

2019

BRIDGE

COST

DATA

A Message From Bert Hartman

A Message from the Bridge Program and Standards Manager

The complete Bridge Cost Data Book for Federal Fiscal year 2019 includes project layout sheets and project bid item summaries for bridges, culverts, seismic retrofit, retaining walls, sign support structures and miscellaneous structure projects. The tables contain bid item summaries received from October 1, 2018 through September 30 2019, using the 2018 Oregon Standard Specifications for Construction.

- We have included typical bridge bid item prices, walls unit prices, and sign structure unit prices.
- The format and data are similar to last year. Project key numbers and contract numbers are listed on the Index pages.
- Bid item costs for the last three years and weighted average unit costs are included, except the unit cost is excluded for the following bridges, since their unique features do not compare well to average conditions:

Bridge 22517, Hwy 2 WB Over NW Graham Road – unit prices for structure excavation.

Bridge 22631, Retaining Wall, Hwy 1 SB, Sta."L" 3008+15.46 Right –

Unit prices for granular wall backfill, reinforcement, general structural concrete, Class 3300, and repair damaged concrete.

Bridge 09460, SCS Canal & UPRR, Hwy 69 – unit prices for general structural concrete, Class 4000.

Bridge 23326 and 23327 – two abutment Retaining walls on Bridge 23324, Hwy 069 WB Conn, over Hwy 069, unit prices for architectural treatment.

For the electronic book file on line, please go to:

<ftp://ftp.odot.state.or.us/Bridge/CostData/>

Any comments or suggestions for improving the cost data book, or questions on this year's unit cost, please contact at: bridge@odot.state.or.us

Bert Hartman, P.E.

CONTENTS

Mobilization Summary (FFY 2019)

Mobilization Summary (FFY 2017 - 2019)

Deck Area Total Cost Summary

Bid Item Summary (FFY 2019)

Bid Item Summary (FFY 2017 - 2019)

Bridge Construction

Precast Prestressed Reinforced Concrete Slabs
Precast Prestressed Reinforced Concrete Deck Girder
Precast Prestressed Reinforced Concrete Girder
Precast Prestressed Reinforced Concrete Box Girder

Seismic Retrofit

Rail Replacement and Retrofit

Culverts

Miscellaneous

Bridge Coating
Bridge Deck/End Panel Cold Plane Pavement Removal
Concrete and Crack Sealing
Deck Joints
Deck Overlay
Protective Fencing
Waterproofing Membrane
Other Miscellaneous

Retaining Walls

Sound Walls

Sign Support Structures

Index

Mobilization Summary Of All Contracts (FFY 2019)				
Federal Fiscal Year 2019 (October 1, 2018 - September 30, 2019)				
Region	Low Bid Mobilization	Low Bid Mobilization %	Average Bid Mobilization	Average Bid Mobilization %
1	\$ 8,535,628.69	10.82%	\$ 9,043,123.68	10.70%
2	\$ 6,378,193.62	10.70%	\$ 6,532,570.99	10.24%
3	\$ 8,875,276.52	9.87%	\$ 10,054,092.33	10.64%
4	\$ 2,464,980.55	6.91%	\$ 3,147,196.77	8.50%
5	\$ 4,673,804.43	11.06%	\$ 5,093,983.79	11.39%
Statewide	\$ 30,927,883.81	10.11%	\$ 33,870,967.56	10.44%

Mobilization Summary Of All Contracts (FFY 2017-2019)				
Federal Fiscal Year 2017 to 2019 (October 1, 2016 - September 30, 2019)				
Region	Low Bid Mobilization	Low Bid Mobilization %	Average Bid Mobilization	Average Bid Mobilization %
1	\$ 26,267,846.46	10.67%	\$ 27,703,936.00	10.68%
2	\$ 18,608,663.96	10.64%	\$ 18,688,187.55	10.03%
3	\$ 20,298,258.68	9.57%	\$ 22,301,627.72	10.01%
4	\$ 12,105,532.60	8.50%	\$ 13,753,604.45	9.15%
5	\$ 14,513,008.10	12.68%	\$ 15,083,124.13	12.44%
Statewide	\$ 91,793,309.80	10.31%	\$ 97,530,479.85	10.37%

Deck Area Total Cost Summary Fiscal Year 2019				
Structure Type	Total Area Square Feet	Total Bid Amount	Cost per Square Feet	Number of Structures
Precast Prestressed Slabs - 18 inch	2,007	\$ 426,000	\$ 212.28	1
Precast Prestressed Slabs - 26 inch	3,089	\$ 709,710	\$ 229.79	1
Precast Prestressed Slabs - 30 inch	4,133	\$ 704,235	\$ 170.38	1
Precast Prestressed R.C. Deck Girder - BT 60 Inches	5,262	\$ 1,387,573	\$ 263.72	1
Precast Prestressed R.C. Girder - BT 60 Inches	8,755	\$ 1,380,145	\$ 157.64	1
Precast Prestressed R.C. Box Girder - 36 Inches	5,095	\$ 1,135,710	\$ 222.89	2
Total	28,341	\$ 5,743,373	\$ 202.65	7

Note: Deck area is calculated using length dimension as back to back of abutment wall or paving notch to paving notch, and width dimension as out-to-out of deck, per Item 52 of National Bridge Inventory.

Deck area unit cost does not include mobilization, traffic control, and costs unrelated to the main type of work.

Miscellaneous Deck Area Cost Summary				
Work Type	Total Area Square Feet	Total Bid Amount	Cost per Square Feet	Number of Structures
Bridge Deck Overlay	59,137	\$ 6,120,546	\$ 11.50	13

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
00236	Temporary Work Access					
	Temporary Work Access (at sign structure sites)	LS	1	15	\$ 18,278.00	\$ 15,826.00
00250	Temporary Detour Bridges					
	Temporary Detour Bridges	SQFT	1	3,840	\$ 65.10	\$ 141.12
			2	1,440	\$ 86.81	\$ 89.12
			Statewide	5,280	\$ 71.02	\$ 126.94
00253	Temporary Work Access and Containment					
	Temporary Work Access and Containment	SQFT	1	11,426	\$ 71.33	\$ 92.23
			2	28,300	\$ 21.04	\$ 25.03
			3	16,163	\$ 9.62	\$ 14.88
			Statewide	55,889	\$ 28.02	\$ 35.83
	Moving Temporary Work Access and Containment	EA	1	4	\$ 2,500.00	\$ 4,333.33
00330	Earthwork					
	Stone Embankment	CUYD	4	320	\$ 36.94	\$ 47.52
00331	Subgrade Stabilization					
	24 Inch Subgrade Stabilization	SQYD	4	155	\$ 40.00	\$ 42.33
00350	Geosynthetic Installation					
	Drainage Geotextile, Type 1	SQYD	2	426	\$ 2.00	\$ 2.83
	Drainage Geotextile, Type 2	SQYD	4	940	\$ 2.16	\$ 1.69
00390	Riprap Protection					
	Loose Riprap, Class 100	CUYD	4	410	\$ 63.66	\$ 77.22
	Loose Riprap, Class 200	CUYD	2	1,935	\$ 58.85	\$ 58.18
			3	270	\$ 90.00	\$ 72.67
			Statewide	2,205	\$ 62.66	\$ 59.95
	Loose Riprap, Class 2000	CUYD	3	2,550	\$ 105.00	\$ 70.67
00450	Structural Plate Shaped Structures					
	159 Inch x 112 Inch Structural Plate Pipe Arch	CUFT	4	11,058	\$ 6.38	\$ 9.69
	159 Inch x 112 Inch Structural Plate Pipe Arch	FT	4	114	\$ 619.04	\$ 939.68
	Structural Plate Concrete Footings and Headwalls	CUYD	4	25	\$ 989.20	\$ 1,396.40

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
00490	Work on Existing Sewers and Structures					

Filling abandoned Structures

EA	4	1	\$	11,760.00	\$	6,986.67
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00501 Bridge Removal

Bridge Removal Work	SQFT	1	12,266	\$	15.16	\$	24.28
		2	5,333	\$	39.85	\$	56.84
		3	35,047	\$	20.81	\$	21.88
		5	7,003	\$	20.80	\$	21.05
		Statewide	59,649	\$	21.35	\$	25.40
Bridge Removal Work*	FT	3	699	\$	42.63	\$	66.09
		4	1,574	\$	66.07	\$	82.17
		Statewide	2,273	\$	58.86	\$	77.23

* Unit cost of \$11,538.46 is excluded (Region 1 C15119, Bridge 07333)

Bridge Removal Work	CUYD	3	8	\$	311.25	\$	1,582.92
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00503 Bridge Deck Cold Plane Pavement Removal

Bridge Deck Cold Plane Pavement Removal (CPRR), 0-2 Inches Deep

SQYD	1	7,154	\$	31.49	\$	30.13
	2	62	\$	32.00	\$	22.25
	3	555	\$	21.35	\$	21.93
	5	4,600	\$	3.00	\$	6.00
	Statewide	12,371	\$	20.44	\$	20.75

Bridge Deck CPRR, 2-4 Inches Deep

SQYD	2	10,584	\$	4.68	\$	8.17
	3	532	\$	18.00	\$	23.33
	4	2,067	\$	13.88	\$	25.17
SQYD	5	3,165	\$	14.00	\$	14.00
	Statewide	16,348	\$	8.08	\$	11.94

Bridge Deck CPRR, 8 - 10 Inches Deep

SQYD	2	388	\$	25.00	\$	27.50
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Bridge End Panel CPRR, 0-2 Inches Deep

SQYD	1	640	\$	40.00	\$	27.69
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Bridge End Panel CPRR, 1/8 - 3/8 Inches Deep

SQYD	1	142	\$	60.00	\$	43.43
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Bridge End Panel CPRR, 2 Inches Deep

SQYD	1	450	\$	20.00	\$	14.67
	2	1,592	\$	3.25	\$	7.94
	3	880	\$	21.12	\$	26.27
	4	1,082	\$	19.51	\$	20.39
	Statewide	4,004	\$	13.45	\$	16.09

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
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00510 Structural Excavation and Backfill

Shoring & Cribbing-Cofferdam

SQYD	1	212	\$	23.59	\$	62.83
	2	801	\$	239.41	\$	205.09
	3	90	\$	1,474.22	\$	1,350.67
	4	112	\$	381.70	\$	385.42
	Statewide	1,215	\$	306.34	\$	281.75

Structure Excavation ¹

CUYD	1	98	\$	826.53	\$	386.34
	2	3,260	\$	36.30	\$	33.08
	3	1,134	\$	45.19	\$	48.42
	4	4,217	\$	28.10	\$	20.52
	5	260	\$	46.15	\$	53.85
	Statewide	8,969	\$	42.49	\$	33.58

¹ Unit price of 4111.11 is excluded (Region 1 C15110, Bridge 22517)

Granular Wall Backfill ²

CUYD	1	74	\$	81.08	\$	234.23
	2	30	\$	116.67	\$	103.33
	3	79	\$	136.13	\$	98.67
	4	250	\$	98.04	\$	112.53
	Statewide	433	\$	103.38	\$	130.16

² Unit price of 30591.67 is excluded (Region 3 C15108, Bridge 22631)

Granular Structure Backfill

CUYD	1	2	\$	700.00	\$	1,316.67
	2	1,163	\$	90.51	\$	81.39
	3	319	\$	219.39	\$	118.38
	4	560	\$	152.44	\$	97.93
	5	260	\$	88.46	\$	97.44
	Statewide	2,304	\$	123.70	\$	93.42

00512 Drilled Shafts

Furnish Drilling Equipment

LS	2	3	\$	74,028.33	\$	81,398.33
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Drilled Shaft Concrete

CUYD	2	255	\$	501.31	\$	406.30
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Drilled Shaft Reinforcement

LB	2	14,175	\$	1.62	\$	2.30
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CSL Test Access Tubes

FT	2	600	\$	12.00	\$	12.67
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CSL Test

EA	2	2	\$	2,300.00	\$	2,266.67
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Drilled Shafts Excavation, 72 Inch Diameter

FT	2	100	\$	800.00	\$	1,100.00
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Permanent Shaft Casings, 72 Inch Diameter

FT	2	20	\$	360.00	\$	386.67
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Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
00520	Driven Piles					
	Furnish Pile Driving Equipment					
		LS				
			1	2	\$ 20,000.00	\$ 34,166.67
			2	2	\$ 19,500.00	\$ 26,666.67
			4	1	\$ 33,000.00	\$ 33,333.33
			Statewide	5	\$ 22,400.00	\$ 31,000.00
	Furnish HP 14 x 89 Steel Piles					
		FT	2	540	\$ 60.00	\$ 50.67
	Furnish HP 14 x 117 Steel Piles					
		FT	2	704	\$ 69.50	\$ 71.17
	Furnish PP 16 x 0.375 Steel Piles					
		FT	4	900	\$ 56.00	\$ 56.67
	Furnish PP 16 x 0.5 Steel Piles					
		FT	1	2,661	\$ 64.04	\$ 66.08
			2	700	\$ 60.00	\$ 57.30
			Statewide	3,361	\$ 63.20	\$ 64.25
	Drive HP 14 x 89 Steel Piles					
		EA	2	18	\$ 750.00	\$ 983.33
	Drive PP 16 x 0.375 Steel Piles					
		EA	4	18	\$ 1,300.00	\$ 1,321.67
	Drive PP 16 x 0.5 Steel Piles					
		EA	1	52	\$ 2,000.00	\$ 1,233.33
			2	14	\$ 1,400.00	\$ 1,016.67
			Statewide	66	\$ 1,872.73	\$ 1,187.37
	Preboring Piles					
		FT	2	788	\$ 106.03	\$ 106.59
	Pile Load Test (Dynamic)					
		EA	2	2	\$ 4,000.00	\$ 2,508.33
	Reinforced Pile Tips					
		EA	2	18	\$ 150.00	\$ 171.67
	HP 14 x 89 Steel Pile Splices					
		EA	2	2	\$ 1.00	\$ 200.33
	PP 16 x 0.375 Steel Pile Splices					
		EA	4	2	\$ 1,000.00	\$ 1,016.67

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
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00530 Reinforcement

Reinforcement ³	LB	1	77,860	\$ 1.63	\$ 3.03
		2	188,375	\$ 1.32	\$ 1.56
		3	27,138	\$ 2.34	\$ 2.56
		4	15,115	\$ 2.13	\$ 2.02
		5	14,300	\$ 1.24	\$ 2.21
		Statewide	322,788	\$ 1.51	\$ 2.05

³ Unit price of 701.61 is excluded (Region 3 C15108, Bridge 22631)

Reinforcement (Bid unit in pounds)	LB	1	100	\$ 5.00	\$ 16.67
		2	5,850	\$ 2.70	\$ 3.05
		Statewide	5,950	\$ 2.74	\$ 3.28

Reinforcement, Grade 60	LB	2	6,200	\$ 12.10	\$ 16.46
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Stainless Steel Reinforcement	LB	3	718	\$ 12.53	\$ 19.03
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Coated Reinforcement	LB	1	93,300	\$ 1.93	\$ 1.76
		3	176,416	\$ 2.55	\$ 2.60
		4	16,690	\$ 2.04	\$ 2.06
		Statewide	286,406	\$ 2.32	\$ 2.29

00538 Crack Injecting Existing Bridges

Inject and Seal Cracks	FT	2	1,060	\$ 55.77	\$ 53.22
		3	271	\$ 67.16	\$ 66.44
		Statewide	1,331	\$ 58.09	\$ 55.91

00539 Concrete and Crack Sealing

Concrete and Crack Sealer	SQFT	1	18,400	\$ 2.00	\$ 2.42
		3	16,808	\$ 1.13	\$ 1.53
		Statewide	35,208	\$ 1.58	\$ 2.00

00540 Concrete Bridges

Foundation Concrete, Class 3300	CUYD	1	3	\$ 1,600.00	\$ 2,300.00
		2	38	\$ 526.32	\$ 1,008.77
		4	33	\$ 821.21	\$ 829.91
		5	64	\$ 125.00	\$ 484.38
		Statewide	138	\$ 434.06	\$ 750.87

Foundation Concrete, Class 4000	CUYD	5	14	\$ 2,142.86	\$ 1,431.79
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Deck Concrete, Class HPC4500	CUYD	1	405	\$ 839.51	\$ 830.45
		2	346	\$ 1,082.95	\$ 1,053.61
		Statewide	751	\$ 951.67	\$ 933.26

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
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Deck Concrete, Class HPC4500 with Fibers

CUYD	3	648	\$	1,049.38	\$	1,512.35
	4	74	\$	1,528.38	\$	1,550.43
	Statewide	722	\$	1,098.47	\$	1,516.25

General Structural Concrete, Class 3300 ⁴

CUYD	1	3	\$	2,500.00	\$	2,500.00
	2	340	\$	1,041.76	\$	1,074.79
	3	4	\$	2,448.80	\$	1,924.50
	4	15	\$	1,686.00	\$	1,550.89
	Statewide	362	\$	1,096.09	\$	1,115.72

⁴ Unit price of \$5,842 is excluded (Region 3 C15108, Bridge 22631)

General Structural Concrete, Class 4000 ⁵

CUYD	1	269	\$	631.97	\$	685.25
	2	205	\$	864.56	\$	995.50
	4	27	\$	1,111.11	\$	1,129.63
	5	40	\$	935.00	\$	1,603.33
	Statewide	541	\$	766.42	\$	892.87

⁵ Unit price of \$6,250 is excluded (Region 2 C15145, Bridge 09460)

General Structural Concrete, Class 5000

CUYD	2	47	\$	1,702.13	\$	1,198.58
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Saw Cut Texturing

SQYD	1	1,048	\$	7.00	\$	5.02
	2	1,935	\$	5.43	\$	6.02
	3	2,839	\$	5.00	\$	4.92
	4	294	\$	15.00	\$	15.25
	5	651	\$	14.30	\$	18.35
	Statewide	6,767	\$	6.76	\$	6.99

PCC Repair Material

CUYD	1	241	\$	1,991.70	\$	2,781.05
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Extra for Curb Ramps on Structures

EA	2	4	\$	700.00	\$	1,788.33
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00542 Concrete Deck Repair

Repair Damaged Concrete ⁶	SQYD	3	691	\$	333.10	\$	268.97
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⁶ Unit Price of \$26,031 is excluded (Region 3 C15108, Bridge 07836 and 22631)

Architectural Treatment

SQYD	1	227	\$	177.44	\$	149.81
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00545 Reinforced Concrete Bridge End Panels

Reinforced Concrete Bridge End Panels

SQYD	1	692	\$	250.00	\$	241.37
	2	991	\$	308.43	\$	328.67
	3	566	\$	432.16	\$	476.24
	4	333	\$	345.00	\$	349.33
	5	696	\$	362.76	\$	373.39
	Statewide	3,278	\$	332.71	\$	347.32

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost	
00550	Precast Prestressed Concrete Members						
	BT 60 Precast Prestressed Girders						
	FT	2		1,452	\$ 250.00	\$ 239.00	
	Deck BT 60 Precast Prestressed Girders						
	FT	2		758	\$ 495.00	\$ 521.67	
	18" Precast Prestressed Slabs						
	FT	2		245	\$ 280.00	\$ 280.33	
	26" Precast Prestressed Slabs						
	FT	4		543	\$ 255.00	\$ 258.33	
	30" Precast Prestressed Slabs						
	FT	2		976	\$ 263.00	\$ 255.67	
	36" Precast Prestressed Box Beams						
	FT	1		1,486	\$ 310.00	\$ 331.67	
	Ultra High Performance Concrete						
	CUYD	2		17	\$ 7,131.47	\$ 7,181.08	
00552	Precast Reinforced Concrete Members						
	Precast Reinforced Concrete Members						
	CUYD	2		20	\$ 700.00	\$ 1,158.33	
00555	Post-tensioning						
	Post-tensioning	LB		1	26,400	\$ 6.44	\$ 5.18
00556	Multi-Layer Polymer Concrete Overlays						
	Class 2 Preparation	SQYD		2	65	\$ 215.00	\$ 219.50
				3	74	\$ 495.14	\$ 421.62
				5	393	\$ 163.47	\$ 122.98
				Statewide	532	\$ 215.90	\$ 176.31
	Furnish MPCO Material	SQYD		2	1,306	\$ 20.50	\$ 20.93
				3	5,899	\$ 17.85	\$ 18.23
				5	16,166	\$ 16.53	\$ 17.26
				Statewide	23,371	\$ 17.09	\$ 17.71
	Construct MPCO	SQYD		2	1,306	\$ 25.20	\$ 25.83
				3	5,899	\$ 15.81	\$ 18.66
				5	16,166	\$ 16.53	\$ 16.86
				Statewide	23,371	\$ 16.83	\$ 17.82

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
00560	Structural Steel Bridges					
	Structural Steel Maintenance	LB				
			1	25,812	\$ 12.67	\$ 13.91
			2	11,626	\$ 15.05	\$ 9.30
			Statewide	37,438	\$ 13.41	\$ 12.48
	Fastener Replacement	EA				
			1	10	\$ 800.00	\$ 383.33
			2	500	\$ 150.00	\$ 123.33
			3	4,000	\$ 150.00	\$ 157.49
			Statewide	4,510	\$ 151.44	\$ 154.20
00566	Carbon Fiber Reinforced Polymer (CFRP) Strengthening - NSM					
	CFRP Strengthening - Near Surface Mounted	FT				
			2	2,650	\$ 27.17	\$ 32.17
			3	10,486	\$ 29.28	\$ 23.35
			4	13,370	\$ 9.50	\$ 10.62
			Statewide	26,506	\$ 19.09	\$ 17.81
00570	Timber Structures					
	Timber and Lumber	MFBM				
			3	0.75	\$ 4,375.00	\$ 7,119.00
	Plastic Lumber	FBM				
			1	8,000	\$ 0.50	\$ 0.59
00581	Bridge Drainage Systems					
	Bridge Drains	EA				
			3	14	\$ 1,000.00	\$ 1,000.00
	Deck Drain Frames	EA				
			5	1	\$ 1,500.00	\$ 1,275.83
	Deck Drain Grates	EA				
			5	8	\$ 9,000.00	\$ 3,478.88
00582	Bridge Bearings					
	Bearing Devices	EA				
			1	14	\$ 3,000.00	\$ 2,905.00
			2	56	\$ 3,000.00	\$ 3,202.67
			Statewide	70	\$ 3,000.00	\$ 3,143.14
00583	Electrical Conduit in Structures					
	3/4" Electrical Conduit	FT				
			1	496	\$ 12.00	\$ 12.00
	2" Electrical Conduit	FT				
			2	271	\$ 18.00	\$ 18.00

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
00584	Elastomeric Concrete Nosing					
	Elastomeric Concrete Nosing	FT				
			2	74	\$ 100.00	\$ 130.54
			3	256	\$ 135.00	\$ 136.67
			Statewide	330	\$ 127.15	\$ 135.30
	Elastomeric Concrete Nosing Material for Repair	CUYD				
			1	4	\$ 1,500.00	\$ 2,725.00
	Repair Elastomeric Concrete Nosing	FT				
			1	457	\$ 173.33	\$ 212.19
			3	209	\$ 135.00	\$ 161.67
			Statewide	666	\$ 161.30	\$ 196.34
00585	Expansion Joints					
	Asphaltic Plug Seals	FT				
			2	488	\$ 147.54	\$ 151.26
			3	237	\$ 85.82	\$ 114.89
			5	280	\$ 137.14	\$ 136.07
			Statewide	1,005	\$ 130.09	\$ 138.45
	Asphaltic Plug Seal Material	CUYD				
			2	1.14	\$ 6,750.00	\$ 6,897.50
			3	1.25	\$ 6,740.00	\$ 6,813.33
			Statewide	2	\$ 6,744.77	\$ 6,853.48
	Poured Seals	FT				
			1	196	\$ 145.92	\$ 132.82
			2	1,819	\$ 33.48	\$ 23.59
			3	665	\$ 21.99	\$ 25.61
			Statewide	2,680	\$ 38.85	\$ 32.08
	Type "B" Compression Seals	FT				
			2	80	\$ 375.00	\$ 375.00
	Type "C" Compression Seals	FT				
			2	204	\$ 55.37	\$ 62.41
	Type "D" Compression Seals	FT				
			1	148	\$ 114.86	\$ 126.13
			3	274	\$ 96.72	\$ 90.75
			Statewide	422	\$ 103.08	\$ 103.16
	Type "E" Compression Seals	FT				
			1	148	\$ 114.86	\$ 130.63
			5	550	\$ 109.09	\$ 109.09
			Statewide	698	\$ 110.31	\$ 113.66
	Strip Seals	FT				
			1	848	\$ 990.57	\$ 1,232.67
	Double Strip Seals - Repair	FT				
			5	176	\$ 124.43	\$ 213.83

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted	Weighted
					Low Bid	Ave 3 or Less
					Unit Cost	Unit Cost
	Modular Bridge Joint Systems, 2 Seal					
	FT	1	236	\$	2,055.08	\$ 2,557.91
	Modular Bridge Joint Systems, 3 Seal					
	FT	1	80	\$	3,000.00	\$ 3,375.00
	Modular Bridge Joint Gland Replacements					
	FT	1	1,365	\$	106.23	\$ 114.26
00587	Bridge Rails					
	2 Tube Steel Rail	FT	2	340	\$	156.43 \$ 162.44
	3 Tube Steel Rail	FT	2	234	\$	170.65 \$ 229.50
	3 Tube Steel Rail, Modified	FT	3	643	\$	329.70 \$ 256.09
	3 Tube Steel Rail, Modified, Curb Mounted					
	FT	3	1,194	\$	296.90	\$ 326.42
	Type 2A Rail, Modified	FT	3	56	\$	53.57 \$ 104.17
	Concrete Bridge Rail	FT	1	13	\$	384.62 \$ 384.62
	Concrete Rail Repair	FT	5	20	\$	400.00 \$ 300.00
	Type "F" Concrete Rail	FT	1	686	\$	174.93 \$ 142.86
			5	281	\$	293.95 \$ 248.20
			Statewide	967	\$	209.52 \$ 173.47
	3'-6" Type "F" Concrete Rail, Modified					
	FT	3	378	\$	330.69	\$ 330.69
	Type "F" Concrete Rail, Retrofit					
	FT	4	1,574	\$	257.43	\$ 265.85
	Type "F" Concrete Rail, 42 Inch					
	FT	2	745	\$	154.36	\$ 158.84
			3	1,074	\$	186.22 \$ 212.60
			4	243	\$	226.34 \$ 227.71
			Statewide	2,062	\$	179.44 \$ 194.96
	Type "F" Concrete Rail, 42 Inch, Retrofit					
	FT	2	591	\$	338.41	\$ 276.37
	Thrie Beam Steel Rail, Retrofit					
	FT	2	230	\$	116.30	\$ 169.02
	Modified Type 2A Rail	FT	3	39	\$	76.92 \$ 295.21
	Concrete Rail Repair	FT	5	20	\$	400.00 \$ 300.00
	Aluminum Handrail	FT	1	410	\$	315.00 \$ 605.00
	Steel Lattice Rail	FT	1	18	\$	720.00 \$ 540.00
	End Block, Modified	FT	3	48	\$	425.00 \$ 456.00

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
00589	Utility Attachments on Structures					
	Sewer Pipe Utility Attachments	EA				
			1	42	\$ 760.00	\$ 820.00
	Gas Line Utility Attachments	EA				
			1	23	\$ 260.00	\$ 436.67
	Water Pipe Fastener Replacement	EA				
			3	540	\$ 120.00	\$ 79.63
	Anchor Rod Replacement	EA				
			3	54	\$ 600.00	\$ 488.37
	Neoprene Rubber Pad	EA				
			3	54	\$ 320.00	\$ 133.00
	Pipe Repair at Saddles	EA				
			3	27	\$ 1,200.00	\$ 1,741.58
00590	Polymer Membrane					
	Polymer Membrane	SQFT				
			2	98,502	\$ 4.93	\$ 5.01
			3	4,792	\$ 5.00	\$ 5.05
			4	18,935	\$ 5.91	\$ 5.41
			Statewide	122,229	\$ 5.08	\$ 5.07
	Class 2 Preparation	SQYD				
			2	1,072	\$ 206.53	\$ 209.60
	Class 2 Preparation ⁷	SQFT				
			2	381	\$ 91.00	\$ 93.33
			3	72	\$ 109.00	\$ 119.67
			Statewide	453	\$ 93.86	\$ 97.52
⁷ Unit Price being excluded from 3 year average, due to different unit of measurement						
00591	Warranted Waterproofing Membrane					
	Warranted Spray Waterproofing Membrane	SQFT				
			3	4,996	\$ 9.65	\$ 9.33
			4	1,400	\$ 12.19	\$ 13.15
			Statewide	6,396	\$ 10.21	\$ 10.16
00594	Preparing and Coating Metal Structures					
	Pack Rust Removal	FT				
			2	1,050	\$ 100.00	\$ 64.48
			3	6,000	\$ 5.00	\$ 40.00
			Statewide	7,050	\$ 19.15	\$ 43.65

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
00595	Reinforced Concrete Box Culverts					
	Precast Reinforced Concrete Box Culverts - CUFT					
	CUFT	2		3,168	\$ 36.11	\$ 30.58
	Precast Reinforced Concrete Box Culverts - FT					
	FT	2		88	\$ 1,300.00	\$ 1,100.72
	Precast Split Reinforced Concrete Box Culverts - CUFT					
	CUFT	2		23,700	\$ 18.35	\$ 21.87
		3		12,973	\$ 27.13	\$ 31.34
		4		8,250	\$ 27.33	\$ 34.49
		Statewide		44,923	\$ 22.53	\$ 26.92
	Precast Split Reinforced Concrete Box Culverts - FT					
	FT	2		100	\$ 300.00	\$ 2,400.00
		3		129	\$ 2,728.47	\$ 3,151.29
		4		55	\$ 4,098.82	\$ 5,173.27
		Statewide		284	\$ 2,138.76	\$ 3,278.33
	Wingwalls and Aprons	CUYD				
		2		100	\$ 1,350.00	\$ 1,033.33
		3		111	\$ 1,125.33	\$ 1,417.15
		4		52	\$ 1,242.46	\$ 1,619.28
		Statewide		263	\$ 1,233.91	\$ 1,311.18
0596A	Mechanically Stabilized Earth (MSE) Retaining Walls					
	Retaining Wall, MSE	SQFT				
		1		5,227	\$ 80.93	\$ 66.20
		2		4,900	\$ 74.49	\$ 87.76
		Statewide		10,127	\$ 77.81	\$ 76.63
	Architectural Treatment ⁸	SQYD				
		1		580	\$ 16.00	\$ 60.25
⁸ Unit price of \$500 is excluded (Region 2 C15159, Bridge 23326 and 23327)						
0596C	Cast-In-Place Concrete Retaining Walls					
	Retaining Wall, Cast-in-place Concrete Semi-Gravity Cantilever					
	SQFT	1		695	\$ 17.27	\$ 17.27
		3		6,380	\$ 77.39	\$ 108.09
		Statewide		7,075	\$ 71.48	\$ 99.17
0596B	Prefabricated Modular Retaining Walls					
	Retaining Wall, Prefabricated Modular Gravity					
	SQFT	2		2,275	\$ 87.14	\$ 77.40
	Retaining Wall, Agency-Furnished Prefabricated Modular Gravity					
	SQFT	3		3,590	\$ 28.13	\$ 29.39

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
0596D	<i>Soldier Pile Retaining Walls</i>					
	Soldier Pile Retaining Wall	SQFT	2	1,456	\$ 135.65	\$ 181.43
	Retaining Wall, Soldier Pile Tieback	SQFT	3	2,367	\$ 205.00	\$ 189.00
	Permanent Ground Anchor	EA	3	13	\$ 2,302.00	\$ 4,312.33
	Performance Test	EA	3	3	\$ 1,000.00	\$ 1,516.67
	Steel Plate Facing	EA	3	12	\$ 12,000.00	\$ 10,833.33
0596E	<i>Hollow Bar Anchor</i>					
	Hollow Bar Anchor	EA	3	2	\$ 10,000.00	\$ 8,516.67
00597	<i>Sound Walls</i>					
	Sound Walls	SQFT	1	4,530	\$ 36.00	\$ 40.83
			2	26,000	\$ 25.25	\$ 27.42
			Statewide	30,530	\$ 26.85	\$ 29.41
	Sound Wall with Retaining Wall	SQFT	2	1,185	\$ 55.00	\$ 67.67
	Sound Walls, Deep Foundation	SQFT	2	9,970	\$ 36.50	\$ 38.33
	Sound Wall, Metal, Bridge	SQFT	2	5,679	\$ 24.08	\$ 24.17
00598	<i>Soil Nail Walls</i>					
	Retaining Wall, Soil Nail	SQFT	1	1,220	\$ 258.20	\$ 258.20
	Verification Test Nails	EA	1	2	\$ 4,000.00	\$ 4,000.00
	Proof Test Nails	EA	1	9	\$ 1,000.00	\$ 1,000.00
00599	<i>Concrete Slope Paving</i>					
	Concrete Slope Paving	SQFT	1	9,149	\$ 16.32	\$ 20.89
	Slope Paving Curbs	FT	1	319	\$ 65.31	\$ 67.56
00744	<i>Asphalt Concrete Pavement</i>					
	Level 3, 1/2 Inch ACP Mixture	TON	4	153	\$ 554.91	\$ 447.89
00759	<i>Miscellaneous Portland Cement Concrete Structures</i>					
	Extra for Curb Ramps on Structures	EA	2	2	\$ 1,600.00	\$ 1,550.00

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
00810	Metal Guardrail					
	Guardrail Transition	EA		1	\$ 3,500.00	\$ 3,550.00
				2	\$ 2,150.00	\$ 2,271.21
				3	\$ 2,812.96	\$ 3,130.68
				4	\$ 2,277.78	\$ 2,844.44
				5	\$ 1,925.00	\$ 1,950.00
				Statewide	\$ 2,505.25	\$ 2,823.60
00842	Facility Identification Markers					
	Culvert Drainage Markers, Type 2	EA		2	\$ 130.00	\$ 144.00
				4	\$ 200.00	\$ 126.00
				Statewide	\$ 165.00	\$ 135.00
	Bridge Identification Markers	EA		2	\$ 157.14	\$ 164.38
				3	\$ 147.50	\$ 135.42
				4	\$ 150.00	\$ 135.00
				Statewide	\$ 153.33	\$ 152.28
00920	Sign Support Footings					
	Sign Support Footings	CUYD		1	\$ 1,067.62	\$ 1,253.14
				2	\$ 945.95	\$ 1,036.04
				Statewide	\$ 1,042.26	\$ 1,207.89
	36 Inch Dia. Sign Support Drill Shaft Foundation	FT		2	\$ 615.00	\$ 988.33
	60 Inch Dia. Sign Support Drill Shaft Foundation	FT		1	\$ 1,705.29	\$ 1,830.43
				2	\$ 1,081.25	\$ 1,353.13
				5	\$ 1,686.81	\$ 2,500.14
				Statewide	\$ 1,670.57	\$ 1,954.95
00930	Major Sign Supports					
	Truss Sign Bridge	LB		1	\$ 5.37	\$ 5.50
				2	\$ 5.41	\$ 5.30
				Statewide	\$ 5.38	\$ 5.44
	Truss Sign Bridge, Agency Furnished	LB		1	\$ 0.59	\$ 0.80
	Monotube Sign Bridge	LB		1	\$ 7.08	\$ 6.34
				2	\$ 5.24	\$ 5.04
				Statewide	\$ 6.27	\$ 5.77
	Monotube Sign Bridge, Agency Furnished	LB		1	\$ 0.57	\$ 1.05

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
Monotube Cantilever Sign Structures						
		LB	1	40,570	\$ 4.99	\$ 5.41
			2	23,308	\$ 3.22	\$ 3.22
			5	189,105	\$ 7.24	\$ 7.53
			Statewide	252,983	\$ 6.51	\$ 6.79
Monotube Cantilever Sign Structures, Agency Furnished						
		LB	1	56,900	\$ 0.32	\$ 1.42
Bridge Structure Mounts						
		LB	1	77,680	\$ 7.94	\$ 7.64
			2	1,500	\$ 9.28	\$ 9.54
			Statewide	79,180	\$ 7.97	\$ 7.68
Vertical Sign Mounts on Existing Structures						
		LB	1	18,400	\$ 12.45	\$ 12.14
01050 Fences						
CL-4 Chain Link Fence						
		FT	1	490	\$ 41.00	\$ 29.00
Type CL-4R Modified Chain Link Fence						
		FT	2	151	\$ 100.00	\$ 100.00
Modified CL-4R Chain Link Fence w/Black Vinyl Clad Fabric						
		FT	3	530	\$ 92.79	\$ 93.13
2.5 Foot x 48 Inch Chain Link Fence Gates						
		EA	2	2	\$ 800.00	\$ 866.67
6 Foot Type C Protective Fence						
		FT	2	420	\$ 110.00	\$ 110.00
			3	256	\$ 330.00	\$ 360.00
			Statewide	676	\$ 193.31	\$ 204.67
8 Foot Type B Protective Fence						
		FT	1	135	\$ 200.00	\$ 166.67
8 Foot Type C Protective Fence						
		FT	2	203	\$ 227.00	\$ 234.67
8 Foot x 30 Inch Bridge Protective Fence Gate						
		EA	1	1	\$ 4,500.00	\$ 4,500.00
8 Foot Type Ornamental Protective Fence						
		FT	4	156	\$ 390.00	\$ 374.33
7 Foot Type C Modified Protective Fence						
		FT	4	520	\$ 82.00	\$ 116.62
Removing and Rebuilding Fence						
		FT	1	840	\$ 0.01	\$ 55.00
Graffiti Deterrent Screening						
		SQFT	1	1,700	\$ 16.00	\$ 20.66

Bid Item Summary Federal Fiscal Year 2019

Section	Item Description	Unit	Region	Quantity	Weighted Low Bid Unit Cost	Weighted Ave 3 or Less Unit Cost
01220	Repair Damaged Reinforcing Bars					
	Repair Damaged Reinforcing Bars	EA				
			2	500	\$ 450.00	\$ 305.00
			3	54	\$ 835.00	\$ 690.65
			5	10	\$ 1,000.00	\$ 613.33
			Statewide	564	\$ 496.61	\$ 347.39
01235	Remove and Replace Damaged Concrete					
	Locate Damaged Concrete	SQFT				
			3	17,380	\$ 19.10	\$ 11.71
			5	2,500	\$ 4.00	\$ 10.00
			Statewide	19,880	\$ 17.20	\$ 11.49
	Repair Damaged Concrete	SQYD				
			2	351	\$ 2,274.79	\$ 2,145.82
			3	122	\$ 1,863.52	\$ 1,783.81
			5	10	\$ 1,000.00	\$ 1,896.67
			Statewide	483	\$ 2,144.51	\$ 2,049.22
	Mortar Build-up On Shallow Rebar	SQYD				
			2	200	\$ 2,402.34	\$ 1,860.78
			3	56	\$ 1,050.00	\$ 1,425.00
			5	2	\$ 2,000.00	\$ 2,066.67
			Statewide	258	\$ 2,105.85	\$ 1,767.32
	Resin Buildup on Shallow Rebar	SQYD				
			5	2	\$ 1,000.00	\$ 1,600.00
	Galvanic Zinc Anodes	EA				
			3	50	\$ 65.00	\$ 70.00
	Install Galvanic Zinc Anodes	EA				
			2	700	\$ 148.00	\$ 83.67
	Hand Patching	EA				
			2	1,000	\$ 70.00	\$ 92.67
	Retrofit Repair Mortar	CUYD				
			2	24	\$ 11,870.00	\$ 10,897.00
01260	Apply Zinc Anodes					
	Install Zinc Anodes	EA				
			3	53	\$ 72.00	\$ 98.50
			5	10	\$ 1,000.00	\$ 398.33
			Statewide	63	\$ 219.30	\$ 146.09
01262	Architectural Finishes on Concrete					
	Prepare, Coat, and Seal Concrete Structures	SQFT				
			3	1,020	\$ 15.69	\$ 11.76

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
00250 Temporary Detour Structure												
Temporary Detour Structure												
	SQFT				5,322	\$ 52.61	\$ 20.98	5,280	\$ 71.02	\$ 126.94	10,602	\$ 61.78
00253 Temporary Work Access and Containment												
Temporary Work Access and Containment												
	SQFT							55,889	\$ 28.02	\$ 35.83	55,889	\$ 28.02
00390 Riprap Protection												
Loose Riprap, Class 100												
	CUYD	266	\$ 74.25	\$ 94.41	247	\$ 64.79	\$ 82.04	410	\$ 63.66	\$ 77.22	923	\$ 67.02
Loose Riprap, Class 200												
	CUYD	467	\$ 45.36	\$ 68.65	315	\$ 75.15	\$ 76.07	2,205	\$ 62.66	\$ 59.95	2,987	\$ 61.27
Loose Riprap, Class 700												
	CUYD	1,980	\$ 50.04	\$ 71.46	842	\$ 83.77	\$ 77.29				2,822	\$ 60.10
Loose Riprap, Class 2000												
	CUYD				6,977	\$ 42.60	\$ 75.92	2,550	\$ 105.00	\$ 70.67	9,527	\$ 59.30
00501 Bridge Removal												
Bridge Removal Work												
	SQFT	33,071	\$ 37.37	\$ 36.87	146,030	\$ 32.55	\$ 26.48	59,649	\$ 21.35	\$ 25.40	238,750	\$ 30.42
00503 Bridge Cold Plane Pavement Removal												
Bridge Deck Cold Plane Pavement Removal, 0-2 Inches Deep												
	SQYD	2,250	\$ 16.33	\$ 15.00	9,355	\$ 44.66	\$ 35.28	11,816	\$ 20.40	\$ 20.69	23,421	\$ 29.70
Bridge Deck Cold Plane Pavement Removal, 2-4 Inches Deep												
	SQYD	33,473	\$ 12.97	\$ 14.21	9,273	\$ 19.71	\$ 18.29	11,911	\$ 4.83	\$ 8.28	54,657	\$ 12.34
Bridge End Panel Cold Plane Pavement Removal, 0-2 Inches Deep												
	SQYD	1,499	\$ 13.07	\$ 11.80	4,925	\$ 12.75	\$ 20.51	640	\$ 40.00	\$ 27.69	7,064	\$ 15.29
Bridge End Panel Cold Plane Pavement Removal, 2-4 Inches Deep												
	SQYD	5,298	\$ 10.91	\$ 13.84	1,355	\$ 12.56	\$ 19.45				6,653	\$ 11.25

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
00510 Structural Excavation and Backfill												
Shoring & Cribbing-Cofferdam												
	SQYD	4,734	\$ 217.67	\$ 245.34	2,060	\$ 689.93	\$ 836.95	1,215	\$ 306.34	\$ 281.75	8,009	\$ 352.60
Structure Excavation												
	CUYD	29,397	\$ 27.10	\$ 30.00	43,304	\$ 30.14	\$ 33.66	8,969	\$ 42.49	\$ 33.58	81,670	\$ 30.40
Granular Wall Backfill												
	CUYD	1,875	\$ 89.41	\$ 96.06	954	\$ 73.78	\$ 102.49	433	\$ 103.38	\$ 130.16	3,262	\$ 86.69
Granular Structure Backfill												
	CUYD	14,581	\$ 35.73	\$ 53.13	9,113	\$ 69.75	\$ 68.49	2,304	\$ 123.70	\$ 93.42	25,998	\$ 55.45
00512 Drilled Shafts												
Furnish Drilling Equipment												
	LS	2	\$55,112.50	\$40,777.00	5	\$ 80,600.00	\$ 79,423	3	\$ 74,028	\$ 81,398	10	\$ 73,531.00
Drilled Shaft Concrete												
	CUYD	201	\$ 457.71	\$ 675.84	419	\$ 403.90	\$ 531.78	255	\$ 501.31	\$ 406.30	875	\$ 444.65
Drilled Shaft Reinforcement												
	LB	54,400	\$ 1.14	\$ 1.06	53,000	\$ 1.45	\$ 1.60	14,175	\$ 1.62	\$ 2.30	121,575	\$ 1.33
CSL Test Access Tubes												
	FT	2,900	\$ 7.91	\$ 7.73	2,754	\$ 10.50	\$ 10.52	600	\$ 12.00	\$ 12.67	6,254	\$ 9.44
CSL Test												
	EA	26	\$ 484.62	\$ 901.54	22	\$ 1,063.64	\$ 931.66	2	\$ 2,300.00	\$ 2,266.67	50	\$ 812.00
Drilled Shaft Excavation, 36" Diameter												
	FT	675	\$ 400.00	\$ 355.32							675	\$ 400.00
Drilled Shaft Excavation, 48" Diameter												
	FT	50	\$ 250.00	\$ 598.33	311	\$ 392.00	\$ 365.67				361	\$ 372.33
Drilled Shaft Excavation, 60" Diameter												
	FT				58	\$ 145.00	\$ 986.67				58	\$ 145.00

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
Drilled Shaft Excavation, 72" Diameter												
	FT							100	\$ 800.00	\$ 1,100.00	100	\$ 800.00
00520 Driven Piles												
Furnish Pile Driving Equipment												
	LS	8	\$20,950.00	\$21,084.46	13	\$ 31,933.85	\$ 38,282	5	\$ 22,400	\$ 31,000	26	\$ 26,720.77
Furnish HP 12 x 53 Steel Piles												
	FT	187	\$ 28.00	\$ 29.67							187	\$ 28.00
Furnish HP 12 x 74 Steel Piles												
	FT	927	\$ 43.62	\$ 41.35							927	\$ 43.62
Furnish HP 14 x 89 Steel Piles												
	FT	2,116	\$ 42.09	\$ 49.05				540	\$ 60.00	\$ 50.67	2,656	\$ 45.73
Furnish HP 14 x 117 Steel Piles												
	FT	598	\$ 60.61	\$ 65.16	810	\$ 100.00	\$ 70.25	704	\$ 69.50	\$ 71.17	2,112	\$ 78.68
Furnish PP 12-3/4 x 0.5 Steel Piles												
	FT	220	\$ 42.00	\$ 40.23							220	\$ 42.00
Furnish PP 16 x 0.375 Steel Piles												
	FT							900	\$ 56.00	\$ 56.67	900	\$ 56.00
Furnish PP 16 x 0.5 Steel Piles												
	FT	1,040	\$ 51.03	\$ 54.65	2,380	\$ 58.12	\$ 55.44	3,361	\$ 63.20	\$ 64.25	6,781	\$ 59.55
Furnish PP 24 x 0.5 Steel Piles												
	FT				10,749	\$ 101.60	\$ 107.59				10,749	\$ 101.60
Drive HP 12 x 74 Steel Piles												
	EA	24	\$ 825.00	\$ 1,550.33							24	\$ 825.00
Drive HP 14 x 89 Steel Piles												
	EA	28	\$ 1,114.29	\$ 1,121.00				18	\$ 750.00	\$ 983.33	46	\$ 971.74

Bid Item Summary Federal Fiscal Year 2017-2019

		17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
Drive HP 14 x 117 Steel Piles												
	EA	14	\$ 775.00	\$ 871.43							14	\$ 775.00
Drive PP 12-3/4 x 0.5 Steel Piles												
	EA	4	\$ 2,500.00	\$ 2,133.33							4	\$ 2,500.00
Drive PP 16 x 0.375 Steel Piles												
	EA							18	\$ 1,300.00	\$ 1,321.67	18	\$ 1,300.00
Drive PP 16 x 0.5 Steel Piles												
	EA	30	\$ 1,000.00	\$ 1,182.22	50	\$ 2,047.60	\$ 1,783.87	66	\$ 1,872.73	\$ 1,187.37	146	\$ 1,753.29
Drive PP 24 x 0.5 Steel Piles												
	EA				187	\$ 1,461.77	\$ 1,853.69				187	\$ 1,461.77
Furnish Preboring Equipment												
	LS	1	\$ 28,000.00	\$ 22,957							1	\$ 28,000.00
Preboring Piles												
	FT				1,010	\$ 208.36	\$ 187.41	788	\$ 106.03	\$ 106.59	1,798	\$ 163.51
Pile Load Test (Dynamic)												
	EA	4	\$ 3,000.00	\$ 2,933.33	3	\$ 4,897.40	\$ 3,776.91	2	\$ 4,000.00	\$ 2,508.33	9	\$ 3,854.69
Reinforced Pile Tips												
	EA	80	\$ 175.40	\$ 205.13	58	\$ 442.97	\$ 420.41	18	\$ 150.00	\$ 171.67	156	\$ 271.95
HP 12 x 74 Steel Pile Splices												
	EA	8	\$ 125.75	\$ 57.67							8	\$ 125.75
HP 14 x 89 Steel Pile Splices												
	EA	20	\$ 25.80	\$ 123.60				2	\$ 1.00	\$ 200.33	22	\$ 23.55
HP 14 x 117 Steel Pile Splices												
	EA	4	\$ 379.00	\$ 338.17	1	\$ 400.00	\$ 133.34				5	\$ 383.20
PP 12-3/4 X 0.5 Steel Pile Splices												
	EA	4	\$ 345.00	\$ 147.33							4	\$ 345.00

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
PP 16 X 0.375 Steel Pile Splices												
	EA							2	\$ 1,000.00	\$ 1,016.67	2	\$ 1,000.00
PP 16 X 0.5 Steel Pile Splices												
	EA	5	\$ 0.01	\$ 0.01	26	\$ 184.62	\$ 61.70				31	\$ 154.84
PP 24 X 0.5 Steel Pile Splices												
	EA				44	\$ 589.88	\$ 638.60				44	\$ 589.88

00530 Steel Reinforcement for Concrete

Reinforcement

LB	464,127	\$ 1.72	\$ 1.75	278,490	\$ 2.48	\$ 2.24	322,788	\$ 1.51	\$ 2.05	1,065,405	\$ 1.86
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Reinforcement, Grade 60

LB				200,328	\$ 3.60	\$ 3.62	6,200	\$ 12.10	\$ 16.46	206,528	\$ 3.85
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Reinforcement, Grade 80

LB				106,559	\$ 1.50	\$ 1.89				106,559	\$ 1.50
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Coated Reinforcement

LB	124,806	\$ 1.33	\$ 1.19	85,385	\$ 1.61	\$ 1.80	286,406	\$ 2.32	\$ 2.29	496,597	\$ 1.95
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Coated Reinforcement, Grade 60

LB				9,500	\$ 1.47	\$ 1.67				9,500	\$ 1.47
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Coated Reinforcement, Grade 80

LB				192,224	\$ 1.82	\$ 1.79				192,224	\$ 1.82
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Stainless Steel Reinforcement

LB				69,544	\$ 4.15	\$ 4.84	718	\$ 12.53	\$ 19.03	70,262	\$ 4.23
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00538 Crack Injecting Existing Bridges

Inject and Seal Cracks

FT	13,346	\$ 37.88	\$ 34.45	8,320	\$ 1.36	\$ 1.51	1,331	\$ 58.09	\$ 55.91	22,997	\$ 25.84
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Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
00539 Concrete and Crack Sealing												
	Concrete and Crack Sealer											
	SQFT	28,500	\$ 1.00	\$ 1.00	195,889	\$ 1.61	\$ 1.72	35,208	\$ 1.58	\$ 2.00	259,597	\$ 1.54
00540 Concrete Bridges												
	Foundation Concrete, Class 3300											
	CUYD	221	\$ 635.00	\$ 826.90	1,140	\$ 743.83	\$ 676.39	138	\$ 434.06	\$ 750.87	1,499	\$ 699.26
	Foundation Concrete, Class 4000											
	CUYD	574	\$ 414.64	\$ 458.16				14	\$ 2,142.86	\$ 1,431.79	588	\$ 455.79
	Deck Concrete, Class HPC 4000											
	CUYD	57	\$ 877.19	\$ 877.19	1,023	\$ 1,588.95	\$ 1,716.52				1,080	\$ 1,551.39
	Deck Concrete, Class HPC 4000 w/Fiber Reinforcement											
	CUYD	681	\$ 937.87	\$ 1,029.11	143	\$ 1,275.35	\$ 1,329.02				824	\$ 996.44
	Deck Concrete, Class HPC 4500											
	CUYD				307	\$ 641.53	\$ 713.44	751	\$ 951.67	\$ 933.26	1,058	\$ 861.68
	General Structural Concrete, Class 3300											
	CUYD	581	\$ 644.01	\$ 672.94	603	\$ 1,806.09	\$ 1,926.24	362	\$ 1,096.09	\$ 1,115.72	1,546	\$ 1,202.93
	General Structural Concrete, Class 4000											
	CUYD	815	\$ 559.02	\$ 665.86	552	\$ 1,098.98	\$ 1,179.43	541	\$ 766.42	\$ 892.87	1,908	\$ 774.04
	General Structural Concrete, Class HPC 4000											
	CUYD				678	\$ 873.25	\$ 1,512.13				678	\$ 873.25
	Saw Cut Texturing											
	SQYD	5,526	\$ 5.33	\$ 5.53	7,483	\$ 8.08	\$ 7.26	6,767	\$ 6.76	\$ 6.99	19,776	\$ 6.86

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
00542 Concrete Deck Repair												
Concrete Deck Repair												
	SQFT				180	\$ 202.36	\$ 423.71				180	\$ 202.36
Repair Damaged Concrete												
	SQYD				116	\$ 2,084.31	\$ 1,601.23	691	\$ 333.10	\$ 268.97	807	\$ 584.82
00545 Reinforced Concrete Bridge End Panels												
Reinforced Concrete Bridge End Panels												
	SQYD	3,165	\$ 273.68	\$ 295.63	3,476	\$ 442.29	\$ 426.19	3,278	\$ 332.71	\$ 347.32	9,919	\$ 352.28
00550 Precast Prestressed Concrete Members												
BT 60 Precast Prestressed Girders												
	FT							1,452	\$ 250.00	\$ 239.00	1,452	\$ 250.00
Deck BT 60 Precast Prestressed Girders												
	FT	811	\$ 248.50	\$ 275.55				758	\$ 495.00	\$ 521.67	1,569	\$ 367.59
BT 72 Precast Prestressed Girders												
	FT	2,471	\$ 245.66	\$ 270.55	1997.5	\$ 250.00	\$ 335.00				4,469	\$ 247.60
15 Inch Precast Prestressed Slabs												
	FT				1,816	\$ 227.58	\$ 221.32				1,816	\$ 227.58
18 Inch Precast Prestressed Slabs												
	FT	177	\$ 199.97	\$ 213.99	527	\$ 232.47	\$ 251.29	245	\$ 280.00	\$ 280.33	949	\$ 238.68
21 Inch Precast Prestressed Slabs												
	FT				403	\$ 257.84	\$ 290.76				403	\$ 257.84
26 Inch Precast Prestressed Slabs												
	FT	548	\$ 200.00	\$ 211.67	2,139	\$ 309.10	\$ 319.70	543	\$ 255.00	\$ 258.33	3,230	\$ 281.49
30 Inch Precast Prestressed Slabs												
	FT	1,541	\$ 231.36	\$ 240.53	2,739	\$ 255.13	\$ 262.84	976	\$ 263.00	\$ 255.67	5,256	\$ 249.62

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
33 Inch Precast Prestressed Box Beams												
	FT				1,193	\$ 300.00	\$ 350.00				1,193	\$ 300.00
36 Inch Precast Prestressed Box Beams												
	FT							1,486	\$ 310.00	\$ 331.67	1,486	\$ 310.00
00556 Multi-Layer Polymer Concrete Overlays												
Class 2 Preparation												
	SQYD	861	\$ 141.87	\$ 131.46	622	\$ 247.09	\$ 305.09	532	\$ 215.90	\$ 176.31	2,015	\$ 193.90
Furnish MPCO Material												
	SQYD	17,815	\$ 22.52	\$ 22.91	31,652	\$ 16.50	\$ 17.20	23,371	\$ 17.09	\$ 17.71	72,838	\$ 18.16
Construct MPCO												
	SQYD	17,842	\$ 23.98	\$ 24.90	31,652	\$ 19.67	\$ 16.54	23,371	\$ 16.83	\$ 17.82	72,865	\$ 19.81
00557 Premixed Polymer Concrete Pavement Overlays												
Class 2 Preparation												
	SQYD	567	\$ 154.36	\$ 154.87	947	\$ 603.95	\$ 468.29	1,578	\$ 26.06	\$ 101.35	3,092	\$ 226.58
Furnish Polyester Polymer Concrete												
	CUYD	1,335	\$ 2,584.94	\$ 2,569.45	962	\$ 2,390.83	\$ 2,372.39	1,581	\$ 2,421.95	\$ 2,481.08	3,878	\$ 2,470.34
Construct Polyester Polymer Concrete Overlay												
	SQYD	38,943	\$ 45.53	\$ 44.02	38,616	\$ 34.52	\$ 30.56	55,339	\$ 38.67	\$ 35.25	132,898	\$ 39.47
00559 Silica Fume and Latex Modified Concrete Overlays												
Class 2 Preparation												
	SQYD	1,924	\$ 0.81	\$ 95.08	4,992	\$ 190.26	\$ 212.72	2,259	\$ 23.10	\$ 92.20	9,175	\$ 109.38
Furnish Silica Fume Concrete												
	CUYD	513	\$ 28.08	\$ 78.00	332	\$ 306.14	\$ 369.90	286	\$ 274.83	\$ 300.32	1,131	\$ 172.10
Construct SFC Resurfacing												
	SQYD	5,274	\$ 47.91	\$ 57.50	3,769	\$ 45.97	\$ 61.73	3,707	\$ 51.95	\$ 63.78	12,750	\$ 48.51

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
Saw Cut Texturing												
	SQYD	5,568	\$ 4.63	\$ 4.83	11,411	\$ 4.54	\$ 3.84	3,374	\$ 4.57	\$ 5.90	20,353	\$ 4.57
00560 Structural Steel Bridges												
Steel Plate Girder												
	LB	499,000	\$ 1.52	\$ 1.78							499,000	\$ 1.52
Structural Steel Maintenance												
	LB	12,237	\$ 15.04	\$ 23.10	45,810	\$ 14.15	\$ 20.94	37,438	\$ 13.41	\$ 12.48	95,485	\$ 13.98
Fastener Replacement												
	EA	170	\$ 150.00	\$ 251.47	50	\$ 374.00	\$ 219.67	4,510	\$ 151.44	\$ 154.20	4,730	\$ 153.74
00566 Near Surface Mounted Stainless Steel Reinforcement System (NSM)												
CFRP Strengthening - Near Surface Mounted												
	FT				13,768	\$ 24.40	\$ 24.89	26,506	\$ 19.09	\$ 17.81	40,274	\$ 20.91
00570 Timber Structures												
Timber and Lumber												
	MFBM				35	\$ 5,395.09	\$ 3,707.46	0.75	\$ 4,375.00	\$ 7,119.00	36	\$ 5,373.69
00581 Bridge Drainage Systems												
Bridge Drains												
	EA				8	\$ 12,400.00	\$ 14,383.33	14	\$ 1,000.00	\$ 1,000.00	22	\$ 5,145.45
00582 Bridge Bearings												
Elastomeric Bearing Devices												
	EA				8	\$ 1,370.00	\$ 1,556.67				8	\$ 1,370.00
Bearing Devices												
	EA				22	\$ 5,226.82	\$ 3,280.91	70	\$ 3,000.00	\$ 3,143.14	92	\$ 3,532.50

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
00583 Electrical Conduit in Structures												
1 Inch Electrical Conduit												
	FT	1,560	\$ 6.00	\$ 8.00							1,560	\$ 6.00
1-1/2 inch Electrical Conduit												
	FT				520	\$ 4.65	\$ 12.55				520	\$ 4.65
2 Inch Electrical Conduit												
	FT				7,107	\$ 30.00	\$ 29.33	496	\$ 12.00	\$ 12.00	7,603	\$ 28.83
00584 Elastomeric Concrete Nosing												
Elastomeric Concrete Nosing												
	FT	2,809	\$ 110.58	\$ 109.94	1,405	\$ 174.17	\$ 197.30	330	\$ 127.15	\$ 135.30	4,544	\$ 131.44
Repair Elastomeric Concrete Nosing												
	FT				2,969	\$ 143.54	\$ 189.01	666	\$ 161.30	\$ 196.34	3,635	\$ 146.80
00585 Expansion Joints												
Asphaltic Plug Seals												
	FT	2,400	\$ 132.50	\$ 133.04	2,317	\$ 136.87	\$ 124.72	1,005	\$ 130.09	\$ 138.45	5,722	\$ 133.85
Asphaltic Plug Joint Material												
	CUYD	7	\$ 6,241.64	\$ 6,186.55	11	\$ 6,719.36	\$ 6,892.11	2.39	\$ 6,744.77	\$ 6,853.48	21	\$ 6,559.97
Pour Seals												
	FT	5,385	\$ 20.71	\$ 19.55	5,681	\$ 36.79	\$ 30.85	2,680	\$ 38.85	\$ 32.08	13,746	\$ 30.89
Type "B" Compression Joint Seals												
	FT	662	\$ 48.31	\$ 49.06	387	\$ 79.53	\$ 68.87	80	\$ 375.00	\$ 375.00	1,129	\$ 82.16
Type "C" Compression Joint Seals												
	FT	140	\$ 214.29	\$ 214.29	1,088	\$ 95.13	\$ 86.85	204	\$ 55.37	\$ 62.41	1,432	\$ 101.12
Type "D" Compression Joint Seals												
	FT	874	\$ 75.52	\$ 113.28	2,451	\$ 110.66	\$ 103.62	422	\$ 103.08	\$ 103.16	3,747	\$ 101.61

