 10-foot multi use trail on one side / curb and gutter

Alternative F is the widest of the alternatives. It includes all the features supported by the stakeholder/public input with in-road bicycle facilities and pedestrian access on both sides of the corridor. It is, however, too wide to fit in the current right-of-way available along the majority of the corridor. This alternative was recommended for further evaluations with the understanding that additional right-of-way would be needed to construct.

As one of the initial set of alternatives considered, Alternative F was recommended for further analysis. However, since it requires approximately 60.5 feet of right-of-way and currently the corridor has right-of-way limitations which would prevent Alternative F from being feasible in many locations, an additional alternative was developed to meet the purpose and need for the project. Alternative G was developed and recommended as a baseline for the entire corridor. The minimal right-of-way need of 44 feet, makes this Alternative feasible in almost all locations (**Figure 5.2.1**).

Figure 5.2.1 Typical Section F



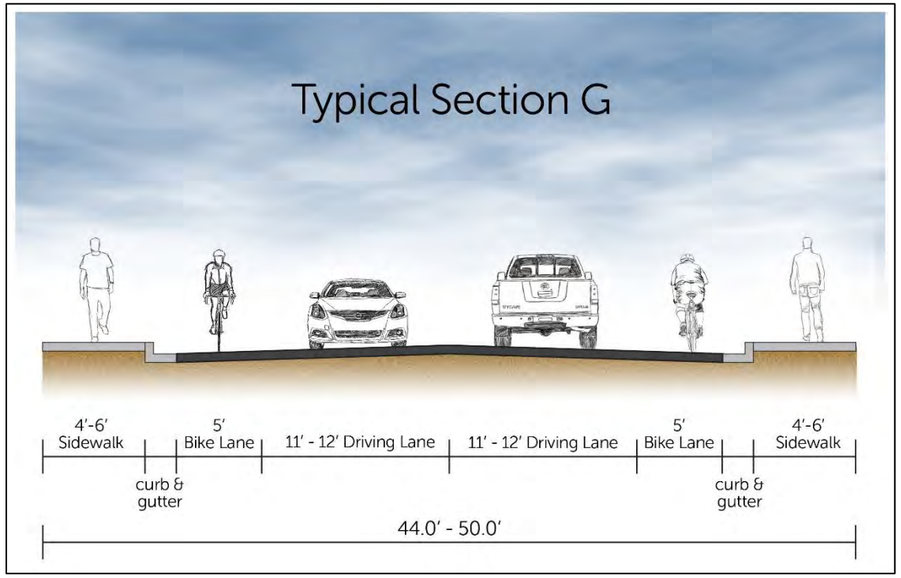
5.2.2 ALTERNATIVE G

44-foot right-of-way / 11 to 12-foot driving lanes / 5-foot bike lanes / 4 to 6-foot sidewalks /curb and gutter

Even with Alternative G, it is expected that some right-of-way/easement acquisition will be required along the EBID facility as well as the private land west of Zia Middle School property. If right-of-way acquisition/easement is not possible then a narrower roadway section could be designed for a short distance. One solution for the narrower section would be to create14-foot driving lanes that would be shared with bicycles and maintain the 4-foot sidewalk on both sides of the roadway for a short distance, if necessary.

For most of the corridor, Alternative G is presented as a minimum but provides several options for additional amenities and widened features – right-of-way permitting. For example, buffers are not currently included between the back of curb and sidewalk but could be added to provide comfort to the pedestrian user and provide a space for landscaping and drainage. The sidewalks could also be widened if desired. (**Figure 5.2.2**).

Figure 5.2.2 Typical Section G



There is an opportunity in a significant portion of the project to utilize the existing EBID right-of-way to house the pedestrian facilities on the south side of roadway. The EBID right-of-way provides ample width to contain both the existing irrigation facilities and a sidewalk or multi-use path. The land area needed for the preferred alternatives would not impact the current use of the EBID irrigation facility. Since the completion of the Phase A report in 2016, EBID has placed a 12" high-pressure water line inside the existing concrete College Lateral and is used to pump irrigation water to the east to supply water for its users.

5.3 Drainage Alternatives

Various drainage alternatives were considered as illustrated on the Drainage Alternative maps. The drainage alternatives are grouped into two categories based on the corridor's natural topographic divide where the roadway crosses over the College Lateral. The College Lateral is the highest point along the corridor's existing profile and thus Alternatives W1 and W2 address drainage to the west of this location and Alternatives E1 and E2 address drainage to the east.

The four drainage alternatives presented below can be implemented with either roadway Alternative F or G.

The locations of proposed drainage ponds are based on the existing topography along the corridor. The final location and configuration of proposed ponds, particularly for the western portion of the corridor, is flexible and subject to change based on further coordination with land owners that will be conducted during design.

5.3.1 Alternative W1

Alternative W1 provides a pond at the west end of the corridor. Refer to **Figure 5.3.1** for conceptual pond sizing and footprint information.

All runoff impacting the roadway along the western portion of the corridor (including the anticipated off-site flows from Zia Middle School) will be conveyed to a pond (W1) at the southeast corner of University Avenue and Avenida de Mesilla, at the location of a 0.5-acre tract acquired by the NMDOT in the early 1990s.

Additional storage could be provided in the existing park at the NE corner of the intersection to reduce the amount or need for additional right-of-way at the SE corner. This concept would need to be coordinated with the Town of Mesilla.

5.3.2 Alternative W2

Alternative W2 provides a pond at the west end of the corridor and a second pond on the Zia Middle School field. Refer to **Figure 5.3.2** for conceptual pond sizing and footprint information.

Runoff impacting the roadway from west of the Laguna Lateral will be conveyed to a pond (W2-A) at the southeast corner of University Avenue and Avenida de Mesilla, at the location of a 0.5-acre tract acquired by the NMDOT in the early 1990s.

Runoff impacting the roadway between the Laguna Lateral and College Lateral will be conveyed to a pond (W2-B) in the Zia Middle School field.

5.3.3 Alternative E1

Alternative E1 provides a pond at the east end of the corridor. Refer to **Figure 5.3.3** for conceptual pond sizing and footprint information.

All runoff impacting the roadway along the eastern portion of the corridor will be conveyed to a pond (E1) at the northwest corner of University Avenue and Main Street (west of the railroad).

A portion of the proposed pond site is existing NMDOT right-of-way and a portion is owned by NMSU.

5.3.4 Alternative E2

Alternative E2 provides a pond at the east end of the corridor and a second pond west of Stanford Street. Refer to **Figure 5.3.4** for conceptual pond sizing and footprint information.

Runoff impacting the roadway between the College Lateral and the high point 400-feet east of Bowman Street will be conveyed to a pond (E2-A) at the northwest corner of University Avenue and Stanford Street.

Runoff impacting the roadway from approximately 400-feet east of Bowman Street and continuing east will be conveyed to a pond (E2-B) at the northwest corner of University Avenue and Main Street (west of the railroad).

Figure 5.3.1 Drainage Alternative W1

Figure 5.3.2 Drainage Alternative W2

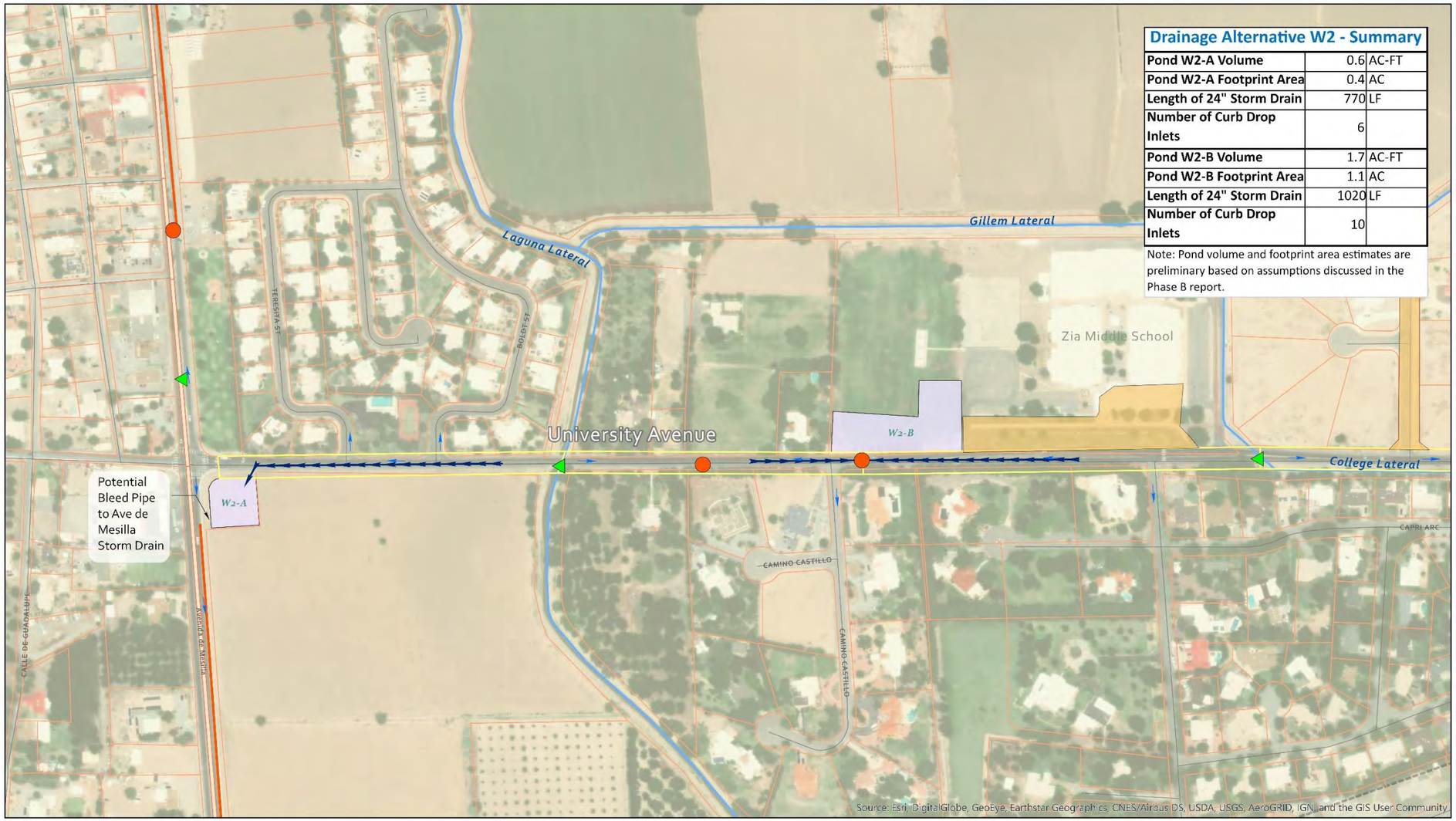


Figure 5.3.3 Drainage Alternative E1

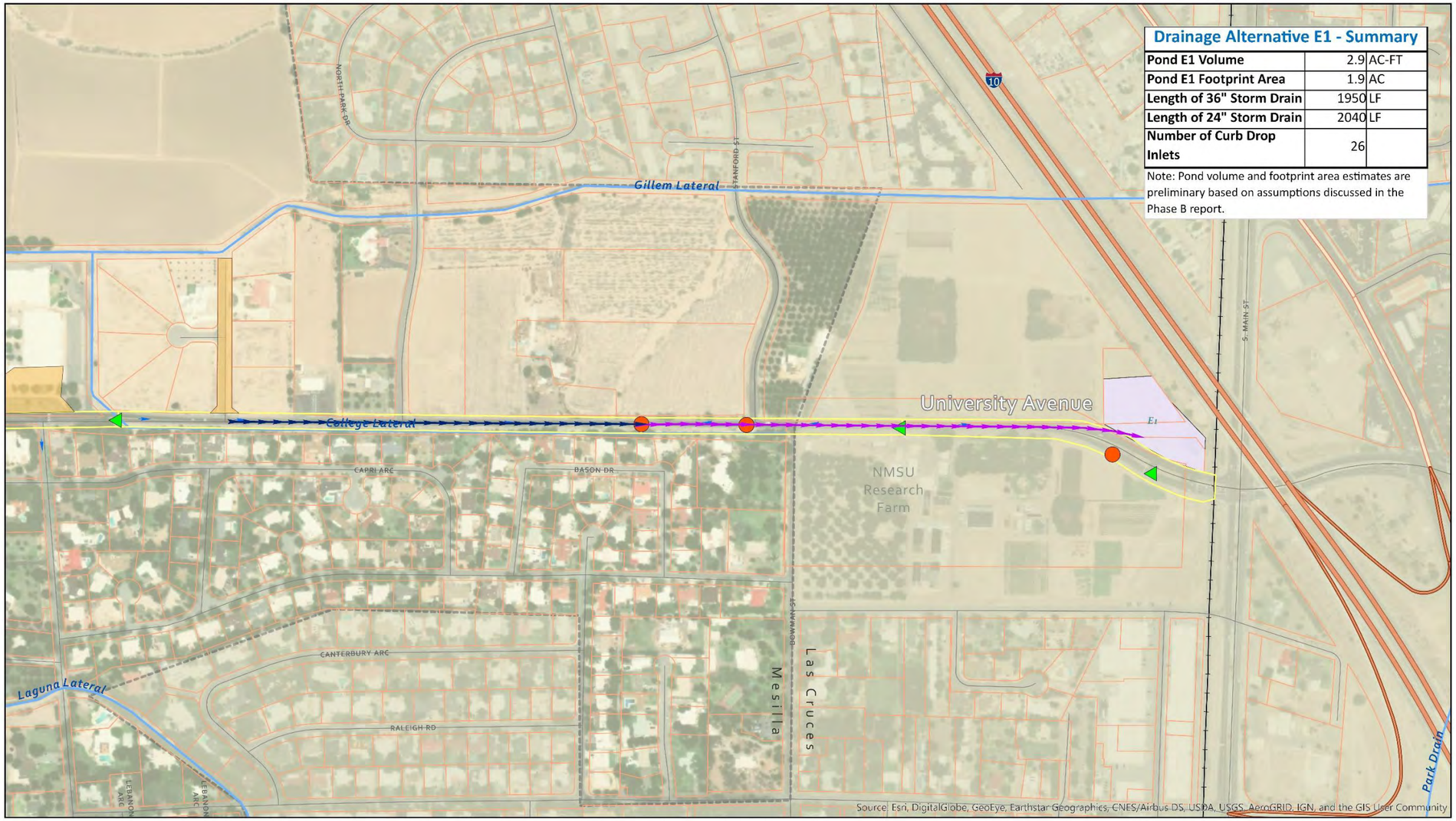
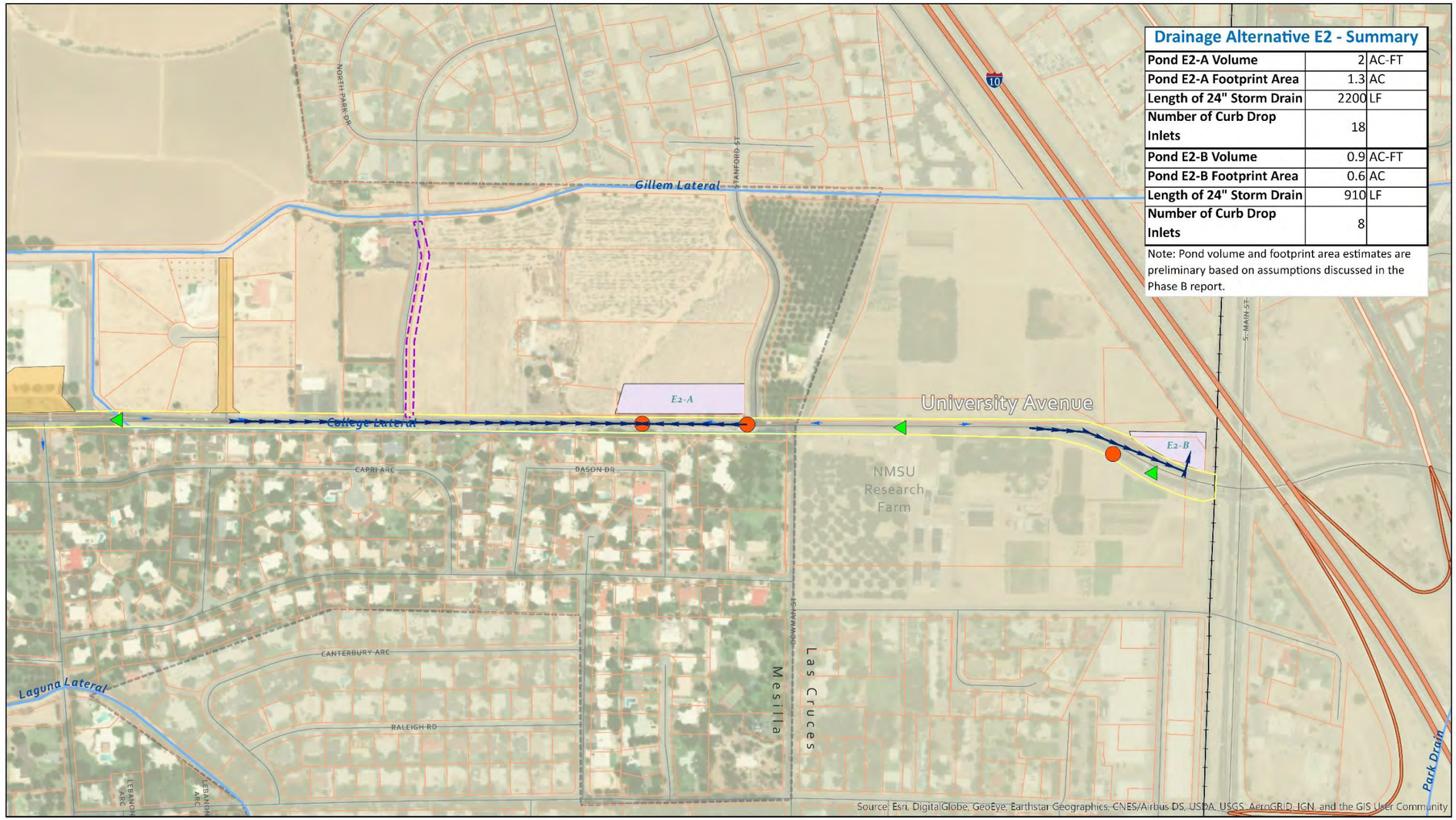


Figure 5.3.4 Drainage Alternative E2



5.4 Conceptual Design Layouts

5.4.1 Alternative F

Plans for Alternative F can be found in **Appendix H**.

5.4.2 Alternative G

Plans for Alternative G can be found in **Appendix H**.

6 DETAILED EVALUATION OF ALTERNATIVES

The detailed evaluation of alternatives further analyzes Alternative F and Alternative G including consideration of right-of-way needs, conceptual engineering plans, engineering feasibility, preliminary cost, operations, potential environmental impacts, community concerns and preferences, and geotechnical investigations. In addition to the various individual evaluation criteria, the initial and most critical criteria is if the proposed alternatives meet the purpose and need. The collection of roadway and drainage preferred alternatives previously presented do meet the purpose and need; therefore, the subsequent section provides discussion on how they align with the additional evaluation criteria.

The no-build alternative was also considered but applying no improvements to the corridor and leaving it in its existing conditions does not meet the purpose and need for the project. Therefore, the no-build alternative will remain in the evaluation process for comparison purpose only.

6.1 Traffic Analysis

The following section will discuss the results of the 2040 future year traffic analysis. The roadway laneage for Alternatives F and G is not expected to change from the existing laneage, thus the future year analysis only considers changes to traffic volumes.

All analysis was completed using Synchro version 10 software which utilizes the HCM procedures.

6.1.1 2040 Traffic Projections

The Mesilla Valley MPO Adopted 2040 Travel Demand Model was reviewed by the project team to estimate the 20-year traffic volume growth for the corridor. Using the estimated 2040 traffic volumes the future level of service (LOS) will be determined for the current roadway geometry at the signalized intersections of University Avenue/Main Street and University Avenue/Avenida de Mesilla.

Growth through the year 2040 was determined for each roadway segment using a linear growth rate. Evaluated segments include University Avenue, Avenida de Mesilla just north and south of University Avenue, and Main Street just north and south of University Avenue.

The average growth was calculated based on all segments, as shown in the table below. The average value was determined to be 0.18%. For purposes of this study, this value will be rounded up to 1%. Traffic volumes for 2015 and 2040 are shown in the table below.

Table 6.1.1 2040 Traffic Projections by Street

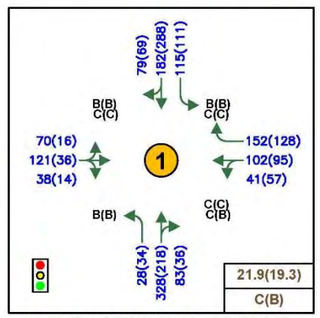
Roadway	2015	2040	Growth
University Avenue	3,976	4,083	0.11%
	4,122	4,251	0.13%
	4,214	4,335	0.12%
	4,674	4,809	0.12%
	4,389	4,533	0.14%
	4,644	4,821	0.16%
	5,726	5,961	0.17%
	6,669	6,880	0.13%
Avenida de Mesilla	7,120	7,388	0.16%
	4,537	4,769	0.21%
Main Street	12,766	13,940	0.38%
	14,299	15,557	0.37%
Average			**0.18%**

6.1.2 2040 Level of Service Analysis

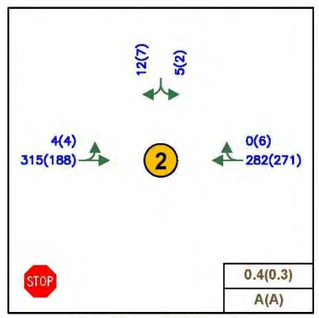
Figure 6.1.1 summarizes the peak hour traffic projections, lane geometry, and movement and intersection level of service for the 2040 analysis results for signalized and unsignalized intersections. Individual intersection output is included in **Appendix B**.

As described in **Section 4.2**, the measure of intersection operational performance is defined by its Level of Service (LOS), with LOS D established as the acceptable level of service in urban areas. The analysis indicates that all intersections will continue to operate at an acceptable LOS with minimal queueing and delay.

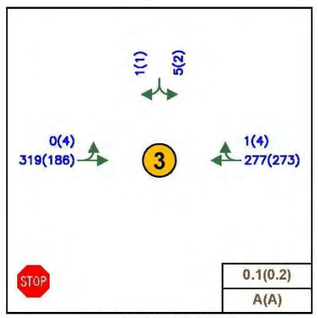
Figure 6.1.1 Future Traffic Volumes



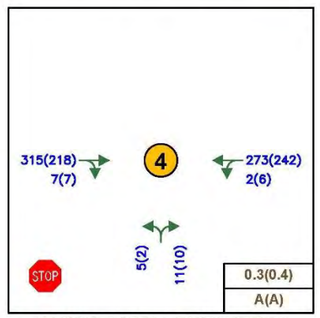
AVENIDA DE MESILLA/UNIVERSITY



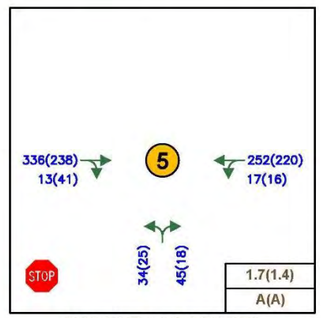
UNIVERSITY/TERESITA



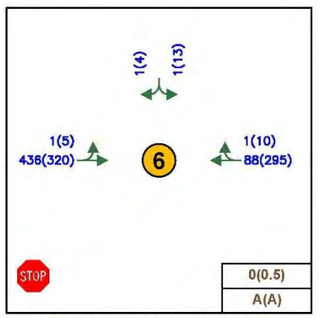
UNIVERSITY/BOLDT



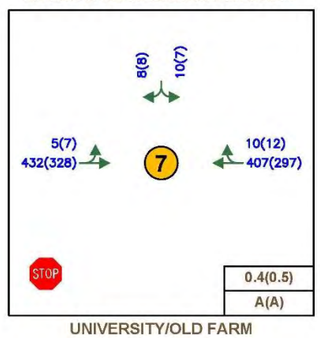
CAMINO CASTILLO/UNIVERSITY



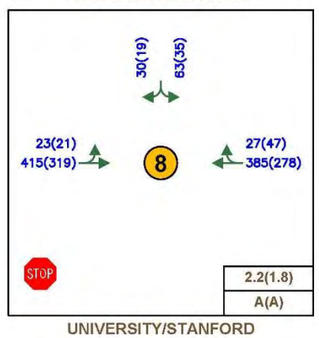
MCDOWELL/UNIVERSITY



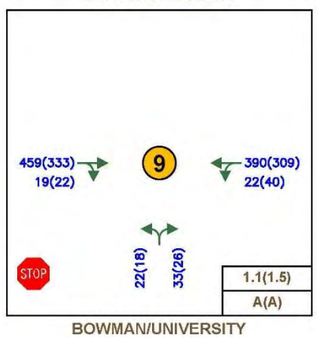
UNIVERSITY/CAMINO DEL REY



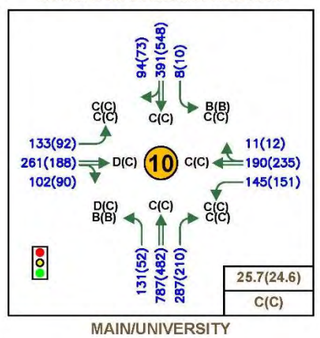
UNIVERSITY/OLD FARM



UNIVERSITY/STANFORD



BOWMAN/UNIVERSITY



MAIN/UNIVERSITY

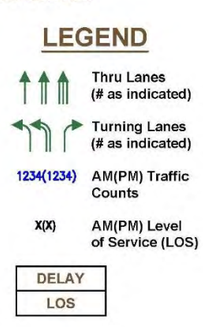


Table 6.1.2 Future Signalized Intersection Capacity Analysis Results

Signalized Intersections	2040 AM Peak			2040 PM Peak		
	Delay (sec.)	V/C	LOS	Delay (sec.)	V/C	LOS
1. Avenida de Mesilla and University	21.9	0.58	C	19.3	0.46	B
2. Main and University	25.7	0.59	C	24.6	0.52	C

Table 6.1.3 Future Unsignalized Intersection Results

Intersection/Movement	2040 AM Peak				2040 PM Peak			
	Delay	v/c	Queue* (ft)	LOS	Delay	v/c	Queue* (ft)	LOS
2. University and Teresita	0.4	-	-	-	0.3	-	-	-
EB Left	7.8	0.01	0	A	7.9	0.01	0	A
SB Approach	10.9	0.3	25	B	10.6	0.02	0	B
3. University and Boldt	0.1	-	-	-	0.2	-	-	-
EB Left	0	-	0	A	7.9	0.01	0	A
SB Approach	12.4	0.01	0	B	11.5	0.01	0	B
4. Camino Castillo and University	0.3	-	-	-	0.4	-	-	-
NB Approach	11.1	0.03	25	B	10.9	0.03	25	B
WB Left	8	0.01	0	A	8	0.01	0	A
5. McDowell and University	1.7	-	-	-	1.4	-	-	-
NB Approach	13.1	0.16	25	B	14.4	0.14	25	B
WB Left	8.1	0.02	0	A	8.2	0.02	25	A
6. University and Camino del Rey	0	-	-	-	0.5	-	-	-
EB Left	7.4	0.01	0	A	8.4	0.01	0	A
SB Approach	10.9	0.01	0	B	18.2	0.09	25	C
7. University and Old Farm	0.4	-	-	-	0.5	-	-	-
EB Left	8.4	0.01	0	A	8.4	0.01	0	A
SB Approach	15.6	0.06	25	C	16.4	0.07	25	C
8. University and Stanford	2.2	-	-	-	1.8	-	-	-
EB Left	8.3	0.02	25	A	8.5	0.03	25	A
SB Approach	20.3	0.31	50	C	20.9	0.30	50	C
9. Bowman and University	1.1	-	-	-	1.5	-	-	-
NB Approach	16	0.16	25	C	18.3	18.3	25	C
WB Left	8.6	0.02	25	A	8.7	8.7	25	A
* – HCM 95th percentile queue rounded to next 25-foot increment								

6.2 Multi-modal

Alternatives F and G provide opportunities for continuous bicycle and pedestrian facilities. Alternative F includes options for in-road bicycle lanes and a multi-use path. Alternative G includes options for in-road bicycle lanes as well as buffered and non-buffered sidewalks.

6.2.1 Multi-Modal Level of Service

As described in **Section 4.3**, the multi-modal LOS analysis evaluates that quality of bicycle and pedestrian facilities as it contributes to the comfort and safety of the user. This section determines the multi-modal LOS for both Alternative F and Alternative G.

6.2.1.1 *Bicycle Analysis*

The results of the bicycle LOS analysis are displayed in **Table 6.2.1** below. Alternatives F and G were evaluated, with Alternative G analyzed under the minimum and maximum footprint. The analysis indicates that **Alternative G** and **Alternative F** are both expected to improve bicycle comfort improving from LOS D to LOS B for both alternatives. The existing conditions LOS is included for reference.

Table 6.2.1 Bicycle Level of Service Results

Criteria	Existing	Alternative G (44')	Alternative G (50')	Alternative F (60.5')
Number of Lanes	1	1	1	1
Median Type	Undivided	Undivided	Undivided	Undivided
Average Weekday Daily Traffic	4,534	4,534	4,534	4,534
Speed Limit	35 MPH	35 MPH	35 MPH	35 MPH
Percent Heavy Vehicles	2	2	2	2
Outside Lane Width	11 feet	12 feet	12 feet	11 feet
Bicycle Lane Buffer Width	N/A	N/A	N/A	N/A
Bicycle Lane Width	N/A	5 feet	5 feet	5 feet
On-Street Parking Width	N/A	N/A	N/A	N/A
Pavement Condition	4	4	4	4
OSPA	0	0	0	0
Level of Service Score	**4.06**	**2.46**	**2.25**	**2.25**
Level of Service	**D**	**B**	**B**	**B**

6.2.1.2 *Pedestrian Analysis*

The results of the pedestrian LOS analysis are displayed in **Table 6.2.2** below. Alternative F and G are both expected to improve pedestrian comfort from LOS E to LOS C in both alternatives. The existing conditions LOS is included for reference.

6.2.2 Multi-Modal Accessibility

The addition of multi-modal facilities within the University Avenue corridor is a major contributing factor to this project. These additions will greatly increase access for pedestrians and bicyclists within the area, especially for those whom attend Zia Middle School and whom utilize the Multi-Use Loop Trail which runs through University Avenue and connects Mesilla with Las Cruces.

The alternatives chosen for further evaluation both provide increased access by applying sidewalks and designated bicycle lanes to University Avenue. However, while both Alternatives F and G increase multi-modal access, **Alternative F** provides greater access with the application of a multi-use path along the south side of the roadway.

Table 6.2.2 Pedestrian Level of Service Results

Criteria	Existing	Alternative G (44')	Alternative G (50')	Alternative F (60.5')
Number of Lanes	1	1	1	1
Signals per Mile	4	4	4	4
Median Type	Undivided	Undivided	Undivided	Undivided
Average Weekday Daily Traffic	4,534	4,534	4,534	4,534
Speed Limit	35 MPH	35 MPH	35 MPH	35 MPH
Outside Lane Width	11 feet	12 feet	12 feet	11 feet
Bicycle Lane Buffer Width	N/A	N/A	N/A	N/A
Bicycle Lane Width	N/A	5 feet	5 feet	5 feet
On-Street Parking Width	N/A	N/A	N/A	N/A
OSPA	0	0	0	0
Sidewalk Width	N/A	4 feet	6 feet	10 feet
Sidewalk Buffer Width	N/A	N/A	5 feet	N/A
Tree Spacing	N/A	N/A	N/A	N/A
Level of Service Score	**4.68**	**3.1**	**2.9**	**2.67**
Level of Service	**E**	**C**	**C**	**C**

6.3 Safety

The proposed alternatives are expected to increase safety and alleviate concerns throughout the University Avenue corridor through the addition of bike lanes and sidewalks/multi-modal facilities. These additions will provide greater sight distance for the numerous access points along University Avenue and

the inclusion of dedicated pedestrian and bicycle facilities will also reduce the risk of incidents involving non-motorized users. This is especially important with Zia Middle School in the immediate vicinity of the study area and with University Avenue being a major segment for the Multi-Use Loop Trail and the main connection between Mesilla and Las Cruces. In addition to improvements related to the typical section, a variety of traffic calming measures are available for implementation to reduce vehicular speeds and increase safety through the corridor.

6.4 Access Management

The University Avenue corridor has 27 driveways that provide access to various subdivisions, businesses, NMSU properties and residential properties. On the north side of University Avenue there are 20 access points, including 5 public roads, 4 entrances/exits to Zia Middle School, and 11 private driveways. On the south side of University Avenue there are 7 access points, including 3 public roads and 4 private driveways. For both alternatives, ADA ramps would be required at all public road crossings, including those at Zia Middle School.

Two driveway permits are on file for access to two subdivisions east of Zia Middle School and include Camino del Rey and Old Farm Road. Six properties along University Avenue, excluding Zia Middle School, have multiple driveways. Some of these driveways may be eliminated through the implementation of the proposed improvements. Properties that currently have multiple driveways include:

- 1500 W University Avenue (North)
- 1501 W University Avenue (South)
- 1200 W University Avenue (Jornada Lodge) (North)
- 320 W University Avenue (North)
- 109 W University Avenue (NMSU's Fabian Garcia Science Center) (South)
- 105 E University Avenue (NMSU Farms) (North)

6.5 Drainage

The addition of curb and gutter associated with the proposed roadway improvements provides the opportunity to collect and manage runoff from the corridor. As an associated decision-making element to the preferred roadway alternatives, various drainage alternatives have been considered as illustrated on the Drainage Alternative maps located in Section 5.3. The four proposed drainage alternatives have been evaluated for similar criteria as the roadway alternatives to include consideration of right-of-way needs, engineering feasibility, drainage operations, and potential environmental impacts. A discussion on these alternative evaluations is provided below. Any of these drainage alternatives can be paired with a preferred roadway alternative.

The locations of proposed drainage ponds are based on the existing topography along the corridor. The final location and configuration of proposed ponds, particularly for the western portion of the corridor, is flexible and subject to change based on further coordination with land owners that will be conducted during design.

6.5.1 Alternative W1

Analysis indicates a storm drain trunk line flowing from east to west will be required to convey runoff that impacts the corridor between the roadway high points at the Laguna Lateral and College Lateral to the proposed pond at the west end of the corridor. This storm drain trunk is preliminarily sized as a 36" RCP. Where curb drop inlets are necessary to satisfy NMDOT allowable spread criteria, storm drain laterals will connect to this storm drain trunk line.

In addition to the 36" storm drain trunk, additional storm drain trunk line and laterals (both preliminary estimated to be 24" RCP) will be required extending to the east of Camino Castillo to remove runoff from the pavement to ensure compliance with NMDOT allowable spread design criteria.

The existing roadway is nearly flat between Avenida de Mesilla and just west of the rise over the Laguna Lateral. Sag vertical curves may be necessary to collect roadway drainage along this stretch.

6.5.1.1 *Additional Considerations for Alternative W1:*

- Additional right-of-way is required for the retention pond
- The storm drain trunk line may require a design variance for the slope due to existing topographic constraints.
- A siphon may be necessary to cross the storm drain trunk line under the Laguna Lateral.
- The pond footprint may be reduced if a low flow outflow to the existing Avenida de Mesilla storm drain is accepted by NMDOT.

6.5.2 ALTERNATIVE W2

Analysis indicates two storm drain systems will be required to convey runoff to the proposed ponds. Where curb drop inlets are necessary to satisfy NMDOT allowable spread criteria, storm drain laterals will connect the inlets to the storm drain trunk line.

The existing roadway is nearly flat between Avenida de Mesilla and just west of the rise over the Laguna Lateral. Sag vertical curves may be necessary to collect roadway drainage along this stretch.

6.5.2.1 *Additional Considerations for Alternative W2:*

- Additional right-of-way is required for the retention pond
- The proposed Zia Middle School pond requires a large pond to accommodate the anticipated runoff volume and satisfy NMDOT drainage criteria. The pond footprint may be reduced based on infiltration testing data and further evaluation of the amount of runoff from the school site that it must accommodate. As shown, the pond footprint does not impact the existing football field.
- The storm drain trunk line may require a design variance for the slope due to existing topographic constraints.
- The pond footprint at the west end of the corridor may be reduced if a low flow outflow to the existing Avenida de Mesilla storm drain is accepted by NMDOT.

6.5.3 ALTERNATIVE E1

Analysis indicates a storm drain trunk line will be required to convey runoff from between the roadway high points at the College Lateral and approximately 400-feet east of Bowman Street to the proposed pond. This storm drain trunk is preliminarily sized as a 36” RCP. Where curb drop inlets are necessary to satisfy NMDOT allowable spread criteria, storm drain laterals will connect to this storm drain trunk line.

In addition to the 36” storm drain trunk, additional storm drain trunk line and laterals (both preliminary estimated to be 24” RCP) will be required extending to Camino del Rey to remove runoff from the pavement to ensure compliance with NMDOT allowable spread design criteria.

Significant drainage ponding occurs through the curve west of Main Street and just west of the railroad crossing. Sag vertical curves may be necessary to collect roadway drainage along this stretch and convey it to the proposed pond.

Figure 6.5.1 Pressure Piped Elephant Butte Irrigation District Facility

6.5.3.1 *Additional Considerations for Alternative E1:*

- Additional right-of-way is required for the retention pond, including an area currently owned by NMSU and utilized for experimental farm operations.
- The storm drain trunk line may require a design variance for the slope due to existing topographic constraints.
- There are significant existing underground utilities along this portion of the corridor including sanitary sewer gravity and force mains, water mains, and gas mains. The proposed storm drain trunk line will need to cross sanitary sewer gravity and force mains in the vicinity of Bowman Street.

6.5.4 ALTERNATIVE E2

Analysis indicates two storm drain systems will be required to convey runoff to the proposed ponds. Where curb drop inlets are necessary to satisfy NMDOT allowable spread criteria, storm drain laterals will connect to these storm drain trunk lines.

Significant drainage ponding occurs through the curve west of Main Street and just west of the railroad crossing. Sag vertical curves will likely be necessary to collect roadway drainage along this stretch and convey it to the proposed pond.

6.5.4.1 *Additional Considerations for Alternative E2:*

- Additional right-of-way is required for both retention ponds, including existing privately held agricultural land.
- The storm drain trunk line may require a design variance for the slope due to existing topographic constraints.
- There are significant existing underground utilities along this portion of the corridor including sanitary sewer gravity and force mains, water mains, and gas mains.

6.5.4.2 *Evaluation of Pond in Existing CME*

The feasibility of a potential ponding site within an existing NMDOT construction maintenance easement (CME) along Old Farm Road was evaluated. Preliminary evaluation of the available footprint indicates the existing CME (shown on **Figure 5.3.4**) will support less than 10% of the pond volume needed to accommodate this stretch of corridor, which is shown as draining to Pond E2-A under Alternative E2. A pond at this location will have minimal impact on the size of right-of-way or CME needed at the northwest corner of Stanford Street.

Additionally, getting roadway drainage into and out of this pond could be problematic due to the narrow shape and location off-line of the storm drain trunk. It would require a non-standard storm drain structure(s).

Considering the limitations and complexities described above, a pond in this existing CME is not recommended as part of the preferred alternative.

6.5.5 OVERALL DRAINAGE CONSIDERATIONS

The following discussion of drainage considerations is applicable to all four drainage alternatives:

- Storm drain systems will be required to remove runoff from the pavement, including on-grade curb drop inlets, to ensure compliance with NMDOT allowable spread design criteria associated with curb drop inlets. The capacity of the proposed roadway section to convey runoff to roadway low points or inlets is severely limited by the very mild slopes along the corridor. Therefore, a relatively higher quantity of inlets will be required.
- Ponds or other means of runoff storage along the corridor will be required because acceptable drainage outfalls have not been identified. Ponding areas will likely require acquisition of right-of-way or agreements with existing property owners. The availability of small linear runoff storage areas along the corridor (i.e. stormwater harvesting basins or rain gardens) could be assessed during design. Due to right-of-way constraints it is unlikely that available storage volumes will significantly reduce the size of the primary runoff retention ponds, which will be sized for the 100-year contributing runoff volume in accordance with NMDOT drainage design criteria.
- The potential for an outfall to the various EBID facilities near the study corridor were discussed preliminarily with EBID. The two types of EBID facilities in the area are drains and laterals. Drains are open channels that were originally constructed to drain groundwater and agricultural runoff. EBID commented that the District is generally willing to accept stormwater drainage into their drain facilities. Laterals are intended to convey irrigation water to agricultural lands and were generally not designed or intended to accept drainage flows. EBID commented that with appropriate water quality treatment and coordination, there is a potential for some laterals to

accept stormwater drainage. The following summarizes the evaluation of potential outfalls identified in the Phase A study and others identified in this study:

- Existing Storm Drain with Avenida de Mesilla (NM 28) – The existing storm drain system in Avenida de Mesilla consists of a gravity system that begins south of the University Avenue intersection and drains to a pump station to the south. This pump station pumps north to a curb drop inlet approximately 600-feet north of the University Avenue intersection and discharges to a separate gravity system that discharges to the Park Drain (another 4,300-feet to the north). Based on a preliminary drainage analysis of the system provided by NMDOT, the existing gravity storm drain does not have capacity to accommodate additional peak flows. There is a potential for a proposed pond near the University Avenue and Avenida de Mesilla intersection to bleed into this existing gravity system, so the pond does not need to rely on infiltration alone to satisfy NMDOT drainage criteria to empty within 96 hours. This potential low flow outfall will need to be further evaluated and coordinated with NMDOT District 1 and the Drainage Design Bureau. If the low flow outfall (bleed pipe) is acceptable, this would allow a pond proposed at this location to be deeper with a smaller footprint, potentially eliminating the need for additional right-of-way.
- Park Drain – This EBID drain facility is located north and east of the University Avenue study corridor as it winds its way through the valley, generally flowing from north to south. It crosses University Avenue approximately 0.2 miles east of the Main Street intersection. Agricultural drains are open channels that were originally constructed to drain groundwater and agricultural runoff. EBID generally accepts stormwater drainage into their drain facilities when properly coordinated. A direct connection from the University Avenue corridor to this EBID facility is likely not a viable alternative due to its distance from the roadway (approximately 1,200-feet from the Main Street intersection or 1,700-feet from the next closest location adjacent to the corridor high point). In addition to the cost of a significant length of storm drain trunk line, connection to the Drain from the Main Street intersection would require storm drain crossing under the railroad.
    - Replacement or Upsizing the Avenida de Mesilla Storm Drain – Draining runoff from the western portion of the University Avenue corridor to the Park Drain by replacing/upsizing the existing Avenida de Mesilla storm drain and extending it over 800-ft south to the University Avenue intersection was considered. The existing storm drain does not have adequate excess capacity and so would need to be replaced with a larger pipe. This approach was determined to be infeasible due to the distance to the Park Drain along this alignment (over 5,000-ft) and thus very high associated cost.
- College Lateral – This EBID irrigation delivery facility that crosses University Avenue just east of Zia Middle School is currently pressure piped along the corridor and EBID intends for this condition to continue. Further, the facility does not discharge to a drain and thus is not an acceptable outfall.
- Gillem Lateral – This EBID irrigation delivery facility is located north of Zia Middle School and generally parallels the corridor. It does not currently flow all the way to a drain (as it did historically) and thus is unable to accommodate stormwater runoff and is not an acceptable outfall.
- Laguna Lateral – This EBID irrigation delivery facility is an open channel that crosses University Avenue through a culvert, approximately 0.2 miles east of the Avenida de Mesilla intersection. While EBID has indicated that they would be open to discussions about accepting stormwater into this delivery facility, they commented that management of the facility to ensure it had adequate capacity to accept flows when a storm event occurs during irrigation season would be difficult. EBID did not provide an allowable stormwater discharge capacity. Further, the Laguna Lateral crosses University Avenue at a roadway high point and therefore it would be difficult to gravity drain University Avenue runoff to this location. It is not considered in the alternatives presented herein. If considered, water quality treatment prior to discharge to the facility would be required.

6.5.6 Right-of-Way Considerations for Drainage Alternatives

If the acquisition of right-of-way and/or agreements associated with ponds are not achievable, other means of runoff storage within NMDOT right-of-way could be evaluated. The viability of these other concepts described below may be significantly impacted by the location of existing underground utilities. These other runoff storage concepts are:

- Permeable pavement along the gutter and bike lanes coupled with parallel subsurface storage. This approach would require regular, long-term inspection and maintenance to ensure the pore space of the permeable pavement does not clog, including regular use of a specialized sweeper that District 1 does not currently possess.

- Underground storage tanks or chambers that are designed to dissipate via infiltration. There are various tank/chamber systems that are commercially available, including large diameter perforated CMP and HDPE pipes, concrete vaults, and open bottom HDPE chambers. Due to the lack of drainage outfalls along the project, the required storage volume associated with this type of system will be significant at a high cost.

6.5.7 MS4 Permitting Considerations

NMDOT District 1 is subject to the EPA Municipal Separate Storm Sewer Systems (MS4) Phase II Permit regulations. The permit calls for control measures that minimize storm water quality degradation in Urbanized Areas as identified by the 2000 US Census. The corridor is located within the Las Cruces Urbanized Area and thus it is anticipated that MS4 permit regulations will apply. Proposed alternatives will satisfy MS4 requirements for post-construction stormwater management as described in Section 701.2 of the 2018 NMDOT Drainage Design Manual by managing the 80th percentile storm event discharge volume in proposed storage facilities (ponds or underground systems). MS4 requirements specific to the local jurisdictions along the corridor (Town of Mesilla and City of Las Cruces), if any, should be further coordinated with those entities during the next phase of this study.

6.6 Constructability

Both preferred roadway alternatives will have similar constructability challenges with limited right-of-way as both will require complete reconstruction with the addition of curb and gutter, drainage facilities, and sidewalk and/or a multi-use trail. Limited access and detours during construction will be similar for both alternatives and no constructability advantage is anticipated between Alternative F or G. Any specific constructability aspects to the drainage alternatives are discussed in Section 6.5.

6.7 Preliminary Right-of-Way

The existing right-of-way limits for the corridor have been established using NMDOT Right-of-Way mapping and field evidence of existing property corners and monumented survey points. This preliminary determination of right-of-way is used to determined potential areas of impact associated with each of the alternatives. For any new right-of-way needed for construction, Right-of-Way maps will be prepared in accordance with NMDOT guidelines during the preliminary and final design.

6.8 Geotechnical

The initial geotechnical investigations for the corridor have not identified any issues that would impact the alignment study or selection of the preferred alternative. A preliminary geotechnical investigation report will be produced for the preliminary design to identify design criteria. The NMDOT will prepare the pavement recommendations for the preliminary design.

6.9 Utility

Both preferred roadway alternatives are expected to have some level of utility impacts along the corridor including, but not limited to, the relocation of utility poles. However, the multi-use path to the south side of proposed **Alternative F** will have a potential for impacts due to the number of existing utility poles as well as telephone cabinets and a pump station located east of McDowell Road (not shown in existing utilities exhibits). During preliminary design, the alignment of the multi-use path will be designed to avoid existing utilities to the maximum extent possible in order to minimize utility relocations.

See **Appendix F** for existing utilities exhibits.

6.10 Cost Estimate

Cost estimates were produced for both roadway alternatives being considered. These cost estimates were prepared for comparison of alternatives and are relative only, they do not reflect what could be the actual construction costs. Based on this comparison, **Alternative F i**s shown to be more expensive by approximately $142,000 (+2.33%). The cost differential is mostly due to the addition of a multi-use path for **Alternative F** and the striping associated with said path. Costs associated with right-of-way takes are not included in these cost estimates and since **Alternative F** consists of a wider section, and possibly needing more right-of-way, there may be additional project costs incurred as a result. Since preliminary pavement recommendations are not yet available the assumed pavement section for roadway improvements consists of 4 inches of hot mix asphalt (HMA) over 6 inches of aggregate base course. These quantities and associated costs will be updated as part of the preliminary and final design once final recommendations are received from the NMDOT. See **Table 6.10.1** and **Table 6.10.2** for cost estimates related to each alternative.

Table 6.10.1 Cost Estimate for Alternative F

NO.	ITEM	UNIT	PRICE	QTY	PROJECT TOTAL AMOUNT
	Alternative F				
207000	SUBGRADE PREPARATION	SY	$2.50	35200	$88,000.00
303000	BASE COURSE (6")	TON	$27.00	10085	$272,295.00
407000	ASPHALT MATERIAL FOR TACK COAT	TON	$550.00	9	$4,950.00
408100	PRIME COAT MATERIAL	TON	$550.00	66	$36,300.00
417000	MISCELLANEOUS PAVING	SY	$17.00	8000	$136,000.00
423283	HMA SP-IV COMPLETE	TON	$85.00	6044	$513,740.00
601110	REMOVAL OF SURFACING	SY	$6.00	23333	$139,998.00
608004	CONCRETE SIDEWALK 4"	SY	$51.00	4800	$244,800.00
609424	CONCRETE VERTICAL CURB AND GUTTER 6" X 24"	SY	$22.00	14400	$316,800.00
623XXX	GRADING AND DRAINAGE	LS	$2,000,000.00	1	$2,000,000.00
70XXXX	SIGNING AND STRIPING	LS	$45,000.00	1	$45,000.00
201000	CLEARING AND GRUBBING	LS	$10,000.00	1	$10,000.00
601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	$10,000.00	1	$10,000.00
618000	TRAFFIC CONTROL MANAGEMENT	LS	$25,000.00	1	$25,000.00
621000	MOBILIZATION	LS	$185,000.00	1	$185,000.00
702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	LS	$30,000.00	1	$30,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	$25,000.00	1	$25,000.00
	MISCELLANEOUS ITEMS (10%)	LS	$180,000.00	1	$180,000.00
	Construction Subtotal				$4,262,883.00
	Contingency (30%)				$1,278,864.90
	NMDOT Engineering and Construction (5%)				$213,144.15
	NMGRT (8.1875%)				$471,181.79
	Construction Total				**$6,226,073.84**
This estimate of construction cost is only an opinion. BHI cannot & does not guarantee that proposals, bids, or actual Construction Costs will not vary from this opinion.					

Table 6.10.2 Cost Estimate for Alternative G

NO.	ITEM	UNIT	PRICE	QTY	PROJECT TOTAL AMOUNT
	Alternative G				
207000	SUBGRADE PREPARATION	SY	$2.50	26400	$66,000.00
303000	BASE COURSE (6")	TON	$27.00	8200	$221,400.00
407000	ASPHALT MATERIAL FOR TACK COAT	TON	$550.00	9	$4,950.00
408100	PRIME COAT MATERIAL	TON	$550.00	50	$27,500.00
423283	HMA SP-IV COMPLETE	TON	$85.00	5866	$498,610.00
601110	REMOVAL OF SURFACING	SY	$6.00	23333	$139,998.00
608004	CONCRETE SIDEWALK 4"	SY	$51.00	8000	$408,000.00
609424	CONCRETE VERTICAL CURB AND GUTTER 6" X 24"	SY	$22.00	14400	$316,800.00
623XXX	GRADING AND DRAINAGE	LS	$2,000,000.00	1	$2,000,000.00
70XXXX	SIGNING AND STRIPING	LS	$40,000.00	1	$40,000.00
201000	CLEARING AND GRUBBING	LS	$7,500.00	1	$7,500.00
601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	$10,000.00	1	$10,000.00
618000	TRAFFIC CONTROL MANAGEMENT	LS	$20,000.00	1	$20,000.00
621000	MOBILIZATION	LS	$185,000.00	1	$185,000.00
702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	LS	$25,000.00	1	$25,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	$20,000.00	1	$20,000.00
	MISCELLANEOUS ITEMS (10%)	LS	$175,000.00	1	$175,000.00
	Construction Subtotal				$4,165,758.00
	Contingency (30%)				$1,249,727.40
	NMDOT Engineering and Construction (5%)				$208,287.90
	NMGRT (8.1875%)				$460,446.44
	Construction Total				**$6,084,219.74**
This estimate of construction cost is only an opinion. BHI cannot & does not guarantee that proposals, bids, or actual Construction Costs will not vary from this opinion.					

7 INITIAL ENVIRONMENTAL ANALYSIS OF PREFERRED ALTERNATIVES

7.1 Social, Cultural, and Environmental Conditions

A preliminary analysis of potential social, cultural, and environmental impacts was completed for each of the preferred alternatives. In most cases, the impacts are relatively similar with the major difference resulting from the greater land area needed for Alternative F versus Alternative G under the preferred roadway alternatives and the various amount of land area needed for the various proposed drainage alternatives. Further environmental analysis will be required prior to final design and construction but based on the analysis completed to date, it is expected that a Categorical Exclusion could be used to complete the environmental compliance process under the National Environmental Policy Act and regulations established by FHWA and the NMDOT.

7.1.1 Social And Economic Conditions

7.1.1.1 *Demographics*

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations", was signed by President Clinton on February 11, 1994 and published in the Federal Register on February 16, 1994. EO 12898 focuses federal attention on the environmental and human health conditions of minority and/or low-income populations, promotes non-discrimination in federal programs affecting human health and the environment, and provides minority and/or low-income populations with access to public information and an opportunity to participate in matters relating to the environment. The demographic and economic profile shown in **Table 4.9.1** and **Table 4.9.2** indicate the population within the corridor includes a higher percentage of minority and low-income residents as compared to the State of New Mexico.

Given the nature of all preferred alternatives, which include the addition of pedestrian/bicycle facilities and improvement of drainage conditions reducing risk to flooding, it is not expected that proposed improvements would affect a disproportionate population of minority or low-income groups. In fact, the addition of bicycle and pedestrian facilities and improved drainage could result in a net benefit for the disadvantaged populations.

It is expected that all preferred alternatives will provide benefits to the low-income and minority populations and comply with EO 12898.

7.1.1.2 *Land Use, Community Cohesion, And Connectivity*

Both recommended roadway alternatives align with local land use plans, enhance community cohesion between Las Cruces and Mesilla, and improve connectivity for all modes. The multi-modal enhancements proposed for this corridor under both preferred alternatives will create lasting value for both communities improving connectivity and economic development opportunities.

There are many driveway access points, along both sides of the corridor, serving residential, schools, and a few other uses. In most cases, all of these access points will be maintained with potential for improvements. However, there are several properties with multiple driveways which may require some modifications and/or reductions. Coordination with the landowners will be ongoing and fully documented.

Alternative F, however, will result in a modified scenario for the adjacent residents on the south side. Currently, there is a berm adjacent to the ditch which might be providing some noise and visual mitigation from corridor activity. The implementation of Alternative F would result in the removal of the berm and bring the corridor activity closer to their homes with the construction of a multi-use path. This modification is not necessarily a negative impact but it is a change that needs to be disclosed to the public and adjacent landowners. The benefits include the higher and better use of the land for a multi-use trail.

All drainage alternatives also align with land use plans and support community cohesion and connectivity. Drainage in the corridor has been an ongoing challenge so improvements to the infrastructure to reduce risk of flooding will be a benefit.

7.1.1.3 *Visual Resources*

The corridor is not an important or unique visual landmark. It is expected that all preferred alternatives would improve the visual landscape along the corridor. Input will continue to be obtained from the stakeholders and public to determine any lighting or landscaping enhancements. The inclusion of drainage ponds will not be out of character in the corridor with the mix of residential and agricultural land.

7.1.1.4 *Noise*

Traffic noise for federally-funded transportation projects in New Mexico are regulated under the guidance and regulations provided by the New Mexico Department of Transportation (NMDOT)

Infrastructure Design Directive, IDD 2011-02 (NMDOT IDD 2011-02) which align with the federal regulations on traffic noise impacts included in 23 CFR, Part 772.

According to the IDD 2011-02, the criteria to warrant a noise study involves geometrical modifications including substantial vertical or horizontal alterations, addition of traffic lanes, or new alignments. The preferred roadway alternatives are maintaining the same primary alignment and are not adding additional lanes or capacity; therefore, the preferred alternatives do not warrant a noise study under the IDD 2011-02.

However, under **Alternative F**, the proposed multi-use trail along the south side would require the removal of an existing berm between the roadway and the adjacent residents on the eastern end. This berm is perceived as acting as a noise barrier under current conditions, and noise concerns have been identified by the public throughout both the Phase A and the Phase B public outreach.

In response to this community concern, a high-level noise analysis was completed for the existing conditions to determine the potential noise mitigation benefit from the berm, as discussed above. The noise analysis included the evaluation of the existing corridor, with and without the berm, using the FHWA-approved Traffic Noise Model (TNM 2.5). Results indicated that the removal of the berm to construct a walking trail would potentially increase the noise for the adjacent resident by 1 to 2 decibels only, and only during peak travel times. This level of potential noise increase is a minimal impact and doesn't warrant mitigation, as the human ear can only perceive a 3 decibel increase or more. The overall benefits to the safety and quality of life along the corridor are expected to outweigh the minimal potential noise impacts resulting from Alternative F.

7.2 Natural Environment

7.2.1 Vegetation

The footprint for all preferred alternatives is primarily contained within the built environment, which has already converted much of the native vegetation in the study area to a roadway, access points, and a highly-maintained ditch corridor. The proposed drainage pond alternatives are currently vacant land with some natural vegetation and some agricultural use. Biological field surveys will be completed prior to design and construction with little or no impact expected to vegetation as a result of any of the preferred alternatives.

There is expected to be little or no impact to vegetation under all preferred alternatives.

7.2.1.1 *Noxious Weeds*

For all preferred alternatives, field surveys will be completed and at that time any and all noxious weeds identified within the corridor will be documented. Prior to construction, as required by Federal Executive Order 13112 and NMDOT regulations, mitigation will be applied to the identified noxious weeds as appropriate. A noxious weeds management plan will be developed to mitigate the impact to any noxious weeds under all preferred alternatives and included as part of the Phase C environmental documentation.

7.2.2 Water Resources

7.2.2.1 *Floodplain Management*

Under all preferred alternatives, the corridor is within FEMA-designated Flood Zone X, and consideration of floodplain management will be maintained throughout project design.

7.2.2.2 *Surface Water and Wetlands*

There are no impacts expected to surface water and wetlands along the corridor. Minor modifications to surface water include the additional drainage ponds proposed under all the proposed drainage alternatives. Under all drainage alternatives the facility design will encourage effective management of drainage captured and will not result in standing water beyond 96 hours.

7.2.2.3 *Groundwater*

Under all preferred alternatives there is expected to be little or no impacts to groundwater.

7.2.3 Wildlife

The footprint for all preferred alternatives is primarily contained within the built environment, which has already converted much of the wildlife habitat in the study area to a roadway, access points, and a highly-maintained ditch corridor. Biological field surveys will be completed prior to design and construction with little or no impact expected to wildlife habitat as a result of either of the preferred alternatives.

The drainage ponds included in all drainage alternatives would provide some additional opportunity for wildlife habitat but under all preferred alternatives there is expected to be little or no impact to wildlife.

7.2.4 Threatened and Endangered Species

Due to the urban setting of the study area, no impact to threatened and endangered species are expected as a result of any of the preferred alternatives. Biological field surveys will be completed prior to design and construction, and if a threatened and endangered species is identified within the footprint of the proposed improvements, coordination with the NMDOT and additional regulatory agencies will be completed immediately to determine the most appropriate mitigation measures necessary.

7.2.5 Soils and Prime Farmland

Geotechnical investigations will be completed prior to construction but given the already developed nature of the corridor and the absence of prime or unique farmlands, little or no impact to soils is expected from any of the preferred alternatives.

7.2.6 Air Quality

Air quality pollutants are not expected to increase as a result of any of the preferred alternatives. There will be no additional vehicular capacity, and there is a potential for reduction of air quality emissions as pedestrian and bicycle facilities are improved. However, this decrease would be impossible to quantify or delineate between the two recommended corridor alternatives.

Doña Ana County does hold a Natural Events Actions Plan (NEAP) under US Environmental Protection Agency that will need to be adhered to during construction for all preferred alternatives.

7.3 Cultural Resources

Field surveys and further coordination with the State Historic Preservation Officer (SHPO), will be completed in Phase C to determine if the project would have: no effect, no adverse effect, or an adverse effect on historic resources (36 CFR 800.3). However, given the established roadway footprint and the developed nature of the corridor, little or no impact to cultural resources is expected as a result of any of the preferred alternatives. A cultural resource report and coordination with the State Historic Preservation Officer will occur during Phase C.

7.3.1 Sections 4(f)

The Town of Mesilla Parque Conmemorativo on the northeast corner of University Avenue and Avenida de Mesilla is subject to Section 4(f) requirements, as discussed in Chapter 4. However, it is not anticipated that any of the preferred alternatives will result in an adverse effect to the activities or features of this public use locations. The corridor modifications are expected to result in benefits to the property and include improvements to additional pedestrian and bicycle access to this facility. Hazardous Materials

Under all preferred alternatives, the potential for hazardous materials impacts is minimal. However, further determination on the need for an initial site assessment (ISA) will be coordinated with the NMDOT Environmental Geology Department.

8 EVALUATION METRICS

The alternatives analysis matrix for comparison of roadway and drainage alternatives represents study findings by identifying the relative benefits of each alternative. As required by the NMDOT Location Study Procedures, the recommended alternative must be consistent with the scoring contained in the analysis matrix. Numerical and visual scoring was assigned to the cells in the analysis matrix shown in **Table 8.1.1** and **Table 8.1.2**, with green (5) representing the greatest benefits and red (1) representing less desirable impacts. Numerical scoring is defined as follows: 5 – meets all criteria, 4 – meets most criteria, 3 – partially meets criteria, 2 – minimally meets criteria, 1 – meets little to no criteria.

The following metrics were included in the evaluation matrix:

- Purpose and Need – The alternative meets the purpose and need of the study.
- Long-Term Benefits – Operation and maintenance of drainage system.
- Land Use – Impacts of future land use by proposed ponds.
- Traffic Operations – Ability of alternative to handle future growth.
- Multi-Modal Access – The alternative provides multi-modal connectivity.
- Safety – Addresses safety issues.
- Access Management – Potential impacts to existing driveway access.
- Constructability – Construction of the alternative is feasible.
- Right-of-Way – The alternative has minimal right-of-way required.
- Cost – Cost differences among the alternatives.
- Environmental Resources – The criteria assesses the impacts to environmental and biological resources.
- Social Impacts – The criteria assesses the impacts to social and cultural resources.
- Community Support – Community members and stakeholders are in support of the alternative.

8.1 Evaluation Factors

Table 8.1.1 Alternatives Analysis Matrix for Comparison of Roadway Alternatives

	No-Build	Alternative F	Alternative G
Meets Purpose and Need	-1-	-5-	-5-
Traffic Operations	-3-	-5-	-5-
Multi-Modal Access	-1-	-5-	-4-
Safety	-3-	-5-	-4-
Access Management	-3-	-5-	-5-
Constructability	-5-	-3-	-2-
Right-of-Way	-5-	-2-	-3-
Cost	-5-	-1-	-1-
Environmental Resources	-5-	-5-	-5-
Social Impacts	-3-	-4-	-5-
Community Support	-1-	-5-	-4-
TOTAL	**35**	**45**	**43**

Table 8.1.2 Alternatives Analysis Matrix for Comparison of Drainage Alternatives

	No Build	Alternative W1	Alternative W2	Alternative E1	Alternative E2
Meets Purpose and Need	-1-	-5-	-5-	-5-	-5-
Long-Term Benefits	-1-	-3-	-5-	-3-	-5-
Land Use	-5-	-3-	-2-	-3-	-1-
Constructability	-5-	-1-	-3-	-1-	-3-
Right-of-Way	-5-	-3-	-3-	-3-	-2-
Cost	-5-	-1-	-3-	-1-	-3-
Environmental Resources	-5-	-5-	-5-	-5-	-5-
Social Impacts	-3-	-3-	-2-	-3-	-3-
Community Support	-1-	-4-	-4-	-4-	-4-
TOTAL	**31**	**28**	**32**	**28**	**31**

9 RECOMMENDATIONS

The University Avenue Corridor Study examines the transportation needs to enhance the existing two-lane roadway from Avenida de Mesilla to Main Street.

The purpose and need for the University Avenue Corridor Study is based on physical deficiencies, safety concerns, and economic development opportunities. The Purpose of the project is to provide an enhanced multi-modal transportation corridor along University Avenue between Main Street and Avenida de Mesilla, including the integration of bicycle and pedestrian facilities. Railroad infrastructure is present in the study area and will require agency coordination during preliminary and final design.

The set of roadway and drainage preferred alternatives are displayed in the figures below.

