CITY OF SARATOGA SPRINGS
CITY COUNCIL WORK SESSION
Tuesday, September 6, 2016 - 6:00 P.M.
City of Saratoga Springs City Offices
1307 North Commerce Drive, Suite 200, Saratoga Springs, Utah 84045

CITY COUNCIL WORK SESSION AGENDA

1. Sports Complex Review and Discussion.

2. Foothill Boulevard Conceptual Alignment and Cost Estimate.
3. Agenda Review:

    a. City Council policy agenda items.
    b. Future City Council policy and work session agenda items.

4. Adjourn to Policy Session.

Councilmembers may participate in this meeting electronically via video or telephonic conferencing.
The order of the agenda items are subject to change by order of the Mayor.

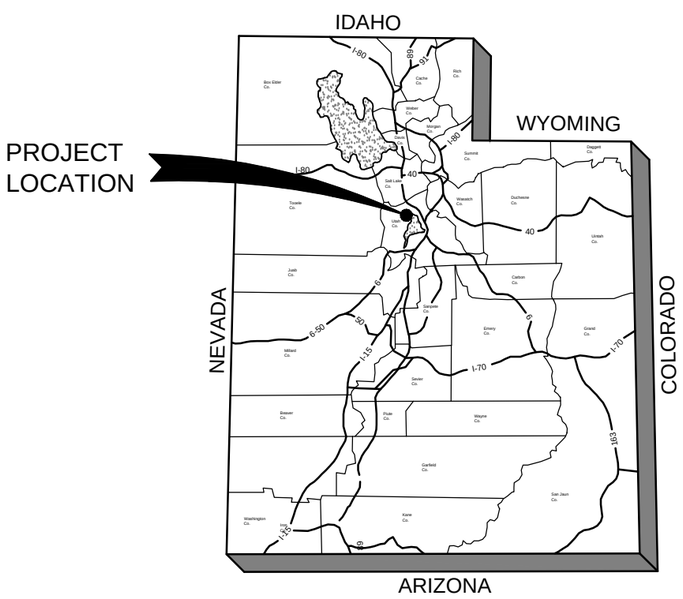
In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during this meeting should notify the City Recorder at 766-9793 at least one day prior to the meeting.

CITY OF SARATOGA SPRINGS

FOOTHILL BOULEVARD CONCEPT DESIGN

AUGUST 2016

STATE MAP



HORROCKS
ENGINEERS

O:\2016\PG-873-1605 Foothill Boulevard\Project Data\Sheet_Files\PG-873-1605_01 - Title Sheet Foothill Blvd.dwg - G1 - 8/12/2016 11:59am, adaml

PRELIMINARY

NOT FOR CONSTRUCTION

SCALE	
HORIZONTAL	1"=5000'
	N/A

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

HORROCKS ENGINEERS

2162 West Grove Parkway
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(801) 763-5100

FOOTHILL BOULEVARD

SHEET KEY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN	DATE	SHEET NO.
ASL	8/12/2016	2 OF 18
CHECKED	DATE	DRAWING NO.
DRK	8/12/2016	IDX-01

CURVE DATA TABLE

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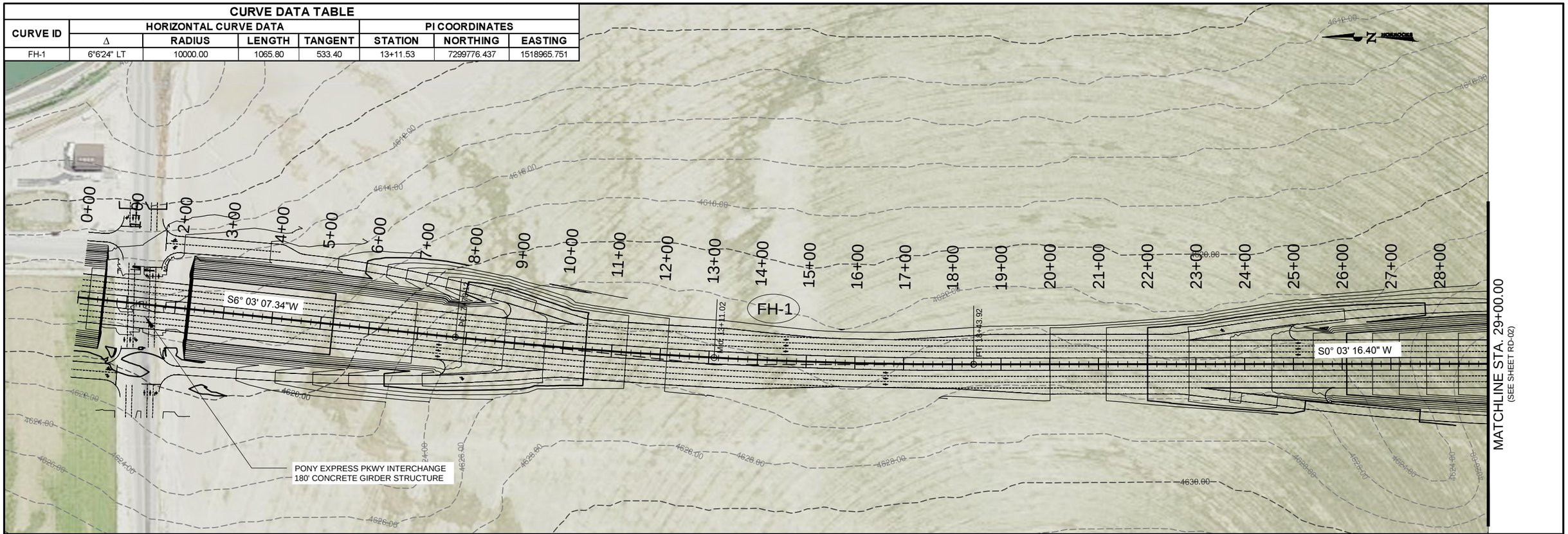

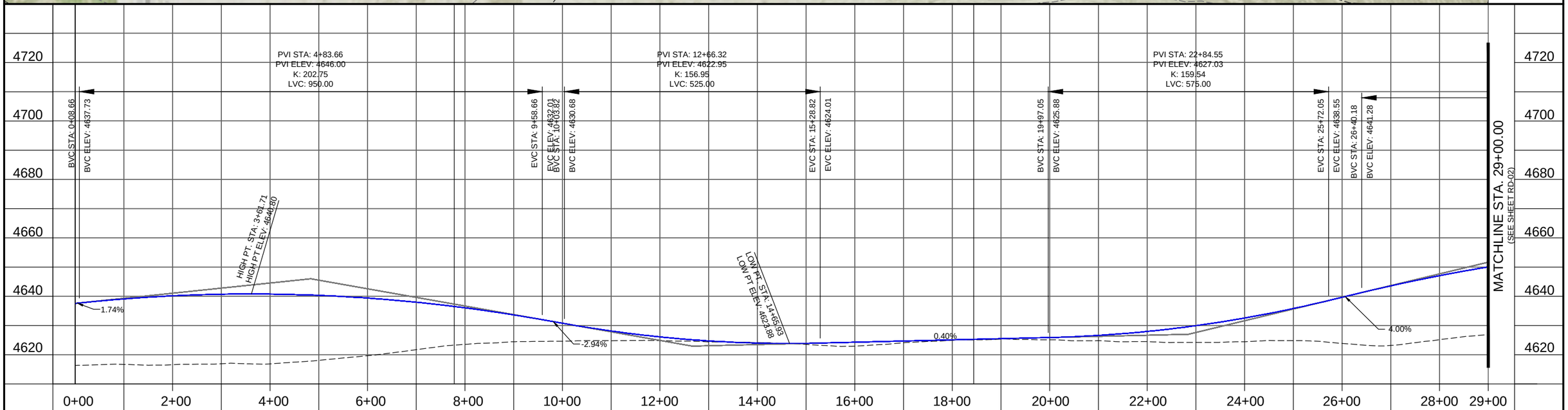

PRELIMINARY

NOT FOR CONSTRUCTION

SCALE

HORIZONTAL 1"=200'

WARNING

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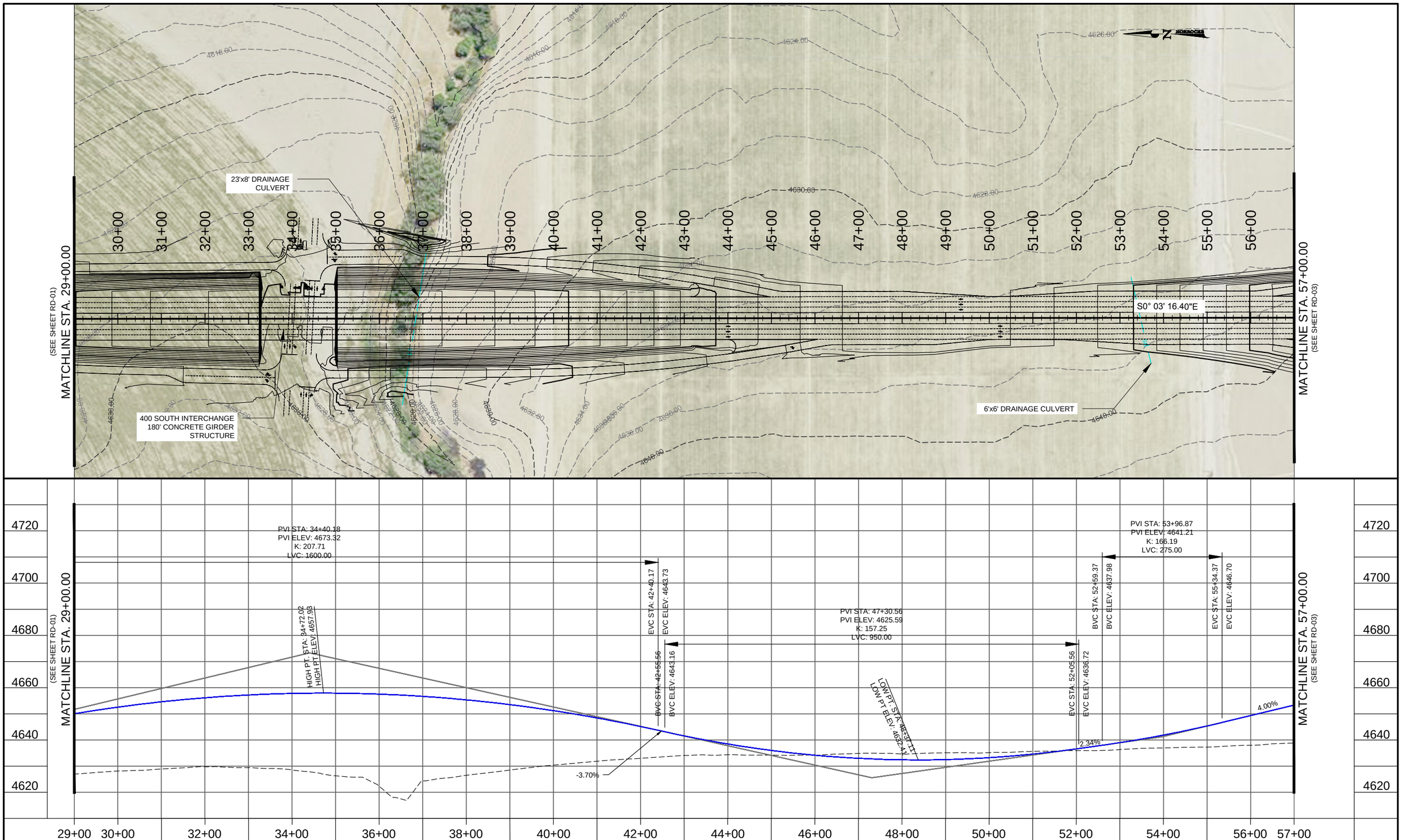
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 3 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-01



PRELIMINARY

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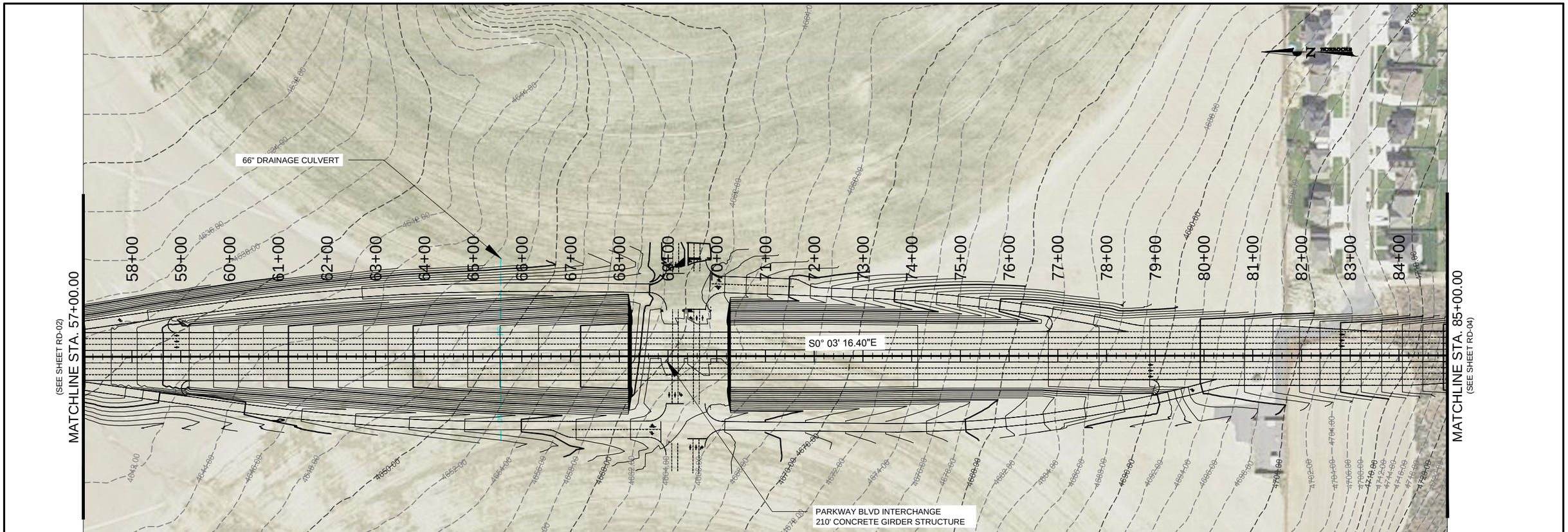
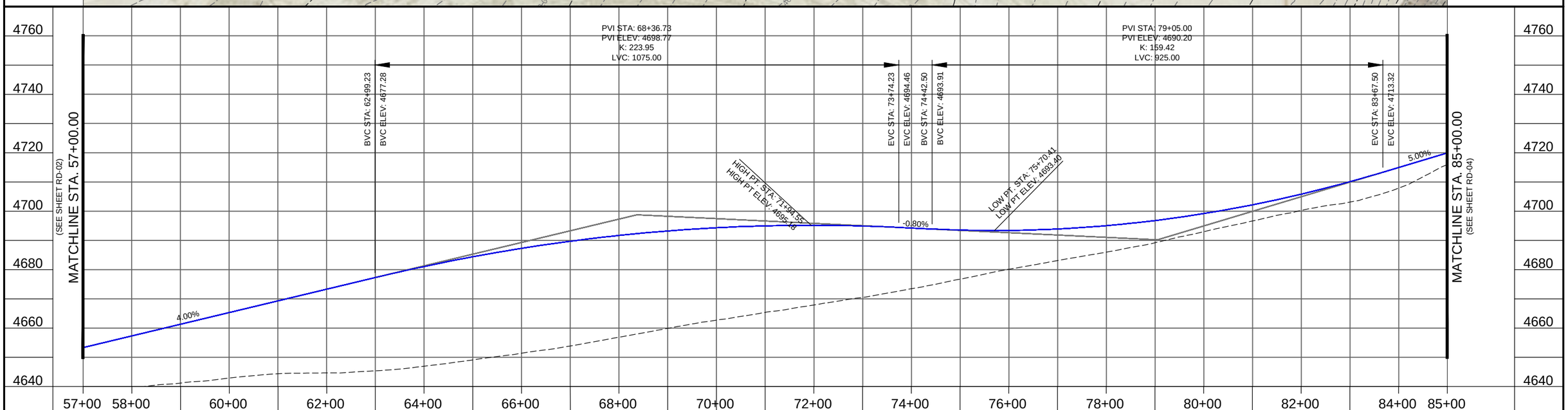
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 4 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-02





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ROADWAY

DESIGNED DLC	DATE 8/12/2016	PROJECT NO. PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 5 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-03

CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
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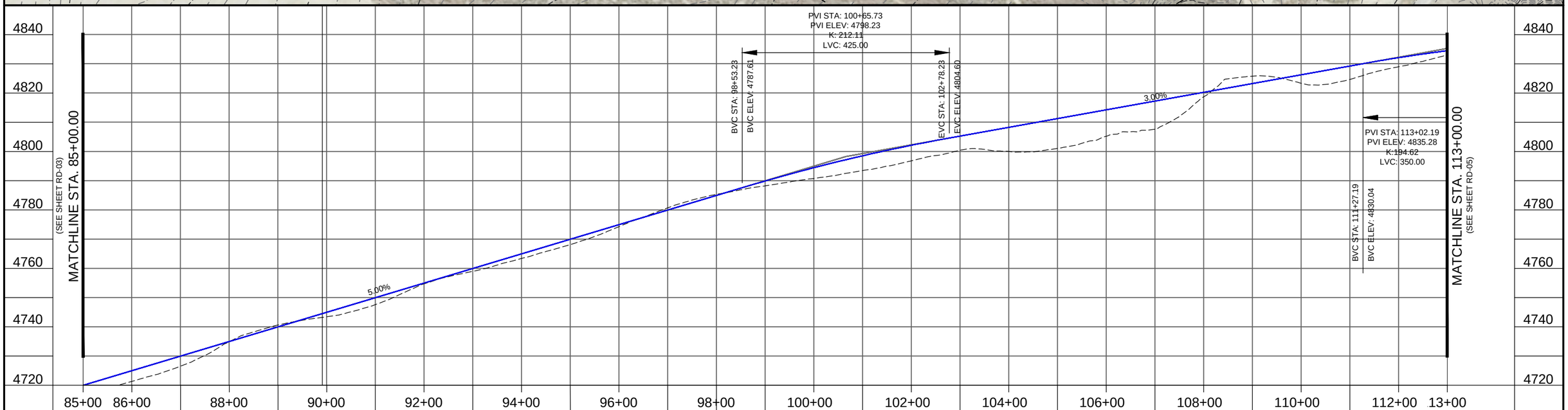
FH-2	64°03'05" LT	2300.00	2571.18	1438.63	104+29.92	7290657.040	1518974.434



PRELIMINARY

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SCALE

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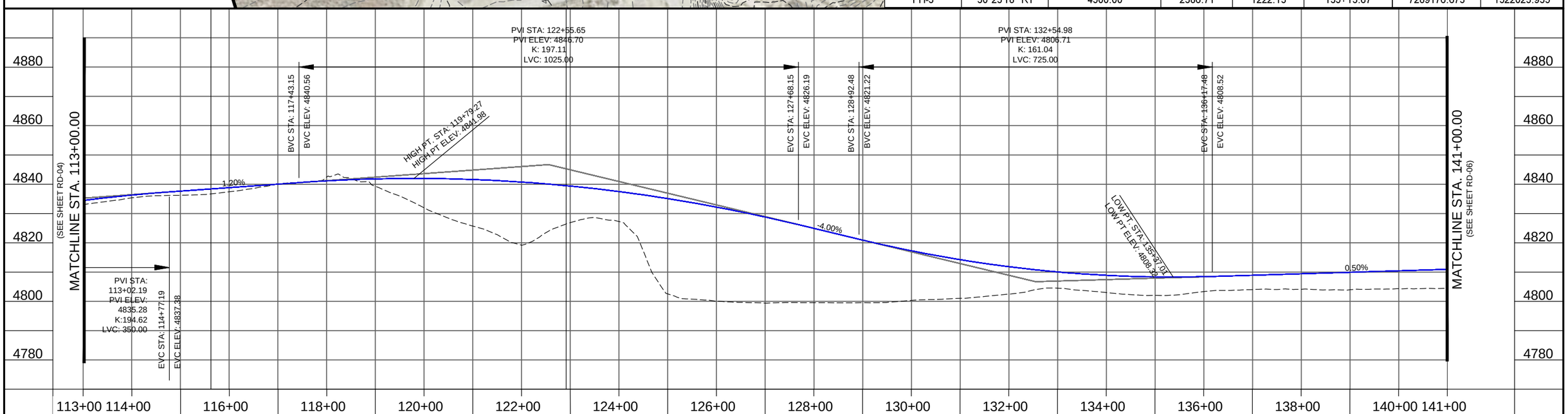
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 6 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-04

CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
	Δ	RADIUS	LENGTH	TANGENT	STATION	OFFSET	NORTHING
FH-2	64°03'05" LT	2300.00	2571.18	1438.63	104+29.92	7290657.040	1518974.434
FH-3	30°23'18" RT	4500.00	2386.71	1222.13	135+13.67	7289176.673	1522023.935



PRELIMINARY

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SCALE

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WARNING

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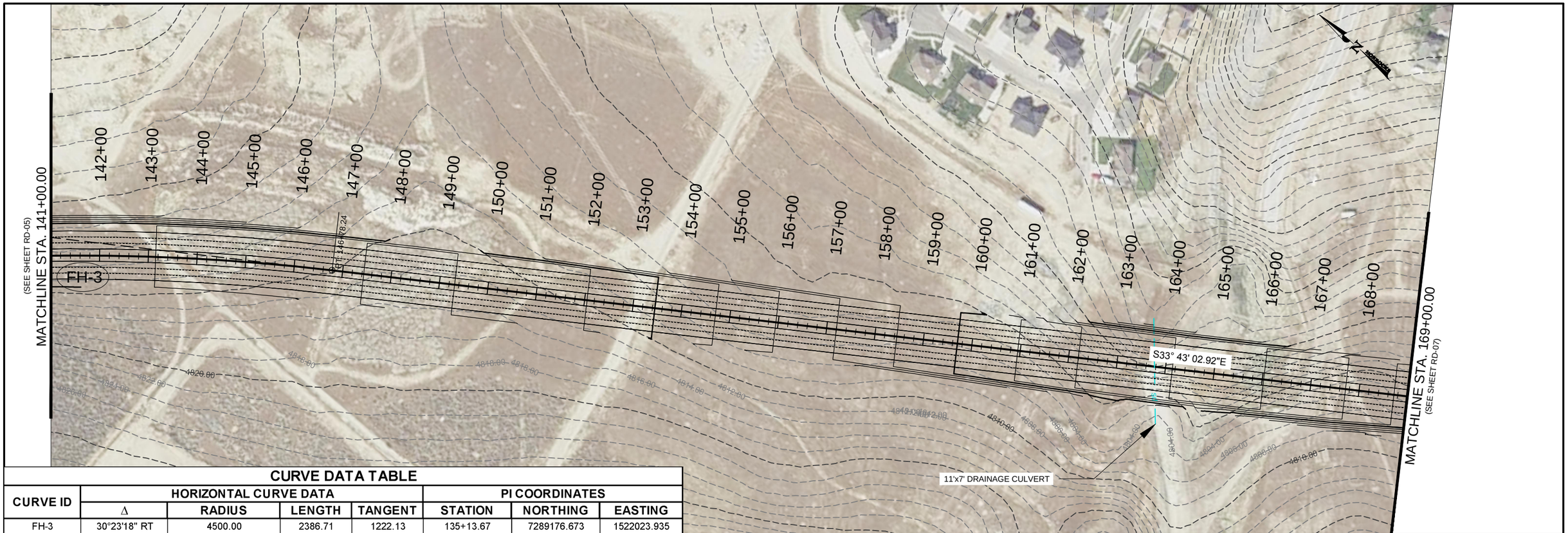
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 7 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-05



CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
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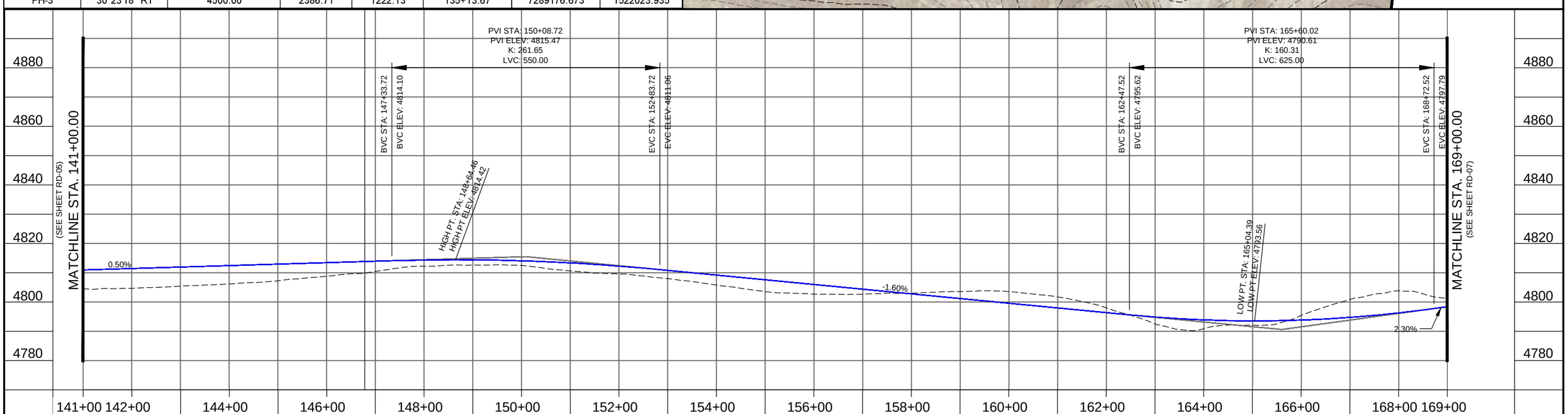
FH-3	30°23'18" RT	4500.00	2386.71	1222.13	135+13.67	7289176.673	1522023.935



PRELIMINARY

NOT FOR CONSTRUCTION

SCALE	
HORIZONTAL	1"=200'
	1"=10'

WARNING

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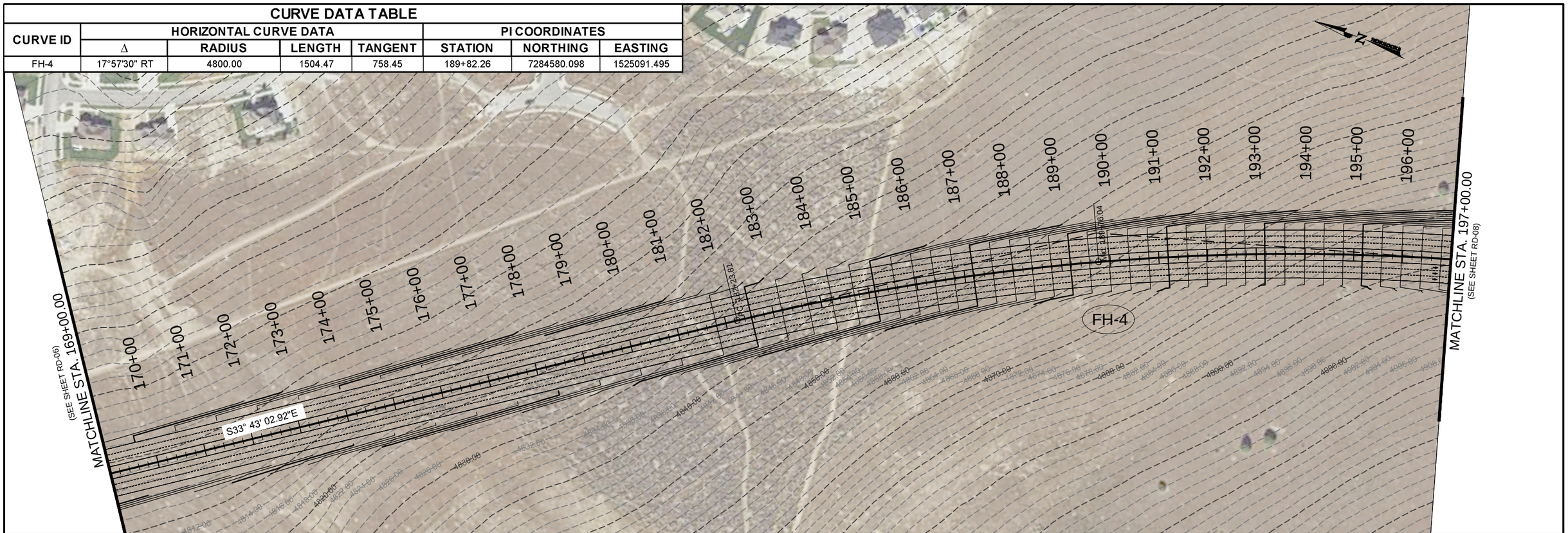
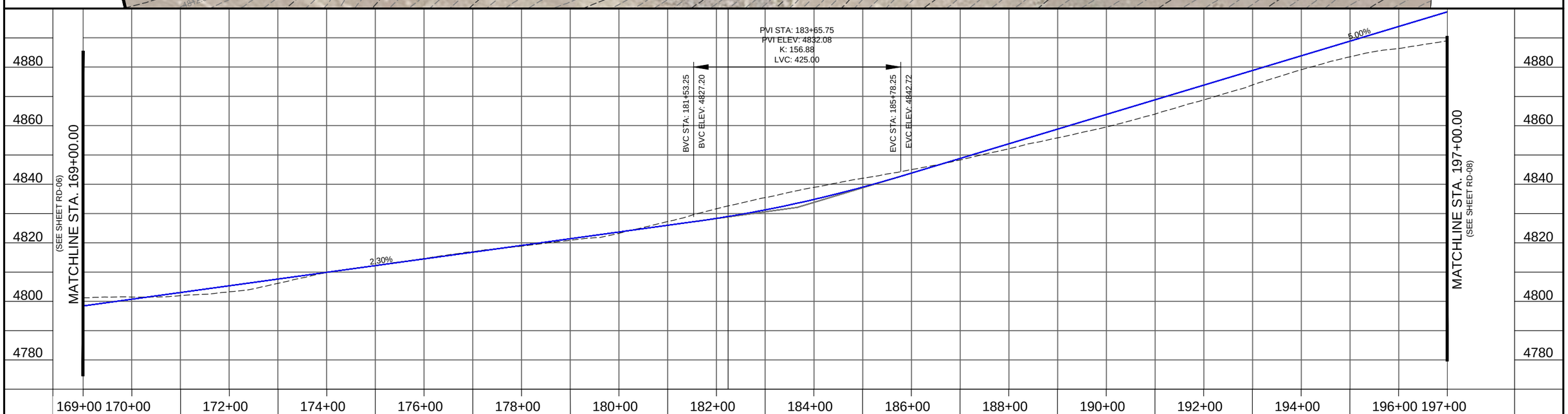
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 8 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-06

CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
	Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
FH-4	17°57'30" RT	4800.00	1504.47	758.45	189+82.26	7284580.098	1525091.495





