

Technical Memo

From: Leslie Romero, PE

Date: December 20, 2019

To: Richard Meadows
Technical Planning Manager
Bernalillo County Public Works

Copies To: Elias Archuleta, PE – Bernalillo County
Edward Cordova, PE – Wilson & Company

Subject: 118th Street Alignment Study
(TS.2019.118STA) RFP# 12-19-AB

File No.: 1910000101

Project Summary

The project scope of work consisted of establishing the centerline alignment of the proposed 118th Street from Eucariz Avenue to Ladera Drive, approximately 8,700-feet (1.65 miles) in length. For this project, a conceptual diamond layout of the Interstate 40 (I-40) and 118th Street interchange was created in order to determine potential ramp lengths and right of way needs for the NMDOT. The final interchange type and design will be determined in the future. The enclosed memo discusses the project schedule, including coordination, design parameters, and alternative centerline alignments created for 118th Street, as reviewed by all stakeholders involved.

Four stakeholder coordination meetings were held during the preliminary phase of this project, including representatives from Bernalillo County, NMDOT, COA, AMAFCA, MRCOG and PNM. Two coordination meetings, held on July 8, 2019 and August 28, 2019, resulted in approval of the preferred alternative from all stakeholders involved. See **Appendix C** for Meeting Minutes of all coordination meetings held.

Purpose and Need

The purpose of setting the 118th Street centerline alignment provides for future development and planning needs within the immediate area. Having an established centerline alignment will set parameters for future development and growth within Bernalillo County, COA and NMDOT right of way. Potential right of way needs were identified along 118th Street for a full roadway built out, and show in **Table 2** of this document.

Conceptual design layouts were created for the sides streets of Avalon Road and Volcano Road, in order to establish right of way needs required to match the proposed grades of 118th Street.

The layouts created for this project are for planning purposes only. The design of 118th Street shall be completed in the future, based on developmental needs.

Deliverables include:

- Plan layout and profile of preferred alignment
- Technical Memo of project summary
- Preferred alignment in .kmz and shape file format
- Right of way needs in .kmz and shape file format
- Necessary CADD files

Typical Section

118th Street is considered a Principal Arterial roadway, with a proposed right of way width of 156-feet. The proposed typical section includes a four-lane divided roadway, including turn lanes, bike lanes, curb and gutter, sidewalk and a multi-use path, as shown in **Figure 1**.

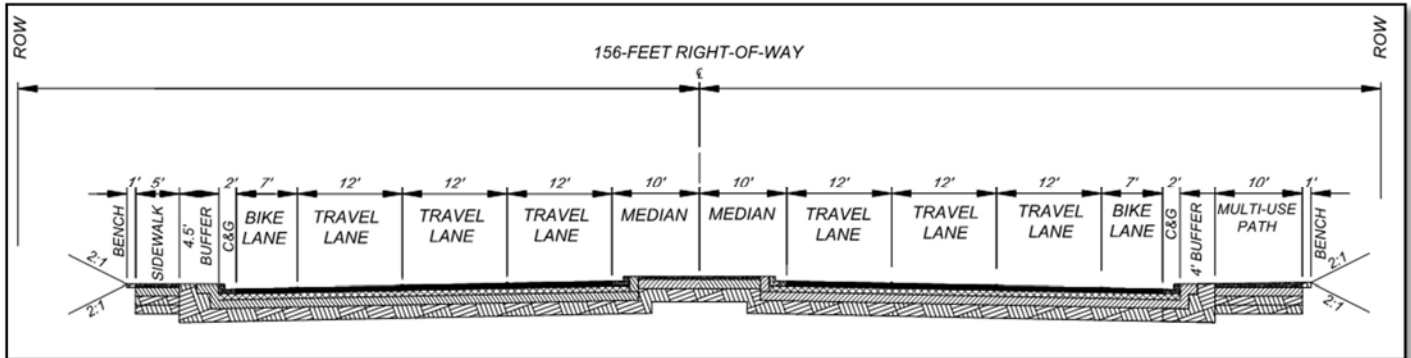


Figure 1: 118th Street Typical Section

Design Parameters

The proposed design for 118th Street shall follow the COA Development Process Manual design criteria. See **Table 1** for the design parameters used for this project.