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
Type "E" Compression Joint Seals												
	FT	348	\$ 80.46	\$ 128.59	1,345	\$ 150.28	\$ 143.54	698	\$ 110.31	\$ 113.66	2,391	\$ 128.45
Strip Seals												
	FT	212	\$ 161.56	\$ 163.25	802	\$ 811.55	\$ 874.50	848	\$ 990.57	\$ 1,232.67	1,862	\$ 819.07
00587 Bridge Rails												
2 Tube Steel Rail												
	FT	951	\$ 109.77	\$ 154.63	192	\$ 171.88	\$ 183.16	340	\$ 156.43	\$ 162.44	1,483	\$ 128.51
2 Tube Steel Rail, Modified												
	FT				46	\$ 543.48	\$ 505.44				46	\$ 543.48
3 Tube Steel Rail												
	FT				414	\$ 168.20	\$ 191.29	234	\$ 170.65	\$ 229.50	648	\$ 169.08
Thrie Beam Steel Rail												
	FT	108	\$ 96.30	\$ 102.78							108	\$ 96.30
Thrie Beam Steel Rail, Retrofit												
	FT				75	\$ 133.33	\$ 177.78	230	\$ 116.30	\$ 169.02	305	\$ 120.49
Type "F" Concrete Rail												
	FT	1,617	\$ 119.74	\$ 137.57	12,112	\$ 177.86	\$ 187.90	967	\$ 209.52	\$ 173.47	14,696	\$ 173.55
Type "F" Concrete Rail, Retrofit												
	FT	384	\$ 260.42	\$ 265.63	11,170	\$ 241.27	\$ 239.78	1,574	\$ 257.43	\$ 265.85	13,128	\$ 243.77
Pedestrian Rail												
	FT	185	\$ 72.97	\$ 80.31	728	\$ 188.66	\$ 193.49				913	\$ 165.21
Pedestrian Rail, Modified												
	FT				19	\$ 303.95	\$ 396.26				19	\$ 303.95
Ornamental Concrete Rail												
	FT				618	\$ 309.44	\$ 300.02				618	\$ 309.44

Bid Item Summary Federal Fiscal Year 2017-2019

											17'-19'	17'-19' Ave
Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	Total Qty	Low Bid
00590 Polymer Membrane												
Class 2 Preparation												
	SQYD	412	\$ 250.00	\$ 143.81				1,072	\$ 206.53	\$ 209.60	1,484	\$ 218.60
Polymer Membrane												
	SQFT	216,997	\$ 4.88	\$ 4.84	36,022	\$ 6.71	\$ 6.70	122,229	\$ 5.08	\$ 5.07	375,248	\$ 5.12
00591 Warranted Spray Waterproofing Membrane												
Warranted Spray Waterproofing Membrane												
	SQFT	44,154	\$ 13.46	\$ 12.38	21,779	\$ 12.80	\$ 13.10	6,396	\$ 10.21	\$ 10.16	72,329	\$ 12.97
00592 Rolled Waterproofing Membrane												
Class 2 Preparation												
	SQFT				1102	\$ 83.74	\$ 122.66				1,102	\$ 83.74
Rolled Waterproofing Membrane												
	SQFT				60,737	\$ 3.50	\$ 3.83				60,737	\$ 3.50
00594 Preparing and Coating Steel Structures												
Pack Rust Removal												
	FT	1,575	\$ 34.00	\$ 67.94	500	\$ 80.00	\$ 66.67	7,050	\$ 19.15	\$ 43.65	9,125	\$ 25.05
00595 Reinforced Concrete Box Culverts												
Reinforced Concrete Box Culverts - Flow Volume												
	CUFT	13,878	\$ 29.21	\$ 29.11	6,720	\$ 31.09	\$ 28.15	3,168	\$ 36.11	\$ 30.58	23,766	\$ 30.66
Reinforced Concrete Box Culverts - FT												
	FT	248	\$ 1,632.99	\$ 1,627.07	70	\$ 2,984.54	\$ 2,642.87	88	\$ 1,300.00	\$ 1,100.72	406	\$ 1,793.84
Precast Split Reinforced Concrete Box Culverts - Flow Volume												
	CUFT				160,577	\$ 14.65	\$ 12.10	44,923	\$ 22.53	\$ 26.92	205,500	\$ 16.37
Precast Split Reinforced Concrete Box Culverts - FT												
	FT				847	\$ 2,777.67	\$ 2,957.15	284	\$ 2,138.76	\$ 3,278.33	1,131	\$ 2,617.19

Bid Item Summary Federal Fiscal Year 2017-2019

											17'-19'	17'-19' Ave
Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	Total Qty	Low Bid
Wingwalls and Aprons												
	CUYD	194	\$ 584.05	\$ 817.25	350	\$ 1,279.49	\$ 1,477.07	263	\$ 1,233.91	\$ 1,311.18	807	\$ 1,097.34
00596 Retaining Walls												
Retaining Wall, MSE Wall												
	SQFT	14,105	\$64.43	\$62.20	4,781	\$ 95.47	\$ 94.22	10,127	\$ 77.81	\$ 76.63	29,013	\$ 74.22
Retaining Wall, Prefabricated Modular												
	SQFT	7,638	\$ 56.29	\$ 59.81				2,275	\$ 87.14	\$ 77.40	9,913	\$ 63.37
Retaining Wall, Cast-In-Place Concrete Rigid Gravity												
	SQFT	500	\$ 114.40	\$ 131.39	2,344	\$ 115.02	\$ 101.16				2,844	\$ 114.91
Retaining Wall, CIP Conc. Semi-gravity Cantilever												
	SQFT	8,230	\$ 111.64	\$ 120.13	11,127	\$ 142.27	\$ 156.97	7,075	\$ 71.48	\$ 99.17	26,432	\$ 113.79
Retaining Wall, Soldier Pile												
	SQFT							2,367	\$ 205.00	\$ 189.00	2,367	\$ 205.00
Retaining Wall, Tieback Soldier Pile												
	SQFT							13	2302	4312.33	13	\$ 2,302.00
00597 Sound Walls												
Sound Wall - Precast Panels												
	SQFT	48,848	\$ 25.00	\$ 28.17				30,530	\$ 26.85	\$ 29.41	79,378	\$ 25.71
00599 Concrete Slope Paving												
Concrete Slope Paving												
	SQFT				3,593	\$ 14.13	\$ 16.73	9,149	\$ 16.32	\$ 20.89	12,742	\$ 15.70
00810 Metal Guardrail												
Guardrail Transition												
	EA	90	\$ 2,615.56	\$ 2,616.28	101	\$ 2,777.33	\$ 2,833.70	81	\$ 2,505.25	\$ 2,823.60	272	\$ 2,642.78

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
00842 Facility Identification Markers												
	Bridge Identification Markers											
	EA	23	\$ 150.87	\$ 204.30	32	\$ 233.12	\$ 193.43	24	\$ 153.33	\$ 152.28	79	\$ 184.94
00920 Sign Support Footings												
	Sign Support Footing											
	CUYD	63	\$ 1,396.83	\$ 1,396.83	151	\$ 1,162.79	\$ 691.03	355	\$ 1,042.26	\$ 1,207.89	569	\$ 1,113.46
00921 Sign Support Drilled Shaft Foundations												
	36 Inch Diameter Sign Support Drilled Shaft Foundation											
	FT				488	\$ 1,188.52	\$ 1,094.26	160	\$ 615.00	\$ 988.33	648	\$ 1,046.91
	66 Inch Diameter Sign Support Drilled Shaft Foundation											
	FT	140	\$ 1,923.88	\$ 2,541.29							140	\$ 1,923.88
	72 Inch Diameter Sign Support Drilled Shaft Foundation											
	FT				112	\$ 1,888.00	\$ 1,794.00				112	\$ 1,888.00
00930 Metal Sign Supports												
	Truss Sign Bridge											
	LB	84,000	\$ 4.38	\$ 4.54	163,500	\$ 4.95	\$ 4.85	287,900	\$ 5.38	\$ 5.44	535,400	\$ 5.09
	Monotube Sign Bridge											
	LB							56,600	\$ 6.27	\$ 5.77	56,600	\$ 6.27
	Monotube Cantilever Sign Structures											
	LB	206,476	\$ 5.08	\$ 5.32	109,000	\$ 5.07	\$ 5.16	252,983	\$ 6.51	\$ 6.79	568,459	\$ 5.71
	Bridge Structure Mounts											
	LB	10,261	\$ 15.56	\$ 15.51	18,085	\$ 6.14	\$ 6.70	79,180	\$ 7.97	\$ 7.68	107,526	\$ 8.39
	Vertical Sign Mounts on Existing Structure											
	LB	20,685	\$ 8.40	\$ 8.49	5,900	\$ 12.21	\$ 15.32	18,400	\$ 12.45	\$ 12.14	44,985	\$ 10.56

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	17'-19' Total Qty	17'-19' Ave Low Bid
01215 Locate and Remove Near Surface Metal												
Locate Near Surface Metal												
	SQFT				17,300	\$ 0.94	\$ 1.34				17,300	\$ 0.94
Remove Non Essential NSM												
	EA	4	\$ 40.00	\$ 100.00	5,805	\$ 26.55	\$ 21.41				5,809	\$ 26.56
01220 Repair Damaged Reinforcing Bars (Cathodic Protection)												
Repair Damaged Reinforcing Bars												
	EA	94	\$ 329.79	\$ 356.74	322	\$ 268.85	\$ 190.21	564	\$ 496.61	\$ 347.39	980	\$ 405.77
01235 Repair Damaged Concrete (Cathodic Protection)												
Locate Damaged Concrete												
	SQFT	78,258	\$ 1.23	\$ 0.90	49,900	\$ 0.43	\$ 0.71	19,880	\$ 17.20	\$ 11.40	148,038	\$ 3.10
Repair Damaged Concrete												
	SQYD	1,184	\$ 1,582.69	\$ 1,617.20	627	\$ 1,349.68	\$ 1,370.91	483	\$ 2,144.51	\$ 2,049.22	2,294	\$ 1,637.29
Concrete Buildup on Shallow Rebar												
	SQYD	31	\$ 1,383.87	\$ 1,422.04	72	\$ 737.71	\$ 1,293.88				103	\$ 932.19
Resin Buildup on Shallow Rebar												
	SQYD	3	\$ 1,000.00	\$ 1,173.67	35	\$ 840.00	\$ 1,104.43	2	\$ 1,000.00	\$ 1,600.00	40	\$ 860.00
01240 Install Reference Cells												
Install Reference Cells												
	EA				58	\$ 2,317.93	\$ 2,495.47				58	\$ 2,317.93
01245 Locate And Eliminate Electrical Discontinuities In Rebars												
Basic Continuity Check												
	SQFT				19,050	\$ 3.97	\$ 1.66				19,050	\$ 3.97
Additional Continuity Check												
	EA	50	\$ 75.00	\$ 75.00	1,130	\$ 21.52	\$ 25.79				1,180	\$ 23.79

Bid Item Summary Federal Fiscal Year 2017-2019

Section	Item	17' Qty	17' low	17' ave	18' Qty	18' low	18' ave	19' Qty	19' low	19' ave	Total Qty	17'-19' Ave	17'-19' Ave
Excavate for Continuity Welds													
	EA	50	\$ 125.00	\$ 125.00	580	\$ 36.90	\$ 47.05				630	\$	43.89
Establish Continuity													
	EA	90	\$ 100.00	\$ 100.00	630	\$ 91.43	\$ 76.83				720	\$	92.50
01250 Install Anode Terminal Plates													
Install Anode Terminal Plates													
	EA	134	\$ 225.07	\$ 240.92	134	\$ 225.07	\$ 240.92				268	\$	225.07
01255 Prepare Anode Surfaces													
Prepare Anode Surfaces													
	SQFT				17,320	\$ 1.42	\$ 3.21				17,320	\$	1.42
01260 Install Zinc Anodes													
Install Zinc Anodes													
	EA	148	\$ 34.29	\$ 35.48	17,300	\$ 12.89	\$ 12.59	63	\$ 219.30	\$ 146.09	17,511	\$	13.81

Bridge

Construction

Precast Prestressed Reinforced Concrete Slabs

Precast Prestressed Reinforced Concrete Deck Girder

Precast Prestressed Reinforced Concrete Girder

Precast Prestressed Reinforced Concrete Box Girder

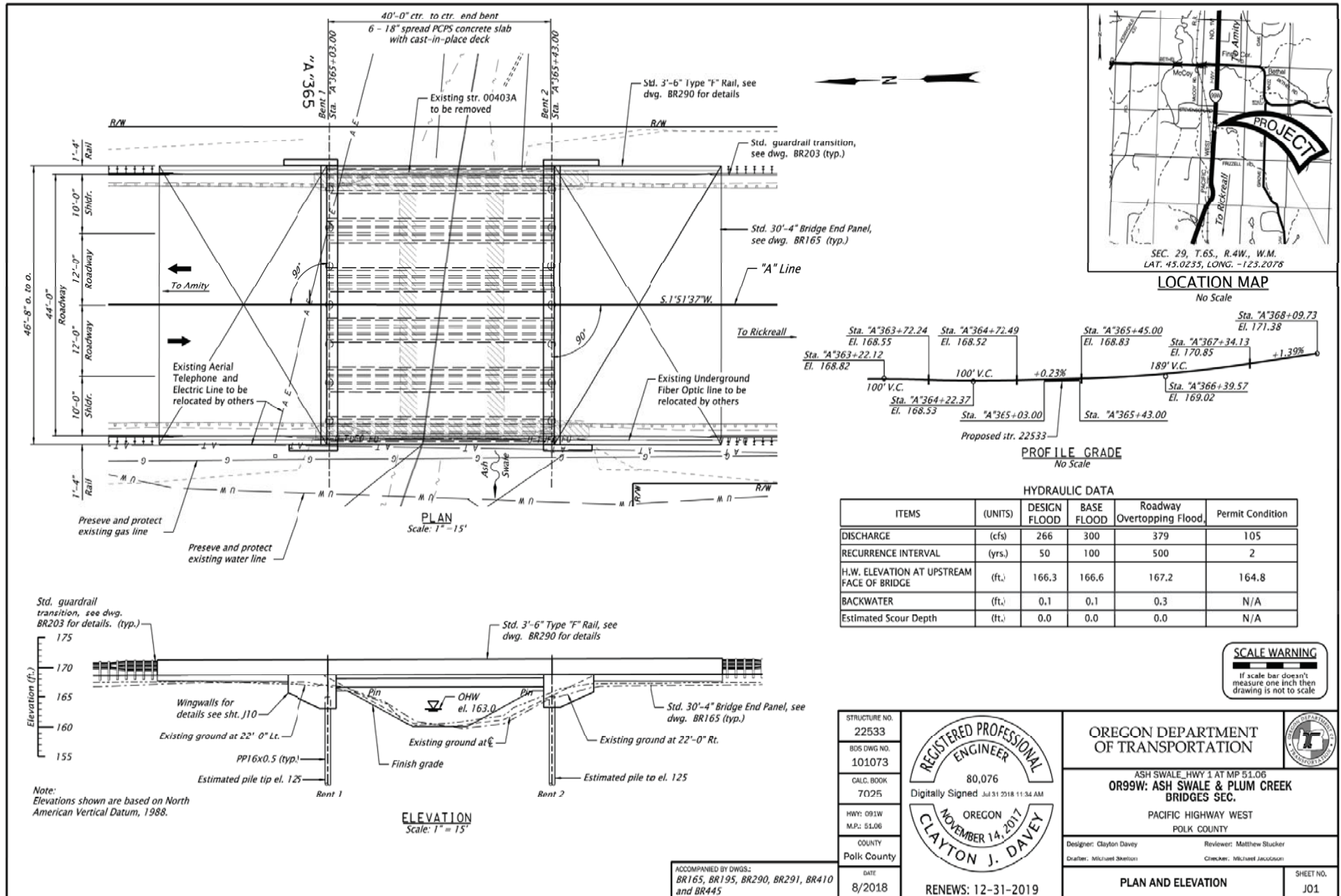
2019 BRIDGE COST DATA

PRECAST PRESTRESSED REINFORCED CONCRETE SLABS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Deck Area SQFT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>18 inch Slabs</u>										
22533	Ash Swale_Hwy 1W_MP 51.06	Polk	15095	6~18" Spread PCPS concrete slabs w/CIP deck, 40'-0" ctr-ctr end bents	101073	2,006.8	\$ 426,000	\$ 212.28	\$ 414,657	\$206.62
	<u>PE Design Cost By Category</u>			<u>*Overall Bridge, Roadway & Traffic Items %</u>						
	Bridge Design	\$	48,427	Bridge, Culvert Items	55.44					
	Environmental	\$	86,527	Roadway/Traffic, etc.	44.56					
	Traffic	\$	224,708	* Multiple structures on the same contract						
	Geo/Hydro	\$	68,875							
		\$	428,537							
				Subtotal		2,006.8	\$ 426,000	\$ 212.28	\$ 414,657	\$206.62
<u>26 inch Slabs</u>										
22757	Wildlife Pass_Hwy 4_MP180.10	Klamath	15138	9~26" PCPS slabs, 60'- 10" end-end bridge deck	102014	3,088.5	\$ 709,710	\$ 229.79	\$ 718,396	\$232.60
	<u>PE Design Cost By Category</u>			<u>Bridge, Roadway & Traffic Items %</u>						
	Bridge Design	\$	60,002	Bridge Items	10.63					
	Environmental	\$	201,384	Roadway/Traffic, etc.	89.37					
	Roadway & Traffic	\$	153,162							
	Geo/Hydro	\$	313,059							
		\$	727,607							
				Subtotal		3,088.5	\$ 709,710	\$ 229.79	\$ 718,396	\$232.60
<u>30 inch Slabs</u>										
22654	Farmer Creek Hwy 9	Tillamook	15152	12~PCPS 30" slabs with 5" CIP deck, 80'-6" ctr- ctr end bents	102710	4,133.3	\$ 704,235	\$ 170.38	\$ 732,187	\$177.15

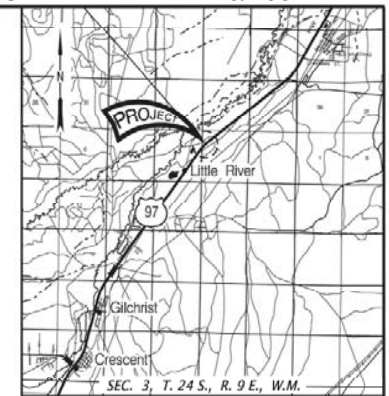
PRECAST PRESTRESSED REINFORCED CONCRETE SLABS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Deck Area SQFT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
	Bridge Design	\$	67,707	Bridge Items	36.51					
	Environmental	\$	113,371	Roadway/Traffic, etc.	63.49					
	Roadway & Traffic	\$	266,362							
	Geo/Hydro	\$	<u>144,516</u>							
		\$	591,957							
				Subtotal		4,133.3	\$ 704,235	\$ 170.38	\$ 732,187	\$177.15



BRIDGE NAME:			Ash swale_Hwy 1W_MP 51.06		BRIDGE NO:		22533		KEY NO:		18584		
SECTION NAME:			OR99W: ASH SWALE & PLUM CREEK BRIDGES SEC.		COUNTY:		Polk		CONTR #		15095		
PRIMARY PROJ:			Bridge Construction		BID DATE:		10/11/2018		FAP NO:		S091(079)		
STRUCT TYPE:			PS SLABS SL18		# BIDS RECVD:		7		AWARDED TO:		HP CIVIL INC		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Bridge Construction Area Unit Cost For Superstructure And Substructure													
2006.81		SF	Deck Area Unit Costs			235.85				229.92			
1892.00		SF	Roadway Area Unit Costs			250.16				243.55			
SUBTOTAL								426,000		414,700			
PERCENT MOBILIZATION						11.11		47,300		11.11		46,100	
TOTAL								473,300		460,800			
Bridge Construction Area Unit Cost For Superstructure Only													
2006.81		SF	Deck Area Unit Costs			97.87				93.63			
1892.00		SF	Roadway Area Unit Costs			103.81				99.31			
SUBTOTAL								176,800		169,100			
PERCENT MOBILIZATION						11.11		19,600		11.11		18,800	
TOTAL								196,400		187,900			
DETAILS													
Superstructure and Substructure													
120.00		CUYD	STRUCTURE EXCAVATION			33.33		4,000		52.22		6,267	
30.00		CUYD	GRANULAR STRUCTURE BACKFILL			216.67		6,500		294.45		8,833	
1.00		LS	FURNISH DRILLING EQUIPMENT			16,200.00		16,200		19,733.33		19,733	
1.00		LS	FURNISH PILE DRIVING EQUIPMENT			15,000.00		15,000		18,333.33		18,333	
700.00		FOOT	FURNISH PP 16 X 0.5 STEEL PILES			60.00		42,000		57.30		40,110	
14.00		EACH	DRIVE PP 16 X 0.5 STEEL PILES			1,400.00		19,600		1,016.67		14,233	
128.00		FOOT	PREBORING PILES			125.00		16,000		119.33		15,275	
2.00		EACH	PILE LOAD TEST (DYNAMIC)			4,000.00		8,000		2,508.33		5,017	
23,345.00		LB	REINFORCEMENT			1.29		30,001		1.34		31,333	
48.00		CUYD	DECK CONCRETE, CLASS HPC4500			1,100.00		52,800		950.00		45,600	
44.00		CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300			909.09		40,000		795.45		35,000	
527.00		SQYD	SAW CUT TEXTURING			5.55		2,925		5.77		3,039	
315.00		SQYD	REINFORCED CONCRETE BRIDGE END PANELS			235.00		74,025		236.67		74,550	
245.00		FOOT	18 INCH PRECAST PRESTRESSED SLABS			280.00		68,600		280.33		68,682	
203.00		FOOT	TYPE "F" CONCRETE RAIL, 42 INCH			147.79		30,000		139.57		28,333	

BRIDGE NAME:			Ash swale_Hwy 1W_MP 51.06		BRIDGE NO:		22533		KEY NO:		18584		
SECTION NAME:			OR99W: ASH SWALE & PLUM CREEK BRIDGES SEC.		COUNTY:		Polk		CONTR #		15095		
PRIMARY PROJ:			Bridge Construction		BID DATE:		10/11/2018		FAP NO:		S091(079)		
STRUCT TYPE:			PS SLABS SL18		# BIDS RECVD:		7		AWARDED TO:		HP CIVIL INC		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
2.00		EACH	BRIDGE IDENTIFICATION MARKERS			175.00	350		159.00	318		175.00	151.00
Superstructure													
17,224.00		LB	REINFORCEMENT			1.29	22,135		1.34	23,117		1.58	1.16
48.00		CUYD	DECK CONCRETE, CLASS HPC4500			1,100.00	52,800		950.00	45,600		1,100.00	850.00
527.00		SQYD	SAW CUT TEXTURING			5.55	2,925		5.77	3,039		6.00	5.55
245.00		FOOT	18 INCH PRECAST PRESTRESSED SLABS			280.00	68,600		280.33	68,682		326.00	235.00
203.00		FOOT	TYPE "F" CONCRETE RAIL, 42 INCH			147.79	30,000		139.57	28,333		147.79	123.15
2.00		EACH	BRIDGE IDENTIFICATION MARKERS			175.00	350		159.00	318		175.00	151.00
Additional Items													
1.00		LS	TEMPORARY WATER MANAGEMENT FACILITY AT STATION ASH SWALE" 10+40			40,000.00	40,000		25,000.00	25,000		40,000.00	10,000.00
1,440.00		SQFT	TEMPORARY DETOUR BRIDGES			86.81	125,000		89.12	128,333		104.17	76.39
930.00		SQFT	BRIDGE REMOVAL WORK			48.39	45,000		39.43	36,667		48.39	26.88
1.00		LS	BRIDGE REMOVAL TEMPORARY CONTAINMENT			10,000.00	10,000		13,333.33	13,333		20,000.00	10,000.00
4.00		EACH	GUARDRAIL TRANSITION			1,900.00	7,600		1,883.33	7,533		1,900.00	1,875.00



Not to Scale

Chord Length = 59,500.00'
Chord Bearing = S48°5'30"W

Length along "G" Line = 59,500.268'

90°

90° 03' 30"

90°

"G" Line

Chord Line

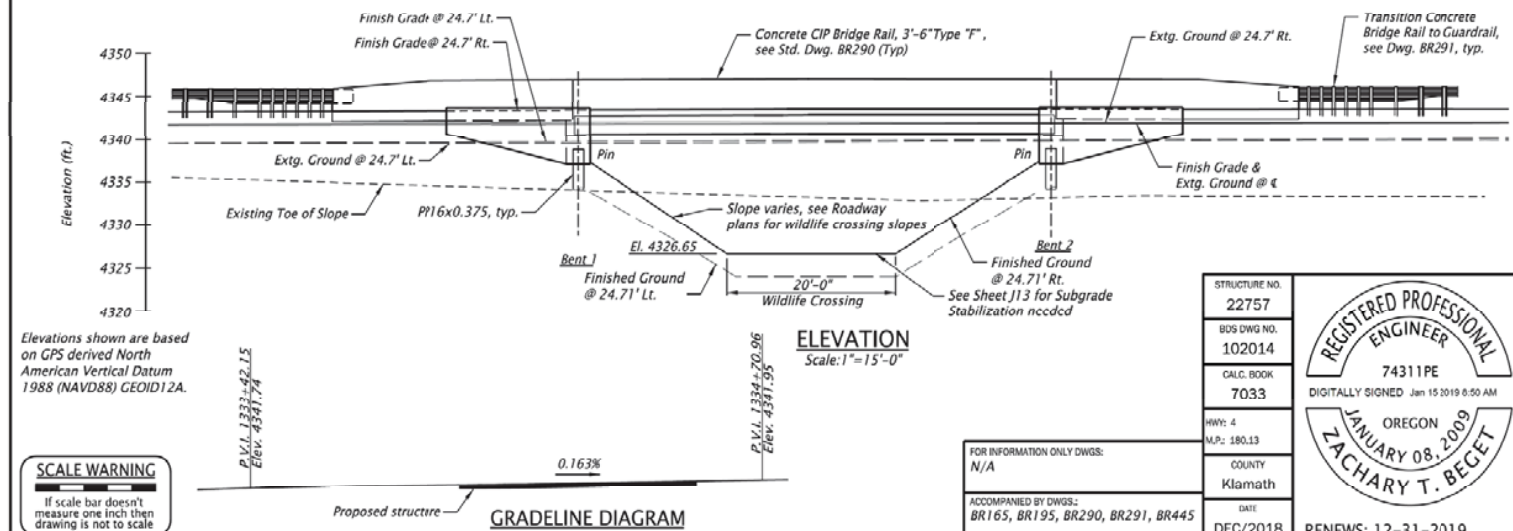
Bent 1

Bent 2

S48°10'30"E

S48°10'30"E

"G" Line Curve Data
 $R=5723.22'$
 $\Delta=12^{\circ}02'10''$ Lt.
 $D=1^{\circ}00'04''$
 $L=1202.28'$
 $T=603.36'$



STRUCTURE NO.	22757
BOS DWG NO.	102014
CALC. BOOK	7033
HWY: 4	
M.P.: 180.13	
COUNTY	Klamath
DATE	DEC/2018

OREGON DEPARTMENT
OF TRANSPORTATION

WILDLIFE CROSSING_HWY 4_MP180.13
FFO-US97: PASSING LANES PROJECT

THE DALLES - CALIFORNIA HIGHWAY
KLAMATH COUNTY

Designer: Natalie R. Marshall
 Drafter: Daryl L. Monk

Reviewer: Zachary T. Beget

PLAN AND ELEVATION

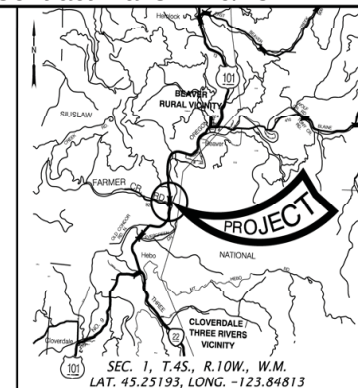
SHEET NO.
101

BRIDGE NAME: Wildlife Pass_Hwy 4_MP180.10			BRIDGE NO: 22757		KEY NO: 19784			
SECTION NAME: FFO - US97: PASSING LANES			COUNTY: Klamath		CONTR # 15138			
PRIMARY PROJ: Bridge Construction			BID DATE: 04/11/2019		FAP NO: S004(209)			
STRUCT TYPE: PS SLABS SL26			# BIDS RECVD: 4		AWARDED TO: HIGH DESERT AGGREGATE &			
PREPARED BY:								
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Construction Area Unit Cost For Superstructure And Substructure								
3088.75	SF	Deck Area Unit Costs	247.28		252.63			
2895.83	SF	Roadway Area Unit Costs	263.76		269.46			
SUBTOTAL				709,700		718,400		
PERCENT MOBILIZATION			7.62	54,100	8.61	61,900		
TOTAL				763,800		780,300		
Bridge Construction Area Unit Cost For Superstructure Only								
3088.54	SF	Deck Area Unit Costs	120.32		122.87			
2895.83	SF	Roadway Area Unit Costs	128.32		131.05			
SUBTOTAL				345,300		349,400		
PERCENT MOBILIZATION			7.62	26,300	8.61	30,100		
TOTAL				371,600		379,500		
DETAILS								
Superstructure and Substructure								
112.00	SQYD	SHORING, CRIBBING, AND COFFERDAMS	381.70	42,750	385.42	43,167	392.86	381.70
767.00	CUYD	STRUCTURE EXCAVATION	18.25	14,000	18.47	14,167	18.90	18.25
30.00	CUYD	GRANULAR WALL BACKFILL	271.67	8,150	275.47	8,264	283.33	271.40
1.00	LS	FURNISH PILE DRIVING EQUIPMENT	33,000.00	33,000	33,333.33	33,333	34,000.00	33,000.00
900.00	FOOT	FURNISH PP 16 X 0.375 STEEL PILES	56.00	50,400	56.67	51,000	58.00	56.00
18.00	EACH	DRIVE PP 16 X 0.375 STEEL PILES	1,300.00	23,400	1,321.67	23,790	1,365.00	1,300.00
2.00	EACH	PP 16 X 0.375 STEEL PILE SPLICES	1,000.00	2,000	1,016.67	2,033	1,050.00	1,000.00
10,315.00	LB	REINFORCEMENT	1.82	18,750	1.84	19,000	1.89	1.82
16,690.00	LB	COATED REINFORCEMENT	2.04	34,000	2.06	34,333	2.10	2.04
33.00	CUYD	FOUNDATION CONCRETE, CLASS 3300	821.21	27,100	829.91	27,387	848.48	820.03
74.00	CUYD	DECK CONCRETE, CLASS HPC4500 W/FIBER REINFORCEMENT	1,528.38	113,100	1,550.43	114,732	1,594.59	1,528.32
27.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	1,111.11	30,000	1,129.63	30,500	1,166.67	1,111.11
294.00	SQYD	SAW CUT TEXTURING	15.00	4,410	15.25	4,484	15.75	15.00
333.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	345.00	114,885	349.33	116,328	360.00	343.00
543.00	FOOT	26 INCH PRECAST PRESTRESSED SLABS	255.00	138,465	258.33	140,275	265.00	255.00

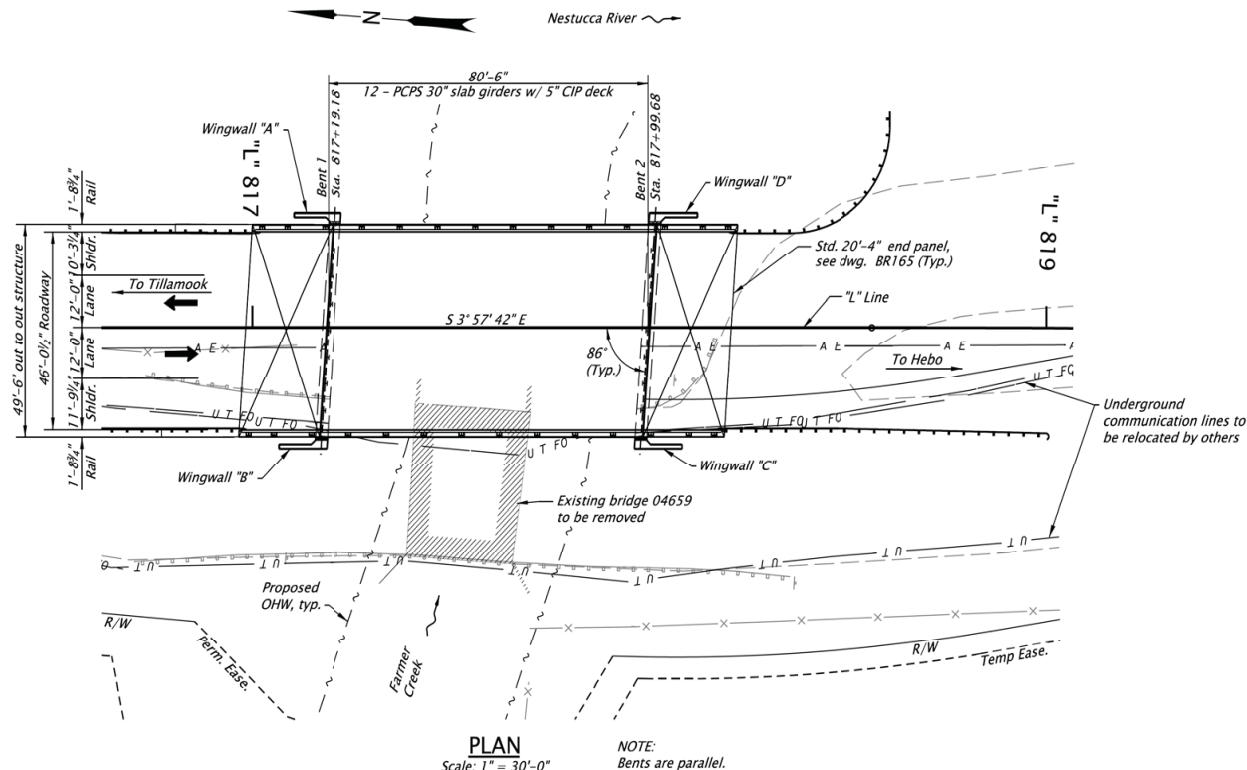
BRIDGE NAME:	Wildlife Pass_Hwy 4_MP180.10	BRIDGE NO:	22757	KEY NO:	19784
SECTION NAME:	FFO - US97: PASSING LANES	COUNTY:	Klamath	CONTR #	15138
PRIMARY PROJ:	Bridge Construction	BID DATE:	04/11/2019	FAP NO:	S004(209)
STRUCT TYPE:	PS SLABS SL26	# BIDS RECVD:	4	AWARDED TO:	HIGH DESERT AGGREGATE &

PREPARED BY:

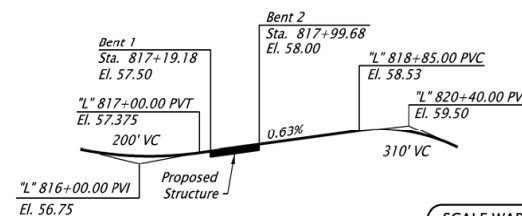
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
243.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH	226.34	55,000	227.71	55,333	230.45	226.34
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	150.00	300	135.00	260	150.00	125.00
Superstructure								
16,690.00	LB	COATED REINFORCEMENT	2.04	34,000	2.06	34,333	2.10	2.04
74.00	CUYD	DECK CONCRETE, CLASS HPC4500 W/FIBER REINFORCEMENT	1,528.38	113,100	1,550.43	114,732	1,594.59	1,528.32
294.00	SQYD	SAW CUT TEXTURING	15.00	4,410	15.25	4,484	15.75	15.00
543.00	FOOT	26 INCH PRECAST PRESTRESSED SLABS	255.00	138,465	258.33	140,275	265.00	255.00
243.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH	226.34	55,000	227.71	55,333	230.45	226.34
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	150.00	300	135.00	260	150.00	125.00
Additional Items								
1.00	LS	TEMPORARY RETAINING WALL	25,000.00	25,000	25,416.67	25,417	26,250.00	25,000.00
155.00	SQYD	24 INCH SUBGRADE STABILIZATION	40.00	6,200	42.33	6,562	55.50	31.50
200.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	35.00	7,000	38.67	7,733	60.00	21.00
4.00	EACH	GUARDRAIL TRANSITION	3,250.00	13,000	3,250.00	13,000	3,250.00	3,250.00



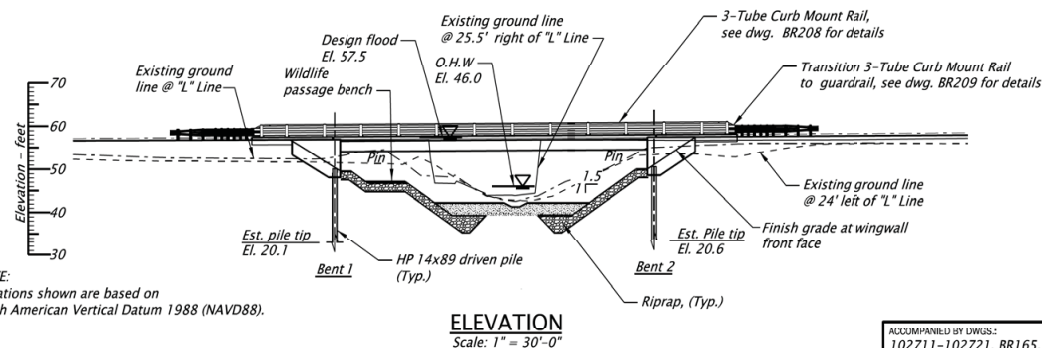
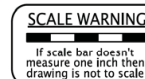
LOCATION MAP
No Scale



HYDRAULIC DATA				
ITEMS	(UNITS)	DESIGN FLOOD	BASE FLOOD	INCIPIENT OVERTOPPING FLOOD
DISCHARGE	(cfs)	920	920	920
RECURRENCE INTERVAL	(yrs.)	100	100	100
H.W. ELEVATION AT UPSTREAM FACE OF BRIDGE ALONG EMBANKMENT	(ft.)	57.5	57.5	57.5
BACKWATER	(ft.)	0.0	0.0	0.0
SCOUR ELEVATION	(ft.)	41.0	41.0	41.0



GRADELINE DIAGRAM
No Scale



Replaces structure no. 04659

STRUCTURE NO.	22654
BDS DWG NO.	102710
CALC. BOOK	6994
HWY: 009	
M.P.: 82.92	
COUNTY	Tillamook
DATE	04/2019

OREGON DEPARTMENT
OF TRANSPORTATION

FARMER CREEK HWY 9

US101: FARMER CREEK BRIDGE SEC.
OREGON COAST HIGHWAY
TILLAMOOK COUNTY

Designer: Michael Jacobson
 Drafter: Steven Christoff

Reviewer: Matthew Stucker/Robert Grubbs

PLAN AND ELEVATION

SHEET NO.
101

BRIDGE NAME:	Farmer Creek Hwy 9	BRIDGE NO:	22654	KEY NO:	17525
SECTION NAME:	US101: FARMER CREEK BRIDGE SEC.	COUNTY:	Tillamook	CONTR #	15152
PRIMARY PROJ:	Bridge Construction	BID DATE:	07/11/2019	FAP NO:	S009(415)
STRUCT TYPE:	PS SLABS SL30	# BIDS RECVD:	9	AWARDED TO:	BENT LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Bridge Construction Area Unit Cost For Superstructure And Substructure

4133.25	SF	Deck Area Unit Costs	189.25		196.75			
3844.48	SF	Roadway Area Unit Costs	203.47		211.53			
SUBTOTAL				704,200		732,200		
PERCENT MOBILIZATION			11.08	78,000	11.06	81,000		
TOTAL				782,200		813,200		

Bridge Construction Area Unit Cost For Superstructure Only

4133.25	SF	Deck Area Unit Costs	113.06		111.78			
3844.48	SF	Roadway Area Unit Costs	121.56		120.18			
SUBTOTAL				420,700		416,000		
PERCENT MOBILIZATION			11.08	46,600	11.06	46,000		
TOTAL				467,300		462,000		

DETAILS

Superstructure and Substructure

106.00	SQYD	SHORING, CRIBBING, AND COFFERDAMS	198.11	21,000	355.20	37,652	461.84	198.11
150.00	CUYD	STRUCTURE EXCAVATION	66.67	10,000	71.11	10,667	80.00	66.67
39.00	CUYD	GRANULAR STRUCTURE BACKFILL	307.69	12,000	341.88	13,333	410.26	307.69
1.00	LS	FURNISH PILE DRIVING EQUIPMENT	24,000.00	24,000	35,000.00	35,000	55,000.00	24,000.00
540.00	FOOT	FURNISH HP 14 X 89 STEEL PILES	60.00	32,400	50.67	27,360	60.00	45.00
18.00	EACH	DRIVE HP 14 X 89 STEEL PILES	750.00	13,500	983.33	17,700	1,200.00	750.00
18.00	EACH	REINFORCED PILE TIPS	150.00	2,700	171.67	3,090	200.00	150.00
2.00	EACH	HP 14 X 89 STEEL PILE SPLICES	1.00	2	200.33	401	350.00	1.00
23,600.00	LB	REINFORCEMENT	1.12	26,500	1.57	37,017	1.95	1.12
65.00	CUYD	DECK CONCRETE, CLASS HPC4500	1,644.62	106,900	1,394.08	90,615	1,644.62	1,053.85
87.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	1,025.29	89,200	978.68	85,145	1,025.29	954.02
588.00	SQYD	SAW CUT TEXTURING	8.00	4,704	8.15	4,792	8.25	8.00
223.70	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	276.00	61,741	282.00	63,083	345.00	225.00
976.00	FOOT	30 INCH PRECAST PRESTRESSED SLABS	263.00	256,688	255.67	249,531	263.00	249.00
234.40	FOOT	3 TUBE STEEL RAIL	170.65	40,000	229.50	53,795	289.61	170.65

BRIDGE NAME:	Farmer Creek Hwy 9	BRIDGE NO:	22654	KEY NO:	17525
SECTION NAME:	US101: FARMER CREEK BRIDGE SEC.	COUNTY:	Tillamook	CONTR #	15152
PRIMARY PROJ:	Bridge Construction	BID DATE:	07/11/2019	FAP NO:	S009(415)
STRUCT TYPE:	PS SLABS SL30	# BIDS RECVD:	9	AWARDED TO:	BENT LLC

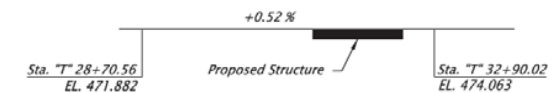
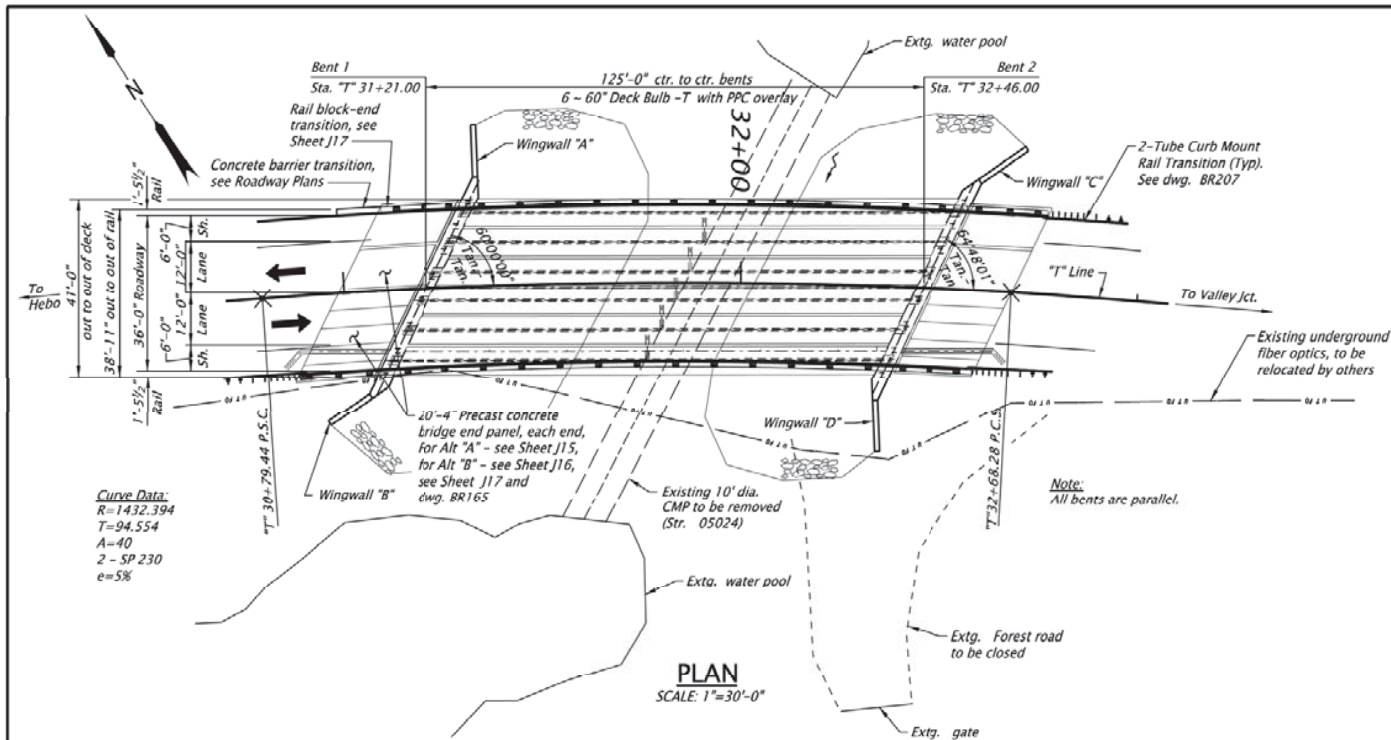
PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES	2,600.00	2,600	2,700.00	2,700	5,000.00	500.00
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	150.00	300	153.33	307	160.00	150.00
Superstructure								
10,800.00	LB	REINFORCEMENT	1.12	12,127	1.57	16,940	1.95	1.12
65.00	CUYD	DECK CONCRETE, CLASS HPC4500	1,644.62	106,900	1,394.08	90,615	1,644.62	1,053.85
588.00	SQYD	SAW CUT TEXTURING	8.00	4,704	8.15	4,792	8.25	8.00
976.00	FOOT	30 INCH PRECAST PRESTRESSED SLABS	263.00	256,688	255.67	249,531	263.00	249.00
234.40	FOOT	3 TUBE STEEL RAIL	170.65	40,000	229.50	53,795	289.61	170.65
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	150.00	300	153.33	307	160.00	150.00
Additional Items								
1.00	LS	TEMPORARY WATER MANAGEMENT FACILITY AT STATION "L" 63+12	25,000.00	25,000	25,100.00	25,100	25,300.00	25,000.00
1,190.00	CUYD	LOOSE RIPRAP, CLASS 200	55.00	65,450	56.00	66,640	58.00	55.00
1,008.00	SQFT	BRIDGE REMOVAL WORK	19.84	20,000	27.52	27,745	42.89	19.84
4.00	EACH	GUARDRAIL TRANSITION	2,400.00	9,600	2,750.00	11,000	3,450.00	2,400.00
1.00	LS	STREAMBED ENHANCEMENT	66,100.00	66,100	70,145.00	70,145	78,235.00	66,100.00
122.00	FOOT	TEMPORARY BRIDGE RAIL	82.00	10,004	131.33	16,023	230.00	82.00

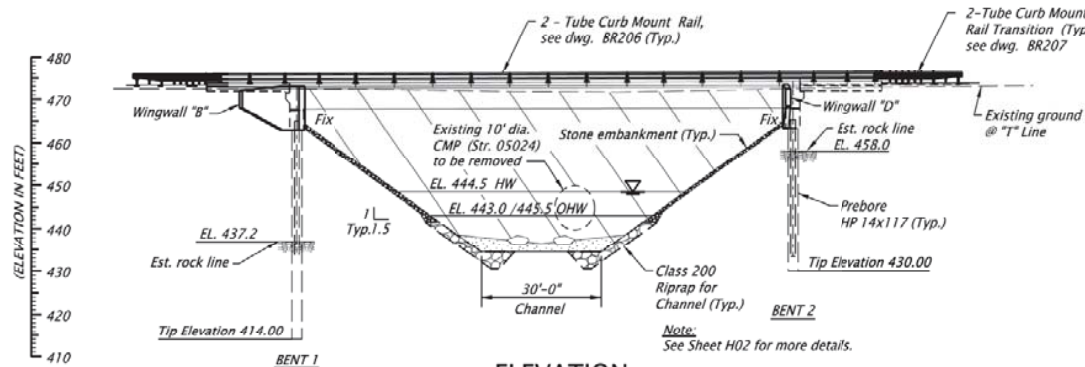
PRECAST PRESTRESSED REINFORCED CONCRETE DECK GIRDER

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Deck Area SQFT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>60 inch Deck Bulb T</u>										
22718	Sourgrass Creek_HWY 32_ MP 11.33	Yamhill	15132	6~60" Deck BT girders with PPC overlay, 125'- 0" ctr-ctr end bents	102447	5,261.5	\$ 1,387,573	\$263.72	\$1,418,021	\$269.51
				<u>PE Design Cost By Category</u>	<u>Bridge, Roadway & Traffic Items %</u>					
				Bridge Design		\$113,545				
				Environmental		\$ 65,037				
				Roadway & Traffic		\$226,287				
				Geo/Hydro		<u>\$168,078</u>				
						\$572,948				
<i>Subtotal</i>						5,261.5	\$ 1,387,573	\$263.72	\$1,418,021	\$269.51

HYDRAULIC DATA				
ITEMS	(UNITS)	DESIGN FLOOD	BASE FLOOD	MAX. PROBABLE FLOOD
DISCHARGE	(cfs)	700	794	1020
RECURRENT INTERVAL	(yrs.)	50	100	500
H.W. ELEV. OF NATURAL CHANNEL AT BRIDGE	(ft.)	448.4	448.6	449.2
HEADWATER ELEVATION AT BRIDGE (UP STREAM)	(ft.)	444.5	444.6	445.0
BACKWATER	(ft.)	0.0	0.0	0.0
SCOUR DEPTH	(ft.)	0.1	0.1	0.2



BR165, BR195, BR206, BR207, BR266,
BR350, BR400 and BR445; RD405;
J02 thru J17



SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

REGISTERED PROFESSIONAL
ENGINEER
17,298
Digitally Signed Date: 11/30/18 6:30 AM
OREGON
JULY 19, 1994
ROBERT J. TOVAR
RENEWLS: 06-30-2020



Rotation: 0° Scale: 1"=30'

BRIDGE NAME:	Sourgrass Creek_HWY 32_ MP 11.33	BRIDGE NO:	22718	KEY NO:	19935
SECTION NAME:	OR22: SOURGRASS CREEK CULVERT PROJECT	COUNTY:	Yamhill	CONTR #	15132
PRIMARY PROJ:	Bridge Construction	BID DATE:	02/28/2019	FAP NO:	S032(012)
STRUCT TYPE:	PRECAST PRESTRESSED DECK GIRDERS-BULB T 60 IN	# BIDS RECVD:	9	AWARDED TO:	LEGACY CONTRACTING INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Bridge Construction Area Unit Cost For Superstructure And Substructure

5261.53	SF	Deck Area Unit Costs	292.82		298.24			
4626.00	SF	Roadway Area Unit Costs	333.03		339.21			
SUBTOTAL				1,387,600		1,418,000		
PERCENT MOBILIZATION			11.03	153,100	10.66	151,200		
TOTAL				1,540,700		1,569,200		

Bridge Construction Area Unit Cost For Superstructure Only

5261.53	SF	Deck Area Unit Costs	155.77		162.61			
4626.00	SF	Roadway Area Unit Costs	177.17		184.95			
SUBTOTAL				738,200		773,200		
PERCENT MOBILIZATION			11.03	81,400	10.66	82,400		
TOTAL				819,600		855,600		

DETAILS

Superstructure and Substructure

300.00	SQYD	SHORING, CRIBBING, AND COFFERDAMS	244.22	73,265	192.52	57,755	244.22	166.67
430.00	CUYD	STRUCTURE EXCAVATION	30.78	13,235	37.39	16,078	46.51	30.78
130.00	CUYD	GRANULAR STRUCTURE BACKFILL	130.35	16,945	122.94	15,982	169.23	69.23
1.00	LS	FURNISH DRILLING EQUIPMENT	53,885.00	53,885	60,461.67	60,462	65,000.00	53,885.00
150.00	CUYD	DRILLED SHAFT CONCRETE	595.57	89,335	406.30	60,945	595.57	140.00
704.00	FOOT	FURNISH HP 14 X 117 STEEL PILES	69.50	48,928	71.17	50,101	74.00	69.50
660.00	FOOT	PREBORING PILES	102.35	67,551	104.12	68,717	115.00	95.00
35,000.00	LB	REINFORCEMENT	1.40	49,155	1.52	53,051	1.71	1.40
196.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	802.22	157,235	871.15	170,745	1,147.96	663.27
175.00	SQYD	BRIDGE END PANELS	535.00	93,625	628.33	109,958	700.00	535.00
758.00	FOOT	DECK BT 60 PRECAST PRESTRESSED GIRDERS	495.00	375,210	521.67	395,423	625.00	445.00
42.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	3,000.00	126,000	2,483.33	104,300	3,000.00	1,450.00
500.00	SQYD	CONSTRUCT PPC OVERLAY	82.00	41,000	135.67	67,833	225.00	82.00
90.00	FOOT	TYPE "C" COMPRESSION SEALS	33.06	2,975	47.70	4,293	72.00	33.06
340.00	FOOT	2 TUBE STEEL RAIL	156.43	53,185	162.44	55,228	183.82	147.06

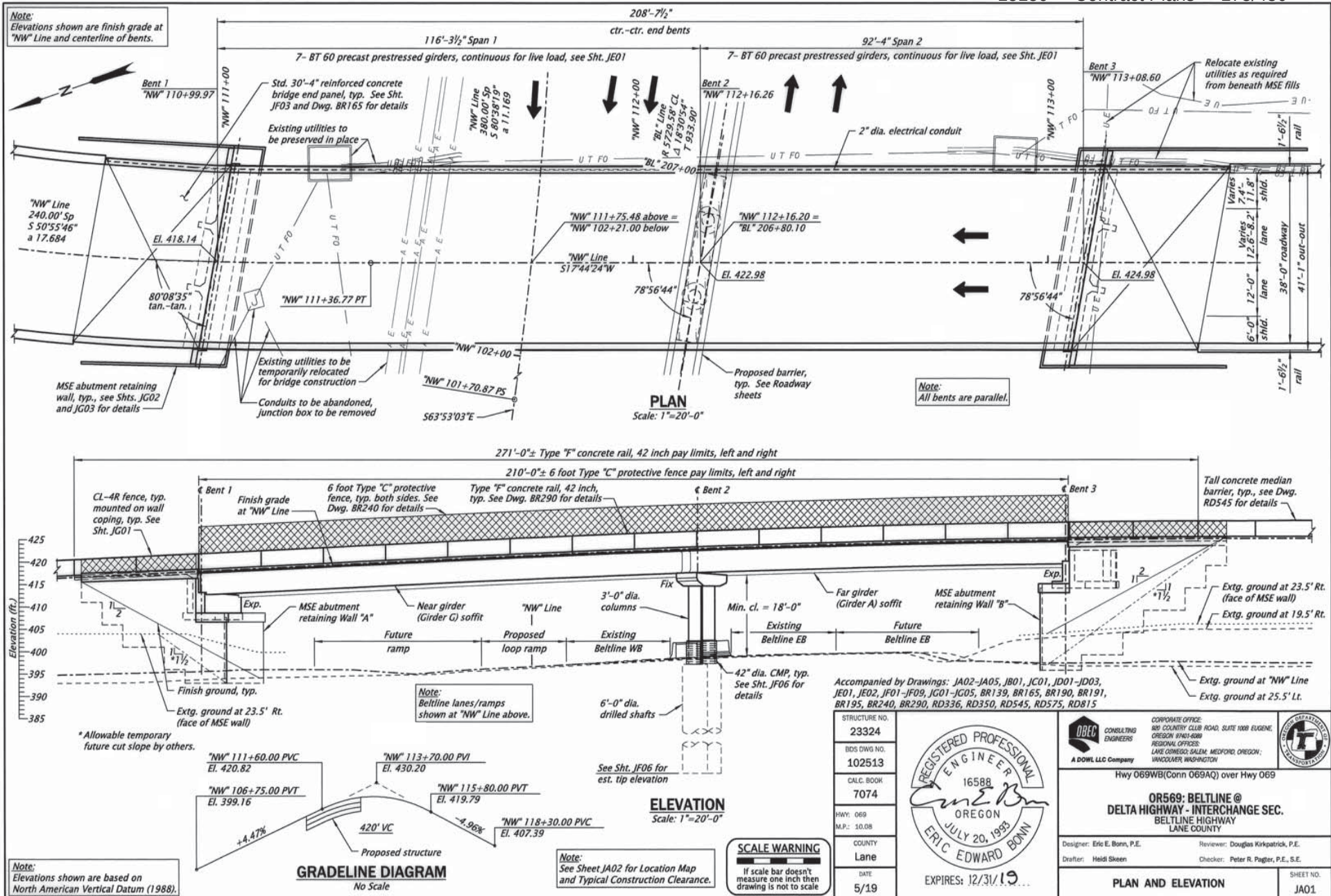
BRIDGE NAME:	Sourgrass Creek_HWY 32_ MP 11.33	BRIDGE NO:	22718	KEY NO:	19935
SECTION NAME:	OR22: SOURGRASS CREEK CULVERT PROJECT	COUNTY:	Yamhill	CONTR #	15132
PRIMARY PROJ:	Bridge Construction	BID DATE:	02/28/2019	FAP NO:	S032(012)
STRUCT TYPE:	PRECAST PRESTRESSED DECK GIRDERS-BULB T 60 IN	# BIDS RECVD:	9	AWARDED TO:	LEGACY CONTRACTING INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES	4,600.00	4,600	4,833.33	4,833	5,000.00	4,600.00
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	105.00	210	118.33	237	150.00	100.00
17.00	CUYD	ULTRA HIGH PERFORMANCE CONCRETE	7,131.47	121,234	7,181.08	122,078	7,941.18	6,470.59
Superstructure								
9,200.00	LB	REINFORCEMENT	1.40	12,921	1.52	13,945	1.71	1.40
69.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	802.22	55,353	871.15	60,109	1,147.96	663.27
758.00	FOOT	DECK BT 60 PRECAST PRESTRESSED GIRDERS	495.00	375,210	521.67	395,423	625.00	445.00
42.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	3,000.00	126,000	2,483.33	104,300	3,000.00	1,450.00
500.00	SQYD	CONSTRUCT PPC OVERLAY	82.00	41,000	135.67	67,833	225.00	82.00
90.00	FOOT	TYPE "C" COMPRESSION SEALS	33.06	2,975	47.70	4,293	72.00	33.06
340.00	FOOT	2 TUBE STEEL RAIL	156.43	53,185	162.44	55,228	183.82	147.06
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	105.00	210	118.33	237	150.00	100.00
10.00	CUYD	ULTRA HIGH PERFORMANCE CONCRETE	7,131.47	71,315	7,181.08	71,811	9,642.86	7,857.14
Additional Items								
1.00	LS	TEMPORARY WATER MANAGEMENT FACILITY AT STATION "T" 32+00	23,650.00	23,650	26,383.33	26,383	40,000.00	15,500.00
745.00	CUYD	LOOSE RIPRAP, CLASS 200	65.00	48,425	61.67	45,942	65.00	55.00
3.00	EACH	GUARDRAIL TRANSITION	2,150.00	6,450	2,150.00	6,450	2,150.00	2,150.00
130.00	FOOT	TEMPORARY BRIDGE RAIL	89.00	11,570	88.00	11,440	100.00	75.00

