

East Dell Range / US 30 Corridor Study **Cheyenne MPO**

Roadway Design Information:

- Design Memoranda
- Cost Estimates
- Plan Sheets



May 2008

— Felsburg Holt & Ullevig —

BenchMark Engineers

Frank Miltenberger Landscape Architect

**EAST DELL RANGE / US 30 CORRIDOR STUDY
ROADWAY DESIGN INFORMATION
DESIGN MEMORANDA, PLANS, COST ESTIMATES)**

Prepared for:

Cheyenne Metropolitan Planning Organization

Prepared by:

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Benchmark Engineers

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FHU Reference No. 06-109
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I. DESIGN MEMORANDUM - DELL RANGE/ US 30/CHRISTENSEN INTERSECTION COMPLEX

We have developed a 35 percent design for the proposed realignment of Dell Range Boulevard to connect with US 30 west of the existing intersection. The design was based on Alternative 2, selected in the East Dell Range / US 30 Corridor Study as the recommended alternative. As discussed in the Corridor Study, conceptual intersection design plans were developed to show how Alternative 2 would be constructed without the anticipated future widening of both US 30 and Dell Range Boulevard.

Design Parameters

The following roadway design assumptions formed the basis for the 35 percent design documents:

- ▶ 12 ft lane widths for drive and turn lanes
- ▶ 12:1 taper ratios for excel and decal lanes
- ▶ Dell Range Design speed for radius approaching intersection e(max) 4.0% = 420 ft Radius
- ▶ ROW of 100 ft through alignment change for 35% design is needed.

Other Considerations

The ability to provide adequate stopping sight distance along US 30 was questioned during the alternative screening process. Accordingly, the 35 percent design provides adequate stopping sight distance for the current US 30 posted speed of 50 Miles Per Hour. It is anticipated that construction easements will be needed to accommodate grading at the intersections. It is anticipated that the back slopes will catch grade beyond the new Right-of-Way boundaries.

When US 30 and Dell Range are widened to provide 4 travel lanes, an additional 20 feet of Right-of-Way will be required along the south side of Dell Range Boulevard.

Item Needing Further Study

Frontage / local access roads are proposed to extend east from the US 30 / Dell Range intersection to connect to Christensen Road. In the conceptual design, these roadways have been aligned to connect with Christensen Road approximately 300 feet north and south of US 30. Right-of-way would need to be acquired to accommodate these alignments.

Cheyenne Hills Church, which owns the land south of US 30, has expressed an interest in shifting the south frontage road alignment further south to accommodate land development options. A private landowner north of US 30 has asked that the north side roadway be aligned to avoid impacts to his property. Further analyses and discussions are needed to identify final alignments for these roadway connections to Christensen Road.

Cost Estimate

The following table provides an itemized cost estimate for construction of the recommended alternative.

The following sheets include the 35 percent plan set.

Category & Item Number	Item	Unit	Estimated Quantity	Unit Price	Total Cost	
Removal (Off-Site)	1	Asphalt Surfacing	SY	22,250	4.50	100,125.00
	2	Signage	LS	1	10,000.00	10,000.00
Category Subtotal					110,125.00	
Removal	3	Misc Demolition	LS	1	35,000.00	35,000.00
Category Subtotal					35,000.00	
Site Improvements	4	Density Control (Subgrade Preparation)	SY	42,550	1.00	42,550.00
	5	3.0" Hot Plant Mix Bit Pavement Type II	SY	35,455	16.50	585,007.50
	6	6.0" Crushed Base Grading W	SY	35,455	5.50	195,002.50
	7	Delineator posts	LS	1	15,000.00	15,000.00
	8	Signage	LS	1	25,000.00	25,000.00
	9	Lighting	LS	1	85,000.00	85,000.00
Category Subtotal					947,560.00	
Utilities	10	Misc Drainage and Storm Sewer	LS	1	50,000.00	50,000.00
Category Subtotal					50,000.00	
Landscaping	11	Trees	EA	250	450.00	112,500.00
	12	Landscaping/Seeding	SY	80,350	1.00	80,350.00
	13	Irrigation/Drip System	LS	1	35,000.00	35,000.00
Category Subtotal					227,850.00	
Embankment & Compaction	14	Unclassified Excavations	SY	60,000	4.50	270,000.00
Category Subtotal					270,000.00	
Right-Of-Way Acquisition	15	Intersection Reconstruction	Acres	0.84		
	16	Frontage Road Areas	Acres	2.55		
Category Subtotal					0.00	
Material Subtotal					1,640,535.00	
Administration	17	Mobilization	%	6.0%	-	98,432.10
	18	Bonds & Insurance	%	3.5%	-	57,418.73
	19	Traffic Control	%	4.0%	-	65,621.40
	20	Construction Surveying	%	3.5%	-	57,418.73
Category Subtotal					278,890.95	
	21	Quality Control Testing	%	2.0%	-	32,810.70
	22	Contingency	%	25.0%	-	410,133.75
Category Subtotal					442,944.45	
Construction Total					2,362,370.40	

Estimate Does NOT Include Cost for ROW Acquisition

EAST DELL RANGE / US-30 CORRIDOR STUDY

35% Plans

January, 2008

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- 3 PLAN AND PROFILE (DELL RANGE BLVD 2 OF 2)
- 4 PLAN AND PROFILE (US-30 1 OF 6)
- 5 PLAN AND PROFILE (US-30 2 OF 6)
- 6 PLAN AND PROFILE (US-30 3 OF 6)
- 7 PLAN AND PROFILE (US-30 4 OF 6)
- 8 PLAN AND PROFILE (US-30 5 OF 6)
- 9 PLAN AND PROFILE (US-30 6 OF 6)
- 10 FRONTAGE ROAD ALIGNMENT NORTH (CHRISTENSEN RD & US-30)
- 11 FRONTAGE ROAD ALIGNMENT SOUTH (CHRISTENSEN RD & US-30)

SPECIFICATIONS

THE CITY OF CHEYENNE AND BOARD OF PUBLIC UTILITIES CONSTRUCTION SPECIFICATIONS AND STANDARD DRAWINGS 2007 SHALL BE THE STANDARD SPECIFICATIONS FOR ALL CIVIL SITE UTILITY WORK ON THIS PROJECT. ALL WORK SHALL BE IN CONFORMANCE WITH THESE STANDARDS AND SPECIFICATIONS AS AMENDED BY THESE PLANS AND THE SPECIAL PROVISIONS.



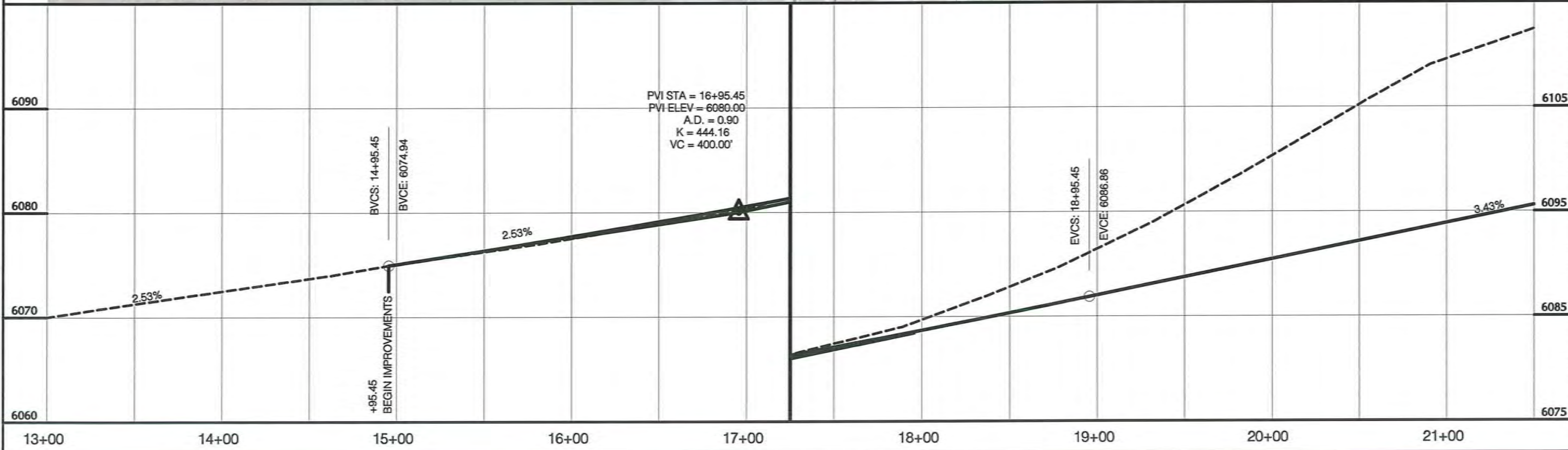
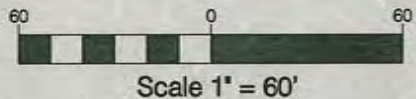
VICINITY MAP

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WYOMING.

