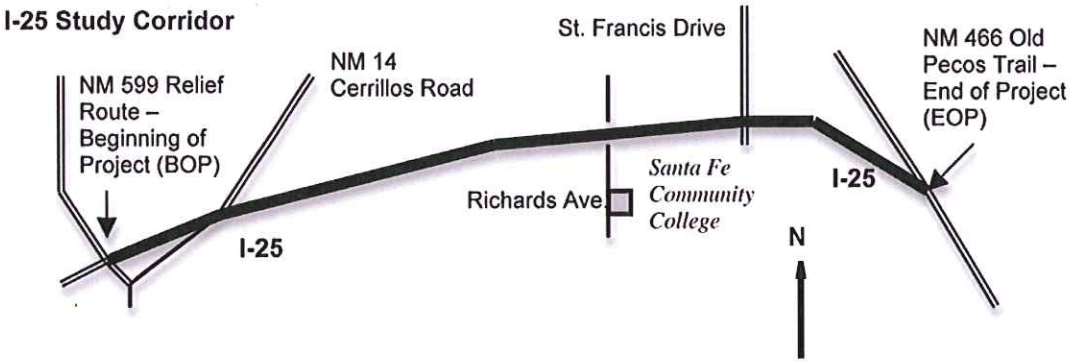
Appendix A
I-25 and St. Francis Studies Executive Summaries as of February 16, 2010

Executive Summary

I-25 Corridor Study: NM 599 to NM 466

The New Mexico Department of Transportation (NMDOT) and the Federal Highway Administration (FHWA) have commissioned this corridor study for the Interstate-25 (I-25) corridor through Santa Fe, New Mexico, to meet the existing and future travel demands through the year 2030, as shown on Figure ES-1.

FIGURE ES-1
Study Limits



Agency Coordination and Public Involvement

Technical staff from FHWA, NMDOT, Santa Fe Metropolitan Planning Organization (MPO), and the City and County of Santa Fe has provided guidance throughout this study during regular meetings with the Project Management Team. The draft Phase B report and recommendations were also presented to the MPO's Technical Coordination Committee and Transportation Policy Board (TPB) on January 26, 2010, and February 11, 2010, respectively.

Two public meetings were held on August 20, 2009, and on December 3, 2009 at the Genoveva Chavez Community Center during Phase B of the I-25 Corridor Study. Complete summaries of these meetings and the written and verbal comments received at each are included in Appendix B of this report.

Study Purpose and Need

The purpose of the I-25 Corridor Study is to develop a prioritized list of projects within the I-25 corridor, from NM 599/Veterans Memorial Highway (NM 599) to NM 466/Old Pecos Trail (NM 466) that will accommodate growth and enhance the regional transportation network in the surrounding area. The need for improvements to the I-25 corridor is driven by a combination of factors including safety, poor system connectivity,

insufficient access, and congestion. Safety concerns in the corridor include a higher proportion of crashes and fatalities. The interstate hampers system connectivity, and is an obstacle to north-south travel for personal, commercial, and emergency vehicles, as well as for transit, cyclists, and pedestrians—a growing concern with development of the Santa Fe Community College District. The expanding development is also driving the need for greater access to I-25, and the need to mitigate congestion and accommodate travel demand.

Detailed Evaluation of Improvement Concepts

Nine concepts were developed to meet the purpose and need of the study. Each of these, and a No Build Alternative were evaluated against a set of criteria established at the beginning of the study.

St. Francis Drive Interchange Improvements

The recommended improvements to the St. Francis Interchange, shown on Figure ES-2, will greatly enhance traffic operations on I-25 and St. Francis Drive, and improve vehicle, bicycle and pedestrian safety. The improvements include:

- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Shift the off-ramp from southbound I-25 to northbound St. Francis Drive farther south of the signalized intersection at Sawmill Road to allow greater distance for vehicles to cross through traffic lanes before turning left at Sawmill Road.
- Move the northbound I-25 off-ramp to St. Francis Drive south of I-25 to separate it from the southbound I-25 off-ramp and the signalized intersection at Sawmill Road. The ramp will terminate at a signalized intersection with dual left-turn lanes onto northbound St. Francis Drive.
- Replace deficient bridge structures.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

Cerrillos Road Interchange Improvements

The recommended improvements to the Cerrillos Road interchange, shown on Figure ES-3, will enhance traffic operations on I-25 and Cerrillos Road, and improve vehicle, bicycle and pedestrian safety. The improvements include:

- Tighten the turn radius of the southbound I-25 off-ramp to Cerrillos Road to shift it south of Beckner Road an additional 725 feet.
- Change the northbound off-ramp to a loop ramp located south of I-25 to separate it from the southbound off-ramp and move it much farther south of Beckner Road.

- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Replace deficient bridge structures.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

NM 466/Old Pecos Trail Interchange Improvements

The recommended improvements to the NM 466 interchange, shown on Figure ES-4, will enhance traffic operations on I-25 and NM 466, and improve vehicle, bicycle and pedestrian safety. The improvements include:

- Add barriers to the Rodeo Road left-turn pocket to prohibit vehicles from entering the pocket other than at the entrance.
- Separate the lanes at the ramp terminus with a 250-foot island to allow sufficient queuing storage for those vehicles turning right on NM 466 and entering the Rodeo Road left-turn pocket.
- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

NM 599/Veterans Memorial Highway Interchange Improvements

The recommended improvements to the NM 599 interchange, shown on Figure ES-5, are primarily safety enhancements for vehicles, cyclists, and pedestrians, and include the following:

- Tighten the southbound I-25 on- and off-ramps to fit under the structures proposed in the NM 599 Corridor Study, which has the added benefit of moving the southbound off-ramp farther south of the signalized intersection at the existing frontage road.
- Add an acceleration lane on northbound NM 599 from the southbound I-25 off-ramp, and a deceleration lane on southbound NM 599 approaching the southbound I-25 on-ramp.
- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

I-25 Auxiliary Lanes between NM 599 and NM 466

This concept proposes adding auxiliary lanes to both directions of I-25 between NM 599 and NM 466, shown on Figure ES-6 through ES-9, to provide additional capacity without the added cost of reconstructing the interchanges. This should result in a reduction in congestion and crashes, and a greater distance for safely merging onto the freeway. The noise level could increase with the freeway widening and moving slightly closer to sensitive receptor locations; however, this could be mitigated by sound walls.

Richards Avenue Interchange

This concept proposes adding a new interchange to I-25 at Richards Avenue, shown on Figure ES-10. This would provide additional access to I-25 and to the Santa Fe Community College District from I-25, and would dramatically improve emergency vehicle response time to locations I-25 between Cerrillos Road and St. Francis Drive. Some traffic would be diverted to I-25 from the surrounding road network, increasing congestion on I-25 and reducing congestion on the local streets. The additional volume on I-25 would be mitigated with the addition of auxiliary lanes on I-25 and the interchange improvements at St. Francis Drive.

Governor Miles Road Extension

This concept proposes extending Governor Miles Road from its terminus just east of Camino Carlos Rey, connecting to Galisteo Street and continuing east across the Rail Runner to Rodeo Park Drive, shown on Figure ES-11. This concept is one of three concepts referred to in this study as system connections because they provide additional connections to the regional transportation network. Residents surrounding Governor Miles Road have strongly opposed this extension and feel that their neighborhoods would be adversely affected by the additional traffic volume, which the model projects to be approximately 900 vehicles during an afternoon peak hour. This extension would not distribute the traffic on the local road network enough to offset the financial costs and impacts on the local neighbors.

Camino Carlos Rey Undercrossing

This concept proposes extending Camino Carlos Rey, from its terminus at Governor Miles Road, south under I-25 and Rabbit Road, and then east to the Northeast Connector, shown on Figure ES-12. The primary benefit of the undercrossing is the additional north-south connection across I-25 for vehicles, and a safer means of crossing I-25 for cyclists and pedestrians. An extension of Camino Carlos Rey is not projected to relieve enough traffic on Richards Avenue or provide sufficient operational benefits to the transportation network to offset the financial costs and impacts on the local neighbors.

Rail Runner Loop Overcrossing

This concept proposes an extension of the proposed Rail Runner Loop in the Las Soleras development, south over I-25, connecting with an extension of the East Frontage Road, shown on Figure ES-13. The primary benefit of the undercrossing is the additional north-south connection across I-25 for vehicles, and a safer means of crossing I-25 for cyclists and pedestrians, but would have a significant visual impact. The projected volume of traffic that

would use the overcrossing is not sufficient to offset the financial costs and impacts on the local neighbors.

Recommendations

Improvement Concepts Recommended for Inclusion in the Metropolitan Transportation Plan

The improvement concepts that provide the greatest benefit at the least cost are listed in Table ES-1 in order of priority, and recommended for inclusion in the MTP. The improvement concepts for additional system connectivity (Governor Miles Extension, Camino Carlos Rey Undercrossing, and Rail Runner Loop Overcrossing) are not believed to provide sufficient benefit for the costs that would be incurred and are, therefore, not recommended for inclusion in the MTP. The benefits are considered in terms of how well the concept contributes to the following evaluation criteria: multimodal mobility, vehicle mobility, vehicular safety, bicycle/pedestrian safety, and emergency vehicle response. The costs are considered in terms of the community and environmental impacts, and the financial costs of developing the concept. The benefits and costs are not weighted equally, but are based on the best judgment of the project management team for the I-25 Corridor Study, with guidance from the analysis described in Section 6 of this report.

TABLE ES-1
Concepts Recommended for Inclusion in the MTP

Priority	Improvement Concept
1	St. Francis Drive Interchange Improvements
2	Cerrillos Road Interchange Improvements
3	NM 466 (Old Pecos Trail) Interchange Improvements
4	NM 599 (Veterans Memorial Highway) Interchange Improvements
5	Auxiliary lanes on I-25: between Cerrillos Road and St. Francis Drive
6	New Richards Avenue Interchange
7	Auxiliary lanes on I-25: between St. Francis Drive and NM 466 (Old Pecos Trail)[a]
9	Auxiliary lanes on I-25: between NM 599 (Veterans Memorial Highway) and Cerrillos Road

[a]Because of the grade northbound, consideration should be given to extend the auxiliary lane north through the interchange at NM 466 (Old Pecos Trail) for slow moving vehicles.

Project Recommendations

The improvement concepts recommended above can be broken into smaller, individual projects that can be advanced as funding becomes available. Table ES-2 groups these projects by short-, medium-, and long-term priorities.

The short-term projects are recommended to address deficiencies in bridges at the St.Francis Drive and Cerrillos Road interchanges, as noted in the I-25 Corridor Study Existing Conditions Report. The medium-term projects are primarily safety enhancements that include extending all of the I-25 on-ramps to allow greater distance to accelerate and safely merge onto I-25, and shift each of the southbound off-ramps farther south of the adjacent signalized intersections to allow greater distance for vehicles turning left to safely traverse through traffic lanes. The long-term projects address capacity and access, and correct other geometric deficiencies.

TABLE ES-2
Project Recommendations

Short-term Improvement Projects	Planning Level Cost Estimate
St. Francis: NB I-25 off-ramp (includes remove and back-fill both I-25 bridges over existing ramp)	$ 1,500,000
St. Francis: Reconstruction of both I-25 Bridges Over Saint Francis (includes improvements to St. Francis)	$ 7,000,000
Cerrillos: NB I-25 off-ramp. Includes: • Remove and back-fill both I-25 bridges over existing ramp • Reconstruct NB on-ramp • Lengthen I-25 bridges to accommodate merge lane • Improvements to Cerrillos	$ 15,000,000

Medium-Term Improvement Projects	Planning Level Cost Estimate
NM 599: NB I-25 on-ramp	$ 200,000
Cerrillos: SB I-25 off-ramp to North Cerrillos	$ 1,200,000
Cerrillos: SB I-25 on-ramp	$ 900,000
St. Francis: NB I-25 on-ramp (from NB St. Francis)	$ 700,000
St. Francis: NB I-25 on-ramp loop (from SB St. Francis)	$ 900,000
St. Francis: SB I-25 off-ramp	$ 1,200,000
St. Francis: SB I-25 on-ramp	$ 5,000,000
NM 466: NB I-25 on-ramp (from NB Old Pecos Trail)	$ 1,300,000
NM 466: NB I-25 on-ramp lLoop (from SB Old Pecos Trail)	$ 1,000,000
NM 466: SB I-25 off-ramp and SB I-25 on-ramp	$ 4,200,000

TABLE ES-2
Project Recommendations

Long-Term Improvement Projects	Planning Level Cost Estimate
Cerrillos: SB I-25 off-ramp to South Cerrillos	$ 400,000
NM 466: NB I-25 off-ramp	$ 700,000
NM 599: SB I-25 off-ramp	$ 1,400,000
NM 599: SB I-25 on-ramp	$ 1,100,000
Auxiliary lanes on I-25: Cerrillos – St. Francis	$ 17,000,000
Auxiliary lanes on I-25: St. Francis Dr – NM 466	$ 2,000,000
Auxiliary lanes on I-25: NM 599 – Cerrillos	$ 4,000,000
Richards Avenue Interchange	$15M - $35M

Interim Safety Improvements

There are several low-cost, interim safety improvement projects, listed in Table ES-3, that could be considered should funding be delayed for the ultimate improvements recommended above.

TABLE ES-3
Interim Safety Improvement Projects

Interim Safety Improvement Projects	Planning Level Cost Estimate
Electronic Emergency Vehicle Access Gate(s)	$ 100,000
Partial Interchange Lighting at all four interchanges	$ 400,000
Prohibit left-turns onto Beckner from SB I-25 off-ramp to NB Cerrillos. Create U-turn pocket north of Beckner.	$ 300,000
NM 466: SB I-25 off-ramp (temporary extension)	$ 200,000
Cerrillos: NB I-25 on-ramp (temporary extension)	$ 200,000
Cerrillos: SB I-25 on-ramp (temporary extension)	$ 200,000
NM 466: NB I-25 on-ramp (from NB Old Pecos Trail--temporary extension)	$ 200,000
NM 466: NB I-25 on-ramp loop (from SB Old Pecos Trail--temporary extension)	$ 200,000
NM 466: SB I-25 on-ramp (temporary extension)	$ 200,000
NM 599: SB I-25 on-ramp (temporary extension)	$ 200,000

FIGURE ES-2
St. Francis Drive Interchange Improvements,
Option A: Signalized Ramp Terminal at
Northbound I-25 to Northbound St. Francis Drive

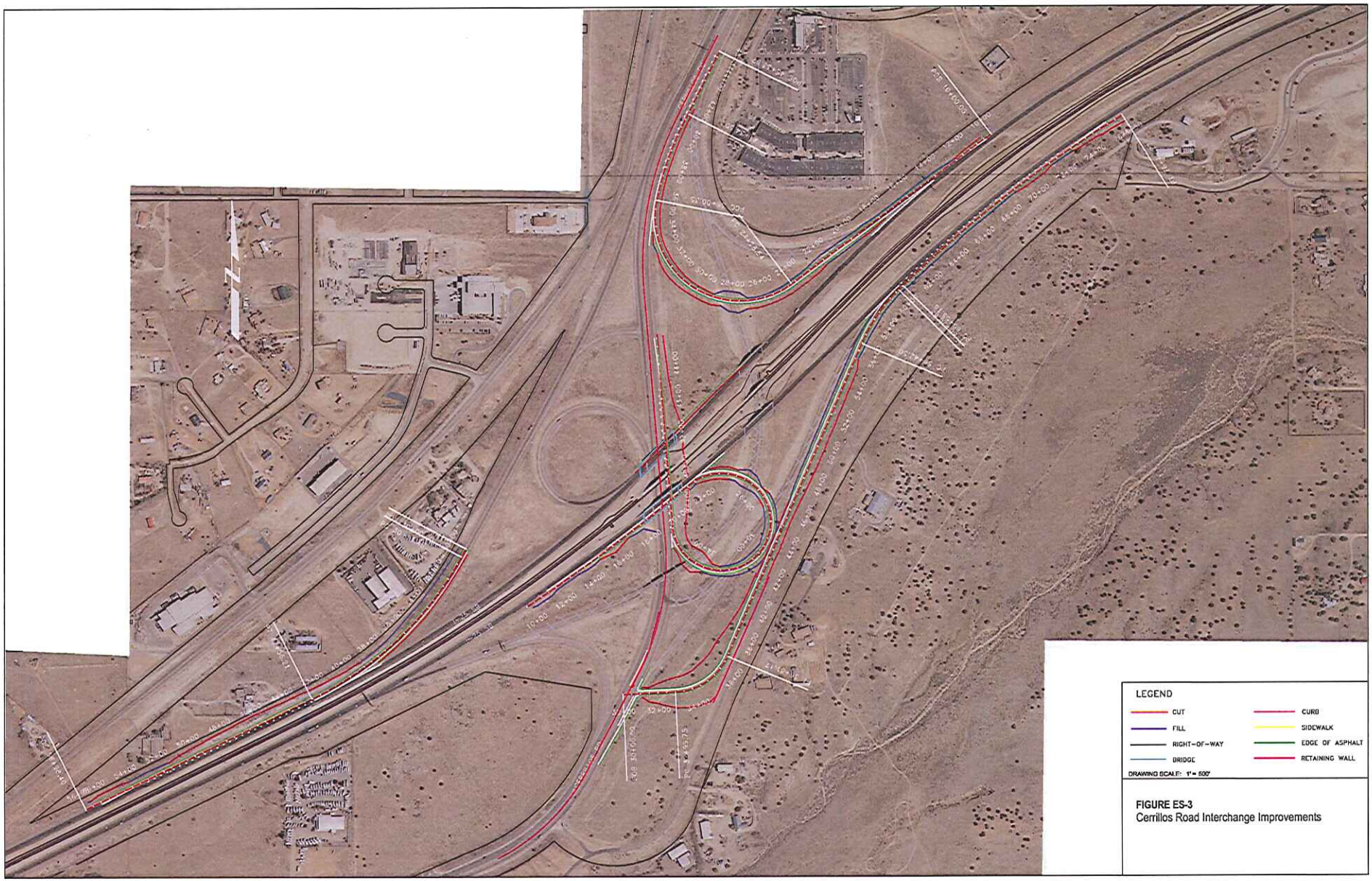


FIGURE ES-3
Cerrillos Road Interchange Improvements

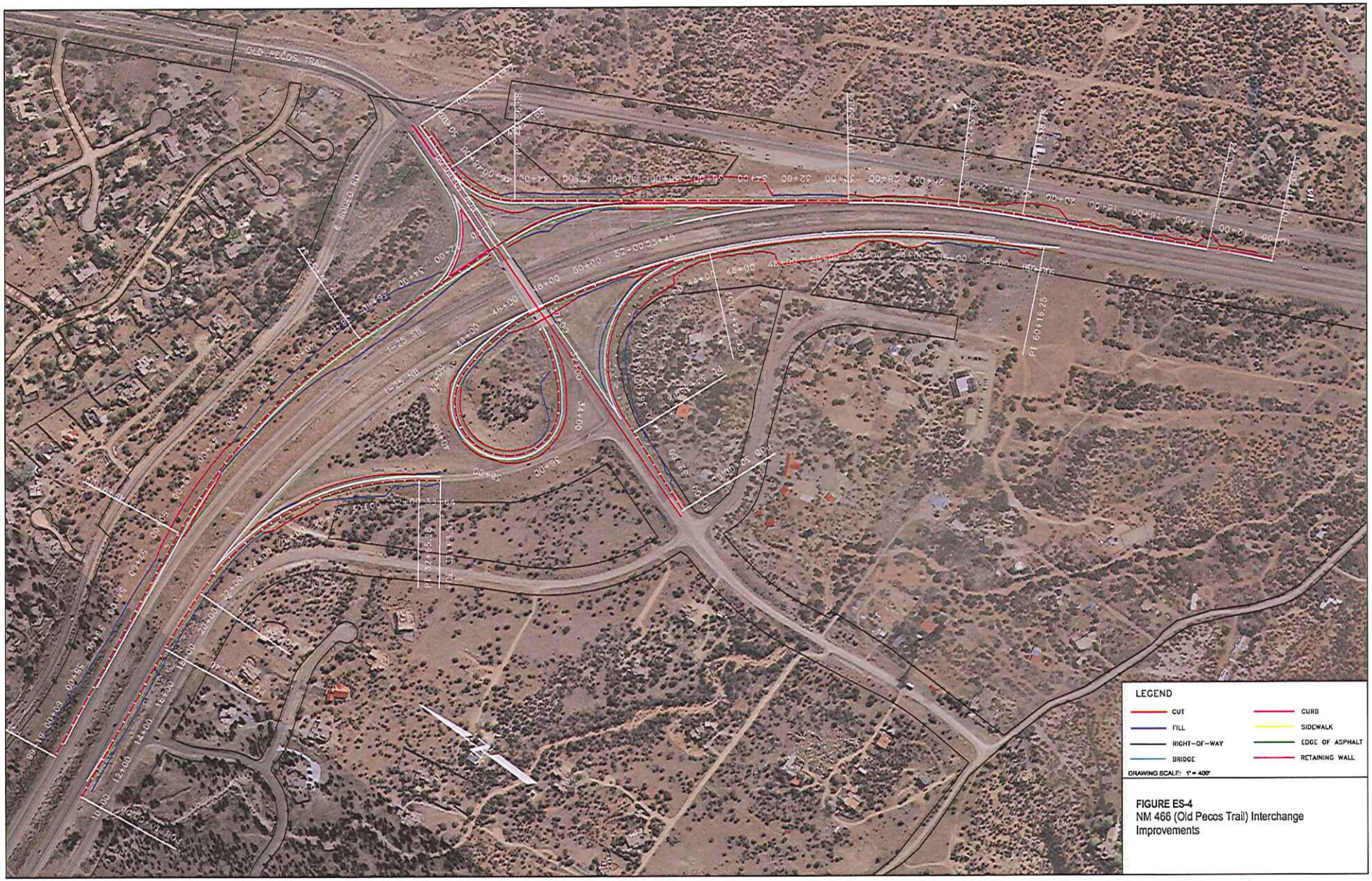


FIGURE ES-4
NM 466 (Old Pecos Trail) Interchange Improvements

FIGURE ES-5
NM 599 Interchange Improvements

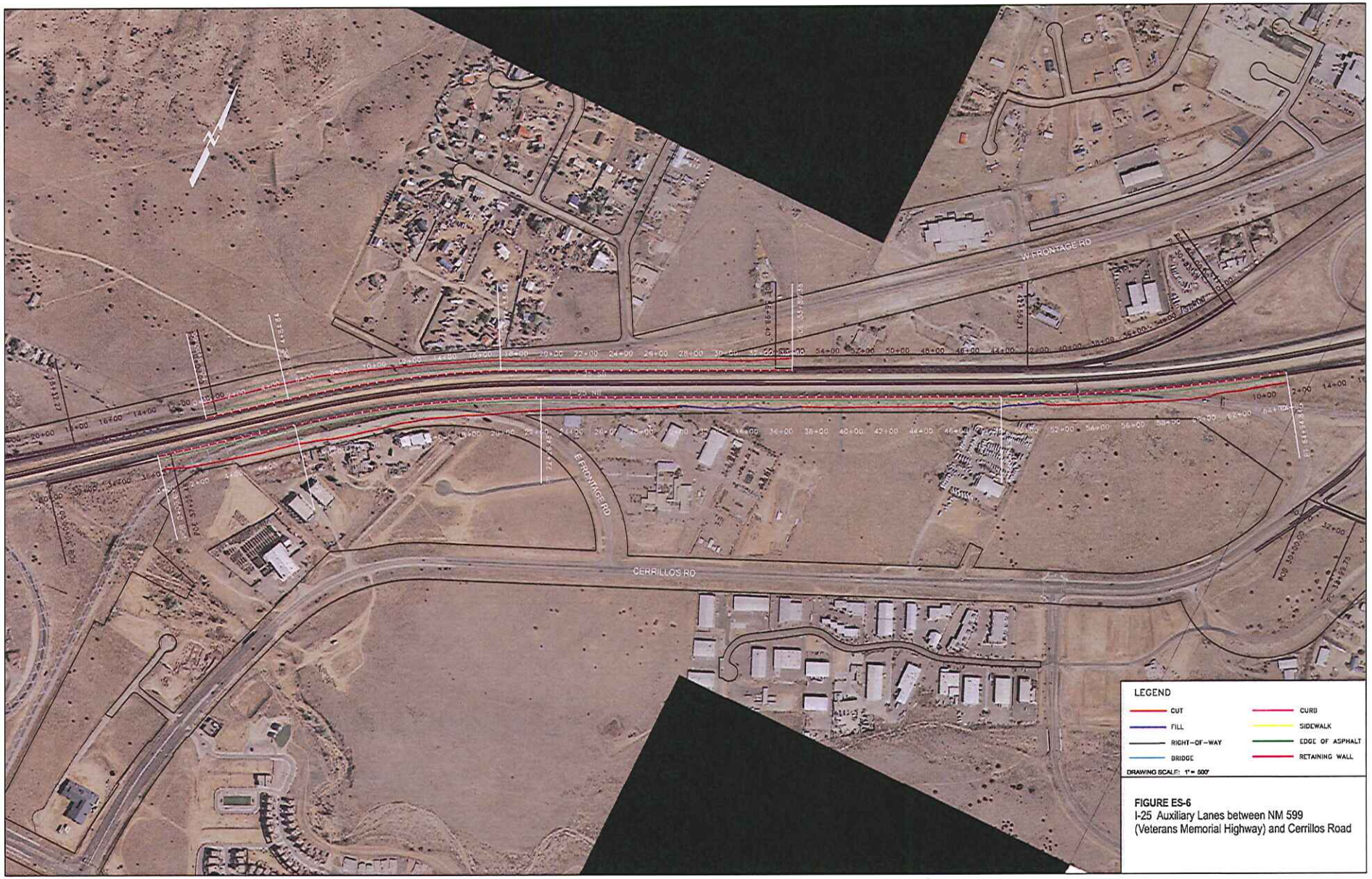


FIGURE ES-6
I-25 Auxiliary Lanes between NM 599
(Veterans Memorial Highway) and Cerrillos Road

FIGURE ES-7
I-25 Auxiliary Lanes between Cerrillos Road and Richards Avenue

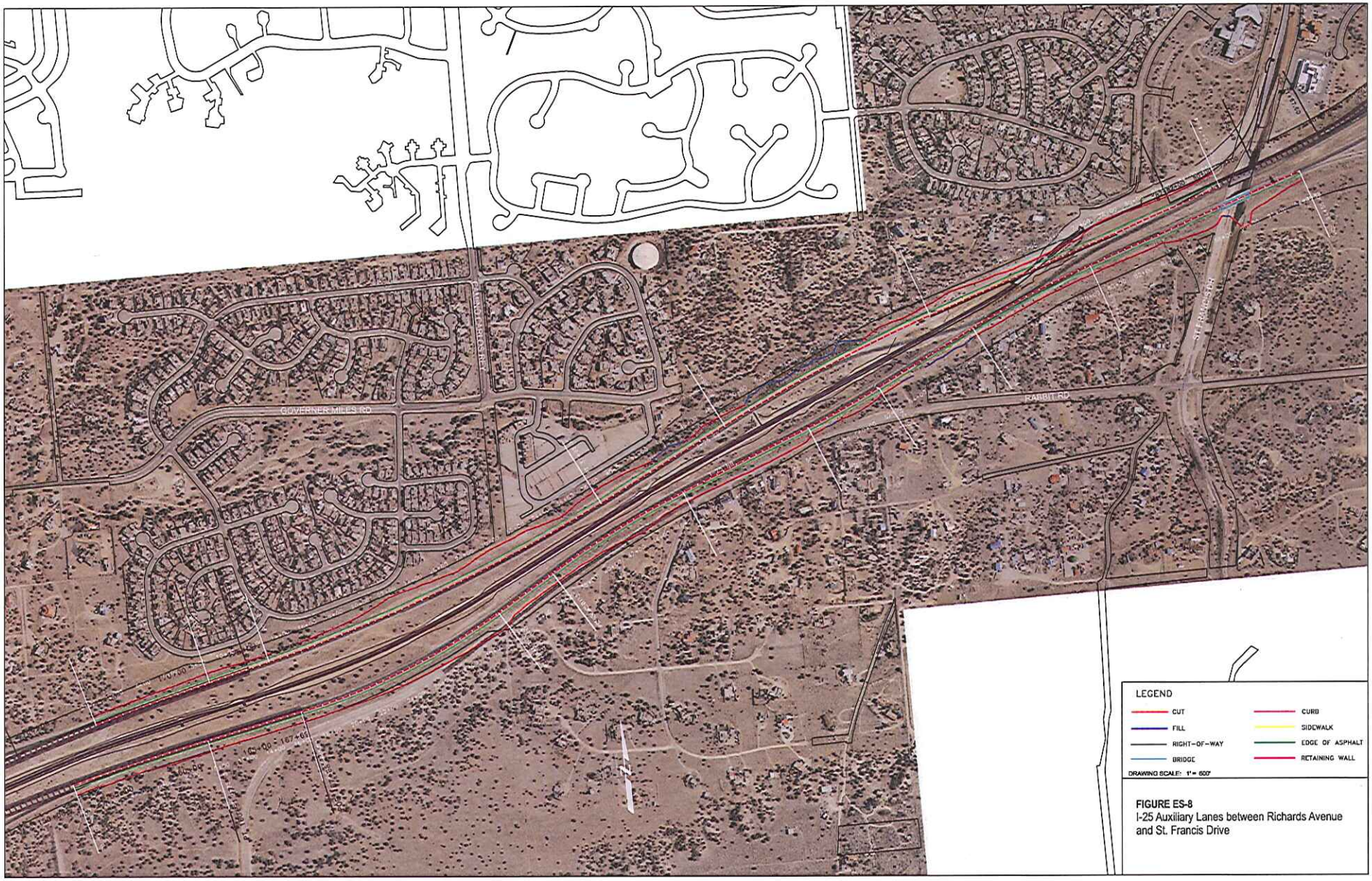


FIGURE ES-8
I-25 Auxiliary Lanes between Richards Avenue and St. Francis Drive

FIGURE ES-9
I-25 Auxiliary Lanes between St. Francis Drive and NM 466 (Old Pecos Trail)

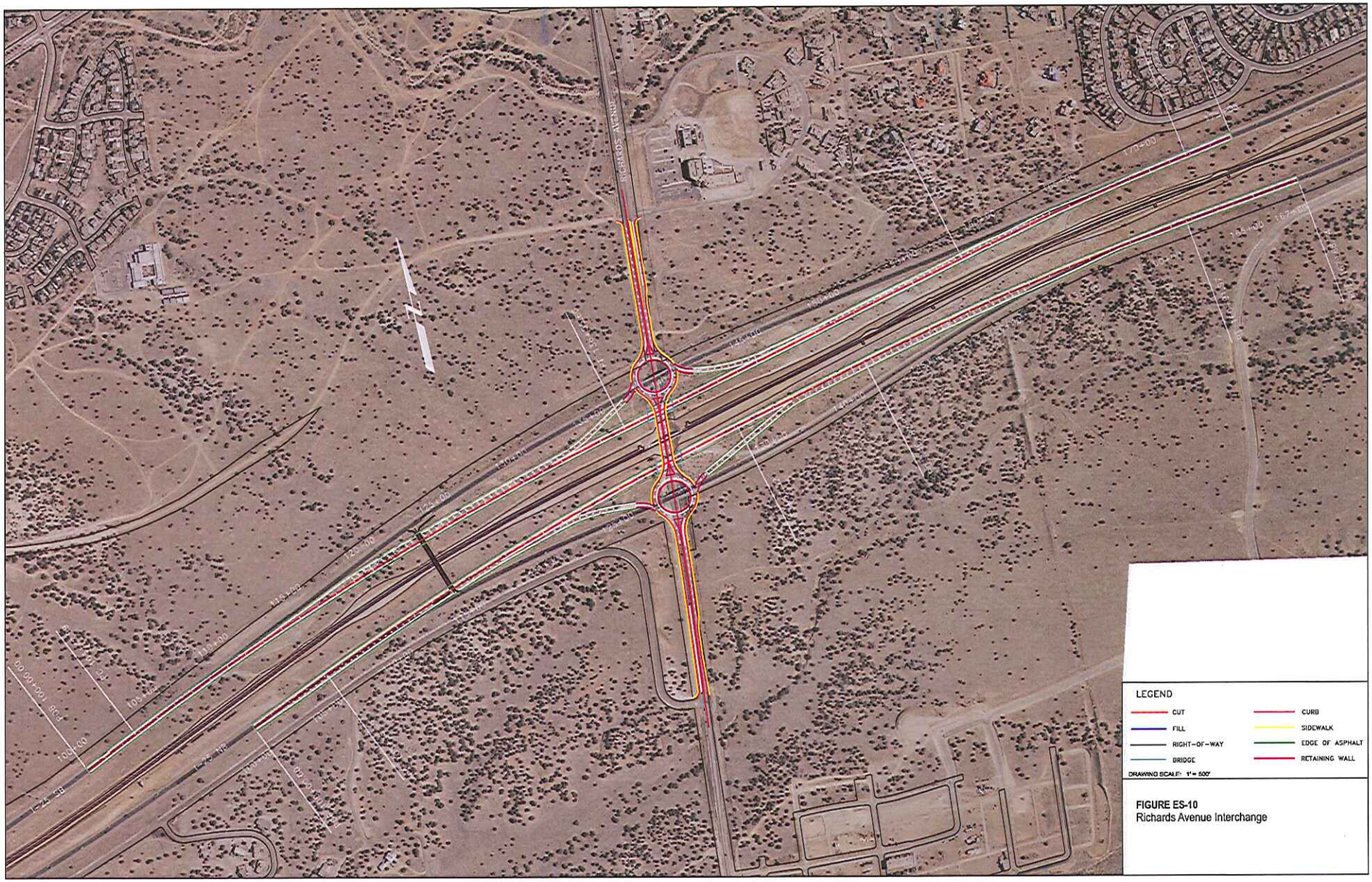


FIGURE ES-10
Richards Avenue Interchange

FIGURE ES-11
Governor Miles Road Extension

FIGURE ES-12
Camino Carlos Rey Undercrossing: Plan View

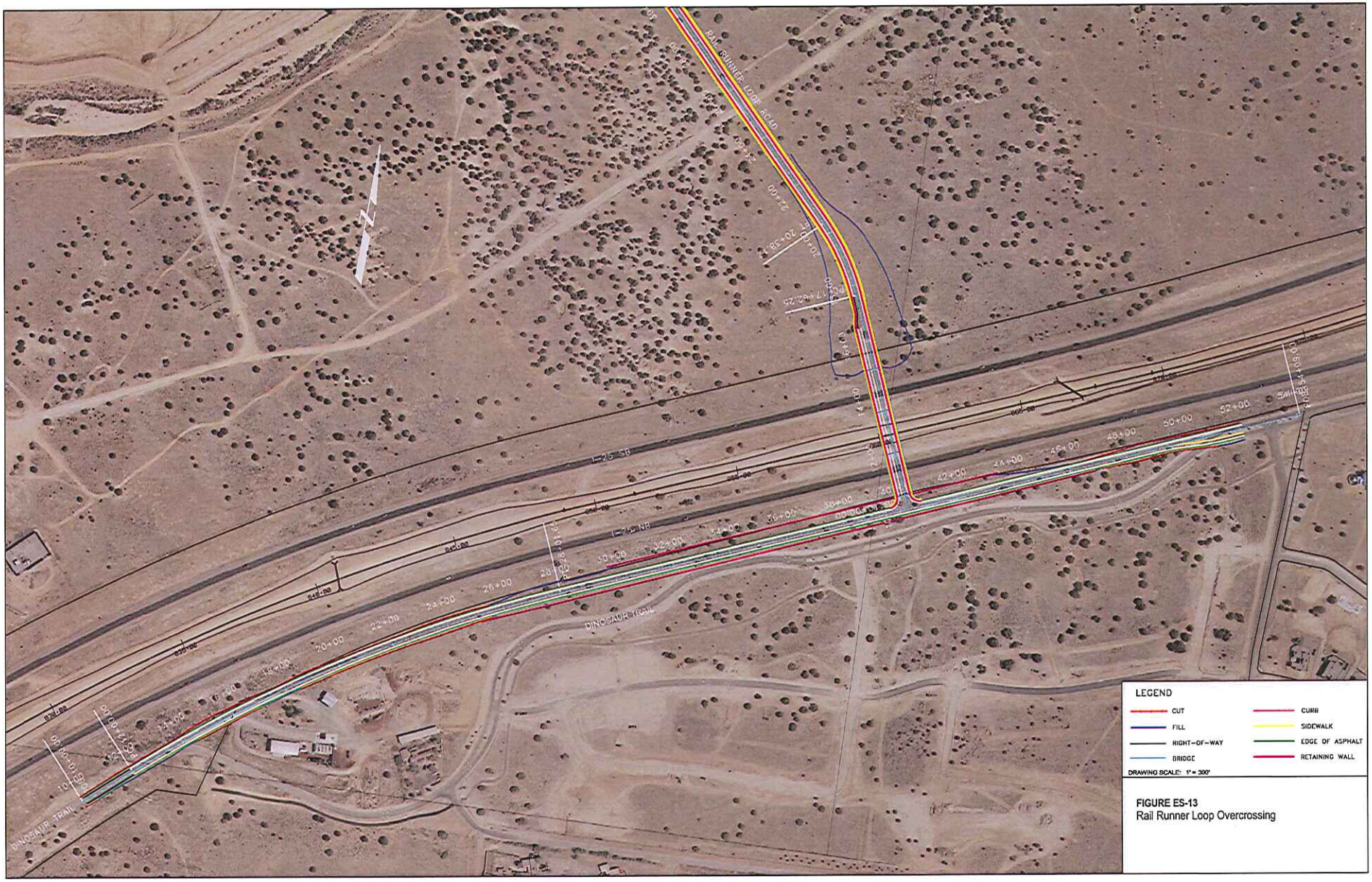


FIGURE ES-13
Rail Runner Loop Overcrossing

EXECUTIVE SUMMARY

The St. Francis Drive Corridor Study is being conducted following the procedures of the New Mexico Department of Transportation's (NMDOT) *Location Study Procedures* manual. The current project is the Phase B *Detailed Evaluation of Alternatives.* The primary objectives of this study are to: 1) further develop and evaluate the alternatives advanced from the Phase A *Initial Evaluation of Alternatives*, and, 2) screen the potential alternatives for feasibility and priority for possible inclusion in the regional Metropolitan Transportation Plan (MTP), and Transportation Improvement Plan (TIP).

Typically a Phase B Study leads to a Phase C *Environmental Documentation and Processing* Report for a Preferred Alternative. However at this time the funding outlook for significant projects is uncertain, so it is not considered an effective use of resources to do a full environmental evaluation for projects that are likely not to come to fruition for some time. Therefore, it was determined that the development of a detailed list of projects for the St. Francis Drive Corridor would be the best solution and then the regional transportation agencies could use the list for long-term planning purposes. The projects identified will have the benefit of completing the Phase A and B planning study process, allowing the projects to proceed directly to the Phase C *Environmental Documenting and Processing* phase as funds become available in the near term.

In 2009, the Phase A *Initial Evaluation of Alternatives* was completed. That study evaluated a range of alternatives that resulted in several alternatives being proposed for further evaluation. The selected alternatives will be discussed in more detail in later sections, but can be grouped into the following categories:

- No Build
- Trail Connectivity
- Enhanced Transit
- Intersection Improvements
- Transportation System Management
- Access Control

The alternatives considered in the report address a range of deficiencies and needs on the Corridor and vary substantially in cost and complexity. In addition, the breadth and scope of the alternatives developed for the Corridor, when combined with the I-25 and NM 599 Corridor Studies currently underway, will far exceed the funding available for transportation improvements in the region. The projects identified in this Corridor Study, as well as the others, will need to be integrated into the overall transportation strategy developed for the region, the 2035 Metropolitan Transportation Plan (MTP), currently under development by the Santa Fe Metropolitan

Planning Organization. The MTP will be the regional planning policy document for transportation improvements in the Santa Fe MPO area.

This Phase B Report will provide sufficient information to the MPO in order to assist in the development of the 2035 MTP. Although this report will develop a list of project recommendations to present to the Santa Fe MPO, inclusion of any project on the Santa Fe MPO TIP or MTP will be at the discretion of the MPO and its member agencies.

To that end, the alternatives evaluated in the Phase A and Phase B St. Francis Drive Corridor Study reports will be recommended in the following format – Short-Term, Medium-Term and Long-Term. The Short-Term projects will be those that are considered to be addressed in the near-term, cognizant of the current funding limitations. Other more extensive project recommendations will still be included, but prioritization and competition for funding is anticipated to require hard decisions and realistic thinking of what is possible, both financially and practically.

The Medium-Term and Long-Term project recommendations include projects of significant size and scope. These projects are expected to be considered 5 or more years into the future. As such all these projects will require an engineering re-evaluation to determine if the alternatives developed in this study are still applicable and appropriate for the future condition. In addition all projects in the table will require completion of the environmental and design process prior to any construction activities.

Table 1 - Recommended Priorities and Timeframes		
Short Term Projects	**Medium Term Projects**	**Long Term Projects**
Transit Enhancement Study	Transit Enhancements/Expansion	Transit Enhancements/Expansion
Zia Road Pedestrian Crossing Improvements*	Trail Connectivity Enhancements*	Trail Connectivity Enhancements*
Trail Connectivity Enhancements*	Access Control as opportunities arise	Access Control as opportunities arise
Access Control as opportunities arise	ITS Implementation District and City Traffic Management Centers Travel Monitoring CCTV's Communication Infrastructure and Integration	ITS Implementation DMS Traffic Adaptive Signal Timing?
Initial ITS Implementation Traffic Signal Upgrades Regular Signal Timing Updates	Joint NMDOT / City Zia Road Improvements*	Joint NMDOT / City Sawmill Road / Mainline St. Francis Drive Improvements* (combine with St. Francis Interchange Replacement?)
Guadalupe Interchange Replacement and EB NM 599-to-SB 84/285 Auxiliary Lane	St. Michael's Drive Improvements	Joint NMDOT/City Cerrillos Road Improvements*
* - Implement Complete Street concepts to maximum extent possible		

Appendix B
Summary of Public Meeting Comments

(1) **Summary of Comments Made at Public Open House, October 10, 2006**

A public open house was held October 10, 2006 at the Chavez Center in Santa Fe. The open house was held for all three of the Santa Fe Corridor Projects, NM 599, Interstate 25 and St. Francis. The comments received at the open house that pertain to the NM 599 corridor are summarized below:

- Need better links between NM 599 and downtown.
- Safety of at-grade intersections. Need intersection at Caja del Rio or Frontage Rd connection to Airport Rd.
- Some type of Barrier (cables, etc.) between north & south bound lanes to prevent vehicle crossovers.
- CR 62 intersection is dangerous
- NW Quadrant master plan needs connection to NM 599 to work, 700-900 units.
- Tierra Contenta is responsible for at-grade intersection; wouldn't work w/ 65 mph and no signal.
- New development which will access CR 62. Suerte del Sur – New 600 homes, Puesta del Sol – up to 300 homes, Arch Diocese 7 units with 14 homes each.
- Hager Rd – Minor Arterial (los Suenos Trail) Hager Board of Trustees is collecting funding from developers to construct.
- Fatalities have occurred at signalized intersections
- No signals, Keep bypass as bypass
- Continuous Frontage Road
- Back connection to Tesuque Pueblo
- Consider interchange at Puesta del Sol overpass
- Jaguar connection needed for airport
- Entrada Contenta traffic study-city (Wal-Mart) may have useful traffic counts.
- Why isn't there an interchange at Caja del Rio?
- Get rid of at-grade intersections and build interchanges.
- Bicycles need better connection to Airport Rd.
- Safer intersections before adding more traffic. Continue Frontage Rd to Airport Rd.
- 599 is a challenging corridor that unfortunately was not adequately planned for its purpose—The WIPP route. It's important this project has STRONG visionary leadership that requires this road to maintain its missions to be the WIPP route. Minimize road access=use frontage road to access 599; no access for neighborhood convenience=holding to mission of the hwy.
- Eliminate at-grade crossings
- Make underpasses and over passes for people to cross, also for bikes, horses, walkers
- Don't get ahead of MPO process

(2) **Summary of Comments Made at 2nd Open House**

A public open house was held January 28, 2009 at the Chavez Center in Santa Fe. The open house was held for all three of the Santa Fe Corridor Projects, NM 599, Interstate 25 and St. Francis. The comments received at the open house that pertain to the NM 599 corridor are summarized below:

- Camino de las Montoyas is a dangerous intersection with limited room in the median to accommodate a vehicle.
- Consider additional access for northwest quadrant development.
- CR 62 and NM 599 intersection is very dangerous. It provides access to local sports facilities and is traveled by parents with children.
- Opposition to any modification or additional access to Calle Mejia. (2 comments)
- Combine River Trail under the NM 599 bridges with connections to CR 62, Via Abajo, and the northwest quadrant.
- Decrease speed limit.
- Opposed to Guadalupe interchange.
- Improve river crossing to provide access to Airport Road.
- Concerned over traffic volumes on CR 62 and Caja del Rio.
- Consider traffic signal at Camino de las Montoyas due to visibility concerns.

(3) **Summary of Comments from Stakeholders Workshop**

A stakeholder workshop for the NM 599 corridor was held April 16, 2009 at the Nancy Rodriguez Community Center in Santa Fe. The purpose of the workshop was to present the project purpose and need and to brainstorm viable alternatives.

Following the presentation there were several questions which are summarized below. Responses were provided by Project Management Team members.

- Will the weaving situation at the northern terminus of the project be evaluated? *Yes, the weaving situation will be evaluated and considered.*
- What land use and socioeconomic data is used in the analysis and can we see the data? *The land use and socioeconomic data is provided by the Santa Fe MPO. It is not that straightforward but we can try to provide some way to make the land use assumptions available for the public.*
- What will the final plan actually include? *It will be a priority plan that includes recommended improvements at various intersections. It will clearly identify a priority for those improvements and is nticipated to include some interim solutions.*
- Have you coordinated with the northwest quadrant and the current development proposals? *Yes, we have coordinated with the City on the proposed development. Some development in that area is included in the traffic model; however, further analysis will be completed to ensure that the appropriate amount of residential and commercial development is being considered in the traffic model.*
- Which of the approved intersections are not constructed? *Jaguar and Caja del Rio are the two locations that do not currently have any type of intersection.*
- What type of analysis will be done to evaluate the air quality impacts of the recommended improvements? *The air quality impacts will be evaluated on a qualitative not a quantitative basis. The analysis will be used as a comparative tool for the recommended improvements.*
- Is the potential connection between Jaguar and the NM 599 in the model? *Yes, it is in the model and will be evaluated.*
- Will the annexation project currently underway by the City and County be considered? *The results of potential annexation do not seem to have any impact on the NM 599 Interchange Corridor Study.*
- Will the sight distance at Camino de Los Montoyas be evaluated? *This sight distance has been evaluated and is currently acceptable. It will continue to be considered if recommendations are made in that area.*
- Will the Federal Highway Administration allow you to signalize the corridor given the initial intent as a relief route and WIPP route? *The original intent of the roadway will be considered and maintained as part of the evaluation of recommended improvements. There may be some interim solutions recommended to address safety concerns.*
- Can we see the accident data? *Yes, it is available through the University of New Mexico.*
- Will the affect of increased traffic be considered with regard to a potential increase in traffic? *There is no model analysis done on this but the direct correlation is considered.*
- There are blind spots at the Frontage Road access on CR 70 and Via Abajo. *This will be considered.*
- There is concern that the installation of signals will make it even more difficult to receive interchange improvements along NM 599. *This will be considered when evaluating interim solutions such as signals.*
- If signals are recommended as an interim solution, please identify an estimated time for construction of a full interchange. *This will be taken into consideration.*

- Can you explain the difference between limited access and access control? *Limited access is the current condition. Access control would be with access allowed only by interchanges.*
- How were the frontage roads determined when NM 599 was constructed? I*f a piece of property were to lose their access as a result of the construction of NM 599, then a frontage road was installed to maintain some access for all properties.*
- Has there been any consideration of public transportation along the corridor? *Any public transportation elements that are currently being prepared by the City, the County, or the Santa Fe MPO will be considered and every effort will be made to not preclude those plans. However, potential public transportation elements will not be used to evaluate roadway improvements.*
- What is the schedule? And, is it similar to the other projects (St. Francis Drive Corridor and the I-25 Study)? *It is a planning process. The current schedule is to complete Phase A by the beginning of June. Yes, it is relatively similar to the other projects.*

Additional comments were received by the public in a variety of ways: verbal comments, written comments on flip charts, written comments on comment sheets, and email comments from those that could not attend. The following is a summary of all of the additional comments received:

Ridgetop Road / US 84/285:

- The weave necessary to enter NM599 from Ridgetop to get to US 84/285 NB in the morning is dangerous. As with the weave from 84/285 NB to NM599 SB to catch Ridgetop, the distance is short and traffic moves at a higher speed than the limit.
- Merge lane from NB NM 599 to SB US 84/285 needs to be extended. (2 comments)
- Check clearance under US 84/285 bridge. Is it substandard?
- Merge between Ridgetop Road and US 84/285 is a disaster.

Camino de las Montoyas:

- Relocation of Camino de las Montoyas intersection is a great idea for access to future NWQ.
- Consider frontage road between Ridgetop and Camino de las Montoyas.
- Overpass at existing Camino de los Montoyas in addition to new interchange was promised in original planning meetings.
- Maintain overpass, underpass at Montoyas as a major arterial between city and county future growth and not an interchange due to lack of visibility on curve. Also note that on I-25 distance between Old Pecos Trail and St. Francis would be equal to distance between Ridgetop and La Tierra. No need for interchange at Montoyas.
- Put interchange in existing Camino de los Montoyas location.

Ephriam:

- Ephriam Interchange is a better location for alternate to Montoyas due to visibility.
- Verify site south of Buckman at Ephriam is a school owned site for commercial development.

Camino la Tierra:

- A dedicated intersection at Aldea to eliminate the left-turn back-up at Camino La Tierra

Via Abajo:

- Three way stop sign at Via Abajo and Alameda for Agua Fria Village Association.

CR 62:

- Support intersection/interchange improvements at CR 62 (4 comments)
- Need to be able to cross NM 599 at CR 62, CR 70 and Via Abajo.
- Concern at CR62 and the amount of heavy truck traffic headed to Caja del Rio landfill and west on the frontage road to sand and gravel and other industrial uses.
- CR 62 intersection is unsafe to cross NM 599. Lots of people use this to get to Caja del Rio facilities.
- CR 62 is more important than CR 70 because of the public services on CR 62 south of NM 599 and the access to Caja del Rio.
- Reevaluate the accident data at CR 62.
- A spot speed study was done by SF City Police on CR 62.

Caja del Rio:

- Support intersection/interchange improvements at Caja del Rio (4 comments)
- The county is planning to expand Caja del Rio.
- Can partial southbound on and northbound off ramps be considered at Caja del Rio?
- Area north of NM 599 at Caja del Rio is a City of Santa Fe future secondary growth area.
- Concern with landfill truck traffic.

Frontage Roads:

- Can frontage road be extended across river between Caja del Rio and Airport Road?
- There are a lot of accidents at the I-25 N. Frontage Road due to speed. There are accidents on the frontage road approach from the south when it is snowy.

Jaguar:

- Future access to Jaguar Interchange might be from next road north.
- Jaguar Interchange is needed for City of Santa Fe road network otherwise there is too much traffic on Airport Road and Cerrillos Road.

Overall Comments:

- Any new access to NM 599 should be built as an interchange.
- Consider the original intent of the roadway and construct the planned interchanges. (2 comments)
- Please construct interchanges. Signals will defeat “bypass” nature of NM 599.
- Acceleration lanes for right-turns.
- The Transportation Policy Board passed a resolution for a citizen advisory board for this project. Why was that overlooked?

Land Use / Traffic Model:

- Traffic from La Tierra will increase along CR 70 and West Alameda to get to the Siler Bridge.
- The Village Plaza development in the southeast quadrant of the CR 62 intersection will include a shopping center, park and multi-family residential. The plan is approved.
- Verify Tierra Contenta's plans for commercial near the interchange area.
- Verify alternate option of airports current requests for expanded runways and therefore larger and more airplanes coming in and out and traffic to support growth.
- Is Paseo del Sol Extension in the traffic model?
- Future Proposed SF Roadway Connections are possibly not in model.
- Consider long range planning.
- Consider SF County Annexation.
- Concerned that the traffic analysis for the Northwest Quadrant development is not accurately represented in the study analysis.

Multi-Modal:

- Please consider bicycle facilities.
- Request Central bus lane from train stop on I-25 to St. Francis.
- Provide pedestrian facilities between Rail Runner parking lot and northwest quadrant of interchange. This area could develop more commercially with the development of the Rail Runner stop.