PRECAST PRESTRESSED REINFORCED CONCRETE GIRDER

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Deck Area SQFT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>60 inch Bulb T</u>										
23324	Hwy 069WB (Delta Hwy) (CONN AQ)	Lane	15159	14~BT 60 PCPS girders, 2 spans, 208'-7 1/2" ctr-ctr-end bents	102513	8,755.2	\$ 1,380,145	\$157.64	\$1,513,910	\$172.92
	<u>PE Design Cost By Category</u>			<u>*Overall Bridge, Roadway & Traffic Items %</u>						
	Bridge Design	\$	10,623	Bridge, retaining wall items		32.31				
	Environmental	\$	30,732	Roadway/Traffic, sign structures, etc.		67.69				
	Traffic	\$	85,389	* Multiple structures on the same contract						
	Geo/Hydro	\$	5,157							
			\$131,902							
				Subtotal		8,755.2	\$ 1,380,145	\$157.64	\$1,513,910	\$172.92



BRIDGE NAME:	Hwy 069WB (Delta Hwy) (CONN AQ)	BRIDGE NO:	23324	KEY NO:	19490
SECTION NAME:	OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.	COUNTY:	Lane	CONTR #	15159
PRIMARY PROJ:	Bridge Construction	BID DATE:	08/29/2019	FAP NO:	S069(019)
STRUCT TYPE:	PRECAST PRESTRESSED GIRDERS - BULB T 60 IN	# BIDS RECVD:	6	AWARDED TO:	HAMILTON CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Bridge Construction Area Unit Cost For Superstructure And Substructure

8755.20	SF	Deck Area Unit Costs	174.38		191.63			
8098.75	SF	Roadway Area Unit Costs	188.51		207.17			
SUBTOTAL				1,380,100		1,513,900		
PERCENT MOBILIZATION			10.62	146,600	10.83	163,900		
TOTAL				1,526,700		1,677,800		

Bridge Construction Area Unit Cost For Superstructure Only

8755.20	SF	Deck Area Unit Costs	92.13		93.74			
8098.75	SF	Roadway Area Unit Costs	99.60		101.34			
SUBTOTAL				729,100		740,500		
PERCENT MOBILIZATION			10.62	77,500	10.83	80,200		
TOTAL				806,600		820,700		

DETAILS

Superstructure and Substructure

1.00	LS	FURNISH DRILLING EQUIPMENT	152,000.00	152,000	164,000.00	164,000	180,000.00	152,000.00
105.00	CUYD	DRILLED SHAFT CONCRETE	366.67	38,500	407.94	42,833	476.19	366.67
14,175.00	LB	DRILLED SHAFT REINFORCEMENT	1.62	23,000	2.30	32,667	2.82	1.62
600.00	FOOT	CSL TEST ACCESS TUBES	12.00	7,200	12.67	7,600	15.00	11.00
2.00	EACH	CSL TESTS	2,300.00	4,600	2,266.67	4,533	2,500.00	2,000.00
100.00	FOOT	DRILLED SHAFT EXCAVATION, 72 INCH DIAMETER	800.00	80,000	1,100.00	110,000	1,300.00	800.00
20.00	FOOT	PERMANENT SHAFT CASINGS, 72 INCH DIAMETER	360.00	7,200	386.67	7,733	400.00	360.00
97,630.00	LB	REINFORCEMENT	1.13	110,000	1.40	136,666	1.54	1.13
38.00	CUYD	FOUNDATION CONCRETE, CLASS 3300	526.32	20,000	1,008.77	38,333	1,842.11	526.32
233.00	CUYD	DECK CONCRETE, CLASS HPC4500	922.75	215,000	979.97	228,333	1,158.80	858.37
152.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	953.95	145,000	1,041.67	158,333	1,315.79	855.26
9.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	2,222.22	20,000	3,703.70	33,333	5,555.56	2,222.22
820.00	SQYD	SAW CUT TEXTURING	3.50	2,870	4.67	3,827	6.00	3.50
277.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	275.00	76,175	281.67	78,022	300.00	270.00
1,452.00	FOOT	BT 60 PRECAST PRESTRESSED GIRDERS	250.00	363,000	239.00	347,028	275.00	192.00

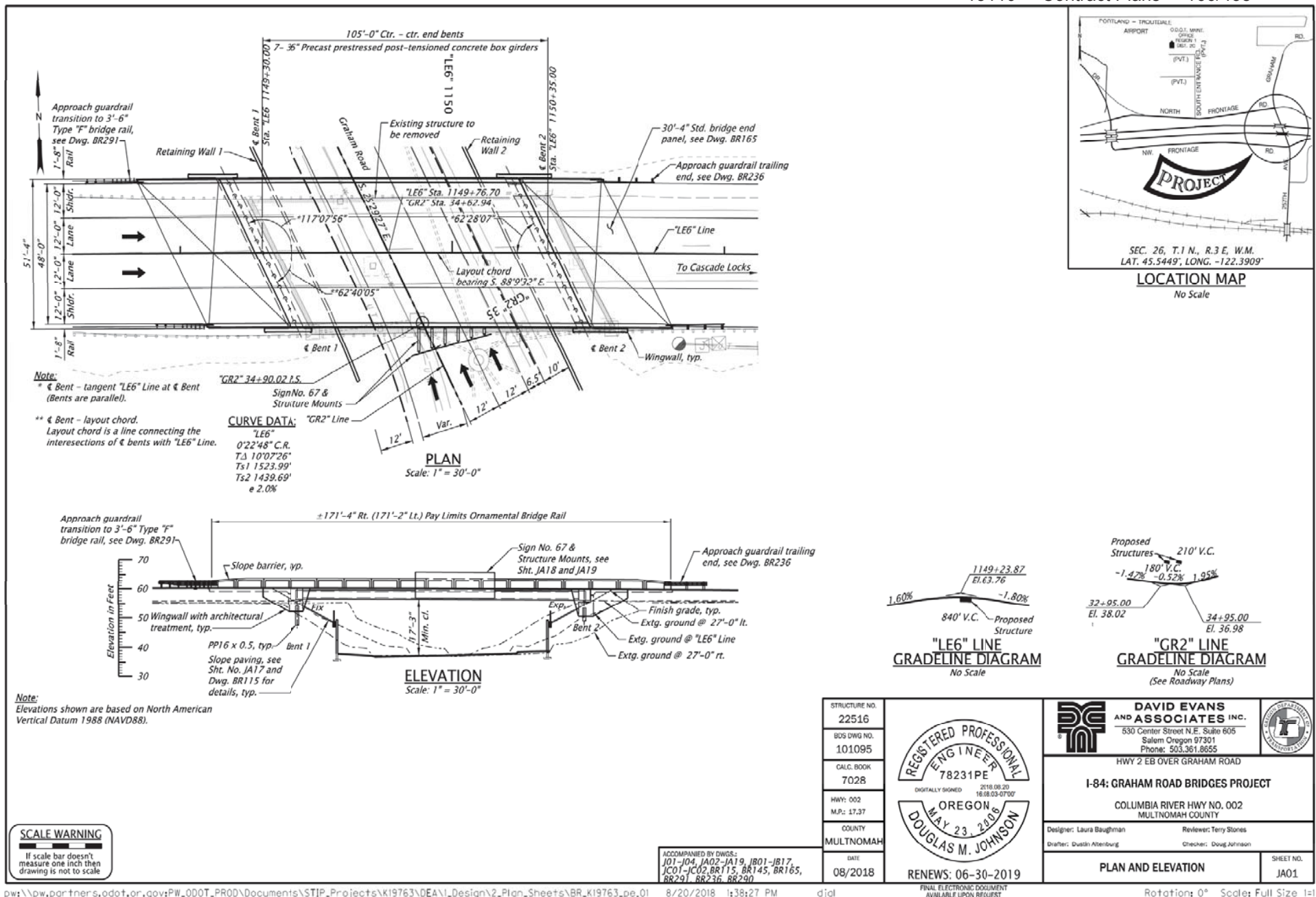
BRIDGE NAME:	Hwy 069WB (Delta Hwy) (CONN AQ)	BRIDGE NO:	23324	KEY NO:	19490
SECTION NAME:	OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.	COUNTY:	Lane	CONTR #	15159
PRIMARY PROJ:	Bridge Construction	BID DATE:	08/29/2019	FAP NO:	S069(019)
STRUCT TYPE:	PRECAST PRESTRESSED GIRDERS - BULB T 60 IN	# BIDS RECVD:	6	AWARDED TO:	HAMILTON CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
80.00	FOOT	TYPE "B" COMPRESSION SEALS	375.00	30,000	375.00	30,000	375.00	375.00
542.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH	156.83	85,000	166.05	90,000	184.50	156.83
4.00	EACH	BRIDGE IDENTIFICATION MARKERS	150.00	600	166.67	667	200.00	150.00
Superstructure								
29,000.00	LB	REINFORCEMENT	1.13	32,674	1.40	40,595	1.54	1.13
233.00	CUYD	DECK CONCRETE, CLASS HPC4500	922.75	215,000	979.97	228,333	1,158.80	858.37
820.00	SQYD	SAW CUT TEXTURING	3.50	2,870	4.67	3,827	6.00	3.50
1,452.00	FOOT	BT 60 PRECAST PRESTRESSED GIRDERS	250.00	363,000	239.00	347,028	275.00	192.00
80.00	FOOT	TYPE "B" COMPRESSION SEALS	375.00	30,000	375.00	30,000	375.00	375.00
542.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH	156.83	85,000	166.05	90,000	184.50	156.83
4.00	EACH	BRIDGE IDENTIFICATION MARKERS	150.00	600	166.67	667	200.00	150.00
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	10,000.00	10,000	16,668.00	16,668	40,000.00	4.00
1.00	LS	FALL ARREST SYSTEM	6,500.00	6,500	5,866.67	5,867	6,500.00	5,000.00
271.00	FOOT	2 INCH ELECTRICAL CONDUIT	18.00	4,878	18.00	4,878	18.00	18.00
420.00	FOOT	6 FOOT TYPE C PROTECTIVE FENCE	110.00	46,200	110.00	46,200	110.00	110.00
1.00	LS	INSPECTION STEPS	1,250.00	1,250	1,583.33	1,583	2,000.00	1,250.00

PRECAST PRESTRESSED REINFORCED CONCRETE BOX GIRDER

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Deck Area SQFT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>36 inch Box Girder</u>										
22516	Hwy 2 EB Over NW Graham Road	Multnomah	15110	7~36" PCPS Post- tensioned concrete box girders, 105'-0" ctr-ctr end bents	101095	5,732	\$1,165,074	\$ 203.26	\$1,085,869	\$189.44
	<u>PE Design Cost By Category</u>			<u>*Overall Bridge, Roadway & Traffic Items %</u>						
	Bridge Design	\$	187,643	Bridge and Retaining Wall Items		36.22				
	Environmental	\$	58,210	Roadway/Traffic, etc.		63.78				
	Roadway & Traffic	\$	368,008	* Multiple structures on the same contract						
	Geo/Hydro	\$	<u>191,379</u>							
		\$	805,241							
22517	Hwy 2 WB Over NW Graham Road	Multnomah	15110	7~36" PCPS Post- tensioned Concrete Box Girders, 105'-0" ctr-ctr end bents	101114	5,732	\$1,356,103	\$ 236.58	\$1,160,673	\$202.49
	<u>PE Design Cost By Category</u>			<u>*Overall Bridge, Roadway & Traffic Items %</u>						
	Bridge Design	\$	187,643	Bridge and Retaining Wall Items		36.22				
	Environmental	\$	58,210	Roadway/Traffic, etc.		63.78				
	Roadway & Traffic	\$	368,008	* Multiple structures on the same contract						
	Geo/Hydro	\$	<u>191,379</u>							
		\$	805,241							
<i>Subtotal</i>						11,564	\$2,521,177	\$ 218.02	\$2,246,542	\$194.27



BRIDGE NAME:	Hwy 2 EB Over NW Graham Road	BRIDGE NO:	22516	KEY NO:	19763
SECTION NAME:	I-84: GRAHAM ROAD BRIDGES PROJECT	COUNTY:	Multnomah	CONTR #	15110
PRIMARY PROJ:	Bridge Construction	BID DATE:	11/15/2018	FAP NO:	S002(222)
STRUCT TYPE:	36" PRECAST PRESTRESSED POST TENSIONED BOX GIRDERS	# BIDS RECVD:	6	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Bridge Construction Area Unit Cost For Superstructure And Substructure

5732.02	SF	Deck Area Unit Costs	228.09		212.66			
5360.00	SF	Roadway Area Unit Costs	243.91		227.41			
SUBTOTAL				1,165,100		1,085,900		
PERCENT MOBILIZATION			11.04	128,600	11.08	120,300		
TOTAL				1,293,700		1,206,200		

Bridge Construction Area Unit Cost For Superstructure Only

5732.02	SF	Deck Area Unit Costs	137.11		128.42			
5360.00	SF	Roadway Area Unit Costs	150.97		137.33			
SUBTOTAL				785,900		662,700		
PERCENT MOBILIZATION			11.04	78,100	11.08	73,400		
TOTAL				809,200		736,100		

DETAILS

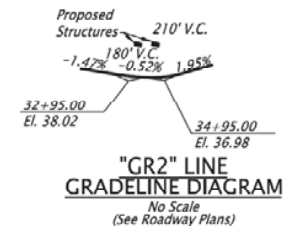
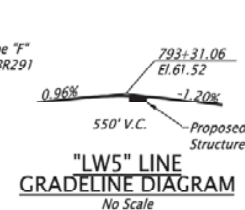
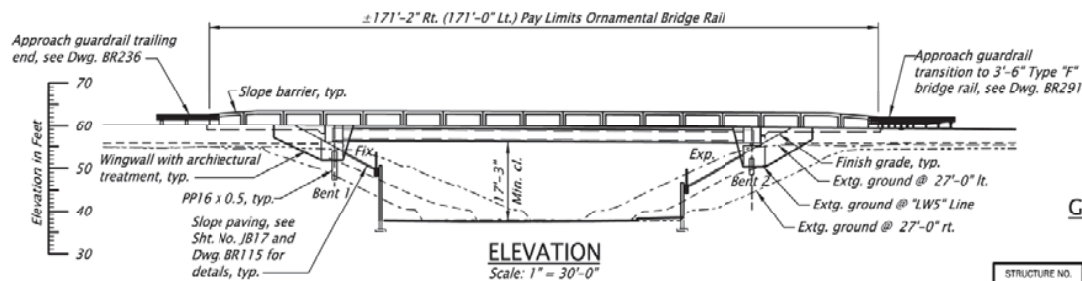
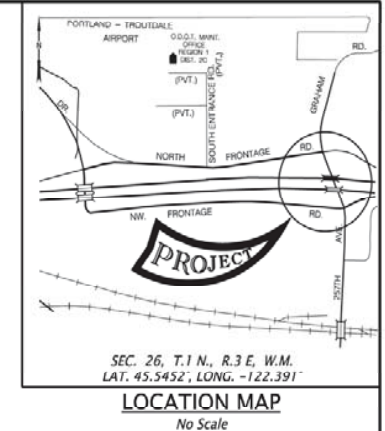
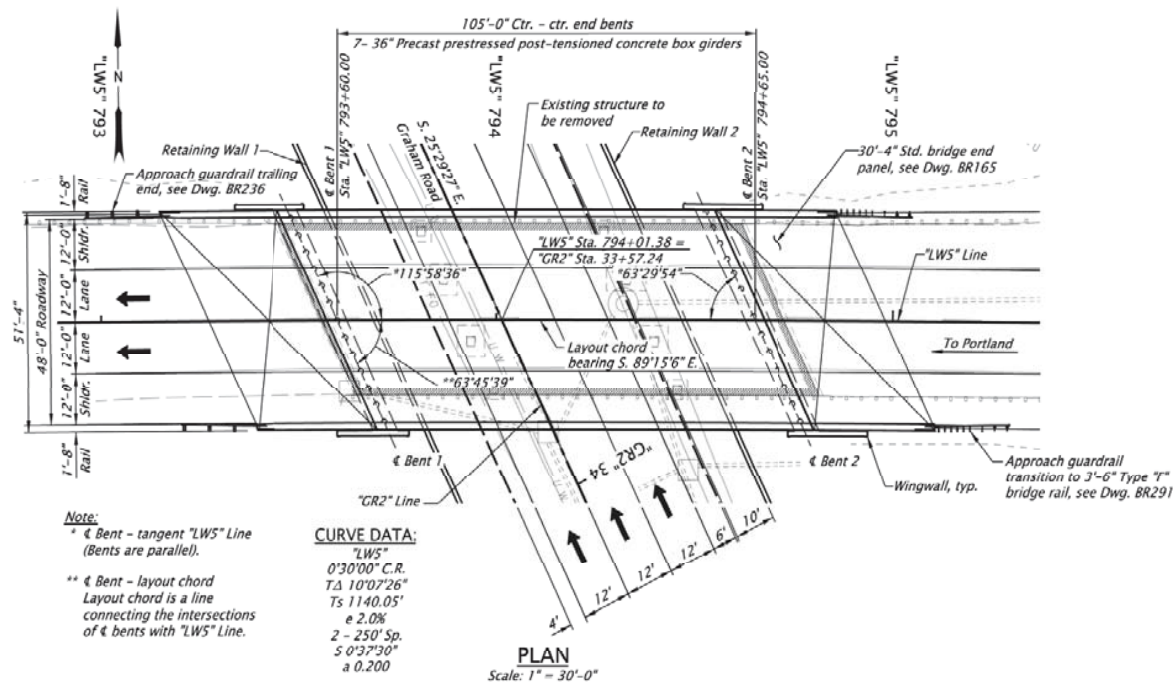
Superstructure and Substructure

95.00	CUYD	STRUCTURE EXCAVATION	842.11	80,000	375.74	35,695	842.11	21.95
36.00	CUYD	GRANULAR WALL BACKFILL	55.56	2,000	240.74	8,667	555.56	55.56
1.00	LS	FURNISH PILE DRIVING EQUIPMENT	20,000.00	20,000	35,000.00	35,000	60,000.00	20,000.00
1,282.00	FOOT	FURNISH PP 16 X 0.5 STEEL PILES	63.00	80,766	66.17	84,826	73.00	62.50
26.00	EACH	DRIVE PP 16 X 0.5 STEEL PILES	2,000.00	52,000	1,233.33	32,067	2,000.00	700.00
19,800.00	LB	REINFORCEMENT	1.52	30,000	1.60	31,667	1.77	1.52
46,700.00	LB	COATED REINFORCEMENT	1.93	90,000	1.73	80,666	1.93	1.50
203.00	CUYD	DECK CONCRETE, CLASS HPC4500	837.44	170,000	824.30	167,333	896.55	738.92
135.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	629.63	85,000	676.54	91,333	844.44	555.56
524.00	SQYD	SAW CUT TEXTURING	7.00	3,668	5.02	2,629	7.00	3.55
346.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	250.00	86,500	241.67	83,617	265.00	210.00
743.00	FOOT	36 INCH PRECAST PRESTRESSED BOX BEAMS	310.00	230,330	331.67	246,428	370.00	310.00
13,200.00	LB	POST-TENSIONING	6.44	85,000	5.11	67,499	6.44	3.98
7.00	EACH	BEARING DEVICES, BENT 2	3,000.00	21,000	2,905.00	20,335	3,000.00	2,715.00

BRIDGE NAME:	Hwy 2 EB Over NW Graham Road	BRIDGE NO:	22516	KEY NO:	19763
SECTION NAME:	I-84: GRAHAM ROAD BRIDGES PROJECT	COUNTY:	Multnomah	CONTR #	15110
PRIMARY PROJ:	Bridge Construction	BID DATE:	11/15/2018	FAP NO:	S002(222)
STRUCT TYPE:	36" PRECAST PRESTRESSED POST TENSIONED BOX GIRDERS	# BIDS RECVD:	6	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
58.00	FOOT	STRIP SEALS	862.07	50,000	574.71	33,333	862.07	431.03
343.00	FOOT	TYPE "F" CONCRETE RAIL	174.93	60,001	140.43	48,167	174.93	86.01
114.00	SQYD	ARCHITECTURAL TREATMENT	165.00	18,810	145.67	16,606	245.00	27.00
Superstructure								
46,700.00	LB	COATED REINFORCEMENT	1.93	90,000	1.73	80,666	1.93	1.50
203.00	CUYD	DECK CONCRETE, CLASS HPC4500	837.44	170,000	824.30	167,333	896.55	738.92
524.00	SQYD	SAW CUT TEXTURING	7.00	3,668	5.02	2,629	7.00	3.55
743.00	FOOT	36 INCH PRECAST PRESTRESSED BOX BEAMS	310.00	230,330	331.67	246,428	370.00	310.00
13,200.00	LB	POST-TENSIONING	6.44	85,000	5.11	67,499	6.44	3.98
58.00	FOOT	STRIP SEALS	862.07	50,000	574.71	33,333	862.07	431.03
343.00	FOOT	TYPE "F" CONCRETE RAIL	174.93	60,001	140.43	48,167	174.93	86.01
114.00	SQYD	ARCHITECTURAL TREATMENT	165.00	18,810	145.67	16,606	245.00	27.00
Additional Items								
1,920.00	SQFT	TEMPORARY DETOUR BRIDGES	65.10	125,000	141.12	270,944	195.31	65.10
5,406.00	SQFT	BRIDGE REMOVAL WORK	12.02	64,993	20.39	110,240	35.28	12.02
234.00	EACH	3/4 INCH ELECTRICAL CONDUIT	12.00	2,808	12.00	2,808	12.00	12.00
1,410.00	SQFT	CONCRETE SLOPE PAVING	30.00	42,300	22.08	31,138	30.00	17.25
46.00	FOOT	SLOPE PAVING CURBS	125.00	5,750	127.83	5,880	133.00	125.00
2.00	EACH	GUARDRAIL TRANSITION	3,500.00	7,000	3,550.00	7,100	3,650.00	3,500.00
5,980.00	LB	BRIDGE STRUCTURE MOUNTS	6.02	36,000	4.90	29,303	6.02	4.06
1.00	LS	GROUND IMPROVEMENTS MOBILIZATION	170,000.00	170,000	148,333.33	148,333	170,000.00	137,500.00
3,750.00	TON	GROUND IMPROVEMENTS, STONE COLUMNS	92.50	346,875	87.81	329,300	92.50	85.47



STRUCTURE NO.	22517
BDS DWG NO.	101114
CALC. BOOK	7028
HWY: 002	
M.P.: 17.37	
COUNTY	MULTNOMAH

REGISTERED PROFESSIONAL
ENGINEER
78231PE
DIGITALLY SIGNED
2018.08.20
16:36:18-0700
OREGON
MAY 23 2008
DOUGLAS M. JOHNSON

	DAVID EVANS AND ASSOCIATES, INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.351.8555	
HWY 2 WB OVER GRAHAM ROAD		
I-84: GRAHAM ROAD BRIDGES		
COLUMBIA RIVER HWY NO. 002 MULTNOMAH COUNTY		
Designer: Laura Boughman Drafter: Quashin Allenburg	Reviewer: Terry Stiles Checker: Doug Allwright	

PLAN AND ELEVATION	SHEET NO. JB01
--------------------	-------------------

Note:
Elevations shown are based on North American Vertical Datum 1988 (NAVD88).

SCALE WARNING
If scale bar doesn't
measure one inch then
drawing is not to scale

ACCOMPANIED BY DWGS.:
J01-J04, JA01-JA19, JB02-JB17,
JC01-JC02, BR115, BR145, BR165,
BR290, BR291, BR236

RENEWS: 06-30-2019
FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

BRIDGE NAME:	Hwy 2 WB Over NW Graham Road	BRIDGE NO:	22517	KEY NO:	19763
SECTION NAME:	I-84: GRAHAM ROAD BRIDGES PROJECT	COUNTY:	Multnomah	CONTR #	15110
PRIMARY PROJ:	Bridge Construction	BID DATE:	11/15/2018	FAP NO:	S002(222)
STRUCT TYPE:	36" PRECAST PRESTRESSED POST TENSIONED BOX GIRDERS	# BIDS RECVD:	6	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Bridge Construction Area Unit Cost For Superstructure And Substructure

5732.02	SF	Deck Area Unit Costs	262.70		224.93			
5360.00	SF	Roadway Area Unit Costs	280.93		240.54			
SUBTOTAL				1,356,100		1,160,700		
PERCENT MOBILIZATION			11.04	149,700	11.08	128,600		
TOTAL				1,505,800		1,289,300		

Bridge Construction Area Unit Cost For Superstructure Only

5732.02	SF	Deck Area Unit Costs	137.63		130.51			
5360.00	SF	Roadway Area Unit Costs	147.18		139.57			
SUBTOTAL				710,500		673,500		
PERCENT MOBILIZATION			11.04	78,400	11.08	74,600		
TOTAL				788,900		748,100		

DETAILS

Superstructure and Substructure

63.00	CUYD	STRUCTURE EXCAVATION	4,111.11	259,000	1,481.72	93,348	4,111.11	16.59
36.00	CUYD	GRANULAR WALL BACKFILL	69.44	2,500	199.07	7,167	416.67	69.44
1.00	LS	FURNISH PILE DRIVING EQUIPMENT	20,000.00	20,000	33,333.33	33,333	45,000.00	20,000.00
1,379.00	FOOT	FURNISH PP 16 X 0.5 STEEL PILES	65.00	89,635	66.00	91,014	68.00	65.00
26.00	EACH	DRIVE PP 16 X 0.5 STEEL PILES	2,000.00	52,000	1,233.33	32,067	2,000.00	700.00
19,700.00	LB	REINFORCEMENT	1.52	30,000	1.69	33,333	1.78	1.52
46,600.00	LB	COATED REINFORCEMENT	1.93	90,000	1.80	84,000	1.93	1.72
202.00	CUYD	DECK CONCRETE, CLASS HPC4500	841.58	170,000	836.63	169,000	900.99	767.33
134.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	634.33	85,000	694.03	93,000	850.75	597.01
524.00	SQYD	SAW CUT TEXTURING	7.00	3,668	5.02	2,629	7.00	3.55
346.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	250.00	86,500	241.67	83,617	265.00	210.00
743.00	FOOT	36 INCH PRECAST PRESTRESSED BOX BEAMS	310.00	230,330	331.67	246,428	370.00	310.00
13,200.00	LB	POST - TENSIONING	6.44	85,000	5.24	69,165	6.44	3.98
7.00	EACH	BEARING DEVICES, BENT 2	3,000.00	21,000	2,905.00	20,335	3,000.00	2,715.00

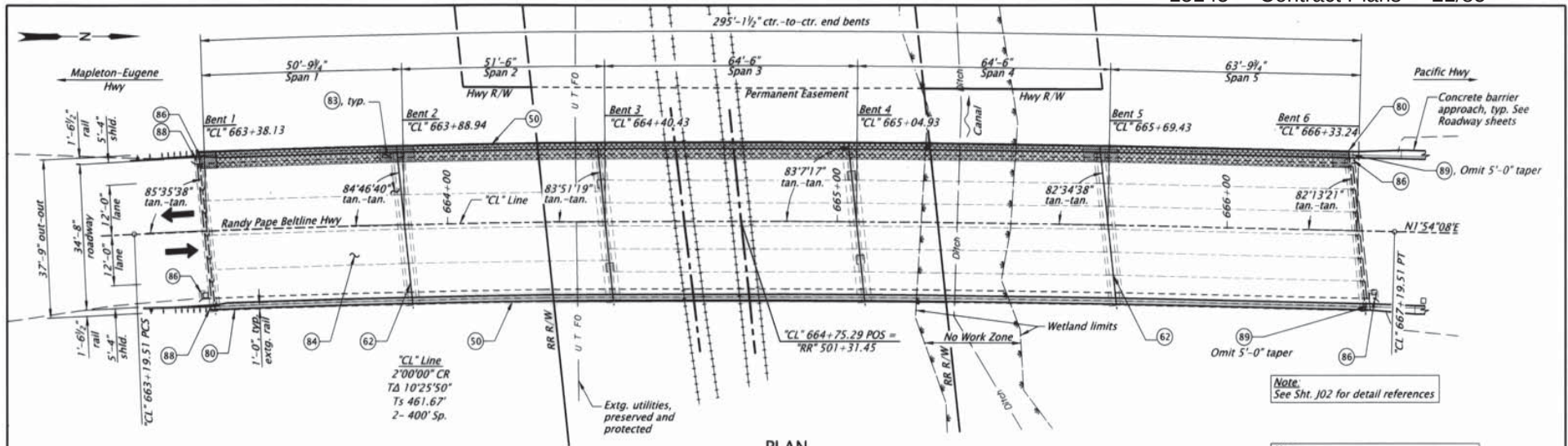
BRIDGE NAME:	Hwy 2 WB Over NW Graham Road		BRIDGE NO:	22517		KEY NO:	19763	
SECTION NAME:	I-84: GRAHAM ROAD BRIDGES PROJECT		COUNTY:	Multnomah		CONTR #	15110	
PRIMARY PROJ:	Bridge Construction		BID DATE:	11/15/2018		FAP NO:	S002(222)	
STRUCT TYPE:	36" PRECAST PRESTRESSED POST TENSIONED BOX GIRDERS		# BIDS RECVD:	6		AWARDED TO:	CARTER & COMPANY INC	
						PREPARED BY:		
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
57.00	FOOT	STRIP SEALS	877.19	50,000	614.03	35,000	877.19	438.60
343.00	FOOT	TYPE "F" CONCRETE RAIL	174.93	60,001	145.29	49,834	174.93	86.01
113.00	SQYD	ARCHITECTURAL TREATMENT	190.00	21,470	154.00	17,402	245.00	27.00
Superstructure								
46,600.00	LB	COATED REINFORCEMENT	1.93	90,000	1.80	84,000	1.93	1.72
202.00	CUYD	DECK CONCRETE, CLASS HPC4500	841.58	170,000	836.63	169,000	900.99	767.33
524.00	SQYD	SAW CUT TEXTURING	7.00	3,668	5.02	2,629	7.00	3.55
743.00	FOOT	36 INCH PRECAST PRESTRESSED BOX BEAMS	310.00	230,330	331.67	246,428	370.00	310.00
13,200.00	LB	POST - TENSIONING	6.44	85,000	5.24	69,165	6.44	3.98
57.00	FOOT	STRIP SEALS	877.19	50,000	614.03	35,000	877.19	438.60
343.00	FOOT	TYPE "F" CONCRETE RAIL	174.93	60,001	145.29	49,834	174.93	86.01
113.00	SQYD	ARCHITECTURAL TREATMENT	190.00	21,470	154.00	17,402	245.00	27.00
Additional Items								
1,920.00	SQFT	TEMPORARY DETOUR BRIDGES	65.10	125,000	141.12	270,944	195.31	65.10
5,220.00	SQFT	BRIDGE REMOVAL WORK	12.45	65,000	19.89	103,833	30.94	12.45
234.00	FOOT	3/4 INCH ELECTRICAL CONDUIT	12.00	2,808	12.00	2,808	12.00	12.00
1,480.00	SQFT	CONCRETE SLOPE PAVING	30.00	44,400	22.08	32,683	30.00	17.25
49.00	FOOT	SLOPE PAVING CURBS	125.00	6,125	127.83	6,264	133.00	125.00
2.00	EACH	GUARDRAIL TRANSITION	3,500.00	7,000	3,550.00	7,100	3,650.00	3,500.00
1.00	LS	GROUND IMPROVEMENTS MOBILIZATION	170,000.00	170,000	148,333.33	148,333	170,000.00	137,500.00
3,750.00	TON	GROUND IMPROVEMENTS, STONE COLUMNS	92.50	346,875	87.81	329,300	92.50	85.47

Seismic Retrofit

2019 BRIDGE COST DATA

SEISMIC RETROFIT

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Beam Seat Extension</u> (unit cost equals Total Cost/Concrete Volume \$/CUYD)										
09460	SCS Canal & UPRR, Hwy 69	Lane	15145	Construct Beam seat extension at Bent 2 and Bent 5	102763	4.88	\$ 35,638	\$ 7,302.77	\$ 26,404	\$ 5,410.62
<u>Breakdown</u>										
				Reinforcement (lb)		411	\$ 5,138	\$ 12.50	\$ 3,631	\$ 8.83
				General structural concrete, Class 4000 (cuyd)		4.88	\$ 30,500	\$ 6,250.00	\$ 22,773	\$ 4,666.67
<u>Transverse Restraint Retrofit</u> (unit cost equals Total Cost/Concrete Volume \$/CUYD)										
09460	SCS Canal & UPRR, Hwy 69	Lane	15145	Transverse seismic restraint retrofit at Bent 2 and Bent 5	102763	3.12	\$ 26,863	\$ 8,609.78	\$ 19,763	\$ 6,334.24
<u>Breakdown</u>										
				Reinforcement (lb)		589	\$ 7,363	\$ 12.50	\$ 5,203	\$ 8.83
				General structural concrete, Class 4000 (cuyd)		3.12	\$ 19,500	\$ 6,250.00	\$ 14,560	\$ 4,666.67

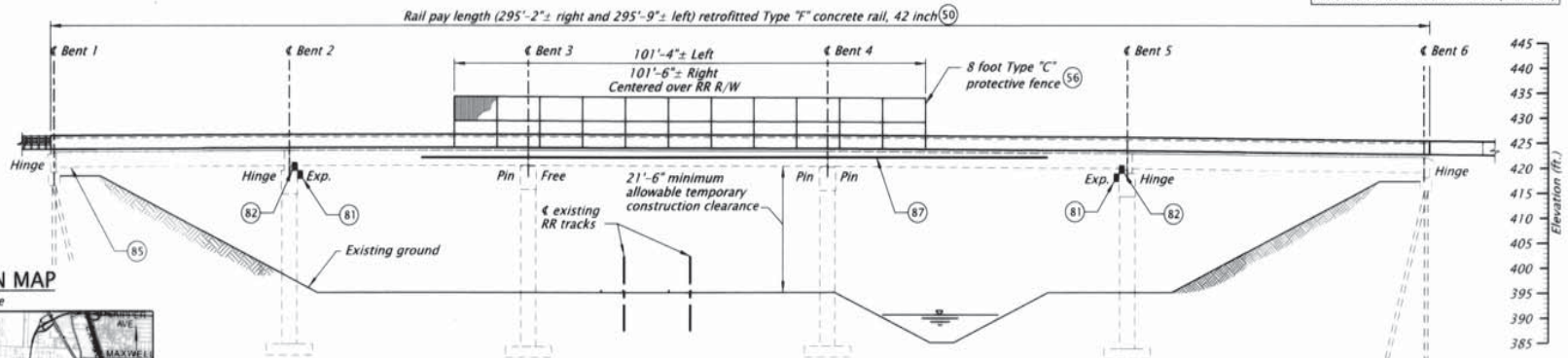


PLAN

Scale: 1" = 25'

Note:
See Sht. J02 for detail references

Note:
Elevations shown are based on North American Vertical Datum 1988 (NAVD88)

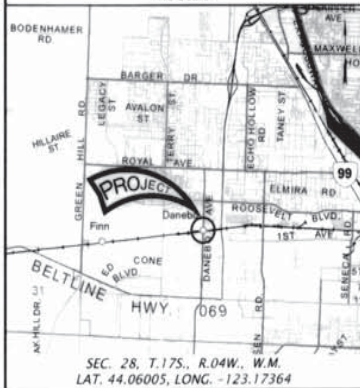


ELEVATION

Scale: 1" = 25'

LOCATION MAP

No Scale

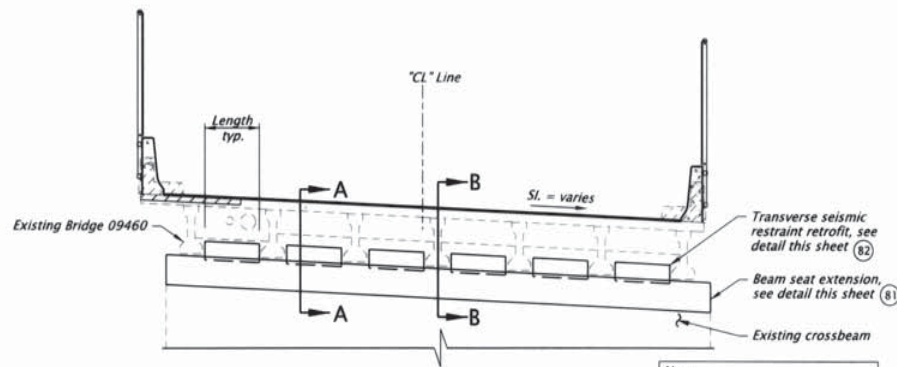


Accompanied by drawings BR02, J02-J09, BR140, BR195, BR240, BR290, and BR291

STRUCTURE NO.	09460
BOS DWG NO.	102759
CALC. BOOK	7105
HWY. 69	
M.P.: 3.92	
COUNTY	Lane
DATE	02/2019



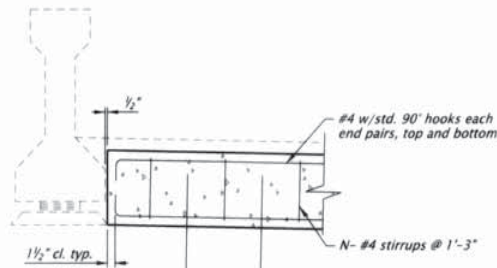
	COMPANY OFFICE: 880 COUNTRY CLUB ROAD, SUITE 1000 EUGENE, OREGON 97401-6089 REGIONAL OFFICES: LAKE OREGON DRIVE, MEDFORD, OREGON HAWKGLADE WASHINGTON	
	SCS Canal & UPRR, Hwy 69 OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT RANDY PAPE BELTLINE HIGHWAY LANE COUNTY	
Designer: Pavan Patel, E.I.T.	Reviewer: Douglas Kirkpatrick, P.E.	
Drafter: Larry Withelm	Checker: Eric E. Bonn, P.E.	
PLAN AND ELEVATION		SHEET NO. J01



BENT ELEVATION
(BENT 5 SHOWN, BENT 2 SIMILAR)
Scale: $\frac{1}{2}" = 1'-0"$

Note:
Transverse seismic restraints are centered between existing girders.

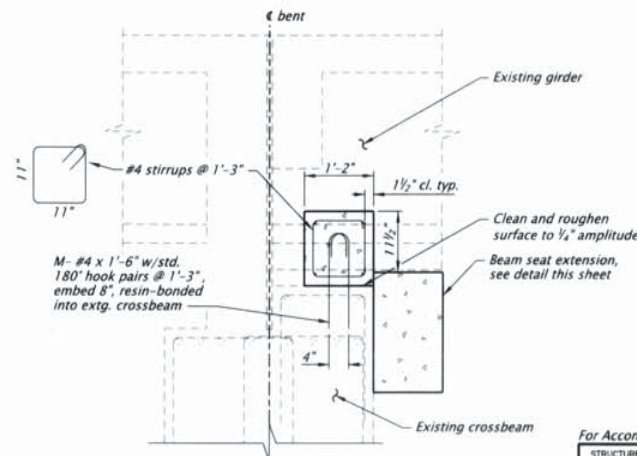
Bent	Qty.	Length
2	4	6'-5"±
5	6	3'-8"±



TRANSVERSE SEISMIC RESTRAINT RETROFIT
Scale: $\frac{1}{2}" = 1'-0"$

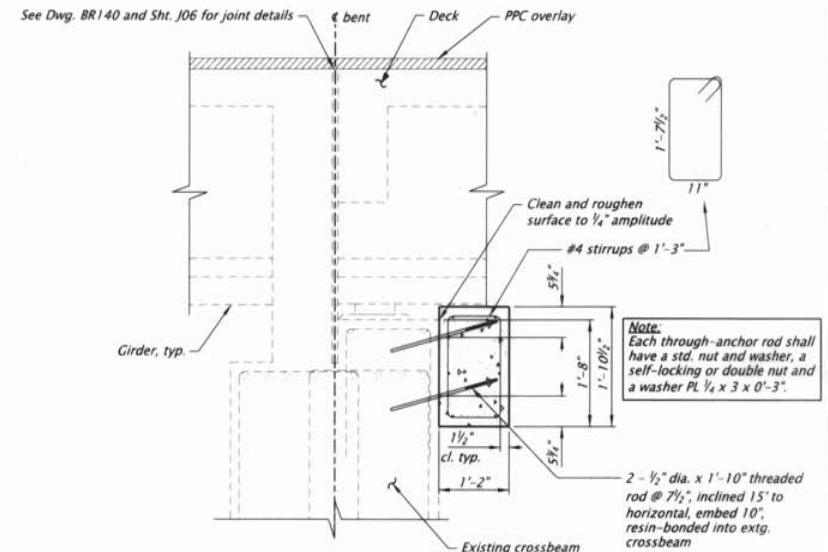
Note:
Rebar layout is symmetrical about centerline of each transverse seismic restraint and beam seat extension.

Bent	N	M
2	5	4
5	3	2

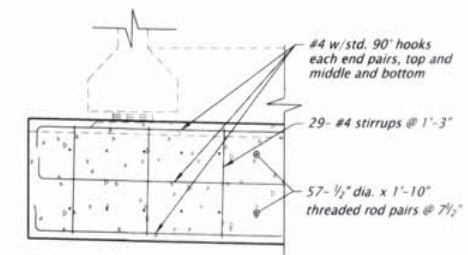


TRANSVERSE SEISMIC RESTRAINT RETROFIT
(SECTION A-A)
Scale: $\frac{1}{2}" = 1'-0"$

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale



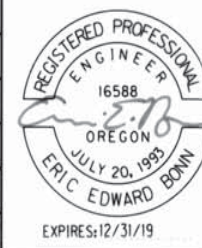
BEAM SEAT EXTENSION SEISMIC RETROFIT
(SECTION B-B)
Scale: $\frac{1}{2}" = 1'-0"$



BEAM SEAT EXTENSION SEISMIC RETROFIT
Scale: $\frac{1}{2}" = 1'-0"$

For Accompanied by drawings, see Sht. J01

STRUCTURE NO.	09460
BDS DWG NO.	102763
CALC. BOOK	7105
HWY. 69	
M.P.: 3.92	
COUNTY	Lane
DATE	02/2019



OBEC CONSULTING ENGINEERS A DOWLL LLC Company		CORPORATE OFFICE: 400 COUNTRY CLUB ROAD, SUITE 1000 EUGENE, OREGON 97401-6000 REGIONAL OFFICES: LANE COUNTY: SALEM, MEDFORD, OREGON HANCOLLIER, WASHINGTON	
SCS Canal & UPRR, Hwy 69			
OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT RANDY PAPE BELTLINE HIGHWAY LANE COUNTY			
Designer: Pavan Patel, E.I.T. Drafter: Larry Wilhelm		Reviewer: Douglas Kirkpatrick, P.E. Checker: Eric E. Bonn, P.E.	
SEISMIC RETROFITS			SHEET NO. J05

BRIDGE NAME:	SCS Canal & UPRR, Hwy 69	BRIDGE NO:	09460	KEY NO:	18576
SECTION NAME:	OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT	COUNTY:	Lane	CONTR #	15145
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	05/16/2019	FAP NO:	S069(020)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE II	# BIDS RECVD:	5	AWARDED TO:	HAMILTON CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Rehabilitation

SUBTOTAL				132,300		147,700		
PERCENT MOBILIZATION			11.01	14,600	11.11	16,400		
TOTAL				146,900		164,100		

Rail_Replacement

591.00	LF	Linear Unit Cost	375.63		306.94			
SUBTOTAL				200,000		163,300		
PERCENT MOBILIZATION			11.01	22,000	11.11	18,100		
TOTAL				222,000		181,400		

Deck_Overlay

10349.83	SF	Deck Overlay Roadway Area Unit Costs	17.31		16.12			
SUBTOTAL				161,400		150,100		
PERCENT MOBILIZATION			11.01	17,800	11.11	16,700		
TOTAL				179,200		166,800		

Seismic Retrofit Phase 1

11140.97	SQFT	Deck Area Unit Costs	6.23		4.60			
SUBTOTAL				62,500		46,200		
PERCENT MOBILIZATION			11.01	6,900	11.11	5,100		
TOTAL				69,400		51,300		

Beam Seat Extension

4.88	CUYD	Volume Unit Costs	8,094.26		6,004.10			
SUBTOTAL				35,600		26,400		
PERCENT MOBILIZATION			11.01	3,900	11.11	2,900		
TOTAL				39,500		29,300		

Transverse Restraint Retrofit

3.12	CUYD	Volume Unit Costs	9,583.33		7,051.28			
SUBTOTAL				26,900		19,800		
PERCENT MOBILIZATION			11.01	3,000	11.11	2,200		
TOTAL				29,900		22,000		

BRIDGE NAME:	SCS Canal & UPRR, Hwy 69	BRIDGE NO:	09460	KEY NO:	18576
SECTION NAME:	OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT	COUNTY:	Lane	CONTR #	15145
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	05/16/2019	FAP NO:	S069(020)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE II	# BIDS RECVD:	5	AWARDED TO:	HAMILTON CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
DETAILS								
Deck Overhang Strengthening, Joint Seals and Concrete Repair								
2,650.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	27.17	71,995	32.17	85,238	37.25	27.17
74.00	FOOT	ELASTOMERIC CONCRETE NOSING	100.00	7,400	130.54	9,660	200.00	91.63
74.00	FOOT	POURED SEALS	20.27	1,500	29.28	2,167	40.54	20.27
1.00	SQYD	REPAIR DAMAGED CONCRETE	5,000.00	5,000	2,666.67	2,667	5,000.00	1,000.00
2.00	EA	BRIDGE IDENTIFICATION MARKERS	150.00	300	150.00	300	150.00	150.00
203.00	FOOT	8 FOOT TYPE C PROTECTIVE FENCE	227.00	46,081	234.67	47,637	250.00	227.00
Rail Replacement								
591.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH, RETROFIT	338.41	200,000	276.37	163,333	338.41	203.05
Bridge Deck Overlay								
6.00	SQYD	CLASS 2 PREPARATION	1,000.00	6,000	666.67	4,000	1,000.00	500.00
24.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	3,600.00	86,400	3,595.37	86,289	3,600.00	3,586.10
1,150.00	SQYD	CONSTRUCT PPC OVERLAY	60.00	69,000	51.98	59,781	60.00	40.95
Beam Seat Extension								
411.00	LB	REINFORCEMENT	12.50	5,138	8.83	3,631	12.50	4.00
4.88	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	6,250.00	30,500	4,666.67	22,773	6,250.00	1,500.00
Transverse Retraint Retrofit								
589.00	LB	REINFORCEMENT	12.50	7,363	8.83	5,203	12.50	4.00
3.12	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	6,250.00	19,500	4,666.67	14,560	6,250.00	1,500.00
DETAILS								
Additional Items								
900.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	27.78	25,000	77.78	70,000	138.89	27.78
2,052.00	SQFT	BRIDGE REMOVAL WORK	29.01	59,535	51.09	104,845	63.35	29.01
2.00	EACH	GUARDRAIL TRANSITION	3,200.00	6,400	3,466.67	6,933	4,000.00	3,200.00

Rail Replacement/

Retrofit

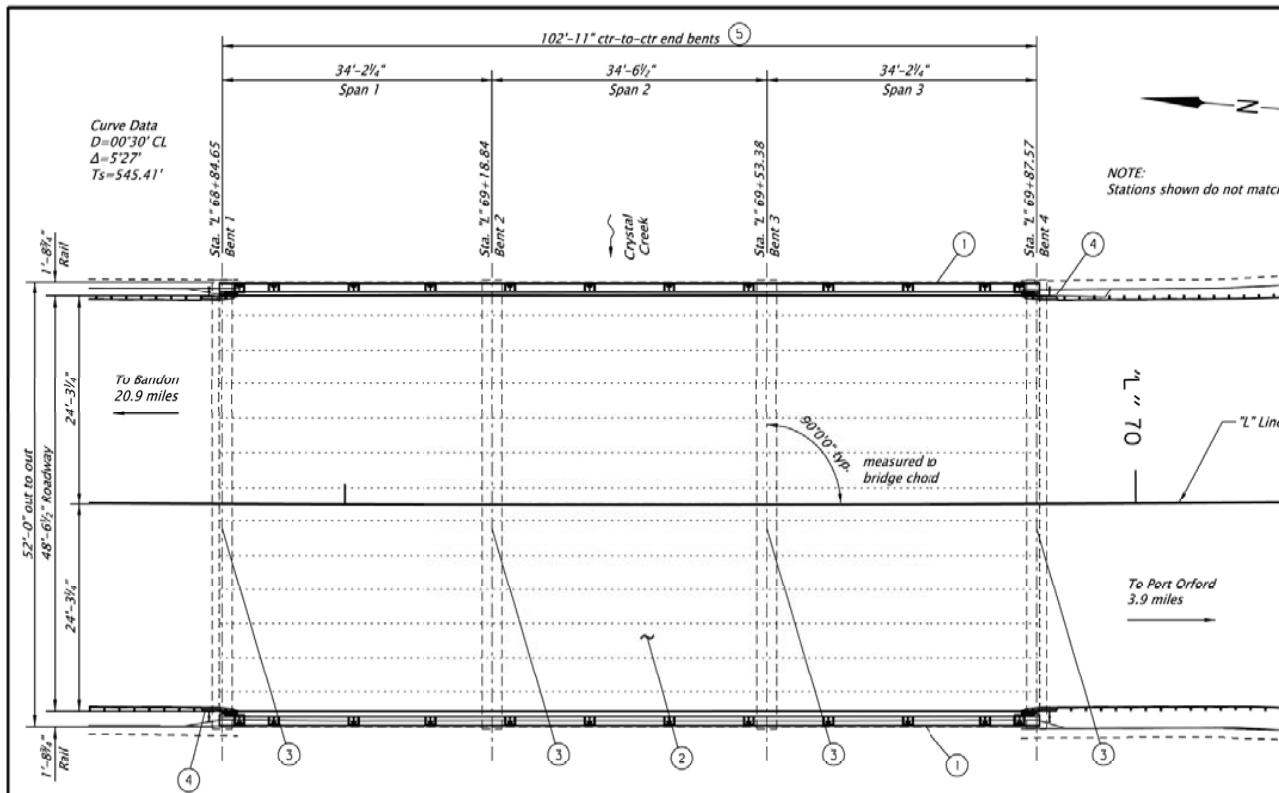
2019 BRIDGE COST DATA

RAIL REPLACEMENT AND RETROFIT

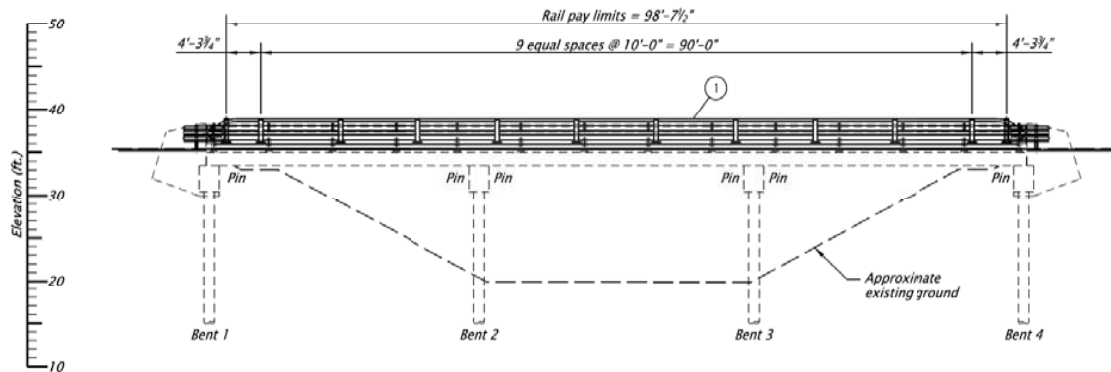
Str. No.	Str. Name	County	Contract	Description	Dwg No.	Linear Feet	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>3 Tube Steel Rail, Modified, Curb Mounted</u>										
00928A	Crystal Creek, Hwy 9	Curry	15104	Remove existing 3 tube rail, construct modified 3-tube curb mount rail.	100935	197	\$ 77,500	\$ 393.40	\$ 88,750	\$ 450.51
00901C	Sixes River, Hwy 9	Curry	15104	Remove existing 3 tube rail, construct Modified 3-tube curb mount rail.	100938	997	\$277,000	\$ 277.83	\$ 301,000	\$ 301.91
09777	Little Butte Creek, Hwy 270	Jackson	15106	Remove existing 3 tube rail, construct modified 3-tube curb mounted rail	100745	643	\$212,000	\$ 329.70	\$ 164,667	\$ 256.09
<i>Subtotal (ft)</i>						1,837	\$566,500	\$ 308.38	\$ 554,417	\$ 301.81
<u>Type 2A Rail, Modified</u>										
07813	Jackson Creek, Hanley Rd #789 at MP 3.34	Jackson	15106	Remove existing rail, install modified Type 2A rail	100749	56	\$ 3,000	\$ 53.57	\$ 5,833	\$ 104.17
<i>Subtotal (ft)</i>						56	\$ 3,000	\$ 53.57	\$ 5,833	\$ 104.17
<u>Concrete Bridge Rail</u>										
07333	Columbia R & N Hayden Isl Dr, Hwy1 SB (Interstate)	Multnomah	15119	Type "F" barrier rail replacement	101267	13	\$ 5,000	\$ 384.62	\$ 5,000	\$ 384.62
<i>Subtotal (ft)</i>						13	5,000	\$ 384.62	5,000	\$ 384.62
<u>Type "F" Concrete Rail, Modified (Replace Existing)</u>										
00805C	Lower Lookingglass Creek, Hwy 35	Douglas	15130	Construct 3'-6" Type F concrete rail, modified (ft)	102467	378	\$125,000	\$ 330.69	\$ 125,000	\$ 330.69
<i>Subtotal (ft)</i>						378	\$125,000	\$ 330.69	\$ 125,000	\$ 330.69

RAIL REPLACEMENT AND RETROFIT

Str. No.	Str. Name	County	Contract	Description	Dwg No.	Linear Feet	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Type "F" Concrete Rail, Retrofit (Replace Existing)</u>										
02133A	Spanish Hollow Creek, Hwy 2	Sherman	15118	Replace existing concrete rail with Type "F" concrete rail, retrofit	100075	277	\$ 71,600	\$ 258.48	\$ 76,533	\$ 276.29
09232	Scott Canyon, Hwy 2 WB	Sherman	15118	Replace existing rail with Type "F" concrete rail, retrofit	100079	382	\$ 98,243	\$ 257.18	\$ 100,969	\$ 264.32
09232A	Scott Canyon, Hwy 2 EB	Sherman	15118	Replace existing rail with Type "F" concrete rail, retrofit	100079 (shared)	398	\$102,357	\$ 257.18	\$ 105,198	\$ 264.32
09225	Hwy 2 EB over Rufus Conn	Sherman	15118	Replace existing rail with Type "F" concrete rail, retrofit	100083	259	\$ 66,500	\$ 257.25	\$ 67,875	\$ 262.57
09225A	Hwy 2 WB over	Sherman	15118	Replace existing rail	100083	259	\$ 66,500	\$ 257.25	\$ 67,875	\$ 262.57
<u>Subtotal (ft)</u>						1,574	\$405,200	\$ 257.43	\$ 418,450	\$ 265.85
<u>Type "F" Concrete Rail, 42 Inch (Replace Existing)</u>										
09259A	Hwy 1 NB over Hwy 273	Jackson	15134	Replace existing rail with Type "F" concrete rail, 42 inch	102087	504	\$100,000	\$ 198.41	\$ 110,000	\$ 218.25
09259	Hwy 1 SB over Hwy 273	Jackson	15134	Replace existing rail with Type "F" concrete rail, 42 inch	102093	570	\$100,000	\$ 175.44	\$ 118,333	\$ 207.60
09460	SCS Canal & UPRR,	Lane	15145	Replace existing rail	102759	591	\$200,000	\$ 338.41	\$ 163,333	\$ 276.37
<u>Subtotal (ft)</u>						1,665	\$400,000	\$ 240.24	\$ 391,667	\$ 235.24
<u>Thrie-Beam Steel Rail, Retrofit</u>										
08013	Hwy 39 over Hwy	Yamhill	15113	Install Thrie-beam rail	101309	230	\$ 48,000	\$ 208.70	\$ 64,950	\$ 282.39
<u>Subtotal (ft)</u>						230	\$ 48,000	\$ 208.70	\$ 64,950	\$ 282.39



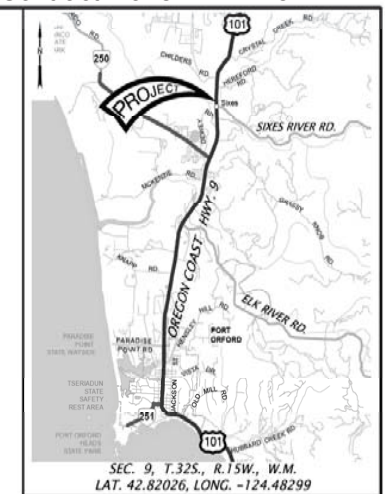
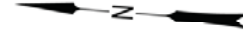
PLAN
Scale: 1" = 15'-0"



NOTE:
Elevations are based on as-built plans.

ELEVATION
Scale: 1" = 15'-0"

NOTE:
Stations shown do not match as-built stations.



LOCATION MAP
No Scale

DETAIL REFERENCE NUMBERS:

- ① Remove existing three tube rail, curb and concrete end blocks. Construct Modified 3-Tube Curb Mount Rail. See JA03 for details.
- ② Field verify existing ACP thickness, $4\frac{1}{2}$ " anticipated. Remove all ACP, place waterproof membrane, and place 4" ACP.
- ③ Sawcut ACP, $\frac{1}{2}$ " wide x $1\frac{1}{2}$ " deep. Fill with traffic loop sealant.
- ④ Remove portions of the wingwall/rail as shown. Install modified guardrail transition. See JA03 for details.
- ⑤ Locate and repair damaged concrete. Replace damaged reinforcing steel and zinc anodes. See JA02 (BD5 Dwg. No 100945) for details.
- ⑥ Install bridge I.D. marker to rail post, see BRIDGE ID MARKER TABLE on sheet JA03 and BR195 for details.