LEGEND

- LIMITS OF CONSTRUCTION
- EXISTING ROW
- PROPOSED ROW
- PROPOSED ALIGNMENT







#	Revision	Date

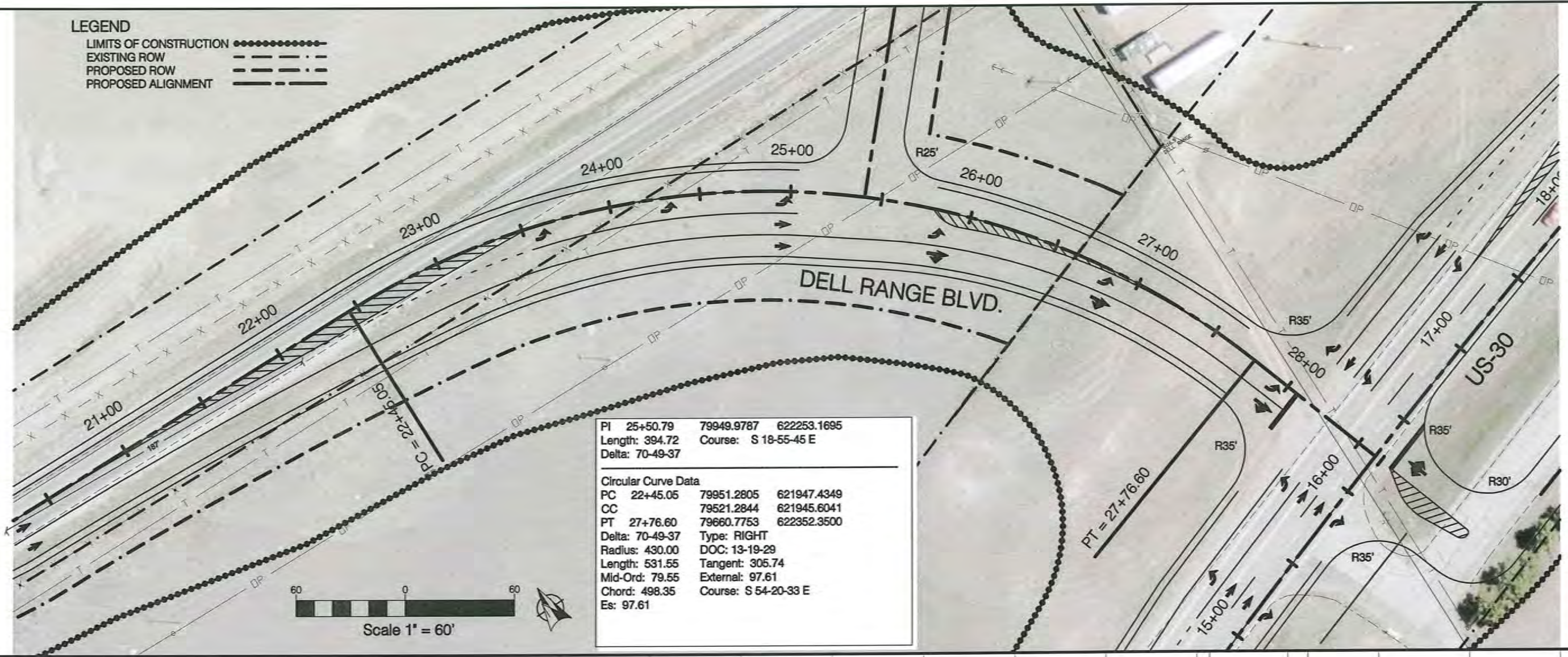
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DELLRANGE BLVD
PLAN AND PROFILE 10F2
 CHEYENNE LARAMIE COUNTY WYOMING

PROJECT NUMBER: 0215.07
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 DRAWN BY: W.M.F.
 CHECKED BY: S.D.L.
 FILE NAME:
 DATE PREPARED: 9/06/02

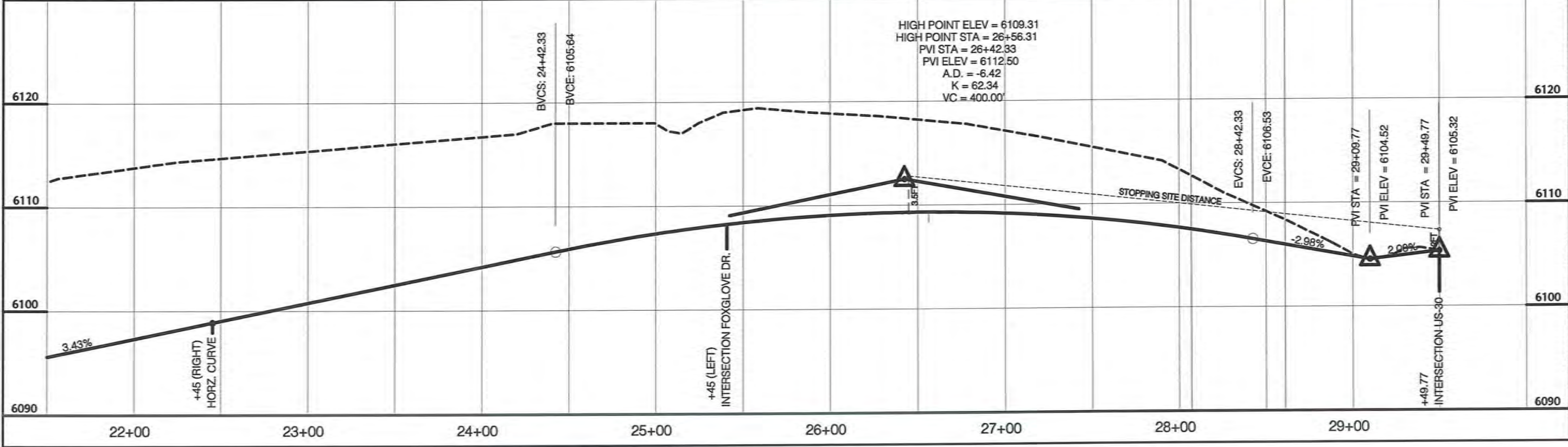
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- EXISTING ROW 
- PROPOSED ROW 
- PROPOSED ALIGNMENT 



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CC		79521.2844	621945.6041
PT	27+76.60	79660.7753	622352.3500
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Radius:	430.00	DOC:	13-19-29
Length:	531.55	Tangent:	305.74
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Es:	97.61		

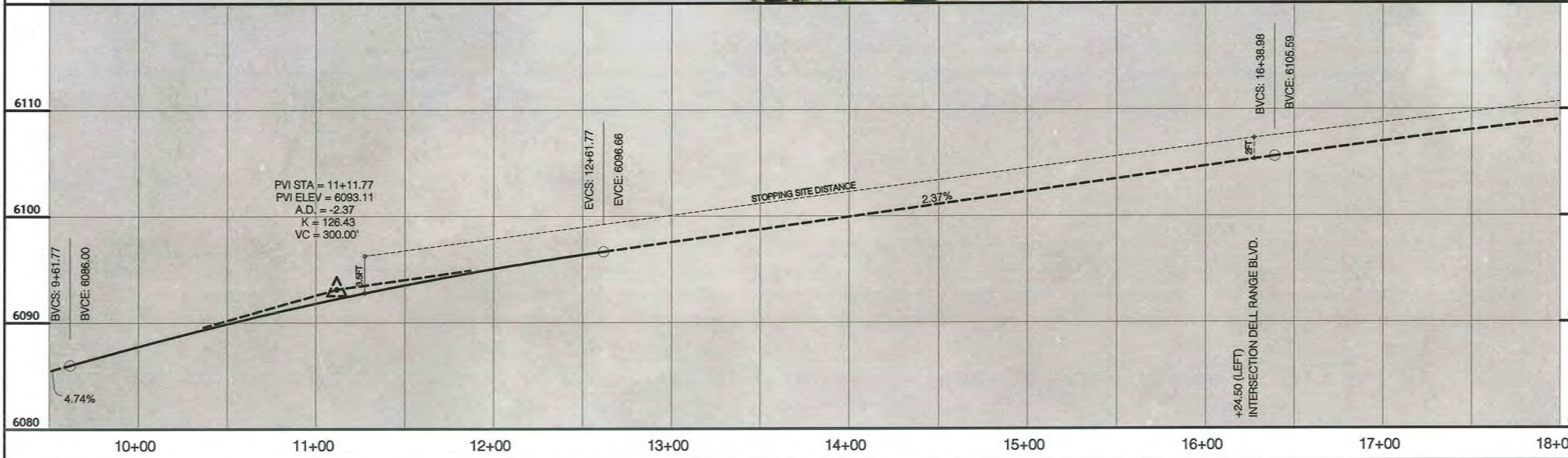
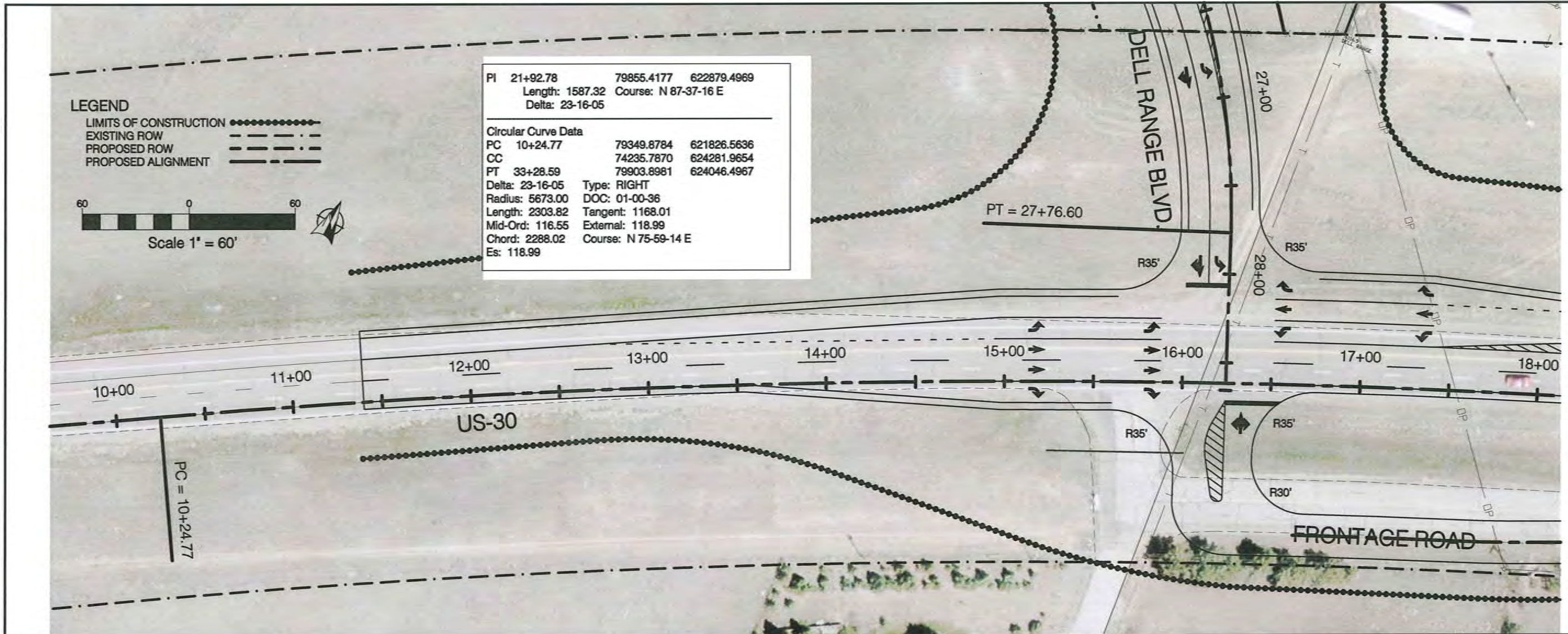


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DELL RANGE BLVD
PLAN AND PROFILE 20F2

CHEYENNE LARAMIE COUNTY WYOMING

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FILE NAME:	
DATE PREPARED:	9/06/02
SHEET	3
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DELLRANGE AND US30 INTERCHANGE