9.1 Preferred Alternative

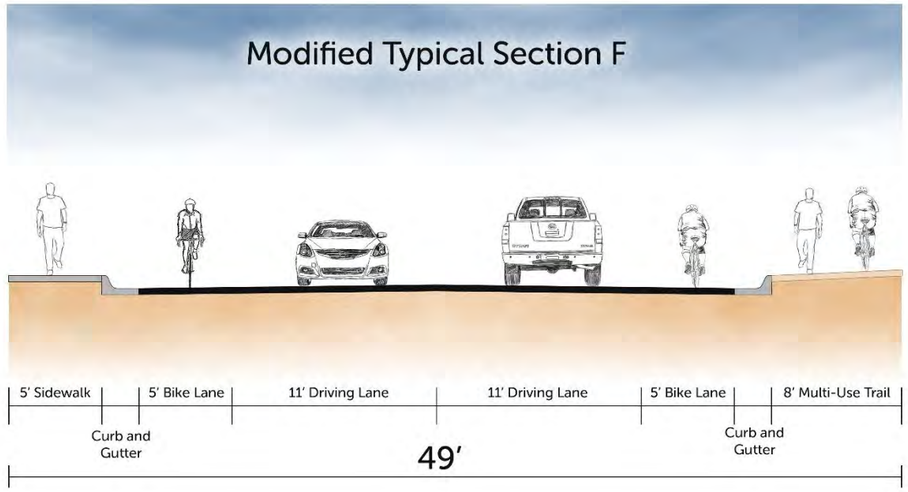
Two alternatives were evaluated in this study, and include two driving lanes, bicycle and pedestrian facilities, and drainage infrastructure. Both alternatives F and G meet the purpose and need for the project and respond to stakeholder and public comment. Right-of-way requirements for the recommended alternatives vary between 44 feet and 60.5 feet.

9.1.1 ROADWAY

At the conclusion of the University Avenue Corridor Study, **Alternative F** is recommended as the preferred alternative. The buffer between the roadway and pedestrian path with vary based on available right-of-way as defined by the two segments below:

1. Segment 1 (Avenida de Mesilla to McDowell Road) will be a "**Modified Alternative F**" that contains 11' driving lanes with 5' bicycle lanes, a 5' sidewalk on the left and an 8' sidewalk/multi-use path on the right. Sidewalk buffers will not be present as depicted in Alternative F. The typical section for **Modified Alternative F** is shown in **Figure 9.1.2** and Plans for Modified Alternative F can be found in **Appendix H**.
2. Segment 2 (McDowell Road to Main Street) will be the **Alternative F** described in this report with the left sidewalk buffer starting approximately 230' west of Camino del Rey.

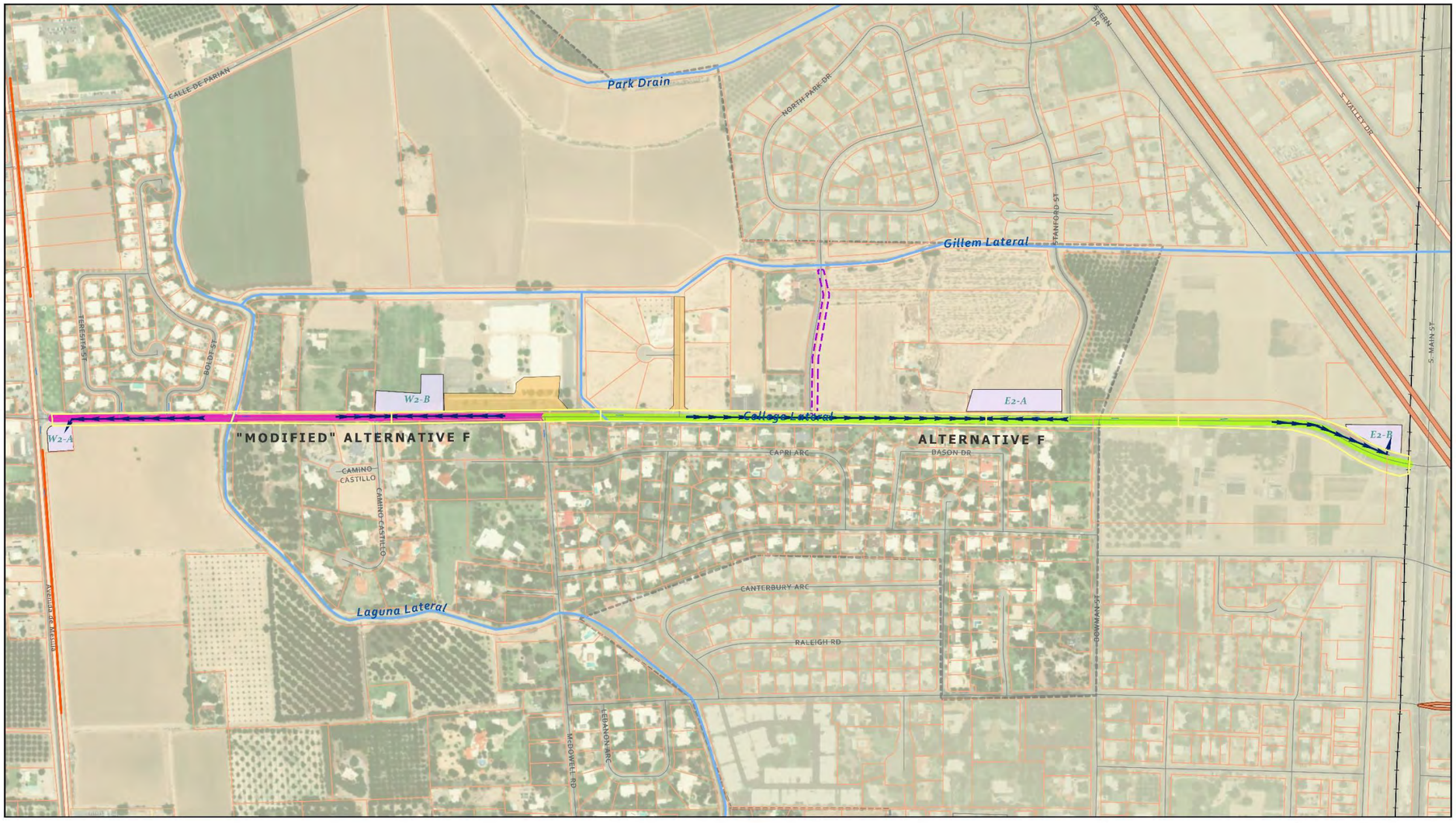
Figure 9.1.1 Modified Alternative F



The available right-of-way allows **Alternative F** to be constructed along the majority of the project area, with **Modified Alternative F** applied to a portion of the roadway. The **Modified Alternative F** demonstrates benefit to pedestrians and bicyclists as it provides multi-modal options for both users. Further, **Alternative F** satisfies issues related to the safety of pedestrians and bicyclists and received general support from community members and positive feedback from stakeholders and agencies.

Alternative G was not selected as the preferred alternative for construction. From a multi-modal accessibility perspective, this alternative provides less benefit for bicycle and pedestrian users. Safety for the multi-modal traffic is also not as robust due to no physical buffer present between the vehicular and pedestrian traffic. Furthermore, **Alternative G** would still require right-of-way acquisition from property owners when compared to the "**Modified Alternative F**" option, albeit a slightly smaller amount. As such, the benefit of increased pedestrian safety outweighs the benefit of slightly smaller acquisitions of right-of-way.

Figure 9.1.2 Preferred Alternatives



9.1.2 DRAINAGE

It is recommended that the preferred drainage alternative (W2 and E2) includes ponding at the main existing topographic low points along the corridor. The lack of a drainage outfall for the project necessitates the use of ponds to accommodate corridor runoff and so the remaining question is where to locate ponds. Initial outreach to property owners for parcels associated with potential right-of-way acquisition for ponds for Alternatives W2 and E2 indicates that acquisition is feasible.

Alternatives W2 and E2 are preferred over Alternatives W1 and E1 because the associated proposed storm drain systems will likely require less maintenance (because they can be steeper with higher flow velocities). Further, Alternatives W2 and E2 are likely to encounter fewer major utility conflicts during design and construction because associated storm drain trunk lines would not cross major existing infrastructure crossing the corridor (including the Laguna Lateral and sanitary force and gravity mains near Bowman Street).

The locations of proposed drainage ponds are based on the existing topography along the corridor. The final location and configuration of proposed ponds, particularly for the western portion of the corridor, is flexible and subject to change based on further coordination with land owners that will be conducted during design.

Appendices

Appendix A | Public Involvement

Engineering
Spatial Data
Advanced Technologies

Bohannan Huston

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MEMORANDUM

DATE: **May 29, 2019**

TO: **New Mexico Department of Transportation**

FROM: **Bohannan Huston, Inc.**

SUBJECT: **University Ave Corridor Study Phase B/1C/1D (CN: LC00290): Stakeholder Meeting Summary**

Selected stakeholders were invited to attend a meeting to discuss the University Avenue Phase B/1C/1D Corridor Study and provide input on project related issues. The meeting was held on May 16, 2019 at the NMDOT District 1 Solano Complex.

The Project Team gave a brief presentation review the initial Phase A Study and discuss the updated data collection and analysis for the Phase B Study. The Phase A Study was completed in 2016 by the Mesilla Valley Metropolitan Planning Organization (MVMPO) under the process defined by the NMDOT Location Study Procedures (2015). The Phase A Study identified two (2) preferred alternatives that are being evaluated in further detail by the Phase B/1C/1D Study. Phases B/1C/1D are being led by the NMDOT and the project development process continues to follow the NMDOT Location Study Procedures.

The preferred alternatives recommended for further evaluation include a typical section that includes all the features supported by the stakeholder and public with in-road bicycle facilities and pedestrian access on both sides of the corridor. However, this option may be too wide to fit in the current right-of-way available along the majority of the corridor. The second alternative addresses these concerns with narrower sections that could be designed for short distances along the corridor.

The Phase B Study evaluates these alternatives in further detail and the data collected and analysis completed thus far was presented to the stakeholder group. The Project Team presented preliminary results for the traffic analysis, multi-modal level of service, crash analysis, drainage investigation, and right-of-way data collection.

Topics that were discussed during the meeting included the following:

- **Multi-Modal Considerations**
  - The corridor will require 12-foot lanes to accommodate buses.
  - There is a transit route that accesses University Ave from Bowman Ave.
  - The presence of both 5-foot bicycle lanes and multi-use trail is important for the different user types using the corridor.
  - A multi-use trail extends from Calle del Norte along the Rio Grande. This could be an opportunity for trail connectivity by utilizing EBID laterals and drains west of the middle school
  - There is a general obligation bond available for trails – coordinate with Tony on decisions for potential trail tie-ins.
  - The MVMPO has Strava data available.
- **Roadway Design**
  - The existing turn-lane in front of the school will be considered during the project design phase.
  - Considerations for the intersection of University Ave with the railroad include bicycle and pedestrian connectivity and potential to sync the controllers. These decisions will be finalized following the preliminary design phase.
- **Traffic and Safety**
  - Consider completing a speed study.
  - Conditions are dangerous for pedestrians in front of the school during school drop-off and pick-up times.
  - Conditions are dangerous for bicycles and pedestrians at the intersection of University Ave and Main St and east through the underpass. Striping may resolve this issue.
  - There is a general obligation bond available to reconstruct the student pick-up area for the middle school – coordinate with Las Cruces Public Schools.
- **Drainage**
  - Water pools at the intersection of University Ave and Bowman Ave when it rains.
  - The Park Drain north of University Ave will have a change of ownership
  - College lateral that runs along University Ave will go underground. The removal of this berm may have perceived noise and/or safety impacts on nearby residents.

Attachments:

Sign in sheet

PowerPoint Presentation

SIGN IN SHEET

STAKEHOLDER MEETING
MAY 16, 2019
2:00 - 3:30 PM

New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

Bohannan Huston

NAME	EMAIL	PRESENT? (Y/N)
Aaron Chavarria	aaron.chavarria@state.nm.us	Yes
Andrew Wray	awray@las-cruces.org	
Ashleigh Curry	acurry@lcps.k12.nm.us	
Carl Clark	cclark@las-cruces.org	
Christina Ainsworth	christinaa@donaanacounty.org	
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Victor Gonzales	vgonzles@ebid-nm.org	
Zach Libbin	zlibbin@ebid-nm.org	

PUBLIC INFORMATION MEETING

The New Mexico Department of Transportation invites you to a public meeting for the

UNIVERSITY AVENUE CORRIDOR STUDY – PHASE B

CN LC00290

The New Mexico Department of Transportation is conducting an open house to collect input on the preferred alternatives to be studied further in Phase B of the University Ave Corridor Study. The Study evaluates the transportation needs to enhance the existing two-lane roadway from Avenida de Mesilla to S. Main Street. The corridor is highly used by pedestrians and bicycles with access to Zia Middle School, local neighborhoods, and as a gateway to the Town of Mesilla.

The purpose of the open house is to provide a project update, review the previously completed Phase A analysis, and collect comments and concerns on the preferred alternatives.

To request Americans with Disabilities Act (ADA)- related accommodations for the meeting, contact Melanie Bishop at mbishop@bhinc.com at least two days before the meeting. Para información en español contacte (505)923-3341.

Written comments will be accepted at the public information meeting, or they may be mailed or faxed to Melanie Bishop, Bohannan Huston Inc, 7500 Jefferson St. NE, Albuquerque, NM 87109, phone (505)923-3340, email mbishop@bhinc.com or fax (505)798-7988.

DATE & TIME:

Wednesday, June 5, 2019

From 5:30 to 7:00 PM

LOCATION:

Mesilla Community Center

2251 Calle de Santiago

Mesilla, NM

Project Area Map

Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

Bohannan Huston

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MEMORANDUM

DATE: **June 7, 2019**

TO: **New Mexico Department of Transportation**

FROM: **Bohannan Huston, Inc.**

SUBJECT: **University Ave Corridor Study Phase B/1C/1D (CN: LC00290): Public Meeting Summary**

Staff from the New Mexico Department of Transportation and Bohannan Huston held a public meeting on June 5, 2019 at the Mesilla Community Center.

The Project Team gave a brief presentation review the initial Phase A Study and discuss the updated data collection and analysis for the Phase B Study. The Phase A Study was completed in 2016 by the Mesilla Valley Metropolitan Planning Organization (MVMPO) under the process defined by the NMDOT Location Study Procedures (2015). The Phase A Study identified two (2) preferred alternatives that are being evaluated in further detail by the Phase B/1C/1D Study. Phases B/1C/1D are being led by the NMDOT and the project development process continues to follow the NMDOT Location Study Procedures.

The preferred alternatives recommended for further evaluation include a typical section that includes all the features supported by the stakeholder and public with in-road bicycle facilities and pedestrian access on both sides of the corridor. However, this option may be too wide to fit in the current right-of-way available along the majority of the corridor. The second alternative addresses these concerns with narrower sections that could be designed for short distances along the corridor.

The Phase B Study evaluates these alternatives in further detail and the data collected and analysis completed thus far was presented to the stakeholder group. The Project Team presented preliminary results for the traffic analysis, multi-modal level of service, crash analysis, drainage investigation, and right-of-way data collection.

A question and answer period took place following the presentation. This was followed by an opportunity to view display boards and interact further with the project team.

Meeting attendees raised questions about safety issues along the corridor related to speeding, lighting, and accidents. There were also questions about the preferred alternatives and how they will be implemented along specific sections of the corridor.

Question and answers include the following:

Q: Will additional lighting be added along the corridor?
A: Lighting is concern for residents because it may shine onto your property. For this reason, we will be implementing lighting at intersections and at conflict points.

Q: Will you be widening the road, adding additional lanes, or changing the striping?
A: We do not anticipate acquiring additional ROW or making major changes to the horizontal alignment of the roadway. The vertical alignment is expected to change to mitigate areas of the roadway with ponding issues.

Q: Have you considered just a multi-use path instead of both the multi-use path and bicycle lanes?
A: This was considered in the Phase A Study as Alternative B. Ultimately this alternative was not carried into Phase B because there may be connectivity issues when multi-modal facilities are located on one side of the corridor. The lack of bicycle lanes may also reduce opportunities for all user types because the bicycle lane user may not want to use the multi-use path.

Q: Is it possible to have a hybrid of Alternative F and Alternative G?
A: Yes, there will be areas with less available ROW that will require a transition between the two alternatives.

Q: Will there be a sound barrier for the properties along the south side of University?
A: A noise study may be conducted to evaluate the existing and future noise.

Q: There are speeding issues along the corridor. Will there be traffic calming options?
A: During 30% design we will look at traffic calming options. For example, road narrowing features near intersections will require drivers to drive slower and more cautiously.

Q: Will detailed maps of the roadway design be made available?
A: Yes, we will post detailed maps on the NMDOT website and you can locate your property.

Q: Will bicycle accidents increase with the addition of bicycle facilities?
A: Bicycle facilities will attract more usage, which may increase the occurrence of accidents. However, improvements to bicycle facilities will create a safer corridor for all modes.

Q: What is the length of construction?

Q: Have you compared crashes and traffic volumes against other areas of town?

6

UNIVERSITY AVENUE CORRIDOR STUDY

PHASE B - DETAILED EVALUATION OF ALTERNATIVES

PUBLIC MEETING
June 5, 2019
5:30 to 7:00 PM

U.S. Department of Transportation Federal Highway Administration

New Mexico Department of Transportation

Bohannan Huston

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UNIVERSITY AVENUE CORRIDOR STUDY

PHASE B - DETAILED EVALUATION OF ALTERNATIVES

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Bohannan Huston

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UNIVERSITY AVENUE CORRIDOR STUDY

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Bohannan Huston

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→ Principal @ Zia Middle School

UNIVERSITY AVENUE CORRIDOR STUDY

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Bohannan Huston

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UNIVERSITY AVENUE PHASE B

Public Meeting
June 5, 2019

U.S. Department of Transportation
Federal Highway Administration

New Mexico DEPARTMENT OF TRANSPORTATION

Bohannan Huston

CN LC00290

AGENDA

- Project Update and Schedule
- Review of Purpose and Need
- Discuss Phase A
  - Issues and Concerns
  - Preferred Alternatives
- Review of Data Collection and Phase B Analysis
  - Traffic Analysis
  - Drainage Analysis
  - Right-of-Way

Bohannan Huston

0 0.25 0.5 Miles

University Avenue
Study Area
City Limits

Study Area Map

PROJECT UPDATE

- The initial University Avenue Phase A Corridor Study was completed in 2016.
- The previous project was led by the Mesilla Valley MPO and resulted in preferred alternatives for further study along the corridor.
- Since then, the NMDOT has obtained funding to continue through to design and construction.

PROJECT SCHEDULE

- July 2019– Phase B Report Draft
- December 2019 – Phase C Environmental Investigation and Documentation
- December 2019 – 30% Design
- FFY2022 - Construction

PUBLIC INVOLVEMENT SCHEDULE

- May 16– Stakeholder Meeting #1
- May 21– Bicycle Pedestrian Advisory Committee (BPAC) #1
- June 5 – Public Meeting #1
- June 6 – Technical Advisory Committee (TAC) #1
- August – Stakeholder Meeting #2
- August – BPAC #2
- September – Public Meeting #2
- September – TAC #2

PURPOSE AND NEED

PUPROSE

Provide an enhanced multi -modal transportation corridor

NEED

- Safety concerns due to potential pedestrian/bicycle/vehicular conflicts
- Physical deficiencies due to lack of shoulders, pedestrian facilities, and bicycle facilities
- Potential for economic development opportunities as a result of improving connectivity

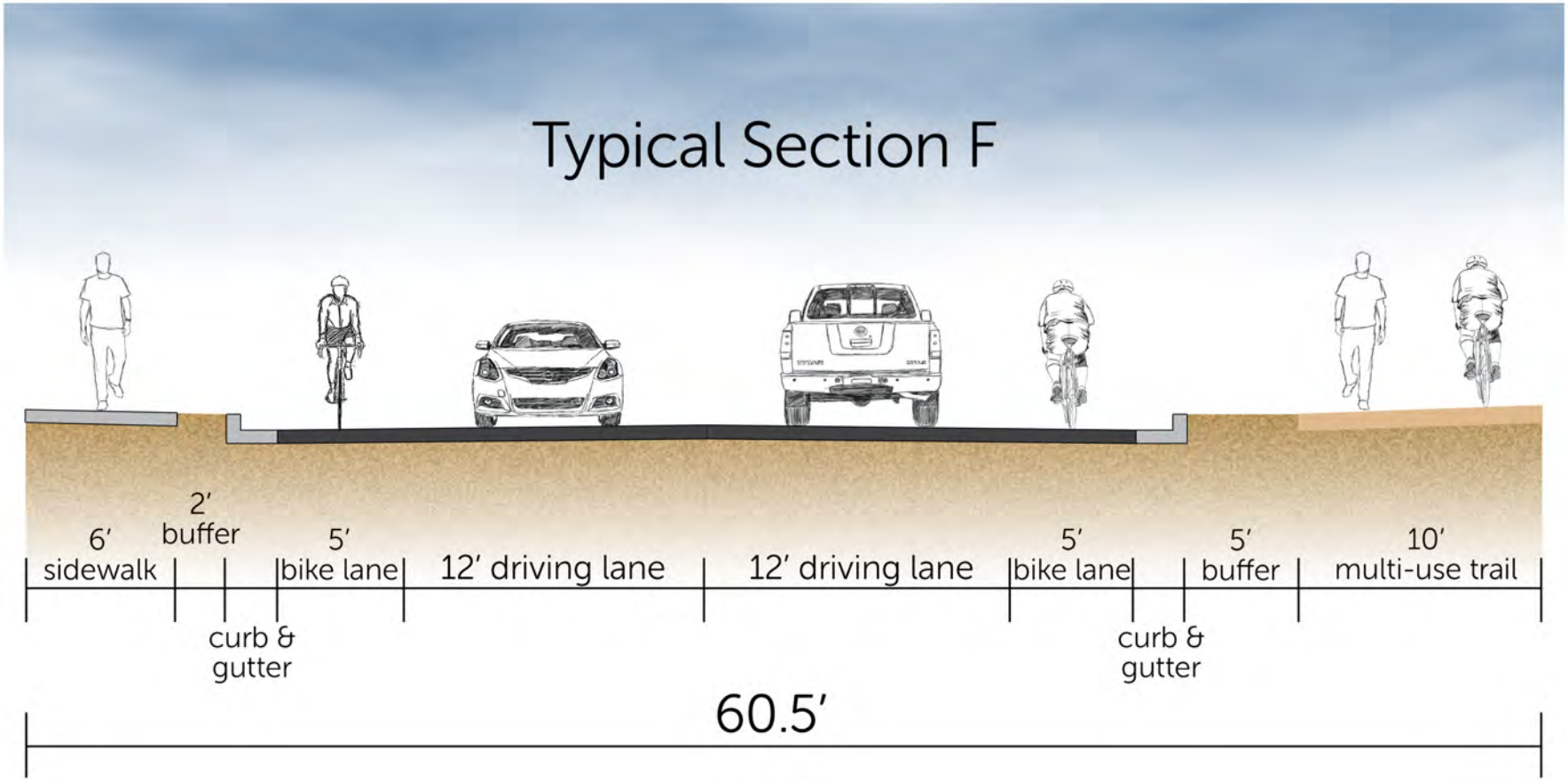
PHASE A – ISSUES AND CONCERNS

- Right-of-Way
  - Limited in some areas
  - Coordination with EBID / LCPS / Private
- EBID
  - Proposed improvements will be coordinated with existing EBID facilities
- Utilities
  - Minimize relocation

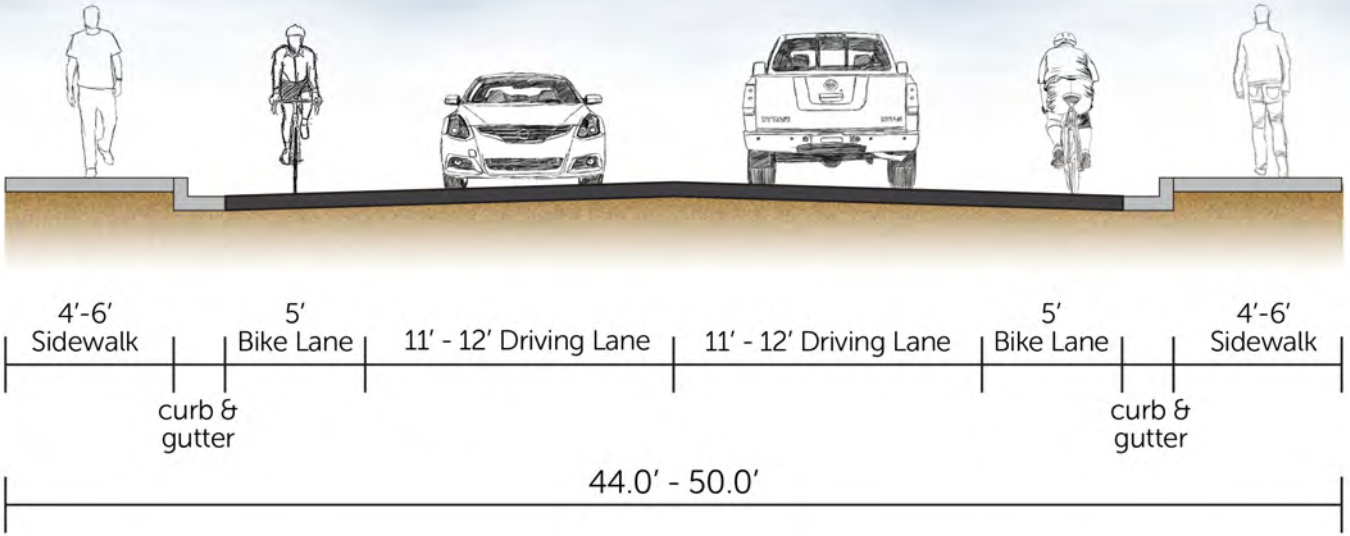
PHASE A – ALTERNATIVES

- Evaluated 6 Alternatives
  - Considered many factors

- Chose Preferred Alternative (F)
  - Created 7th Alternative (G)
    - to address limited ROW


Typical Section F
6′
sidewalk
2′
buffer
curb &
gutter
5′
bike lane
12′ driving lane
12′ driving lane
5′
bike lane
curb &
gutter
5′
buffer
10′
multi-use trail
60.5′

Typical Section G



PHASE B – DETAILED ANALYSIS

- Further Analysis of the 2 Preferred Alternatives
  - Traffic Analysis
  - Drainage Analysis
  - Right-of-Way

TRAFFIC ANALYSIS

- Existing roadway operation (2019)
- Future roadway operation (2040)
  - Proposed growth rate of 1% for University Ave
- Acceptable LOS and delay for existing and future

Intersection	2019 AM Peak	2019 PM Peak	2040 AM Peak	2040 PM Peak
Avenida de Mesilla	C	B	C	B
Teresita	B	B	B	B
Boldt	B	B	B	B
Camino Castillo	B	B	B	B
McDowell	B	B	B	B
Camino del Rey	B	C	B	C
Old Farm	B	C	C	C
Stanford	C	C	C	C
Bowman	B	C	C	C
Main	C	C	C	C

MULTI-MODAL LOS ANALYSIS

- LOS based on comfort of user
- Existing roadway has no bicycle or pedestrian facilities – poor LOS
- LOS expected to improve with any bicycle and pedestrian facility addition

Alternative	Bicycle LOS	Pedestrian LOS
Existing	D	E
Typical Section F (60.5')	B	C
Typical Section G (44')	B	C
Typical Section G (50')	B	C

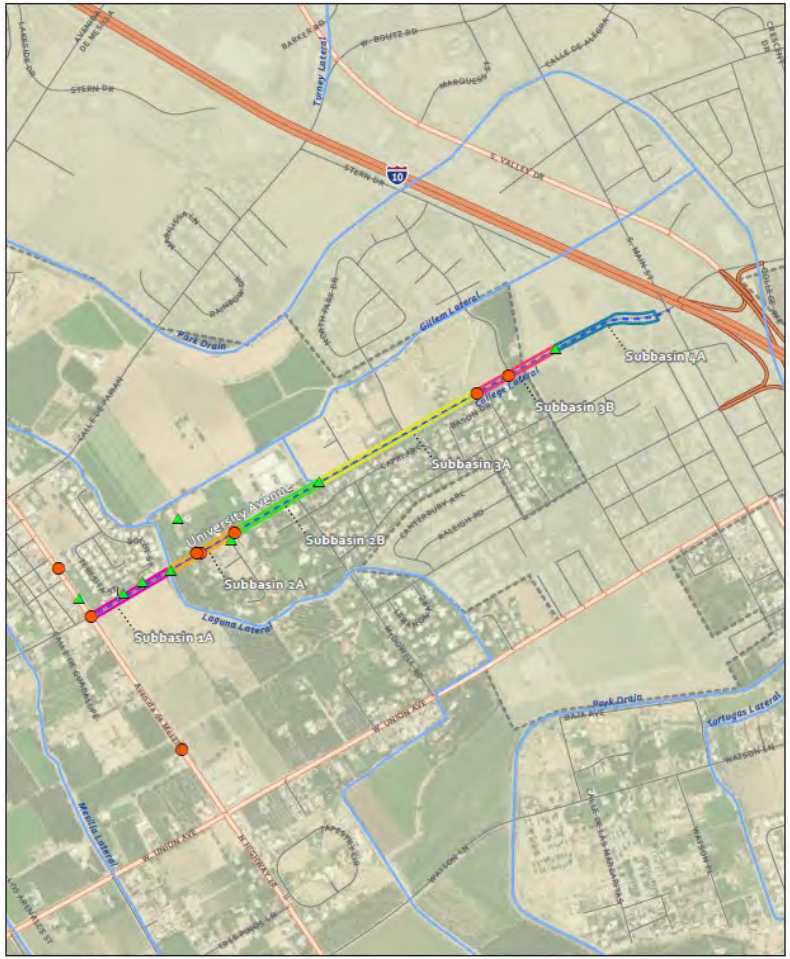
CRASH ANALYSIS

- 2013-2017
- 60 accidents
  - 41 at the intersection with Main St
- Property damage and injury crashes – no fatal crashes
- Most frequent crash type are rear end crash and side swipe crash
- No crashes involving pedestrians, 1 crash involving bicyclist


University and Main
50 Crashes
University and Bowman
7 Crashes
University Avenue
University and Avienda de
Mesilla
6 Crashes
University Avenue
Corridor Study - Phase B
Crash Density Map
Crashes (72 Total)
Sparse
Dense
University Avenue
Study Area
Miles
0
0.25
0.5
N

DRAINAGE ANALYSIS

- Potential offsite contributing drainage areas (outside NMDOT ROW)
  - North of University from the Laguna Lateral east
- Identified existing roadway drainage pattern
- Calculated preliminary roadway/ROW runoff based on Alternative F
- Initial potential pond locations and storm drain outfalls



University Avenue
Corridor Study - Phase B

Drainage Overview Map

Roadway High & Low Points (Existing)

High

Low

Miles

0 0.25 0.5

N

Path: P:\Locops\gis\NMDOT-PCN\Study and Conceptual Design\PHASE B\GIS\University Avenue - ArcPro\University Avenue - ArcPro.aprx

RIGHT-OF-WAY

- Survey, mapping, and right -of-way in progress
- Will define NMDOT ROW and EBID ROW

NEXT STEPS

- July 2019– Phase B Report Draft
  - Fall 2019 – 2nd round of public outreach
- December 2019 – Phase C Environmental Investigation and Documentation
- December 2019 – 30% Design
- FFY2022 - Construction

QUESTIONS & COMMENTS

- **Alvin Dominguez, PE (BHI)**

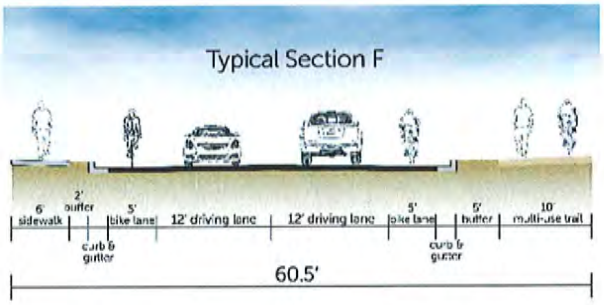
adominguez@bhinc.com

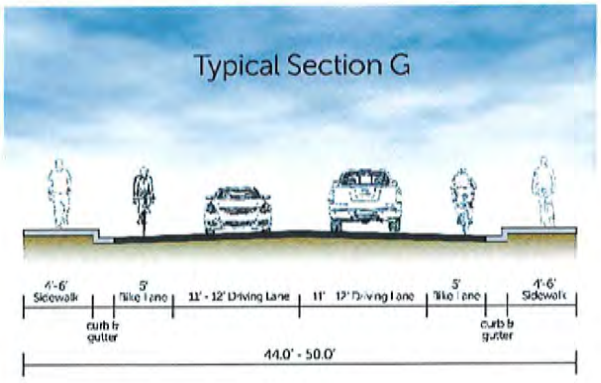
- **Mark Salazar, PE (NMDOT)**

mark.Salazar@state.nm.us

UNIVERSITY AVENUE CORRIDOR STUDY
PHASE B - DETAILED EVALUATION OF ALTERNATIVES
PUBLIC MEETING
June 5, 2019

Please share your thoughts on the Preferred Alternatives





Your vote is this one

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New Mexico DEPARTMENT OF TRANSPORTATION

Bohannan Huston

General Comments

Marsha Williams

Lives on

Bicycles along Univ. Ave to Avenida de Mesilla

- NB signal recognizes & changes but EB it does not. Is it a signal problem that can be fixed?
- Trench across road west of Avenida de Mesilla (outside project limits but in the town of Mesilla) has a recent trench cut across the road, probably for a utility and it is very rough for bicyclists.

Please send questions and comments to Melanie Bishop, Bohannan Huston Inc., by phone (505)923-3340, email mbishop@bhinc.com, or fax (505)798-7988.

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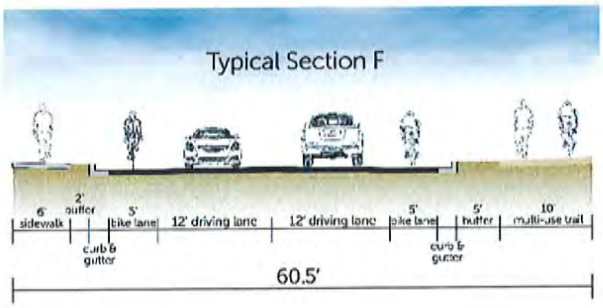
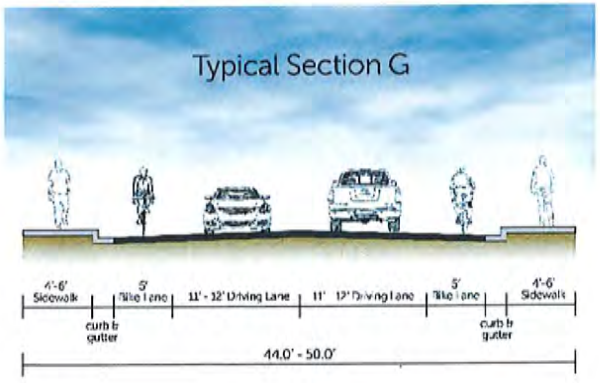


WAY TOO WIDE, MULTI-USE TRAIL NOT NEEDED. SAME TRAIL ON UNION USED RARELY.
Questions of who owns Right of Way.



Better serves needs of Community using the Narrower version

U.S. Department of Transportation Federal Highway Administration

New Mexico Department of Transportation

Bohannan Huston

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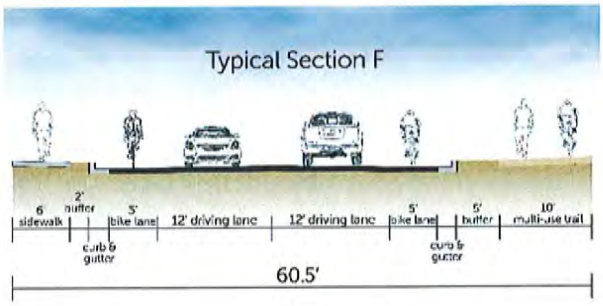

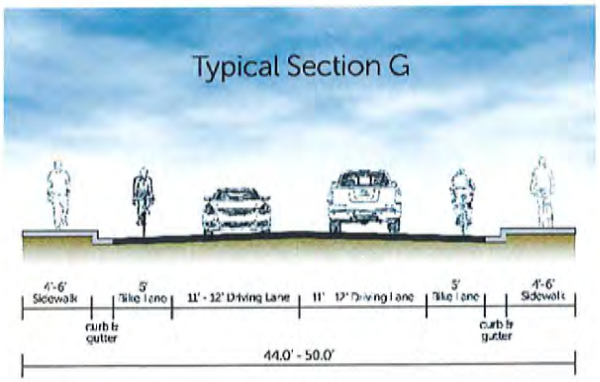

preferable - less taking & property

U.S. Department of Transportation Federal Highway Administration

New Mexico Department of Transportation

Bohannan Huston

General Comments

Thank you! Please continue to provide detailed information before the plan is finalized!

Please send questions and comments to Melanie Bishop, Bohannan Huston Inc., by phone (505)923-3340, email mbishop@bhinc.com, or fax (505)798-7988.

UNIVERSITY AVENUE CORRIDOR STUDY
PHASE B - DETAILED EVALUATION OF ALTERNATIVES
PUBLIC MEETING
June 5, 2019

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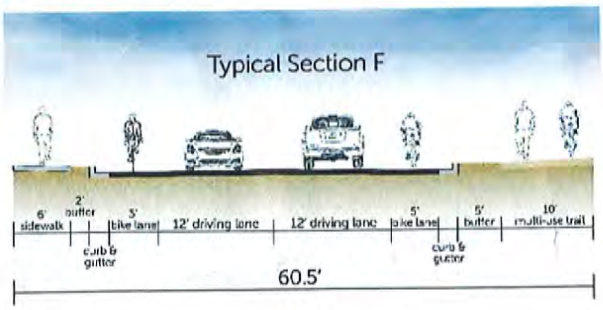
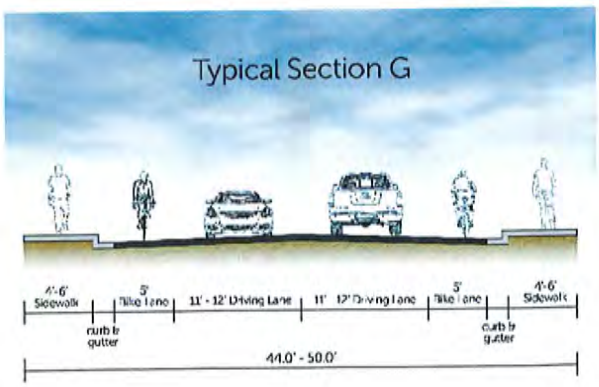


Use 11' lanes through entire project. Could have 6' bike lane if not enough room for bike buffer.



Do not go narrower than 5' for sidewalk.
Make south sidewalk as wide as possible, perhaps just extending multi use path until running out of ROW

U.S. Department of Transportation Federal Highway Administration

New Mexico DEPARTMENT OF TRANSPORTATION

Bohannan Huston

General Comments

- Vital that 5' in road bike lane exist through entire project.
- Connect to north/south EBID that could be used for trail.

Please send questions and comments to Melanie Bishop, Bohannan Huston Inc., by phone (505)923-3340, email mbishop@bhinc.com, or fax (505)798-7988.

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PHASE B - DETAILED EVALUATION OF ALTERNATIVES
PUBLIC MEETING
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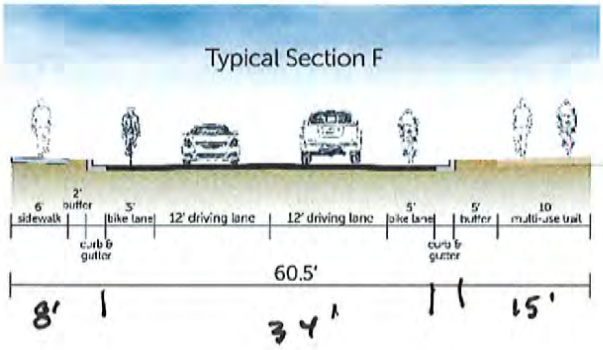
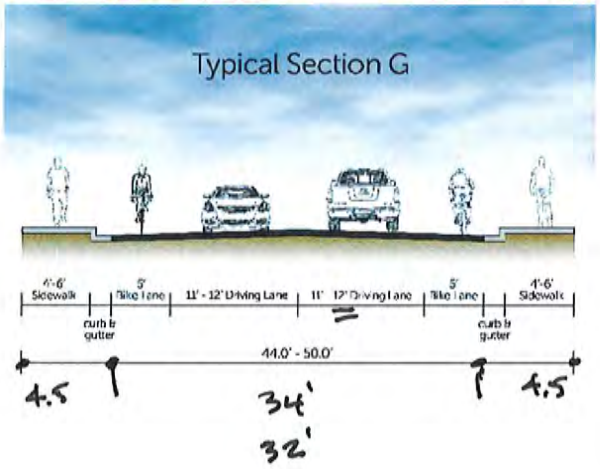


PREFER THIS OPTION WITH NARROW LANES (11'-12').
& LESS BUFFER (2'-0" AND 5'-0").

- MINIMIZE SPEED ON STREET
- " RACING.
- VISUAL / SOUND BUFFERS

= 57'



SHOW CONTEXT!
THESE ARE MEANINGLESS WITHOUT THE EXISTING.

= 43'-0" w/o CURB/GUTTER @ 12'-0
= 41'-0" " " " @ 11'-0

U.S. Department of Transportation Federal Highway Administration

New Mexico Department of Transportation

Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

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MEMORANDUM

DATE: **September 13, 2019**

TO: **New Mexico Department of Transportation**

FROM: **Bohannan Huston, Inc.**

SUBJECT: **University Ave Corridor Study Phase B/1C/1D (CN: LC00290): Stakeholder Meeting Summary**

Selected stakeholders were invited to attend a meeting to discuss the University Avenue Phase B/1C/1D Corridor Study and provide input on project related issues. The meeting was held on September 5, 2019 at the NMDOT District 1 Solano Complex.

The Project Team gave a brief presentation review the initial Phase A Study and discuss the detailed analysis conducted for the Phase B Study. The Phase A Study was completed in 2016 by the Mesilla Valley Metropolitan Planning Organization (MVMPO) under the process defined by the NMDOT Location Study Procedures (2015). The Phase A Study identified two (2) preferred alternatives that were evaluated in further detail in the Phase B/1C/1D Study. Phases B/1C/1D are being led by the NMDOT and the project development process continues to follow the NMDOT Location Study Procedures.

The preferred alternatives recommended for further evaluation include a typical section that includes all the features supported by the stakeholder and public with in-road bicycle facilities and pedestrian access on both sides of the corridor. However, this option may be too wide to fit in the current right-of-way available along the majority of the corridor. The second alternative addresses these concerns with narrower sections that could be designed for short distances along the corridor.

The Phase B Study evaluated these alternatives in further detail and the preferred alternative selected for construction was presented to the stakeholder group. The Project Team also presented drainage alternatives that were developed as part of the Phase B Study.

Topics that were discussed during the meeting included the following:

- **Roadway**
  - Las Cruces Public Schools commented that they are looking to address school traffic circulation issues with improvements to ingress and egress.
  - There may be further implications for school traffic circulation due to parents who won't be able to park along University Ave during student pick-up times.
  - Discussion on roadway and sidewalk lighting options
- **Drainage**
  - Comment of the capacity of the west pipes and the Avenida storm drain…
  - Consideration of sub surface ponding or a storm tech system rather than standing ponds.
  - Question about utilizing the existing pond in front of Zia Middle School for the additional drainage needs.
- **Multi-Modal**
  - Mike Bartholomew of the City of Las Cruces Transit Section commented that there are six bus stops located on University Ave within the project area. He would like to see the bus stops integrated into the roadway design with ADA bus stops, ramps, and shelters, particularly at Bowman.
  - Consideration of a flashing pedestrian crossing for Zia Middle School students.
  - In-road storm grates located in the bicycle lane are hazardous to bicycles.

Previous discussion:

- **Multi-Modal Considerations**
  - The corridor will require 12-foot lanes to accommodate buses.
  - There is a transit route that accesses University Ave from Bowman Ave.
  - The presence of both 5-foot bicycle lanes and multi-use trail is important for the different user types using the corridor.
  - A multi-use trail extends from Calle del Norte along the Rio Grande. This could be an opportunity for trail connectivity by utilizing EBID laterals and drains west of the middle school
  - There is a general obligation bond available for trails – coordinate with Tony on decisions for potential trail tie-ins.
  - The MVMPO has Strava data available.
- **Roadway Design**
  - The existing turn-lane in front of the school will be considered during the project design phase.
  - Considerations for the intersection of University Ave with the railroad include bicycle and pedestrian connectivity and potential to sync the controllers. These decisions will be finalized following the preliminary design phase.
- **Traffic and Safety**
  - Consider completing a speed study.
  - Conditions are dangerous for pedestrians in front of the school during school drop-off and pick-up times.

  - Conditions are dangerous for bicycles and pedestrians at the intersection of University Ave and Main St and east through the underpass. Striping may resolve this issue.
  - There is a general obligation bond available to reconstruct the student pick-up area for the middle school – coordinate with Las Cruces Public Schools.
- **Drainage**
  - Water pools at the intersection of University Ave and Bowman Ave when it rains.
  - The Park Drain north of University Ave will have a change of ownership
  - College lateral that runs along University Ave will go underground. The removal of this berm may have perceived noise and/or safety impacts on nearby residents.

Attachments:

Sign in sheet

PowerPoint Presentation

SIGN IN SHEET

STAKEHOLDER MEETING
SEPTEMBER 5, 2019
1:15 - 3:00 PM

New Mexico Department of Transportation

Bohannan Huston

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Tony Trevino	ttrevino@las-cruces.org	

NAME	EMAIL	PRESENT? (Y/N)
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Victor Gonzales	vgonzales@ebid-nm.org	
Zach Libbin	zlibbin@ebid-nm.org	
Terrie Dallman	tdallman@lcps.net	
Ed Frank	efrank@lcps.net	Y
Sean Barham	sebarham@lcps.net	Y
SooGyu Lee	sglee@las-cruces.org	
STEVEN SANCHEZ	stsancher@lcps.net	SAS
~~Carol~~		

PUBLIC INFORMATION MEETING

The New Mexico Department of Transportation invites you to a public meeting for the

UNIVERSITY AVENUE CORRIDOR STUDY – PHASE B

CN LC00290

The New Mexico Department of Transportation is conducting an open house to collect input on the preferred alternative selected for roadway and drainage improvements for the University Ave Corridor Study. The Study evaluated the transportation needs to enhance the existing two-lane roadway from Avenida de Mesilla to S. Main Street. The corridor is highly used by pedestrians and bicycles with access to Zia Middle School, local neighborhoods, and as a gateway to connect the Town of Mesilla, City of Las Cruces, and New Mexico State University.

The purpose of the open house is to review findings from the study, present recommendations for improvement, and solicit input from the community.

To request Americans with Disabilities Act (ADA)- related accommodations for the meeting, contact Melanie Bishop at mbishop@bhinc.com at least two days before the meeting. Para información en español contacte (505)923-3341.

Written comments will be accepted at the public information meeting, or they may be mailed or faxed to Melanie Bishop, Bohannan Huston Inc, 7500 Jefferson St. NE, Albuquerque, NM 87109, phone (505)923-3340, email mbishop@bhinc.com or fax (505)798-7988.

DATE & TIME:

Tuesday, September 10, 2019

From 5:30 to 7:00 PM

LOCATION:

Mesilla Community Center

2251 Calle de Santiago

Mesilla, NM

Project Area Map

Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

Bohannan Huston

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335
www.bhinc.com
voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

MEMORANDUM

DATE: **September 13, 2019**

TO: **New Mexico Department of Transportation**

FROM: **Bohannan Huston, Inc.**

SUBJECT: **University Ave Corridor Study Phase B/1C/1D (CN: LC00290): Public Meeting Summary**

Staff from the New Mexico Department of Transportation and Bohannan Huston held a public meeting on September 10, 2019 at the Mesilla Community Center.

The Project Team gave a brief presentation review the initial Phase A Study and discuss the detailed analysis conducted for the Phase B Study. The Phase A Study was completed in 2016 by the Mesilla Valley Metropolitan Planning Organization (MVMPO) under the process defined by the NMDOT Location Study Procedures (2015). The Phase A Study identified two (2) preferred alternatives that were evaluated in further detail in the Phase B/1C/1D Study. Phases B/1C/1D are being led by the NMDOT and the project development process continues to follow the NMDOT Location Study Procedures.

The preferred alternatives recommended for further evaluation include a typical section that includes all the features supported by the stakeholder and public with in-road bicycle facilities and pedestrian access on both sides of the corridor. However, this option may be too wide to fit in the current right-of-way available along the majority of the corridor. The second alternative addresses these concerns with narrower sections that could be designed for short distances along the corridor.

The Phase B Study evaluated these alternatives in further detail and the preferred alternative selected for construction was presented to the stakeholder group. The Project Team also presented drainage alternatives that were developed as part of the Phase B Study.

A question and answer period took place following the presentation. This was followed by an opportunity to view display boards and interact further with the project team.

Meeting attendees raised questions about the drainage alternatives and implications for ponding.

Question and answers include the following:

Q: Did you measure noise during the weekend evenings?

A: No, we measure during the peak hour when traffic volumes are heaviest.

Q: Have you considered safety for the pedestrians who use the Laguna Lateral?

A: We will identify safe crossing locations and safety for pedestrians along the roadway.

Q: How will you address insect control at the ponding locations?

A: The ponds must drain within 96 hours, which will reduce the insect attraction. There will also be maintenance responsibilities for insect spaying by the NMDOT. We will also investigate soil types, groundwater levels, etc.

Q: Who is responsible for maintenance of ponds?

A: There may be a Memo of Agreement and Maintenance Agreement between agencies.

Q: How deep are the ponds?

A: The depth of the ponds will be identified during preliminary design when configurations are determined.

Q: Can you discharge the stormwater into the nearby laterals?

A: No, there are regulations against discharging stormwater into laterals.

Q: Will there be vegetation along the roadway?

A: Landscaping and aesthetics will be incorporated into the preliminary design, with considerations for water harvesting options in the sidewalk buffer areas.

Q: Ponding on the Zia Middle School field will interrupt day-to-day use (PE, community use, sports practice).

A: We will continue to coordinate with the school district.

Q: Ponding on the Zia Middle School field may cause health risks to students.

A: Draining of the pond will meet minimum criteria for draining with 96 hours.

Q: Instead of ponding why not upgrade and tie into the existing storm drain system?

A: If it alleviates issues and if funding is available that may be possible.

UNIVERSITY AVENUE CORRIDOR STUDY
PHASE B - DETAILED EVALUATION OF ALTERNATIVES

PUBLIC MEETING
September 10, 2019
5:30 to 7:00 PM

U.S. Department of Transportation Federal Highway Administration

New Mexico DEPARTMENT OF TRANSPORTATION

Bohannan Huston

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UNIVERSITY AVENUE CORRIDOR STUDY
PHASE B - DETAILED EVALUATION OF ALTERNATIVES

PUBLIC MEETING
September 10, 2019
5:30 to 7:00 PM

U.S. Department of Transportation Federal Highway Administration

New Mexico DEPARTMENT OF TRANSPORTATION

Bohannan Huston

NAME	EMAIL	PHONE NUMBER
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UNIVERSITY AVENUE CORRIDOR STUDY
PHASE B - DETAILED EVALUATION OF ALTERNATIVES

PUBLIC MEETING
September 10, 2019
5:30 to 7:00 PM

U.S. Department of Transportation Federal Highway Administration

New Mexico Department of Transportation

Bohannan Huston

NAME	EMAIL	PHONE NUMBER
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UNIVERSITY AVENUE CORRIDOR STUDY
PHASE B - DETAILED EVALUATION OF ALTERNATIVES

PUBLIC MEETING
September 10, 2019
5:30 to 7:00 PM

U.S. Department of Transportation Federal Highway Administration

New Mexico DEPARTMENT OF TRANSPORTATION

Bohannan Huston

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Jerry Gonzalez	Jerry@spotteddogbrewery.com	575. 640. 2346
NORA L. BARRAZA	Town of Mesilla	
Fr Gabriel Rochelle	gabrielcroch@ abl. com	520 1916
Todd GREGORY	tgregory@lcps.net	527663/
GREGORY STERVANICK	emmebk@gmail.com	575-647-4260

UNIVERSITY AVENUE PHASE B

Stakeholder Meeting
September 5, 2019

U.S. Department of Transportation
Federal Highway Administration

New Mexico DEPARTMENT OF TRANSPORTATION

Bohannan Huston

CN LC00290

AGENDA

- Purpose and Need
- Project Background
- Detailed Evaluation of Alternatives / Phase B
- Preferred Alternative

Bohannan Huston

0 0.25 0.5 Miles

University Avenue
Study Area
City Limits

Study Area Map

PURPOSE AND NEED

PUPROSE

Provide an enhanced multi-modal transportation corridor

NEED

- Safety concerns due to potential pedestrian/bicycle/vehicular conflicts
- Physical deficiencies due to lack of shoulders, pedestrian facilities, and bicycle facilities
- Potential for economic development opportunities as a result of improving connectivity

PROJECT BACKGROUND

- The initial University Avenue Phase A Corridor Study was completed in 2016.
- The previous project was led by the Mesilla Valley MPO and resulted in preferred alternatives for further study along the corridor.
- Since then, the NMDOT has obtained funding to continue through to design and construction.

PREVIOUS PUBLIC INVOLVEMENT ACTIVITIES

- May 16 – Stakeholder Meeting #1
- May 21 – Bicycle Pedestrian Advisory Committee (BPAC) #1
- June 5 – Public Meeting #1
- June 6 – Technical Advisory Committee (TAC) #1
- June 12 – Policy Committee

PUBLIC INVOLVEMENT SCHEDULE

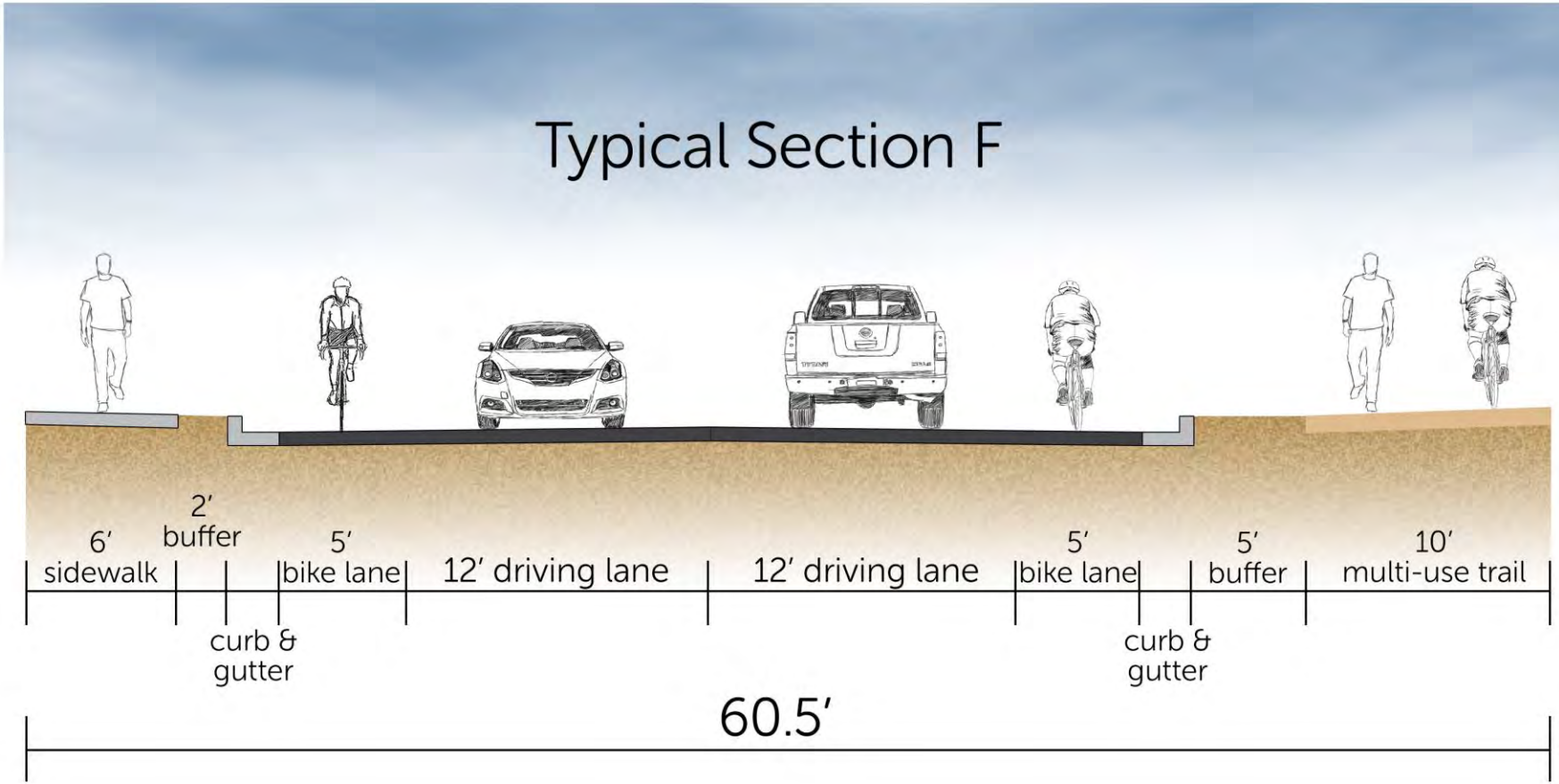
- September 5 – Stakeholder Meeting #2
- September 5 – MVMPO Technical Advisory Committee #2
- September 10 – Public Meeting #2
- September 11 – MVMPO Policy Committee #2
- September 17 – MVMPO Bicycle Pedestrian Advisory Committee #2

PHASE A – ALTERNATIVES

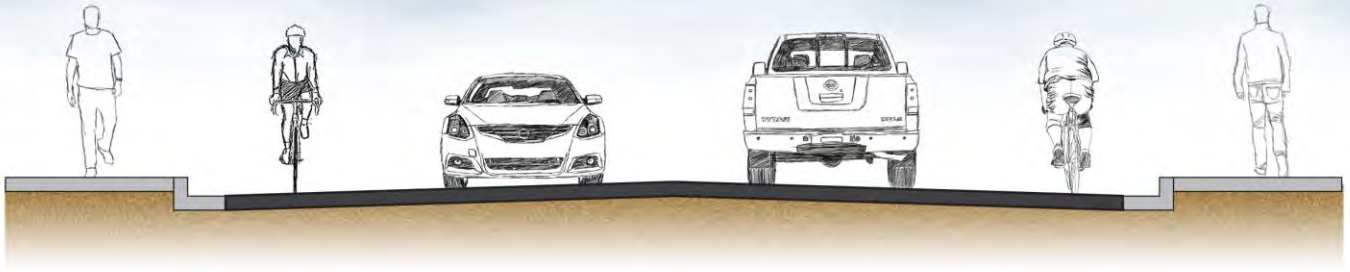
- Evaluated 6 Alternatives
  - Considered many factors

- Chose Preferred Alternative (F)
  - Created 7th Alternative (G)
    - to address limited ROW

Typical Section F



Typical Section G



4′-6′ Sidewalk	curb & gutter	5′ Bike Lane	11′ - 12′ Driving Lane	11′ - 12′ Driving Lane	5′ Bike Lane	curb & gutter	4′-6′ Sidewalk

44.0′ - 50.0′

PHASE B – DETAILED ANALYSIS

- Roadway Evaluation Metrics
- Drainage Evaluation Metrics

ROADWAY EVALUATION METRICS

Evaluation Metrics	No-Build	Alternative F	Alternative G
Meets Purpose and Need	-1-	-5-	-5-
Traffic Operations	-3-	-5-	-5-
Multi-Modal Access	-1-	-5-	-4-
Safety	-3-	-5-	-4-
Access Management	-3-	-5-	-5-
Constructability	-5-	-3-	-2-
Right-of-Way	-5-	-2-	-3-
Cost	-5-	-1-	-1-
Environmental Resources	-5-	-5-	-5-
Social Impacts	-3-	-4-	-5-
Community Support	-1-	-5-	-4-
TOTAL	**35**	**45**	**43**

DRAINAGE EVALUATION

- Four proposed drainage alternatives
  - Two west of College Lateral
  - Two east of College Lateral
- Considers
  - Right-of-way needs
  - Engineering feasibility
  - Drainage operation
  - Potential environmental impact
- Any drainage alternative can be paired with the preferred roadway alternative

DRAINAGE EVALUATION
ALTERNATIVE W1

- Runoff will be conveyed to one pond:
  - Pond W1 - southeast corner of University Ave and Avenida de Mesilla
- 0.5-acre tract was acquired by NMDOT in the early 1990s

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Folder: p:\20190569\NMDOT-PCN\Study and Conceptual Design\PHASE B\Drainage\Data\Programs\ArcGIS\Maps\

Roadway High & Low Points (Existing)
- High
- Low
- Existing Road Slope Direction

- Extisting Storm Drain
- EBID Facilities
- Proposed Trunk Storm Drain (24")
- Proposed Trunk Storm Drain (36")

- Conceptual Pond Footprint
- Corridor Drainage Subbasins
- Offsite Subbasins
- Parcels

0 250 500 Feet

1 inch equals 250 feet

University Avenue
Corridor Study - Phase B

Drainage Alternative W1

DRAINAGE EVALUATION
ALTERNATIVE W2

- Runoff will be conveyed to two ponds:
  - Pond W2-A - southeast corner of University Ave and Avenida de Mesilla
  - Pond W2-B – Zia Middle School field
- Will require coordination with Zia Middle School

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Roadway High & Low Points (Existing)
- High
- Low
- Existing Road Slope Direction

- Extisting Storm Drain
- EBID Facilities
- Proposed Trunk Storm Drain (24")
- Conceptual Pond Footprint

- Corridor Drainage Subbasins
- Offsite Subbasins
- Parcels

0 250 500 Feet

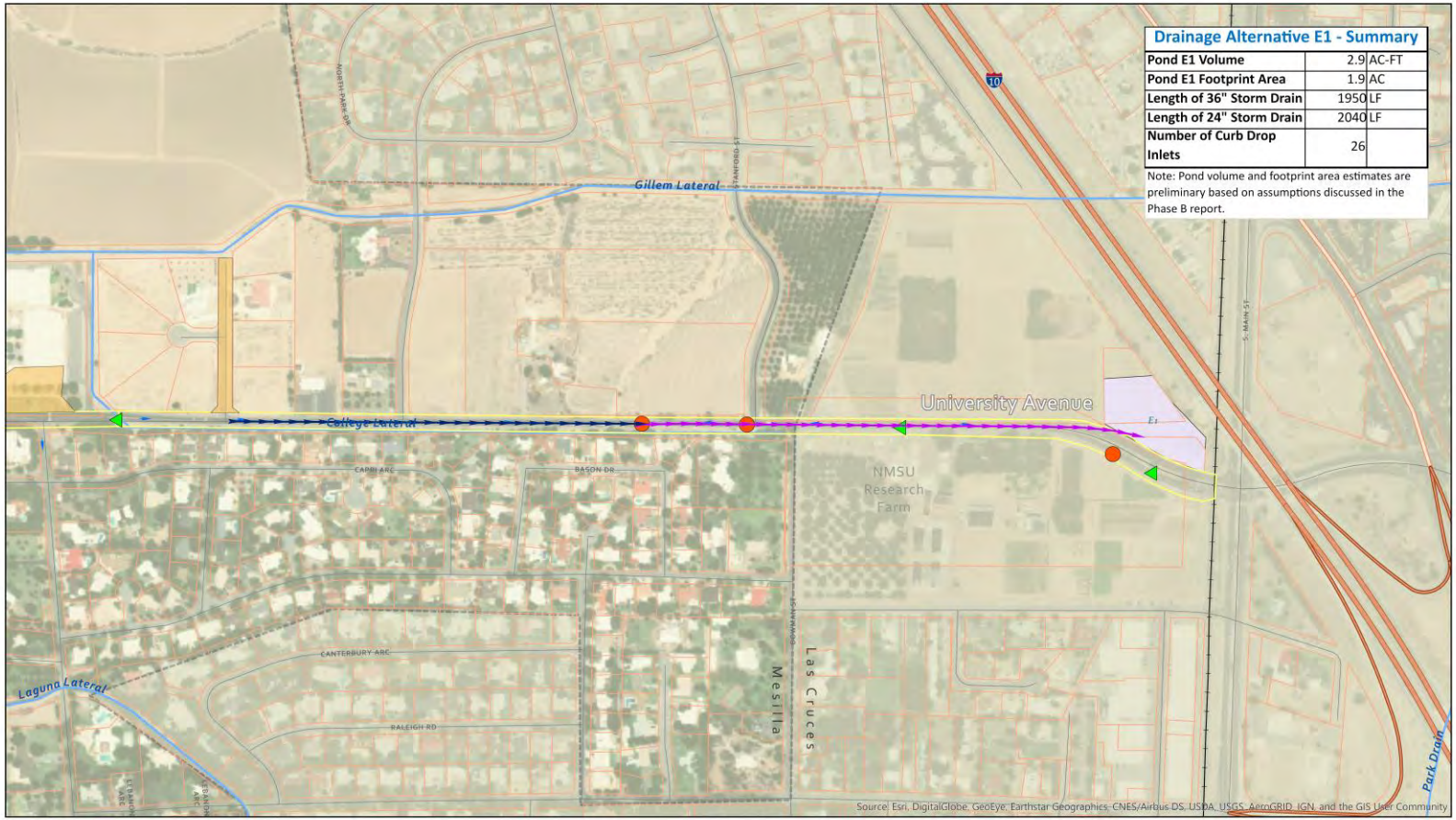
1 inch equals 250 feet

University Avenue
Corridor Study - Phase B

Drainage Alternative W2

DRAINAGE EVALUATION
ALTERNATIVE E1

- Runoff will be conveyed to one pond:
  - Pond E1 – northwest corner of University Ave and Main Street (west of the railroad)
- Site is partially on existing NMDOT right-of-way and a portion is owned by NMSU