Note:

Anticipated that access for repairing damaged reinforcing and damaged concrete can be accomplished from ground using ladders and scaffolding

STRUCTURE NO.	00928A
BOS DWG. NO.	100935
CALC. BOOK	6992
REV: 009	
M.P.: 296.49	
COUNTY	Curry
DATE	7/2018

SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

OREGON DEPARTMENT
OF TRANSPORTATION

CRYSTAL CR_HWY 9

US101: CHILDERS RD - GARRISON SLOUGH SECTION
OREGON COAST HIGHWAY
CURRY COUNTY

Designer: Robert E. Grubbs
 Drafter: Michael L. Jones/D

Reviewer: George F. Bornstedt

PLAN AND ELEVATION

SHEET NO.
1A01

BRIDGE NAME:	Crystal Creek, Hwy 9	BRIDGE NO:	00928A	KEY NO:	18870
SECTION NAME:	US101: CHILDERS RD - GARRISON SLOUGH SECTION	COUNTY:	Curry	CONTR #	15104
PRIMARY PROJ:	Rail Replacement	BID DATE:	10/11/2018	FAP NO:	S009(471)
STRUCT TYPE:	PS SLABS SL18	# BIDS RECVD:	2	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

197.00	LF	Linear Unit Cost	413.20		487.22			
SUBTOTAL				77,500		88,800		
PERCENT MOBILIZATION			5.11	4,000	8.19	7,300		
TOTAL				81,500		96,100		

Miscellaneous Project - Bridge Repair

SUBTOTAL				80,000		77,400		
PERCENT MOBILIZATION			5.11	4,100	8.19	6,300		
TOTAL				84,100		83,700		

DETAILS

Rail Replacement

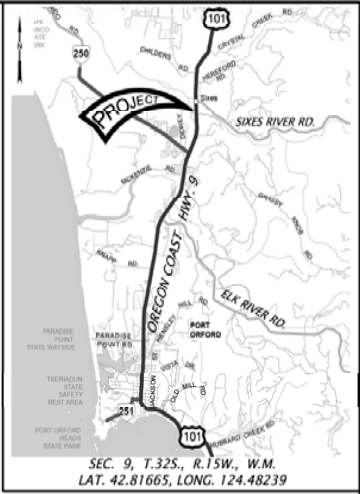
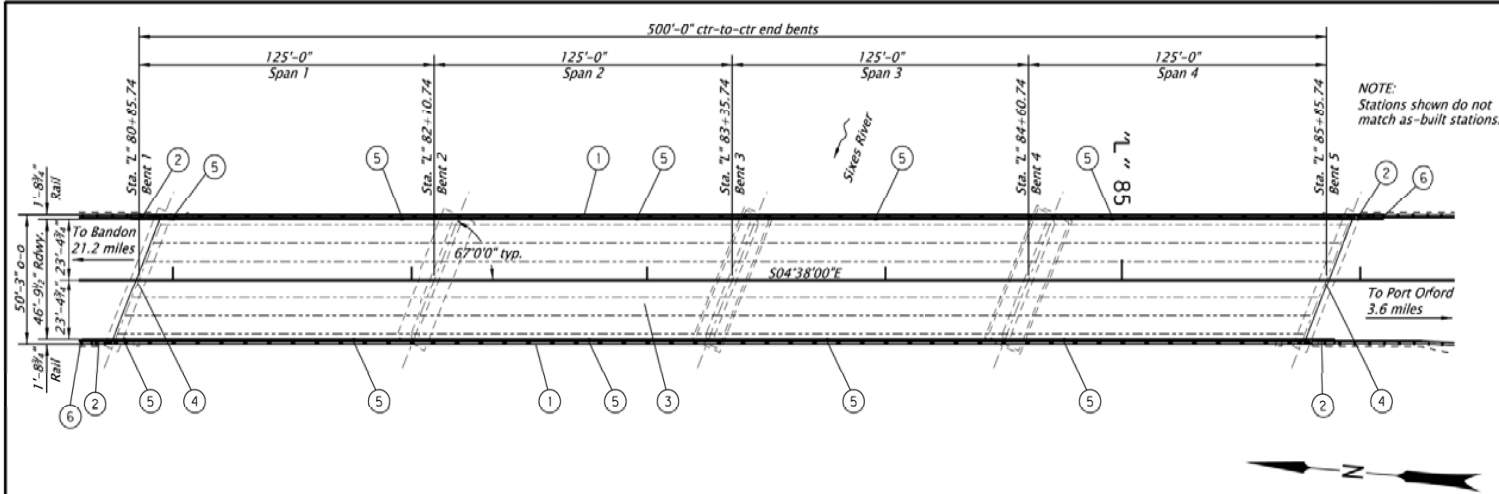
197.00	FOOT	3 TUBE STEEL RAIL, MODIFIED, CURB MOUNTED	393.40	77,500	450.51	88,750	507.61	393.40
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Bridge Repair - Locate and Repair Damage Concrete, Install Membrane

555.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	21.35	11,849	21.93	12,168	22.50	21.35
216.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	22.10	4,774	22.68	4,898	23.25	22.10
4,996.00	SQFT	WARRANTED SPRAY WATERPROOFING MEMBRANE	9.65	48,211	9.33	46,588	9.65	9.00
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	135.00	270	137.50	275	140.00	135.00
1.00	EACH	REPAIR DAMAGED REINFORCING BAR	1,100.00	1,100	2,050.00	2,050	3,000.00	1,100.00
5.00	SQYD	REPAIR DAMAGED CONCRETE	2,765.00	13,825	2,282.50	11,412	2,765.00	1,800.00

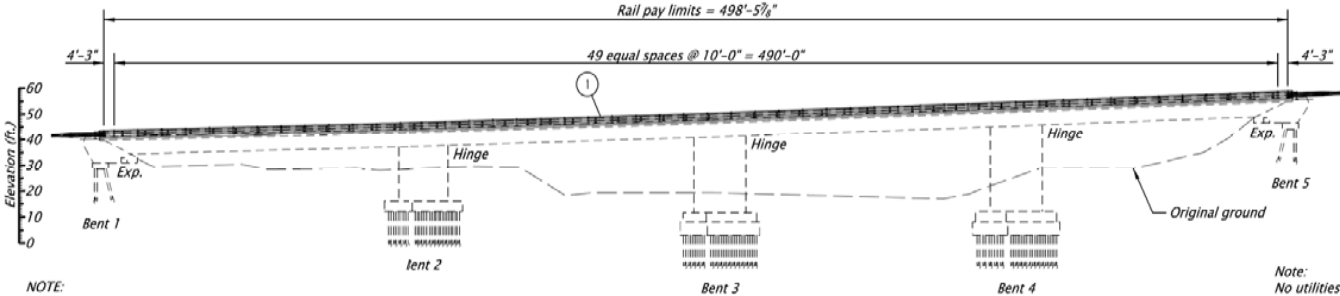
Additional Items

500.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	32.00	16,000	66.00	33,000	100.00	32.00
414.00	SQFT	BRIDGE REMOVAL WORK	53.14	22,000	50.72	21,000	53.14	48.31
4.00	EACH	GUARDRAIL TRANSITION	3,250.00	13,000	3,250.00	13,000	3,250.00	3,250.00



PLAN
Scale: 1" = 50'-0"

- DETAIL REFERENCE NUMBERS:**
- 1 Remove existing two tube rail, curb, and concrete end blocks. Install NSM CFRP overhang strengthening, see JB03 for details. Construct Modified 3-Tube Curb Mount Rail. See JB02 for details.
 - 2 Remove portion of wingwall/rail as shown. Install modified guardrail transition, see JB04 for details.
 - 3 Construct MPCO, see JB03 for details.
 - 4 Remove and replace Type D Compression seals only, see BR139
 - 5 Modify curb to accommodate existing deck drains, 10 total, see JB05.
 - 6 Install bridge I.D. Marker to rail post, see BRIDGE ID MARKER TABLE on sheet JB02 and BR195 for details.



Note:
No utilities conflicts are anticipated.

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

BRIDGE ID MARKER TABLE	
Phone Number (Agency Dispatch Center)	1-877-877-3806
Route (RTE)	US 101
Highway No. (HWY)	109
Milepoint (MP)	295.75
Bridge No. (BR)	00901C
Structure Name	00901C

ELEVATION
Scale: 1" = 50'-0"

STRUCTURE NO.
00901C
BOS DWG NO.
100938
CALC. BOOK
6992
HWY: 009
M.P.: 295.75
COUNTY
Curry
DATE
7/2018

REGISTERED PROFESSIONAL ENGINEER
56148PE
Digitally Signed Jul 25 2018 6:11 AM
OREGON
JAN 15, 2002
ROBERT E. CRUBBS
RENEW: 06-30-2019

OREGON DEPARTMENT OF TRANSPORTATION
SIXES RIVER HWY 9
US101: CHILDERS RD - GARRISON SLOUGH SECTION
OREGON COAST HIGHWAY
CURRY COUNTY

Designer: Robert E. Grubbs
Reviewer: George F. Barnstedt
Draftsman: Michael L. Jones/Dan D. Foss
Checker: Fred M. Gomez

PLAN AND ELEVATION

SHEET NO.
JB01

BRIDGE NAME:	Sixes River, Hwy 9	BRIDGE NO:	00901C	KEY NO:	18870
SECTION NAME:	US101: CHILDERS RD - GARRISON SLOUGH SECTION	COUNTY:	Curry	CONTR #	15104
PRIMARY PROJ:	Rail Replacement	BID DATE:	10/11/2018	FAP NO:	S009(471)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-BULB T 65 IN	# BIDS RECVD:	2	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

997.00	LF	Linear Unit Cost	292.08		326.58			
SUBTOTAL				277,000		301,000		
PERCENT MOBILIZATION			5.11	14,200	8.19	24,600		
TOTAL				291,200		325,600		

Miscellaneous Project - Deck Overhang Strengthening, Joint Repair

SUBTOTAL				126,800		130,400		
PERCENT MOBILIZATION			5.11	6,500	8.19	10,700		
TOTAL				133,300		141,100		

Multi-Layer Polymer Concrete Overlay (MPCO)

23400.00	SF	MPCO Roadway Area Unit Costs	4.63		4.24			
SUBTOTAL				103,000		91,800		
PERCENT MOBILIZATION			5.11	5,300	8.19	7,500		
TOTAL				108,300		99,300		

DETAILS

Rail Replacement								
997.00	FOOT	3 TUBE STEEL RAIL, MODIFIED, CURB MOUNTED	277.83	277,000	301.91	301,000	325.98	277.83
Deck Overhang Strengthening, Joint Repair								
208.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	21.50	4,472	22.00	4,576	22.50	21.50
3,725.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	29.80	111,000	31.01	115,500	32.21	29.80
109.00	FOOT	TYPE "D" COMPRESSION SEALS	101.83	11,100	92.20	10,050	101.83	82.57
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	135.00	270	137.50	275	140.00	135.00
MPCO								
26.00	SQYD	CLASS 2 PREPARATION	500.00	13,000	250.01	6,500	500.00	0.01
2,600.00	SQYD	FURNISH MPCO MATERIAL	17.30	44,980	16.40	42,640	17.30	15.50
2,600.00	SQYD	CONSTRUCT MPCO	17.30	44,980	16.40	42,640	17.30	15.50

BRIDGE NAME:			Sixes River, Hwy 9		BRIDGE NO:		00901C		KEY NO:		18870		
SECTION NAME:			US101: CHILDERS RD - GARRISON SLOUGH SECTION		COUNTY:		Curry		CONTR #		15104		
PRIMARY PROJ:			Rail Replacement		BID DATE:		10/11/2018		FAP NO:		S009(471)		
STRUCT TYPE:			RC DECK GIRDER-PRECAST-BULB T 65 IN		# BIDS RECVD:		2		AWARDED TO:		LTM INC		
										PREPARED BY:			
					CONTRACT			2 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Additional Items													
6,000.00		SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT			0.92	5,500		15.79	94,750		30.67	0.92
1,110.00		SQFT	BRIDGE REMOVAL WORK			100.00	111,000		95.05	105,500		100.00	90.09
4.00		EACH	GUARDRAIL TRANSITION			3,250.00	13,000		3,250.00	13,000		3,250.00	3,250.00

BRIDGE NAME:	Little Butte Creek, Hwy 270	BRIDGE NO:	09777	KEY NO:	19961
SECTION NAME:	OR140/OR238: BRIDGE & CULVERT RAIL UPGRADES PROJECT	COUNTY:	Jackson	CONTR #	15106
PRIMARY PROJ:	Rail Replacement	BID DATE:	10/11/2018	FAP NO:	STP - SA00(057)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE V	# BIDS RECVD:	6	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail Replacement

643.00	LF	Linear Unit Cost	367.03		287.25			
SUBTOTAL				212,300		164,900		
PERCENT MOBILIZATION			11.14	23,700	12.00	19,800		
TOTAL				236,000		184,700		

Miscellaneous Project - Deck Overhang Strengthening

SUBTOTAL				221,300		162,500		
PERCENT MOBILIZATION			11.14	24,700	12.00	19,500		
TOTAL				246,000		182,000		

Multi-Layer Polymer Concrete Overlay (MPCO)

16110.00	SF	MPCO Roadway Area Unit Costs	4.54		5.58			
SUBTOTAL				65,900		80,300		
PERCENT MOBILIZATION			11.14	7,300	12.00	9,600		
TOTAL				73,200		89,900		

DETAILS

Rail Replacement

643.00	FOOT	3 TUBE STEEL RAIL, MODIFIED	329.70	212,000	256.09	164,667	329.70	174.18
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	160.00	320	133.33	267	160.00	90.00

Deck Overhang Strengthening, End Block Replacement

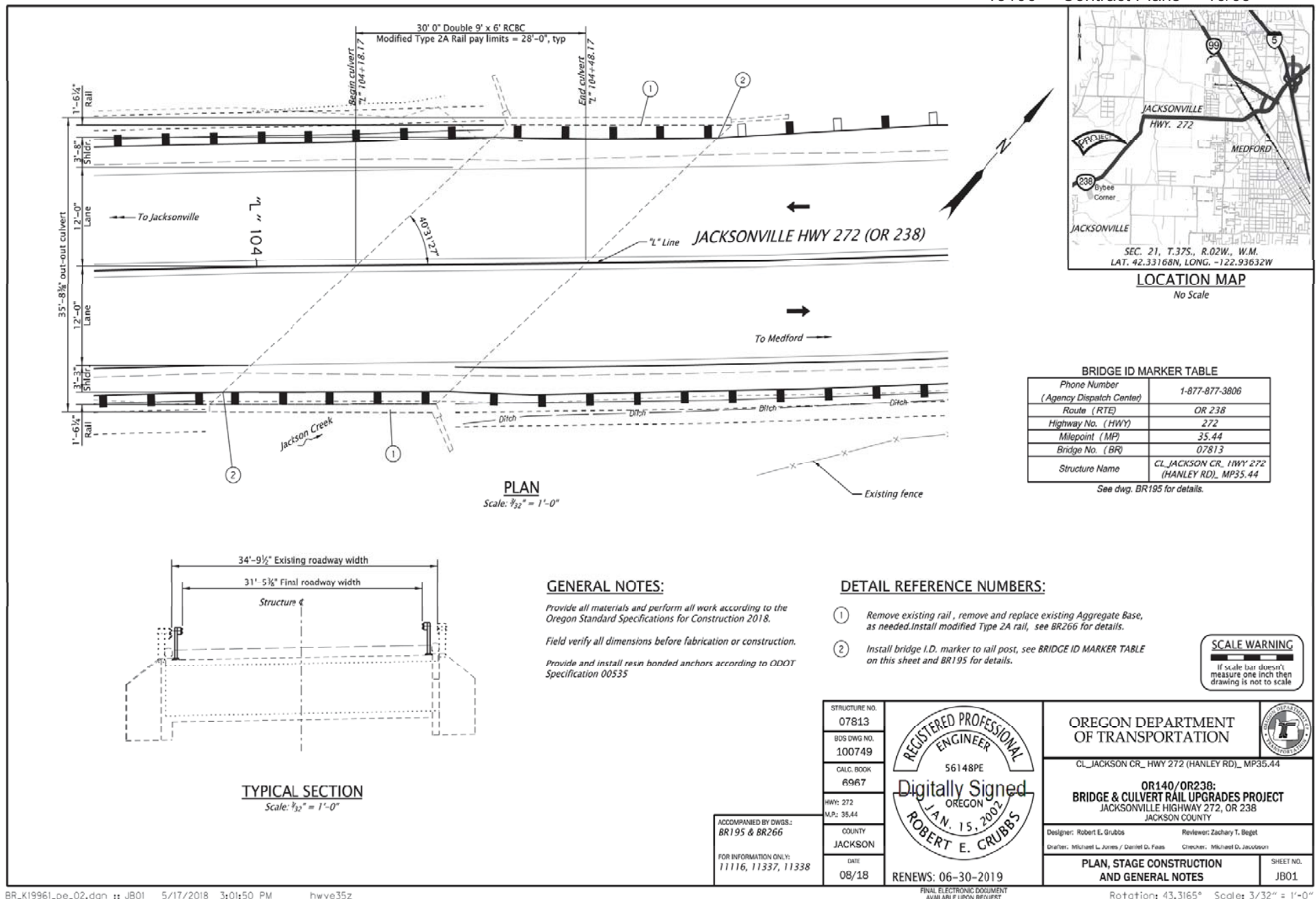
13.00	CUYD	STRUCTURE EXCAVATION	376.92	4,900	869.23	11,300	2,000.00	230.77
6,761.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	28.99	196,000	19.13	129,333	28.99	3.25
48.00	FOOT	END BLOCK, MODIFIED	425.00	20,400	456.00	21,888	700.00	243.00

MPCO

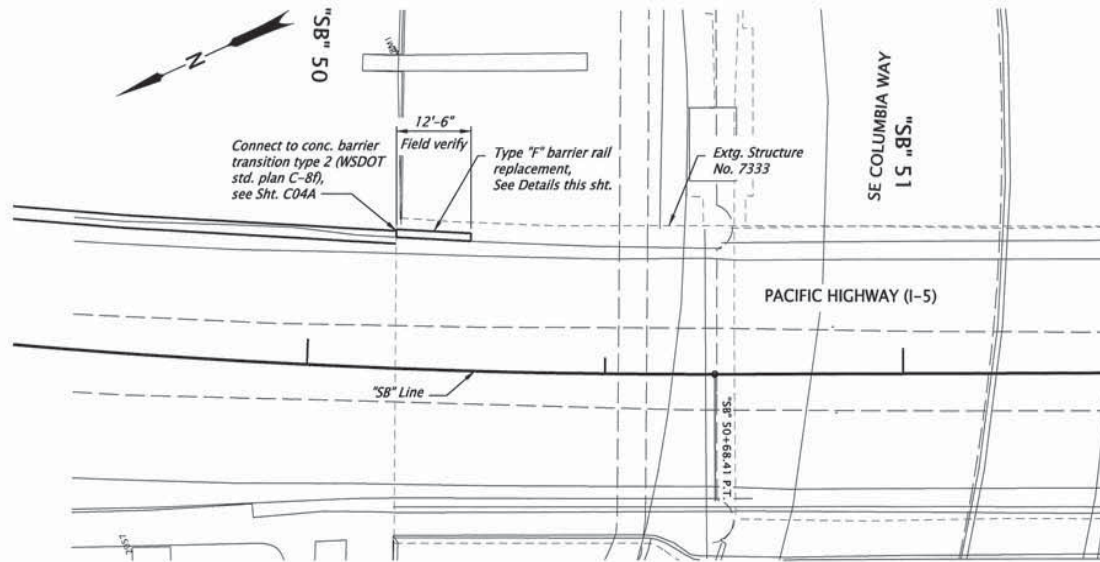
18.00	SQYD	CLASS 2 PREPARATION	480.00	8,640	716.67	12,900	1,200.00	470.00
1,790.00	FOOT	FURNISH MPCO MATERIAL	16.00	28,640	17.00	30,430	18.00	16.00
1,790.00	SQYD	CONSTRUCT MPCO	16.00	28,640	20.67	36,993	28.00	16.00

Additional Items

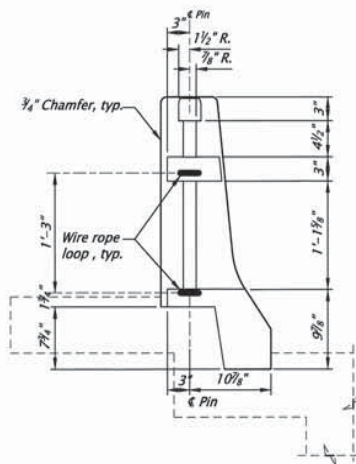
2,571.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	0.39	1,000	8.43	21,667	15.95	0.39
643.00	FOOT	BRIDGE REMOVAL WORK	44.79	28,800	52.26	33,600	65.32	44.79
4.00	EACH	GUARDRAIL TRANSITION	1,900.00	7,600	2,596.67	10,387	4,000.00	1,890.00



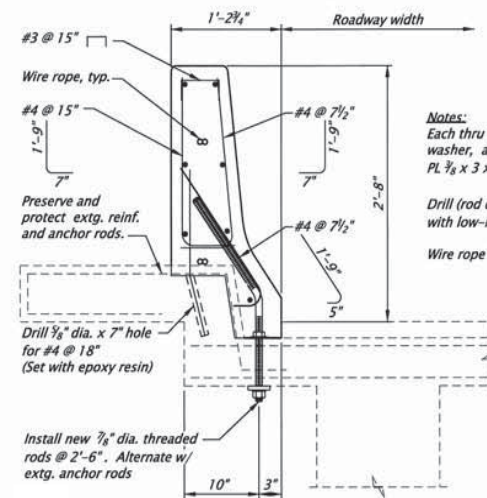
BRIDGE NAME:			Jackson Creek, Hanley Rd #789 at MP 3.34			BRIDGE NO:		07813		KEY NO:		19961			
SECTION NAME:			OR140/OR238: BRIDGE & CULVERT RAIL UPGRADES PROJECT			COUNTY:		Jackson		CONTR #		15106			
PRIMARY PROJ:			Rail Replacement			BID DATE:		10/11/2018		FAP NO:		STP - SA00(057)			
STRUCT TYPE:			REINFORCED CONCRETE BOX CULVERTS			# BIDS RECVD:		6		AWARDED TO:		CONWAY CONSTRUCTION CO			
										PREPARED BY:					
						CONTRACT			3 LOW BIDDERS			SPREAD			
QTY		UNIT	BID ITEM			UNIT		AMT		UNIT		AMT		HIGH	LOW
Rail_Replacement															
56.00		LF	Linear Unit Cost			66.07				121.43					
SUBTOTAL								3,300				6,100			
PERCENT MOBILIZATION						11.14		400		12.00		700			
TOTAL								3,700				6,800			
DETAILS															
Rail Replacement															
56.00		FOOT	TYPE 2A RAIL, MODIFIED			53.57		3,000		104.17		5,833		178.57	53.57
2.00		EACH	BRIDGE IDENTIFICATION MARKERS			160.00		320		133.33		267		160.00	90.00
Additional Items															
56.00		FOOT	BRIDGE REMOVAL WORK			17.86		1,000		225.00		12,600		642.86	14.29



PLAN
Scale: 1"=20'



NORTH END VIEW

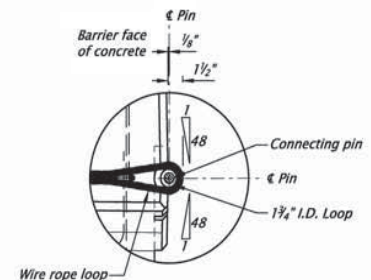


SECTION

Notes:
Each thru anchor rod shall have a standard nut and washer, a self locking or double nut and a washer PL 7/8 x 3 x 3 (galv.).

Drill (rod dia. + 1/8") dia. holes for thru anchor rods with low-impact rotary drill.

Wire rope loops shall be 3'-8" long.



WIRE ROPE CONNECTION DETAIL
Scale: 1"=1'-0"

TYPE "F" RAIL CONNECTION DETAILS

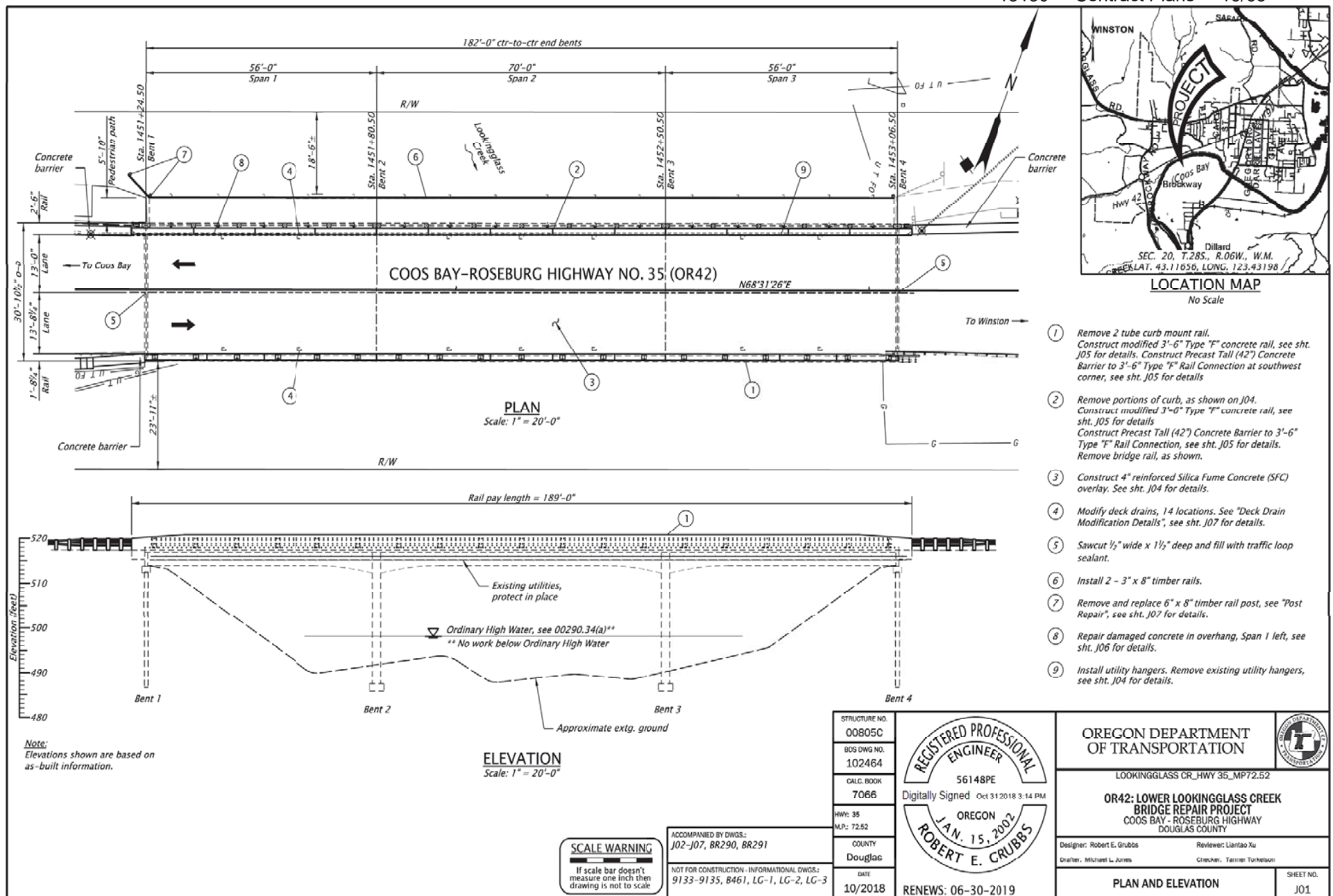
Scale: 1"=1'-0"

STRUCTURE NO. 07333			DAVID EVANS AND ASSOCIATES INC.		
BOS DWG NO. 101267			2100 SW River Parkway Portland Oregon 97201 Phone: 503.223.6663		
CALC. BOOK 7031			COLUMBIA R. HWY 15B (INTERSTATE BR)		
HWY: 001 M.P.: 308.38			I-5: INTERSTATE BR (NB) TRUNNION SHAFT REPLACEMENT PROJECT PACIFIC HIGHWAY MULTNOMAH COUNTY OREGON AND CLARK COUNTY WASHINGTON		
COUNTY Multnomah/ Clark	RENEWS: 06-30-2020	Designer: Terry Stones	Reviewer: Ted Stewart	SHEET NO. J27	
DATE 09/2018		Drafter: Jim Culpepper	Checker: Anthony Caligano		
		RAIL REPLACEMENT DETAILS			

BRIDGE NAME:	Columbia R & N Hayden Isl Dr, Hwy1 SB (Interstate)	BRIDGE NO:	07333	KEY NO:	19651
SECTION NAME:	I-5: INTERSTATE BR (NB) TRUNNION SHAFT REPLACEMENT PROJECT	COUNTY:	Multnomah	CONTR #	15119
PRIMARY PROJ:	Rail Replacement	BID DATE:	12/06/2018	FAP NO:	S001(482)
STRUCT TYPE:	STEEL-MOVABLE-LIFT	# BIDS RECVD:	1	AWARDED TO:	HAMILTON CONSTRUCTION CO

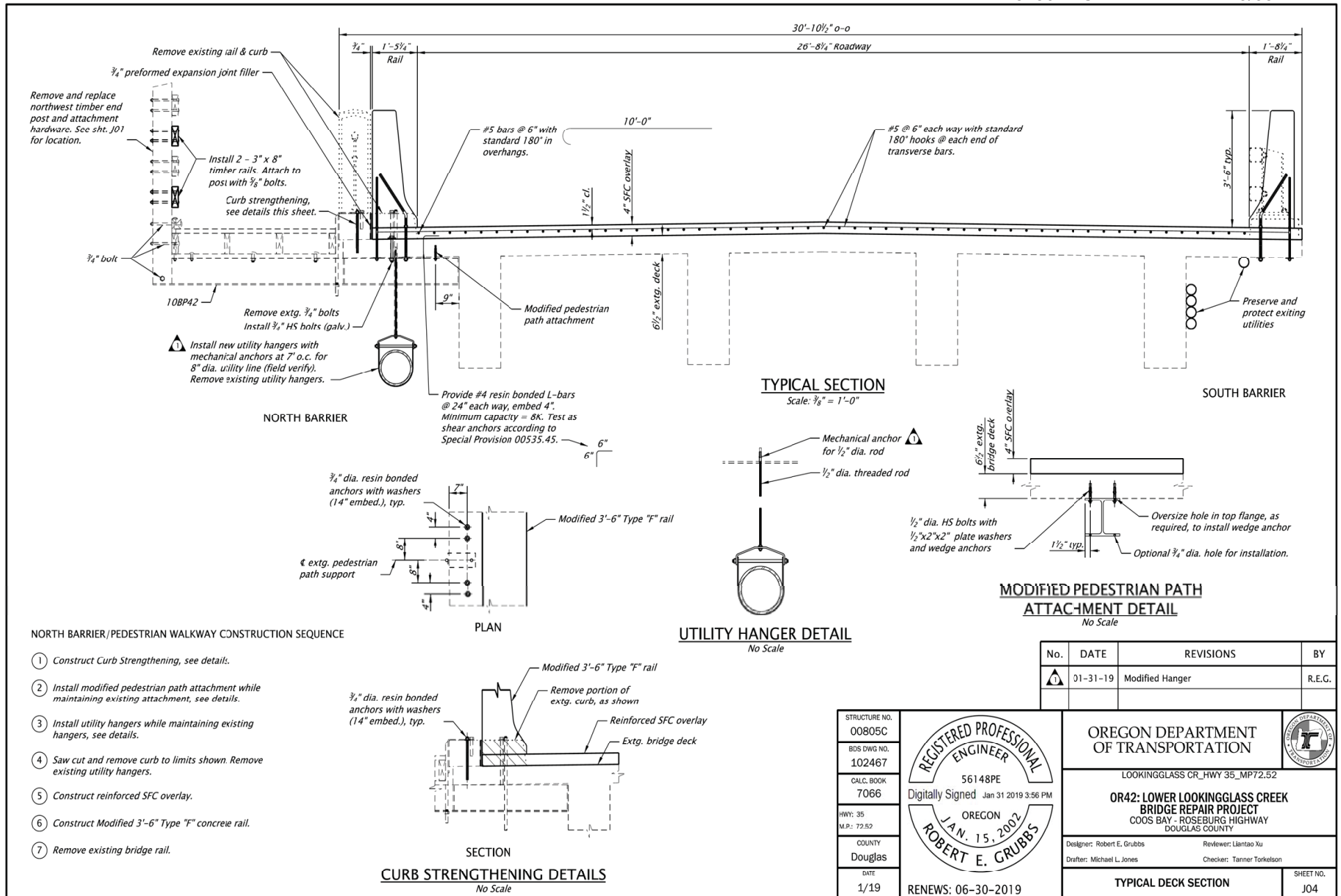
PREPARED BY:

			CONTRACT		1 LOW BIDDER		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Rail Replacement								
13.00	LF	Linear Unit Cost	430.77		430.77			
		SUBTOTAL		5,000		5,000		
		PERCENT MOBILIZATION	11.00	600	11.00	600		
		TOTAL		5,600		5,600		
DETAILS								
Rail Replacement								
13.00	FOOT	CONCRETE BRIDGE RAIL	384.62	5,000	384.62	5,000	384.62	384.62
Additional Items								
13.00	FOOT	BRIDGE REMOVAL WORK	11,538.46	150,000	11,538.46	150,000	11,538.46	11,538.46
12.50	FOOT	CONCRETE BARRIER TRANSITION, TYPE 2 to BRIDGE RAIL	40.00	500	40.00	500	40.00	40.00



BR_K18586_pe_01.dgn :: J01 10/31/2018 3:09:47 PM hwy35:

Rotation: 21.526° Scale: 1"=20'



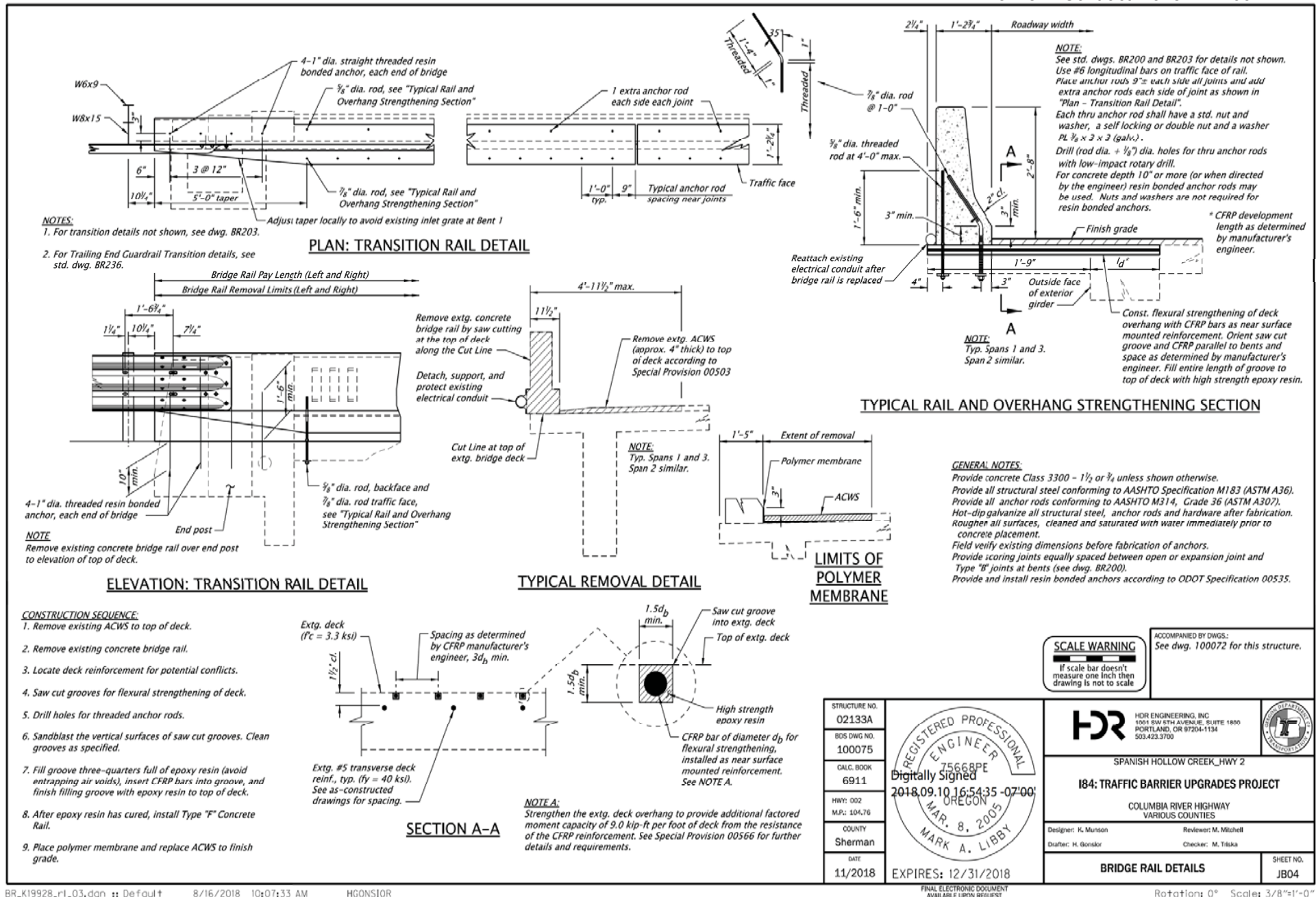
BR_K18586_dk_01.dgn :: J02 1/31/2019 2:35:30 PM hwy35z

RENEW: 06-30-2019
FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotation: 0° Scale: 3/8"=1'-0"

BRIDGE NAME:	Lower Lookingglass Creek, Hwy 35			BRIDGE NO:	00805C		KEY NO:	18586	
SECTION NAME:	OR42: LOWER LOOKINGGLASS CREEK BRIDGE REPAIR PROJECT			COUNTY:	Douglas		CONTR #	15130	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	02/07/2019		FAP NO:	S035(069)	
STRUCT TYPE:	RC DECK GIRDER-CIP			# BIDS RECVD:	10		AWARDED TO:	OREGON STATE BRIDGE	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Repair									
SUBTOTAL					102,200		101,900		
PERCENT MOBILIZATION				11.10	11,300	10.44	10,600		
TOTAL					113,500		112,500		
Rail_Replacement									
378.00	LF	Linear Unit Cost		367.46		365.08			
SUBTOTAL					125,000		125,000		
PERCENT MOBILIZATION				11.10	13,900	10.44	13,000		
TOTAL					138,900		138,000		
Deck_Overlay									
4878.00	SF	Deck Overlay Roadway Area Unit Costs		15.23		18.38			
SUBTOTAL					66,900		83,600		
PERCENT MOBILIZATION				11.10	7,400	10.44	8,700		
TOTAL					74,300		89,600		
DETAILS									
Bridge Repair									
26,555.00	LB	REINFORCEMENT		2.26	60,000	2.44	64,717	3.20	1.85
14.00	EACH	BRIDGE DRAINS		1,000.00	14,000	1,000.00	14,000	1,000.00	1,000.00
16.00	SQFT	REPAIR DAMAGED CONCRETE		310.00	4,960	303.33	4,853	450.00	150.00
0.75	MFBM	TIMBER AND LUMBER		4,357.00	3,268	7,119.00	5,339	10,000.00	4,357.00
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES		20,000.00	20,000	13,000.00	13,000	20,000.00	4,000.00
Rail Replacement									
378.00	FOOT	3'-6" TYPE "F" CONCRETE RAIL, MODIFIED		330.69	125,000	330.69	125,000	343.92	317.46
Bridge Deck SFC Overlay									
69.00	SQYD	CLASS 2 PREPARATION		163.00	11,247	332.67	22,954	485.00	163.00
66.00	CUYD	FURNISH SILICA FUME CONCRETE		191.00	12,606	223.67	14,762	300.00	180.00
542.00	SQYD	CONSTRUCT SFC RESURFACING		75.00	40,650	80.00	43,360	100.00	65.00
473.00	SQYD	SAW CUT TEXTURING		5.00	2,365	5.27	2,491	6.80	4.00

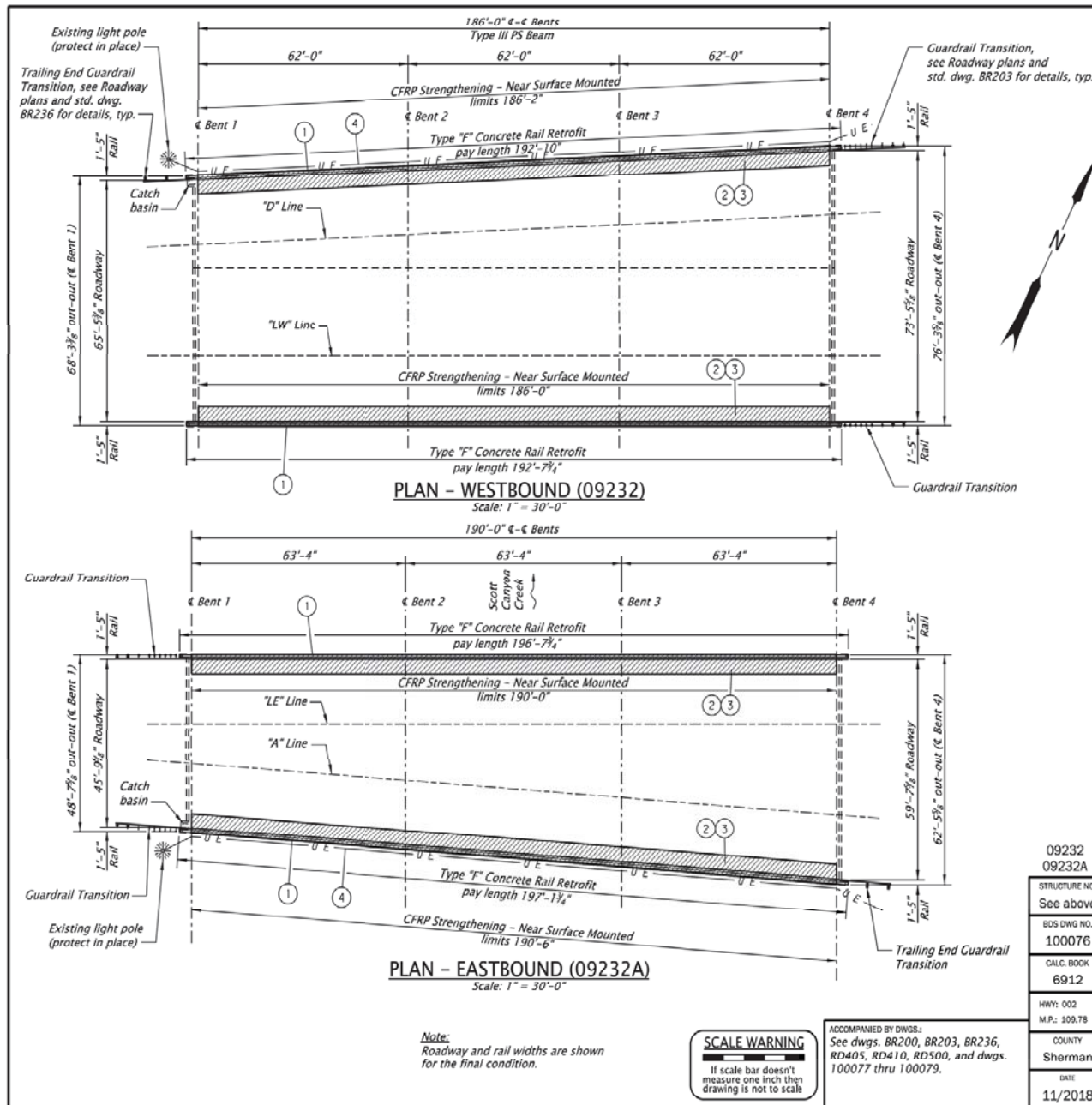
BRIDGE NAME:			Lower Lookingglass Creek, Hwy 35		BRIDGE NO:		00805C		KEY NO:		18586		
SECTION NAME:			OR42: LOWER LOOKINGGLASS CREEK BRIDGE REPAIR PROJECT		COUNTY:		Douglas		CONTR #		15130		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		02/07/2019		FAP NO:		S035(069)		
STRUCT TYPE:			RC DECK GIRDER-CIP		# BIDS RECVD:		10		AWARDED TO:		OREGON STATE BRIDGE		
										PREPARED BY:			
					CONTRACT		3 LOW BIDDERS			SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT	UNIT	AMT	HIGH	LOW		
Additional Items													
364.00		SQFT	BRIDGE REMOVAL WORK			137.36	50,000	96.15	35,000	137.36	68.68		
1,092.00		LS	TEMPORARY WORK ACCESS AND CONTAINMENT			48.53	53,000	43.65	47,667	48.53	36.63		



BRIDGE NAME:	Spanish Hollow Creek, Hwy 2	BRIDGE NO:	02133A	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Rail Replacement								
277.00	LF	Linear Unit Cost	288.09		305.05			
		SUBTOTAL		71,600		76,500		
		PERCENT MOBILIZATION	11.44	8,200	10.44	8,000		
		TOTAL		79,800		84,500		
Miscellaneous Project - Bridge Repair								
		SUBTOTAL		71,600		73,200		
		PERCENT MOBILIZATION	11.44	8,200	10.44	7,600		
		TOTAL		79,800		80,800		
DETAILS								
Rail Replacement								
277.00	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	258.48	71,600	276.29	76,533	351.99	218.41
Overhang Strengthening and Install Membrane								
120.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	3,360	66.00	7,920	100.00	28.00
2,670.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	7.49	20,000	9.34	24,933	10.41	7.49
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES	4,800.00	4,800	9,266.67	9,267	18,000.00	4,800.00
1,070.00	SQFT	POLYMER MEMBRANE	6.00	6,420	6.33	6,777	7.00	6.00
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	22,000.00	22,000	18,000.00	18,000	30,000.00	2,000.00
1.00	LS	WORK CONTAINMENT PLAN	15,000.00	15,000	6,333.33	6,333	15,000.00	1,500.00
277.00	FOOT	BRIDGE REMOVAL WORK	90.25	25,000	87.85	24,333	101.08	72.20
23.00	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	577.00	13,271	462.33	10,634	577.00	260.00
4.00	EACH	GUARDRAIL TRANSITION	2,000.00	8,000	2,850.00	11,400	3,500.00	2,000.00



LOCATION MAP
No Scale

- Work Items:**
- 1 Replace bridge rail with Type "F" Concrete Rail Retrofit. See sheet JC04.
 - 2 Construct CFRP Strengthening - Near Surface Mounted. See sheet JC04.
 - 3 Remove and replace ACWS and place polymer membrane. See sheet JC04.
 - 4 Detach, support and protect, and reattach existing electrical conduit. See sheet JC04.

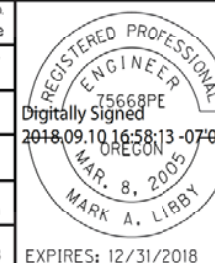
General Notes:
Provide all materials and perform all work according to the Oregon Standard Specifications for Construction, 2018.

Bridge work is designed in accordance with the 2014 edition of the AASHTO LRFD Bridge Design Specifications, including 2015 and 2016 interim revisions.

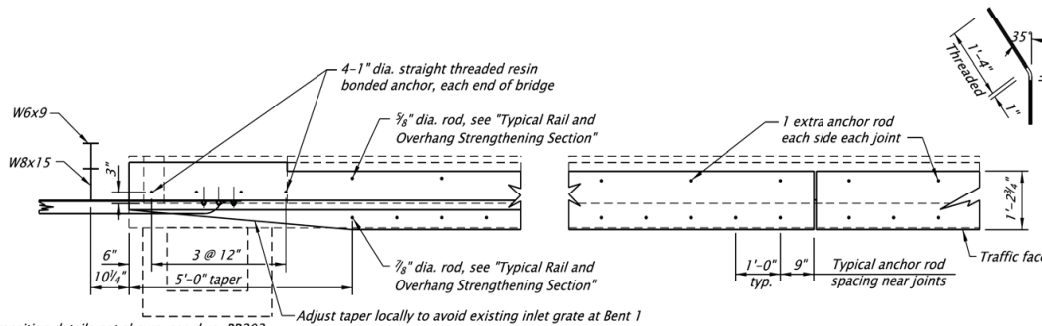
Containment and work platforms shall not extend below the bottom of existing structure. See Special Provisions for details.

09232
09232A

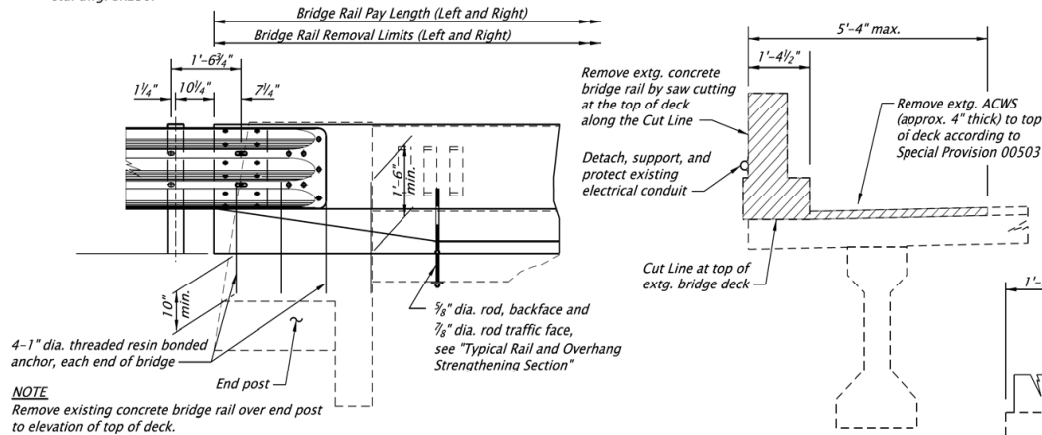
STRUCTURE NO.	See above
BOS DWG NO.	100076
CALC. BOOK	6912
HWY: 002	
M.P.: 109.78	
COUNTY	Sherman
DATE	11/2018



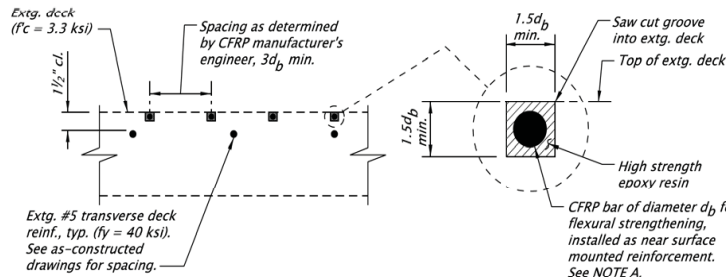
HDR ENGINEERING, INC. 1001 SW 8TH AVENUE, SUITE 1800 PORTLAND, OR 97204-1134 503.423.3700	
SCOTT CANYON HWY 2 WB SCOTT CANYON HWY 2 EB 184: TRAFFIC BARRIER UPGRADES PROJECT	
COLUMBIA RIVER HIGHWAY VARIOUS COUNTIES	
Designer: K. Munson Checker: H. Gonsior	Reviewer: M. Mitchell Checker: M. Triha
PLAN	SHEET NO. JC01

**NOTES:**

1. For transition details not shown, see dwg. BR203.
2. For Trailing End Guardrail Transition details, see std. dwg. BR236.

**ELEVATION: TRANSITION RAIL DETAIL****CONSTRUCTION SEQUENCE:**

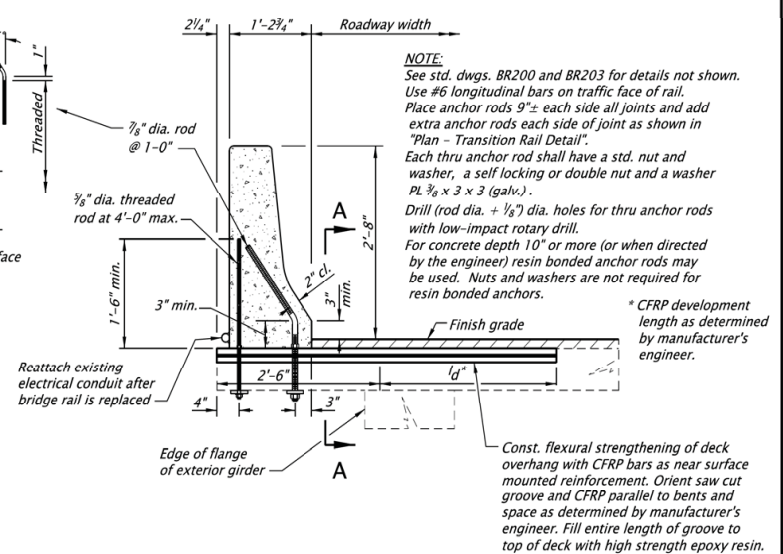
1. Remove existing ACWS to top of deck.
2. Remove existing concrete bridge rail.
3. Locate deck reinforcement for potential conflicts.
4. Saw cut grooves for flexural strengthening of deck.
5. Drill holes for threaded anchor rods.
6. Sandblast the vertical surfaces of saw cut grooves. Clean grooves as specified.
7. Fill groove three-quarters full of epoxy resin (avoid entrapping air voids), insert CFRP bars into groove, and finish filling groove with epoxy resin to top of deck.
8. After epoxy resin has cured, install Type "F" Concrete Rail.
9. Place polymer membrane and replace ACWS to finish grade.

**NOTE A:**

Strengthen the extg. deck overhang to provide additional factored moment capacity per Table A from the resistance of the CFRP reinforcement, in kip-ft per foot of deck. See Special Provision 00566 for further details and requirements.

SECTION A-A

Table A		
Structure	Span	Additional Factored Moment Capacity
09232	1	11.0 kip-ft/ft
	2	10.5 kip-ft/ft
	3	9.5 kip-ft/ft
09232A	All	9.5 kip-ft/ft

**TYPICAL RAIL AND OVERHANG STRENGTHENING SECTION****GENERAL NOTES:**

- Provide concrete Class 3300 - 1 1/2 or 3/4 unless shown otherwise.
- Provide all structural steel conforming to AASHTO Specification M183 (ASTM A36).
- Provide all anchor rods conforming to AASHTO M314, Grade 36 (ASTM A307).
- Hot-dip galvanize all structural steel, anchor rods and hardware after fabrication. Roughen all surfaces, cleaned and saturated with water immediately prior to concrete placement.
- Field verify existing dimensions before fabrication of anchors.
- Provide scoring joints equally spaced between open or expansion joint and Type "B" joints at bents (see dwg. BR200).
- Provide and install resin bonded anchors according to ODOT Specification 00535.

LIMITS OF POLYMER MEMBRANE09232
09232A

STRUCTURE NO.
See above

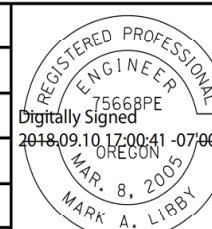
BOS DWG NO.
100079

CALC. BOOK
6912

HWY: 002
M.P.: 109.78

COUNTY
Sherman

DATE
11/2018



SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

ACCOMPANIED BY DWGS:
See dwg. 100076 for this structure.