US30

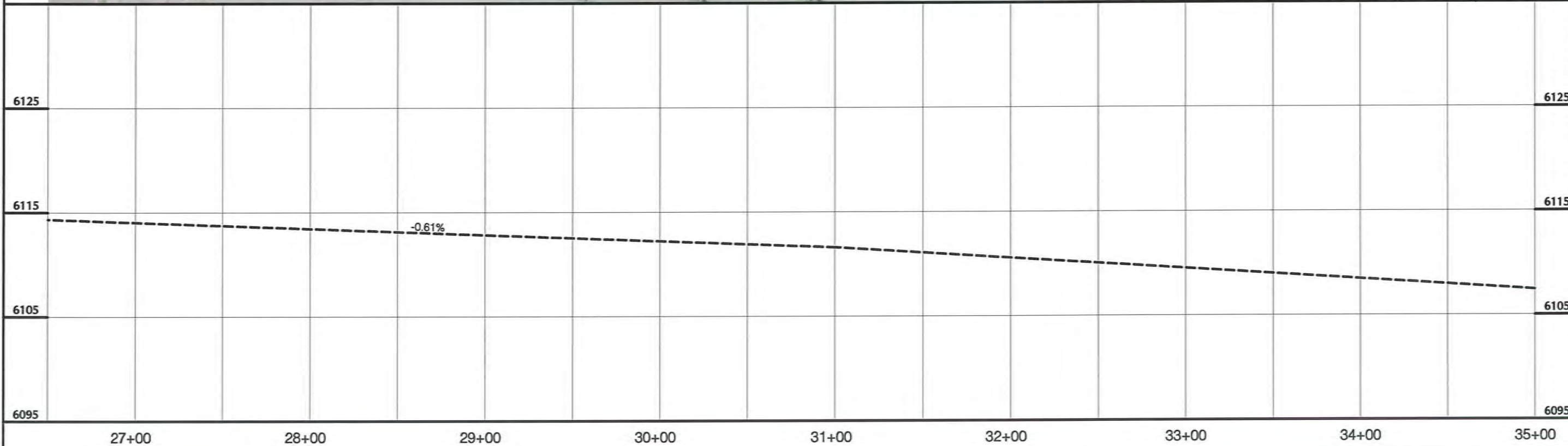
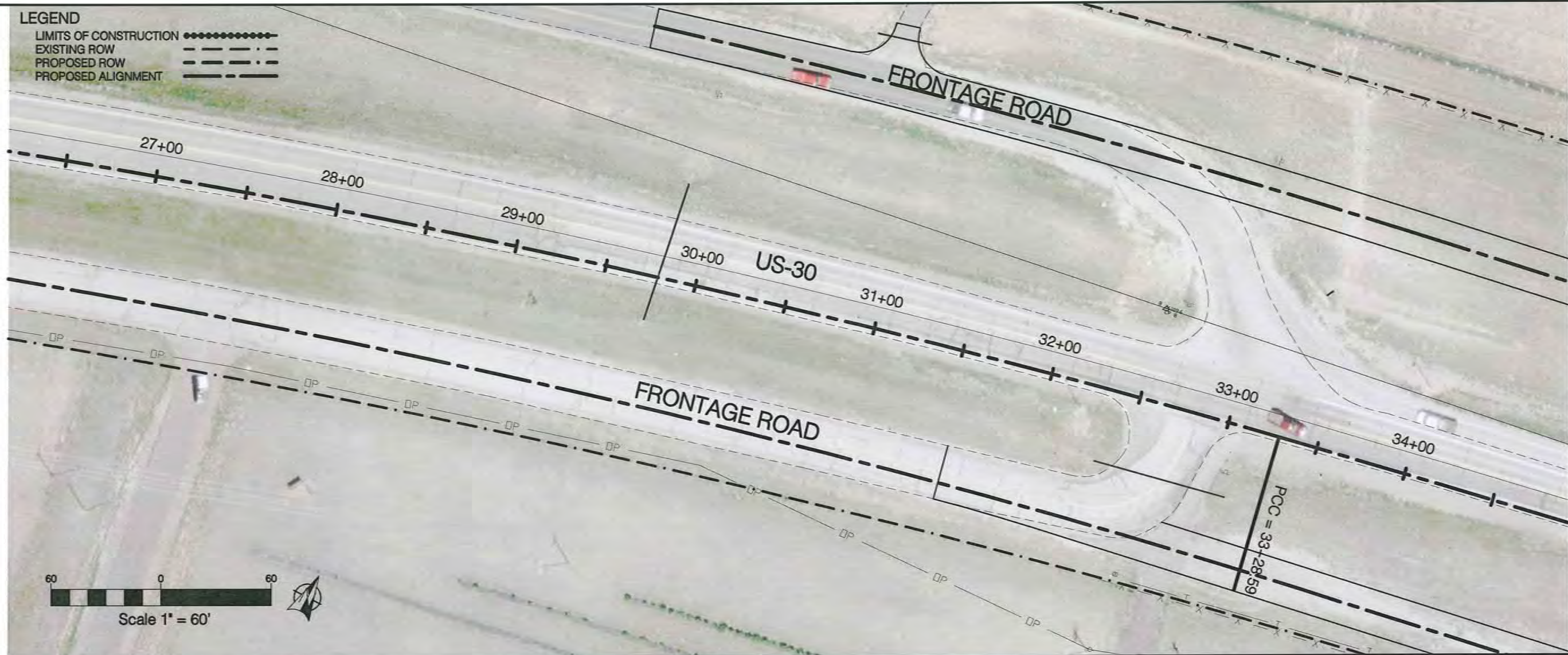
PLAN AND PROFILE 10F6

CHEYENNE LARAMIE COUNTY WYOMING

PROJECT NUMBER: 0213.07
 DESIGN BY: K.W.H.
 DRAWN BY: W.M.F.
 CHECKED BY: S.D.L.
 FILE NAME:
 DATE PREPARED: 9/06/02

SHEET **4** OF 11 SHEETS

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 PROPOSED ROW - - - - -
 PROPOSED ALIGNMENT ————



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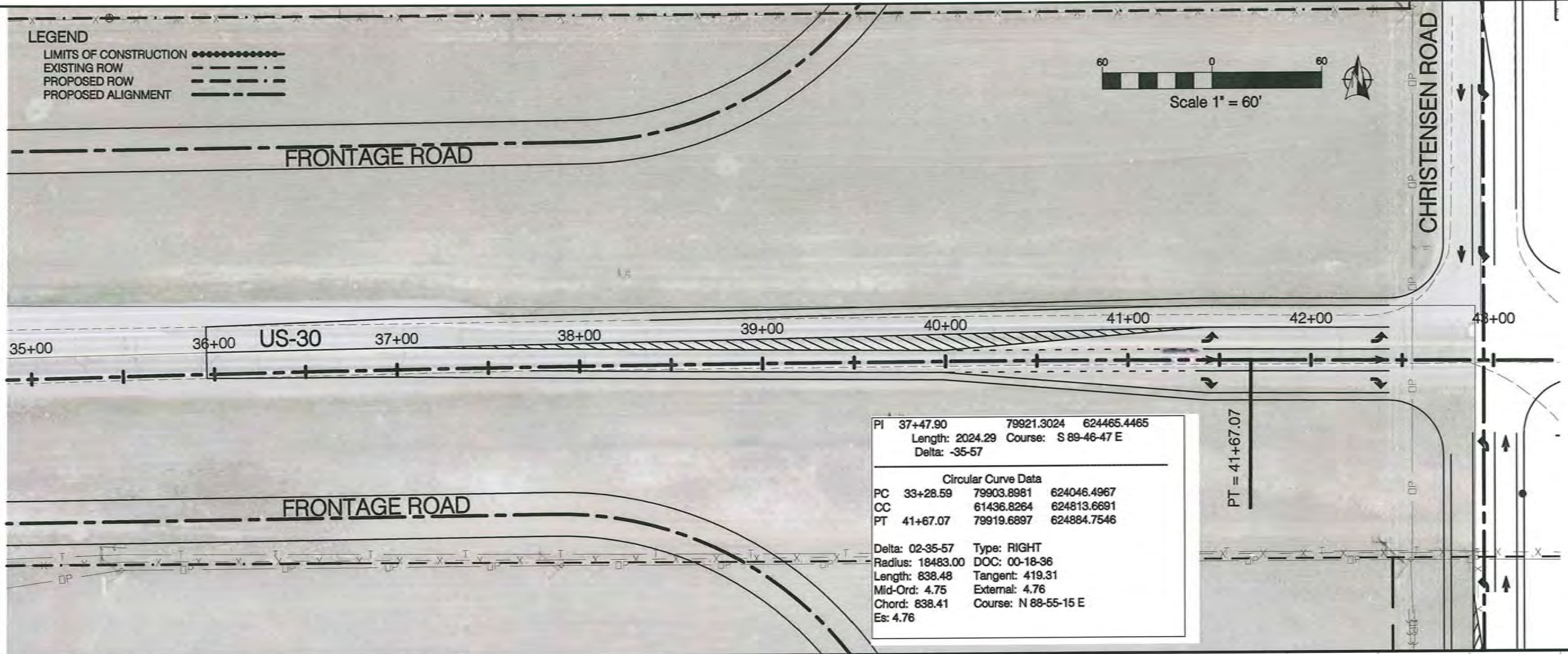
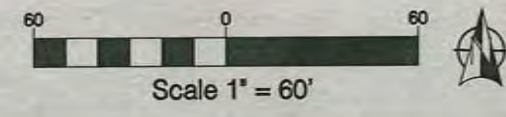
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US30
PLAN AND PROFILE 30FG
 CHEYENNE LARAMIE COUNTY WYOMING

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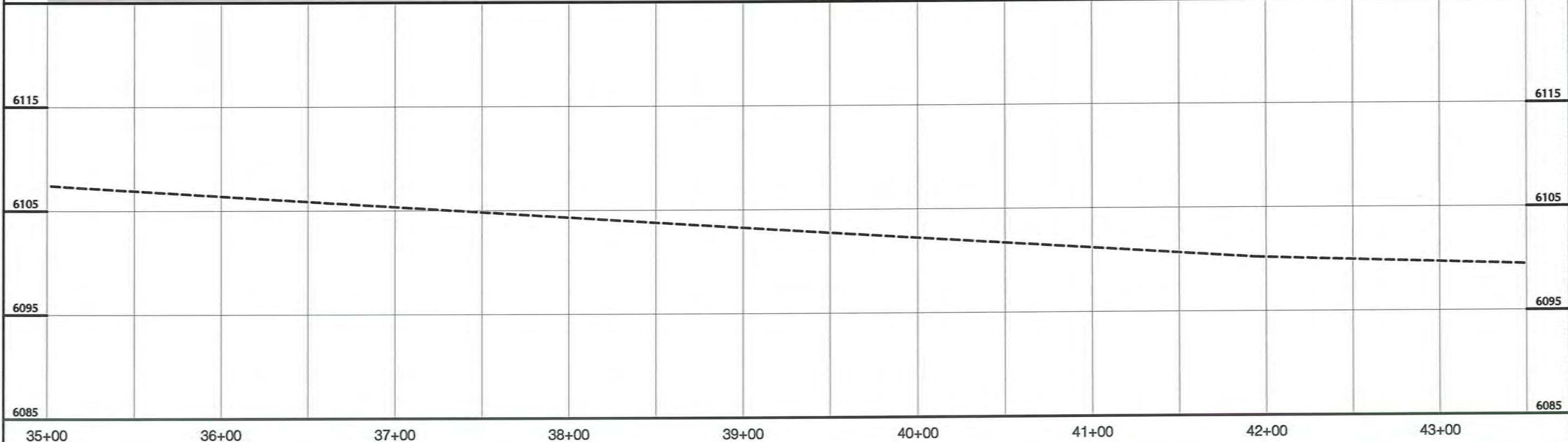
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LEGEND