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Roadway High & Low Points (Existing)
- High
- Low
- Existing Road Slope Direction

- EBID Facilities
- Proposed Trunk Storm Drain (24")
- Proposed Trunk Storm Drain (36")
- Conceptual Pond Footprint
- Corridor Drainage Subbasins
- Offsite Subbasins
- Parcels

0 350 700 Feet

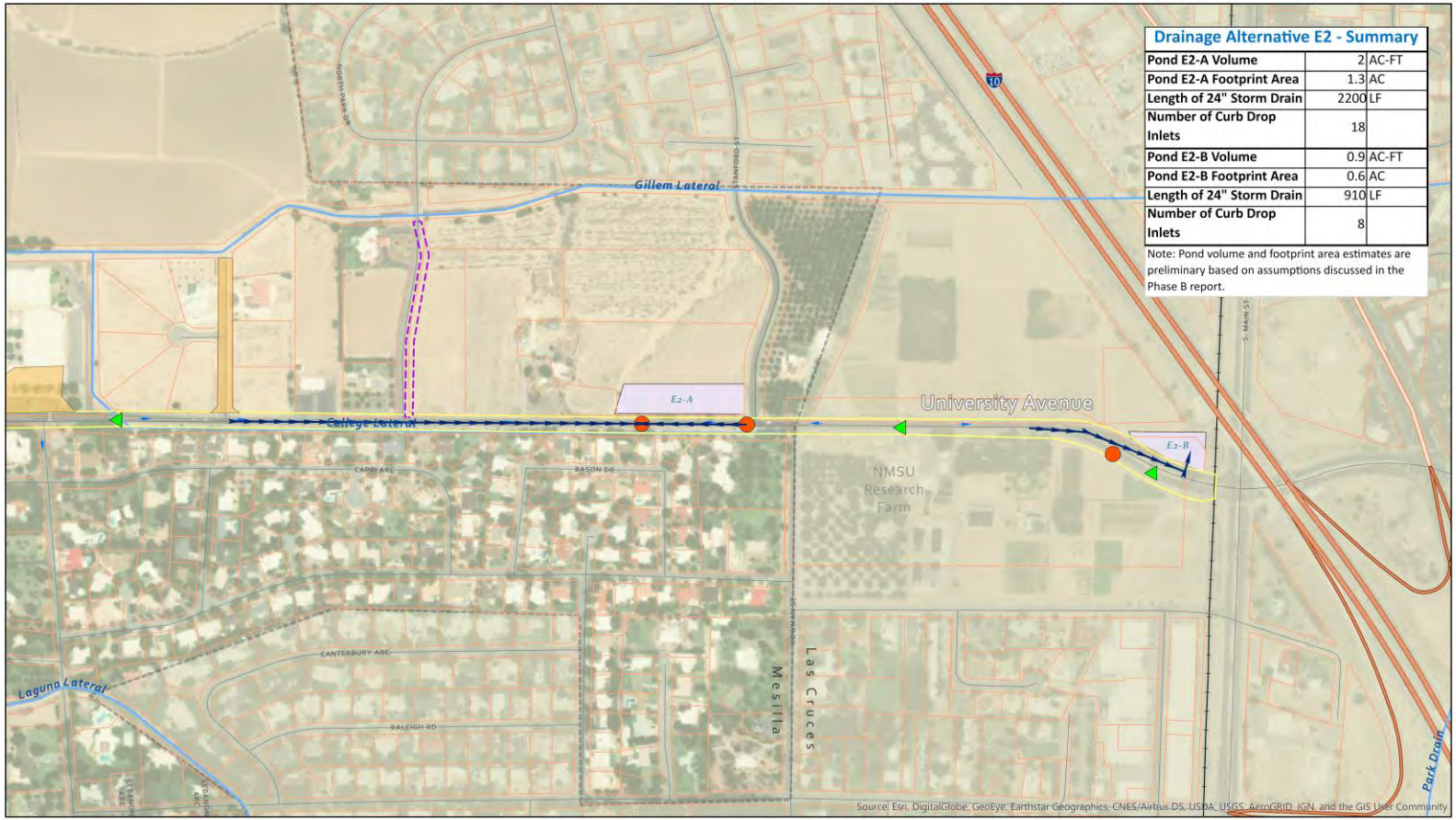
1 inch equals 350 feet

University Avenue
Corridor Study - Phase B

Drainage Alternative
E1

DRAINAGE EVALUATION
ALTERNATIVE E2

- Runoff will be conveyed to two ponds:
  - Pond E2-A – northwest corner of University Ave and Stanford Street
  - Pond E2-B – northwest corner of University Ave and Main Street (west of the railroad)
- Will require property owner coordination
- Easement along Old Farm Road considered



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Roadway High & Low Points (Existing)
- High
- Low
- Existing Road Slope Direction

- EBID Facilities
- Proposed Trunk Storm Drain (24")
- Conceptual Pond Footprint
- Corridor Drainage Subbasins
- Offsite Subbasins
- Parcels
- Existing CME

0 350 700 Feet

1 inch equals 350 feet

University Avenue
Corridor Study - Phase B

Drainage Alternative
E2

DRAINAGE EVALUATION METRICS

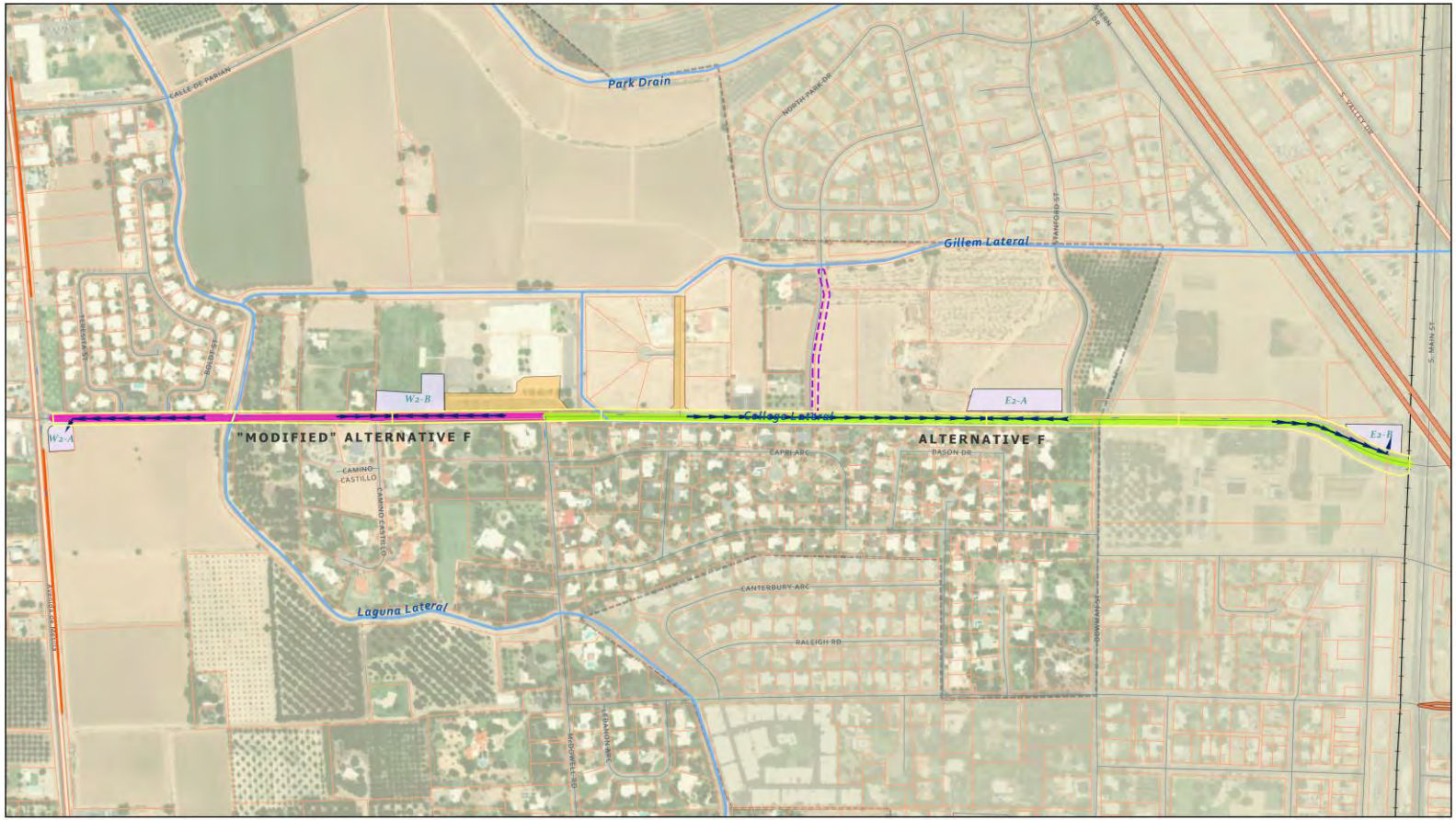
Evaluation Metrics	No-Build	Alternative W1	Alternative W2	Alternative E1	Alternative E2
Meets Purpose and Need	-1-	-5-	-5-	-5-	-5-
Long-Term Benefits	-1-	-3-	-5-	-3-	-5-
Land Use	-5-	-3-	-2-	-3-	-1-
Constructability	-5-	-1-	-3-	-1-	-3-
Right-of-Way	-5-	-3-	-3-	-3-	-2-
Cost	-5-	-1-	-3-	-1-	-3-
Environmental Resources	-5-	-5-	-5-	-5-	-5-
Social Impacts	-3-	-3-	-2-	-3-	-3-
Community Support	-1-	-4-	-4-	-4-	-4-
TOTAL	**31**	**28**	**32**	**28**	**31**

NEXT STEPS

- September/October 2019 – Phase B Final Report
- December 2019 – Phase C Environmental Investigation and Documentation
- December 2019 – 30% Design
- FFY2022 - Construction

CONCLUSIONS

- Preferred roadway alternative
  - Alternative F – McDowell to Main Street
  - Alternative F (no buffer) – Avenida de Mesilla to McDowell
- Ponding for drainage alternative
  - Alternative W2
  - Alternative E2



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Existing Road Slope Direction
Extisting Storm Drain
EBID Facilities
Proposed Trunk Storm Drain (24")
Conceptual Pond Footprint
Corridor Drainage Subbasins
Offsite Subbasins
Parcels
Existing CME
"Modified" Alternative F
Alternative F

0 475 950 Feet
1 inch equals 475 feet

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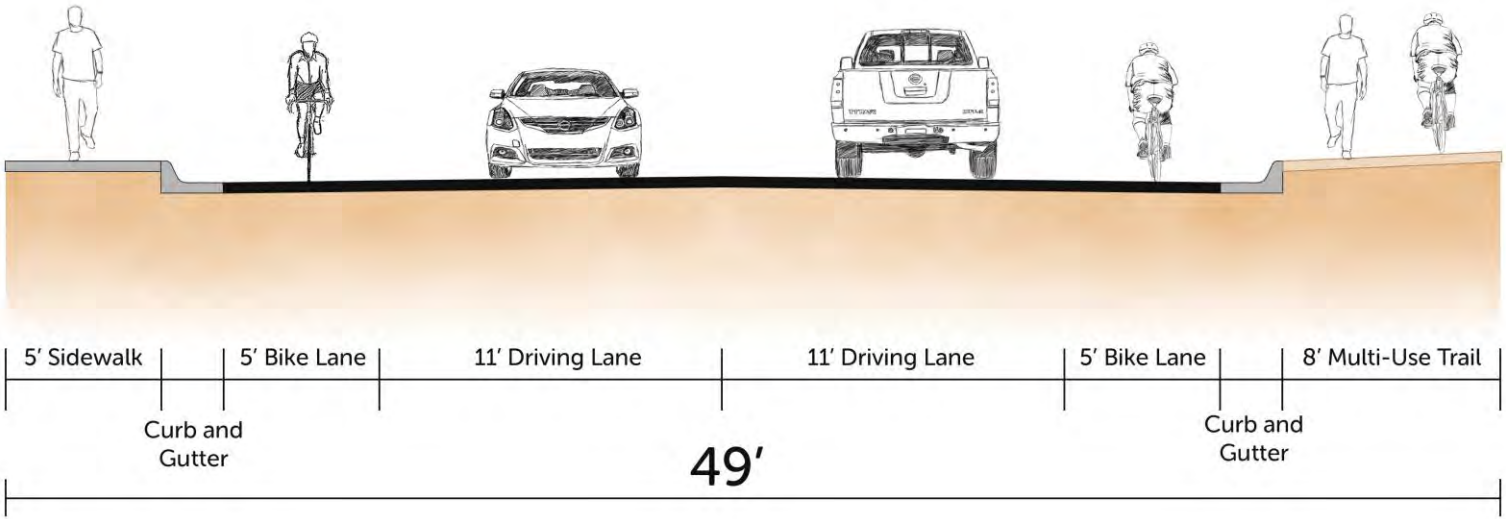
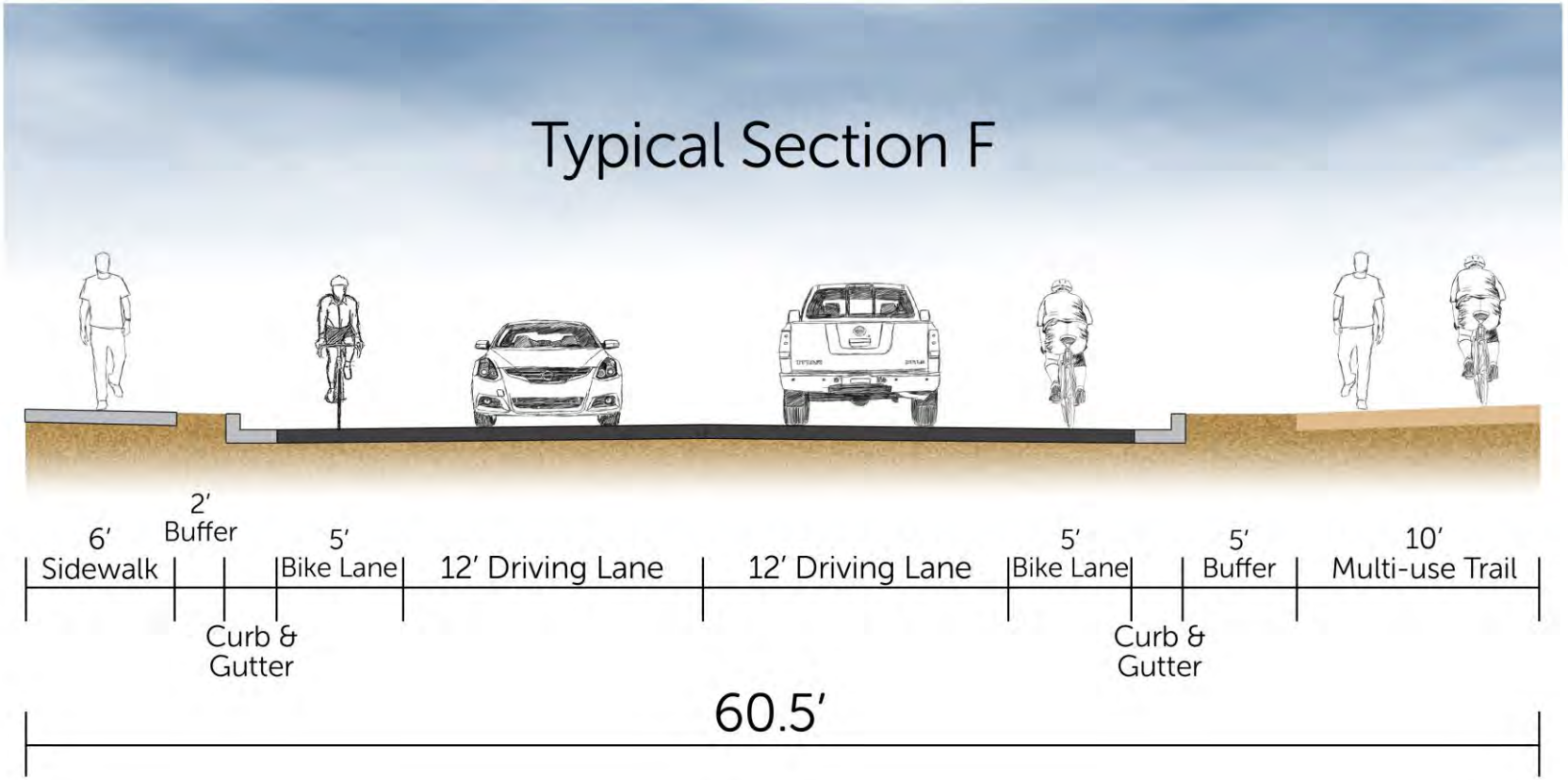
University Avenue
Corridor Study - Phase B

Preferred Alternatives

Modified Typical Section F



Typical Section F



QUESTIONS & COMMENTS

- **Alvin Dominguez, PE (BHI)**

adominguez@bhinc.com

- **Mark Salazar, PE (NMDOT)**

mark.Salazar@state.nm.us

UNIVERSITY AVENUE CORRIDOR STUDY
PHASE B - DETAILED EVALUATION OF ALTERNATIVES
PUBLIC MEETING
September 10, 2019

Name: Joan Woodward, FASLA

Address: PO 699 Fairacres NM 88033

Please share your thoughts on the Preferred Alternative

Landscaped buffers, stormwater ponds and rights-of-way must be included + highlighted in design. Stormwater harvesting opportunities should be stressed to set a good regional example for this important project!

Thank you.

Please send questions and comments to Melanie Bishop, Bohannan Huston Inc., by phone (505)923-3340, email mbishop@bhinc.com, or fax (505)798-7988.

U.S. Department of Transportation Federal Highway Administration

New Mexico Department of Transportation

Bohannan Huston

UNIVERSITY AVENUE CORRIDOR STUDY
PHASE B - DETAILED EVALUATION OF ALTERNATIVES
PUBLIC MEETING
September 10, 2019

Name: Dona Devine

Address: 4124 Papago Ct LC –

Please share your thoughts on the Preferred Alternative

Please – NO Bollards!

Thanks

Please send questions and comments to Melanie Bishop, Bohannan Huston Inc., by phone (505)923-3340, email mbishop@bhinc.com, or fax (505)798-7988.

U.S. Department of Transportation Federal Highway Administration

New Mexico Department of Transportation

Bohannan Huston

Appendix B | Traffic Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	100	31	34	84	126	23	271	69	95	150	65
Future Volume (veh/h)	58	100	31	34	84	126	23	271	69	95	150	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1856	1856	1856
Adj Flow Rate, veh/h	65	112	35	38	94	142	26	304	78	107	169	73
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	3	3	3
Cap, veh/h	169	275	77	170	395	480	641	636	163	544	580	251
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.07	0.45	0.45	0.09	0.47	0.47
Sat Flow, veh/h	381	900	253	389	1292	1572	1753	1413	363	1767	1229	531
Grp Volume(v), veh/h	212	0	0	132	0	142	26	0	382	107	0	242
Grp Sat Flow(s),veh/h/ln	1534	0	0	1681	0	1572	1753	0	1775	1767	0	1760
Q Serve(g_s), s	4.8	0.0	0.0	0.0	0.0	6.2	0.6	0.0	13.6	2.6	0.0	7.6
Cycle Q Clear(g_c), s	9.6	0.0	0.0	4.8	0.0	6.2	0.6	0.0	13.6	2.6	0.0	7.6
Prop In Lane	0.31		0.17	0.29		1.00	1.00		0.20	1.00		0.30
Lane Grp Cap(c), veh/h	521	0	0	565	0	480	641	0	799	544	0	831
V/C Ratio(X)	0.41	0.00	0.00	0.23	0.00	0.30	0.04	0.00	0.48	0.20	0.00	0.29
Avail Cap(c_a), veh/h	521	0	0	565	0	480	641	0	799	544	0	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	0.0	23.4	0.0	23.9	10.6	0.0	17.3	11.1	0.0	14.5
Incr Delay (d2), s/veh	2.4	0.0	0.0	1.0	0.0	1.6	0.1	0.0	2.0	0.8	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	0.0	0.0	4.0	0.0	4.4	0.5	0.0	9.7	1.9	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	0.0	0.0	24.3	0.0	25.4	10.7	0.0	19.4	11.9	0.0	15.4
LnGrp LOS	C	A	A	C	A	C	B	A	B	B	A	B
Approach Vol, veh/h		212			274			408			349	
Approach Delay, s/veh		27.2			24.9			18.8			14.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	45.0		32.0	11.0	47.0		32.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.5	40.5		27.5	6.5	42.5		27.5				
Max Q Clear Time (g_c+I1), s	4.6	15.6		11.6	2.6	9.6		8.2				
Green Ext Time (p_c), s	0.1	2.5		1.1	0.0	1.5		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	260	233	0	4	10
Future Vol, veh/h	3	260	233	0	4	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	3	265	238	0	4	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	238	0	-	0	509	238
Stage 1	-	-	-	-	238	-
Stage 2	-	-	-	-	271	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1323	-	-	-	524	801
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1323	-	-	-	522	801
Mov Cap-2 Maneuver	-	-	-	-	522	-
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1323	-	-	-	695
HCM Lane V/C Ratio	0.002	-	-	-	0.021
HCM Control Delay (s)	7.7	0	-	-	10.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	264	229	1	4	1
Future Vol, veh/h	0	264	229	1	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	0	267	231	1	4	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	232	0	-	0	499	232
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	267	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1330	-	-	-	531	807
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	778	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1330	-	-	-	531	807
Mov Cap-2 Maneuver	-	-	-	-	531	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	778	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1330	-	-	-	570
HCM Lane V/C Ratio	-	-	-	-	0.009
HCM Control Delay (s)	0	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	6	2	226	4	9
Future Vol, veh/h	260	6	2	226	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	268	6	2	233	4	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	274	0	508	271
Stage 1	-	-	-	-	271	-
Stage 2	-	-	-	-	237	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1283	-	525	768
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1283	-	524	768
Mov Cap-2 Maneuver	-	-	-	-	524	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	802	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	672	-	-	1283	-
HCM Lane V/C Ratio	0.02	-	-	0.002	-
HCM Control Delay (s)	10.5	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	278	11	14	208	28	37
Future Vol, veh/h	278	11	14	208	28	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	299	12	15	224	30	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	311	0	559	305
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	254	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1249	-	490	735
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1249	-	483	735
Mov Cap-2 Maneuver	-	-	-	-	483	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	600	-	-	1249	-
HCM Lane V/C Ratio	0.116	-	-	0.012	-
HCM Control Delay (s)	11.8	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	360	73	1	1	1
Future Vol, veh/h	1	360	73	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	4	4	5	5	2	2
Mvmt Flow	1	424	86	1	1	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	87	0	-	0	513	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	426	-
Critical Hdwy	4.14	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1496	-	-	-	521	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	659	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1496	-	-	-	520	971
Mov Cap-2 Maneuver	-	-	-	-	520	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	659	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1496	-	-	-	677
HCM Lane V/C Ratio	0.001	-	-	-	0.003
HCM Control Delay (s)	7.4	0	-	-	10.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	357	336	8	8	7
Future Vol, veh/h	4	357	336	8	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	4	4	5	5	2	2
Mvmt Flow	5	410	386	9	9	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	395	0	-	0	811	391
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	420	-
Critical Hdwy	4.14	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1153	-	-	-	349	658
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	663	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1153	-	-	-	347	658
Mov Cap-2 Maneuver	-	-	-	-	347	-
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	663	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1153	-	-	-	445
HCM Lane V/C Ratio	0.004	-	-	-	0.039
HCM Control Delay (s)	8.1	0	-	-	13.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	343	318	22	52	25
Future Vol, veh/h	19	343	318	22	52	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	381	353	24	58	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	377	0	-	0	788	365
Stage 1	-	-	-	-	365	-
Stage 2	-	-	-	-	423	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1181	-	-	-	360	680
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1181	-	-	-	352	680
Mov Cap-2 Maneuver	-	-	-	-	352	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	661	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1181	-	-	-	417
HCM Lane V/C Ratio	0.018	-	-	-	0.205
HCM Control Delay (s)	8.1	0	-	-	15.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	379	16	18	322	18	27
Future Vol, veh/h	379	16	18	322	18	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	5	5	2	2
Mvmt Flow	416	18	20	354	20	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	434	0	819	425
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	394	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1110	-	345	629
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1110	-	337	629
Mov Cap-2 Maneuver	-	-	-	-	337	-
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	681	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	467	-	-	1110	-
HCM Lane V/C Ratio	0.106	-	-	0.018	-
HCM Control Delay (s)	13.6	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	216	84	120	157	9	108	650	237	7	323	78
Future Volume (veh/h)	110	216	84	120	157	9	108	650	237	7	323	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	227	88	126	165	9	114	684	249	7	340	82
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	2	2	2	2	2	2
Cap, veh/h	514	571	215	456	874	47	500	1362	608	331	997	237
Arrive On Green	0.09	0.23	0.23	0.13	0.26	0.26	0.09	0.38	0.38	0.06	0.35	0.35
Sat Flow, veh/h	1767	2506	943	1739	3346	181	1781	3554	1585	1781	2847	678
Grp Volume(v), veh/h	116	158	157	126	85	89	114	684	249	7	210	212
Grp Sat Flow(s),veh/h/ln	1767	1763	1686	1739	1735	1793	1781	1777	1585	1781	1777	1748
Q Serve(g_s), s	4.3	6.8	7.2	4.5	3.4	3.5	3.4	13.2	10.3	0.2	7.9	8.1
Cycle Q Clear(g_c), s	4.3	6.8	7.2	4.5	3.4	3.5	3.4	13.2	10.3	0.2	7.9	8.1
Prop In Lane	1.00		0.56	1.00		0.10	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	514	402	384	456	453	468	500	1362	608	331	622	612
V/C Ratio(X)	0.23	0.39	0.41	0.28	0.19	0.19	0.23	0.50	0.41	0.02	0.34	0.35
Avail Cap(c_a), veh/h	514	402	384	456	453	468	500	1362	608	331	622	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	29.5	29.6	20.2	25.8	25.9	15.0	21.2	20.3	16.3	21.6	21.6
Incr Delay (d2), s/veh	1.0	2.9	3.2	1.5	0.9	0.9	1.1	1.3	2.0	0.1	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	5.7	5.7	3.5	2.7	2.8	2.6	9.4	7.3	0.2	6.2	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	32.3	32.8	21.7	26.8	26.8	16.1	22.5	22.3	16.4	23.0	23.2
LnGrp LOS	C	C	C	C	C	C	B	C	C	B	C	C
Approach Vol, veh/h		431			300			1047			429	
Approach Delay, s/veh		30.0			24.6			21.8			23.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	39.0	16.0	25.0	13.0	36.0	13.0	28.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	34.5	11.5	20.5	8.5	31.5	8.5	23.5
Max Q Clear Time (g_c+I1), s	2.2	15.2	6.5	9.2	5.4	10.1	6.3	5.5
Green Ext Time (p_c), s	0.0	5.5	0.1	1.4	0.1	2.5	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	35	14	55	92	124	33	212	35	108	280	67
Future Volume (veh/h)	16	35	14	55	92	124	33	212	35	108	280	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	40	16	62	105	141	38	241	40	123	318	76
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	274	98	207	327	449	564	721	120	667	705	169
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.08	0.46	0.46	0.11	0.48	0.48
Sat Flow, veh/h	285	968	346	535	1155	1585	1781	1564	260	1781	1459	349
Grp Volume(v), veh/h	74	0	0	167	0	141	38	0	281	123	0	394
Grp Sat Flow(s),veh/h/ln	1598	0	0	1690	0	1585	1781	0	1824	1781	0	1808
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	6.3	0.9	0.0	8.8	2.9	0.0	13.0
Cycle Q Clear(g_c), s	6.4	0.0	0.0	6.4	0.0	6.3	0.9	0.0	8.8	2.9	0.0	13.0
Prop In Lane	0.24		0.22	0.37		1.00	1.00		0.14	1.00		0.19
Lane Grp Cap(c), veh/h	503	0	0	534	0	449	564	0	841	667	0	874
V/C Ratio(X)	0.15	0.00	0.00	0.31	0.00	0.31	0.07	0.00	0.33	0.18	0.00	0.45
Avail Cap(c_a), veh/h	503	0	0	534	0	449	564	0	841	667	0	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	25.4	0.0	25.4	10.2	0.0	15.4	9.6	0.0	15.4
Incr Delay (d2), s/veh	0.6	0.0	0.0	1.5	0.0	1.8	0.2	0.0	1.1	0.6	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.0	0.0	5.4	0.0	0.4	0.7	0.0	6.8	2.1	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	0.0	26.9	0.0	27.2	10.5	0.0	16.5	10.2	0.0	17.0
LnGrp LOS	C	A	A	C	A	C	B	A	B	B	A	B
Approach Vol, veh/h		74			308			319			517	
Approach Delay, s/veh		24.7			27.0			15.8			15.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	46.0		30.0	12.0	48.0		30.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	41.5		25.5	7.5	43.5		25.5				
Max Q Clear Time (g_c+I1), s	4.9	10.8		8.4	2.9	15.0		8.4				
Green Ext Time (p_c), s	0.1	1.8		0.3	0.0	2.6		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			19.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	183	263	6	2	7
Future Vol, veh/h	4	183	263	6	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	210	302	7	2	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	309	0	-	0	526	306
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	220	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1252	-	-	-	512	734
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1252	-	-	-	509	734
Mov Cap-2 Maneuver	-	-	-	-	509	-
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1252	-	-	-	668
HCM Lane V/C Ratio	0.004	-	-	-	0.015
HCM Control Delay (s)	7.9	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	181	265	4	2	1
Future Vol, veh/h	4	181	265	4	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	210	308	5	2	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	313	0	-	0	531	311
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	220	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1247	-	-	-	509	729
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1247	-	-	-	506	729
Mov Cap-2 Maneuver	-	-	-	-	506	-
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1247	-	-	-	563
HCM Lane V/C Ratio	0.004	-	-	-	0.006
HCM Control Delay (s)	7.9	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	212	7	6	235	2	10
Future Vol, veh/h	212	7	6	235	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	2	2	4	4	2	2
Mvmt Flow	316	10	9	351	3	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	326	0	690	321
Stage 1	-	-	-	-	321	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	-	-	4.14	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.236	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1222	-	411	720
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1222	-	407	720
Mov Cap-2 Maneuver	-	-	-	-	407	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	699	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	638	-	-	1222	-
HCM Lane V/C Ratio	0.028	-	-	0.007	-
HCM Control Delay (s)	10.8	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	231	40	16	214	24	17
Future Vol, veh/h	231	40	16	214	24	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	4	4	3	3	2	2
Mvmt Flow	345	60	24	319	36	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	405	0	742	375
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	367	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1148	-	383	671
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1148	-	373	671
Mov Cap-2 Maneuver	-	-	-	-	373	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	457	-	-	1148	-
HCM Lane V/C Ratio	0.134	-	-	0.021	-
HCM Control Delay (s)	14.1	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	311	286	10	13	4
Future Vol, veh/h	5	311	286	10	13	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	62	62	62	62	62	62
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	8	502	461	16	21	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	477	0	-	0	987	469
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	518	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1080	-	-	-	274	594
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1080	-	-	-	271	594
Mov Cap-2 Maneuver	-	-	-	-	271	-
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1080	-	-	-	311
HCM Lane V/C Ratio	0.007	-	-	-	0.088
HCM Control Delay (s)	8.4	0	-	-	17.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	318	288	12	7	8
Future Vol, veh/h	7	318	288	12	7	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	61	61	61	61	61	61
Heavy Vehicles, %	3	3	3	3	13	13
Mvmt Flow	11	521	472	20	11	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	492	0	-	0	1025	482
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	543	-
Critical Hdwy	4.13	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.227	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	1066	-	-	-	248	563
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1066	-	-	-	244	563
Mov Cap-2 Maneuver	-	-	-	-	244	-
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	561	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1066	-	-	-	350
HCM Lane V/C Ratio	0.011	-	-	-	0.07
HCM Control Delay (s)	8.4	0	-	-	16.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	310	270	46	34	18
Future Vol, veh/h	20	310	270	46	34	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	31	484	422	72	53	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	494	0	-	0	1004	458
Stage 1	-	-	-	-	458	-
Stage 2	-	-	-	-	546	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1064	-	-	-	268	603
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	580	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1064	-	-	-	257	603
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	580	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	20
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1064	-	-	-	321
HCM Lane V/C Ratio	0.029	-	-	-	0.253
HCM Control Delay (s)	8.5	0	-	-	20
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	323	21	39	300	17	25
Future Vol, veh/h	323	21	39	300	17	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	482	31	58	448	25	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	513	0	1062	498
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	564	-
Critical Hdwy	-	-	4.12	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.218	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1052	-	244	566
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	564	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1052	-	226	566
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	564	-

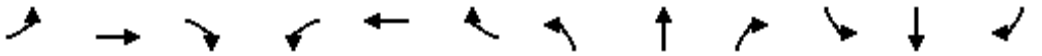
Approach	EB	WB	NB
HCM Control Delay, s	0	1	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	352	-	-	1052	-
HCM Lane V/C Ratio	0.178	-	-	0.055	-
HCM Control Delay (s)	17.4	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	183	87	147	228	12	50	468	204	10	532	71
Future Volume (veh/h)	89	183	87	147	228	12	50	468	204	10	532	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	197	94	158	245	13	54	503	219	11	572	76
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	484	539	247	496	973	51	389	1323	590	385	1104	146
Arrive On Green	0.08	0.23	0.23	0.14	0.28	0.28	0.08	0.37	0.37	0.06	0.35	0.35
Sat Flow, veh/h	1781	2366	1086	1781	3433	181	1781	3554	1585	1781	3154	418
Grp Volume(v), veh/h	96	146	145	158	126	132	54	503	219	11	322	326
Grp Sat Flow(s),veh/h/ln	1781	1777	1675	1781	1777	1838	1781	1777	1585	1781	1777	1795
Q Serve(g_s), s	3.5	6.2	6.6	5.4	4.9	5.0	1.6	9.3	9.1	0.3	12.9	13.0
Cycle Q Clear(g_c), s	3.5	6.2	6.6	5.4	4.9	5.0	1.6	9.3	9.1	0.3	12.9	13.0
Prop In Lane	1.00		0.65	1.00		0.10	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	484	405	382	496	503	521	389	1323	590	385	622	628
V/C Ratio(X)	0.20	0.36	0.38	0.32	0.25	0.25	0.14	0.38	0.37	0.03	0.52	0.52
Avail Cap(c_a), veh/h	484	405	382	496	503	521	389	1323	590	385	622	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	29.2	29.4	18.9	24.9	24.9	15.9	20.7	20.6	16.0	23.2	23.2
Incr Delay (d2), s/veh	0.9	2.5	2.9	1.7	1.2	1.2	0.7	0.8	1.8	0.1	3.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	5.2	5.2	4.3	4.0	4.1	1.3	7.0	6.4	0.3	9.7	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	31.7	32.2	20.6	26.1	26.1	16.7	21.5	22.4	16.1	26.3	26.3
LnGrp LOS	C	C	C	C	C	C	B	C	C	B	C	C
Approach Vol, veh/h		387			416			776			659	
Approach Delay, s/veh		29.9			24.0			21.4			26.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	38.0	17.0	25.0	12.0	36.0	12.0	30.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	33.5	12.5	20.5	7.5	31.5	7.5	25.5
Max Q Clear Time (g_c+I1), s	2.3	11.3	7.4	8.6	3.6	15.0	5.5	7.0
Green Ext Time (p_c), s	0.0	4.2	0.2	1.3	0.0	3.7	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	121	38	41	102	152	28	328	83	115	182	79
Future Volume (veh/h)	70	121	38	41	102	152	28	328	83	115	182	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1856	1856	1856
Adj Flow Rate, veh/h	79	136	43	46	115	171	31	369	93	129	204	89
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	3	3	3
Cap, veh/h	159	258	73	162	377	480	593	638	161	484	592	258
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.06	0.45	0.45	0.09	0.48	0.48
Sat Flow, veh/h	349	845	239	360	1235	1572	1753	1419	358	1767	1225	534
Grp Volume(v), veh/h	258	0	0	161	0	171	31	0	462	129	0	293
Grp Sat Flow(s),veh/h/ln	1432	0	0	1596	0	1572	1753	0	1776	1767	0	1759
Q Serve(g_s), s	8.0	0.0	0.0	0.0	0.0	7.6	0.8	0.0	17.4	3.2	0.0	9.3
Cycle Q Clear(g_c), s	14.2	0.0	0.0	6.3	0.0	7.6	0.8	0.0	17.4	3.2	0.0	9.3
Prop In Lane	0.31		0.17	0.29		1.00	1.00		0.20	1.00		0.30
Lane Grp Cap(c), veh/h	490	0	0	539	0	480	593	0	799	484	0	850
V/C Ratio(X)	0.53	0.00	0.00	0.30	0.00	0.36	0.05	0.00	0.58	0.27	0.00	0.34
Avail Cap(c_a), veh/h	490	0	0	539	0	480	593	0	799	484	0	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	0.0	23.8	0.0	24.3	11.2	0.0	18.4	11.9	0.0	14.4
Incr Delay (d2), s/veh	4.0	0.0	0.0	1.4	0.0	2.1	0.2	0.0	3.0	1.3	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.8	0.0	0.0	5.0	0.0	5.5	0.6	0.0	11.9	2.4	0.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	0.0	25.2	0.0	26.4	11.3	0.0	21.4	13.2	0.0	15.5
LnGrp LOS	C	A	A	C	A	C	B	A	C	B	A	B
Approach Vol, veh/h		258			332			493			422	
Approach Delay, s/veh		30.5			25.8			20.8			14.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	45.0		32.0	10.0	48.0		32.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.5	40.5		27.5	5.5	43.5		27.5				
Max Q Clear Time (g_c+I1), s	5.2	19.4		16.2	2.8	11.3		9.6				
Green Ext Time (p_c), s	0.1	3.0		1.2	0.0	1.9		1.4				

Intersection Summary												
HCM 6th Ctrl Delay			21.9									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	315	282	0	5	12
Future Vol, veh/h	4	315	282	0	5	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	4	321	288	0	5	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	288	0	-	0	617	288
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1268	-	-	-	453	751
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	729	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1268	-	-	-	451	751
Mov Cap-2 Maneuver	-	-	-	-	451	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	729	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1268	-	-	-	628
HCM Lane V/C Ratio	0.003	-	-	-	0.028
HCM Control Delay (s)	7.8	0	-	-	10.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	319	277	1	5	1
Future Vol, veh/h	0	319	277	1	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	0	322	280	1	5	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	281	0	-	0	603	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1276	-	-	-	462	758
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1276	-	-	-	462	758
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1276	-	-	-	494
HCM Lane V/C Ratio	-	-	-	-	0.012
HCM Control Delay (s)	0	-	-	-	12.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	315	7	2	273	5	11
Future Vol, veh/h	315	7	2	273	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	325	7	2	281	5	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	332	0	614	329
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	285	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1222	-	455	712
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	763	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1222	-	454	712
Mov Cap-2 Maneuver	-	-	-	-	454	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	763	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	605	-	-	1222	-
HCM Lane V/C Ratio	0.027	-	-	0.002	-
HCM Control Delay (s)	11.1	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	336	13	17	252	34	45
Future Vol, veh/h	336	13	17	252	34	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	361	14	18	271	37	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	375	0	675	368
Stage 1	-	-	-	-	368	-
Stage 2	-	-	-	-	307	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1183	-	419	677
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	746	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1183	-	411	677
Mov Cap-2 Maneuver	-	-	-	-	411	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	746	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	-	-	1183	-
HCM Lane V/C Ratio	0.16	-	-	0.015	-
HCM Control Delay (s)	13.1	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	436	88	1	1	1
Future Vol, veh/h	1	436	88	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	4	4	5	5	2	2
Mvmt Flow	1	513	104	1	1	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	105	0	-	0	620	105
Stage 1	-	-	-	-	105	-
Stage 2	-	-	-	-	515	-
Critical Hdwy	4.14	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1474	-	-	-	452	949
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1474	-	-	-	452	949
Mov Cap-2 Maneuver	-	-	-	-	452	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1474	-	-	-	612
HCM Lane V/C Ratio	0.001	-	-	-	0.004
HCM Control Delay (s)	7.4	0	-	-	10.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	432	407	10	10	8
Future Vol, veh/h	5	432	407	10	10	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	4	4	5	5	2	2
Mvmt Flow	6	497	468	11	11	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	479	0	-	0	983	474
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	509	-
Critical Hdwy	4.14	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.236	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1073	-	-	-	276	590
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1073	-	-	-	274	590
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	604	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1073	-	-	-	360
HCM Lane V/C Ratio	0.005	-	-	-	0.057
HCM Control Delay (s)	8.4	0	-	-	15.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	415	385	27	63	30
Future Vol, veh/h	23	415	385	27	63	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	461	428	30	70	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	458	0	-	0	956	443
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	513	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1103	-	-	-	286	615
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	601	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1103	-	-	-	277	615
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	601	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	20.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1103	-	-	-	337
HCM Lane V/C Ratio	0.023	-	-	-	0.307
HCM Control Delay (s)	8.3	0	-	-	20.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3

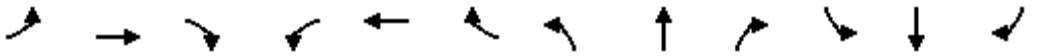
Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	459	19	22	390	22	33
Future Vol, veh/h	459	19	22	390	22	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	5	5	2	2
Mvmt Flow	504	21	24	429	24	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	525	0	992	515
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	477	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1027	-	272	560
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1027	-	264	560
Mov Cap-2 Maneuver	-	-	-	-	264	-
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	624	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	387	-	-	1027	-
HCM Lane V/C Ratio	0.156	-	-	0.024	-
HCM Control Delay (s)	16	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	261	102	145	190	11	131	787	287	8	391	94
Future Volume (veh/h)	133	261	102	145	190	11	131	787	287	8	391	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1826	1826	1826	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	140	275	107	153	200	12	138	828	302	8	412	99
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	2	2	2	2	2	2
Cap, veh/h	493	541	206	417	758	45	489	1402	625	294	965	230
Arrive On Green	0.12	0.22	0.22	0.13	0.23	0.23	0.12	0.39	0.39	0.06	0.34	0.34
Sat Flow, veh/h	1767	2499	949	1739	3326	198	1781	3554	1585	1781	2847	678
Grp Volume(v), veh/h	140	192	190	153	104	108	138	828	302	8	256	255
Grp Sat Flow(s),veh/h/ln	1767	1763	1685	1739	1735	1790	1781	1777	1585	1781	1777	1748
Q Serve(g_s), s	5.2	8.6	9.0	5.7	4.4	4.5	3.9	16.6	12.8	0.2	10.0	10.2
Cycle Q Clear(g_c), s	5.2	8.6	9.0	5.7	4.4	4.5	3.9	16.6	12.8	0.2	10.0	10.2
Prop In Lane	1.00		0.56	1.00		0.11	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	493	382	365	417	395	408	489	1402	625	294	602	592
V/C Ratio(X)	0.28	0.50	0.52	0.37	0.26	0.27	0.28	0.59	0.48	0.03	0.42	0.43
Avail Cap(c_a), veh/h	493	382	365	417	395	408	489	1402	625	294	602	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	31.0	31.1	21.7	28.5	28.6	14.3	21.5	20.4	17.0	23.0	23.0
Incr Delay (d2), s/veh	1.4	4.7	5.2	2.5	1.6	1.6	1.4	1.8	2.7	0.2	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	7.4	7.4	4.6	3.6	3.7	3.1	11.3	8.7	0.2	7.9	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	35.7	36.3	24.2	30.2	30.2	15.7	23.3	23.0	17.2	25.2	25.3
LnGrp LOS	C	D	D	C	C	C	B	C	C	B	C	C
Approach Vol, veh/h		522			365			1268			519	
Approach Delay, s/veh		32.6			27.7			22.4			25.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	40.0	16.0	24.0	15.0	35.0	15.0	25.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	35.5	11.5	19.5	10.5	30.5	10.5	20.5
Max Q Clear Time (g_c+I1), s	2.2	18.6	7.7	11.0	5.9	12.2	7.2	6.5
Green Ext Time (p_c), s	0.0	6.5	0.1	1.4	0.1	3.0	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	36	14	57	95	128	34	218	36	111	288	69
Future Volume (veh/h)	16	36	14	57	95	128	34	218	36	111	288	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	41	16	65	108	145	39	248	41	126	327	78
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	276	96	209	325	449	556	704	116	665	705	168
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.08	0.45	0.45	0.12	0.48	0.48
Sat Flow, veh/h	277	973	339	543	1146	1585	1781	1565	259	1781	1460	348
Grp Volume(v), veh/h	75	0	0	173	0	145	39	0	289	126	0	405
Grp Sat Flow(s),veh/h/ln	1590	0	0	1690	0	1585	1781	0	1824	1781	0	1808
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	6.5	0.9	0.0	9.3	2.9	0.0	13.4
Cycle Q Clear(g_c), s	6.7	0.0	0.0	6.6	0.0	6.5	0.9	0.0	9.3	2.9	0.0	13.4
Prop In Lane	0.24		0.21	0.38		1.00	1.00		0.14	1.00		0.19
Lane Grp Cap(c), veh/h	500	0	0	534	0	449	556	0	821	665	0	874
V/C Ratio(X)	0.15	0.00	0.00	0.32	0.00	0.32	0.07	0.00	0.35	0.19	0.00	0.46
Avail Cap(c_a), veh/h	500	0	0	534	0	449	556	0	821	665	0	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	25.5	0.0	25.4	10.6	0.0	16.2	9.5	0.0	15.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	1.6	0.0	1.9	0.2	0.0	1.2	0.6	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	0.0	0.0	5.6	0.0	4.7	0.7	0.0	7.2	2.1	0.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	0.0	0.0	27.1	0.0	27.3	10.9	0.0	17.4	10.1	0.0	17.2
LnGrp LOS	C	A	A	C	A	C	B	A	B	B	A	B
Approach Vol, veh/h		75			318			328			531	
Approach Delay, s/veh		24.8			27.2			16.6			15.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	45.0		30.0	12.0	48.0		30.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.5	40.5		25.5	7.5	43.5		25.5				
Max Q Clear Time (g_c+I1), s	4.9	11.3		8.7	2.9	15.4		8.6				
Green Ext Time (p_c), s	0.1	1.8		0.3	0.0	2.7		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	188	271	6	2	7
Future Vol, veh/h	4	188	271	6	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	216	311	7	2	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	318	0	-	0	541	315
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1242	-	-	-	502	725
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1242	-	-	-	499	725
Mov Cap-2 Maneuver	-	-	-	-	499	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1242	-	-	-	659
HCM Lane V/C Ratio	0.004	-	-	-	0.016
HCM Control Delay (s)	7.9	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	186	273	4	2	1
Future Vol, veh/h	4	186	273	4	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	216	317	5	2	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	322	0	-	0	546	320
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1238	-	-	-	499	721
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1238	-	-	-	497	721
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1238	-	-	-	554
HCM Lane V/C Ratio	0.004	-	-	-	0.006
HCM Control Delay (s)	7.9	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	218	7	6	242	2	10
Future Vol, veh/h	218	7	6	242	2	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	2	2	4	4	2	2
Mvmt Flow	325	10	9	361	3	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	335	0	709	330
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	379	-
Critical Hdwy	-	-	4.14	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.236	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1213	-	401	712
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	692	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1213	-	397	712
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	692	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	629	-	-	1213	-
HCM Lane V/C Ratio	0.028	-	-	0.007	-
HCM Control Delay (s)	10.9	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	238	41	16	220	25	18
Future Vol, veh/h	238	41	16	220	25	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	4	4	3	3	2	2
Mvmt Flow	355	61	24	328	37	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	416	0	762	386
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	376	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1138	-	373	662
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1138	-	363	662
Mov Cap-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	448	-	-	1138	-
HCM Lane V/C Ratio	0.143	-	-	0.021	-
HCM Control Delay (s)	14.4	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	320	295	10	13	4
Future Vol, veh/h	5	320	295	10	13	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	62	62	62	62	62	62
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	8	516	476	16	21	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	492	0	-	0	1016	484
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	532	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1066	-	-	-	264	583
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1066	-	-	-	261	583
Mov Cap-2 Maneuver	-	-	-	-	261	-
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	589	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	18.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1066	-	-	-	300
HCM Lane V/C Ratio	0.008	-	-	-	0.091
HCM Control Delay (s)	8.4	0	-	-	18.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	328	297	12	7	8
Future Vol, veh/h	7	328	297	12	7	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	61	61	61	87	61	61
Heavy Vehicles, %	3	3	3	3	13	13
Mvmt Flow	11	538	487	14	11	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	501	0	-	0	1054	494
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	560	-
Critical Hdwy	4.13	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.227	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	1058	-	-	-	239	554
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	551	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1058	-	-	-	235	554
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	582	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1058	-	-	-	339
HCM Lane V/C Ratio	0.011	-	-	-	0.073
HCM Control Delay (s)	8.4	0	-	-	16.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	319	278	47	35	19
Future Vol, veh/h	21	319	278	47	35	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	33	498	434	73	55	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	507	0	-	0	1035	471
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	564	-
Critical Hdwy	4.13	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1053	-	-	-	257	593
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1053	-	-	-	246	593
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	569	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	20.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1053	-	-	-	310
HCM Lane V/C Ratio	0.031	-	-	-	0.272
HCM Control Delay (s)	8.5	0	-	-	20.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

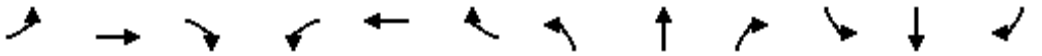
Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	333	22	40	309	18	26
Future Vol, veh/h	333	22	40	309	18	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	497	33	60	461	27	39

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	530	0	1095	514
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	581	-
Critical Hdwy	-	-	4.12	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.218	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1037	-	233	555
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1037	-	215	555
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	548	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	18.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	337	-	-	1037	-
HCM Lane V/C Ratio	0.195	-	-	0.058	-
HCM Control Delay (s)	18.3	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	188	90	151	235	12	52	482	210	10	548	73
Future Volume (veh/h)	92	188	90	151	235	12	52	482	210	10	548	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	202	97	162	253	13	56	518	226	11	589	78
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	538	248	492	975	50	373	1323	590	379	1139	151
Arrive On Green	0.08	0.23	0.23	0.14	0.28	0.28	0.07	0.37	0.37	0.06	0.36	0.36
Sat Flow, veh/h	1781	2360	1090	1781	3440	176	1781	3554	1585	1781	3155	417
Grp Volume(v), veh/h	99	150	149	162	130	136	56	518	226	11	331	336
Grp Sat Flow(s),veh/h/ln	1781	1777	1674	1781	1777	1839	1781	1777	1585	1781	1777	1795
Q Serve(g_s), s	3.6	6.4	6.8	5.5	5.1	5.1	1.7	9.6	9.4	0.3	13.2	13.2
Cycle Q Clear(g_c), s	3.6	6.4	6.8	5.5	5.1	5.1	1.7	9.6	9.4	0.3	13.2	13.2
Prop In Lane	1.00		0.65	1.00		0.10	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	480	405	381	492	503	521	373	1323	590	379	642	648
V/C Ratio(X)	0.21	0.37	0.39	0.33	0.26	0.26	0.15	0.39	0.38	0.03	0.52	0.52
Avail Cap(c_a), veh/h	480	405	381	492	503	521	373	1323	590	379	642	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	29.3	29.5	19.0	24.9	25.0	16.0	20.8	20.7	15.5	22.6	22.6
Incr Delay (d2), s/veh	1.0	2.6	3.0	1.8	1.2	1.2	0.8	0.9	1.9	0.1	3.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	5.4	5.4	4.4	4.1	4.3	1.3	7.3	6.6	0.3	9.8	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	31.9	32.4	20.8	26.2	26.2	16.8	21.6	22.6	15.7	25.5	25.5
LnGrp LOS	C	C	C	C	C	C	B	C	C	B	C	C
Approach Vol, veh/h		398			428			800			678	
Approach Delay, s/veh		30.0			24.1			21.6			25.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	38.0	17.0	25.0	11.0	37.0	12.0	30.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	33.5	12.5	20.5	6.5	32.5	7.5	25.5
Max Q Clear Time (g_c+I1), s	2.3	11.6	7.5	8.8	3.7	15.2	5.6	7.1
Green Ext Time (p_c), s	0.0	4.3	0.2	1.3	0.0	3.9	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: AVENIDA DE MESILLA & UNIVERSITY AVE

AM Peak Hour

	Southbound AVENIDA DE MESILLA			Westbound UNIVERSITY			Northbound AVENIDA DE MESILLA			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	95	150	65	34	84	126	23	271	69	58	100	31
Background Growth	20	32	14	7	18	26	5	57	14	12	21	7
No Build (2040)	115	182	79	41	102	152	28	328	83	70	121	38
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	115	182	79	41	102	152	28	328	83	70	121	38
PHF	*0.89*			*0.89*			*0.89*			*0.89*		
HV %		*3*			*3*			*4*			*4*	

PM Peak Hour

	Southbound AVENIDA DE MESILLA			Westbound UNIVERSITY			Northbound AVENIDA DE MESILLA			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	108	280	67	55	92	124	33	212	35	16	35	14
Background Growth	3	8	2	2	3	4	1	6	1	0	1	0
No Build (2040)	111	288	69	57	95	128	34	218	36	16	36	14
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	111	288	69	57	95	128	34	218	36	16	36	14
PHF	*0.88*			*0.88*			*0.88*			*0.88*		
HV %		*2*			*2*			*2*			*2*	

growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: TERESITA ST & UNIVERSITY AVE

AM Peak Hour

	Southbound TERESITA			Westbound UNIVERSITY			Northbound TERESITA			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	4	0	10	0	233	0	0	0	0	3	260	0
Background Growth	1	0	2	0	49	0	0	0	0	1	55	0
No Build (2040)	5	0	12	0	282	0	0	0	0	4	315	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	5	0	12	0	282	0	0	0	0	4	315	0
PHF	*0.98*			*0.98*			*0.98*			*0.98*		
HV %		*2*			*3*			*2*			*3*	

PM Peak Hour

	Southbound TERESITA			Westbound UNIVERSITY			Northbound TERESITA			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	2	0	7	0	263	6	0	0	0	4	183	0
Background Growth	0	0	0	0	8	0	0	0	0	0	5	0
No Build (2040)	2	0	7	0	271	6	0	0	0	4	188	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	2	0	7	0	271	6	0	0	0	4	188	0
PHF	*0.87*			*0.87*			*0.87*			*0.87*		
HV %		*2*			*2*			*2*			*2*	
growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: BOLDT ST & UNIVERSITY AVE

AM Peak Hour

	Southbound BOLDT			Westbound UNIVERSITY			Northbound BOLDT			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	4	0	1	0	229	1	0	0	0	0	264	0
Background Growth	1	0	0	0	48	0	0	0	0	0	55	0
No Build (2040)	5	0	1	0	277	1	0	0	0	0	319	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	5	0	1	0	277	1	0	0	0	0	319	0

PHF	*0.99*			*0.99*			*0.99*			*0.99*		
HV %		*2*			*3*			*2*			*3*	

PM Peak Hour

	Southbound BOLDT			Westbound UNIVERSITY			Northbound BOLDT			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	2	0	1	0	265	4	0	0	0	4	181	0
Background Growth	0	0	0	0	8	0	0	0	0	0	5	0
No Build (2040)	2	0	1	0	273	4	0	0	0	4	186	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	2	0	1	0	273	4	0	0	0	4	186	0

PHF	*0.86*			*0.86*			*0.86*			*0.86*		
HV %		*2*			*2*			*2*			*2*	

growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: CAMINO CASTILLO & UNIVERSITY AVE

AM Peak Hour

	Southbound CAMINO CASTILLO			Westbound UNIVERSITY			Northbound CAMINO CASTILLO			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	0	0	0	2	226	0	4	0	9	0	260	6
Background Growth	0	0	0	0	47	0	1	0	2	0	55	1
No Build (2040)	0	0	0	2	273	0	5	0	11	0	315	7
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	0	0	0	2	273	0	5	0	11	0	315	7
PHF	*0.97*			*0.97*			*0.97*			*0.97*		
HV %		*2*			*3*			*2*			*3*	

PM Peak Hour

	Southbound CAMINO CASTILLO			Westbound UNIVERSITY			Northbound CAMINO CASTILLO			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	0	0	0	6	235	0	2	0	10	0	212	7
Background Growth	0	0	0	0	7	0	0	0	0	0	6	0
No Build (2040)	0	0	0	6	242	0	2	0	10	0	218	7
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	0	0	0	6	242	0	2	0	10	0	218	7
PHF	*0.67*			*0.67*			*0.67*			*0.67*		
HV %		*2*			*4*			*2*			*2*	

growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: MCDOWELL PL & UNIVERSITY AVE

AM Peak Hour

	Southbound MCDOWELL			Westbound UNIVERSITY			Northbound MCDOWELL			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	0	0	0	14	208	0	28	0	37	0	278	11
Background Growth	0	0	0	3	44	0	6	0	8	0	58	2
No Build (2040)	0	0	0	17	252	0	34	0	45	0	336	13
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	0	0	0	17	252	0	34	0	45	0	336	13
PHF	*0.93*			*0.93*			*0.93*			*0.93*		
HV %		*2*			*2*			*2*			*5*	

PM Peak Hour

	Southbound MCDOWELL			Westbound UNIVERSITY			Northbound MCDOWELL			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	0	0	0	16	214	0	24	0	17	0	231	40
Background Growth	0	0	0	0	6	0	1	0	1	0	7	1
No Build (2040)	0	0	0	16	220	0	25	0	18	0	238	41
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	0	0	0	16	220	0	25	0	18	0	238	41
PHF	*0.67*			*0.67*			*0.67*			*0.67*		
HV %		*2*			*3*			*2*			*4*	

growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: CAMINO DEL REY & UNIVERSITY AVE

AM Peak Hour

	Southbound CAMINO DEL REY			Westbound UNIVERSITY			Northbound CAMINO DEL REY			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	1	0	1	0	73	1	0	0	0	1	360	0
Background Growth	0	0	0	0	15	0	0	0	0	0	76	0
No Build (2040)	1	0	1	0	88	1	0	0	0	1	436	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	1	0	1	0	88	1	0	0	0	1	436	0

PHF	*0.85*	*0.85*	*0.85*	*0.85*
HV %	*2*	*5*	*2*	*4*

PM Peak Hour

	Southbound CAMINO DEL REY			Westbound UNIVERSITY			Northbound CAMINO DEL REY			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	13	0	4	0	286	10	0	0	0	5	311	0
Background Growth	0	0	0	0	9	0	0	0	0	0	9	0
No Build (2040)	13	0	4	0	295	10	0	0	0	5	320	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	13	0	4	0	295	10	0	0	0	5	320	0

PHF	*0.62*	*0.62*	*0.62*	*0.62*
HV %	*2*	*4*	*2*	*3*

growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: OLD FARM RD & UNIVERSITY AVE

AM Peak Hour

	Southbound OLD FARM			Westbound UNIVERSITY			Northbound OLD FARM			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	8	0	7	0	336	8	0	0	0	4	357	0
Background Growth	2	0	1	0	71	2	0	0	0	1	75	0
No Build (2040)	10	0	8	0	407	10	0	0	0	5	432	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	10	0	8	0	407	10	0	0	0	5	432	0

PHF	*0.87*			*0.87*			*0.87*			*0.87*		
HV %		*2*			*5*			*2*			*4*	

PM Peak Hour

	Southbound OLD FARM			Westbound UNIVERSITY			Northbound OLD FARM			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	7	0	8	0	288	12	0	0	0	7	318	0
Background Growth	0	0	0	0	9	0	0	0	0	0	10	0
No Build (2040)	7	0	8	0	297	12	0	0	0	7	328	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	7	0	8	0	297	12	0	0	0	7	328	0

PHF	*0.61*			*0.61*			*0.61*			*0.61*		
HV %		*13*			*3*			*2*			*3*	

growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: STANFORD ST & UNIVERSITY AVE

AM Peak Hour

	Southbound STANFORD			Westbound UNIVERSITY			Northbound STANFORD			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	52	0	25	0	318	22	0	0	0	19	343	0
Background Growth	11	0	5	0	67	5	0	0	0	4	72	0
No Build (2040)	63	0	30	0	385	27	0	0	0	23	415	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	63	0	30	0	385	27	0	0	0	23	415	0
PHF	*0.90*			*0.90*			*0.90*			*0.90*		
HV %		*2*			*2*			*2*			*2*	

PM Peak Hour

	Southbound STANFORD			Westbound UNIVERSITY			Northbound STANFORD			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	34	0	18	0	270	46	0	0	0	20	310	0
Background Growth	1	0	1	0	8	1	0	0	0	1	9	0
No Build (2040)	35	0	19	0	278	47	0	0	0	21	319	0
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	35	0	19	0	278	47	0	0	0	21	319	0
PHF	*0.64*			*0.64*			*0.64*			*0.64*		
HV %		*2*			*3*			*2*			*3*	
growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: BOWMAN AVE & UNIVERSITY AVE

AM Peak Hour

	Southbound BOWMAN			Westbound UNIVERSITY			Northbound BOWMAN			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	0	0	0	18	322	0	18	0	27	0	379	16
Background Growth	0	0	0	4	68	0	4	0	6	0	80	3
No Build (2040)	0	0	0	22	390	0	22	0	33	0	459	19
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	0	0	0	22	390	0	22	0	33	0	459	19

PHF	*0.91*			*0.91*			*0.91*			*0.91*		
HV %		*2*			*5*			*2*			*3*	

PM Peak Hour

	Southbound BOWMAN			Westbound UNIVERSITY			Northbound BOWMAN			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	0	0	0	39	300	0	17	0	25	0	323	21
Background Growth	0	0	0	1	9	0	1	0	1	0	10	1
No Build (2040)	0	0	0	40	309	0	18	0	26	0	333	22
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	0	0	0	40	309	0	18	0	26	0	333	22

PHF	*0.67*			*0.67*			*0.67*			*0.67*		
HV %		*2*			*2*			*5*			*2*	

growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

UNIVERSITY AVENUE - PHASE B
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: MAIN ST & UNIVERSITY AVE

AM Peak Hour

	Southbound MAIN			Westbound UNIVERSITY			Northbound MAIN			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	7	323	78	120	157	9	108	650	237	110	216	84
Background Growth	1	68	16	25	33	2	23	137	50	23	45	18
No Build (2040)	8	391	94	145	190	11	131	787	287	133	261	102
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	8	391	94	145	190	11	131	787	287	133	261	102
PHF	*0.95*			*0.95*			*0.95*			*0.95*		
HV %		*2*			*5*			*2*			*3*	

PM Peak Hour

	Southbound MAIN			Westbound UNIVERSITY			Northbound MAIN			Eastbound UNIVERSITY		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	10	532	71	147	228	12	50	468	204	89	183	87
Background Growth	0	16	2	4	7	0	2	14	6	3	5	3
No Build (2040)	10	548	73	151	235	12	52	482	210	92	188	90
Entering												
Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Build (2040)	10	548	73	151	235	12	52	482	210	92	188	90
PHF	*0.93*			*0.93*			*0.93*			*0.93*		
HV %		*2*			*2*			*2*			*2*	
growth rates	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

Appendix C | Sight Distance Analysis

Intersection Sight Distance Analysis						
Intersection	**Case**	**Design Vehicle**	**A**	**B**	**Actual Sight Distance**	**Location Description**
I-1	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	Teresita St
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-2	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	Boldt St
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-3	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Passenger Vehicle (Stone Wall Obstructs View)	1500 W University Ave (West)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Does Not Meet Minimum Sight Distance for Passenger Vehicle (Stone Wall Obstructs View)	
		Single-Unit Truck		500		
		Combination Truck		620		
I-4	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Any Vehicle (Stone Wall & Vegetation Obstruct Views)	1500 W University Ave (East)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Does Not Meet Minimum Sight Distance for Any Vehicle (Stone Wall & Vegetation Obstruct Views)	
		Single-Unit Truck		500		
		Combination Truck		620		
I-5	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	1501 University Ave (West)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-6	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Any Vehicle (Vegetation Obstructs Views)	1501 University Ave (East)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-7	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Any Vehicle (Garden Wall & Vegetation Obstruct Views)	1440 W University Ave
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-8	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	1420 W University Ave
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Does Not Meet Minimum Sight Distance for Combination Truck (Vegetation Obstructs View)	
		Single-Unit Truck		500		
		Combination Truck		620		