HDR ENGINEERING, INC.
1001 SW 5TH AVENUE, SUITE 1800
PORTLAND, OR 97204-1134
503.423.3700



SCOTT CANYON HWY 2 WB
SCOTT CANYON HWY 2 EB
184: TRAFFIC BARRIER UPGRADES PROJECT

COLUMBIA RIVER HIGHWAYS
VARIOUS COUNTIES

Designer: K. Munson
Drafters: H. Okazaki

Reviewer: M. Mitchell
Checker: M. Tishke

BRIDGE RAIL DETAILS

SHEET NO.
JC04

BRIDGE NAME:	Scott Canyon, Hwy 2 WB	BRIDGE NO:	09232	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

382.00	LF	Linear Unit Cost	286.39		291.88			
SUBTOTAL				98,200		101,000		
PERCENT MOBILIZATION			11.44	11,200	10.44	10,500		
TOTAL				109,400		111,500		

Miscellaneous Project - Bridge Repair

SUBTOTAL				55,300		65,800		
PERCENT MOBILIZATION			11.44	6,300	10.44	6,900		
TOTAL				61,600		72,700		

DETAILS

Rail Replacement

382.00	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	257.18	98,243	264.32	100,969	320.51	215.26
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Overhang Strengthening and Install Membrane

208.41	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	5,835	50.17	10,455	72.50	28.00
4,475.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	7.73	34,613	8.47	37,910	9.94	7.73
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES (49%)	3,430.00	3,430	6,043.33	6,043	25,000.00	5,000.00
1,904.00	SQFT	POLYMER MEMBRANE	6.00	11,424	6.00	11,424	6.00	6.00

Additional Items

1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT (56%)	12,320.00	12,320	15,681.87	15,682	600,000.00	2,010.00
1.00	LS	WORK CONTAINMENT PLAN (56%)	8,960.00	8,960	3,360.00	3,360	16,000.00	500.00
382.00	FOOT	BRIDGE REMOVAL WORK	50.00	19,100	65.81	25,140	83.33	50.00
39.40	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	551.00	21,709	445.33	17,546	551.00	260.00
3.00	EACH	GUARDRAIL TRANSITION	2,000.00	6,000	2,850.00	8,550	3,500.00	2,000.00

BRIDGE NAME:	Scott Canyon, Hwy 2 EB	BRIDGE NO:	09232A	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

398.00	LF	Linear Unit Cost	286.43		291.96			
SUBTOTAL				102,300		105,200		
PERCENT MOBILIZATION			11.44	11,700	10.44	11,000		
TOTAL				114,000		116,200		

Miscellaneous Project - Bridge Repair

SUBTOTAL				52,300		62,000		
PERCENT MOBILIZATION			11.44	6,000	10.44	6,500		
TOTAL				58,300		68,500		

DETAILS

Rail Replacement

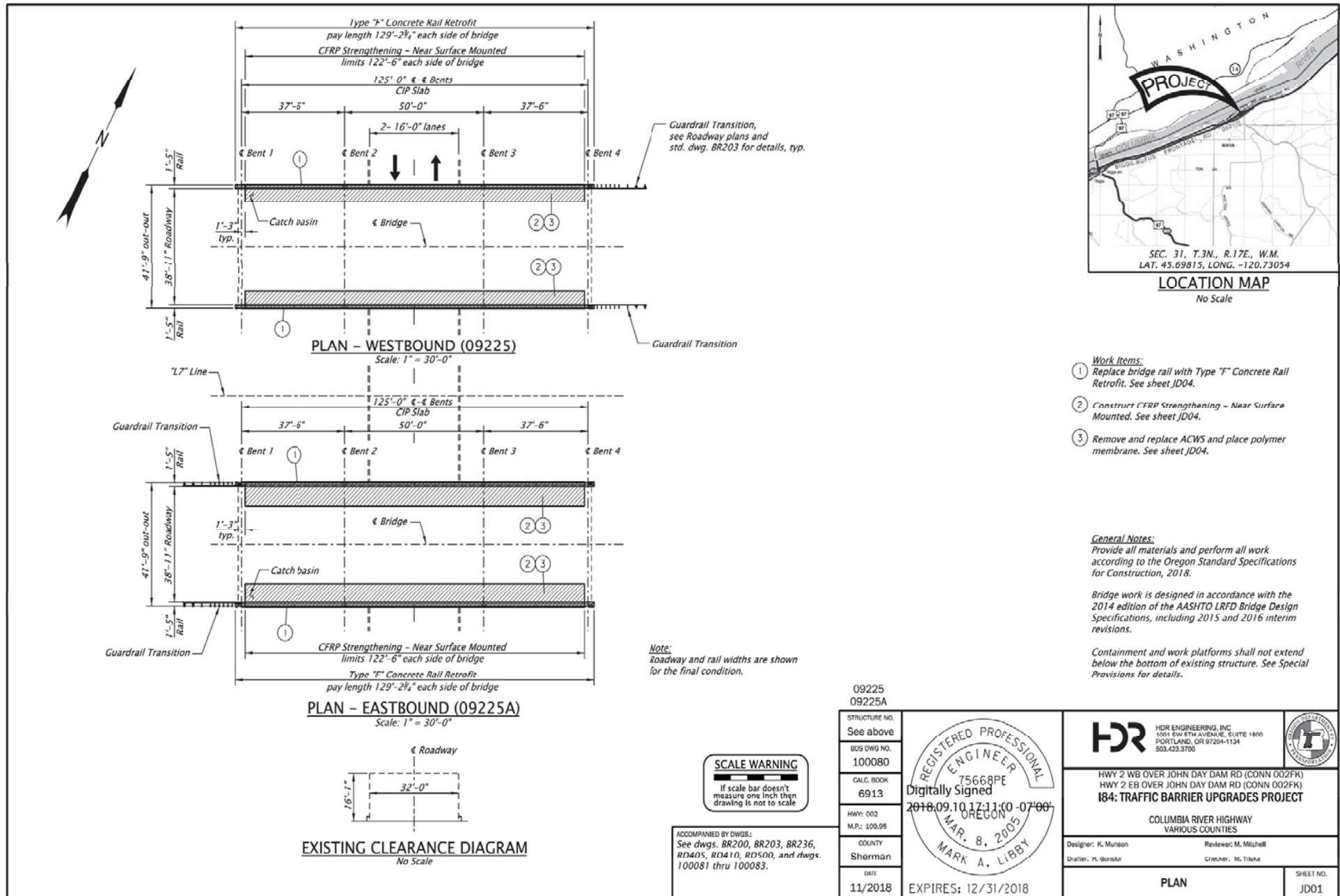
398.00	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	257.18	102,357	264.32	105,198	320.51	215.26
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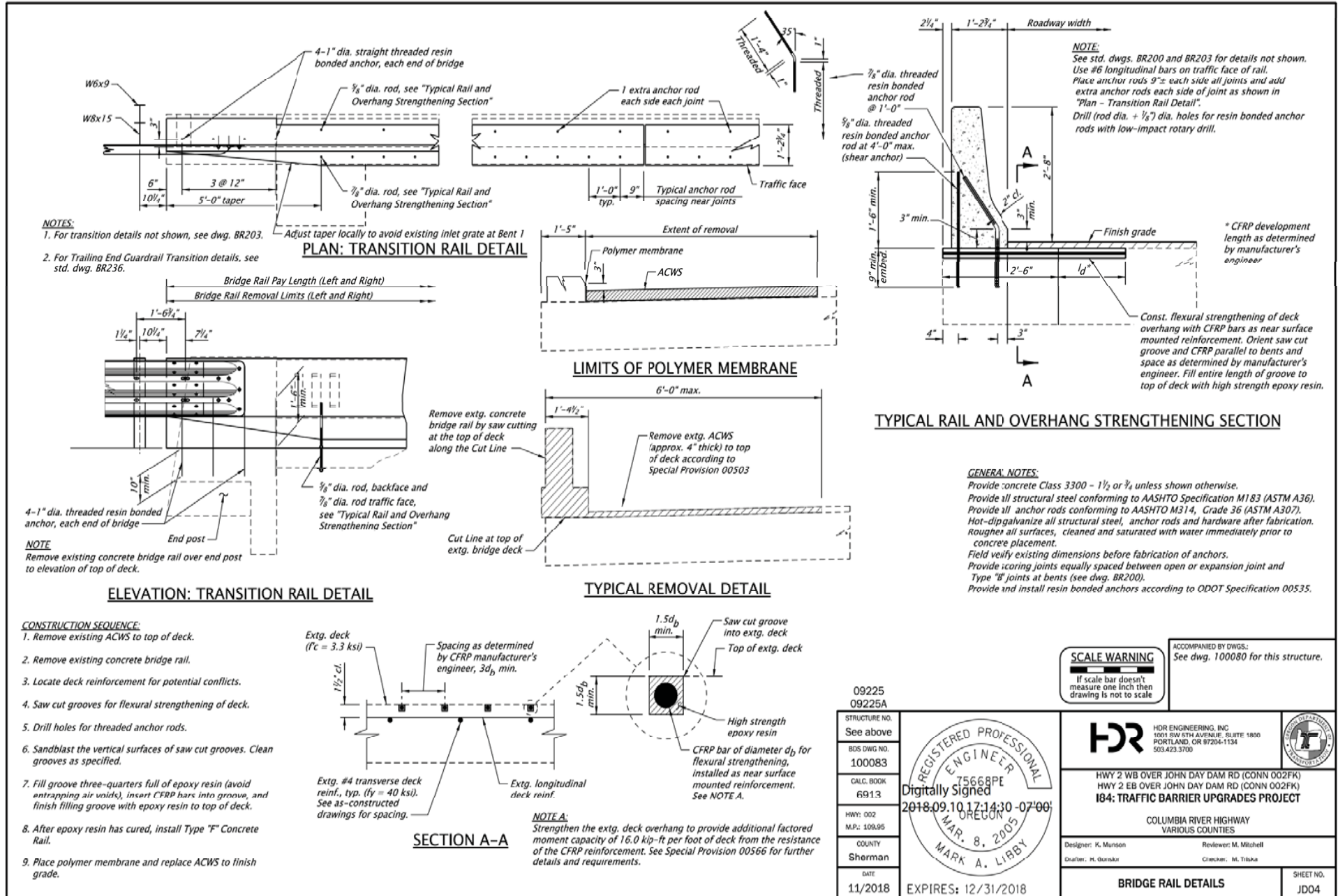
Miscellaneous Proj

161.59	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	4,525	50.17	8,106	72.50	28.00
4,575.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	7.73	35,387	8.47	38,757	9.94	7.73
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES (51%)	3,570.00	3,570	6,290.00	6,290	25,000.00	5,000.00
1,476.00	SQFT	POLYMER MEMBRANE	6.00	8,856	6.00	8,856	6.00	6.00

Additional Items

1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT (44%)	9,680.00	9,680	12,321.47	12,321	60,000.00	2,010.00
1.00	LS	WORK CONTAINMENT PLAN (44%)	7,040.00	7,040	2,640.00	2,640	16,000.00	500.00
398.00	FOOT	BRIDGE REMOVAL WORK	50.00	19,900	65.81	26,193	83.33	50.00
30.60	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	551.00	16,861	445.33	13,627	551.00	260.00
3.00	EACH	GUARDRAIL TRANSITION	2,000.00	6,000	2,850.00	8,550	3,500.00	2,000.00





BRIDGE NAME:	Hwy 2 EB over Rufus Conn	BRIDGE NO:	09225	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	CAST-IN-PLACE SLABS	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

258.50	LF	Linear Unit Cost	286.65		290.14			
SUBTOTAL				66,500		67,900		
PERCENT MOBILIZATION			11.44	7,600	10.44	7,100		
TOTAL				74,100		75,000		

Miscellaneous Project - Bridge Repair

SUBTOTAL				29,600		34,500		
PERCENT MOBILIZATION			11.44	3,400	10.44	3,600		
TOTAL				33,000		38,100		

DETAILS

Rail Replacement

258.50	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	257.25	66,500	262.57	67,875	327.37	203.09
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Overhang Strengthening and Install Membrane

125.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	3,500	53.50	6,688	72.50	28.00
825.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	22.42	18,500	24.44	20,167	30.30	20.61
1,270.00	SQFT	POLYMER MEMBRANE	6.00	7,620	6.00	7,620	6.00	6.00

Additional Items

1.00	LS	WORK CONTAINMENT PLAN	22,000.00	11,000	8,500.00	4,250	22,000.00	500.00
258.50	FOOT	BRIDGE REMOVAL WORK	77.37	20,000	103.80	26,833	154.74	77.37
2.00	EACH	GUARDRAIL TRANSITION	2,000.00	4,000	2,850.00	5,700	3,500.00	2,000.00
30.00	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	551.00	16,530	445.33	13,360	551.00	260.00
2.00	EACH	GUARDRAIL TRANSITION	2,000.00	4,000	2,850.00	5,700	3,500.00	2,000.00

BRIDGE NAME:	Hwy 2 WB over Rufus Conn	BRIDGE NO:	09225A	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	CAST-IN-PLACE SLABS	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

258.50	LF	Linear Unit Cost	286.65		290.14			
SUBTOTAL				66,500		67,900		
PERCENT MOBILIZATION			11.44	7,600	10.44	7,100		
TOTAL				74,100		75,000		

Miscellaneous Project - Bridge Repair

SUBTOTAL				29,600		34,500		
PERCENT MOBILIZATION			11.44	3,400	10.44	3,600		
TOTAL				33,000		38,100		

DETAILS

Rail Replacement

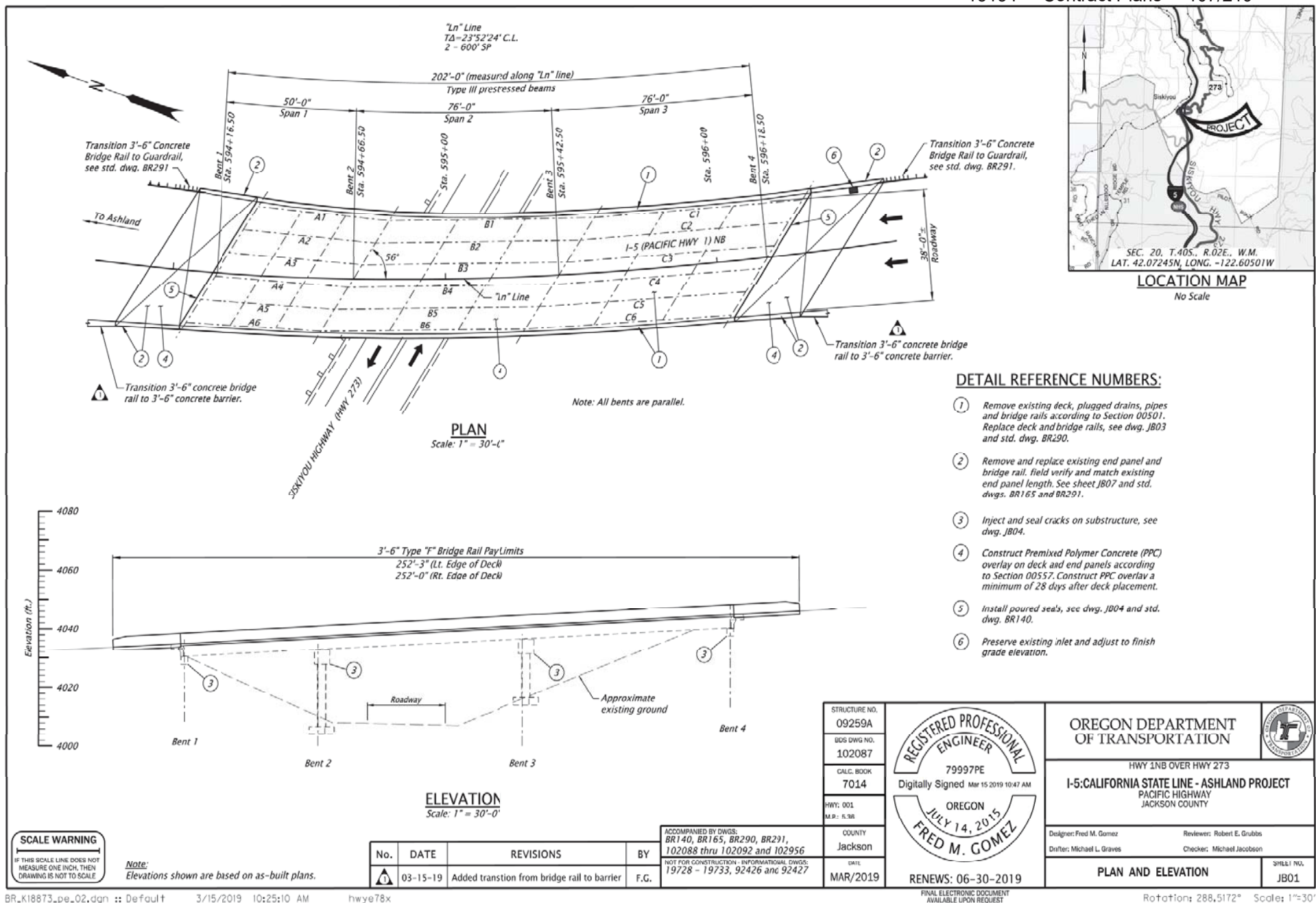
258.50	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	257.25	66,500	262.57	67,875	327.37	203.09
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Overhang Strengthening and Install Membrane

125.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	3,500	53.50	6,688	72.50	28.00
825.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	22.42	18,500	24.44	20,167	30.30	20.61
1,270.00	SQFT	POLYMER MEMBRANE	6.00	7,620	6.00	7,620	6.00	6.00

Additional Items

1.00	LS	WORK CONTAINMENT PLAN	22,000.00	11,000	8,500.00	4,250	22,000.00	500.00
258.50	FOOT	BRIDGE REMOVAL WORK	77.37	20,000	103.80	26,833	154.74	77.37
2.00	EACH	GUARDRAIL TRANSITION	2,000.00	4,000	2,850.00	5,700	3,500.00	2,000.00
30.00	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	551.00	16,530	445.33	13,360	551.00	260.00
2.00	EACH	GUARDRAIL TRANSITION	2,000.00	4,000	2,850.00	5,700	3,500.00	2,000.00



BR_K18873_pe_02.dan :: Default 3/15/2019 10:25:10 AM hwy78x

BRIDGE NAME:	Hwy 1 NB over Hwy 273	BRIDGE NO:	09259A	KEY NO:	18873
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT	COUNTY:	Jackson	CONTR #	15134
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	04/18/2019	FAP NO:	S001(475)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	5	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Rehabilitation

SUBTOTAL				739,800		870,200		
PERCENT MOBILIZATION			11.10	82,100	11.10	96,600		
TOTAL				821,900		966,800		

Rail_Replacement

504.00	LF	Linear Unit Cost	220.24		242.46			
SUBTOTAL				100,000		110,000		
PERCENT MOBILIZATION			11.01	11,000	11.11	12,200		
TOTAL				111,000		122,200		

Deck_Overlay

10251.00	SF	Deck Overlay Roadway Area Unit Costs	12.24		12.81			
SUBTOTAL				113,000		118,200		
PERCENT MOBILIZATION			11.10	12,500	11.10	13,100		
TOTAL				125,500		131,300		

DETAILS

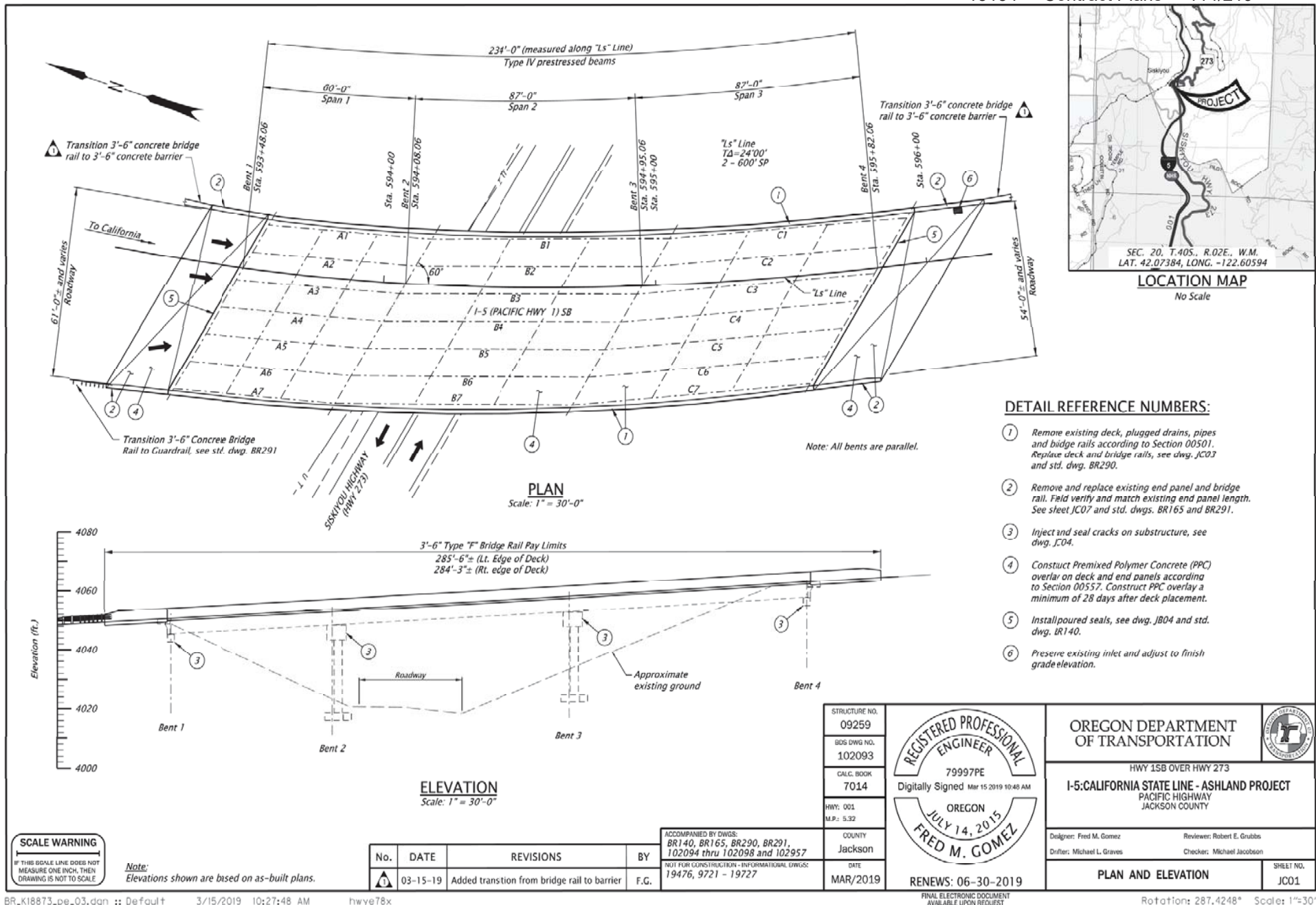
Deck Replacement

309.00	LB	STAINLESS STEEL REINFORCEMENT	12.94	4,000	17.80	5,500	24.27	12.94
71,681.00	LB	COATED REINFORCEMENT	2.79	200,000	2.70	193,333	3.14	2.16
110.00	FOOT	INJECT AND SEAL CRACKS	63.00	6,930	70.00	7,700	100.00	47.00
247.00	CUYD	DECK CONCRETE, CLASS HPC4500 W/FIBERS	1,133.60	280,000	1,592.44	393,333	2,024.29	1,133.60
1,074.00	SQYD	SAW CUT TEXTURING	5.00	5,370	4.92	5,281	6.00	3.75
244.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	435.00	106,140	486.67	118,747	575.00	435.00
110.00	FOOT	ELASTOMERIC CONCRETE NOSING	135.00	14,850	136.67	15,033	150.00	125.00
110.00	FOOT	POURED SEALS	27.27	3,000	24.24	2,667	27.27	18.18
85.00	SQFT	REPAIR DAMAGED CONCRETE GIRDERS	230.00	19,550	218.33	18,558	325.00	100.00

Rail Replacement

504.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH	198.41	100,000	218.25	110,000	257.94	198.41
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BRIDGE NAME:	Hwy 1 NB over Hwy 273			BRIDGE NO:	09259A		KEY NO:	18873	
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT			COUNTY:	Jackson		CONTR #	15134	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	04/18/2019		FAP NO:	S001(475)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III			# BIDS RECVD:	5		AWARDED TO:	CARTER & COMPANY INC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay									
24.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE		3,000.00	72,000	2,933.33	70,400	3,000.00	2,800.00
1,139.00	SQYD	CONSTRUCT PPC OVERLAY		36.00	41,004	42.00	47,838	50.00	36.00
Additional Items									
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT		100,000.00	100,000	73,333.33	73,333	100,000.00	30,000.00
10,814.00	SQFT	BRIDGE REMOVAL WORK		18.49	200,000	21.42	231,667	29.59	16.18
2.00	EACH	GUARDRAIL TRANSITION		3,350.00	6,700	3,566.67	7,133	4,000.00	3,350.00



BRIDGE NAME:	Hwy 1 SB over Hwy 273	BRIDGE NO:	09259	KEY NO:	18873
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT	COUNTY:	Jackson	CONTR #	15134
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	04/18/2019	FAP NO:	S001(475)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE IV	# BIDS RECVD:	5	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Rehabilitation

SUBTOTAL				968,000		1,200,800		
PERCENT MOBILIZATION			11.10	107,400	11.10	133,300		
TOTAL				1,075,400		1,334,100		

Rail_Replacement

570.00	LF	Linear Unit Cost	194.74		230.53			
SUBTOTAL				100,000		118,300		
PERCENT MOBILIZATION			11.01	11,000	11.11	13,100		
TOTAL				111,000		131,400		

Deck_Overlay

16551.00	SF	Deck Overlay Roadway Area Unit Costs	11.33		12.41			
SUBTOTAL				168,800		184,900		
PERCENT MOBILIZATION			11.10	18,700	11.10	20,500		
TOTAL				187,500		205,400		

DETAILS

Deck Replacement

409.00	LB	STAINLESS STEEL REINFORCEMENT	12.22	5,000	19.97	8,167	24.45	12.22
104,735.00	LB	COATED REINFORCEMENT	2.39	250,000	2.53	265,000	3.10	2.10
161.00	FOOT	INJECT AND SEAL CRACKS	70.00	11,270	64.00	10,304	75.00	47.00
401.00	CUYD	DECK CONCRETE, CLASS HPC4500 W/FIBERS	997.51	400,000	1,463.01	586,667	1,870.32	997.51
1,765.00	SQYD	SAW CUT TEXTURING	5.00	8,825	4.92	8,678	6.00	3.75
322.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	430.00	138,460	468.33	150,803	525.00	430.00
146.00	FOOT	ELASTOMERIC CONCRETE NOSING	135.00	19,710	136.67	19,953	150.00	125.00
146.00	FOOT	POURED SEALS	25.34	3,700	23.29	3,400	27.40	17.12
135.00	SQFT	REPAIR DAMAGED CONCRETE GIRDERS	230.00	31,050	218.33	29,475	325.00	100.00

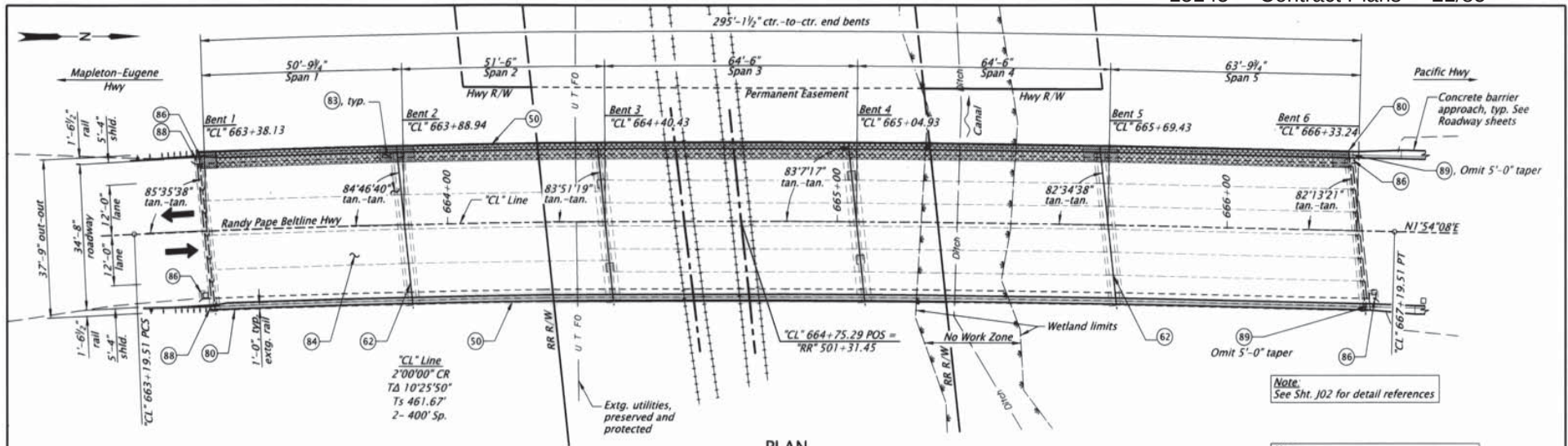
Rail Replacement

570.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH	175.44	100,000	207.60	118,333	228.07	175.44
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BRIDGE NAME:	Hwy 1 SB over Hwy 273	BRIDGE NO:	09259	KEY NO:	18873
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT	COUNTY:	Jackson	CONTR #	15134
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	04/18/2019	FAP NO:	S001(475)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE IV	# BIDS RECVD:	5	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay								
38.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,700.00	102,600	2,833.33	107,667	3,000.00	2,700.00
1,839.00	SQYD	CONSTRUCT PPC OVERLAY	36.00	66,204	42.00	77,238	50.00	36.00
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	30,000.00	30,000	66,666.67	66,667	100,000.00	30,000.00
17,222.00	SQFT	BRIDGE REMOVAL WORK	11.61	200,000	16.45	283,333	23.23	11.61
2.00	EACH	GUARDRAIL TRANSITION	3,350.00	6,700	3,566.67	7,133	4,000.00	3,350.00

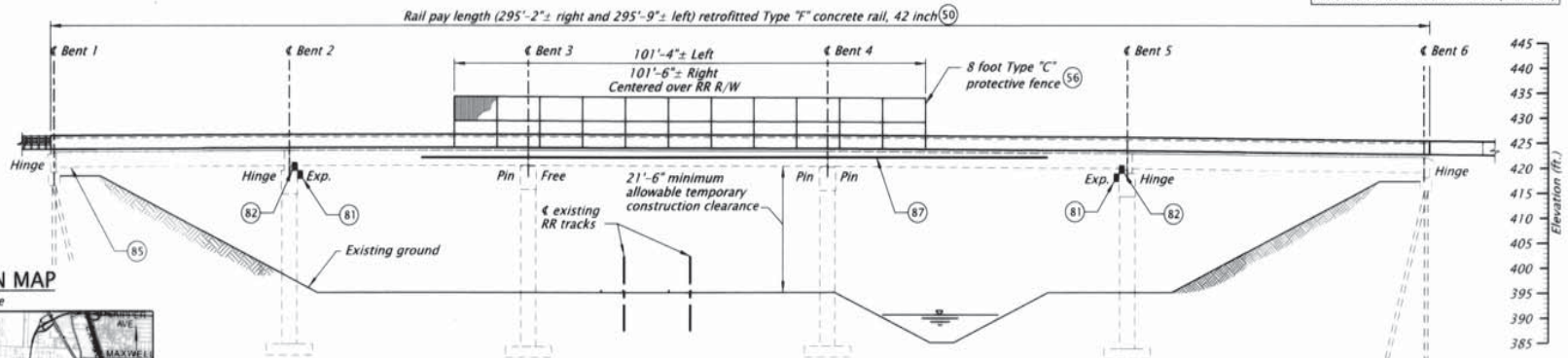


PLAN

Scale: 1" = 25'

Note:
See Sht. J02 for detail references

Note:
Elevations shown are based on North American Vertical Datum 1988 (NAVD88)

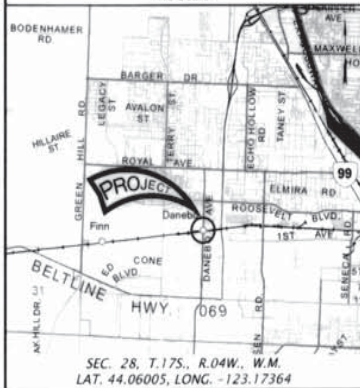


ELEVATION

Scale: 1" = 25'

LOCATION MAP

No Scale



Accompanied by drawings BR02, J02-J09, BR140, BR195, BR240, BR290, and BR291

STRUCTURE NO.	09460
BOS. DWG. NO.	102759
CALC. BOOK	7105
HWY. 69	M.P.: 3.92
COUNTY	Lane
DATE	02/2019



 CONSULTING ENGINEERS A DBWL LLC Company		COMPANY OFFICE: 880 COUNTRY CLUB ROAD, SUITE 1000 EUGENE, OREGON 97401-6089 REGIONAL OFFICES: LAKE OREGON DRIVE, MEDFORD, OREGON HAWKGLADE WASHINGTON
SCS Canal & UPRR, Hwy 69		
OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT RANDY PAPE BELTLINE HIGHWAY LANE COUNTY		
Designer: Pavan Patel, E.I.T.	Reviewer: Douglas Kirkpatrick, P.E.	
Drafter: Larry Withelm	Checker: Eric E. Bonn, P.E.	
PLAN AND ELEVATION		SHEET NO. J01

SCALE WARNING

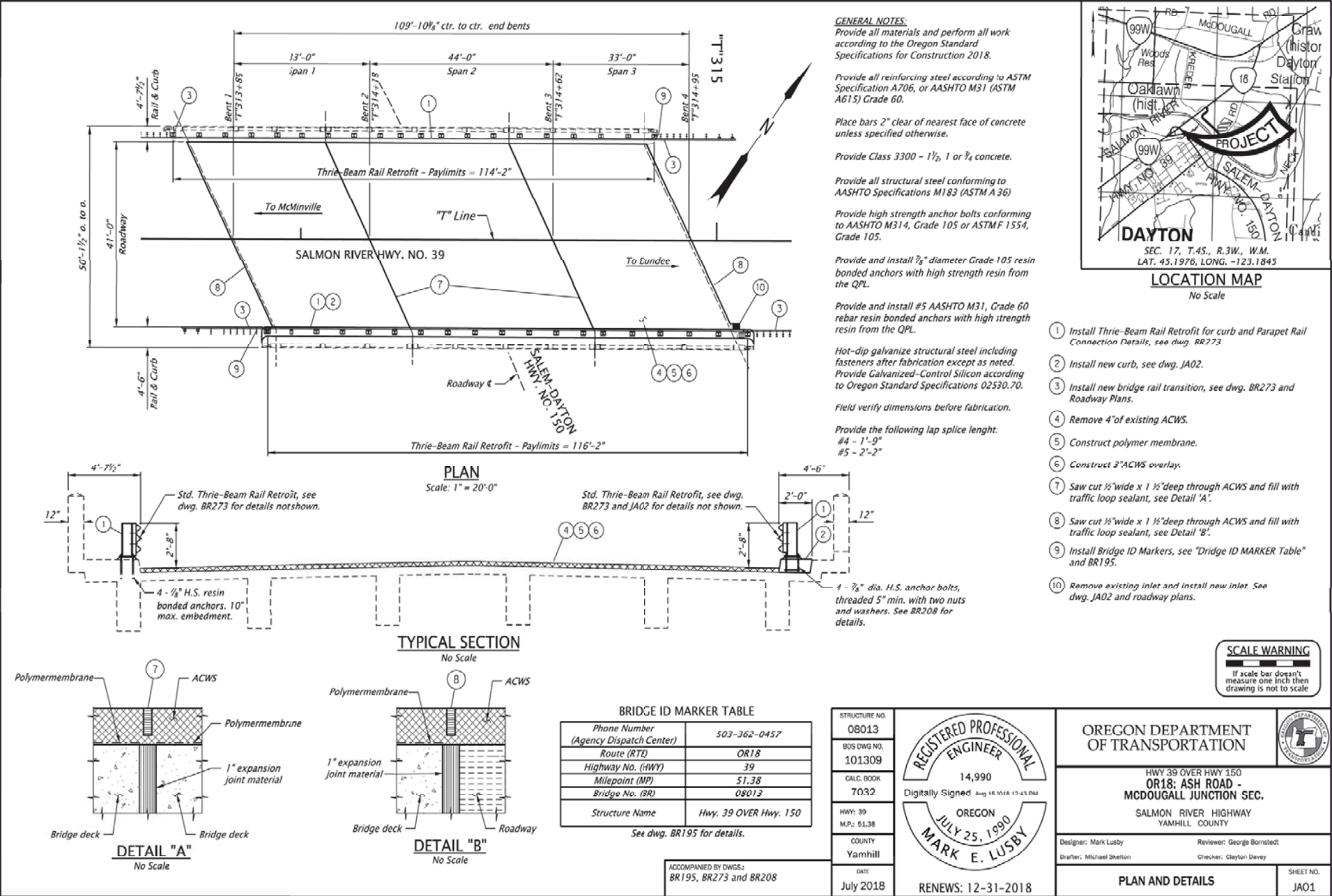
If scale bar doesn't measure one inch then drawing is not to scale

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotations 0° - Scale Full Size 1:1

BRIDGE NAME:	SCS Canal & UPRR, Hwy 69			BRIDGE NO:	09460		KEY NO:	18576	
SECTION NAME:	OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT			COUNTY:	Lane		CONTR #	15145	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	05/16/2019		FAP NO:	S069(020)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE II			# BIDS RECVD:	5		AWARDED TO:	HAMILTON CONSTRUCTION CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Rehabilitation									
SUBTOTAL					132,300		147,700		
PERCENT MOBILIZATION				11.01	14,600	11.11	16,400		
TOTAL					146,900		164,100		
Rail_Replacement									
591.00	LF	Linear Unit Cost		375.63		306.94			
SUBTOTAL					200,000		163,300		
PERCENT MOBILIZATION				11.01	22,000	11.11	18,100		
TOTAL					222,000		181,400		
Deck_Overlay									
10349.83	SF	Deck Overlay Roadway Area Unit Costs		17.31		16.12			
SUBTOTAL					161,400		150,100		
PERCENT MOBILIZATION				11.01	17,800	11.11	16,700		
TOTAL					179,200		166,800		
Seismic Retrofit Phase 1									
11140.97	SQFT	Deck Area Unit Costs		6.23		4.60			
SUBTOTAL					62,500		46,200		
PERCENT MOBILIZATION				11.01	6,900	11.11	5,100		
TOTAL					69,400		51,300		
DETAILS									
Deck Overhang Strengthening, Joint Seals and Concrete Repair									
2,650.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED		27.17	71,995	32.17	85,238	37.25	27.17
74.00	FOOT	ELASTOMERIC CONCRETE NOSING		100.00	7,400	130.54	9,660	200.00	91.63
74.00	FOOT	POURED SEALS		20.27	1,500	29.28	2,167	40.54	20.27
1.00	SQYD	REPAIR DAMAGED CONCRETE		5,000.00	5,000	2,666.67	2,667	5,000.00	1,000.00
2.00	EA	BRIDGE IDENTIFICATION MARKERS		150.00	300	150.00	300	150.00	150.00
203.00	FOOT	8 FOOT TYPE C PROTECTIVE FENCE		227.00	46,081	234.67	47,637	250.00	227.00
Rail Replacement									
591.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH, RETROFIT		338.41	200,000	276.37	163,333	338.41	203.05

BRIDGE NAME:	SCS Canal & UPRR, Hwy 69			BRIDGE NO:	09460		KEY NO:	18576	
SECTION NAME:	OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT			COUNTY:	Lane		CONTR #	15145	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	05/16/2019		FAP NO:	S069(020)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE II			# BIDS RECVD:	5		AWARDED TO:	HAMILTON CONSTRUCTION CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay									
6.00	SQYD	CLASS 2 PREPARATION		1,000.00	6,000	666.67	4,000	1,000.00	500.00
24.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE		3,600.00	86,400	3,595.37	86,289	3,600.00	3,586.10
1,150.00	SQYD	CONSTRUCT PPC OVERLAY		60.00	69,000	51.98	59,781	60.00	40.95
Seismic Retrofit - Beam Seat Extension / Transverse Retraint Retrofit									
1,000.00	LB	REINFORCEMENT		12.50	12,500	8.83	8,833	12.50	4.00
8.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000		6,250.00	50,000	4,666.67	37,333	6,250.00	1,500.00
DETAILS									
Additional Items									
900.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT		27.78	25,000	77.78	70,000	138.89	27.78
2,052.00	SQFT	BRIDGE REMOVAL WORK		29.01	59,535	51.09	104,845	63.35	29.01
2.00	EACH	GUARDRAIL TRANSITION		3,200.00	6,400	3,466.67	6,933	4,000.00	3,200.00



BRIDGE NAME:	Hwy 39 over Hwy 150	BRIDGE NO:	08013	KEY NO:	18567
SECTION NAME:	OR18: ASH ROAD - MCDOUGALL JUNCTION SEC.	COUNTY:	Yamhill	CONTR #	15113
PRIMARY PROJ:	Rail Retrofit	BID DATE:	10/25/2018	FAP NO:	S039(050)
STRUCT TYPE:	RC DECK GIRDER-CIP	# BIDS RECVD:	2	AWARDED TO:	ROY HOUCK CONSTRUCTION LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Rail_Retrofit								
230.00	LF	Linear Unit Cost	225.22		309.35			
		SUBTOTAL		48,000		64,950		
		PERCENT MOBILIZATION	7.99	3,800	9.60	6,200		
		TOTAL		51,800		71,150		
Miscellaneous Project - Bridge Repair								
		SUBTOTAL		47,500		38,800		
		PERCENT MOBILIZATION	7.99	3,800	9.60	3,700		
		TOTAL		51,300		42,500		
DETAILS								
Rail Retrofit								
230.00	FOOT	THRIE BEAM STEEL RAIL, RETROFIT	116.30	26,750	169.02	38,875	221.74	116.30
1,200.00	LB	REINFORCEMENT	8.96	10,750	9.48	11,375	10.00	8.96
7.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	1,500.00	10,500	2,100.00	14,700	2,700.00	1,500.00
Deck Membrane								
530.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2-4 INCHES DEEP	31.90	16,907	22.95	12,164	31.90	14.00
4,560.00	SQFT	POLYMER MEMBRANE	6.70	30,552	5.85	26,676	6.70	5.00
Additional Items								
1,280.00	SQFT	BRIDGE REMOVAL WORK	3.13	4,000	5.88	7,522	7.81	3.13
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	160.00	320	160.00	320	160.00	160.00
4.00	EACH	GURADRAIL TRANSITION	4,250.00	17,000	3,575.00	14,300	4,250.00	2,900.00

Culverts

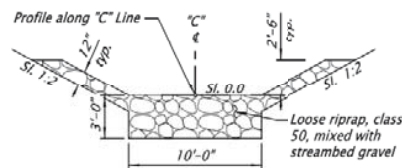
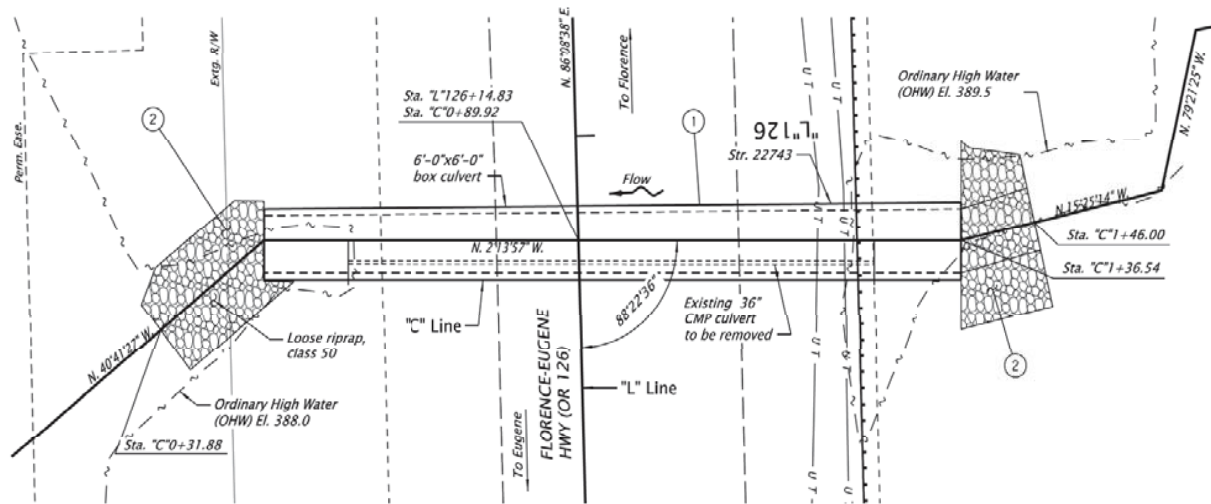
2019 BRIDGE COST DATA

CULVERTS

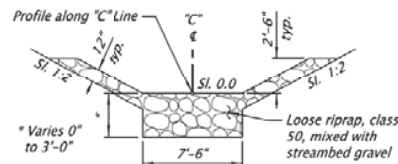
Str. No.	Str. Name	County	Contract	Description	Dwg No.	Barrel Vol Cu FT or per FT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Reinforced Concrete Box Culvert</u>										
22743	Culvert_Hwy 62_MP31.72	Lane	15126	6'-0" x 6'-0" Precast prestressed concrete box culvert, L 88'-0"	102266	3,168	\$ 142,000	\$ 44.82	\$ 143,928	\$ 45.43
				Subtotal (per cu.ft.) (per ft)		3,168 88	\$ 142,000	\$ 44.82 \$ 1,613.64	\$ 143,928	\$ 45.43 \$ 1,635.54
<u>Split Reinforced Concrete Box Culvert</u>										
22667	cl_channel_Hw y 45_MP7.52	Douglas	15141	11'-0" x 8'-6" Precast split RCBC culvert, L 56'-0"	102735	5,236	\$ 306,709	\$ 58.58	\$ 322,150	\$ 61.53
				(per ft)		56		\$ 5,476.95		\$ 5,752.68
22668	cl_Hoagland Cr_Hwy 45	Douglas	15141	11'-0" x 7'-0" Precast split RCBC, L 50'-0"	102730	3,850	\$ 304,683	\$ 79.14	\$ 307,130	\$ 79.77
				(per ft)		50		\$ 6,093.66		\$ 6,142.59
23743	Cogswell Cr_Hwy 19	Lake	15161	20'-0" x 7'-6" Precast split RCBC, L 55'-0"	102722	8,250	\$ 397,103	\$ 48.13	\$ 458,669	\$ 55.60
				(per ft)		55		\$ 7,220.05		\$ 8,339.44
22534	Plum Creek Culvert, Hwy 1W at MP	Polk	15095	15' x 8' side by side PSRCBC, L 98'-9"	100957	23,700	\$ 768,500	\$ 32.43	\$ 753,767	\$ 31.80
				(per ft)		100		\$ 7,685.00		\$ 7,537.67
				Subtotal (per cu.ft.) (per ft)		41,036 261	\$ 1,776,995	\$ 43.30 \$ 6,808.41	\$ 1,841,715	\$ 44.88 \$ 7,056.38
<u>Structural Plate Arch</u>										
23828	Crooked Creek Culvert	Lake	15161	9'-4" x 13'-3" Structural plate arch, L 114'-0"	102753	11,058	\$ 262,149	\$ 23.71	\$ 267,550	\$ 24.20
				Subtotal (per cu.ft.) (per ft)		11,058 114	\$ 262,149	\$ 23.71 \$ 2,299.55	\$ 267,550	\$ 24.20 \$ 2,346.93

CULVERTS

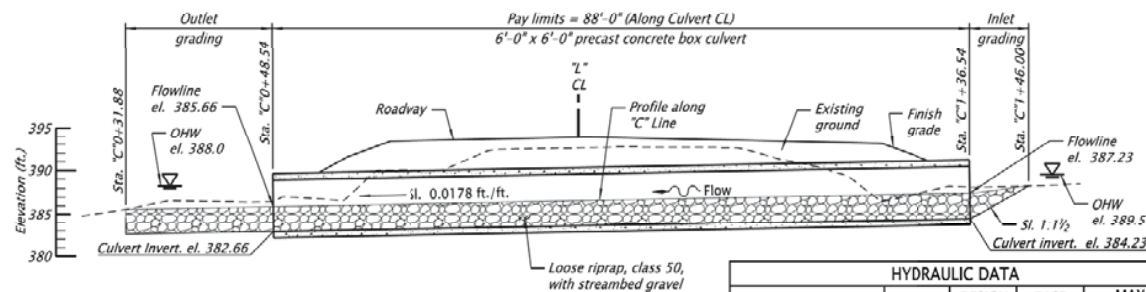
Str. No.	Str. Name	County	Contract	Description	Dwg No.	Barrel Vol Cu FT or per FT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Other</u>										
07836	Wildlife Pass_Hwy 1_MP116.86	Douglas	15108	Construct 13' x 13' precast split RCBC extension, L 23'	101416	3,887	\$ 144,257	\$ 37.11	\$ 171,342	\$ 44.08
				Subtotal (per cu.ft.)		3,887	\$ 144,257	\$ 37.11	\$ 171,342	\$ 44.08
				(per ft)		23		\$ 6,272.06		\$ 7,449.67



Sta. "C"0+31.88 to "C"0+48.54
OUTLET GRADING



Sta. "C"1+36.54 to "C"1+46.00
INLET GRADING



PROFILE ALONG "C" LINE

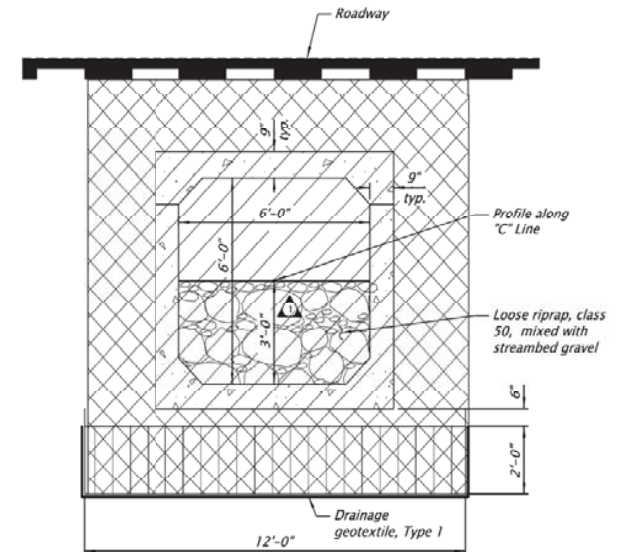
No.	DATE	REVISIONS	BY
1	12-13-18	Dimension change	C.C.

ACCOMPANIED BY DWGS.:
BR820 and RD300

HYDRAULIC DATA				
ITEMS	(UNITS)	DESIGN FLOOD	BASE FLOOD	MAX. PROBABLE
DISCHARGE	(c/s)	32.8	37.3	49.5
FREQUENCY	(yrs.)	50	100	500
HEADWALL INLET EL.	(ft.)	388.7	388.8	389.1
AVG. OUTLET VELOCITY	(ft./s.)	2.2	2.5	3.0
BACKWATER	(ft.)	0.0	0.0	0.0



- Sta. "C"0+48.54 to "C"1+36.54
Install 6' x 6' precast reinforced concrete box culvert - 88 ft.
Granular structure backfill $\frac{3}{4}$ " - 0 - 266 cu. yd.
Drainage Geotextile, Type 1 - 156 sq. yd.
Structure Excavation - 528 cu. yd.
Granular structure backfill $2\frac{1}{2}$ " - 0 - 78 cu. yd.
(See dwg. BR820)
- Sta. "C"0+31.88 to "C"1+46.00
Construct Streambed Enhancement
Loose riprap, Class 50 - 78 cu. yd.
Streambed gravel - 23 cu. yd.
General excavation - 32 cu. yd.



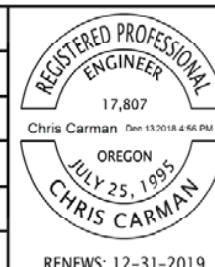
TYPICAL SECTION

Note:
For details not shown
see dwg. RD300.

- Pay Limits of Granular Structure Backfill $\frac{3}{4}$ " - 0
- Pay Limits of Structure Excavation
- Pay Limits of Granular Structure Backfill $2\frac{1}{2}$ " - 0

Note:
In-water work period July 1 to Sept. 15
For details not shown see dwg. BR820.
All slopes shown as vertical to horizontal or percentage.

STRUCTURE NO.	22743
BOS DWG NO.	102266
CALC. BOOK	N/A
HWY: OR126	
M.P.: 31.72	
COUNTY	Lane
DATE	08/2018

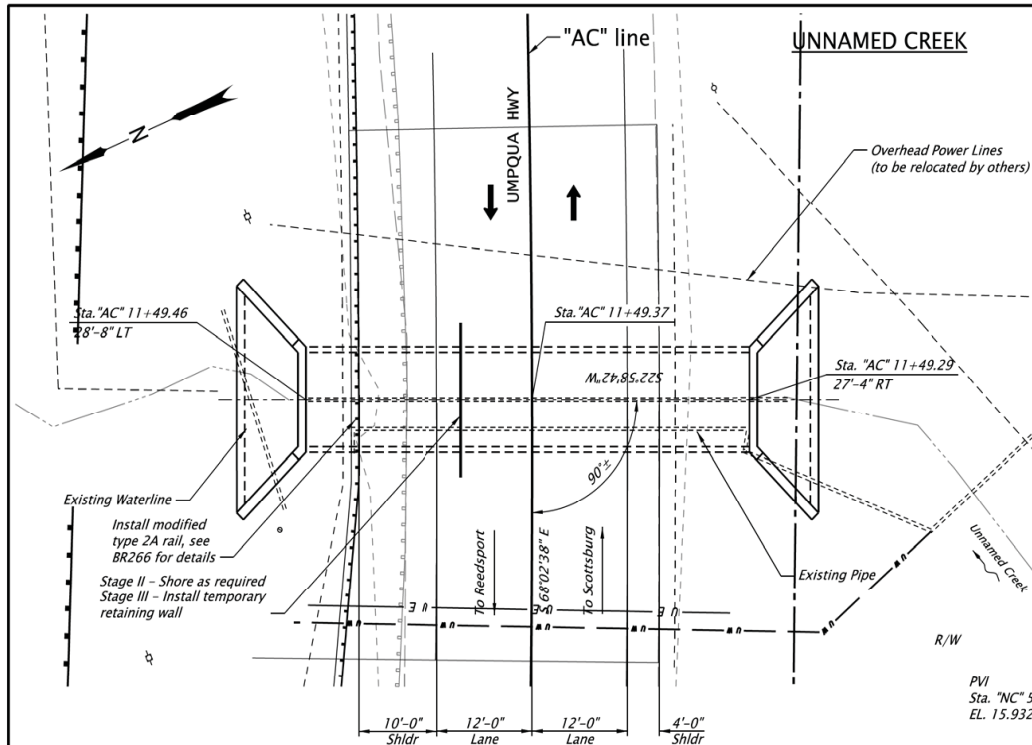


OREGON DEPARTMENT OF TRANSPORTATION	
Culvert Hwy 62_MP 31.72	
OR126: WALKER CREEK - CHICKAHOMINY CREEK SEC. FLORENCE - EUGENE HIGHWAY, LANE COUNTY	
Designer: Chris Carman	Reviewer: Bo Miller
Checker: Michael Shelton	Crafter: N/A
CULVERT PLAN AND PROFILE	
SHEET NO.	HB01

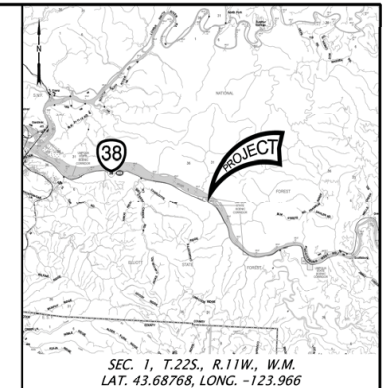
BRIDGE NAME:	Culvert_Hwy 62_MP31.72	BRIDGE NO:	22743	KEY NO:	19661
SECTION NAME:	OR126: WALKER CREEK - CHICKAHOMINY CREEK SEC.	COUNTY:	Lane	CONTR #	15126
PRIMARY PROJ:	Culverts	BID DATE:	12/20/2018	FAP NO:	S062(041)
STRUCT TYPE:	REINFORCED CONCRETE BOX CULVERTS	# BIDS RECVD:	8	AWARDED TO:	SUULUTAAQ INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Culvert_Construction								
6.00	FT	WIDTH						
6.00	FT	HEIGHT						
88.00	FT	LENGTH						
3168.00	CF	Barrel Volume Unit Costs	47.63		49.49			
		SUBTOTAL		142,000		143,900		
		PERCENT MOBILIZATION	6.29	8,900	8.95	12,900		
		TOTAL		150,900		156,800		
DETAILS								
Culverts								
93.00	SQYD	SHORING, CRIBBING, AND COFFERDAMS	69.89	6,500	154.83	14,399	260.20	69.89
528.00	CUYD	STRUCTURE EXCAVATION	15.34	8,100	34.31	18,116	63.92	15.34
344.00	CUYD	GRANULAR STRUCTURE BACKFILL	37.79	13,000	42.29	14,549	52.75	36.34
3,168.00	CUFT	PRECAST REINFORCED CONCRETE BOX CULVERTS	36.11	114,400	30.58	96,863	36.11	26.45
Additional Items								
1.00	LS	TEMPORARY WATER MANAGEMENT FACILITY AT STATION "L" 126+14	10,000.00	10,000	15,886.45	15,886	30,000.00	7,659.35
78.00	CUYD	LOOSE RIPRAP, CLASS 50	60.00	4,680	110.28	8,602	190.83	60.00
1.00	LS	STREAMBED ENHANCEMENT	20,000.00	20,000	17,433.45	17,433	20,000.00	15,300.34



HYDRAULIC DATA				
ITEMS	(UNITS)	DESIGN FLOOD	BASE FLOOD	MAX. PROBABLE FLOOD
DISCHARGE	(cfs)	70.2	81	108
RECURRENCE INTERVAL	(yrs.)	50	100	500
H.W. ELEV. OF NATURAL CHANNEL AT CULVERT INLET	(ft.)	17.7	17.9	18.3
HEADWATER ELEVATION AT CULVERT INLET	(ft.)	18.2	18.5	19.1
BACKWATER DEPTH AT CULVERT INLET	(ft.)	0.5	0.6	0.9
TAILWATER ELEVATION AT CULVERT OUTLET	(ft.)	14.5	14.6	15.0
AVERAGE VELOCITY AT CULVERT OUTLET	(ft./s)	5.6	5.8	6.0



LOCATION MAP
No Scale

GENERAL NOTES:

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018.
Provide Precast Split Reinforced Concrete Box Culvert (PSRCBC) designed in accordance to the AASHTO LRFD Bridge Design Specifications (8th. edition) and ODOT BDM with all of the following Live Loads: Service and Strength I Limit States:
HL-93: Design truck or the design tandems and the design lane load.
Strength II Limit State:
ODOT Type STP-5BW Permit truck
ODOT Type STP-4E Permit truck
Provide PSRCBC according to ASTM Specification C1786.
General structural concrete, Class 3300 1/2, 1, or 3/4 inch wingwalls and aprons.
Provide all reinforcing steel according to ASTM Specification A706 or AASHTO M31 (ASTM A615) Grade 60 unless noted otherwise. Use the following splice lengths unless shown otherwise:

REINFORCING SPLICE LENGTHS (CLASS B) GRADE 60										$f_c = 3.3$ ksi
Bar Size	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14 & #18
Uncoated	1'-0"	1'-4"	1'-8"	2'-0"	2'-9"	3'-7"	4'-6"	5'-9"	7'-0"	Not Permitted

Splice reinforcing steel at alternate bars, staggered at least one splice length or as far as possible, unless shown otherwise.
Place bars 2 inch clear of the nearest face of concrete unless shown otherwise.
Do not fabricate reinforcing steel for wingwall apron until final wingwall apron location, and elevations have been determined in the field. Aprons will follow same slope as structure.
Chamfer all exposed concrete. Provide general surface finish on all exposed surfaces. Exposed faces include but not limited to wingwall, parapet and culvert interior.
Provide a continuous flexible watertight seal in the joint between each precast members. Water leaks are not allowed within the PSRCBC structure.
Install PSRCBC per manufacturer's recommendation.

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

STRUCTURE NO. 22667	
BOS DWG NO. 102735	
CALC. BOOK 6886	
HWY: 45 M.P.: 7.52	
COUNTY Douglas	DATE 3/19
RENEW: 06-30-2019	

OREGON DEPARTMENT
OF TRANSPORTATION

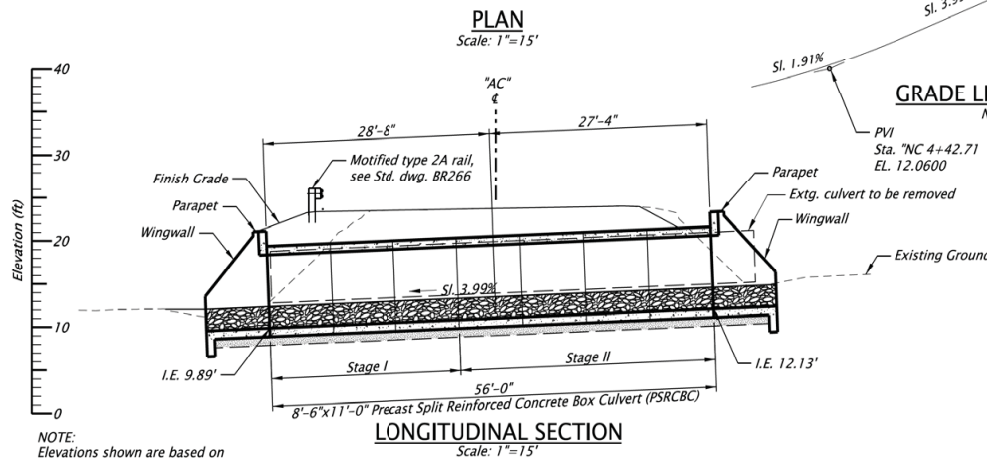
CL_CHANNEL_HWY 45_MP7.52
OR38: HOAGLAND CR AND
UNNAMED CR CULVERTS PROJECT
UMPOUA HIGHWAY
DOUGLAS COUNTY

Designer: Josh R. Beattie
Draftsman: David D. Fazio

Reviewer: Robert E. Grubbs
Checker: Lillian R. Xu

PLAN AND SECTION

SHEET NO.
HB101



NOTE:
Elevations shown are based on
North American Vertical Datum 1988 (NAVD88).

LONGITUDINAL SECTION
Scale: 1"=15'

BRIDGE NAME:	cl_channel_Hwy 45_MP7.52	BRIDGE NO:	22667	KEY NO:	19810
SECTION NAME:	OR38: HOAGLAND CR AND UNNAMED CR CULVERTS PROJECT	COUNTY:	Douglas	CONTR #	15141
PRIMARY PROJ:	Culverts	BID DATE:	04/11/2019	FAP NO:	S045(064)
STRUCT TYPE:	CU-PRECAST SPLIT RC BOX CULVERT	# BIDS RECVD:	4	AWARDED TO:	BABB CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Culvert_Construction

11.00	FT	WIDTH						
8.50	FT	HEIGHT						
56.00	FT	LENGTH						
5236.00	CF	Barrel Volume Unit Costs	65.05		68.30			
		SUBTOTAL		306,700		322,200		
		PERCENT MOBILIZATION	11.04	33,900	10.99	35,400		
		TOTAL		340,600		357,600		

DETAILS

Culverts

48.00	SQYD	SHORING, CRIBBING, AND COFFERDAMS	1,398.02	67,105	1,236.84	59,368	1,398.02	1,145.83
535.00	CUYD	STRUCTURE EXCAVATION	39.39	21,075	37.12	19,858	51.40	20.56
31.00	CUYD	GRANULAR WALL BACKFILL	133.60	4,142	90.39	2,802	133.60	48.39
156.00	CUYD	GRANULAR STRUCTURE BACKFILL	201.55	31,443	110.56	17,248	201.55	41.67
13.00	FOOT	MODIFIED TYPE 2A RAIL	115.38	1,500	338.46	4,400	507.69	115.38
5,236.00	CUFT	PRECAST SPLIT REINFORCED CONCRETE BOX CULVERTS	25.76	134,870	30.23	158,282	37.12	25.76
38.00	CUYD	WING WALLS AND APRONS	1,225.66	46,575	1,583.99	60,192	1,815.79	1,225.66

Additional Items

1.00	LS	TEMPORARY WATER MANAGEMENT FACILITY AT UNAMED CREEK	5,585.00	5,585	8,728.33	8,728	12,600.00	5,585.00
1.00	LS	TEMPORARY RETAINING WALL UNAMED CREEK	14,440.00	14,440	7,402.67	7,403	14,440.00	1.00
378.00	SQFT	BRIDGE REMOVAL WORK	12.33	4,660	22.53	8,515	39.68	12.33
1.00	LS	STREAMBED ENHANCEMENT AT UNAMED CREEK	19,592.25	19,592	18,389.08	18,389	22,750.00	12,825.00

No Scale

HYDRAULIC DATA				
ITEMS	(UNITS)	DESIGN FLOOD	BASE FLOOD	MAX. PROBABLE FLOOD
DISCHARGE	(cfs)	60.3	70.5	103
RECURRENCE INTERVAL	(yrs.)	50	100	500
H.W. ELEV. OF NATURAL CHANNEL AT CULVERT INVERT	(ft.)	19.6	19.7	20.0
HEADWATER ELEVATION AT CULVERT INLET	(ft.)	19.9	20.2	21.0
BACKWATER DEPTH AT CULVERT INLET	(ft.)	0.2	0.5	1.0
TAILWATER ELEVATION AT CULVERT OUTLET	(ft.)	17.6	17.7	18.0
AVERAGE VELOCITY AT CULVERT OUTLET	(ft./s)	1.9	2.1	2.3

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018.

Provide Precast Split Reinforced Concrete Box Culvert (PSRCBC) designed in accordance to the AASHTO LRFD Bridge Design Specifications 8th. edition, and ODOT BDM with all of the following Live Loads: Service and Strength I Limit States:

HL-93: Design truck or the design tandems and the design lane load.

Strength II Limit State:

ODOT Type STP-5BW Permit truck

ODOT Type STP-4E Permit truck

Provide PSRCBC according to ASTM Specification C1786.

General structural concrete, Class 4000 $1\frac{1}{2}$, 1, or $\frac{3}{4}$ in. wingwalls and aprons.

Provide all reinforcing steel according to ASTM Specification A706 or AASHTO M31 (ASTM A615) Grade 60 unless noted otherwise. Use the following splice lengths unless shown otherwise:

REINFORCING SPLICE LENGTHS (CLASS B) GRADE 60 $f'_c = 3.3$ ksi										
Bar Size	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14 & #18
Uncoated	1'-0"	1'-4"	1'-8"	2'-0"	2'-9"	3'-7"	4'-6"	5'-9"	7'-0"	Not Permitted

Splice reinforcing steel at alternate bars, staggered at least one splice length or as far as possible, unless shown otherwise.

Place bars 2 inch clear of the nearest face of concrete unless shown otherwise.

Do not fabricate reinforcing steel for wingwall apron until final wingwall apron location, and elevations have been determined in the field. Aprons will follow same slope as structure.

Chamfer all exposed concrete provide general surface finish on all e
include but not limited to wingwall, parapet and culvert interior

Provide a continuous flexible watertight seal in the joint between each precast members. Water leaks are not allowed within the PSRCBC structure.

Install PSRCBC per manufacturer's recommendation.