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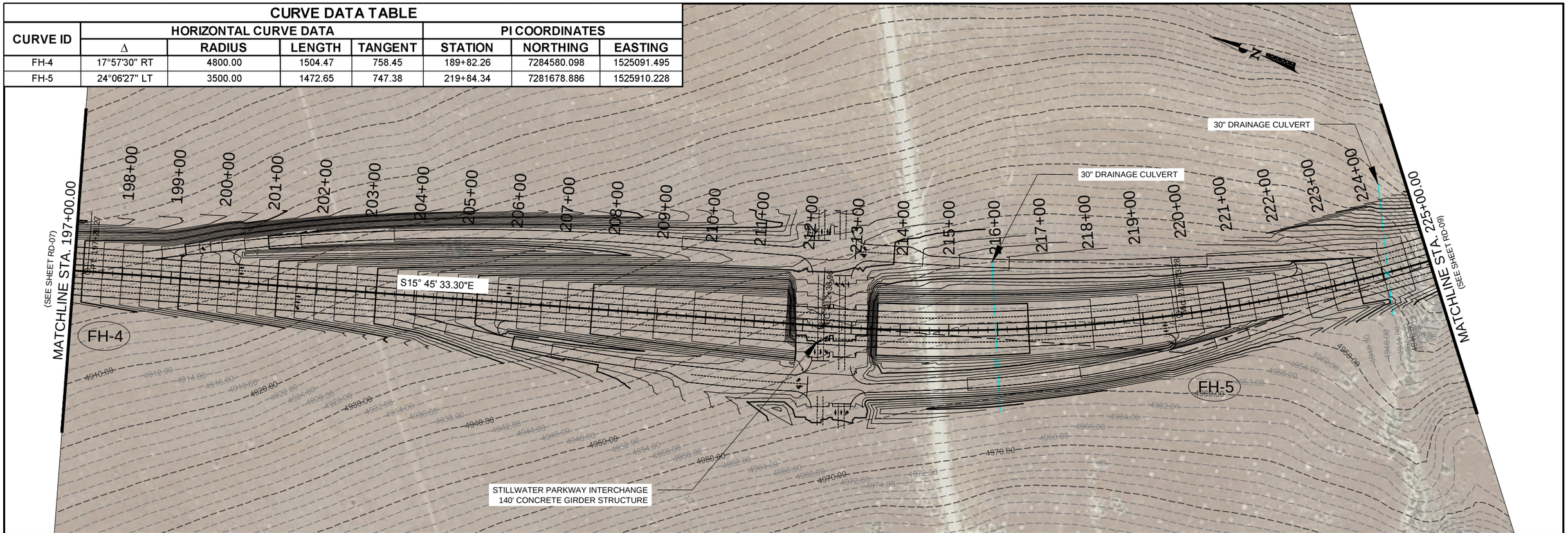
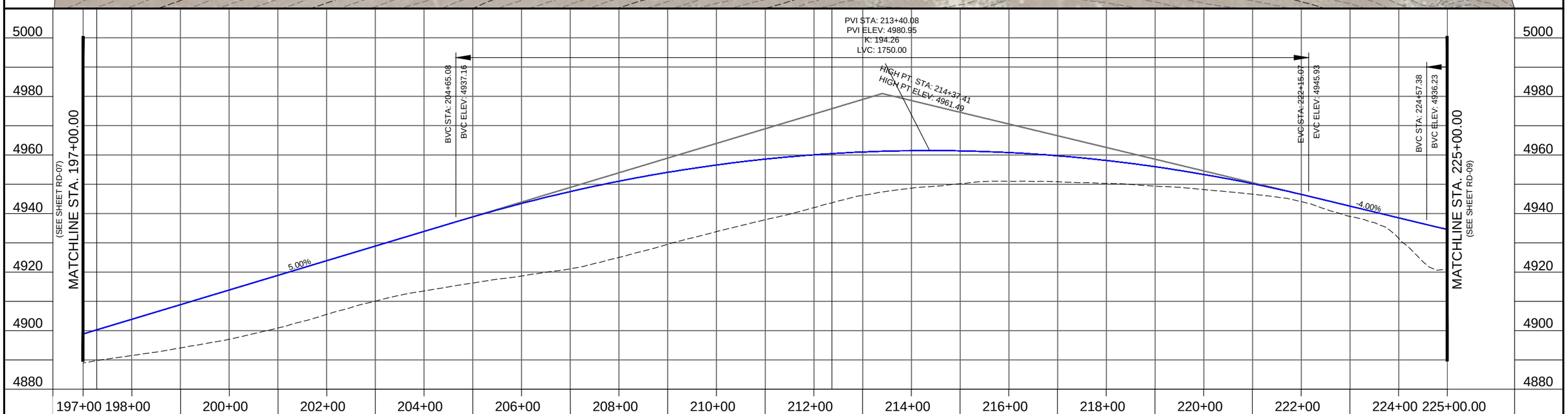
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 9 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-07

CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
	Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
FH-4	17°57'30" RT	4800.00	1504.47	758.45	189+82.26	7284580.098	1525091.495
FH-5	24°06'27" LT	3500.00	1472.65	747.38	219+84.34	7281678.886	1525910.228





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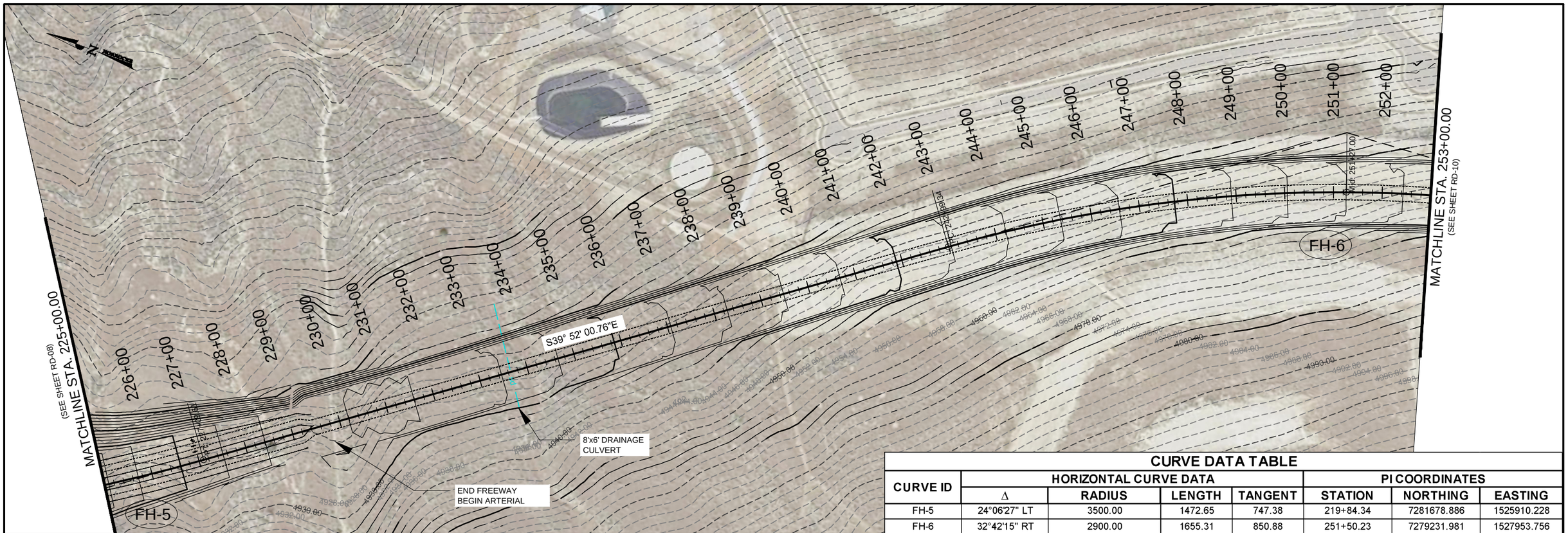
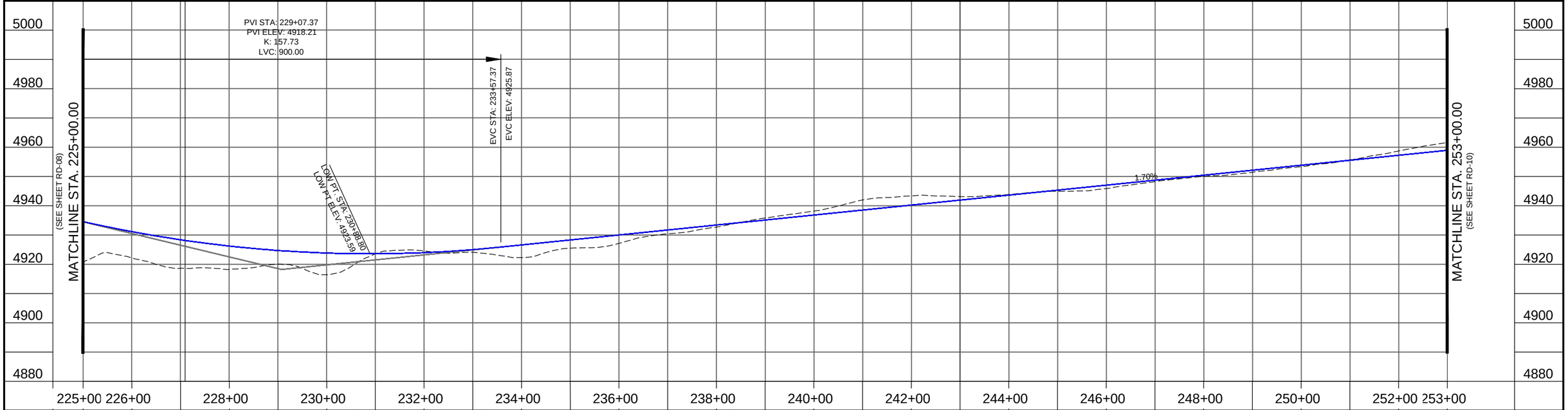
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 10 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-08



CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
	Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
FH-5	24°06'27" LT	3500.00	1472.65	747.38	219+84.34	7281678.886	1525910.228
FH-6	32°42'15" RT	2900.00	1655.31	850.88	251+50.23	7279231.981	1527953.756



PRELIMINARY
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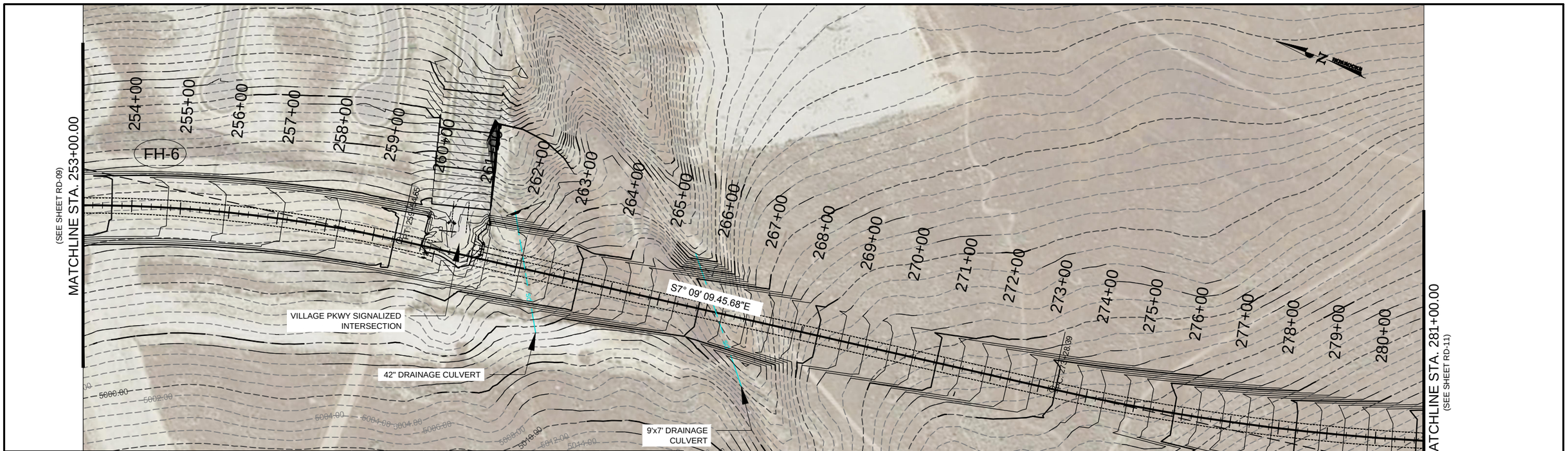
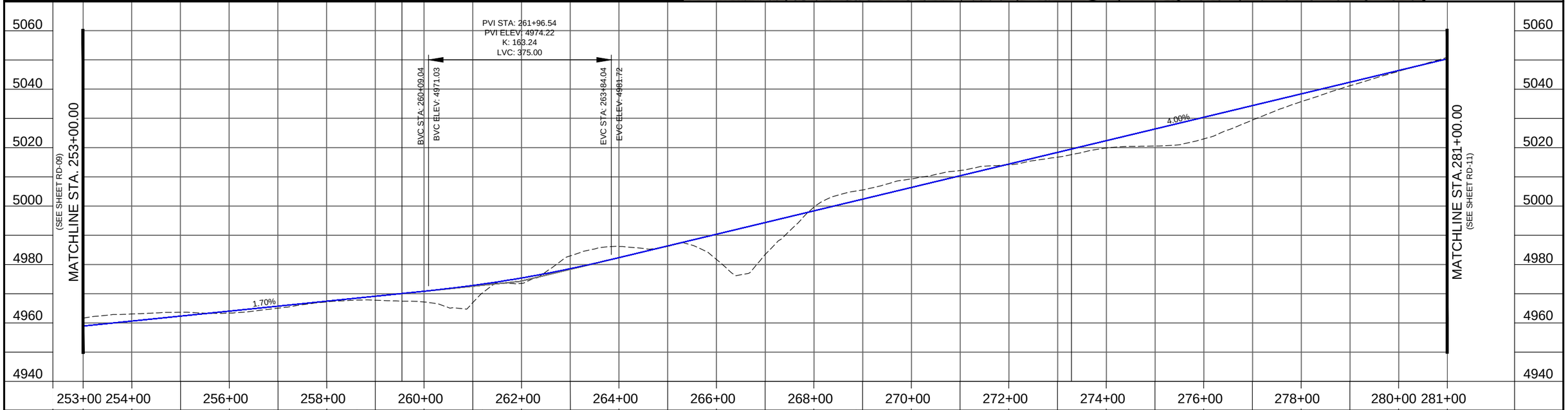
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 11 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-09



CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
	Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
FH-6	32°42'15" RT	2900.00	1655.31	850.88	251+50.23	7279231.981	1527953.756
FH-7	27°55'50" LT	4500.00	2193.66	1119.08	284+47.47	7275914.377	1528370.672



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ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 12 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-10

CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
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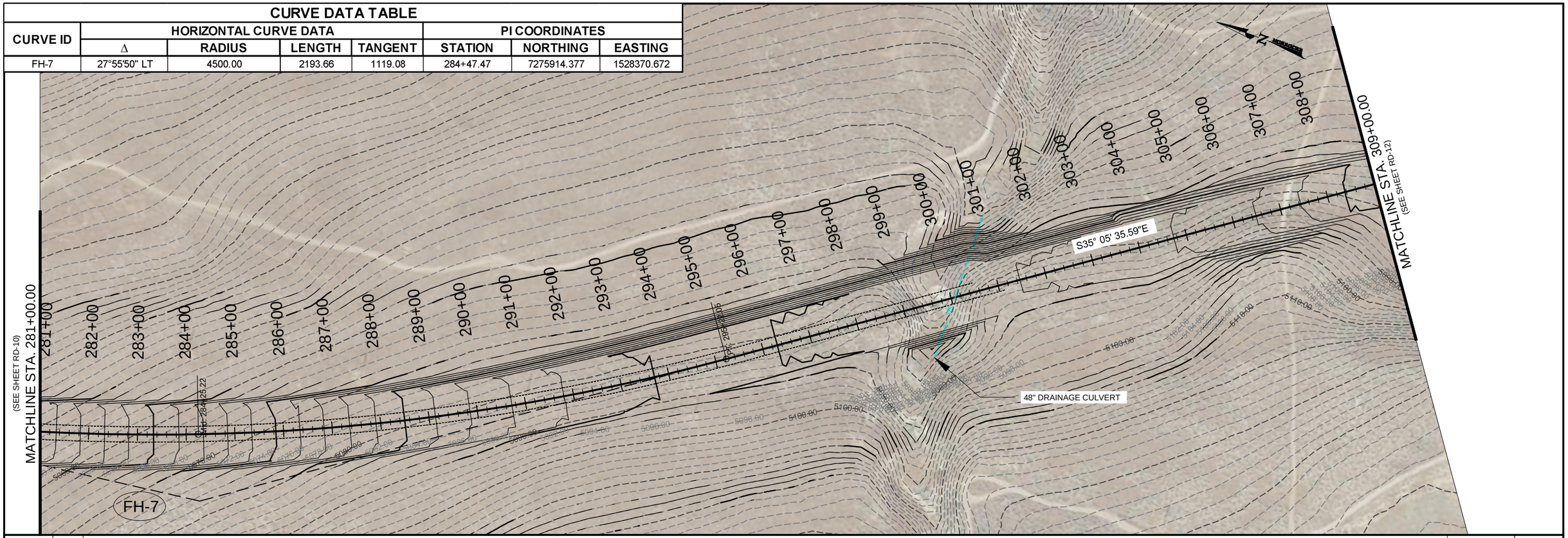
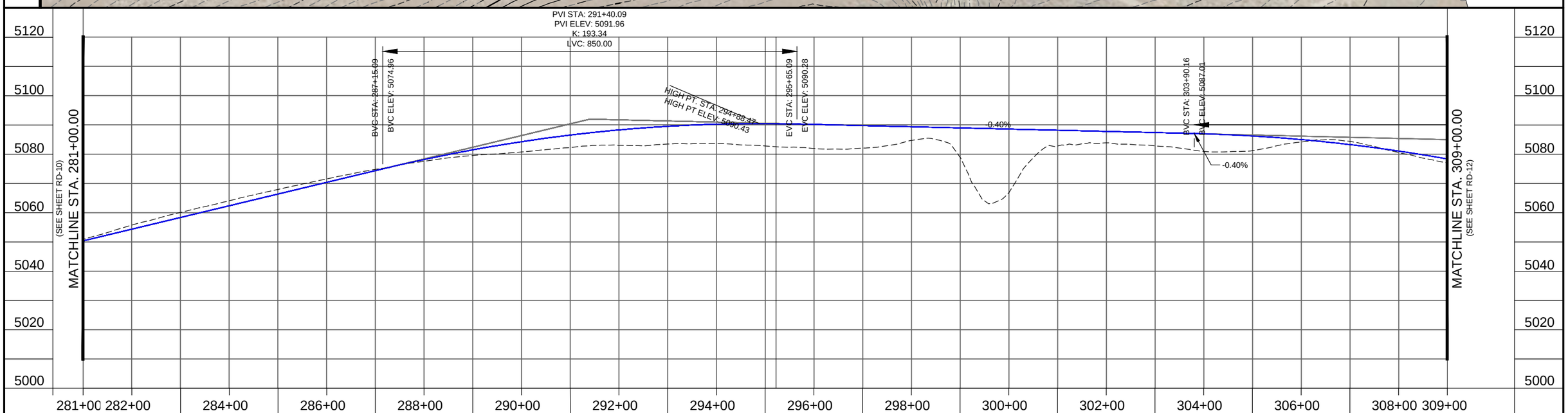
FH-7	27°55'50" LT	4500.00	2193.66	1119.08	284+47.47	7275914.377	1528370.672