Table 1: Design Parameters

Parameters	Design Criteria
Roadway Classification:	Principal Arterial
Design Speed	45 mph (Posted: 40 mph)
Horizontal Curve – $e_{\max}$:	4.00% (1,000' min. CL radius)
Vertical Curve Minimum K (Sag):	90
Vertical Curve Minimum K (Crest):	120 (Stopping)
Crown Cross Slope:	2.00%
Drive Lane Width:	12' Minimum
Shoulder Width:	2' Minimum

Alternative Alignments

Three proposed alternative alignments were created during the preliminary phase of this project, as shown in **Figure 2**. See **Appendix A** for a larger exhibit of the preliminary alternative alignments. Coordination meetings were held to discuss each alignment and to provide a comment period for all stakeholders involved. The proposed alignment crosses I-40, at a future interchange. The proposed crossing location was determined based on meeting the minimum 1 mile distance from the existing 98th Street interchange to the east and Atrisco Vista Boulevard interchange to the west. The interchange shown for this project is for preliminary planning purposes only.

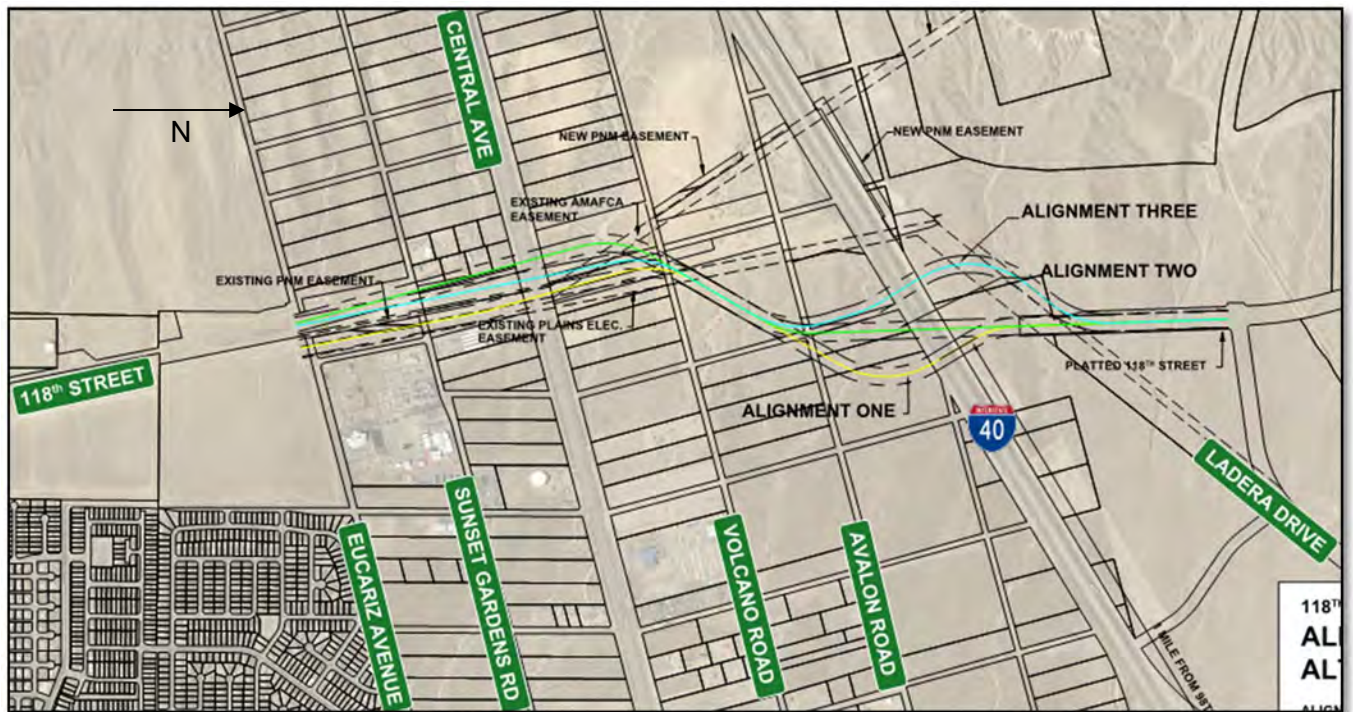


Figure 2: Preliminary Alternative Alignments

Alignment I (shown in yellow)

- Follows the current platting created by the COA, located north of I-40.
- Crosses perpendicular to I-40.
- Crosses the Plains Electric and PNM Easements, located south of I-40, requiring utility relocations.