If scale bar doesn't measure one inch then drawing is not to scale

Replaces existing structure no. 01693.

STRUCTURE NO.	22668
BOS DWG NO.	102730
CALC. BOOK	6886
HWN: 45	
M.P.: 8.79	
COUNTY	Douglas
DATE	3/19

OREGON DEPARTMENT
OF TRANSPORTATION

CL_HOAGLAND CR_HWY 45

**OR38: HOAGLAND CR AND
UNNAMED CR CULVERTS PROJECT**
UMPQUA HIGHWAY
DOUGLAS COUNTY

Designer: Josh R. Beattie

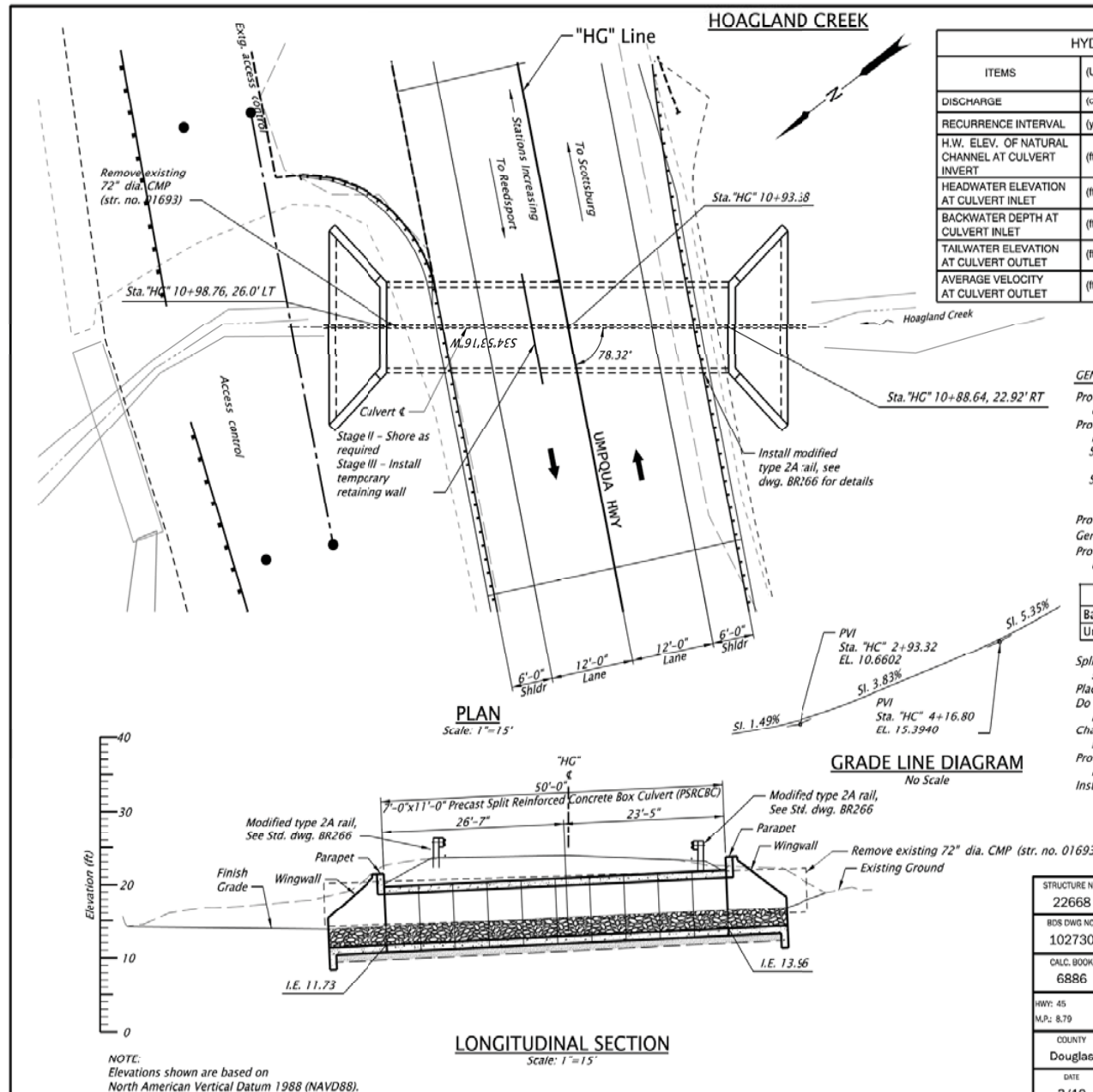
Reviewer: Robert E. Grubbs

Drafter: Daniel D. Faxon

Checker: Liantao R. Xu

PLAN AND SECTION

SHEET NO.
HB201



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FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotation: 235.1122° Scale: 1"=15'

BRIDGE NAME:	cl Hoagland Cr_Hwy 45	BRIDGE NO:	22668	KEY NO:	19810
SECTION NAME:	OR38: HOAGLAND CR AND UNNAMED CR CULVERTS PROJECT	COUNTY:	Douglas	CONTR #	15141
PRIMARY PROJ:	Culverts	BID DATE:	04/11/2019	FAP NO:	S045(064)
STRUCT TYPE:	CU-PRECAST SPLIT RC BOX CULVERT	# BIDS RECVD:	4	AWARDED TO:	BABB CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Culvert_Construction

11.00	FT	WIDTH						
7.00	FT	HEIGHT						
50.00	FT	LENGTH						
3850.00	CF	Barrel Volume Unit Costs	87.87		88.52			
SUBTOTAL				304,700		307,100		
PERCENT MOBILIZATION			11.04	33,600	10.99	33,700		
TOTAL				338,300		340,800		

DETAILS

Culverts

42.00	SQFT	SHORING, CRIBBING, AND COFFERDAMS	1,561.31	65,575	1,480.75	62,192	1,561.31	1,333.33
481.00	CUYD	STRUCTURE EXCAVATION	48.16	23,165	41.35	19,888	55.09	20.79
32.00	CUYD	GRANULAR WALL BACKFILL	150.39	4,812	95.61	3,059	150.39	46.88
128.00	CUYD	GRANULAR STRUCTURE BACKFILL	286.27	36,642	141.00	18,048	286.27	42.97
26.00	FOOT	MODIFIED TYPE 2A RAIL	57.69	1,500	273.59	7,113	393.85	57.69
3,850.00	FOOT	PRECAST SPLIT REINFORCED CONCRETE BOX CULVERTS	32.91	126,713	35.34	136,071	39.35	32.91
38.00	CUYD	WING WALLS AND APRONS	1,217.76	46,275	1,598.90	60,758	1,815.79	1,217.76

Additional Items

1.00	LS	TEMPORARY WATER MANAGEMENT FACILITY AT HOAGLAND CREEK	5,585.00	5,585	9,728.33	9,728	11,000.00	5,585.00
1.00	LS	TEMPORARY RETAINING WALL HOAGLAND CREEK	14,560.00	14,560	7,442.67	7,443	14,560.00	1.00
432.00	SQFT	BRIDGE REMOVAL WORK	9.37	4,047	19.24	8,310	34.72	9.37
1.00	LS	STREAMBED ENHANCEMENT AT HOAGLAND CREEK	33,441.75	33,442	28,717.25	28,717	36,400.00	16,310.00

[illegible]

LONGITUDINAL SECTION
Scale: 1"=10'-0"

Labels and Dimensions:

- Precast Headwall (see sheet J02)
- Finish grade
- 8'-0" Shldr
- 55'-0" Precast Split RCBC
- 24'-0" Roadway
- 8'-0" Shldr
- Guardrail, see Std. Dwg. BR266
- OHW El. 4811.72±
- Existing ground
- Channel Slope = 1.8%
- Precast Split RCBC Slope = 0%
- Stream Enhancement Material (For Hydraulic plans, see sht. A02)
- Invert El. 4806.87
- Riprap (For Hydraulic plans, see sht. A02)
- Invert El. 4806.87

Vertical Axis: Elevation (ft) with markings at 4800, 4805, 4810, 4815, and 4820.

NOTE: Elevations shown are based on North American Vertical Datum NAVD83.

SCALE WARNING

IF THIS SCALE LINE DOES NOT
MEASURE ONE INCH, THEN
DRAWING IS NOT TO SCALE

REGISTERED PROFESSIONAL
ENGINEER
80830
Digitally Signed Jul 18 2010 1:10 PM
OREGON
JUNE 29, 2009
GEORGE F. BORNSTEDT
RENEW: 12-31-2019

SHEET NO.
101

RENEWS: 12-31-2019

Rotation: 0° Scale: Full Size 1=1

BRIDGE NAME:	Cogswell Cr Hwy 19	BRIDGE NO:	23743	KEY NO:	19943
SECTION NAME:	US395: COGSWELL CREEK & CROOKED CREEK CULVERTS PROJECT	COUNTY:	Lake	CONTR #	15161
PRIMARY PROJ:	Culverts	BID DATE:	09/19/2019	FAP NO:	S019(025)
STRUCT TYPE:	CU-PRECAST SPLIT RC BOX CULVERT	# BIDS RECVD:	3	AWARDED TO:	MARCUM & SONS LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Culvert_Construction

20.00	FT	WIDTH						
7.50	FT	HEIGHT						
55.00	FT	LENGTH						
8250.00	CF	Barrel Volume Unit Costs	51.73		60.76			
SUBTOTAL				397,100		458,700		
PERCENT MOBILIZATION			7.48	29,700	9.29	42,600		
TOTAL				426,800		501,300		

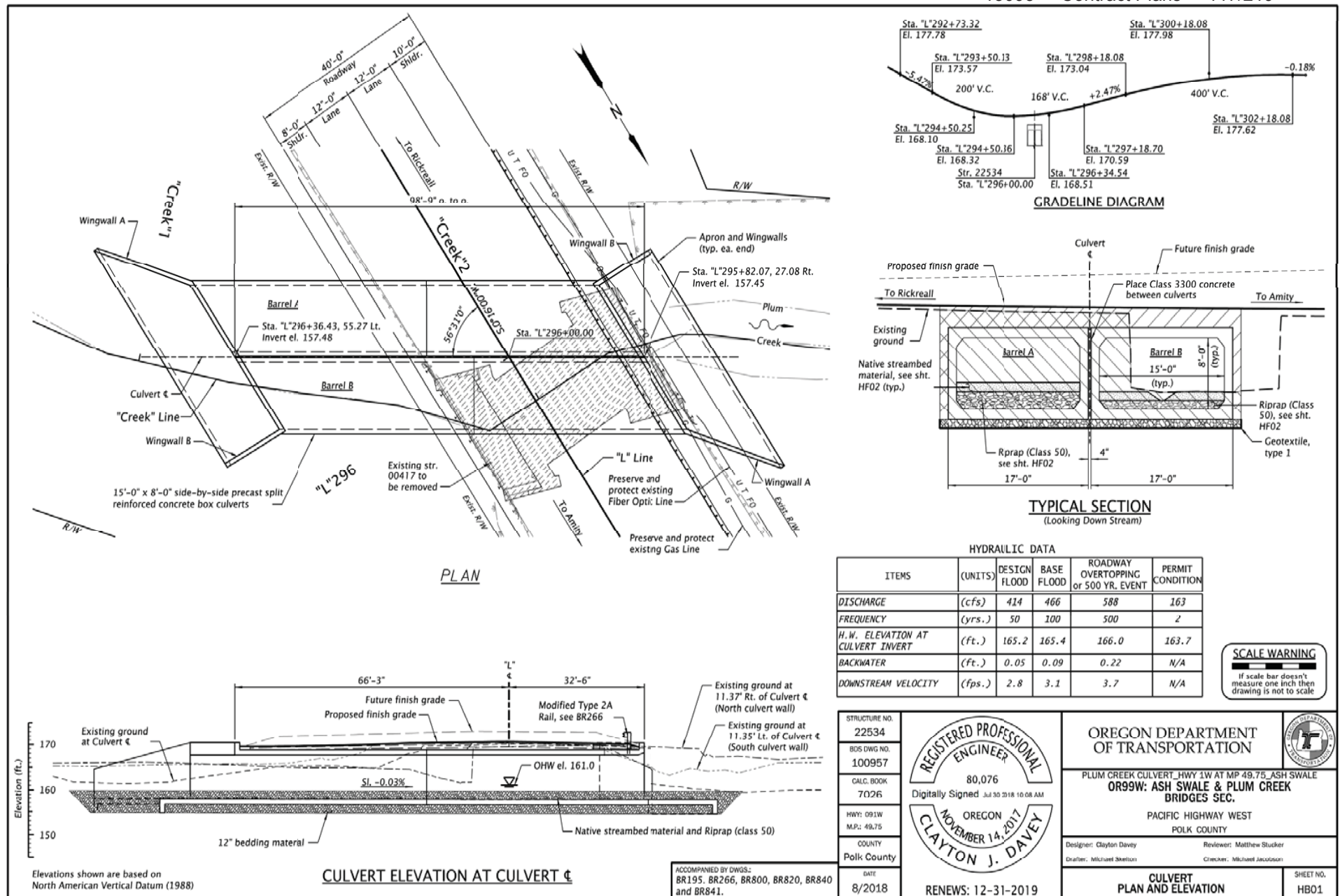
DETAILS

Culverts

120.00	CUYD	STONE EMBANKMENT	32.50	3,900	45.83	5,500	60.00	32.50
1,000.00	CUYD	STRUCTURE EXCAVATION	50.18	50,180	27.39	27,393	50.18	13.00
130.00	CUYD	GRANULAR WALL BACKFILL	54.52	7,088	82.28	10,696	100.00	54.52
440.00	CUYD	GRANULAR STRUCTURE BACKFILL	65.51	28,826	63.50	27,942	81.82	43.18
1,400.00	SQFT	WARRANTED SPRAY WATERPROOFING MEMBRANE	12.19	17,066	13.15	18,405	15.00	12.19
8,250.00	FOOT	PRECAST SPLIT REINFORCED CONCRETE BOX CULVERTS	27.33	225,435	34.49	284,530	40.00	27.33
52.00	CUYD	WING WALLS AND APRONS	1,242.46	64,608	1,619.28	84,203	2,269.23	1,242.46

Additional Items

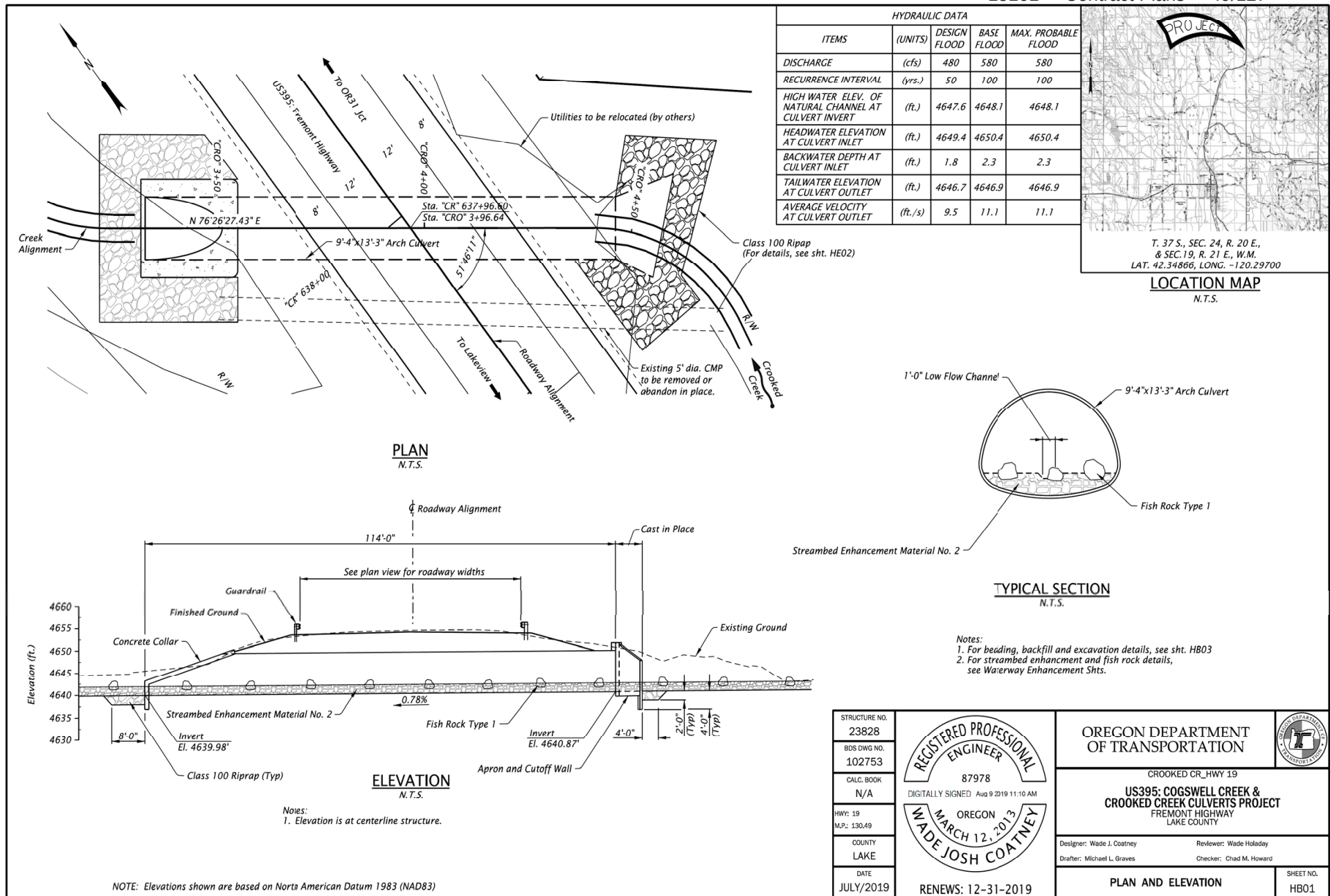
1.00	LS	TEMPORARY WATER MANAGEMENT FACILITY AT STATION "CO" 437+00	10,260.00	10,260	24,346.67	24,347	36,300.00	10,260.00
440.00	SQYD	DRAINAGE GEOTEXTILE, TYPE 2	2.63	1,157	1.81	796	2.63	1.00
1.00	EACH	FILLING ABANDONED STRUCTURES	11,760.00	11,760	6,986.67	6,987	11,760.00	1,200.00
2.00	EACH	CULVERT DRAINAGE MARKERS, TYPE 2	200.00	400	121.67	243	200.00	65.00
1.00	LS	STREAMBED ENHANCEMENT AT STATION "CO" 437+00	30,939.00	30,938	28,962.67	28,963	31,850.00	24,100.00



BRIDGE NAME:	Plum Creek Culvert, Hwy 1W at MP 49.75	BRIDGE NO:	22534	KEY NO:	18584
SECTION NAME:	OR99W: ASH SWALE & PLUM CREEK BRIDGES SEC.	COUNTY:	Polk	CONTR #	15095
PRIMARY PROJ:	Culverts	BID DATE:	10/11/2018	FAP NO:	S091(079)
STRUCT TYPE:	CU-PRECAST SPLIT RC BOX CULVERT	# BIDS RECVD:	7	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Culvert_Construction								
30.00	FT	WIDTH						
8.00	FT	HEIGHT						
98.75	FT	LENGTH						
23700.00	CF	Barrel Volume Unit Costs	36.03		35.34			
		SUBTOTAL		768,500		753,800		
		PERCENT MOBILIZATION	11.11	85,400	11.11	83,700		
		TOTAL		853,900		837,500		
DETAILS								
Culverts								
300.00	SQYD	SHORING, CRIBBING, AND COFFERDAMS	283.33	85,000	172.22	51,667	283.33	50.00
1,900.00	CUYD	STRUCTURE EXCAVATION	34.21	65,000	23.44	44,533	34.21	10.53
30.00	CUYD	GRANULAR WALL BACKFILL	116.67	3,500	103.33	3,100	116.67	93.33
570.00	CUYD	GRANULAR STRUCTURE BACKFILL	78.95	45,000	57.54	32,800	78.95	38.60
24,000.00	CUFT	REINFORCED CONCRETE BOX CULVERTS	18.13	435,000	21.60	518,333	23.75	18.13
100.00	CUYD	WING WALLS AND APRONS	1,350.00	135,000	1,033.33	103,333	1,350.00	850.00
Additional Items								
1.00	LS	TEMPORARY WATER MANAGEMENT FACILITY AT STATION "CREEK" 0+42	50,000.00	50,000	30,000.00	30,000	50,000.00	10,000.00
426.00	SQYD	DRAINAGE GEOTEXTILE, TYPE 1	2.00	852	2.83	1,207	4.00	2.00
1,225.00	SQFT	BRIDGE REMOVAL WORK	24.49	30,000	31.29	38,333	44.90	24.49
2.00	EACH	CULVERT DRAINAGE MARKERS, TYPE 2	130.00	260	144.00	288	151.00	130.00
1.00	LS	BRIDGE REMOVAL TEMPORARY CONTAINMENT	6,000.00	6,000	12,000.00	12,000	20,000.00	6,000.00
1.00	LS	STREAMBED ENHANCEMENT	2,000.00	2,000.00	13,333.33	13,333	20,000.00	10,000.00



BRIDGE NAME:	Crooked Creek Culvert	BRIDGE NO:	23828	KEY NO:	19943
SECTION NAME:	US395: COGSWELL CREEK & CROOKED CREEK CULVERTS PROJECT	COUNTY:	Lake	CONTR #	15161
PRIMARY PROJ:	Culverts	BID DATE:	09/19/2019	FAP NO:	S019(025)
STRUCT TYPE:	STRUCTURE PLATE PIPE ARCH	# BIDS RECVD:	3	AWARDED TO:	MARCUM & SONS LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Culvert_Construction

13.25	FT	WIDTH						
7.32	FT	HEIGHT						
114.00	FT	LENGTH						
11058.00	CF	Barrel Volume Unit Costs	19.98		20.75			
		SUBTOTAL		262,100		267,600		
		PERCENT MOBILIZATION	7.48	19,600	9.29	24,900		
		TOTAL		281,700		292,500		

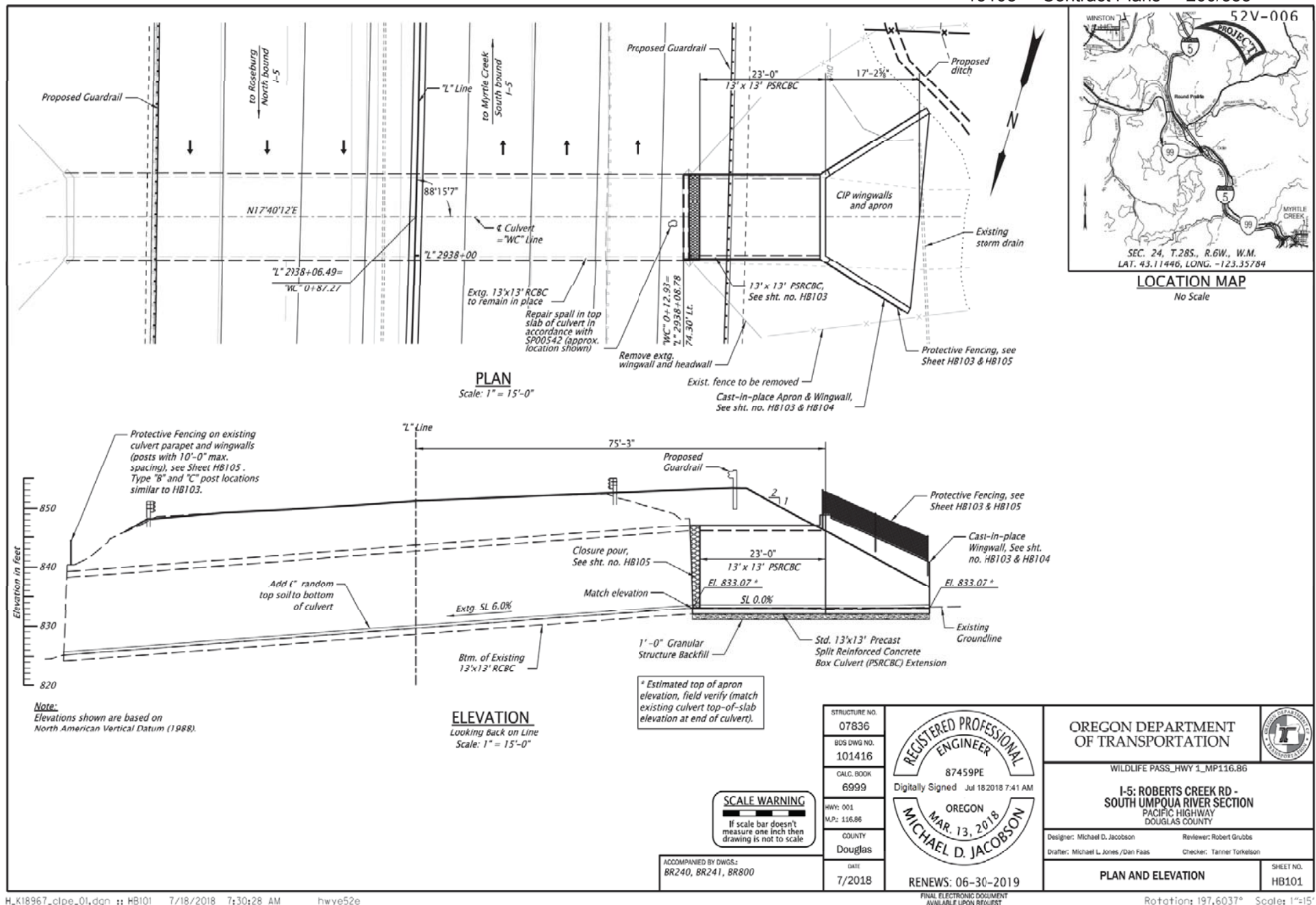
DETAILS

Culverts

200.00	CUYD	STONE EMBANKMENT	39.61	7,922	48.54	9,707	60.00	39.61
11,058.00	CUFT	159 INCH X 112 INCH STRUCTURAL PLATE ARCH	6.38	70,571	9.69	107,124	11.34	6.38
25.00	CUYD	STRUCTURAL PLATE CONCRETE FOOTINGS AND HEADWALLS	989.20	24,730	1,396.40	34,910	2,200.00	989.20
2,450.00	CUYD	STRUCTURE EXCAVATION	22.17	54,305	18.35	44,968	22.17	10.82
90.00	CUYD	GRANULAR WALL BACKFILL	103.01	9,271	101.93	9,174	113.89	88.89
120.00	CUYD	GRANULAR STRUCTURE BACKFILL	471.17	56,540	224.14	26,897	471.17	90.00
4,800.00	LB	REINFORCEMENT	2.82	13,520	2.40	11,507	2.82	2.08
15.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	1,686.00	25,290	1,550.89	23,263	1,766.67	1,200.00

Additional Items

1.00	LS	TEMPORARY WATER MANAGEMENT FACILITY AT STATION "CR" 637+70	11,460.00	11,460	25,820.00	25,820	39,000.00	11,460.00
500.00	SQYD	DRAINAGE GEOTEXTILE, TYPE 2	1.75	875	1.58	792	2.00	1.00
2.00	EACH	CULVERT DRAINAGE MARKERS, TYPE 2	200.00	400	126.00	252	200.00	78.00
1.00	LS	STREAMBED ENHANCEMENT AT STATION "CR" 637+70	30,325.00	30,325	28,941.67	28,942	30,325.00	27,500.00



BRIDGE NAME:	Wildlife Pass_Hwy 1_MP116.86	BRIDGE NO:	07836	KEY NO:	18967
SECTION NAME:	I-5: ROBERTS CREEK RD - SOUTH UMPQUA RIVER SECTION	COUNTY:	Douglas	CONTR #	15108
PRIMARY PROJ:	Culverts	BID DATE:	11/01/2018	FAP NO:	S001(478)
STRUCT TYPE:	CU-REINFORCED CONCRETE BOX CULVERTS	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Culvert_Construction

13.00	FT	WIDTH						
13.00	FT	HEIGHT						
23.00	FT	LENGTH						
3887.00	CF	Barrel Volume Unit Costs	40.62		48.29			
		SUBTOTAL		144,300		171,300		
		PERCENT MOBILIZATION	9.44	13,600	9.56	16,400		
		TOTAL		157,900		187,700		

DETAILS

Culverts

105.00	CUYD	STRUCTURE EXCAVATION	20.00	2,100	36.83	3,867	57.14	20.00
16.00	CUYD	GRANULAR WALL BACKFILL	112.50	1,800	120.83	1,933	187.50	62.50
35.00	CUYD	GRANULAR STRUCTURE BACKFILL	54.29	1,900	70.48	2,467	97.14	54.29
583.00	LB	REINFORCEMENT	6.19	3,608	8.10	4,719	11.41	6.19
4.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	2,448.50	9,794	1,924.50	7,698	2,448.50	1,025.00
3,887.00	CUFT	PRECAST SPLIT REINFORCED CONCRETE BOX CULVERTS	23.25	90,390	28.86	112,163	36.69	23.25
35.00	CUYD	WING WALLS AND APRONS	916.06	32,062	1,038.69	36,354	1,142.86	916.06
0.10	SQYD	REPAIR DAMAGED CONCRETE	26,031.00	2,603	21,410.33	2,141	32,000.00	6,200.00

Additional Items

8.00	CUYD	BRIDGE REMOVAL WORK	311.25	2,490	1,582.92	12,663	4,000.00	311.25
20.00	FOOT	4 FOOT TYPE B PROTECTIVE FENCE	190.00	3,800	193.33	3,867	200.00	190.00
80.00	FOOT	4 FOOT TYPE C PROTECTIVE FENCE	165.00	13,200	166.67	13,333	170.00	165.00

Miscellaneous

Bridge Coating

Bridge Deck/End Panel Cold Plane Pavement Removal

Concrete and Crack Sealing

Deck Joints

Deck Overlay

Protective Fencing

Waterproofing Membrane

Other Miscellaneous

2019 BRIDGE COST DATA

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Bridge Coating</u>										
01820	Yaquina Bay, Hwy 9	Lincoln	15094	Structural steel painting below deck of spans 1 & 3, rivet replacement	101305		\$ 1,277,000		\$ 1,469,400	
<u>Breakdown</u>										
				Surface preparation (LS)		1	\$ 676,000	\$ 676,000.00	\$ 959,667	\$ 959,666.77
				Coating application (LS)		1	\$ 366,000	\$ 366,000.00	\$ 332,400	\$ 332,400.00
				Coating materials (LS)		1	\$ 60,000	\$ 60,000.00	\$ 57,333	\$ 57,333.33
				Pack rust removal (ft)		1,000	\$ 100,000	\$ 100.00	\$ 58,333	\$ 58.33
				Fastener replacement (ea)		500	\$ 75,000	\$ 150.00	\$ 61,667	\$ 123.33
01823	Coos Bay, Hwy 9 (McCullough)	Coos	15099	Perform maintenance coating on all structural steel, repair water utility	102109		\$ 17,375,000		\$ 17,625,527	
<u>Breakdown</u>										
				Surface preparation (LS)		1	\$ 11,000,000	\$ 11,000,000.00	\$ 10,324,733	\$ 10,324,733.33
				Coating application (LS)		1	\$ 5,000,000	\$ 5,000,000.00	\$ 5,743,567	\$ 5,743,566.67
				Coating materials (LS)		1	\$ 745,000	\$ 745,000.00	\$ 687,267	\$ 687,266.67
				Pack rust removal (ft)		6,000	\$ 30,000	\$ 5.00	\$ 240,000	\$ 40.00
				Fastener replacement (ea)		4,000	\$ 600,000	\$ 150.00	\$ 629,960	\$ 157.49

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
<u>Bridge Deck Cold Plane Pavement Removal (CPPR)</u>														
02716A	Lost River Diversion Canal, Hwy 50	Klamath	15158	Bridge deck CPPR, 2" deep (sqyd)	100834	588	\$	7,056	\$	12.00	\$	8,379	\$	14.25
<u>Bridge End Panel Cold Plane Pavement Removal (CPPR)</u>														
07839	Hwy 1 SB over Clarks Branch Rd Conn #2	Douglas	15108	Bridge end panel CPPR, 2" deep (sqyd)	101422	283	\$	4,670	\$	16.50	\$	8,915	\$	31.50
18276	USRS Main Canal A, Hwy 50	Klamath	15158	Bridge end panel CPPR, 2" deep (sqyd)	100833	294	\$	7,056	\$	24.00	\$	5,954	\$	20.25
<u>Subtotal Bridge End Panel CPPR 2" Deep (sq.yd.)</u>						577	\$	11,726	\$	20.32	\$	14,868	\$	25.77
<u>Concrete and Crack Sealing</u>														
09717	Hwy 64 NB over UPRR	Clackamas	15115	Joint seal and rut repair, apply deck crack sealer	101996		\$	163,262			\$	194,683		
<u>Breakdown</u>														
				Concrete and crack sealer (sqft)		18,400	\$	36,800	\$	2.00	\$	44,467	\$	2.42
				Furnish Premixed Polymer concrete (cuyd)		3	\$	9,730	\$	3,500.00	\$	13,437	\$	4,833.33
				Repair elastomeric concrete nosing (ft)		161	\$	40,733	\$	253.00	\$	53,559	\$	332.67
				Poured seals (ft)		161	\$	28,000	\$	173.91	\$	23,000	\$	142.86
				Construct PPC overlay, in rut repair (sqyd)		133	\$	47,999	\$	360.00	\$	60,221	\$	451.67

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost
09260A	Hwy 1 over Hwy 273 at MP 4.63	Jackson	15134	Place concrete and crack sealer on deck and end panels Breakdown	102099		\$	193,413		\$	158,586	
				Concrete and crack sealer (sqft)		16,798	\$	16,798	\$ 1.00	\$	23,797	\$ 1.42
				Repair elastomeric concrete nosing (ft)		209	\$	28,215	\$ 135.00	\$	33,788	\$ 161.67
				Poured seals (ft)		209	\$	5,300	\$ 25.36	\$	5,600	\$ 26.79
				Repair damaged concrete (sqyd)		318	\$	143,100	\$ 450.00	\$	95,400	\$ 300.00
<u>Deck Joints</u>												
00902C	Elk River, Hwy 9	Curry	15104	Remove and replace Type "D" compression seal (ft)	100943	111		11,100	\$ 100.00	\$	10,050.00	\$ 90.54
09312A	Hwy 273 over Hwy 1	Jackson	15134	Install Type "D" compression seals, repair damaged concrete Breakdown	102101		\$	44,370		\$	43,323	
				Poured seals (ft)		54	\$	1,500	\$ 27.78	\$	1,917	\$ 35.49
				Type "D" compression seals (ft)		54	\$	4,300	\$ 79.63	\$	4,767	\$ 88.27
				Galvanic zinc anodes (ea)		50	\$	3,250	\$ 65.00	\$	3,500	\$ 70.00
				Prepare and coat concrete structures (sqft)		1,020	\$	16,000	\$ 15.69	\$	12,000	\$ 11.76
				Repair damaged concrete (sqft)		84	\$	19,320	\$ 230.00	\$	21,140	\$ 251.67

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
08958B	Hwy 61 over City Strs & RR (E Fremont Bridge Appr)	Multnomah	15098	Replace modular joint between steel-to-steel girders @ L2, U2, and U3, replace seals @L1 and U1	101321		\$ 470,000		\$ 521,333	
				Breakdown						
				Modular bridge joint gland replacements (ft)		411	\$ 40,000	\$ 97.32	\$ 43,333	\$ 105.43
				Modular bridge joint systems, 2 seal (ft)		80	\$ 160,000	\$ 2,000.00	\$ 190,333	\$ 2,379.17
				Modular bridge joint systems, 3 seal (ft)		40	\$ 120,000	\$ 3,000.00	\$ 133,333	\$ 3,333.33
				Removal of existing joint surfaces for MBSJS (LS)		1	\$ 150,000	\$ 150,000.00	\$ 154,333	\$ 154,333.33
08958D	Hwy 61 NB to Hwy 1 SB over Strs (E Fremont Intchg)	Multnomah	15098	Replace modular joint @ Joint 2; joint 3, 4 and 5 (trans) with strip seal; joint 5 (long) with compression seal	101337		\$ 195,000		\$ 227,000	
				Breakdown						
				Modular bridge joint gland replacements (ft)		87	\$ 10,000	\$ 114.94	\$ 16,000	\$ 183.91
				Modular bridge joint systems, 2 seal (ft)		26	\$ 50,000	\$ 1,923.08	\$ 73,000	\$ 2,807.69

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Removal of existing joint surfaces (LS)		1	\$	100,000	\$	100,000.00	\$	92,333	\$	92,333.33
				Removal of existing joint surfaces for MBSJS (LS)		1	\$	35,000	\$	35,000.00	\$	45,667	\$	45,666.67
				Strip seal (ft)		79	\$	85,000	\$	1,075.95	\$	114,000	\$	1,443.04
				Tension/compression seal (ft)		40	\$	4,000	\$	100.00	\$	5,647	\$	141.17
08958I	Hwy1 SB Conn to Hwy61 SB over Conn (E Fremont Int)	Multnomah	15098	Replace modular joint 2 with strip seal; joint 3 with modular joint; joint 1 with compression seal	101346		\$	229,000			\$	292,301		
				Breakdown										
				Strip seal (ft)		40	\$	45,000	\$	1,125.00	\$	62,300	\$	1,557.50
				Modular bridge joint systems, 2 seal (ft)		40	\$	80,000	\$	2,000.00	\$	104,000	\$	2,600.00
				Removal of existing joint surfaces (LS)		1	\$	50,000	\$	50,000.00	\$	53,333	\$	53,333.33
				Removal of existing joint surfaces for MBSJS (LS)		1	\$	50,000	\$	50,000.00	\$	65,668	\$	65,667.67
				Tension/compression seal (ft)		42	\$	4,000	\$	95.24	\$	7,000	\$	166.67
09254E	Hwy 61 NB Conn #2 to Hwy 47 WB over Hwy 61 & Conns	Multnomah	15098	Replace seal and repair cracked header	101367		\$	44,000			\$	56,687		

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Breakdown										
				Header crack repair (LS)		1	\$	10,000	\$	10,000.00	\$	6,020	\$	6,020.00
				Built-up armor (ft)		180	\$	25,000	\$	138.89	\$	35,333	\$	196.30
				Tension/compression seal (ft)		90	\$	9,000	\$	100.00	\$	15,333	\$	170.37
09268B	Hwy 2W EB Conn to Hwy 61 SB	Multnomah	15098	Replace modular joint 1 and 4 with strip seal; joint 3 with modular joint; gland replacement @ Joint 6 & 7; compression joint @ joint 8	101350		\$	343,000			\$	483,200		
				Breakdown										
				Strip seal (ft)		80	\$	45,000	\$	562.50	\$	109,000	\$	1,362.50
				Built-up armor (ft)		128	\$	30,000	\$	234.38	\$	26,400	\$	206.25
				Grand replacement (ft)		138	\$	15,000	\$	108.70	\$	14,667	\$	106.28
				Modular bridge joint gland replacements (ft)		252	\$	25,000	\$	99.21	\$	31,667	\$	125.66
				Modular bridge joint systems, 3 seal (ft)		40	\$	120,000	\$	3,000.00	\$	136,667	\$	3,416.67
				Removal of existing joint surfaces (LS)		1	\$	50,000	\$	50,000.00	\$	85,667	\$	85,666.67
				Removal of existing joint surfaces for MBJS (LS)		1	\$	50,000	\$	50,000.00	\$	67,500	\$	67,500.00
				Tension/compression seal (ft)		66	\$	8,000	\$	121.21	\$	11,633	\$	176.26

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
09268E	Hwy 2W EB Conn to Hwy 61 NB	Multnomah	15098	Place new joint seal @ joint 1; replace modular joint @ joint 2	101358		\$ 145,000		\$ 176,237	
				Breakdown						
				Modular bridge joint gland replacements (ft)		126	\$ 15,000	\$ 119.05	\$ 12,070	\$ 95.79
				Modular bridge joint systems, 2 seal (ft)		38	\$ 80,000	\$ 2,105.26	\$ 96,000	\$ 2,526.32
				Removal of existing joint surfaces for MBS (LS)		1	\$ 50,000	\$ 50,000.00	\$ 68,167	\$ 68,166.67
09268N	Hwy 61 NB over City Streets	Multnomah	15098	Place new joint seal @ joint 1 & 7; replace modular joint with strip seal @ joint 2, 3, 4 and 5; replace modular joint @ joint 6	101361		\$ 839,000		\$ 856,620	
				Breakdown						
				Strip seal (ft)		255	\$ 265,000	\$ 1,039.22	\$ 321,667	\$ 1,261.44
				Built-up armor (ft)		134	\$ 30,000	\$ 223.88	\$ 29,000	\$ 216.42
				Modular bridge joint gland replacements (ft)		162	\$ 20,000	\$ 123.46	\$ 20,667	\$ 127.57
				Modular bridge joint systems, 2 seal (ft)		52	\$ 115,000	\$ 2,211.54	\$ 140,333	\$ 2,698.72

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
				Removal of existing joint surfaces (LS)		1	\$ 330,000	\$ 330,000.00	\$ 248,667	\$ 248,666.67
				Removal of existing joint surfaces for MBJS (LS)		1	\$ 75,000	\$ 75,000.00	\$ 86,667	\$ 86,666.67
				Tension/compression seal (ft)		66	\$ 4,000	\$ 60.61	\$ 9,620	\$ 145.76
09268S	Hwy 61 SB over City Streets	Multnomah	15098	Replace modular joint with strip seal @ joint 2,3 and 4; place strip seal between concrete-to-steel boxes @ joint 5	101366		\$ 724,000		\$ 710,107	
				Breakdown						
				Strip seals (ft)		279	\$ 300,000	\$ 1,075.27	\$ 370,000	\$ 1,326.16
				Built-up armor (ft)		156	\$ 35,000	\$ 224.36	\$ 32,800	\$ 210.26
				Modular bridge joint gland replacements (ft)		327	\$ 35,000	\$ 107.03	\$ 32,800	\$ 100.31
				Removal of existing joint surfaces (LS)		1	\$ 350,000	\$ 350,000.00	\$ 263,333	\$ 263,333.33
				Tension/compression seal (ft)		80	\$ 4,000	\$ 50.00	\$ 11,173	\$ 139.67
13531	Hwy 64 over Hwy 26 (SE Powell Blvd)	Multnomah	15124	Replace joint seal, remove and replace PPC nosing as required	101451		\$ 39,240		\$ 46,157	

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Breakdown										
				Repair elastomeric concrete nosing (ft)		148	\$	19,240	\$	130.00	\$	21,707	\$	146.67
				Type "D" Compression Seals (ft)		74	\$	8,500	\$	114.86	\$	9,333	\$	126.13
				Type "E" Compression Seals (ft)		74	\$	8,500	\$	114.86	\$	9,667	\$	130.63
				Elastomeric concrete nosing material (cuyd)		2	\$	3,000	\$	1,500.00	\$	5,450	\$	2,725.00
13528	Hwy 64 over SE Division Street	Multnomah	15124	Replace joint seal, remove and replace PPC nosing as required	101452		\$	39,240			\$	46,157		
				Breakdown										
				Repair elastomeric concrete nosing (ft)		148	\$	19,240	\$	130.00	\$	21,707	\$	146.67
				Type "D" Compression Seals (ft)		74	\$	8,500	\$	114.86	\$	9,333	\$	126.13
				Type "E" Compression Seals (ft)		74	\$	8,500	\$	114.86	\$	9,667	\$	130.63
				Elastomeric concrete nosing material (cuyd)		2	\$	3,000	\$	1,500.00	\$	5,450	\$	2,725.00

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost		
				<i>Subtotal Deck Joint (ft)</i>										
				Repair elastomeric concrete nosing (ft)		296	\$	38,480	\$	130.00	\$	43,413	\$	146.67
				Elastomeric concrete nosing material (cuyd)		4	\$	6,000	\$	1,500.00	\$	10,900	\$	2,725.00
				Type "D" compression seals (ft)		313	\$	32,400	\$	103.51	\$	33,483	\$	106.98
				Type "E" compression seals (ft)		148	\$	17,000	\$	114.86	\$	19,333	\$	130.63
				Strip seal (ft)		733	\$	740,000	\$	1,009.55	\$	976,967	\$	1,332.83
				Tension/compression seal (ft)		384	\$	33,000	\$	85.94	\$	60,407	\$	157.31
				Modular bridge joint systems, 2 seal (ft)		236	\$	485,000	\$	2,055.08	\$	603,667	\$	2,557.91
				Modular bridge joint systems, 3 seal (ft)		80	\$	240,000	\$	3,000.00	\$	270,000	\$	3,375.00
				Modular bridge joint gland replacements (ft)		1,365	\$	145,000	\$	106.23	\$	156,537	\$	114.68
<u>Deck Overlay</u>														
<u>Premixed Polymer Concrete (PPC)</u>														
09259A	Hwy 1 NB over Hwy 273	Jackson	15134	Construct PPC overlay (sqyd)	102089	1,139	\$	113,004	\$	99.21	\$	118,238	\$	103.81

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Breakdown										
				Furnish Premixed Polymer concrete (cuyd)		24	\$	72,000	\$	3,000.00	\$	70,400	\$	2,933.33
				Construct PPC overlay (sqyd)		1,139	\$	41,004	\$	36.00	\$	47,838	\$	42.00
09259	Hwy 1 SB over Hwy 273	Jackson	15134	Construct PPC overlay (sqyd)	102095	1,839	\$	168,804	\$	91.79	\$	184,905	\$	100.55
				Breakdown										
				Furnish Premixed Polymer concrete (cuyd)		38	\$	102,600	\$	2,700.00	\$	107,667	\$	2,833.33
				Construct PPC overlay (sqyd)		1,839	\$	66,204	\$	36.00	\$	77,238	\$	42.00
09460	SCS Canal & UPRR, Hwy 69	Lane	15145	Construct PPC overlay (sqyd)	102764	1,150	\$	161,400	\$	140.35	\$	150,070	\$	130.50
				Breakdown										
				Class 2 preparation (sqyd)		6	\$	6,000	\$	1,000.00	\$	4,000	\$	666.67
				Furnish Premixed Polymer concrete (cuyd)		24	\$	86,400	\$	3,600.00	\$	86,289	\$	3,595.37
				Construct PPC overlay (sqyd)		1,150	\$	69,000	\$	60.00	\$	59,781	\$	51.98
07854C	Hwy 1 over UPRR Main Line	Marion	15137	Construct PPC overlay (sqyd)	102703	3,568	\$	438,176	\$	122.81	\$	445,840	\$	124.96

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Breakdown										
				Class 2 preparation (sqyd)		80	\$	16,000	\$	200.00	\$	16,280	\$	203.50
				Furnish Premixed Polymer concrete (cuyd)		112	\$	308,000	\$	2,750.00	\$	313,600	\$	2,800.00
				Construct PPC overlay (sqyd)		3,568	\$	114,176	\$	32.00	\$	115,960	\$	32.50
09254E	Hwy 61 NB Conn #2 to Hwy 47 WB over Hwy 61 & Conns	Multnomah	15098	Construct PPC overlay (sqyd)	101367	2,987	\$	385,055	\$	128.91	\$	341,113	\$	114.20
				Breakdown										
				Class 2 preparation (sqyd)		10	\$	0.1	\$	0.01	\$	1,000	\$	100.01
				Furnish Premixed Polymer concrete (cuyd)		83	\$	190,900	\$	2,300.00	\$	195,742	\$	2,358.33
				Construct PPC overlay (sqyd)		2,987	\$	194,155	\$	65.00	\$	144,372	\$	48.33
09268E	Hwy 2W EB Conn to Hwy 61 NB	Multnomah	15098	Construct PPC overlay (sqyd)	101358	1,417	\$	146,212	\$	103.18	\$	246,577	\$	174.01
				Breakdown										
				Class 2 preparation (sqyd)		1,715	\$	17	\$	0.01	\$	100,053	\$	58.34
				Furnish Premixed Polymer concrete (cuyd)		42	\$	96,600	\$	2,300.00	\$	102,550	\$	2,441.67
				Construct PPC overlay (sqyd)		1,417	\$	49,595	\$	35.00	\$	43,974	\$	31.03

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
09268B	Hwy 2W EB Conn to Hwy 61 SB	Multnomah	15098	Construct PPC overlay (sqyd)	101350	12,000	\$ 1,186,592	\$ 98.88	\$ 1,145,669	\$ 95.47
				Breakdown						
				Class 2 preparation (sqyd)		177	\$ 2	\$ 0.01	\$ 15,636	\$ 88.34
				Furnish Premixed Polymer concrete (cuyd)		333	\$ 766,590	\$ 2,300.00	\$ 786,033	\$ 2,358.33
				Construct PPC overlay (sqyd)		12,000	\$ 420,000	\$ 35.00	\$ 344,000	\$ 28.67
09268N	Hwy 61 NB over City Streets	Multnomah	15098	Construct PPC overlay (sqyd)	101361	15,120	\$ 1,495,202	\$ 98.89	\$ 1,448,335	\$ 95.79
				Breakdown						
				Class 2 preparation (sqyd)		202	\$ 2	\$ 0.01	\$ 16,835	\$ 83.34
				Furnish Premixed Polymer concrete (cuyd)		420	\$ 966,000	\$ 2,300.00	\$ 990,500	\$ 2,358.33
				Construct PPC overlay (sqyd)		15,120	\$ 529,200	\$ 35.00	\$ 441,000	\$ 29.17
09268S	Hwy 61 SB over City Streets	Multnomah	15098	Construct PPC overlay (sqyd)	101366	11,350	\$ 1,121,751	\$ 98.83	\$ 1,089,709	\$ 96.01
				Breakdown						
				Class 2 preparation (sqyd)		76	\$ 0.8	\$ 0.01	\$ 6,334	\$ 83.34
				Furnish Premixed Polymer concrete (cuyd)		315	\$ 724,500	\$ 2,300.00	\$ 742,875	\$ 2,358.33
				Construct PPC overlay (sqyd)		11,350	\$ 397,250	\$ 35.00	\$ 340,500	\$ 30.00

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
08003	Yamhill River, Hwy 39 (Dayton)	Yamhill	15113	Construct PPC overlay (sqyd)	101311	2,100	\$	221,810	\$	105.62	\$	222,387	\$	105.90
				Breakdown										
				Class 2 preparation (sqyd)		50	\$	12,500	\$	250.00	\$	12,682	\$	253.65
				Furnish Premixed Polymer concrete (cuyd)		44	\$	132,660	\$	3,015.00	\$	136,730	\$	3,107.50
				Construct PPC overlay (sqyd)		2,100	\$	76,650	\$	36.50	\$	72,975	\$	34.75
				Subtotal PPC overlay (sq.yd.)		52,670	\$	5,438,006	\$	103.25	\$	5,392,842	\$	102.39
				(sq.ft.)					\$	11.47			\$	11.38
<u>Silica Fume Concrete (SFC)</u>														
00805C	Lower Lookingglass Creek, Hwy 35	Douglas	15130	Construct 4" Reinforced SFC overlay (sqyd)	102467	542	\$	66,868	\$	123.37	\$	83,567	\$	154.18
				Breakdown										
				Class 2 preparation (sqyd)		69	\$	11,247	\$	163.00	\$	22,954	\$	332.67
				Furnish silica fume concrete (cuyd)		66	\$	12,606	\$	191.00	\$	14,762	\$	223.67
				Construct SFC resurfacing (sqyd)		542	\$	40,650	\$	75.00	\$	43,360	\$	80.00
				Saw cut texturing (sqyd)		473	\$	2,365	\$	5.00	\$	2,491	\$	5.27

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
08107E	Snake River, Hwy 6 EB	Malheur	15121	Construct SFCO spans 2 thru 8 (sqyd)	101989	3,165	\$	271,822	\$	85.88	\$	366,804	\$	115.89
				Breakdown										
				Class 2 preparation (sqyd)		475	\$	40,904	\$	86.15	\$	85,250	\$	179.55
				Furnish silica fume concrete (cuyd)		220	\$	65,940	\$	300.00	\$	71,069	\$	323.33
				Construct SFC resurfacing (sqyd)		3,165	\$	151,925	\$	48.00	\$	193,071	\$	61.00
				Saw cut texturing (sqyd)		2,901	\$	13,053	\$	4.50	\$	17,414	\$	6.00
				Subtotal SFC overlay (sq.yd.) (sq.ft.)		3,707	\$	338,690	\$	91.36	\$	450,371	\$	121.49
									\$	10.15			\$	13.50
<u>High Performance Concrete (HPC) Overlay</u>														
09268E	Hwy 2W EB Conn to Hwy 61 NB	Multnomah	15098	Construct HPC overlay (sqyd)	101358	2,760	\$	343,850	\$	124.58	\$	324,200	\$	117.46
				Breakdown										
				Furnish high performance concrete (cuyd)		115	\$	40,250	\$	350.00	\$	98,708	\$	858.33
				Construct HPC resurfacing (sqyd)		2,760	\$	276,000	\$	100.00	\$	212,980	\$	77.17
				Concrete deck finishing (sqyd)		2,760	\$	27,600	\$	10.00	\$	12,512	\$	4.53
				Subtotal HPC overlay (sq.yd.) (sq.ft.)		2,760	\$	343,850	\$	124.58	\$	324,200	\$	117.46
									\$	13.84			\$	13.05
				Deck Overlay (w/o MPCO) (sq.yd) (sq.ft)		59,137	\$	6,120,546	\$	103.50	\$	6,167,414	\$	104.29
									\$	11.50			\$	11.59

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
<u>Multi-Layer Polymer Concrete (MPCO, for information only)</u>														
00901C	Sixes River, Hwy 9	Curry	15104	Construct MPCO (sqyd)	100938	2,600	\$	102,960	\$	39.60	\$	91,780	\$	35.30
				<i>Breakdown</i>										
				Class 2 preparation (sqyd)		26	\$	13,000	\$	500.00	\$	6,500	\$	250.01
				Furnish MPCO material (sqyd)		2,600	\$	44,980	\$	17.30	\$	42,640	\$	16.40
				Construct MPCO (sqyd)		2,600	\$	44,980	\$	17.30	\$	42,640	\$	16.40
09777	Little Butte Creek, Hwy 270	Jackson	15106	Construct MPCO (sqyd)	100745	1,790	\$	65,920	\$	36.83	\$	80,323	\$	44.87
				<i>Breakdown</i>										
				Class 2 preparation (sqyd)		18	\$	8,640	\$	480.00	\$	12,900	\$	716.67
				Furnish MPCO material (sqyd)		1,790	\$	28,640	\$	16.00	\$	30,430	\$	17.00
				Construct MPCO (sqyd)		1,790	\$	28,640	\$	16.00	\$	36,993	\$	20.67
09312A	Little Butte Creek, Hwy 270	Jackson	15134	Construct MPCO (sqyd)	102101	1,509	\$	66,306	\$	43.94	\$	76,687	\$	50.82
				<i>Breakdown</i>										
				Class 2 preparation (sqyd)		30	\$	15,000	\$	500.00	\$	11,800	\$	393.33
				Furnish MPCO material (sqyd)		1,509	\$	31,689	\$	21.00	\$	34,456	\$	22.83
				Construct MPCO (sqyd)		1,509	\$	19,617	\$	13.00	\$	30,432	\$	20.17

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
08107E	Snake River, Hwy 6 EB	Malheur	15121	Construct MPCO (sqyd)	101989	213	\$	9,442	\$	44.37	\$	11,760	\$	55.26
				Breakdown										
				Class 2 preparation (sqyd)		1	\$	500	\$	500.00	\$	833	\$	833.33
				Furnish MPCO material (sqyd)		213	\$	4,471	\$	21.01	\$	4,399	\$	20.67
				Construct MPCO (sqyd)		213	\$	4,471	\$	21.01	\$	6,527	\$	30.67
08107W	Snake River, Hwy 6 WB	Malheur	15121	Construct MPCO (sqyd)	101989 (shared)	3,378	\$	129,595	\$	38.37	\$	153,378	\$	45.41
				Breakdown										
				Class 2 preparation (sqyd)		150	\$	12,923	\$	86.15	\$	30,558	\$	203.72
				Furnish MPCO material (sqyd)		3,378	\$	58,336	\$	17.27	\$	61,410	\$	18.18
				Construct MPCO (sqyd)		3,378	\$	58,336	\$	17.27	\$	61,410	\$	18.18
07855E	Chemawa Rd NE to Hwy 1 SB over Hwy 72 (Salem Pkwy)	Marion	15137	Construct MPCO (sqyd)	102702	1,306	\$	73,659	\$	56.40	\$	75,323	\$	57.67
				Breakdown										
				Class 2 preparation (sqyd)		65	\$	13,975	\$	215.00	\$	14,268	\$	219.50
				Furnish MPCO material (sqyd)		1,306	\$	26,773	\$	20.50	\$	27,328	\$	20.93
				Construct MPCO (sqyd)		1,306	\$	32,911	\$	25.20	\$	33,727	\$	25.83

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
16443	Hwy 70 WB over Umatilla R, UPRR, and Cnty Rd.	Umatilla	15101	Construct MPCO (sqyd)	101445	4,750	\$	171,950	\$	36.20	\$	167,279	\$	35.22
				Breakdown										
				Class 2 preparation (sqyd)		95	\$	19,950	\$	210.00	\$	79,563	\$	837.50
				Furnish MPCO material (sqyd)		4,750	\$	76,000	\$	16.00	\$	76,000	\$	16.00
				Construct MPCO (sqyd)		4,750	\$	76,000	\$	16.00	\$	11,717	\$	2.47
16444	Hwy 70 EB over Umatilla River, UPRR, and Cnty Rd.	Umatilla	15101	Construct MPCO (sqyd)	101445 (shared)	4,600	\$	167,150	\$	36.34	\$	157,684	\$	34.28
				Breakdown										
				Class 2 preparation (sqyd)		95	\$	19,950	\$	210.00	\$	6,651	\$	70.01
				Furnish MPCO material (sqyd)		4,600	\$	73,600	\$	16.00	\$	77,433	\$	16.83
				Construct MPCO (sqyd)		4,600	\$	73,600	\$	16.00	\$	73,600	\$	16.00
16450	Hwy 70 WB over UPRR	Umatilla	15101	Construct MPCO (sqyd)	101450	1,570	\$	60,730	\$	38.68	\$	56,641	\$	36.08
				Breakdown										
				Class 2 preparation (sqyd)		35	\$	7,350	\$	210.00	\$	2,450	\$	70.01
				Furnish MPCO material (sqyd)		1,570	\$	26,690	\$	17.00	\$	27,370	\$	17.43
				Construct MPCO (sqyd)		1,570	\$	26,690	\$	17.00	\$	26,821	\$	17.08

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
16451	Hwy 70 EB over UPRR	Umatilla	15101	Construct MPCO (sqyd)	101450 (shared)	1,655	\$	59,840	\$	36.16	\$	58,315	\$	35.24
				<i>Breakdown</i>										
				Class 2 preparation (sqyd)		17	\$	3,570	\$	210.00	\$	1,190	\$	70.01
				Furnish MPCO material (sqyd)		1,655	\$	28,135	\$	17.00	\$	28,852	\$	17.43
				Construct MPCO (sqyd)		1,655	\$	28,135	\$	17.00	\$	28,273	\$	17.08
				<i>Subtotal MPCO overlay (sq.yd.)</i>		23,371	\$	907,552	\$	36.09	\$	929,171	\$	39.76
<i>Protective Fencing</i>														
09739	Stafford Rd over Hwy 64	Clackamas	15163	Install 8 foot type B modified protective fence (ft)	102598	135	\$	26,900	\$	200.00	\$	22,417	\$	166.67
08944	Phillipi Canyon Rd over Hwy 2	Gilliam	15118	Install 7 foot type C modified protective fencing (ft)	100084	180	\$	14,760	\$	82.00	\$	20,992	\$	116.62
09198	Hwy 52 over Hwy 2	Gilliam	15118	Install 7 foot type C modified protective fencing (ft)	100104	340	\$	27,880	\$	82.00	\$	39,652	\$	116.62
09312A	Hwy 273 over Hwy 1	Jackson	15134	Install 6 foot type C protective fence (ft)	102101	256	\$	84,480	\$	330.00	\$	92,160	\$	360.00
08805	Brewery Grade Conn over Hwy 2	Wasco	15118	Install ornamental protective fencing (ft)	100069	156	\$	60,840	\$	390.00	\$	58,396	\$	374.33
09460	SCS Canal & UPRR, Hwy 69	Lane	15145	Install 8 foot Type C protective fence (ft)	102759	203		46,081	\$	227.00	\$	47,637	\$	234.67
				<i>Subtotal (ft)</i>		1,270	\$	260,941	\$	205.55	\$	281,254	\$	221.55