(4) **Summary of Public Meeting Comments from October 6, 2009 Public Meeting**

The comments received at the stakeholder's workshop are summarized below:

- Question: There is no frontage road at CR 70, Ridgetop Rd and a connection to US 84/285.You have no reference at all to Ridgetop Rd. Are you going to go back to the drawing board? You are ignoring the most problematic of interchanges.
- Response: If improvements are needed because of what was approved as part of the Northwest Quadrant Plan, then the developer would be required to make improvements as part of the development commitment. We have looked at the analysis and found that the average southbound speed is 63 mph and the average northbound speed is 68 mph. If vehicle adhere to the speed limit then there are the appropriate number of gaps. We will look at the interchange again with the 20 year forecasts from the traffic models.
- Question: I have three points. I concur that the weave isn't as problematic as it has been made out to be. There is only a ¼ mi to go from the left-hand lane to the right-hand lane. Is this in accordance with federal traffic? Increased traffic control by police at this location would be helpful. We volunteered to pay for flashing lights which would be helpful. I would also make the recommendation to continue to do maintenance painting of the white and yellow lane lines because there are a lot of curves. This is an inexpensive way to improve safety. Can you give any speculation as to the likelihood that this study would move from recommendations to an adopted program?
- Response: There is no funding currently identified for the alternatives. There is one possibility for safety funding; the NMDOT is looking at this option. The Santa Fe area gets $2 million per year to spend on transportation projects. Some of the costs for these alternatives are between $6-8 million. One or two intersections could possibly be improved.
- Question: Since it is public knowledge about who owns land along NM 599 it would be interesting to know what the possibilities are for private development along the corridor. How can I get information about land ownership?
- Response: Land ownership information is available on the City of Santa Fe website. The only development plans that we consider are approved plans. You can look at the City of Santa Fe's General Plan to see what areas are being developed. As well, you can go into the County of Santa Fe offices in order to access land ownership information from their database. You can also access this information from the County Assessor's office.
- Question: The Northwest Quadrant Plan just got approved last Wednesday. This isn't going to factor into your study?
- Response: The model that we are running has development proposed in that area. Until the approval of the plan we didn't have information to input on roads. We have a meeting setup for this week in order to discuss the road connections approved by the Northwest Quadrant Plan.

- Comment: The Caja del Rio alternative and the CR62 alternative are critical because of the residences and public services located in that vicinity.
- Question: Have you looked at the interchange at Camino de los Montoyas? Would private development have to do the improvements at this location?
- Response: The Northwest Quadrant plan will require developers to do the improvements since they will be financing the proposed development.
- Question: These plans are great. I think that Airport Road and the south side of NM 599 are a priority. Who is going to dictate priorities if any funding becomes available? What are the possible funding sources?
- Response: The priorities are set by the City, County, NMDOT, public input, and the Santa Fe MPO. These priorities will also depend upon safety and traffic data. Currently, the NMDOT is trying to identify safety funding for improvements.
- Question: CR 62 is a critical intersection. What can be done at this location to improve safety before we get funding?
- Response: We could look at interim signals and lighting.
- Question: I have some questions about the relationship with this study and other studies conducted for this corridor in the last 10 years. At what point will the previous recommendations be considered and what body has been considering those other plans? I served on the highway corridor committee; we looked at all of the land use considerations and competing interests between developers. We came up with a certain order in which the improvements would provide the most relief. I encourage you to look at those recommendations. My other question is in regard to the environmental impact for the bridge over the Santa Fe River. Why is this considered a medium impact instead of a low impact?
- Response: We did look at those studies and recommendations when we started this process. Those recommendations could still be considered. In regard to the medium impact assigned to the bridge alternative, any crossing of Waters of the U.S. has to go through extensive coordination with the United States Corp of Engineers (USACE). As well, there are potential impacts to Threatened and Endangered species and wetlands. We will look at that more closely as we move forward into Phase B of the Location Study Procedures.
- Comment: I am a member of the Aqua Fria Association. Although everyone has good reasons for improvements in their neighborhood, the City and County have made vast improvements on the CR62 frontage road area. This area is huge because it serves everyone in this room as far as garbage disposal, City recreational facilities, County public works facilities, Sheriff Department, and community services. All of these public services have to be taken into consideration.
- Comment: With regard to the Caja del Rio intersection, the Baca Ranch has been bisected by NM599 which has cut off a 50 acre parcel. The NMDOT said they would give us access as part of a contractual agreement. I

understand that they were going to use legislative/federal monies but the SFMPO turned them down because it would be an at-grade intersection. We have proposed this intersection for quite awhile to open access to our property. CR62 improvements would be good. I would suggest you do a survey of all the users of this area in order to determine which intersection would be most critical. (Full comment by Mr. Baca is attached)

- Comment: I want to stress the importance of the CR62 crossover/Caja del Rio crossover. Not only do we have recreational facilities, the dump, shelters, but it also serves neighborhoods in the vicinity. We do not have any control as to what is being developed because there are Bureau of Land Management (BLM)/federal lands. Since we moved in a year ago, it is now a zoo in this area; this unplanned development is one of our major priorities. You need to do something now to at least have some safety features put in before we have more people killed.
- Question: The extent of this analysis is fantastic. Until these crossings are turned into interchanges, it wouldn't be a good idea to have at-grade crossings because of the greater chance of accidents. If Airport road is improved would it be possible to do a frontage road crossing to be incorporated into the same project?
- Response: It is a matter of money; could be constructed at the same time.
- Comment: I am in favor of an improved intersection at Caja del Rio. It is silly to put a bridge over the river with the bridge nearby. We all have to do a two mile detour all the way to CR62 and then back down. Like Jaguar, there is a lot of development out there and there is such little decent access. We need improved signage at the northbound/eastbound ramp to I-25 since many people mistake this as the entrance to the Rail Runner.
- Comment: I want to reinforce the need for flashing yellow lights at CR62 and NM599. That is so important; we have families that cross that intersection every day. There is a ten-minute wait for a safe crossing. This would help with decreasing accidents.
- Response: We can look at interim improvements such as flashing lights.

Comments from boards:

Summary of priority board:

Location	1st Priority	2nd Priority	Total
I-25 Frontage Road	1		1
Jaguar			
Airport	3	2	5
Extend Frontage Rd Across River		2	2
Caja del Rio	10	3	13
CR 62	17	8	25
CR 70	1	5	6
Ephriam			
Camino de los Montoyas			

Summary of preferred alternative at Caja del Rio Board:

Alternative	Number of dots
Interchange at Caja del Rio	3
S. Frontage Road from CR 62	3

Summary of comments from boards:

- I-25 Frontage Road overpass should be moved closer to I-25 and eliminate the high speed right turns on the ramps.
- Better signage is needed for the Rail Runner station.
- There will be more industrial and truck traffic on the I-25 frontage road south of I-25.
- The Hart Business Park is an approved development north of the sewer line, east of Aviation Drive, and west of NM 599.

(5) **Written Comments Received following the October, 2009 Public Information Meeting**

- Comment: My wife and I live in the Piñon Hills Subdivision and most frequently use the CR 70 intersection to access 599 to get to town. We would like a safer intersection there. Our next most frequently used intersection is CR 62 to go to Albuquerque. That is our second choice for improved safety.
- Comment: The NWQ project is being proposed with one public access point at Ridgetop Road. This project is very sizeable – over 770 dwelling units plus substantial destination commercial development. Ridgetop Road is also the sole public access for Santa Fe Estates which at build out will have a population of 5,000. Plans for Ridgetop and Montoyas should consider the one access issue for these two large developments.
- Comment: Need to enhance safety at CR 62 prior to putting an interchange in which is the ultimate solution. Ideally, the intersection would be realigned to better connect with CR 62 heading toward Agua Fria.
- Comment: I live on Jaguar Rd. I do not want an exit at Jaguar Rd from 599. It will increase traffic on a residential street. The street runs between houses and walking trails, and increased traffic would be dangerous. We can get around just fine with the Airport Road exit at 599. I do NOT want an exit at Jaguar Road. Please spend your (our) money elsewhere. Thank you!
- Comment: Building the intersection at Caja del Rio would
- Comment: Save County taxpayer dollars needed for construction of bridge and road from Caja del Rio to Airport.
- Comment: Save the DOT from having to build a frontage road from Baca Land to County Rd 62.
- Comment: Save the DOT from having to build frontage road and bridge from Caja del Rio to Airport.
- Comment: Save the County from having to improve County Road 1 from 599 o Caja del Rio.
- Comment: I would like to have an appointment with you to discuss a development at the County Rd 62 / 599 access consisting of both general commercial and residential uses. This development has county approval and city zoning designation of C-2.
- Comment: Note: When purchasing Caja del Rio / 599 ROW for interchange most of the property purchased is from the State Land Office. These monies go into the state trust which funds public schools. It is not a direct cost to tax payers but a shifting between government programs.
- Comment: I attended the Public Involvement meeting on October 6th concerning the NM 599 corridor study. I would like to agree with a comment made by someone at the end of the meeting, they suggested that we improve the existing issues prior to creating new projects. It seems sensible to address the immediate needs such as CR 62 and CR 70. I would also like to say that I am opposed to Jaguar road having direct access to NM 599. Jaguar is a residential street with at least two schools, a library and walking trails. We do not need to put the children and other pedestrians at risk of a higher traffic area by making Jaguar a cut through for Cerrillos. In addition if the road ever needed to be expanded due to increased traffic it would be cost prohibitive.
- Comment: I recently purchased a home in a residential neighborhood – backing up to Jaguar. I and many other home owners would suffer financial hardship by decreased home valued if the connection between Jaguar and NM 599 we to occur. If I wanted to live right on a busy street I would have bought a house that backs up to Rodeo. This is a residential neighborhood and I want to keep it that way.
- Comment: It is my understanding that Paso Del Sol is to extend to CO Road 18B / Ocate Rd to reach Cerrillos. If this is the case CO Road 18B / Ocate Rd could just as easily be reached by Mutt Neilson which would reduce the risks associated with increasing traffic in a residential area. There is much less existing development already there and Mutt Neilson could easily hook into CO Road 18B via Las Cuarto Milpas (if it extended to CO Road

18B). If the road ever needs expansion you could plan for that and if people still needed to access Jaguar they could reach it with the extension of Paso Del Sol to CO Road 18B.

- Comment: I spoke with Ms. Jesse Bopp today concerning the 599 corridor study; I have CC'd her as well. Ms. Bopp's main concern is the speed at which traffic is currently driving on NM 599 (especially rush hour traffic). She has suggested that more speed limit signs would be useful. She correctly pointed out that with the access on 599, some drivers enter NM 599 and assume it is a 75 MPH speed limit until they come across a speed limit sign. I told her that this is something that the study would look at and address if possible. Please include with the public comments received to date.
- Comment: Please make Private Ownership and Public Ownership of land along the 599 Corridor available to all parties - This should be published along with any plans or materials that are presented to your constituents. In order for the public or government entities to make intelligent comments and decisions concerning more development of the 599 corridor - it seems apparent that we need a full picture of the whole project - not just one small piece of the puzzle.
- Comment: Karyn, my name is John Courtright and I live in Los Alamos. Our business has me driving trucks all over Northern NM including the 599 by pass. Yesterday I saw the bill board for the meeting that took place at the Chavez CC and wondered why the meeting is only there? The people of Santa Fe can't use that road as much as the people in the surrounding area. If you aren't the right contact person about such a public meeting, could you please point me to the correct person? I question what such a meeting is trying to discover and why it's only in Santa Fe? I like the idea of public comment, especially regarding some other agencies especially at a town hall format. I sincerely believe that if this meeting was to gain information on "how's it going", the NMDOT better consider asking the people who use it and not the people who live in Santa Fe.
- Comment: The Board of Directors of the West Santa Fe Association met on October 28 to discuss Parametrix's proposed options for improvements along NM 599. Some board members had participated in the previous public meeting you held at the Genoveva Chavez Community Center in Santa Fe. The WSFA has about 120 members who reside in the Pinon Hills and Alameda Ranchettes area just north of NM 599's intersection with CR 62. We have four recommendations to convey to Parametrix as you carry forward your project for the New Mexico Department of Transportation
- Comment: For safety reasons, build a grade-separated crossing at CR 62 to replace the present at-grade crossing.
- Comment: To facilitate traffic flow, extend the 599 north Frontage Rd. southward to connect to Airport Road.
- Comment: Do not build any more at-grade crossings along 599.
- Comment: As a quick economical way to reduce hazards at the CR 62 crossing, install flashing warning lights to alert NM 599 traffic to slow down and be careful.
- Comment: We thank you for your thoughtful work on improving this highway and soliciting public input.

The following email was received from Dave Thomas, Project Engineer with the Tierra Contenta Corporation:

Dear Ms Weston,

Thank you for giving me the time on Sept 30 and again on October 6 to discuss the 599 Corridor Study as it pertains to Tierra Contenta (TC). I and taking this opportunity to provide some pertinent and up-to-date information on TC and comment on the impacts of the alternatives on our development.

The right-of-way for NM 599 was acquired in about 1988 as part of the first section of the Santa Fe Bypass project. The NM 599 R/W in Tierra Contenta was donated by the developer, Bellamah Community Development, in exchange for the future access. Prior any development on the property, Bellamah went bankrupt. Eventually the City of Santa Fe purchased the property and created the Tierra Contenta Corporation as a non-profit entity to develop it under master plan adopted in 1994. The primary objective of the development and the corporation was to provide a mixed-use, mixed-income community with 40% affordable housing.

Currently the TC community has approximately 2300 residential units, 45% of which are affordable in addition to retail, office and community uses. The infrastructure in the community is built to within 900 feet of the NM 599 R/W and plans have been approved for the infrastructure allowing development of all the TC property adjacent to NM 599. Construction of this infrastructure is expected to begin in the first half of 2010. Development of the property adjacent to the R/W would begin soon thereafter.

The Tierra Contenta Corporation prefers the interchange alternative as this would be in compliance with the original Location Study Report and Environmental Assessment. Frontage roads from the I25 Frontage Roads to Jaguar Drive would provide only minimal additional access to our community and no additional benefit if the interchange is in place, but there would be no apparent adverse effects. We are opposed to the frontage road on the east side of NM 599 as it would require acquisition of 6.4 acres of our property that is expected to be developed within the next 3 years – long before any frontage roads would be funded. Benefits of this frontage road combined with the planned roads within Tierra Contenta would be minimal compared to the cost and disruption to developable property. There are preparations currently underway to build the interchange at Jaguar Drive and NM 599 using private funds with construction to begin within 12 months. The primary reason for the proposal is to provide ready access to land in the SW quadrant of that interchange and develop it for office and commercial use. The Tierra Contenta Corporation supports this initiative.

We are aware of preliminary and approved plans for the development of property on both sides of NM 599 between the West Frontage Road and Airport Road. The road systems in all of these developments could help to satisfy the need for frontage roads directly adjacent to NM 599. Roads in the Komis property development combined with those in Tierra Contenta could eliminate the need for a frontage road on the east side of NM 599 between the I-25 West

Frontage Road and Jaguar Drive. Existing and planned roads in Tierra Contenta will provide access between Jaguar Drive and Airport Road.

Tierra Contenta Corporation asks that the alternative that includes the frontage road between Jaguar Drive and Airport Road on the east side of NM 599 be immediately eliminated from consideration. For the following reasons:

1. This alternative's inclusion in a study could jeopardize or delay approval of development on our property in that area. The frontage road alternative presented on page 89 of the Phase A Study requires 6.4 acres of right-of way on property to be developed as commercial and/office use according to the TC master plan.

2. Final plat approval of this property with accompanying engineering plans has been granted and spine infrastructure construction is slated by begin within a year.

3. This final plat and engineering plan approval includes provisions for connecting roads between NM 599 and Airport Road.

4. Contrary to what is stated in the "Responsiveness to Purpose and Need" on page 89, this alternative would <u>not</u> "improve access to NM 599 for undeveloped areas of Tierra Contenta.

5. Engineering considerations including hilly terrain, drainage and the sewer trunk line have already been dealt with in the design of the Tierra Contenta Roads

6. There would be no need for right-of-way acquisition or business relocation.

In our efforts to fully participate in the development of this study, we ask for an opportunity to meet with members of the study team so that future documents will contain complete and accurate information pertaining to the Tierra Contenta master planned community.

Sincerely
Tierra Contenta Corporation
David R. Thomas, P.E.
Project Engineer

(6) **Summary of Comments from March 3, 2010 Public Meeting**

- Question: Rick Martinez: These plans seem to encourage more traffic; are you looking at public transportation?
- Answer: On NM 599, LOS is B, so therefore bus transit would be simple to do and the traffic would not impact the bus to travel freely. We also looked at pedestrians and bicycles and how trails would tie into each of the alternatives; we did try to look at other modes of transportation.
- Question: Ricardo Sanchez: I live near CR 70, what about noise?
- Answer: We look at all of the alternatives, if the alternative is carried forward, concerns of noise would be further investigated in Phase C.
- Question: Matthew Baca: who came up with the method for the priority plan? With a higher number of accidents, there is a higher priority for alternatives? For Caja del Rio you said that most of the property to be purchased would be from the State Land Office (SLO); who else would you purchase from? This purchase would be from government to government (SLO to NMDOT). Could you trade for NMDOT land within this plat, versus from one executive arm of government to another arm of government?
- Answer: The priority plan factors were based on data, and BHI came up with the method which was approved by the NMDOT, City of Santa Fe, Santa Fe County, and FHWA who had input on this model. This model is unique to this project; however the method is not unusual. We didn't look at property ownership due to the time span of when these alternatives would move forward. David Martinez for NMDOT: We would prefer that SLO would donate ROW, the second priority would be getting an easement (pay market value), and the third option would be outright purchase. We have not elevated these projects to this level since we are not in that process and are only in Phase B.
- Question: You mentioned the purpose of NM599; don't try to compromise this purpose. Would have been better served to study the entire extent of NM 599 instead of the current locations of interchanges and proposed interchanges. Jurisdictions begin to impose traffic lights and interchanges on the proposed improvements. A beneficial road is lost. How many total interchanges are you proposing? How closely spaced will they be? There seems to be ambivalence about frontage roads. There is too much consideration of future development and land uses. You should consider the people use of roads instead of adjacent development. Santa Fe County has not done forward thinking of road corridors.
- Answer: I want to address the point about access. There were 12 access points where an interchange could occur that was approved by the City and County at that time. No further accesses can occur besides existing access points. All interchanges are at the original 12 locations with original intent to construct an interchange. No more access points can occur between these. With regard to frontage roads we looked everywhere they could occur. The arroyos were too close to NM 599 which would make it physically challenging to put a frontage road at those locations. There are gaps in where they are physically possible but some frontage roads didn't have any

utility. In regard to spacing, interchanges don't work if they are closer than one mile. We followed the ***American Association of State Highway and Transportation Officials (AASHTO)*** interchange spacing standards. We did do an analysis of traffic with the traffic model.

- Question: Ronald Miller: In regard to the frontage roads at Ridgetop Rd. There was an accident on Halloween 2009 that blocked NM 599 between Ridgetop Rd and NM599. There is a need for a frontage road to bypass that kind of blockage. This blockage meant traffic had to be re-routed for miles.
- Answer: There are terrain difficulties between Ridgetop Rd and US 84/285, you would have to exit 84/285 to the frontage road, and then Ridgetop Rd would be the first place you could exit 84/285. Noted in the report is a connection between NM 599 and the City of Santa Fe, which is outside of NMDOT's jurisdiction. All we could do was recommend that the City and the County make those connections. The St. Francis Drive Corridor Study is looking at using additional ROW for an acceleration lane between NM 599 and the Guadalupe interchange.
- Question: Ricardo Sanchez: Some of the at-grade intersections are dangerous and need interim help.
- Answer: We did have interim improvements planned between CR 62 and CR 70. The NMDOT maintenance budget was slashed this year which took aside money from our budget for these improvements. The minimum we can do is put up flashers and dramatic speed signs. (David Martinez)
- Question: Can we put camera and speed signs along NM 599?
- Answer: We tried very hard at the NMDOT district level because it would be an effective tool for enforced speed at this location.
- Question: Hazel Romero: Did you do a traffic study at the CR 52 interchange indicating how people arrive at CR 62? There aren't that many residents located there. Where is the traffic coming from onto CR 62?
- Answer: We did have an existing traffic count. A lot of CR 62 traffic is going to Caja del Rio. When South Meadows is constructed it will bring more traffic to this area. David Martinez: Fact is that a lot of development occurred on the Caja del Rio side including municipal facilities, public facilities, as a result of what is happening on the other side. The ideal would be to grade separate that traffic, provide on/off ramps to eliminate conflict of left turns through the intersection. The ultimate option will be an interchange. Based on current traffic conditions and flow, and the South Meadows extension, CR 62 was a logical location for an interchange.
- Question: Dave Lucero: I hear what you're saying about CR 62, I agree that traffic crossing there is tremendous. You need to keep in mind that South Meadows will be completed late fall, and the traffic that will utilize South Meadows may be signficant. What are you going to do in the interim? What will you do in the next 3 years when traffic volumes increase?
- Answer: We have taken that into consideration.

- Question: In regard to the Montoyas exchange, an assessment will be necessary if the northwest quadrant will be developed, what is the capacity to handle the northwest quadrant? A suggestion is to come down from the north and go south on NM 599. Due to the big curve, an interchange at that point is dangerous because of the merge of traffic. There is a big problem with visibility.
- Answer: The northwest quadrant study broke development into phases. The first phase access to Ridgetop Rd would work. In order to do other phases they will need access to Montoyas. This study doesn't stop them from tying into Camino de los Montoyas. We didn't look at how to tie any particular development into this road. The future projections do include this development and show that an interchange would work at this location.
- Question: In regard to the Agua Fria Village which recently had Siler Rd opened. This is moving 5,000 cars from Agua Fria Street. Were these impacts included into the study?
- Answer: The traffic model did have Siler Rd crossing in there.
- Question: Steven Uhall: How well are cycling and pedestrian uses tied into this study? Will NMDOT avoid their habit to put lip on roads to take bikes down? What are the safety aspects for bikes and pedestrians?
- Answer: We recommend that the minimum shoulder width be 5 feet for bikes, and currently the NMDOT is discussing changing their policy for the lip with shoulder. Also during the design process, public comment will be possible for such an issue.
- Question: Helen Cook: In regard to private property, anyone that wants to develop along NM 599 can use money to develop NM 599? Interchanges should be more or less than one mile apart?
- Answer: They can develop if they do it at one of the original approved access locations, if someone is willing to come forward and pay for it. Interchanges should be no less than one mile apart.
- Question: Are you assigning arbitrary values to intersections that haven't been built?
- Answer: There would be more accidents if it existed; however, for comparison purposes they received a constant value.

(7) **Written Comments Received following the March 3, 2010 Public Meeting**

- Comment: I think CR 62 should have emergency lights installed quickly before S. Meadows comes through then overpass ASAP.
- Comment: Interchange at Camino de los Montoyas, the environmental impact of an interchange near the City's open space would be devastating. Traffic / drivers from the residences north of the open space can and do use the Ridgetop interchange. The city's open space should be preserved without further incursions. Trails – the trails you show at the CR 70 Connection are sidewalks not trails. Trails should be

as far away from traffic as possible and provide a pleasant, quiet, scenic alternative to roads. Do the trails you show connect with existing and future trails? Please add trails to utilize existing underpasses.

- Comment: I highly favor the CR 62 improvement as my priority. I have had many close calls at the present intersection trying to cross.
- Comment: No interim signals should be considered on 599. The Airport Rd under / over pass should be the top priority. All projects should be designed to improve the traffic flow on 599 which will help to decrease traffic on St. Francis. Interim signals are difficult to remove once they have been installed. As 599 is a highway, any bike lanes should be on the frontage roads not 599.
- Comment: I have been tracking issues related to 599 for at least10 years. You did an excellent job. Your priorities are appropriate. Excellent analysis.
- Comment: I fwded to sf BikeNM.org register members. I did go thru the presentation, but it was very hard to pick out any specific plans/allowances for Bike/Ped in the interchange proposals. I would suggest adding a page of 'standards' for how the detail design will treat typical areas: shoulders, frontage shoulders, intersections, entry/exit ramps. The typical treatments that make these improvements a 'Complete Street' need to documented to assure they make it to the detail designs. Specific questions I would have are:
    a. Are rumbles planned on 599? If so, they should be discontinuous, narrow, near the fog-lines, and allow at least 4' 'clear' paved shoulder.
    b. what is the total road section width, and planned shoulder width for the frontage road. It SHOULD be no less than 5' considering traffic volume and speed
    c. All intersections should have signs and striping moving bikes mid-lane' to traverse intersections in traffic lanes.
    d. 599 entry/exit ramps should have 'puppy tracks' to help define bike thru position and 'yield to bikes' signs.
    e. Frontage roads should also have 'share the road' signs after all intersections to raise motorist awareness.
- Response: We made an effort during the corridor study to consider how pedestrians, equestrians, and bicyclists could be accommodated by the alternatives and how the alternatives fit in with the City of Santa Fe Open Space and Santa Fe County master plans for trails. There are recommended typical sections in the study that were used for the cost estimates. The overpass typical section was assumed to be 2 - 12' lanes with 5' bicycle lanes, curb & gutter and 5' sidewalks to match the City of Santa Fe typical section for a minor arterial street. The frontage road typical section was "assumed to be 2-12' lanes with 5' shoulders as shown in Figure 4. A minimum of 4' of clear space is recommended for bicyclists. An additional foot is

needed because the open graded friction course laps onto the shoulder 1'. In areas with guardrails or walls the shoulders are recommended to be 6.

- Comment: I just noticed this line in your response, “An additional foot is needed because the open graded friction course laps onto the shoulder 1'”, and wanted to comment that this is contrary to Resolutions passed by both the City and the MPO, and contrary to verbal agreements from NMDOT after hard lessons learned from NM14 and Old Las Vegas Hwy. There have been several bicycle crashes, and several with serious injury due to these 'lap lips'. I would expect that the next crash will result is a serious lawsuit for negligent design practice since all involved parties have been informed of the potential hazard. We absolutely need to have the top layer of asphalt be continuous edge to edge without a seam and/or lip. Cost savings is NOT a valid reason for designing contrary to recent Resolutions, and (upcoming) specific Executive Order from the Gov. Office to specifically forbid this practice because it is such a hazard and dis-incentive for cyclists. If volume and speeds warrant the use of OGFC in traffic lanes of the frontage road, then it needs to cover the entire section width. If you need to save money, then perhaps a different grade of asphalt topcoat will be suitable, as long as it goes edge to edge.
- Response: Thank you for your comments on the NM 599 study. Your comments will be included in the document. Please see the response below from NMDOT. The NMDOT policy should be clarified before any of the NM 599 projects are funded. The proposed typical sections will be revisited during the design process.
- Response from NMDOT: Currently the NMDOT is looking into the policies with regard to OGFC placement on NMDOT projects. This issue has been brought up by the bike community and is being looked into. The current NMDOT policy is to OGFC all projects 1’ beyond shoulder stripe, this does not preclude individual projects from using different widths should the development process lead us to make those changes based on stakeholder and public involvement.
- Comment: I met you the other night at the 599 Corridor study meeting (Chavez CC). I really enjoyed your presentation and was happy that I attended. You told me to e-mail you to get a copy of the notes (the plans-maps ect..) on the meeting or that you would provide me the site to get them. I would also like to be put on a mailing list of anything new happening on the 599 corridor. My email is nm_manager@yahoo.com and my address is Cottonwood Village Mobile Home Park at 6441 Cypress St Santa Fe NM 87507 Attention: Dean Telaroli (Property Manager). I had some follow up questions as well. 1) I believe you told me that the CR 62 exchange is the only construction approved as of yet. Is this accurate? If it is, where is the funding coming from on this project? When will the other funding for the other projects be known? 2) Is public busing (transportation) for the Via Vista subdivision being considered? 3) Would you know who own's (or maintains) Constellation Road located off of Airport Rd? Is this road the city-state's or private?

- Response: All of the projects are approved but none are currently funded. There is no known funding source at this time. You can view the website http://www.santafenm.gov/index.aspx? nid=498 or you can contact santafetrails@santafenm.gov about changes to the transit system. I don't know the answer to this question. [Constellation Road] is private.
- Comment: I am reminding you of the land ownership may that you were getting for me and all others who are interested Could you please email it to me at your earliest convenience. Thank you.
- Response: My apologies for the delay. I have attached a land ownership map for you. It does not indicate individual property owners but it does identify what is public/private land. I will put it on the Santa Fe Metropolitan Planning Organization (SFMPO) Website as well as bring some copies to the meeting.
- Comment: I think it is very important to have private property owners (Public information) on the map. You are asking people for input without giving vital information being open and transparent !!! That is what the public needs Thank you I hope this info will be available.
- Response: I apologize for any miscommunication with regard to the information provided on the property ownership map. The Study Team does not have direct access to property ownership by parcel. I do believe that the parcel ownership information is available at the County but since we do not use that information in our design decision making process it is not information that we collect or review. We do, however, consider the delineation between public and private land which is the information I shared.
- Response: I did want to share a few potential plans in the area. As I am sure you know the land east of Jaguar Drive is Tierra Contenta and west is the Pavilion. This land is being developed (and privately funded) as an interchange with NMDOT and FHWA oversight. We will share this information at the meeting.
- Comment: I think property owners around all the proposed interchanged should be known -- It is public record -- I know that Richard Cook is trying to pay for one overpass -- Why should not it be put on the may along with other interchange owners ???? - People really like to know what the whole picture is about --- otherwise they realize they were short changed on transparency - and get disenchanted. Thanks
- Comment: I attended the public presentation/discussion on 3 March in Santa Fe on proposed interchanges along Rt. 599. I want to convey to you in writing comments I made then.
    a. Rt. 599 is only about 15 miles long; yet, as many as 12 interchanges are being considered over those few miles. I am concerned that if all 12 (even just 6) were to be realized, the safety, efficiency, and effectiveness of Rt. 599 would be heavily and negatively impacted. It would be poor road system planning; it would kill Rt. 599 as far too often too many and too closely spaced traffic lights kill our main roads. Think in terms of a hierarchical road system in the region affected by Rt. 599 and its interchange roads with those roads at the top level!

b. Will interchanges that are selected for Rt. 599 be guaranteed by appropriate government(s) corridors dedicated so that interchange roads extend significant lengths (at least 2, preferably 4 or more miles) on both sides of the interchanges?

c. How well would selected interchanges and their roads over Rt. 599 fit in an overall, hierarchical road system for Santa Fe City and County in the extensive area occupied by those roads and beyond?

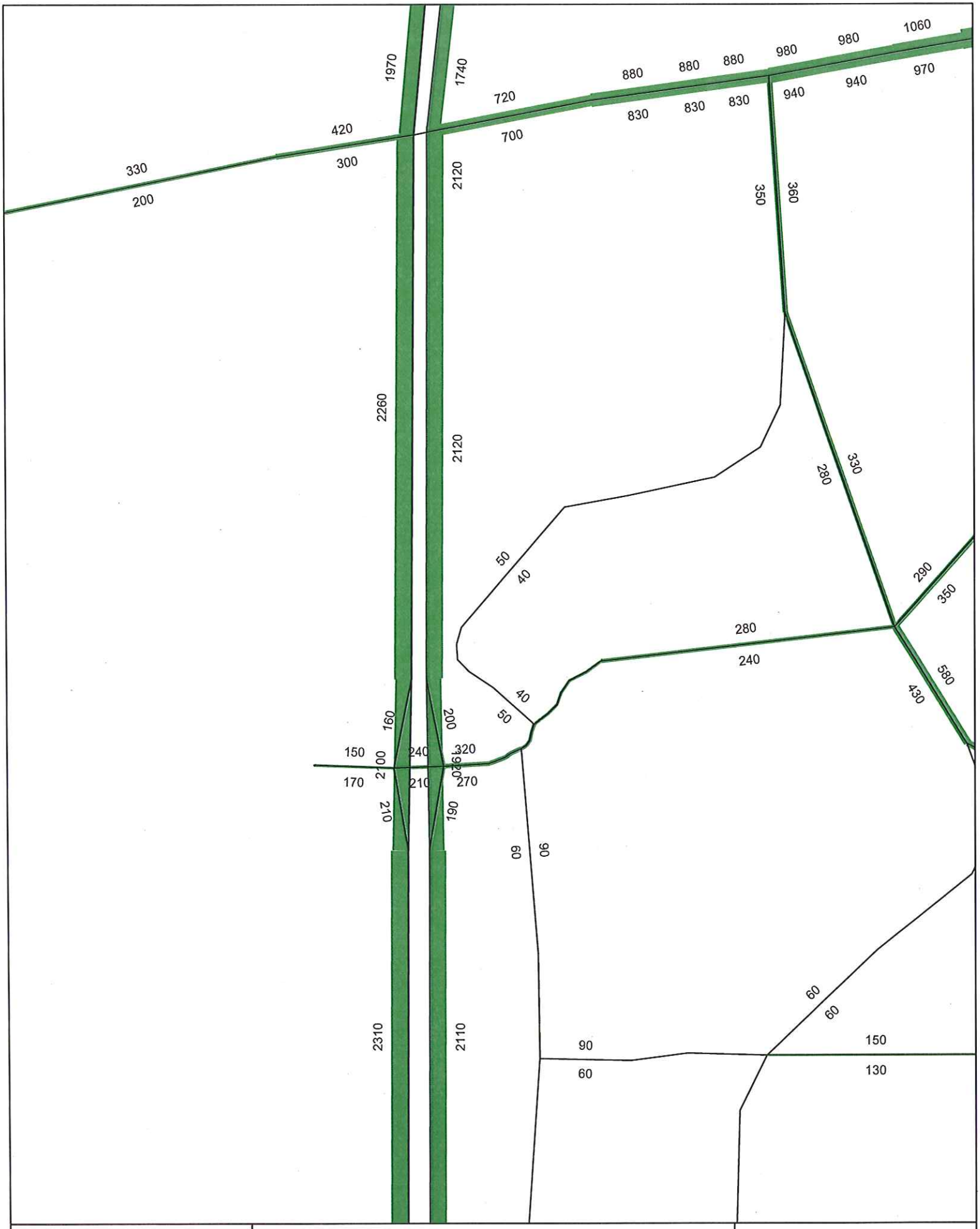
d. Either have a true and complete Frontage Road along Rt. 599 or none at all. Do not half-ass job it! I understand that topographical conditions may in spots require moving segments of frontage roads away from Rt. 599, but that is not the same as making the frontage road discontinuous. Instead of a discontinuous frontage road, opt for no frontage road and transfer its functions to main roads on each side of, parallel to, and one or more miles from Rt. 599 and well tied to its interchange roads.

e. Do not place interchanges to accommodate self interests of current/future land owners/land uses adjacent to Rt. 599. Satisfy those owner/use needs by roads away from Rt. 599. Rt. 599 and the interchange roads should be considered to define the highest level roads in the hierarchical road system to be imposed on the currently relatively undeveloped land surrounding Rt. 599 over its whole length and 4-6 miles each side of it. The integrity of those highest level roads as safe, efficient, effective roads must be guaranteed.

f. The land surrounding Rt. 599 is currently relatively undeveloped. Need for and realization of roads in that land, including proposed interchanges with Rt. 599 would be imposed mostly by development within that land. It follows that the bulk of the funding for Rt. 599 interchanges, interchange and other roads should be borne by that development.

Appendix C
Traffic Forecast Model Output

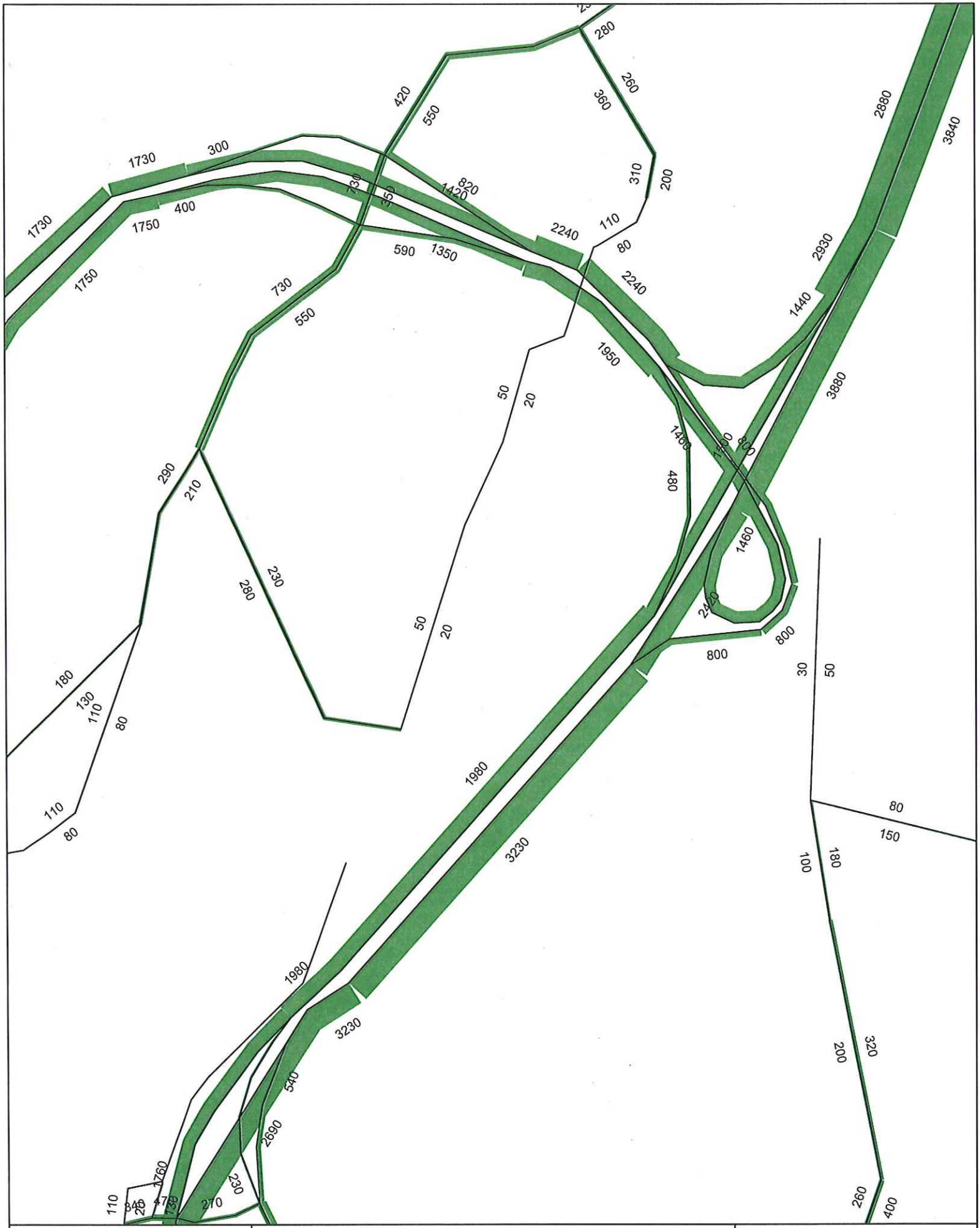
ase-Version1-11092009.ver	NM 599 / I-25 Interchange	1:6992



	DOT Base Model	1:12676

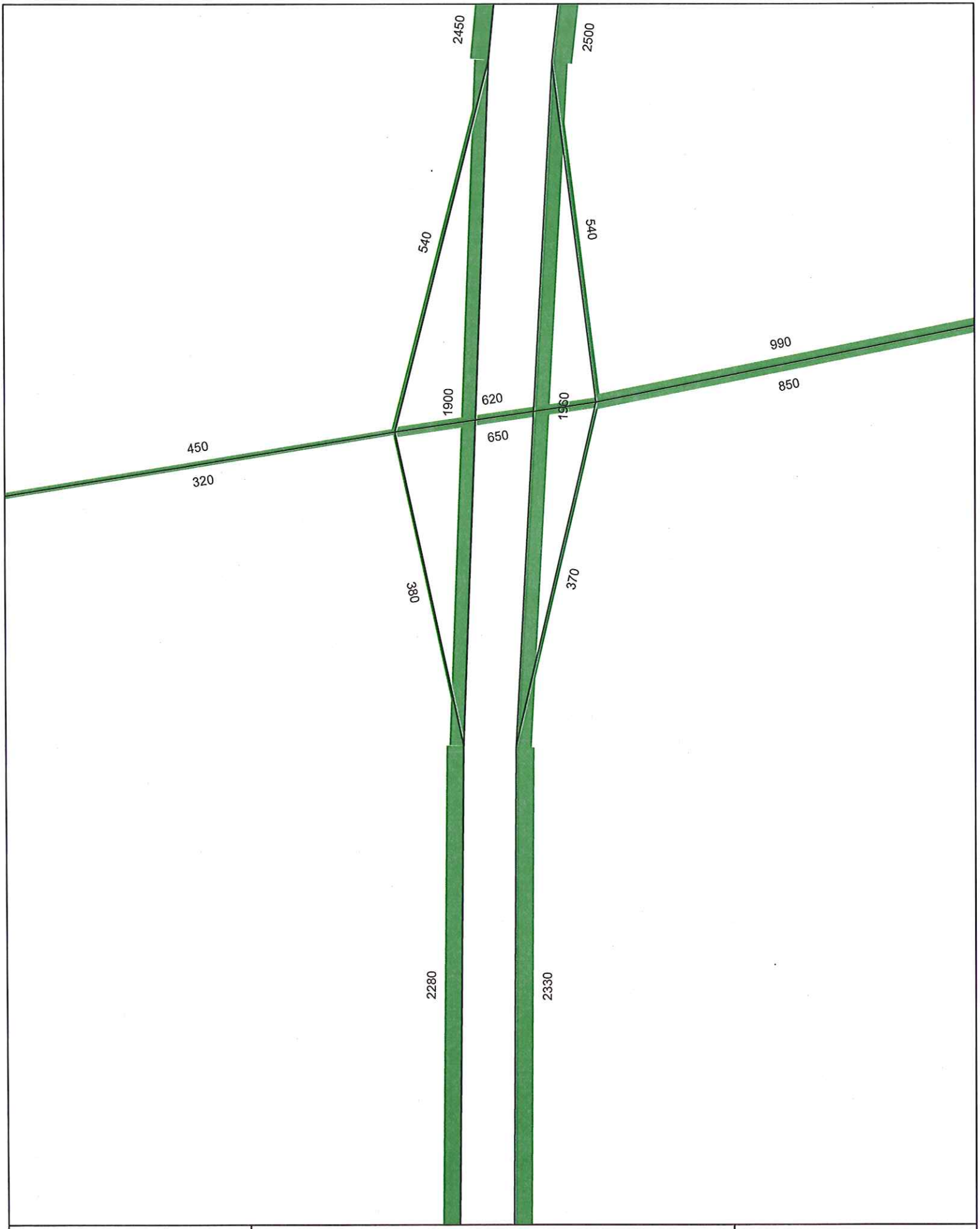
	DOT Base Model	1:12676

	DOT Base Model	1:12676



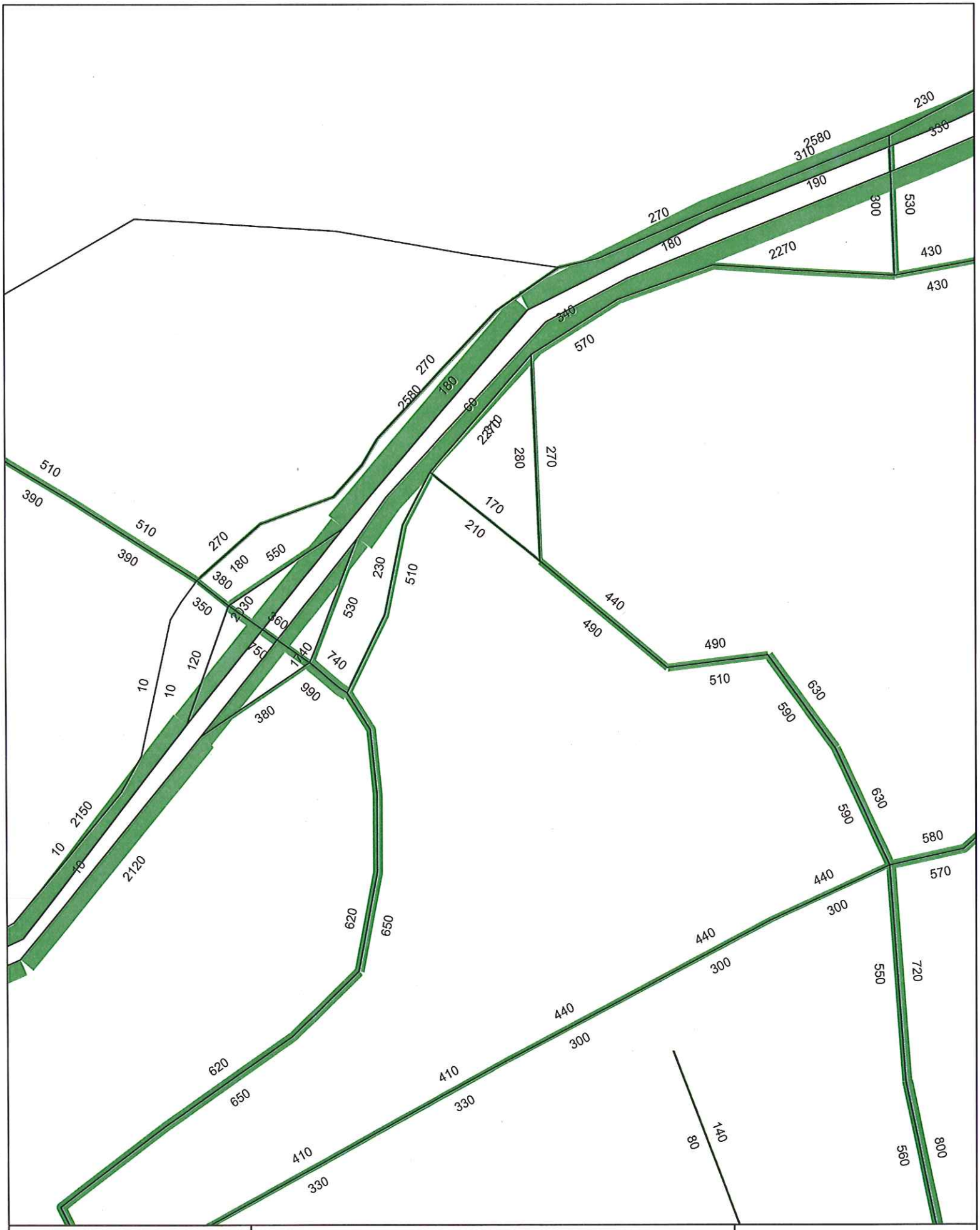
	recast-rev-LU-10092009-working-DOT-Base-Version1-1	
	NM 599 / US 84/285 Interchange	1:10432

	e-Forecast-rev-LU-10092009-Scenario-1-Version1-11092	
	NM 599 / I-25 Interchange	1:6992

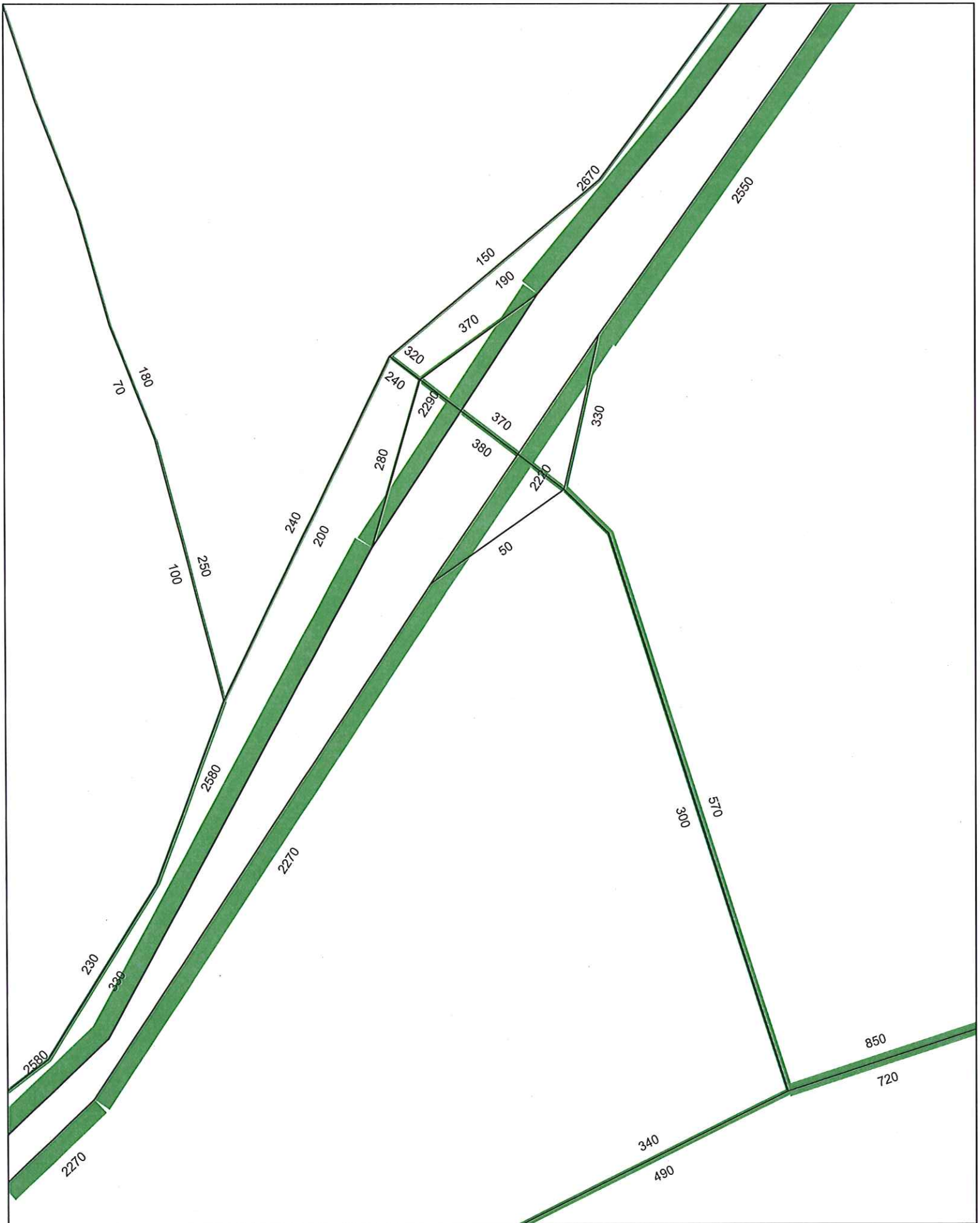


	e-Forecast-rev-LU-10092009-Scenario-1-Version1-11092	
	Airport Road	1:3223

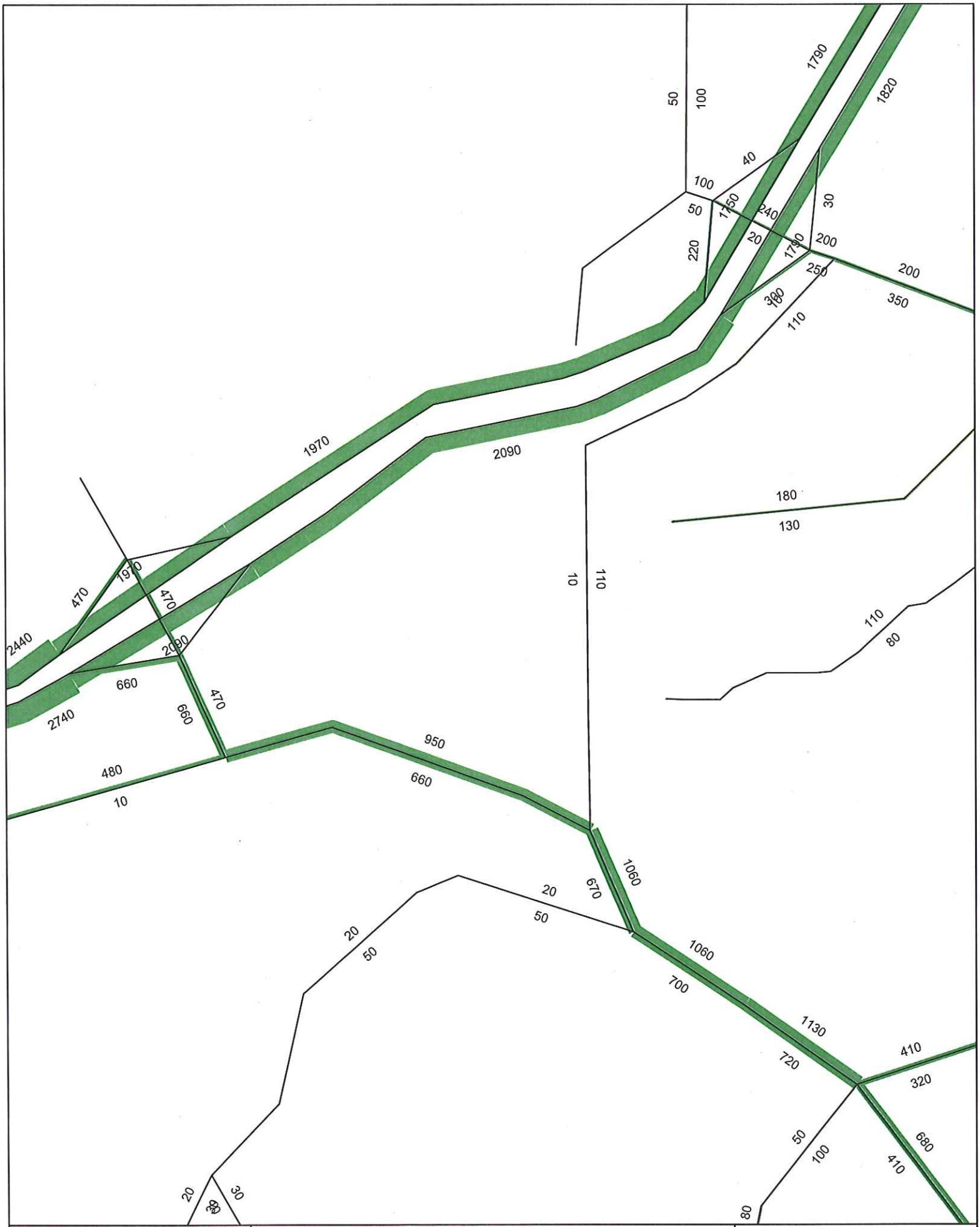

e-Forecast-rev-LU-10092009-Scenario-1-Version1-11092
Caja del Rio & CR 62
1:14307



	e-Forecast-rev-LU-10092009-Scenario-1-Version1-11092	
	CR 62 and Via Abajo	1:9376