Alignment II (shown in green)

- Follows the current COA platting, located north of I-40.
- Crosses I-40 at a skew, requiring a longer bridge.
- Potential conflict south of Central Avenue with existing homes.

Alignment III (shown in blue)

- Requires COA platting revisions, north of I-40.
- Crosses perpendicular to I-40.
- Potential conflicts with the existing AMAFCA channel.

Preferred Alignment

The preferred alignment became a combination of Preliminary Alignments I & III, as shown in **Figure 3**. Based on coordination efforts with PNM and AMAFCA, the goal of the preferred alternative was to reduce conflicts with their existing infrastructure.

AMAFCA owns a drainage channel, located to the west of the 118th Street alignment, and would prefer for the channel to remain in place. It is possible to place the AMAFCA channel underneath the proposed roadway, but this would be an expensive option and would become a sediment trap/maintenance issue in the future.

PNM owns 2-100' wide easements located east of the AMAFCA channel, labeled as the *Plains Electric Easement* and *PNM Easement* as shown on the horizontal layout, located in **Appendix A**. The PNM Easement is to remain in place, as this line runs south to Dennis Chavez Boulevard, and would be expensive to relocate. The existing poles located within the Plains Electric Easement are being removed during a construction project scheduled to begin in the fall of 2019. With this work being completed, the proposed roadway alignment may use the easement.

Due to the existing utility infrastructure in the area and to reduce future construction costs, the preferred alignment was shifted as far east as possible. Shifting to the east decreased potential utility conflicts for the future roadway design.

Developed areas, located south of Central Avenue and east of the proposed 118th Street alignment include COA facilities, including a fire department and academy facility and the Westside Animal Welfare Department. A storage complex is located within the proposed 118th Street right of way and will require relocation upon this area being fully developed and the design of 118th Street.

A vertical profile was created based on the preferred alignment. For this project, the vertical profile is used for preliminary earthwork quantities and is subject to change based on the future design of 118th Street.

See **Appendix B** for the preliminary layout and vertical profile of the preferred alignment.



Figure 3: Preferred 118th Street Alignment

Preferred Alignment Summary

- Requires COA platting revisions, north of I-40.
- Addresses future I-40 widening, as provided by the NMDOT.
 - Including additional interstate lanes and frontage roads.
- Proposed interchange located 1.12 miles west of 98th Street interchange.
- Proposed interchange located 1.61 miles east of Atrisco Vista Boulevard interchange.
- Crosses I-40 at a 16° skew, similar to the 98th Street interchange, located east of 118th Street.
- Interstate ramp intersections to be signalized.
- Avalon Road to be a right in/right out intersection.
- Volcano Road to be a full access intersection.
- Central Avenue to be a full access intersection.
- Interchange type to be determined in the future.
- 118th Street grades range from 0.50% to 5.85%.
- Right of way required, as summarized in **Table 2** and as shown in the layout.
 - Including the relocation of the storage complex located in the northeast corner of the proposed 118th Street and Sunset Gardens Road intersection.
- Earthwork quantities required for 118th Street, Volcano Road and Avalon Road are summarized in **Table 3**.
 - Side slopes assumed to be 2:1.
 - Quantities shown for Volcano Road and Avalon Road are for at-grade intersections and are subject to change.

Table 2: Right of Way Needs

Station	To Station	Length (FT)	Right of Way Width Needs (FT)	Additional ROW Width Required (FT)
1+00	11+00	1,000	186	30
11+00	34+00	2,300	178	22
34+00	41+00	700	188	32
41+00	47+00	600	260	104
47+00	55+00 (assumed NMDOT ROW)	800	320	164
58+50 (assumed NMDOT ROW)	72+50	1,400	214	58
72+50	80+25	775	254	98
80+25	87+18	693	234	78

Note: Additional right of way required, as shown above, includes width beyond 156 feet.

Table 3: Preliminary Earthwork Quantities

Roadway	Unclassified Excavation (CY)	Borrow (CY)
118 th Street	139,800	565,500
Volcano Road	10,780	7,150
Avalon Road	1,300	263,250
Project Total	151,880	835,900

Note: Borrow quantity includes 30% shrink factor.