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost
<u>Waterproofing Membrane</u>												
07839A	Hwy 1 NB over Clarks Branch Rd Conn #2	Douglas	15108	Perform Class 2 preparation, place polymer membrane, install asphalt joint plug seal.	101421		\$	42,949		\$	55,126	
				<i>Breakdown</i>								
				Bridge deck CPPR, 3" deep (sqyd)		532	\$	9,576	\$	18.00	\$	23.33
				Asphaltic plug seals (ft)		91	\$	140	\$	1.54	\$	92.09
				Asphaltic plug seal material (cuyd)		0.25	\$	1,425	\$	5,700.00	\$	6,066.67
				Class 2 preparation (sqft)		72		7848	\$	109.00		119.67
				Polymer membrane (sqft)		4,792	\$	23,960	\$	5.00	\$	5.05
08945	Hwy 2 over Blalock Conn	Gilliam	15111	Construct polymer membrane	100735		\$	77,840		\$	72,287	
				<i>Breakdown</i>								
				Bridge deck CPPR, 2-4" deep (sqyd)		1,327	\$	7,962	\$	6.00	\$	9.17
				Polymer membrane (sqft)		11,945	\$	69,878	\$	5.85	\$	5.03
				<i>Subtotal Polymer Membrane Waterproofing (sq.yd.)</i>		16,737	\$	93,838	\$	6.08	\$	5.55
<u>Other Miscellaneous</u>												
23736	its_Hwy 064_SS_MP7 .60	Clackamas	15163	Construct camera pole and foundation, BL 45'-0" (ft)	102281	45	\$	35,000	\$	777.78	\$	792.59

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
08306	Youngs Bay, Hwy 9 (New Youngs Bay)	Clatsop	15109	Replace bearings, joint seals, repair damaged concrete and reinforcing bars, install CP system	101423		\$ 3,880,898			\$ 4,639,841	
				Breakdown							
				Reinforcement, Grade 60 (lb)		6,200	\$ 75,000	\$ 12.10	\$ 102,037	\$ 16.46	
				Inject and seal cracks (ft)		1,000	\$ 56,000	\$ 56.00	\$ 53,333	\$ 53.33	
				Structural steel maintenance (lb)		11,626	\$ 175,000	\$ 15.05	\$ 108,167	\$ 9.30	
				Bearing devices (ea)		56	\$ 168,000	\$ 3,000.00	\$ 179,349	\$ 3,202.67	
				Poured seals (ft)		514	\$ 25,000	\$ 48.64	\$ 19,783	\$ 38.49	
				Prepare and coat concrete structures (LS)		1	\$ 750,000	\$ 750,000.00	\$ 1,557,000	\$ 1,557,000.00	
				Surface preparation (LS)		1	\$ 27,500	\$ 27,500.00	\$ 87,045	\$ 87,045.33	
				Coating application (LS)		1	\$ 25,000	\$ 25,000.00	\$ 45,361	\$ 45,360.67	
				Coating materials (LS)		1	\$ 5,000	\$ 5,000.00	\$ 4,623	\$ 4,623.33	

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
08306	continue			Repair damaged reinforcing bars (ea)		500	\$ 225,000	\$ 450.00	\$ 152,500	\$ 305.00
				Locate damaged concrete (LS)		1	\$ 300,000	\$ 300,000.00	\$ 141,992	\$ 141,991.67
				Repair damaged concrete (sqyd)		350	\$ 793,450	\$ 2,267.00	\$ 750,517	\$ 2,144.33
				Mortar buildup on shallow rebar (sqyd)		200	\$ 480,468	\$ 2,402.34	\$ 372,156	\$ 1,860.78
				Bridge jacking (LS)		1	\$ 256,000	\$ 256,000.00	\$ 494,599	\$ 494,599.33
				Quality control plan (LS)		1	\$ 61,000	\$ 61,000.00	\$ 158,617	\$ 158,617.00
				Hand patching (ea)		1,000	\$ 70,000	\$ 70.00	\$ 92,667	\$ 92.67
				Install galvanic zinc anodes (ea)		700	\$ 103,600	\$ 148.00	\$ 58,567	\$ 83.67
				Retrofit repair mortar (cuyd)		24	\$ 284,880	\$ 11,870.00	\$ 261,528	\$ 10,897.00
00928A	Crystal Creek, Hwy 9	Curry	15104	Install membrane, locate and repair damaged concrete, replace damaged reinforcing steel	100935		\$ 79,759		\$ 77,116	
				Breakdown						
				Bridge deck CPPR, 3-5" deep (sqyd)		555	\$ 11,849	\$ 21.35	\$ 12,168	\$ 21.93
				Bridge end panel CPPR, 3-5" deep (sqyd)		216	\$ 4,774	\$ 22.10	\$ 4,898	\$ 22.68
				Warranted spray waterproofing membrane (sqft)		4,996	\$ 48,211	\$ 9.65	\$ 46,588	\$ 9.33
				Repair damaged reinforcing bar (ea)		1	\$ 1,100	\$ 1,100.00	\$ 2,050	\$ 2,050.00
				Repair damaged concrete (sqyd)		5	\$ 13,825	\$ 2,765.00	\$ 11,413	\$ 2,282.50

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost
00901C	Sixes River, Hwy 9	Curry	15104	CFRP overhang strengthening, remove/replace Type D compression seal	100940		\$	126,572		\$	130,126	
				Breakdown								
				Bridge end panel CPPR, 2" deep (sqyd)		208	\$	4,472	\$ 21.50	\$	4,576	\$ 22.00
				CFRP strengthening - NSM (ft)		3,725	\$	111,000	\$ 29.80	\$	115,500	\$ 31.01
				Type "D" compression seals (ft)		109	\$	11,100	\$ 101.83	\$	10,050	\$ 92.20
16231	Garrison Slough, Hwy 9	Curry	15104	Locate and repair damaged concrete, replace damaged reinforcing steel, repair joint seal	100944		\$	679,331		\$	555,828	
				Breakdown								
				Asphaltic plus seals (ft)		146	\$	20,200	\$ 138.36	\$	18,850	\$ 129.11
				Asphaltic plus seal material (cuyd)		1	\$	7,000	\$ 7,000.00	\$	7,000	\$ 7,000.00
				Repair damaged reinforcing bar (ea)		53	\$	43,990	\$ 830.00	\$	35,245	\$ 665.00
				Locate damaged concrete (sqft)		17,380	\$	332,000	\$ 19.10	\$	203,500	\$ 11.71
				Repair damaged concrete (sqyd)		117	\$	213,525	\$ 1,825.00	\$	206,213	\$ 1,762.50
				Mortar buildup on shallow rebar (sqyd)		56	\$	58,800	\$ 1,050.00	\$	79,800	\$ 1,425.00
				Install zinc anodes (ea)		53	\$	3,816	\$ 72.00	\$	5,221	\$ 98.50

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
00805C	Lower Lookingglass Creek, Hwy 35	Douglas	15130	Modify deck drains, repair damaged concrete in overhang, install	102464		\$ 102,228		\$ 101,909	
				Breakdown						
				Reinforcement (lb)		26,555	\$ 60,000	\$ 2.26	\$ 64,717	\$ 2.44
				Timber and lumber (MFBM)		0.75	\$ 3,268	\$ 4,357.00	\$ 5,339	\$ 7,119.00
				Bridge drains (ea)		14	\$ 14,000	\$ 1,000.00	\$ 14,000	\$ 1,000.00
				Utility attachment on structures (LS)		1	\$ 20,000	\$ 20,000.00	\$ 13,000	\$ 13,000.00
				Repair damaged concrete (sqft)		16	\$ 4,960	\$ 310.00	\$ 4,853	\$ 303.33
09777	Little Butte Creek, Hwy 270	Jackson	15106	Deck strengthening, construct modified concrete end block	100747		\$ 221,300		\$ 162,521	
				Breakdown						
				Structure excavation (cuyd)		13	\$ 4,900	\$ 376.92	\$ 11,300	\$ 869.23
				CFRP strengthening - NSM (ft)		6,761	\$ 196,000	\$ 28.99	\$ 129,333	\$ 19.13
				End block, modified (ft)		48	\$ 20,400	\$ 425.00	\$ 21,888	\$ 456.00
08749	Hwy 63 over Hwy 1 (S Ashland Intchg)	Jackson	15134	Install poured seals, repair damaged concrete	102085		\$ 13,290		\$ 18,038	
				Breakdown						
				Poured seals (ft)		44	\$ 1,100	\$ 25.00	\$ 1,608	\$ 36.55
				Repair damaged concrete (sqft)		53	\$ 12,190	\$ 230.00	\$ 16,430	\$ 310.00

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost		
09259A	Hwy 1 NB over Hwy 273	Jackson	15134	Remove/replace existing deck, repair cracks and joint seals	102085		\$	639,840		\$	760,152			
				Breakdown										
				Stainless steel reinforcement (lb)		309	\$	4,000	\$	12.94	\$	5,500	\$	17.80
				Coated reinforcement (lb)		71,681	\$	200,000	\$	2.79	\$	193,333	\$	2.70
				Inject and seal cracks (ft)		110	\$	6,930	\$	63.00	\$	7,700	\$	70.00
				Deck concrete, Class HPC4500 w/fibers (lb)		247	\$	280,000	\$	1,133.60	\$	393,333	\$	1,592.44
				Saw cut texturing (sqyd)		1,074	\$	5,370	\$	5.00	\$	5,281	\$	4.92
				Reinforced concrete bridge end panels (sqyd)		244	\$	106,140	\$	435.00	\$	118,747	\$	486.67
				Elastomeric concrete nosing (ft)		110	\$	14,850	\$	135.00	\$	15,033	\$	136.67
				Poured seals (ft)		110	\$	3,000	\$	27.27	\$	2,667	\$	24.24
				Repair damaged concrete girders		85	\$	19,550	\$	230.00	\$	18,558	\$	218.33

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost		
09259	Hwy 1 SB over Hwy 273	Jackson	15134	Remove/replace existing deck, repair cracks and joint seals	102093		\$	868,015		\$	1,082,447			
				Breakdown										
				Stainless steel reinforcement (lb)		409	\$	5,000	\$	12.22	\$	8,167	\$	19.97
				Coated reinforcement (lb)		104,735	\$	250,000	\$	2.39	\$	265,000	\$	2.53
				Inject and seal cracks (ft)		161	\$	11,270	\$	70.00	\$	10,304	\$	64.00
				Deck concrete, Class HPC4500 w/fibers (lb)		401	\$	400,000	\$	997.51	\$	586,667	\$	1,463.01
				Saw cut texturing (sqyd)		1,765	\$	8,825	\$	5.00	\$	8,678	\$	4.92
				Reinforced concrete bridge end panels (sqyd)		322	\$	138,460	\$	430.00	\$	150,803	\$	468.33
				Elastomeric concrete nosing (ft)		146	\$	19,710	\$	135.00	\$	19,953	\$	136.67
				Poured seals (ft)		146	\$	3,700	\$	25.34	\$	3,400	\$	23.29
				Repair damaged concrete girders		135	\$	31,050	\$	230.00	\$	29,475	\$	218.33

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost
09460	SCS Canal & UPRR, Hwy 69	Lane	15145	Deck overhang strengthening, joint and concrete repair Breakdown	102761		\$	86,195		\$	100,032	
				CFRP strengthening - NSM (ft)		2,650	\$	71,995	\$ 27.17	\$	85,238	\$ 32.17
				Elastomeric concrete nosing (ft)		74	\$	7,400	\$ 100.00	\$	9,660	\$ 130.54
				Poured seals (ft)		74	\$	1,500	\$ 20.27	\$	2,167	\$ 29.28
				Repair damaged concrete (sqft)		1	\$	5,000	\$ 5,000.00	\$	2,667	\$ 2,666.67
				Bridge ID markers (ea)		2	\$	300	\$ 150.00	\$	300	\$ 150.00
08107E	Snake River, Hwy 6 EB	Malheur	15121	Replace joint seal, locate and repair damaged concrete, install drain grates. Breakdown	101989		\$	164,411		\$	126,440	
				Bridge deck CPPR, 2-1/2" deep (sqyd)		3,165	\$	44,311	\$ 14.00	\$	44,311	\$ 14.00
				Type "E" compression seals (ft)		275	\$	30,000	\$ 109.09	\$	30,000	\$ 109.09
				Repair damaged reinforcing bars (ea)		3	\$	3,000	\$ 1,000.00	\$	1,840	\$ 613.33
				Locate damaged concrete (sqft)		1,250	\$	5,000	\$ 4.00	\$	10,833	\$ 8.67
				Repair damaged concrete (sqyd)		3	\$	3,000	\$ 1,000.00	\$	5,900	\$ 1,966.67
				Mortar build-up on shallow rebar (sqyd)		1	\$	1,600	\$ 2,000.00	\$	1,653	\$ 2,066.67

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Resin buildup on shallow rebar (sqyd)		1	\$	1,000	\$	1,000.00	\$	1,600	\$	1,600.00
				Deck drain frames (ea)		1	\$	1,500	\$	1,500.00	\$	1,276	\$	1,275.83
				Deck drain grates (ea)		8	\$	72,000	\$	9,000.00	\$	27,831	\$	3,478.88
				Install zinc anodes (ea)		3	\$	3,000	\$	1,000.00	\$	1,195	\$	398.33
08107W	Snake River, Hwy 6 WB	Malheur	15121	Replace joint seal, locate and repair damaged concrete at bent caps.	101989 (shared)		\$	58,600			\$	67,568		
				Breakdown										
				Type "E" compression seals (ft)		275	\$	30,000	\$	109.09	\$	30,000	\$	109.09
				Repair damaged reinforcing bars (ea)		7	\$	7,000	\$	1,000.00	\$	4,293	\$	613.33
				Locate damaged concrete (sqft)		1,250	\$	5,000	\$	4.00	\$	14,167	\$	11.33
				Repair damaged concrete (sqyd)		7	\$	7,000	\$	1,000.00	\$	13,067	\$	1,866.67
				Mortar build-up on shallow rebar (sqyd)		1	\$	1,600	\$	2,000.00	\$	1,653	\$	2,066.67
				Resin buildup on shallow rebar (sqyd)		1	\$	1,000	\$	1,000.00	\$	1,600	\$	1,600.00
				Install zinc anodes (ea)		7	\$	7,000	\$	1,000.00	\$	2,788	\$	398.33

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost
07855C	Hwy 1 NB over Hwy 72 NB	Marion	15137	Construct joint seal replacement and deck membrane	102701		\$	208,572		\$	224,728	
				Breakdown								
				Bridge deck CPPR, 2-4" deep (sqyd)		2,780	\$	9,035	\$ 3.25	\$	18,974	\$ 6.83
				Bridge end panel CPPR, 2" deep (sqyd)		405	\$	1,316	\$ 3.25	\$	3,189	\$ 7.88
				Asphaltic plus seals (ft)		128	\$	18,500	\$ 144.53	\$	18,963	\$ 148.14
				Asphaltic plus seal material (cuyd)		0.3	\$	2,025	\$ 6,750.00	\$	2,069	\$ 6,897.50
				Poured seals (ft)		72	\$	2,000	\$ 27.78	\$	2,015	\$ 27.99
				Polymer membrane (sqft)		25,020	\$	120,096	\$ 4.80	\$	123,224	\$ 4.93
				Class 2 preparation (sqft)		278	\$	55,600	\$ 200.00	\$	56,295	\$ 202.50
07855D	Hwy 1 SB over Hwy 72 NB	Marion	15137	Construct joint seal replacement and deck membrane	102701		\$	186,392		\$	199,736	
				Breakdown								
				Bridge deck CPPR, 2-4" deep (sqyd)		2,407	\$	7,823	\$ 3.25	\$	16,428	\$ 6.83
				Bridge end panel CPPR, 2" deep (sqyd)		405	\$	1,316	\$ 3.25	\$	3,189	\$ 7.88
				Asphaltic plus seals (ft)		128	\$	18,500	\$ 144.53	\$	18,950	\$ 148.05
				Asphaltic plus seal material (cuyd)		0.3	\$	2,025	\$ 6,750.00	\$	2,069	\$ 6,897.50

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
				Poured seals (ft)		72	\$ 2,150	\$ 29.86	\$ 1,091	\$ 15.15
				Polymer membrane (sqft)		21,660	\$ 103,968	\$ 4.80	\$ 106,676	\$ 4.93
				Class 2 preparation (sqft)		241	\$ 50,610	\$ 210.00	\$ 51,333	\$ 213.00
16086	Labish Bottom, Hwy 1 NB	Marion	15137	Construct joint seal replacement and deck membrane	102700		\$ 183,492		\$ 200,445	
				Breakdown						
				Bridge deck CPPR, 2-4" deep (sqyd)		2,353	\$ 7,647	\$ 3.25	\$ 19,118	\$ 8.13
				Bridge end panel CPPR, 2" deep (sqyd)		391	\$ 1,271	\$ 3.25	\$ 3,177	\$ 8.13
				Asphaltic plus seals (ft)		116	\$ 17,500	\$ 150.86	\$ 17,950	\$ 154.74
				Asphaltic plus seal material (cuyd)		0.3	\$ 1,823	\$ 6,750.00	\$ 1,862	\$ 6,897.50
				Poured seals (ft)		72	\$ 900	\$ 12.50	\$ 925	\$ 12.85
				Polymer membrane (sqft)		21,170	\$ 104,792	\$ 4.95	\$ 106,909	\$ 5.05
				Class 2 preparation (sqft)		236	\$ 49,560	\$ 210.00	\$ 50,504	\$ 214.00
16086A	Labish Bottom, Hwy 1 SB	Marion	15137	Construct joint seal replacement and deck membrane	102700 (shared)		\$ 189,900		\$ 206,742	

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Breakdown										
				Bridge deck CPPR, 2-4" deep (sqyd)		2,514	\$	8,171	\$	3.25	\$	19,798	\$	7.88
				Bridge end panel CPPR, 2" deep (sqyd)		391	\$	1,271	\$	3.25	\$	3,079	\$	7.88
				Asphaltic plus seals (ft)		116	\$	17,500	\$	150.86	\$	17,950	\$	154.74
				Asphaltic plus seal material (cuyd)		0.3	\$	1,823	\$	6,750.00	\$	1,862	\$	6,897.50
				Poured seals (ft)		72	\$	900	\$	12.50	\$	925	\$	12.85
				Polymer membrane (sqft)		22,620	\$	108,576	\$	4.80	\$	110,838	\$	4.90
				Class 2 preparation (sqft)		252	\$	51,660	\$	205.00	\$	52,290	\$	207.50
07295	Tumble Creek, Hwy 162	Marion	15117	Construct moment slab, install membrane, repair cracks	100963		\$	193,655			\$	183,732		
				Breakdown										
				Structure excavation (cuyd)		82	\$	14,000	\$	170.73	\$	7,667	\$	93.50
				Granular structure backfill (cuyd)		30	\$	7,000	\$	233.33	\$	5,000	\$	166.67
				Reinforcement (lb)		6,600	\$	10,000	\$	1.52	\$	15,983	\$	2.42
				Inject and seal cracks (ft)		60	\$	3,120	\$	52.00	\$	3,080	\$	51.33
				General structural concrete, Class 5000 (cuyd)		47	\$	80,000	\$	1,702.13	\$	56,333	\$	1,198.58
				Polymer membrane (sqft)		3,472	\$	18,054	\$	5.20	\$	18,749	\$	5.40
				Bridge identification markers (ea)		2	\$	310	\$	155.00	\$	370	\$	185.00

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Precast reinforced concrete members (cuyd)		20	\$	14,000	\$	700.00	\$	23,167	\$	1,158.33
				Extra for curb ramps on structures (ea)		4	\$	2,800	\$	700.00	\$	7,153	\$	1,788.33
				Bridge deck cold plane pavement removal, 8-10 inches deep (sqyd)		388	\$	9,700	\$	25.00	\$	10,670	\$	27.50
				Class 2 preparation (sqft)		381	\$	34,671	\$	91.00	\$	35,560	\$	93.33
01377A	Columbia R & N Hayden Isl Dr, Hwy1 NB (Interstate)	Multnomah	15119	Trunnion Shaft Replacement	101241			\$ 3,346,500			\$	3,346,500		
				Breakdown										
				Granular wall backfill (cuyd)		2	\$	1,500	\$	750.00	\$	1,500	\$	750.00
				Lead paint removal/containment (LS)		1	\$	40,000	\$	40,000.00	\$	40,000	\$	40,000.00
				Lift span rehabilitation (LS)		1	\$	125,000	\$	125,000.00	\$	125,000	\$	125,000.00
				Lift span testing and reactivation (LS)		1	\$	30,000	\$	30,000.00	\$	30,000	\$	30,000.00
				Provide bearing assemblies (LS)		1	\$	800,000	\$	800,000.00	\$	800,000	\$	800,000.00
				Provide counterweight rope load equalize (LS)		1	\$	375,000	\$	375,000.00	\$	375,000	\$	375,000.00

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
				Provide counterweight ropes (LS)		1	\$ 675,000	\$ 675,000.00	\$ 675,000	\$ 675,000.00
				Provide sheave and trunnion assemblies (LS)		1	\$ 1,300,000	\$ 1,300,000.00	\$ 1,300,000	\$ 1,300,000.00
13522	SE Stark Street over Hwy 64	Multnomah	15124	Install Concrete Slope Paving and Paving Curbs	C05A		\$ 33,120		\$ 62,860	
				Breakdown						
				Concrete slope paving (sqft)		2,856	\$ 28,560	\$ 10.00	\$ 58,072	\$ 20.33
				Slope paving curbs (ft)		114	\$ 4,560	\$ 40.00	\$ 4,788	\$ 42.00
02019	Sandy River, Hwy 100	Multnomah	15160	Replace timer and steel walkway	103347		\$ 590,810		\$ 741,013	
				Breakdown						
				Structure excavation (cuyd)		3	\$ 1,000	\$ 333.33	\$ 2,167	\$ 722.22
				Granular structure backfill (cuyd)		2	\$ 1,400	\$ 700.00	\$ 2,633	\$ 1,316.67
				Reinforcement (lb)		100	\$ 500	\$ 5.00	\$ 1,667	\$ 16.67
				Foundation concrete, Class 3300 (cuyd)		3	\$ 4,800	\$ 1,600.00	\$ 6,900	\$ 2,300.00
				General structural concrete, Class 3300 (cuyd)		3	\$ 7,500	\$ 2,500.00	\$ 7,500	\$ 2,500.00
				Structural steel maintenance (lb)		25,812	\$ 327,000	\$ 12.67	\$ 359,000	\$ 13.91
				Poured seals (ft)		35	\$ 600	\$ 17.14	\$ 3,033	\$ 86.67
				Surface preparation (LS)		1	\$ 26,000	\$ 26,000.00	\$ 22,000	\$ 22,000.00

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Coating application (LS)		1	\$	26,000	\$	26,000.00	\$	22,000	\$	22,000.00
				Coating materials (LS)		1	\$	4,000	\$	4,000.00	\$	3,333	\$	3,333.33
				Fastener replacement (ea)		10	\$	8,000	\$	800.00	\$	3,833	\$	383.33
				Gas line utility attachments (ea)		23	\$	5,980	\$	260.00	\$	10,043	\$	436.67
				Sewer pipe utility attachments (ea)		42	\$	31,920	\$	760.00	\$	34,440	\$	820.00
				Aluminum handrail (ft)		410	\$	129,150	\$	315.00	\$	248,050	\$	605.00
				Steel lattice rail (ft)		18	\$	12,960	\$	720.00	\$	9,720	\$	540.00
				Plastic lumber (fbm)		8,000	\$	4,000	\$	0.50	\$	4,693	\$	0.59
02133A	Spanish Hollow Creek, Hwy 2	Sherman	15118	Construct overhang strengthening, install membrane	100072		\$	34,580			\$	48,897		
				Breakdown										
				Bridge deck CPPR 3-5 inches deep (sqyd)		120	\$	3,360	\$	28.00	\$	7,920	\$	66.00
				CFRP strengthening - NSM (ft)		2,670	\$	20,000	\$	7.49	\$	24,933	\$	9.34
				Utility attachment to structures (LS)		1	\$	4,800	\$	4,800.00	\$	9,267	\$	9,266.67
				Polymer membrane (sqft)		1,070	\$	6,420	\$	6.00	\$	6,777	\$	6.33
09232	Scott Canyon, Hwy 2 WB	Sherman	15118	Construct overhang strengthening, install membrane	100076		\$	55,303			\$	65,832		

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Breakdown										
				Bridge deck CPPR 3-5 inches deep (sqyd)		208	\$	5,835	\$	28.00	\$	10,455	\$	50.17
				CFRP strengthening - NSM (ft)		4,475	\$	34,613	\$	7.73	\$	37,910	\$	8.47
				Utility attachment to structures (LS)		1	\$	3,430	\$	3,430.00	\$	6,043	\$	6,043.33
				Polymer membrane (sqft)		1,904	\$	11,424	\$	6.00	\$	11,424	\$	6.00
09232A	Scott Canyon, Hwy 2 EB	Sherman	15118	Construct overhang strengthening, install membrane	100076 (shared)		\$	52,337			\$	62,009		
				Breakdown										
				Bridge deck CPPR 3-5 inches deep (sqyd)		162	\$	4,525	\$	28.00	\$	8,106	\$	50.17
				CFRP strengthening - NSM (ft)		4,575	\$	35,387	\$	7.73	\$	38,757	\$	8.47
				Utility attachment to structures (LS)		1	\$	3,570	\$	3,570.00	\$	6,290	\$	6,290.00
				Polymer membrane (sqft)		1,476	\$	8,856	\$	6.00	\$	8,856	\$	6.00
09225	Hwy 2 EB over Rufus Conn	Sherman	15118	Construct overhang strengthening, install membrane	100080		\$	29,620			\$	34,474		
				Breakdown										
				Bridge deck CPPR 3-5 inches deep (sqyd)		125	\$	3,500	\$	28.00	\$	6,688	\$	53.50
				CFRP strengthening - NSM (ft)		825	\$	18,500	\$	22.42	\$	20,167	\$	24.44
				Polymer membrane (sqft)		1,270	\$	7,620	\$	6.00	\$	7,620	\$	6.00

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost
09225A	Hwy 2 WB over Rufus Conn	Sherman	15118	Construct overhang strengthening, install membrane	100080 (shared)		\$	29,620		\$	34,474	
				Breakdown								
				Bridge deck CPPR 3-5 inches deep (sqyd)		125	\$	3,500	\$ 28.00	\$	6,688	\$ 53.50
				CFRP strengthening - NSM (ft)		825	\$	18,500	\$ 22.42	\$	20,167	\$ 24.44
				Polymer membrane (sqft)		1,270	\$	7,620	\$ 6.00	\$	7,620	\$ 6.00
16443	Hwy 70 WB over Umatilla R, UPRR, and Cnty Rd.	Umatilla	15101	Replace end panels, construct sleeper slab, repair backwall and joint seal	101445		\$	216,700		\$	252,657	
				Breakdown								
				Structure excavation (cuyd)		130	\$	6,000	\$ 46.15	\$	7,167	\$ 55.13
				Granular structure backfill (cuyd)		130	\$	11,500	\$ 88.46	\$	12,667	\$ 97.44
				Reinforcement (lb)		6,100	\$	10,000	\$ 1.64	\$	13,833	\$ 2.27
				Foundation concrete, Class 3300 (cuyd)		32	\$	4,000	\$ 125.00	\$	16,333	\$ 510.42
				General structural concrete, Class 4000 (cuyd)		20	\$	18,700	\$ 935.00	\$	32,900	\$ 1,645.00
				Saw cut texturing (sqyd)		280	\$	4,200	\$ 15.00	\$	4,107	\$ 14.67
				Reinforced concrete bridge end panels (sqyd)		300	\$	108,000	\$ 360.00	\$	108,500	\$ 361.67

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Asphaltic plug seals (ft)		88	\$	12,000	\$	136.36	\$	11,717	\$	133.14
				Double strip seals - repair (ft)		88	\$	11,000	\$	125.00	\$	18,333	\$	208.33
				Type "F" concrete rail (ft)		120	\$	31,300	\$	260.83	\$	27,100	\$	225.83
16444	Hwy 70 EB over Umatilla R, UPRR, and Cnty Rd.	Umatilla	15101	Replace end panels, construct sleeper slab, repair backwall and joint seal	101445 (shared)		\$	224,200			\$	275,323		
				Breakdown										
				Bridge deck cold plane pavement removal, 0-2" deep (sqyd)		4,600	\$	13,800	\$	3.00	\$	27,600	\$	6.00
				Structure excavation (cuyd)		130	\$	6,000	\$	46.15	\$	6,833	\$	52.56
				Granular structure backfill (cuyd)		130	\$	11,500	\$	88.46	\$	12,667	\$	97.44
				Reinforcement (lb)		6,100	\$	3,800	\$	0.62	\$	11,767	\$	1.93
				Foundation concrete, Class 3300 (cuyd)		32	\$	4,000	\$	125.00	\$	14,667	\$	458.33
				General structural concrete, Class 4000 (cuyd)		20	\$	18,700	\$	935.00	\$	31,233	\$	1,561.67
				Saw cut texturing (sqyd)		280	\$	4,200	\$	15.00	\$	4,107	\$	14.67
				Reinforced concrete bridge end panels (sqyd)		300	\$	108,000	\$	360.00	\$	108,500	\$	361.67
				Asphaltic plug seals (ft)		88	\$	12,000	\$	136.36	\$	11,717	\$	133.14
				Double strip seals - repair (ft)		88	\$	10,900	\$	123.86	\$	19,300	\$	219.32
				Type "F" concrete rail (ft)		120	\$	31,300	\$	260.83	\$	26,933	\$	224.44

MISCELLANEOUS

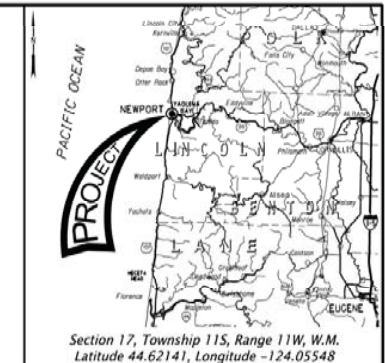
Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost	Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost		
09578	Hwy 6 WB over Nolan Road	Umatilla	15131	Replace bridge end panel, install rail, construct sleeper slab	102556		\$	91,390		\$	88,419			
				Breakdown										
				Reinforcement (lb)		2,100	\$	4,000	\$	1.90	\$	6,052	\$	2.88
				Foundation concrete, Class 4000 (cuyd)		14	\$	30,000	\$	2,142.86	\$	20,045	\$	1,431.79
				Saw cut texturing (sqyd)		91	\$	910	\$	10.00	\$	3,731	\$	41.00
				Reinforced concrete bridge end panels (sqyd)		96	\$	36,480	\$	380.00	\$	42,880	\$	446.67
				Type "F" concrete rail (ft)		41	\$	20,000	\$	487.80	\$	15,712	\$	383.21
08003	Yamhill River, Hwy 39 (Dayton)	Yamhill	15113	Construct moment slabs, expansion joints, coat steel surface around pin & hanger	101311		\$	143,979		\$	193,234			
				Breakdown										
				Bridge deck cold plane pavement removal, 0-2" deep (sqyd)		62	\$	1,984	\$	32.00	\$	1,380	\$	22.25
				Structure excavation (cuyd)		50	\$	4,000	\$	80.00	\$	4,500	\$	90.00
				Granular structure backfill (cuyd)		20	\$	4,815	\$	240.75	\$	4,158	\$	207.88
				Reinforcement (lb)		5,850	\$	15,795	\$	2.70	\$	17,843	\$	3.05
				General structural concrete, Class 3300 (cuyd)		50	\$	69,500	\$	1,390.00	\$	72,250	\$	1,445.00

MISCELLANEOUS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	QTY	Low Bid Total Cost		Low Bid Unit Cost		Ave 3 Bid Total Cost		Ave 3 Bid Unit Cost	
				Crack sealant removal (ft)		1	\$	1,690	\$	1,690.00	\$	1,714	\$	1,714.10
				Poured seals (ft)		76	\$	3,450	\$	45.39	\$	3,491	\$	45.93
				Type "C" compression seals (ft)		114	\$	8,320	\$	72.98	\$	8,438	\$	74.01
				Surface preparation (LS)		1	\$	8,025	\$	8,025.00	\$	16,513	\$	16,512.50
				Coating application (LS)		1	\$	10,700	\$	10,700.00	\$	40,350	\$	40,350.00
				Coating materials (LS)		1	\$	10,700	\$	10,700.00	\$	13,225	\$	13,225.00
				Pack rust removal (ft)		50	\$	5,000	\$	100.00	\$	9,375	\$	187.50

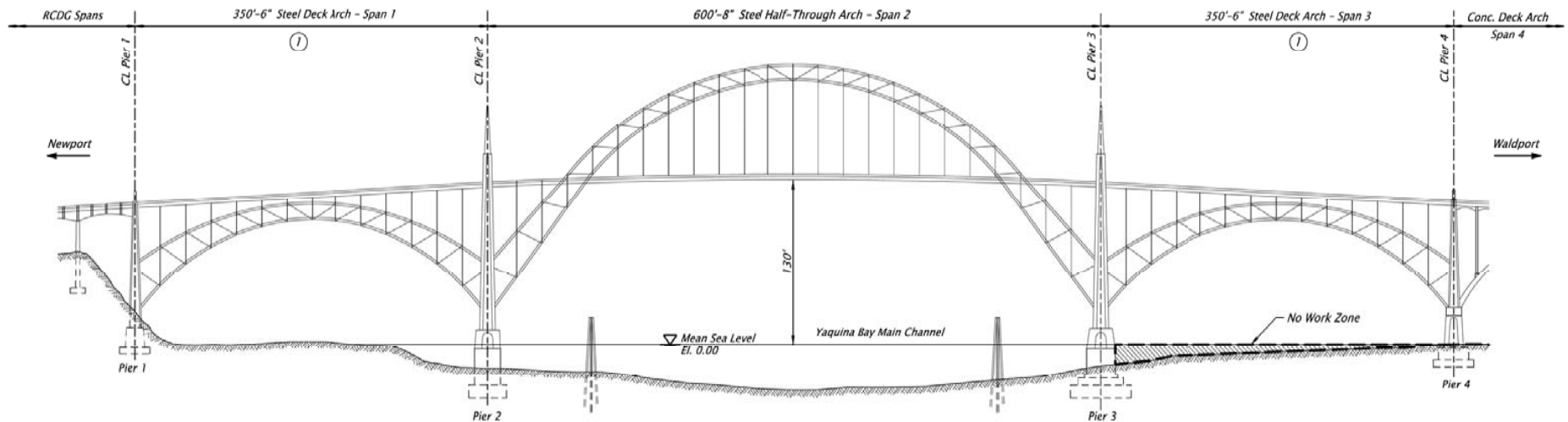
WORK ITEMS:

- ① Prepare and paint floor system structural steel below deck of Spans 1 and 3, full width.



LOCATION MAP

No Scale

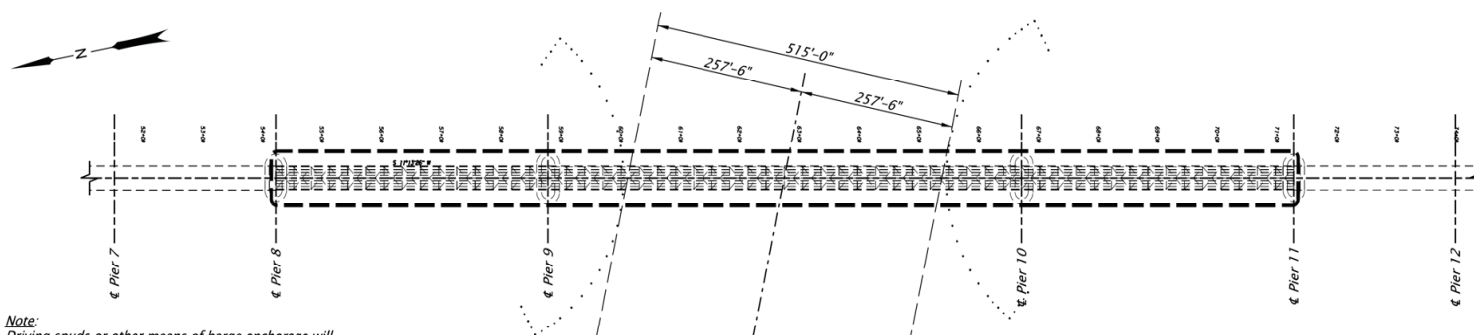


ELEVATION

Scale: 1" = 100'

STRUCTURE NO. 01820		OREGON DEPARTMENT OF TRANSPORTATION			
BOS DWG NO. 101305		Yaquina Bay_Hwy 9			
CALC. BOOK 7047		US101: YAQUINA BAY BRIDGE (NEWPORT)			
HWY: 009 MP: 143.68		PAINTING PROJECT			
COUNTY LINCOLN	DESIGNER: David M. Dobson, PE	REVIEWER: Raymond D. Bottenberg, PE	OREGON COAST HIGHWAY LINCOLN COUNTY		
DATE June 2018	DRAWN: TAD, DMD, JAT	CHECKED: James D. Garrard	SHEET NO. J01		
RENEW: 12-31-2019			ELEVATION		

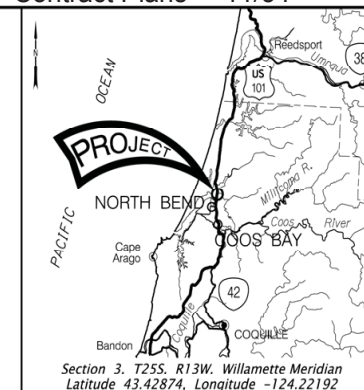
BRIDGE NAME:			Yaquina Bay, Hwy 9		BRIDGE NO:		01820		KEY NO:		19654		
SECTION NAME:			US101: YAQUINA BAY BRIDGE (NEWPORT) PAINTING PROJECT		COUNTY:		Lincoln		CONTR #		15094		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		10/11/2018		FAP NO:		S009(482)		
STRUCT TYPE:			STEEL TRUSS		# BIDS RECVD:		6		AWARDED TO:		CERTIFIED COATINGS CO		
PREPARED BY:													
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Miscellaneous Project - Bridge Painting													
SUBTOTAL						1,277,000			1,469,400				
PERCENT MOBILIZATION					11.08	141,500		8.48	124,600				
TOTAL						1,418,500			1,594,000				
DETAILS													
Bridge Painting													
1.00		LS	SURFACE PREPARATION			676,000.00	676,000		959,666.67	959,667		1,250,000.00	676,000.00
1.00		LS	COATING APPLICATION			366,000.00	366,000		332,400.00	332,400		440,000.00	191,200.00
1.00		LS	COATING MATERIALS			60,000.00	60,000		57,333.33	57,333		70,000.00	42,000.00
1,000.00		FOOT	PACK RUST REMOVAL			100.00	100,000		58.33	58,333		100.00	20.00
500.00		EACH	FASTENER REPLACEMENT			150.00	75,000		123.33	61,667		150.00	100.00
Additional Items													
26,600.00		SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT			20.44	543,600		22.33	593,866		27.74	18.80
1.00		LS	WORK CONTAINMENT PLAN			35,000.00	35,000		12,833.33	12,833		35,000.00	1,000.00



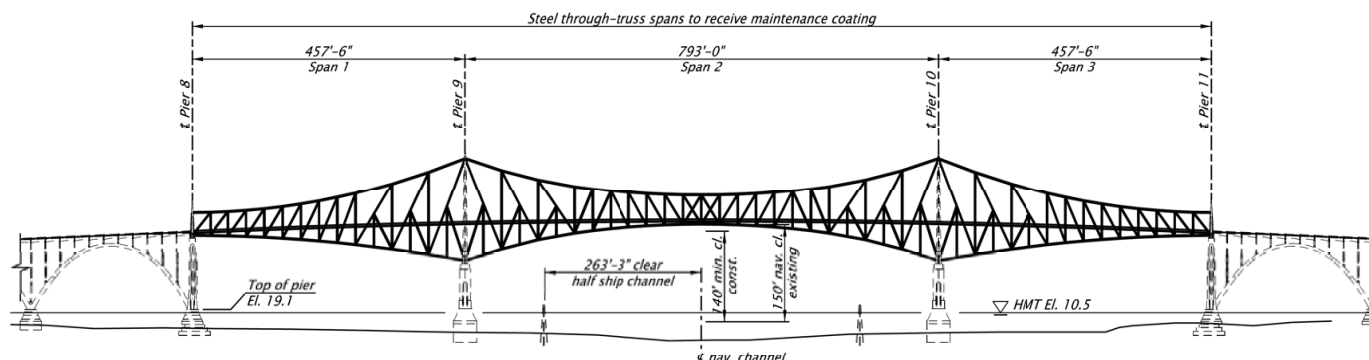
Note:
Driving spuds or other means of barge anchorage will not be allowed within the Navigational Channel.

There are submarine cables present under the bridge. Locate all cables and obtain written approval from the engineer before driving spuds or setting other means of anchorage within 46' of bridge centerline.

PLAN
Scale: 1" = 200'-0"



LOCATION MAP
No Scale



ELEVATION
Scale: 1" = 200'-0"

NAVIGATION CLEARANCE NOTES:

Maximum reduction in vertical navigation clearance is 10-feet.

Maintain full height navigation clearance for a minimum of half of the navigation channel at all times.

NOTE:
Elevations shown are based on the North American Vertical Datum 1988 (NAVD88).

WORK ITEMS:

Perform maintenance coating on all structural steel within steel spans, per Section 00594.

Provide temporary access and containment for steel preparation and painting procedures per Section 00253.

Provide barge services per Section 00253.

Repair water utility pipe per Section 00589.

STRUCTURE NO.	01823
BOS DWG NO.	102109
CALC. BOOK	7056
HWY: 009	
MD: 974 R/R	
COUNTY	COOS
DATE	August 2018



OREGON DEPARTMENT OF TRANSPORTATION

Coos Bay (McCullough Bridge) Hwy. 9 (North Bend)

US101: McCullough Bridge (Coos Bay) Painting Project
Oregon Coast Highway (Hwy #009)
Coos County

Designer: David Dobson, PE
Drafter: Joe Tilman

Reviewer: Raymond Bottenberg, PE, SE
Checker: James Garrard

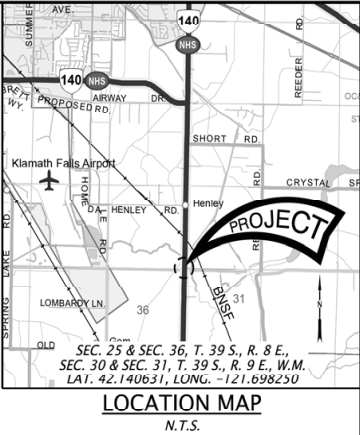
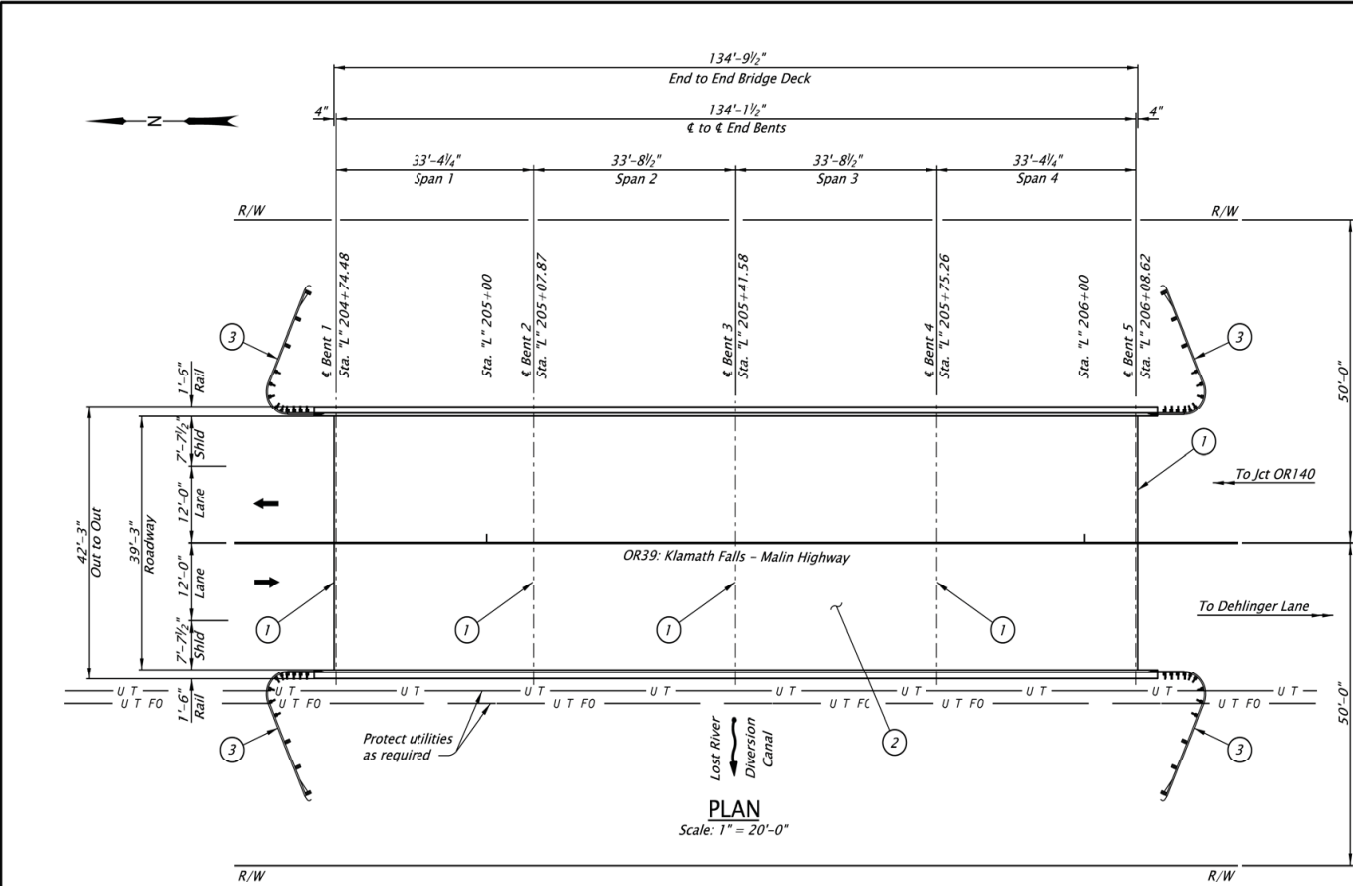
PLAN AND ELEVATION

SHEET NO.
J01

BRIDGE NAME:	Coos Bay, Hwy 9 (McCullough)	BRIDGE NO:	01823	KEY NO:	18914
SECTION NAME:	US101: MCCULLOUGH BRIDGE(COOS BAY) BRIDGE PAINTING	COUNTY:	Coos	CONTR #	15099
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	S009(481)
STRUCT TYPE:	STEEL TRUSS	# BIDS RECVD:	5	AWARDED TO:	VIMAS PAINTING COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Coating								
		SUBTOTAL		17,836,900		17,979,000		
		PERCENT MOBILIZATION	10.57	1,885,400	10.86	1,952,500		
		TOTAL		19,722,300		19,931,500		
DETAILS								
Bridge Coating, Rivet Replacement, Utility Pipe Repair								
1.00	LS	SURFACE PREPARATION	11,000,000.00	11,000,000	10,324,733.33	10,324,733	11,400,000.00	8,574,200.00
1.00	LS	COATING APPLICATION	5,000,000.00	5,000,000	5,743,566.67	5,743,567	6,430,700.00	5,000,000.00
1.00	LS	COATING MATERIALS	745,000.00	745,000	687,266.67	687,267	800,800.00	516,000.00
6,000.00	FOOT	PACK RUST REMOVAL	5.00	30,000	40.00	240,000	65.00	5.00
1.00	LS	WATER PIPE COATING APPLICATION	100,000.00	100,000	72,000.00	72,000	100,000.00	51,700.00
1.00	LS	WATER PIPE COATING MATERIALS	15,000.00	15,000	11,233.33	11,233	15,000.00	8,000.00
1.00	LS	WATER PIPE SURFACE PREPARATION	200,000.00	200,000	146,700.00	146,700	200,000.00	85,700.00
54.00	EACH	ANCHOR ROD REPLACEMENT	600.00	32,400	488.37	26,372	615.11	250.00
4,000.00	EACH	FASTENER REPLACEMENT	150.00	600,000	157.49	629,960	172.47	150.00
54.00	EACH	NEOPRENE RUBBER PAD	320.00	17,280	133.00	7,182	320.00	29.00
27.00	EACH	PIPE REPAIR AT SADDLES	1,200.00	32,400	1,741.58	47,023	3,774.75	250.00
540.00	EACH	WATER PIPE FASTENER REPLACEMENT	120.00	64,800	79.63	42,998	120.00	25.00
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	10,000,000.00	10,000,000	12,108,466.67	12,108,467	16,725,400.00	9,600,000.00

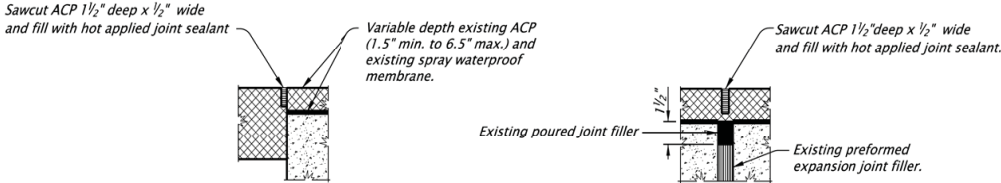


- CONSTRUCTION NOTES:**
- 1 Sawcut ACP surface 1 1/2" deep by 1/2" wide and fill with hot applied joint sealant, see roadway plans. At bridge end bents, see Detail 'A' this sheet. At interior bents, see Detail 'B' this sheet.
 - 2 Bridge deck cold plane pavement removal, 2 inches deep (nominal). Variable depth existing ACP. Approximately 1.5 inches min. at face of rail to 6.5 inches max. at centerline. Protect existing waterproof membrane in-place. Construct 2" ACP.
 - 3 Construct guardrail and guardrail transitions for details, see roadway plans and std. dwg. BR203 (Typ)

GENERAL NOTES:

Provide all materials and perform all work according to the 2018 Oregon Standard Specifications for Construction.

All dimensions, including stationing, are taken from existing plans. Contractor shall field verify all dimensions prior to beginning work.



SCALE WARNING

IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

DETAIL 'A'
No Scale

DETAIL 'B'
No Scale

FOR INFORMATION ONLY DWGS:
17190, 19848, 20341
and 21395 thru 21396.

ACCOMPANIED BY DWGS:
BR203

STRUCTURE NO. 02716A	
BOS DWG NO. 100834	
CALC. BOOK 7107	
HWY: 50 M.P.: 3.81	
COUNTY Klamath	DATE MAY/2019
RENEWS: 06-3C-2020	

OREGON DEPARTMENT OF TRANSPORTATION	
LOST RIVER DIVERSION CANAL HWY 50	
OR39: KLAMATH FALLS/LAKEVIEW JCT -MATNEY RD SEC.	
KLAMATH FALLS-MALIN HIGHWAY KLAMATH COUNTY	
Designer: Paul J. Strauser	Review: Zachary T. Beget
Drafter: Michael L. Graves	Checker: Zachary T. Beget
PLAN	
SHEET NO. JB01	

BRIDGE NAME:	Lost River Diversion Canal, Hwy 50	BRIDGE NO:	02716A	KEY NO:	18683
SECTION NAME:	OR39: KLAMATH FALLS/LAKEVIEW JCT-MATNEY RD SEC.	COUNTY:	Klamath	CONTR #	15158
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	08/15/2019	FAP NO:	S050(030)
STRUCT TYPE:	PS SLABS SL15	# BIDS RECVD:	2	AWARDED TO:	ROCKY MOUNTAIN CONSTRUCTION LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

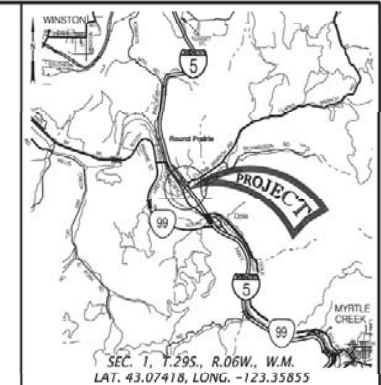
Miscellaneous Project - Bridge Repair

SUBTOTAL				7,100		8,400		
PERCENT MOBILIZATION			4.63	300	8.24	700		
TOTAL				7,400		9,100		

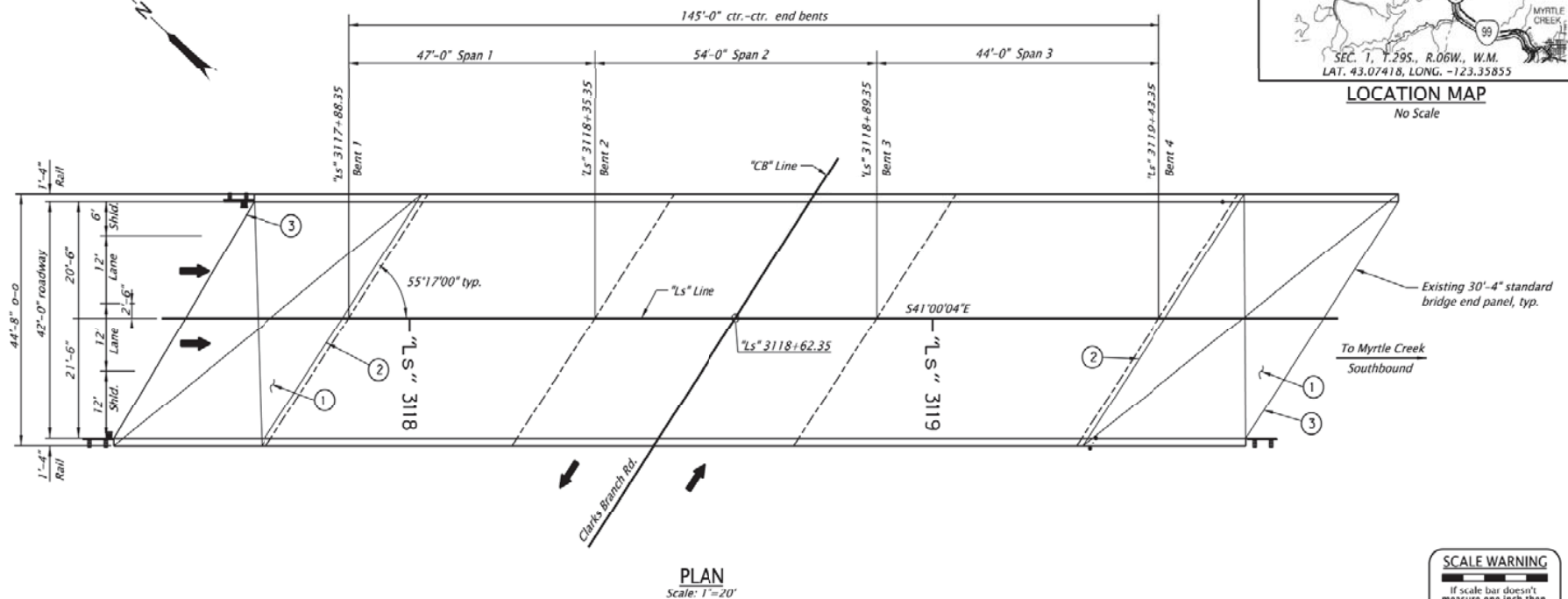
DETAILS

Bridge Deck Repair

588.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2" DEEP	12.00	7,056	14.25	8,379	16.50	12.00
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LOCATION MAP
No Scale



SCALE WARNING
If scale bar doesn't
measure one inch then
drawing is not to scale

CONSTRUCTION NOTES:

- ① Perform Bridge End Panel Cold Plane Pavement Removal 2" Deep. Place 2" ACP.
- ② Remove and replace poured joint seals, see BR165.
- ③ Sawcut ACP 1 1/2" deep, fill with traffic loop sealant, see BR165.

GENERAL NOTES:

Provide all materials and preform all work according to the Oregon Standard Specifications for Construction 2018.
For Information only: Dwgs. 75048, 51984, 51985, 51987, 51988 and 51989.