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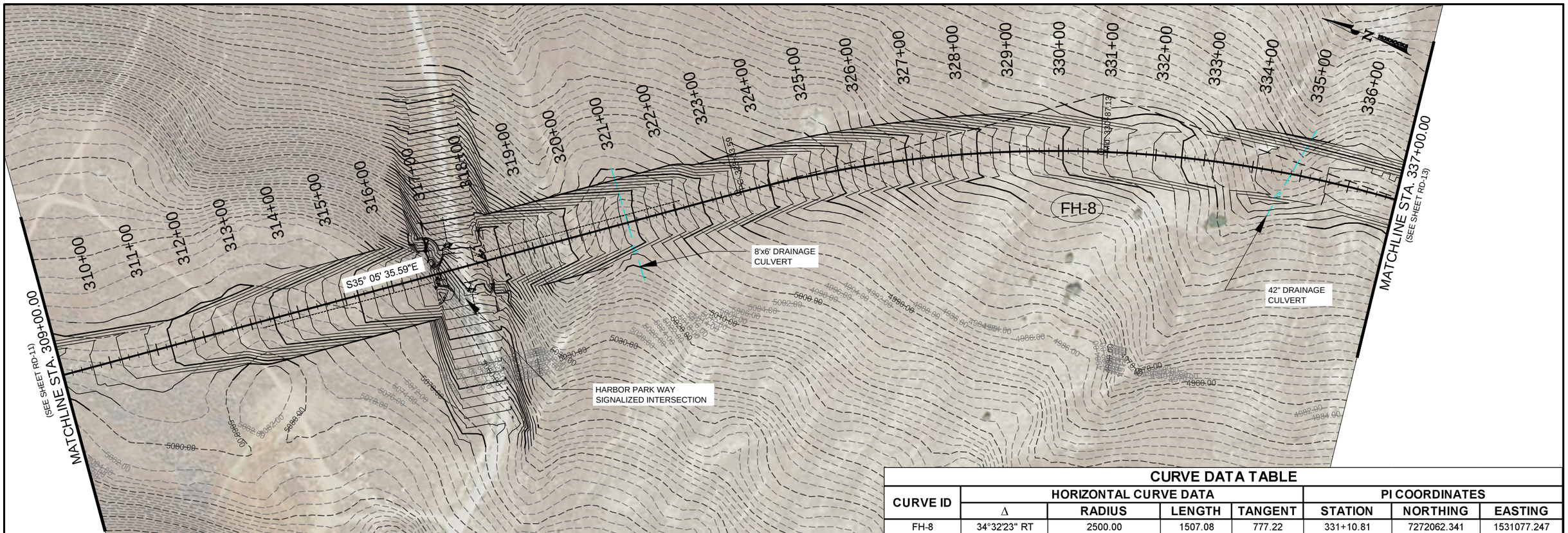
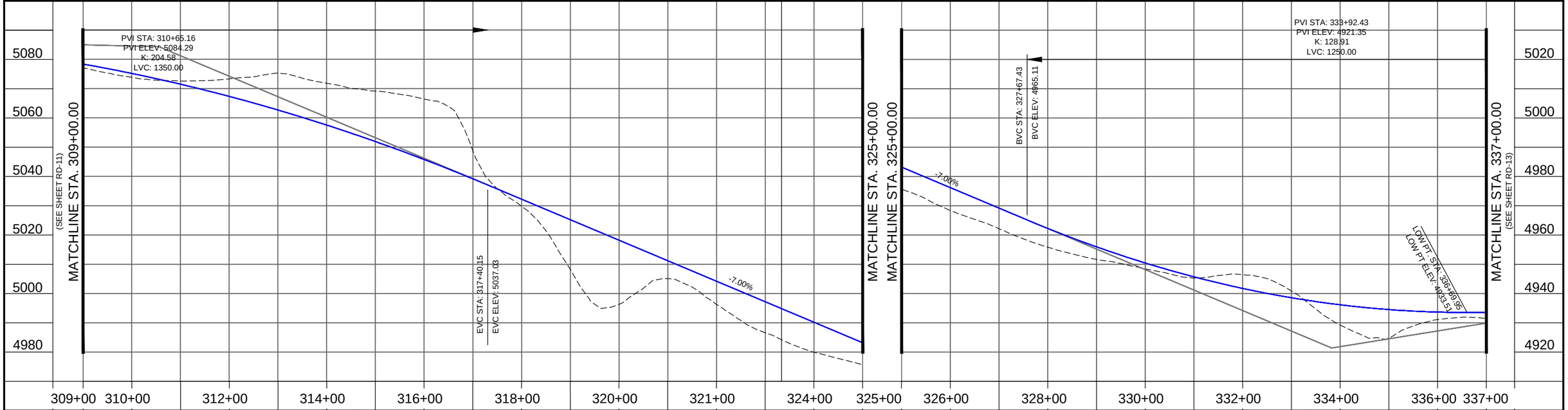
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 13 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-11



CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
	Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
FH-8	34°32'23" RT	2500.00	1507.08	777.22	331+10.81	7272062.341	1531077.247



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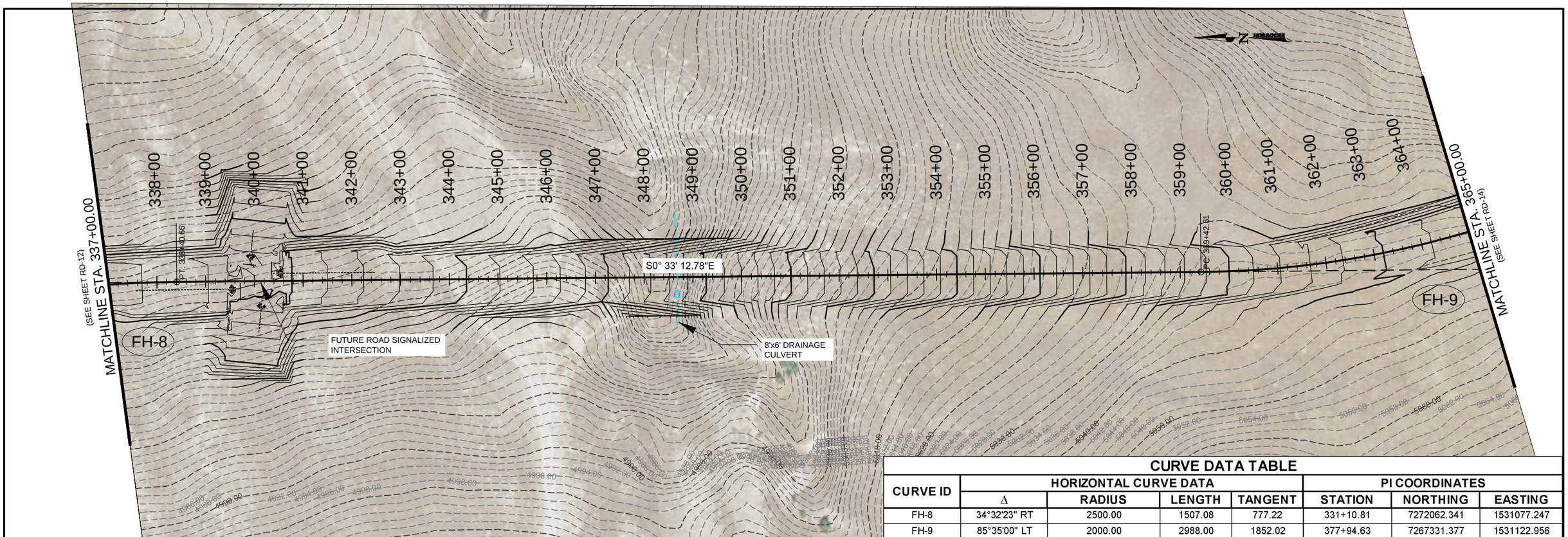
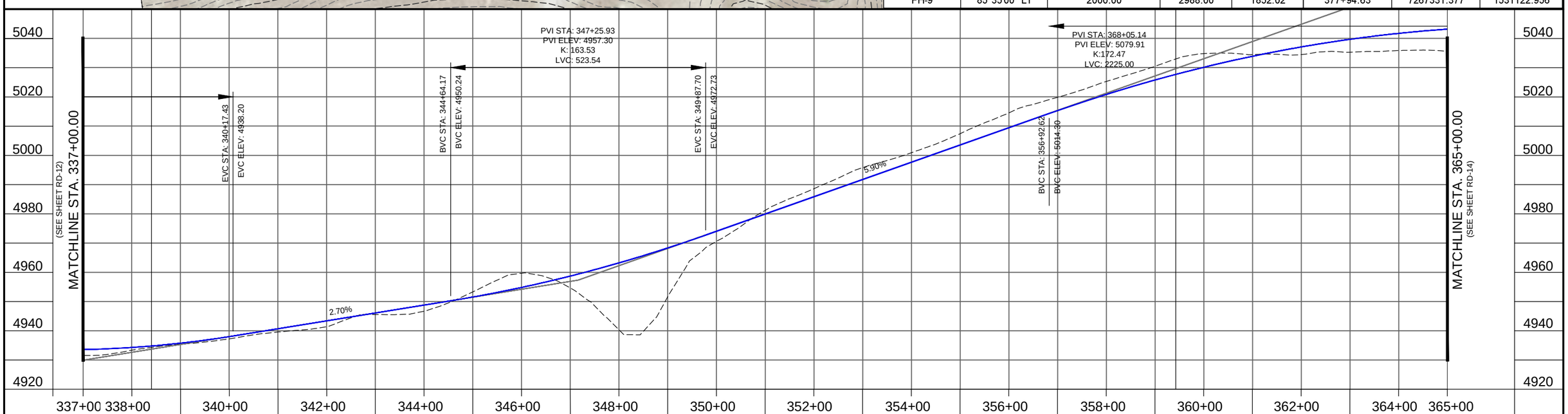
ROADWAY

DESIGNED DLC	DATE 8/12/2016	PROJECT NO. PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 14 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-12



CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
	Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
FH-8	34°32'23" RT	2500.00	1507.08	777.22	331+10.81	7272062.341	1531077.247
FH-9	85°35'00" LT	2000.00	2988.00	1852.02	377+94.63	7267331.377	1531122.956



PRELIMINARY
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ROADWAY

DESIGNED DLC	DATE 8/12/2016	PROJECT NO. PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 15 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-13

CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
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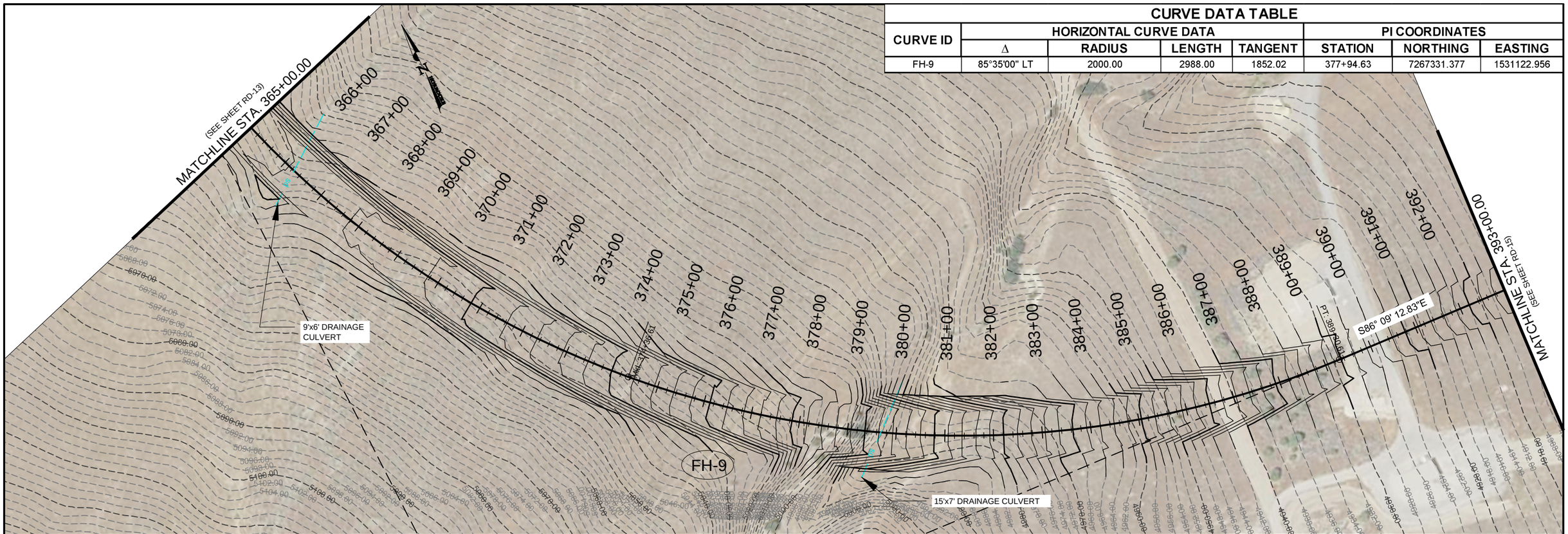
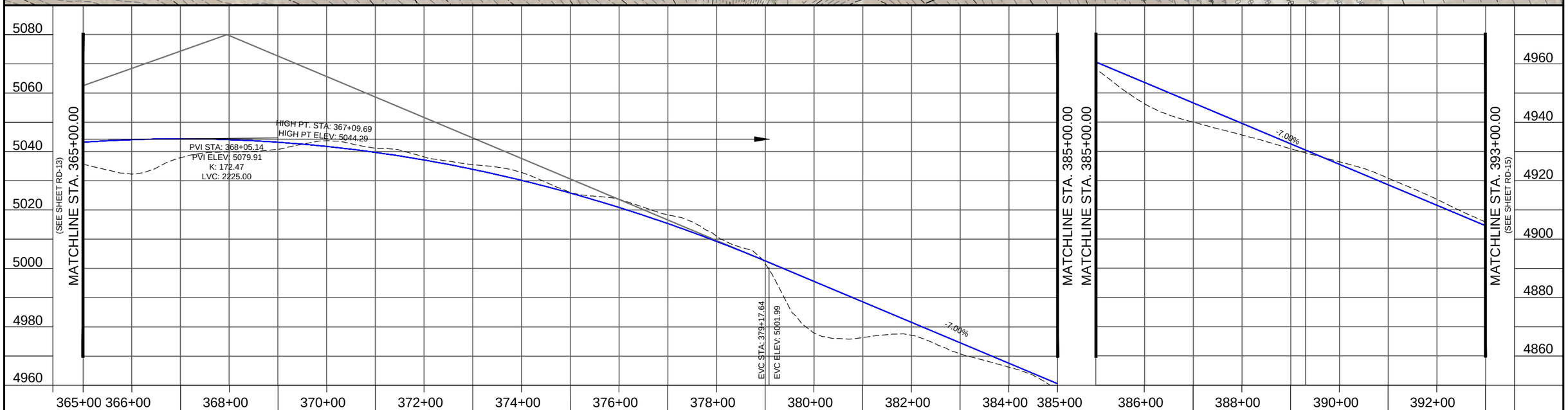
FH-9	85°35'00" LT	2000.00	2988.00	1852.02	377+94.63	7267331.377	1531122.956





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ROADWAY

DESIGNED DLC	DATE 8/12/2016	PROJECT NO. PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 16 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-14

CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
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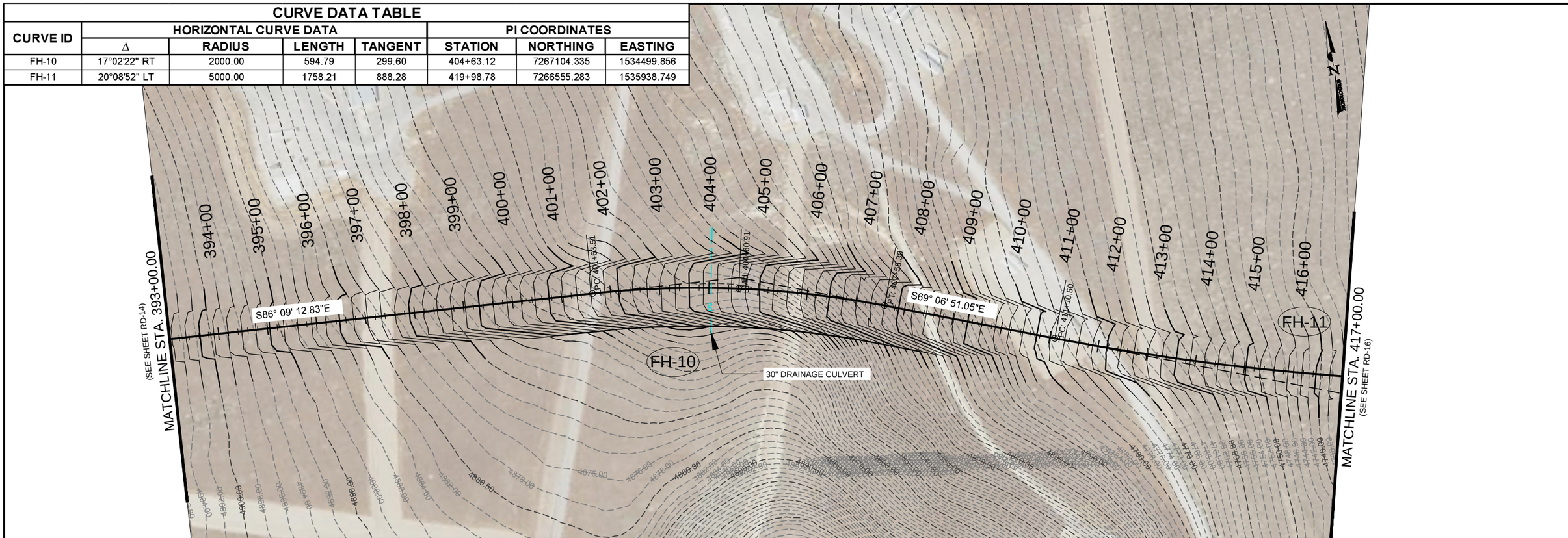
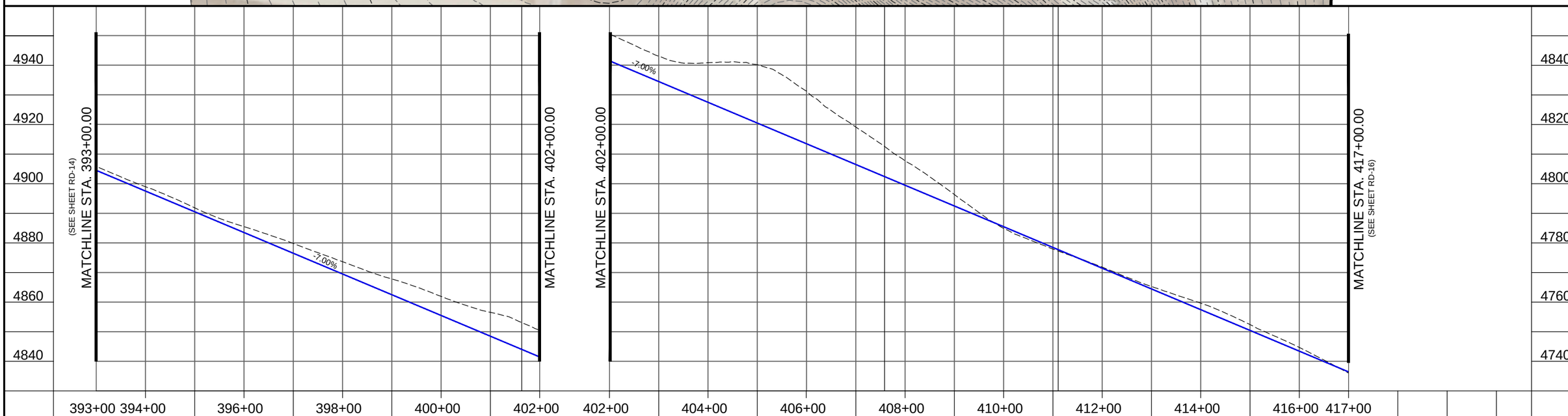
FH-10	17°02'22" RT	2000.00	594.79	299.60	404+63.12	7267104.335	1534499.856
FH-11	20°08'52" LT	5000.00	1758.21	888.28	419+98.78	7266555.283	1535938.749





PRELIMINARY
NOT FOR CONSTRUCTION

SCALE
HORIZONTAL 1"=200'

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

HORROCKS ENGINEERS

2162 West Grove Parkway
Suite 400
Pleasant Grove, UT 84062
(801) 763-5100

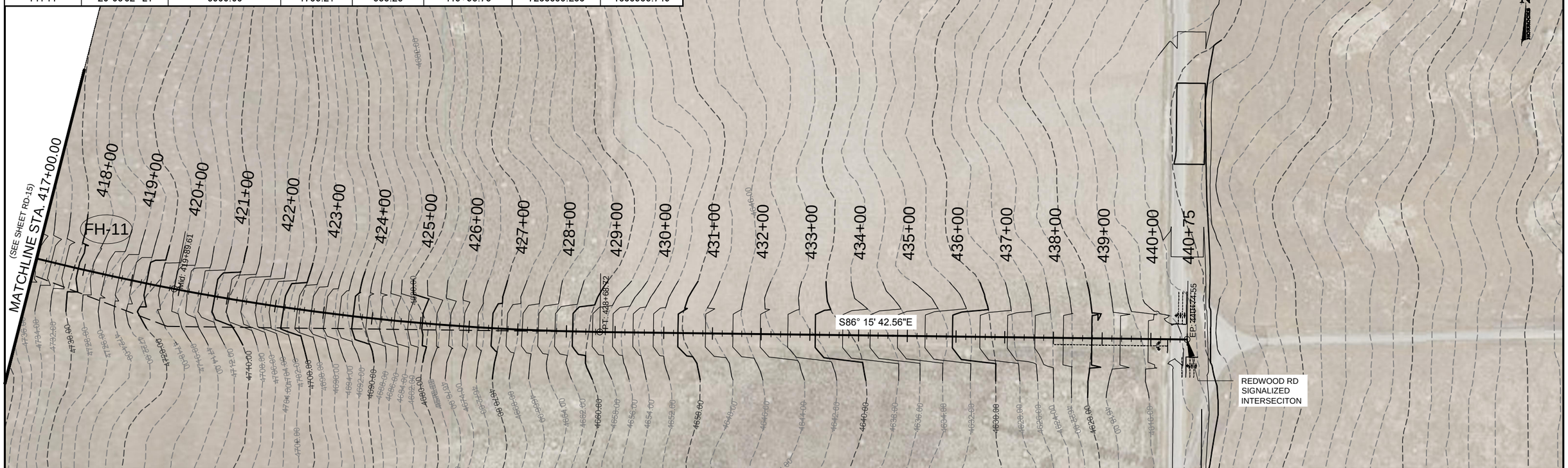
FOOTHILL BOULEVARD

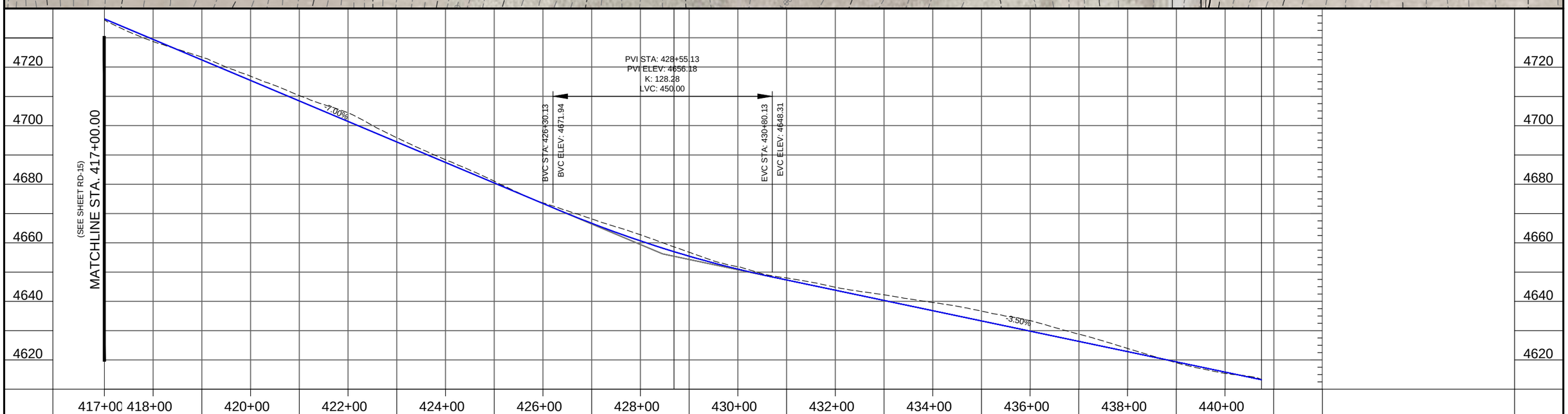
ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 17 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-15

CURVE DATA TABLE

CURVE ID	HORIZONTAL CURVE DATA				PI COORDINATES		
	Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
FH-11	20°08'52" LT	5000.00	1758.21	888.28	419+98.78	7266555.283	1535938.749





PRELIMINARY
NOT FOR CONSTRUCTION

SCALE
HORIZONTAL 1"=200'

WARNING
0 1/2 1
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HORROCKS ENGINEERS

2162 West Grove Parkway
Suite 400
Pleasant Grove, UT 84062
(801) 763-5100

FOOTHILL BOULEVARD

ROADWAY

DESIGNED	DATE	PROJECT NO.
DLC	8/12/2016	PG-873-1605
DRAWN ASL	DATE 8/12/2016	SHEET NO. 18 OF 18
CHECKED DRK	DATE 8/12/2016	DRAWING NO. RD-16

City of Saratoga Springs
Foothill Blvd Concept Estimate

	Segment 1 Phase A - Arterial Pony Express Pkwy to Grandview Blvd	**Segment 1** Phase B - Freeway Pony Express Pkwy to Grandview Blvd	**Segment 2** Phase A - Arterial Grandview Blvd to Stillwater Dr	**Segment 2** Phase B - Freeway Grandview Blvd to Stillwater Dr	**Segment 3** Major Arterial Stillwater Dr to Harbor Park Way	**Segment 4** Minor Arterial Harbor Park Way to Redwood Rd
Structures Subtotal	$1,440,000	$16,125,000	$716,000	$11,185,000	$3,542,000	$4,414,000
Roadway/Misc Subtotal	$12,462,000	$24,433,000	$8,432,000	$12,965,000	$10,760,000	$11,108,000
Construction Contingency	$2,780,000	$8,111,000	$1,829,000	$4,830,000	$2,860,000	$3,104,000
Construction Subtotal	**$16,682,000**	**$48,669,000**	**$10,977,000**	**$28,980,000**	**$17,162,000**	**$18,626,000**
Preliminary Engineering	$1,337,000	$3,898,000	$880,000	$2,321,000	$1,378,000	$1,494,000
Construction Engineering	$1,337,000	$3,898,000	$880,000	$2,321,000	$1,378,000	$1,494,000
Right-of-Way Acquisition	$11,100,000	$0	$4,500,000	$0	$3,800,000	$2,400,000
Utilities	$1,806,000	$910,000	$1,300,000	$580,000	$1,540,000	$1,570,000
2016 Total Costs	**$34,329,000**	**$63,273,000**	**$19,900,000**	**$37,717,000**	**$27,411,000**	**$27,902,000**
2020 Total Costs	**$38,639,000**	**$71,214,000**	**$22,397,000**	**$42,450,000**	**$30,851,000**	**$31,405,000**
2025 Total Costs	**$44,790,000**	**$82,557,000**	**$25,963,000**	**$49,211,000**	**$35,764,000**	**$36,405,000**

	Full Project	Full Project Arterial	Segment 1 (Phase A and B)	Segment 2 (Phase A and B)
2016 Total Costs	$210,532,000	$109,542,000	$97,602,000	$57,617,000
2020 Total Costs	$236,956,000	$123,292,000	$109,853,000	$64,847,000
2025 Total Costs	$274,690,000	$142,922,000	$127,347,000	$75,174,000

August 12, 2016

Foothill Blvd-Concept Estimate-Segment 1A
Cost Estimate - Concept Level

Prepared By: David Clawson/Kay Christofferson **Date** 8/11/2016

Proposed Project Scope: **Foothill Blvd-Pony Express to Grandview Blvd-Phase A-Arterial**

Approximate Route Reference Mile Post (BEGIN) =	0.000	(END) =	2.330
Project Length =	2.330	miles	12,302 ft
Current FY Year (July-June) =	2016		
Assumed Construction FY Year =	2020		
Construction Items Inflation Factor =	1.13	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	3.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	8.0%		

Construction Items		Cost	Remarks
Public Information Services		$40,000	
Roadway and Drainage		$11,238,838	
Traffic and Safety		$1,103,600	
Structures		$1,440,000	
Environmental Mitigation		$79,200	
ITS		$0	
	Subtotal	$13,901,638	
	Items not Estimated (20%)	$2,780,328	
	Construction Subtotal	**$16,681,966**	
P.E. Cost	**P.E. Subtotal**	**$1,336,906**	8%
C.E. Cost	**C.E. Subtotal**	**$1,336,906**	8%
Right of Way	**Right of Way Subtotal**	$11,100,000	
Utilities	**Utilities Subtotal**	$1,806,000	
Incentives	**Incentives Subtotal**	$29,353	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		2016		2020		2025
P.E.			$1,337,000		$1,505,000	$1,744,000
Right of Way			$11,100,000		$12,493,000	$14,483,000
Utilities			$1,806,000		$2,033,000	$2,356,000
Construction			$16,682,000		$18,776,000	$21,766,000
C.E.			$1,337,000		$1,505,000	$1,744,000
Incentives			$29,000		$33,000	$38,000
Aesthetics	0.75%		$125,000		$141,000	$163,000
Change Order Contingency	9.00%		$1,513,000		$1,703,000	$1,974,000
UDOT Oversight	2.00%		$400,000		$450,000	$522,000
Miscellaneous			$0		$0	$0
		TOTAL	$34,329,000	TOTAL	$38,639,000	$44,790,000

PROPOSED COMMISSION REQUEST	TOTAL	$34,329,000	TOTAL	$38,639,000	$44,790,000

Project Assumptions/Risks

1 _____ 8 _____

2 _____ 9 _____

3 _____ 10 _____

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5 _____ 12 _____

6 _____ 13 _____

7 _____ 14 _____

Roadway and Drainage

Foothill Blvd-Concept Estimate-Segment 1A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$820,000.00	$820,000.00	5% of construction
015540005	Traffic Control	1	Lump	$160,000.00	$160,000.00	1% of construction
01557001*	Maintenance of Traffic	1	Lump	$80,000.00	$80,000.00	0.5% of construction
015720020	Dust Control and Watering	9,695	1000 gal	$50.00	$484,750.00	
020560005	Borrow (Plan Quantity)	150,000	cu yd	$9.00	$1,350,000.00	
020560015	Granular Borrow (Plan Quantity)	46,813	cu yd	$12.00	$561,756.00	
022310020	Clearing and Grubbing (Plan Quantity)	40	Acre	$1,000.00	$40,000.00	
023160020	Roadway Excavation (Plan Quantity)	70,000	cu yd	$8.00	$560,000.00	
027210020	Untreated Base Course (Plan Quantity)	19,178	cu yd	$17.00	$326,026.00	
027410060	HMA - 3/4 Inch	23,022	Ton	$58.00	$1,335,276.00	
027480010	Liquid Asphalt MC-70 or MC-250	232	Ton	$500.00	$116,000.00	Prime Coat
027520020	Portland Cement Concrete Pavement 9 inch Thick	95,334	sq yd	$45.00	$4,290,030.00	
027710025	Concrete Curb and Gutter Type B1	3,500	ft	$20.00	$70,000.00	
027760010	Concrete Sidewalk	40,000	sq ft	$4.00	$160,000.00	
028220030	Right-of-Way Fence, Type D (Metal Post)	24,000	ft	$5.00	$120,000.00	
Roadway Subtotal					**$10,473,838**	
Drainage						
023730010	Loose Riprap	6,000	cu yd	$25.00	$150,000.00	
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth	5,000	ft	$75.00	$375,000.00	
026101388	24 Inch Irrigation/Storm Drain, Class C, smooth		ft	$125.00		
026101391	36 Inch Irrigation/Storm Drain, Class C, smooth		ft	$200.00		
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9	60	Each	$4,000.00	$240,000.00	
Drainage Subtotal					**$765,000**	
PI						
013150010	Public Information Services	1	Lump	$40,000.00	**$40,000**	Usually 0.25% of construction