Appendices

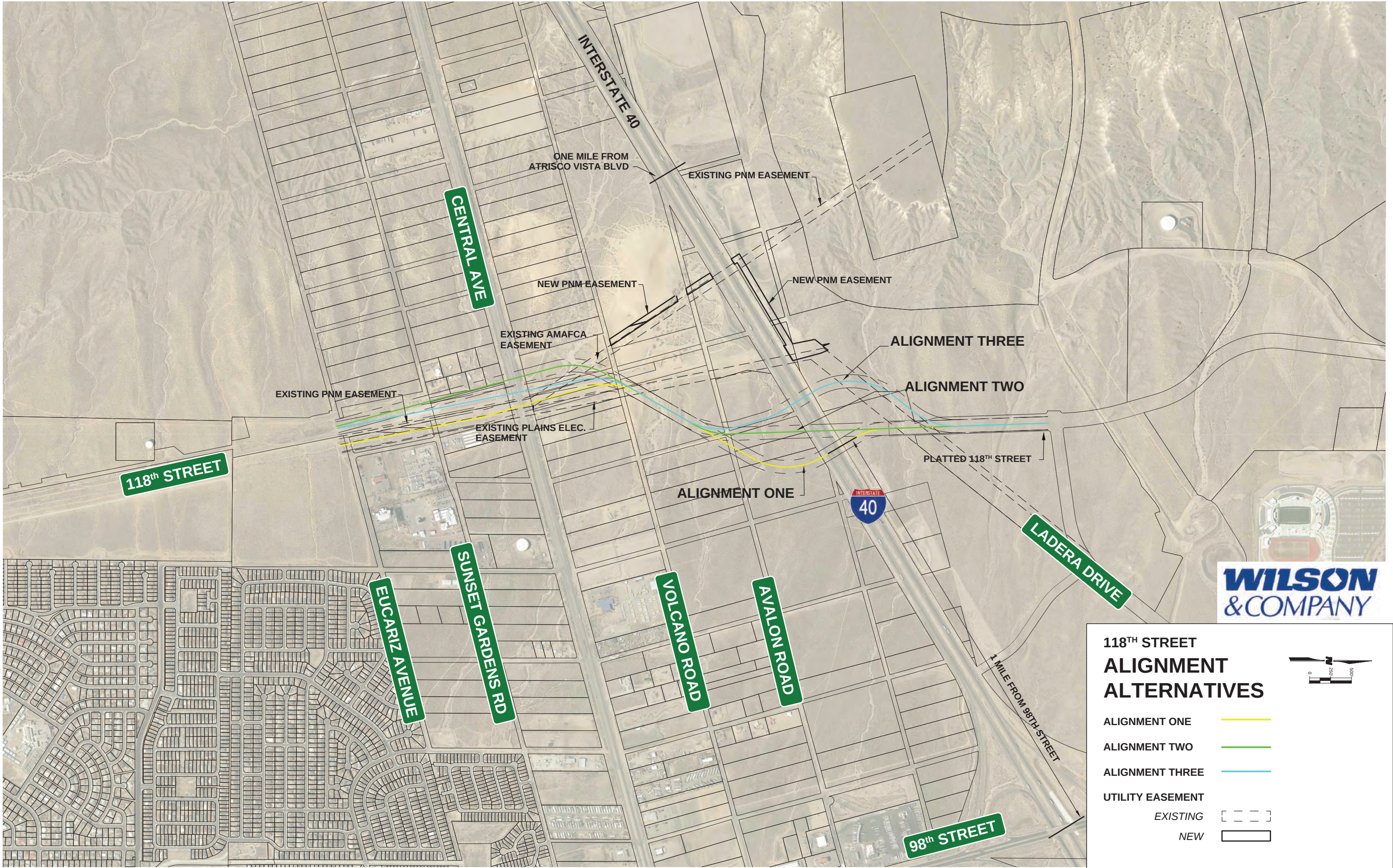
Appendix A – Preliminary Alternative Alignments

Appendix B – Preferred Alignment

Appendix C – Meeting Minutes

Appendix A:

Preliminary Alternative
Alignments



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**118TH STREET
ALIGNMENT
ALTERNATIVES**

- ALIGNMENT ONE
- ALIGNMENT TWO
- ALIGNMENT THREE
- UTILITY EASEMENT
 - EXISTING
 - NEW

Appendix B:

Preferred Alignment

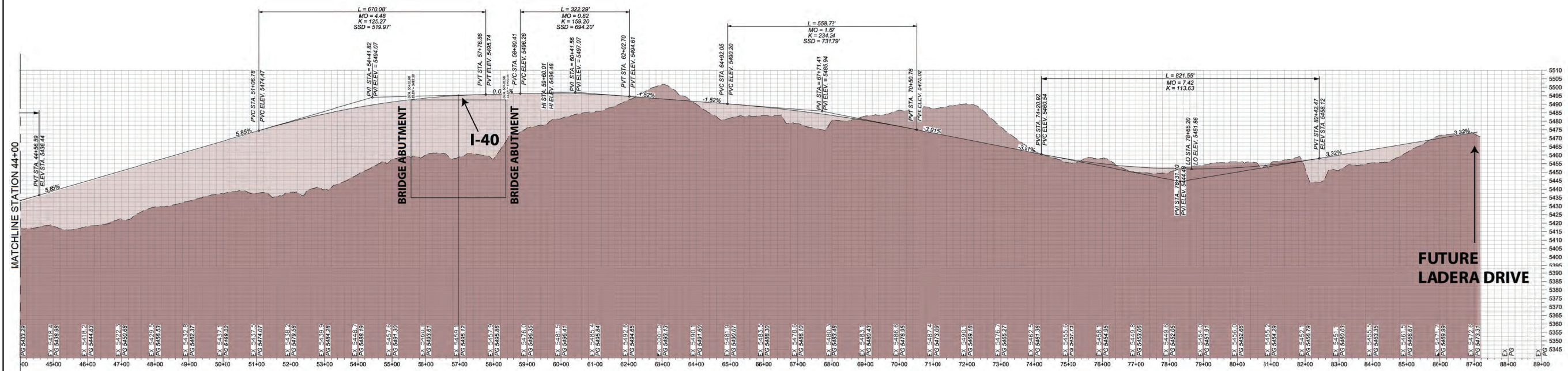
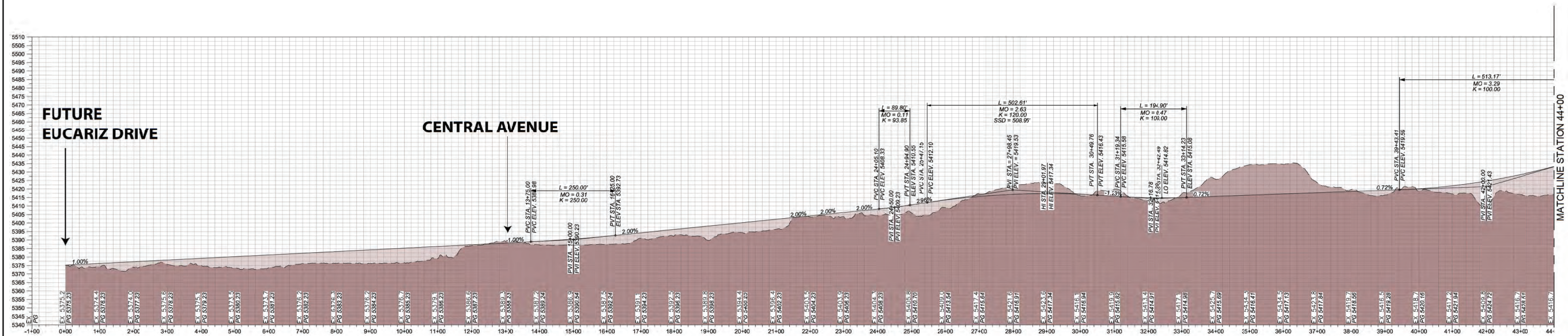
- Horizontal Layout
- Vertical Profile



118TH STREET
PREFERRED ALTERNATIVE
PLAN VIEW

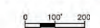
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CONCEPTUAL LAYOUT
NOT FOR CONSTRUCTION



CONCEPTUAL LAYOUT
NOT FOR CONSTRUCTION

118TH STREET
PREFERRED ALTERNATIVE
PROFILE VIEW



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Appendix C:

Meeting Minutes

- Project Kick-off Meeting
- Coordination Meetings held the months of June 2019 through August 2019

Meeting Minutes



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118th Street Alignment Project Kick-off Meeting Minutes

DATE:	May 10, 2019	TIME:	10:00 am to 11:00 am
LOCATION:	Wilson & Company ABQ Office Conference Room		
PROJECT:	118 th Street Alignment Project		

Attendees:

<u>Name</u>	<u>Organization</u>	<u>Phone No.</u>	<u>Email</u>
Richard Meadows	BCPWD	505-848-1598	rmeadows@bernco.gov
Elias Archuleta	BCPWD	505-848-1543	earchuleta@bernco.gov
Kevin Grovet	BCPWD	505-848-1532	kgrovet@bernco.gov
Julie Luna	BernCo	505-848-1508	jaluna@bernco.gov
Nancy Perea	NMDOT	505-206-1069	nancy.perea@state.nm.us
Margaret Haynes	NMDOT	505-288-2086	margaret.haynes@state.nm.us
Brad Bingham	AMAFCA	505-884-2215	bbingham@amafca.org
Laurie Moye	PNM	505-241-4436	laurie.moye@pnm.com
Reid Driscoll	PNM	505-269-9189	reid.driscoll@pnm.com
Paula Dodge-Kwan	COA	via telephone	
Edward Cordova	Wilson & Company	505-348-4079	edward.cordova@wilsonco.com
Ben Bachwirtz	Wilson & Company	505-348-4008	benjamin.bachwirtz@wilsonco.com

A project kick-off meeting was held with project stakeholder staff and the design team at the Wilson & Company Albuquerque office on May 10, 2019 10:00 am.

Action items shown in bold.

Completed action items shown in blue.

The following is a summary of the items discussed at the meeting:

Meeting Overview

- A project overview was provided to the group.
- Plans for a future hospital property on north side of I-40.
- Bernalillo County comments
 - Sewer line located in 118th Street.
 - Gas line located in area.
- NMDOT comments
 - Future widening of I-40 to include six-lane section.
 - Future frontage roads – one-way pair.
 - **Verify interchange spacing. 1 mile**
- COA comments
- AMAFCA comments
 - Channel located on west side of 118th Street.

Meeting Minutes



- 84" storm drain located on north side of I-40.
- PNM comments
 - Begin construction of new transmission lines September 2019.
 - PNM has their own easement along the 118th area.
 - **Will provide CAD files of proposed work and easement lines.**
- **WCI to await additional info and prepare preliminary alignment options for group to review.**

Meeting Minutes



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118th Street Alignment Project Coordination Meeting Minutes

DATE:	June 7, 2019	TIME:	2:00 pm to 3:00 pm
LOCATION:	Bernalillo County PW Building A Conference Room		
PROJECT:	118 th Street Alignment Project		

Attendees:

<u>Name</u>	<u>Organization</u>	<u>Phone No.</u>	<u>Email</u>
Richard Meadows	BCPWD	505-848-1598	rmeadows@bernco.gov
Elias Archuleta	BCPWD	505-848-1543	earchuleta@bernco.gov
Kevin Grovet	BCPWD	505-848-1532	kgrovet@bernco.gov
Julie Luna	BernCo	505-848-1508	jaluna@bernco.gov
Blaine Carter	BCPWD	505-848-1526	bcarter@bernco.gov
Willy Simon	MRMPO	505-724-3647	wsimon@mrcog-nm.gov
Nancy Perea	NMDOT	505-206-1069	nancy.perea@state.nm.us
John MacKenzie	COA	505-768-3965	jmackenzie@cabq.gov
Brad Bingham	AMAFCA	505-884-2215	bbingham@amafca.org
Leslie Romero	WCI	505-348-4118	leslie.romero@wilsonco.com
Edward Cordova	WCI	505-348-4079	edward.cordova@wilsonco.com

A project coordination meeting was held with project stakeholder staff and the design team at the Bernalillo County Public Works Department office on June 7, 2019 2:00 pm.

Action items shown in bold.

Completed action items shown in blue.

The following is a summary of the items discussed at the meeting:

Meeting Overview

- A display of three alternative alignments was presented to the group and discussed.
- Each alignment includes the 156' ROW footprint required for the typical section.
- Plains Electric and PNM easements are shown; we do not cross PNM's new easement area.
- Alignment 1
 - Follow the current platting created by COA on the north side of the interstate
 - Located at the 1-mile marker distance from the 98th St interchange, the minimum distance allowed per NMDOT.
 - Crosses the Plains electric and PNM easements.
 - Electric lines will require relocation
- Alignment 2
 - Follows the current platting created by the COA on the north side.
 - Crosses the interstate at a skew
 - Longer bridge required

Meeting Minutes



- Will require ROW to be purchased south of Central, potential conflict with existing homes.
- Alignment 3
 - Will require COA platting revisions on the north side
 - Located on top of the AMAFCA channel
- **Nancy to provide a future I-40 typical section, to be used for this project.**
- **WCI to verify COA DPM radius minimum. 1,000' minimum**
- WCI to use 50 MPH design speed, 45 MPH posted
- COA not worried about platting of the north side of I-40, this can be revised as necessary
- WCI to determine a best fit of all 3 presented alternatives
 - Maintain the 1 mile distance from other interchanges, as best as possible
 - Use 6% max grade on all on and off ramps
- On the south side of the interstate
 - Look into making the PNM easement the centerline of the roadway, with a 100' median
 - Verify distance PNM will require from pole to curb and gutter
 - Can place AMAFCA under roadway, expensive and becomes a sediment trap.