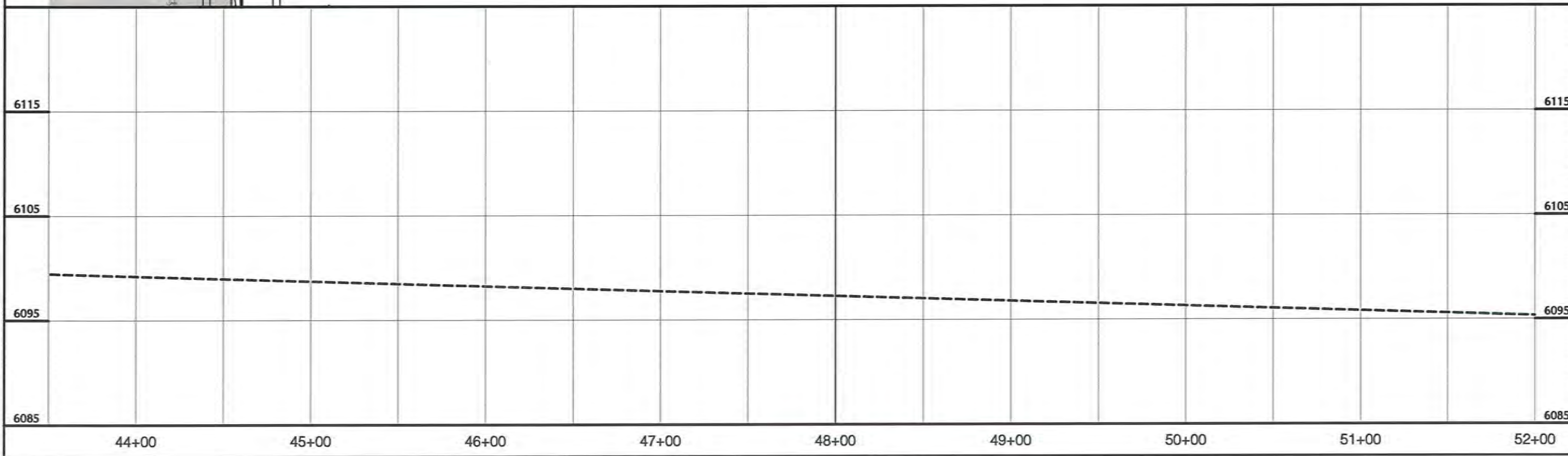
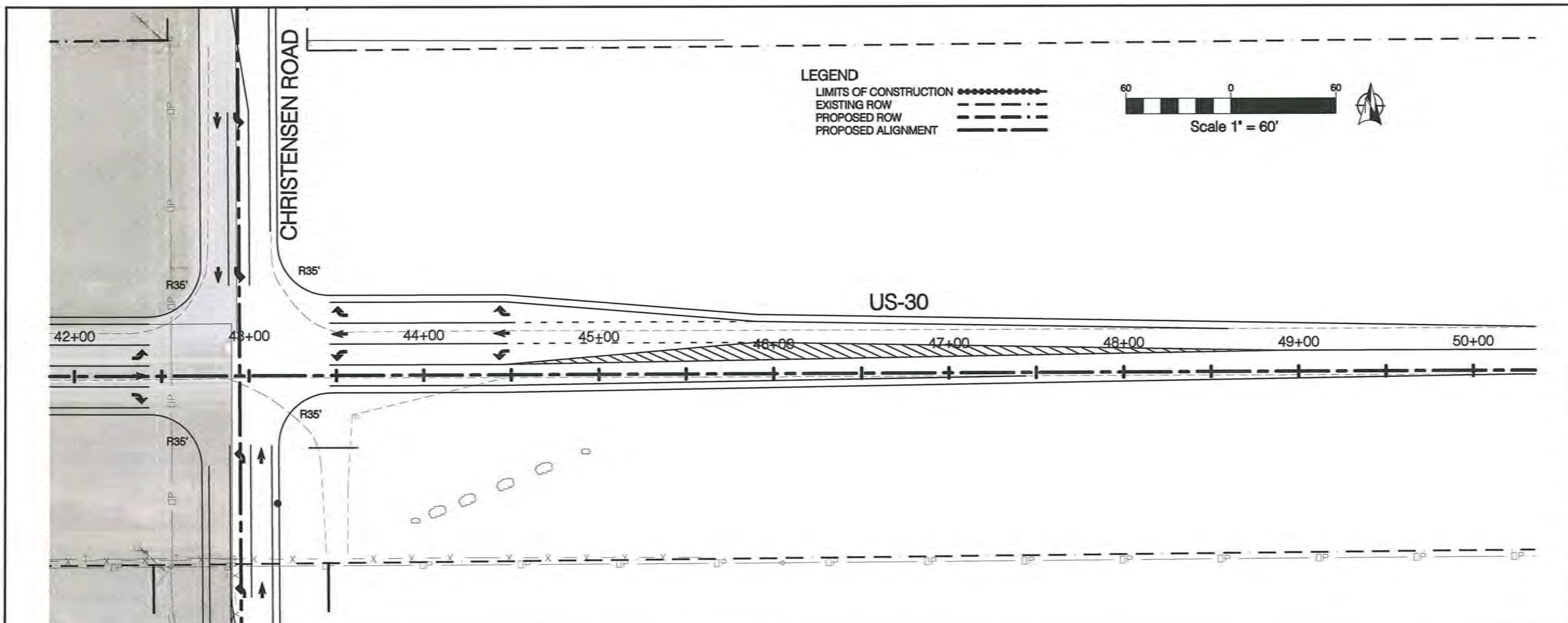
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- EXISTING ROW
- PROPOSED ROW
- PROPOSED ALIGNMENT



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	Delta: -35-57		
Circular Curve Data			
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CC		61436.8264	624813.6691
PT	41+67.07	79919.6897	624884.7546
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Radius: 18483.00		DOC: 00-18-36	
Length: 838.48		Tangent: 419.31	
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Es: 4.76			

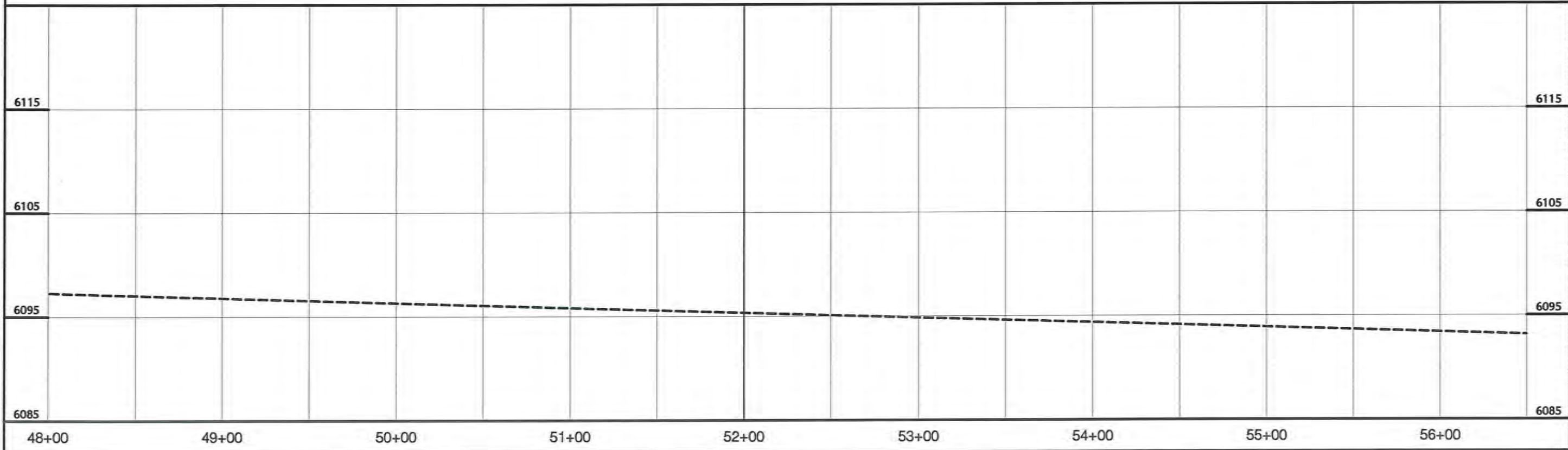
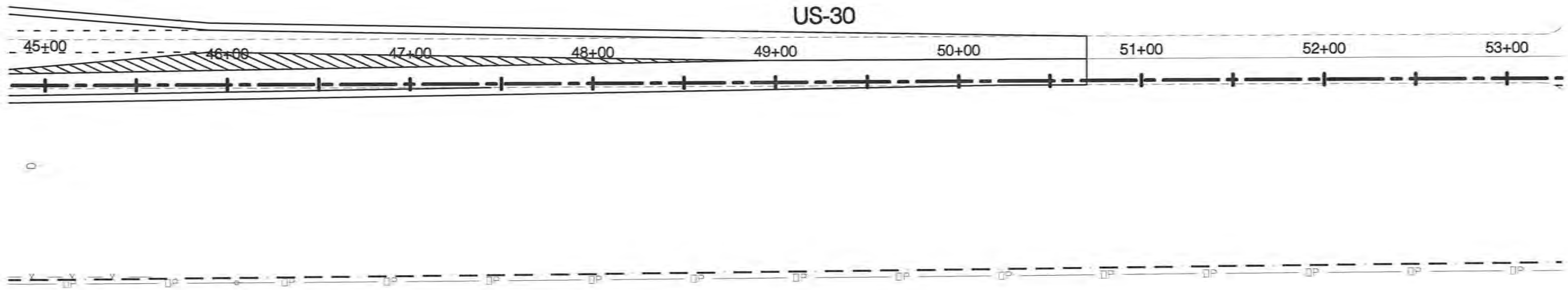
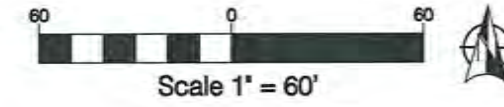