Intersection Sight Distance Analysis						
Intersection	**Case**	**Design Vehicle**	**A**	**B**	**Actual Sight Distance**	**Location Description**
I-9	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Any Vehicle (Vegetation Obstructs Views)	1306 W University Ave
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-10	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Any Vehicle (Vegetation Obstructs Views)	Camino Castillo
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-11	B1	Passenger Car	36	445	Meets Minimum Sight Distance for All Vehicles	Zia Middle School (West)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-12	B1	Passenger Car	39	445	Meets Minimum Sight Distance for All Vehicles	Zia Middle School (Bus Exit)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-13	B1	Passenger Car	43.5	445	Does Not Meet Minimum Sight Distance for Combination Truck (Vegetation Obstructs View)	McDowell Rd
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Does Not Meet Minimum Sight Distance for Any Vehicle (Vegetation Obstructs Views)	
		Single-Unit Truck		500		
		Combination Truck		620		
I-14	F	Passenger Car	-	325	Meets Minimum Sight Distance for All Vehicles	Zia Middle School (Bus Entrance)
		Single-Unit Truck		385		
		Combination Truck		445		
I-15	B1	Passenger Car	42	445	Meets Minimum Sight Distance for All Vehicles	Zia Middle School (Student Drop Off)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-16	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	Camino del Rey
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-17	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	Jornada Lodge 1200 W University Ave (West)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-18	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	Jornada Lodge 1200 W University Ave (East)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		

Intersection Sight Distance Analysis						
Intersection	**Case**	**Design Vehicle**	**A**	**B**	**Actual Sight Distance**	**Location Description**
I-19	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	Old Farm Rd
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-20	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	490 W University Ave
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-21	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Any Vehicle (Vegetation Obstructs Views)	Stanford St
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-22	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	Bowman St
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Does Not Meet Minimum Sight Distance for Combination Truck (Topography Obstructs View)	
		Single-Unit Truck		500		
		Combination Truck		620		
I-23	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	320 W University Ave
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-24	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Combination Truck (Wood Fence Obstructs View)	Fabian Garcia Science Center - NMSU 109 W University Ave (West)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-25	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	105 E University Ave (West)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-26	B1	Passenger Car	29.5	445	Does Not Meet Minimum Sight Distance for Any Vehicle (Vegetation Obstructs Views)	Fabian Garcia Science Center - NMSU 109 W University Ave (East)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		
I-27	B1	Passenger Car	29.5	445	Meets Minimum Sight Distance for All Vehicles	105 E University Ave (East)
		Single-Unit Truck		560		
		Combination Truck		680		
	B2	Passenger Car	19.5	385	Meets Minimum Sight Distance for All Vehicles	
		Single-Unit Truck		500		
		Combination Truck		620		

PROJECT CONTROL NUMBER: ####

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DRAWING SCALE: 1"=100'

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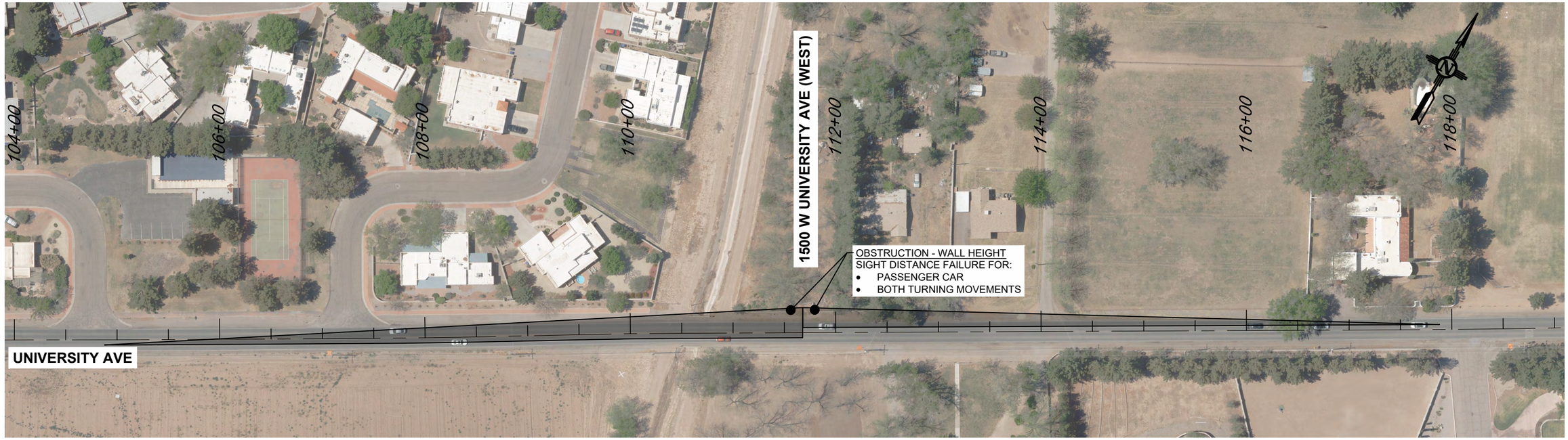

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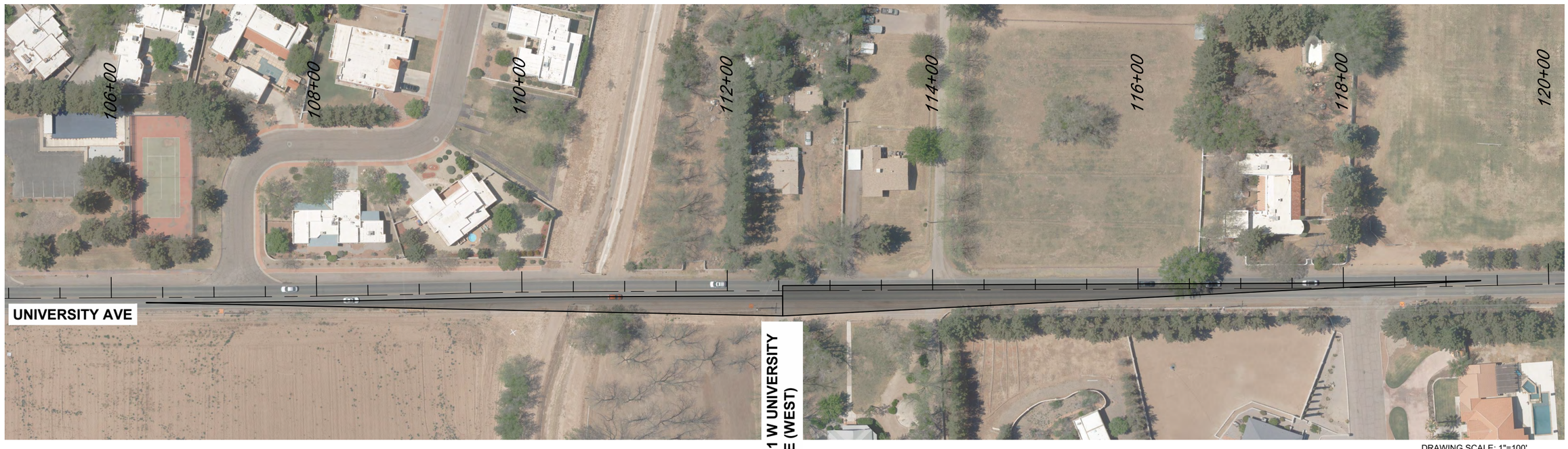

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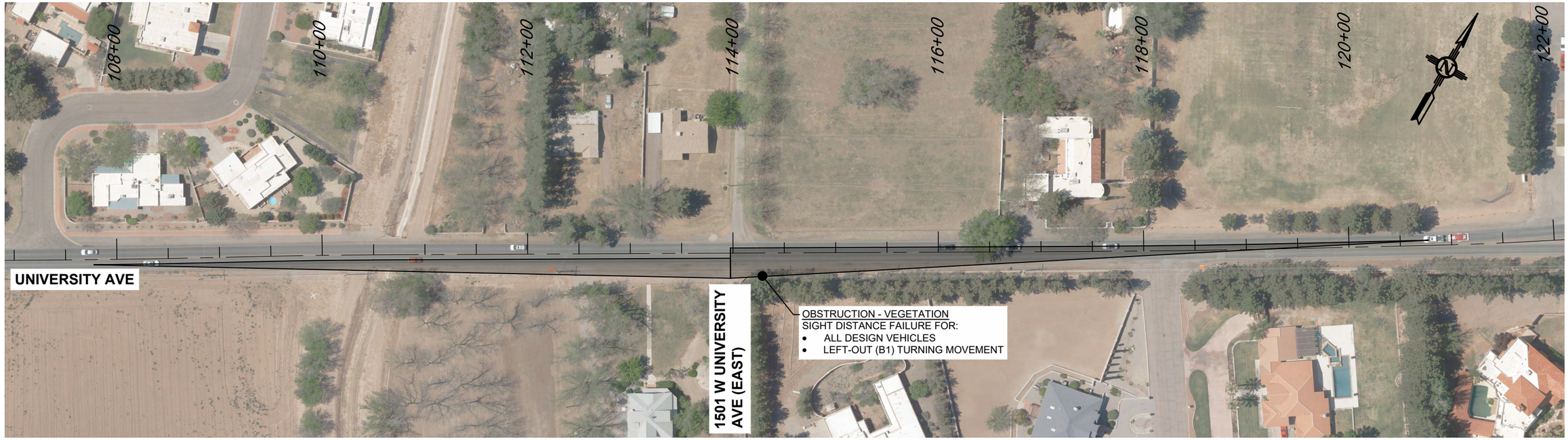

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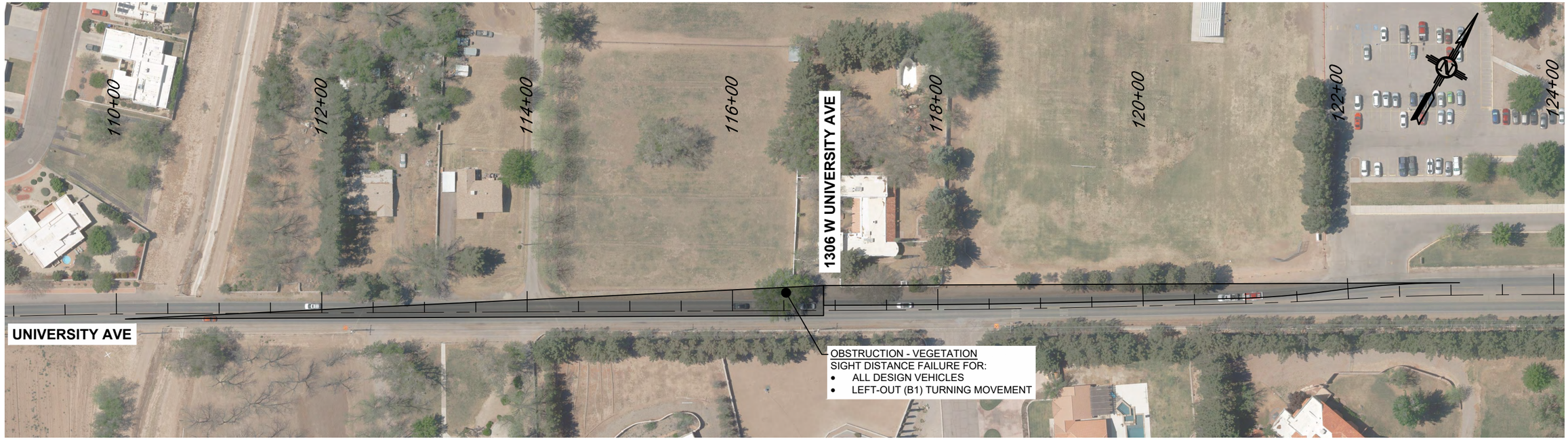

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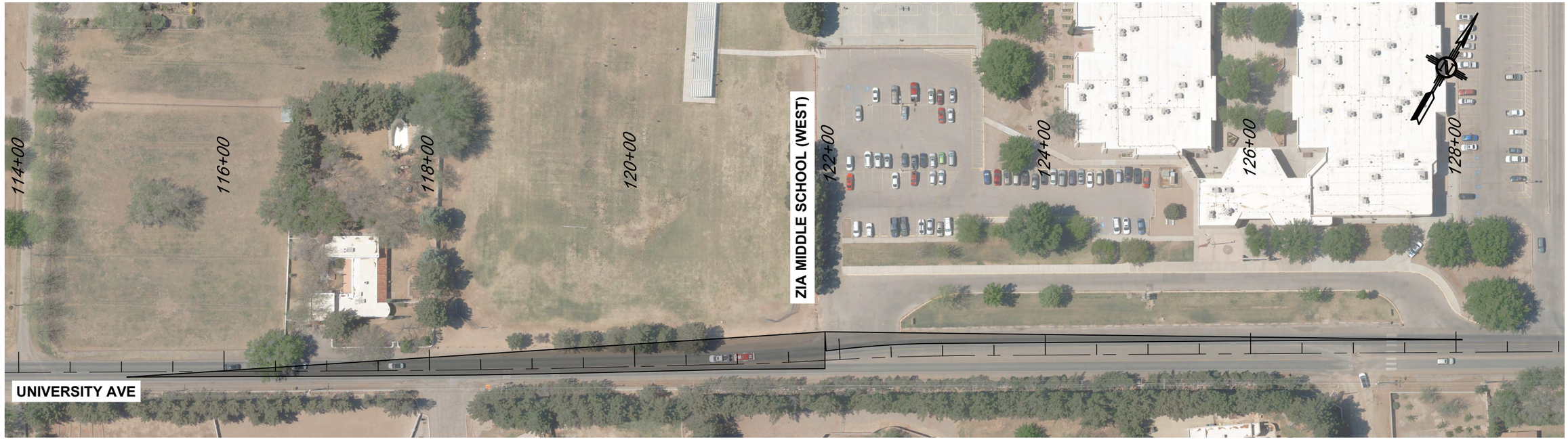

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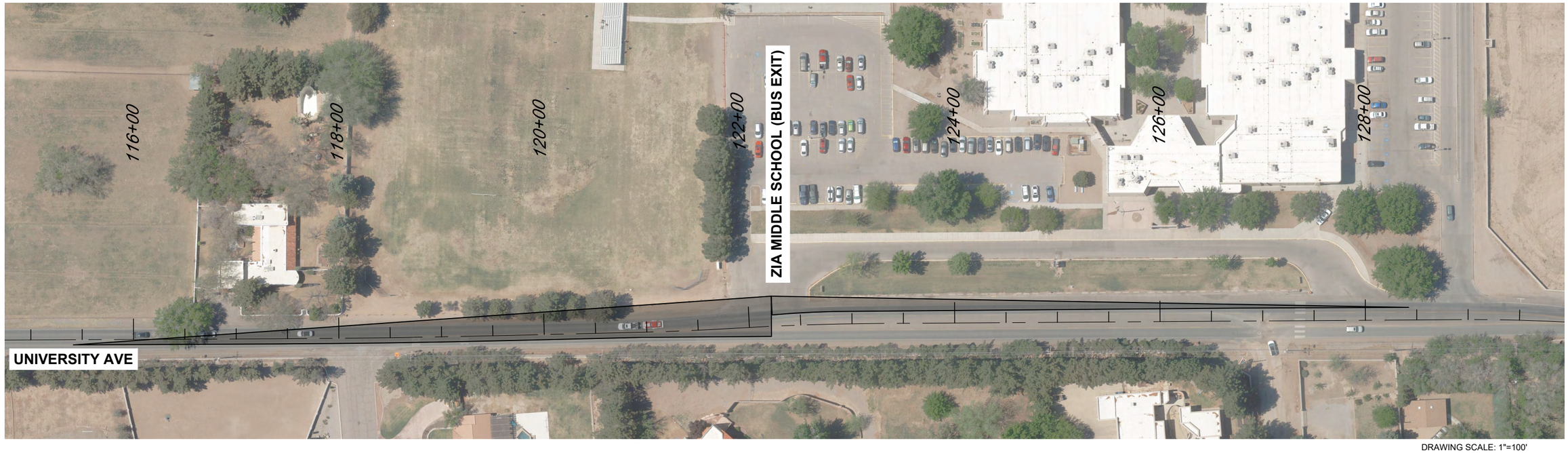

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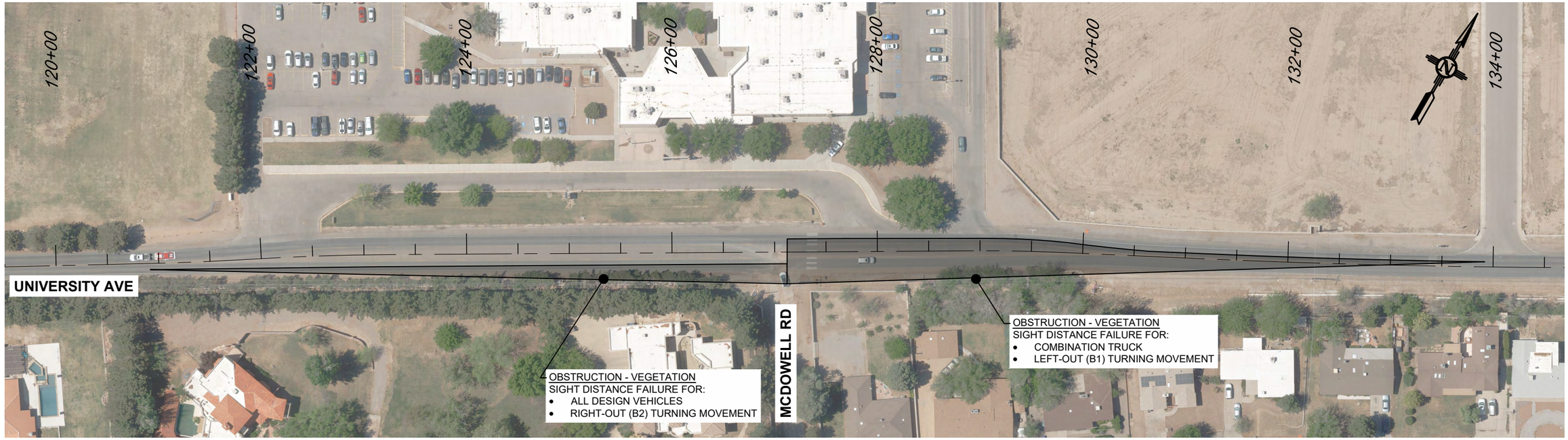

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INTERSECTION SIGHT DISTANCE

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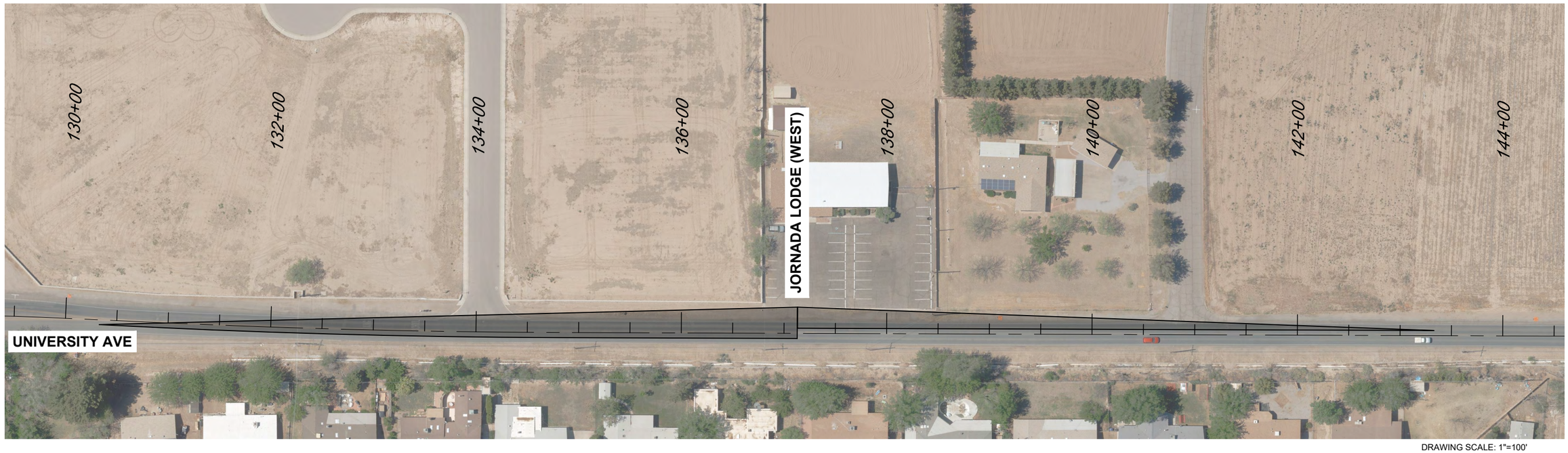

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INTERSECTION SIGHT DISTANCE

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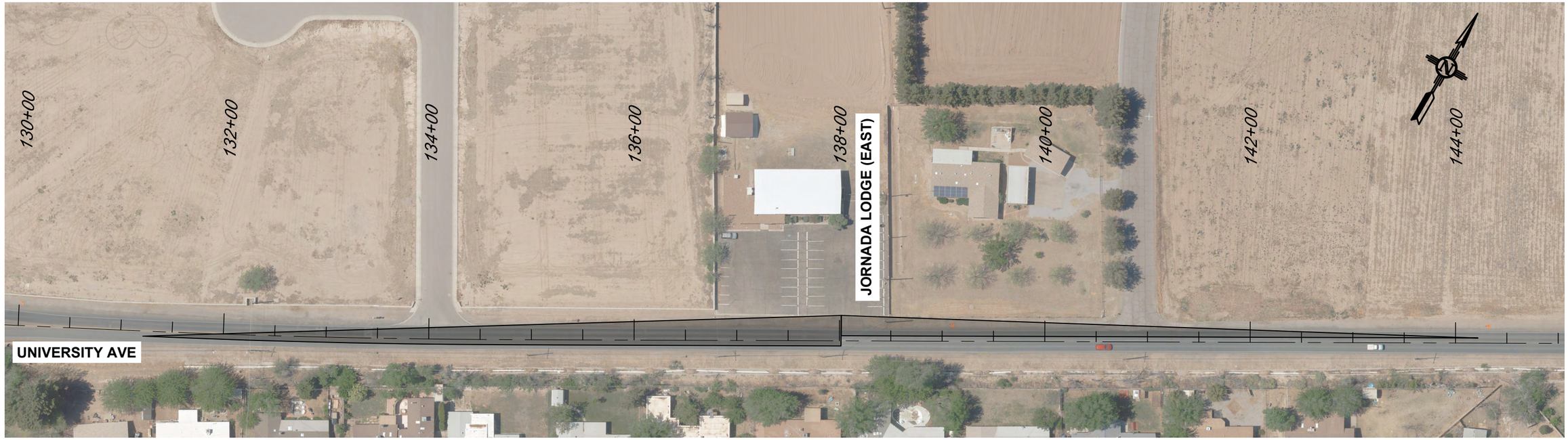

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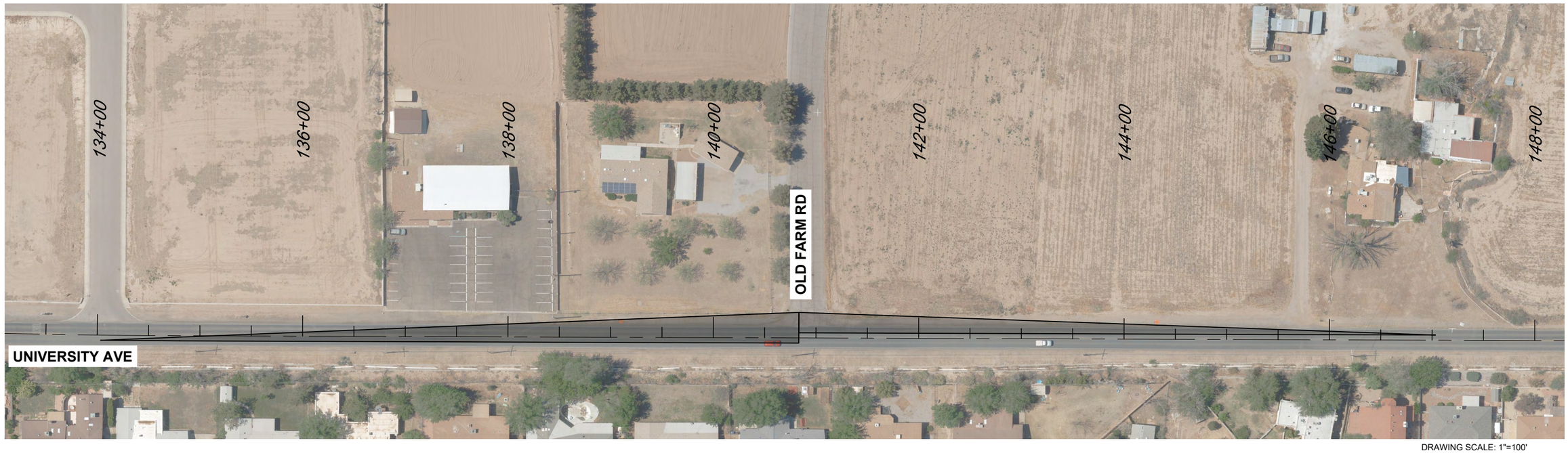

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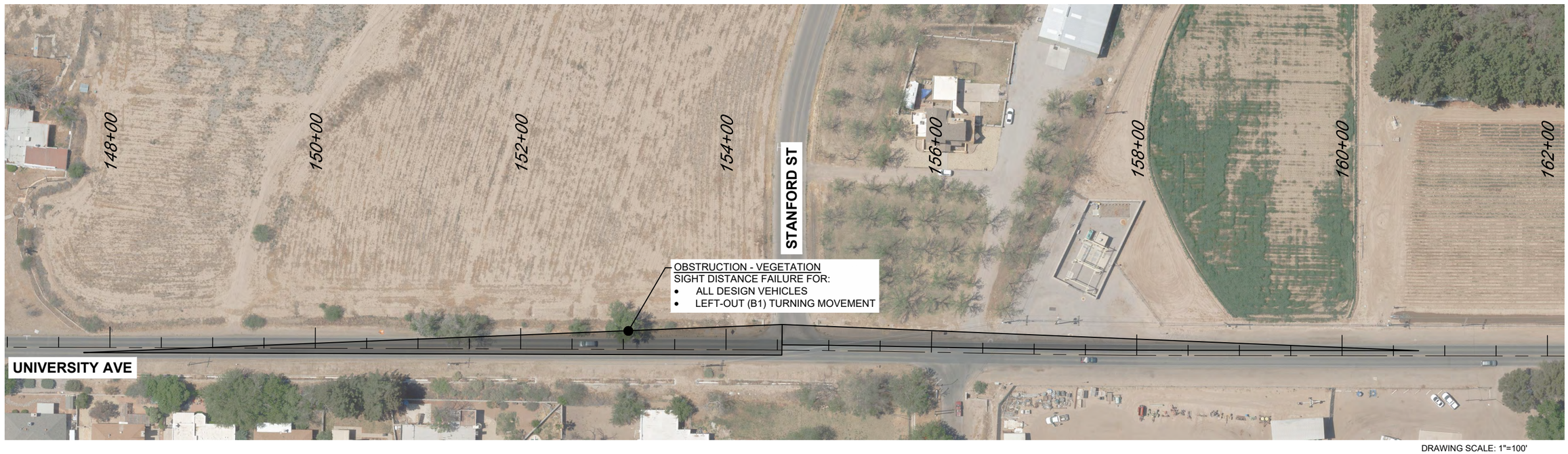

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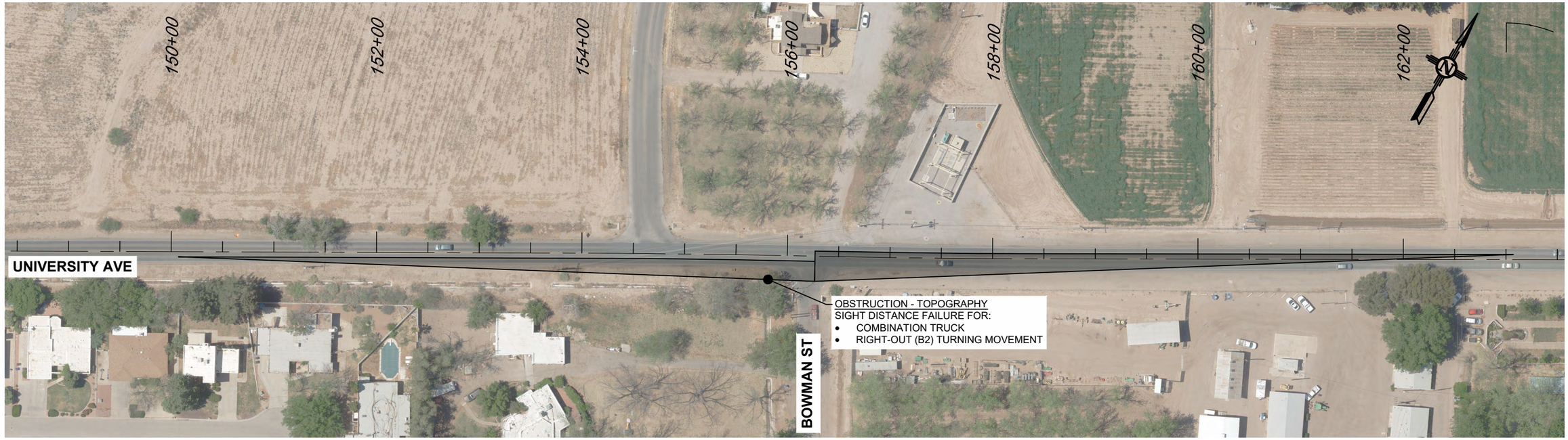

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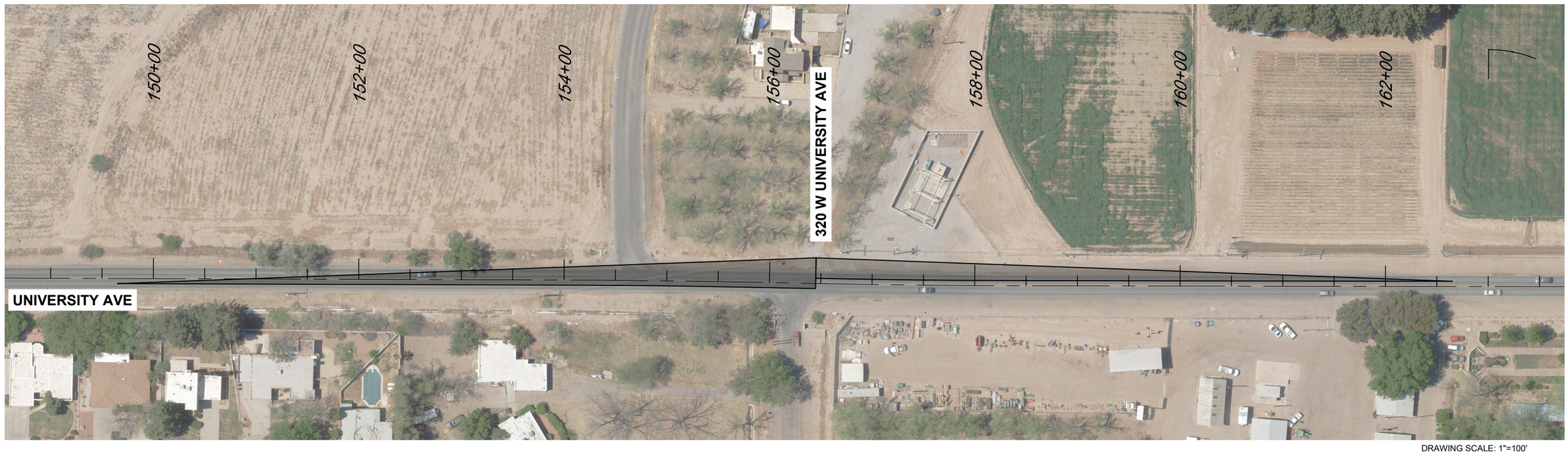

DRAWING SCALE: 1"=100'

INTERSECTION SIGHT DISTANCE

PROJECT CONTROL NUMBER: ####

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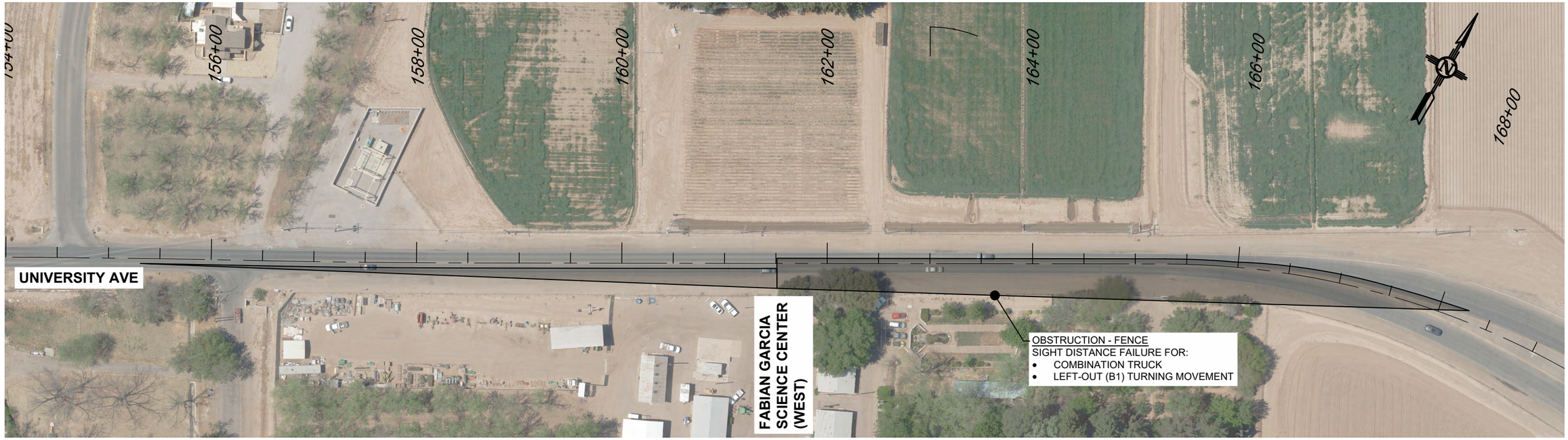

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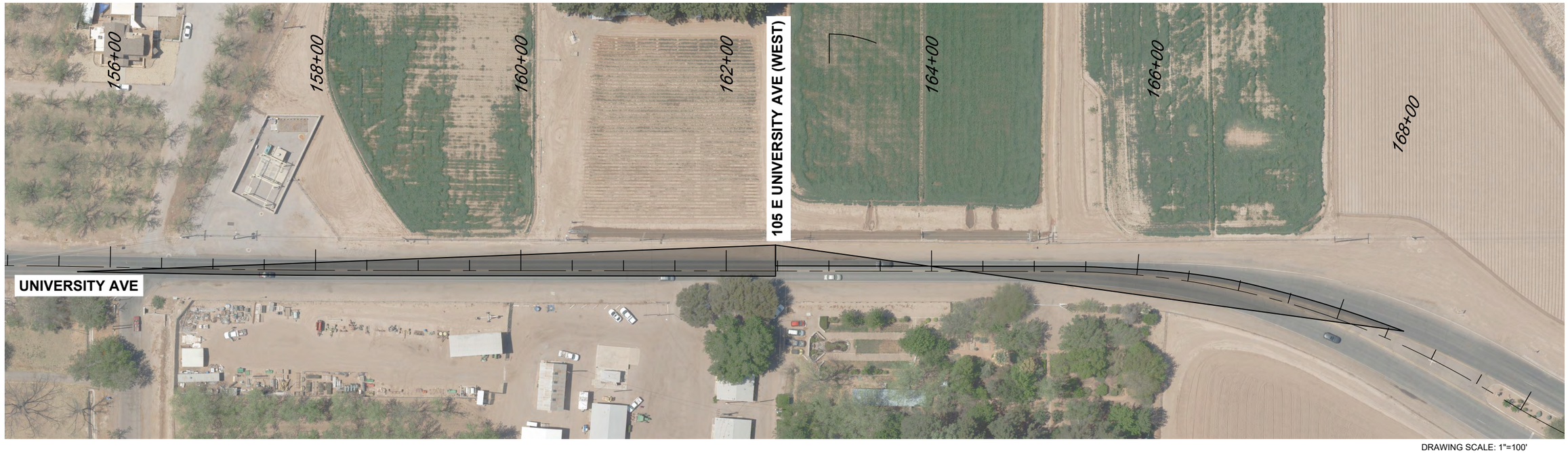

DRAWING SCALE: 1"=100'

INTERSECTION SIGHT DISTANCE

Drawing File: \\A-ABQ-FS2\PROJECTS\20190569\NMDOT-PCN\STUDY AND CONCEPTUAL DESIGN\PHASE B\ROADWAY DESIGN\WORK\LOGAN\ISD EXHIBITS.DWG DESIGNED BY: NEW MEXICO PROJECT NO. SHEET NO. X - X

PROJECT CONTROL NUMBER: ####

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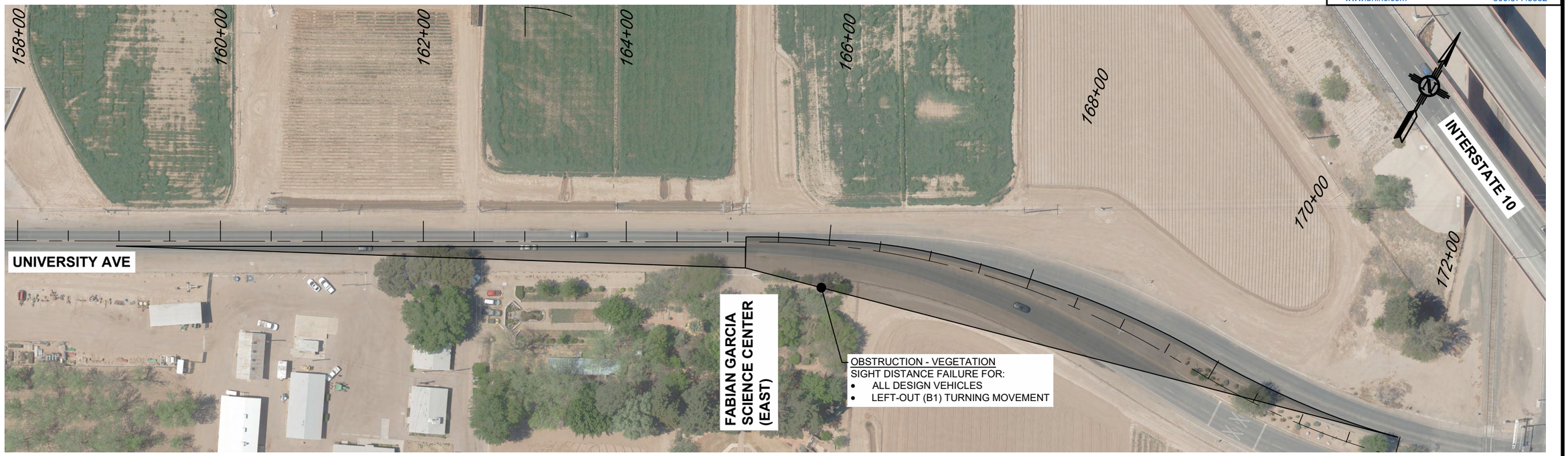
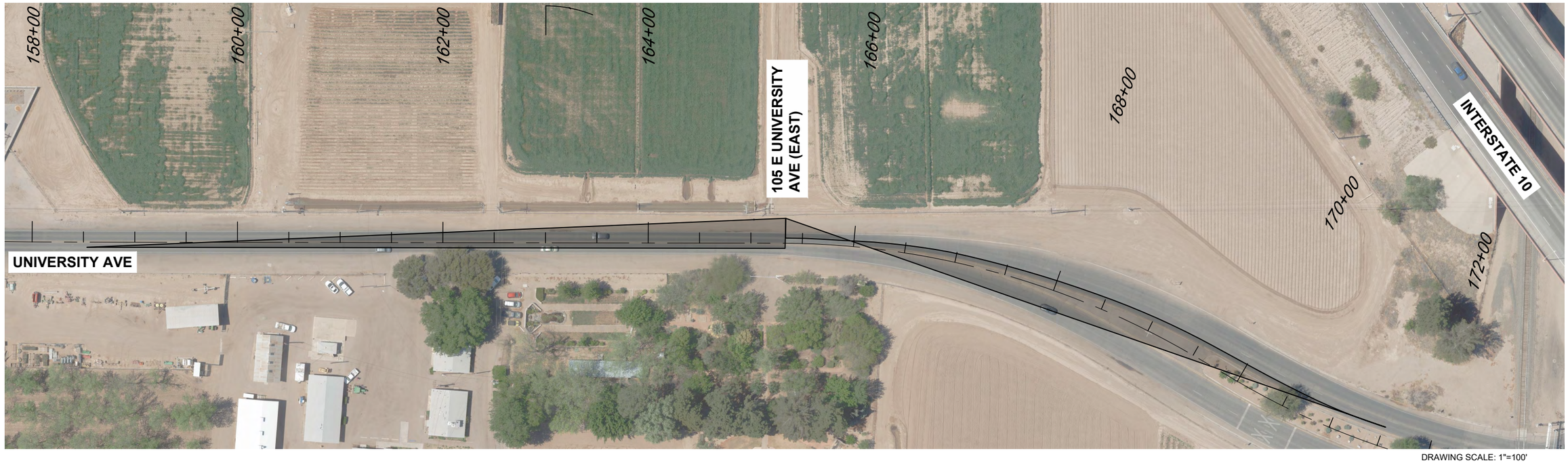


DRAWING SCALE: 1"=100'



DRAWING SCALE: 1"=100'

INTERSECTION SIGHT DISTANCE

Appendix D | Crash Analysis

FID	Year	AStreet	BStreet	Killed	ClassA	ClassB	ClassC	Injured	Unhurt	Total	Severity	Class	Analysis	TopCFacc	Weather	Light	AlcInv	DrugInv	PEDInv	PECInv	RoadCharac	RoadGrade
1923	2017	W UNIVERSITY AVE		0	2	0	0	2	1	3	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Rear End Collision	Other Improper Driving	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
11142	2017	UNIVERSITY	BOLDT	0	0	0	0	0	1	1	Property Damage Only Crash	Other (Non-Collision)	Non-Collision - All Other/Not Stated	Other - No Driver Error	Clear	Dark-Not Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
12554	2017	UNIVERSITY AVE	BOWMAN	0	0	0	0	0	1	1	Property Damage Only Crash	Fixed Object	Fixed Object - Barbed Wire Fence	Alcohol/Drug Involved	Clear	Dark-Lighted	Involved	Not Involved	Not Involved	Not Involved	Straight	Level
12605	2017	W UNIVERSITY AVE	W UNIVERSITY AVE AND BOWMAN ST	0	0	0	1	1	2	3	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Following Too Closely	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
18516	2017	1300 E. UNIVERSITY	SOLANO DRIVE	0	0	0	0	0	2	2	Property Damage Only Crash	Pedestrian	Pedestrian Collision - All Others and Not Known	Pedestrian Error	Clear	Daylight	Not Involved	Not Involved	Involved	Not Involved	Straight	On Grade
32675	2017	UNIVERSITY AVE	CAMINO CASTILLO	0	0	0	0	0	1	1	Property Damage Only Crash	Other (Object)	Other Object - Unknown/Not Stated	Made Improper Turn	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
32754	2017	E UNIVERSITY AVE	NM 101	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Alcohol/Drug Involved	Clear	Dark-Lighted	Involved	Not Involved	Not Involved	Not Involved	Straight	Level
42874	2017	S MAIN ST	E UNIVERSITY AVE	0	0	0	3	3	0	3	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Rear End Collision	Made Improper Turn	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
43562	2017	S MAIN ST	E UNIVERSITY	0	0	0	1	1	3	4	Injury Crash	Other Vehicle	Other Vehicle - From Opposite Direction	Disregarded Traffic Signal	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	On Grade
43803	2017	UNIVERSITY	S. MAIN	0	0	0	1	1	1	2	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Rear End Collision	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
44313	2017	E UNIVERSITY AVE	S MAIN ST	0	0	1	1	2	0	2	Injury Crash	Other Vehicle	Other Vehicle - Both Going Straight/Entering At Angle	Disregarded Traffic Signal	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
44591	2017	S MAIN S	E UNIVERSITY AVE	0	0	0	1	1	1	2	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Rear End Collision	Missing Data	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
44693	2017	MAIN ST	UNIVERSITY	0	0	0	1	1	2	3	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Driver Inattention	Clear	Dusk	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
45230	2017	S MAIN ST	E UNIVERSITY AVE	0	0	0	2	2	2	4	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
45397	2017	EL PASEO RD	855 E. UNIVERSITY AVE 855 E UNIVERSITY	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - One Left Turn/Entering At Angle	Failed to Yield Right of Way	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
45609	2017	S MAIN ST	W UNIVERSITY AVE	0	0	1	2	3	1	4	Injury Crash	Other Vehicle	Other Vehicle - Both Going Straight/Entering At Angle	Alcohol/Drug Involved	Clear	Dark-Lighted	Involved	Not Involved	Not Involved	Not Involved	Straight	Level
45621	2017	W UNIVERSITY AVE		0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Avoid No Contact - Vehicle	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
45654	2017	1105 E UNIVERSITY AVE		0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - One Left Turn/Entering At Angle	Failed to Yield Right of Way	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
52170	2016	AVENIDA DE MESILLA	UNIVERSITY	0	0	0	0	0	4	4	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Opposite Direction/One Left Turn	Disregarded Traffic Signal	Clear	Dark-Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
52341	2016	UNIVERSITY	CAMINO CATILLO	0	0	0	0	0	1	1	Property Damage Only Crash	Fixed Object	Fixed Object - Sign or Sign Post (Traffic)	Alcohol/Drug Involved	Clear	Dark-Not Lighted	Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53005	2016	113 W UNIVERSITY AVE		0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Opposite Direction/Sideswipe Collision	Excessive Speed	Clear	Dark-Not Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Curve	Level
53327	2016	UNIVERSITY AVE	MAIN ST	0	0	0	0	0	4	4	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Turn Right	Failed to Yield Right of Way	Clear	Dark-Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53328	2016	NM 478	NM 138	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - Both Going Straight/Entering At Angle	Following Too Closely	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53329	2016	UNIVERSITY AVE	S. MAIN ST.	0	0	0	0	0	6	6	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	None	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53330	2016	S MAIN ST	E UNIVERSITY AVE	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Other Vehicle - Both Turn Right/Entering At Angle	Made Improper Turn	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53331	2016	E UNIVERSITY AVE	S MAIN ST	0	0	0	0	0	7	7	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Sideswipe Collision	Improper Lane Change	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53332	2016	S MAIN ST	E UNIVERSITY AVE	0	0	7	0	7	0	7	Injury Crash	Other Vehicle	Other Vehicle - One Left Turn/Entering At Angle	Failed to Yield Right of Way	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53333	2016	S MAIN ST	E UNIVERSITY AVE	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Rear End Collision	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53334	2016	E UNIVERSITY AVE	S MAIN ST	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Opposite Direction/Both Going Straight	Disregarded Traffic Signal	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53335	2016	UNIVERSITY AVE	MAIN ST	0	0	0	1	1	2	3	Injury Crash	Other Vehicle	Other Vehicle - Both Turn Left/Entering At Angle	Made Improper Turn	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53336	2016	S MAIN ST/ E UNIVERSITY AVE		0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53337	2016	S MAIN ST	E UNIVERSITY AVE	0	0	0	1	1	1	2	Injury Crash	Other Vehicle	Other Vehicle - Both Going Straight/Entering At Angle	Missing Data	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53338	2016	E UNIVERSITY AVE		0	0	0	1	1	0	1	Injury Crash	Fixed Object	Fixed Object - Median Raised Or Curb	Driver Inattention	Clear	Dark-Not Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53339	2016	E UNIVERSITY	MAIN ST	0	0	0	1	1	1	2	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Other - No Driver Error	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
53340	2016	UNIVERSITY	S. MAIN	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Driver Inattention	Clear	Dark-Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Curve	Level
53344	2016	MAIN	INTERSTATE 25	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Sideswipe Collision	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
98826	2015	HWY 28	CALLE DE SUR	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Opposite Direction	Missing Data	Clear	Left Blank	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
98913	2015	S MAIN ST	E UNIVERSITYAVE	0	0	0	1	1	3	4	Injury Crash	Other Vehicle	Other Vehicle - From Opposite Direction/Both Going Straight	Disregarded Traffic Signal	Raining	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
102778	2015	S MAIN ST	E UNIVERSITY AVE	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Opposite Direction	Disregarded Traffic Signal	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
114855	2015	E UNIVERSITY AVE / S MAIN ST		0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Opposite Direction/Both Going Straight	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
116704	2015	AVENIDA DE MESILLA	UNIVERSITY	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Other Vehicle - One Right Turn/Entering At Angle	Disregarded Traffic Signal	Clear	Dark-Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
116756	2015	S MAIN ST / E UNIVERSITY AVE		0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	Improper Lane Change	Clear	Dark-Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
117923	2015	UNIVERSITY AVE.	BOWMEN	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Opposite Direction	Passed Stop Sign	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
118038	2015	SOUTH MAIN	UNIVERSITY	0	0	0	0	0	6	6	Property Damage Only Crash	Other Vehicle	Other Vehicle - Both Turn Right/Entering At Angle	Made Improper Turn	Clear	Dark-Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
118555	2015	EUNIVERSITY AVE		0	0	1	3	4	3	7	Injury Crash	Other Vehicle	Other Vehicle - From Same Direction/Rear End Collision	Following Too Closely	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
118818	2015	W UNIVERSITY AVE	BOWMAN ST	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Both Going Straight	None	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
125275	2015	E UNIVERSITY AVE	S MAIN ST	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Other Vehicle - One Left Turn/Entering At Angle	Failed to Yield Right of Way	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
128457	2015	UNIVERSITY	STANFORD	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Opposite Direction	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
130445	2015	W UNIVERSITY AVE	BOWMAN ST	0	0	0	0	0	4	4	Property Damage Only Crash	Other Vehicle	Other Vehicle - From Same Direction/Rear End Collision	Other Improper Driving	Clear	Dusk	Not Involved	Not Involved	Not Involved	Not Involved	Curve	Level
138762	2014	E UNIVERSITY AVE	S MAIN ST	0	0	1	1	2	3	5	Injury Crash	Other Vehicle	Intersection - From Same Direction/Both Going Straight	Following Too Closely	Clear	Dark-Lighted	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
138796	2014	MAIN	UNIVERSITY	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Intersection - From Same Direction/Both Turn Right	Made Improper Turn	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
139022	2014	E UNIVERSITY AVE	S MAIN ST	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Intersection - Both Going Straight/Entering At Angle	Improper Overtaking	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
139130	2014	S MAIN ST	E UNIVERSITY AVE	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Intersection - One Left Turn/Entering At Angle	Failed to Yield Right of Way	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
139447	2014	S MAIN ST	E UNIVERSITY AVE	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Non-Intersection - From Same Direction/Rear End Collision	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
139534	2014	S MAIN ST	E UNIVERSITY AVE	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Non-Intersection - From Same Direction/Rear End Collision	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
140154	2014	E UNIVERSITY AVE	S MAIN	0	0	0	2	2	2	4	Injury Crash	Other Vehicle	Intersection - From Same Direction/Both Going Straight	Failed to Yield Right of Way	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
141327	2014	AVENIDA DE MESILLA	UNIVERSITY AVE	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Intersection - From Opposite Direction	Driver Inattention	Left Blank	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
151065	2014	UNIVERSITY	STANFORD	0	0	0	1	1	3	4	Injury Crash	Other Vehicle	Non-Intersection - From Same Direction/Rear End Collision	Driver Inattention	Clear	Dusk	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
175124	2014	S MAIN ST		0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Intersection - From Same Direction/All Others	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
175350	2014	S MAIN ST	UNIVERSITY	0	0	0	1	1	1	2	Injury Crash	Other Vehicle	Intersection - From Same Direction/Both Going Straight	Other Improper Driving	Clear	Dusk	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
175485	2014	E UNIVERSITY AVE	BOWMAN	0	0	0	0	0	4	4	Property Damage Only Crash	Pedalcyclist	Vehicle Struck Pedalcyclist At Angle	Other Improper Driving	Clear	Dusk	Not Involved	Not Involved	Not Involved	Involved	Straight	Level
175720	2014	E UNIVERSITY AVE	LB	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Non-Intersection - From Same Direction/Rear End Collision	Driver Inattention	Clear	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	Straight	Level
200435	2013	UNIVERSITY	TERESITA	0	0	0	0	0	3	3	Property Damage Only Crash	Other Vehicle	Intersection - From Same Direction/Both Going Straight	Failure To Yield	CLEAR	Dark-Not Lighted	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
200443	2013	UNIVERSITY		0	0	0	1	1	2	3	Injury Crash	Other Vehicle	Intersection - Not Stated	Driver Inattention	CLEAR	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
200456	2013	STATE ROAD 28		0	0	1	0	1	1	2	Injury Crash	Other Vehicle	Intersection - Not Stated	Driver Inattention	CLEAR	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
201104	2013	100 W UNIVERSITY AVENUE		0	0	0	0	0	5	5	Property Damage Only Crash	Vehicle on Other Road	Vehicle On Other Roadway - Trailer Vehicle Disconnected	Driver Inattention	CLEAR	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
201178	2013	31E UNIVERSITY AVE	EL PASEO RD	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Non-Intersection - From Same Direction/Rear End Collision	Driver Inattention	CLEAR	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
201580	2013	E UNIVERSITY AVE & S MAIN ST		0	0	0	2	2	1	3	Injury Crash	Other Vehicle	Intersection - Not Stated	Red Light Running	CLEAR	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
201706	2013	S MAIN ST	E UNIVERSITY AVE	0	0	0	0	0	6	6	Property Damage Only Crash	Other Vehicle	Non-Intersection - From Same Direction/Rear End Collision	Driver Inattention	CLEAR	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
202004	2013	E UNIVERSITY AVE	S MAIN ST	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Intersection - Not Stated	Red Light Running	CLEAR	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
202646	2013	S MAIN ST	UNIVERSITY AVE	0	0	0	0	0	2	2	Property Damage Only Crash	Other Vehicle	Intersection - Not Stated	Following Too Closely	CLEAR	Daylight	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL
202951	2013	S. MAIN ST	E. UNIVERSITY AVE	0	0	1	0	1	2	3	Injury Crash	Other Vehicle	Intersection - From Same Direction/Both Going Straight	Improper Turn	CLEAR	Dark-Not Lighted	Not Involved	Not Involved	Not Involved	Not Involved	STRAIGHT	LEVEL

Appendix E | RIGHT-OF-WAY

Coordinates Based on
New Mexico Grid
Map Factor = .99980969
Sta. 240+57.20 To 293+63.80
GENERAL NOTE:
ALL BEARINGS ARE RELATED TO CENTER LINE.
PROPERTY LINES HAVE BEEN ESTABLISHED FROM TOPOGRAPHIC & LOCATION SURVEYS MADE BY NEW MEXICO STATE HIGHWAY COMMISSION IN CONJUNCTION WITH THE BEST PROPERTY INFORMATION AVAILABLE.
THE COORDINATES POSTED UPON THIS MAP ARE OF THIRD AND FOURTH ORDER ACCURACY BASED ON U.S.G.S. "PICACHO" TRI-STATION.
STA. 36+15.36 END N.M.P.-F-002-2(8)
S.R. 478
STA. 140+09.91 END N.M.P.-F-002-2(8)
U.S. 80 & 85
TRUCK BY-PASS STATE ROAD 460
STA. 133+19.38 BEG. N.M.P. F-002-2(8)
U.S. 80 & 85
STA. 32+62.69 BEG. N.M.P.-F-002-2(8)
S.R. 478
END R/W & A.C. CONTROL
P.C. 140+48.18
BEG A.C. CONTROL
STA. 29+40
A.T. & S.F. R.R.
STATE ROAD 478
Q.C.D. 17-3-EL
N.M.S.H.C to Siesta Corp.(N.S.L.)
June 17, 1971
Q.C.D.
17-5-EL, 17-8-EL, 17-9-EL
N.M.S.H.D. To Las Cruces Coca-Cola Bottling Company. Oct. 19, 1972
Q.C.D.
17-11-EL
N.M.S.H.D. To Dave Sims, Oct. 19, 1972
Q.C.D.
17-8-EL-1
N.M.S.H.D. To Arnold Harrison, ET. UX. October 19, 1972.
Q.C.D.
17-12-EL
N.M.S.H.D. To Melvin Crump. Oct. 19, 1972
STUART P. MEERSHEIDT
TRACT IIC-53
SIESTA CORPORATION
TRACT IIC-59
TRACT IIC-62A-1
T.M. HEIGHT & VERDIE BELL HEIGHT
TRACT IIC-63
GILLEM LATERAL
LAS CRUCES CITY LIMITS
WEST BOUND LANE
EAST BOUND LANE
TRACT IIC-62B
FRONTAGE ROAD
ARNOLD HARRISON & NEVA JEAN HARRISON
TRACT IIC-62A2
TRACT IIC-60
JOHN F. DANLEY
TRACT IIC-61
RAY CHAVEZ & FELICITA CHAVEZ
TRACT IIC-62C
JOHN D. CRAGIN & VERA M. CRAGIN
TRACT IID-8
NEW MEXICO STATE UNIVERSITY
TRACT IID-7
NEW MEXICO STATE UNIVERSITY
TRACT IID-14
BOARD OF EDUCATION
TRACT IID-1
UNIVERSITY AVE.
PARK
FARNEY ROAD

No.	DESCRIPTION		DATE	BY
12	ADDED Q.C.D.	TO PARCEL 17-8-EL-1 & 17-12-EL	1-3-73	B.R.
11	ADDED Q.C.D.	TO PARCEL 17-5-EL, 17-8-EL, 17-9-EL & 17-11-EL	1-3-73	B.R.
10	ADDED	Q.C.D. to PARCEL 17-3-EL	7-30-71	J.L.C.
9	CORRECTED/ADDED STRUCTURES		4-20-70	A.S.
8	REVISED	CONST F 001 1(12) to F 002 2(8)	4-20-70	A.S.
7	ADDED	CONST. PROJ. F-001-1(12)	3-19-70	A.S.
6	REVISED	A/c @ STRUCTURE STA. 276+19 LT.	1-15-70	P.B.
5	OMITTED	I-G DESIGENATION ON CONST. PROJ.	12-9-69	A.S.
4	ADDED ORDED ORDER OF ACCURACY TO GEN. NOTE		6-2-69	G.R.
3		ADDED CUL-DU-SAC ON PARCEL 17-8	5-24-69	G.R.
2		REVISED PARCELS 17-8 and 17-8EL-1	5-22-69	G.R.
1	Added Topography on Parcel 17-8		4-16-69	G.R.

REVISIONS (OR CHANGE NOTICES)

PARCEL BLOCK

PARCEL NO.	OWNER	AREA OF TAKE acres	AREA OF TAKE sq ft.	AREA REMAINDER	LARGER PARCEL
17-1	BOARD OF EDUCATION	0.720	31,374	24.371 AC.	25.091 Ac.
17-2	S. P. & B. L. MEERSHEIDT	0.936	40,791	1.275	2.211 Ac.
17-3	SIESTA CORPORATION	3.917	170,625	TOTAL TAKE	5.395
17-10	UNITED STATES OF AMERICA B. O. RECLAMATION	0.479	20,846	—	—
17-4	BOARD OF EDUCATION	0.369	16,094	2.840	3.209
17-5	JOHN A EAKENS ET. AL.	1.211	52,754	TOTAL TAKE	1.451
17-5EL	" "	0.240	10,472		
17-6	R & F CHAVEZ	0.191	8,320	2.805	2.996
17-7	A.H. & N.J. HARRISON	1.264	55,040	2.865	4.129
17-8	G. & A. FOX	3.197	139,261	TOTAL TAKE	4.004
17-8EL	" "	0.296	12,890		
17-8EL-1	" "	0.511	22,283		
17-9	T. M. & V. B. HEIGHT	2.592	154,944	TOTAL TAKE	6.149
17-11	NEW MEXICO STATE UNIVERSITY	4.945	215,423	17.301	23.844
17-11EL	" " "	1.598	69,616		
17-12	J. D. & V. M. CRAGIN	1.258	54,799	TOTAL TAKE	2.659

17-3EL	SIESTA CORPORATION ET. AL.	1.478	64,373	TOTAL TAKE	SEE 17-3
17-9EL	T.M. & V.B. HIEGHT	3.557	154,944	TOTAL TAKE	SEE 17-9
17-12EL	J.D. & V.M. CRAGIN	1.401	61,047	TOTAL TAKE	SEE 17-12

LEGEND

- ACCESS CONTROL & R/W LINE
- RIGHT OF WAY LINE
- SURVEYED PROPERTY LINE
- UNSURVEYED PROPERTY LINE
- SURVEY LINE
- TRACT SUBDIVISION
- TOE OF SLOPE - TOP OF CUT
- x x x x ADJUSTED SURVEYED DATA
- (x x x x) DEEDED AND/OR PLATTED DATA

FINAL MAP

DONA ANA BEND COLONY GRANT

I-010-2(33)140 CONSTR.

NEW MEXICO STATE HIGHWAY COMMISSION

RIGHT OF WAY MAP

NEW MEXICO PROJECT NO.

I-010-2(28)136

DONA ANA COUNTY

Prepared by E. H. Schmidt and Associates Inc.

SCALE 1" = 100'

SHEET 17 OF 21

2

Coordinates Based On
New Mexico Grid:
Sta 240+57.20 To 293+63.80
Map Factor = .99980969
P.C. 293+63.80 To P.I. 297+12.10
Map Factor = .99979902
P.I. 297+12.10 To P.T. 300+59.70 Bk =
P.T. 300+11.19 Ahd
Map Factor = .99971289

GENERAL NOTE:

THE COORDINATE POSTED UPON THIS MAP ARE OF THIRD AND FOURTH ORDER ACCURACY BASED ON U.S.G.S. "PICACHO" TRI-STATION

STA 140+09.91 END NMP F-002-2(8)
U.S. 80&85

BEG. CONST. U.S. 80&85
STA. 147+00

JILLIAN S. EGERTON, ET AL TRACT IIC-94
(SEE DETAIL-SHEET 18-A)

END R/W & ACCESS CONTROL
P.C. 140+48.18

BEG. ACCESS CONTROL
STA. 29+40

TRACT IIC-97
FRANCIS E. CRAGIN ET AL

TRACT IIC-98

TRACT IID-11

TRACT IID-10
U.S. DEPT OF AGRICULTURE

TRACT IID-5
KERMIT B. WHEELER

TRACT IID-12
ST. JAMES EPISCOPAL CHURCH

TRACT IID-13

TRACT IID-14
NEW MEXICO STATE UNIVERSITY

TRACT IID-8

TRACT IID-9
LAS CRUCES CITY LIMITS

TRACT IID-4B
BRUCE HORNBROOK SAGE

TRACT IID-4A

TRACT IID-3

TRACT IID-2

TRACT IID-1

P.T. Sta. 300+59.6 Bk.
EQUATION
P.T. Sta. 300+11.9 Ah.

STA. 306+00 Build
1: 24100 C.F. C. Horz.

Q.C.D. 18-7-EL
N.M.S.H.D. To V. Roy Harrison, Oct 19, 1972

Q.C.D. 18-8-EL
N.M.S.H.D. To Charles Roger Jr. Oct. 16, 1975

Q.C.D. 18-40-EL
N.M.S.H.D. To B.A. King & E.J. King, Sept. 21, 1972

DETAIL NO. 1

DETAIL NO. 2

NUMBER	IMPROVEMENT DESCRIPTION	NO.	IMPROVEMENT DESCRIPTION
A	Frame Shed	JJ	Frame Stucco Garage
B	Frame Stucco Res.	KK	Frame Stucco Garage
C	Adobe Stucco Res.	LL	Frame Stucco Res.
D	Frame Stucco Bldg.	MM	Adobe & Stucco Res.
E	Block Garage	NN	Adobe Bld.
F	Block Apts.	OO	Adobe Bld.
G	Frame Stucco Res.	PP	Adobe Bld.
H	Frame Stucco Res.	QQ	Block Bld.
I	Adobe Stucco Res.	RR	Adobe Res.
J	Adobe Stucco Res.	SS	Adobe Bld.
K	Block Stucco Res.	TT	Adobe Bld.
L	Frame Ser. Sta.	UU	Adobe Bld
M	Adobe Res.	VV	Adobe & Block
N	Adobe Res.	WW	Adobe & Stucco
O	Block Stucco Ser. Sta.	XX	
P	Adobe Res.	YY	
Q	Adobe Bldg.	ZZ	
R	Frame Shed		
S	Adobe Shed		
T	Adobe Res.		
U	Block Stucco Duplex		
V	Block Stucco Res.		
W	Frame Stucco Garage		
X	Frame Garage		
Y	Frame Stucco Res.		
Z	Frame Stucco Res.		
A-A	Frame Stucco Res.		
B-B	Stucco Garage		
C-C	Frame Stucco Res.		
D-D	Frame Stucco Res.		
EE	Frame Stucco Res.		
FF	Stucco Garage		
GG	Frame Stucco Res.		
HH	Frame Stucco Res.		
II	Frame Stucco Res.		