Meeting Minutes



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118th Street Alignment Project Coordination Meeting Minutes

DATE:	June 10, 2019	TIME:	9:30 am to 10:30 am
LOCATION:	Wilson & Company ABQ Office Conference Room		
PROJECT:	118 th Street Alignment Project		

Attendees:

<u>Name</u>	<u>Organization</u>	<u>Phone No.</u>	<u>Email</u>
Richard Meadows	BCPWD	505-848-1598	rmeadows@bernco.gov
Elias Archuleta	BCPWD	505-848-1543	earchuleta@bernco.gov
Nancy Perea	NMDOT	505-206-1069	nancy.perea@state.nm.us
Brad Bingham	AMAFCA	505-884-2215	bbingham@amafca.org
Laurie Moyer	PNM	505-241-4436	laurie.moye@pnm.com
Reid Driscoll	PNM	505-269-9189	reid.driscoll@pnm.com
Leslie Romero	WCI	505-348-4118	leslie.romero@wilsonco.com

A project coordination meeting was held with BernCo, NMDOT and PNM staff and the design team at Wilson & Company Albuquerque Office on June 7, 2019 2:00 pm.

Action items shown in bold.

Completed action items shown in blue.

The following is a summary of the items discussed at the meeting:

Meeting Overview

- A display of three alternative alignments was presented to PNM and discussed.
- Plains Easement to remain in place, poles will be removed.
- PNM to provide all proposed plans for the improvements to their lines, going to construction this fall.
- Nancy to follow up with the ability to skew the I-40 interchange crossing for this design.
- PNM is okay with the design splitting their poles, south of Central Ave., if needed.
- **WCI to use design speed of 45 MPH, posted 40 MPH.**
- **WCI to move forward with preferred alignment options.**

Meeting Minutes



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118th Street Alignment Project Coordination Meeting Minutes

DATE:	July 8, 2019	TIME:	9:00 am to 10:00 am
LOCATION:	Bernalillo County PW Building A Conference Room		
PROJECT:	118 th Street Alignment Project		

Attendees:

<u>Name</u>	<u>Organization</u>	<u>Phone No.</u>	<u>Email</u>
Richard Meadows	BCPWD	505-848-1598	rmeadows@bernco.gov
Elias Archuleta	BCPWD	505-848-1543	earchuleta@bernco.gov
Kevin Grovet	BCPWD	505-848-1532	kgrovet@bernco.gov
Julie Luna	BernCo	505-848-1508	jaluna@bernco.gov
Nancy Perea	NMDOT	505-206-1069	nancy.perea@state.nm.us
Racquel Michel	COA		rmichel@cabq.gov
Mojgan Maadandar	COA		mmaadandar@cabq.gov
Laurie Moyer	PNM	505-241-4436	laurie.moyer@pnm.com
Reid Driscoll	PNM	505-269-9189	reid.driscoll@pnm.com
Ethan Giedraitis	PNM		egiadra@pnm.com
Emilie Dohleman	PNM/EASI		edohleman@easi.com
Brad Bingham	AMAFCA	505-884-2215	bbingham@amafca.org
Leslie Romero	WCI	505-348-4118	leslie.romero@wilsonco.com
Edward Cordova	WCI	505-348-4079	edward.cordova@wilsonco.com

A project coordination meeting was held with project stakeholder staff and the design team at the Bernalillo County Public Works Department office on July 8, 2019 9:00 am.

Action items shown in bold.

Completed action items shown in blue.