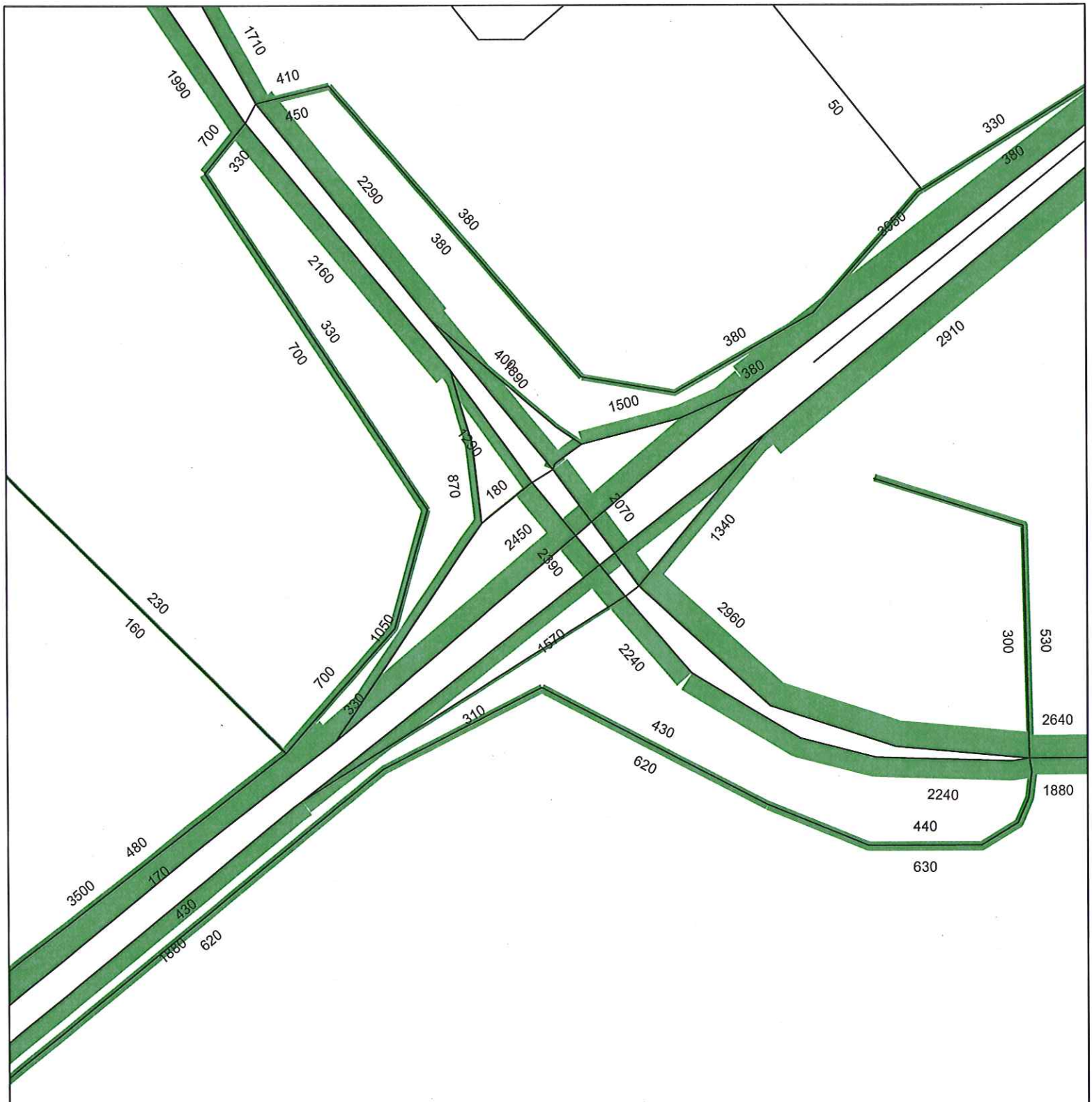


	e-Forecast-rev-LU-10092009-Scenario-1-Version1-11092	
	CR 70	1:5931

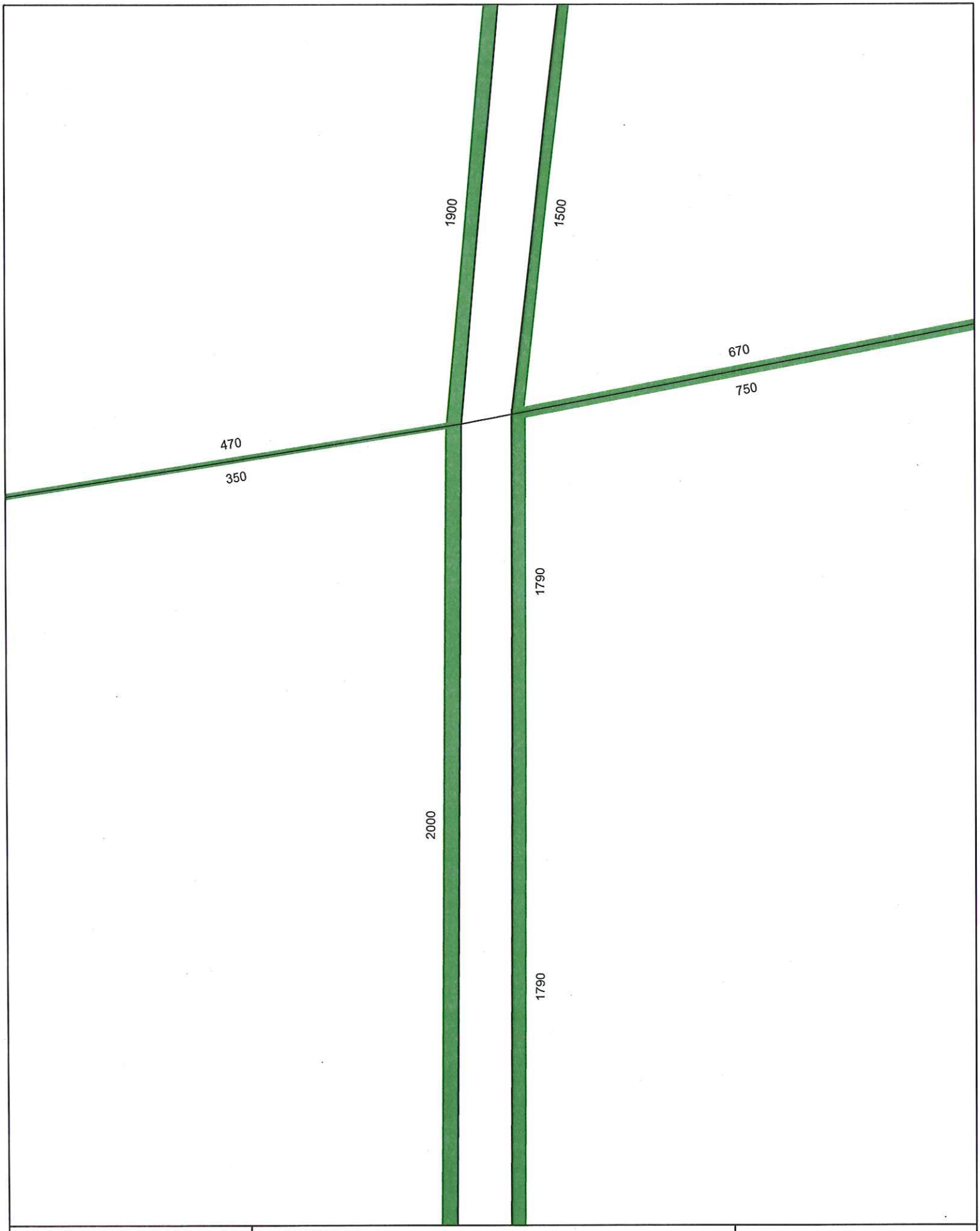


	e-Forecast-rev-LU-10092009-Scenario-1-Version1-11092	
	Ephriam and Montoyas	1:9151

	e-Forecast-rev-LU-10092009-Scenario-1-Version1-11092	
	NM 599 / US 84/285 Interchange	1:10432

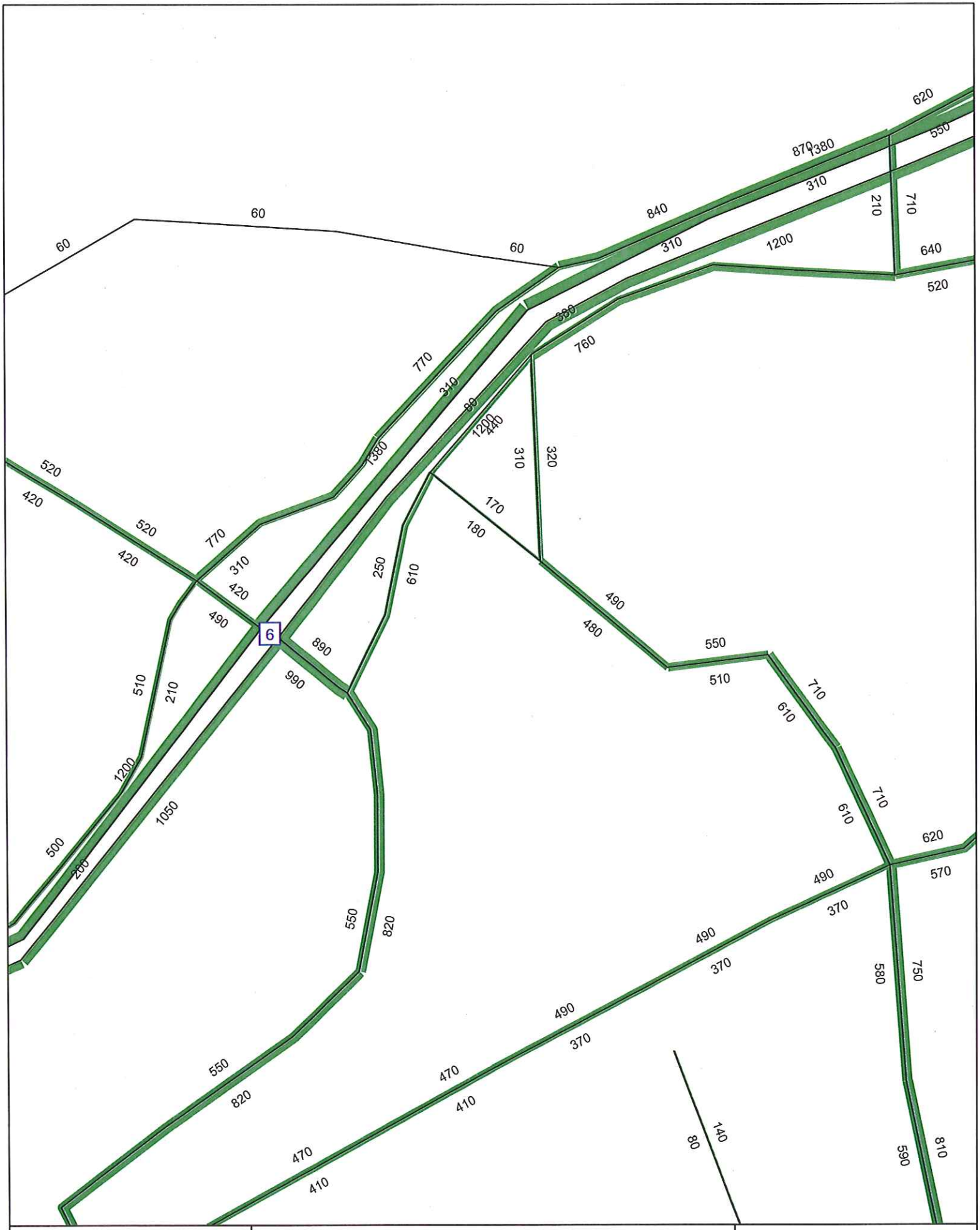


	Forecast (rev LU 10092009) - Scenario 4 - Version1 - 110	
	NM 599 / I-25 Interchange	1:6992

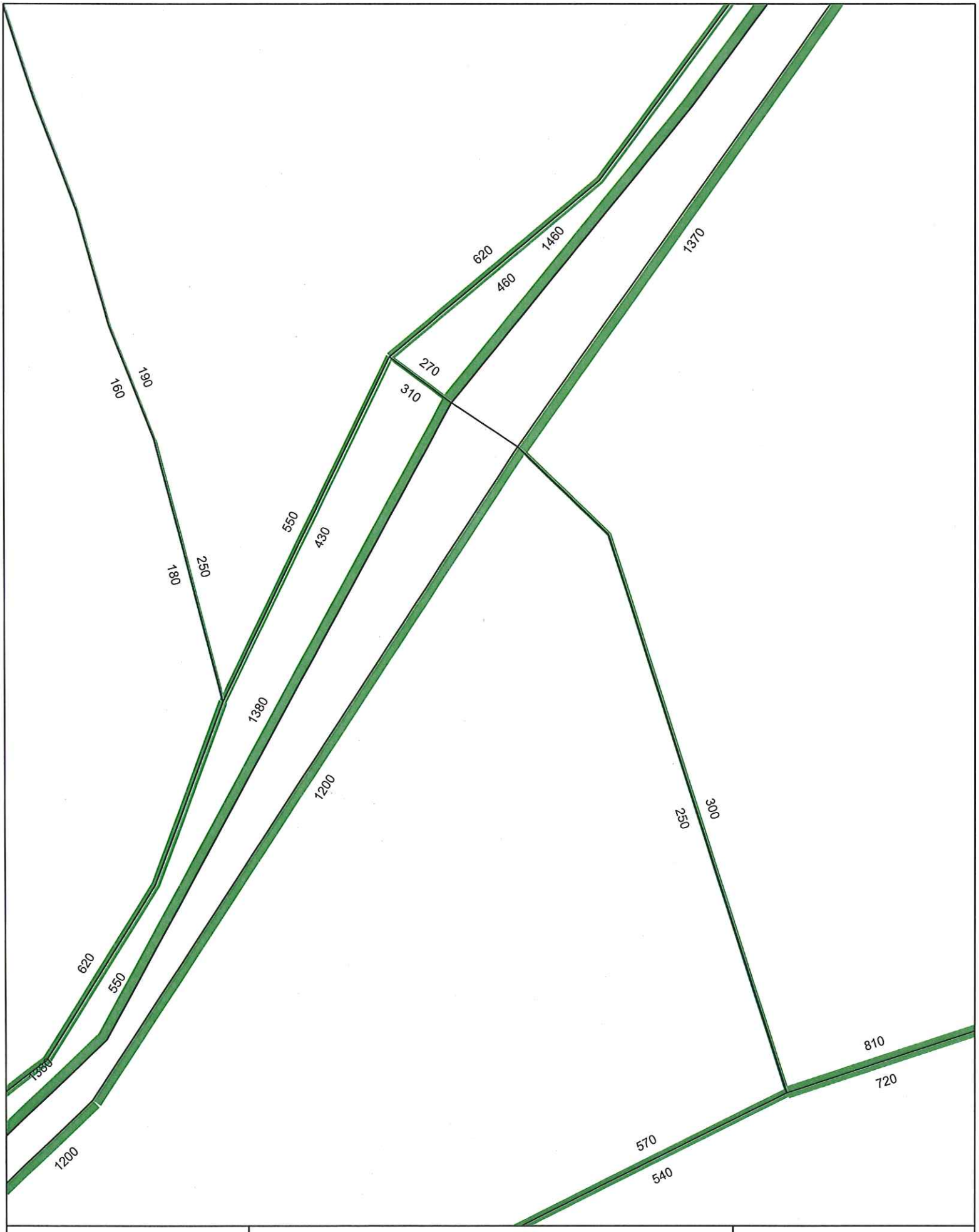


	Forecast (rev LU 10092009) - Scenario 4 - Version1 - 110	
	Airport Road	1:3223

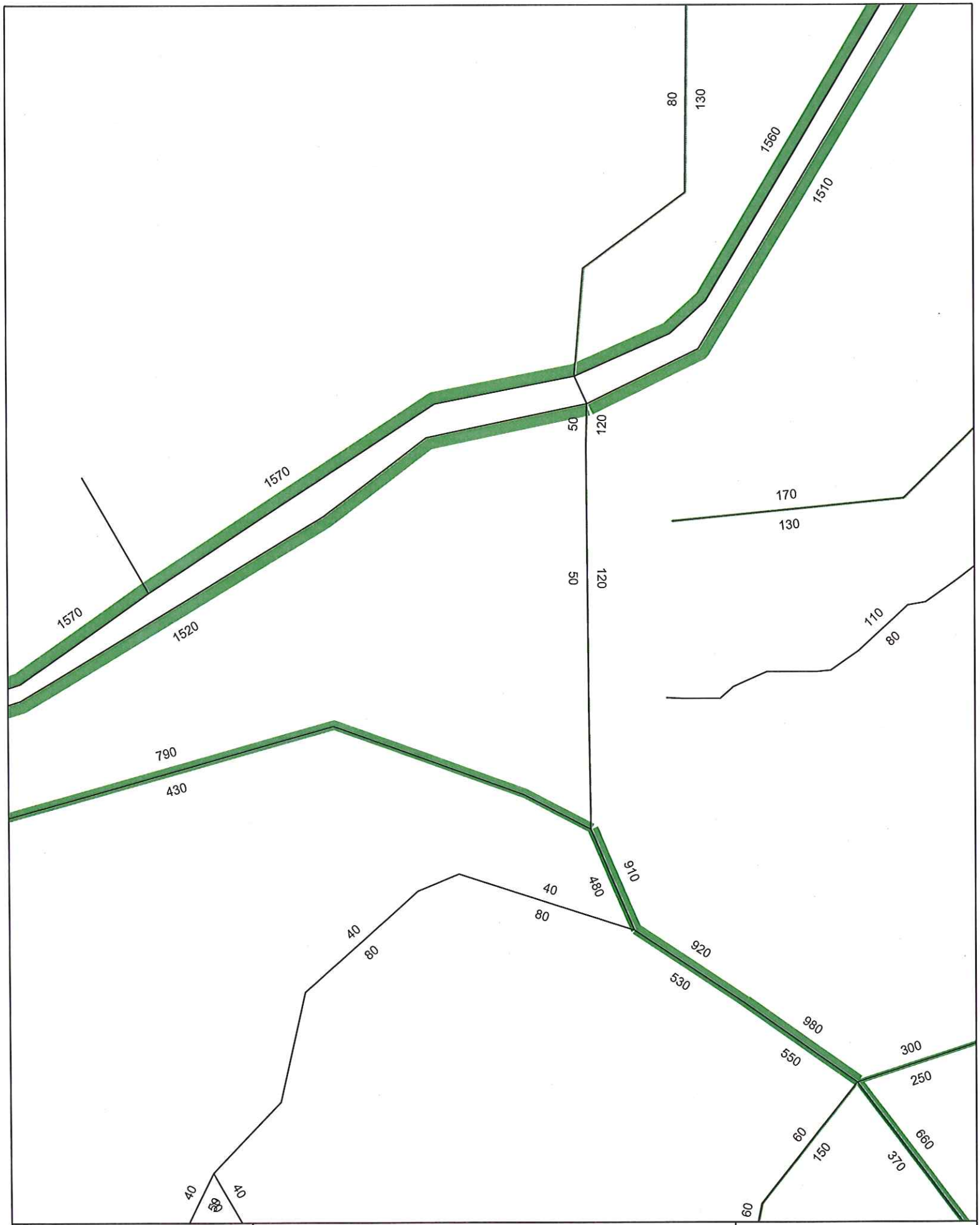
	Forecast (rev LU 10092009) - Scenario 4 - Version1 - 110	
	Caja del Rio & CR 62	1:14307



	Forecast (rev LU 10092009) - Scenario 4 - Version1 - 110	
	CR 62 and Via Abajo	1:9376

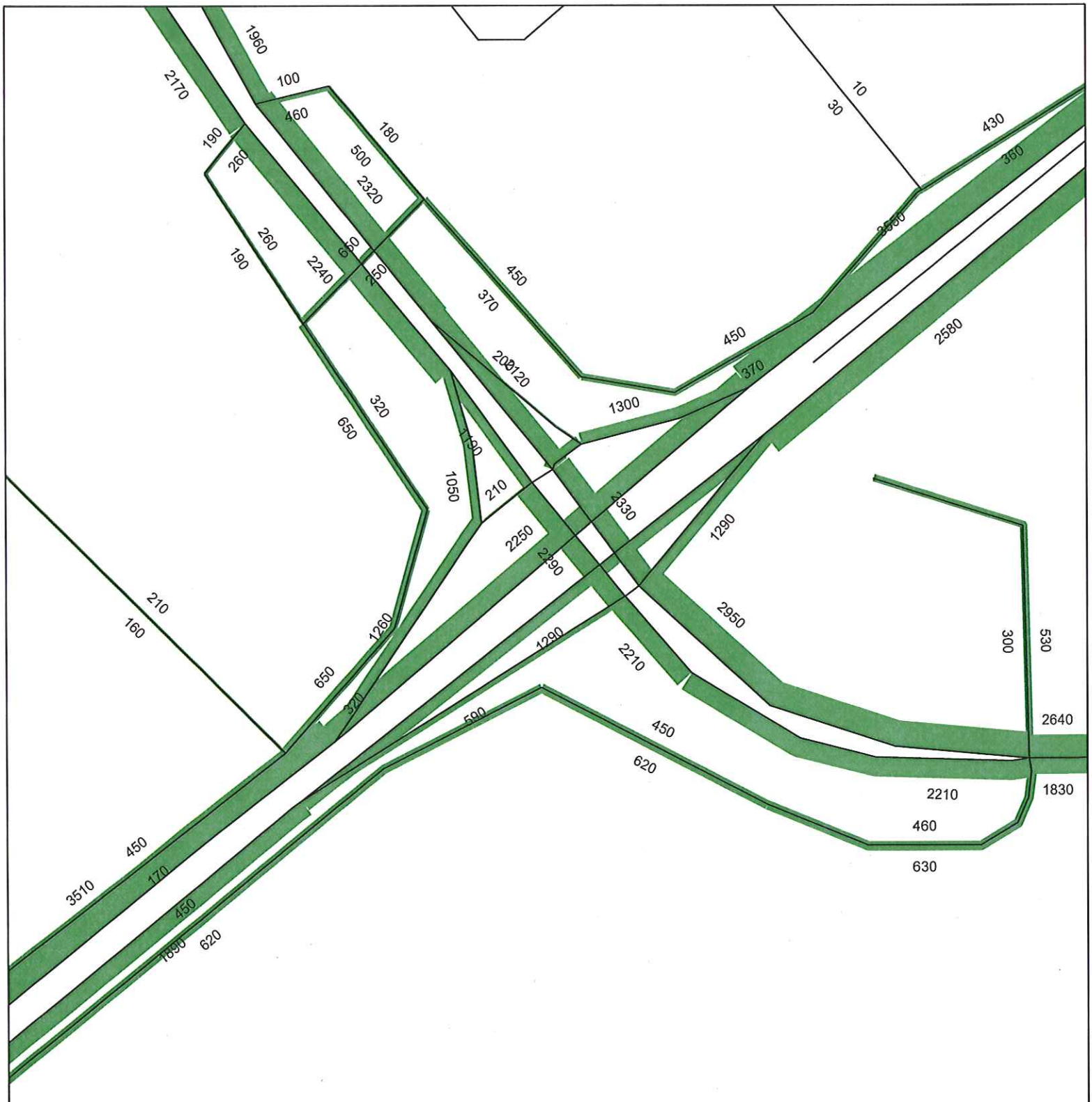


	Forecast (rev LU 10092009) - Scenario 4 - Version1 - 110	
	CR 70	1:5931

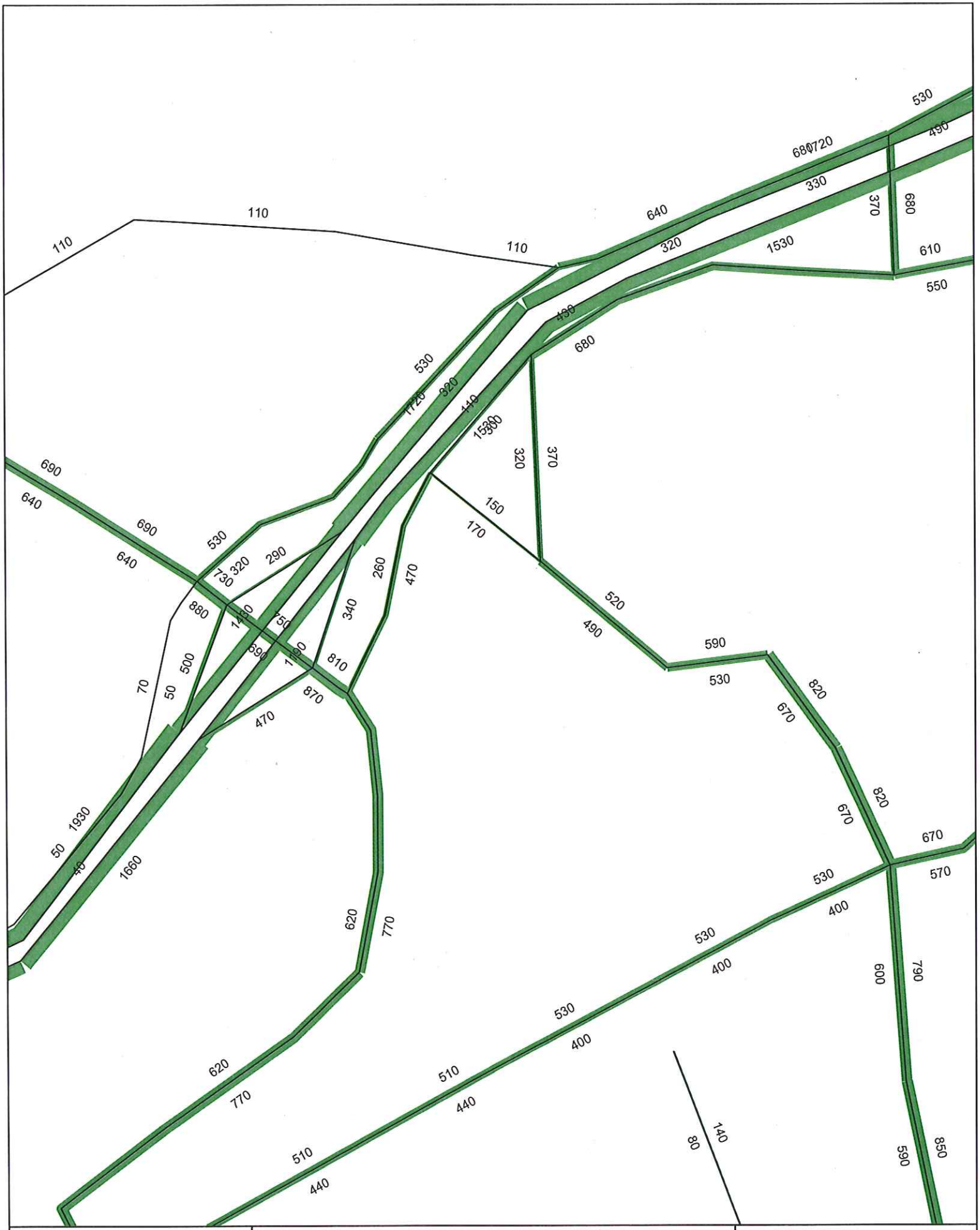


	Forecast (rev LU 10092009) - Scenario 4 - Version1 - 110	
	Ephriam and Montoyas	1:9151

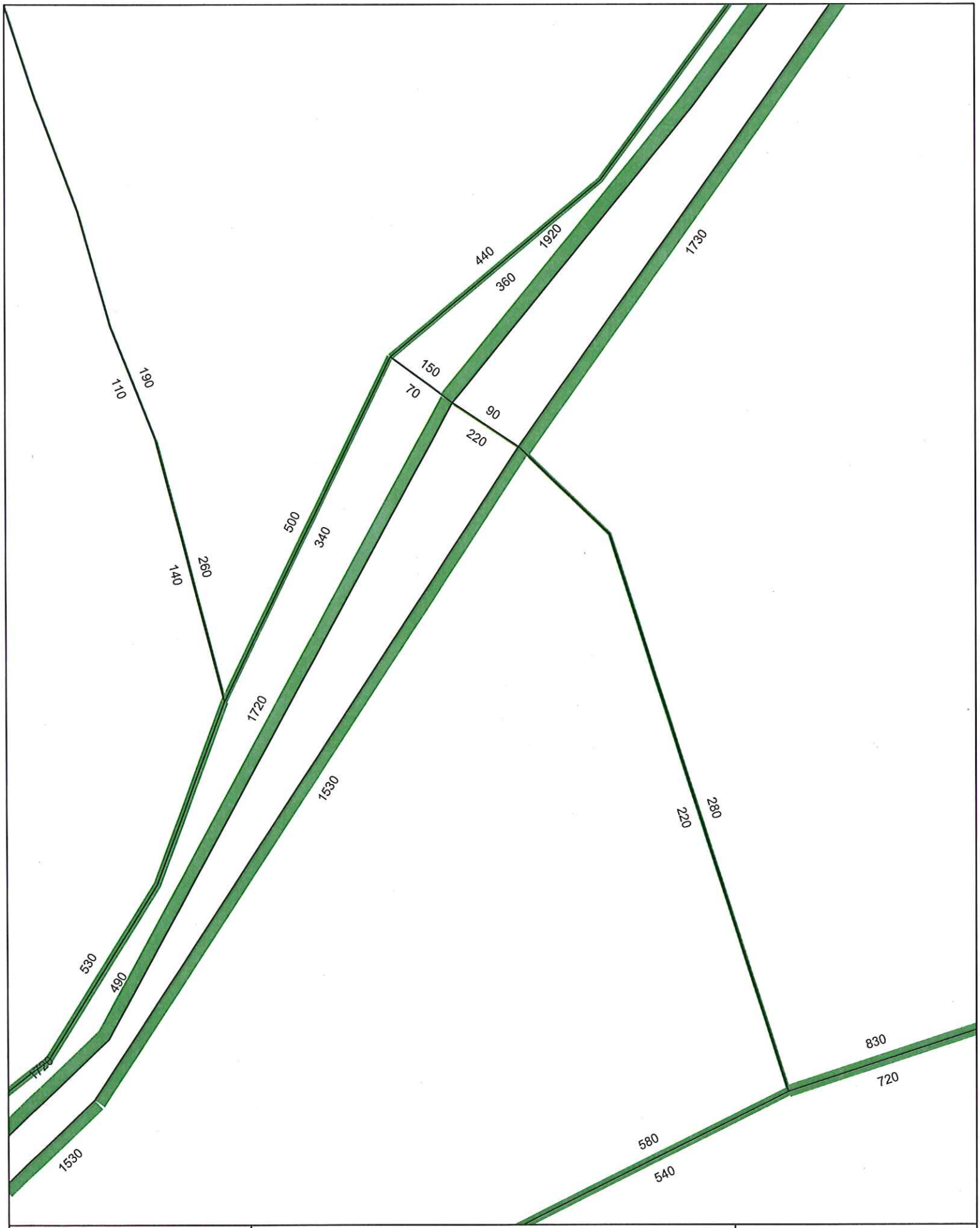
	Forecast (rev LU 10092009) - Scenario 4 - Version1 - 110	
	NM 599 / US 84/285 Interchange	1:10432



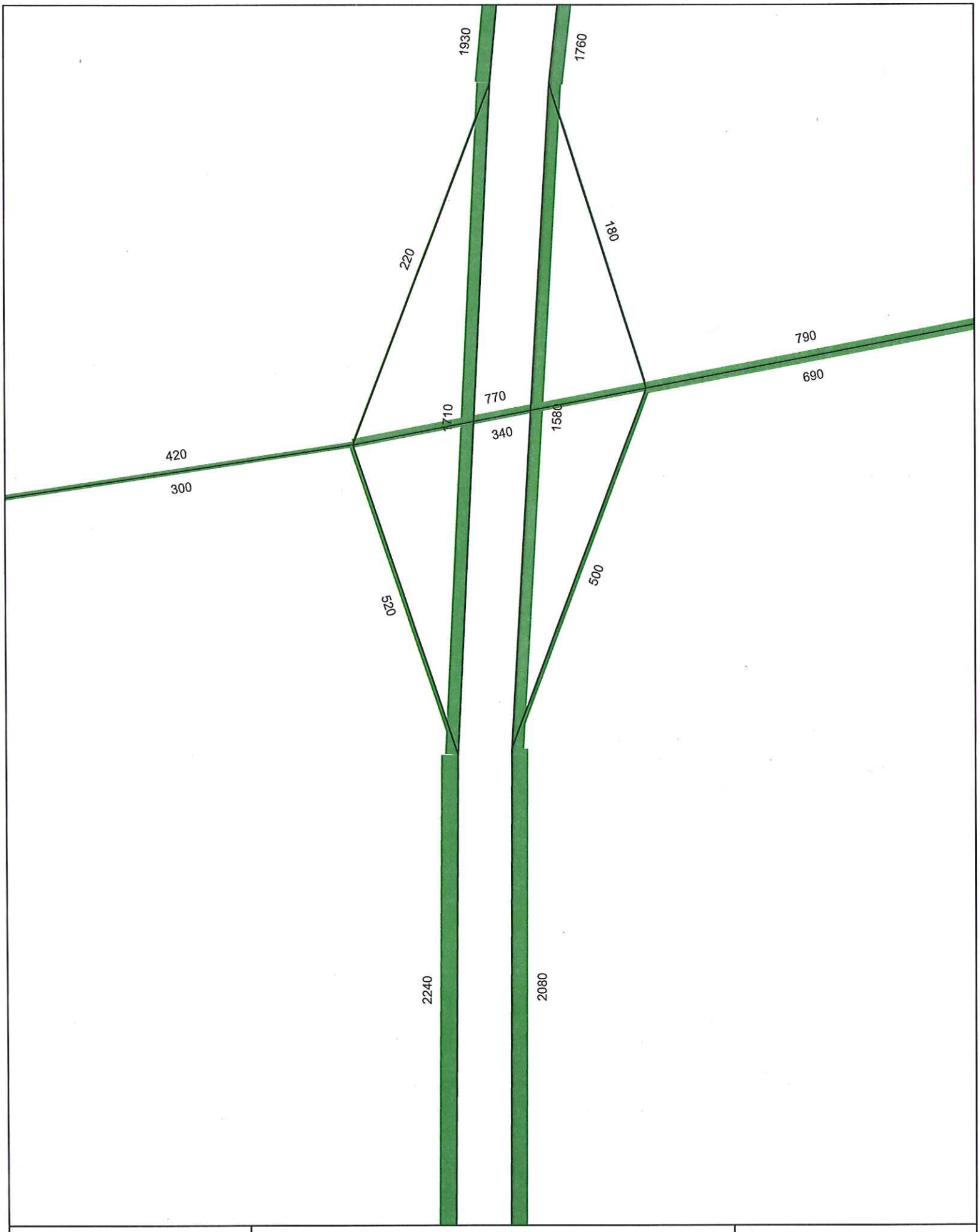
	e-Forecast-rev-LU-10092009-Scenario-5-Version1-11092	
	NM 599 / I-25 Interchange	1:6992



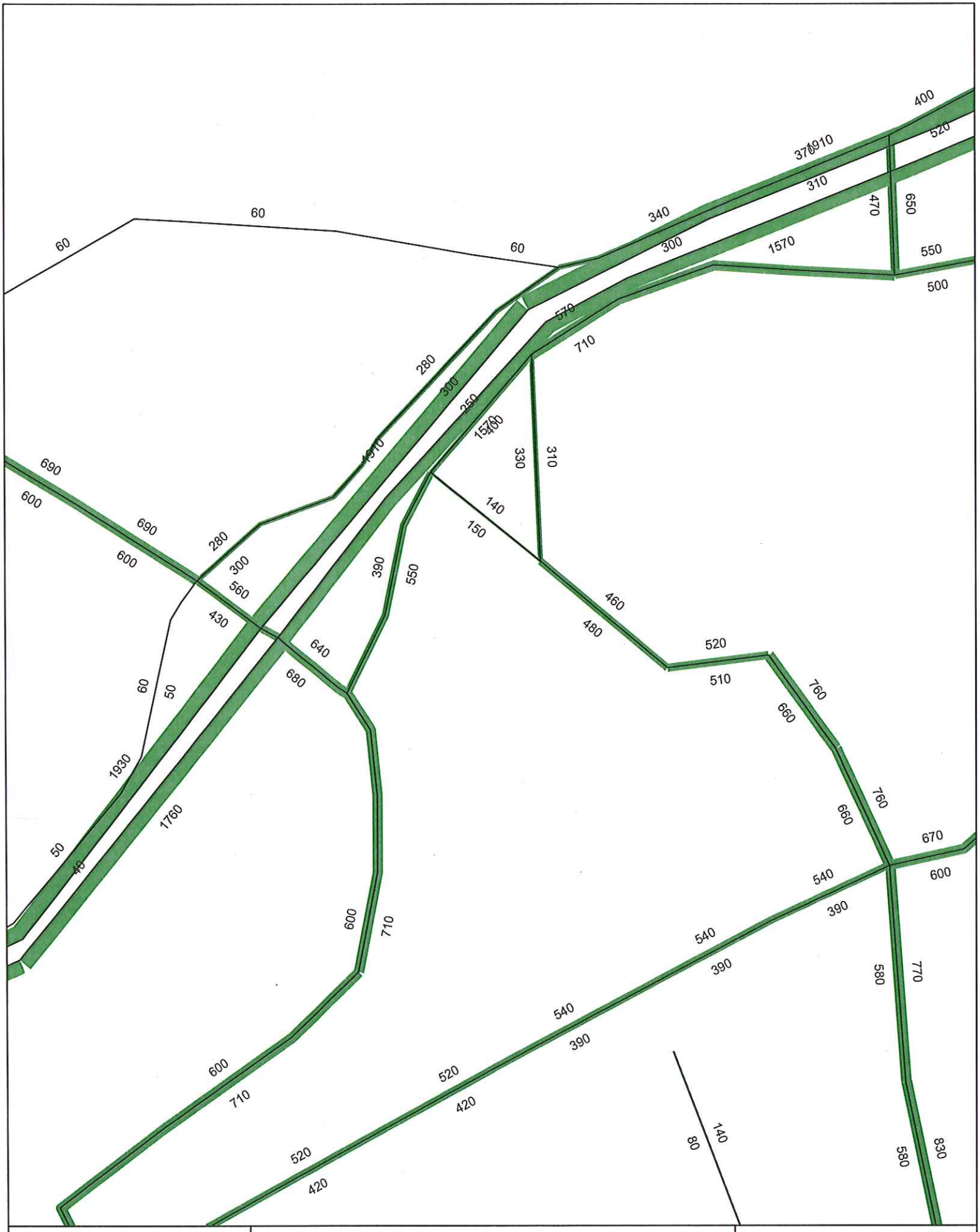
	e-Forecast-rev-LU-10092009-Scenario-5-Version1-11092	
	CR 62 and Via Abajo	1:9376



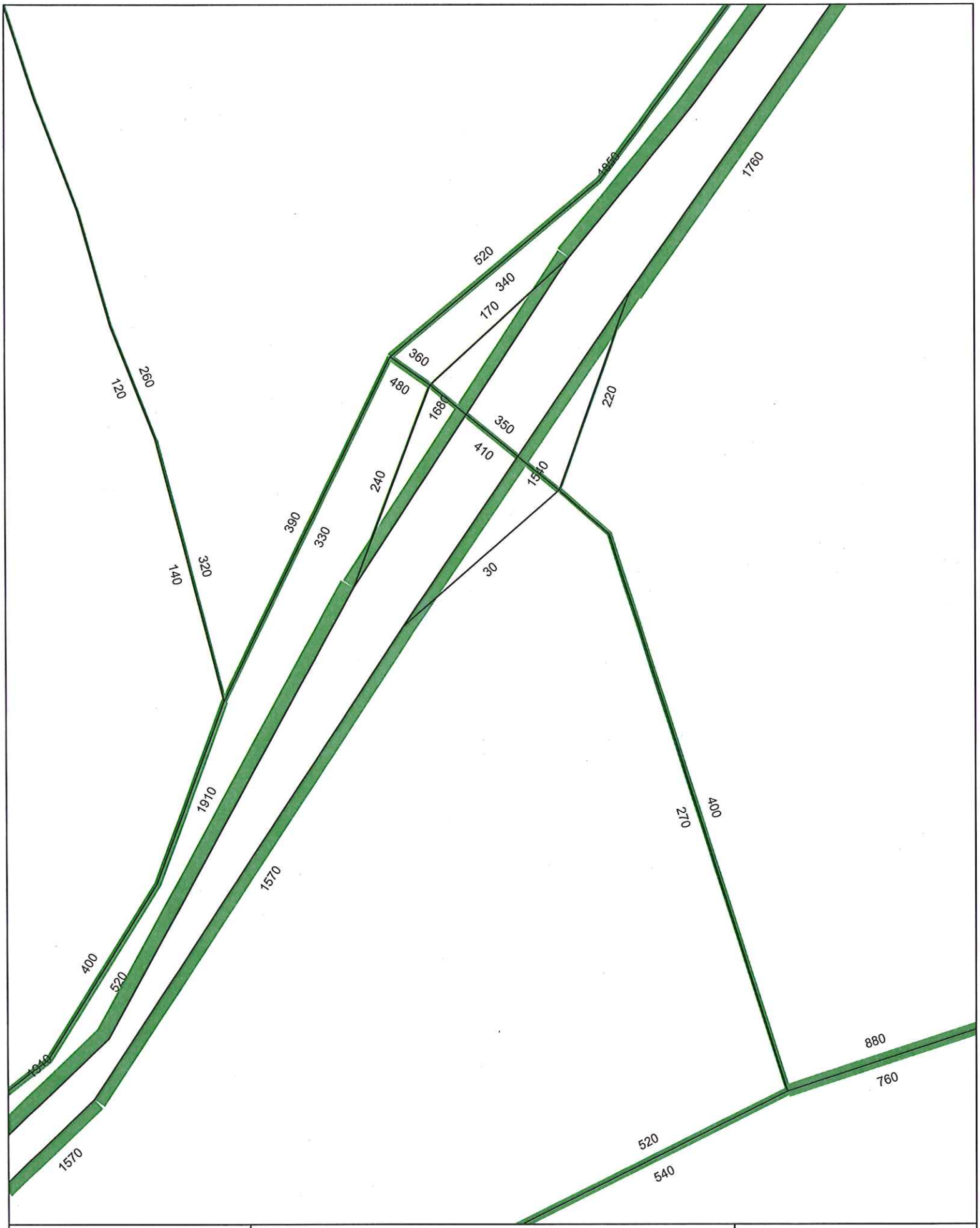
	e-Forecast-rev-LU-10092009-Scenario-5-Version1-11092	
	CR 70	1:5931



	e-Forecast-rev-LU-10092009-Scenario-6-Version1-11092	
	Airport Road	1:3223



	e-Forecast-rev-LU-10092009-Scenario-6-Version1-11092	
	CR 62 and Via Abajo	1:9376



	e-Forecast-rev-LU-10092009-Scenario-6-Version1-11092	
	CR 70	1:5931

Appendix D
Traffic Analysis

PROJECT NAME _____ SHEET _____ OF _____

PROJECT NO. _____ BY _____ DATE _____

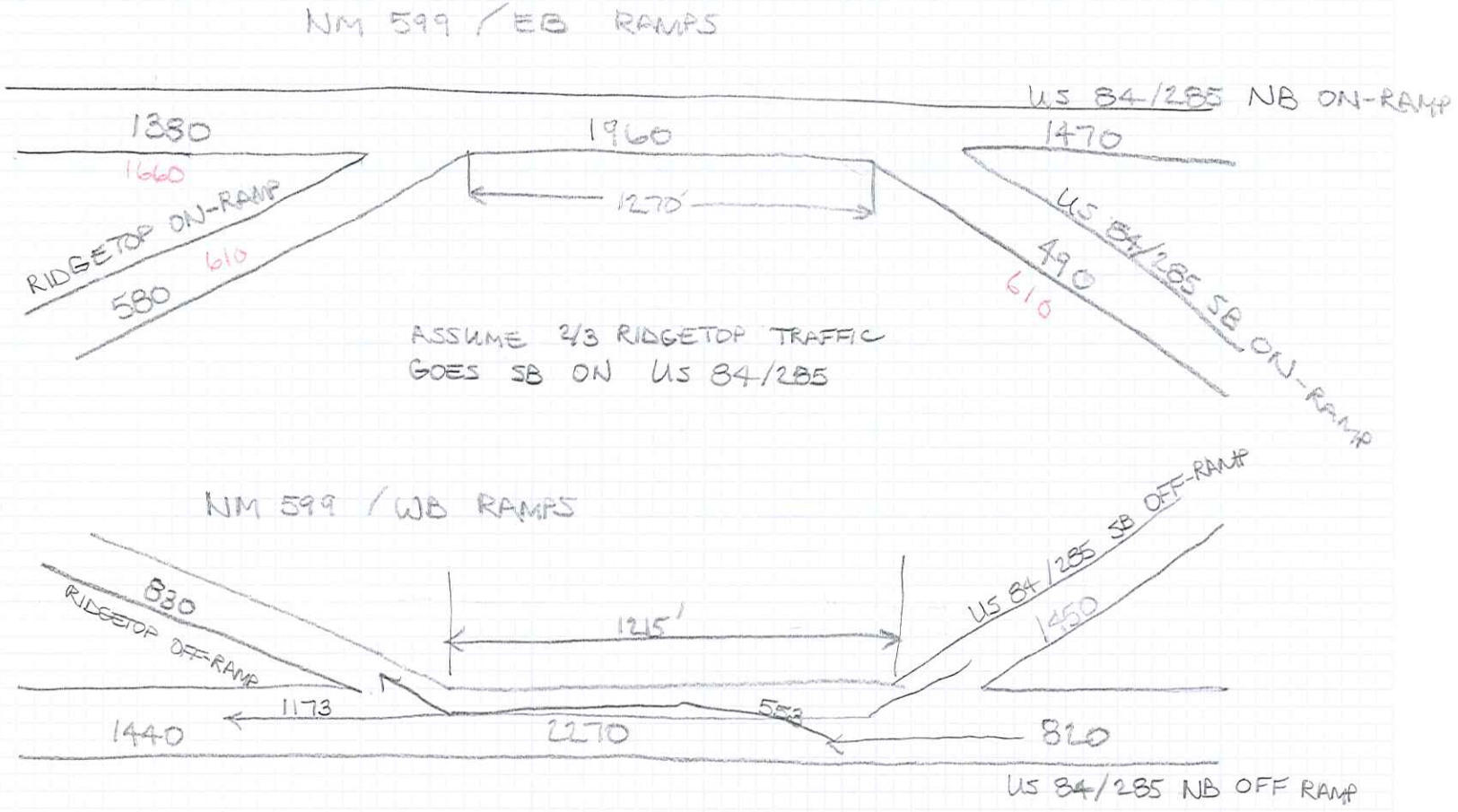
SUBJECT _____ CH'D _____ DATE _____

Bohannan ▲ Huston INC.

ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES ▲

FUTURE NO BUILD

DOT BASE MODEL VOLUMES, PM PEAK HOUR



CHAPTER 24 - FREEWAY WEAVING WORKSHEET

General Information

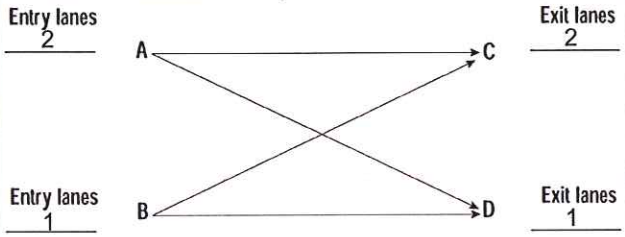
Analyst	JAW
Agency or Company	NMDOT
Analysis Period/Year	PM Peak 2030
Comment	Using DOT Base Model Volumes

Site Information

Jurisdiction/Date	Jurisdiction 11/2/2009
Freeway/Direction of Travel	NM 599
Weaving Segment Location	Ridgtop to US 84/285

☑ Operational (LOS) ☐ Design (N, L, Type) ☐ Planning (LOS) ☐ Planning (N, L, Type)

Inputs



Driver type from A ☑ Commuter/weekday ☐ Recreational/weekend

Driver type from B ☑ Commuter/weekday ☐ Recreational/weekend

Freeway free-flow speed, S_{FF} =	68 mi/h
Weaving number of lanes, N =	3
Weaving segment length, L	1270 ft
Freeway terrain	☐ Level ☑ Rolling
Ramp terrain	☑ Level ☐ Rolling
Weaving type	☑ Type A ☐ Type B ☐ Type C
Volume ratio, VR = $\frac{v_w}{v}$	0.208
Weaving ratio, R = $\frac{v_{w2}}{v_w}$	0.417

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D	V (veh/h)	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF * f_{HV} * f_p}$
v_{AC}				1215	0.91	11	☐ 0.858	☐ 1.00	1555
v_{BD}				325	0.91	11	☐ 0.948	☐ 1.00	377
v_{AD}				165	0.91	11	☐ 0.858	☐ 1.00	211
v_{BC}				255	0.91	11	☐ 0.948	☐ 1.00	296
v_w									507
v_{nw}									1932
v									2439

Weaving and Nonweaving Speeds

	Unconstrained		Constrained	
	Weaving (i = w)	Nonweaving (i = nw)	Weaving (i = w)	Nonweaving (i = nw)
a (Exhibit 24-6)	0.15	53.7		
b (Exhibit 24-6)	2.2	4.0		
c (Exhibit 24-6)	0.97	1.3		
d (Exhibit 24-6)	0.80	0.75		
Weaving intensity factor, $W_i = \frac{a(1 + VR)^b (v/N)^c}{(L)^d}$	0.497	0.212		
Weaving and nonweaving speeds, S_i (mi/h) $S_i = 15 + \frac{S_{FF} - 10}{1 + W_i}$	53.7	62.84		

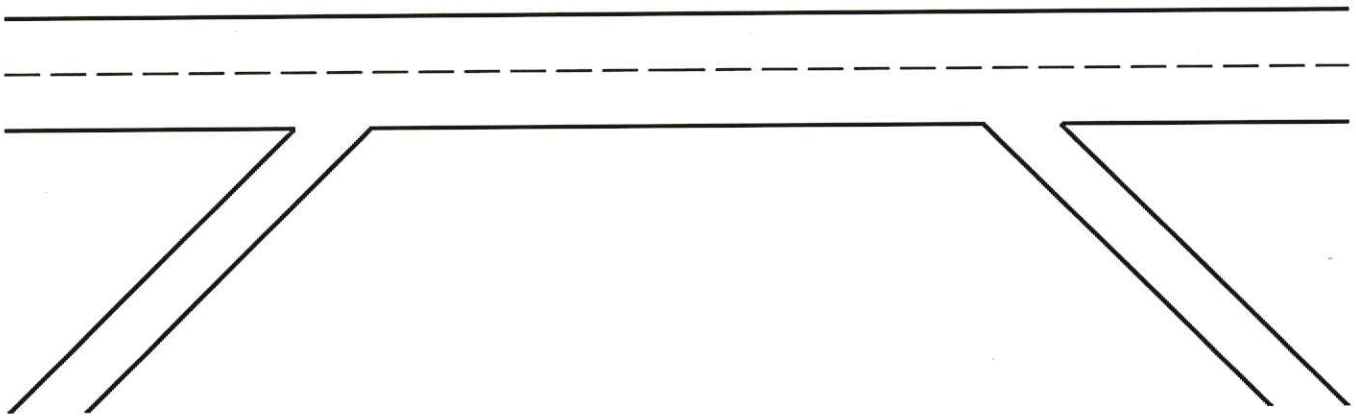
Number of lanes required for unconstrained operation, N_w (Exhibit 24-7) 0.84

Maximum number of lanes, N_w(max) (Exhibit 24-7) 1.40

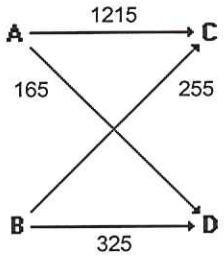
☑ If $N_w < N_w$(max) unconstrained operation ☐ If $N_w \geq N_w$(max) constrained operation

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment speed, S (mi/h) $S = \frac{v}{\left(\frac{v_w}{S_w}\right) + \left(\frac{v_{nw}}{S_{nw}}\right)}$	60.7
Weaving segment density, D (pc/mi/ln) $D = \frac{v/N}{S}$	13.4
Level of service, LOS (Exhibit 24-2)	B
Capacity for base condition, c_b (pc/h) (Exhibit 24-8)	6097
Capacity as a 15-min flow rate, c (veh/h) $c = c_b * f_{HV} * f_p$	5506
Capacity as a full-hour volume, c_h (veh/h) $c_h = c(PHF)$	5011



Summary of volumes (veh/h)



Length of weaving segment	1270 ft	Freeway weaving volume	165 veh/h	Ramp weaving volume	255 veh/h
		Freeway non-weaving volume	1215 veh/h	Ramp non-weaving volume	325 veh/h
Capacity for base condition, cb	6097 pc/h	15-min capacity	5506 veh/h	Full hour capacity, ch	5011 veh/h

Weave Type A **Weave segment speed** 60.7 mi/h **Weave segment density** 13.4 pc/mi/ln **LOS** B

Freeway Weaving - Analysis Summary

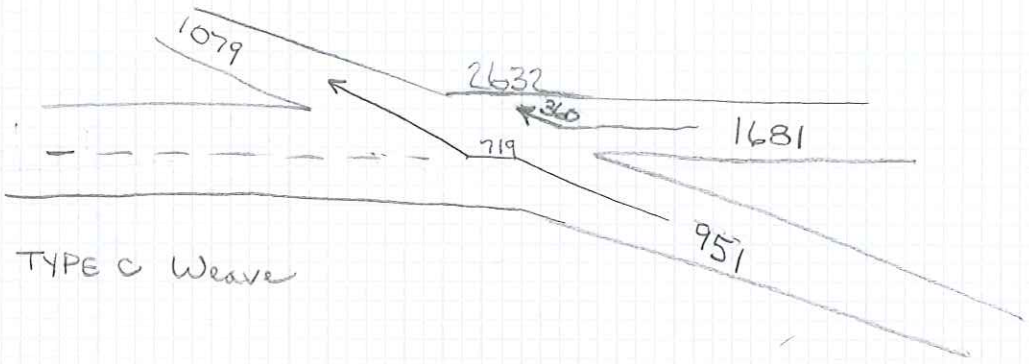
Analyst	JAW	City/Location	Santa Fe	Jurisdiction/Date	Jurisdiction 11/2/2009
Agency/Company	NMDOT	Freeway	NM 599	Comments	Using DOT Base Model Volumes
Analysis period/Year	PM Peak 2030	Ramp	Ridgtop to US 84/285		

DOT Base Model Volumes

Description	Peak Hour	Volume	PHF	%Truck	Fhv	Fp	Adjusted volume
Ridgetop SB off ramp	am		0.8	8	0.96	1	0
	pm	830	0.8	8	0.96	1	1079
NM 599 WB	am		0.91	11	0.95	1	0
	pm	1440	0.91	11	0.95	1	1669
US 84/285 SB ramp	am		0.91	11	0.95	1	0
	pm	1450	0.91	11	0.95	1	1681
US 84/285 NB ramp	am		0.91	11	0.95	1	0
	pm	820	0.91	11	0.95	1	951

No weaving beyond 2500'

Adjusted Volumes



TYPE C Weave

Bohannan ▲ Huston INC.