Traffic, Safety & ITS

Foothill Blvd-Concept Estimate-Segment 1A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Traffic						
027650050	Pavement Marking Paint	518	gal	$200.00	$103,600.00	
027680105	Pavement Message (Preformed Thermoplastic)		Each	$180.00		
027680110	Pavement Message (Preformed Thermoplastic Stop Line, Crosswalks - 12 inch)		Each	$7.00		
028410086	W-Beam Guardrail 72 inch Wood Post		ft	$25.00		
028430035	Crash Cushion Type G		Each	$15,000.00		
028440010	Precast Concrete Barrier - 32 Inch (New Jersey Shape)		ft	$50.00		
028910028	Sign Type A-1, 12 Inch X 36 Inch		Each	$150.00		
028910270	Remove Sign Less Than 20 Square Feet		Each	$100.00		
028910285	Relocate Sign Less Than 20 Square Feet		Each	$500.00		
Signals						
02892001D	Traffic Signal System	4	Each	$200,000.00	$800,000.00	
Lighting						
16525001D	Highway Lighting System	4	Each	$50,000.00	$200,000.00	
Traffic and Safety Subtotal					**$1,103,600**	
ITS						
135530035	1D Conduit		ft			
	CCTV System	1	Lump			
ITS Subtotal					**$0**	

Structures

Foothill Blvd-Concept Estimate-Segment 1A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Bridges						
	Concrete Girder Structure		sq ft	$200.00		Assumed LxW (deck area)
Walls						
	MSE Retaining Wall	2,000	Sq ft	$65.00	$130,000.00	Fill Wall
	Soil Nail Retaining Wall			$95.00		Cut Wall
Sign Structures						
	Overhead Sign Structure	1	Lump	$0.00	$0.00	
	Remove Overhead Sign	1	Lump	$0.00	$0.00	
	Remove Existing Overhead Sign Structure	1	Lump	$0.00	$0.00	
Hydraulics						
	23'X8' Box Culvert	300	ft	$3,500.00	$1,050,000.00	
	6'X6' Box Culvert	200	ft	$600.00	$120,000.00	
	66" Pipe Culvert	420	ft	$300.00	$126,000.00	
	24" Pipe Culvert	200	ft	$70.00	$14,000.00	
Geotech						
	Geotech Report	1	Lump			
	Drilling	1	Lump			
Structures Subtotal					**$1,440,000**	

Environmental and Landscaping

Foothill Blvd-Concept Estimate-Segment 1A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmental						
	Wetland Mitigation	1	Lump			
	Noise Wall		ft			
Temporary Erosion Control						
015710030	Silt Fence	24,600	ft	$2.00	$49,200.00	
	Erosion Control Supervisor	1	Lump	$25,000.00	$25,000.00	
	Check Dams	500	Each	$10.00	$5,000.00	
Landscaping						
029110010	Wood Fiber Mulch		Acre	$1,500.00		
029120010	Contractor Furnished Topsoil		sq yd			
029120050	Strip, Stockpile, and Spread Topsoil (Plan Quantity)		sq yd			
029220010	Drill Seed		Acre			
029220030	Broadcast Seed		Acre			
Environmental Mitigation Subtotal					**$79,200**	

Utilities, Right of Way, and Incentives

Foothill Blvd-Concept Estimate-Segment 1A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities						
	New Wet Utilities	12,300	Ft	$120.00	$1,476,000.00	
	Relocate Gas Line	1	Lump			
	Relocate Power Line	1	Lump			
	Relocate Fiber Optic	1	Lump			
	Lump Utility	1	Lump	$330,000.00	$330,000.00	2%
Utilities Subtotal					**$1,806,000**	
Right-of-way						
	Urban/Suburban Residential		sq ft			
	Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Residential		Each			
	non-Urban/Suburban Undeveloped	1,050,000	sq ft	$2.00	$2,100,000.00	
	non-Urban/Suburban Farm	2,250,000	sq ft	$4.00	$9,000,000.00	
Right-of-Way Subtotal					**$11,100,000**	
Incentives						
00000601*	Pavement Smoothness Incentive	1	Lump			
00000602*	Hot Mix Asphalt (HMA) Incentive	1	Lump	$29,353.05	$29,353.05	
00000603*	Stone Matrix Asphalt (SMA) Incentive	1	Lump			
00000604*	Open Graded Surface Course Incentive	1	Lump			
00000605*	Bonded Wearing Course Incentive	1	Lump			
00000606*	Early Completion - Time	0	Cal'd			
00000607*	Lane Rental Incentive	0	Hours			
00000608*	Miscellaneous Incentive	1	Lump			
Incentives Subtotal					**$29,353**	

Foothill Blvd-Concept Estimate-Segment 1B
Cost Estimate - Concept Level

Prepared By: David Clawson/Kay Christofferson **Date** 8/11/2016

Proposed Project Scope: **Foothill Blvd-Pony Express to Grandview Blvd-Phase B-Convert Arterial to Freeway**

Approximate Route Reference Mile Post (BEGIN) =	0.000	(END) =	2.330
Project Length =	2.330	miles	12,302 ft
Current FY Year (July-June) =	2016		
Assumed Construction FY Year =	2020		
Construction Items Inflation Factor =	1.13	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	3.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	8.0%		

Construction Items		Cost	Remarks
Public Information Services		$110,000	
Roadway and Drainage		$20,327,261	
Traffic and Safety		$3,916,000	
Structures		$16,125,000	
Environmental Mitigation		$79,200	
ITS		$0	
	Subtotal	$40,557,461	
	Items not Estimated (20%)	$8,111,492	
	Construction Subtotal	**$48,668,953**	
P.E. Cost	**P.E. Subtotal**	**$3,897,016**	8%
C.E. Cost	**C.E. Subtotal**	**$3,897,016**	8%
Right of Way	**Right of Way Subtotal**	$0	
Utilities	**Utilities Subtotal**	$910,000	
Incentives	**Incentives Subtotal**	$43,747	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		2016		2020		2025
P.E.			**$3,897,000**		**$4,386,000**	**$5,085,000**
Right of Way			**$0**		**$0**	**$0**
Utilities			**$910,000**		**$1,024,000**	**$1,187,000**
Construction			**$48,669,000**		**$54,777,000**	**$63,502,000**
C.E.			**$3,897,000**		**$4,386,000**	**$5,085,000**
Incentives			**$44,000**		**$50,000**	**$57,000**
Aesthetics	**0.75%**		**$365,000**		**$411,000**	**$476,000**
Change Order Contingency	**9.00%**		**$4,413,000**		**$4,967,000**	**$5,758,000**
UDOT Oversight	**2.00%**		**$1,078,000**		**$1,213,000**	**$1,407,000**
Miscellaneous			**$0**		**$0**	**$0**
		TOTAL	**$63,273,000**	**TOTAL**	**$71,214,000**	**$82,557,000**

PROPOSED COMMISSION REQUEST	**TOTAL**	**$63,273,000**	**TOTAL**	**$71,214,000**	**$82,557,000**

Project Assumptions/Risks

1 _____ 8 _____

2 _____ 9 _____

3 _____ 10 _____

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5 _____ 12 _____

6 _____ 13 _____

7 _____ 14 _____

Roadway and Drainage

Foothill Blvd-Concept Estimate-Segment 1B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$2,280,000.00	$2,280,000.00	5% of construction
015540005	Traffic Control	1	Lump	$460,000.00	$460,000.00	1% of construction
01557001*	Maintenance of Traffic	1	Lump	$230,000.00	$230,000.00	0.5% of construction
015720020	Dust Control and Watering	28,803	1000 gal	$50.00	$1,440,150.00	
020560005	Borrow (Plan Quantity)	560,000	cu yd	$9.00	$5,040,000.00	
020560015	Granular Borrow (Plan Quantity)	54,401	cu yd	$12.00	$652,812.00	
022310020	Clearing and Grubbing (Plan Quantity)	40	Acre	$1,000.00	$40,000.00	
023160020	Roadway Excavation (Plan Quantity)	28,000	cu yd	$8.00	$224,000.00	
027210020	Untreated Base Course (Plan Quantity)	25,838	cu yd	$17.00	$439,246.00	
027410060	HMA - 3/4 Inch	34,311	Ton	$58.00	$1,990,038.00	
027480010	Liquid Asphalt MC-70 or MC-250	312	Ton	$500.00	$156,000.00	Prime Coat
027520020	Portland Cement Concrete Pavement 9 inch Thick	148,667	sq yd	$45.00	$6,690,015.00	
027710025	Concrete Curb and Gutter Type B1	2,000	ft	$20.00	$40,000.00	
027760010	Concrete Sidewalk	10,000	sq ft	$4.00	$40,000.00	
028220030	Right-of-Way Fence, Type D (Metal Post)	24,000	ft	$5.00	$120,000.00	
Roadway Subtotal					**$19,842,261**	
Drainage						
023730010	Loose Riprap	4,000	cu yd	$25.00	$100,000.00	
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth	3,000	ft	$75.00	$225,000.00	
026101388	24 Inch Irrigation/Storm Drain, Class C, smooth		ft	$125.00		
026101391	36 Inch Irrigation/Storm Drain, Class C, smooth		ft	$200.00		
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9	40	Each	$4,000.00	$160,000.00	
Drainage Subtotal					**$485,000**	
PI						
013150010	Public Information Services	1	Lump	$110,000.00	**$110,000**	Usually 0.25% of construction

Traffic, Safety & ITS

Foothill Blvd-Concept Estimate-Segment 1B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Traffic						
027650050	Pavement Marking Paint	580	gal	$200.00	$116,000.00	
027680105	Pavement Message (Preformed Thermoplastic)		Each	$180.00		
027680110	Pavement Message (Preformed Thermoplastic Stop Line, Crosswalks - 12 inch)		Each	$7.00		
028410086	W-Beam Guardrail 72 inch Wood Post		ft	$25.00		
028430035	Crash Cushion Type G		Each	$15,000.00		
028440030	Cast-in-Place Concrete Constant Slope Barrier - 42 Inch	40,000	ft	$50.00	$2,000,000.00	
028910028	Sign Type A-1, 12 Inch X 36 Inch		Each	$150.00		
028910270	Remove Sign Less Than 20 Square Feet		Each	$100.00		
028910285	Relocate Sign Less Than 20 Square Feet		Each	$500.00		
Signals						
02892001D	Traffic Signal System	8	Each	$200,000.00	$1,600,000.00	
Lighting						
16525001D	Highway Lighting System	4	Each	$50,000.00	$200,000.00	
Traffic and Safety Subtotal					**$3,916,000**	
ITS						
135530035	1D Conduit		ft			
	CCTV System	1	Lump			
ITS Subtotal					**$0**	

Structures

Foothill Blvd-Concept Estimate-Segment 1B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Bridges						
	Concrete Girder Structure	72,000	sq ft	$200.00	$14,400,000.00	Assumed LxW (deck area)
Walls						
	MSE Retaining Wall	20,000	Sq ft	$65.00	$1,300,000.00	Fill Wall
	Soil Nail Retaining Wall			$95.00		Cut Wall
Sign Structures						
	Overhead Sign Structure	8	Each	$50,000.00	$400,000.00	
	Remove Overhead Sign	1	Each	$5,000.00	$5,000.00	
	Remove Existing Overhead Sign Structure	1	Each	$20,000.00	$20,000.00	
Hydraulics						
	Extend Box Culvert		ft			
	New Box Culvert	1	Lump			
Geotech						
	Geotech Report	1	Lump			
	Drilling	1	Lump			
Structures Subtotal					**$16,125,000**	

Environmental and Landscaping

Foothill Blvd-Concept Estimate-Segment 1B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmental						
	Wetland Mitigation	1	Lump			
	Noise Wall		ft			
Temporary Erosion Control						
015710030	Silt Fence	24,600	ft	$2.00	$49,200.00	
	Erosion Control Supervisor	1	Lump	$25,000.00	$25,000.00	
	Check Dams	500	Each	$10.00	$5,000.00	
Landscaping						
029110010	Wood Fiber Mulch		Acre	$1,500.00		
029120010	Contractor Furnished Topsoil		sq yd			
029120050	Strip, Stockpile, and Spread Topsoil (Plan Quantity)		sq yd			
029220010	Drill Seed		Acre			
029220030	Broadcast Seed		Acre			
Environmental Mitigation Subtotal					**$79,200**	

Utilities, Right of Way, and Incentives

Foothill Blvd-Concept Estimate-Segment 1B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities						
	New Wet Utilities	0	Ft	$120.00	$0.00	
	Relocate Gas Line	1	Lump			
	Relocate Power Line	1	Lump			
	Relocate Fiber Optic	1	Lump			
	Lump Utility	1	Lump	$910,000.00	$910,000.00	2%
Utilities Subtotal					**$910,000**	
Right-of-way						
	Urban/Suburban Residential		sq ft			
	Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Residential		Each			
	non-Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Farm	0	sq ft	$4.00	$0.00	
Right-of-Way Subtotal					**$0**	
Incentives						
00000601*	Pavement Smoothness Incentive	1	Lump			
00000602*	Hot Mix Asphalt (HMA) Incentive	1	Lump	$43,746.53	$43,746.53	
00000603*	Stone Matrix Asphalt (SMA) Incentive	1	Lump			
00000604*	Open Graded Surface Course Incentive	1	Lump			
00000605*	Bonded Wearing Course Incentive	1	Lump			
00000606*	Early Completion - Time	0	Cal'd			
00000607*	Lane Rental Incentive	0	Hours			
00000608*	Miscellaneous Incentive	1	Lump			
Incentives Subtotal					**$43,747**	

Foothill Blvd-Concept Estimate-Segment 2A
Cost Estimate - Concept Level

Prepared By: David Clawson/Kay Christofferson **Date** 8/11/2016

Proposed Project Scope: **Foothill Blvd-Grandview Blvd to Stillwater Dr-Phase B-Arterial**

Approximate Route Reference Mile Post (BEGIN) =	2.330	(END) =	4.020
Project Length =	1.690	miles	8,923 ft
Current FY Year (July-June) =	2016		
Assumed Construction FY Year =	2020		
Construction Items Inflation Factor =	1.13	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	3.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	8.0%		

Construction Items		Cost	Remarks
Public Information Services		$30,000	
Roadway and Drainage		$7,760,903	
Traffic and Safety		$575,200	
Structures		$716,000	
Environmental Mitigation		$65,000	
ITS		$0	
	Subtotal	$9,147,103	
	Items not Estimated (20%)	$1,829,421	
	Construction Subtotal	**$10,976,524**	
P.E. Cost	**P.E. Subtotal**	**$879,788**	8%
C.E. Cost	**C.E. Subtotal**	**$879,788**	8%
Right of Way	**Right of Way Subtotal**	$4,500,000	
Utilities	**Utilities Subtotal**	$1,300,000	
Incentives	**Incentives Subtotal**	$20,831	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		2016		2020		2025
P.E.			$880,000		$990,000	$1,148,000
Right of Way			$4,500,000		$5,065,000	$5,871,000
Utilities			$1,300,000		$1,463,000	$1,696,000
Construction			$10,977,000		$12,355,000	$14,322,000
C.E.			$880,000		$990,000	$1,148,000
Incentives			$21,000		$24,000	$27,000
Aesthetics	0.75%		$82,000		$92,000	$107,000
Change Order Contingency	9.00%		$995,000		$1,120,000	$1,298,000
UDOT Oversight	2.00%		$265,000		$298,000	$346,000
Miscellaneous			$0		$0	$0
		TOTAL	$19,900,000	TOTAL	$22,397,000	$25,963,000