No.	DESCRIPTION	DATE	BY
6	ADDED MEDIANS@ U.S.80-85 & UNIVERSITY AVE.	6-10-69	G.R.
5	ADDED ORDER OF ACCURACY TO GEN. NOTE	6-2-69	G.R.
4	ADDED A/C @ mters. of S.R. 478 & U.S. 80-85	5-20-69	G.R.
3	Added Parcel 18-17-EL	5-16-69	N.C.
2	Added Topography on Parcels 18-28 & 18-40	4-17-69	G.R.
1	Added Topography on Parcels 18-8 & 18-36	12-27-68	G.R.

REVISIONS (OR CHANGE NOTICES)

No.	DESCRIPTION	DATE	BY
29.			
28.			
27.			
26.	ADDED Q.C.D. TO PARCEL 18-8-EL	10-22-75	J.R.R.
25.	ADDED Q.C.D. TO PARCEL 18-7-EL	1-3-73	B.R.
24.	ADDED Q.C.D. TO PARCEL 18-40-EL	11-30-72	B.R.

REVISIONS (OR CHANGE NOTICES)

No.	DESCRIPTION	DATE	BY
13	OMITTED I-G DESIGNATION ON CONST. PROJ.	12-9-69	A.S.
12	Eliminated Parcel 18-10-EL	7-2-69	N.C.
11	CHANGED PARCEL NO. 18-11EL TO 18-10EL	6-10-69	G.R.
10	REVISED PARCELS 18-13, 18-14, 18-15, 18-16, 18-17	6-10-69	G.R.
9	ADDED PARCELS 18-49, 18-50, 18-51	6-10-69	G.R.
8	DELETED PARCELS-18-11, 18-12, 18-13EL, 18-14EL, & 18-17EL	6-10-69	G.R.
7	DELETED CUL-DE-SAC @ PARCEL 18-11, CURVE @ PARCEL 18-12	6-10-69	G.R.

REVISIONS (OR CHANGE NOTICES)

No.	DESCRIPTION	DATE	BY
23	REVISED A/C LINE ON WEST OAK AVE.	12-14-70	R.B.
22	DELETED CONST. AGR. ON MARBLE AVE.	11/24/70	P.B.
21	ADDED CONST. AGR. ON MARBLE AVE.	9-3-70	P.B.
20	DELETED PARCEL 18-2-EL	8-7-70	A.S.
19	ADDED STRUCTURE @ STA. 306+00	4-20-70	A.S.
18	ADDED BEG. CONST. U.S. 80&85 STA. 147+00	4-20-70	A.S.
17	ADDED CONST. PROJ. F-002-2(8)& STA. 140+09.91	4-20-70	A.S.
16	DELETED PARCEL 18-4 EL	4-20-70	G.R.
15	LABELED IMPROVEMENTS	3-13-70	A.S.
14	REVISED A/C @ STRUCTURE 21+25 RAMP "D" LT.	1-15-70	R.B.

REVISIONS (OR CHANGE NOTICES)

ACCESS CONTROL & R/W LINE
RIGHT OF WAY LINE
SURVEYED PROPERTY LINE
UNSURVEYED PROPERTY LINE
SURVEY LINE
TRACT SUBDIVISION
TOE OF SLOPE - TOP OF CUT
x x x x ADJUSTED SURVEYED DATA
(x x x) DEEDED AND/OR PLATTED DATA

FINAL MAP

NOV 27 1968

I-010-2(33)140 CONSTR.
NEW MEXICO STATE HIGHWAY COMMISSION
RIGHT OF WAY MAP
NEW MEXICO PROJECT NO.
I-010-2(28)136
DONA ANA COUNTY
SCALE 1" = 100' SHEET 18 OF 21

Prepared by E. H. Schmidt and Associates Inc.

X X

Project Plan Template For Scanning/Indexing

PROJECT NUMBER: **SP-SM-4510(200)**

CONTROL NUMBER: **9210** **DISTRICT:** **1**

DESCRIPTION:

PROJECT DATE: **3/10/1999**

COUNTY: **DONA ANA**

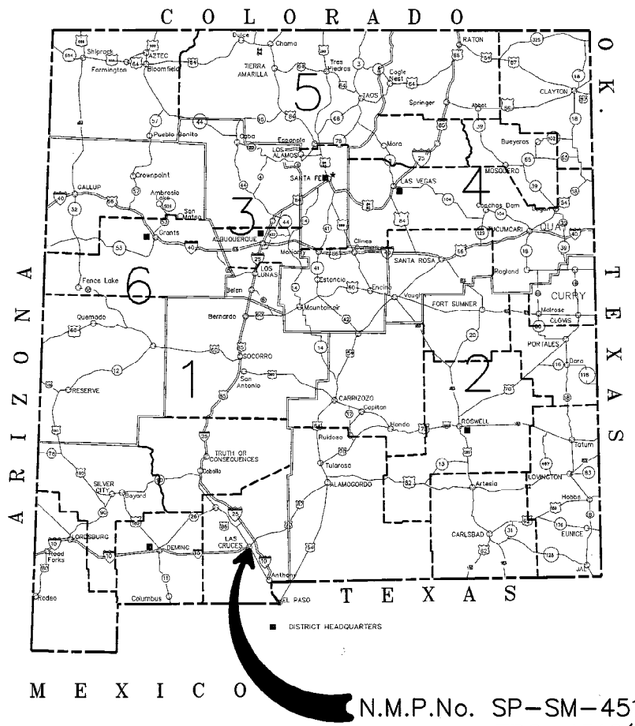
PLAN TYPE: **RIGHT OF WAY**

X **PPL1** X

RIGHT OF WAY MAP

LENGTH OF PROJECT 1.316 MILES
LENGTH OF R.O.W. 1.316 MILES

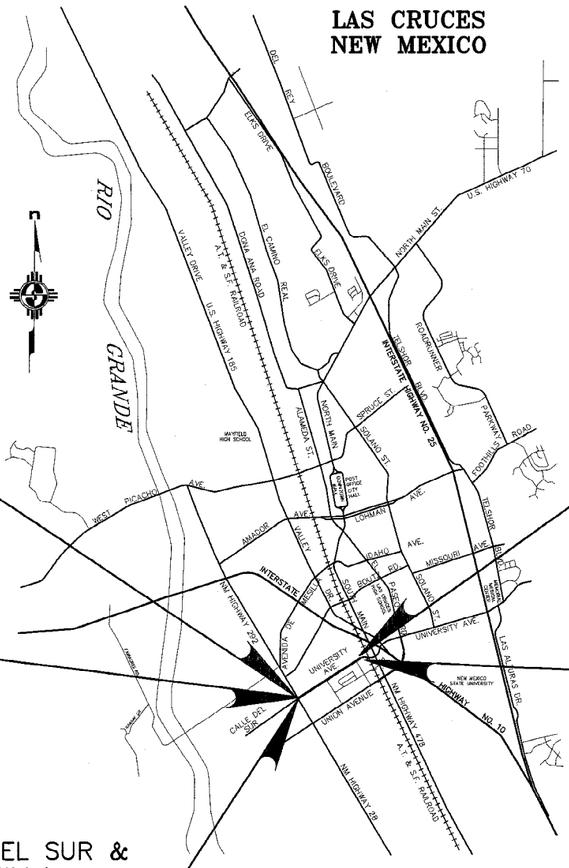
INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
1A	PROFILE SHEET
1B	PARCEL BLOCK SHEET
2	STA. 10+00.00 TO 15+00
3	STA. 15+00 TO 27+00
4	STA. 27+00 TO 39+00
5	STA. 39+00 TO 50+00
6	OFFSITE STORM SEWER
6A	OFFSITE STORM SEWER
6B	STA. 50+00 TO 60+00
7	STA. 60+00 TO 72+00
8	STA. 72+00 TO 79+46.48



N.M.P.No. SP-SM-4510(200) & TPO-4510(2)

VICINITY MAP

LAS CRUCES
NEW MEXICO



LOCATION MAP

STA. 10+43.03 CONST. ℄
BEGIN RIGHT-OF-WAY
N.M.P.No. SP-SM-4510(200) &
TPO-4510(2)

STA. 11+14.60 CONST. ℄
BEGIN CONSTRUCTION
N.M.P.No. SP-SM-4510(200) &
TPO-4510(2)

INTERSECTION OF
UNIVERSITY AVENUE/CALLE DEL SUR &
℄ N.M.S.R. 28/AVENIDA DE MESILLA
STA. 10+00.00 BEGIN SURVEY & CONST.
B.O.P. N.M.P. SP-SM-4510(200)
& TPO-4510(2)

END SURVEY
℄ STA. 82+25.60

STA. 82+04.98 CONST. ℄
END OF RIGHT-OF-WAY
N.M.P.No. SP-SM-4510(200) &
TPO-4510(2)

P.C. STA. 79+46.48 CONST. ℄
P.C. STA. 79+46.18 SURVEY ℄
END OF PROJECT
N.M.P.No. SP-SM-4510(200) &
TPO-4510(2)

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1	CHANGED MAP SCALE FROM 1"=50' TO 1"=40'	9/98	SGB

REVISIONS (OR CHANGE NOTICES)

LEEDSHILL - HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

FINAL MAP DATE *MARCH 10, 1999*

EFFECTIVE *MAR. 10, 1999*
DATE

SECRETARY OF HIGHWAYS AND TRANSPORTATION

BY
LANDS ENGINEER

CN - 9210

NEW MEXICO STATE HIGHWAY COMMISSION

RIGHT OF WAY MAP
NEW MEXICO PROJECT NO.
SP-SM-4510(200)&
TPO-4510(2)
DONA ANA COUNTY
SHEET 1 OF 8

scanlon white inc.

PREPARED BY:
SCANLON WHITE, INC.
540 N. WATER ST.
LAS CRUCES, NM 88001
(505) 525-2112

101TSHT.dwg

16

PARCEL BLOCK

PARCELS

PARCEL NUMBER	OWNER	AREA OF TAKE acres	AREA OF TAKE sq. ft.	AREA REMAINDER	LARGER PARCEL ACRES
2–1	HAHN, EUGENE / SNYDER, DARLENE	0.4570	19906	20.3840	20.841
2–2	BASH, DALLAS	0.0167	729	0.2974	0.3141
2–3	GALLAGHER, B. JACK	0.0132	573	0.2483	0.2615
2–4	MESILLA FARMS HOMEOWNER'S ASSOCIATION	0.0107	788	0.8709	0.8890
3–1	WRIGHT, BEN & JANET	0.0072	503	0.2693	0.2808
3–2	HARRIS, KENNETH	0.0117	512	0.3333	0.3451
(REVISED TO A CME) ~~3–3~~	~~ARROWOOD, ROY & PATRICIA~~	~~0.0169~~	~~735~~	~~1.9841~~	~~2.001~~
3–4	ESTRADA, YVETTE	0.0073	317	0.2427	0.250
3–5	PRICHARD, JAMES T.	0.0210	915	5.3240	5.345
3–6	POLONER, BONNIE D.	0.0103	450	0.7707	0.781
4–1	LAS CRUCES SCHOOL DISTRICT NO. 2	0.7313	31856	14.7525	15.490
5–1	WUNSCH, ET. AL.	0.1354	5897	11.3799	11.5412
(DELETED) ~~5–2~~	~~JORNADA LODGE NO. 70~~	~~0.0226~~	~~984~~	~~3.0034~~	~~3.026~~
(REVISED TO A CME) ~~5–3~~	~~MARTINEZ, CATHERINE M. & MONTOYA, LINDA L.~~	~~.0252~~	~~1098~~	~~0.9748~~	~~1.000~~
6–1	RALEY, FRED & EVELYN	0.0092	402	0.9908	1.000
7–1	RALEY, MYRTLE – SUCCESSOR TRUSTEE	0.0014	61	31.4276	31.429
7–2	EDWARDS, GILBERT & EARLENE	0.0531	2315	6.2839	6.337
7–3	NMSU REGENTS	0.0308	1341	~~>100~~	>100
7–4	NMSU REGENTS	0.3130	13633	>100	>100
8–1	NMSU REGENTS/NMSHTD – SEE NOTE BELOW	0.3782	16473	>100	>100
8–2	NMSU REGENTS	0.5036	21936	>100	>100

CONSTRUCTION MAINTENANCE EASEMENTS

PARCEL NUMBER	OWNER	AREA OF TAKE acres	AREA OF TAKE sq. ft.	AREA REMAINDER	LARGER PARCEL ACRES
3-CME-1	ARROWOOD, ROY & PATRICIA	0.0169	735	1.9841	2.001
5–CME–1	RALEY, MYRTLE – SUCCESSOR TRUSTEE	0.0728	3709	0.2499	0.335
5–CME–2	RALEY, FRED & EVELYN	0.0554	2414	0.9446	1.00
5–CME–3	RALEY, MYRTLE – SUCCESSOR TRUSTEE	0.2285	9955	0.9985	1.227
5–CME–4	RALEY, MYRTLE – SUCCESSOR TRUSTEE	0.1561	6802	38.6889	38.845
5–CME–5	McCOWEN FARM LIMITED	1.3739	59846	81.7651	83.139
(DELETED) ~~5-CME-6~~	~~MARTINEZ, CATHERINE M. & MONTOYA LINDA L.~~	~~.0252~~	~~1098~~	~~0.9748~~	~~1.000~~

NOTE: AREAS FOR REMAINDERS AND LARGER PARCEL AREAS WERE OBTAINED FROM INFORMATION CONTAINED IN THE DEEDS, SUBDIVISION PLATS AND OTHER RECORD DATA

PARCEL 8–1 IS NMSHTD R/W OF OLD UNIVERSITY AVENUE ALIGNMENT OCCUPIED BY NEW MEXICO STATE UNIVERSITY. A PARCEL DESCRIPTION HAS BEEN CREATED TO FACILITATE CONVERSION OF OWNERSHIP FROM NMSHTD TO NMSU.

NO.	DESCRIPTION	DATE	BY
6	REVISE NAME 5-CME-3	12-20-00	J.G.
5	DELETED PARCEL 5-CME-6	9/11/00	C.S.
4	REVISED PARCEL 5-3, CHANGE TO 5-CME-6	8/01/00	J.G.
3	REVISED PARCEL 3-3, CHANGE TO 3-CME-1	8/01/00	J.G.
2	DELETED PARCEL 5-2	7/31/00	J.G.
1	CHANGE OWNERSHIP OF VARIOUS PACELS	3/27/00	SGB

REVISIONS (OR CHANGE NOTICES)

LEEDSHILL – HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471–4443

scanlon white inc.
PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001

FINAL MAP DATE *MARCH 10, 1999*

CN – 9210

NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP
NEW MEXICO STATE PROJECT NO.
SP–SM–4510(200)&
TPO–4510(2)

DONA ANA COUNTY
SHEET 1A OF 8

101RWS1A.dwg

Dr. 16

PROFILE SHEET

STA. 11+14.60 CONST. ℄
BEGIN CONSTRUCTION
N.M.P.No. SP-SM-4510(200) &
TPO-4510(2)

STA. 10+43.03 CONST. ℄ – BEGIN R.O.W.
N.M.P.No. SP-SM-4510(200) &
TPO-4510(2)

10+00 15+00 20+00 25+00 30+00 35+00 40+00 45+00

DALLAS W. BASH 2-2
MESILLA FARMS HOMEOWNER'S ASSOCIATION 2-4
KENNETH HARRIS 3-2
ROY & PATRICIA ARROWOOD 3-CME-1
JAMES T. PRICHARD 3-5
BONNIE D. POLONER 3-6
LAS CRUCES SCHOOL DISTRICT NO.2 4-1
WILLIAM WUNSCH
DONALD WUNSCH
& BARBARA O'GWYNN
(c/o ALBERT REYES) 5-1
(DELETED)
JORNADA MASON'S LODGE NO.70 5-2
B. JACK & LOIS E. GALLAHER 2-3
BEN & JANET WRIGHT 3-1
YVETTE E. ESTRADA 3-4
EUGENE HAHN/DARLENE SNYDER 2-1

CONST. ℄
P.I. STA. 28+20.35 LT
Δ = 05°04'16"
D = 02°30'00"
T = 101.49'
L = 202.84'
R = 2291.83'

CONST. ℄
P.I. STA. 40+47.91 LT
Δ = 05°40'51"
D = 02°30'00"
T = 116.72'
L = 233.23'
R = 2291.83'

CONST. ℄
P.I. STA. 30+21.78 RT
Δ = 05°00'04"
D = 02°30'00"
T = 100.08'
L = 200.04'
R = 2291.83'

P.R.C. STA. 29+21.70 CONST. ℄
P.C. STA. 27+18.86 CONST. ℄
P.O.T. STA. 30+78.48 CONST. ℄ (NOT A P.I.) INTERSECT McDONELL ROAD ℄
P.O.T. STA. 39+31.09 CONST. ℄ (NOT A P.I.)
P.O.T. STA. 39+45.89 CONST. ℄ (NOT A P.I.)
P.T. STA. 41+79.12 CONST. ℄

N.M.S.R. NO. 28
N.M.S.R. NO. 101
N.M.S.R. NO. 101

STA 14+45.31 CONST. ℄
INTERSECT TERESITA STREET
STA 16+95.32 CONST. ℄
INTERSECT BOLDT STREET
STA. 27+44.44 CONST. ℄
INTERSECT CAMINO CASTILLO ℄

LAGUNA LATERAL
CAMINO CASTILLO
McDONELL RD.

SP-SM-4510(200) &
TPO-4510(2)
STA. 10+03.06 CONST. ℄
EQ. STA. 1465+93.92 SURVEY
& CONST. ℄ NMP M-4511(1)

B.O.S. SP-SM-4510(200) &
TPO-4510(2)
STA. 10+00.00 SURVEY ℄
EQ. STA. 1465+90.98 SURVEY
& CONST. ℄ NMP M-4511(1)

GRAPHIC SCALE
200 0 100 200 400 800
(IN FEET)

(DELETED)
~~CATHERINE M. MARTINEZ~~
~~& LINDA L. MONTOYA~~
~~5-CME-6~~

JORNADA MASON'S LODGE NO.70 5-2

50+00 55+00 60+00 65+00 70+00 75+00 80+00 85+00

OLD FARM RD.

FRED & EVELYN RALEY 6-1
P.I. STA 54+00.13 ANGLE POINT CONST. ℄ Δ = 08°07'45"
MYRTLE RALEY 7-1
GILBERT & EARLINE EDWARDS 7-2
REGENTS OF NEW MEXICO STATE UNIVERSITY (EASEMENT TO CITY OF LAS CRUCES) 7-3
REGENTS OF NEW MEXICO STATE UNIVERSITY 7-4
REGENTS OF NEW MEXICO STATE UNIVERSITY 8-1
REGENTS OF NEW MEXICO STATE UNIVERSITY 8-2

CONST. ℄
P.I. STA 62+47.28 LT
Δ = 05°49'30"
D = 02°30'00"
T = 116.60'
L = 233.00'
R = 2291.83'

P.R.C. STA 63+63.68 CONST. ℄
P.C. STA 61+30.68 CONST. ℄
P.O.T. STA. 65+81.60 ANGLE POINT SURVEY ℄ Δ = 5°24'09"

CONST. ℄
P.I. STA 64+75.22
Δ = 05°34'21"
D = 02°30'00"
T = 111.54'
L = 222.90'
R = 2291.83'

P.T. STA 65+86.58 CONST. ℄
INTERSECT BOWMAN STREET ℄
BOWMAN STREET

STA. 50+67.02 CONST. ℄
INTERSECT OLD FARM ROAD ℄

N.M.S.R. NO. 101
N.M.S.R. NO. 101

P.C. STA 75+15.46 CONST. ℄

CONST. ℄
P.I. STA 77+11.00
Δ = 32°14'45"
D = 08°00'
T = 206.86'
L = 402.73'
R = 715.60'

P.T. STA 78+18.8 CONST. ℄
P.C. STA 79+46.48 CONST. ℄

FOUND HIGHWAY RIGHT-OF-WAY RAIL FOR N.M.P. SU-1133(S) – BEGINNING OF CONST. P.R.C. STA. 4+31.29 RT.

E.O.P. STA. 79+46.48 CONST. ℄
N.M.P. SP-SM-4510(200) &
TPO-4510(2)

℄ DATA
Δ = 20°57'24"
D = 07°30'00"
T = 141.29'
L = 279.42'
R = 763.94'

A.T. & S.F. RAIL ROAD
SOUTH MAIN ST. N.M.S.R. 478
INTERSTATE 10

FINAL MAP DATE MARCH 10, 1999

NO.	DESCRIPTION	DATE	BY
6			
5			
4	DELETED PARCEL 5-CME-6	9/11/00	C.S.
3	REVISED PARCELS 3-3 to 3-CME-1, 5-3 to 5-CME-6	8/01/00	J.G.
2	DELETED PARCEL 5-2	7/31/00	J.G.
1	CHANGE OWNERSHIP OF VARIOUS PACELS	3/27/00	SGB

REVISIONS (OR CHANGE NOTICES)

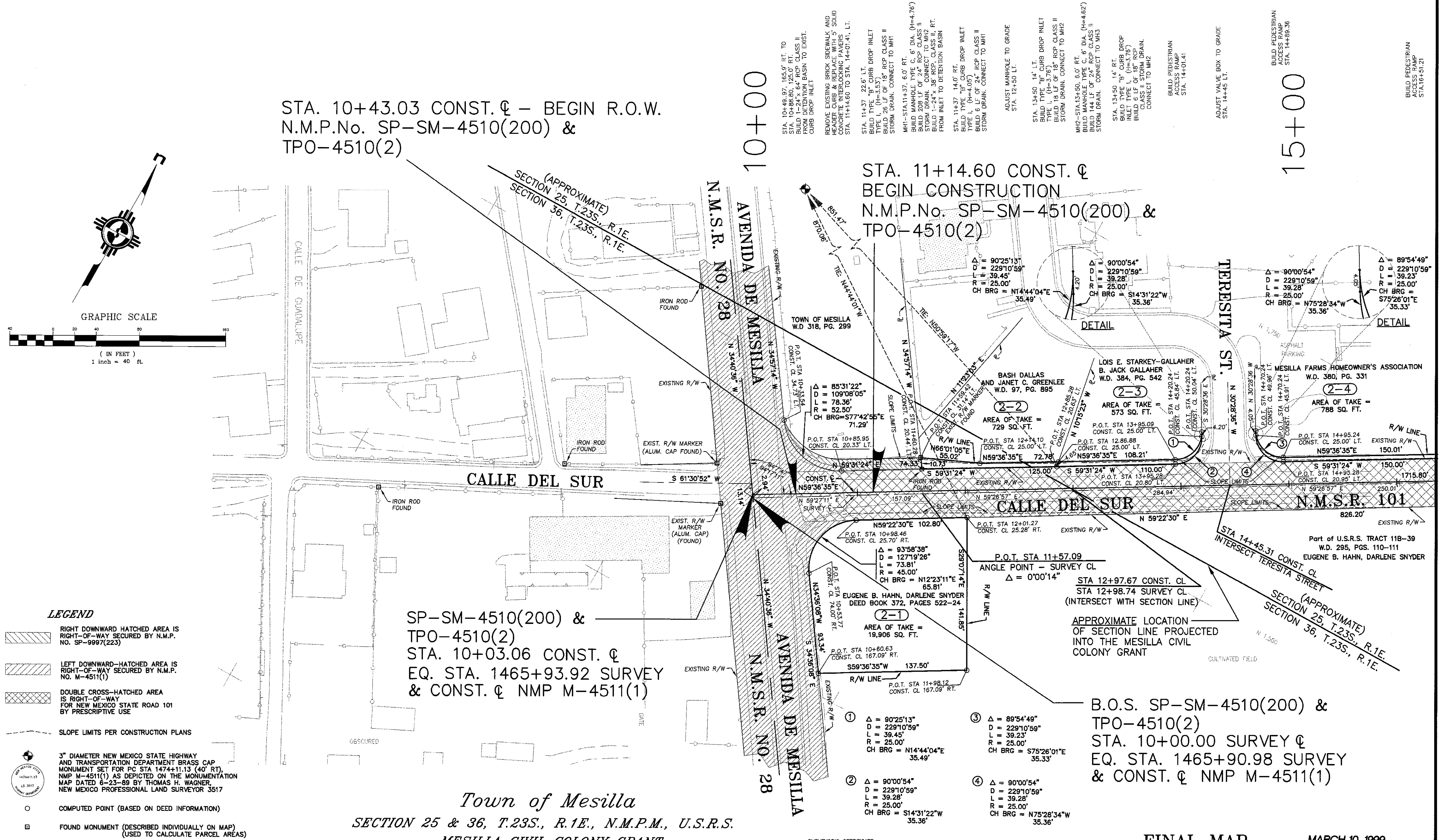
LEEDSHILL – HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

CN – 9210
NEW MEXICO HIGHWAY COMMISSION
RIGHT OF WAY MAP
NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200)&
TPO-4510(2)
DONA ANA COUNTY
SHEET 1B OF 8
101RWS1B.dwg

16



Town of Mesilla

SECTION 25 & 36, T.23S., R.1E., N.M.P.M., U.S.R.S.

MESILLA CIVIL COLONY GRANT

LEGEND

- RIGHT DOWNWARD HATCHED AREA IS RIGHT-OF-WAY SECURED BY N.M.P. NO. SP-9997(223)
- LEFT DOWNWARD-HATCHED AREA IS RIGHT-OF-WAY SECURED BY N.M.P. NO. M-4511(1)
- DOUBLE CROSS-HATCHED AREA IS RIGHT-OF-WAY FOR NEW MEXICO STATE ROAD 101 BY PRESCRIPTIVE USE
- SLOPE LIMITS PER CONSTRUCTION PLANS
- 3" DIAMETER NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT BRASS CAP MONUMENT SET FOR PC STA 1474+11.13 (40' RT), NMP M-4511(1) AS DEPICTED ON THE MONUMENTATION MAP DATED 6-23-89 BY THOMAS H. WAGNER, NEW MEXICO PROFESSIONAL LAND SURVEYOR 3517
- COMPUTED POINT (BASED ON DEED INFORMATION)
- FOUND MONUMENT (DESCRIBED INDIVIDUALLY ON MAP) (USED TO CALCULATE PARCEL AREAS)
- BUILDINGS & ROOFED STRUCTURES

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

BASIS OF BEARING: WEST R/W LINE MONUMENTATION FOR NMP NO. I-010-2(28)136.

DETERMINATION OF EXISTING RIGHT-OF-WAY IS PRIMARILY FROM FIELD SURVEY OF EXISTING PROPERTIES. DEEDS AND FIELD EVIDENCE WERE USED TO DETERMINE THE PROPERTY BOUNDARIES. THE RIGHT-OF-WAY SURVEY OF NMP NO. I-010-2(28)136 WAS USED TO DETERMINE THE EAST PROPERTY BOUNDARIES AND AVENIDA DE MESILLA NMSR NO. 28 WAS USED ON THE WEST.

For Ownership and Areas of Parcel Numbers Shown See Sheet 1A of 8

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR AND THAT THESE RIGHT-OF-WAY MAPS ARE AN INTERIM PRODUCT OF PROJECT DESIGN DEVELOPMENT AND WERE PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECTION. CONFORMANCE WITH THE STATE OF NEW MEXICO'S MINIMUM STANDARDS FOR RIGHT-OF-WAY SURVEYING WILL OCCUR FOLLOWING ACTUAL ACQUISITION OF RIGHT-OF-WAY REQUIRED BY PROJECT NUMBER SP-SM-4510(200) & TPO-4510(2).

March 10, 1999 — DATE OF SURVEY

TED G. SCANLON / PS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

LEEDSHILL - HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

FINAL MAP DATE MARCH 10, 1999

CN – 9210

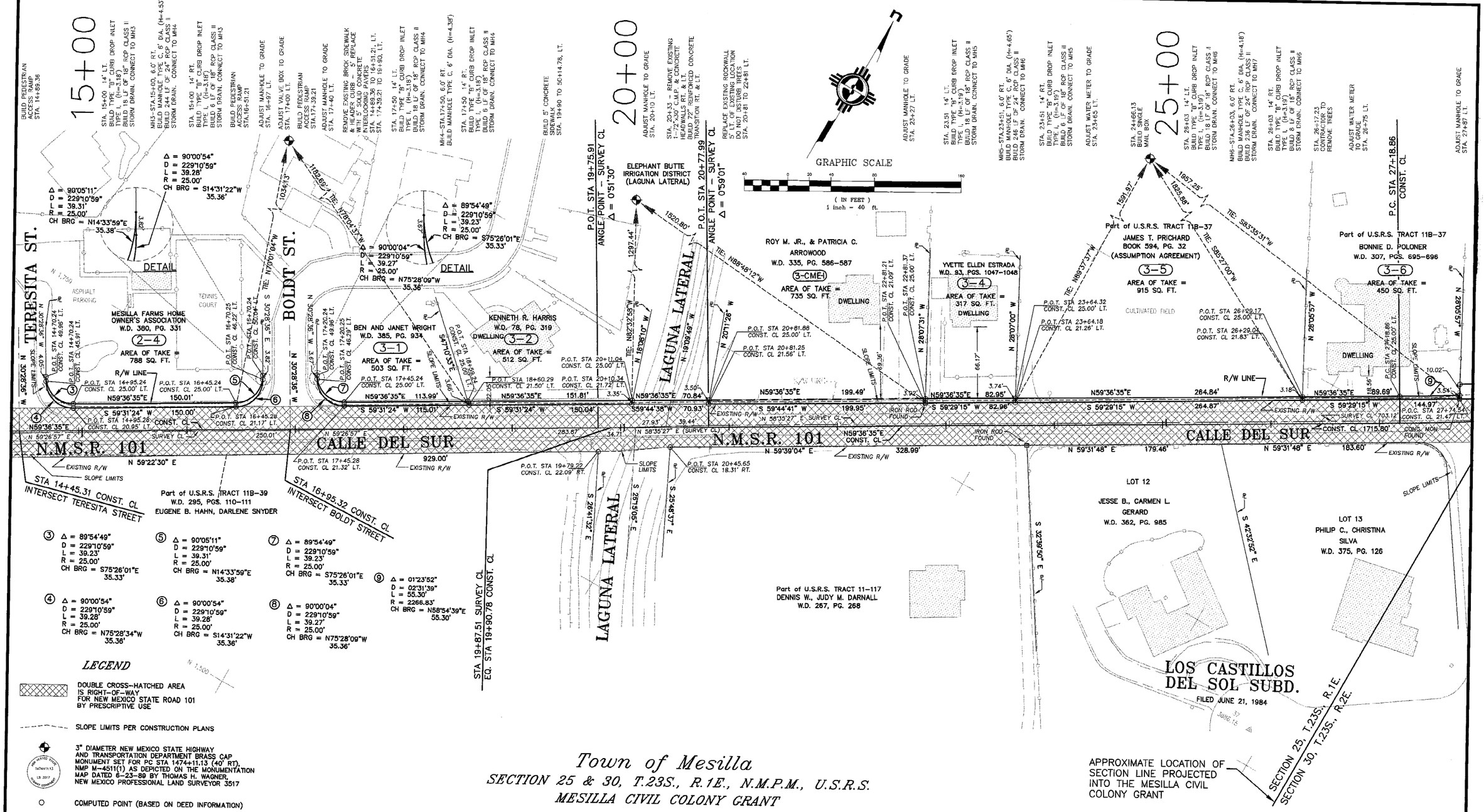
NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP

NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200) & TPO-4510(2)

DONA ANA COUNTY

SCALE 1" = 40' SHEET 2 OF 8



Town of Mesilla
SECTION 25 & 30, T.23S., R.1E., N.M.P.M., U.S.R.S.
MESILLA CIVIL COLONY GRANT

For Ownership and Areas of Parcel Numbers Shown See Sheet 1A of 8

NO.	DESCRIPTION	DATE	BY
8			
5			
4			
3			
2			
1	REVISED PARCEL 3-3, CHANGE TO 3-CME-1	7/31/00	J.G.

REVISIONS (OR CHANGE NOTICES)

BASIS OF BEARING: WEST R/W LINE MONUMENTATION FOR NMP NO. I-010-2(28)136.

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March 10, 1999
DATE OF SURVEY

TED G. SCANLON - PS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

LEEDSHILL - HERKENHOFF, INC.
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scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

FINAL MAP

DATE MARCH 10, 1999

CN - 9210

NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP
NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200) & TPO-4510(2)
DONA ANA COUNTY
SCALE 1" = 40' SHEET 3 OF 8

10SRW53.dwg

CONST. CL
P.I. STA. 28+20.35 LT
Δ = 05°04'16"
D = 02°30'00"
T = 101.49'
L = 202.84'
R = 2291.83'

30+00

35+00

SECTION 25, T.23S., R.1E.
SECTION 30, T.23S., R.2E.

APPROXIMATE LOCATION OF SECTION LINE PROJECTED INTO THE MESILLA CIVIL COLONY GRANT

GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

ADJUST WATER METER TO GRADE STA. 26+75 LT.
ADJUST MANHOLE TO GRADE STA. 27+87 LT.
STA. 28+45 18' LT. BUILD TYPE "B" CURB DROP INLET TYPE I, (H=3.19') BUILD 6 LF OF 18" RCP CLASS II STORM DRAIN. CONNECT TO MH7
MH7-STA.28+45, 6.0' RT. BUILD MANHOLE TYPE C, 6' DIA. (H=5.38') BUILD 228 LF OF 24" RCP CLASS II STORM DRAIN. CONNECT TO MH8
STA. 28+45 18.0' RT. BUILD TYPE "B" CURB DROP INLET TYPE I, (H=3.19') BUILD 6 LF OF 18" RCP STORM DRAIN. CONNECT TO MH7
ADJUST MANHOLE TO GRADE STA. 28+10 LT.
BUILD 5' CONCRETE SIDEWALK STA. 18+90 TO 50+14.73, LT.
STA. 30+79 21' LT. BUILD TYPE "B" CURB DROP INLET TYPE I, (H=3.19') BUILD 30 LF OF 18" RCP CLASS II STORM DRAIN. CONNECT TO MH8
MH8-STA.30+79, 12.0' RT. BUILD MANHOLE TYPE C, 6' DIA. (H=6.54') BUILD 368 LF OF 24" RCP CLASS II STORM DRAIN. CONNECT TO MH9
STA. 30+79 21' RT. BUILD TYPE "B" CURB DROP INLET TYPE I, (H=3.19') BUILD 6 LF OF 18" RCP STORM DRAIN. CONNECT TO MH8
STA. 31+77.89 LT. BUILD 28' LAYDOWN CURB & GUTTER & DRIVEPAD
STA. 33+63.76 LT. BUILD 28' LAYDOWN CURB & GUTTER & DRIVEPAD
MH9-STA.34+30, 12.0' LT. 7' BUILD MANHOLE TYPE C, 6' DIA. (H=8.36') BUILD 274 LF OF 24" RCP CLASS II STORM DRAIN. CONNECT TO MH10
ADJUST MANHOLE TO GRADE STA. 35+87 RT.
ADJUST MANHOLE TO GRADE AND VALVE BOXES STA. 35+75 RT.
STA. 36+79.55 LT. BUILD 28' LAYDOWN CURB & GUTTER & DRIVEPAD
STA. 37+30 21' RT. BUILD TYPE "B" CURB DROP INLET TYPE I, (H=3.19') BUILD 30 LF OF 18" RCP CLASS II STORM DRAIN. CONNECT TO MH10
MH10-STA.37+30, 12.0' LT. BUILD MANHOLE TYPE C, 6' DIA. (H=9.79') BUILD 64 LF OF 24" RCP CLASS II STORM DRAIN. CONNECT TO MH11
MH11-STA.38+00, 12.0' RT. BUILD MANHOLE TYPE C, 6' DIA. (H=10.15') BUILD 45 LF OF 24" RCP CLASS II STORM DRAIN. CONNECT TO MH12

P.C. STA 27+18.86 CONST. CL
P.O.T. STA 27+81.11 ANGLE POINT – SURVEY CL Δ = 0°06'59"
P.O.C. STA 28+07.43 CONST. CL
P.O.T. STA 28+04.13 SURVEY CL (INTERSECT WITH SECTION LINE)
P.R.C. STA 29+21.70 CONST. CL
P.O.T. STA 31+21.74 CONST. CL (NOT A P.I.)
P.O.T. STA 36+73.86 ANGLE POINT – SURVEY CL Δ = 0°43'18"
P.O.T. STA 36+76.48 CONST. CL INTERSECT McDOWELL ROAD CL (NOT A P.C.)
P.O.T. STA 39+31.19 CONST. CL (NOT A P.C.)
P.O.T. STA 39+45.89 CONST. CL (NOT A P.I.)

COLLEGE LATERAL

Part of U.S.R.S. TRACT 11B-37
BONNIE D. POLONER
W.D. 307, PGS. 695-696
3-6
AREA OF TAKE = 450 SQ. FT.

U.S.R.S. TRACT 11-71B
LAS SCHOOL DISTRICT No. 2
ZIA MIDDLE SCHOOL
W.D. 186, PG. 179
4-1
AREA OF TAKE = 31,856 SQ. FT.

SCHOOL

APPARENT 50' WIDE UNRECORDED EASEMENT ELEPHANT BUTTE IRRIGATION DISTRICT

Δ = 04°43'17"
D = 02°27'45"
L = 191.74'
R = 2326.83'
CH = N61°54'01"E 191.68'

3007.82'
TIE S74°58'29"W 3007.8183'

DWELLING

R/W LINE
SLOPE LIMITS
CONC. MON. FOUND
EXISTING R/W
CONST. CL
SURVEY CL
ASPHALT PARKING
CONC. MON. FOUND

N59°36'35"E 89.69'
S 59°29'15" W 144.97'
N59°34'28"E 703.12'
N59°36'35"E 1715.80'
N 59°31'48" E 183.60'
N 59°31'48" E 178.70'
N 59°19'03" E 214.64'
N 59°19'03" E 107.32'
N 59°19'03" E 107.32'
N 59°19'03" E 214.64'
N59°33'03"E 1112.03'
N59°32'23"E 598.36'
S 59°41'02" W
554.73'
892.75'
1112.03'
60.58'
2.12'
1388.14'
N 60°14'54" E
S65°49'49"W 14.70'
S65°54'54"E 51.28'
S65°32'54"E 24.14'
N 00°25'06" W 2326.83'

LOT 13
PHILIP C., CHRISTINA SILVA
W.D. 375, PG. 126

LOT 1
RICHARD B., PIEDAD GARAY
W.D. 378, PG. 865

LOT 4
LOT 5
LOT 6
BENNIE J. JR., DEBRA L. ADAY
W.D. 339, PG. 611-612
BENNIE J. JR., DEBRA L. ADAY
W.D. 339, PG. 607

ORIGINAL SUBDIVISION
S 34°43'41" E
S 34°40'50" E
S 34°41'05" E
S 34°46'18" E

N.M.S.R. 101
CALLE DEL SUR
CAMINO CASTILLO
McDOWELL RD.

N 63°01'30" E 99.93'
N 63°01'30" E 106.10'
N 63°01'30" E 103.30'

LOT 1
FERNANDO H., ELIZABETH M. SALAZAR
W.D. 228, PG. 189
LOT 2
EDWARD A., AVA M. ABRAHAM
W.D. 364, PG. 628
LOT 3
DARRELL T., SARA J. SULLIVAN
W.D. 236, PG. 339

S 35°20'28" E
DWELLING
DWELLING
DWELLING

STA 28+13.40 SURVEY CL EQ. STA 28+16.68 CONST. CL
STA 27+84.44 CONST. CL INTERSECT CAMINO CASTILLO CL
S 34°02'22" E 2104.54'
SECTION 25, T.23S., R.1E.
SECTION 30, T.23S., R.2E.
DWELLING
EXISTING R/W

PINEWOOD COVE SUBDIVISION
FILED AUGUST 29, 1984

LOS CASTILLOS DEL SOL SUBD.
FILED JUNE 21, 1984

MESILLA PARK MANOR SUBDIVISION
BLOCK 1
FILED JULY 20, 1964

⑨ Δ = 01°23'52" D = 02°31'39" L = 55.30' R = 2266.83' CH BRG = N58°54'39"E 55.30'
⑩ Δ = 03°39'25" D = 02°32'20" L = 144.04' R = 2256.83' CH BRG = N56°22'02"E 144.02'
⑪ Δ = 01°57'36" D = 02°27'45" L = 79.60' R = 2326.83' CH BRG = N55°31'07"E 79.59'
⑫ Δ = 03°34'19" D = 08°51'17" L = 40.34' R = 647.07' CH BRG = N55°30'50"E 40.33'
⑬ Δ = 00°58'28" D = 02°27'45" L = 39.58' R = 2326.83' CH BRG = N59°03'09"E 39.58'
⑭ Δ = 00°30'41" D = 02°27'45" L = 20.77' R = 2327.12' CH = N64°31'00"E 20.76'
⑮ Δ = 01°08'40" D = 02°27'44" L = 46.49' R = 2327.12' CH = N65°20'41"E 46.49'

CONST. CL
P.I. STA. 30+21.78 RT
Δ = 05°00'04"
D = 02°30'00"
T = 100.08'
L = 200.04'
R = 2291.83'

CONST. CL
P.I. STA. 38+03.97 RT
Δ = 06°22'04"
D = 02°30'00"
T = 127.49'
L = 254.72'
R = 2291.83'

P.O.C. STA 38+65.33 CONST. CL 35.00' LT.
P.O.C. STA 38+85.78 CONST. CL 35.00' LT.
R/W LINE
EXISTING R/W
CONC. MON. FOUND
31.28'
N 60°15'09" E
S59°41'02"W, 2.12'
P.O.C. STA 38+65.81 CONST. CL 11.53' LT.
P.O.C. STA 38+87.91 CONST. CL 11.72' LT.

DETAIL

LEGEND

- RIGHT DOWNWARD-HATCHED AREA IS RIGHT-OF-WAY FOR McDOWELL ROAD BY PRESCRIPTIVE USE
- LEFT DOWNWARD-HATCHED AREA IS RIGHT-OF-WAY FOR CAMINO CASTILLO SECURED BY LOS CATILLOS DEL SOL SUBDIVISION
- DOUBLE CROSS-HATCHED AREA IS RIGHT-OF-WAY FOR NEW MEXICO STATE ROAD 101 BY PRESCRIPTIVE USE
- SLOPE LIMITS PER CONSTRUCTION PLANS
- COMPUTED POINT (BASED ON DEED INFORMATION)
- FOUND MONUMENT (DESCRIBED INDIVIDUALLY ON MAP) (USED TO CALCULATE PARCEL AREAS)
- BUILDINGS & ROOFED STRUCTURES

3" DIAMETER NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT BRASS CAP MONUMENT SET FOR PC STA 1474+11.13 (40' RT), NMP M-4511(1) AS DEPICTED ON THE MONUMENTATION MAP DATED 6-23-89 BY THOMAS H. WAGNER, NEW MEXICO PROFESSIONAL LAND SURVEYOR 3517

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

BASIS OF BEARING: WEST R/W LINE MONUMENTATION FOR NMP NO. I-010-2(28)136.

DETERMINATION OF EXISTING RIGHT-OF-WAY IS PRIMARILY FROM FIELD SURVEY OF EXISTING PROPERTIES. DEEDS AND FIELD EVIDENCE WERE USED TO DETERMINE THE PROPERTY BOUNDARIES. THE RIGHT-OF-WAY SURVEY OF NMP NO. I-010-2(28)136 WAS USED TO DETERMINE THE EAST PROPERTY BOUNDARIES AND AVENIDA DE MESILLA NMSR NO. 28 WAS USED ON THE WEST.

For Ownership and Areas of Parcel Numbers Shown See Sheet 1A of 8

Town of Mesilla
SECTION 30, T.23S., R.2E., N.M.P.M., U.S.R.S.
MESILLA CIVIL COLONY GRANT

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March 10, 1999
DATE OF SURVEY

TED G. SCANLON - PS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

LEEDSHILL - HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

FINAL MAP

DATE MARCH 10, 1999

CN - 9210

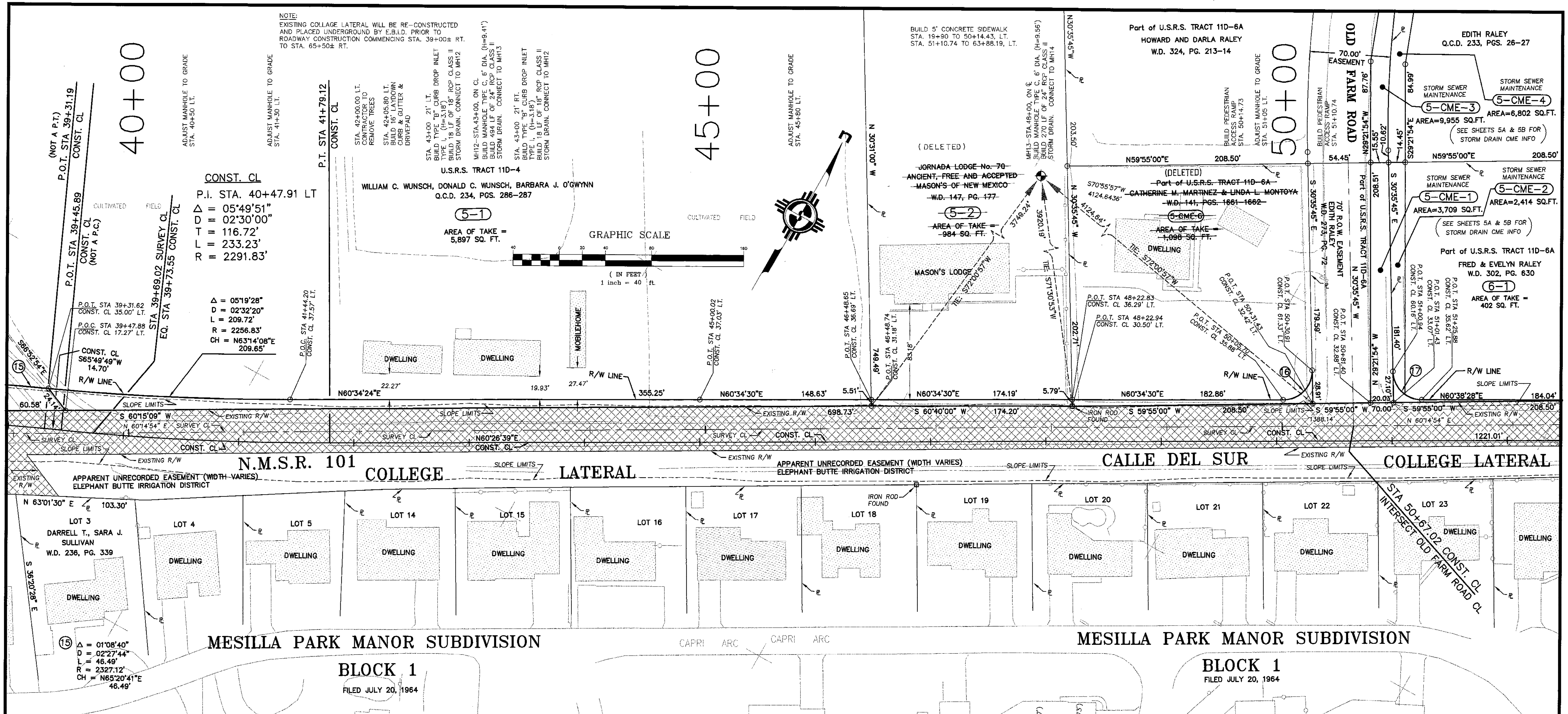
NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP
NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200) & TPO-4510(2)
DONA ANA COUNTY
SCALE 1" = 40' SHEET 4 OF 8

scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

101RW54.dwg



Town of Mesilla

SECTION 30, T.23S., R.2E., N.M.P.M., U.S.R.S.

MESILLA CIVIL COLONY GRANT

LEGEND

- DOUBLE CROSS-HATCHED AREA IS RIGHT-OF-WAY FOR NEW MEXICO STATE ROAD 101 BY PRESCRIPTIVE USE
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- 3" DIAMETER NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT BRASS CAP MONUMENT SET FOR PC STA 1474+11.13 (40' RT), NMP M-4511(1) AS DEPICTED ON THE MONUMENTATION MAP DATED 6-23-89 BY THOMAS H. WAGNER, NEW MEXICO PROFESSIONAL LAND SURVEYOR 3517
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- BUILDINGS & ROOFED STRUCTURES

NO.	DESCRIPTION	DATE	BY
6			
5			
4	DELETED PARCEL 5-CME-6	2/11/00	C.S.
3	CHANGE PARCEL 5-3, TO PARCEL 5-CME-6	8/01/00	J.G.
2	DELETED PARCEL 5-2	7/31/00	J.G.
1	CHANGE OWNERSHIP OF VARIOUS PACELS	3/27/00	SGB

REVISIONS (OR CHANGE NOTICES)

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March 10, 1999
DATE OF SURVEY

TED G. SCANLON – PS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

LEEDSHILL – HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

scanlon white inc.
PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

FINAL MAP DATE MARCH 10, 1999

CN – 9210

NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP

NEW MEXICO STATE PROJECT NO.

SP-SM-4510(200) & TPO-4510(2)

DONA ANA COUNTY

SCALE 1" = 40' SHEET 5 OF 8

16

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

DELETED
MASON'S JORNADA LODGE No. 70
W.D. 147, PG. 177
5-2
AREA OF TAKE = 984 SQ. FT.

MASON'S LODGE

MASON'S JORNADA
LODGE No. 70
W.D. 147, PG. 177

McCOWEN FARM LTD.
STORM SEWER MAINTENANCE
5-CME-5
AREA=59,846 SQ.FT.

McCOWEN FARM LIMITED
W.D. 359, PGS. 131-139

CALLE DEL SUR

COLLEGE LATERAL

NMSR 101

GILLEM LATERAL

CONLEE FARM SUBDIVISION
PLAT BK. 15, PGS. 188-90
FILED APRIL 12, 1988

STA 50+67.02 CONST. CL
INTERSECT OLD FARM ROAD CL

OLD FARM ROAD

50+00

55+00

P.I. STA 54+00.13
ANGLE POINT CONST. CL
Δ = 00°07'45"

(DELETED)
Part of U.S.R.S. TRACT 11D-6A
CATHERINE M. MARTINEZ & LINDA L. MONTOYA
W.D. 141, PG. 1661-1662
5-CME-6
AREA OF TAKE = 1,098 SQ. FT.

Part of U.S.R.S. TRACT 11D-6A
HOWARD AND DARLA RALEY
W.D. 324, PG. 213-14

Part of U.S.R.S. TRACT 11D-6A
EDITH RALEY
Q.C.D. 233, PGS. 26-27

Part of U.S.R.S. TRACT 11D-6A
MARGARET R. FARRELL
W.D. 334, PG. 413

Part of U.S.R.S. TRACT 11D-6A
EDWARD A. AND CAROL ANN WALSH
S.W.D. 330, PGS. 7-9

Part of U.S.R.S. TRACT 11D-6A
70' R.O.W. EASEMENT
EDITH RALEY
W.D. 273, PG. 72

MYRTLE RALEY
-SUCCESSOR TRUSTEE
STORM SEWER MAINTENANCE
5-CME-3
AREA=9,955 SQ.FT.

MYRTLE RALEY
STORM SEWER MAINTENANCE
5-CME-1
AREA=3,709 SQ.FT.

FRED & EVELYN RALEY
STORM SEWER MAINTENANCE
5-CME-2
AREA=2,414 SQ.FT.

MYRTLE RALEY
STORM SEWER MAINTENANCE
5-CME-4
AREA=6,802 SQ.FT.

Part of U.S.R.S. TRACT 11D-6A
FRED & EVELYN RALEY
W.D. 302, PG. 630
6-1
AREA OF TAKE = 402 SQ. FT.

EDITH RALEY
W.D. 273, PG. 72

EDITH RALEY
W.D. 273, PG. 72

EDITH RALEY
W.D. 273, PG. 72

(DEED CALL = "APPROXIMATELY 755')

TIE: S70°44'59"W 4193.38'
TIE: S70°57'44"W 4201.43'
4157.39'
4171.70'
TIE: S67°55'53"W
TIE: S67°54'13"W

Δ = 11°29'32"
D = 05°54'17"
L = 194.63'
R = 970.35'
CH BRG = N24°50'59"W
194.30'

Δ = 00°16'32"
D = 05°54'17"
L = 4.67'
R = 970.35'
CH BRG = N18°57'57"W
4.67'

Δ = 02°15'14"
D = 07°23'36"
L = 30.48'
R = 774.97'
CH BRG = N19°57'18"W
30.48'

Δ = 12°27'05"
D = 07°23'36"
L = 168.42'
R = 774.97'
CH BRG = N27°18'27"W
168.08'

(16) Δ = 91°31'28"
D = 229°10'59"
L = 39.94'
R = 25.00'
CH BRG = N15°10'07"E
35.82'

(20) Δ = 53°29'23"
D = 229°10'59"
L = 23.34'
R = 25.00'
CH BRG = S57°20'26"E
22.50'

(21) Δ = 11°46'04"
D = 06°21'49"
L = 184.92'
R = 900.35'
CH BRG = S24°42'43"E
184.59'

(22) Δ = 09°16'12"
D = 06°46'51"
L = 136.71'
R = 844.97'
CH BRG = S23°27'48"E
136.56'

(23) Δ = 05°26'06"
D = 06°46'51"
L = 80.15'
R = 844.97'
CH BRG = S30°48'57"E
80.12'

(24) Δ = 07°10'00"
D = 06°11'45"
L = 115.67'
R = 924.76'
CH BRG = S69°35'00"W
115.60'

LOT 19, LOT 20, LOT 21, LOT 22, LOT 23, LOT 24
DWELLING

LEGEND

- DOUBLE CROSS-HATCHED AREA IS RIGHT-OF-WAY FOR NEW MEXICO STATE ROAD 101 BY PRESCRIPTIVE USE
- COMPUTED POINT (BASED ON DEED INFORMATION)
- FOUND MONUMENT (DESCRIBED INDIVIDUALLY ON MAP) (USED TO CALCULATE PARCEL AREAS)
- BUILDINGS & ROOFED STRUCTURES

3" DIAMETER NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT BRASS CAP MONUMENT SET FOR PC STA 1474+11.13 (40' RT), NMP M-4511(1) AS DEPICTED ON THE MONUMENTATION MAP DATED 6-23-89 BY THOMAS H. WAGNER, NEW MEXICO PROFESSIONAL LAND SURVEYOR 3517

NO.	DESCRIPTION	DATE	BY
6			
5	REVISE NAME 5-CME-3	12-20-00	J.G.
4	DELETED PARCEL 5-CME-6	9/11/00	C.S.
3	CHANGE PARCEL 5-3, TO 5-CME-6	8/01/00	J.G.
2	DELETED PARCEL 5-2	7/31/00	J.G.
1	CHANGE OWNERSHIP OF VARIOUS PACELS	3/27/00	SGB

REVISIONS (OR CHANGE NOTICES)

BASIS OF BEARING: WEST R/W LINE MONUMENTATION FOR NMP NO. I-010-2(28)136.

DETERMINATION OF EXISTING RIGHT-OF-WAY IS PRIMARILY FROM FIELD SURVEY OF EXISTING PROPERTIES. DEEDS AND FIELD EVIDENCE WERE USED TO DETERMINE THE PROPERTY BOUNDARIES. THE RIGHT-OF-WAY SURVEY OF NMP NO. I-010-2(28)136 WAS USED TO DETERMINE THE EAST PROPERTY BOUNDARIES AND AVENIDA DE MESILLA NMSR NO. 28 WAS USED ON THE WEST.

For Ownership and Areas of Parcel Numbers Shown See Sheet 1A of 8

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR AND THAT THESE RIGHT-OF-WAY MAPS ARE AN INTERIM PRODUCT OF PROJECT DESIGN DEVELOPMENT AND WERE PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECTION. CONFORMANCE WITH THE STATE OF NEW MEXICO'S MINIMUM STANDARDS FOR RIGHT-OF-WAY SURVEYING WILL OCCUR FOLLOWING ACTUAL ACQUISITION OF RIGHT-OF-WAY REQUIRED BY PROJECT NUMBER SP-SM-4510(200) & TPO-4510(2).

March 10, 1999
DATE OF SURVEY

TED G. SCANLON PS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

LEEDSHILL - HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

FINAL MAP

DATE March 10, 1999

CN - 9210

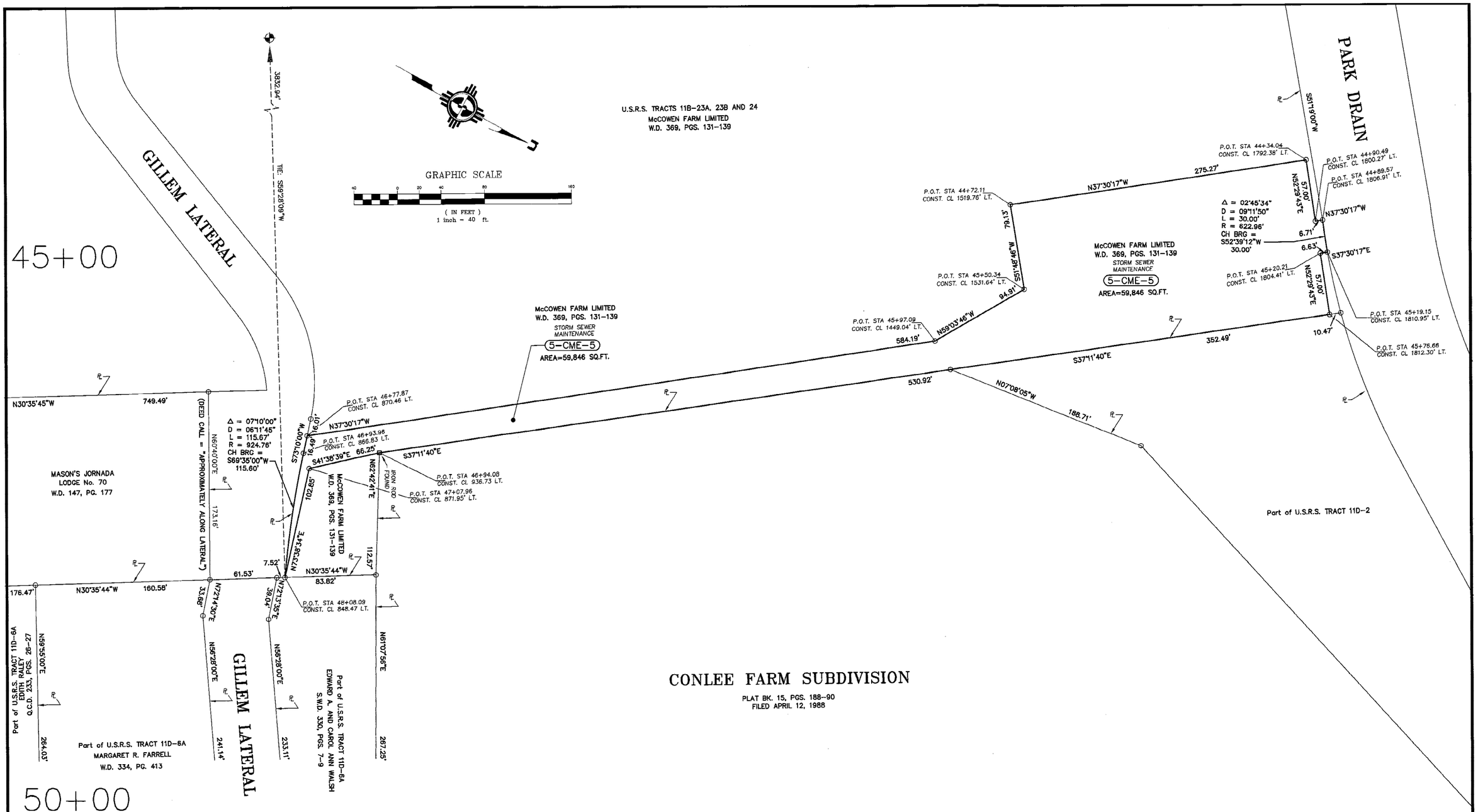
NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP
NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200) & TPO-4510(2)
DONA ANA COUNTY
SCALE 1" = 40' SHEET 5A OF 8 101RWS5A.dwg

scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

Dr. Ke



CONLEE FARM SUBDIVISION

PLAT BK. 15, PGS. 188-90
FILED APRIL 12, 1988

LEGEND

- ○ COMPUTED POINT (BASED ON DEED INFORMATION)
- ⊡ FOUND MONUMENT (DESCRIBED INDIVIDUALLY ON MAP) (USED TO CALCULATE PARCEL AREAS)

3" DIAMETER NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT BRASS CAP MONUMENT SET FOR PC STA 1474+11.13 (40' RT), NMP M-4511(1) AS DEPICTED ON THE MONUMENTATION MAP DATED 6-23-89 BY THOMAS H. WAGNER, NEW MEXICO PROFESSIONAL LAND SURVEYOR 3517

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

BASIS OF BEARING: WEST R/W LINE MONUMENTATION FOR NMP NO. I-010-2(28)136.

DETERMINATION OF EXISTING RIGHT-OF-WAY IS PRIMARILY FROM FIELD SURVEY OF EXISTING PROPERTIES. DEEDS AND FIELD EVIDENCE WERE USED TO DETERMINE THE PROPERTY BOUNDARIES. THE RIGHT-OF-WAY SURVEY OF NMP NO. I-010-2(28)136 WAS USED TO DETERMINE THE EAST PROPERTY BOUNDARIES AND AVENIDA DE MESILLA NMSR NO. 28 WAS USED ON THE WEST.

For Ownership and Areas of Parcel Numbers Shown See Sheet 1A of 8

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR AND THAT THESE RIGHT-OF-WAY MAPS ARE AN INTERIM PRODUCT OF PROJECT DESIGN DEVELOPMENT AND WERE PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECTION. CONFORMANCE WITH THE STATE OF NEW MEXICO'S MINIMUM STANDARDS FOR RIGHT-OF-WAY SURVEYING WILL OCCUR FOLLOWING ACTUAL ACQUISITION OF RIGHT-OF-WAY REQUIRED BY PROJECT NUMBER SP-SM-4510(200) & TPO-4510(2).

March 10, 1999
DATE OF SURVEY

TED C. SCANLON -/PS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

LEEDSHILL - HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

FINAL MAP

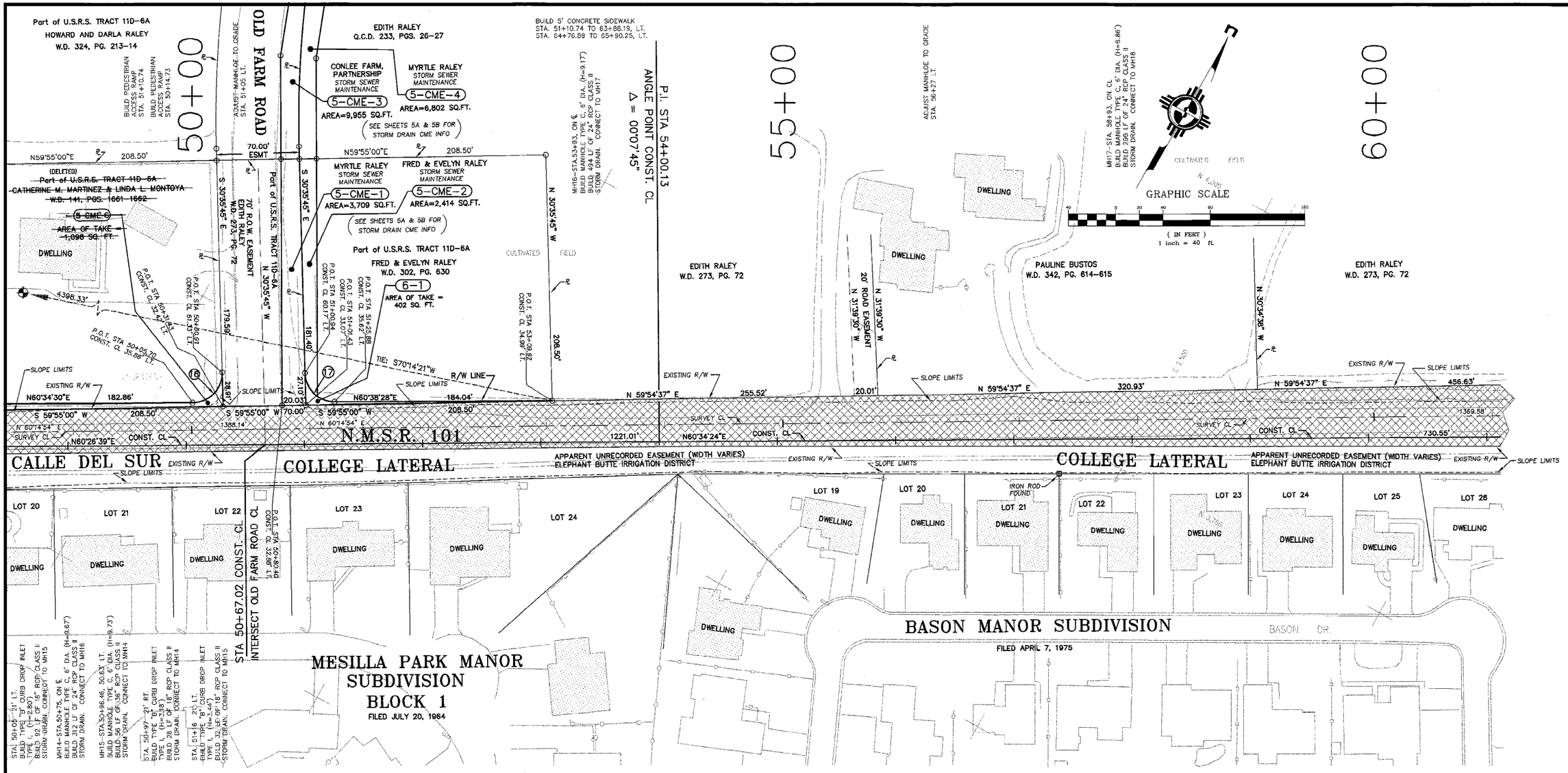
DATE March 10, 1999

CN - 9210

NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP
NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200) & TPO-4510(2)
DONA ANA COUNTY
SCALE 1" = 40' SHEET 5B OF 8 101RWSSB.dwg

16



LEGEND

- DOUBLE CROSS-HATCHED AREA IS RIGHT-OF-WAY FOR NEW MEXICO STATE ROAD 101 BY PRESCRIPTIVE USE
- SLOPE LIMITS PER CONSTRUCTION PLANS
- ○ COMPUTED POINT (BASED ON DEED INFORMATION)
- ⊡ FOUND MONUMENT (DESCRIBED INDIVIDUALLY ON MAP) (USED TO CALCULATE PARCEL AREAS)
- BUILDINGS & ROOFED STRUCTURES

⑯ Δ = 91°31'28"
D = 229°10'43"
L = 39.94'
R = 25.00'
CH = N15°10'07"E
35.82'

⑰ Δ = 88°49'51"
D = 229°10'59"
L = 38.76'
R = 25.00'
CH = S75°00'40"E
34.99'

3" DIAMETER NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT BRASS CAP MONUMENT SET FOR PC STA 1474+11.13 (40' RT). NMP M-4511(1) AS DEPICTED ON THE MONUMENTATION MAP DATED 6-23-89 BY THOMAS H. WAGNER, NEW MEXICO PROFESSIONAL LAND SURVEYOR 3517

BASIS OF BEARING: WEST R/W LINE MONUMENTATION FOR NMP NO. I-010-2(28)136.