PROJECT NAME _____ SHEET _____ OF _____

PROJECT NO. _____ BY _____ DATE _____

SUBJECT _____ CH'D _____ DATE _____

ENGINEERING ▲
SPATIAL DATA ▲
ADVANCED TECHNOLOGIES ▲

NM 599 southbound between US 84/285 + Ridgetop Road
PM PEAK UNCONSTRAINED

$$W_W = \frac{.03\left(1+\frac{1079}{2632}\right)^{2.3}\left(\frac{2632}{2}\right)^{.8}}{1215^{.6}} = .78$$

$$S_W = 15 + \frac{(60-10)}{1+W_W} = 43 \text{ mph}$$ Speed of weaving vehicles

$$W_{NW} = \frac{.002\left(1+\frac{1079}{2632}\right)^{6}\left(\frac{2632}{2}\right)^{1.1}}{1215^{.6}} = .60$$

$$S_{NW} = 15 + \frac{(60-10)}{1+W_{NW}} = 46 \text{ mph}$$ Speed of non-weaving vehicles

Check Constraint
N = 2 = # of lanes in weave

$$N_W = 2\left[.761 + .047\left(\frac{1079}{2632}\right) - .00011 - .055(46-43)\right] = 1.23 < 3$$

$$S = \frac{2632}{\frac{1079}{43} + \frac{1553}{46}} = 44.7$$ Average total speed
(S_W, S_{NW})

$$D = \frac{\frac{2632}{2}}{S} = 29.44 \quad \text{LOS C}$$

$$\text{Delay} = \frac{\frac{\text{Total Vehicles}}{\#\text{ of Lanes}}}{\text{Average Speed}}$$

CHAPTER 24 - FREEWAY WEAVING WORKSHEET

General Information

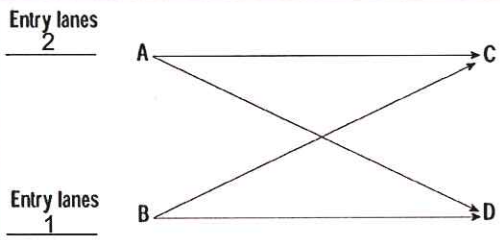
Analyst	JAW
Agency or Company	NMDOT
Analysis Period/Year	PM Peak 2030
Comment	Using Scenario 1 traffic forecasts

Site Information

Jurisdiction/Date	Jurisdiction 11/3/2009
Freeway/Direction of Travel	NM 599
Weaving Segment Location	Ridgetop to US 84/285

☑ Operational (LOS) ☐ Design (N, L, Type) ☐ Planning (LOS) ☐ Planning (N, L, Type)

Inputs



Driver type from A ☑ Commuter/weekday ☐ Recreational/weekend

Driver type from B ☑ Commuter/weekday ☐ Recreational/weekend

Freeway free-flow speed, S_{FF} =	65 mi/h
Weaving number of lanes, N =	3
Weaving segment length, L	1270 ft
Freeway terrain	☐ Level ☑ Rolling
Ramp terrain	☐ Level ☑ Rolling
Weaving type	☑ Type A ☐ Type B ☐ Type C
Volume ratio, $VR = \frac{v_w}{v}$	0.313
Weaving ratio, $R = \frac{v_{w2}}{v_w}$	0.333

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D	V (veh/h)	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF * f_{HV} * f_p}$
v_{AC}				1337	0.91	11	☐ 0.858	☐ 1.00	1712
v_{BD}				533	0.91	11	☐ 0.858	☐ 1.00	682
v_{AD}				283	0.91	11	☐ 0.858	☐ 1.00	362
v_{BC}				567	0.91	11	☐ 0.858	☐ 1.00	726
v_w									1088
v_{nw}									2394
v									3482

Weaving and Nonweaving Speeds

	Unconstrained		Constrained	
	Weaving (i = w)	Nonweaving (i = nw)	Weaving (i = w)	Nonweaving (i = nw)
a (Exhibit 24-6)	0.15	44.8		
b (Exhibit 24-6)	2.2	4.0		
c (Exhibit 24-6)	0.97	1.3		
d (Exhibit 24-6)	0.80	0.75		
Weaving intensity factor, $W_i = \frac{a(1 + VR)^b (v/N)^c}{(L)^d}$	0.843	0.471		
Weaving and nonweaving speeds, S_i (mi/h) $S_i = 15 + \frac{S_{FF} - 10}{1 + W_i}$	44.8	52.40		

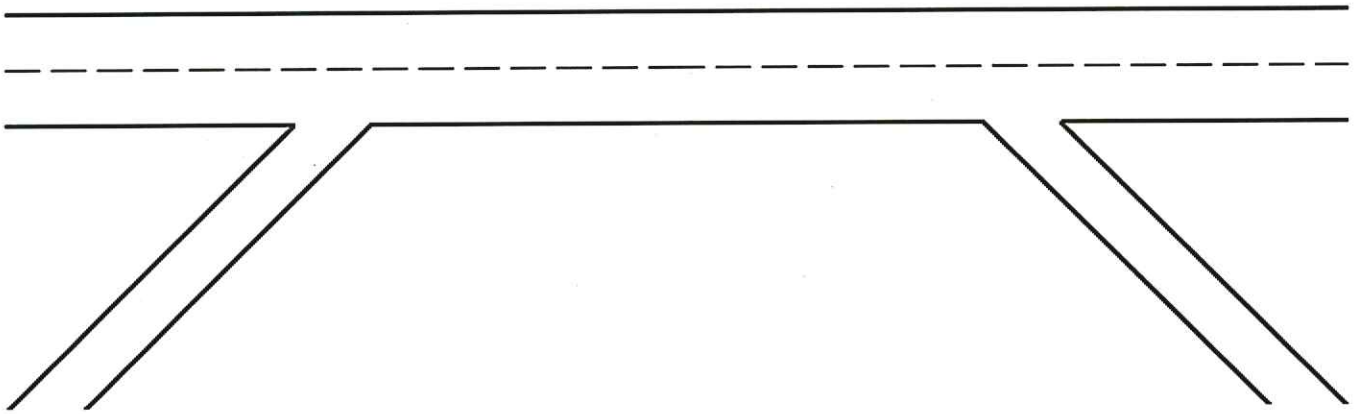
Number of lanes required for unconstrained operation, N_w (Exhibit 24-7) 1.15

Maximum number of lanes, N_w(max) (Exhibit 24-7) 1.40

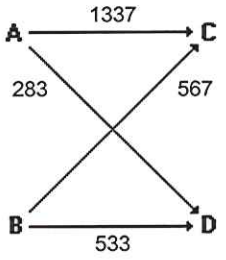
☑ If $N_w < N_w$(max) unconstrained operation ☐ If $N_w \geq N_w$(max) constrained operation

Weaving Segment Speed, Density, Level of Service, and Capacity

Weaving segment speed, S (mi/h) $S = \frac{v}{\left(\frac{v_w}{S_w}\right) + \left(\frac{v_{nw}}{S_{nw}}\right)}$	49.8
Weaving segment density, D (pc/mi/ln) $D = \frac{v/N}{S}$	23.3
Level of service, LOS (Exhibit 24-2)	C
Capacity for base condition, c_b (pc/h) (Exhibit 24-8)	5502
Capacity as a 15-min flow rate, c (veh/h) $c = c_b * f_{HV} * f_p$	4723
Capacity as a full-hour volume, c_h (veh/h) $c_h = c(PHF)$	4298



Summary of volumes (veh/h)



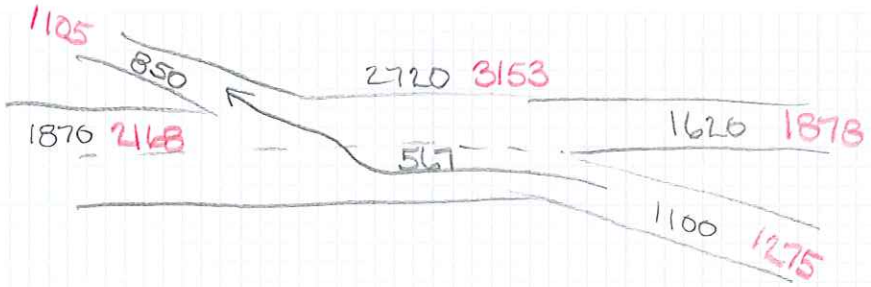
Length of weaving segment	1270 ft	Freeway weaving volume	283 veh/h	Ramp weaving volume	567 veh/h
		Freeway non-weaving volume	1337 veh/h	Ramp non-weaving volume	533 veh/h
Capacity for base condition, cb	5502 pc/h	15-min capacity	4723 veh/h	Full hour capacity, ch	4298 veh/h

Weave Type A **Weave segment speed** 49.8 mi/h **Weave segment density** 23.3 pc/mi/ln **LOS** C

Freeway Weaving - Analysis Summary

Analyst	JAW	City/Location	Santa Fe	Jurisdiction/Date	Jurisdiction 11/3/2009
Agency/Company	NMDOT	Freeway	NM 599	Comments	Using Scenario 1 traffic forecasts
Analysis period/Year	PM Peak 2030	Ramp	Ridgetop to US 84/285		

SCENARIO 1



XXX Adj. Volumes

$$W_W = \frac{.08\left(1+\frac{1105}{3153}\right)^{2.3}\left(\frac{3153}{2}\right)^{.8}}{1215^{.6}} = .814$$

$$S_W = 15 + \frac{(60-10)}{1.814} = 42.56$$

$$W_{NW} = \frac{.002\left(1+\frac{1105}{3153}\right)^{6}\left(\frac{3153}{2}\right)^{1.1}}{1215^{.6}} = .563$$

$$S_{NW} = 15 + \frac{(60-10)}{1.563} = 47$$

Check constraint

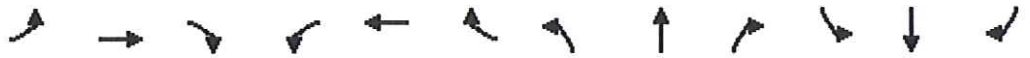
$$N_W = 2\left[.761 + .047\left(\frac{1105}{3153}\right) - .00011 - .055(47-42.56)\right] = 1.07 < 3$$

$$S = \frac{3153}{\frac{1105}{42.56} + \frac{2048}{47}} = 45.34$$

$$D = \frac{\frac{3153}{2}}{45.34} = 34.77 \quad LOS = D$$

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	31	1710	169	395	1900	15	144	116	250	77	253	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.08	1.00	1.00	0.07	1.00	1.00	0.26	1.00	1.00	0.59	1.00	1.00
Satd. Flow (perm)	156	5085	1583	136	5085	1583	923	1863	1583	1092	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	1900	188	439	2111	17	160	129	278	86	281	122
RTOR Reduction (vph)	0	0	67	0	0	6	0	0	223	0	0	66
Lane Group Flow (vph)	34	1900	121	439	2111	11	160	129	55	86	281	56
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm	Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4		4	8		8
Actuated Green, G (s)	53.6	50.7	50.7	81.4	74.5	74.5	22.2	22.2	22.2	22.2	22.2	22.2
Effective Green, g (s)	53.6	50.7	50.7	81.4	74.5	74.5	22.2	22.2	22.2	22.2	22.2	22.2
Actuated g/C Ratio	0.48	0.45	0.45	0.73	0.67	0.67	0.20	0.20	0.20	0.20	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	117	2310	719	490	3395	1057	184	371	315	217	371	315
v/s Ratio Prot	0.01	0.37		c0.21	0.42			0.07			0.15	
v/s Ratio Perm	0.13		0.08	c0.44		0.01	c0.17		0.03	0.08		0.04
v/c Ratio	0.29	0.82	0.17	0.90	0.62	0.01	0.87	0.35	0.18	0.40	0.76	0.18
Uniform Delay, d1	15.4	26.5	18.0	33.3	10.5	6.2	43.3	38.5	37.1	38.9	42.2	37.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	2.5	0.1	18.6	0.4	0.0	32.6	0.6	0.3	1.2	8.6	0.3
Delay (s)	16.7	29.0	18.1	51.9	10.9	6.2	75.9	39.0	37.4	40.1	50.7	37.4
Level of Service	B	C	B	D	B	A	E	D	D	D	D	D
Approach Delay (s)		27.9			17.9			48.6			45.5	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	177	98	335	219	166	174	1703	243	280	1663	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.60	1.00	1.00	0.41	1.00	1.00	0.08	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	1119	3539	1583	760	3539	1583	273	5085	1583	261	5085	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	197	109	372	243	184	193	1892	270	311	1848	23
RTOR Reduction (vph)	0	0	96	0	0	120	0	0	102	0	0	9
Lane Group Flow (vph)	28	197	13	372	243	64	193	1892	168	311	1848	14
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	15.8	13.5	13.5	39.5	33.2	33.2	59.9	52.9	52.9	64.9	55.4	55.4
Effective Green, g (s)	15.8	13.5	13.5	39.5	33.2	33.2	59.9	52.9	52.9	64.9	55.4	55.4
Actuated g/C Ratio	0.14	0.12	0.12	0.35	0.29	0.29	0.53	0.46	0.46	0.57	0.49	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	419	188	459	1032	461	338	2362	735	413	2473	770
v/s Ratio Prot	0.00	0.06		c0.16	0.07		0.04	c0.37		c0.06	0.36	
v/s Ratio Perm	0.02		0.01	c0.12		0.04	0.27		0.11	0.37		0.01
v/c Ratio	0.17	0.47	0.07	0.81	0.24	0.14	0.57	0.80	0.23	0.75	0.75	0.02
Uniform Delay, d1	42.9	46.9	44.6	31.0	30.7	29.8	18.9	26.0	18.3	25.5	23.6	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.8	0.2	10.4	0.1	0.1	2.3	2.0	0.2	7.6	1.3	0.0
Delay (s)	43.4	47.7	44.8	41.4	30.8	29.9	21.2	28.1	18.4	33.1	24.9	15.2
Level of Service	D	D	D	D	C	C	C	C	B	C	C	B
Approach Delay (s)		46.4			35.5			26.4			25.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Airport NB off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1960	0.92	5	☐ 0.976	☐ 1.00	2184
v_R				370	0.92	5	☐ 0.976	☐ 1.00	412
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2184 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2184	See Exhibit 25-14	
v_{12}	2184	4400: All	
$v_{FO} = v_F - v_R$	1771	See Exhibit 25-14	
v_R	370	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 17.7 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.465 (Exhibit 25-19)
S_R = 57.0 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 57.0 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Airport NB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1960	0.92	5	☐ 0.976	☐ 1.00	2184
v_R				540	0.92	5	☐ 0.976	☐ 1.00	602
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 2184 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2785	See Exhibit 25-7	
v_{R12}	2785	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = 23.2 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

M_s = 0.343 (Exhibit 25-19)
S_R = 60.4 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 60.4 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Airport SB off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h
S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1910	0.92	5	☐ 0.976	☐ 1.00	2128
v_R				540	0.92	5	☐ 0.976	☐ 1.00	602
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2128 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2128	See Exhibit 25-14	
v_{12}	2128	4400: All	
$v_{FO} = v_F - v_R$	1526	See Exhibit 25-14	
v_R	540	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 17.2 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.482 (Exhibit 25-19)
S_R = 56.5 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 56.5 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Airport SB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h
S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1900	0.92	5	☐ 0.976	☐ 1.00	2117
v_R				380	0.92	5	☐ 0.976	☐ 1.00	423
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 2117 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2540	See Exhibit 25-7	
v_{R12}	2540	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$

D_R = 21.4 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

M_s = 0.329 (Exhibit 25-19)
S_R = 60.8 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 60.8 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$

D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / Futu
Comment: Using Model Scenario 1

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Caja del Rio NB off Ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft
S_{FF} = 70.0 mi/h
S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV}	f_p	v = V / (PHF f_{HV} f_p)
							Field data if checked		
v_F				2500	0.92	5	☐ 0.976	☐ 1.00	2785
v_R				520	0.92	5	☐ 0.976	☐ 1.00	579
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2785 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2785	See Exhibit 25-14	
v_{12}	2785	4400: All	
$v_{FO} = v_F - v_R$	2206	See Exhibit 25-14	
v_R	520	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 22.9 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.480 (Exhibit 25-19)
S_R = 56.6 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 56.6 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / Futu
Comment: Model Scenario 1

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Caja NB on Ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h
S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1980	0.92	5	☐ 0.976	☐ 1.00	2206
v_R				140	0.92	5	☐ 0.976	☐ 1.00	156
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 2206 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2362	See Exhibit 25-7	
v_{R12}	2362	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = 20.1 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

M_s = 0.321 (Exhibit 25-19)
S_R = 61.0 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 61.0 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / Futu
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Caja del Rio SB off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1990	0.92	5	☐ 0.976	☐ 1.00	2217
v_R				160	0.92	5	☐ 0.976	☐ 1.00	178
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$

D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2217 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2217	See Exhibit 25-14	
v_{12}	2217	4400: All	
$v_{FO} = v_F - v_R$	2039	See Exhibit 25-14	
v_R	160	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$

D_R = 18.0 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.444 (Exhibit 25-19)
S_R = 57.6 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 57.6 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / Futu
Comment: Scenario 1 Volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Caja del Rio SB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h
S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				2000	0.92	5	☐ 0.976	☐ 1.00	2228
v_R				450	0.92	5	☐ 0.976	☐ 1.00	501
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 2228 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2730	See Exhibit 25-7	
v_{R12}	2730	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$

D_R = 22.8 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

M_s = 0.339 (Exhibit 25-19)
S_R = 60.5 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 60.5 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

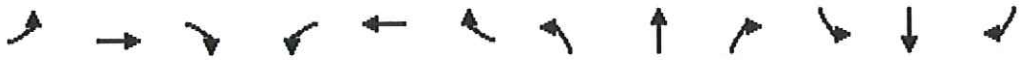
Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$

D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	144	57	75	106	155	88	1224	67	67	1832	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1784		1770	1697		1770	3539	1583	1770	3539	1583
Flt Permitted	0.37	1.00		0.50	1.00		0.10	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	698	1784		933	1697		185	3539	1583	289	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	157	62	82	115	168	96	1330	73	73	1991	205
RTOR Reduction (vph)	0	12	0	0	50	0	0	0	26	0	0	72
Lane Group Flow (vph)	130	207	0	82	233	0	96	1330	47	73	1991	133
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	13.9	13.9		13.9	13.9		40.3	40.3	40.3	40.3	40.3	40.3
Effective Green, g (s)	13.9	13.9		13.9	13.9		40.3	40.3	40.3	40.3	40.3	40.3
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.65	0.65	0.65	0.65	0.65	0.65
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	156	399		209	379		120	2293	1026	187	2293	1026
v/s Ratio Prot		0.12			0.14			0.38			c0.56	
v/s Ratio Perm	c0.19			0.09			0.52		0.03	0.25		0.08
v/c Ratio	0.83	0.52		0.39	0.61		0.80	0.58	0.05	0.39	0.87	0.13
Uniform Delay, d1	23.0	21.2		20.6	21.7		8.0	6.2	4.0	5.2	8.8	4.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.0	1.1		1.2	2.9		30.5	0.4	0.0	1.3	3.8	0.1
Delay (s)	53.0	22.4		21.8	24.7		38.5	6.6	4.0	6.5	12.6	4.3
Level of Service	D	C		C	C		D	A	A	A	B	A
Approach Delay (s)		33.8			24.0			8.5			11.6	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	254	189	88	535	67	84	1544	112	67	1832	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.27	1.00	1.00	0.57	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	507	3539	1583	1064	3539	1583	183	3539	1583	183	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	276	205	96	582	73	91	1678	122	73	1991	205
RTOR Reduction (vph)	0	0	12	0	0	23	0	0	44	0	0	16
Lane Group Flow (vph)	73	276	193	96	582	50	91	1678	78	73	1991	189
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	14.7	14.7	14.7	14.7	14.7	14.7	40.7	40.7	40.7	40.7	40.7	40.7
Effective Green, g (s)	14.7	14.7	14.7	14.7	14.7	14.7	40.7	40.7	40.7	40.7	40.7	40.7
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.64	0.64	0.64	0.64	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	118	821	367	247	821	367	117	2272	1016	117	2272	1016
v/s Ratio Prot		0.08			c0.16			0.47			c0.56	
v/s Ratio Perm	0.14		0.12	0.09		0.03	0.50		0.05	0.40		0.12
v/c Ratio	0.62	0.34	0.53	0.39	0.71	0.14	0.78	0.74	0.08	0.62	0.88	0.19
Uniform Delay, d1	21.8	20.3	21.3	20.6	22.4	19.3	8.1	7.7	4.3	6.8	9.3	4.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	0.2	1.4	1.0	2.8	0.2	27.0	1.3	0.0	9.9	4.1	0.1
Delay (s)	31.1	20.5	22.7	21.6	25.2	19.5	35.2	9.0	4.3	16.7	13.4	4.7
Level of Service	C	C	C	C	C	B	D	A	A	B	B	A
Approach Delay (s)		22.7			24.2			10.0			12.7	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / Futu
Comment: Scenario 1 Volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CR 62 NB off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft
S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1740	0.92	5	☐ 0.976	☐ 1.00	1939
v_R				380	0.92	5	☐ 0.976	☐ 1.00	423
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 1939 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	1939	See Exhibit 25-14	
v_{12}	1939	4400: All	
$v_{FO} = v_F - v_R$	1515	See Exhibit 25-14	
v_R	380	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 15.6 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.466 (Exhibit 25-19)
S_R = 56.9 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 56.9 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period FUT
Comment: Comments

Site Information

Jurisdiction/Date: Jurisdiction 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CR 62 NB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1740	0.92	5	☐ 0.976	☐ 1.00	1939
v_R				530	0.92	5	☐ 0.976	☐ 1.00	590
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 1939 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2529	See Exhibit 25-7	
v_{R12}	2529	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = 21.2 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

M_s = 0.329 (Exhibit 25-19)
S_R = 60.8 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 60.8 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CR 62 SB off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	v = V / (PHF f_{HV} f_p)
v_F				2030	0.92	5	☐ 0.976	☐ 1.00	2262
v_R				580	0.92	5	☐ 0.976	☐ 1.00	646
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2262 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2262	See Exhibit 25-14	
v_{12}	2262	4400: All	
$v_{FO} = v_F - v_R$	1615	See Exhibit 25-14	
v_R	580	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 18.4 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.486 (Exhibit 25-19)
S_R = 56.4 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 56.4 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CR 62 SB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				2030	0.92	5	☐ 0.976	☐ 1.00	2262
v_R				120	0.92	5	☐ 0.976	☐ 1.00	134
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 2262 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2395	See Exhibit 25-7	
v_{R12}	2395	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$

D_R = 20.4 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

M_s = 0.322 (Exhibit 25-19)
S_R = 61.0 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 61.0 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$

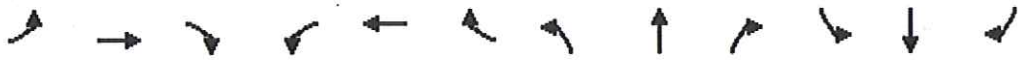
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	20	34	19	22	57	5	532	19	59	855	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.91		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1688		1770	1661		1770	3539	1583	1770	3539	1583
Flt Permitted	1.00	1.00		1.00	1.00		0.30	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	1863	1688		1863	1661		566	3539	1583	809	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	22	37	21	24	62	5	578	21	64	929	20
RTOR Reduction (vph)	0	32	0	0	54	0	0	0	9	0	0	9
Lane Group Flow (vph)	5	27	0	21	32	0	5	578	12	64	929	11
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	3.2	3.2		3.2	3.2		14.0	14.0	14.0	14.0	14.0	14.0
Effective Green, g (s)	3.2	3.2		3.2	3.2		14.0	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.56	0.56	0.56	0.56	0.56	0.56
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	237	214		237	211		314	1966	879	449	1966	879
v/s Ratio Prot		0.02			c0.02			0.16			c0.26	
v/s Ratio Perm	0.00			0.01			0.01		0.01	0.08		0.01
v/c Ratio	0.02	0.12		0.09	0.15		0.02	0.29	0.01	0.14	0.47	0.01
Uniform Delay, d1	9.6	9.8		9.7	9.8		2.5	3.0	2.5	2.7	3.4	2.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.3		0.2	0.3		0.0	0.1	0.0	0.1	0.2	0.0
Delay (s)	9.7	10.0		9.9	10.1		2.5	3.1	2.5	2.8	3.6	2.5
Level of Service	A	B		A	B		A	A	A	A	A	A
Approach Delay (s)		10.0			10.1			3.0			3.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	4.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	25.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	27	57	10	37	63	14	1540	56	126	1816	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.90		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1672		1770	1687		1770	3539	1583	1770	3539	1583
Flt Permitted	0.54	1.00		0.64	1.00		0.08	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	1014	1672		1191	1687		156	3539	1583	234	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	29	62	11	40	68	15	1674	61	137	1974	41
RTOR Reduction (vph)	0	36	0	0	54	0	0	0	10	0	0	7
Lane Group Flow (vph)	39	55	0	11	54	0	15	1674	51	137	1974	34
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	7.4	7.4		7.4	7.4		78.8	78.8	78.8	78.8	78.8	78.8
Effective Green, g (s)	7.4	7.4		7.4	7.4		78.8	78.8	78.8	78.8	78.8	78.8
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.84	0.84	0.84	0.84	0.84	0.84
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	80	131		94	133		130	2960	1324	196	2960	1324
v/s Ratio Prot		0.03			0.03			0.47			0.56	
v/s Ratio Perm	c0.04			0.01			0.10		0.03	c0.59		0.02
v/c Ratio	0.49	0.42		0.12	0.40		0.12	0.57	0.04	0.70	0.67	0.03
Uniform Delay, d1	41.6	41.4		40.4	41.3		1.4	2.4	1.3	3.0	2.8	1.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	2.2		0.6	2.0		0.4	0.2	0.0	10.4	0.6	0.0
Delay (s)	46.2	43.5		40.9	43.3		1.8	2.6	1.3	13.4	3.4	1.3
Level of Service	D	D		D	D		A	A	A	B	A	A
Approach Delay (s)		44.3			43.1			2.6			4.0	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period FUT
Comment: Scenario 1 Volumes

Site Information

Jurisdiction/Date: Jurisdiction 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CR 70 NB off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				2300	0.92	5	☐ 0.976	☐ 1.00	2563
v_R				280	0.92	5	☐ 0.976	☐ 1.00	312
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$

D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2563 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2563	See Exhibit 25-14	
v_{12}	2563	4400: All	
$v_{FO} = v_F - v_R$	2251	See Exhibit 25-14	
v_R	280	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$

D_R = 21.0 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.456 (Exhibit 25-19)
S_R = 57.2 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 57.2 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CR 70 NB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft
S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				2220	0.92	5	☐ 0.976	☐ 1.00	2473
v_R				330	0.92	5	☐ 0.976	☐ 1.00	368
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2473 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2473	See Exhibit 25-14	
v_{12}	2473	4400: All	
$v_{FO} = v_F - v_R$	2106	See Exhibit 25-14	
v_R	330	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 20.2 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.461 (Exhibit 25-19)
S_R = 57.1 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 57.1 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Comments

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CR 70 sb off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	v = V / (PHF f_{HV} f_p)
v_F				2300	0.92	5	☐ 0.976	☐ 1.00	2563
v_R				370	0.92	5	☐ 0.976	☐ 1.00	412
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2563 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2563	See Exhibit 25-14	
v_{12}	2563	4400: All	
$v_{FO} = v_F - v_R$	2150	See Exhibit 25-14	
v_R	370	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 21.0 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.465 (Exhibit 25-19)
S_R = 57.0 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 57.0 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CR 70 SB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft
S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				2300	0.92	5	☐ 0.976	☐ 1.00	2563
v_R				280	0.92	5	☐ 0.976	☐ 1.00	312
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 2563 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2874	See Exhibit 25-7	
v_{R12}	2874	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = 24.1 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

M_s = 0.349 (Exhibit 25-19)
S_R = 60.2 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 60.2 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Ephriam NB off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft
S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	v = V / (PHF f_{HV} f_p)
v_F				2080	0.92	5	☐ 0.976	☐ 1.00	2317
v_R				660	0.92	5	☐ 0.976	☐ 1.00	735
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 2317 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	2317	See Exhibit 25-14	
v_{12}	2317	4400: All	
$v_{FO} = v_F - v_R$	1582	See Exhibit 25-14	
v_R	660	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 18.9 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.494 (Exhibit 25-19)
S_R = 56.2 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 56.2 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Ephriam SB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h
S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV}	f_p	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
							Field data if checked		
v_F				1970	0.92	5	☐ 0.976	☐ 1.00	2195
v_R				470	0.92	5	☐ 0.976	☐ 1.00	524
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 2195 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2718	See Exhibit 25-7	
v_{R12}	2718	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = 22.7 pc/mi/ln
LOS = C (Exhibit 25-4)

Speed Estimation

M_s = 0.339 (Exhibit 25-19)
S_R = 60.5 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 60.5 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: Camino Montoyas NB off

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level
Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV}	f_p	v = V / (PHF f_{HV} f_p)
							Field data if checked		
v_F				1790	0.92	5	☐ 0.976	☐ 1.00	1994
v_R				300	0.92	5	☐ 0.976	☐ 1.00	334
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 1994 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	1994	See Exhibit 25-14	
v_{12}	1994	4400: All	
$v_{FO} = v_F - v_R$	1660	See Exhibit 25-14	
v_R	300	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 16.1 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.458 (Exhibit 25-19)
S_R = 57.2 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 57.2 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PMPeak Period FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CDLM NB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1790	0.92	5	☐ 0.976	☐ 1.00	1994
v_R				30	0.92	5	☐ 0.976	☐ 1.00	33
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 1994 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2028	See Exhibit 25-7	
v_{R12}	2028	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = 17.6 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

M_s = 0.309 (Exhibit 25-19)
S_R = 61.3 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 61.3 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CDLM SB off ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☐ Merge ☑ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV}	f_p	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
							Field data if checked		
v_F				1750	0.92	5	☐ 0.976	☐ 1.00	1950
v_R				40	0.92	5	☐ 0.976	☐ 1.00	45
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = _____ using Equation _____ (Exhibit 25-5)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}		See Exhibit 25-7	
v_{R12}		4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$
D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

M_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = 1.000 using Equation _____ (Exhibit 25-12)
v_{12} = 1950 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$	1950	See Exhibit 25-14	
v_{12}	1950	4400: All	
$v_{FO} = v_F - v_R$	1905	See Exhibit 25-14	
v_R	40	See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$
D_R = 15.7 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.432 (Exhibit 25-19)
S_R = 57.9 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 57.9 mi/h (Equation 25-15)

CHAPTER 25 - RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst: JAW
Agency or Company: NMDOT
Analysis Period/Year: PM Peak Period / FUT
Comment: Scenario 1 volumes

Site Information

Jurisdiction/Date: Jurisdiction / 12/1/2009
Freeway/Direction of Travel: NM 599
Junction: CDLM SB on ramp

☑ Operational (LOS) ☐ Design (L_A, L_D, or N) ☐ Planning (LOS) ☐ Planning (L_A, L_D, or N)

Inputs

Upstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = _____ ft
V_u = _____ veh/h

Freeway terrain: Level
Ramp terrain: Level

Ramp Type
☑ Merge ☐ Diverge
☑ Right side ☐ Left side
Number of freeway lanes: 2
Number of ramp lanes: 1
Length of ramp roadway: 590 ft

S_{FF} = 70.0 mi/h
S_{FR} = 35.0 mi/h

Downstream Adjacent Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = _____ ft
V_D = _____ veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	AADT (veh/day)	K	D (veh/h)	V	PHF	% HV	f_{HV} Field data if checked	f_p Field data if checked	$v = \frac{V}{PHF\ f_{HV}\ f_p}$
v_F				1750	0.92	5	☐ 0.976	☐ 1.00	1950
v_R				220	0.92	5	☐ 0.976	☐ 1.00	245
v_U							☐ 0.976	☐ 1.00	
v_D							☐ 0.976	☐ 1.00	

Merge Areas

Estimation of v_{12}

$v_{12} = v_F * P_{FM}$

L_{EQ} = _____ (Equation 25-2 or 25-3)
P_{FM} = 1.000 using Equation _____ (Exhibit 25-5)
v_{12} = 1950 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2195	See Exhibit 25-7	
v_{R12}	2195	4600: All	

Level-of-Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$

D_R = 18.8 pc/mi/ln
LOS = B (Exhibit 25-4)

Speed Estimation

M_s = 0.315 (Exhibit 25-19)
S_R = 61.2 mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = 61.2 mi/h (Equation 25-14)

Diverge Areas

Estimation of v_{12}

$v_{12} = v_R + (v_F - v_R)P_{FD}$

L_{EQ} = _____ (Equation 25-8 or 25-9)
P_{FD} = _____ using Equation _____ (Exhibit 25-12)
v_{12} = _____ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{FI} = v_F$		See Exhibit 25-14	
v_{12}		4400: All	
$v_{FO} = v_F - v_R$		See Exhibit 25-14	
v_R		See Exhibit 25-3	

Level-of-Service Determination (if not F)

$D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$

D_R = _____ pc/mi/ln
LOS = _____ (Exhibit 25-4)

Speed Estimation

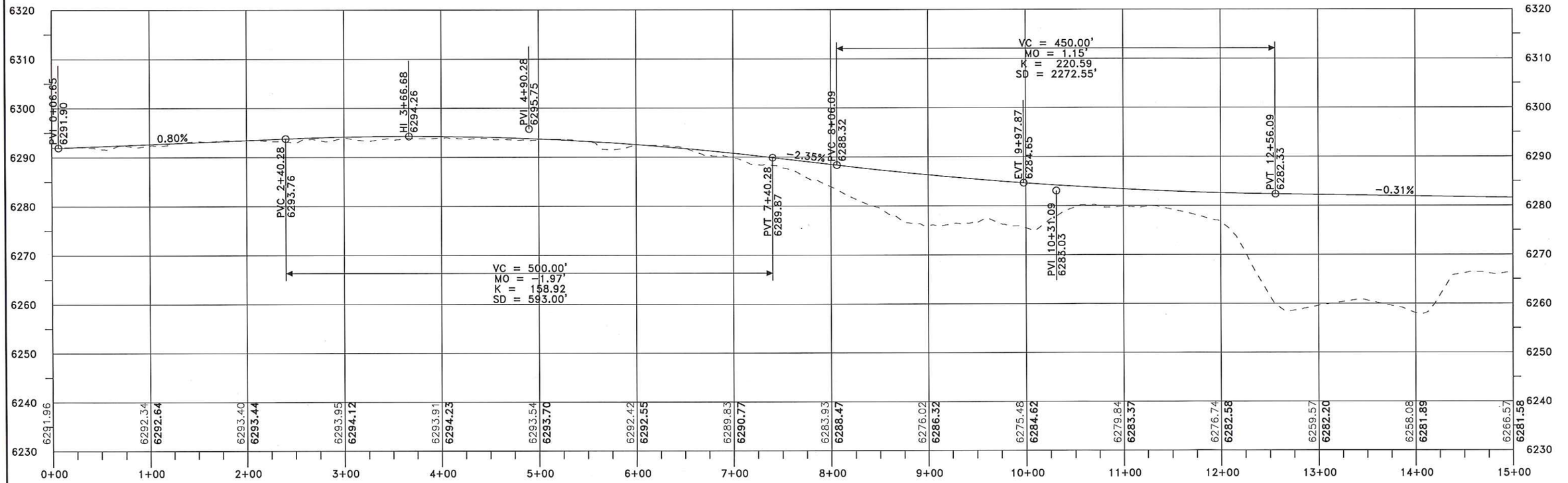
D_s = _____ (Exhibit 25-19)
S_R = _____ mi/h (Exhibit 25-19)
S_O = _____ mi/h (Exhibit 25-19)
S = _____ mi/h (Equation 25-15)

Appendix E
I-25 Frontage Road Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

I-25 Frontage Road Overpass

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$30,000.00	$30,000.00
	EARTHWORK	L. S.	L. S.	$350,000.00	$350,000.00
	PAVING	L. S.	L. S.	$650,000.00	$650,000.00
	BRIDGE	L. S.	L. S.	$1,850,000.00	$1,850,000.00
	BARRIERS	L. S.	L. S.	$100,000.00	$100,000.00
	DRAINAGE	L. S.	L. S.	$10,000.00	$10,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$450,000.00	$450,000.00
	EROSION CONTROL	L. S.	L. S.	$40,000.00	$40,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$30,000.00	$30,000.00
	SIGNING & STRIPING	L. S.	L. S.	$25,000.00	$25,000.00
	LIGHTING	L. S.	L. S.	$250,000.00	$250,000.00
	TRAFFIC CONTROL	L. S.	L. S.	$150,000.00	$150,000.00
	STAKING	L. S.	L. S.	$150,000.00	$150,000.00
	SUBTOTAL				$4,620,000.00
	E&C				$369,600.00
	NMGRT				$366,712.50
	TOTAL				$5,356,312.50
	USE				$6,000,000.00



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335

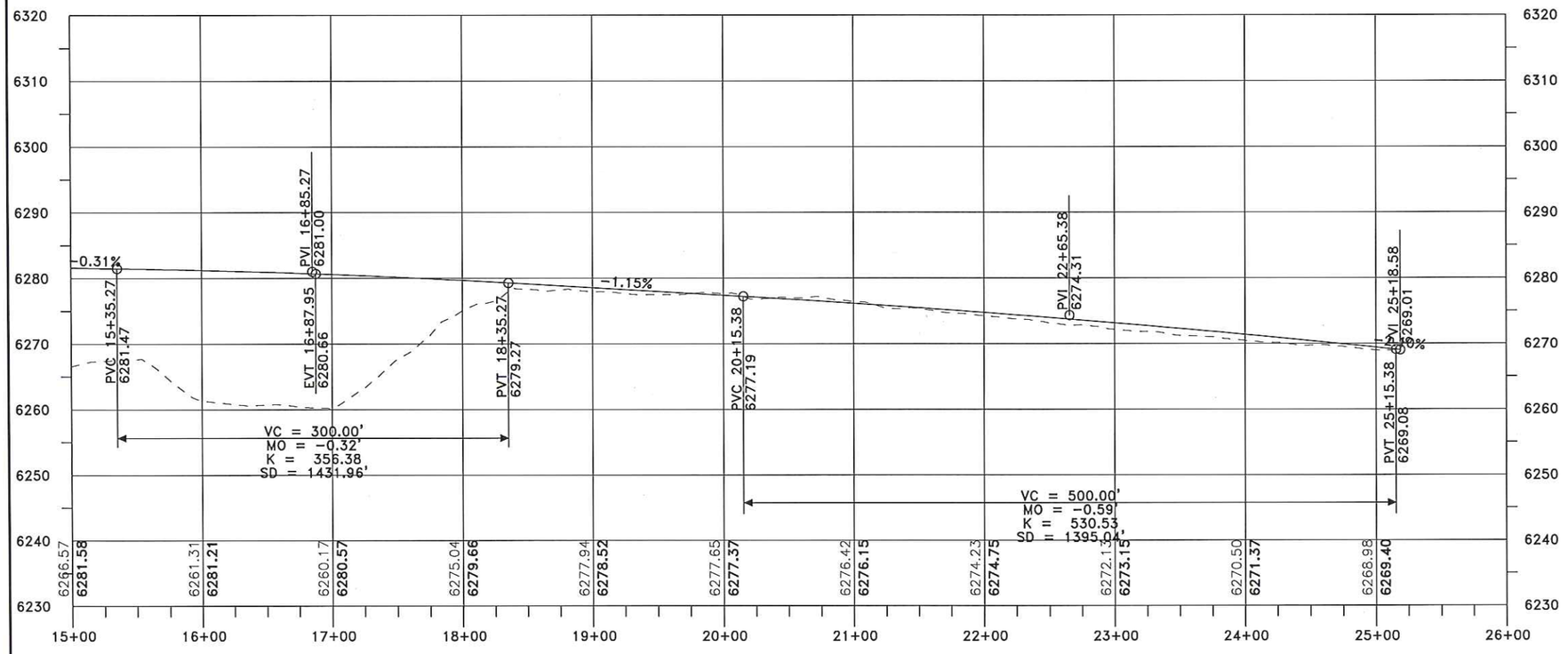
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE D-1
I-25 WEST FRONTAGE ROAD PROFILE

25-NOV-2009 - 09:28

\\a-abq-fs1\abq-projects\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

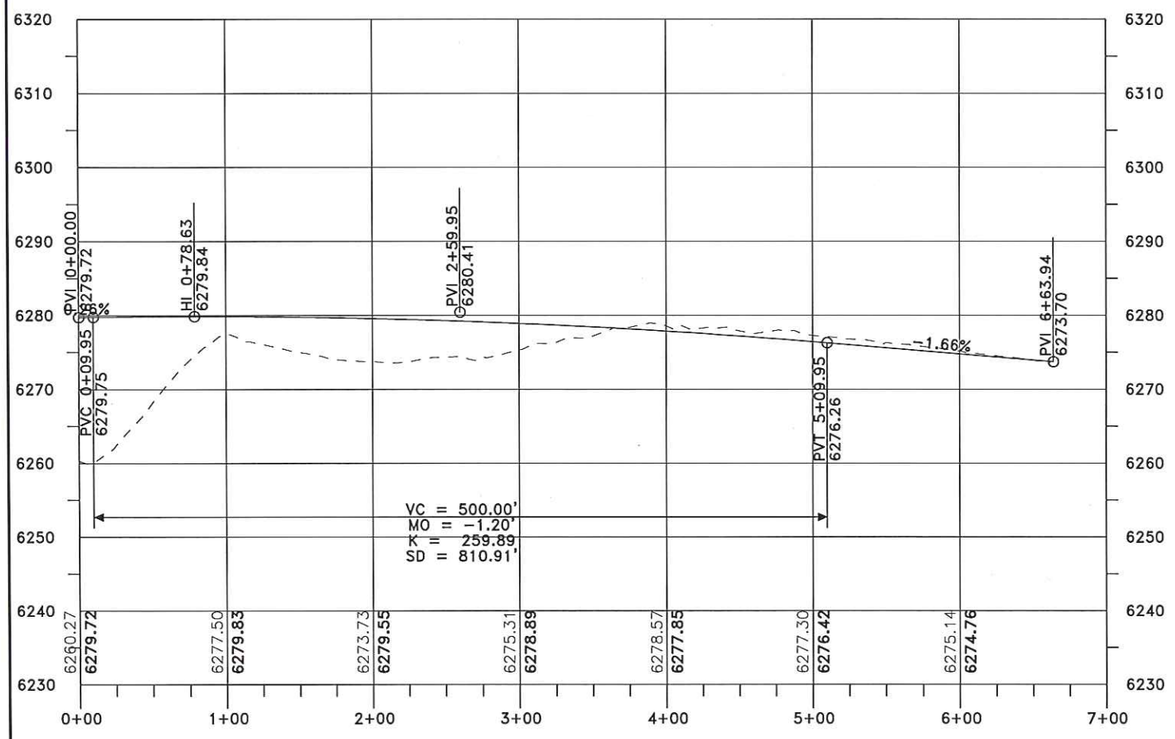
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE D-2
I-25 WEST FRONTAGE ROAD PROFILE

25-NOV-2009 - 09:29

\\a-abq-fs1\abq-projects\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



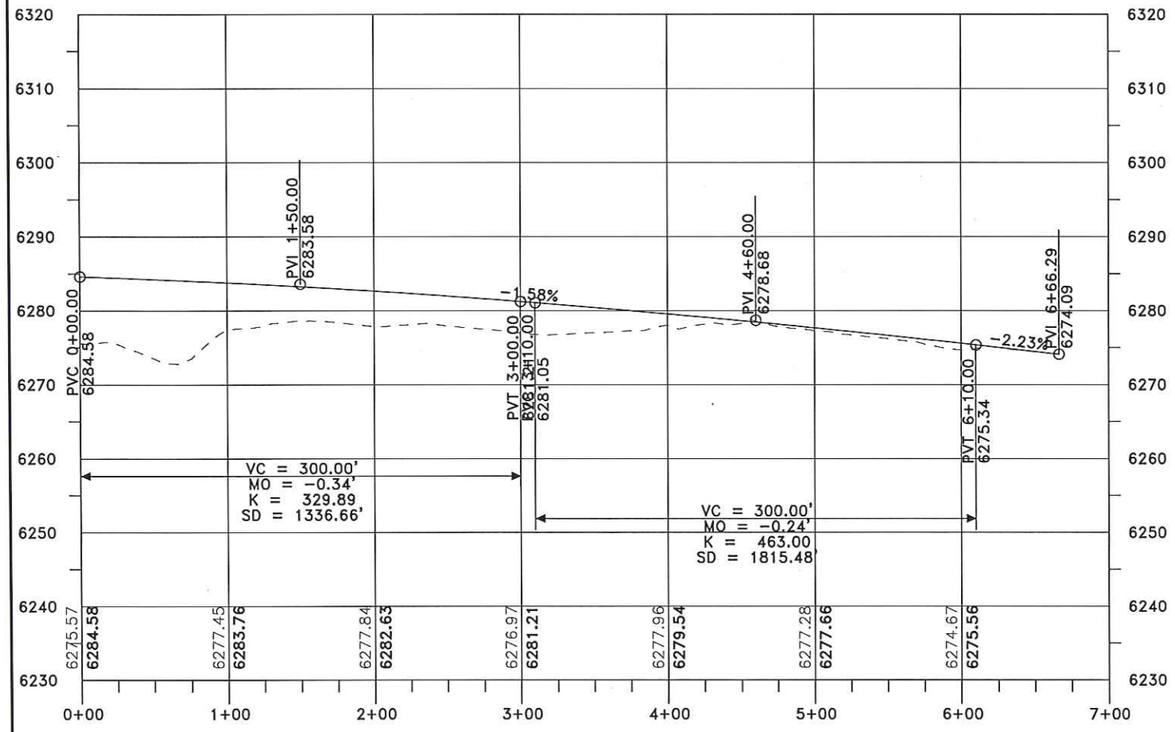
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE D-3
EAST TIE TO EXISTING ROAD
PROFILE

25-NOV-2009 - 09:29

\\a-abq-fs1\abq-projects\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



25-NOV-2009 - 09:30

\\a-abq-fs1\abq-projects\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100

Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

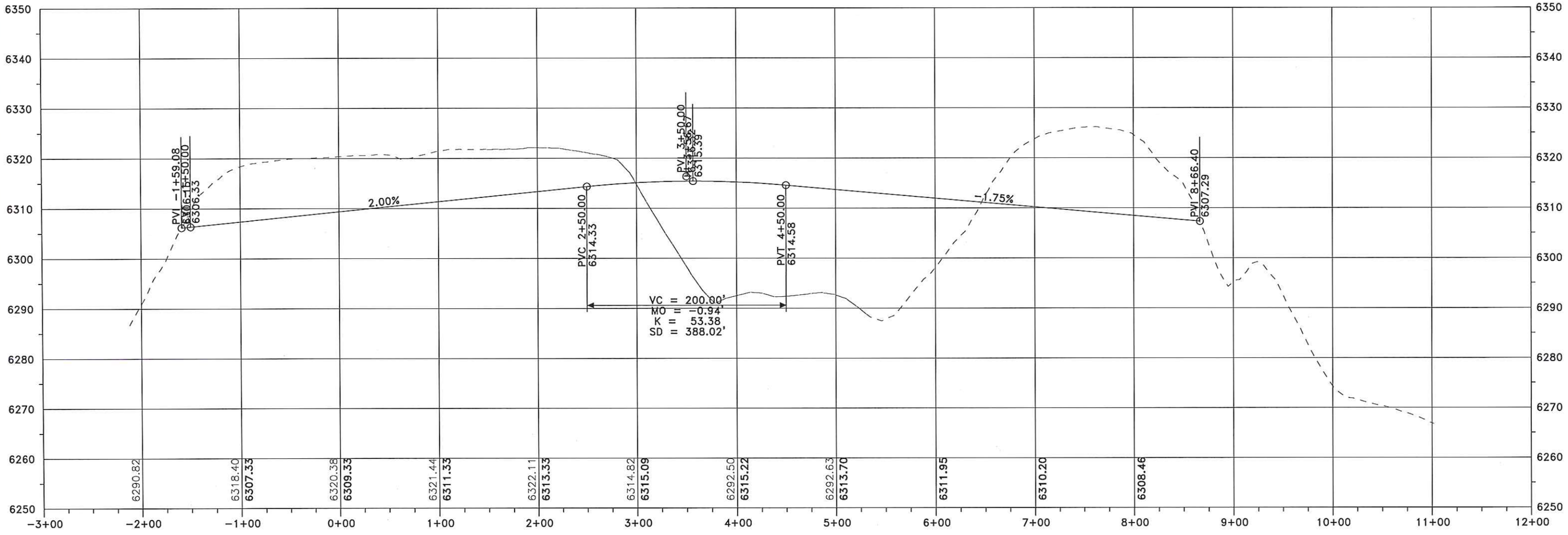
FIGURE D-4
WEST TIE IN TO EXISTING ROAD PROFILE

Appendix F
Jaguar Interchange Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

Jaguar Interchange Alternative

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$60,000.00	$60,000.00
	EARTHWORK	L. S.	L. S.	$1,650,000.00	$1,650,000.00
	PAVING	L. S.	L. S.	$680,000.00	$680,000.00
	BRIDGE	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	BARRIERS	L. S.	L. S.	$160,000.00	$160,000.00
	DRAINAGE	L. S.	L. S.	$740,000.00	$740,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$600,000.00	$600,000.00
	EROSION CONTROL	L. S.	L. S.	$40,000.00	$40,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$50,000.00	$50,000.00
	SIGNING & STRIPING	L. S.	L. S.	$25,000.00	$25,000.00
	LIGHTING	L. S.	L. S.	$160,000.00	$160,000.00
	TRAFFIC CONTROL	L. S.	L. S.	$350,000.00	$350,000.00
	STAKING	L. S.	L. S.	$90,000.00	$90,000.00
	SUBTOTAL				$6,440,000.00
	E&C				$515,200.00
	NMGRT				$511,175.00
	TOTAL				$7,466,375.00
	USE				$8,000,000.00