<p>DELLRANGE AND US30 INTERCHANGE</p> <p style="text-align: center;">US30</p> <p style="text-align: center;">PLAN AND PROFILE 40F6</p> <p style="text-align: right;">LARAMIE COUNTY</p> <p style="text-align: right;">WYOMING</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">PROJECT NUMBER: 0213.07</td> <td style="width: 50%;">DESIGN BY: K.W.H.</td> </tr> <tr> <td>DRAWN BY: W.M.F.</td> <td>CHECKED BY: S.D.L.</td> </tr> <tr> <td>FILE NAME:</td> <td>DATE PREPARED: 9/09/02</td> </tr> </table>	PROJECT NUMBER: 0213.07	DESIGN BY: K.W.H.	DRAWN BY: W.M.F.	CHECKED BY: S.D.L.	FILE NAME:	DATE PREPARED: 9/09/02
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DRAWN BY: W.M.F.	CHECKED BY: S.D.L.						
FILE NAME:	DATE PREPARED: 9/09/02						
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DRAWN BY: W.M.F.	CHECKED BY: S.D.L.
FILE NAME:	DATE PREPARED: 9/06/02
CHEYENNE LARAMIE COUNTY WYOMING	
8 OF 11 SHEETS	

LEGEND
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 PROPOSED ROW - - - - -
 PROPOSED ALIGNMENT - - - - -



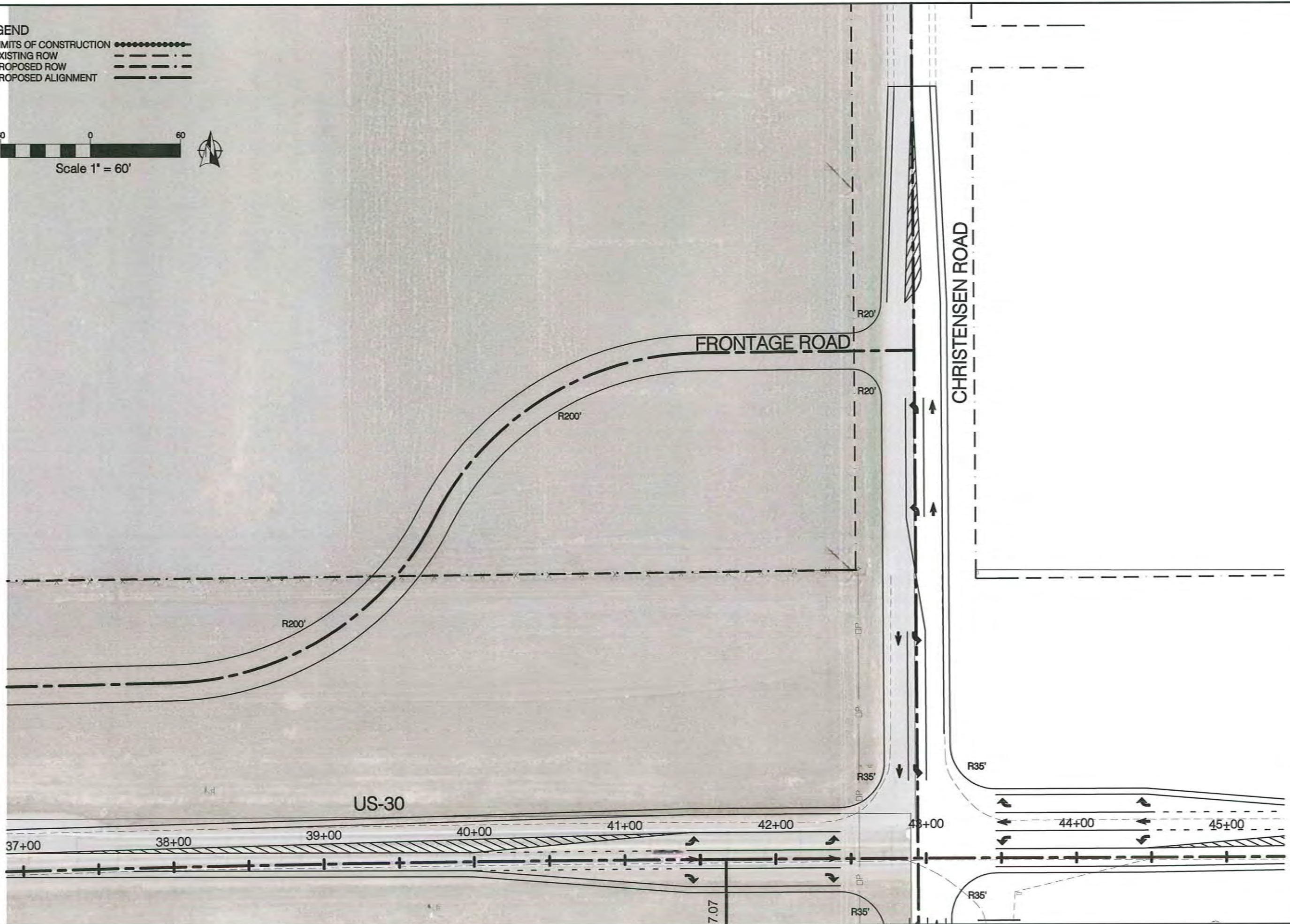
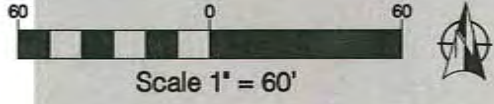
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 CHEYENNE LARAMIE COUNTY WYOMING

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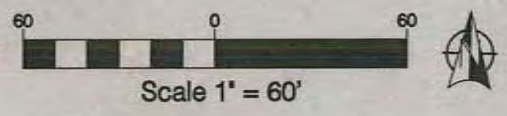
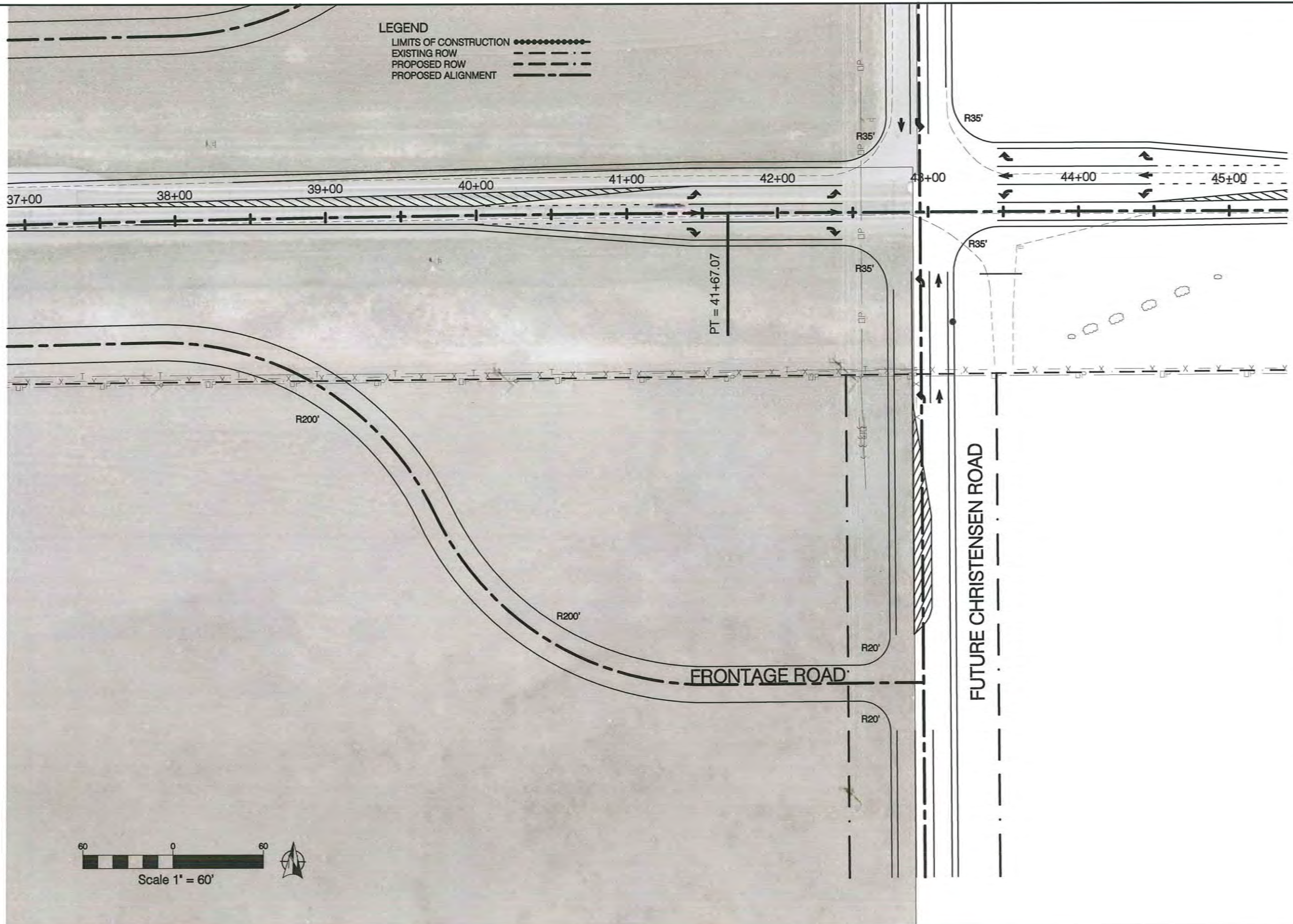
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- LIMITS OF CONSTRUCTION
- EXISTING ROW
- PROPOSED ROW
- PROPOSED ALIGNMENT



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PROJECT NUMBER: 0213.07	DESIGN BY: K.W.H.	DRAWN BY: W.M.F.	CHECKED BY: S.D.L.
FILE NAME:	DATE PREPARED: 9/06/02	CHEYENNE	LARAMIE COUNTY
WYOMING			
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OF 11 SHEETS			

LEGEND
 LIMITS OF CONSTRUCTION
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 PROPOSED ROW - . - . -
 PROPOSED ALIGNMENT ———



PROJECT NUMBER: 0213.07	DESIGN BY: K.W.H.	DRAWN BY: W.M.F.	CHECKED BY: S.D.L.	FILE NAME:	DATE PREPARED: 9/06/02
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CHEYENNE			LARAMIE COUNTY		WYOMING
<p>SHEET</p> <p style="font-size: 2em; font-weight: bold; text-align: center;">11</p> <p>OF 11 SHEETS</p>					
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II. DESIGN MEMORANDUM - CHRISTENSEN ROAD-COMMERCE CIRCLE TO PERSHING BOULEVARD

We have developed a 35 percent design for the proposed segment of Christensen Road between Commerce Circle and E. Pershing Boulevard. This effort has been included as an addendum to the East Dell Range / US 30 Corridor Study, as Christensen Road is an important future roadway link within the study area. The proposed segment would include a roadway-over-railroad bridge, crossing the Union Pacific Railroad south of Tate Road.