DETERMINATION OF EXISTING RIGHT-OF-WAY IS PRIMARILY FROM FIELD SURVEY OF EXISTING PROPERTIES. DEEDS AND FIELD EVIDENCE WERE USED TO DETERMINE THE PROPERTY BOUNDARIES. THE RIGHT-OF-WAY SURVEY OF NMP NO. I-010-2(28)136 WAS USED TO DETERMINE THE EAST PROPERTY BOUNDARIES AND AVENIDA DE MESILLA NMSR NO. 28 WAS USED ON THE WEST.

For Ownership and Areas of Parcel Numbers Shown See Sheet 1A of 8

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3	DELETED PARCEL 5-CME-6	9/11/00	C.S.
2	REVISED 5-3, CHANGE TO 5-CME-6	6/01/00	J.G.
1	CHANGE OWNERSHIP OF VARIOUS PACELS	3/27/00	SGB

REVISIONS (OR CHANGE NOTICES)

Town of Mesilla

SECTION 30, T.23S., R.2E., N.M.P.M., U.S.R.S.
MESILLA CIVIL COLONY GRANT

FINAL MAP

DATE *MARCH 10, 1999*

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR AND THAT THESE RIGHT-OF-WAY MAPS ARE AN INTERIM PRODUCT OF PROJECT DESIGN DEVELOPMENT AND WERE PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECTION. CONFORMANCE WITH THE STATE OF NEW MEXICO'S MINIMUM STANDARDS FOR RIGHT-OF-WAY SURVEYING WILL OCCUR FOLLOWING ACTUAL ACQUISITION OF RIGHT-OF-WAY REQUIRED BY PROJECT NUMBER SP-SM-4510(200) & TPO-4510(2).

March 10, 1999
DATE OF SURVEY

Ted G. Scanlon
TED G. SCANLON – NMPS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

TERRENCE G. SCANLON NEW MEXICO 9433 REGISTERED PROFESSIONAL LAND SURVEYOR

LEEDSHILL - HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

CN – 9210

NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP
NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200) & TPO-4510(2)
DONA ANA COUNTY
SCALE 1" = 40' SHEET 6 OF 8

101RW06.dwg

00+09

P.C. STA 61+30.68
CONST. CL

ADJUST MANHOLE TO GRADE
STA. 61+45 LT.

CONST. CL
P.I. STA 62+47.28 LT
Δ = 05°49'30"
D = 02°30'00"
T = 116.60'
L = 233.00'
R = 2291.83'

P.R.C. STA 63+63.68
CONST. CL

STA. 64+87 21' LT.
BUILD TYPE "B" CURB DROP INLET
TYPE I, (H=2.94')
BUILD 30 LF OF 18" RCP CLASS II
STORM DRAIN, CONNECT TO MH19

STA. 64+33, 45' LT.
BUILD 1- 24" x 62' RCP -
NORMAL TO STANFORD DR.
BUILD H-1 61 HEADWALLS
RT. & LT., SHAPE INLET &
OUTLET, CONTRACTOR TO
REMOVE EXISTING 24" CMP
W/HEADWALLS RT. & LT.

MH19-STA. 64+87, 12.0' RT.
BUILD MANHOLE TYPE C, 6' DIA. (H=3.93')
BUILD 100 LF OF 24" RCP CLASS II
STORM DRAIN TO STA. 65+90.25

STANFORD STREET

65+00

STA 64+43.92 SURVEY CL
EQ. STA 64+49.32 CONST. CL

RELOCATE EXISTING FIRE
HYDRANT & ADJUST VALVE
BOX TO GRADE
STA. 65+20 LT.

STA. 65+90.25 TO STA. 66+42. RT.
BUILD SQ LF OF 24" RCP, CLASS II

STA. 65+90.50' RT.
BUILD 1- 30" x 35' RCP -
NORMAL TO BOWMAN RD.
BUILD H-1-61 HEADWALLS RT. & LT.
CONTRACTOR TO REMOVE EXISTING
24" CMP & TRANSITION

ADJUST MANHOLE TO GRADE
STA. 65+94 RT.

STA. 66+42. 21' RT.
BUILD TYPE "B" CURB DROP INLET
TYPE II, (H=3.17')

ADJUST MANHOLE TO GRADE
STA. 66+70 LT.

ADJUST VALVE BOX TO GRADE
STA. 66+72 RT.

BUILD 5' CONCRETE
SIDEWALK STA. 65+90.25
TO STA. 70+00, LT.

ADJUST MANHOLE TO GRADE
STA. 67+07 LT.

ADJUST MANHOLE TO GRADE
STA. 68+60 LT.

70+00

STA. 70+05.50
BUILD 1- 24" x 60' RCP -
NORMAL, BUILD H-1-61
HEADWALL RT. & LT.
SHAPE INLET & OUTLET,
CONTRACTOR TO REMOVE
EXISTING CMP & TRANSITION

ADJUST MANHOLE TO GRADE
STA. 70+41 LT.

ADJUST MANHOLE TO GRADE
STA. 71+53 LT.

EDITH RALEY
W.D. 273, PG. 72

STA. 61+95 21' LT.
BUILD TYPE "B" CURB DROP INLET
TYPE I, (H=3.19')
BUILD 18 LF OF 18" RCP CLASS II
STORM DRAIN, CONNECT TO MH18

MH18-STA. 61+95, ON CL
BUILD MANHOLE TYPE C, 6' DIA. (H=4.74')
BUILD 28± LF OF 24" RCP CLASS II
STORM DRAIN, CONNECT TO MH19

STA. 61+95 21' RT.
BUILD TYPE "B" CURB DROP INLET
TYPE I, (H=3.19')
BUILD 18 LF OF 18" RCP CLASS II
STORM DRAIN, CONNECT TO MH18

DETAIL

Δ = 00°56'32"
D = 02°27'45"
L = 38.27'
R = 2326.83'
CH = N55°17'49"E
38.27'

R/W LINE
S59°54'37"W 38.14'
3.08'
S30°05'00"E

7-1
AREA OF TAKE =
61 SQ. FT.
MYRTLE RALEY
SUCCESSOR TRUSTEE
TRUST AGREEMENT
DATED 2/14/1974

P.O.C STA 64+04.47
CONST. CL 35.00' LT.
P.O.C STA 64+04.25
CONST. CL 31.93' LT.
P.O.C STA 63+66.78
CONST. CL 35.00' LT.

70' R.O.W. EASEMENT
SUNCOR ENTERPRISES, INC.
W.D. 316, PGS. 903-904

N 30°05'00" W
S 30°05'00" E

Part of U.S.R.S. TRACT 11D-6
GILBERT S., EARLINE EDWARDS
W.D. 295, PGS. 110-111

7-2
AREA OF TAKE =
2,315 SQ. FT.

TIE: S68°11'29"W 5475.38'

P.O.C STA 64+73.74
CONST. CL 39.88' LT.
P.O.C STA 64+73.24
CONST. CL 27.91' LT.

P.O.T. STA 65+88.91
CONST. CL 40.00' LT.
P.O.T. STA 66+34.80
CONST. CL 18.70' LT.
P.O.T. STA 66+38.24
CONST. CL 28.25' LT.
P.O.T. STA 66+42.39
CONST. CL 35.00' LT.
P.O.T. STA 66+44.63
CONST. CL 40.00' LT.

RESIDENCE

5707.36'
S68°11'29"W 5680.00'

CITY OF LAS CRUCES
PUMP STATION EASEMENT
(WASTEWATER)

7-3
AREA OF TAKE =
1,341 SQ. FT.

LAS CRUCES CITY LIMITS
N 04°47'00" W

TIE: S67°51'00"W
N 04°47'00" W 1189.95'

P.O.T. STA 67+24.99
CONST. CL 35.00' LT.
P.O.T. STA 67+17.50
CONST. CL 18.86' LT.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

CULTIVATED FIELD

U.S.R.S. TRACT 11D-7
NEW MEXICO STATE UNIVERSITY
W.D. 67, PG. 317 & W.D. 77, PG. 503

7-4
AREA OF TAKE =
13,633 SQ. FT.

CULTIVATED FIELD

EXISTING R/W
N 59°54'37" E
456.63'
SLOPE LIMITS
R/W LINE
18
Δ = 00°56'32"
S59°54'37"W 38.14'
S 59°55'00" W 70.00'
1369.58'
11.98'
S 59°55'00" W
166.34'
9.65'
N60°19'15"E
82.68'
17.79'
8.32'
S 60°12'43" W 82.76'
IRON ROD FOUND
N60°19'15"E
S 60°12'43" W
CONST. CL
EXISTING R/W
944.01'
N 60°14'54" E
SLOPE LIMITS
SURVEY CL
N60°34'24"E
CONST. CL
730.55'
CALLE DEL SUR
N 65°22'16" E
150.02'
SURVEY CL
N 59°58'07" E
UNIVERSITY AVENUE
N.M.S.R. 101
SURVEY CL
SLOPE LIMITS
892.62'
N 59°43'30" E
EXISTING R/W
EXISTING R/W
COLLEGE LATERAL
APPARENT UNRECORDED EASEMENT (WIDTH VARIES)
ELEPHANT BUTTE IRRIGATION DISTRICT
SLOPE LIMITS
EXISTING R/W
SLOPE LIMITS
SLOPE LIMITS
EXISTING R/W
SLOPE LIMITS
R/W LINE
SLOPE LIMITS
790.46'

LOT 24
LOT 25
LOT 26

BASON MANOR SUBDIVISION
BASON DR.
FILED APRIL 7, 1975

U.S.R.S. TRACT 11-95
BILLIE RUTH SIMPSON
W.D. 146 PGS. 355-356

U.S.R.S. TRACT 11D-14
NEW MEXICO STATE UNIVERSITY
UNRECORDED W.D. DATED JUNE 9,1906

P.O.T. STA 64+31.58
ANGLE POINT - SURVEY CL
Δ = 5°07'22"

CONST. CL
P.I. STA 64+75.22
Δ = 05°34'21"
D = 02°30'00"
T = 111.54'
L = 222.90'
R = 2291.83'

P.T. STA 65+86.58 CONST. CL
INTERSECT BOWMAN STREET CL

P.O.T. STA 65+81.60
ANGLE POINT - SURVEY CL
Δ = 5°24'09"

LAS CRUCES CITY LIMITS
S 29°31'15" E
BOWMAN STREET

18 Δ = 00°56'32"
D = 02°27'45"
L = 38.27'
R = 2326.83'
CH = N55°17'49"E
38.27'

19 Δ = 02°53'05"
D = 02°27'45"
L = 117.15'
R = 2326.83'
CH = N58°52'43"E
117.13'

LEGEND

LEFT DOWNWARD-HATCHED AREA IS RIGHT-OF-WAY FOR BOWMAN STREET BY PRESCRIPTIVE USE

DOUBLE CROSS-HATCHED AREA IS RIGHT-OF-WAY FOR NEW MEXICO STATE ROAD 101 BY PRESCRIPTIVE USE

SLOPE LIMITS PER CONSTRUCTION PLANS

3" DIAMETER NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT BRASS CAP MONUMENT SET FOR PC STA 1474+11.13 (40' RT), NMP M-4511(1) AS DEPICTED ON THE MONUMENTATION MAP DATED 6-23-89 BY THOMAS H. WAGNER, NEW MEXICO PROFESSIONAL LAND SURVEYOR 3517

COMPUTED POINT (BASED ON DEED INFORMATION)

FOUND MONUMENT (DESCRIBED INDIVIDUALLY ON MAP) (USED TO CALCULATE PARCEL AREAS)

BUILDINGS & ROOFED STRUCTURES

Town of Mesilla
SECTION 30, T.23S., R.2E., N.M.P.M., U.S.R.S.
MESILLA CIVIL COLONY GRANT

City of Las Cruces
SECTION 30, T.23S., R.2E., N.M.P.M., U.S.R.S.

For Ownership and Areas of Parcel Numbers Shown See Sheet 1A of 8

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1	CHANGE OWNERSHIP OF VARIOUS PACELS	3/27/00	SGB

REVISIONS (OR CHANGE NOTICES)

BASIS OF BEARING: WEST R/W LINE MONUMENTATION FOR NMP NO. I-010-2(28)136.

DETERMINATION OF EXISTING RIGHT-OF-WAY IS PRIMARILY FROM FIELD SURVEY OF EXISTING PROPERTIES. DEEDS AND FIELD EVIDENCE WERE USED TO DETERMINE THE PROPERTY BOUNDARIES. THE RIGHT-OF-WAY SURVEY OF NMP NO. I-010-2(28)136 WAS USED TO DETERMINE THE EAST PROPERTY BOUNDARIES AND AVENIDA DE MESILLA NMSR NO. 28 WAS USED ON THE WEST.

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR AND THAT THESE RIGHT-OF-WAY MAPS ARE AN INTERIM PRODUCT OF PROJECT DESIGN DEVELOPMENT AND WERE PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECTION. CONFORMANCE WITH THE STATE OF NEW MEXICO'S MINIMUM STANDARDS FOR RIGHT-OF-WAY SURVEYING WILL OCCUR FOLLOWING ACTUAL ACQUISITION OF RIGHT-OF-WAY REQUIRED BY PROJECT NUMBER SP-SM-4510(200) & TPO-4510(2).

March 10, 1999
DATE OF SURVEY

TED G. SCANLON - PS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

TED G. SCANLON 9433 REGISTERED PROFESSIONAL LAND SURVEYOR

LEEDSHILL - HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

FINAL MAP

DATE MARCH 10, 1999

CN - 9210

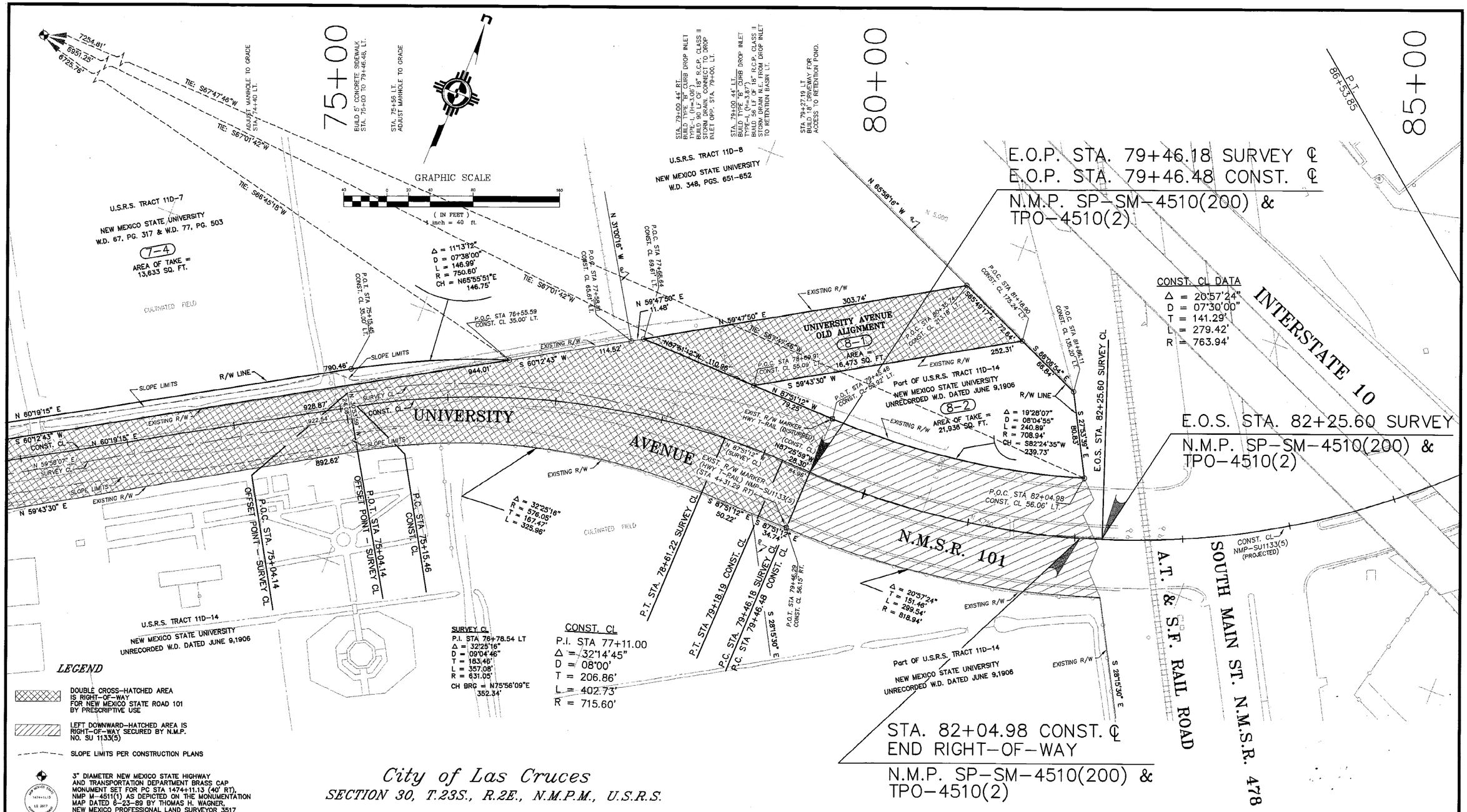
scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 526-2112

NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP
NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200) &
TPO-4510(2)
DONA ANA COUNTY
SCALE 1" = 40' SHEET 7 OF 8

101RW57.dwg



LEGEND

- DOUBLE CROSS-HATCHED AREA IS RIGHT-OF-WAY FOR NEW MEXICO STATE ROAD 101 BY PRESCRIPTIVE USE
- LEFT DOWNWARD-HATCHED AREA IS RIGHT-OF-WAY SECURED BY N.M.P. NO. SU 1133(5)
- SLOPE LIMITS PER CONSTRUCTION PLANS
- 3" DIAMETER NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT BRASS CAP MONUMENT SET FOR PC STA 1474+11.13 (40' RT), NMP M-4511(1) AS DEPICTED ON THE MONUMENTATION MAP DATED 6-23-89 BY THOMAS H. WAGNER, NEW MEXICO PROFESSIONAL LAND SURVEYOR 3517
- COMPUTED POINT (BASED ON DEED INFORMATION)
- FOUND MONUMENT (DESCRIBED INDIVIDUALLY ON MAP) (USED TO CALCULATE PARCEL AREAS)
- BUILDINGS & ROOFED STRUCTURES

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

City of Las Cruces

SECTION 30, T.23S., R.2E., N.M.P.M., U.S.R.S.

BASIS OF BEARING: WEST R/W LINE MONUMENTATION FOR NMP NO. I-010-2(28)136.

DETERMINATION OF EXISTING RIGHT-OF-WAY IS PRIMARILY FROM FIELD SURVEY OF EXISTING PROPERTIES. DEEDS AND FIELD EVIDENCE WERE USED TO DETERMINE THE PROPERTY BOUNDARIES. THE RIGHT-OF-WAY SURVEY OF NMP NO. I-010-2(28)136 WAS USED TO DETERMINE THE EAST PROPERTY BOUNDARIES AND AVENIDA DE MESILLA NMSR NO. 28 WAS USED ON THE WEST.

For Ownership and Areas of Parcel Numbers Shown See Sheet 1A of 8

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR AND THAT THESE RIGHT-OF-WAY MAPS ARE AN INTERIM PRODUCT OF PROJECT DESIGN DEVELOPMENT AND WERE PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECTION. CONFORMANCE WITH THE STATE OF NEW MEXICO'S MINIMUM STANDARDS FOR RIGHT-OF-WAY SURVEYING WILL OCCUR FOLLOWING ACTUAL ACQUISITION OF RIGHT-OF-WAY REQUIRED BY PROJECT NUMBER SP-SM-4510(200) & TPO-4510(2).

March 10, 1999
DATE OF SURVEY

TED G. SCANLON / PS NO. 9433
540 N. WATER STREET, LAS CRUCES, NM 88001

LEEDSHILL - HERKENHOFF, INC.
2000 ST. MICHAEL DRIVE SANTA FE, NM 87502 (505) 471-4443

scanlon white inc.

PREPARED BY:
Scanlon White, Inc.
540 North Water
Las Cruces, NM 88001
(505) 525-2112

FINAL MAP

DATE *MARCH 10, 1999*

CN - 9210

NEW MEXICO HIGHWAY COMMISSION

RIGHT OF WAY MAP

NEW MEXICO STATE PROJECT NO.
SP-SM-4510(200) & TPO-4510(2)

DONA ANA COUNTY

SCALE 1" = 40' SHEET 8 OF 8 101RWS8.dwg

Appendix F | UTILITIES

PROJECT CONTROL NUMBER: ####

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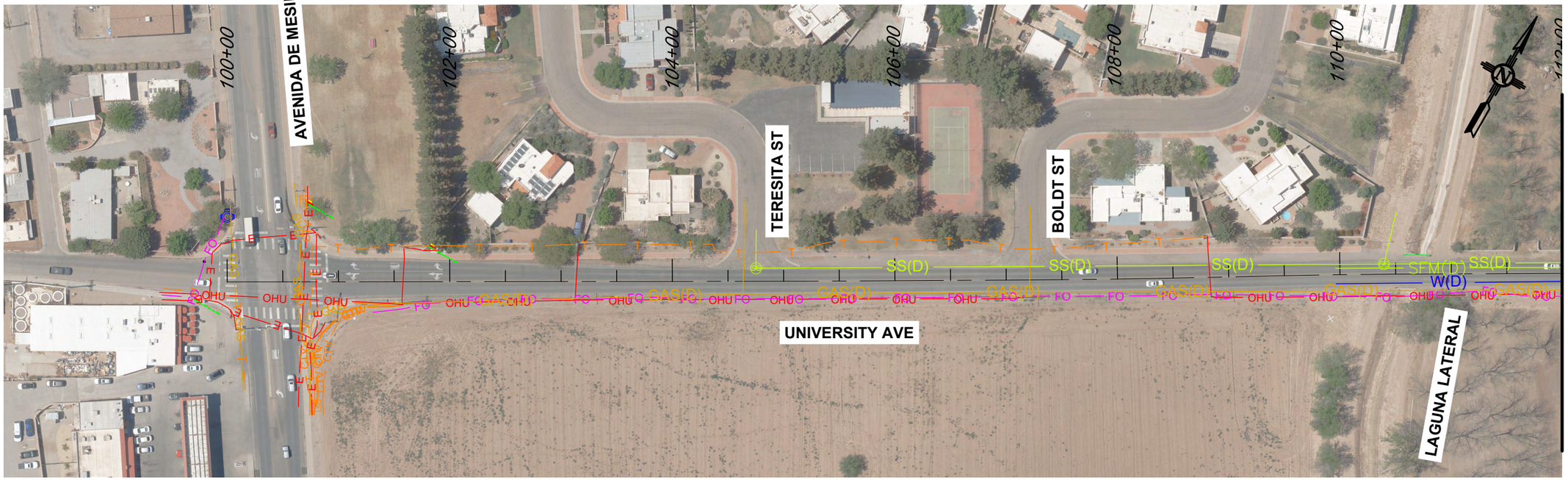
www.bhinc.com 800.877.5332



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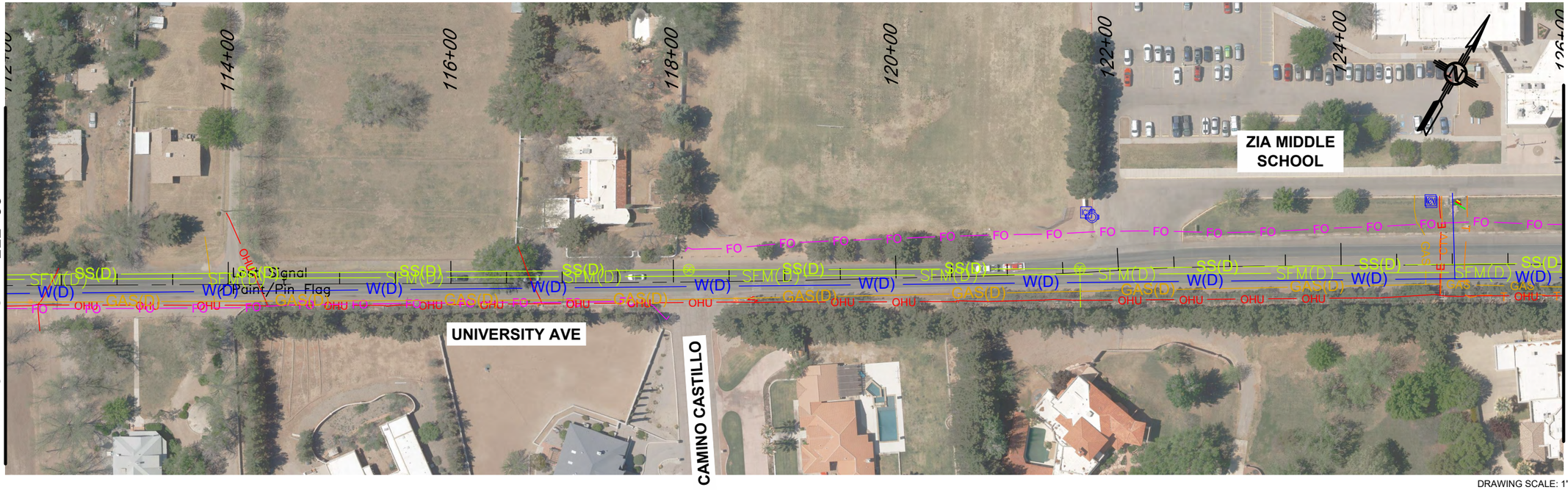

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NEW MEXICO PROJECT NO.

EXISTING UTILITIES

SHEET NO. X - X

PROJECT CONTROL NUMBER: ####

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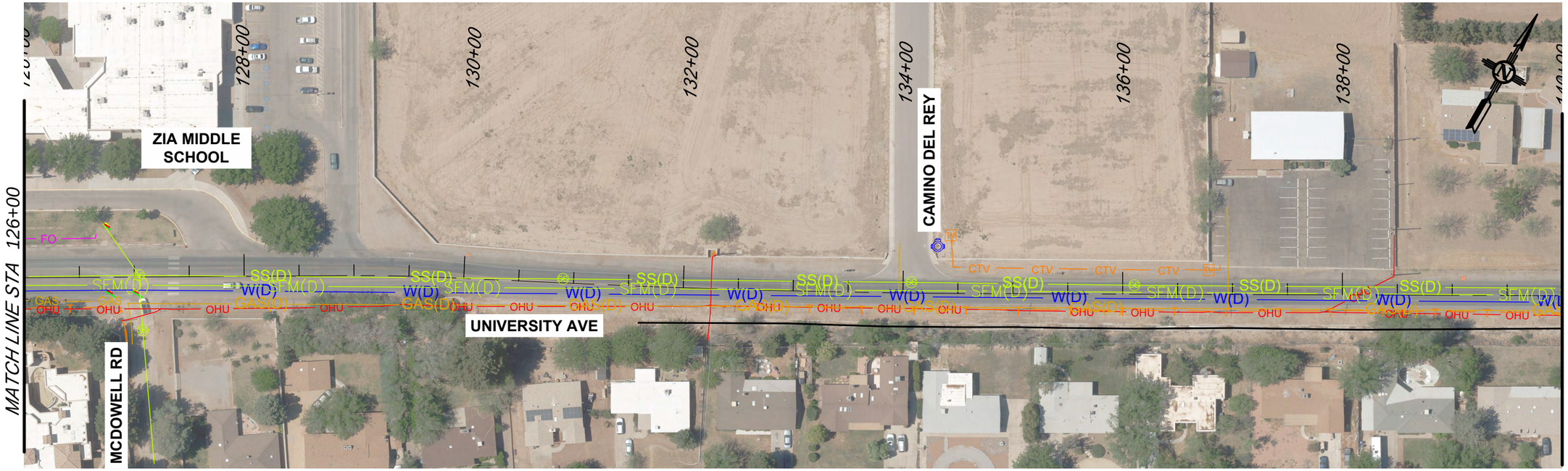

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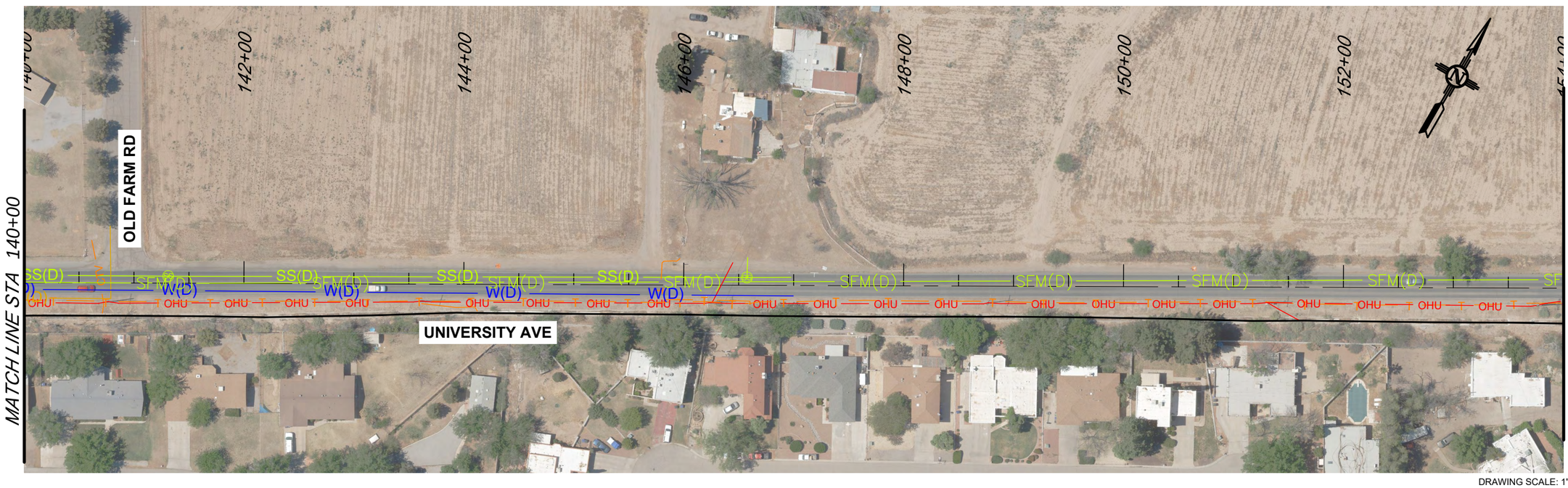

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EXISTING UTILITIES

SHEET NO. X - X

PROJECT CONTROL NUMBER: ####

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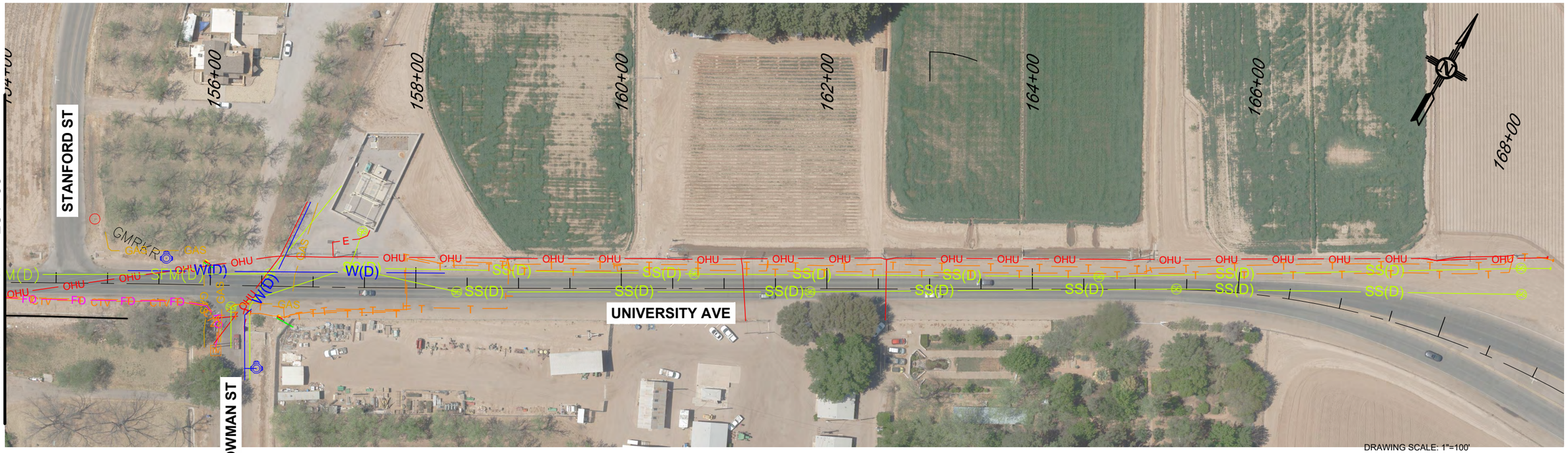

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DESIGNED BY:

NEW MEXICO PROJECT NO.

EXISTING UTILITIES

SHEET NO. X - X

Company	Type of Facility	Contact Information				Records		
		Name	Address	Phone	Email	First Contacted	Received	Notes
Century Link	Telecommunications	Manny Altamirano	272 W Griggs Las Cruces, NM 88005	(575) 525-5019	jose.altamirano1@centurylink.com	5.3.2019		
City of Las Cruces	Water Wastewater Storm	Mesi Montoya	680 N. Motel Blvd Las Cruces 88007	575-528-3525	mmontoya@las-cruces.org	5.3.2019	5.15.2019	Recd
City of Las Cruces	Gas	Mesi Montoya	680 N. Motel Blvd Las Cruces 88007	575-528-3525	mmontoya@las-cruces.org	5.3.2019	5.15.2019	Recd
Comcast	Cable TV	Jason Zishi	110 Idaho Ave, Suite A Las Cruces, NM 88005	575-882-0125 575-526-0764	jason_zishi@cable.comcast.com	5.3.2019		new emails sent to comcast 06 07 19
Doña Ana MDWCA	Water	Joe Martinez		(575) 648-8881	joe@dawater.org	5.3.2019	5.9.2019	not in conflict
El Paso Electric	Power	Tomas Vasquez	555 S. Compress Road Las Cruces, NM 88002	(575) 522-2687	tomas.vasquez@epelectric.com	5.3.2019	5.8.2019	Recd
Town of Mesilla	Water					5.3.2019		
Century Link National	Communications					5.3.2019		
Verizon MCI	Communications					5.3.2019		
Zia Natural Gas	Gas	Ron Reynolds	2700 West Picacho Las Cruces, NM 88007	(575) 526-4427	ronreynolds@zngc.com	5.3.2019	5.17.2019	Recd

Appendix G | ENVIRONMENTAL

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/17/2019 at 3:26:44 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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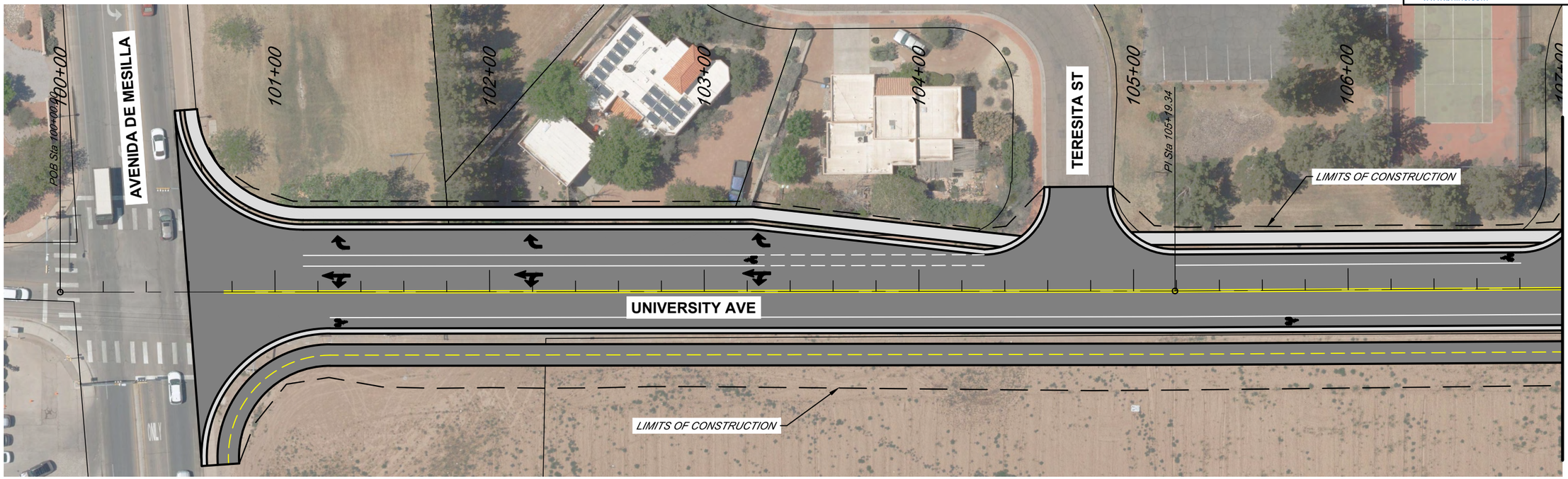

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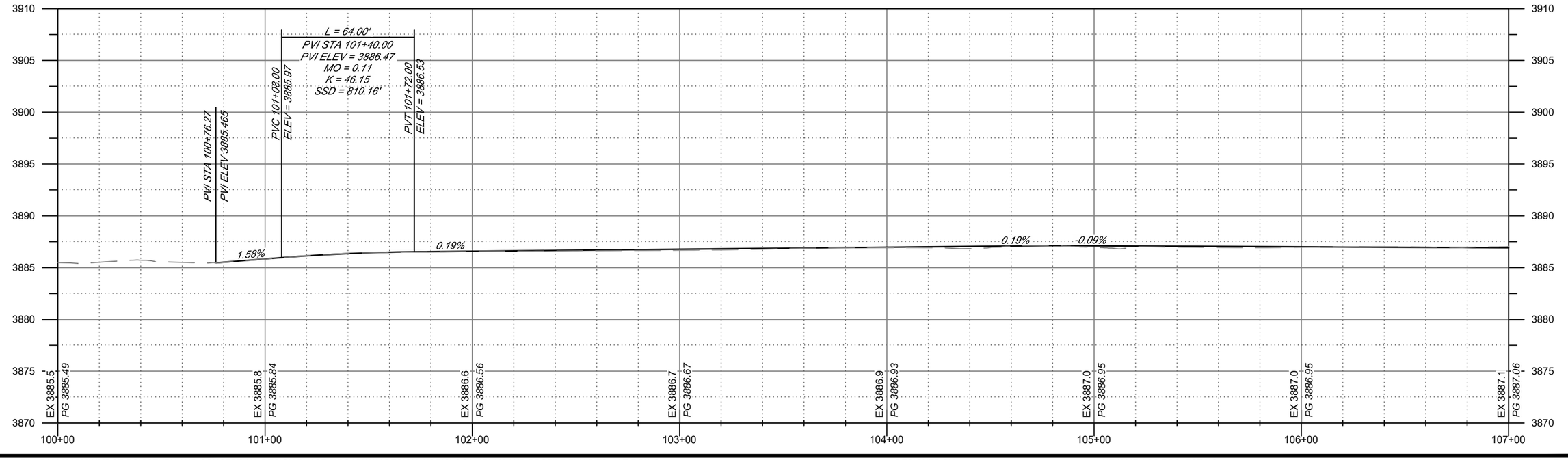

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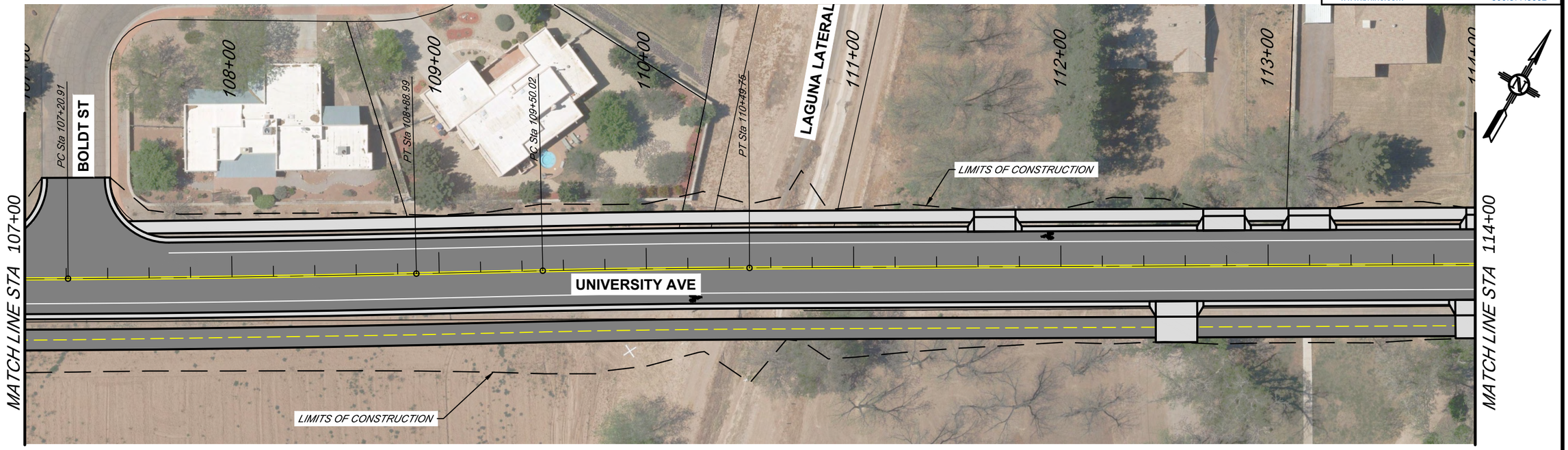

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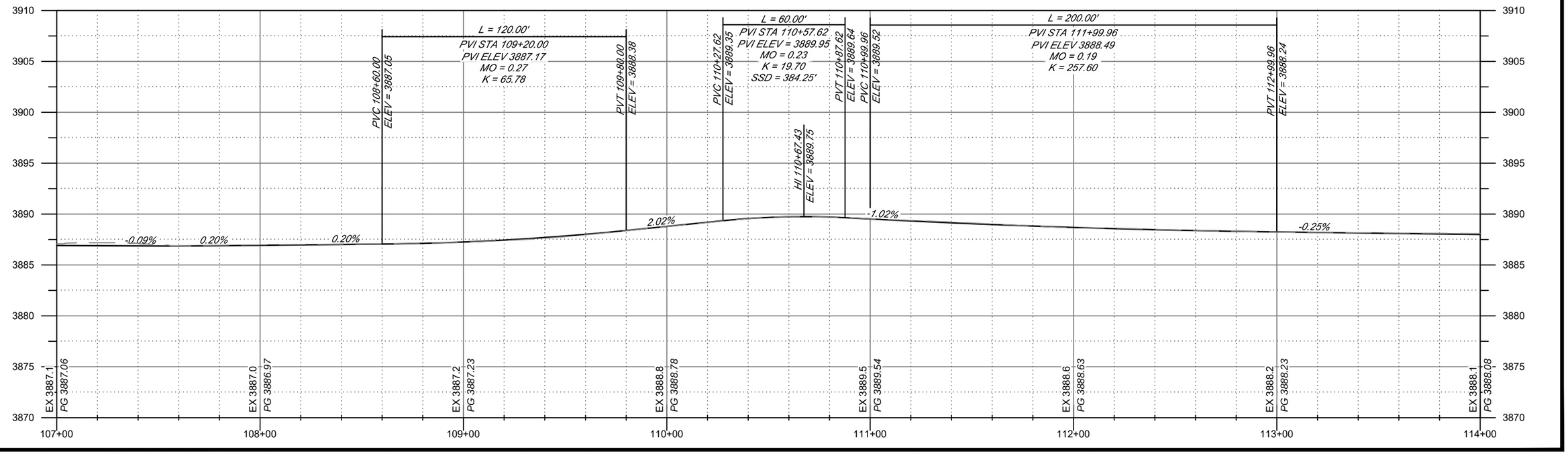

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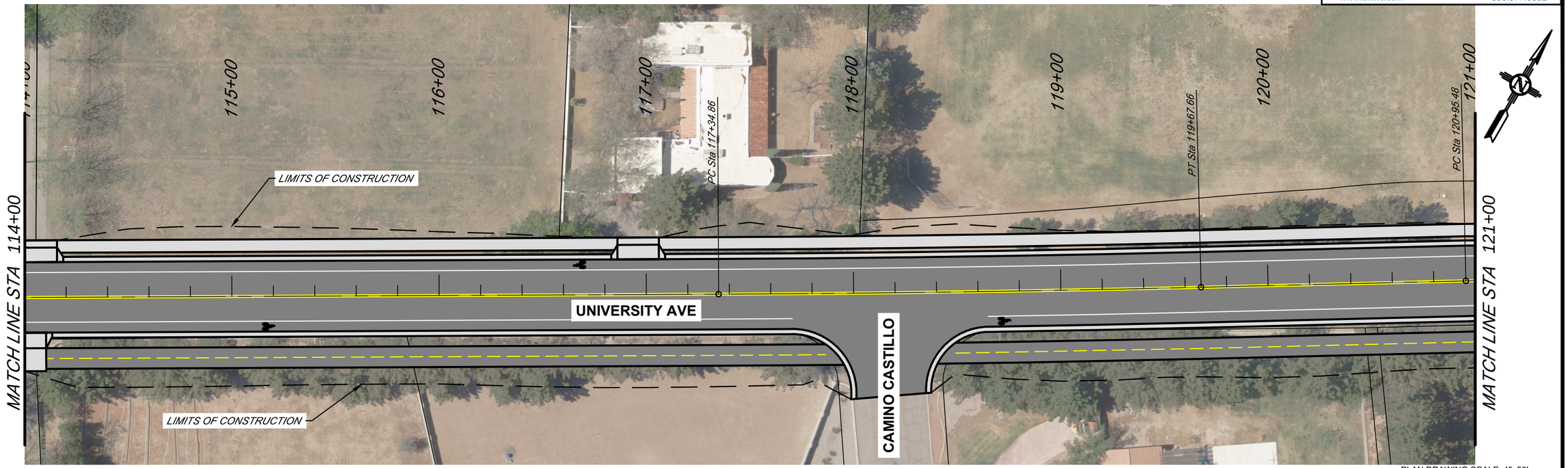

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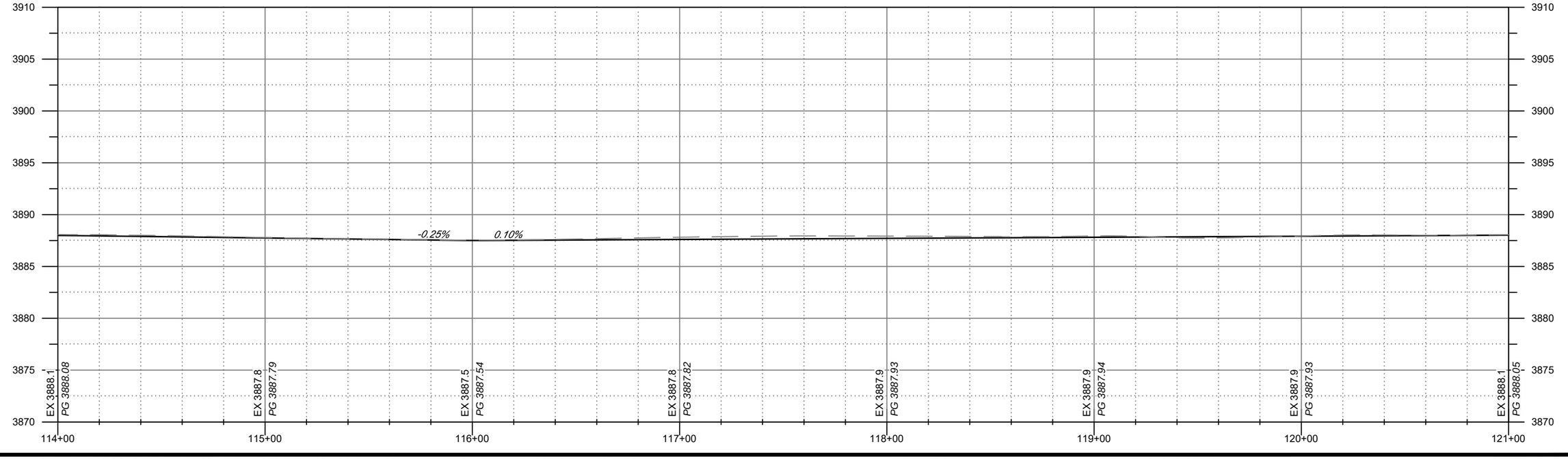

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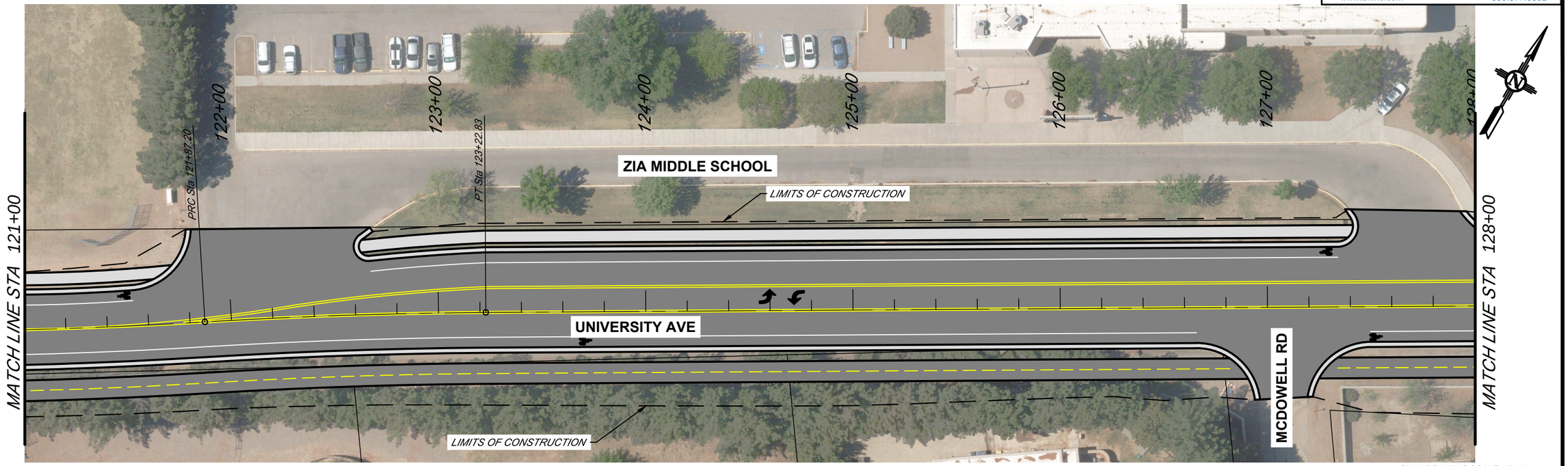

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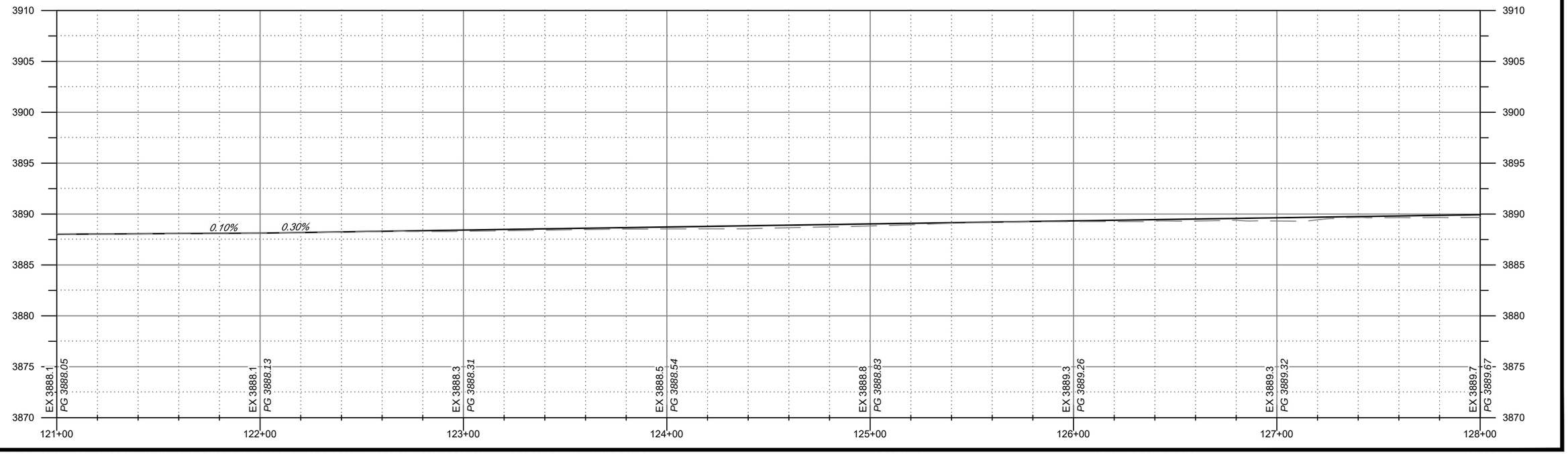

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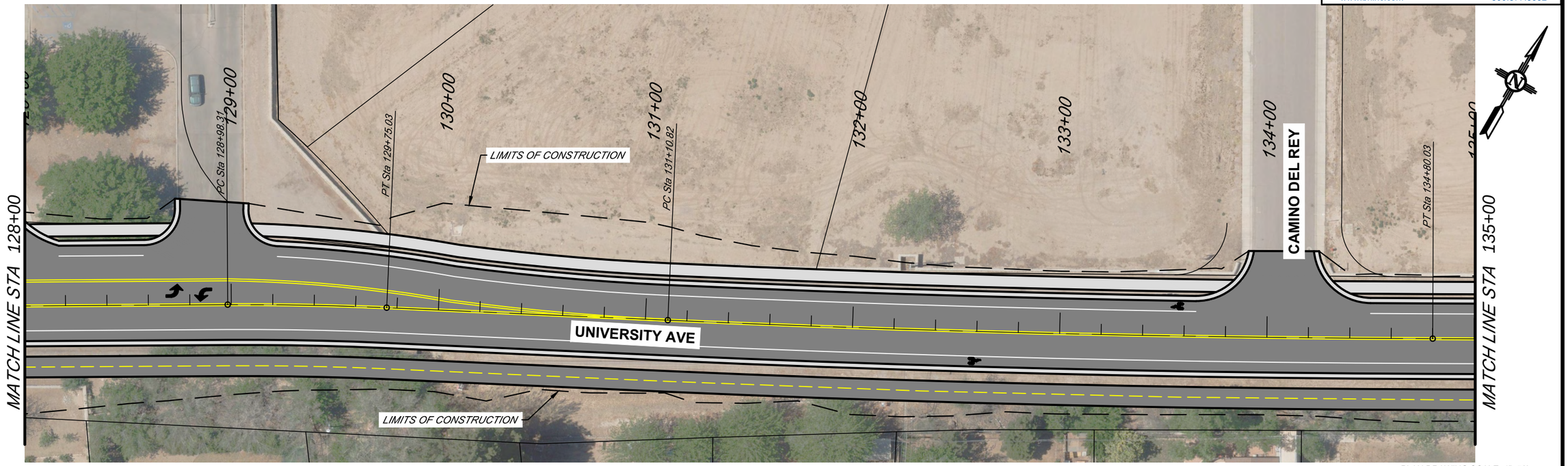

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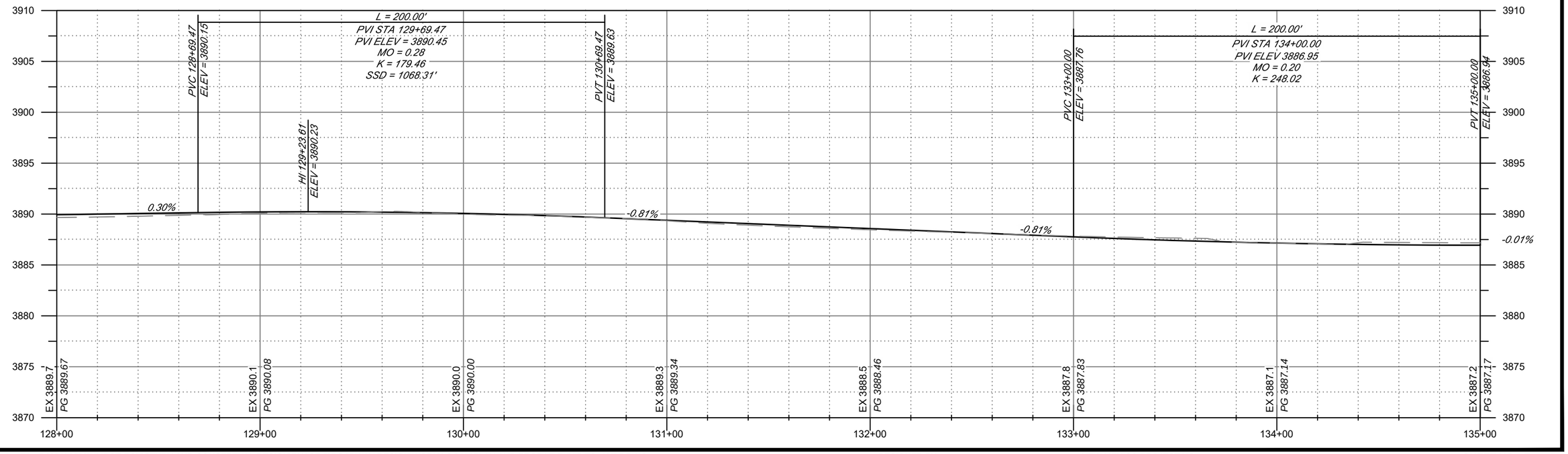

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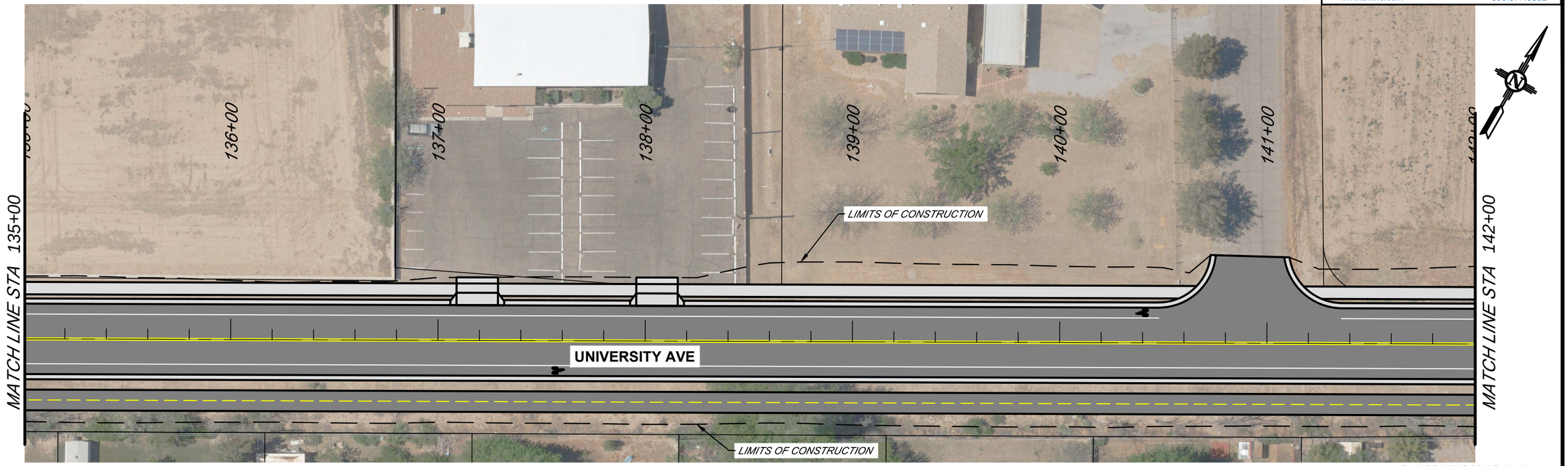

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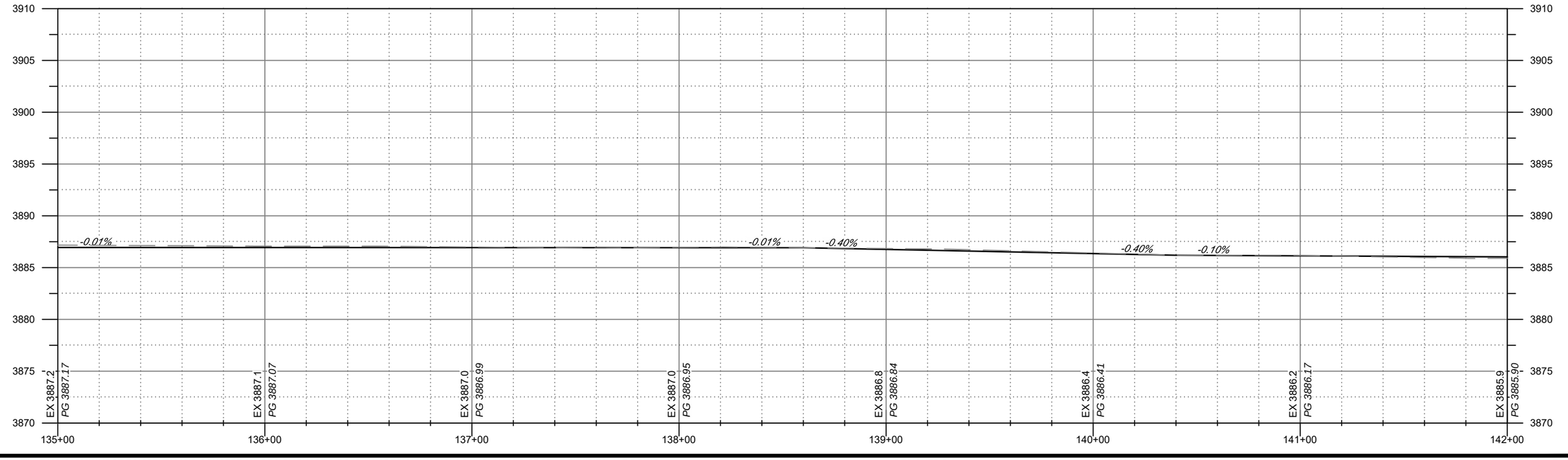