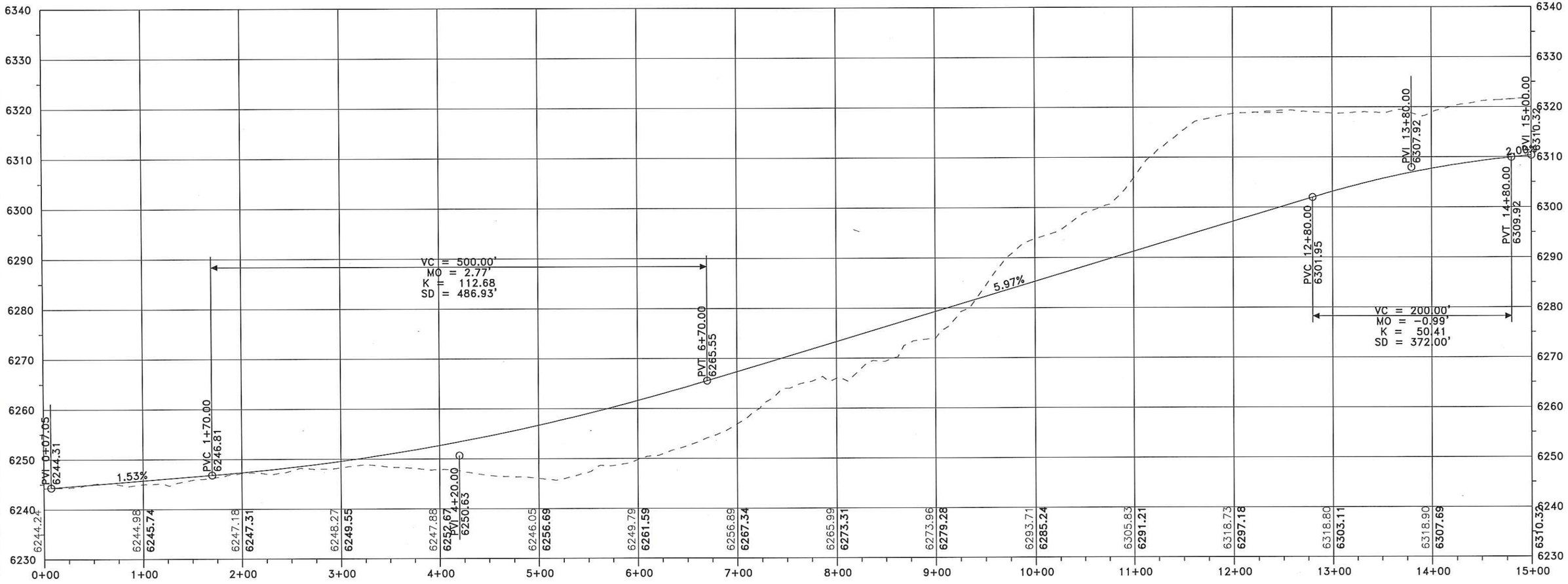


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE E-1
JAGUAR ROAD
OVERPASS PROFILE

25-NOV-2009 - 06:34
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100

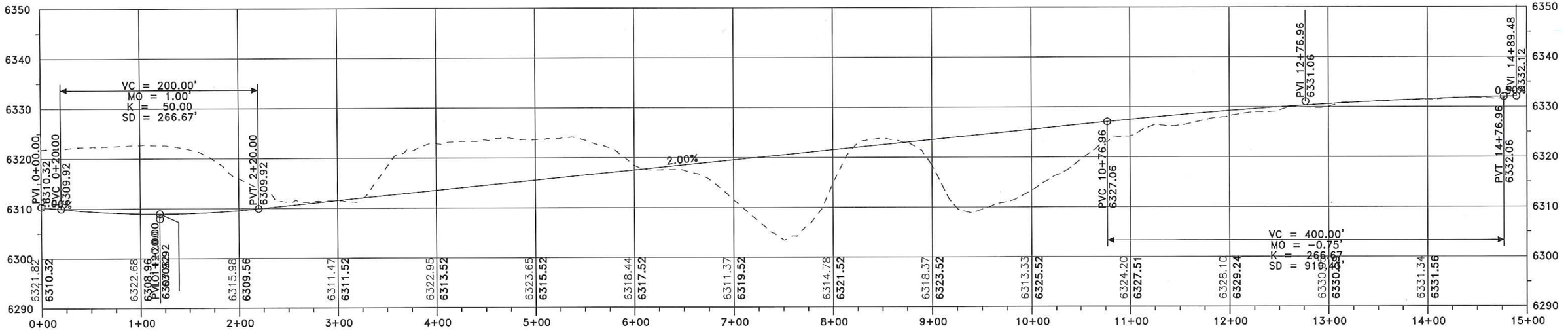


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE E-2
JAGUAR ROAD
SOUTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 06:33
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



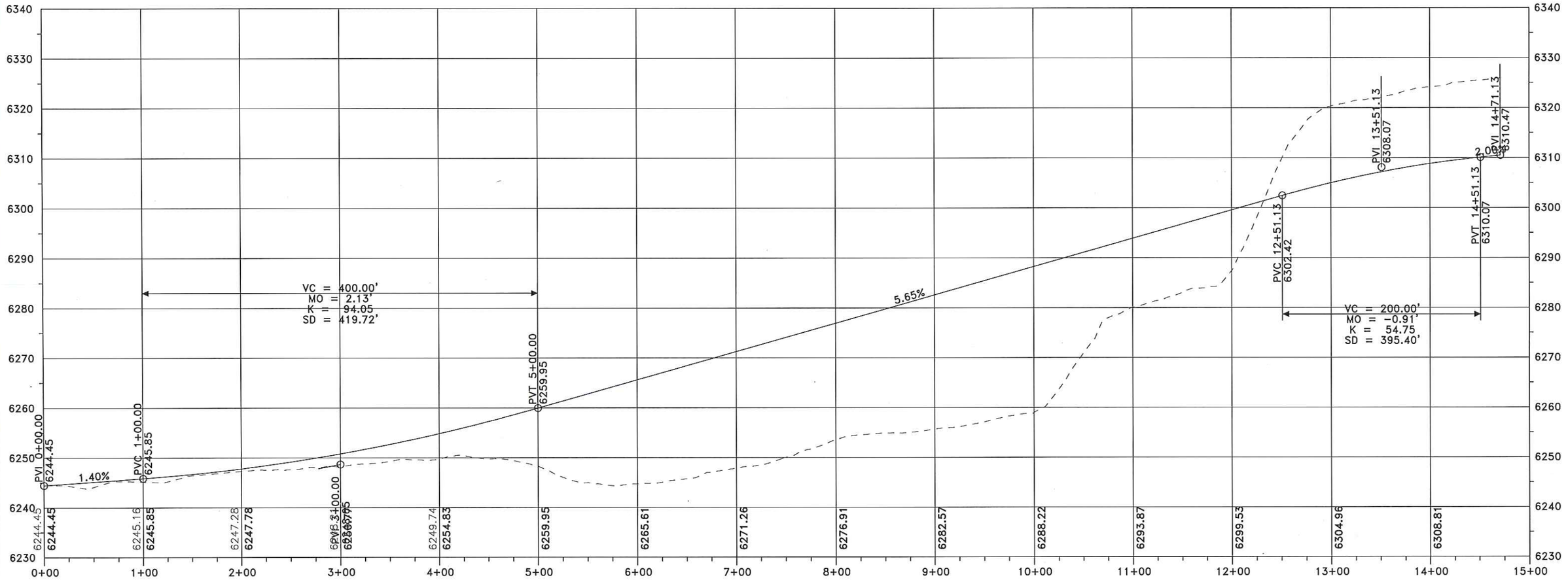
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE E-3
JAGUAR ROAD
SOUTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 06:33

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

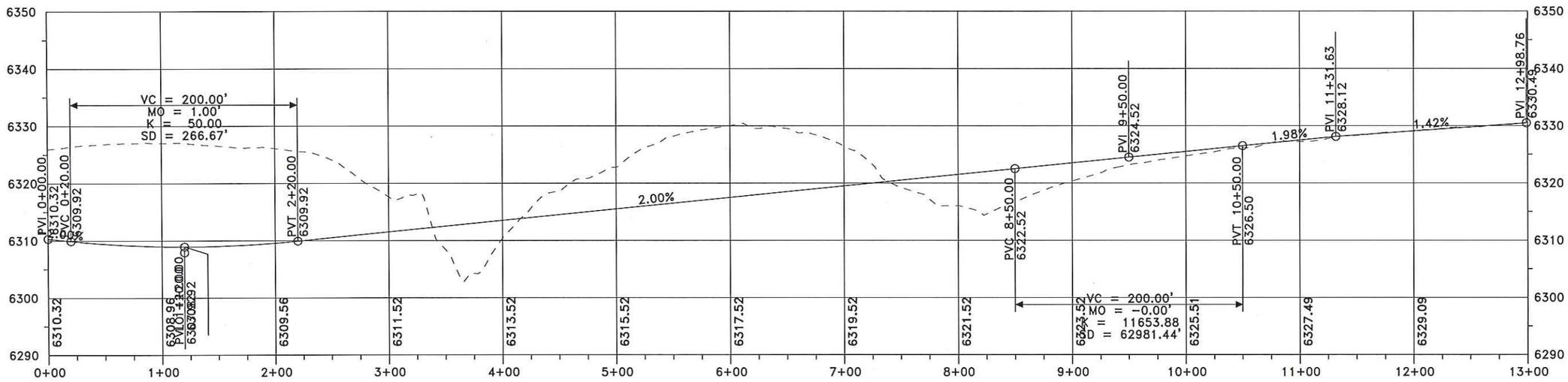
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE E-4
JAGUAR ROAD
NORTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 06:33

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE E-5
JAGUAR ROAD
NORTHBOUND ON RAMP
PROFILE

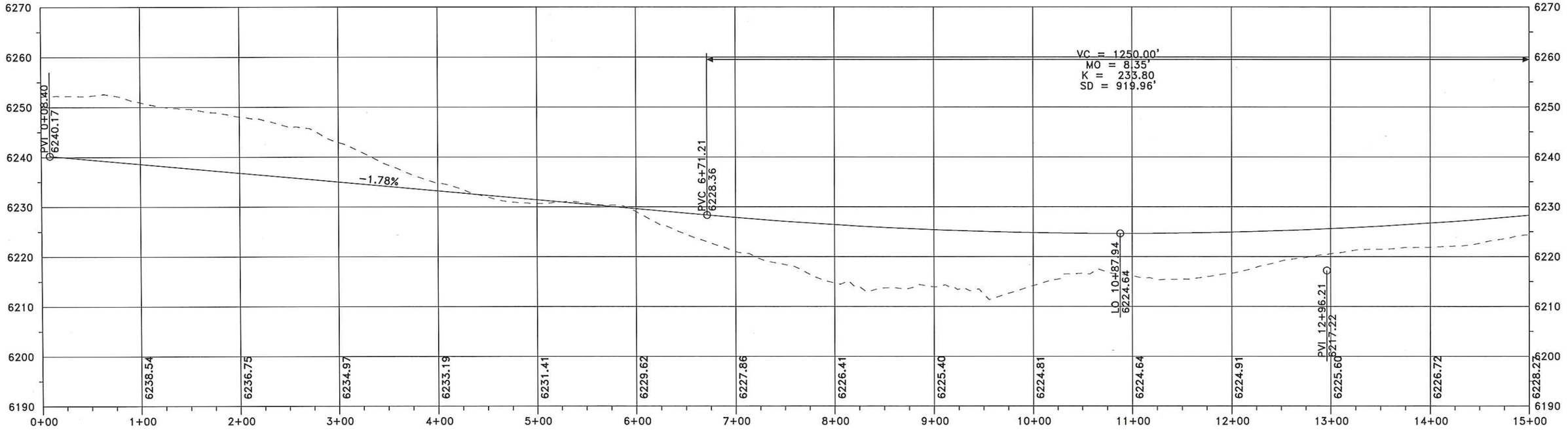
25-NOV-2009 - 06:34
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100

Appendix G
W. Frontage Road I-25 to Jaguar Road Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

NM 599 West Frontage Road from I-25 to Jaguar Road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$55,000.00	$55,000.00
	EARTHWORK	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	PAVING	L. S.	L. S.	$1,350,000.00	$1,350,000.00
	BRIDGE	L. S.	L. S.	$0.00	$0.00
	BARRIERS	L. S.	L. S.	$100,000.00	$100,000.00
	DRAINAGE	L. S.	L. S.	$690,000.00	$690,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$433,000.00	$433,000.00
	EROSION CONTROL	L. S.	L. S.	$40,000.00	$40,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$30,000.00	$30,000.00
	SIGNING & STRIPING	L. S.	L. S.	$50,000.00	$50,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$100,000.00	$100,000.00
	STAKING	L. S.	L. S.	$80,000.00	$80,000.00
	SUBTOTAL				$4,763,000.00
	E&C				$381,040.00
	NMGRT				$378,063.13
	TOTAL				$5,522,103.13
	USE				$6,000,000.00

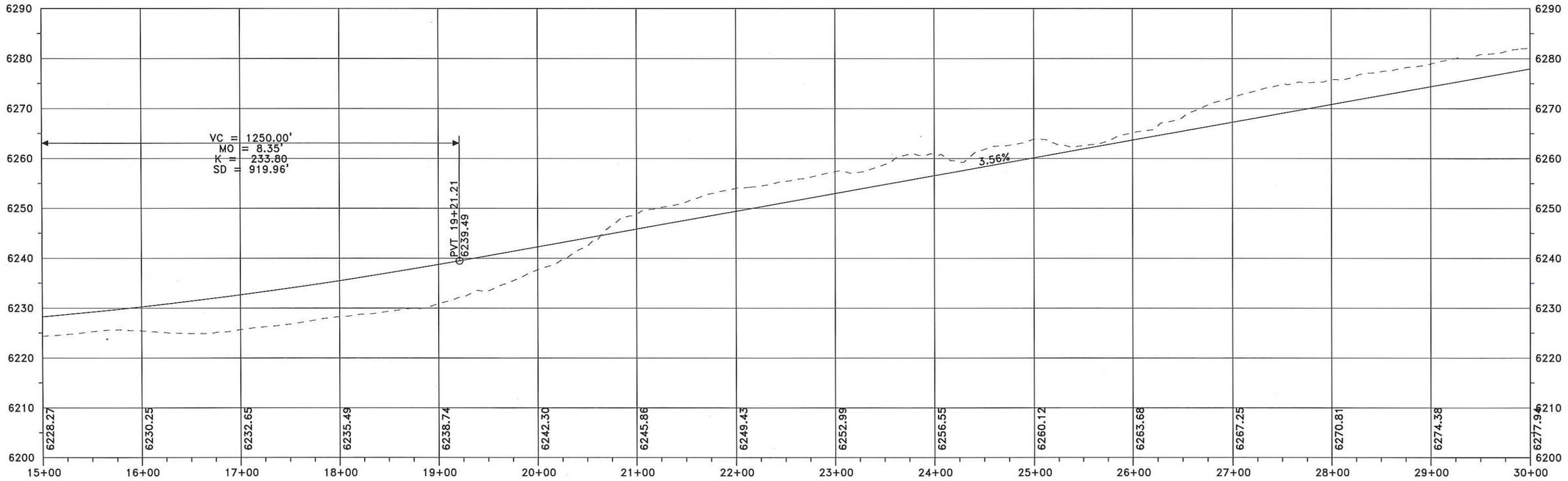


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE F-1
NM 599 WEST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:35
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



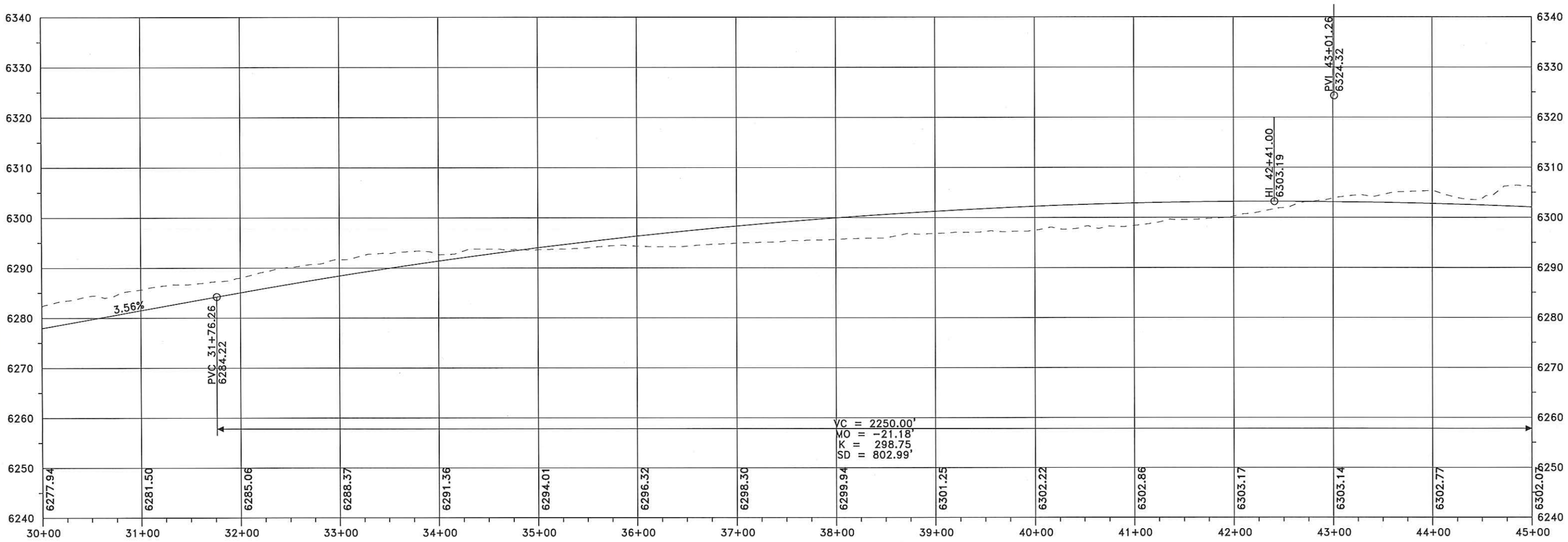
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE F-2
NM 599 WEST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:35

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335

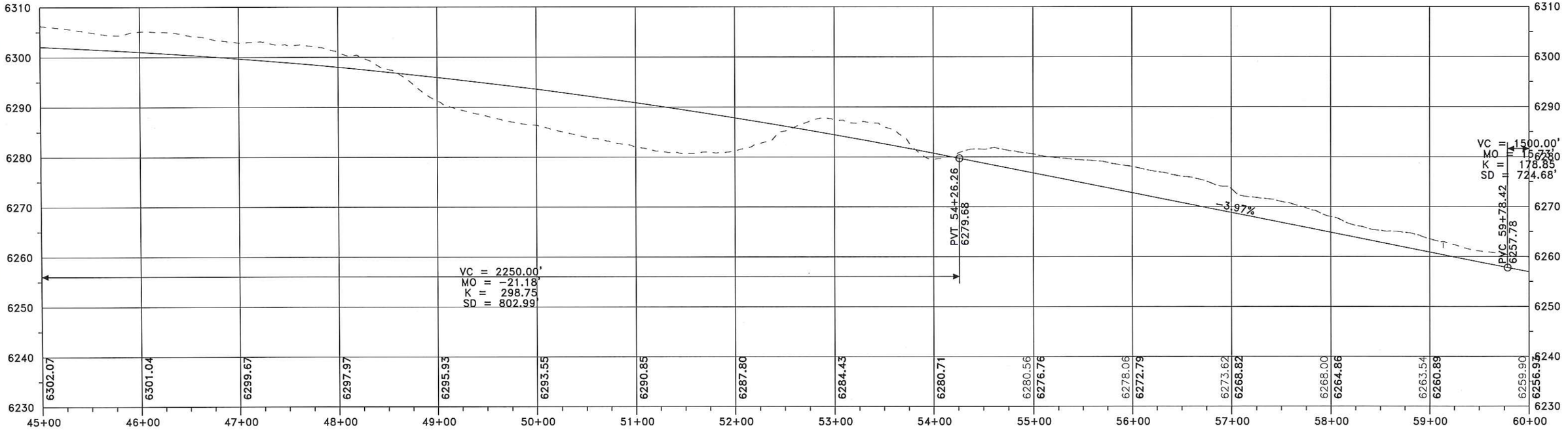
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE F-3
NM 599 WEST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:35

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100

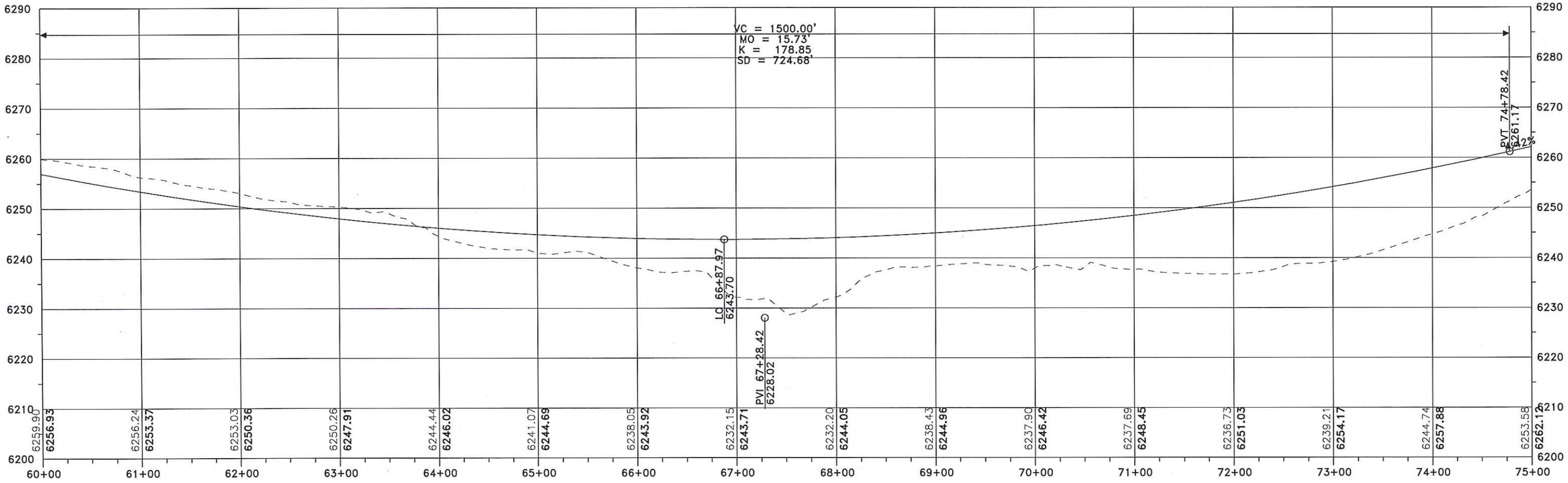


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE F-4
NM 599 WEST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:35
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



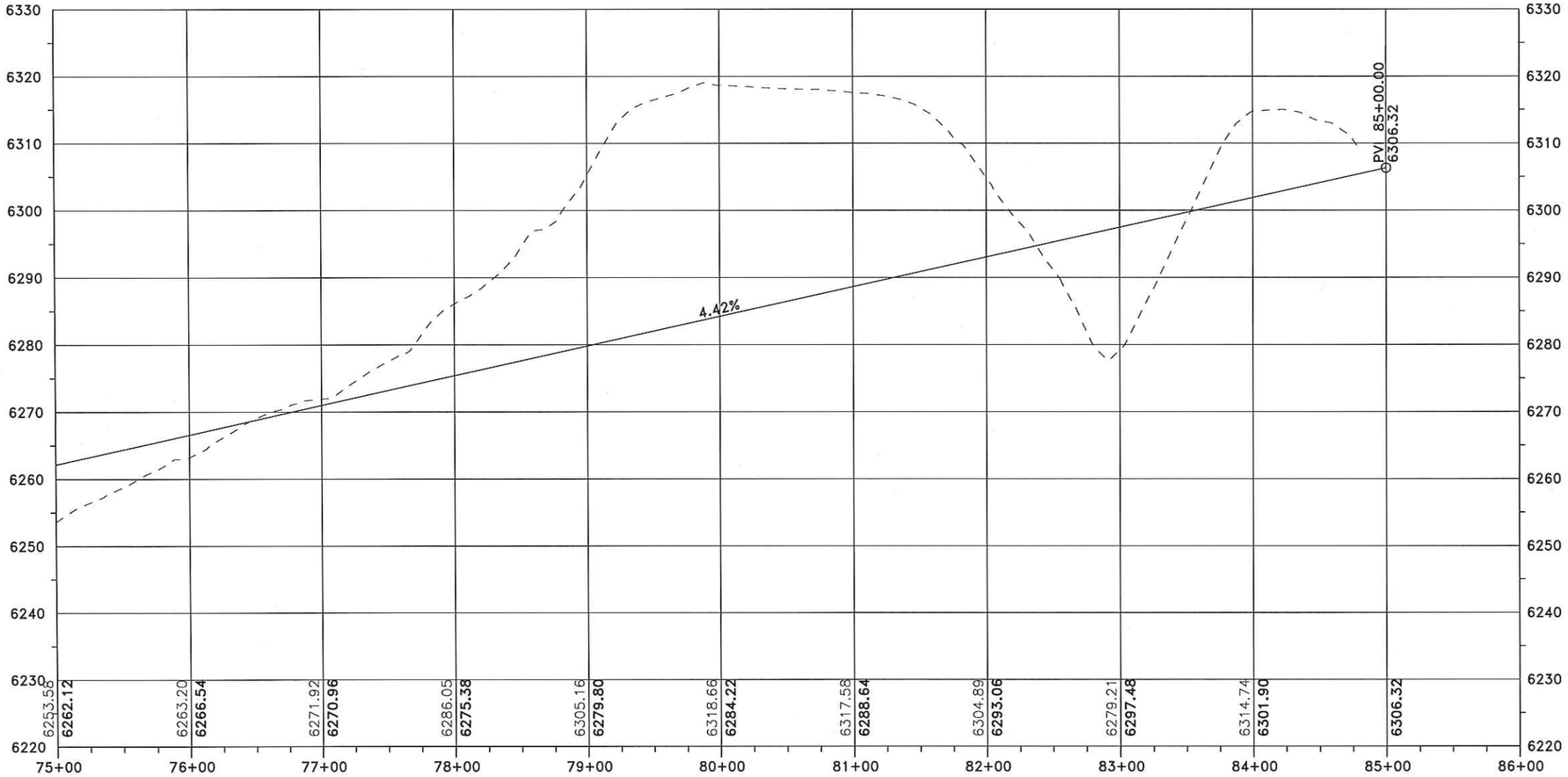
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE F-5
NM 599 WEST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:35

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE F-6
NM 599 WEST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:35

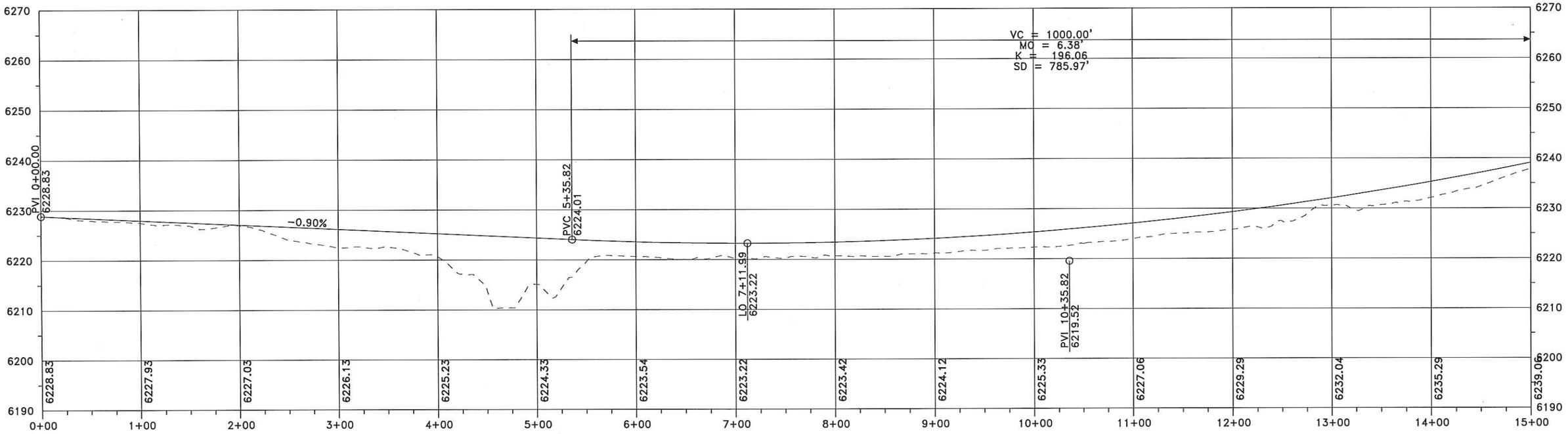
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100

Appendix H
E. Frontage Road I-25 to Jaguar Road Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

NM 599 East Frontage Road from I-25 to Jaguar Road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$60,000.00	$60,000.00
	EARTHWORK	L. S.	L. S.	$2,200,000.00	$2,200,000.00
	PAVING	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	BRIDGE	L. S.	L. S.	$0.00	$0.00
	WALL & BARRIERS	L. S.	L. S.	$370,000.00	$370,000.00
	DRAINAGE	L. S.	L. S.	$660,000.00	$660,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$550,000.00	$550,000.00
	EROSION CONTROL	L. S.	L. S.	$100,000.00	$100,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$30,000.00	$30,000.00
	SIGNING & STRIPING	L. S.	L. S.	$50,000.00	$50,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$100,000.00	$100,000.00
	STAKING	L. S.	L. S.	$90,000.00	$90,000.00
	SUBTOTAL				$6,045,000.00
	E&C				$483,600.00
	NMGRT				$479,821.88
	TOTAL				$7,008,421.88
	USE				$7,500,000.00

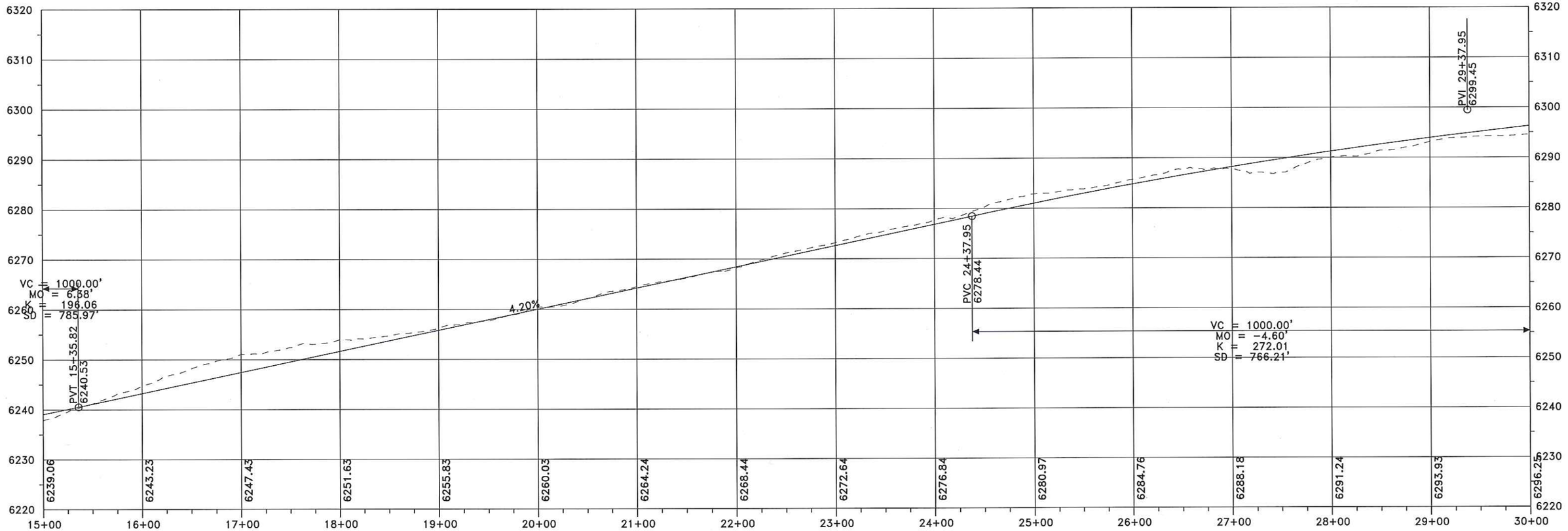


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE G-1
NM 599 EAST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:34
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

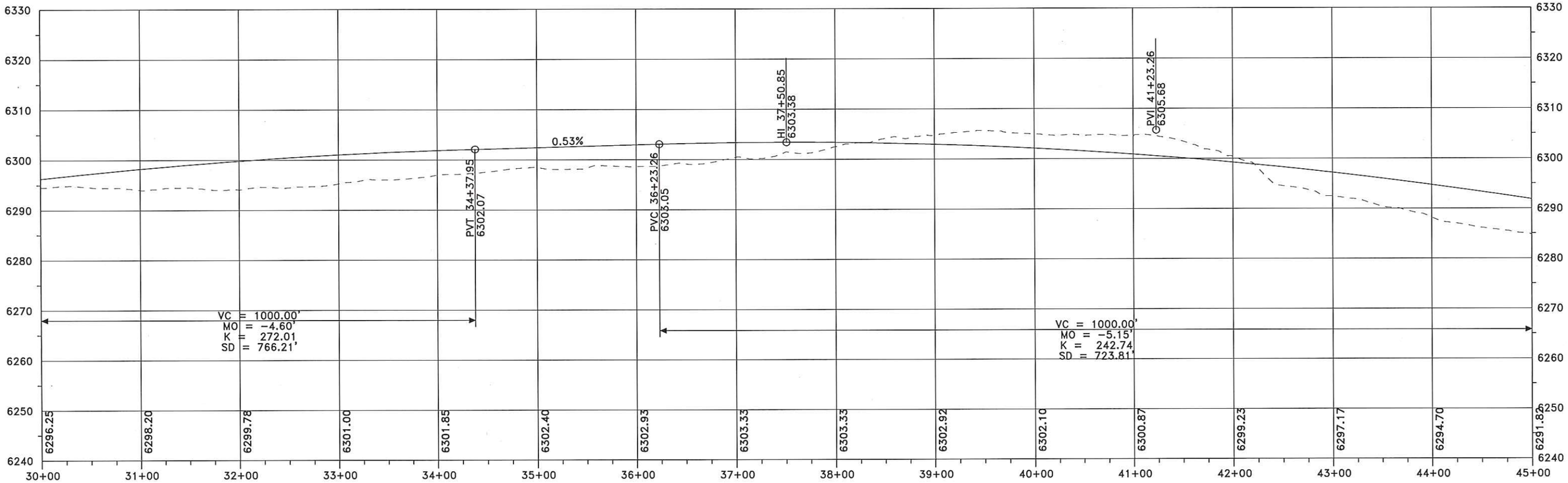
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE G-2
NM 599 EAST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:34

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100

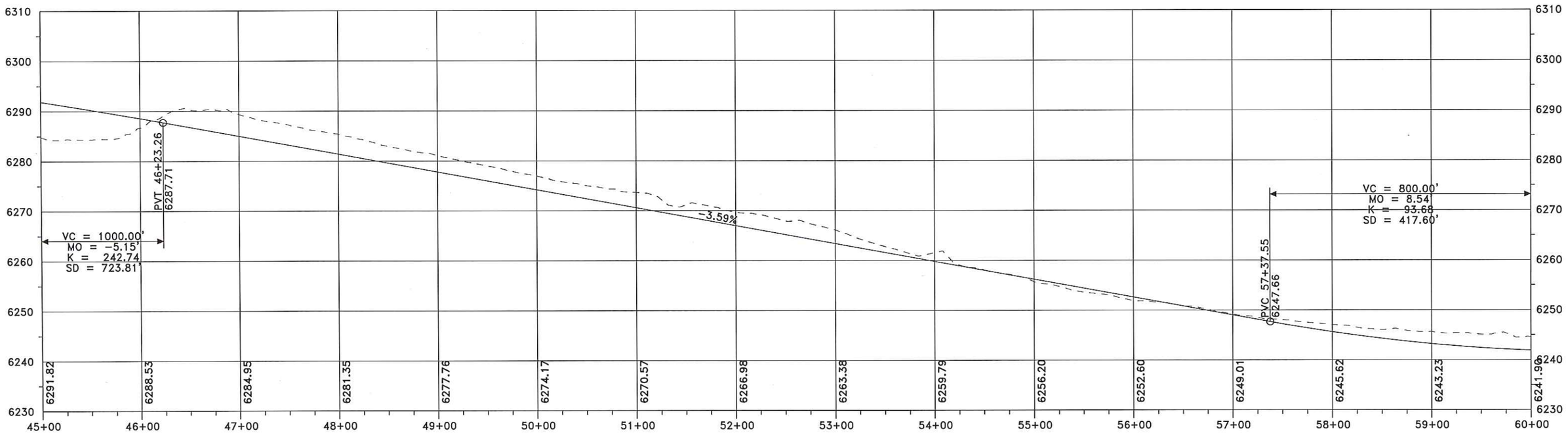


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE G-3
NM 599 EAST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:34
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



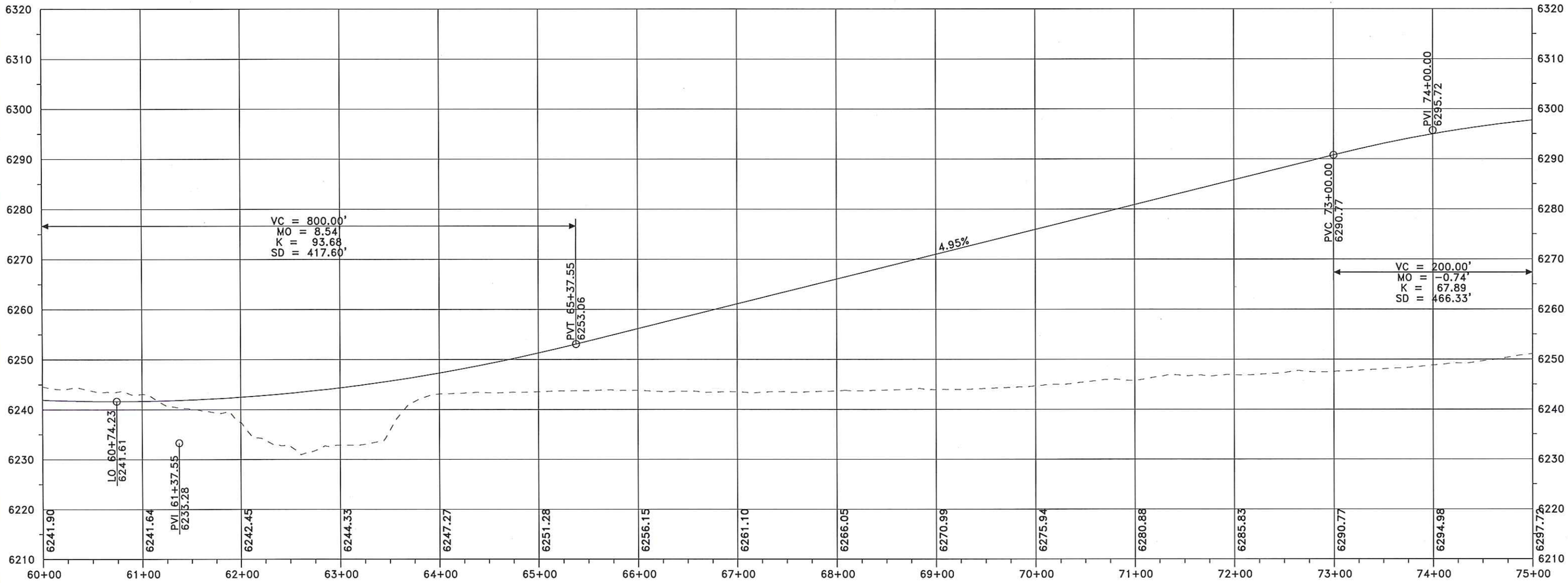
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE G-4
NM 599 EAST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:34

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



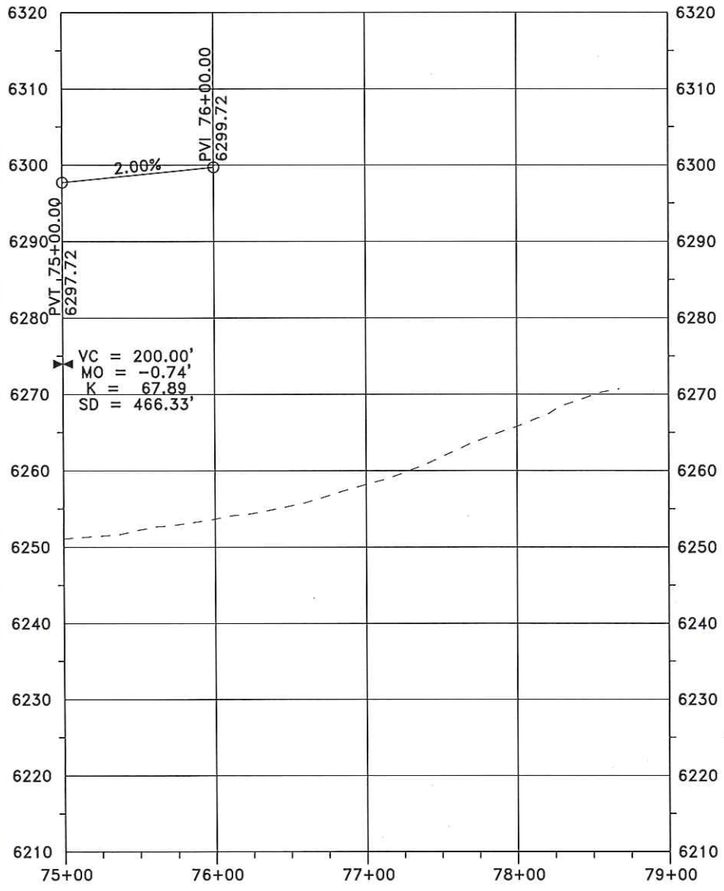
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE G-5
NM 599 EAST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:34

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE G-6
NM 599 EAST FRONTAGE ROAD
I-25 TO JAGUAR ROAD

25-NOV-2009 - 06:35

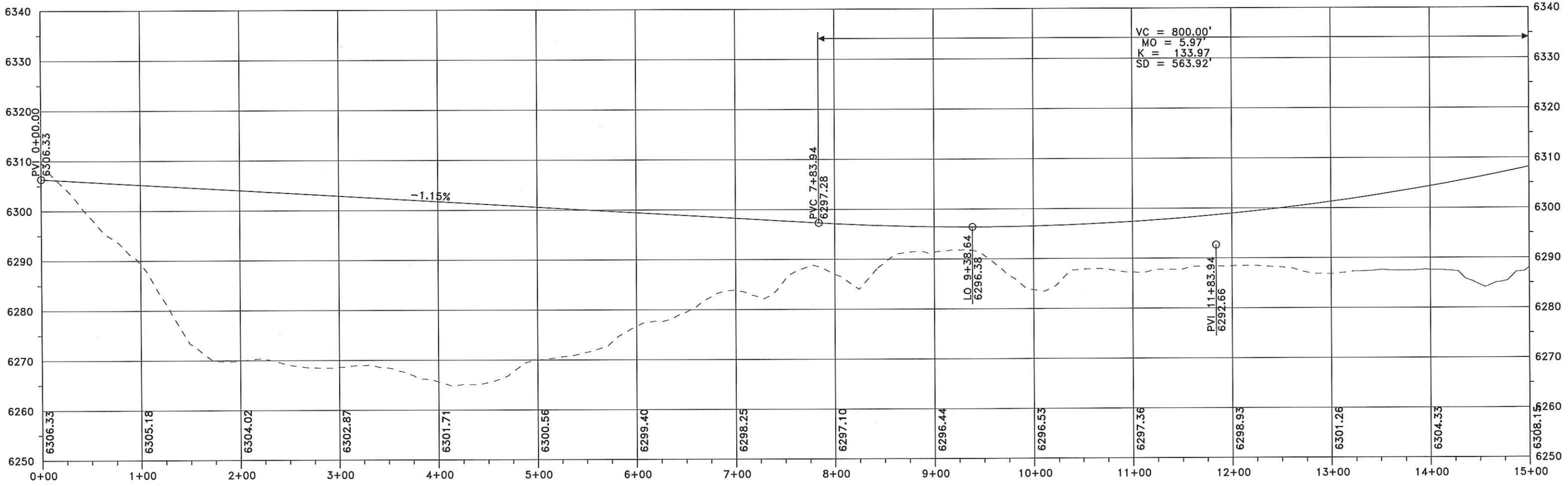
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles01.100

Appendix I
W. Frontage Road Jaguar Road to Airport Road
Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

NM 599 West Frontage Road from Jaguar Road to Airport Road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$40,000.00	$40,000.00
	EARTHWORK	L. S.	L. S.	$1,600,000.00	$1,600,000.00
	PAVING	L. S.	L. S.	$650,000.00	$650,000.00
	BRIDGE	L. S.	L. S.	$0.00	$0.00
	BARRIERS	L. S.	L. S.	$50,000.00	$50,000.00
	DRAINAGE	L. S.	L. S.	$350,000.00	$350,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$360,000.00	$360,000.00
	EROSION CONTROL	L. S.	L. S.	$40,000.00	$40,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$20,000.00	$20,000.00
	SIGNING & STRIPING	L. S.	L. S.	$30,000.00	$30,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$100,000.00	$100,000.00
	STAKING	L. S.	L. S.	$60,000.00	$60,000.00
	SUBTOTAL				$3,835,000.00
	E&C				$306,800.00
	NMGRT				$304,403.13
	TOTAL				$4,446,203.13
	USE				$5,000,000.00

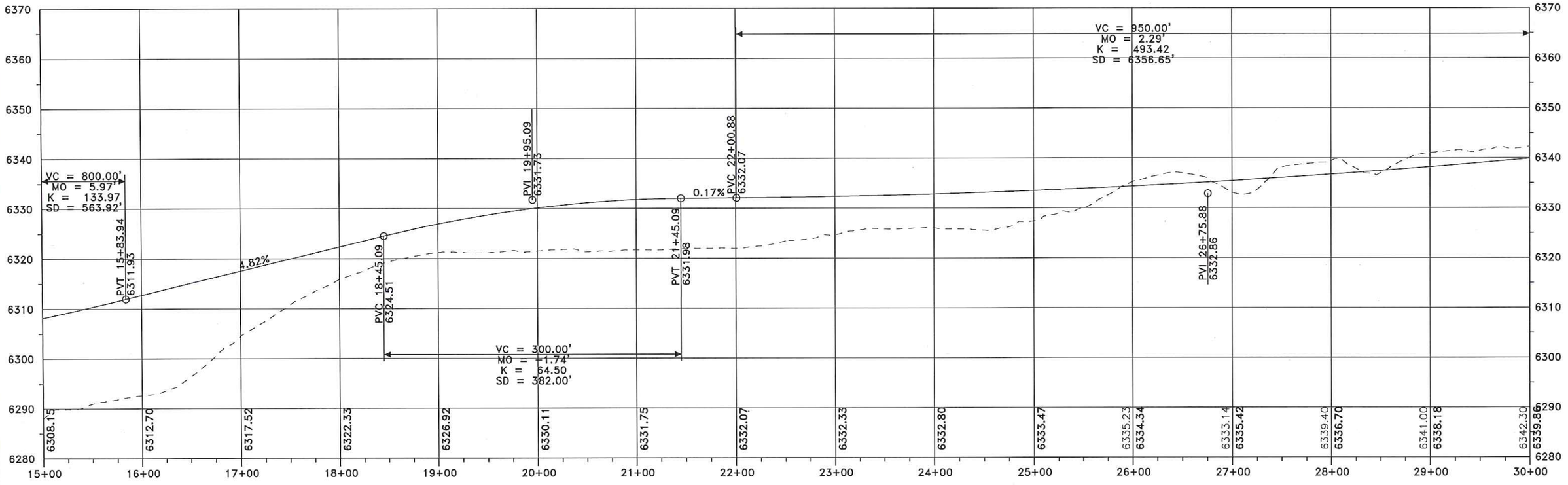


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE H-1
NM 599 WEST FRONTAGE ROAD
JAGUAR ROAD TO AIRPORT ROAD

25-NOV-2009 - 06:41
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

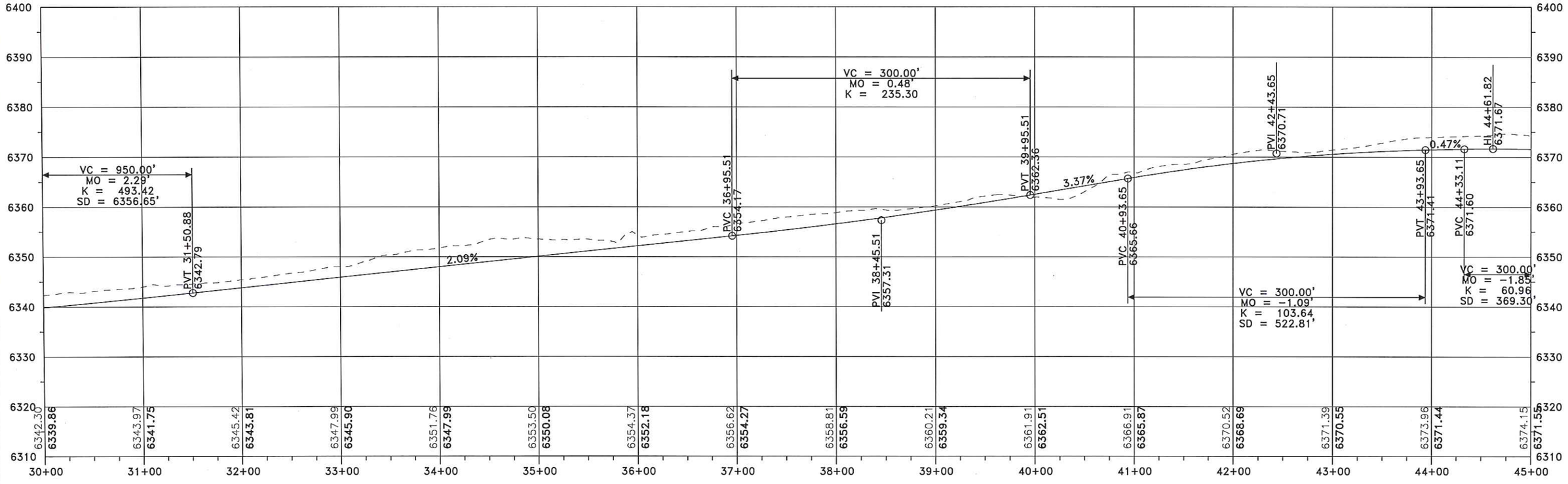
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE H-2
NM 599 WEST FRONTAGE ROAD
JAGUAR ROAD TO AIRPORT ROAD

25-NOV-2009 - 06:41

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100

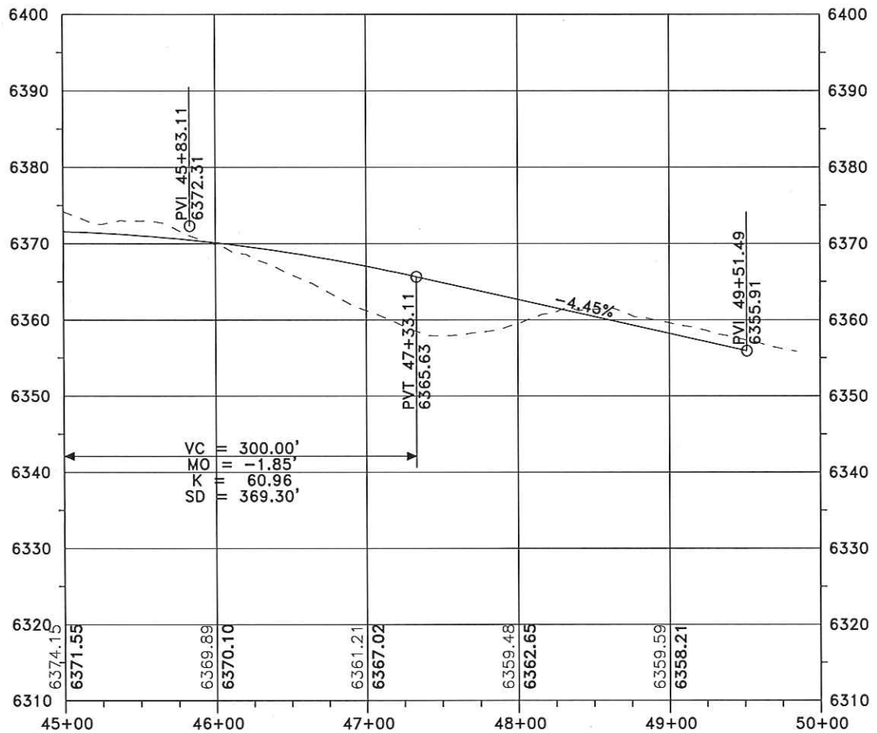


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE H-3
NM 599 WEST FRONTAGE ROAD
JAGUAR ROAD TO AIRPORT ROAD

25-NOV-2009 - 06:41
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE H-4
NM 599 WEST FRONTAGE ROAD
JAGUAR ROAD TO AIRPORT ROAD