Background

The Christensen Road connection will help to set the stage for anticipated development within the eastern portion of the City of Cheyenne. It will provide a more direct connection to the Campstool Road / Interstate 80 (I-80) interchange for residents and businesses in the area. This link was identified as a priority in the *PlanCheyenne* Transportation Plan, and the Cheyenne MPO is currently exploring options for funding the connection.

This memorandum outlines the assumptions underlying our 35 percent design of the connection and provides a preliminary estimate of the construction cost and right-of-way acreage required to construct Christensen Road between Commerce Circle and Pershing Boulevard.

Design Assumptions

The data available to conduct the design effort was provided by Cheyenne MPO through GIS and AVI Engineering's previous development study titled *A Development Study of Alignment & Costs for Christensen Road, October 1994*. The GIS data provided contours, parcel data and aerial images. AVI also provided electronic data consisting of the preferred "Alignment A" centerline.

The following lists the assumptions made during the design:

- ▶ The "Alignment A" centerline as provided by AVI was used as the future full 4-lane build out alignment for this analysis.
- ▶ The parcel data outlines the reserved right of way as developed in the AVI original study for "Alignment A" from Commerce Circle to Union Pacific Railroad right of way.
- ▶ The aerial and parcel data do not align, therefore the parcel data was used as a background for the design effort. The aerial was used to locate adjacent buildings, visible utilities and existing roadway characteristics.
- ▶ The existing roadway section on Christensen Road south of the Commerce Circle intersection is 5-lanes. The roadway width that will be extended is currently 58 feet which is more than the required width of the proposed extension. Therefore, limited work is required at the intersection.
- ▶ Signal installed at the intersection of Christensen Road and realigned E. Pershing Boulevard.
- ▶ The *Road, Street, & Site Planning Design Standards, 2006* was utilized as the design guide for roadway improvements.

- The Christensen roadway section consists of a 3-lane minor arterial street section (Figure 5-B-2) except when it tapers to a 2-lane section for the bridge over the Union Pacific Railroad tracks. The roadway section will be slightly altered to allow for a sidewalk on one side and a Greenway path on the other.
- E. Pershing Boulevard was realigned to establish a 90 degree intersection. The roadway section of E. Pershing Boulevard was assumed to be an Urban Collector without parking (Figure 5-B-3).

AVI's previous study listed items that needed further consideration and are described briefly below with comments describing what resulted from the further evaluation.

1. Rerouting of Tate Road. There were two recommended options: cul-de-sac or reroute.
 - We recommend the cul-de-sac option to avoid extensive impact to the adjacent parcel.
 - The previous study only noted the west side of the Christensen Road extension at Tate Road. There is a major access to multiple parcels that is directly to the east of Tate Road intersection with the Christensen Road extension. A new access to these parcels would have to be located adjacent to Archies Road intersection. This would require additional right-of-way and roadway work to tie into the existing internal access configuration. The Rural Road Section was used to design and cost the access.
2. Acceleration/climbing lane for combination vehicles, due to the 5½ percent grade.
 - The length of grade at 5½ percent is approximately 1,300 feet. In order to accommodate a climbing lane, an additional lane would be required on the bridge over the Union Pacific Railroad tracks. Since this is a large expense and the length of higher grade is minimal, we have not incorporated a climbing lane.
3. Intersection of Christensen Road and E. Pershing Boulevard. The current intersection is at a 24 degree skew.
 - The intersection has been designed for 90 degrees.
4. Need for left turn lanes.
 - A center left turn lane has been incorporated where left turns will occur.

Cost Estimate

As detailed in the included table, the opinion of probable cost for the Christensen Road extension from Commerce Circle to realigned E. Pershing Boulevard is \$8,797,000. Unit costs in the opinion of probable cost were taken from the following sources:

1. 2006 Weighted Average Bid Prices
2. Relevant previous project experience

The cost estimate includes the following items:

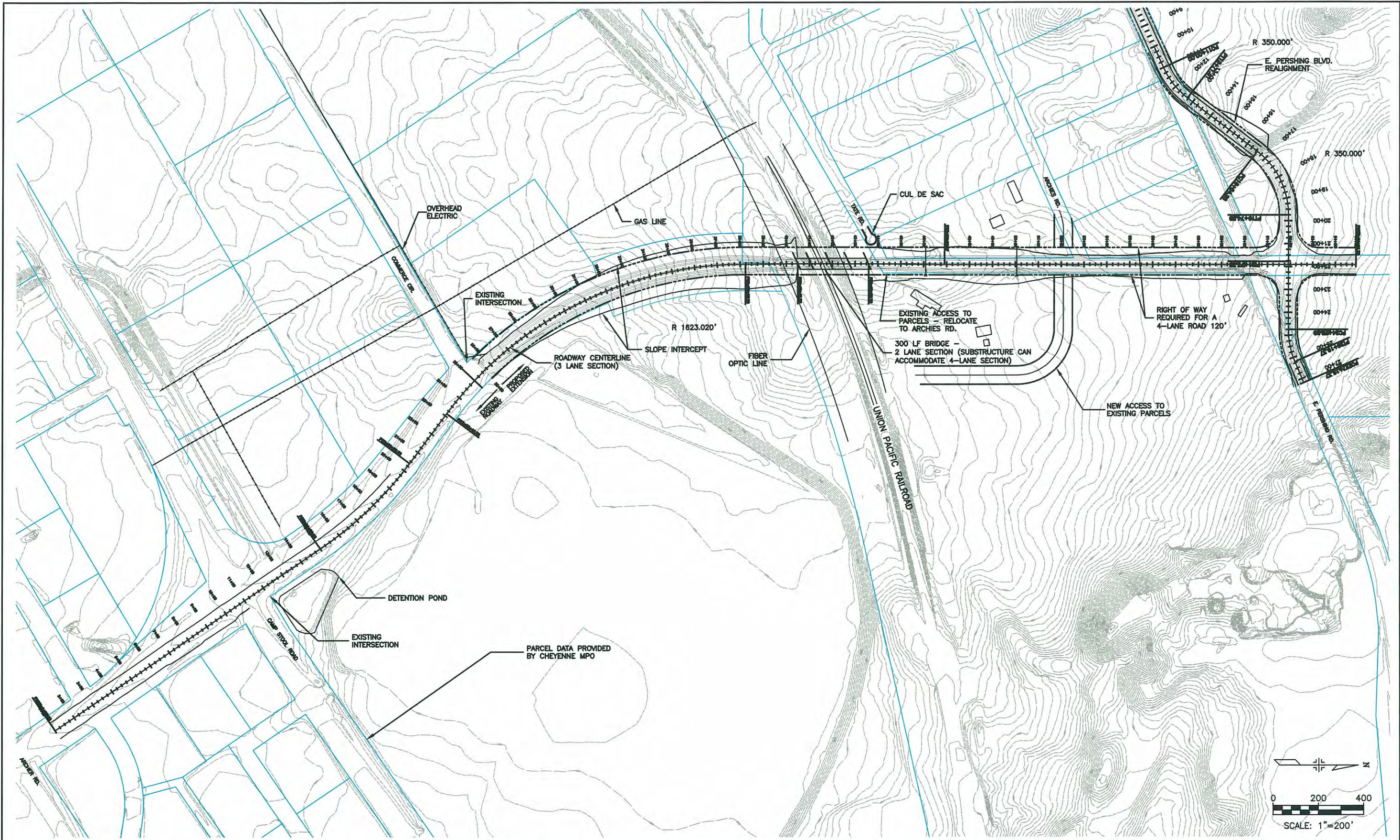
- ▶ Christensen Road extension from Commerce Circle to the realigned E. Pershing Boulevard intersection.
- ▶ Realigned E. Pershing Boulevard
- ▶ Cul-de-sac on Tate Road
- ▶ Intersection with Archies Road
- ▶ New access to parcels east of Christensen Road between Tate Road and E. Pershing Boulevard

Right-of-way acquisition

The right of way needed for this project was evaluated during the previous study by AVI from Campstool Road to US Highway 30 to accommodate a 4-lane Principal Arterial section. The Principal Arterial Street section requires 120' of right of way. The previous efforts resulted in the majority of required right of way at 125' width except for a portion south of the Union Pacific Railroad which is 250'. The previously determined right of way widths were used to determine the acreage requirement. The right of way required to accommodate all the improvements as listed in the above section is approximately 14 acres.

Item	Unit	Unit Cost	Quantity	Cost
REMOVALS / RELOCATIONS				
Removal Of Asphalt Mat	S.Y.	\$3	6,428	\$20,000
Removal Of Asphalt Mat (Planing)	S.Y.	\$2	0	-
Removal Of Curb And Gutter	L.F.	\$6	0	-
ROADWAY/CONSTRUCTION				
Pavement - (10" HMA)	TON	\$65	15,231	\$ 991,000
Concrete Sidewalk	S.Y.	\$45	6,547	\$295,000
Curb And Gutter	L.F.	\$25	13,000	\$325,000
EARTHWORK				
Unclassified Excavation	CY	\$5	210,000	\$1,050,000
BRIDGES/STRUCTURES				
Standard	SF	\$120	16,000	\$1,920,000
RETAINING WALLS				
MSE Wall Height (0-10')	L.F.	\$280	400	\$112,000
TRAFFIC SIGNALS	EACH	\$210,000	1	\$ 210,000
				\$4,923,000
LIGHTING	0%	OF (A)	N.A.	-
DRAINAGE	5%	OF (A)	N.A.	\$247,000
SIGNING AND STRIPING	1%	OF (A)	N.A.	\$50,000
CONSTRUCTION TRAFFIC CONTROL	2%	OF (A)	N.A.	\$99,000
URBAN DESIGN / LANDSCAPING	1%	OF (A)	N.A.	\$50,000
				\$5,369,000
MOBILIZATION	5%	OF CBI	N.A.	\$269,000
CONTINGENCIES & OTHER COST				
Contingencies	25%	OF CBI	N.A.	\$1,343,000
				\$6,981,000
UTILITIES	5%	OF (CI)	N.A.	\$349,000
ENGINEERING				
Design	10%	OF (CI)	N.A.	\$698,000
Construction Management	5%	OF (CI)	N.A.	\$349,000
ROW*	AC	\$30,000.00	14	\$420,000
				\$8,797,000