PROPOSED COMMISSION REQUEST	TOTAL	$19,900,000	TOTAL	$22,397,000	$25,963,000

Project Assumptions/Risks

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Roadway and Drainage

Foothill Blvd-Concept Estimate-Segment 2A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$540,000.00	$540,000.00	5% of construction
015540005	Traffic Control	1	Lump	$110,000.00	$110,000.00	1% of construction
01557001*	Maintenance of Traffic	1	Lump	$50,000.00	$50,000.00	0.5% of construction
015720020	Dust Control and Watering	5,199	1000 gal	$50.00	$259,950.00	
020560005	Borrow (Plan Quantity)	70,000	cu yd	$9.00	$630,000.00	
020560015	Granular Borrow (Plan Quantity)	32,412	cu yd	$12.00	$388,944.00	
022310020	Clearing and Grubbing (Plan Quantity)	29	Acre	$1,000.00	$29,000.00	
023160020	Roadway Excavation (Plan Quantity)	75,000	cu yd	$8.00	$600,000.00	
027210020	Untreated Base Course (Plan Quantity)	13,465	cu yd	$17.00	$228,905.00	
027410060	HMA - 3/4 Inch	16,338	Ton	$58.00	$947,604.00	
027480010	Liquid Asphalt MC-70 or MC-250	163	Ton	$500.00	$81,500.00	Prime Coat
027520020	Portland Cement Concrete Pavement 9 inch Thick	68,000	sq yd	$45.00	$3,060,000.00	
027710025	Concrete Curb and Gutter Type B1	2,500	ft	$20.00	$50,000.00	
027760010	Concrete Sidewalk	20,000	sq ft	$4.00	$80,000.00	
028220030	Right-of-Way Fence, Type D (Metal Post)	16,000	ft	$5.00	$80,000.00	
Roadway Subtotal					**$7,135,903**	
Drainage						
023730010	Loose Riprap	5,000	cu yd	$25.00	$125,000.00	
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth	4,000	ft	$75.00	$300,000.00	
026101388	24 Inch Irrigation/Storm Drain, Class C, smooth		ft	$125.00		
026101391	36 Inch Irrigation/Storm Drain, Class C, smooth		ft	$200.00		
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9	50	Each	$4,000.00	$200,000.00	
Drainage Subtotal					**$625,000**	
PI						
013150010	Public Information Services	1	Lump	$30,000.00	**$30,000**	Usually 0.25% of construction

Traffic, Safety & ITS

Foothill Blvd-Concept Estimate-Segment 2A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Traffic						
027650050	Pavement Marking Paint	376	gal	$200.00	$75,200.00	
027680105	Pavement Message (Preformed Thermoplastic)		Each	$180.00		
027680110	Pavement Message (Preformed Thermoplastic Stop Line, Crosswalks - 12 inch)		Each	$7.00		
028410086	W-Beam Guardrail 72 inch Wood Post		ft	$25.00		
028430035	Crash Cushion Type G		Each	$15,000.00		
028440010	Precast Concrete Barrier - 32 Inch (New Jersey Shape)		ft	$50.00		
028910028	Sign Type A-1, 12 Inch X 36 Inch		Each	$150.00		
028910270	Remove Sign Less Than 20 Square Feet		Each	$100.00		
028910285	Relocate Sign Less Than 20 Square Feet		Each	$500.00		
Signals						
02892001D	Traffic Signal System	2	Each	$200,000.00	$400,000.00	
Lighting						
16525001D	Highway Lighting System	2	Each	$50,000.00	$100,000.00	
Traffic and Safety Subtotal					**$575,200**	
ITS						
135530035	1D Conduit		ft			
	CCTV System	1	Lump			
ITS Subtotal					**$0**	

Structures

Foothill Blvd-Concept Estimate-Segment 2A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Bridges						
	Concrete Girder Structure		sq ft	$200.00		Assumed LxW (deck area)
Walls						
	MSE Retaining Wall	4,000	Sq ft	$65.00	$260,000.00	Fill Wall
	Soil Nail Retaining Wall			$95.00		Cut Wall
Sign Structures						
	Overhead Sign Structure		Lump	$50,000.00		
	Remove Overhead Sign		Lump	$5,000.00		
	Remove Existing Overhead Sign Structure		Lump	$20,000.00		
Hydraulics						
	11'X7' Box Culvert	200	ft	$1,200.00	$240,000.00	
	11'X7' Box Culvert	180	ft	$1,200.00	$216,000.00	
Geotech						
	Geotech Report	1	Lump			
	Drilling	1	Lump			
Structures Subtotal					**$716,000**	

Environmental and Landscaping

Foothill Blvd-Concept Estimate-Segment 2A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmental						
	Wetland Mitigation	1	Lump			
	Noise Wall		ft			
Temporary Erosion Control						
015710030	Silt Fence	18,000	ft	$2.00	$36,000.00	
	Erosion Control Supervisor	1	Lump	$25,000.00	$25,000.00	
	Check Dams	400	Each	$10.00	$4,000.00	
Landscaping						
029110010	Wood Fiber Mulch		Acre	$1,500.00		
029120010	Contractor Furnished Topsoil		sq yd			
029120050	Strip, Stockpile, and Spread Topsoil (Plan Quantity)		sq yd			
029220010	Drill Seed		Acre			
029220030	Broadcast Seed		Acre			
Environmental Mitigation Subtotal					**$65,000**	

Utilities, Right of Way, and Incentives

Foothill Blvd-Concept Estimate-Segment 2A

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities						
	New Wet Utilities	9,000	Ft	$120.00	$1,080,000.00	
	Relocate Gas Line	1	Lump			
	Relocate Power Line	1	Lump			
	Relocate Fiber Optic	1	Lump			
	Lump Utility	1	Lump	$220,000.00	$220,000.00	2%
Utilities Subtotal					**$1,300,000**	
Right-of-way						
	Urban/Suburban Residential		sq ft			
	Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Residential		Each			
	non-Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Undeveloped	2,250,000	sq ft	$2.00	$4,500,000.00	
Right-of-Way Subtotal					**$4,500,000**	
Incentives						
00000601*	Pavement Smoothness Incentive	1	Lump			
00000602*	Hot Mix Asphalt (HMA) Incentive	1	Lump	$20,830.95	$20,830.95	
00000603*	Stone Matrix Asphalt (SMA) Incentive	1	Lump			
00000604*	Open Graded Surface Course Incentive	1	Lump			
00000605*	Bonded Wearing Course Incentive	1	Lump			
00000606*	Early Completion - Time	0	Cal'd			
00000607*	Lane Rental Incentive	0	Hours			
00000608*	Miscellaneous Incentive	1	Lump			
Incentives Subtotal					**$20,831**	

Foothill Blvd-Concept Estimate-Segment 2B
Cost Estimate - Concept Level

Prepared By: David Clawson/Kay Christofferson **Date** 8/11/2016

Proposed Project Scope: **Foothill Blvd-Pony Express to Grandview Blvd-Phase B--Convert Arterial to Freeway**

Approximate Route Reference Mile Post (BEGIN) =	2.330	(END) =	4.020
Project Length =	1.690	miles	8,923 ft
Current FY Year (July-June) =	2016		
Assumed Construction FY Year =	2020		
Construction Items Inflation Factor =	1.13	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	3.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	8.0%		

Construction Items		Cost	Remarks
Public Information Services		$70,000	
Roadway and Drainage		$10,487,355	
Traffic and Safety		$2,342,800	
Structures		$11,185,000	
Environmental Mitigation		$64,600	
ITS		$0	
	Subtotal	$24,149,755	
	Items not Estimated (20%)	$4,829,951	
	Construction Subtotal	**$28,979,706**	
P.E. Cost	**P.E. Subtotal**	**$2,320,524**	8%
C.E. Cost	**C.E. Subtotal**	**$2,320,524**	8%
Right of Way	**Right of Way Subtotal**	$0	
Utilities	**Utilities Subtotal**	$580,000	
Incentives	**Incentives Subtotal**	$26,843	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		2016		2020		2025
P.E.			$2,321,000		$2,612,000	$3,028,000
Right of Way			$0		$0	$0
Utilities			$580,000		$653,000	$757,000
Construction			$28,980,000		$32,617,000	$37,812,000
C.E.			$2,321,000		$2,612,000	$3,028,000
Incentives			$27,000		$30,000	$35,000
Aesthetics	0.75%		$217,000		$244,000	$283,000
Change Order Contingency	9.00%		$2,628,000		$2,958,000	$3,429,000
UDOT Oversight	2.00%		$643,000		$724,000	$839,000
Miscellaneous			$0		$0	$0
		TOTAL	$37,717,000	TOTAL	$42,450,000	$49,211,000

PROPOSED COMMISSION REQUEST	TOTAL	$37,717,000	TOTAL	$42,450,000	$49,211,000

Project Assumptions/Risks

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Roadway and Drainage

Foothill Blvd-Concept Estimate-Segment 2B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$1,450,000.00	$1,450,000.00	5% of construction
015540005	Traffic Control	1	Lump	$290,000.00	$290,000.00	1% of construction
01557001*	Maintenance of Traffic	1	Lump	$140,000.00	$140,000.00	0.5% of construction
015720020	Dust Control and Watering	10,907	1000 gal	$50.00	$545,350.00	
020560005	Borrow (Plan Quantity)	190,000	cu yd	$9.00	$1,710,000.00	
020560015	Granular Borrow (Plan Quantity)	36,230	cu yd	$12.00	$434,760.00	
022310020	Clearing and Grubbing (Plan Quantity)	29	Acre	$1,000.00	$29,000.00	
023160020	Roadway Excavation (Plan Quantity)	30,000	cu yd	$8.00	$240,000.00	
027210020	Untreated Base Course (Plan Quantity)	16,363	cu yd	$17.00	$278,171.00	
027410060	HMA - 3/4 Inch	21,053	Ton	$58.00	$1,221,074.00	
027480010	Liquid Asphalt MC-70 or MC-250	198	Ton	$500.00	$99,000.00	Prime Coat
027520020	Portland Cement Concrete Pavement 9 inch Thick	90,000	sq yd	$45.00	$4,050,000.00	
027710025	Concrete Curb and Gutter Type B1		ft	$20.00		
027760010	Concrete Sidewalk		sq ft	$4.00		
028220030	Right-of-Way Fence, Type D (Metal Post)		ft	$5.00		
Roadway Subtotal					**$10,487,355**	
Drainage						
023730010	Loose Riprap		cu yd	$25.00		
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth		ft	$75.00		
026101388	24 Inch Irrigation/Storm Drain, Class C, smooth		ft	$125.00		
026101391	36 Inch Irrigation/Storm Drain, Class C, smooth		ft	$200.00		
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9		Each	$4,000.00		
Drainage Subtotal					**$0**	
PI						
013150010	Public Information Services	1	Lump	$70,000.00	**$70,000**	Usually 0.25% of construction

Traffic, Safety & ITS

Foothill Blvd-Concept Estimate-Segment 2B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Traffic						
027650050	Pavement Marking Paint	464	gal	$200.00	$92,800.00	
027680105	Pavement Message (Preformed Thermoplastic)		Each	$180.00		
027680110	Pavement Message (Preformed Thermoplastic Stop Line, Crosswalks - 12 inch)		Each	$7.00		
028410086	W-Beam Guardrail 72 inch Wood Post		ft	$25.00		
028430035	Crash Cushion Type G		Each	$15,000.00		
028440030	Cast-in-Place Concrete Constant Slope Barrier - 42 Inch	25,000	ft	$50.00	$1,250,000.00	
028910028	Sign Type A-1, 12 Inch X 36 Inch		Each	$150.00		
028910270	Remove Sign Less Than 20 Square Feet		Each	$100.00		
028910285	Relocate Sign Less Than 20 Square Feet		Each	$500.00		
Signals						
02892001D	Traffic Signal System	4	Each	$200,000.00	$800,000.00	
Lighting						
16525001D	Highway Lighting System	4	Each	$50,000.00	$200,000.00	
Traffic and Safety Subtotal					**$2,342,800**	
ITS						
135530035	1D Conduit		ft			
	CCTV System	1	Lump			
ITS Subtotal					**$0**	

Structures

Foothill Blvd-Concept Estimate-Segment 2B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Bridges						
	Concrete Girder Structure	46,000	sq ft	$200.00	$9,200,000.00	Assumed LxW (deck area)
Walls						
	MSE Retaining Wall	24,000	Sq ft	$65.00	$1,560,000.00	Fill Wall
	Soil Nail Retaining Wall			$95.00		Cut Wall
Sign Structures						
	Overhead Sign Structure	8	Each	$50,000.00	$400,000.00	
	Remove Overhead Sign	1	Each	$5,000.00	$5,000.00	
	Remove Existing Overhead Sign Structure	1	Each	$20,000.00	$20,000.00	
Hydraulics						
	Extend Box Culvert		ft			
	New Box Culvert	1	Lump			
Geotech						
	Geotech Report	1	Lump			
	Drilling	1	Lump			
Structures Subtotal					**$11,185,000**	

Environmental and Landscaping

Foothill Blvd-Concept Estimate-Segment 2B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmental						
	Wetland Mitigation	1	Lump			
	Noise Wall		ft			
Temporary Erosion Control						
015710030	Silt Fence	17,800	ft	$2.00	$35,600.00	
	Erosion Control Supervisor	1	Lump	$25,000.00	$25,000.00	
	Check Dams	400	Each	$10.00	$4,000.00	
Landscaping						
029110010	Wood Fiber Mulch		Acre	$1,500.00		
029120010	Contractor Furnished Topsoil		sq yd			
029120050	Strip, Stockpile, and Spread Topsoil (Plan Quantity)		sq yd			
029220010	Drill Seed		Acre			
029220030	Broadcast Seed		Acre			
Environmental Mitigation Subtotal					**$64,600**	

Utilities, Right of Way, and Incentives

Foothill Blvd-Concept Estimate-Segment 2B

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities						
	New Wet Utilities	0	Ft	$120.00	$0.00	
	Relocate Gas Line	1	Lump			
	Relocate Power Line	1	Lump			
	Relocate Fiber Optic	1	Lump			
	Lump Utility	1	Lump	$580,000.00	$580,000.00	2%
Utilities Subtotal					**$580,000**	
Right-of-way						
	Urban/Suburban Residential		sq ft			
	Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Residential		Each			
	non-Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Farm	0	sq ft	$4.00	$0.00	
Right-of-Way Subtotal					**$0**	
Incentives						
00000601*	Pavement Smoothness Incentive	1	Lump			
00000602*	Hot Mix Asphalt (HMA) Incentive	1	Lump	$26,842.58	$26,842.58	
00000603*	Stone Matrix Asphalt (SMA) Incentive	1	Lump			
00000604*	Open Graded Surface Course Incentive	1	Lump			
00000605*	Bonded Wearing Course Incentive	1	Lump			
00000606*	Early Completion - Time	0	Cal'd			
00000607*	Lane Rental Incentive	0	Hours			
00000608*	Miscellaneous Incentive	1	Lump			
Incentives Subtotal					**$26,843**	

Foothill Blvd-Concept Estimate-Segment 3
Cost Estimate - Concept Level

Prepared By: David Clawson/Kay Christofferson **Date** 8/11/2016

Proposed Project Scope: **Stillwater Parkway to Harbor Park Way-Major Arterial**

Approximate Route Reference Mile Post (BEGIN) =	4.020	(END) =	6.020
Project Length =	2.000	miles	10,560 ft
Current FY Year (July-June) =	2016		
Assumed Construction FY Year =	2020		
Construction Items Inflation Factor =	1.13	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	3.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	8.0%		

Construction Items		Cost	Remarks
Public Information Services		$40,000	
Roadway and Drainage		$9,694,427	
Traffic and Safety		$958,000	
Structures		$3,541,900	
Environmental Mitigation		$67,000	
ITS		$0	
	Subtotal	$14,301,327	
	Items not Estimated (20%)	$2,860,265	
	Construction Subtotal	**$17,161,592**	
P.E. Cost	**P.E. Subtotal**	**$1,377,970**	8%
C.E. Cost	**C.E. Subtotal**	**$1,377,970**	8%
Right of Way	**Right of Way Subtotal**	$3,800,000	
Utilities	**Utilities Subtotal**	$1,540,000	
Incentives	**Incentives Subtotal**	$63,027	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		2016		2020		2025
P.E.			$1,378,000		$1,551,000	$1,798,000
Right of Way			$3,800,000		$4,277,000	$4,958,000
Utilities			$1,540,000		$1,733,000	$2,009,000
Construction			$17,162,000		$19,316,000	$22,393,000
C.E.			$1,378,000		$1,551,000	$1,798,000
Incentives			$63,000		$71,000	$82,000
Aesthetics	0.75%		$129,000		$145,000	$168,000
Change Order Contingency	9.00%		$1,556,000		$1,751,000	$2,030,000
UDOT Oversight	2.00%		$405,000		$456,000	$528,000
Miscellaneous			$0		$0	$0
		TOTAL	$27,411,000	TOTAL	$30,851,000	$35,764,000