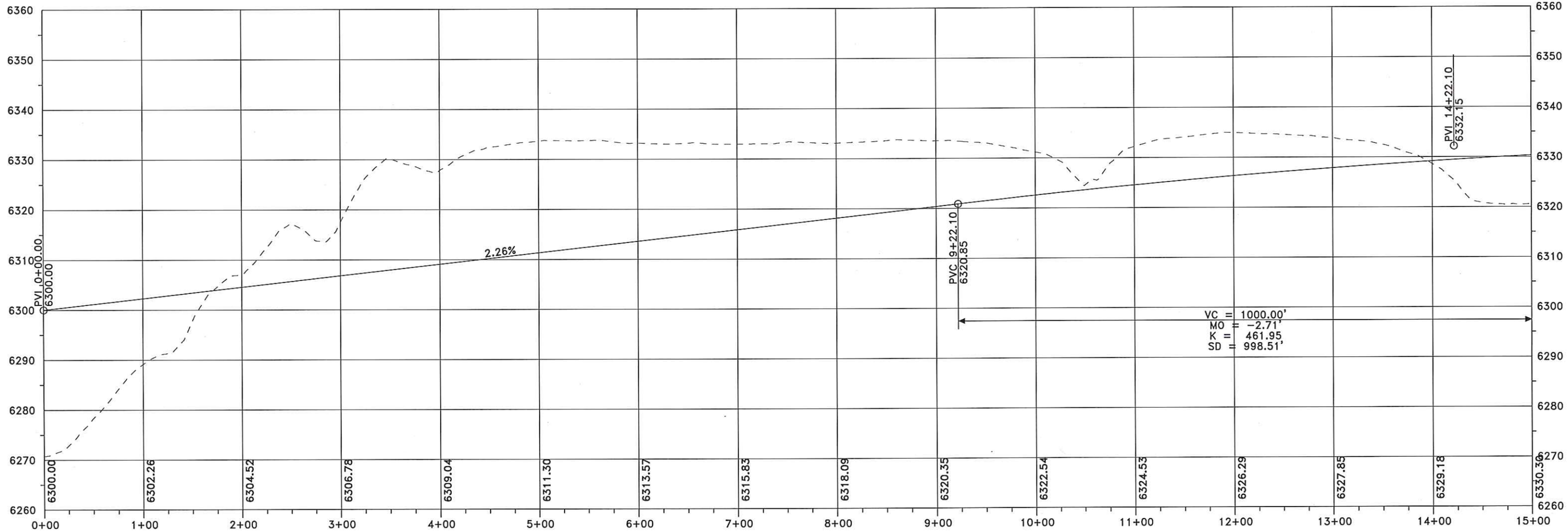
25-NOV-2009 - 06:41
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100

Appendix J
E. Frontage Road Jaguar Road to Airport Road
Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

NM 599 East Frontage Road from Jaguar Road to Airport Road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$40,000.00	$40,000.00
	EARTHWORK	L. S.	L. S.	$900,000.00	$900,000.00
	PAVING	L. S.	L. S.	$750,000.00	$750,000.00
	BRIDGE	L. S.	L. S.	$0.00	$0.00
	WALL & BARRIERS	L. S.	L. S.	$100,000.00	$100,000.00
	DRAINAGE	L. S.	L. S.	$230,000.00	$230,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$380,000.00	$380,000.00
	EROSION CONTROL	L. S.	L. S.	$40,000.00	$40,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$20,000.00	$20,000.00
	SIGNING & STRIPING	L. S.	L. S.	$30,000.00	$30,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$100,000.00	$100,000.00
	STAKING	L. S.	L. S.	$60,000.00	$60,000.00
	SUBTOTAL				$3,185,000.00
	E&C				$254,800.00
	NMGRT				$252,809.38
	TOTAL				$3,692,609.38
	USE				$4,500,000.00



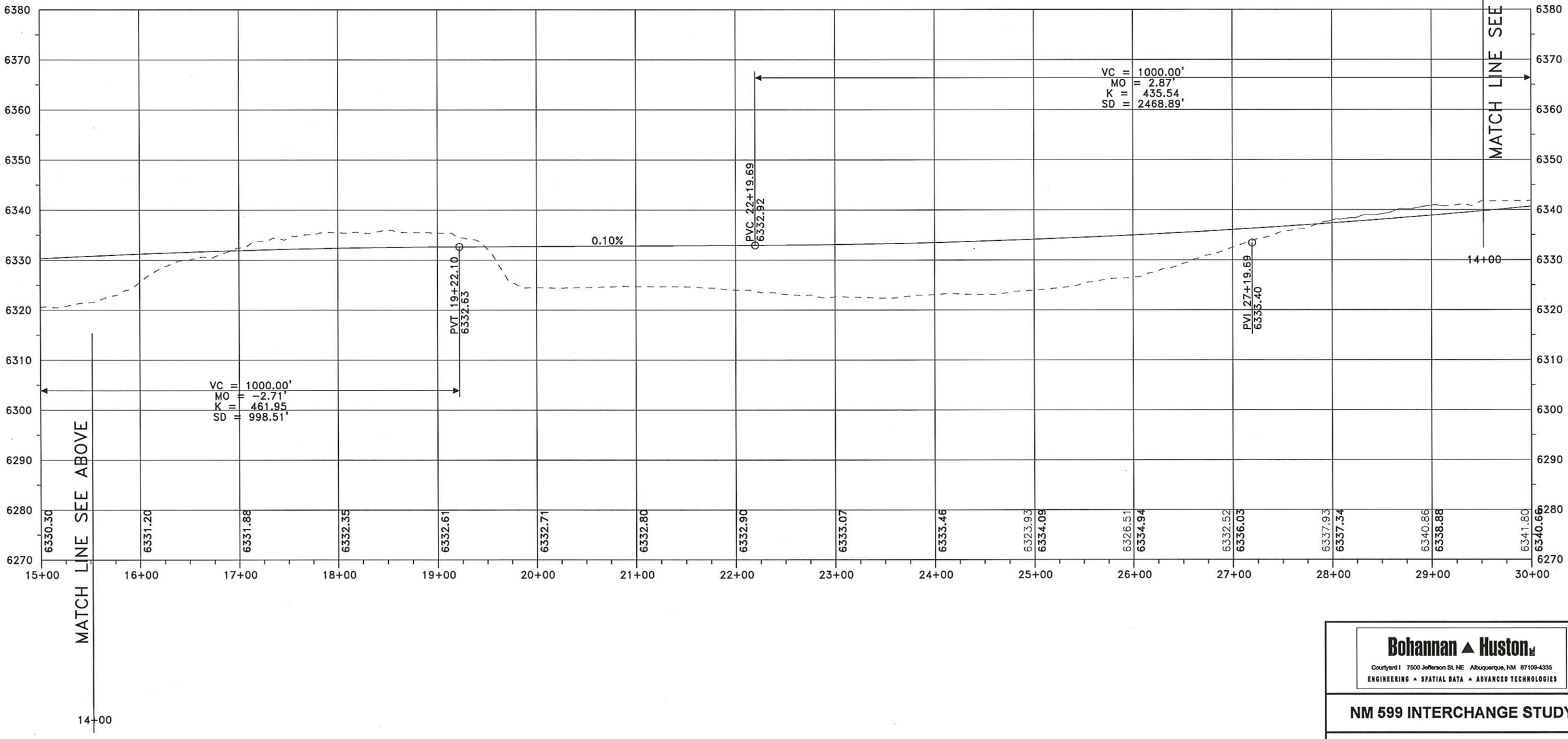
Bohannan ▲ Huston
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE I-1
NM 599 EAST FRONTAGE ROAD
JAGUAR ROAD TO AIRPORT ROAD

25-NOV-2009 - 06:40

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston Inc.

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

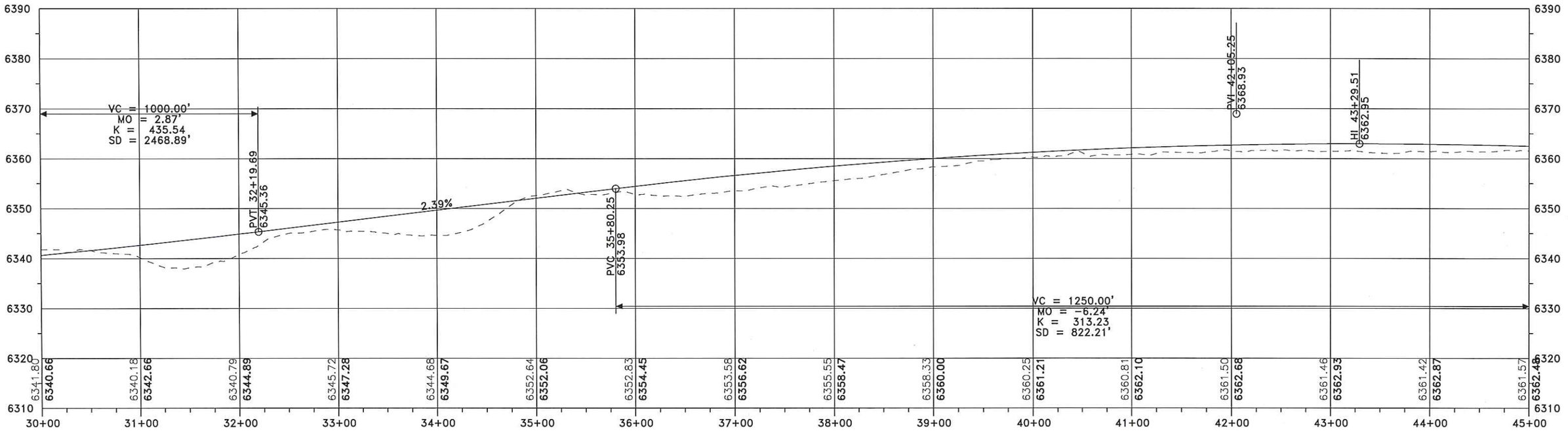
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE I-2
NM 599 EAST FRONTAGE ROAD
JAGUAR ROAD TO AIRPORT ROAD

25-NOV-2009 - 06:40

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100

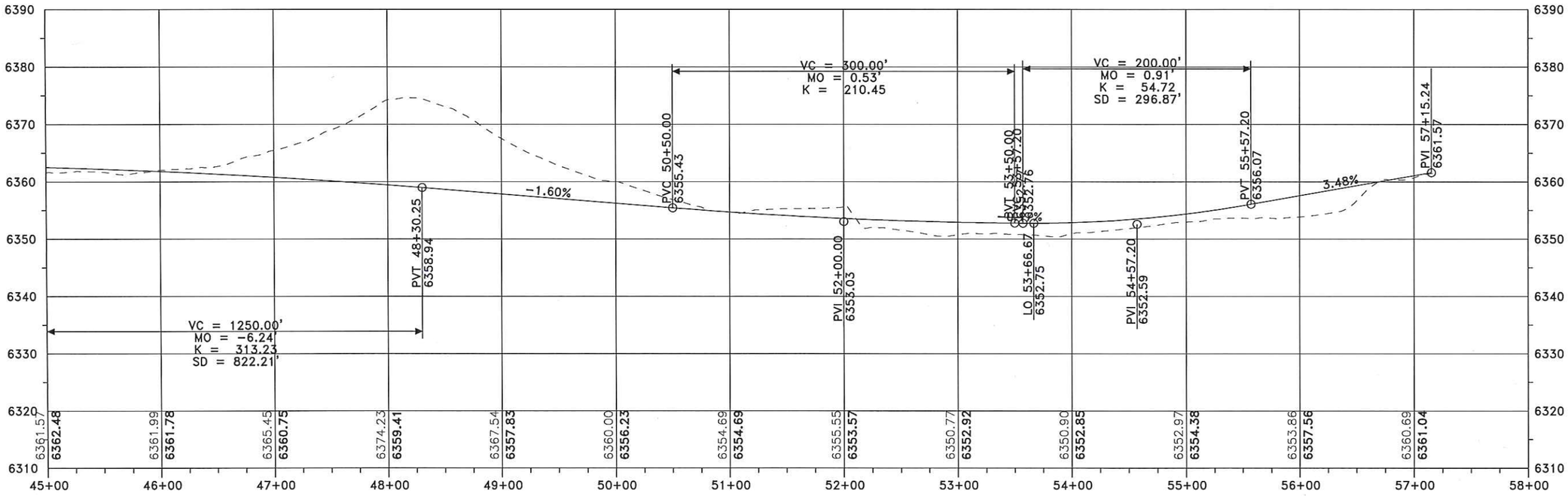


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE I-3
NM 599 EAST FRONTAGE ROAD
JAGUAR ROAD TO AIRPORT ROAD

25-NOV-2009 - 06:40
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE I-4
NM 599 EAST FRONTAGE ROAD
JAGUAR ROAD TO AIRPORT ROAD

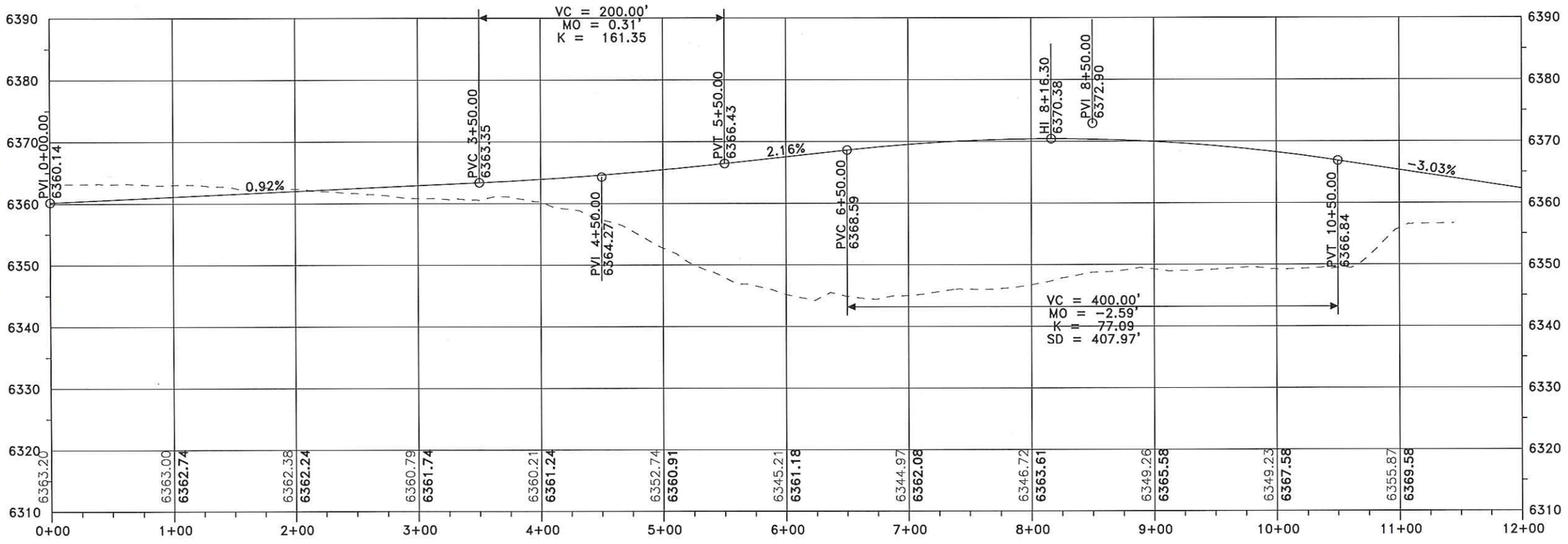
25-NOV-2009 - 06:41
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100

Appendix K
Airport Road Interchange Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

Airport Interchange Alternative

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$85,000.00	$85,000.00
	EARTHWORK	L. S.	L. S.	$1,600,000.00	$1,600,000.00
	PAVING	L. S.	L. S.	$750,000.00	$750,000.00
	BRIDGE	L. S.	L. S.	$3,300,000.00	$3,300,000.00
	WALL & BARRIERS	L. S.	L. S.	$130,000.00	$130,000.00
	DRAINAGE	L. S.	L. S.	$70,000.00	$70,000.00
	CURB AND SIDEWALK	L. S.	L. S.	$200,000.00	$200,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$810,000.00	$810,000.00
	EROSION CONTROL	L. S.	L. S.	$20,000.00	$20,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$70,000.00	$70,000.00
	REMOVAL OF SURFACING	L. S.	L. S.	$60,000.00	$60,000.00
	SIGNING & STRIPING	L. S.	L. S.	$50,000.00	$50,000.00
	LIGHTING	L. S.	L. S.	$160,000.00	$160,000.00
	SIGNALS	L. S.	L. S.	$400,000.00	$400,000.00
	TRAFFIC CONTROL	L. S.	L. S.	$350,000.00	$350,000.00
	STAKING	L. S.	L. S.	$125,000.00	$125,000.00
	SUBTOTAL				$8,715,000.00
	E&C				$697,200.00
	NMGRT				$691,753.13
	TOTAL				$10,103,953.13
	USE				$11,000,000.00

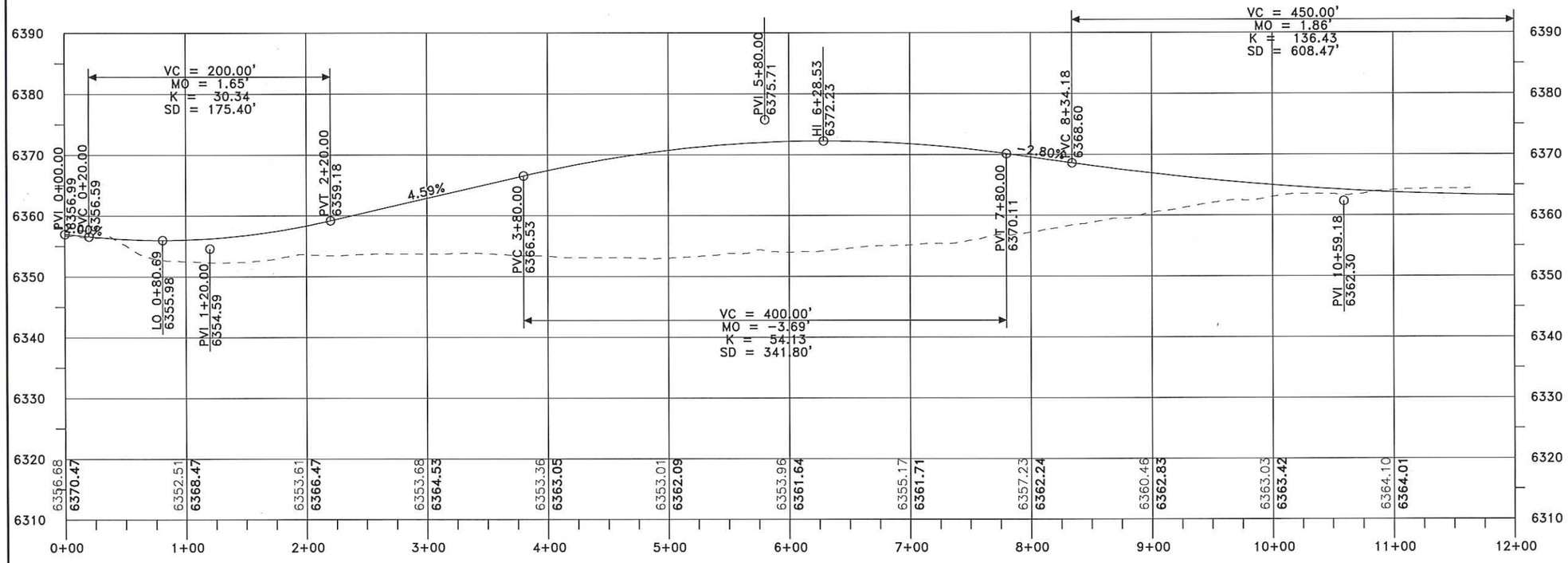


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE J-1
AIRPORT ROAD INTERCHANGE
SOUTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 14:45
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



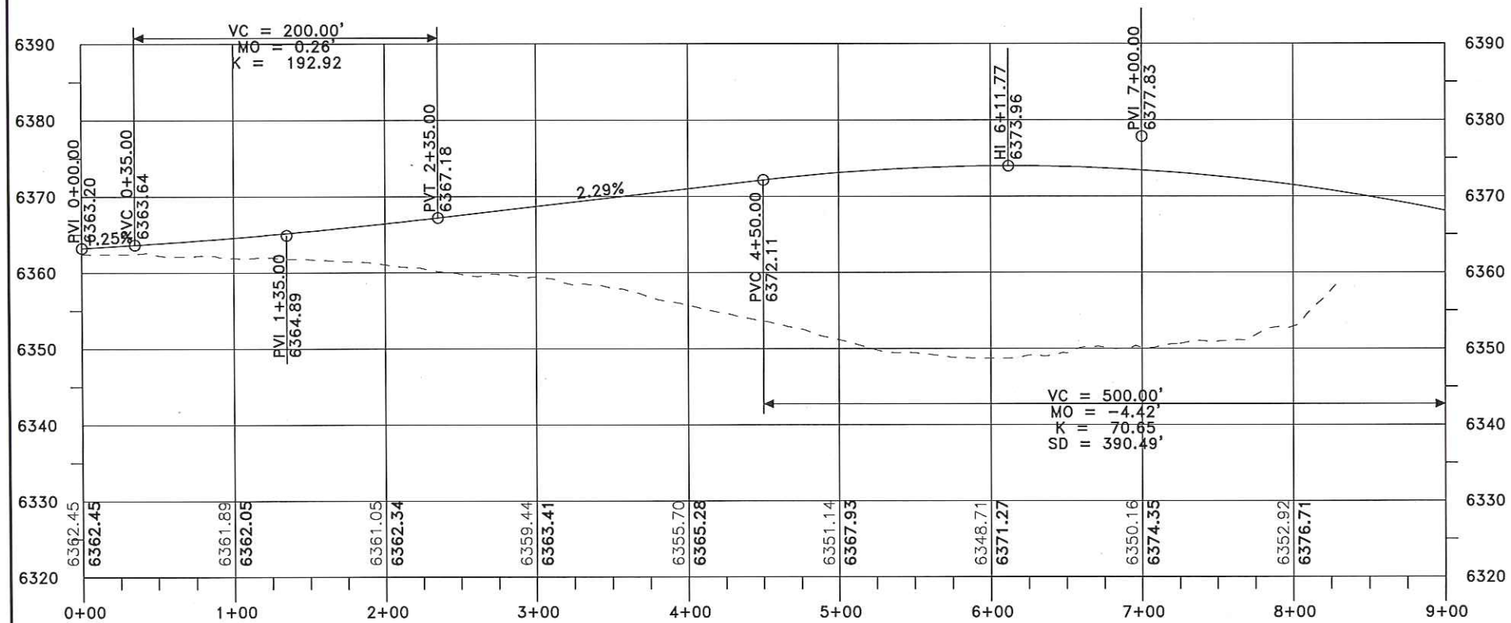
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE J-2
AIRPORT ROAD INTERCHANGE
SOUTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 14:45

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



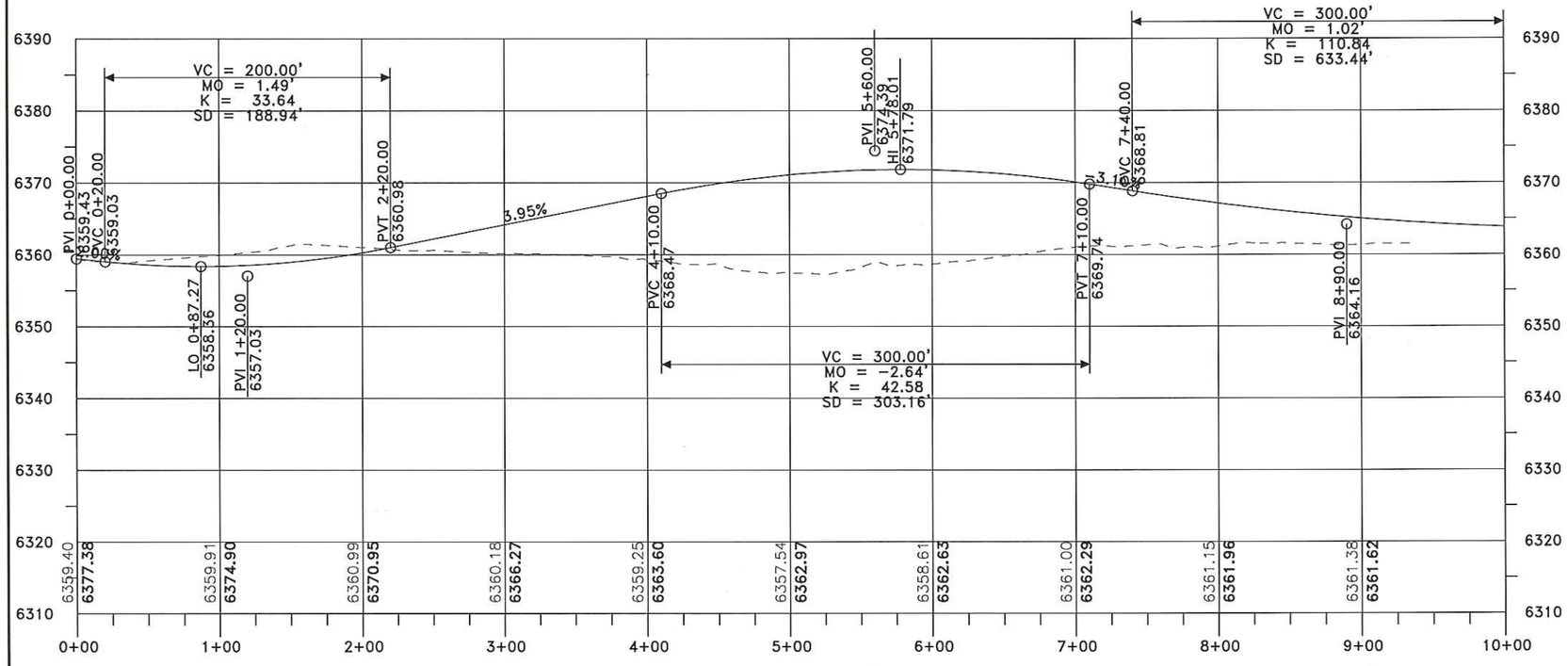
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE J-3
AIRPORT ROAD INTERCHANGE
NORTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 14:45

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100

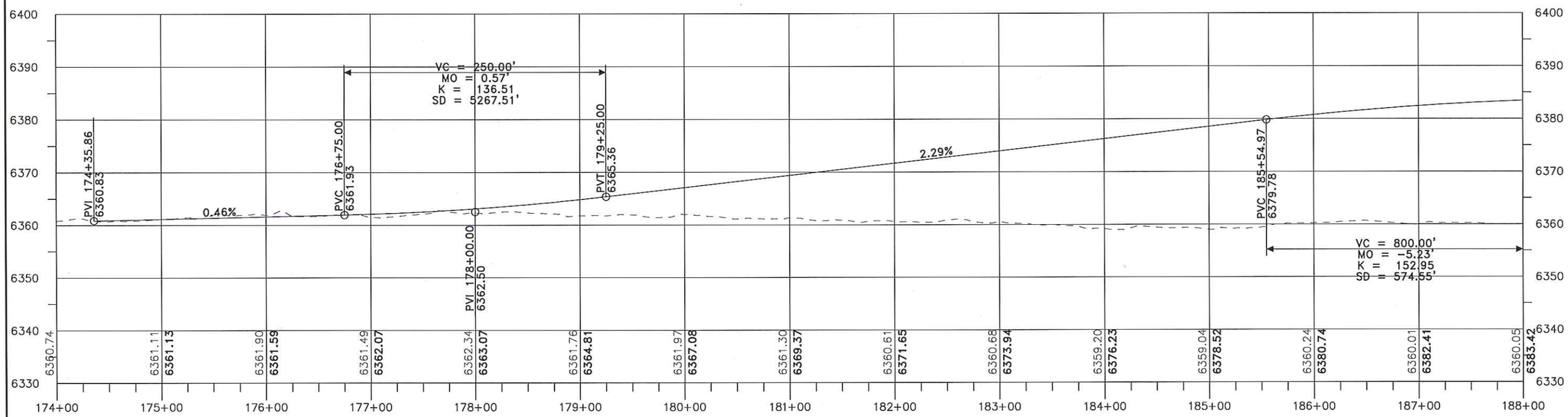


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE J-4
AIRPORT ROAD INTERCHANGE
NORTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 14:46
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

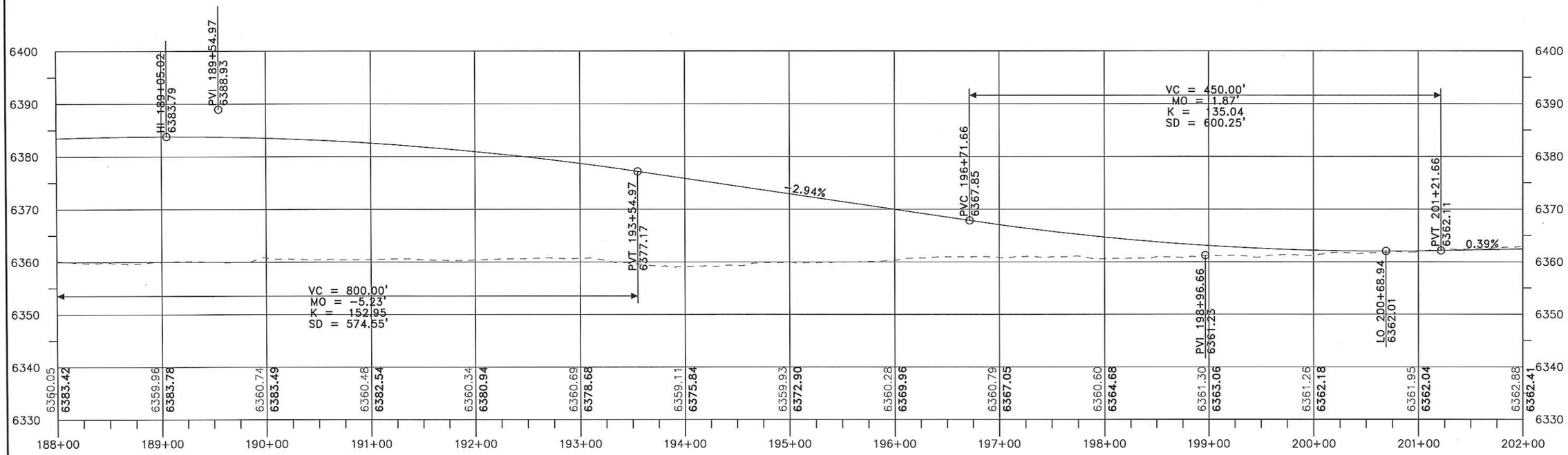
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE J-5
AIRPORT ROAD INTERCHANGE
NM 599 OVERPASS PROFILE

25-NOV-2009 - 14:48

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

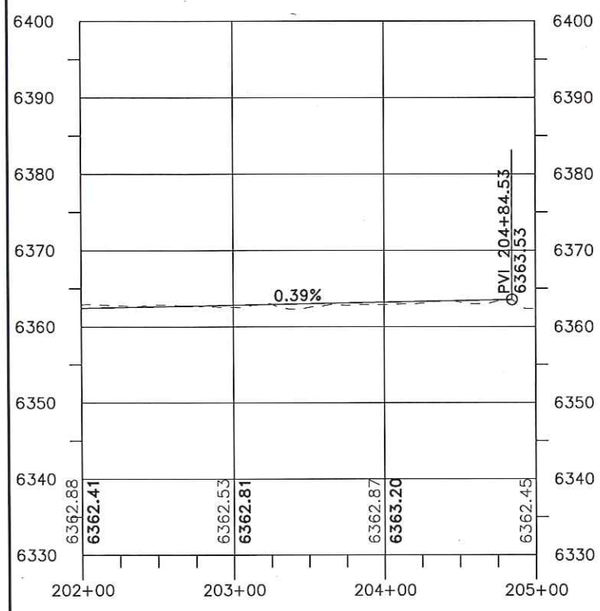
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE J-6
AIRPORT ROAD INTERCHANGE
NM 599 OVERPASS PROFILE

25-NOV-2009 - 14:48

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE J-7
AIRPORT ROAD INTERCHANGE
NM 599 OVERPASS PROFILE

25-NOV-2009 - 14:48

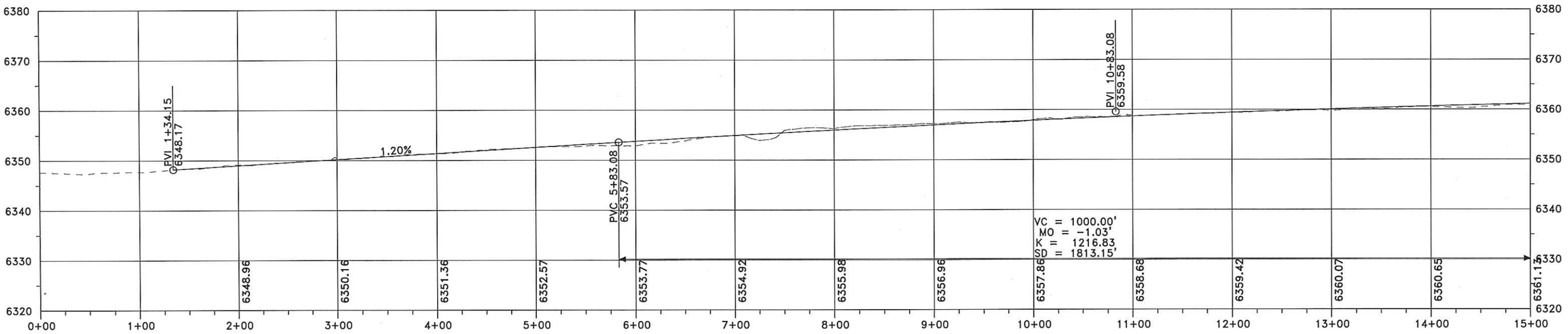
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100

Appendix L
NM 599 Frontage Road over Santa Fe River
Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

NM 599 Extend Frontage Road across SF River

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$30,000.00	$30,000.00
	EARTHWORK	L. S.	L. S.	$200,000.00	$200,000.00
	PAVING	L. S.	L. S.	$430,000.00	$430,000.00
	BRIDGE	L. S.	L. S.	$1,200,000.00	$1,200,000.00
	BARRIERS	L. S.	L. S.	$10,000.00	$10,000.00
	DRAINAGE	L. S.	L. S.	$50,000.00	$50,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$285,000.00	$285,000.00
	EROSION CONTROL	L. S.	L. S.	$60,000.00	$60,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$30,000.00	$30,000.00
	SIGNING & STRIPING	L. S.	L. S.	$30,000.00	$30,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$50,000.00	$50,000.00
	STAKING	L. S.	L. S.	$45,000.00	$45,000.00
	SUBTOTAL				$2,955,000.00
	E&C				$236,400.00
	NMGRT				$234,553.13
	TOTAL				$3,425,953.13
	USE				$4,000,000.00

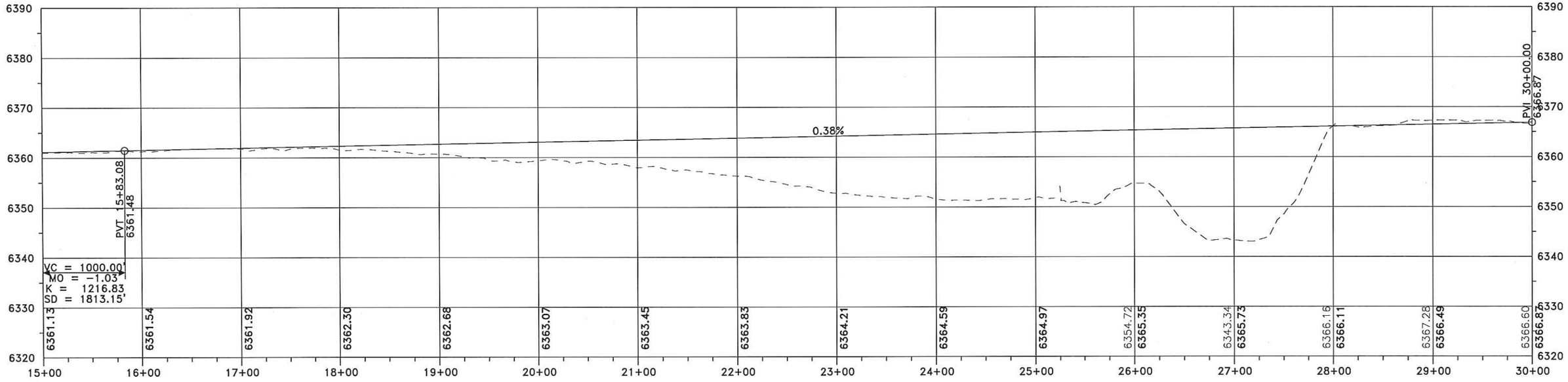


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE K-1
NM 599 WEST FRONTAGE ROAD ACROSS SF RIVER

25-NOV-2009 - 06:42
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE K-2
NM 599 WEST FRONTAGE ROAD ACROSS SF RIVER

25-NOV-2009 - 06:42

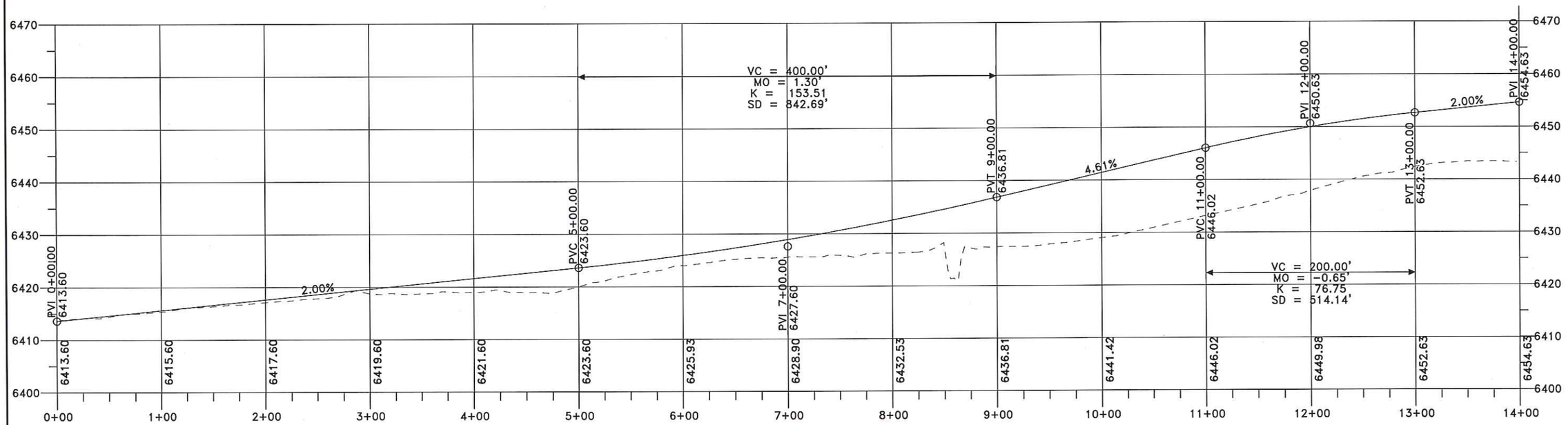
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100

Appendix M
Caja del Rio Interchange Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

Caja del Rio Interchange Alternative

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$55,000.00	$55,000.00
	EARTHWORK	L. S.	L. S.	$1,050,000.00	$1,050,000.00
	PAVING	L. S.	L. S.	$1,060,000.00	$1,060,000.00
	BRIDGE	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	BARRIERS	L. S.	L. S.	$50,000.00	$50,000.00
	EQUESTRIAN CROSSING	L. S.	L. S.	$820,000.00	$820,000.00
	DRAINAGE	L. S.	L. S.	$200,000.00	$200,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$540,000.00	$540,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$100,000.00	$100,000.00
	SIGNING & STRIPING	L. S.	L. S.	$25,000.00	$25,000.00
	LIGHTING	L. S.	L. S.	$160,000.00	$160,000.00
	TRAFFIC CONTROL	L. S.	L. S.	$300,000.00	$300,000.00
	STAKING	L. S.	L. S.	$80,000.00	$80,000.00
	RIGHT OF WAY	AC			$0.00
	SUBTOTAL				$6,305,000.00
	E&C				$504,400.00
	NMGRT				$500,459.38
	TOTAL				$7,309,859.38
	USE				$8,000,000.00



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

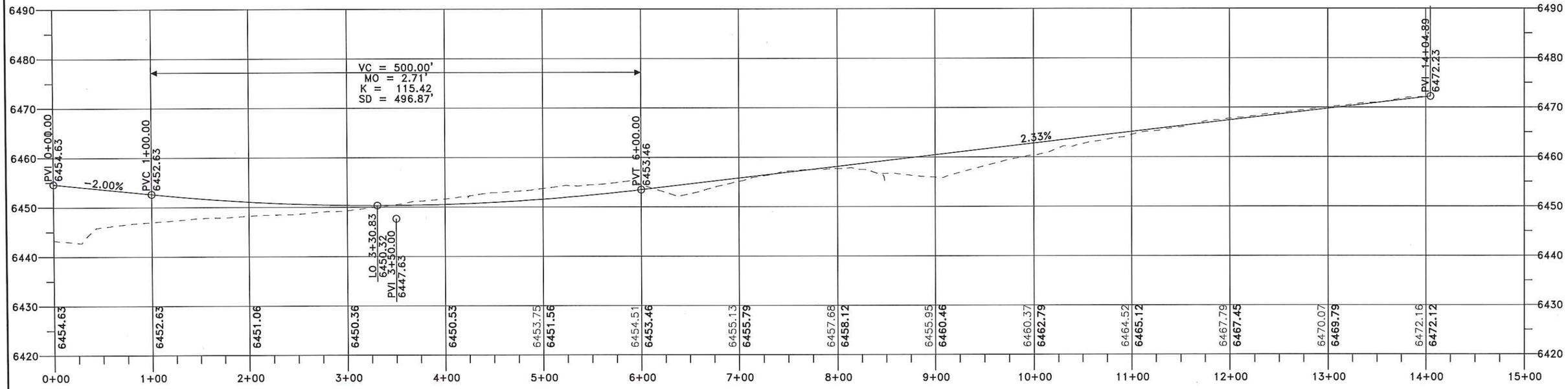
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE L-1
CAJA DEL RIO
SOUTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 08:42

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



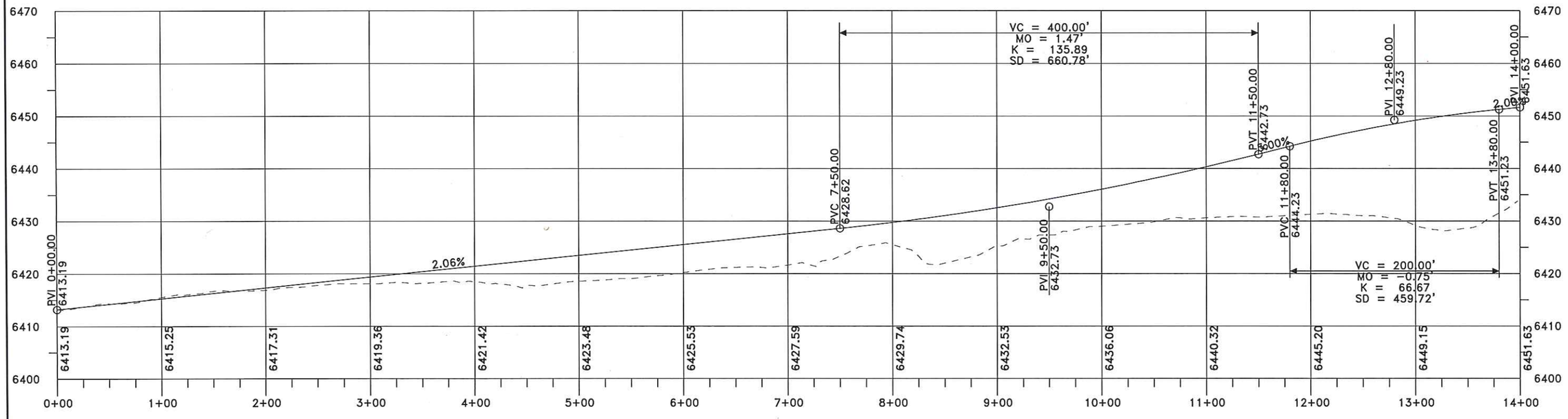
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE L-2
CAJA DEL RIO
SOUTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 06:42

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

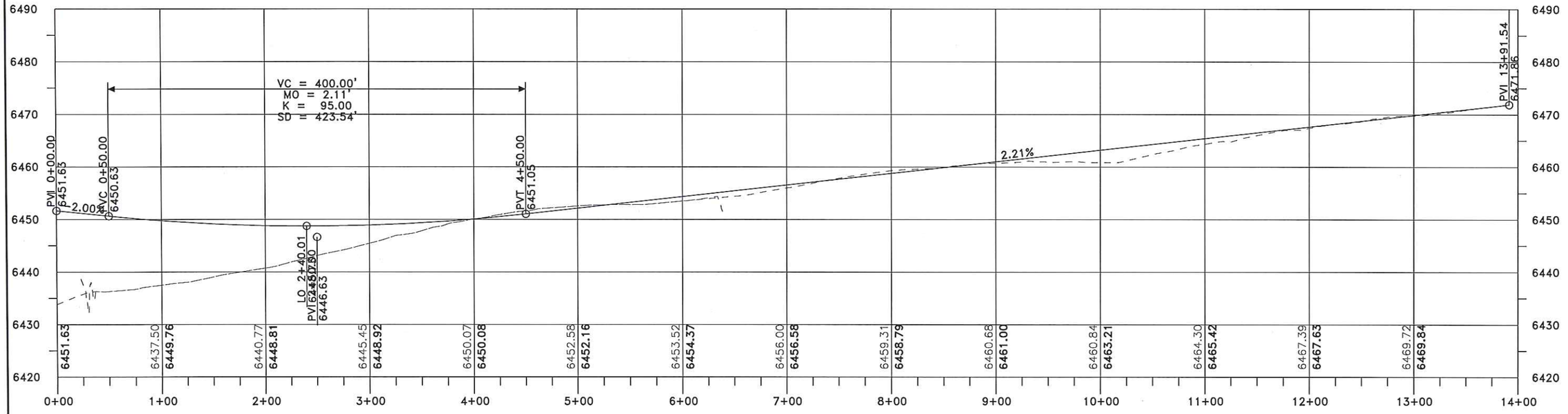
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE L-3
CAJA DEL RIO
INTERCHANGE
NORTHTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 06:42

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



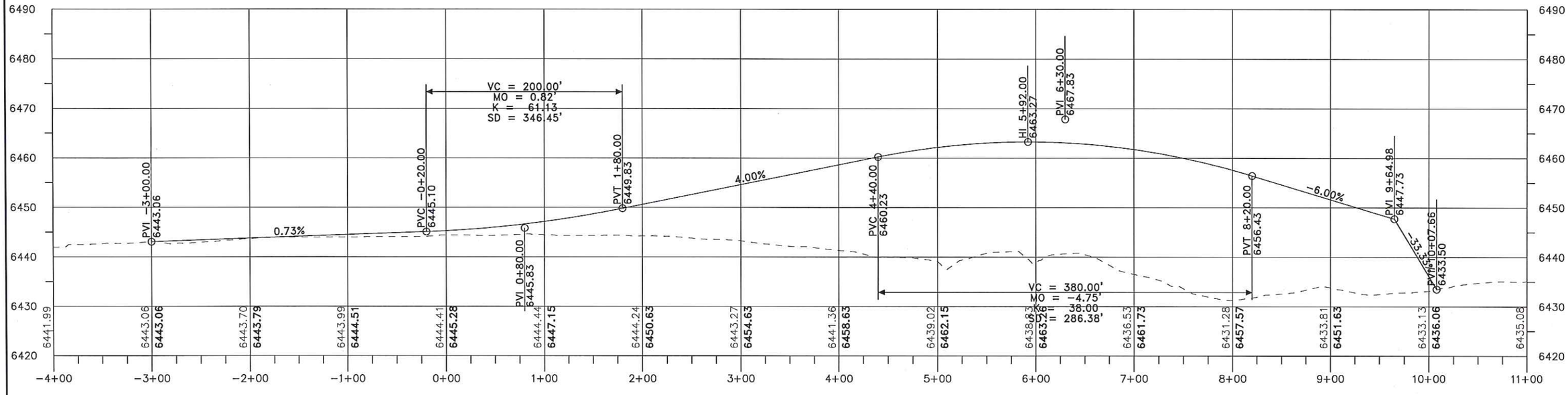
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE L-4
CAJA DEL RIO
INTERCHANGE
NORTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 06:43

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE L-5
CAJA DEL RIO
INTERCHANGE OVERPASS
PROFILE

25-NOV-2009 - 09:25

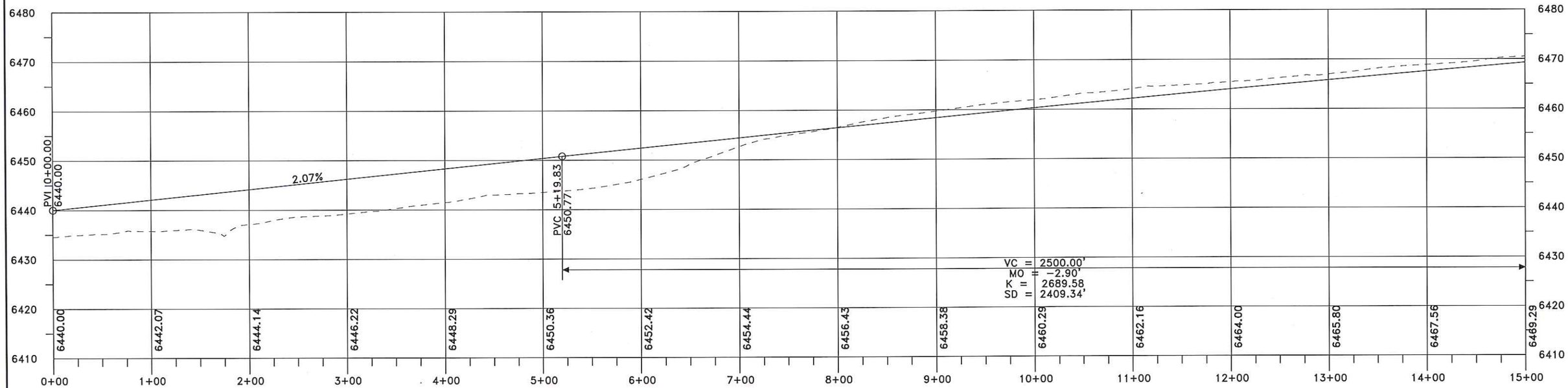
\\a-obq-fs1\obq-projects\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles02.100

Appendix N
S. Frontage Road Caja del Rio to CR 62 Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

Caja del Rio S. Frontage Road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$55,000.00	$55,000.00
	EARTHWORK	L. S.	L. S.	$250,000.00	$250,000.00
	PAVING	L. S.	L. S.	$970,000.00	$970,000.00
	BARRIERS	L. S.	L. S.	$190,000.00	$190,000.00
	NOISE WALL	L. S.	L. S.	$1,430,000.00	$1,430,000.00
	CONCRETE WALL BARRIER	L. F.	5310	$225.00	$1,194,750.00
	DRAINAGE	L. S.	L. S.	$510,000.00	$510,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$535,000.00	$535,000.00
	EROSION CONTROL	L. S.	L. S.	$40,000.00	$40,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$100,000.00	$100,000.00
	SIGNING & STRIPING	L. S.	L. S.	$20,000.00	$20,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$200,000.00	$200,000.00
	STAKING	L. S.	L. S.	$80,000.00	$80,000.00
	SUBTOTAL				$6,109,750.00
	E&C				$488,780.00
	NMGRT				$484,961.41
	TOTAL				$7,083,491.41
	USE				$8,000,000.00