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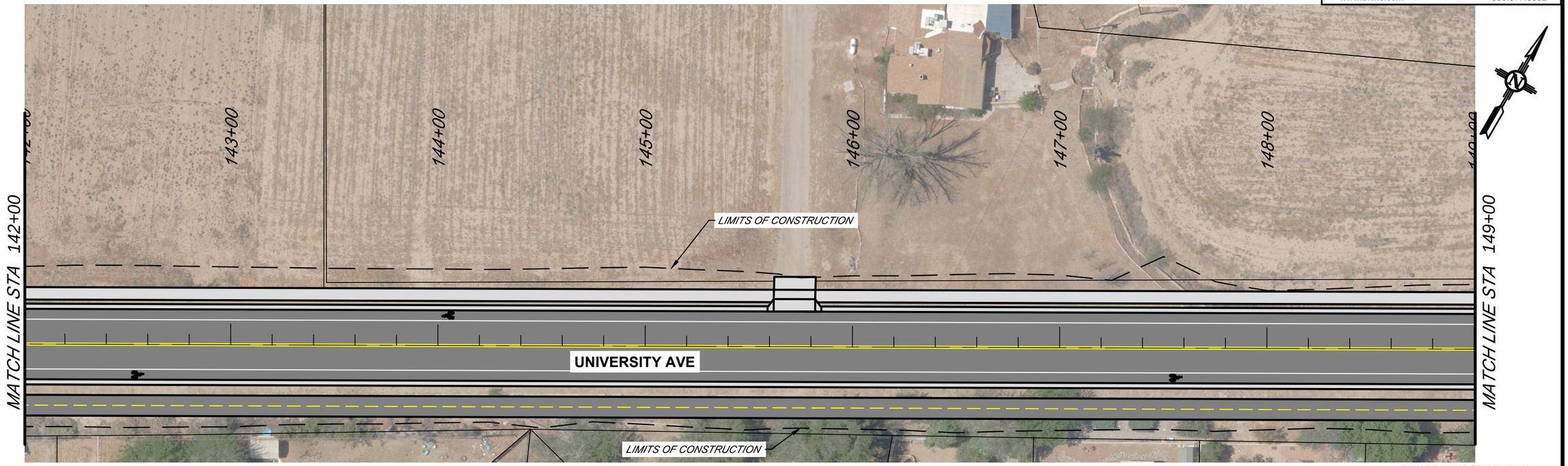

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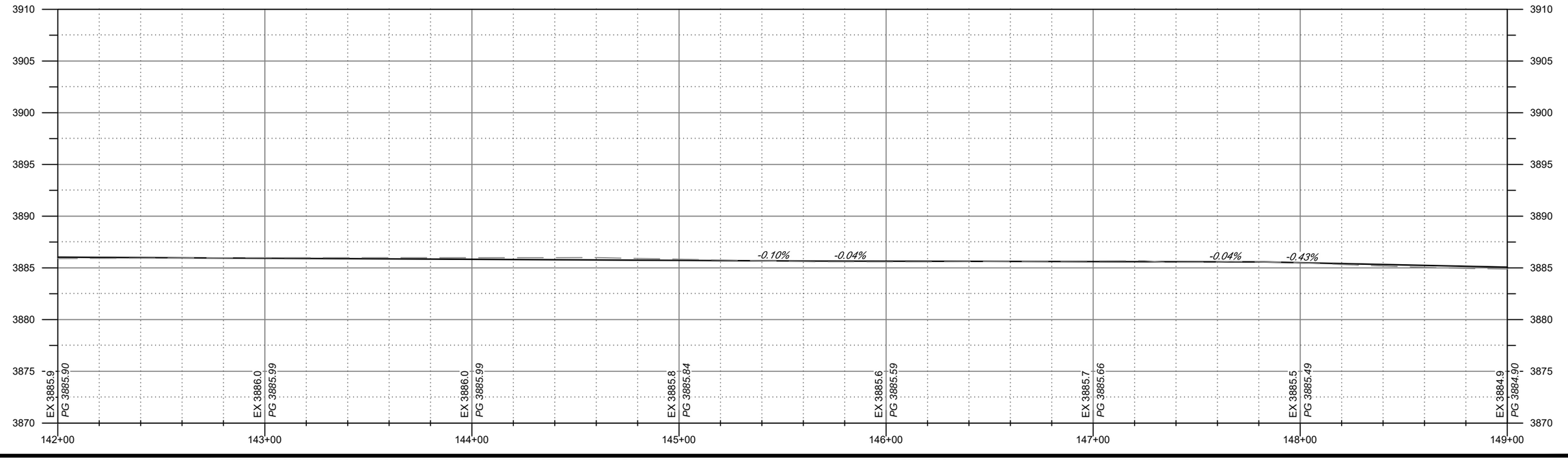

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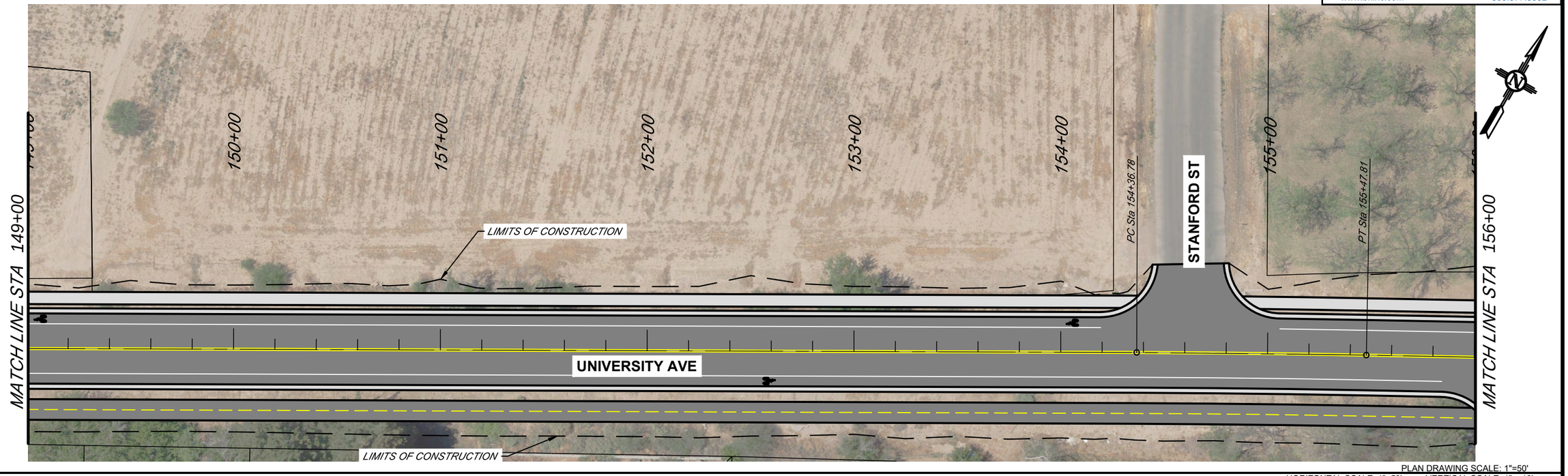

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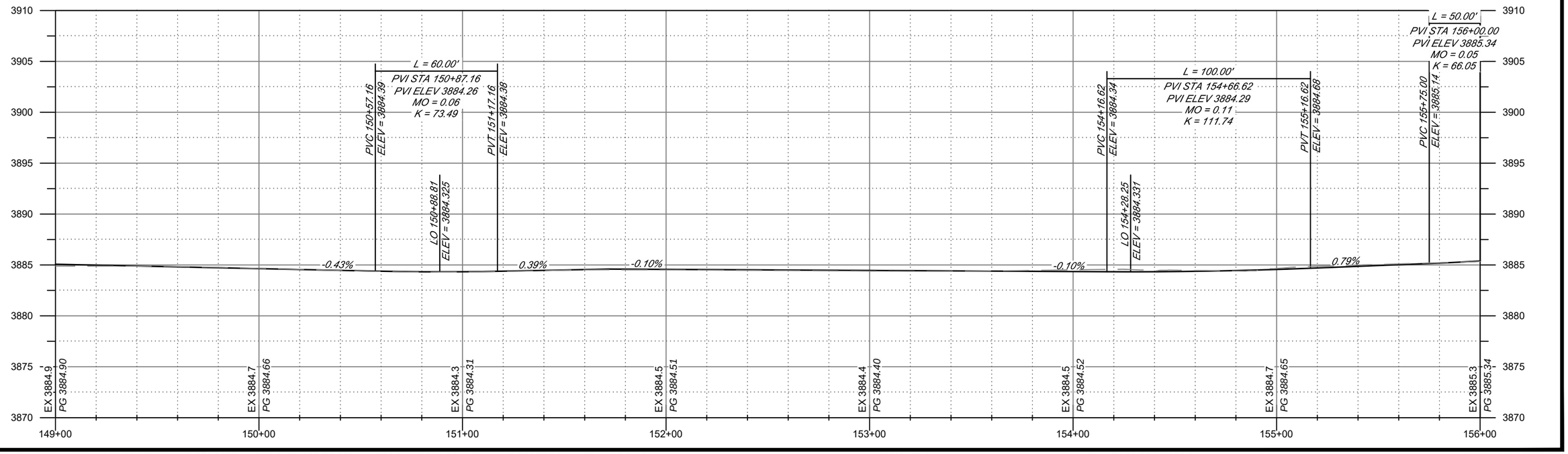

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SHEET NO. F - 8

PROJECT CONTROL NUMBER: ####

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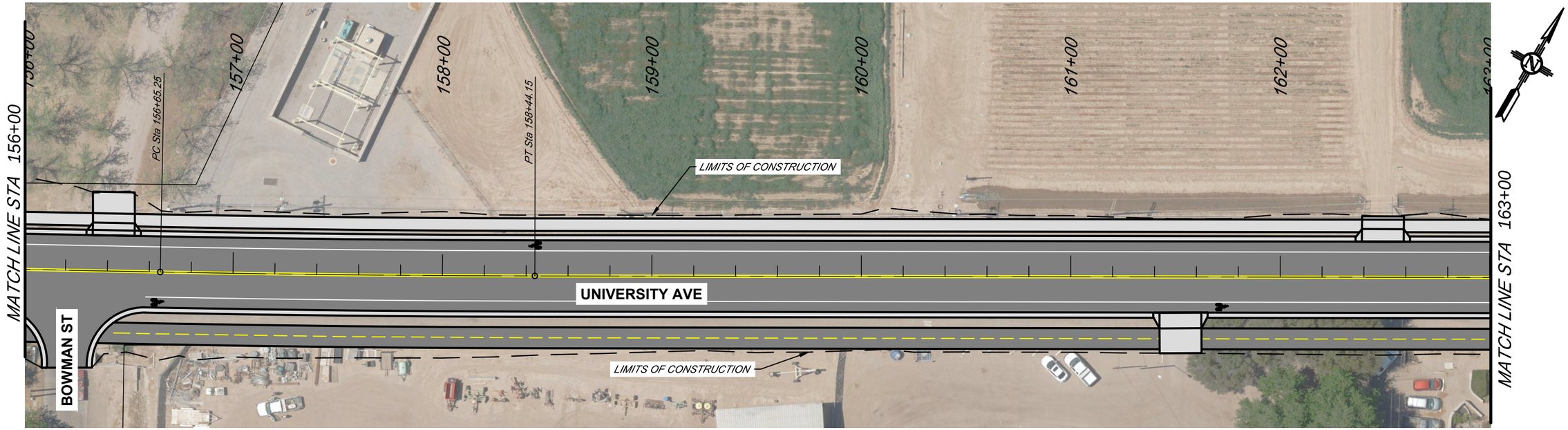

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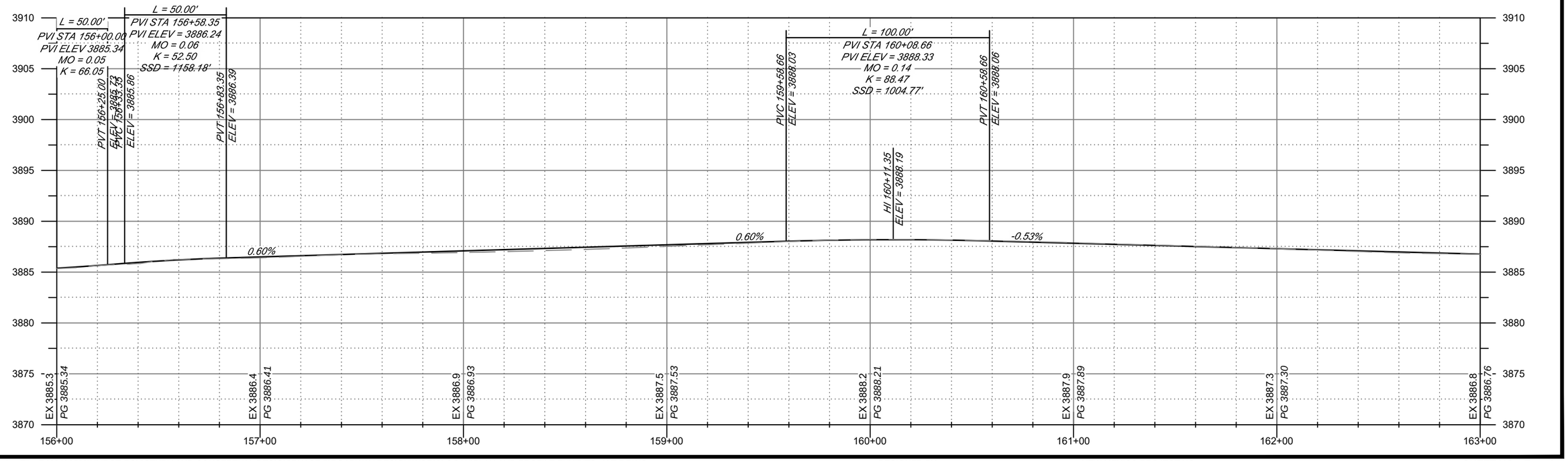

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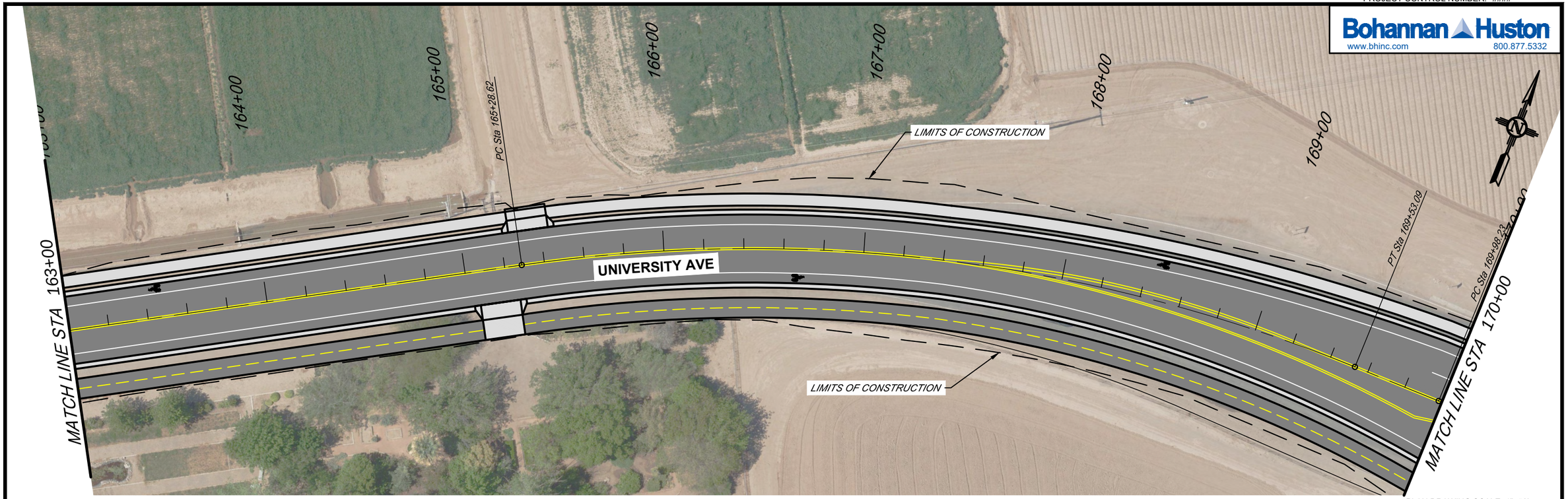

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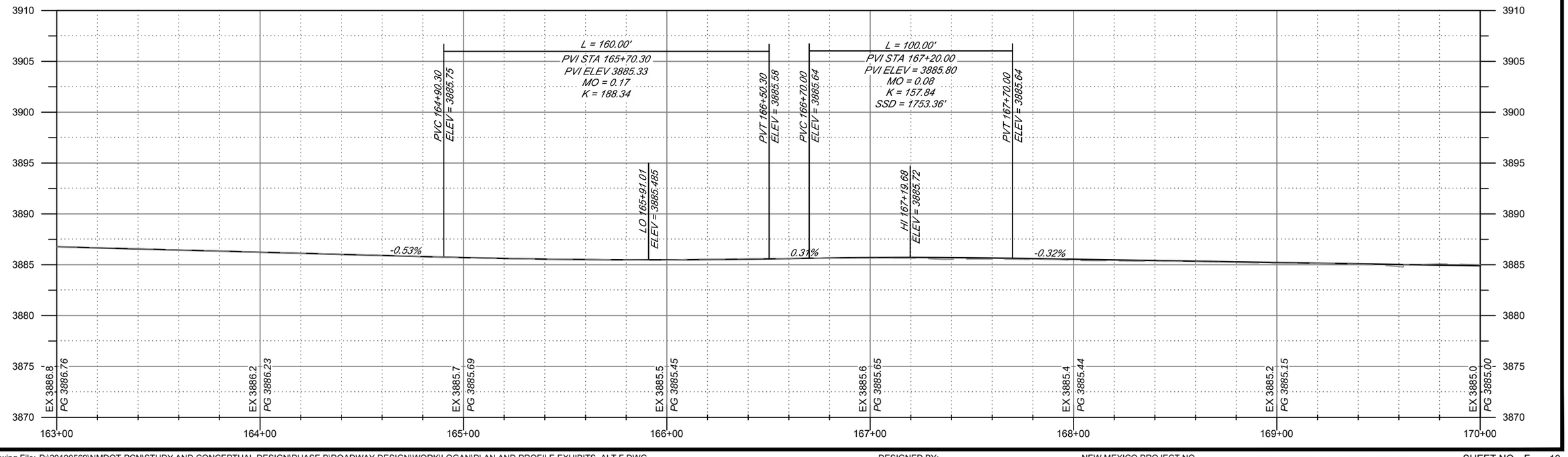

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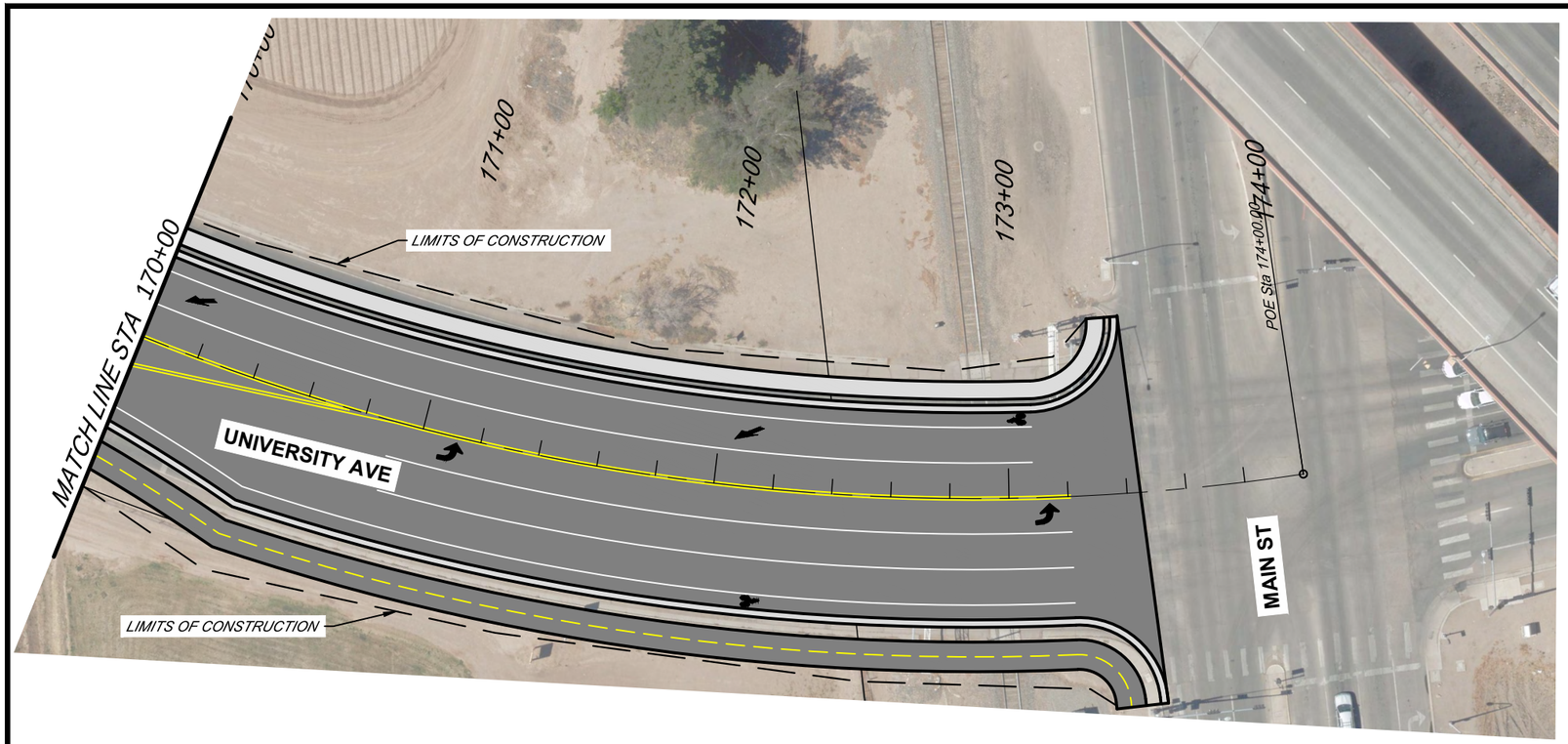

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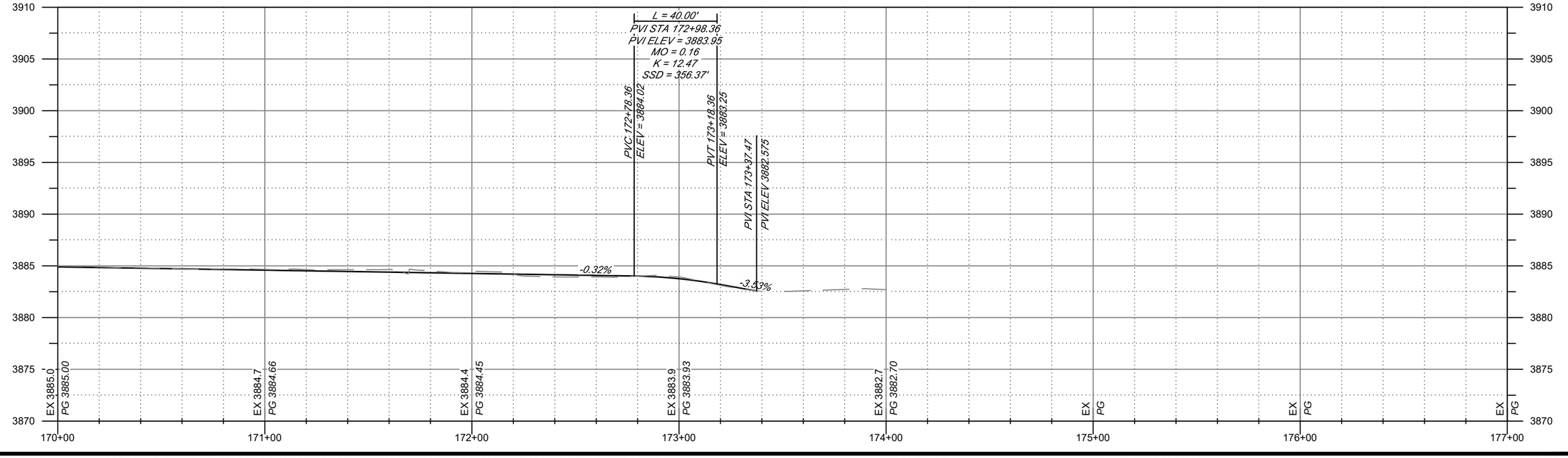

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DESIGNED BY:

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ALTERNATIVE F

SHEET NO. F - 11

PROJECT CONTROL NUMBER: ####

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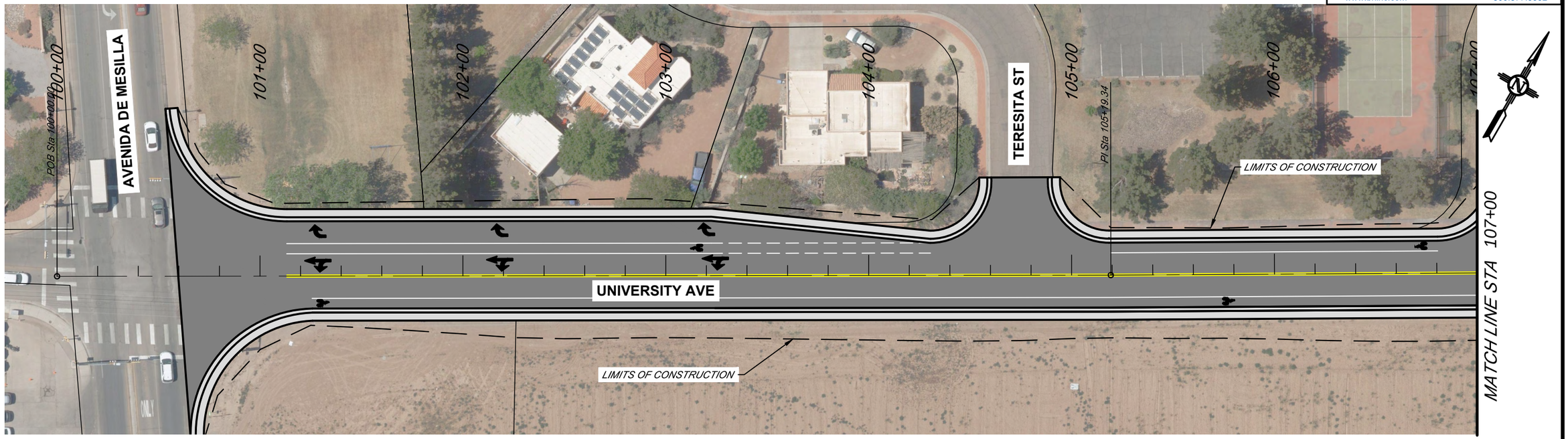

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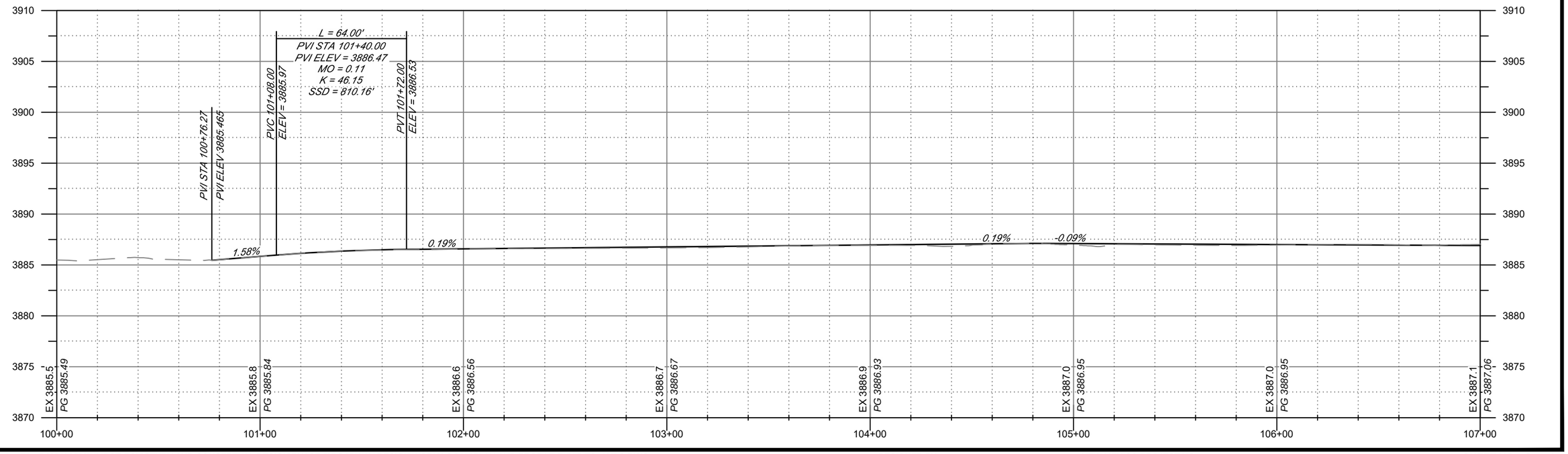

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DESIGNED BY:

NEW MEXICO PROJECT NO.

ALTERNATIVE G

SHEET NO. G - 1

PROJECT CONTROL NUMBER: ####

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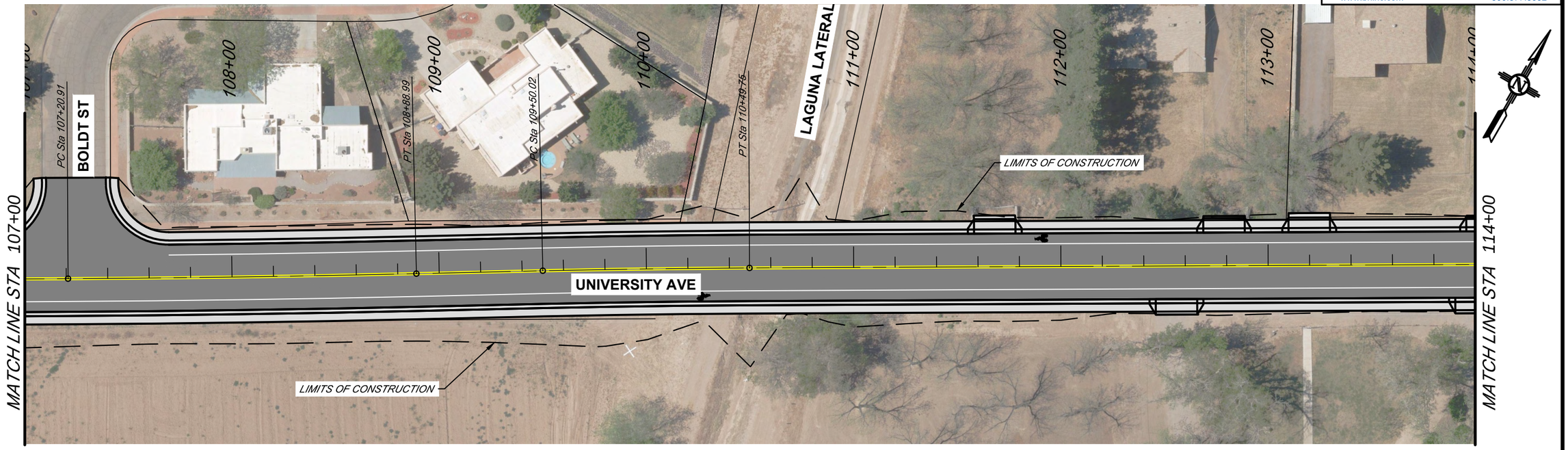

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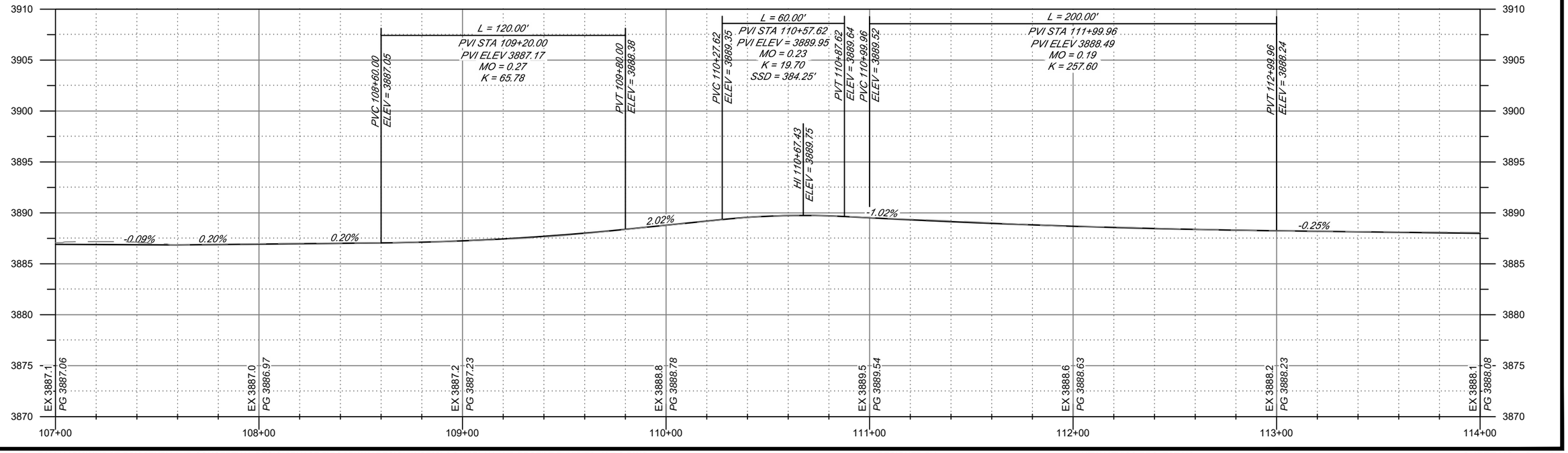


Drawing File: P:\20190569\NMDOT-PCN\STUDY AND CONCEPTUAL DESIGN\PHASE B\ROADWAY DESIGN\WORK\LOGAN\PLAN AND PROFILE EXHIBITS_ALT G.DWG

DESIGNED BY:

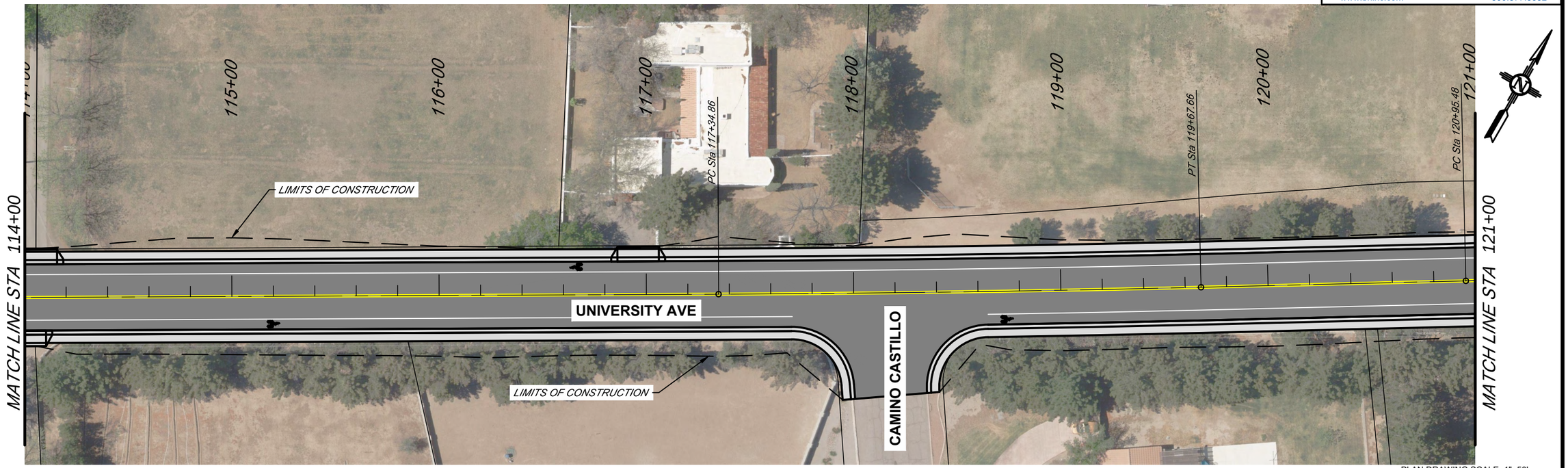
NEW MEXICO PROJECT NO.

ALTERNATIVE G

SHEET NO. G - 2

PROJECT CONTROL NUMBER: ####

Bohannan Huston
www.bhinc.com 800.877.5332



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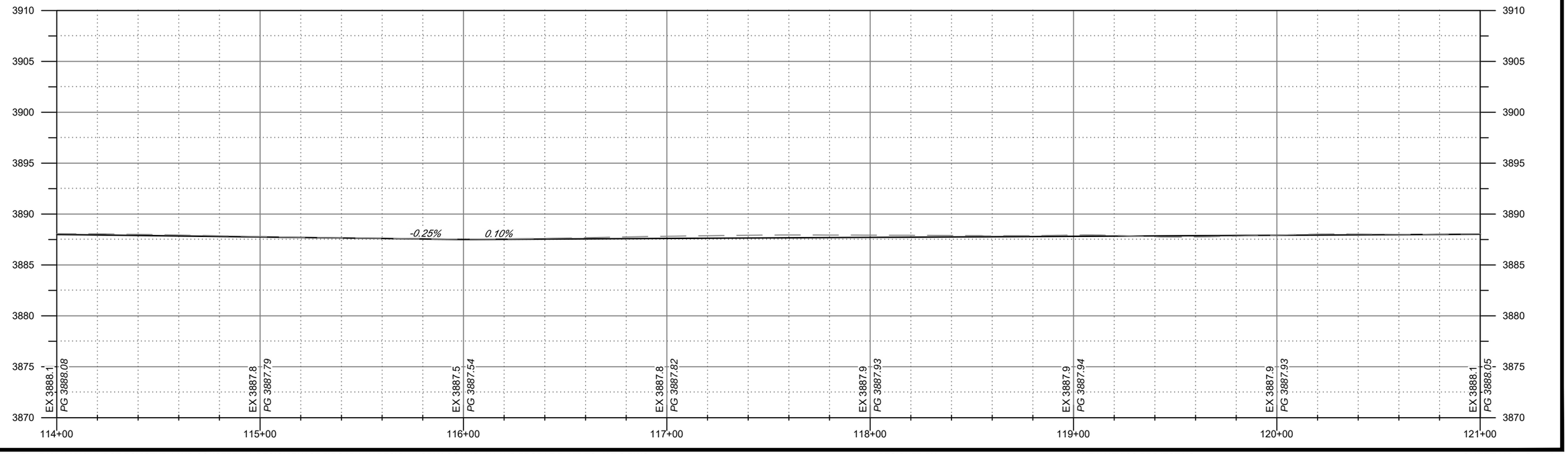
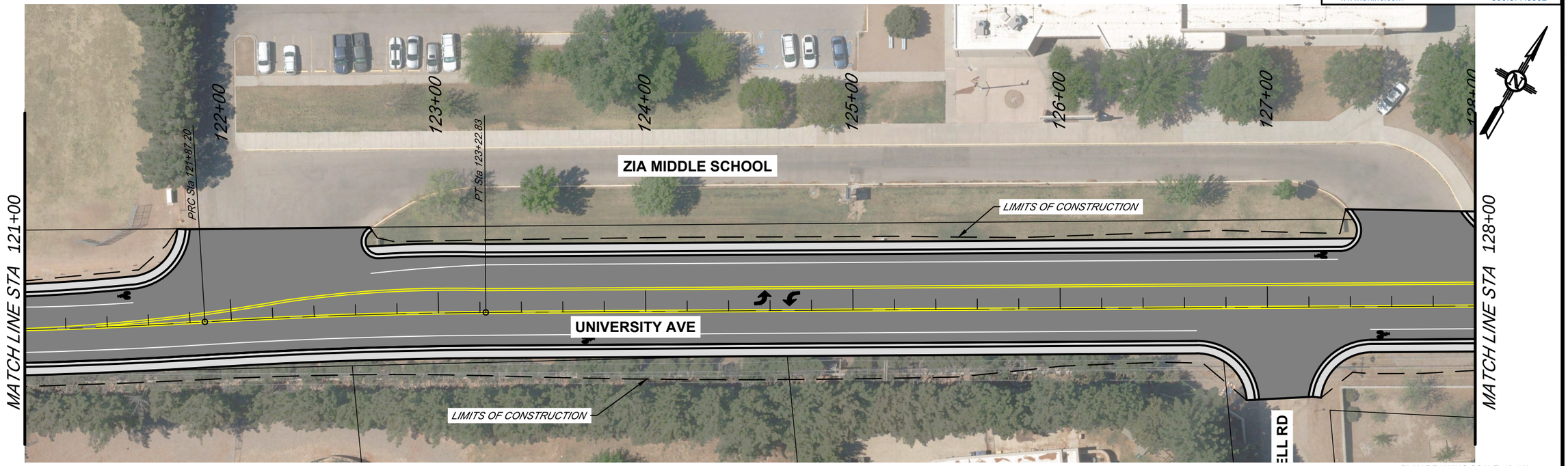


PROJECT CONTROL NUMBER: ####

Bohannan Huston
www.bhinc.com 800.877.5332



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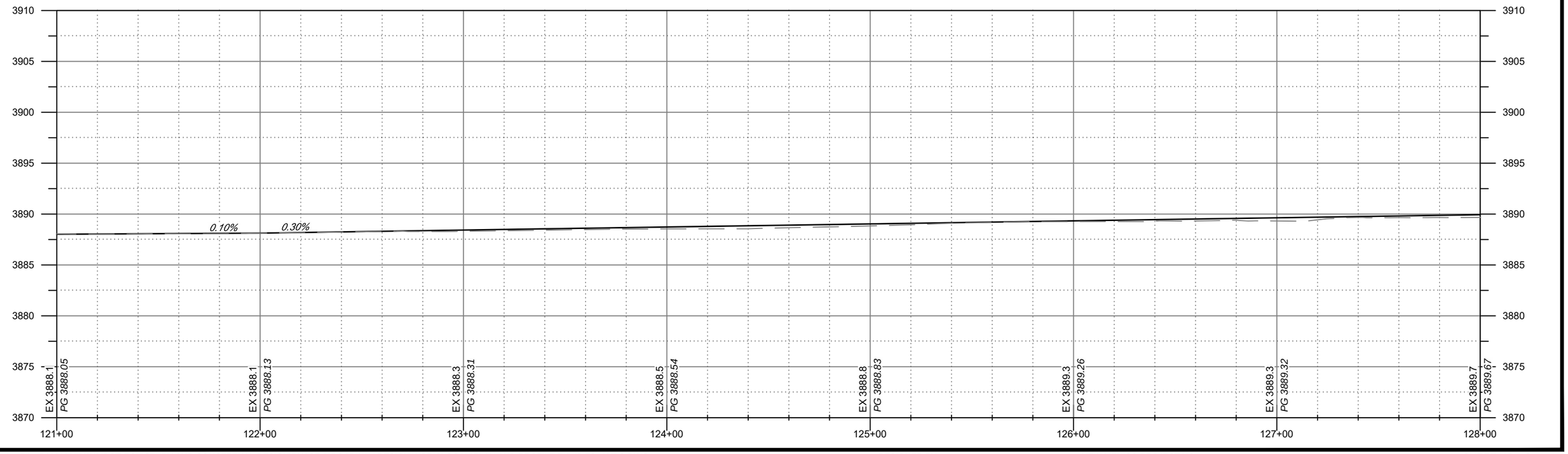

PROJECT CONTROL NUMBER: ####

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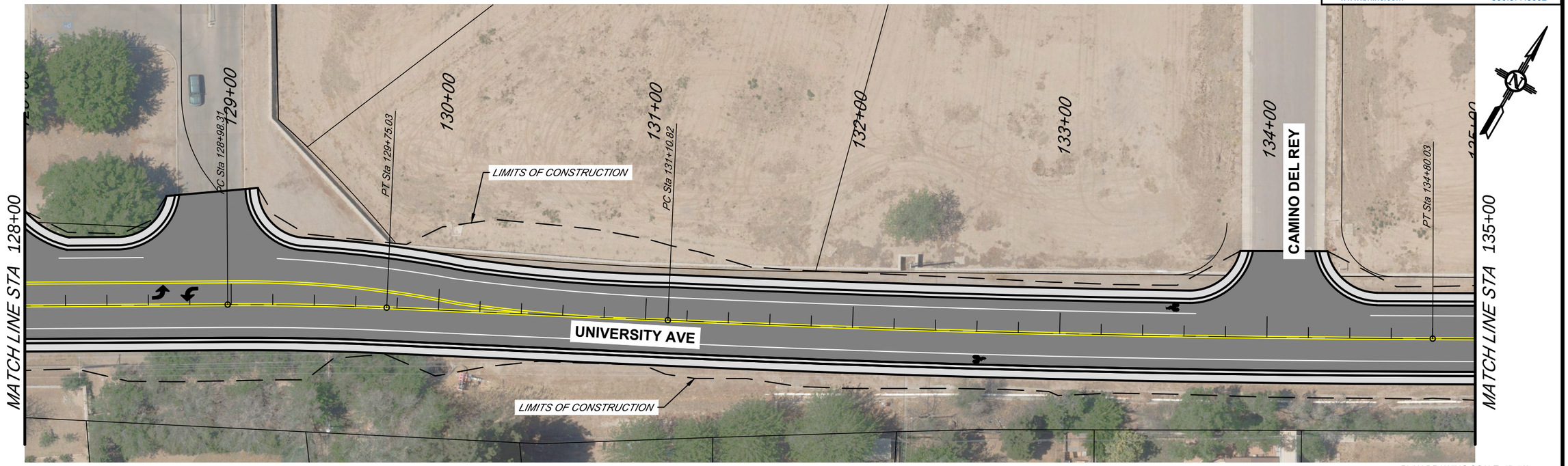
www.bhinc.com 800.877.5332



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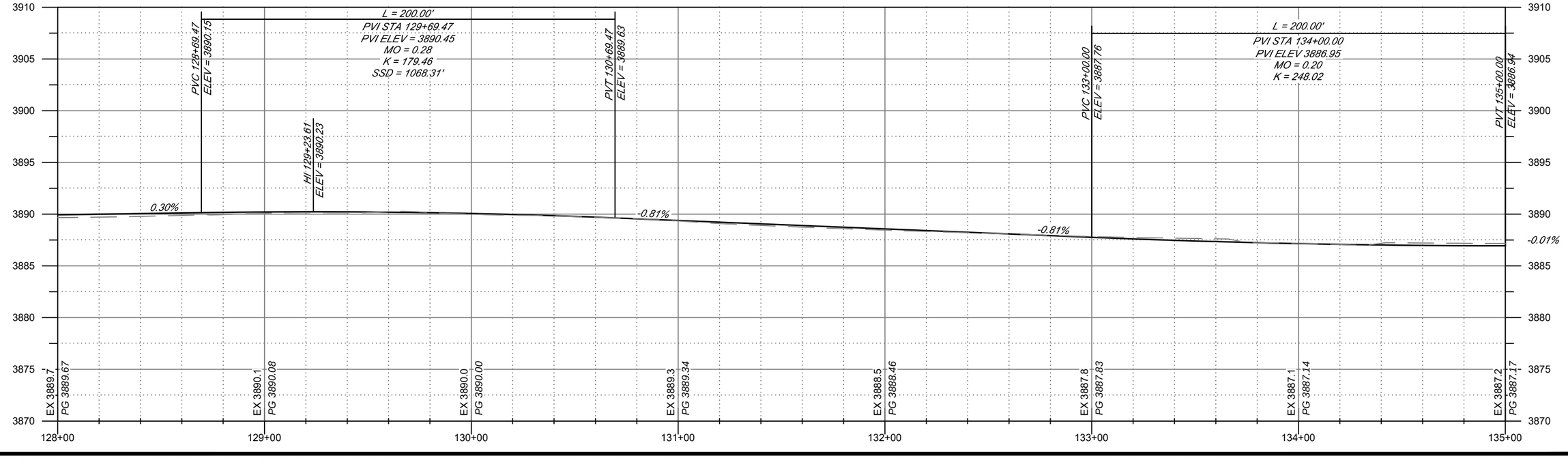

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DESIGNED BY:

NEW MEXICO PROJECT NO.

ALTERNATIVE G

SHEET NO. G - 5

PROJECT CONTROL NUMBER: ####

Bohannan Huston
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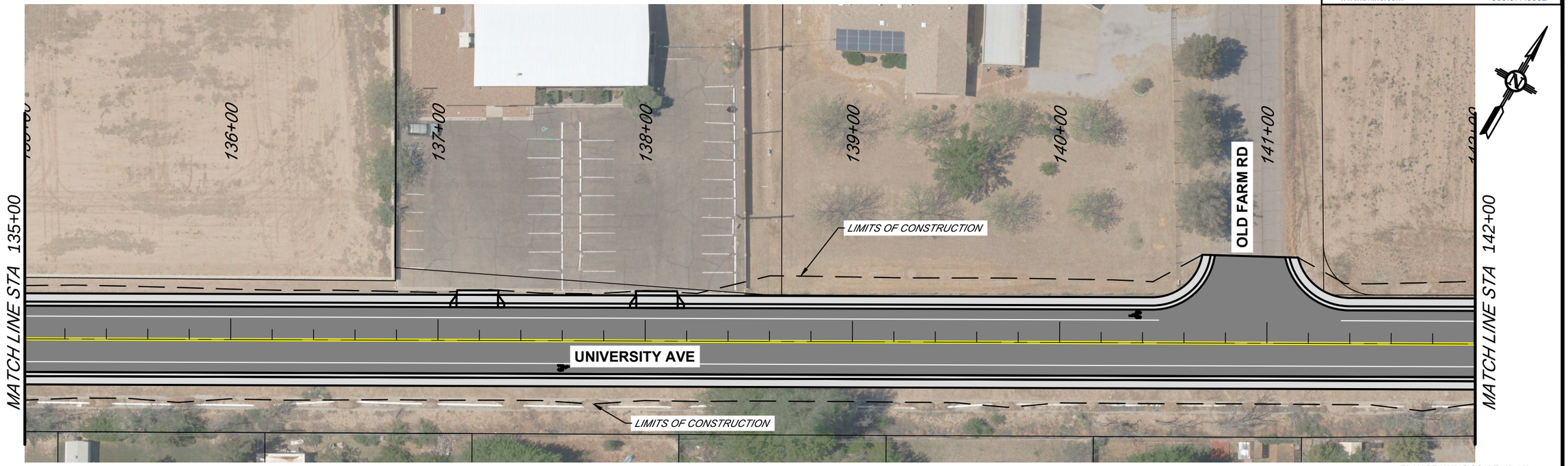

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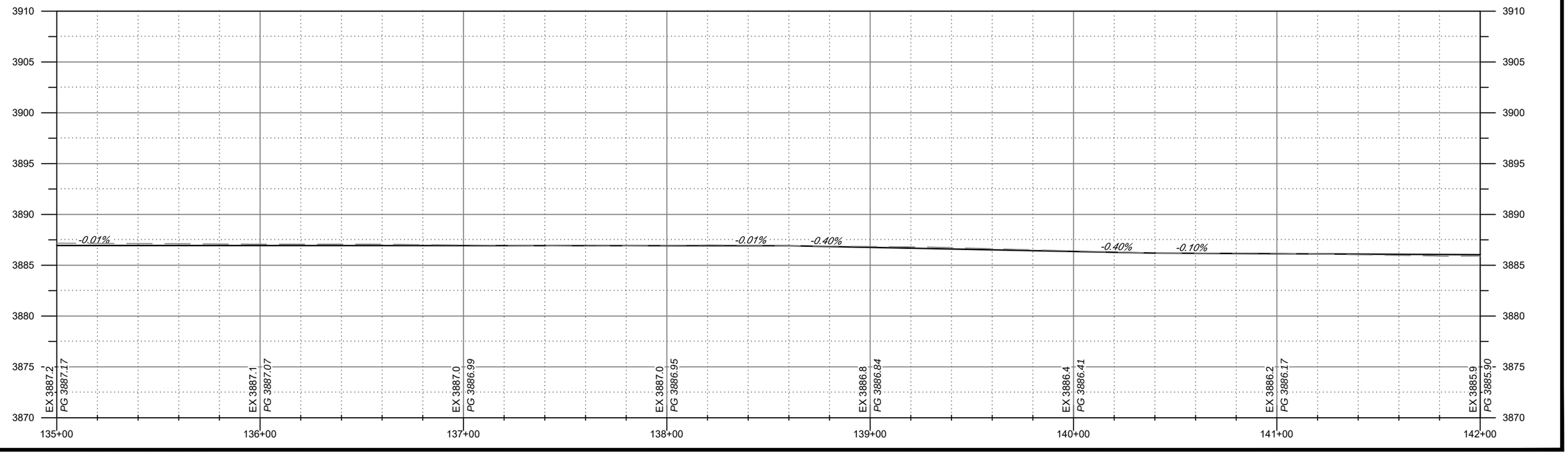

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DESIGNED BY:

NEW MEXICO PROJECT NO.

ALTERNATIVE G

SHEET NO. G - 6

PROJECT CONTROL NUMBER: ####

Bohannan Huston
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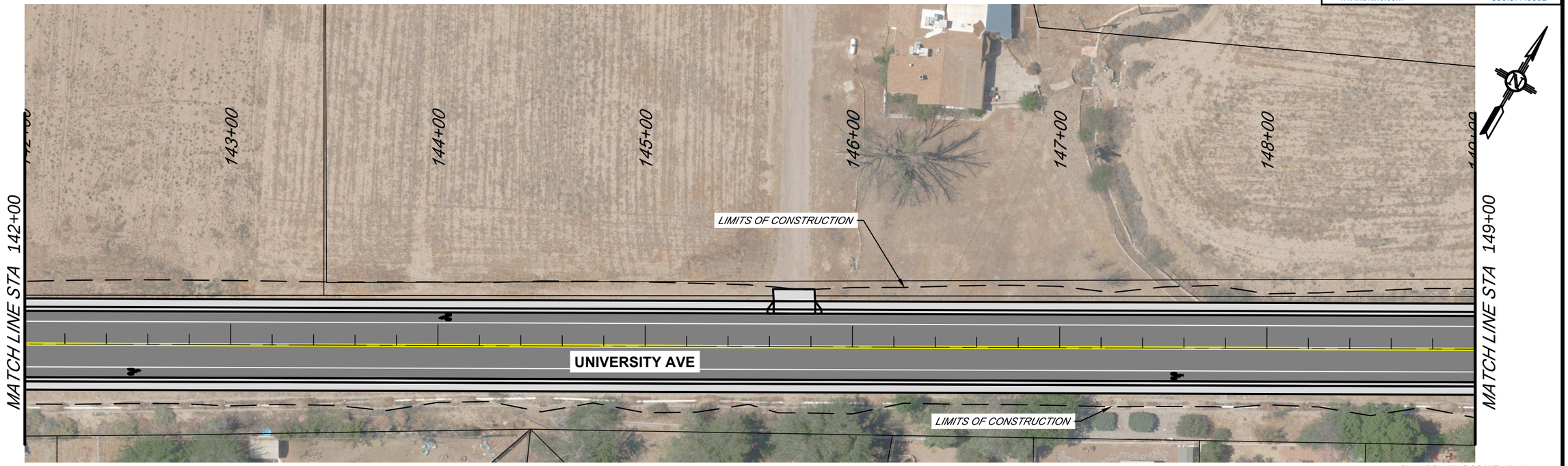

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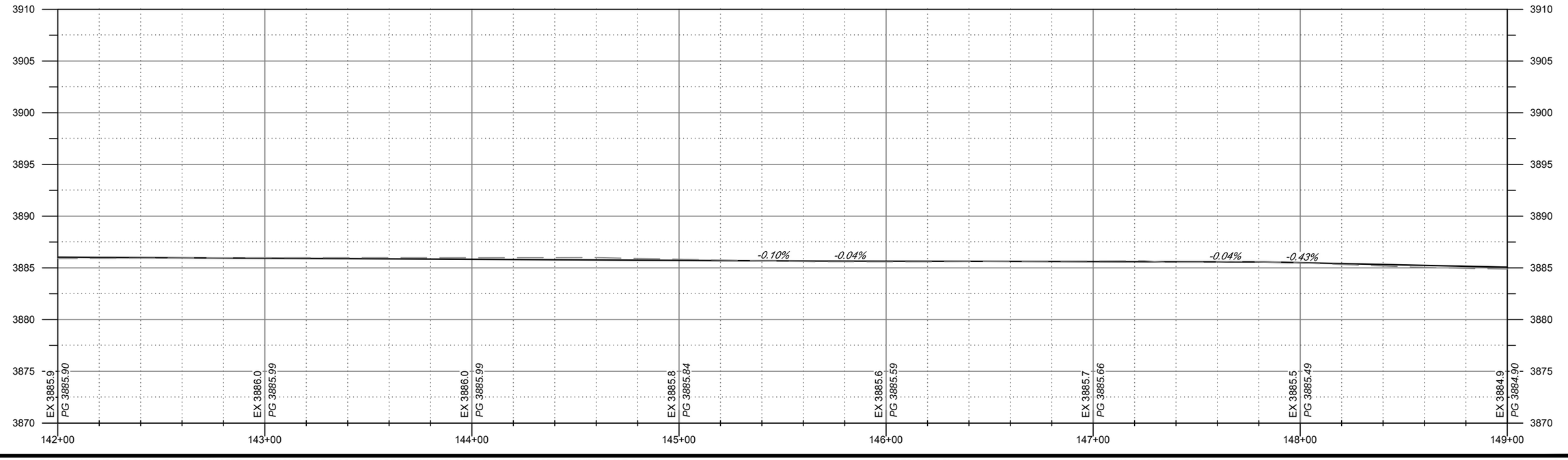

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DESIGNED BY:

NEW MEXICO PROJECT NO.

ALTERNATIVE G

SHEET NO. G - 7

PROJECT CONTROL NUMBER: ####

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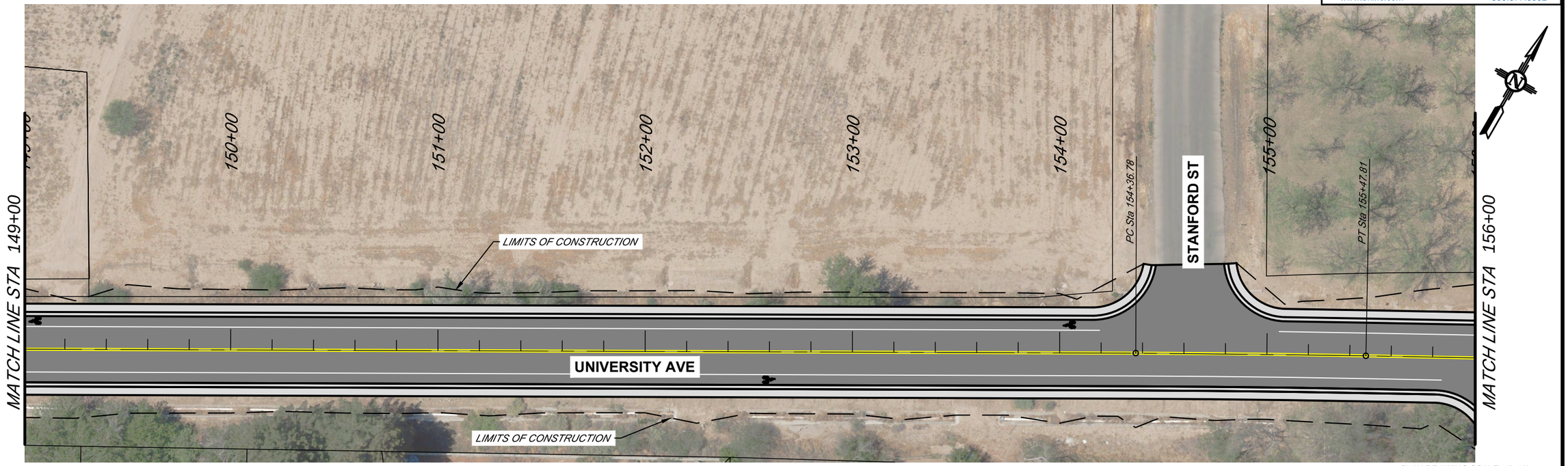

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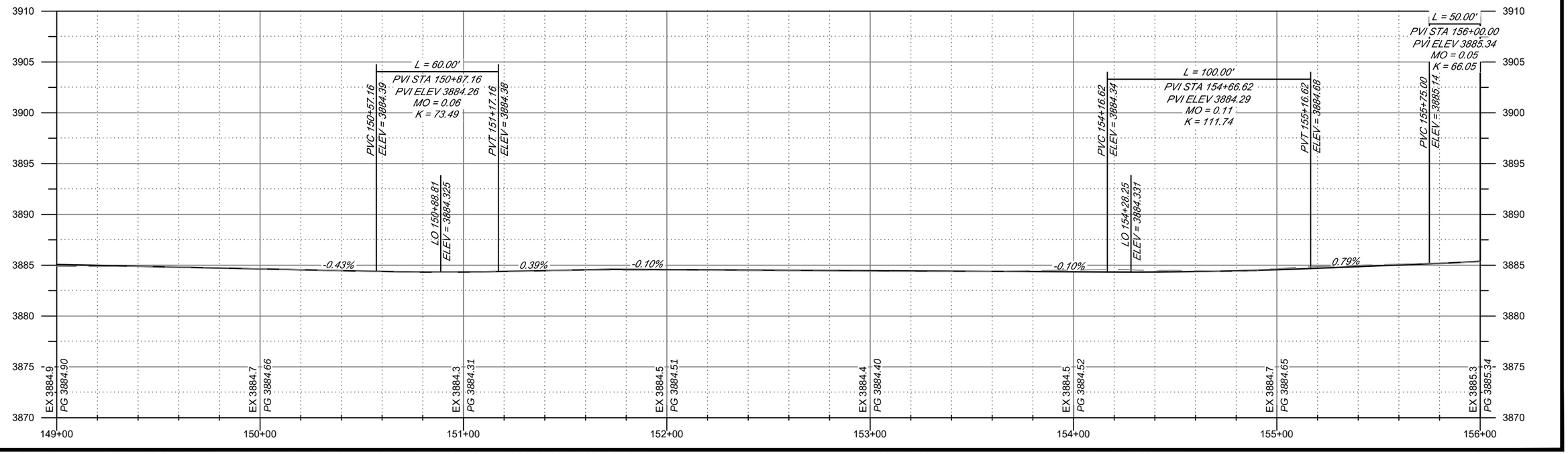

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DESIGNED BY:

NEW MEXICO PROJECT NO.