PROPOSED COMMISSION REQUEST	TOTAL	$27,411,000	TOTAL	$30,851,000	$35,764,000

Project Assumptions/Risks

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5 _____ 12 _____

6 _____ 13 _____

7 _____ 14 _____

Roadway and Drainage

Foothill Blvd-Concept Estimate-Segment 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$860,000.00	$860,000.00	5% of construction
015540005	Traffic Control	1	Lump	$170,000.00	$170,000.00	1% of construction
01557001*	Maintenance of Traffic	1	Lump	$90,000.00	$90,000.00	0.5% of construction
015720020	Dust Control and Watering	3,731	1000 gal	$50.00	$186,550.00	
020560005	Borrow (Plan Quantity)	35,000	cu yd	$9.00	$315,000.00	
020560015	Granular Borrow (Plan Quantity)	31,934	cu yd	$12.00	$383,208.00	
022310020	Clearing and Grubbing (Plan Quantity)	28	Acre	$1,000.00	$28,000.00	
023160020	Roadway Excavation (Plan Quantity)	140,000	cu yd	$8.00	$1,120,000.00	
027210020	Untreated Base Course (Plan Quantity)	15,967	cu yd	$17.00	$271,439.00	
027410060	HMA - 3/4 Inch	43,685	Ton	$58.00	$2,533,730.00	
027480010	Liquid Asphalt MC-70 or MC-250	193	Ton	$500.00	$96,500.00	Prime Coat
027520020	Portland Cement Concrete Pavement 9 inch Thick	0	sq yd	$45.00	$0.00	
027710025	Concrete Curb and Gutter Type B1	33,000	ft	$20.00	$660,000.00	
027760010	Concrete Sidewalk	160,000	sq ft	$4.00	$640,000.00	
028220030	Right-of-Way Fence, Type D (Metal Post)	20,000	ft	$5.00	$100,000.00	
Roadway Subtotal					**$7,454,427**	
Drainage						
023730010	Loose Riprap	4,000	cu yd	$25.00	$100,000.00	
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth	20,000	ft	$75.00	$1,500,000.00	
026101388	24 Inch Irrigation/Storm Drain, Class C, smooth		ft	$125.00		
026101391	36 Inch Irrigation/Storm Drain, Class C, smooth		ft	$200.00		
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9	160	Each	$4,000.00	$640,000.00	
Drainage Subtotal					**$2,240,000**	
PI						
013150010	Public Information Services	1	Lump	$40,000.00	**$40,000**	Usually 0.25% of construction

Traffic, Safety & ITS

Foothill Blvd-Concept Estimate-Segment 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Traffic	Stillwater Parkway to Harbor Park Way-Major Arterial					
027650050	Pavement Marking Paint	290	gal	$200.00	$58,000.00	
027680105	Pavement Message (Preformed Thermoplastic)		Each	$180.00		
027680110	Pavement Message (Preformed Thermoplastic Stop Line, Crosswalks - 12 inch)		Each	$7.00		
028410086	W-Beam Guardrail 72 inch Wood Post		ft	$25.00		
028430035	Crash Cushion Type G		Each	$15,000.00		
028440030	Cast-in-Place Concrete Constant Slope Barrier - 42 Inch	3,000	ft	$50.00	$150,000.00	
028910028	Sign Type A-1, 12 Inch X 36 Inch		Each	$150.00		
028910270	Remove Sign Less Than 20 Square Feet		Each	$100.00		
028910285	Relocate Sign Less Than 20 Square Feet		Each	$500.00		
Signals						
02892001D	Traffic Signal System	3	Each	$200,000.00	$600,000.00	
Lighting						
16525001D	Highway Lighting System	3	Each	$50,000.00	$150,000.00	
Traffic and Safety Subtotal					**$958,000**	
ITS						
135530035	1D Conduit		ft			
	CCTV System	1	Lump			
ITS Subtotal					**$0**	

Structures

Foothill Blvd-Concept Estimate-Segment 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Bridges	Stillwater Parkway to Harbor Park Way-Major Arterial					
	Concrete Girder Structure	0	sq ft	$200.00	$0.00	Assumed LxW (deck area)
Walls						
	MSE Retaining Wall	2,000	Sq ft	$65.00	$130,000.00	Fill Wall
	Soil Nail Retaining Wall	28,000	Sq ft	$95.00	$2,660,000.00	Cut Wall
Sign Structures						
	Overhead Sign Structure	0	Each	$50,000.00	$0.00	
	Remove Overhead Sign	0	Each	$5,000.00	$0.00	
	Remove Existing Overhead Sign Structure	0	Each	$20,000.00	$0.00	
Hydraulics						
	30" Pipe Culvert	350	ft	$80.00	$28,000.00	
	54" Pipe Culvert	200	ft	$250.00	$50,000.00	
	8'X6' Box Culvert	180	ft	$900.00	$162,000.00	
	42" Pipe Culvert	250	ft	$150.00	$37,500.00	
	9'X7' Box Culvert	250	ft	$1,100.00	$275,000.00	
	48" Pipe Culvert	220	ft	$170.00	$37,400.00	
	8'X6' Box Culvert	180	ft	$900.00	$162,000.00	
Geotech						
	Geotech Report	1	Lump			
	Drilling	1	Lump			
Structures Subtotal					**$3,541,900**	

Environmental and Landscaping

Foothill Blvd-Concept Estimate-Segment 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmenta	Stillwater Parkway to Harbor Park Way-Major Arterial					
	Wetland Mitigation	1	Lump			
	Noise Wall		ft			
Temporary Erosion Control						
015710030	Silt Fence	20,000	ft	$2.00	$40,000.00	
	Erosion Control Supervisor	1	Lump	$25,000.00	$25,000.00	
	Check Dams	200	Each	$10.00	$2,000.00	
Landscaping						
029110010	Wood Fiber Mulch		Acre	$1,500.00		
029120010	Contractor Furnished Topsoil		sq yd			
029120050	Strip, Stockpile, and Spread Topsoil (Plan Quantity)		sq yd			
029220010	Drill Seed		Acre			
029220030	Broadcast Seed		Acre			
Environmental Mitigation Subtotal					**$67,000**	

Utilities, Right of Way, and Incentives

Foothill Blvd-Concept Estimate-Segment 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities	Stillwater Parkway to Harbor Park Way-Major Arterial					
	New Wet Utilities	10,000	Ft	$120.00	$1,200,000.00	
	Relocate Gas Line	1	Lump			
	Relocate Power Line	1	Lump			
	Relocate Fiber Optic	1	Lump			
	Lump Utility	1	Lump	$340,000.00	$340,000.00	2%
Utilities Subtotal					**$1,540,000**	
Right-of-way						
	Urban/Suburban Residential		sq ft			
	Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Residential		Each			
	non-Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Undeveloped	1,900,000	sq ft	$2.00	$3,800,000.00	
Right-of-Way Subtotal					**$3,800,000**	
Incentives						
00000601*	Pavement Smoothness Incentive	1	Lump			
00000602*	Hot Mix Asphalt (HMA) Incentive	1	Lump	$55,698.38	$55,698.38	
00000603*	Stone Matrix Asphalt (SMA) Incentive	1	Lump			
00000604*	Open Graded Surface Course Incentive	1	Lump			
00000605*	Bonded Wearing Course Incentive	1	Lump	$7,328.70	$7,328.70	
00000606*	Early Completion - Time	0	Cal'd			
00000607*	Lane Rental Incentive	0	Hours			
00000608*	Miscellaneous Incentive	1	Lump			
Incentives Subtotal					**$63,027**	

Foothill Blvd-Concept Estimate-Segment 4
Cost Estimate - Concept Level

Prepared By: David Clawson/Kay Christofferson **Date** 8/11/2016

Proposed Project Scope: **Harbor Park Way to Redwood Road - Minor Arterial**

Approximate Route Reference Mile Post (BEGIN) =	6.020	(END) =	8.350
Project Length =	2.330	miles	12,302 ft
Current FY Year (July-June) =	2016		
Assumed Construction FY Year =	2020		
Construction Items Inflation Factor =	1.13	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	3.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	8.0%		

Construction Items		Cost	Remarks
Public Information Services		$50,000	
Roadway and Drainage		$10,172,572	
Traffic and Safety		$814,800	
Structures		$4,414,400	
Environmental Mitigation		$70,000	
ITS		$0	
	Subtotal	$15,521,772	
	Items not Estimated (20%)	$3,104,354	
	Construction Subtotal	**$18,626,126**	
P.E. Cost	**P.E. Subtotal**	**$1,494,199**	8%
C.E. Cost	**C.E. Subtotal**	**$1,494,199**	8%
Right of Way	**Right of Way Subtotal**	$2,400,000	
Utilities	**Utilities Subtotal**	$1,570,000	
Incentives	**Incentives Subtotal**	$51,361	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		2016		2020		2025
P.E.			$1,494,000		$1,682,000	$1,949,000
Right of Way			$2,400,000		$2,701,000	$3,131,000
Utilities			$1,570,000		$1,767,000	$2,048,000
Construction			$18,626,000		$20,964,000	$24,303,000
C.E.			$1,494,000		$1,682,000	$1,949,000
Incentives			$51,000		$57,000	$67,000
Aesthetics	0.75%		$140,000		$158,000	$183,000
Change Order Contingency	9.00%		$1,689,000		$1,901,000	$2,204,000
UDOT Oversight	2.00%		$438,000		$493,000	$571,000
Miscellaneous			$0		$0	$0
		TOTAL	$27,902,000	TOTAL	$31,405,000	$36,405,000

PROPOSED COMMISSION REQUEST	TOTAL	$27,902,000	TOTAL	$31,405,000	$36,405,000

Project Assumptions/Risks

1 _____ 8 _____

2 _____ 9 _____

3 _____ 10 _____

4 _____ 11 _____

5 _____ 12 _____

6 _____ 13 _____

7 _____ 14 _____

Roadway and Drainage

Foothill Blvd-Concept Estimate-Segment 4

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$930,000.00	$930,000.00	5% of construction
015540005	Traffic Control	1	Lump	$190,000.00	$190,000.00	1% of construction
01557001*	Maintenance of Traffic	1	Lump	$90,000.00	$90,000.00	0.5% of construction
015720020	Dust Control and Watering	3,557	1000 gal	$50.00	$177,850.00	
020560005	Borrow (Plan Quantity)	40,000	cu yd	$9.00	$360,000.00	
020560015	Granular Borrow (Plan Quantity)	26,023	cu yd	$12.00	$312,276.00	
022310020	Clearing and Grubbing (Plan Quantity)	28	Acre	$1,000.00	$28,000.00	
023160020	Roadway Excavation (Plan Quantity)	135,000	cu yd	$8.00	$1,080,000.00	
027210020	Untreated Base Course (Plan Quantity)	13,012	cu yd	$17.00	$221,204.00	
027410060	HMA - 3/4 Inch	35,599	Ton	$58.00	$2,064,742.00	
027480010	Liquid Asphalt MC-70 or MC-250	157	Ton	$500.00	$78,500.00	Prime Coat
027520020	Portland Cement Concrete Pavement 9 inch Thick	0	sq yd	$45.00	$0.00	
027710025	Concrete Curb and Gutter Type B1	46,000	ft	$20.00	$920,000.00	
027760010	Concrete Sidewalk	190,000	sq ft	$4.00	$760,000.00	
028220030	Right-of-Way Fence, Type D (Metal Post)	20,000	ft	$5.00	$100,000.00	
Roadway Subtotal					**$7,312,572**	
Drainage						
023730010	Loose Riprap	9,000	cu yd	$25.00	$225,000.00	
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth	25,000	ft	$75.00	$1,875,000.00	
026101388	24 Inch Irrigation/Storm Drain, Class C, smooth		ft	$125.00		
026101391	36 Inch Irrigation/Storm Drain, Class C, smooth		ft	$200.00		
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9	190	Each	$4,000.00	$760,000.00	
Drainage Subtotal					**$2,860,000**	
PI						
013150010	Public Information Services	1	Lump	$50,000.00	**$50,000**	Usually 0.25% of construction

Traffic, Safety & ITS

Foothill Blvd-Concept Estimate-Segment 4

Item #	Item	Quantity	Units	Price	Cost	Remarks
Traffic						
027650050	Pavement Marking Paint	324	gal	$200.00	$64,800.00	
027680105	Pavement Message (Preformed Thermoplastic)		Each	$180.00		
027680110	Pavement Message (Preformed Thermoplastic Stop Line, Crosswalks - 12 inch)		Each	$7.00		
028410086	W-Beam Guardrail 72 inch Wood Post		ft	$25.00		
028430035	Crash Cushion Type G		Each	$15,000.00		
028440030	Cast-in-Place Concrete Constant Slope Barrier - 42 Inch	5,000	ft	$50.00	$250,000.00	
028910028	Sign Type A-1, 12 Inch X 36 Inch		Each	$150.00		
028910270	Remove Sign Less Than 20 Square Feet		Each	$100.00		
028910285	Relocate Sign Less Than 20 Square Feet		Each	$500.00		
Signals						
02892001D	Traffic Signal System	2	Each	$200,000.00	$400,000.00	
Lighting						
16525001D	Highway Lighting System	2	Each	$50,000.00	$100,000.00	
Traffic and Safety Subtotal					**$814,800**	
ITS						
135530035	1D Conduit		ft			
	CCTV System	1	Lump			
ITS Subtotal					**$0**	

Structures

Foothill Blvd-Concept Estimate-Segment 4

Item #	Item	Quantity	Units	Price	Cost	Remarks
Bridges						
	Concrete Girder Structure	0	sq ft	$200.00	$0.00	Assumed LxW (deck area)
Walls						
	MSE Retaining Wall	4,000	Sq ft	$65.00	$260,000.00	Fill Wall
	Soil Nail Retaining Wall	35,000	Sq ft	$95.00	$3,325,000.00	Cut Wall
Sign Structures						
	Overhead Sign Structure	0	Each	$50,000.00	$0.00	
	Remove Overhead Sign	0	Each	$5,000.00	$0.00	
	Remove Existing Overhead Sign Structure	0	Each	$20,000.00	$0.00	
Hydraulics						
	42" Pipe Culvert	220	ft	$150.00	$33,000.00	
	8'X6' Box Culvert	180	ft	$900.00	$162,000.00	
	9'X6' Box Culvert	180	ft	$1,000.00	$180,000.00	
	15'X7' Box Culvert	220	ft	$2,000.00	$440,000.00	
	30" Pipe Culvert	180	ft	$80.00	$14,400.00	
Geotech						
	Geotech Report	1	Lump			
	Drilling	1	Lump			
Structures Subtotal					**$4,414,400**	

Environmental and Landscaping

Foothill Blvd-Concept Estimate-Segment 4

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmental						
	Wetland Mitigation	1	Lump			
	Noise Wall		ft			
Temporary Erosion Control						
015710030	Silt Fence	20,000	ft	$2.00	$40,000.00	
	Erosion Control Supervisor	1	Lump	$25,000.00	$25,000.00	
	Check Dams	500	Each	$10.00	$5,000.00	
Landscaping						
029110010	Wood Fiber Mulch		Acre	$1,500.00		
029120010	Contractor Furnished Topsoil		sq yd			
029120050	Strip, Stockpile, and Spread Topsoil (Plan Quantity)		sq yd			
029220010	Drill Seed		Acre			
029220030	Broadcast Seed		Acre			
Environmental Mitigation Subtotal					**$70,000**	

Utilities, Right of Way, and Incentives

Foothill Blvd-Concept Estimate-Segment 4

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities						
	New Wet Utilities	10,000	Ft	$120.00	$1,200,000.00	
	Relocate Gas Line	1	Lump			
	Relocate Power Line	1	Lump			
	Relocate Fiber Optic	1	Lump			
	Lump Utility	1	Lump	$370,000.00	$370,000.00	2%
Utilities Subtotal					**$1,570,000**	
Right-of-way						
	Urban/Suburban Residential		sq ft			
	Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Residential		Each			
	non-Urban/Suburban Commercial		sq ft			
	non-Urban/Suburban Undeveloped	1,200,000	sq ft	$2.00	$2,400,000.00	
Right-of-Way Subtotal					**$2,400,000**	
Incentives						
00000601*	Pavement Smoothness Incentive	1	Lump			
00000602*	Hot Mix Asphalt (HMA) Incentive	1	Lump	$45,388.73	$45,388.73	
00000603*	Stone Matrix Asphalt (SMA) Incentive	1	Lump			
00000604*	Open Graded Surface Course Incentive	1	Lump			
00000605*	Bonded Wearing Course Incentive	1	Lump	$5,972.13	$5,972.13	
00000606*	Early Completion - Time	0	Cal'd			
00000607*	Lane Rental Incentive	0	Hours			
00000608*	Miscellaneous Incentive	1	Lump			
Incentives Subtotal					**$51,361**	