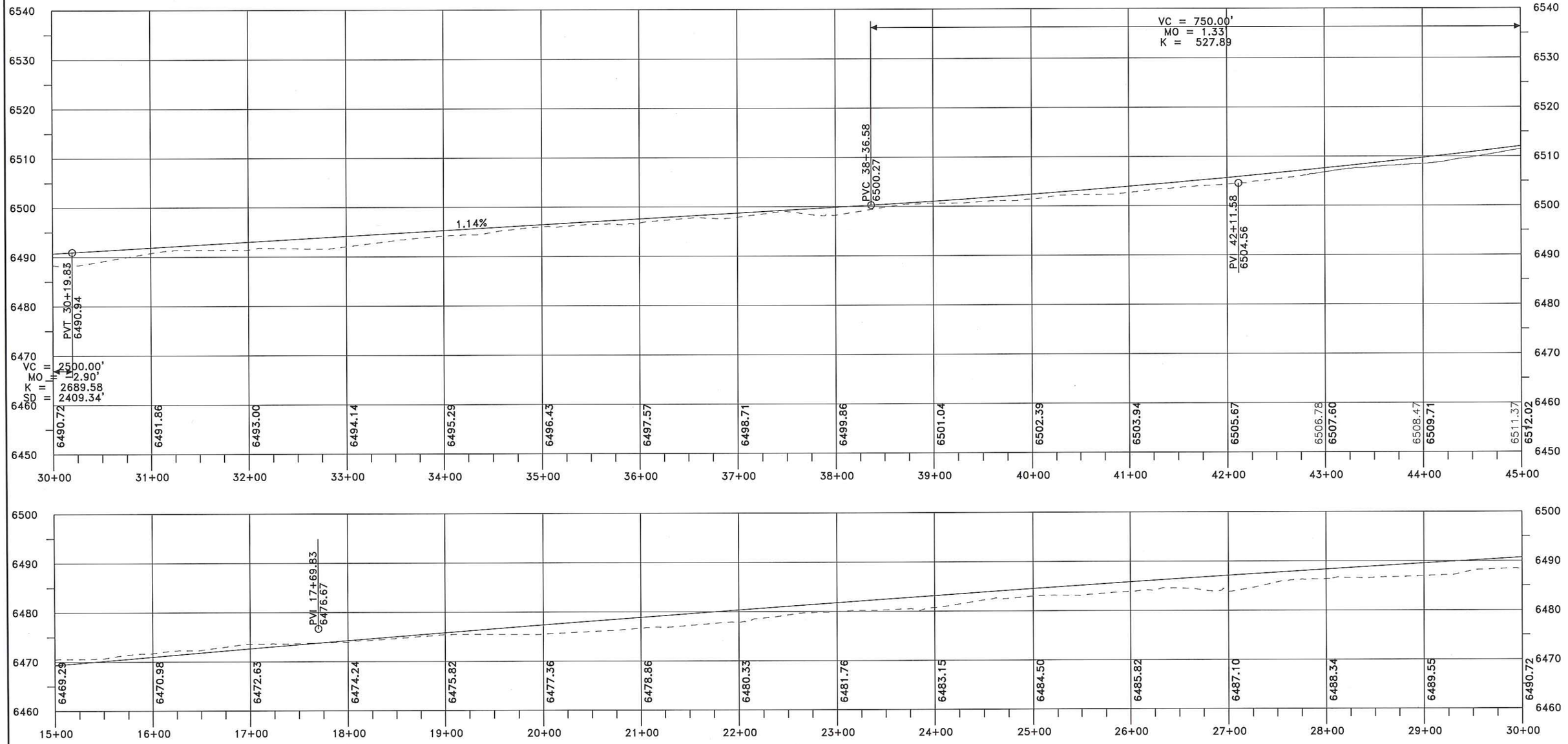


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE M-1
NM 599 S. FRONTAGE ROAD
FROM CR 62 TO CAJA DEL RIO

25-NOV-2009 - 06:59
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



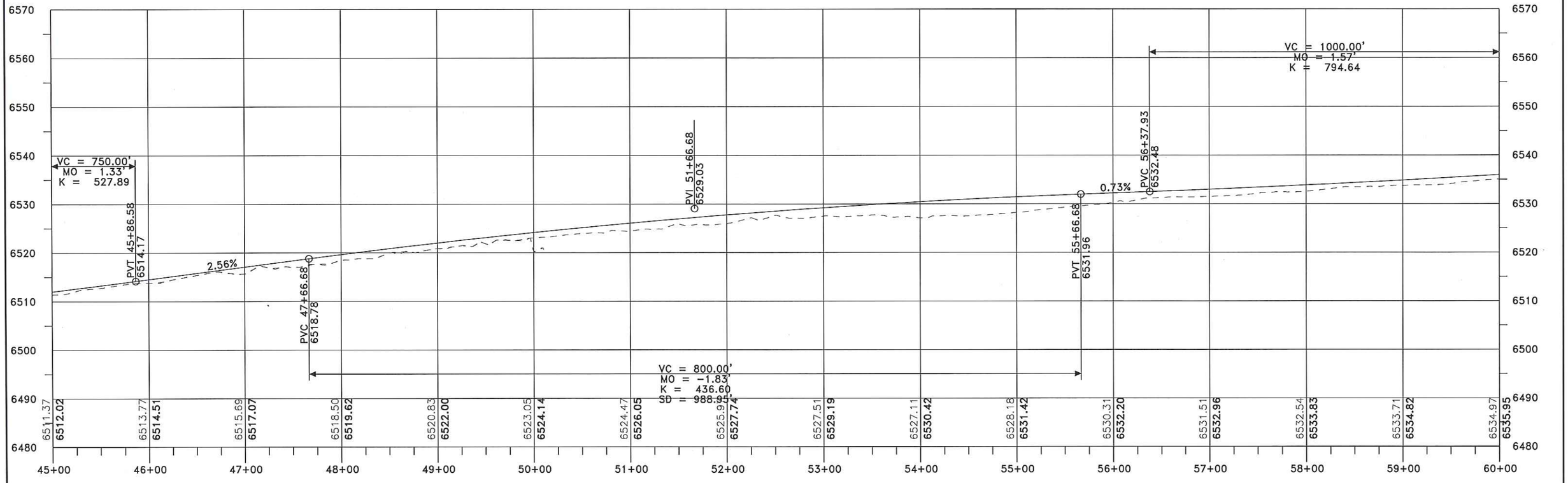
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE M-2
NM 599 S. FRONTAGE ROAD
FROM CR 62 TO CAJA DEL RIO

25-NOV-2009 - 06:59

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



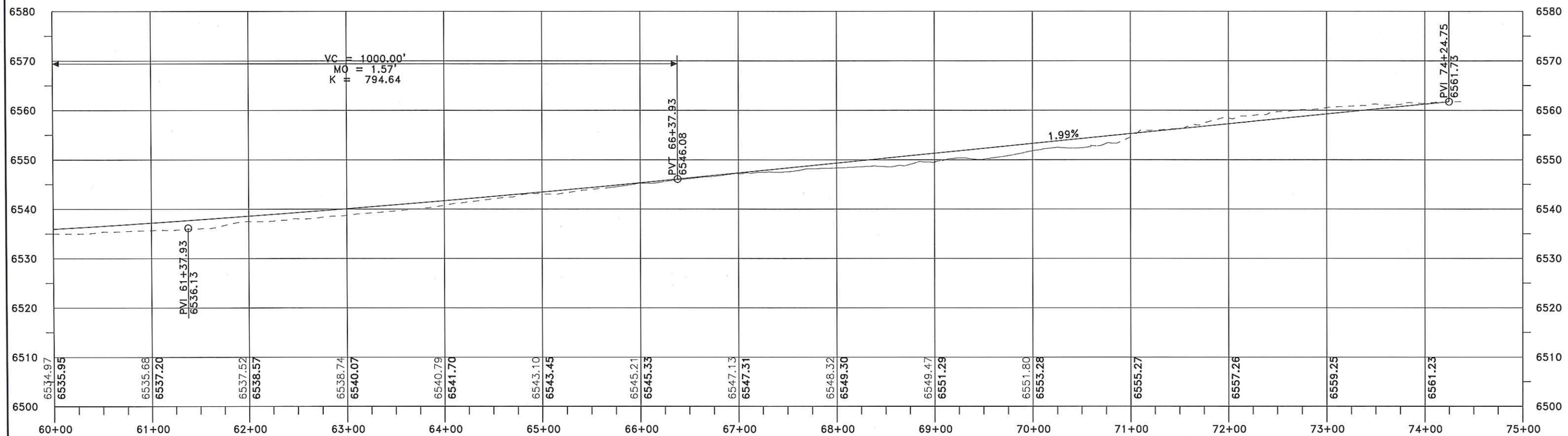
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE M-3
NM 599 S. FRONTAGE ROAD
FROM CR 62 TO CAJA DEL RIO

25-NOV-2009 - 07:00

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE M-4
NM 599 S. FRONTAGE ROAD
FROM CR 62 TO CAJA DEL RIO

25-NOV-2009 - 07:00

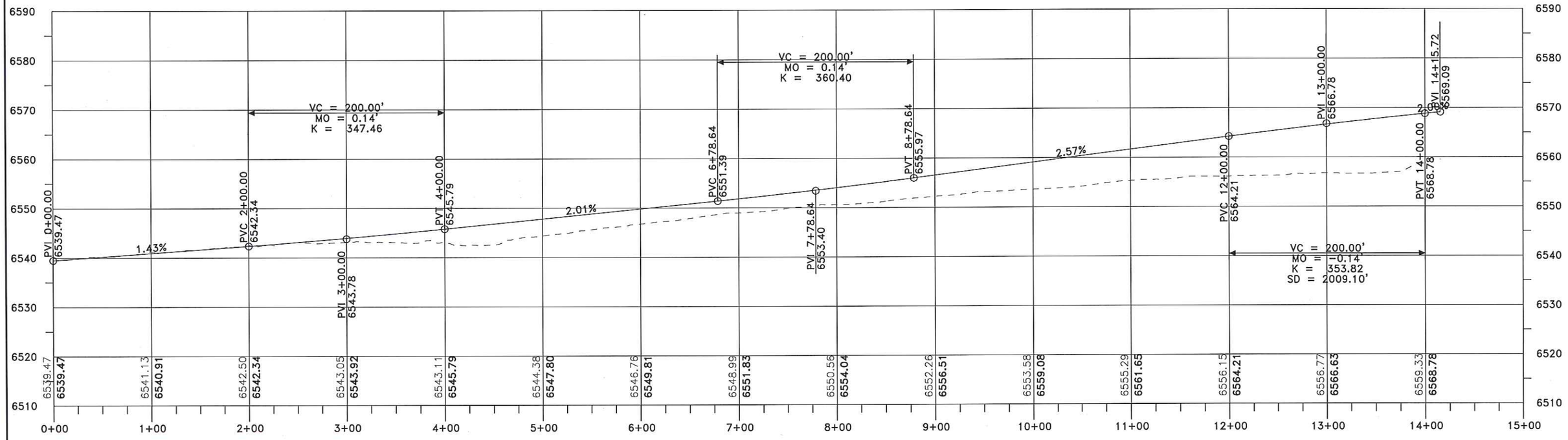
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100

Appendix O
County Road 62 Interchange Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

CR 62 Interchange Alternative

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$40,000.00	$40,000.00
	EARTHWORK	L. S.	L. S.	$950,000.00	$950,000.00
	PAVING	L. S.	L. S.	$780,000.00	$780,000.00
	BRIDGE	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	BARRIERS	L. S.	L. S.	$50,000.00	$50,000.00
	DRAINAGE	L. S.	L. S.	$60,000.00	$60,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$415,000.00	$415,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$50,000.00	$50,000.00
	SIGNING & STRIPING	L. S.	L. S.	$25,000.00	$25,000.00
	LIGHTING	L. S.	L. S.	$160,000.00	$160,000.00
	TRAFFIC CONTROL	L. S.	L. S.	$300,000.00	$300,000.00
	STAKING	L. S.	L. S.	$65,000.00	$65,000.00
	SUBTOTAL				$4,760,000.00
	E&C				$380,800.00
	NMGRT				$377,825.00
	TOTAL				$5,518,625.00
	USE				$6,500,000.00



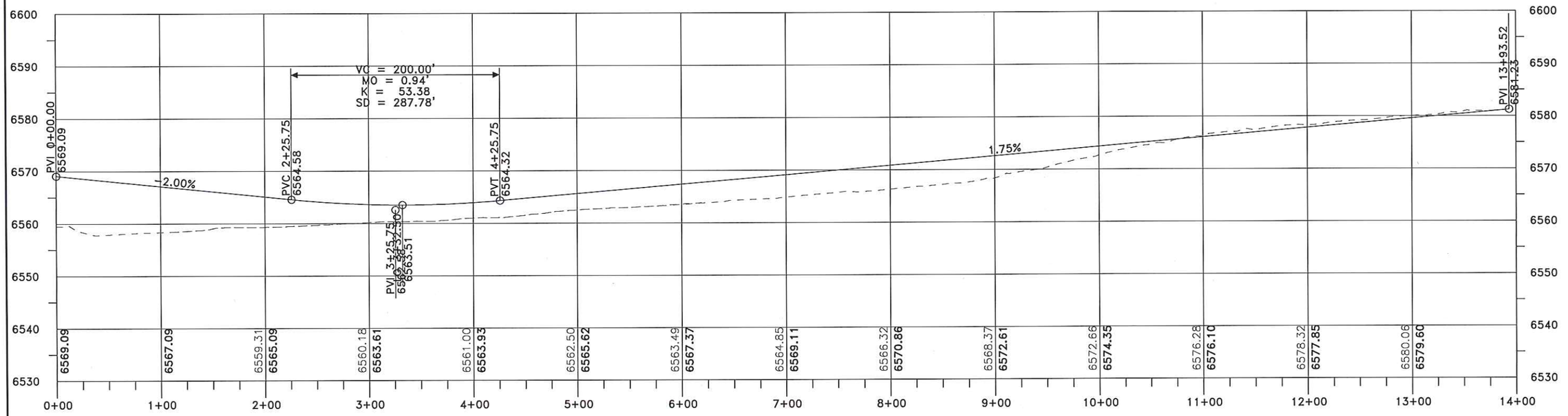
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE N-1
COUNTY ROAD 62
SOUTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 09:39

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100

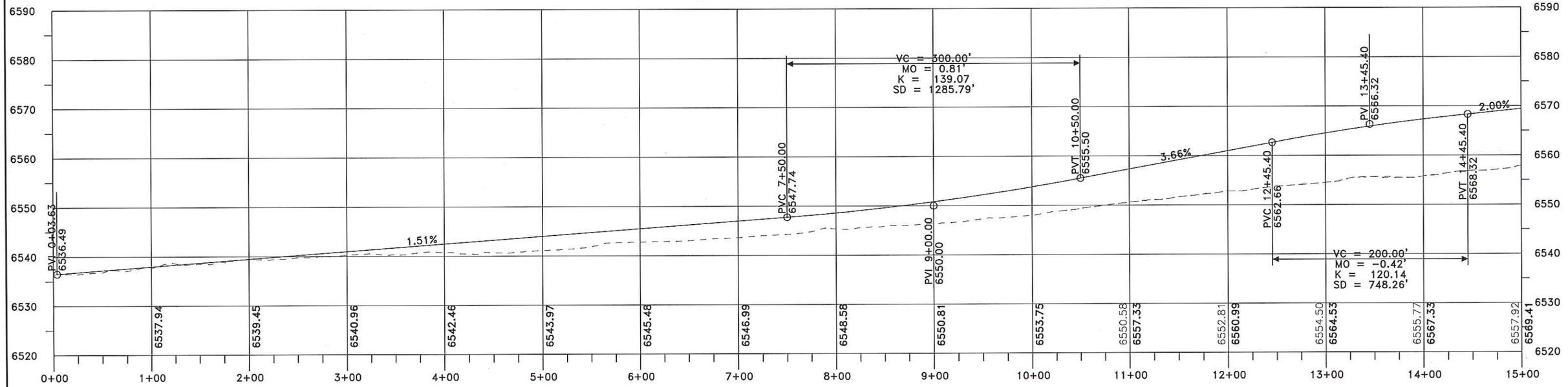


Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE N-2
COUNTY ROAD 62
SOUTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 09:40
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



Bohannan ▲ Huston INC

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

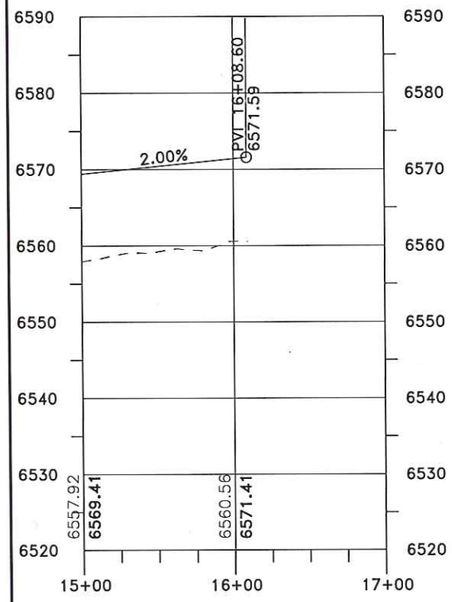
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE N-3
COUNTY ROAD 62
NORTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 09:40

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

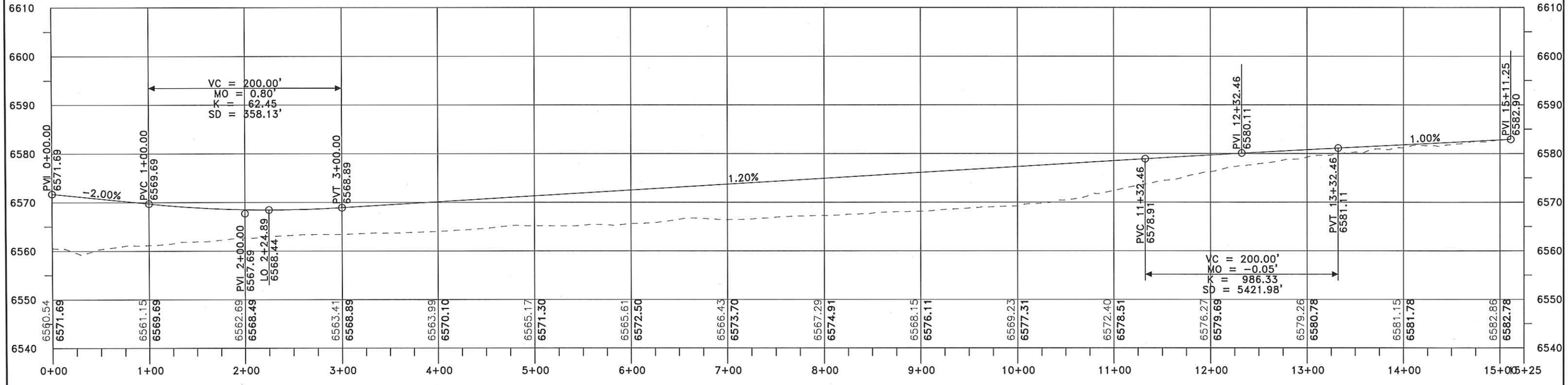
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE N-4
COUNTY ROAD 62
NORTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 09:40

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

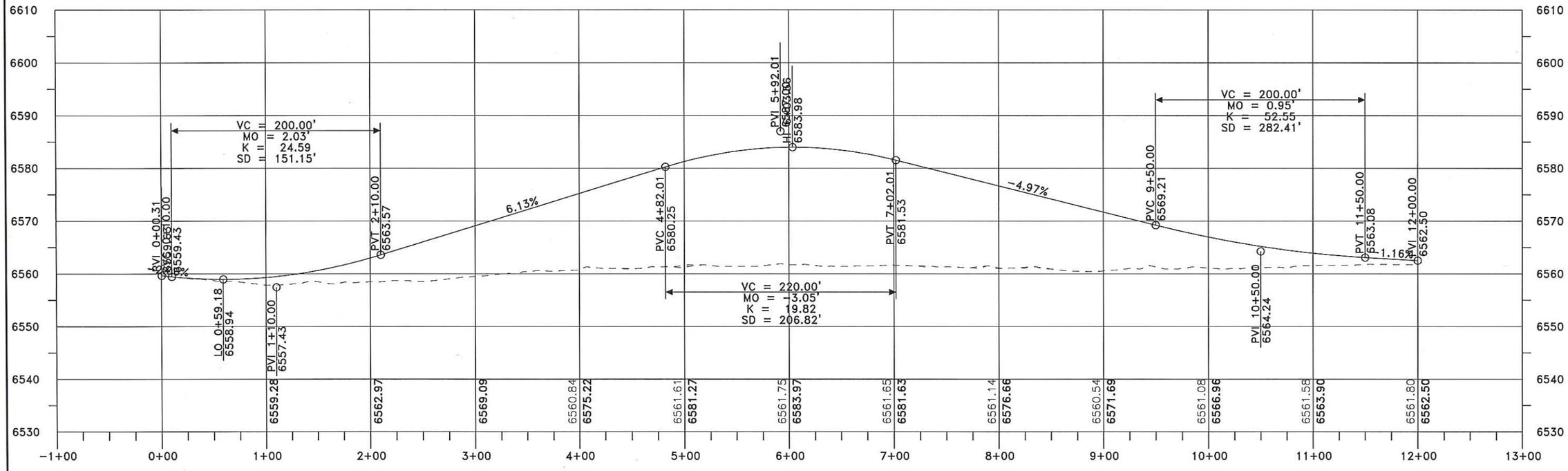
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE N-5
COUNTY ROAD 62
NORTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 09:40

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE N-6
COUNTY ROAD 62
OVERPASS PROFILE

25-NOV-2009 - 09:49

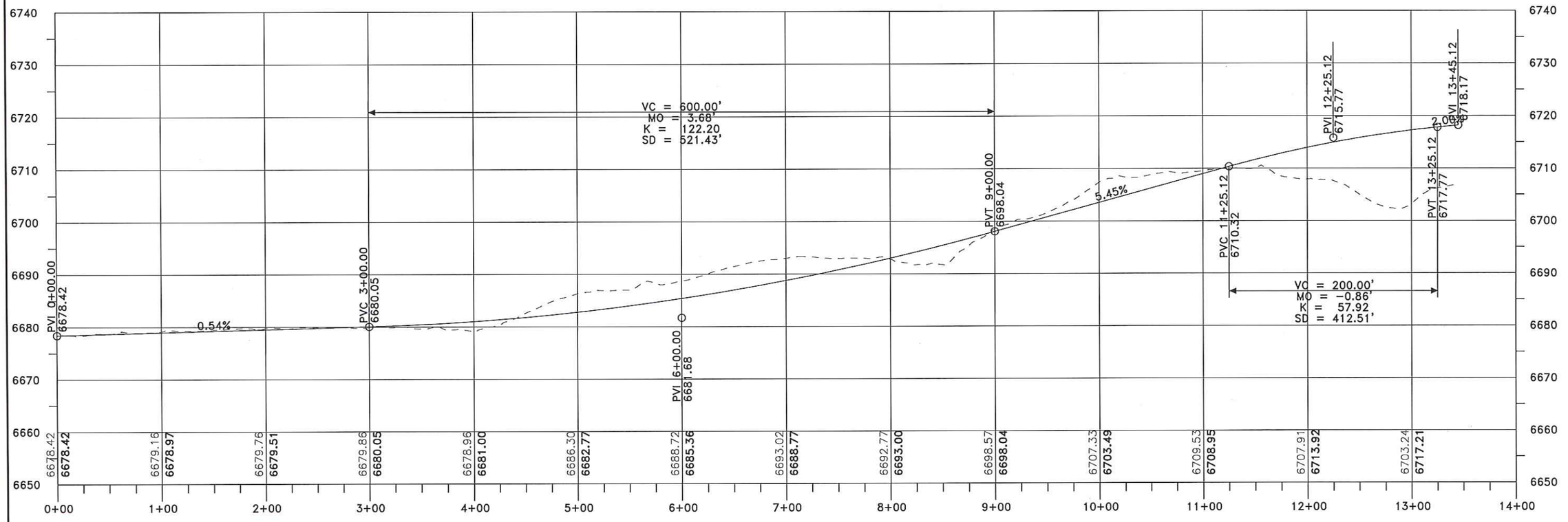
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100

Appendix P
County Road 70 Connection Interchange Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

CR 70 Interchange Alternative

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$60,000.00	$60,000.00
	EARTHWORK	L. S.	L. S.	$1,600,000.00	$1,600,000.00
	PAVING	L. S.	L. S.	$740,000.00	$740,000.00
	BRIDGE	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	WALL & BARRIERS	L. S.	L. S.	$470,000.00	$470,000.00
	DRAINAGE	L. S.	L. S.	$260,000.00	$260,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$580,000.00	$580,000.00
	MOBILIZATION	L. S.	L. S.	$570,000.00	$570,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$50,000.00	$50,000.00
	SIGNING & STRIPING	L. S.	L. S.	$25,000.00	$25,000.00
	LIGHTING	L. S.	L. S.	$160,000.00	$160,000.00
	TRAFFIC CONTROL	L. S.	L. S.	$300,000.00	$300,000.00
	STAKING	L. S.	L. S.	$90,000.00	$90,000.00
	SUBTOTAL				$6,235,000.00
	E&C				$498,800.00
	NMGRT				$494,903.13
	TOTAL				$7,228,703.13
	USE				$8,000,000.00



Bohannan ▲ Huston Inc.

Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335

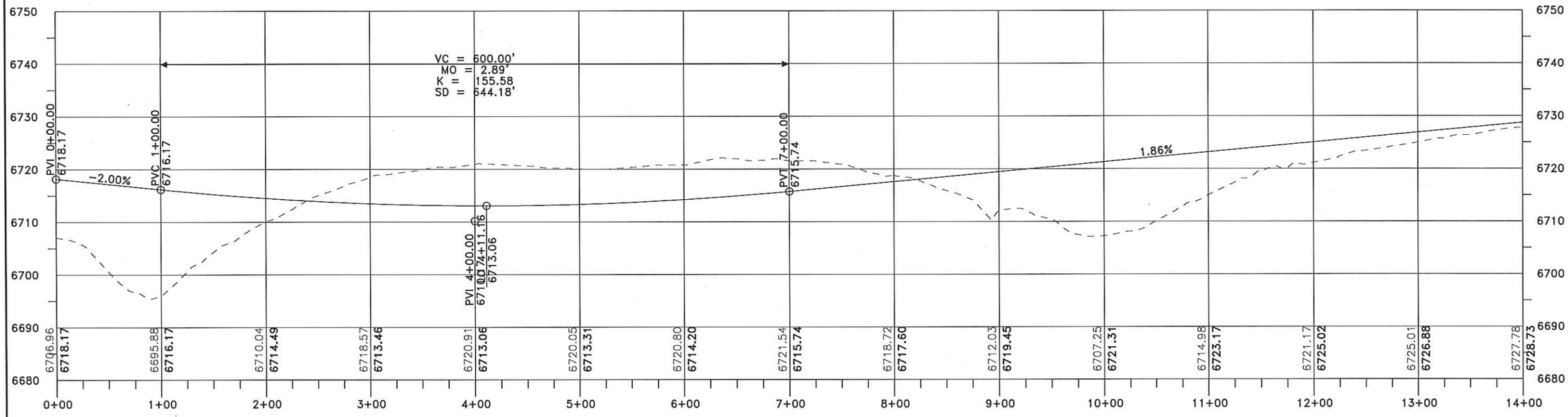
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE O-1
COUNTY ROAD 70
SOUTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 09:39

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



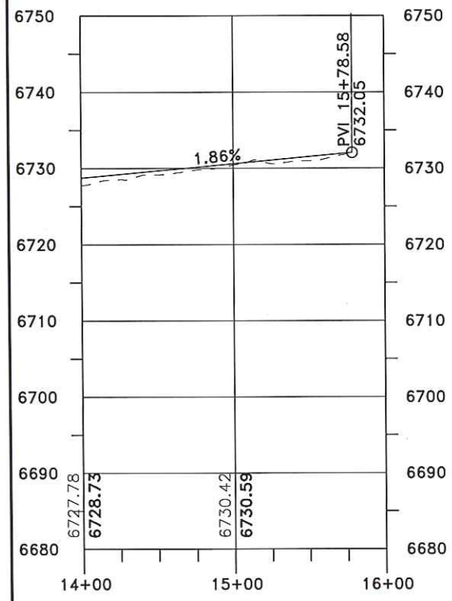
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE O-2
COUNTY ROAD 70
SOUTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 09:50

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

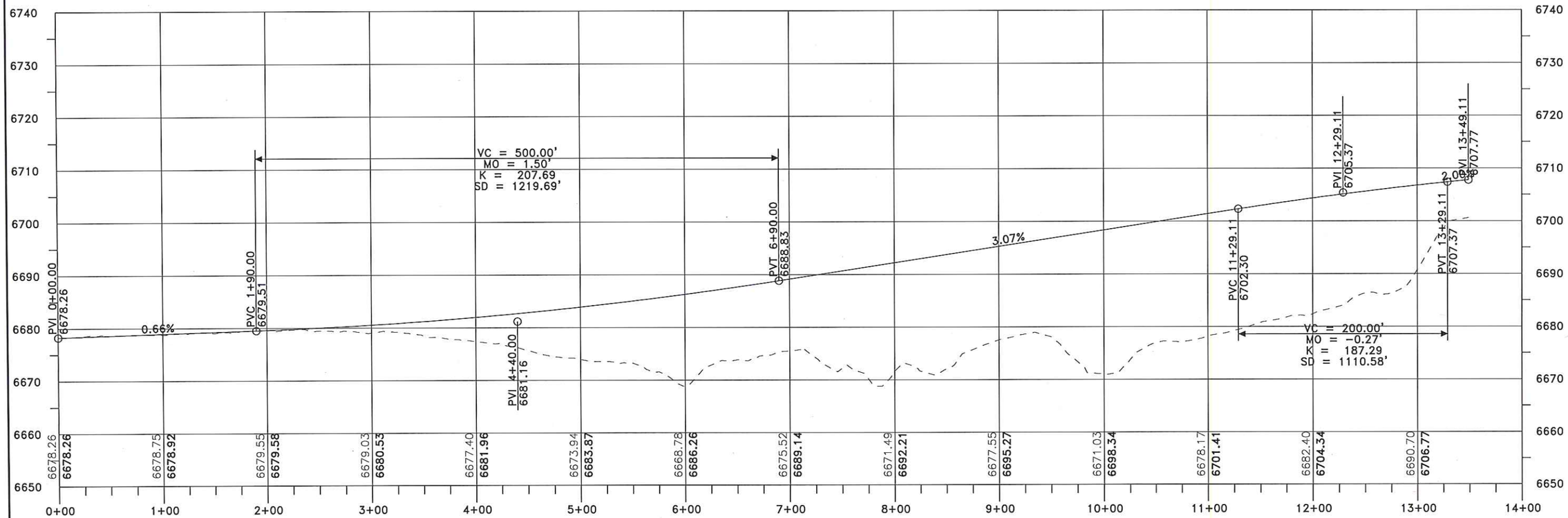
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE O-3
COUNTY ROAD 70
SOUTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 09:51

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



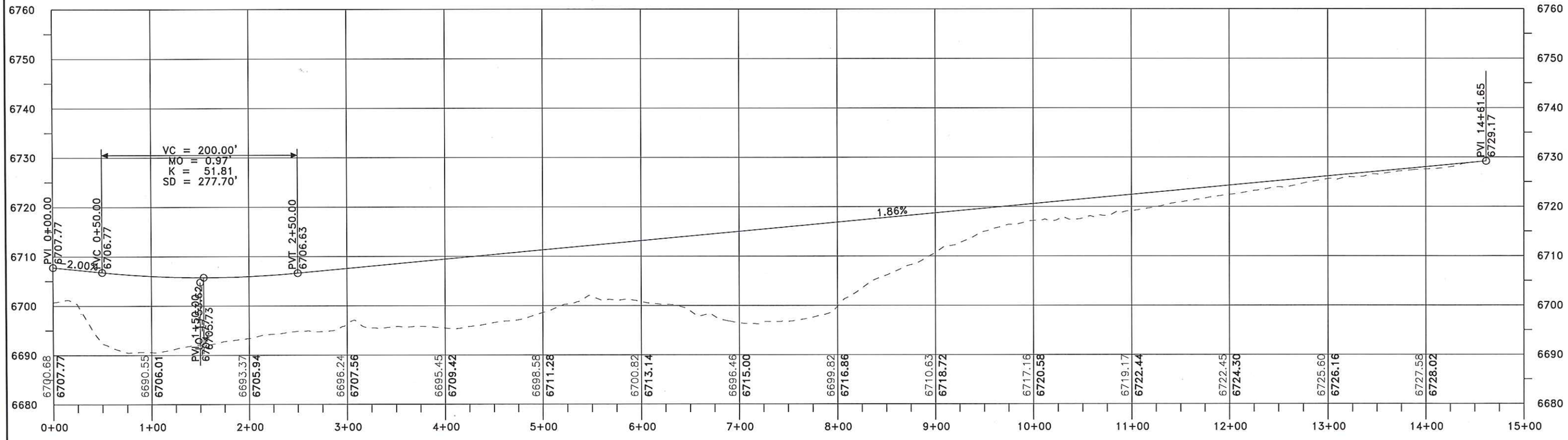
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE O-4
COUNTY ROAD 70
NORTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 09:39

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

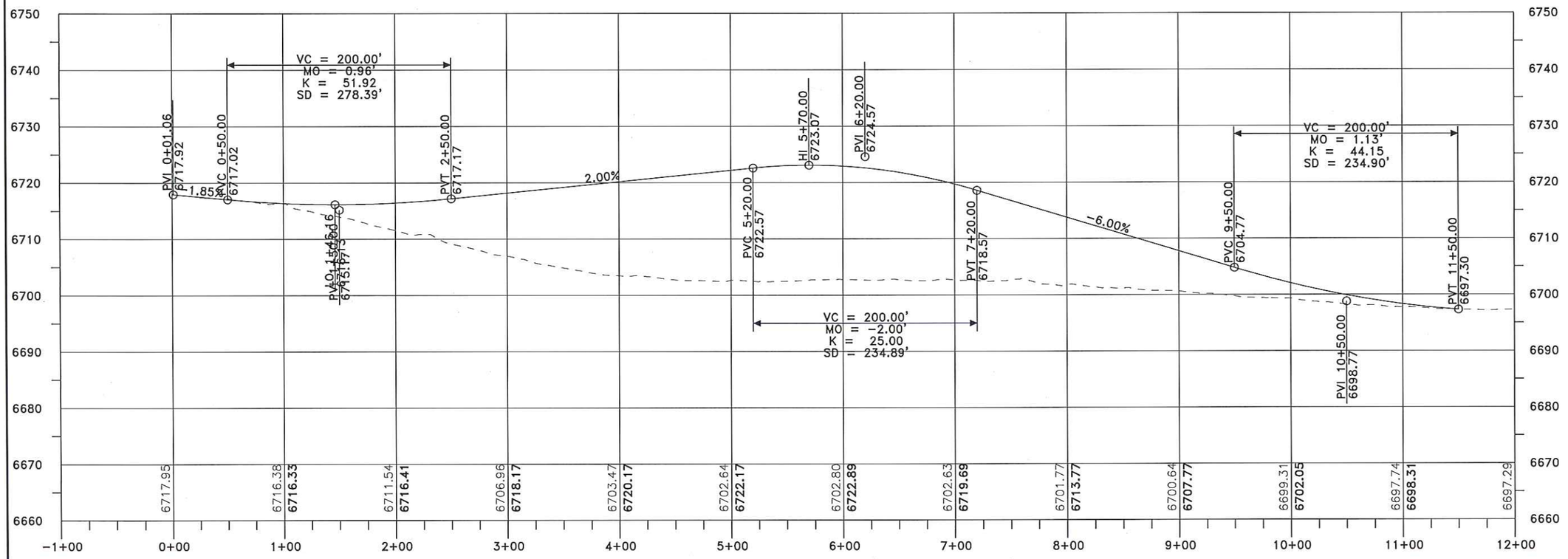
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE O-5
COUNTY ROAD 70
NORTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 09:39

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE O-6
COUNTY ROAD 70
OVERPASS PROFILE

25-NOV-2009 - 09:39
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles05.100

Appendix Q
Ephriam Road Interchange Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

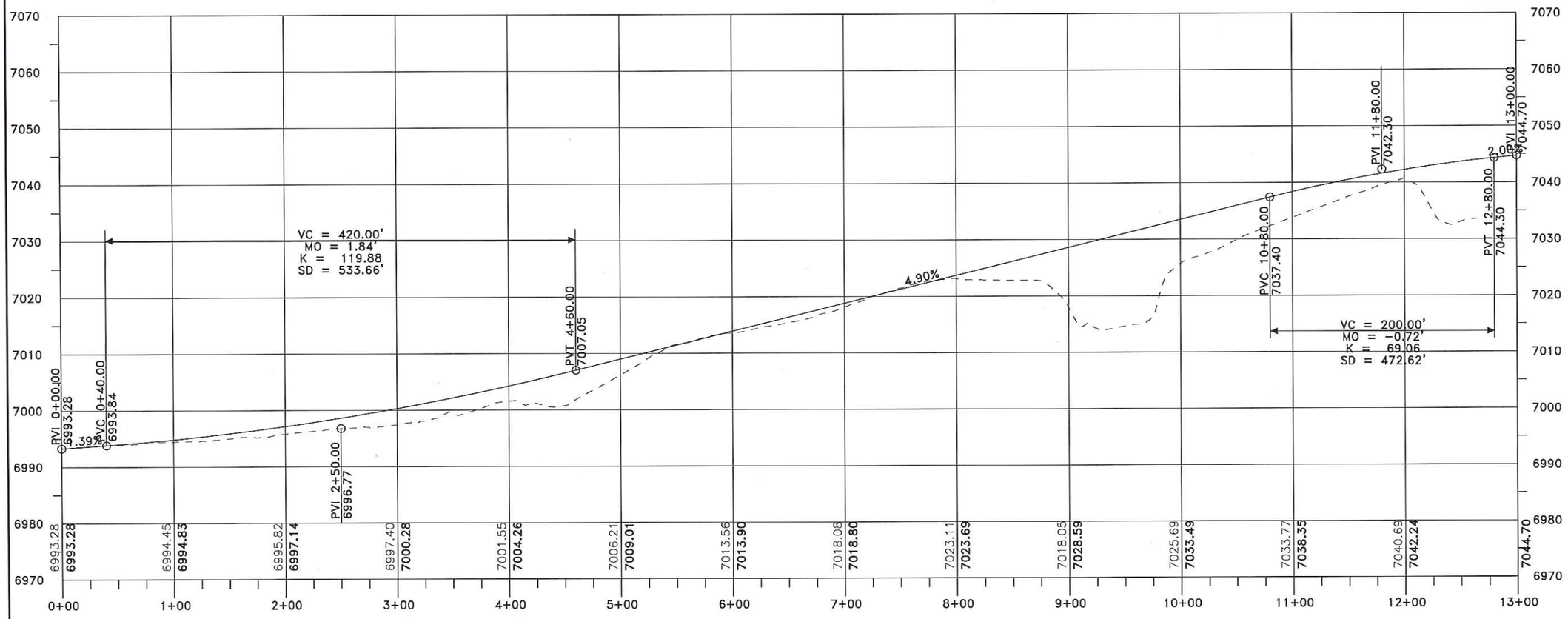
Ephriam Interchange Alternative

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$60,000.00	$60,000.00
	EARTHWORK	L. S.	L. S.	$1,700,000.00	$1,700,000.00
	PAVING	L. S.	L. S.	$840,000.00	$840,000.00
	BRIDGE	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	BARRIERS	L. S.	L. S.	$50,000.00	$50,000.00
	DRAINAGE	L. S.	L. S.	$900,000.00	$900,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$600,000.00	$600,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$50,000.00	$50,000.00
	SIGNING & STRIPING	L. S.	L. S.	$25,000.00	$25,000.00
	LIGHTING	L. S.	L. S.	$160,000.00	$160,000.00
	TRAFFIC CONTROL	L. S.	L. S.	$300,000.00	$300,000.00
	STAKING	L. S.	L. S.	$90,000.00	$90,000.00
	SUBTOTAL				$6,640,000.00
	E&C				$531,200.00
	NMGRT				$527,050.00
	TOTAL				$7,698,250.00
	USE				$8,000,000.00

12/1/09
Phase B Estimate

Ephriam Overpass

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$30,000.00	$30,000.00
	EARTHWORK	L. S.	L. S.	$600,000.00	$600,000.00
	PAVING	L. S.	L. S.	$190,000.00	$190,000.00
	BRIDGE	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	BARRIERS	L. S.	L. S.	$50,000.00	$50,000.00
	DRAINAGE	L. S.	L. S.	$340,000.00	$340,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$320,000.00	$320,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$50,000.00	$50,000.00
	SIGNING & STRIPING	L. S.	L. S.	$15,000.00	$15,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$300,000.00	$300,000.00
	STAKING	L. S.	L. S.	$50,000.00	$50,000.00
	SUBTOTAL				$3,810,000.00
	E&C				$304,800.00
	NMGRT				$302,418.75
	TOTAL				$4,417,218.75
	USE				$5,000,000.00



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

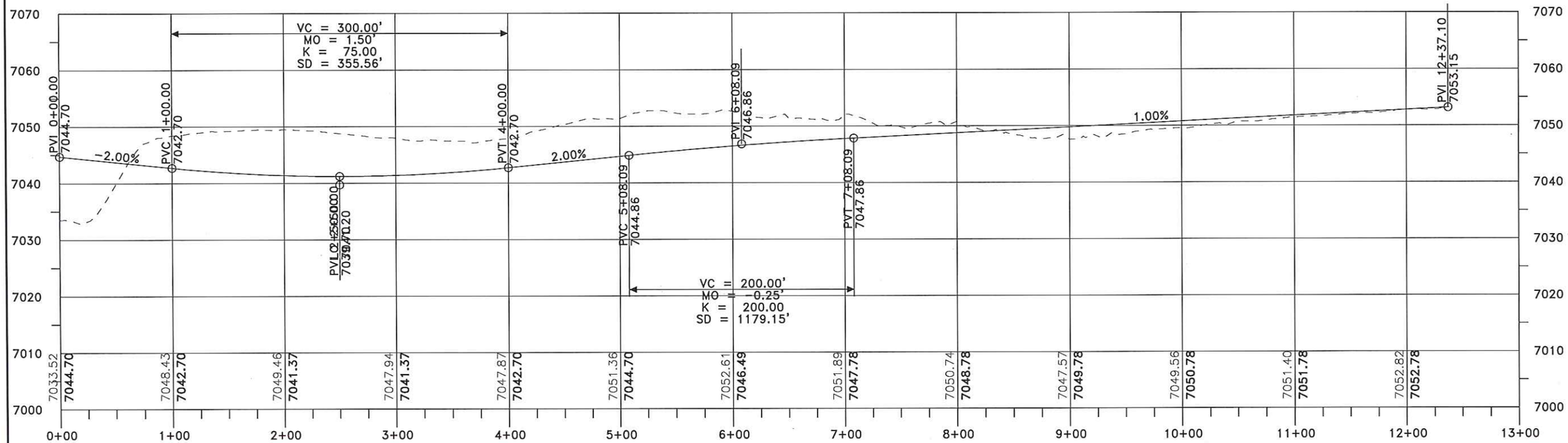
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE P-1
EPHRIAM ROAD INTERCHANGE
SOUTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 07:00

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335

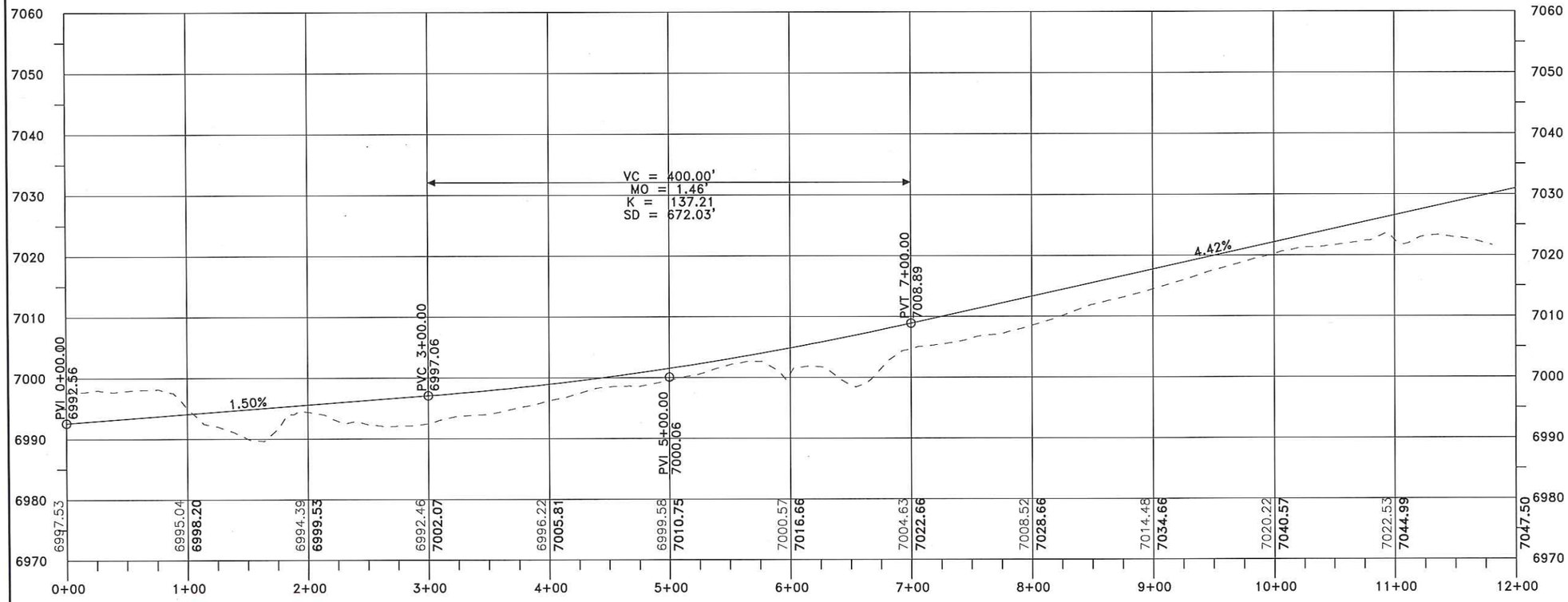
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE P-2
EPHRIAM ROAD INTERCHANGE
SOUTHBOUND OFF-RAMP
PROFILE

25-NOV-2009 - 07:00

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



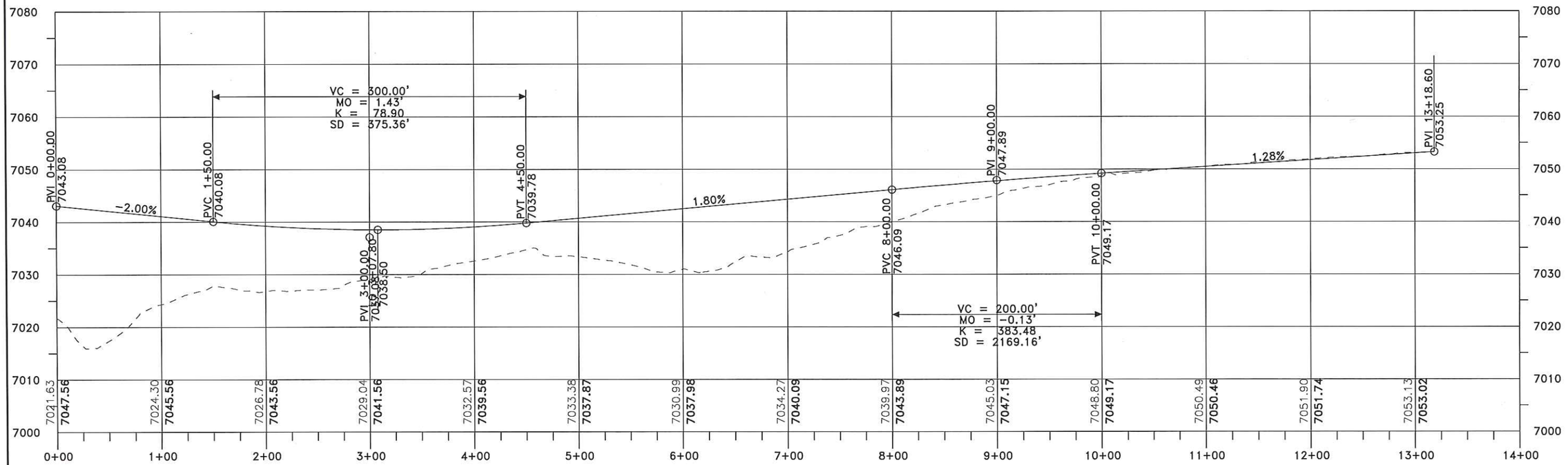
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE P-3
EPHRIAM ROAD INTERCHANGE
NORTHBOUND OFF RAMP
PROFILE

25-NOV-2009 - 07:00

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



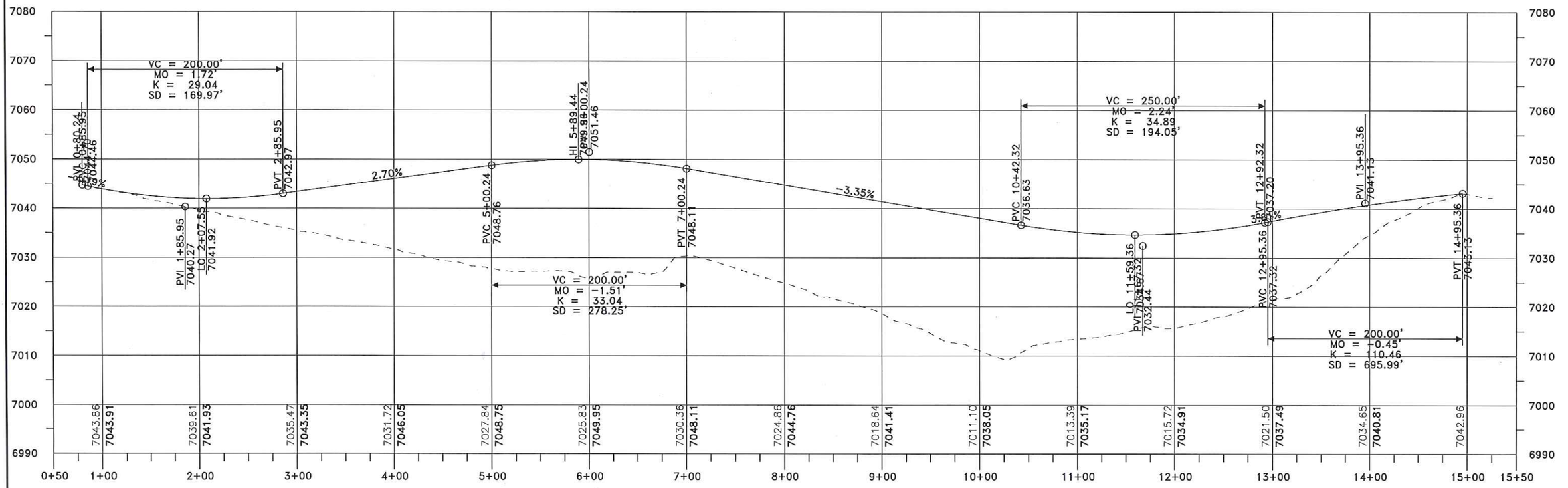
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE P-4
EPHRIAM ROAD INTERCHANGE
NORTHBOUND ON RAMP
PROFILE

25-NOV-2009 - 07:00

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE P-5
EPHRIAM ROAD INTERCHANGE
OVERPASS PROFILE

25-NOV-2009 - 09:23

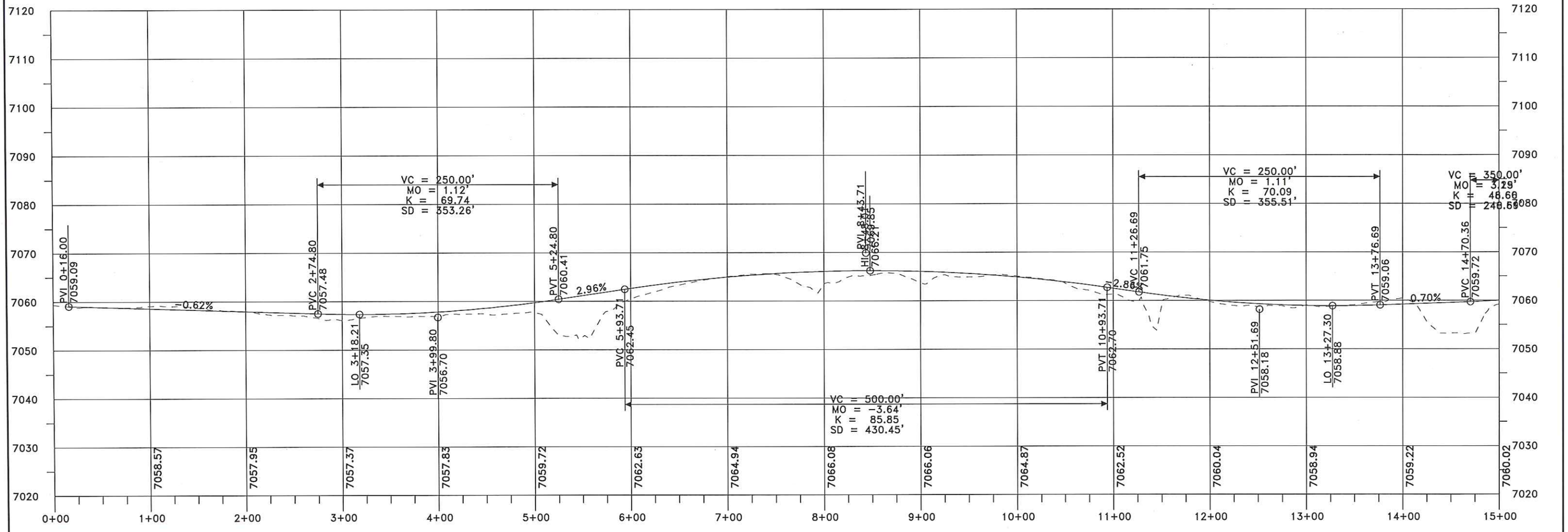
\\a-abq-fs1\abq-projects\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100