The following is a summary of the items discussed at the meeting:

Meeting Overview

- A display of the preferred alternative alignment was provided for the group to review and discuss.
- NMDOT comments
 - Okay with the 16 degree skew and the ramps outside the 1-mile marker from the 98th Street interchange. This will be reviewed and approved in the future by NMDOT and FHWA when design of the interchange takes place.
 - Process for the interchange would require a Phase IA/B study in order to get an approval.
 - Widening of I-40 to be within the existing median. **WCI to revise the I-40 layout.**
 - **WCI to try to fit I-40 improvement within the existing right of way**
- COA comments
 - The City has no plans with design in the area north of I-40

Meeting Minutes



- Only the platting has been completed in this area.
 - If re-platting is required, this can be done during design
- AMAFCA comments
 - Okay with the preliminary alignment
 - This alignment is not affecting their infrastructure
- **WCI to update I-40 layout and provide Nancy a PDF for review and comments.**
- Once the alignment is approved by NMDOT, BernCo will meet with FHWA to discuss potential interchange needs
- WCI to look into 2 side roads for BernCo, verify where these roads will tie
 - Avalon Road and Volcano Road to be checked
 - Use 6% max grade
 - Use for future moratorium needs
 - Make sure Central Ave and 118th Street intersection is a 90 degree angle

Meeting Minutes



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118th Street Alignment Project Coordination Meeting Minutes

DATE:	July 29, 2019	TIME:	9:30 am to 10:30 am
LOCATION:	Wilson & Company ABQ Office Conference Room		
PROJECT:	118 th Street Alignment Project		

Attendees:

<u>Name</u>	<u>Organization</u>	<u>Phone No.</u>	<u>Email</u>
Richard Meadows	BCPWD	505-848-1598	rmeadows@bernco.gov
Elias Archuleta	BCPWD	505-848-1543	earchuleta@bernco.gov
Kevin Grovet	BCPWD	505-848-1532	kgrovet@bernco.gov
Leslie Romero	WCI	505-348-4118	leslie.romero@wilsonco.com
Edward Cordova	WCI	505-348-4079	edward.cordova@wilsonco.com
Ted Ortiz	WCI	505-348-4015	ted.ortiz@wilsonco.com

A project coordination meeting was held with BernCo. staff and the design team at the Wilson & Company Albuquerque Office on July 29, 2019 9:30 am.

Action items shown in bold.

Completed action items shown in blue.

The following is a summary of the items discussed at the meeting:

Meeting Overview

- A display of the preferred alternative was reviewed in AutoCAD and discussed by the team.
- Based on the NMDOT SAMM, 1,300' is the distance between full access intersections.
- Avalon Road and 118th Street intersection to be a right in-right out intersection.
- Layout to include sidewalk on entire west side of roadway
- **Richard to provide side street typical sections to be used.**
- WCI to coordinate with Access Management project to ensure the 118th Street intersection is shown correctly.
- We will have one more coordination meeting with all municipalities to present the final layout.
- Technical Memo to include:
 - Appendix of all alternatives created
 - Brief description of each

Meeting Minutes



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118th Street Alignment Project Coordination Meeting Minutes

DATE:	August 28, 2019	TIME:	1:00 pm to 2:00 pm
LOCATION:	Wilson & Company ABQ Office Conference Room		
PROJECT:	118 th Street Alignment Project		

Attendees:

<u>Name</u>	<u>Organization</u>	<u>Phone No.</u>	<u>Email</u>
Richard Meadows	BCPWD	505-848-1598	rmeadows@bernco.gov
Elias Archuleta	BCPWD	505-848-1543	earchuleta@bernco.gov
Kevin Grovet	BCPWD	505-848-1532	kgrovet@bernco.gov
Blaine Carter	BCPWD	505-848-1526	bcarter@bernco.gov
Willy Simon	MRCOG	505-724-3647	wsimon@mrcog-nm.gov
Margaret Haynes	NMDOT	505-288-2086	margaret.haynes@state.nm.us
Jeanne Wolfenbarger	COA	505-924-3901	JWolfenbarger@cabq.gov
Leslie Romero	WCI	505-348-4118	leslie.romero@wilsonco.com
Edward Cordova	WCI	505-348-4079	edward.cordova@wilsonco.com

A project coordination meeting was held with project stakeholder staff and the design team at the Wilson & Company Albuquerque office on August 29, 2019 1:00 pm.

Action items shown in bold.

Completed action items shown in blue.

The following is a summary of the items discussed at the meeting:

Meeting Overview

- A display of the preferred alternative was reviewed in AutoCAD and discussed by the team.
- Bernco, COA and NMDOT agree on the preferred alternative alignment.
- WCI to move forward with Technical Memo and finalize project.
- BernCo would like the following items included:
 - Isolate the ROW and slope limit layers and provide in separate .kmz files
- WCI to update profile to include proposed grades