* \$30,000 Per Acre Estimate



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Index of Revisions	
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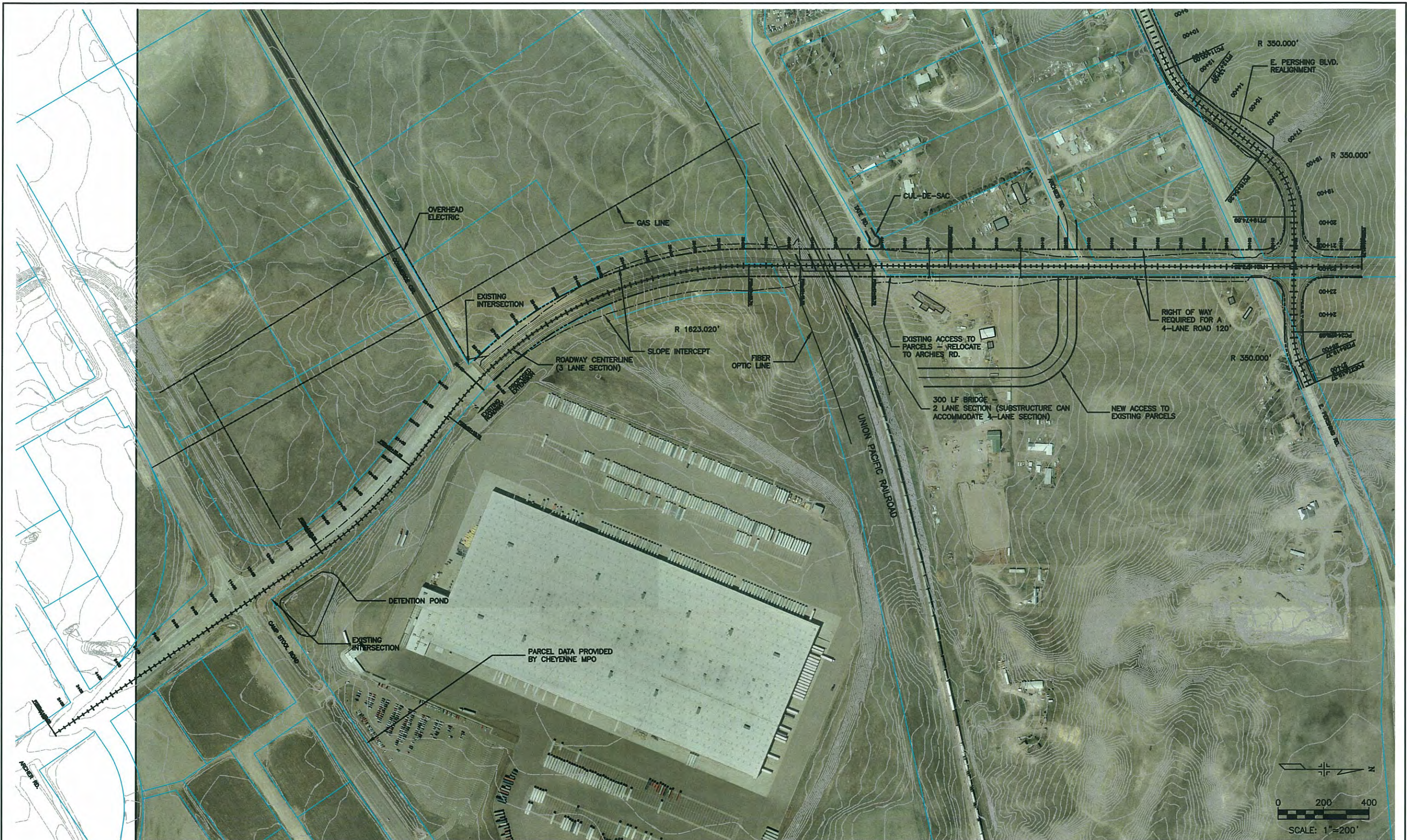


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As Constructed
No Revisions:
Revised:
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CHRISTENSEN RD DEVELOPMENT STUDY	
Designer:	Structure Numbers
Detailer:	
Sheet Subset:	1 Subset Sheets: 1 of 2

Project No./Code
Sheet Number 1



Computer File Information	
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Last Modification Date:	10/11/07 Initials: KRP
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Acad Ver.	2004 Scale: 200 Units: US Cust.

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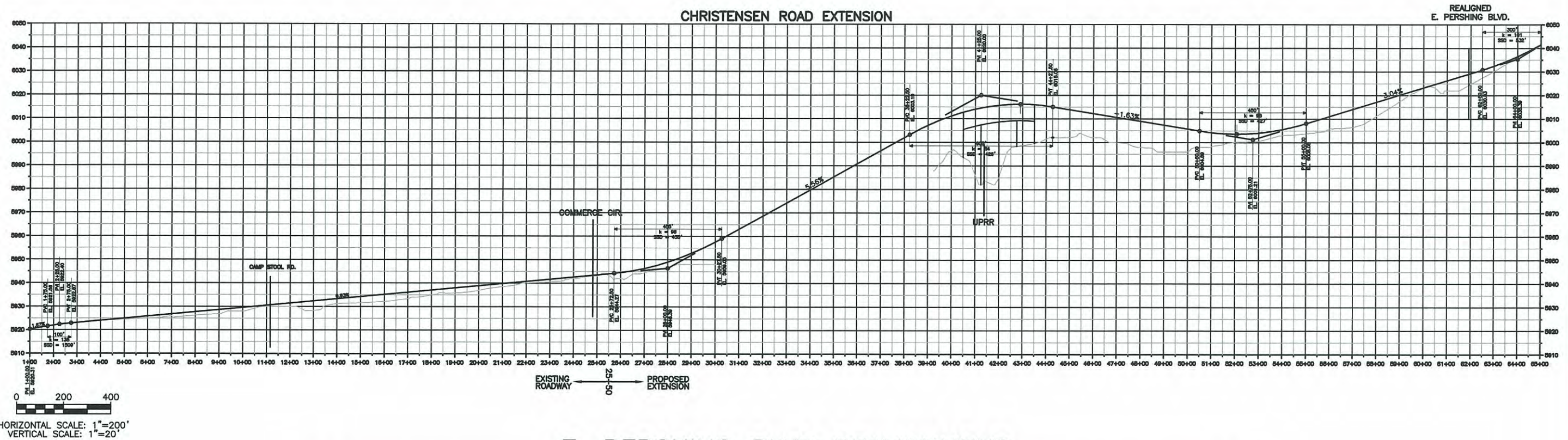


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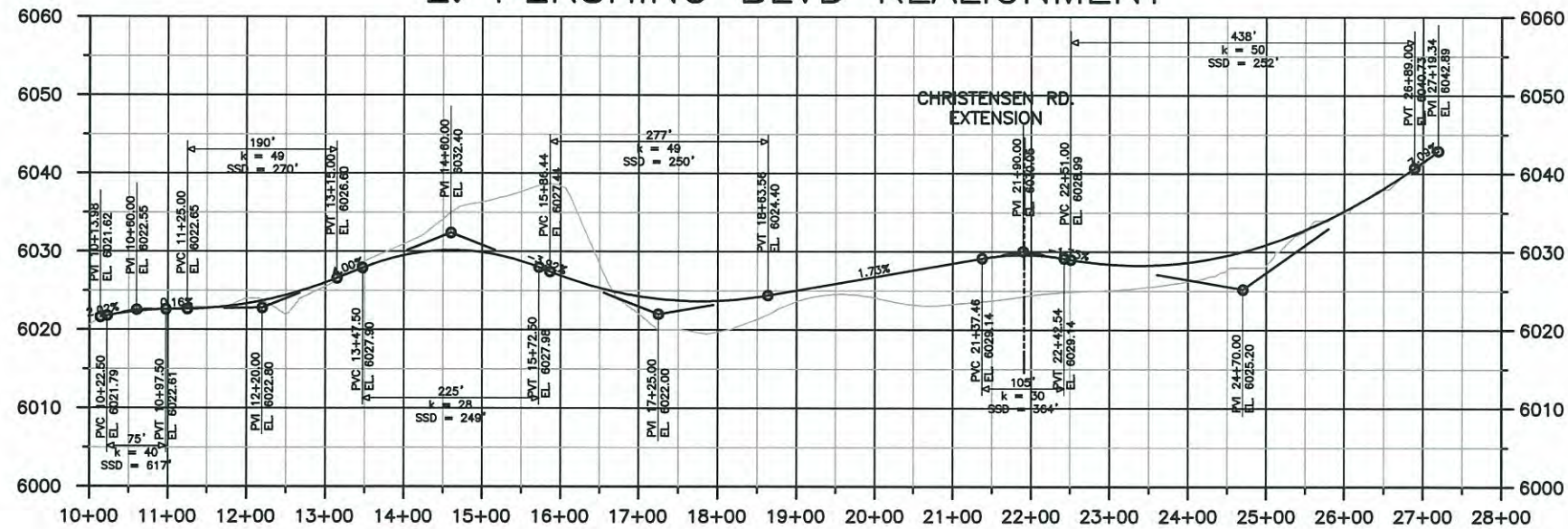
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CHRISTENSEN ROAD EXTENSION



E. PERSHING BLVD REALIGNMENT



HORIZONTAL SCALE: 1"=100'
VERTICAL SCALE: 1"=10'

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Revised:	Detailer:		
Void:	Sheet Subset:	Subset Sheets: 2 of 2	Sheet Number 2

III. DESIGN MEMORANDUM - CHRISTENSEN ROAD EXTENSION EAST PERSHING BOULEVARD TO US 30

We have developed a 10 percent design for the proposed segment of Christensen Road between E. Pershing Boulevard and US 30. This effort has been included as an addendum to the East Dell Range / US 30 Corridor Study, as Christensen Road is an important future roadway link within the study area. The proposed segment would include a roadway continuing north from the preliminary design of Christensen Road that is extended from Commerce Circle to E. Pershing Boulevard.

Background

The Christensen Road connection will help to set the stage for anticipated development within the eastern portion of the City of Cheyenne. It will provide a more direct connection to the Campstool Road / Interstate 80 (I-80) interchange for residents and businesses in the area. This link was identified as a priority in the *PlanCheyenne* Transportation Plan, and the Cheyenne MPO is currently exploring options for funding the connection.

This memorandum outlines the assumptions underlying our 10 percent design of the connection and provides a preliminary estimate of the construction cost and right-of-way acreage required to construct Christensen Road between E. Pershing Boulevard and US 30.

Design Assumptions

The data available to conduct the design effort was provided by Cheyenne MPO through GIS and AVI's previous development study titled *A Development Study of Alignment & Costs for Christensen Road, October 1994*. The GIS data provided contours, parcel data and aerial images. AVI also provided electronic data consisting of the preferred "Alignment A" centerline that extended from E. Pershing Boulevard to US 30.

The following lists the assumptions made during the design:

- ▶ The "Alignment A" centerline as provided by AVI was used as the future full 4-lane build out alignment for this analysis.
- ▶ The aerial and parcel data do not align, therefore the parcel data was used as a background for the design effort. The aerial was used to locate adjacent buildings, visible utilities and existing roadway characteristics.
- ▶ The *Road, Street, & Site Planning Design Standards, 2006* was utilized as the design guide for roadway improvements.
- ▶ The Christensen roadway section consists of a 3-lane minor arterial street section (Figure 5-B-2). The roadway section will be slightly altered to allow for a sidewalk on one side and a Greenway path on the other.