Appendix R
Frontage Road Ephriam Road to Camino de los Montoyas Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

Ephriam Frontage Road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$20,000.00	$20,000.00
	EARTHWORK	L. S.	L. S.	$50,000.00	$50,000.00
	PAVING	L. S.	L. S.	$310,000.00	$310,000.00
	BRIDGE	L. S.	L. S.	$0.00	$0.00
	BARRIERS	L. S.	L. S.	$20,000.00	$20,000.00
	EQUESTRIAN CROSSING	L. S.	L. S.	$820,000.00	$820,000.00
	DRAINAGE	L. S.	L. S.	$50,000.00	$50,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$200,000.00	$200,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$20,000.00	$20,000.00
	SIGNING & STRIPING	L. S.	L. S.	$20,000.00	$20,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	STAKING	L. S.	L. S.	$20,000.00	$20,000.00
	SUBTOTAL				$2,125,000.00
	E&C				$170,000.00
	NMGRT				$168,671.88
	TOTAL				$2,463,671.88
	USE				$3,000,000.00



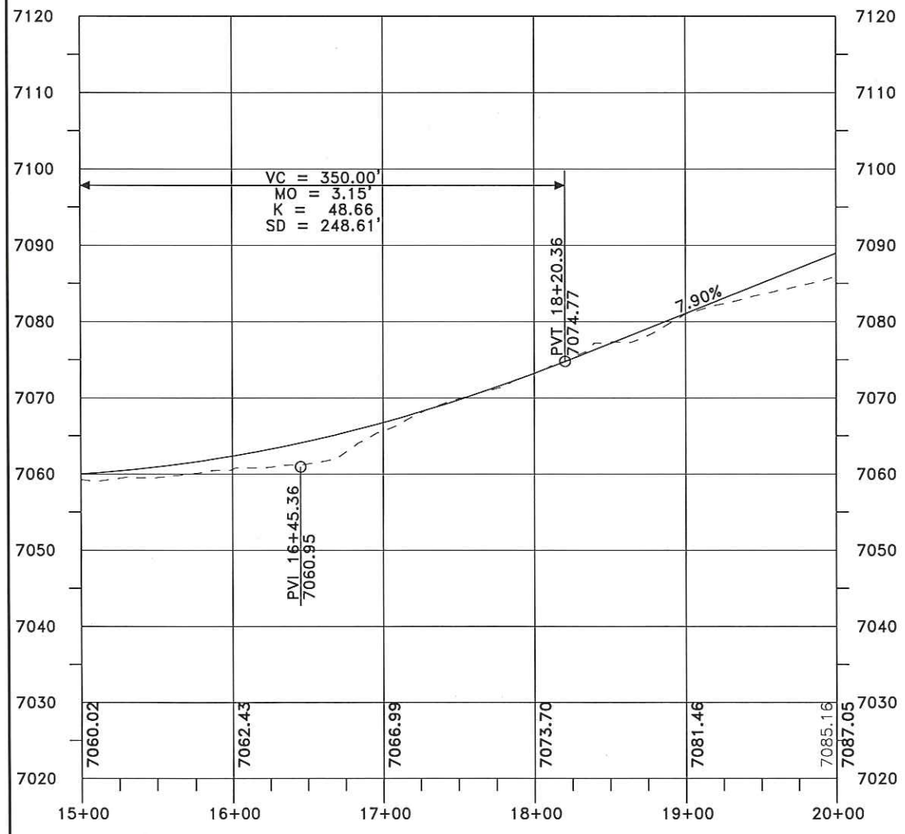
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE Q-1
CAMINO DE LOS MONTOYAS
W. FRT RD TO EPHRIAM
INTERCHANGE PROFILE

25-NOV-2009 - 07:02

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



25-NOV-2009 - 07:02

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100

Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE Q-2
CAMINO DE LOS MONTOYAS
W. FRT RD TO EPHRIAM
INTERCHANGE PROFILE

Appendix S
Camino de los Montoyas Interchange Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

Camino de los Montoyas Interchange

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$60,000.00	$60,000.00
	EARTHWORK	L. S.	L. S.	$1,800,000.00	$1,800,000.00
	PAVING	L. S.	L. S.	$810,000.00	$810,000.00
	BRIDGE	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	BARRIERS	L. S.	L. S.	$50,000.00	$50,000.00
	DRAINAGE	L. S.	L. S.	$570,000.00	$570,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$565,000.00	$565,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$50,000.00	$50,000.00
	SIGNING & STRIPING	L. S.	L. S.	$40,000.00	$40,000.00
	LIGHTING	L. S.	L. S.	$160,000.00	$160,000.00
	TRAFFIC CONTROL	L. S.	L. S.	$300,000.00	$300,000.00
	STAKING	L. S.	L. S.	$90,000.00	$90,000.00
	SUBTOTAL				$6,360,000.00
	E&C				$508,800.00
	NMGRT				$504,825.00
	TOTAL				$7,373,625.00
	USE				$8,000,000.00

12/1/09
Phase B Estimate

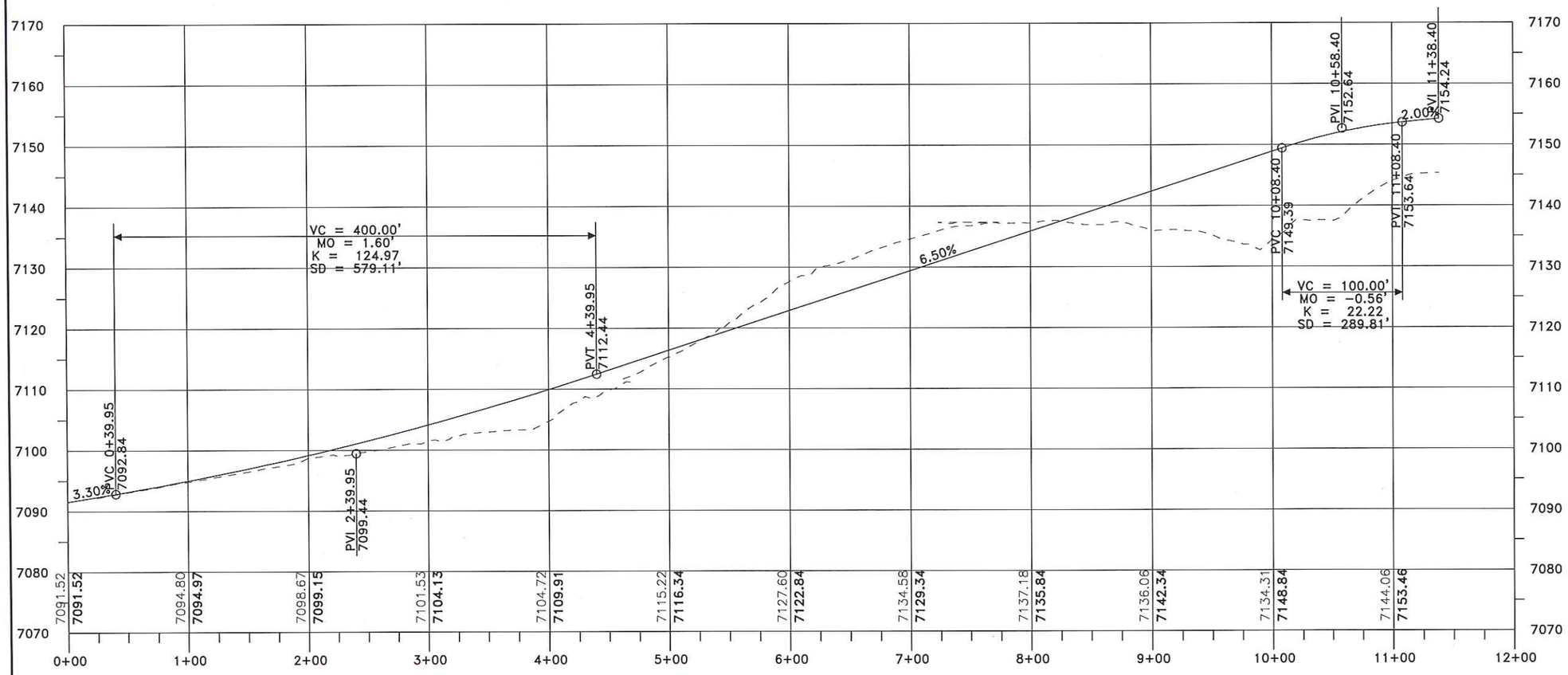
Camino de los Montoyas Overpass

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$30,000.00	$30,000.00
	EARTHWORK	L. S.	L. S.	$600,000.00	$600,000.00
	PAVING	L. S.	L. S.	$130,000.00	$130,000.00
	BRIDGE	L. S.	L. S.	$1,300,000.00	$1,300,000.00
	BARRIERS	L. S.	L. S.	$100,000.00	$100,000.00
	DRAINAGE	L. S.	L. S.	$70,000.00	$70,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$290,000.00	$290,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$30,000.00	$30,000.00
	SIGNING & STRIPING	L. S.	L. S.	$15,000.00	$15,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$300,000.00	$300,000.00
	STAKING	L. S.	L. S.	$50,000.00	$50,000.00
	SUBTOTAL				$3,480,000.00
	E&C				$278,400.00
	NMGRT				$276,225.00
	TOTAL				$4,034,625.00
	USE				$4,500,000.00

12/1/09
Phase B Estimate

Camino de los Montoyas south frontage road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$20,000.00	$20,000.00
	EARTHWORK	L. S.	L. S.	$200,000.00	$200,000.00
	PAVING	L. S.	L. S.	$240,000.00	$240,000.00
	BRIDGE	L. S.	L. S.	$0.00	$0.00
	BARRIERS	L. S.	L. S.	$0.00	$0.00
	DRAINAGE	L. S.	L. S.	$170,000.00	$170,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$120,000.00	$120,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$20,000.00	$20,000.00
	SIGNING & STRIPING	L. S.	L. S.	$15,000.00	$15,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	STAKING	L. S.	L. S.	$30,000.00	$30,000.00
	SUBTOTAL				$1,410,000.00
	E&C				$112,800.00
	NMGRT				$111,918.75
	TOTAL				$1,634,718.75
	USE				$2,000,000.00



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

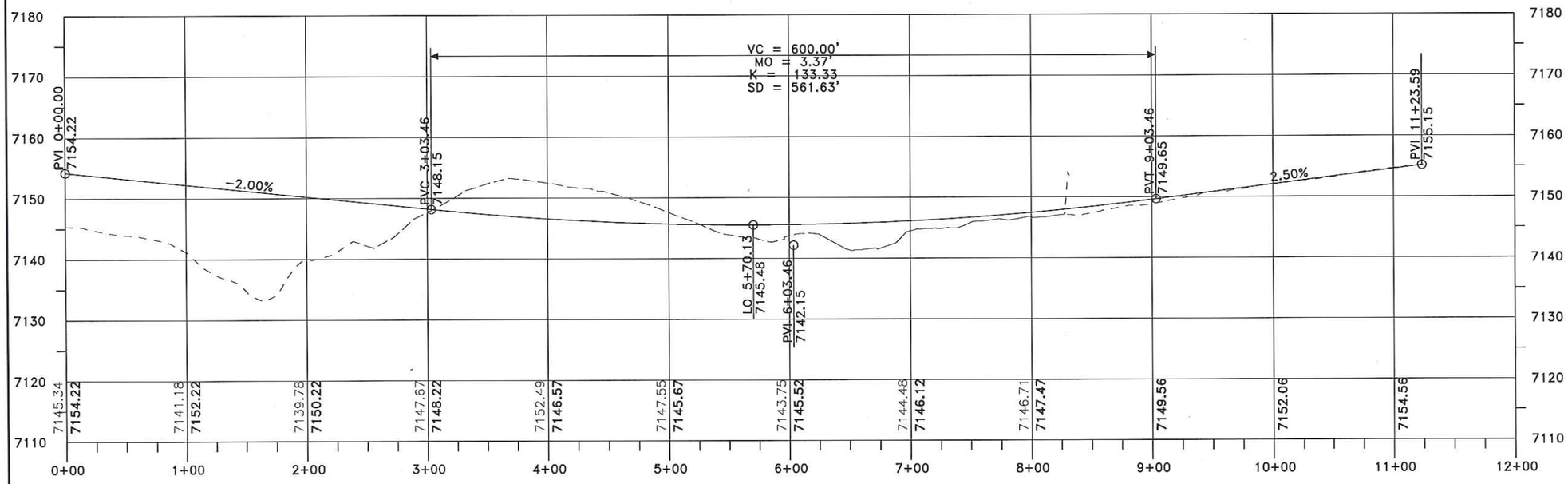
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE R-1
CAMINO DE LOS MONTOYAS INTERCHANGE
SOUTHBOUND ON RAMP PROFILE

25-NOV-2009 - 07:01

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

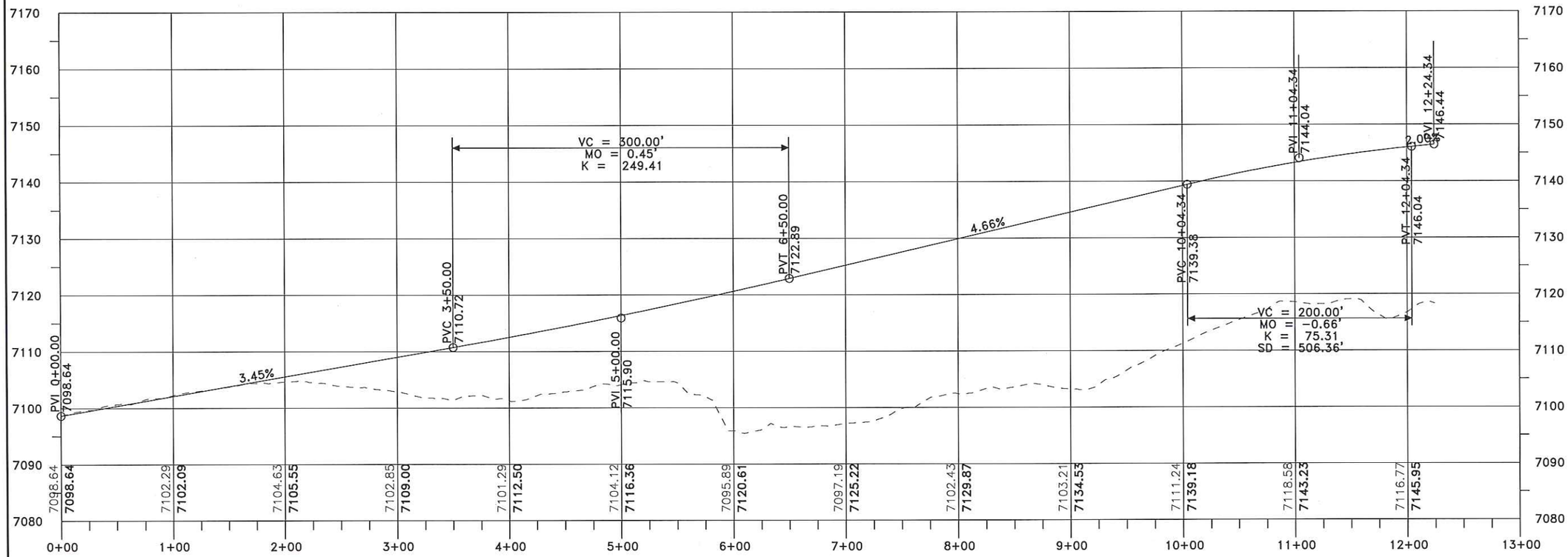
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE R-2
CAMINO DE LOS MONTOYAS INTERCHANGE
SOUTHBOUND OFF RAMP PROFILE

25-NOV-2009 - 07:01

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



Bohannan ▲ Huston INC

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

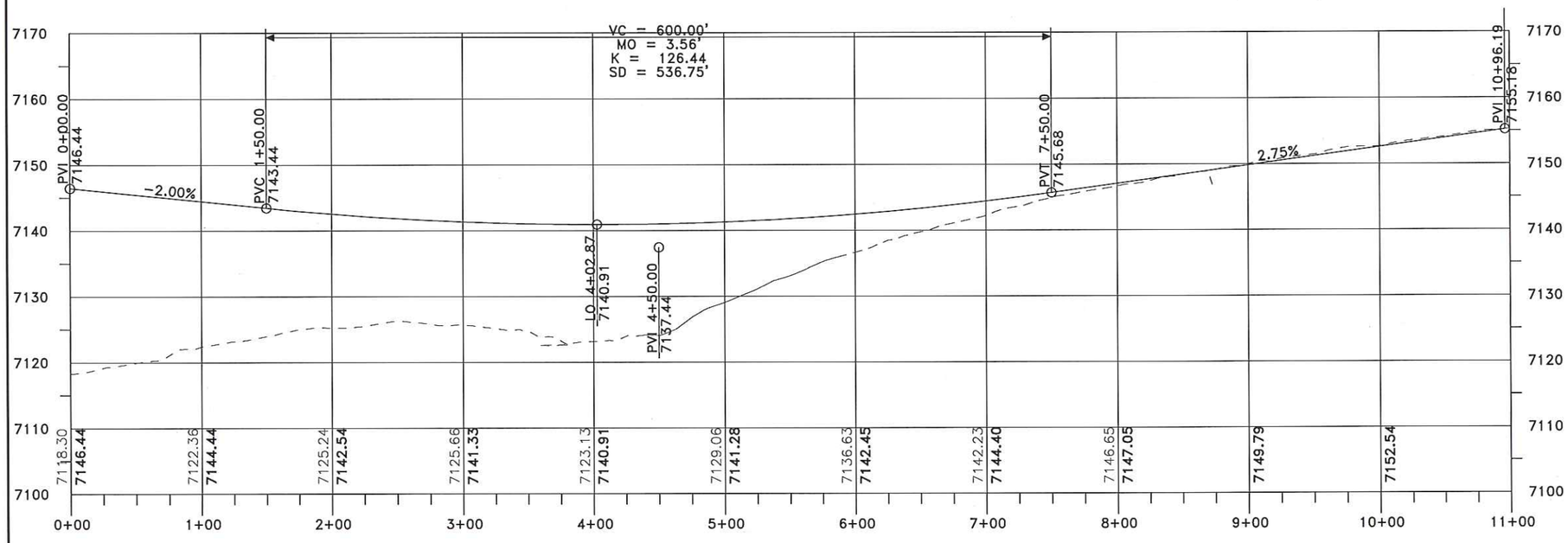
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE R-3
CAMINO DE LOS MONTOYAS INTERCHANGE
NORTHBOUND OFF RAMP PROFILE

25-NOV-2009 - 07:01

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



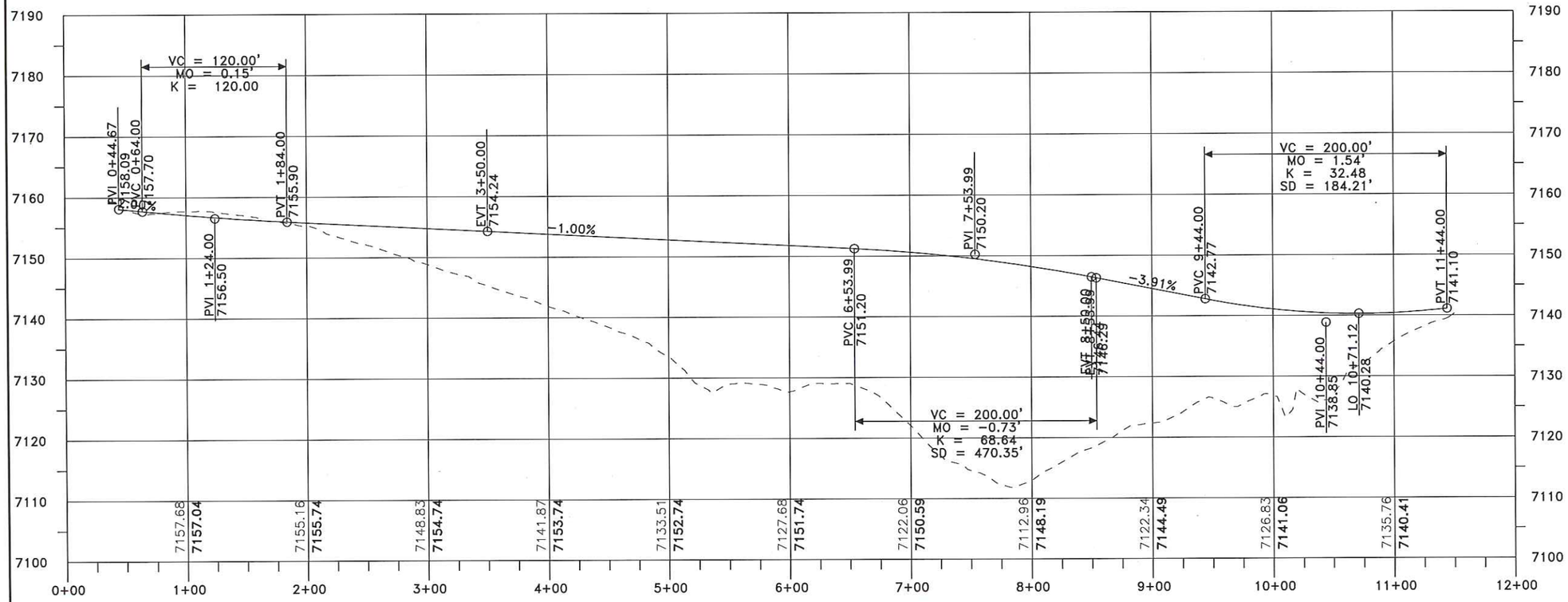
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE R-4
CAMINO DE LOS MONTOYAS INTERCHANGE
NORTHBOUND ON RAMP PROFILE

25-NOV-2009 - 07:01

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



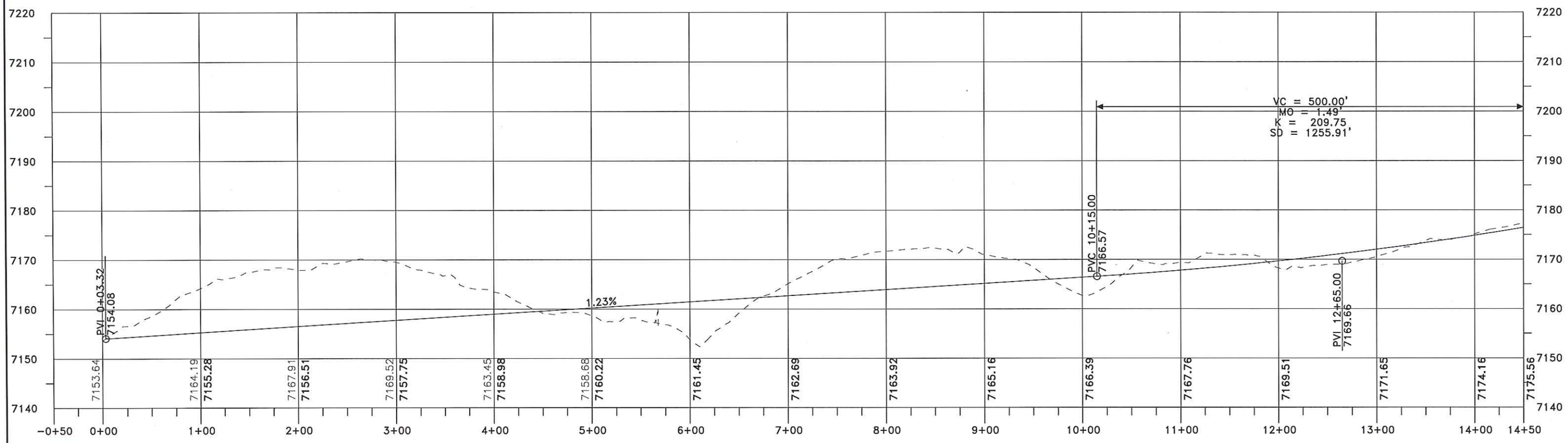
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE R-5
CAMINO DE LOS MONTOYAS
INTERCHANGE
OVERPASS PROFILE

25-NOV-2009 - 07:01

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



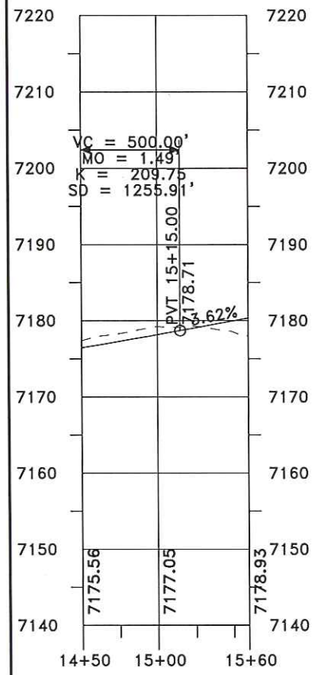
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE R-6
CAMINO DE LOS MONTOYAS INTERCHANGE
WEST FRONTAGE RD PROFILE

25-NOV-2009 - 07:02

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



25-NOV-2009 - 07:02

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100

Bohannan ▲ Huston Inc.

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335

ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

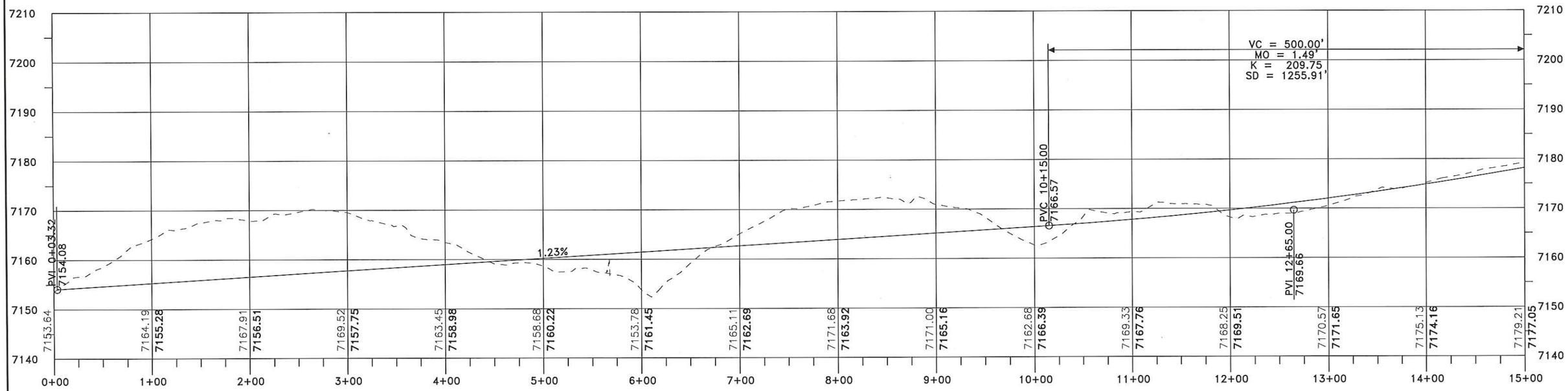
FIGURE R-7
CAMINO DE LOS MONTOYAS INTERCHANGE
WEST FRONTAGE ROAD PROFILE

Appendix T
W. Frontage Road Camino de los Montoyas to Ridgetop Road Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

NM 599 West Frontage Road from CDLM to Ridgetop Road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$30,000.00	$30,000.00
	EARTHWORK	L. S.	L. S.	$1,800,000.00	$1,800,000.00
	PAVING	L. S.	L. S.	$700,000.00	$700,000.00
	BRIDGE	L. S.	L. S.	$0.00	$0.00
	WALL & BARRIERS	L. S.	L. S.	$440,000.00	$440,000.00
	DRAINAGE	L. S.	L. S.	$160,000.00	$160,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$290,000.00	$290,000.00
	EROSION CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$20,000.00	$20,000.00
	SIGNING & STRIPING	L. S.	L. S.	$30,000.00	$30,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	STAKING	L. S.	L. S.	$45,000.00	$45,000.00
	SUBTOTAL				$4,110,000.00
	E&C				$328,800.00
	NMGRT				$326,231.25
	TOTAL				$4,765,031.25
	USE				$5,500,000.00



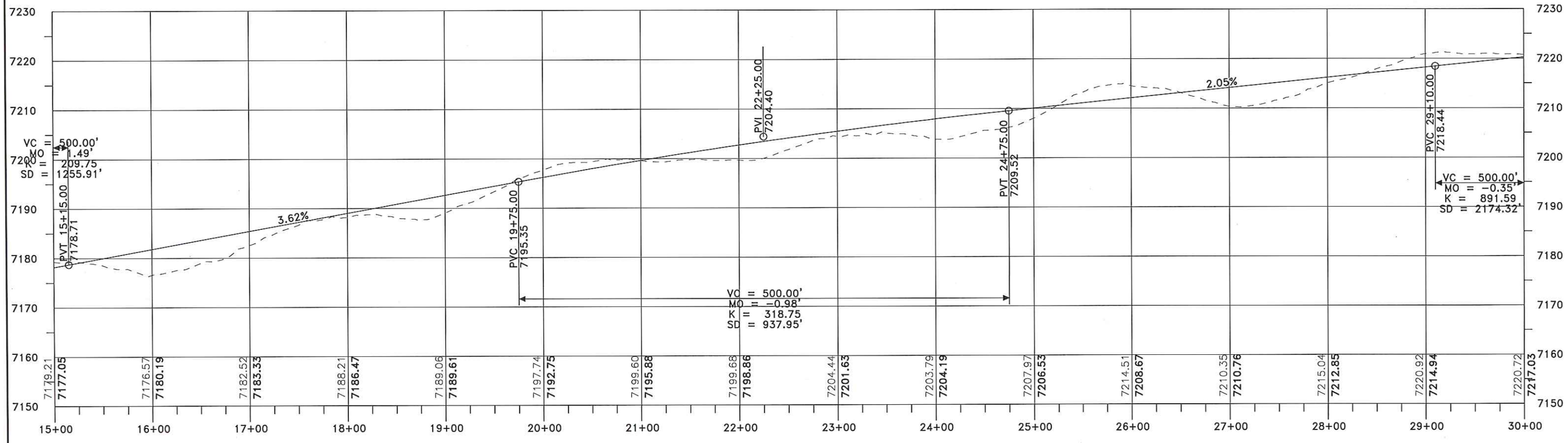
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE S-1
WEST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:03

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



Bohannan ▲ Huston

Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335

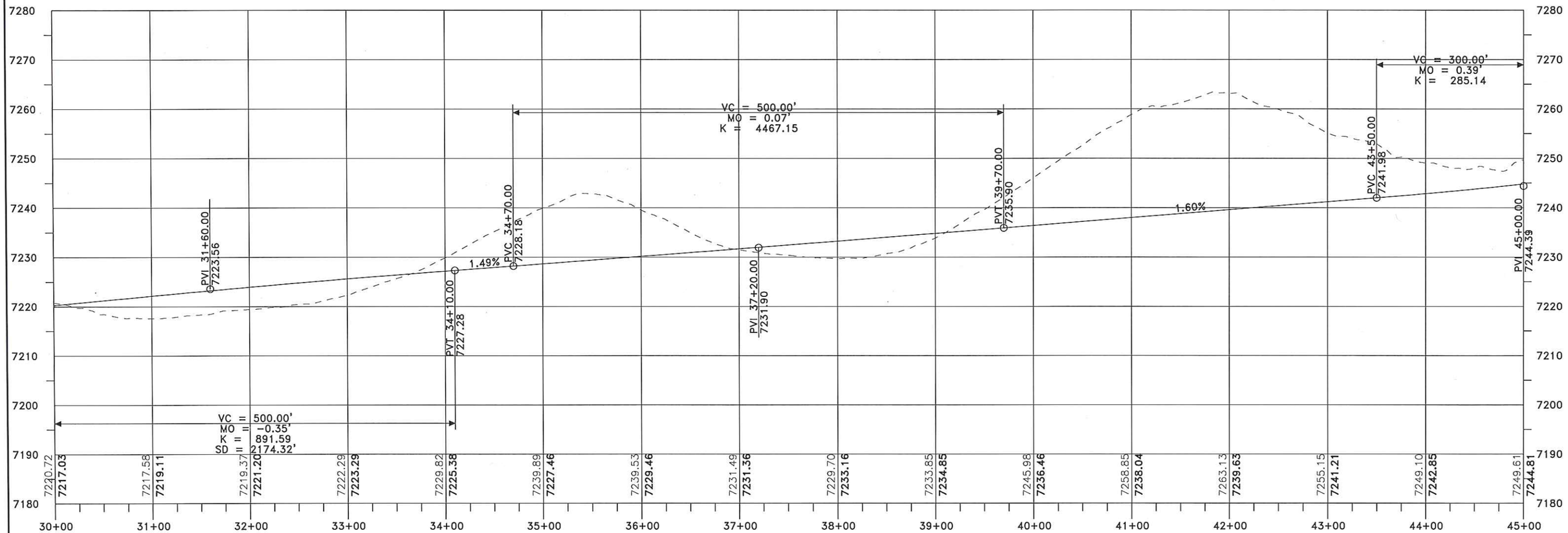
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE S-2
WEST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:03

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



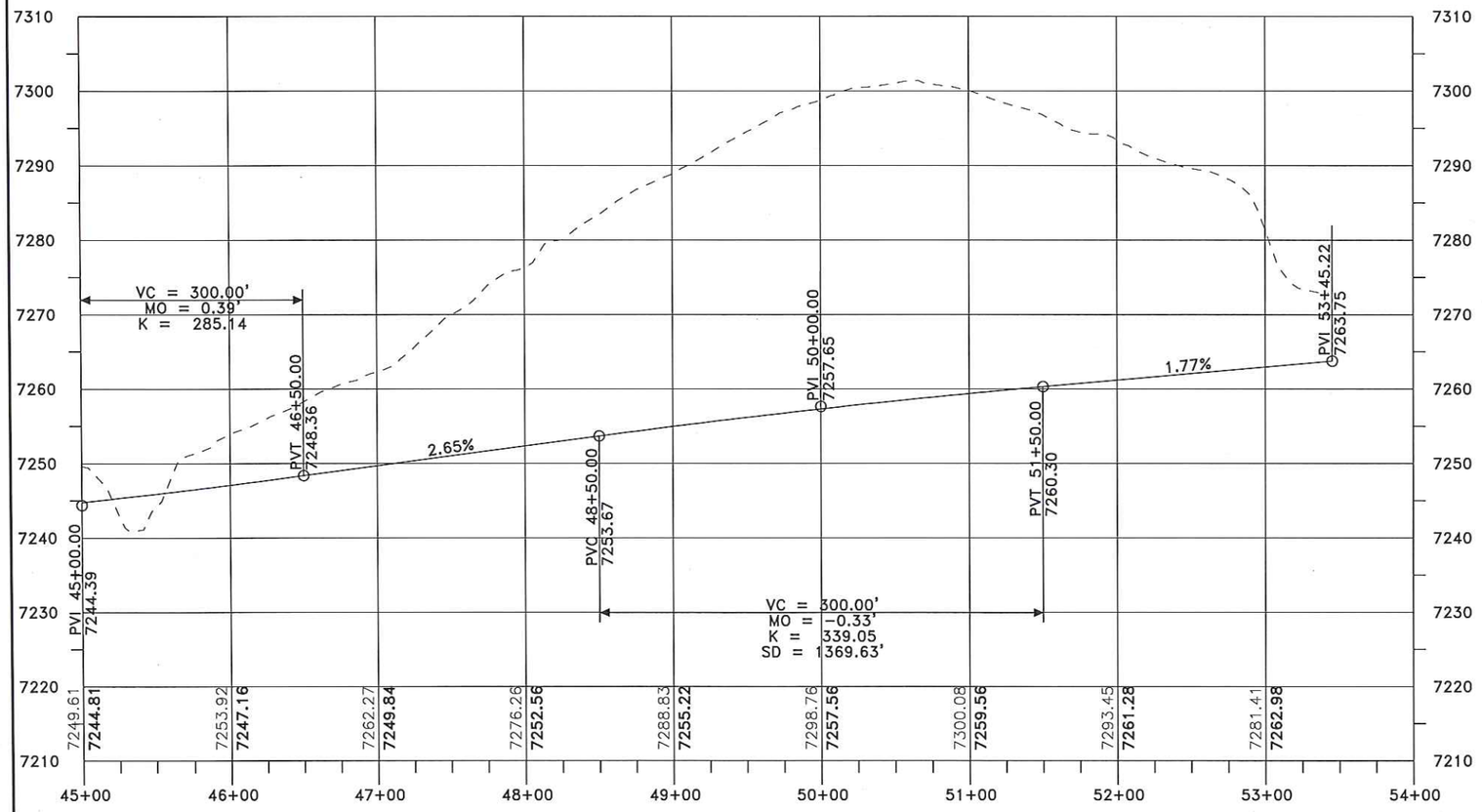
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE S-3
WEST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:03

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE S-4
WEST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:03

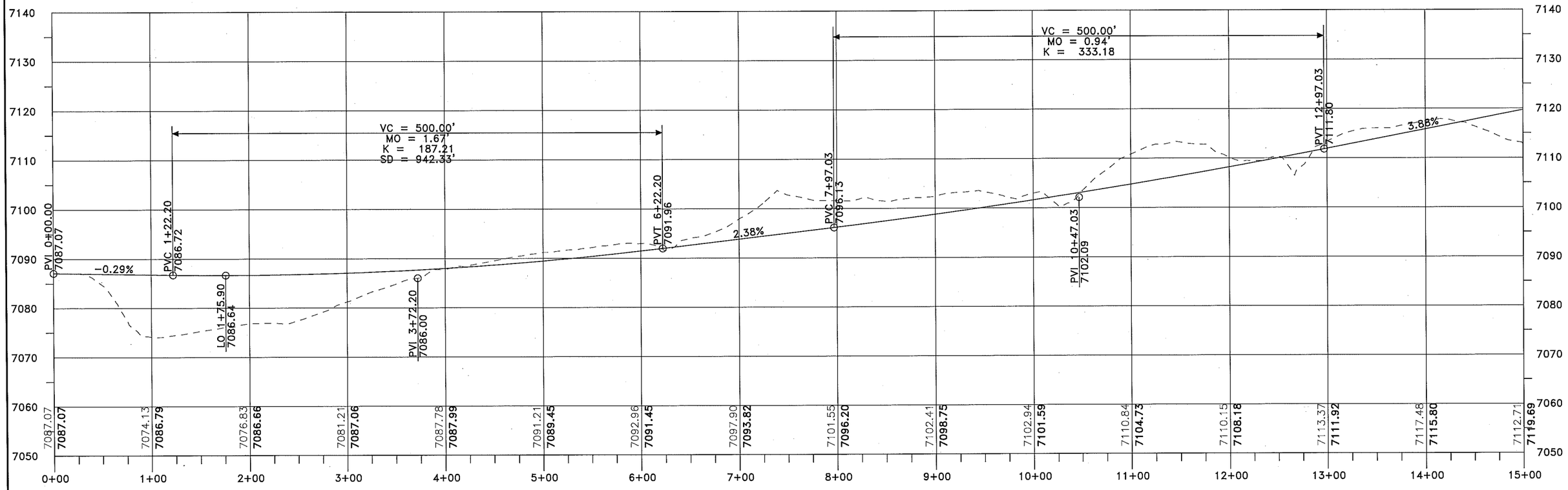
P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100

Appendix U
E. Frontage Road Camino de los Montoyas to Ridgetop Road Vertical Profiles and Cost Estimate

12/1/09
Phase B Estimate

NM 599 East Frontage Road from CDLM to Ridgetop Road

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
	CLEARING & GRUBBING	L. S.	L. S.	$50,000.00	$50,000.00
	EARTHWORK	L. S.	L. S.	$450,000.00	$450,000.00
	PAVING	L. S.	L. S.	$850,000.00	$850,000.00
	BRIDGE	L. S.	L. S.	$0.00	$0.00
	BARRIERS	L. S.	L. S.	$10,000.00	$10,000.00
	DRAINAGE	L. S.	L. S.	$220,000.00	$220,000.00
	CONSTRUCTION ENGINEERING	L. S.	L. S.	$535,000.00	$535,000.00
	MOBILIZATION	L. S.	L. S.	$455,000.00	$455,000.00
	EROSION CONTROL	L. S.	L. S.	$40,000.00	$40,000.00
	REMOVALS OF STRUCTURES & OBSTRUCTIONS	L. S.	L. S.	$25,000.00	$25,000.00
	SIGNING & STRIPING	L. S.	L. S.	$30,000.00	$30,000.00
	LIGHTING	L. S.	L. S.	$0.00	$0.00
	TRAFFIC CONTROL	L. S.	L. S.	$30,000.00	$30,000.00
	STAKING	L. S.	L. S.	$70,000.00	$70,000.00
	SUBTOTAL				$2,765,000.00
	E&C				$221,200.00
	NMGRT				$219,471.88
	TOTAL				$3,205,671.88
	USE				$4,000,000.00



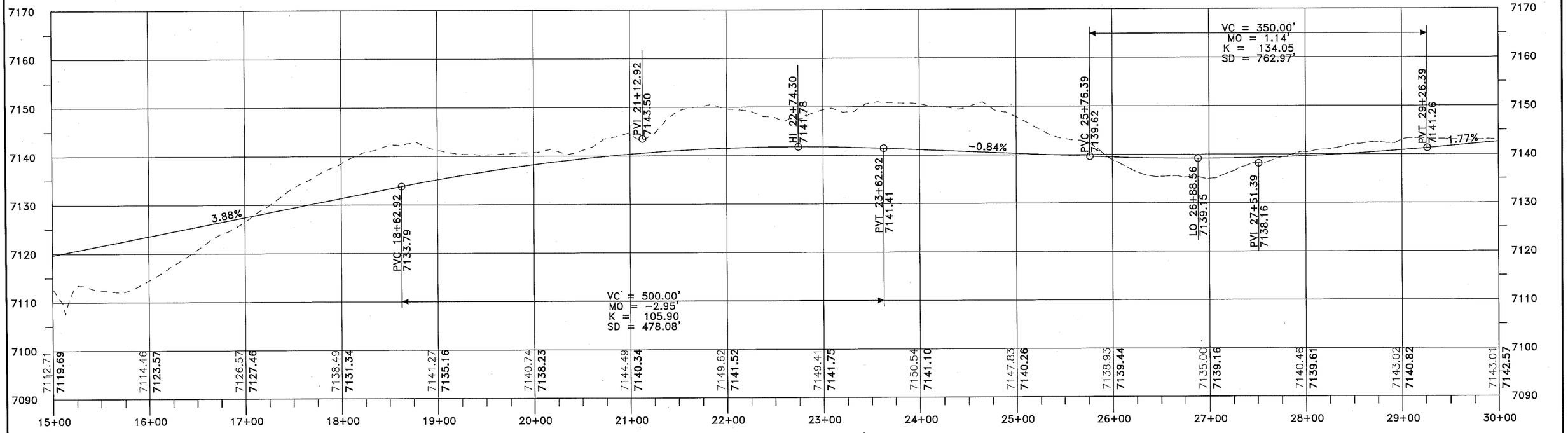
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE T-1
EAST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:02

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



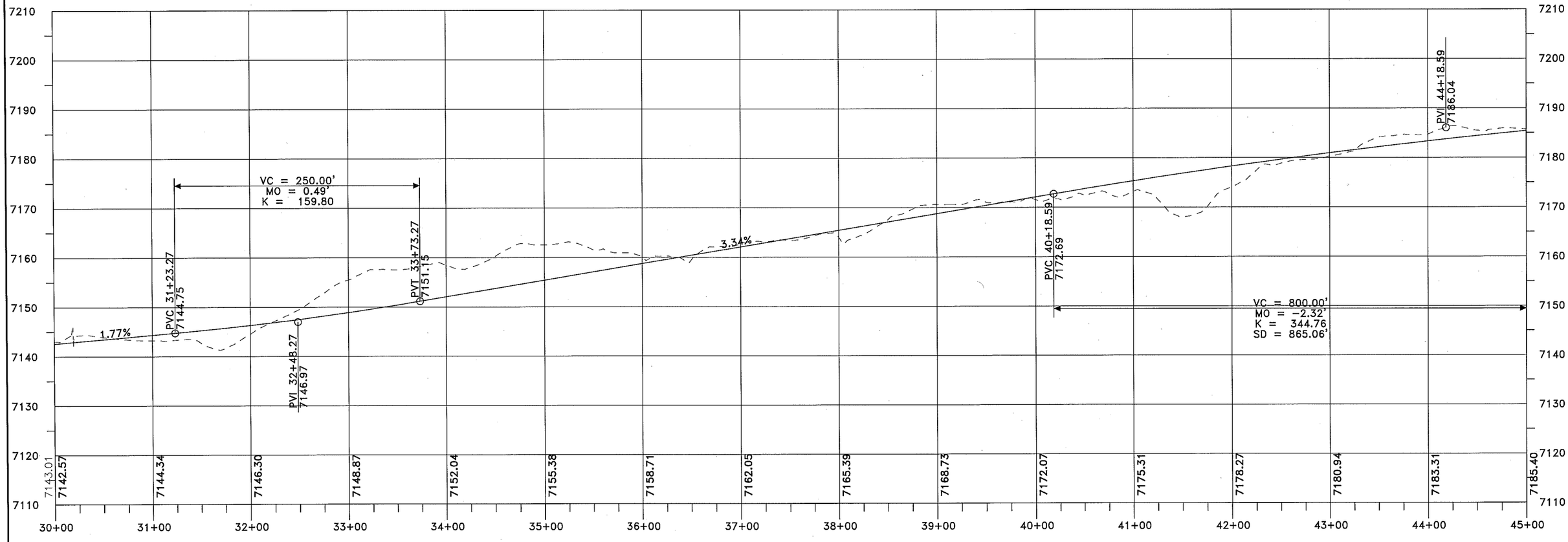
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE T-1
EAST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:02

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



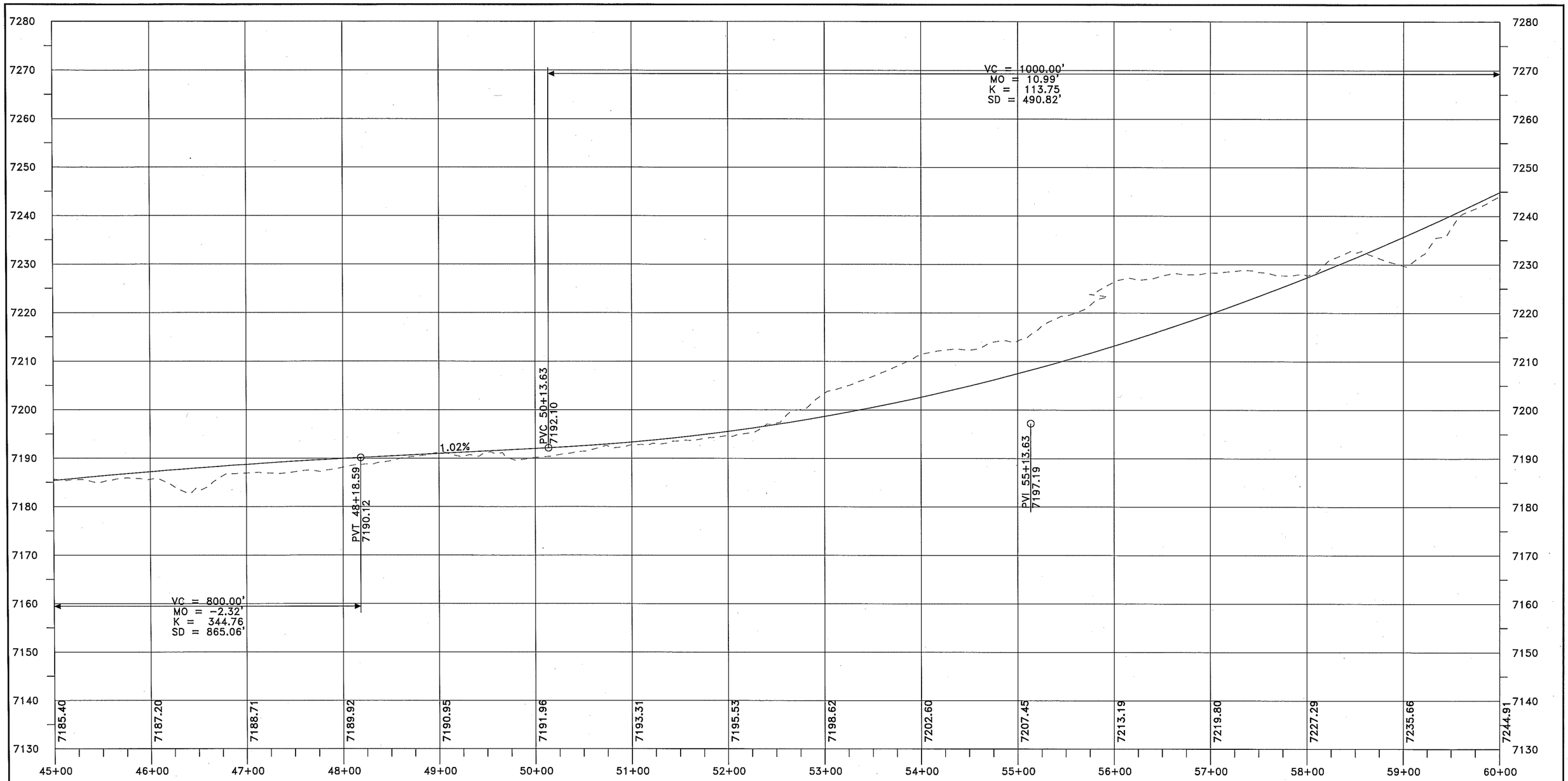
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE T-3
EAST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:02

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



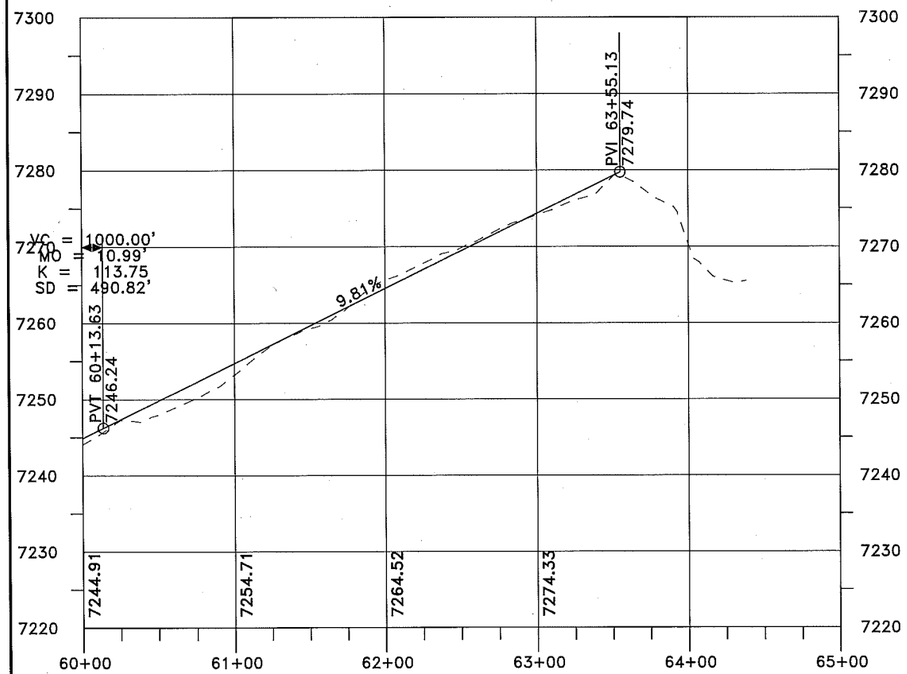
Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE T-4
EAST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:03

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100



Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

FIGURE T-5
EAST FRONTAGE ROAD
FROM CAMINO DE LOS MONTOYAS
TO RIDGE TOP PROFILE

25-NOV-2009 - 07:03

P:\070064\Trans\Study\Graphics\Report Figures 2\070064Profiles04.100

Appendix V
Prioritization Ranking Check

Appendix V - Prioritization Ranking without one Criterion							
Location	**No Crash Data**	**No Existing Traffic**	**No Projected Traffic**	**No Cost**	**No Public Input**	**No Improves Circulation**	**No LOS**
I-25 Frontage Road Overpass	4	4	3	4	2	4	4
Jaguar Rd Interchange	8	8	7	9	7	8	8
NM 599 E. Frt Rd to I-25	10	10	10	10	10	10	10
Airport Rd Interchange	3	3	4	2	2	3	2
Extend Frontage Rd across Santa Fe River	5	5	5	7	5	5	5
Caja del Rio Interchange	6	6	9	5	9	6	6
CR 62 Interchange	1	1	1	1	1	1	1
CR 70 Connection Interchange	2	2	2	3	2	2	2
Ephriam Rd Interchange	6	6	7	8	6	6	7
Camino de los Montoyas Interchange w/ Frt Rd	9	9	6	6	8	8	8