ALTERNATIVE G

SHEET NO. G - 8

PROJECT CONTROL NUMBER: ####

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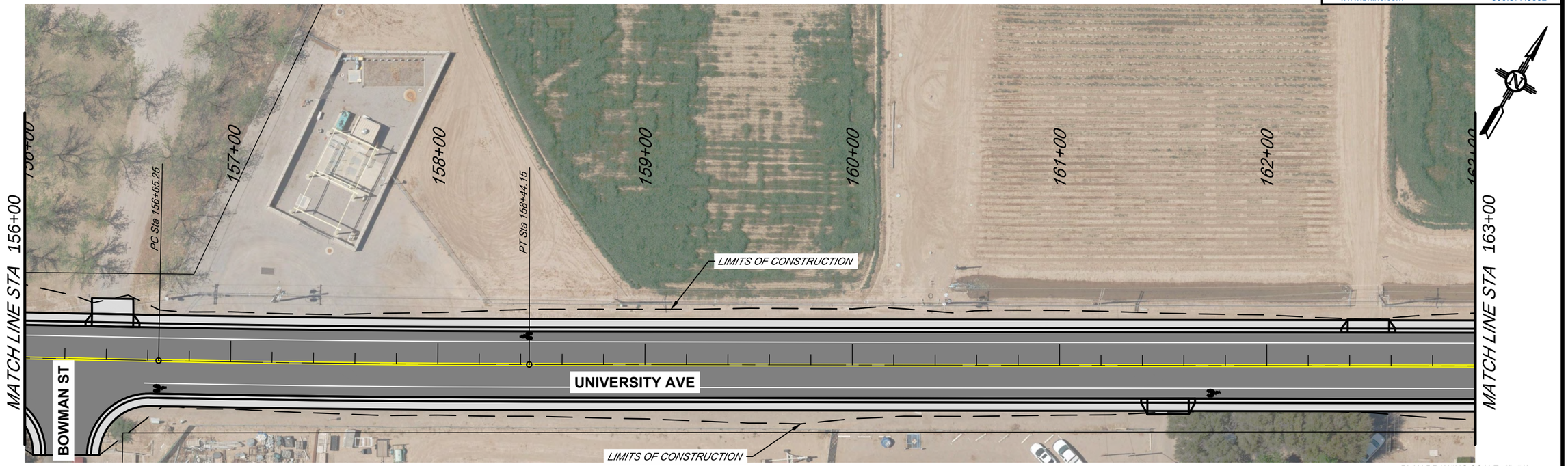

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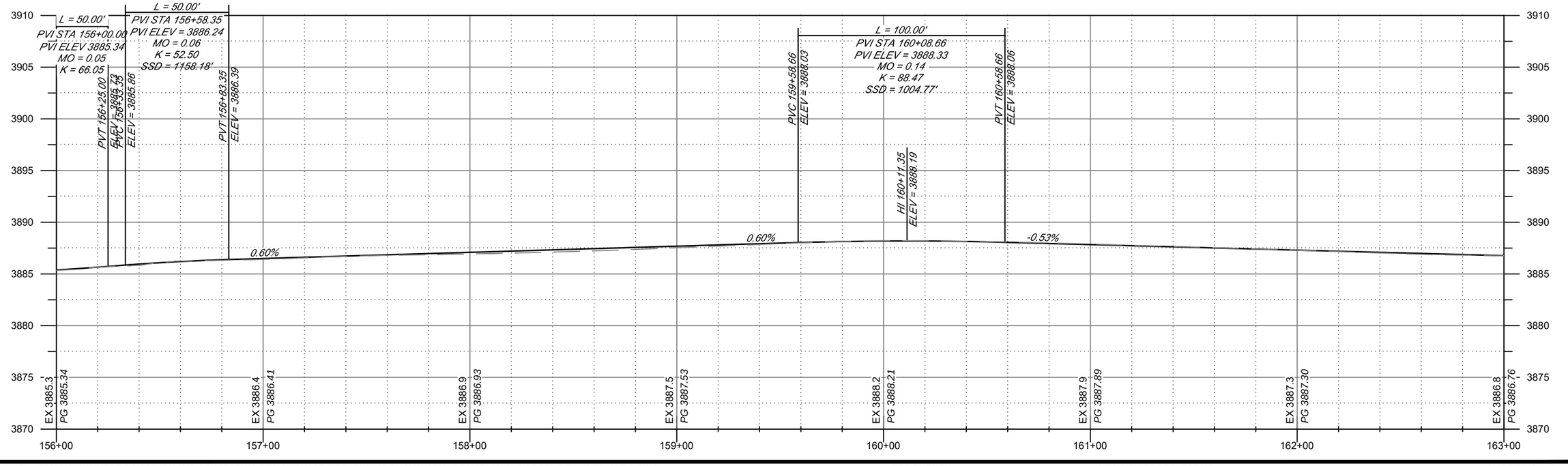

PROJECT CONTROL NUMBER: ####

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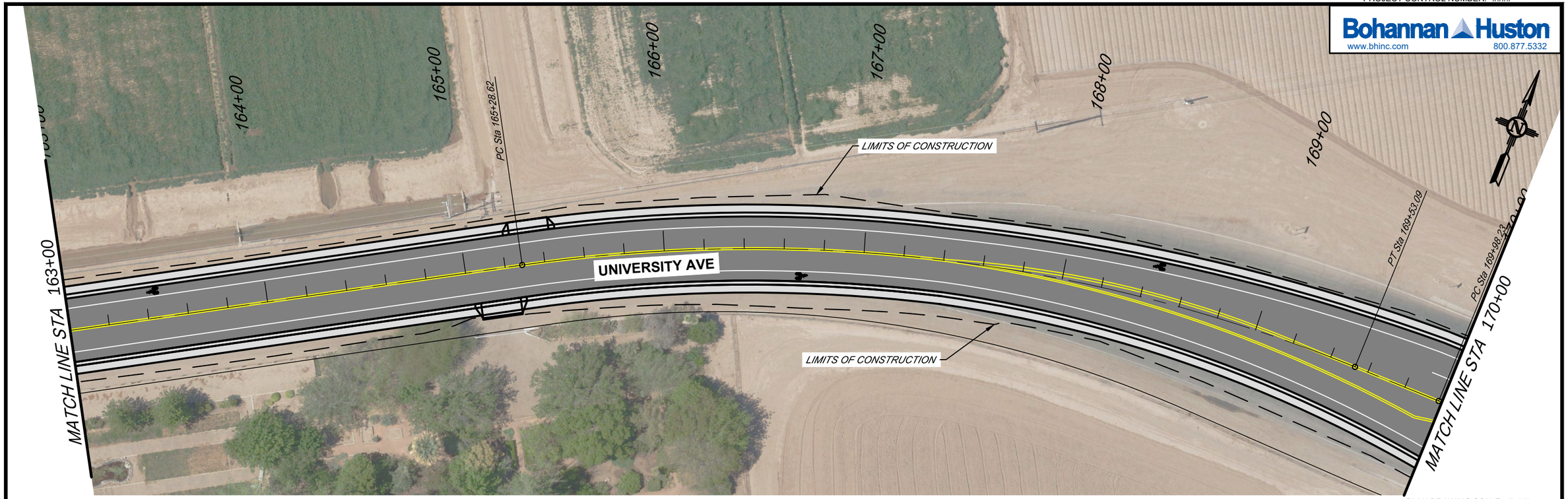

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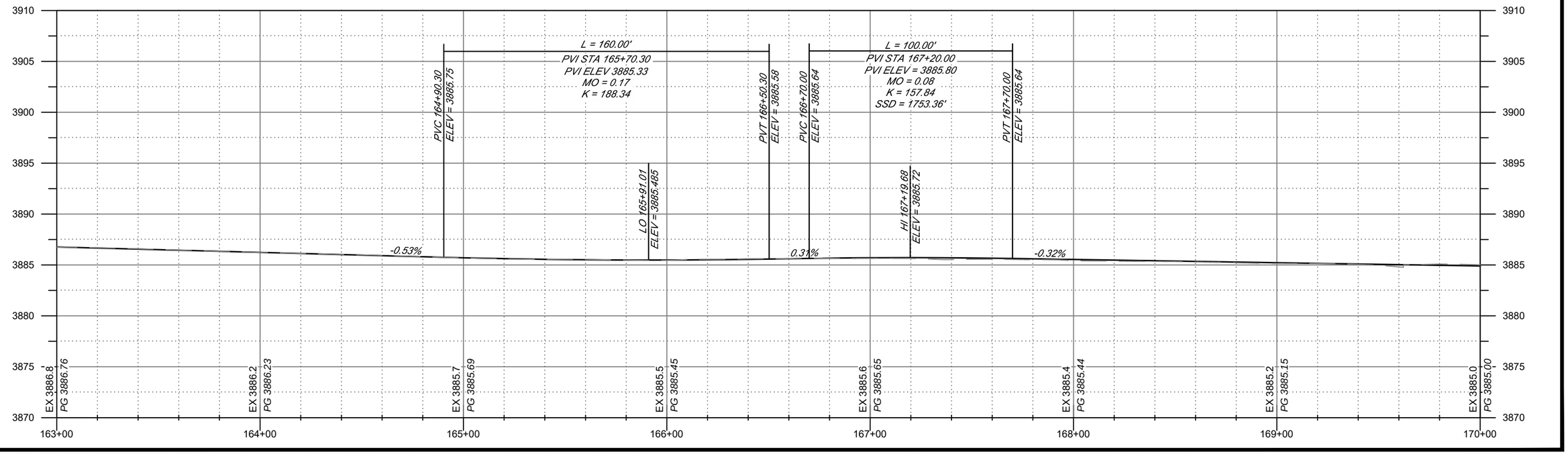

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Bohannan Huston
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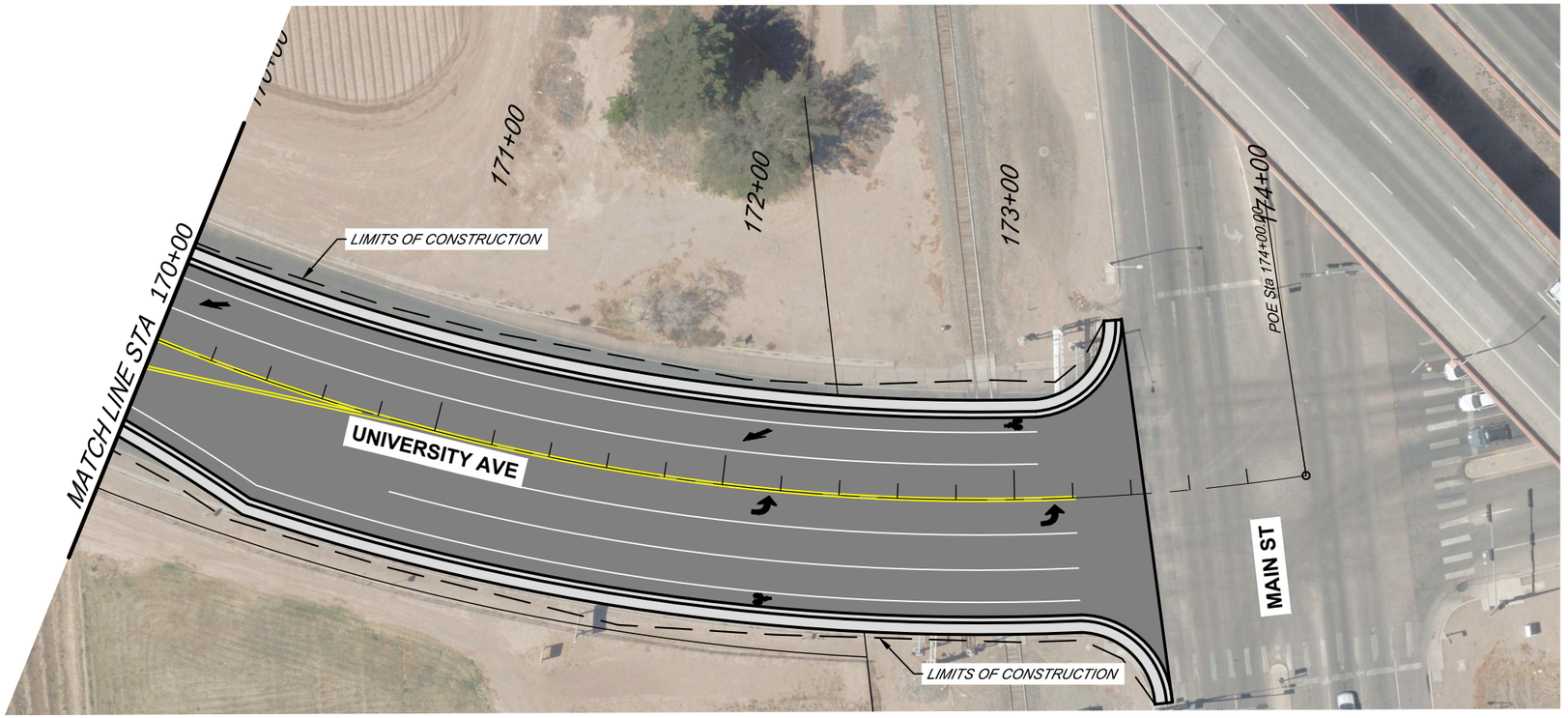

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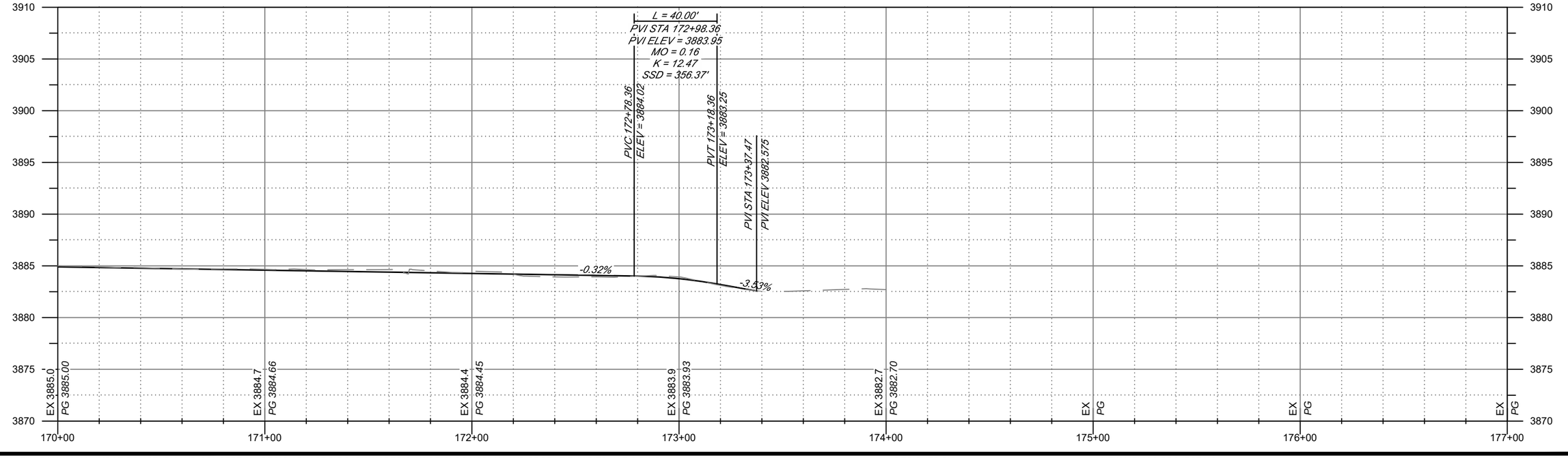

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DESIGNED BY:

NEW MEXICO PROJECT NO.

ALTERNATIVE G

SHEET NO. G - 11

PROJECT CONTROL NUMBER: ####

Bohannan Huston
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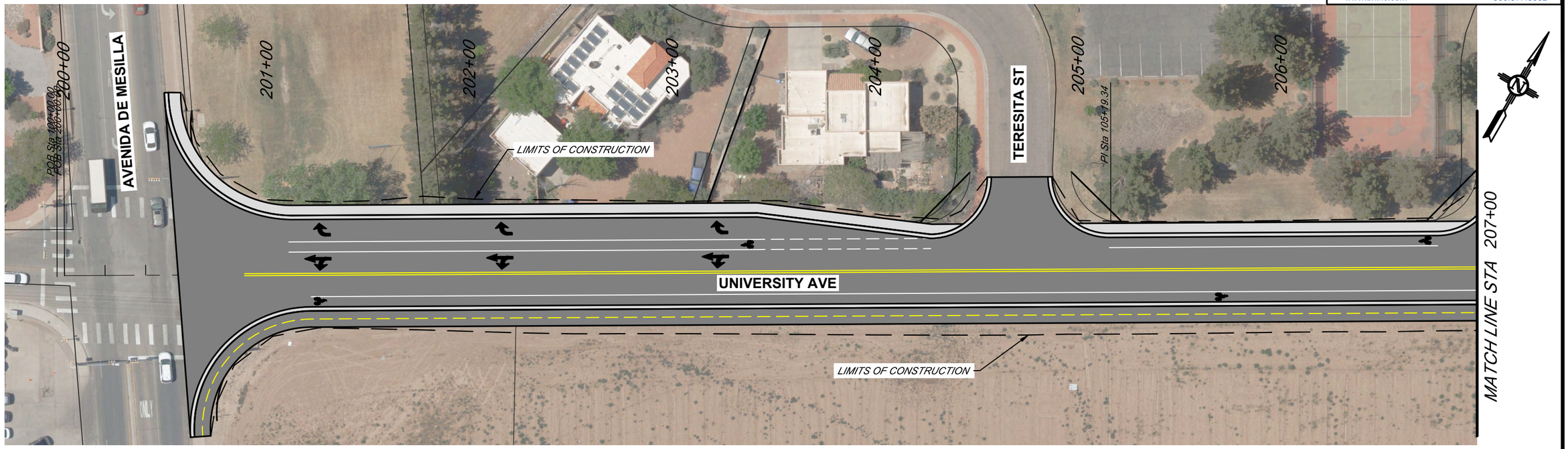

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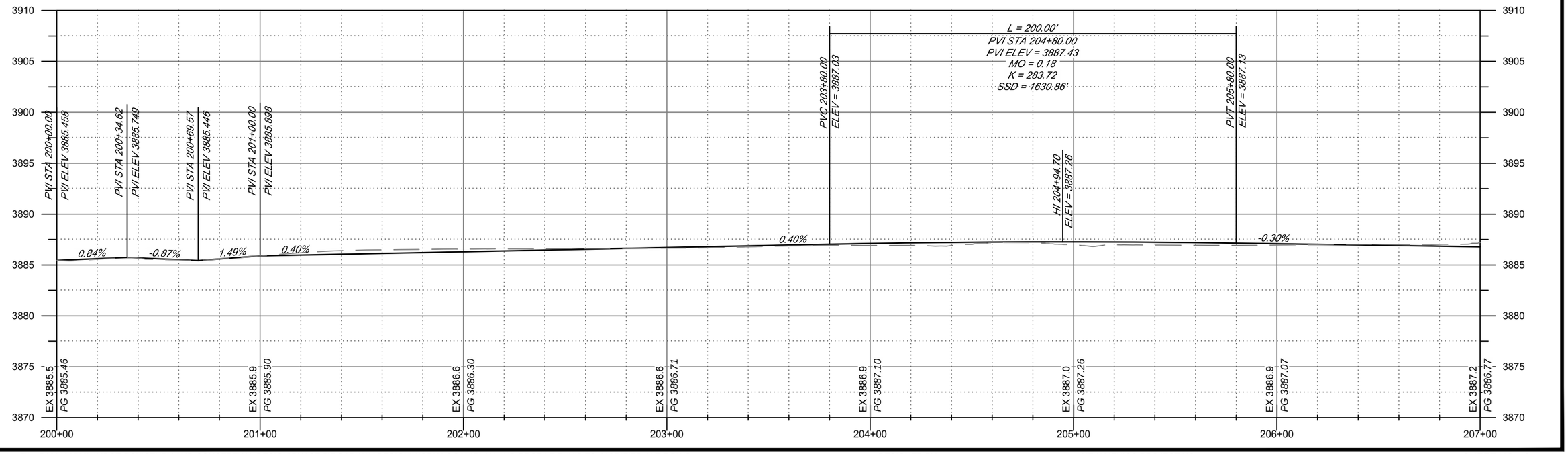


Drawing File: P:\20190569\NMDOT-PCN\STUDY AND CONCEPTUAL DESIGN\PHASE B\ROADWAY DESIGN\WORK\LOGAN\PLAN AND PROFILE EXHIBITS_MODIFIED ALT F.DWG

DESIGNED BY:

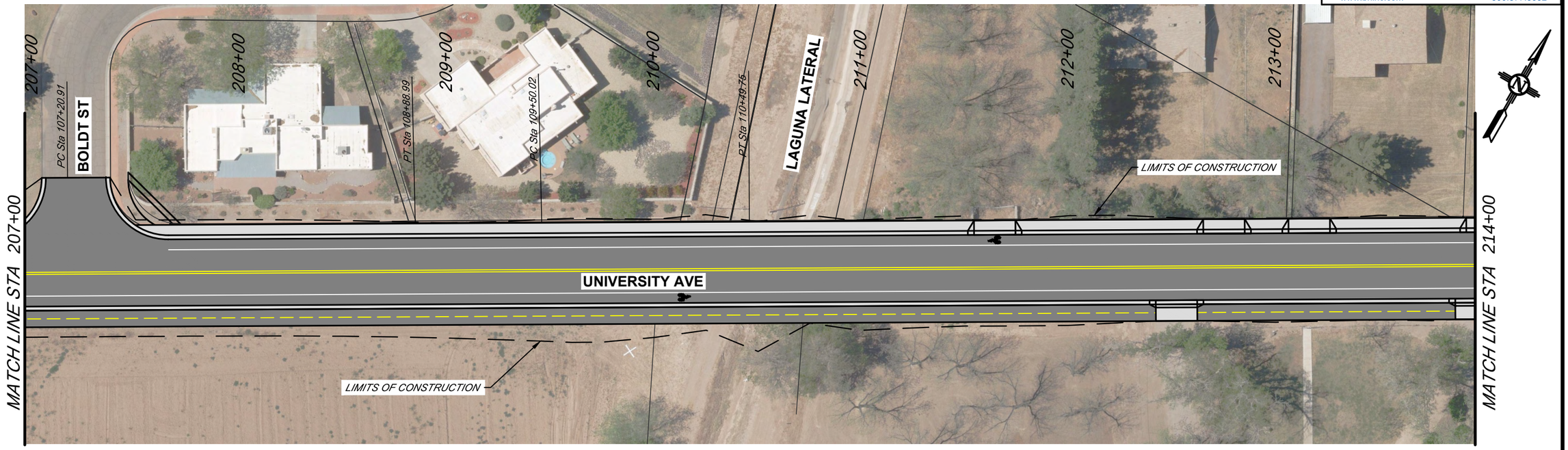
NEW MEXICO PROJECT NO.

RECOMMENDED ALT.

SHEET NO. J - 1

PROJECT CONTROL NUMBER: ####

Bohannan Huston
www.bhinc.com 800.877.5332



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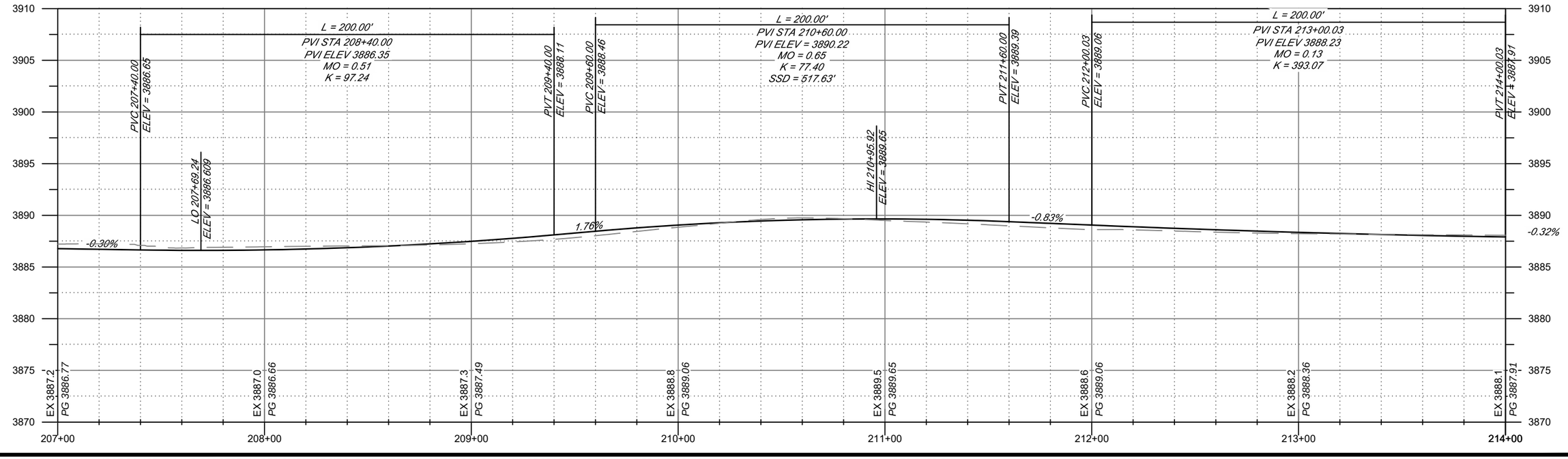

Drawing File: P:\20190569\NMDOT-PCN\STUDY AND CONCEPTUAL DESIGN\PHASE B\ROADWAY DESIGN\WORK\LOGAN\PLAN AND PROFILE EXHIBITS_MODIFIED ALT F.DWG

DESIGNED BY:

NEW MEXICO PROJECT NO.

RECOMMENDED ALT.

SHEET NO. J - 2

PROJECT CONTROL NUMBER: ####

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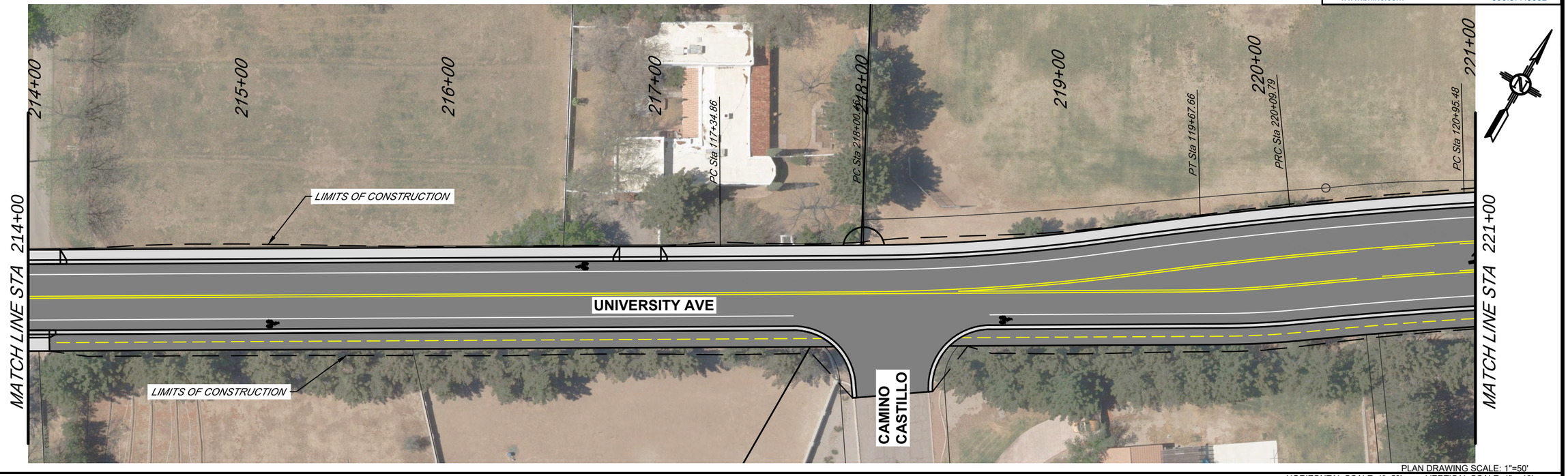

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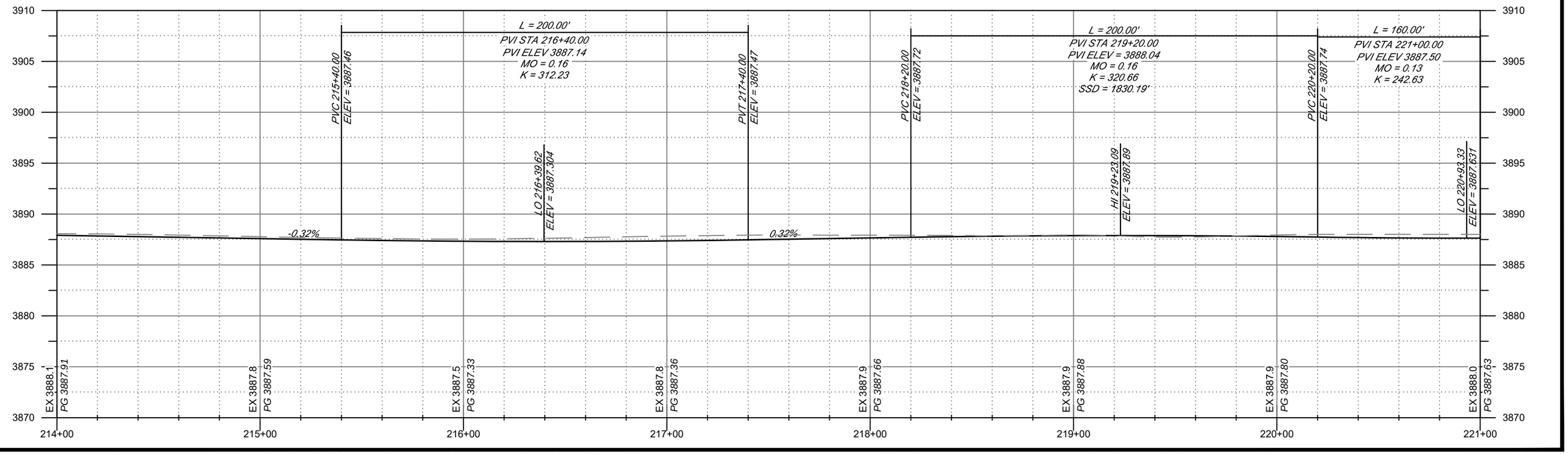

Drawing File: P:\20190569\NMDOT-PCN\STUDY AND CONCEPTUAL DESIGN\PHASE B\ROADWAY DESIGN\WORK\LOGAN\PLAN AND PROFILE EXHIBITS_MODIFIED ALT F.DWG DESIGNED BY: NEW MEXICO PROJECT NO.

RECOMMENDED ALT.

SHEET NO. J - 3

PROJECT CONTROL NUMBER: ####

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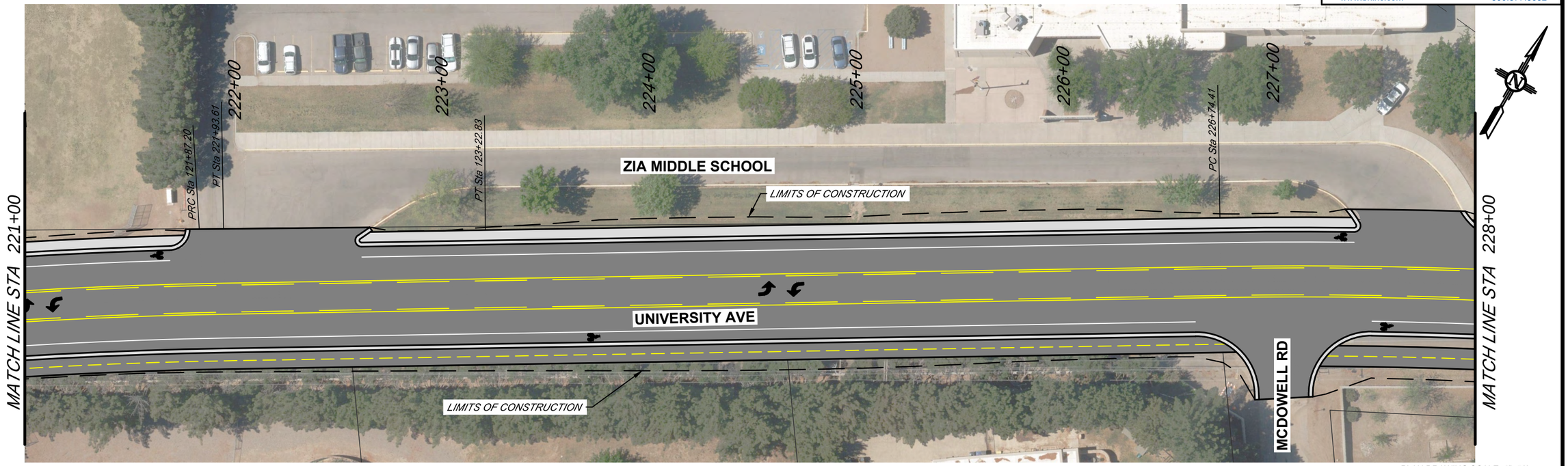

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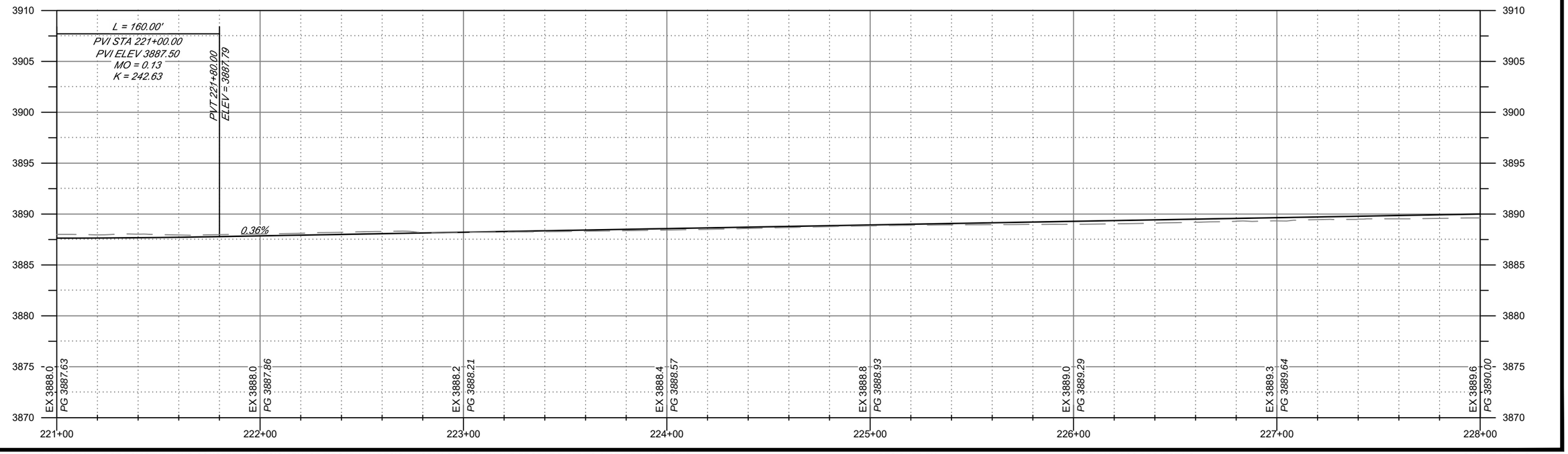

Drawing File: P:\20190569\NMDOT-PCN\STUDY AND CONCEPTUAL DESIGN\PHASE B\ROADWAY DESIGN\WORK\LOGAN\PLAN AND PROFILE EXHIBITS_MODIFIED ALT F.DWG

DESIGNED BY:

NEW MEXICO PROJECT NO.

RECOMMENDED ALT.

SHEET NO. J - 4

PROJECT CONTROL NUMBER: ####

Bohannan Huston
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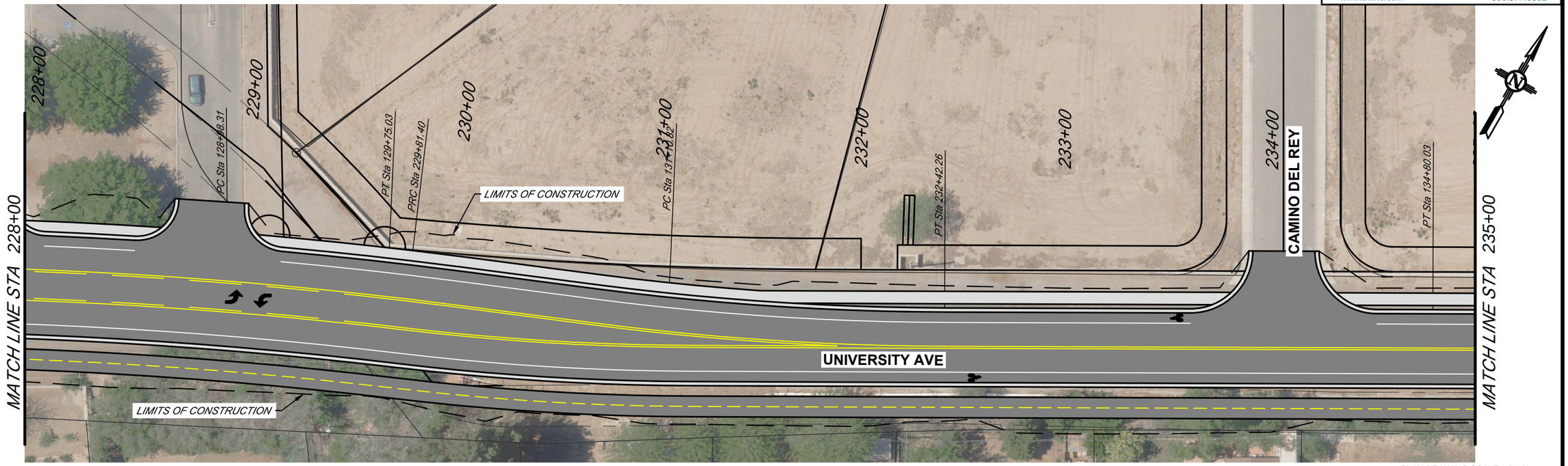

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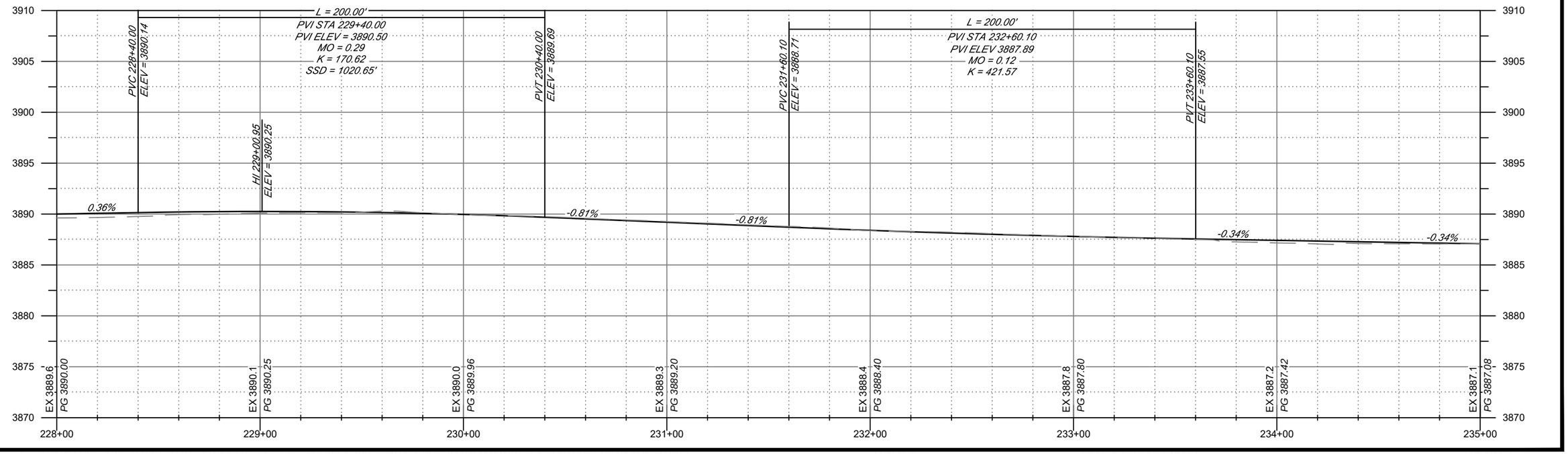

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DESIGNED BY:

NEW MEXICO PROJECT NO.

RECOMMENDED ALT.

PROJECT CONTROL NUMBER: ####

Bohannan Huston
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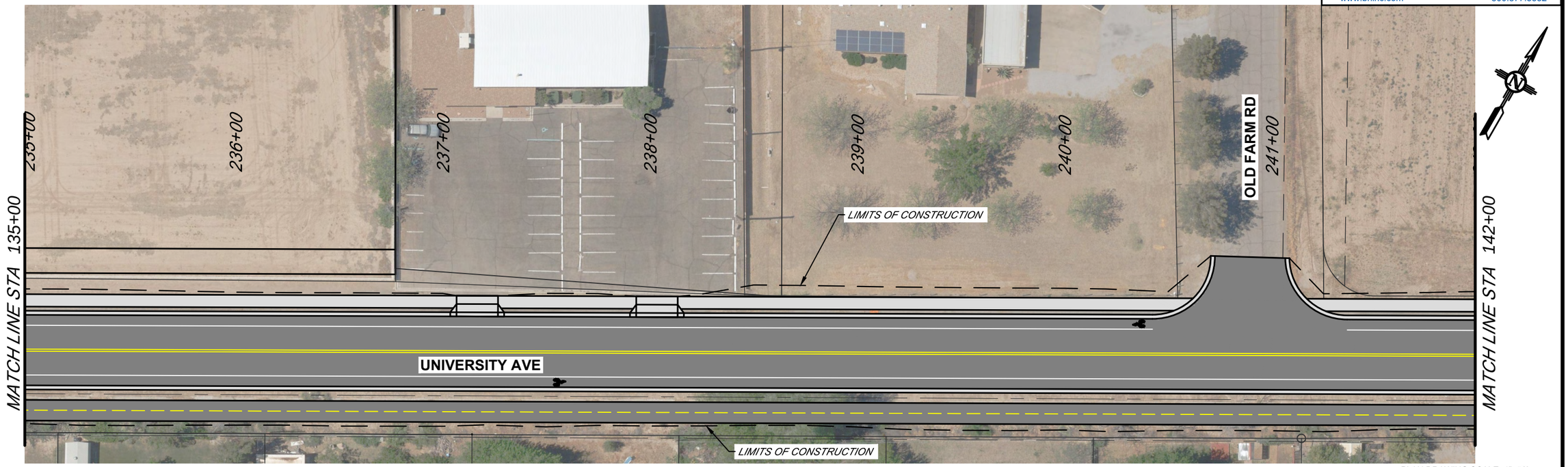

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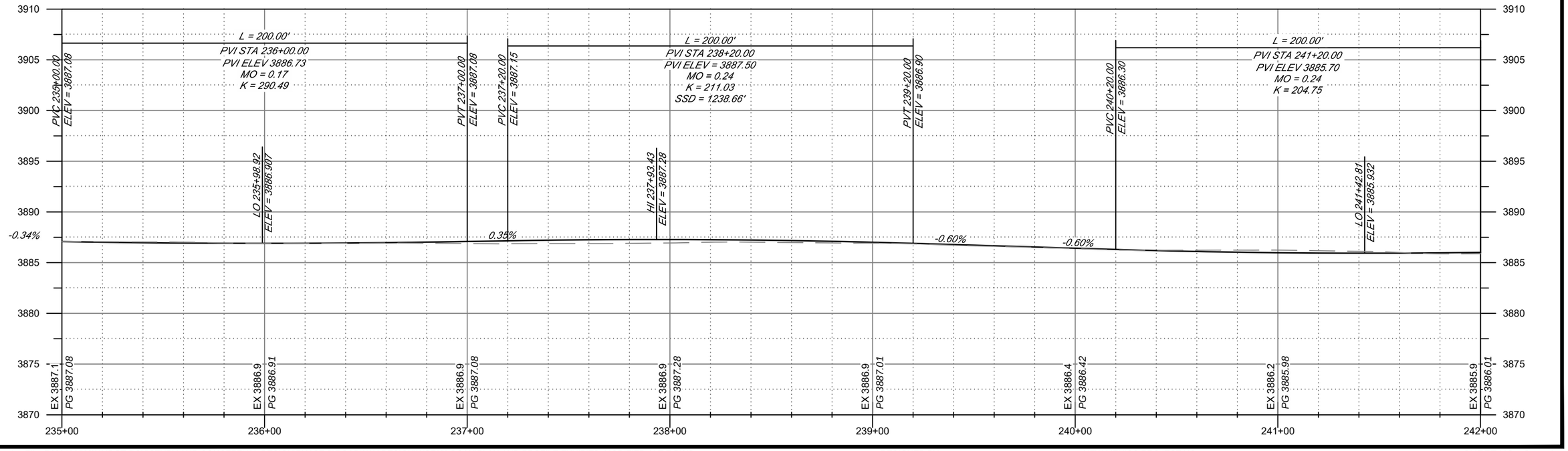

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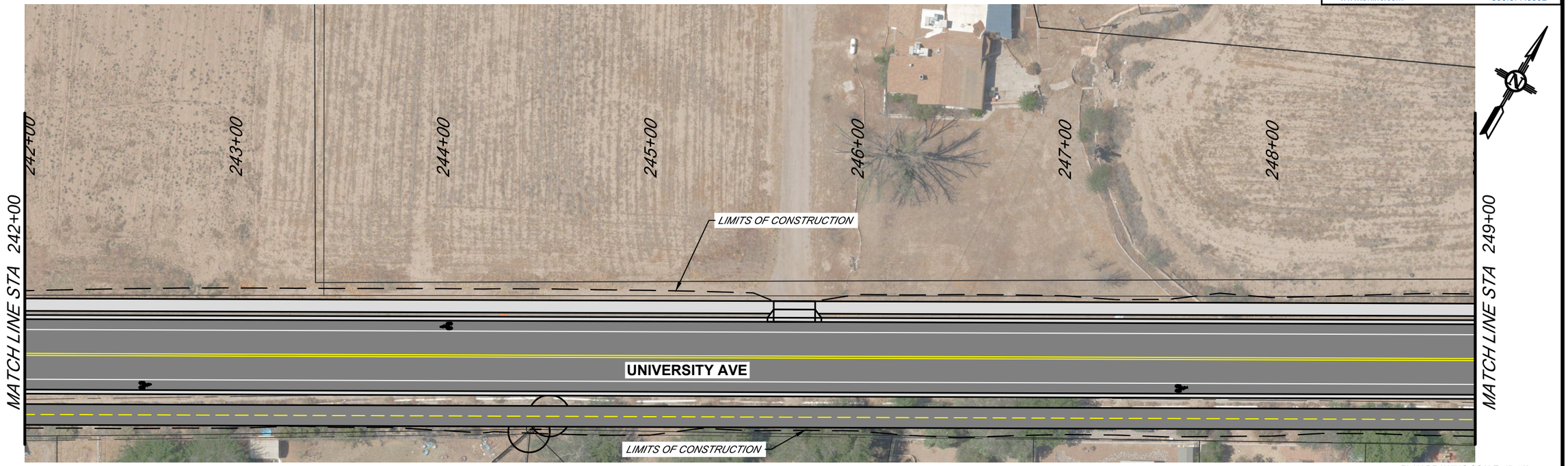

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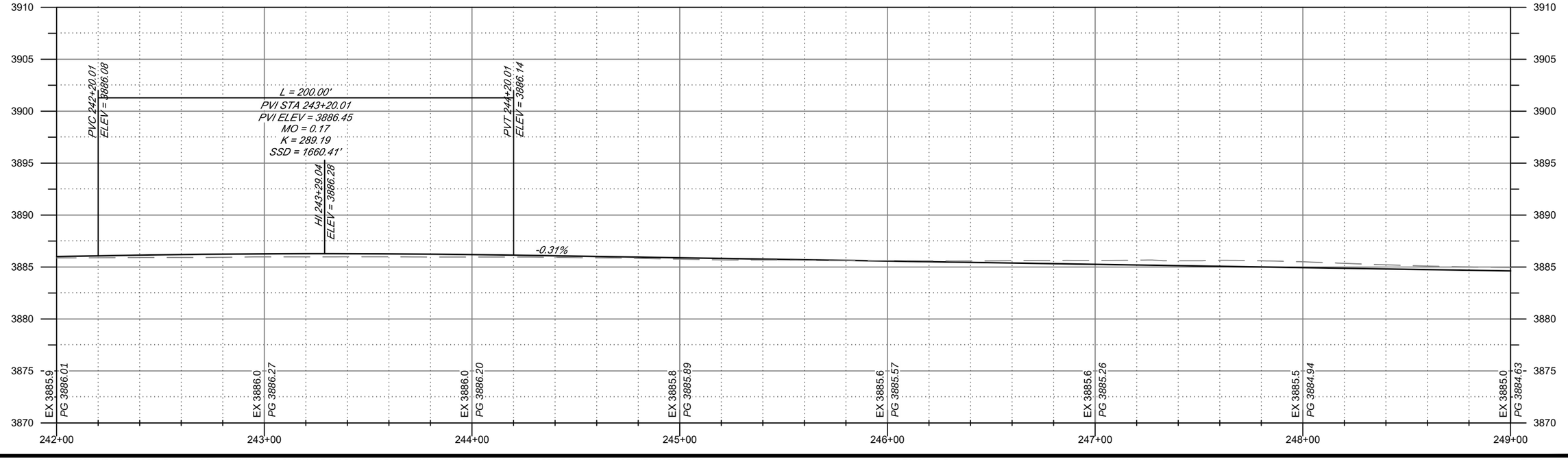

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DESIGNED BY:

NEW MEXICO PROJECT NO.

RECOMMENDED ALT.

SHEET NO. J - 7

PROJECT CONTROL NUMBER: ####

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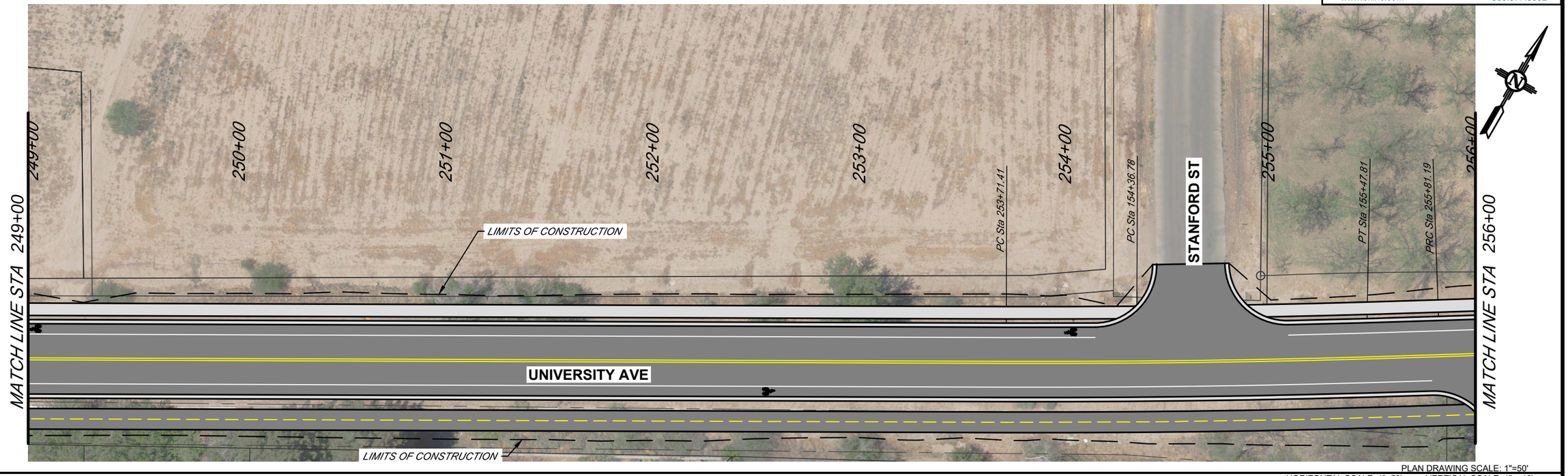

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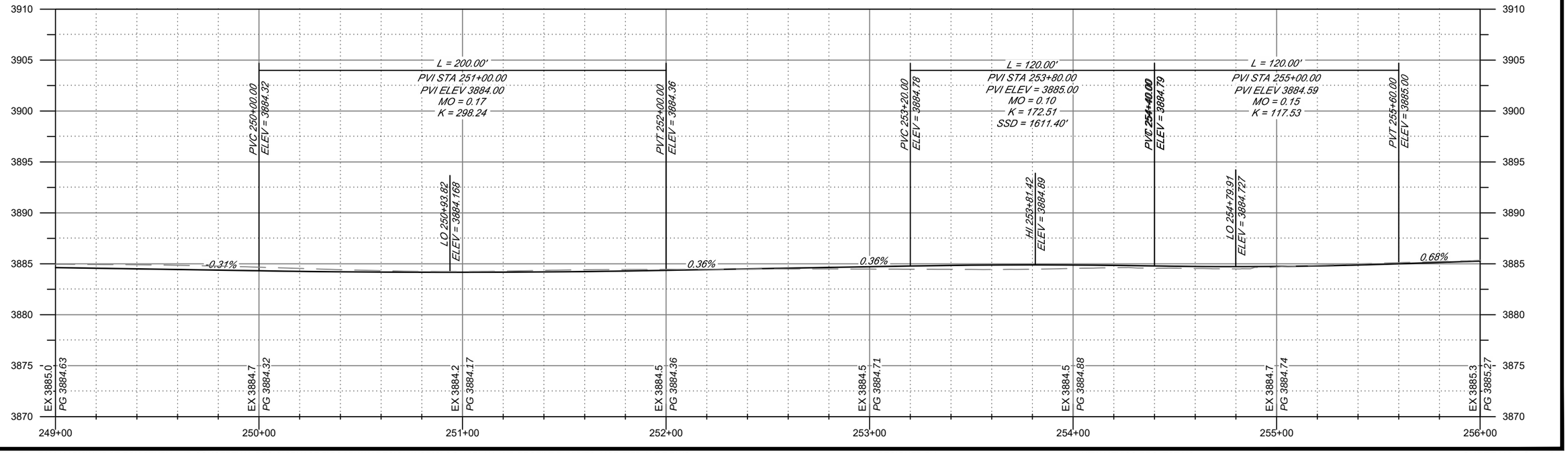

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DESIGNED BY:

NEW MEXICO PROJECT NO.

RECOMMENDED ALT.

PROJECT CONTROL NUMBER: ####

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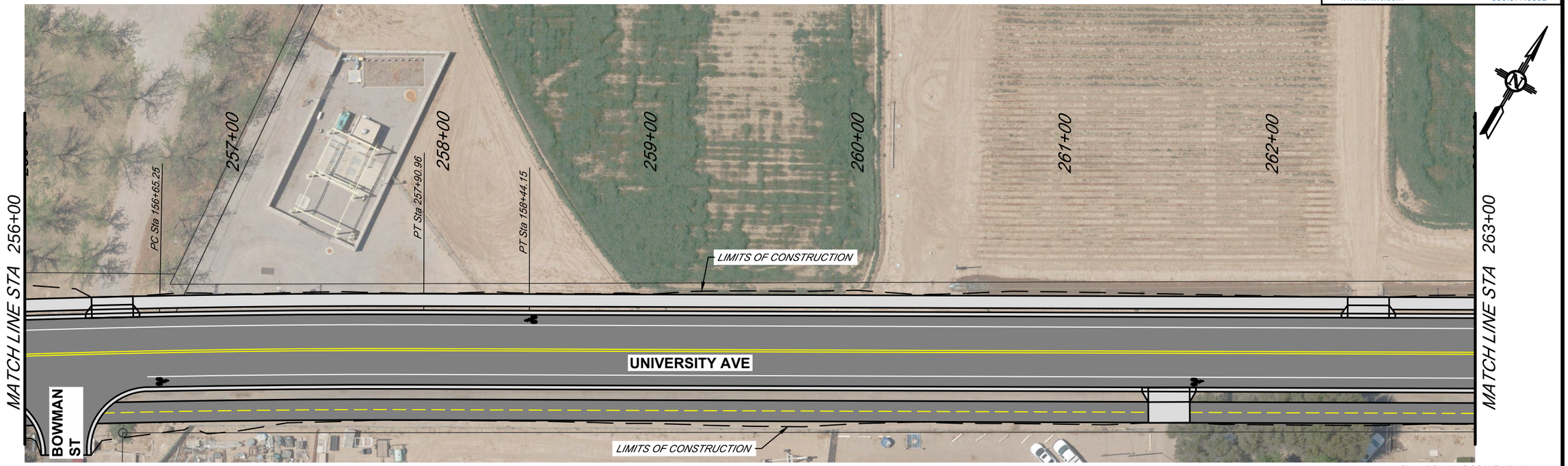

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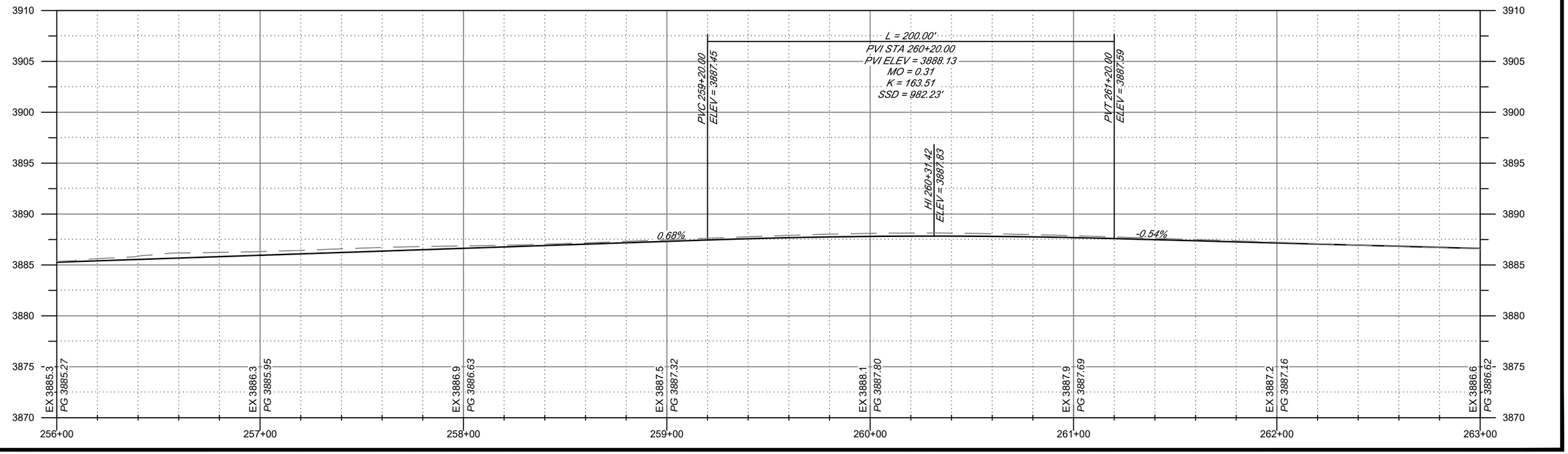

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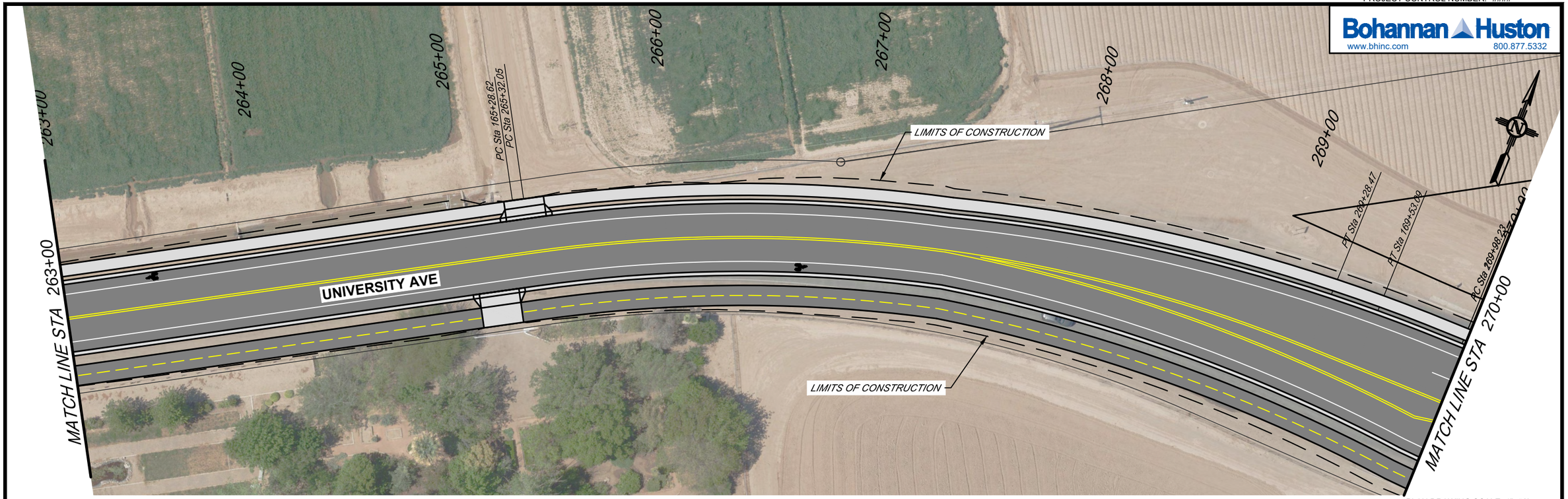

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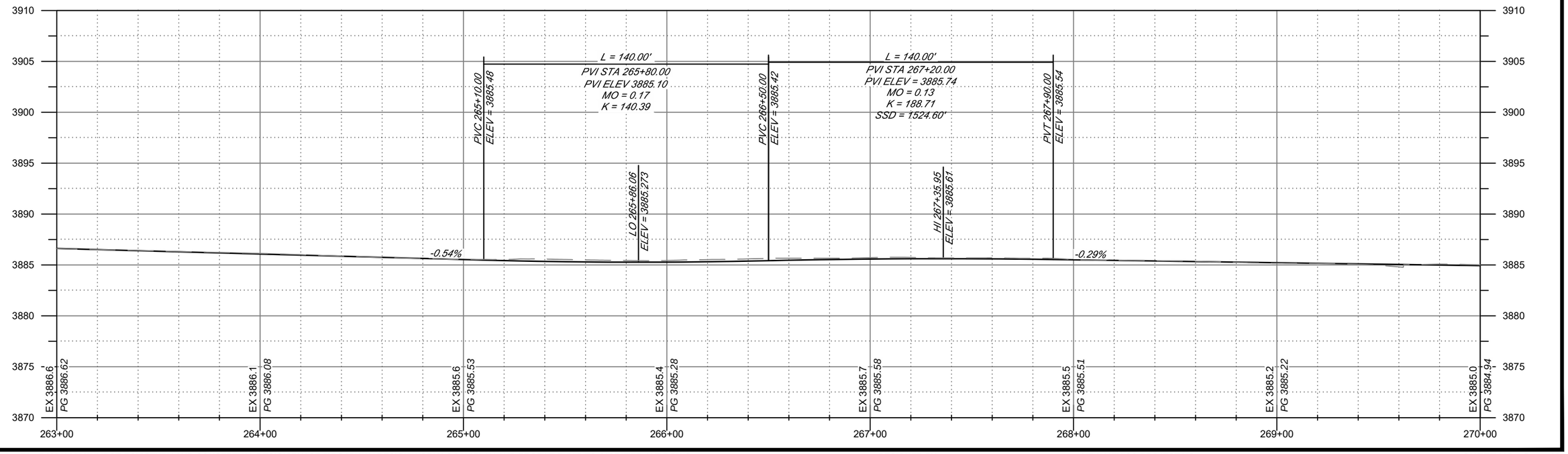

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DESIGNED BY:

NEW MEXICO PROJECT NO.

RECOMMENDED ALT.

PROJECT CONTROL NUMBER: ####

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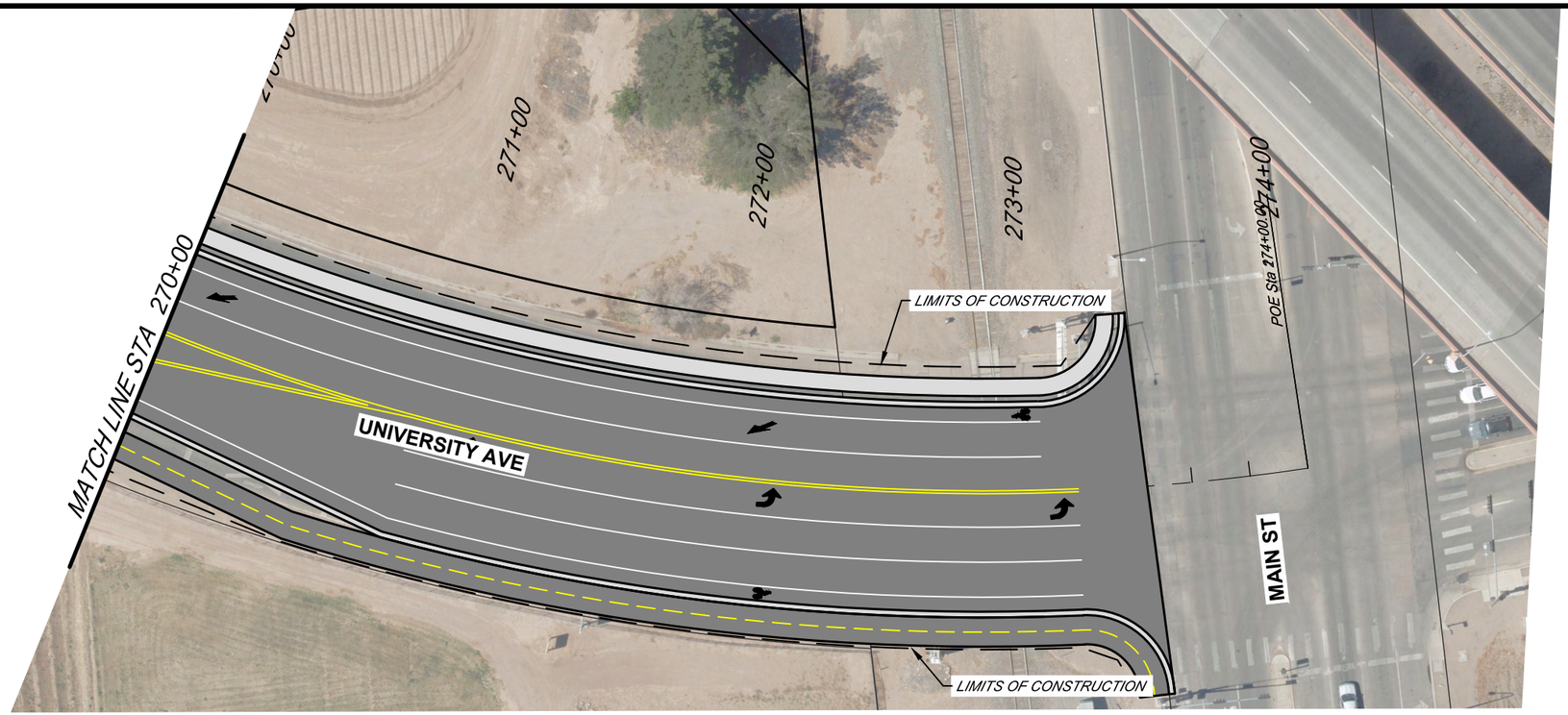

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