Christensen Road

Only one alternative was evaluated in the study for this portion of Christensen Road. The centerline of the previous portion of Christensen Road that terminates at the intersection of E. Pershing Boulevard is extended north to intersect with the existing US 30 and Christensen Road intersection. The full 4-lane alignment does not impact any structures and is centered in the right of way as represented by the parcel data provided. The initial 3-lane section will be built to accommodate the expansion to the full 4-lane section on the west side of the section. This will eliminate the need to widen on both sides of the 3-lane section for full build out as well as minimize the cost.

Two road sections were evaluated for this portion of Christensen Road. The three-lane section, as described in previous study, and a 4-lane full build section.

Items Needing Further Study

1. Refinement of the Christensen Road alignment should be evaluated once more detailed data of the existing property boundaries is available. Depending on the future roadway sections of US 30 and Christensen Road north of US 30, the intersection might need to be realigned to the west of the existing intersection to avoid impacts to current dwellings and features.
2. There is a property in the southeast quadrant of the proposed intersection of Christensen Road and US 30. The access is directly off of US 30 within 25 feet of the proposed intersection. Alternative access should be evaluated.

Cost Estimate

The opinions of probable costs for the Christensen Road extension from E. Pershing Boulevard to US 30 are detailed in the attached tables. The 3-lane section would cost approximately \$1.75 Million and the 4-lane section approximately \$2.1 Million.

Unit costs in the opinion of probable cost were taken from the following sources:

1. *2006 Weighted Average Bid Prices*
2. Relevant previous project experience

The cost estimate includes the Christensen Road extension from realigned E. Pershing Boulevard intersection to US 30. Costs were not included for any roadway, signal, or lighting work at the intersection of US 30.

Right-of-way acquisition

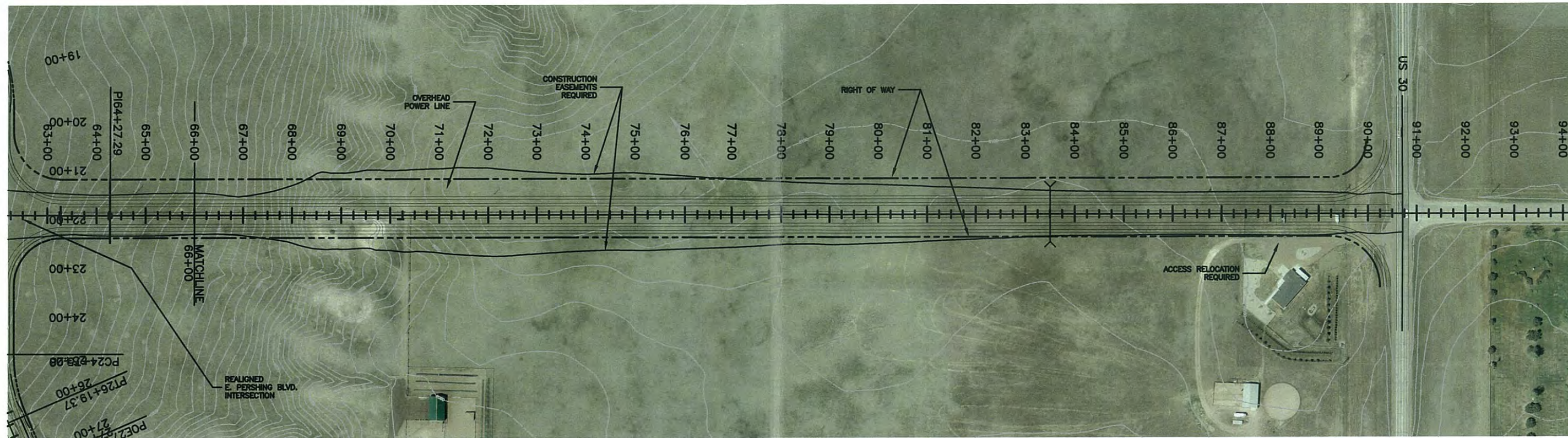
The right of way needed for this project was evaluated during the previous study by AVI from Campstool Road to US Highway 30 to accommodate a 4-lane Principal Arterial section. The Principal Arterial Street section requires 120' of right of way. The previous efforts resulted in the majority of required right of way at 125' width. The previously determined right of way width of 125' was used to determine the acreage requirement. The right of way required to accommodate all the improvements as listed in the above section is approximately 7.25 acres.

Item	Unit	Unit Cost (\$)	Quantity	Cost
REMOVALS / RELOCATIONS				
Removal of Asphalt Mat	S.Y.	3	0	-
Removal of Asphalt Mat (Planing)	S.Y.	2	0	-
Removal of Curb And Gutter	L.F.	6	0	-
ROADWAY/CONSTRUCTION				
Pavement - (10" HMA)	TON	65	5,500	\$358,000
Concrete Sidewalk	S.Y.	45	3,400	\$153,000
Curb And Gutter	L.F.	25	5,000	\$125,000
EARTHWORK				
Unclassified Excavation	CY	5	40,000	\$200,000
BRIDGES/STRUCTURES				
Standard	SF	120	0	-
RETAINING WALLS				
MSE Wall Height (0-10')	L.F.	280	0	-
TRAFFIC SIGNALS	EACH	210,000	0	-
				\$836,000
LIGHTING	0%	OF (A)	N.A.	-
DRAINAGE	10%	OF (A)	N.A.	\$84,000
SIGNING AND STRIPING	5%	OF (A)	N.A.	\$42,000
CONSTRUCTION TRAFFIC CONTROL	2%	OF (A)	N.A.	\$17,000
URBAN DESIGN / LANDSCAPING	1%	OF (A)	N.A.	\$9,000
				\$988,000
MOBILIZATION	5%	OF CBI	N.A.	\$50,000
CONTINGENCIES & OTHER COST				
Contingencies	25%	OF CBI	N.A.	\$247,000
				\$1,285,000
UTILITIES	5%	OF (CI)	N.A.	\$64,000
ENGINEERING				
Design	10%	OF (CI)	N.A.	\$129,000
Construction Management	5%	OF (CI)	N.A.	\$64,000
ROW*	AC	\$30,000.00	7	\$210,000
				\$1,752,000

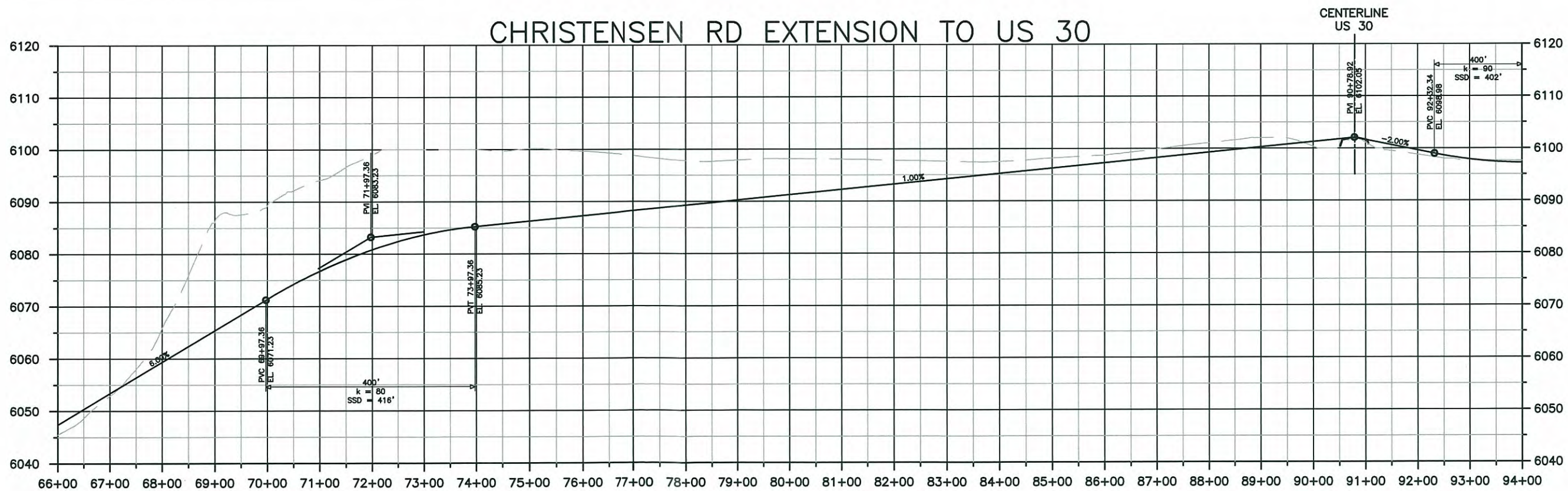
* \$30,000 Per Acre Estimate

Item	Unit	Unit Cost (\$)	Quantity	Cost
REMOVALS / RELOCATIONS				
Removal Of Asphalt Mat	S.Y.	3	0	-
Removal Of Asphalt Mat (Planing)	S.Y.	2	0	-
Removal Of Curb And Gutter	L.F.	6	0	-
ROADWAY/CONSTRUCTION				
Pavement - (10" HMA)	TON	65	7,500	\$488,000
Concrete Sidewalk	S.Y.	45	3,400	\$153,000
Curb And Gutter	L.F.	25	5,000	\$125,000
EARTHWORK				
Unclassified Excavation	CY	5	55,000	\$275,000
BRIDGES/STRUCTURES				
Standard	SF	120	0	-
RETAINING WALLS				
MSE Wall Height (0-10')	L.F.	280	0	-
TRAFFIC SIGNALS	EACH	210,000	0	-
				\$1,041,000
LIGHTING	0%	OF (A)	N.A.	-
DRAINAGE	10%	OF (A)	N.A.	\$105,000
SIGNING AND STRIPING	5%	OF (A)	N.A.	\$53,000
CONSTRUCTION TRAFFIC CONTROL	2%	OF (A)	N.A.	\$21,000
URBAN DESIGN / LANDSCAPING	1%	OF (A)	N.A.	\$11,000
				\$1,231,000
MOBILIZATION	5%	OF CBI	N.A.	\$62,000
CONTINGENCIES & OTHER COST				
Contingencies	25%	OF CBI	N.A.	\$308,000
				\$1,601,000
UTILITIES	5%	OF (CI)	N.A.	\$80,000
ENGINEERING				
Design	10%	OF (CI)	N.A.	\$160,000
Construction Management	5%	OF (CI)	N.A.	\$80,000
ROW*	AC	\$30,000.00	7	\$210,000
				\$2,131,000

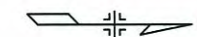
* \$30,000 Per Acre Estimate



CHRISTENSEN RD EXTENSION TO US 30



0 100 200
 HORIZONTAL SCALE: 1"=100'
 VERTICAL SCALE: 1"=20'



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