ACCOMPANIED BY DWGS.:
BR165

STRUCTURE NO. 07839	
BOS DWG NO. 101422	
CALC. BOOK 6998	
DATE 7/2018	
HWY: 001 M.P.: 113.44	Digitally Signed Jul 18 2018 7:40 AM RENEWS: 06-30-2019
COUNTY Douglas	

OREGON DEPARTMENT
OF TRANSPORTATION

HWY 1SB OVER CLARKS BRANCH RD (CONN 001GV)

**I-5; ROBERTS CREEK RD -
SOUTH UMPQUA RIVER SECTION**
PACIFIC HIGHWAY
DOUGLAS COUNTY

Designer: Michael D. Jacobson
Checker: Michael L. Jones

Reviewer: Robert Grubbs
Crafter: Joaqui Mayes

PLAN AND DETAILS

SHEET NO.
JB01

BRIDGE NAME:	Hwy 1 SB over Clarks Branch Rd Conn #2	BRIDGE NO:	07839	KEY NO:	18967
SECTION NAME:	I-5: ROBERTS CREEK RD - SOUTH UMPQUA RIVER SECTION	COUNTY:	Douglas	CONTR #	15108
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/01/2018	FAP NO:	S001(478)
STRUCT TYPE:	RC DECK GIRDER-CIP	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

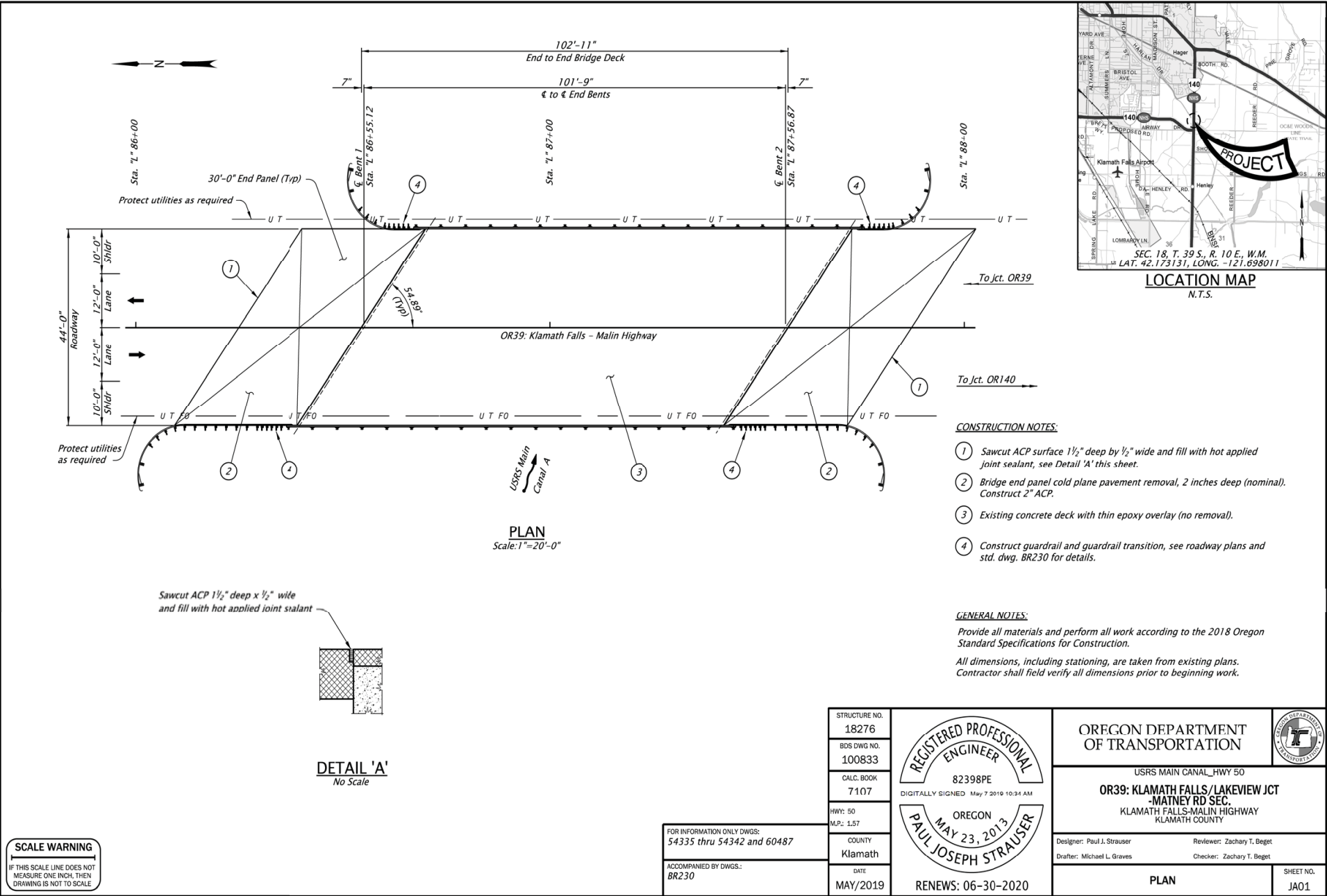
Miscellaneous Project - Bridge Repair - End Panel CPPR and Joint Seal

SUBTOTAL				4,700		10,800		
PERCENT MOBILIZATION			9.44	400	9.56	1,000		
TOTAL				5,100		11,800		

DETAILS

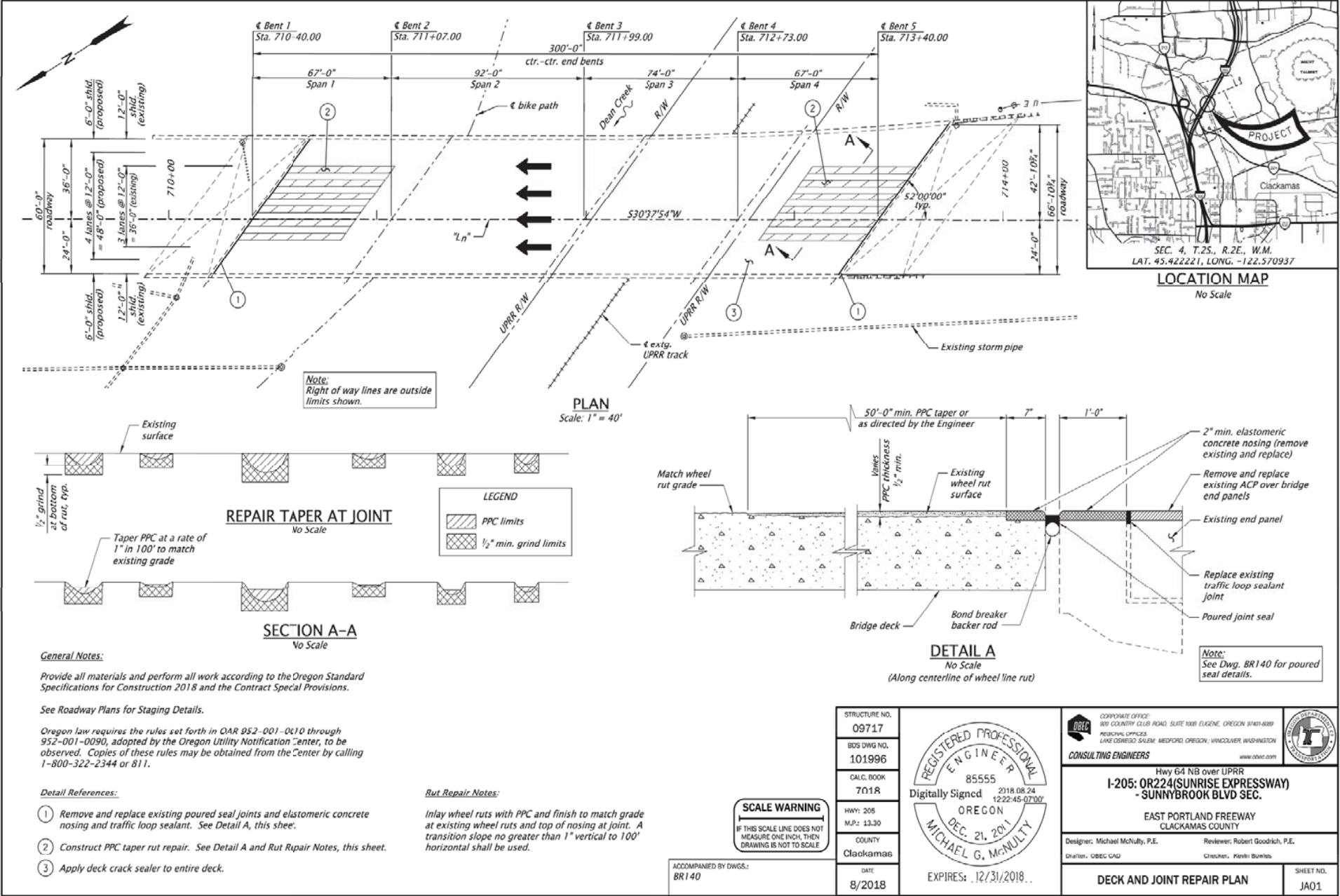
End Panel CPPR and Joint Seal

283.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	16.50	4,670	31.50	8,915	45.00	16.50
102.00	FOOT	POURED SEALS	0.24	24	18.05	1,841	29.41	0.24



BRIDGE NAME:	USRS Main Canal A, Hwy 50			BRIDGE NO:	18276		KEY NO:	18683	
SECTION NAME:	OR39: KLAMATH FALLS/LAKEVIEW JCT-MATNEY RD SEC.			COUNTY:	Klamath		CONTR #	15158	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	08/15/2019		FAP NO:	S050(030)	
STRUCT TYPE:	RC BOX GIRDER-PRECAST-39 IN			# BIDS RECVD:	2		AWARDED TO:	ROCKY MOUNTAIN CONSTRUCTION LLC	
							PREPARED BY:		

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge End Panel Repair								
SUBTOTAL				7,100		6,000		
PERCENT MOBILIZATION			4.63	300	8.24	500		
TOTAL				7,400		6,500		
DETAILS								
Bridge End Panel Repair								
294.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2" DEEP	24.00	7,056	20.25	5,954	24.00	16.50



BRIDGE NAME:	Hwy 64 NB over UPRR	BRIDGE NO:	09717	KEY NO:	19721
SECTION NAME:	I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC.	COUNTY:	Clackamas	CONTR #	15115
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/08/2018	FAP NO:	S064(056)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				163,300		194,700		
PERCENT MOBILIZATION			10.25	16,700	9.09	17,700		
TOTAL				180,000		212,400		

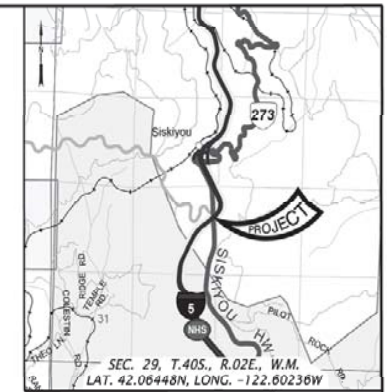
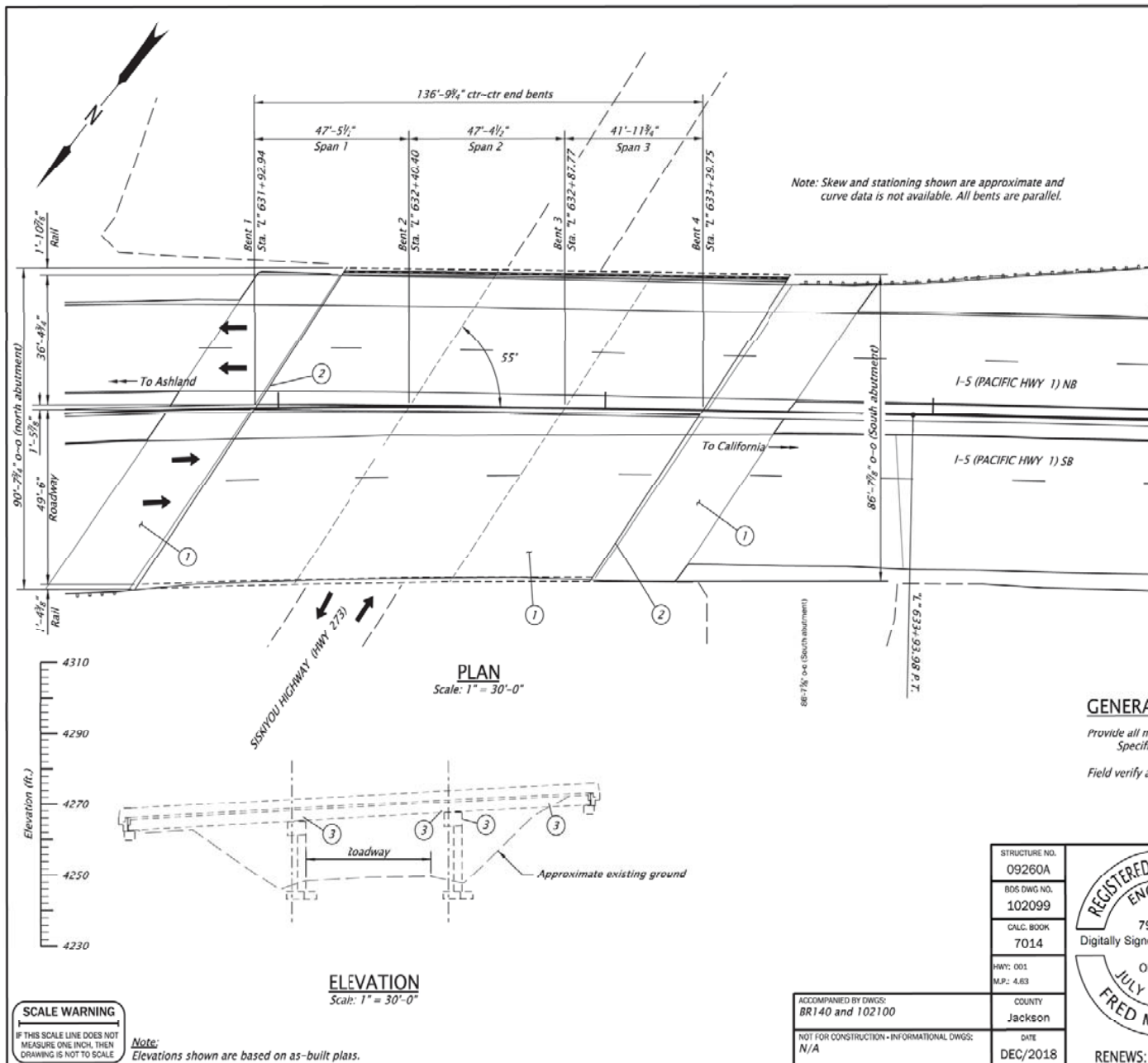
DETAILS

Bridge Deck and Joint Repair

18,400.00	SQFT	CONCRETE AND CRACK SEALER	2.00	36,800	2.42	44,467	3.25	2.00
2.78	CUYD	FURNISH PREMIXED POLYMER CONCRETE	3,500.00	9,730	4,833.33	13,437	7,000.00	3,500.00
133.33	SQYD	CONSTRUCT PPC OVERLAY, IN RUT REPAIR	360.00	47,999	451.67	60,221	645.00	350.00
161.00	FOOT	REPAIR ELASTOMERIC CONCRETE NOSING	253.00	40,733	332.67	53,559	495.00	250.00
161.00	FOOT	POURED SEALS	173.91	28,000	142.86	23,000	192.55	62.11

Additional Items

450.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	20.00	9,000	14.67	6,600	20.00	7.00
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**DETAIL REFERENCE NUMBERS:**

- 1 Prepare deck and place concrete and crack sealer according to Section 00539
- 2 Install poured seals with elastomeric concrete nosing, see dwg. JD02 and std. dwg. BR140
- 3 Repair damaged concrete according to Section 00542, see dwg. JD02

GENERAL NOTES:

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018

Field verify all dimensions.

STRUCTURE NO. 09260A	
BOS DWG NO. 102099	
CALC. BOOK 7014	
HWY: 001 M.P.: 4.63	
DATE DEC/2018	ACCOMPANIED BY DWGS: BR140 and 102100 NOT FOR CONSTRUCTION - INFORMATIONAL DWGS: N/A

OREGON DEPARTMENT
OF TRANSPORTATION

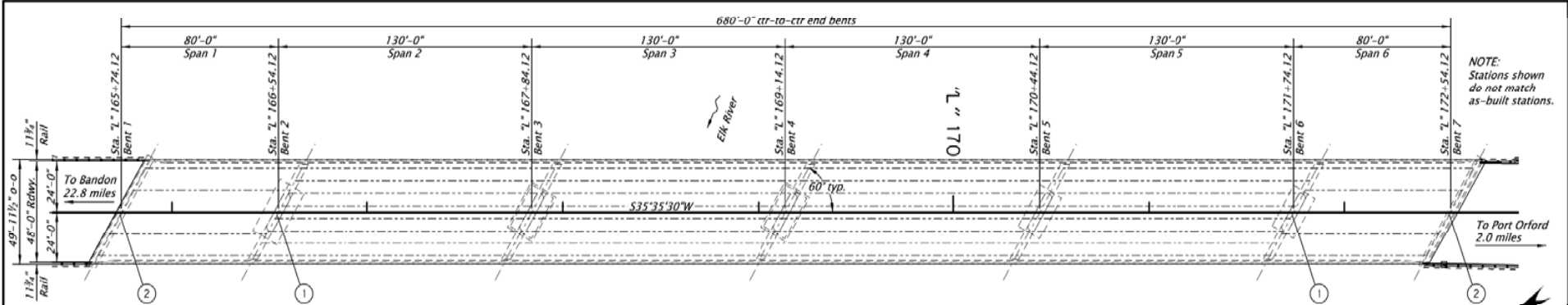
HWY 1 OVER HWY 273
I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT
PACIFIC HIGHWAY
JACKSON COUNTY

Designer: Fred M. Gomez
Reviewer: Robert E. Grubbs
Draftsman: Michael L. Grieco
Checker: Michael Jacobson

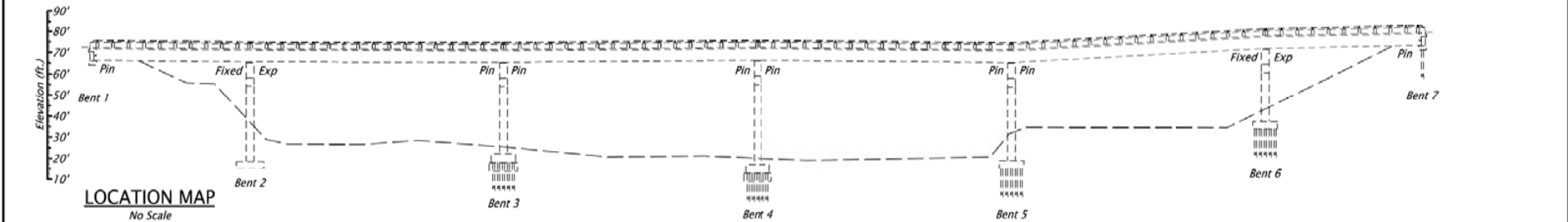
PLAN AND ELEVATION

SHEET NO.
JD01

BRIDGE NAME:			Hwy 1 over Hwy 273 at MP 4.63		BRIDGE NO:		09260A		KEY NO:		18873		
SECTION NAME:			I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT		COUNTY:		Jackson		CONTR #		15134		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		04/18/2019		FAP NO:		S001(475)		
STRUCT TYPE:			RC DECK GIRDER-PRECAST-TYPE II		# BIDS RECVD:		5		AWARDED TO:		CARTER & COMPANY INC		
										PREPARED BY:			
					CONTRACT		3 LOW BIDDERS			SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Miscellaneous Project - Bridge Repair													
SUBTOTAL						193,400			158,600				
PERCENT MOBILIZATION					11.10	21,500		11.10	17,600				
TOTAL						214,900			176,200				
DETAILS													
Bridge Repair													
16,798.00		SQFT	CONCRETE AND CRACK SEALER			1.00	16,798		1.42	23,797		2.00	1.00
209.00		FOOT	REPAIR ELASTOMERIC CONCRETE NOSING			135.00	28,215		161.67	33,788		200.00	135.00
209.00		FOOT	POURED SEALS			25.36	5,300		26.79	5,600		28.71	25.36
318.00		SQFT	REPAIR DAMAGED CONCRETE			450.00	143,100		300.00	95,400		450.00	200.00
Additional Items													
1.00		LS	TEMPORARY WORK ACCESS AND CONTAINMENT			100,000.00	100,000		41,333.33	41,333		100,000.00	4,000.00



PLAN
Scale: 1" = 50'-0"

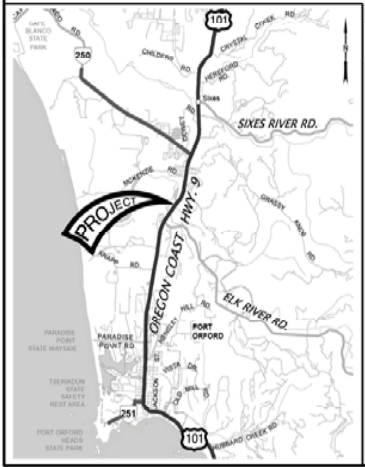


ELEVATION
Scale: 1" = 50'-0"

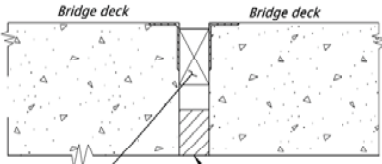
GENERAL NOTES:
Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018.

- DETAIL REFERENCE NUMBERS:**
- 1 Remove and replace Type 'D' compression seals. See detail on this sheet and BR139.
 - 2 Sawcut 1/2" wide x 1 1/2" deep. Fill with traffic loop sealant.

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale



SEC. 21, T.32S., R.15W., W.M.
LAT. 42.79446, LONG. -124.25557



COMPRESSION JOINT SEAL
Scale: No Scale

NOTE:
See BR139 for details not shown

STRUCTURE NO.	00902C
BOS DWG NO.	100943
CALC. BOOK	6992
HWY: 009	M.P.: 297.37
COUNTY	Curry
DATE	7/2018

REGISTERED PROFESSIONAL ENGINEER
56148PE
Digitally Signed Jul 26 2018 6:16 AM
OREGON
JAN. 15, 2002
ROBERT E. CRUBBS
RENEWES: 06-30-2019

OREGON DEPARTMENT OF TRANSPORTATION	
ELK RIVER, HWY 9	
US101: CHILDERS RD - GARRISON SLOUGH SECTION OREGON COAST HIGHWAY CURRY COUNTY	
Designer: Robert E. Grubbs	Reviewer: George F. Bornstedt
Drafter: Michael L. Jones/Dan D. Faas	Checker: Fred M. Gomez
PLAN, ELEVATION, AND DETAILS	
SHEET NO. JC01	

BRIDGE NAME:	Elk River, Hwy 9	BRIDGE NO:	00902C	KEY NO:	18870
SECTION NAME:	US101: CHILDERS RD - GARRISON SLOUGH SECTION	COUNTY:	Curry	CONTR #	15104
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/11/2018	FAP NO:	S009(471)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-BULB T 65 IN	# BIDS RECVD:	2	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Joint Repair

SUBTOTAL				11,100		10,100		
PERCENT MOBILIZATION			5.11	600	8.19	800		
TOTAL				11,700		10,900		

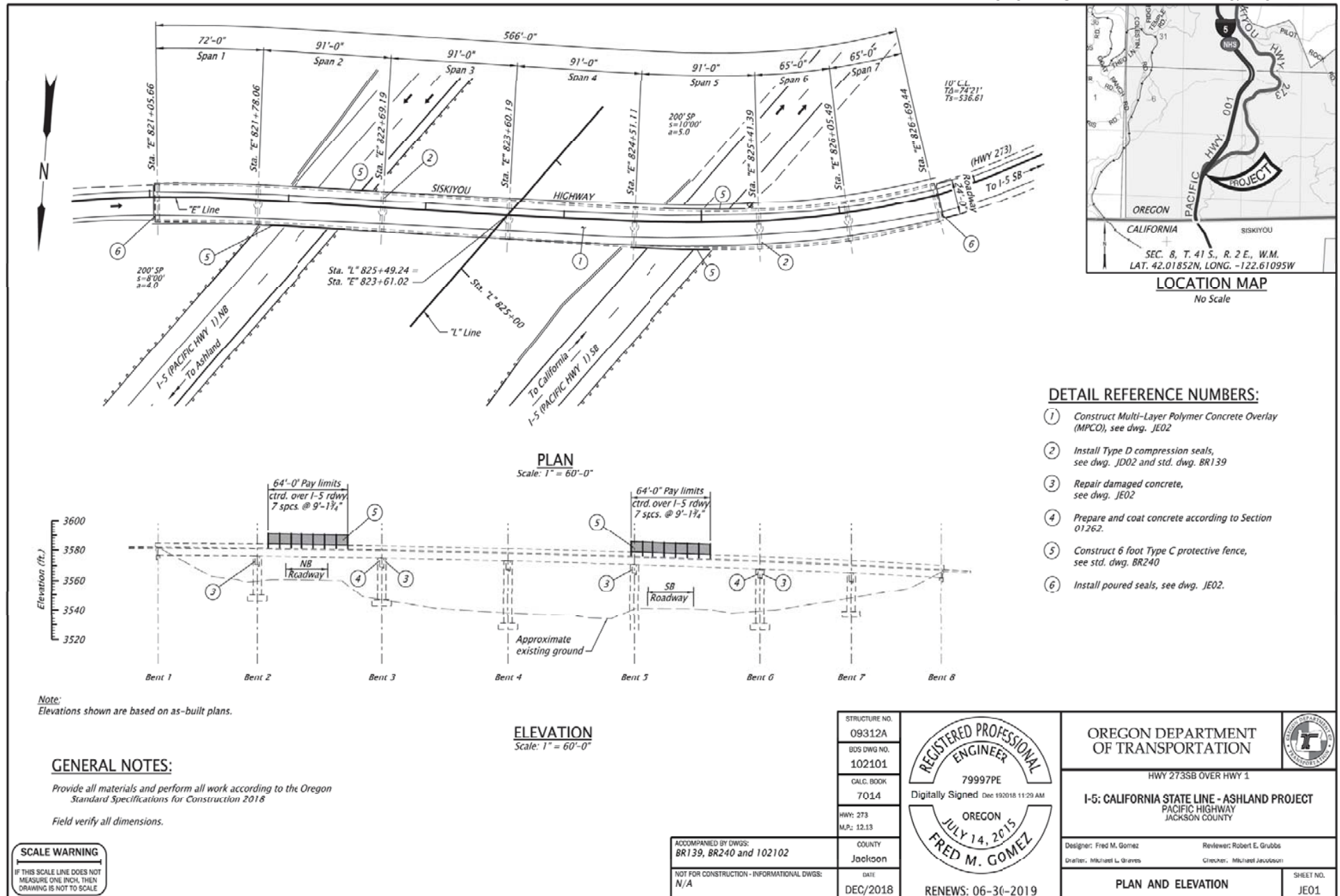
DETAILS

Joint Repair

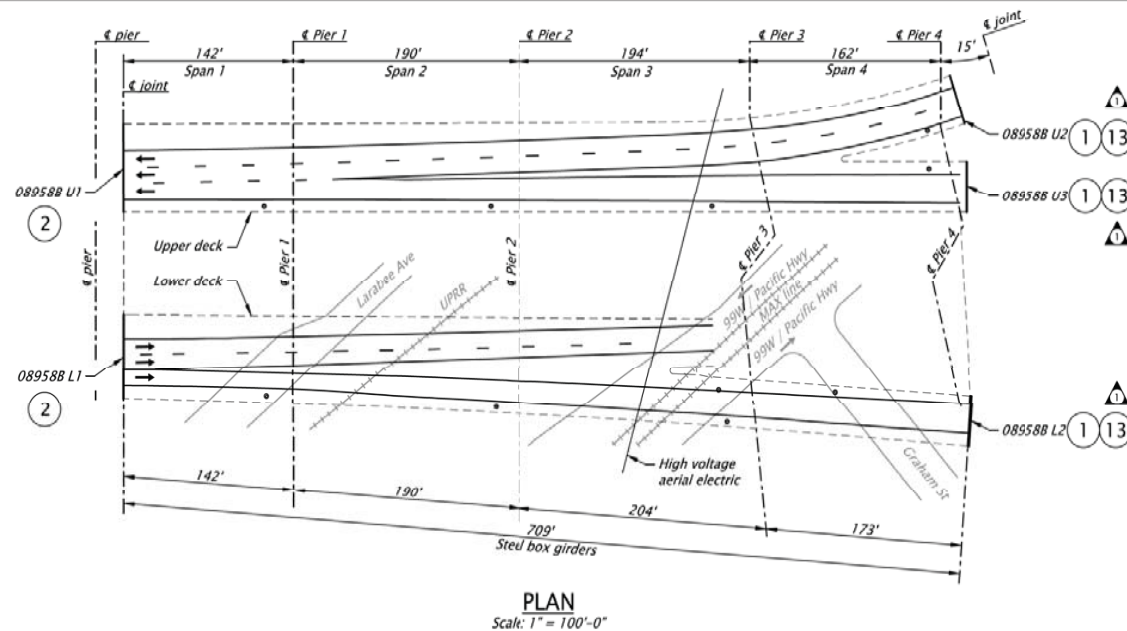
111.00	FOOT	TYPE "D" COMPRESSION SEALS	100.00	11,100	90.54	10,050	100.00	81.08
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Additional Items

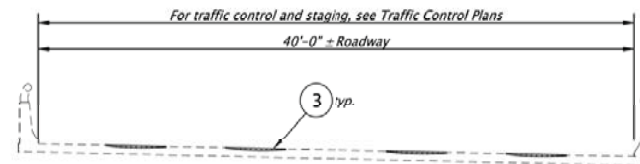
4.00	EACH	GUARDRAIL TRANSITION	3,250.00	13,000	3,250.00	13,000	3,250.00	3,250.00
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BRIDGE NAME:	Hwy 273 over Hwy 1			BRIDGE NO:	09312A		KEY NO:	18873	
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT			COUNTY:	Jackson		CONTR #	15134	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	04/18/2019		FAP NO:	S001(475)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE IV			# BIDS RECVD:	5		AWARDED TO:	CARTER & COMPANY INC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Repair									
SUBTOTAL					44,400		43,300		
PERCENT MOBILIZATION				11.10	4,900	11.10	4,800		
TOTAL					49,300		48,100		
Multi-Layer Polymer Concrete Overlay (MPCO)									
13581.00	SF	MPCO Roadway Area Unit Costs		5.43		6.27			
SUBTOTAL					66,300		76,700		
PERCENT MOBILIZATION				11.10	7,400	11.10	8,500		
TOTAL					73,700		85,200		
Protective_Fencing									
256.00	LF	Linear Unit Cost		366.80		400.00			
SUBTOTAL					84,500		92,200		
PERCENT MOBILIZATION				11.10	9,400	11.10	10,200		
TOTAL					93,900		102,400		
DETAILS									
Joint Seal and Concrete Repair									
54.00	FOOT	POURED SEALS		27.78	1,500	35.49	1,917	41.67	27.78
54.00	FOOT	TYPE "D" COMPRESSION SEALS		79.63	4,300	88.27	4,767	111.11	74.07
50.00	EACH	GALVANIC ZINC ANODES		65.00	3,250	70.00	3,500	75.00	65.00
1,020.00	SQFT	PREPARE AND COAT CONCRETE STRUCTURES		15.69	16,000	11.76	12,000	15.69	4.90
84.00	SQFT	REPAIR DAMAGED CONCRETE		230.00	19,320	251.67	21,140	325.00	200.00
MPCO									
30.00	SQYD	CLASS 2 PREPARATION		500.00	15,000	393.33	11,800	500.00	330.00
1,509.00	SQYD	FURNISH MPCO MATERIAL		21.00	31,689	22.83	34,456	30.00	17.50
1,509.00	SQYD	CONSTRUCT MPCO		13.00	19,617	20.17	30,432	30.00	13.00
Protective Fencing									
256.00	FOOT	6 FOOT TYPE C PROTECTIVE FENCE		330.00	84,480	360.00	92,160	400.00	330.00
Additional Items									
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT		20,000.00	20,000	18,333.33	18,333	27,000.00	8,000.00



Notes:
All span lengths shown are rounded to the nearest foot.
Undercrossing features are shown in correct orientation to lower deck. Upper deck is offset laterally for clarity.



Detail Reference Notes:

- 1 Remove and replace modular joint between steel-to-steel box girder segments. See Sections "C" and "D" on Sheet JA28 for removal, and Replacement Joint Data Table on Sheet JA33.
- 2 Remove seal(s) from existing joint assembly and replace with new seal(s) of similar type and length. See replacement seal data table on Sheet JA03.
- 3 Repair wheel ruts with PPC. See detail on Sheet JC01.
- 13 Remove and reinstall fencing as necessary for access.

SCALE WARNING
If scale bar does not measure one inch, then drawing is not to scale

STRUCTURE NO.
089588
BOS DWG NO.
101321
CALC. BOOK
703R
HWY: 061
M.P.: 2.59 to 3.98
HWY: 092
M.P.: 1.03 to 1.45
COUNTY
Multnomah
DATE
07/2018

REGISTERED PROFESSIONAL ENGINEER
15460
Digitally Signed
2018.10.02 13:41:33-0700
OREGON
JULY 25, 1991
JAMES N. BOLLMAN
EXPIRES: 12/31/19

No.	DATE	REVISIONS	BY
1	09-26-18	Added Note	J.N.B.

OBEC CORPORATE OFFICE: 180 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-4089 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON WWW.OBEC.COM	
HWY 61 OVER CITY STREETS & RR (EAST FREMONT BRIDGE APPROACH) I-405: FREMONT BRIDGE TO US20 WB CONNECTION BRIDGE (PORTLAND) SEC. STADIUM FREEWAY MULTNOMAH COUNTY	
Designer: James N. Bollman, P.E. Checker: OBEC CAD	Reviewer: Jeff A. Parker, P.E. Checker: Xiguo Long, P.E.
PLAN BRIDGE 089588	
SHEET NO. JA04	

BRIDGE NAME:	Hwy 61 over City Strs & RR (E Fremont Bridge Appr)	BRIDGE NO:	08958B	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				598,000		721,900		
PERCENT MOBILIZATION			11.10	66,400	11.10	80,100		
TOTAL				664,400		802,000		

PPC Wheel Ruts Repairs

SUBTOTAL				82,500		118,600		
PERCENT MOBILIZATION			11.10	9,200	11.10	13,200		
TOTAL				91,700		131,800		

DETAILS

Modular Joints and Seal Replacement

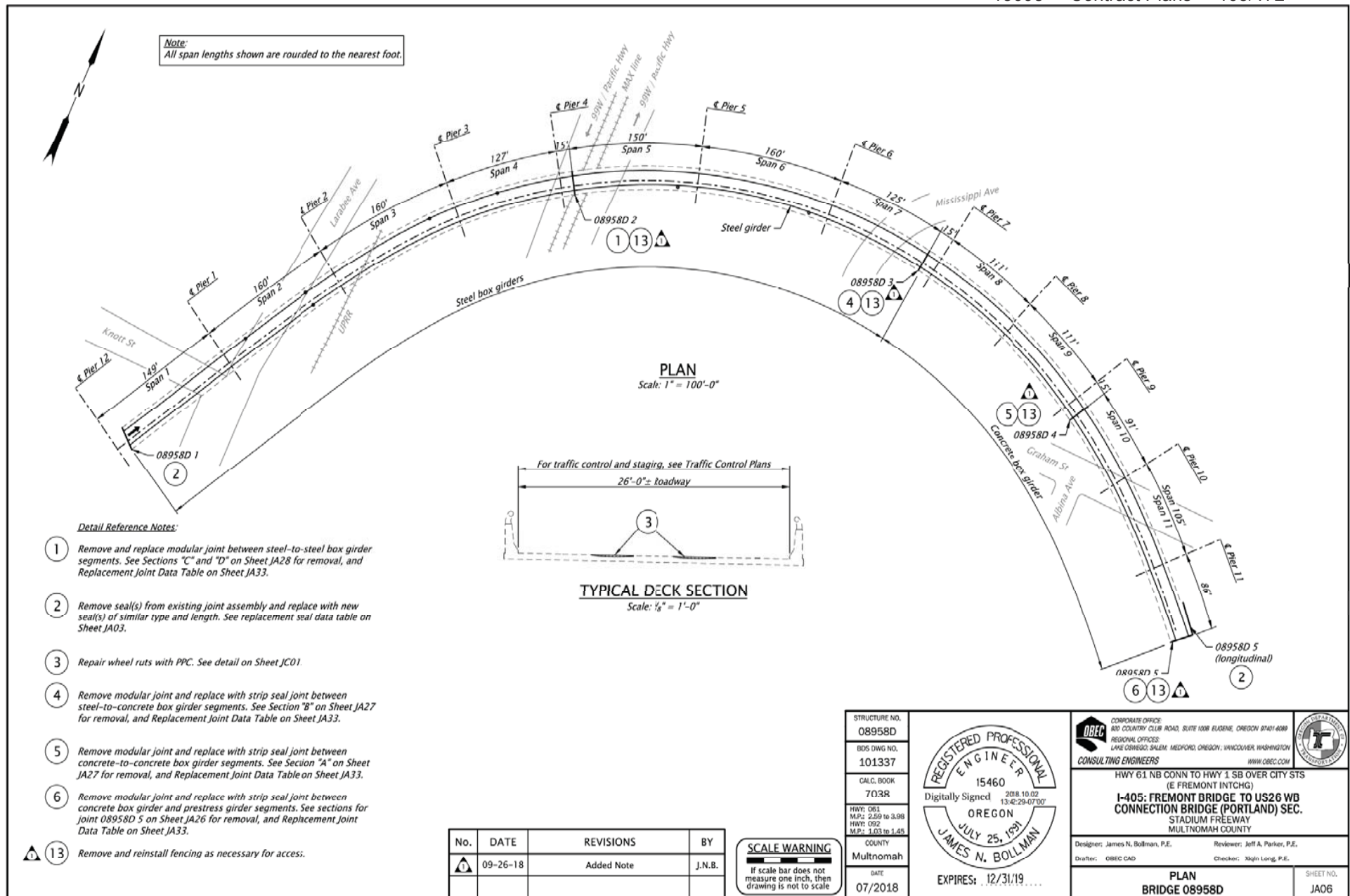
5,230.00	LB	REINFORCEMENT	2.29	12,000	4.91	25,667	7.65	2.29
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	12,166.67	12,167	18,500.00	3,000.00
1.00	LS	COATING APPLICATION	6,000.00	6,000	7,666.67	7,667	11,000.00	6,000.00
1.00	LS	COATING MATERIALS	2,000.00	2,000	1,750.00	1,750	2,500.00	750.00
1.00	LS	BIRD DETERRENT DEVICES	30,000.00	30,000	42,633.33	42,633	50,000.00	30,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS	150,000.00	150,000	154,333.00	154,333	160,000.00	150,000.00
411.00	FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS	97.32	40,000	105.43	43,333	121.65	97.32
80.00	FOOT	MODULAR BRIDGE JOINT SYSTEMS, 2 SEAL	2,000.00	160,000	2,379.17	190,333	3,125.00	2,000.00
40.00	FOOT	MODULAR BRIDGE JOINT SYSTEMS, 3 SEAL	3,000.00	120,000	3,333.33	133,333	4,375.00	2,625.00
1.00	LS	TEST PANEL	15,000.00	15,000	28,666.67	28,667	60,000.00	11,000.00
33.00	CUYD	PCC REPAIR MATERIAL	1,818.18	60,000	2,485.86	82,033	3,787.88	1,818.18

PPC Wheel Ruts Repairs

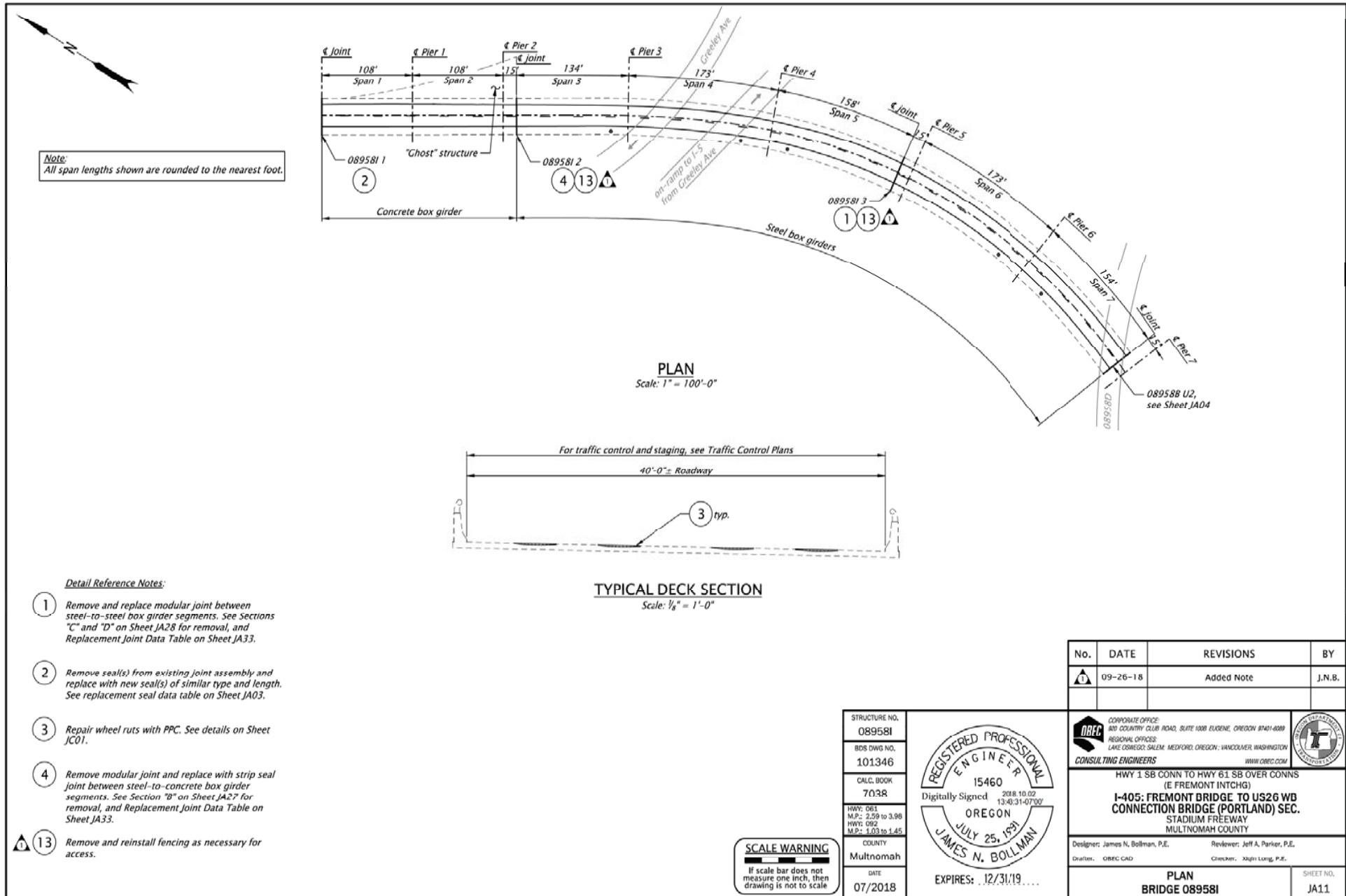
333.00	SQYD	CLASS 2 PREPARATION	0.01	3	83.34	27,752	250.00	0.01
17.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	39,100	2,441.67	41,508	2,750.00	2,275.00
667.00	SQYD	CONSTRUCT PPC OVERLAY IN REPAIR	65.00	43,355	74.03	49,380	90.00	65.00

Additional Items

1,440.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	104.17	150,000	179.40	258,333	347.22	86.81
1.00	LS	TEMPORARY BRIDGING	125,000.00	125,000	103,333.33	103,333	125,000.00	60,000.00
240.00	FOOT	REMOVING AND REBUILDING FENCE	0.01	2	55.00	13,201	153.00	0.01



BRIDGE NAME:			Hwy 61 NB to Hwy 1 SB over Strs (E Fremont Intchg)		BRIDGE NO:		08958D		KEY NO:		19533		
SECTION NAME:			I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE		COUNTY:		Multnomah		CONTR #		15098		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		10/18/2018		FAP NO:		SA00(029)		
STRUCT TYPE:			STEEL BOX GIRDER		# BIDS RECVD:		4		AWARDED TO:		WILDISH STANDARD PAVING CO		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Miscellaneous Project - Bridge Joint Repair													
SUBTOTAL							391,000			501,700			
PERCENT MOBILIZATION						11.10	61,400		11.10	55,700			
TOTAL							452,400			557,400			
PPC Wheel Ruts Repairs													
SUBTOTAL							52,000			73,800			
PERCENT MOBILIZATION						11.10	5,800		11.10	8,200			
TOTAL							57,800			82,000			
DETAILS													
Modular Joint and Seal Replacement													
3,500.00		LB	REINFORCEMENT			1.71	6,000		5.10	17,833		7.14	1.71
79.00		FOOT	STRIP SEALS			1,075.95	85,000		1,443.04	114,000		1,987.34	1,075.95
1.00		LS	SURFACE PREPARATION			3,000.00	3,000		9,833.33	9,833		18,000.00	3,000.00
1.00		LS	COATING APPLICATION			6,000.00	6,000		7,816.67	7,817		14,200.00	3,250.00
1.00		LS	COATING MATERIALS			2,000.00	2,000		1,400.00	1,400		2,000.00	500.00
1.00		LS	BIRD DETERRENT DEVICES			30,000.00	30,000		44,616.67	44,617		63,850.00	30,000.00
1.00		LS	REMOVAL OF EXISTING JOINT SURFACES			10,000.00	100,000		92,333.33	92,333		102,000.00	75,000.00
1.00		LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS			35,000.00	35,000		45,666.67	45,667		67,000.00	35,000.00
87.00		FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS			114.94	10,000		183.91	16,000		321.84	114.94
26.00		FOOT	MODULAR BRIDGE JOINT SYSTEMS, 2 SEAL			1,923.08	50,000		2,807.69	73,000		3,269.23	1,923.08
40.00		FOOT	TENSION/COMPRESSION SEAL			100.00	4,000		141.17	5,647		212.50	100.00
22.00		CUYD	PCC REPAIR MATERIAL			2,727.27	60,000		3,342.42	73,533		4,545.46	2,727.27
PPC Wheel Ruts Repairs													
267.00		SQYD	CLASS 2 PREPARATION			0.01	3		83.34	22,252		250.00	0.01
7.00		CUYD	FURNISH PREMIXED POLYMER CONCRETE			2,300.00	16,100		2,441.67	17,092		2,750.00	2,275.00
553.00		SQYD	CONSTRUCT PPC OVERLAY IN REPAIR			65.00	35,945		62.37	34,489		67.10	55.00
Additional Items													
1,120.00		SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT			98.21	110,000		136.90	153,333		267.86	44.64
280.00		FOOT	REMOVING AND REBUILDING FENCE			0.01	3		55.00	15,401		153.00	0.01



BRIDGE NAME:	Hwy1 SB Conn to Hwy61 SB over Conn (E Fremont Int)	BRIDGE NO:	08958I	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				371,100		490,000		
PERCENT MOBILIZATION			11.10	41,200	11.10	54,400		
TOTAL				412,300		544,400		

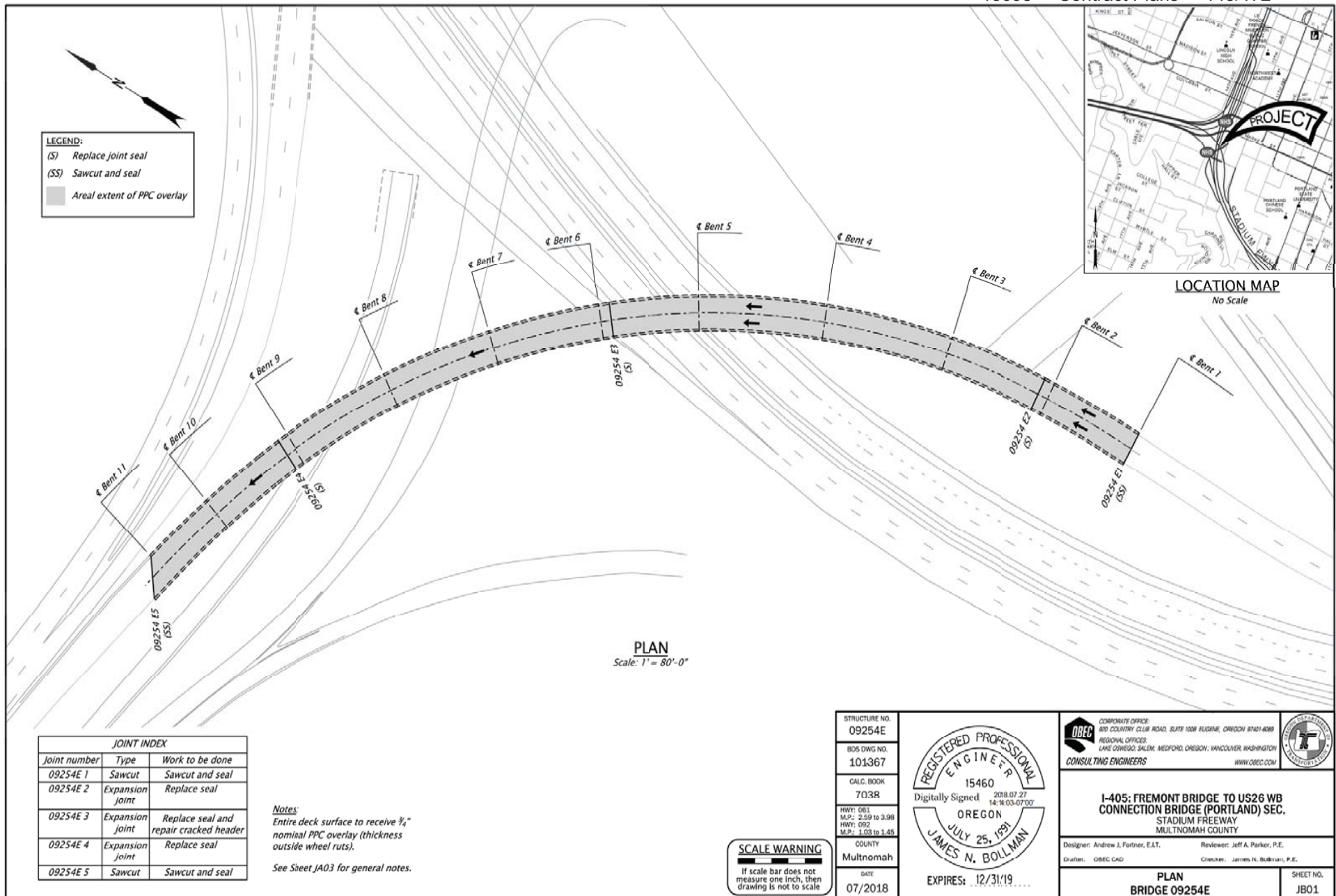
DETAILS

Modular Joint and Seal Replacement

3,300.00	LB	REINFORCEMENT	2.12	7,000	4.39	14,500	7.58	2.12
333.00	SQYD	CLASS 2 PREPARATION	0.01	3	86.67	28,862	260.00	0.01
9.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	20,700	2,441.67	21,975	2,750.00	2,275.00
667.00	SQYD	CONSTRUCT PPC OVERLAY IN REPAIR	65.00	43,355	60.70	40,487	67.10	50.00
40.00	FOOT	STRIP SEALS	1,125.00	45,000	1,557.50	62,300	1,922.50	1,125.00
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	4,333.34	4,333	10,000.00	0.01
1.00	LS	COATING APPLICATION	6,000.00	6,000	3,500.00	3,500	6,000.00	0.01
1.00	LS	COATING MATERIALS	2,000.00	2,000	833.34	833	2,000.00	0.01
1.00	LS	BIRD DETERRENT DEVICES	20,000.00	20,000	27,300.00	27,300	31,900.00	20,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES	50,000.00	50,000	53,333.00	53,333	60,000.00	50,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS	50,000.00	50,000	65,667.67	65,668	97,003.00	50,000.00
40.00	FOOT	MODULAR BRIDGE JOINT SYSTEMS, 2 SEAL	2,000.00	80,000	2,600.00	104,000	3,125.00	2,000.00
42.00	FOOT	TENSION/COMPRESSION SEAL	95.24	4,000	166.67	7,000	214.29	95.24
21.00	CUYD	PCC REPAIR MATERIAL	1,904.76	40,000	2,658.73	55,833	4,166.67	1,904.76

Additional Items

1,120.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	98.21	110,000	99.40	111,333	168.75	31.25
160.00	FOOT	REMOVING AND REBUILDING FENCE	0.01	2	55.00	8,801	153.00	0.01



BRIDGE NAME:	Hwy 61 NB Conn #2 to Hwy 47 WB over Hwy 61 & Conns	BRIDGE NO:	09254E	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	RC BOX GIRDER-CONV REINF	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Joint Repair

SUBTOTAL				44,000		56,700		
PERCENT MOBILIZATION			11.10	4,900	11.10	6,300		
TOTAL				48,900		63,000		

Deck Overlay

26883.00	SF	Deck Overlay Roadway Area Unit Costs	15.92		14.10			
SUBTOTAL				385,100		341,100		
PERCENT MOBILIZATION			11.10	42,800	11.10	37,900		
TOTAL				427,900		379,000		

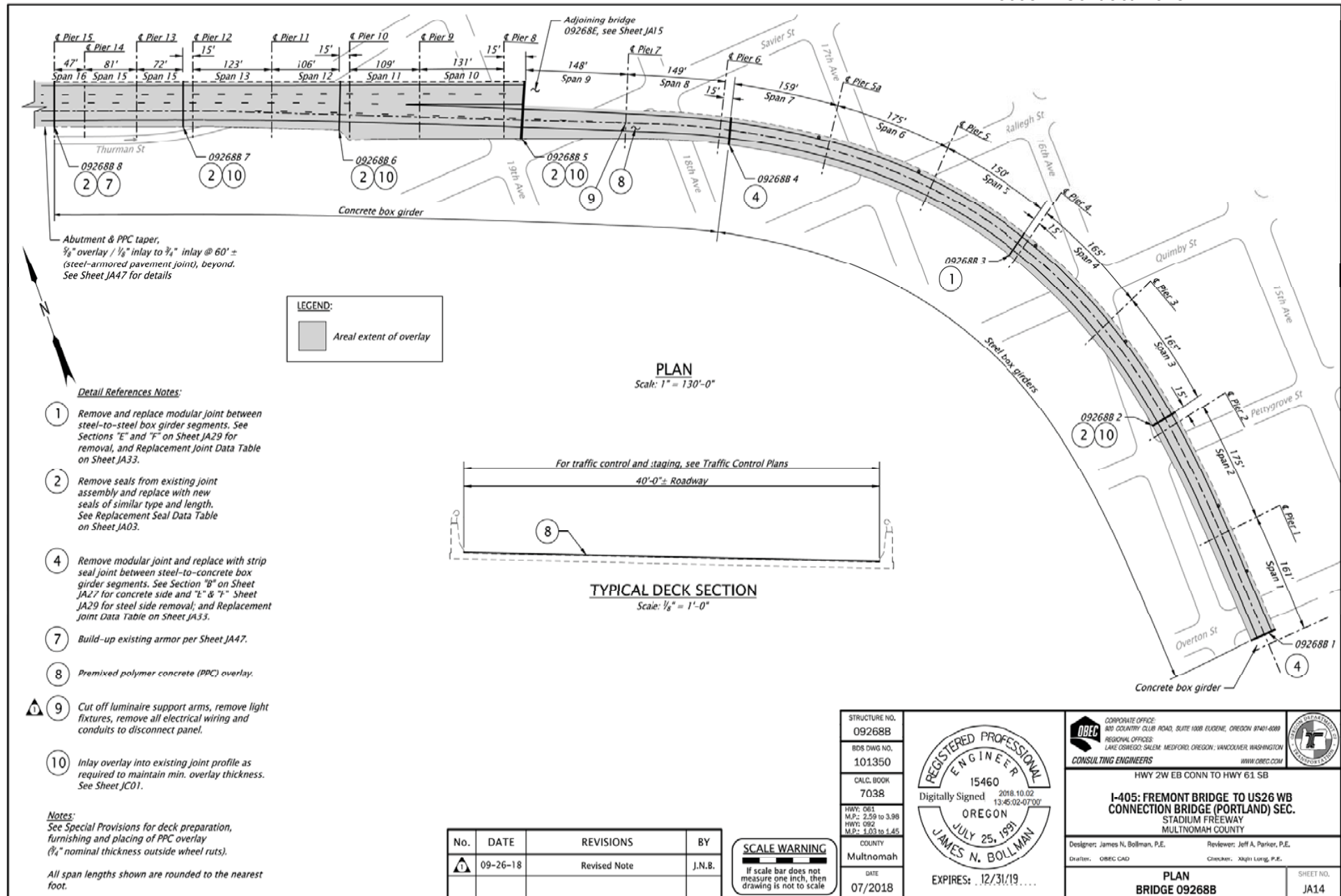
DETAILS

Joint Repair

1.00	LS	HEADER CRACK REPAIR	10,000.00	10,000	6,020.00	6,020	10,000.00	500.00
180.00	FOOT	BUILT-UP ARMOR	138.89	25,000	196.30	35,333	277.78	138.89
90.00	FOOT	TENSION/COMPRESSION SEAL	100.00	9,000	170.37	15,333	277.78	100.00

Bridge Deck Overlay

10.00	SQYD	CLASS 2 PREPARATION	0.01	0.1	100.01	1,000	300.00	0.01
83.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	190,900	2,358.33	195,742	2,500.00	2,275.00
2,987.00	SQYD	CONSTRUCT PPC OVERLAY	65.00	194,155	48.33	144,372	65.00	35.00

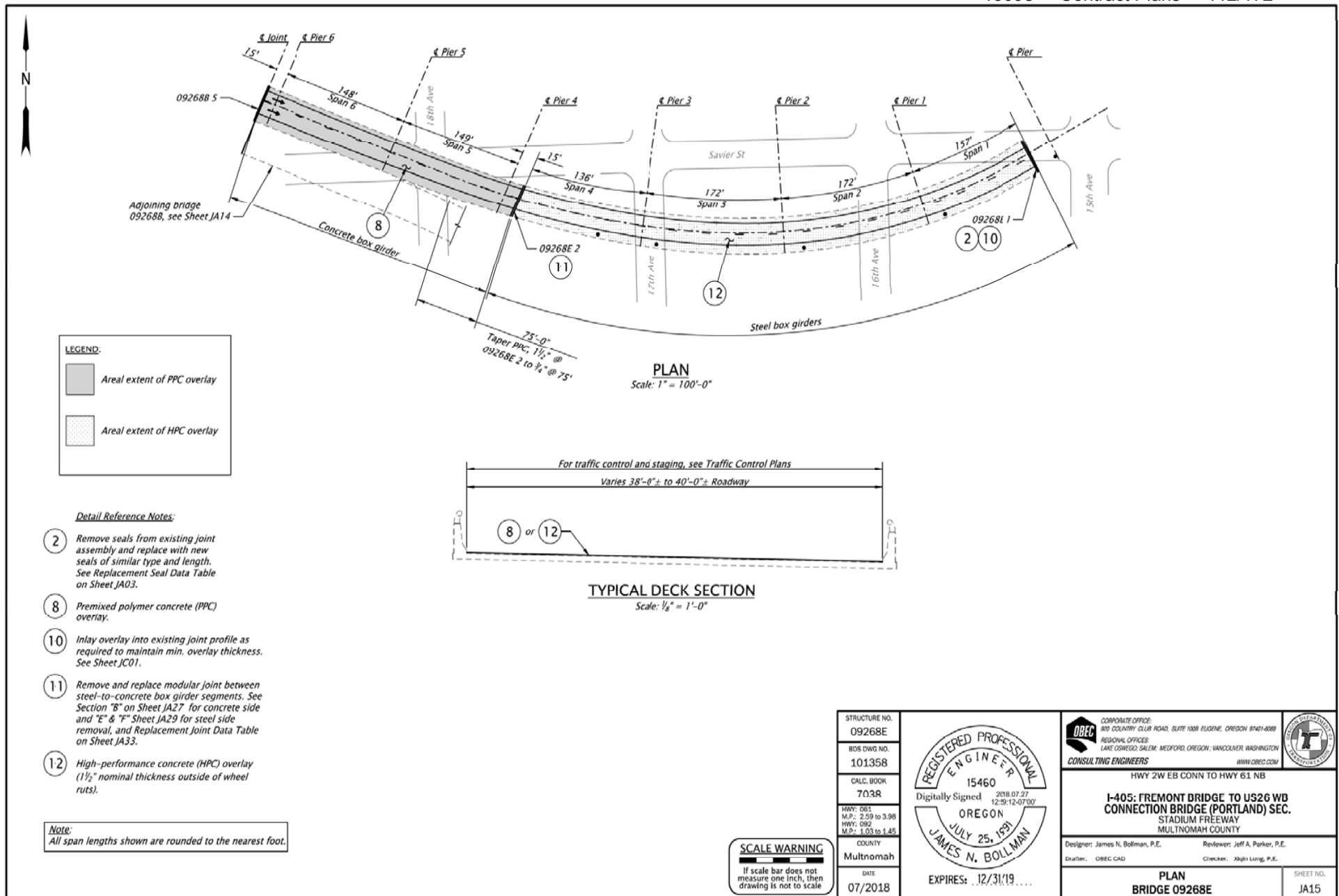


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Rotation: 0° Scale: Full Size 1=1

BRIDGE NAME:			Hwy 2W EB Conn to Hwy 61 SB		BRIDGE NO:		09268B		KEY NO:		19533		
SECTION NAME:			I-405: FREMONT BRIDGE TO US26 WB CONNECTION		COUNTY:		Multnomah		CONTR #		15098		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		10/18/2018		FAP NO:		SA00(029)		
STRUCT TYPE:			STEEL BOX GIRDER		# BIDS RECVD:		4		AWARDED TO:		WILDISH STANDARD PAVING CO		
										PREPARED BY:			
					CONTRACT		3 LOW BIDDERS		SPREAD				
QTY		UNIT	BID ITEM		UNIT	AMT		UNIT	AMT		HIGH	LOW	
Miscellaneous Project - Bridge Joint Repair													
SUBTOTAL						559,900			817,100				
PERCENT MOBILIZATION					11.10	62,100		11.10	90,700				
TOTAL						622,000			907,800				
Deck Overlay													
108000.00		SF	Deck Overlay Roadway Area Unit Costs		12.21			11.79					
SUBTOTAL						1,186,600			1,145,700				
PERCENT MOBILIZATION					11.10	131,800		11.10	127,200				
TOTAL						1,318,400			1,272,900				
DETAILS													
Modular Joint and Seal Replacement													
4,374.00		SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP		25.00	109,350		26.20	114,599		30.00	23.60	
142.00		SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL 1/8 TO 3/8 INCHES DEEP		60.00	8,520		43.43	6,168		60.00	27.80	
4,860.00		LB	REINFORCEMENT		1.65	8,000		5.69	27,667		8.23	1.65	
80.00		FOOT	STRIP SEALS		562.50	45,000		1,362.50	109,000		2,025.00	562.50	
1.00		LS	SURFACE PREPARATION		3,000.00	3,000		54,333.33	54,333		145,000.00	3,000.00	
1.00		LS	COATING APPLICATION		6,000.00	6,000		7,500.00	7,500		10,500.00	6,000.00	
1.00		LS	COATING MATERIALS		2,000.00	2,000		1,700.00	1,700		2,600.00	500.00	
1.00		LS	BIRD DETERRENT DEVICES		30,000.00	30,000		42,633.33	42,633		50,000.00	30,000.00	
1.00		LS	REMOVAL OF EXISTING JOINT SURFACES		50,000.00	50,000		85,666.67	85,667		107,000.00	50,000.00	
1.00		LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS		50,000.00	50,000		67,500.00	67,500		102,500.00	50,000.00	
128.00		FOOT	BUILT-UP ARMOR		234.38	30,000		206.25	26,400		234.38	150.00	
138.00		FOOT	GLAND REPLACEMENT		108.70	15,000		106.28	14,667		144.93	65.22	
252.00		FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS		99.21	25,000		125.66	31,667		158.73	99.21	
40.00		FOOT	MODULAR BRIDGE JOINT SYSTEMS, 3 SEAL		3,000.00	120,000		3,416.67	136,667		4,375.00	2,875.00	
66.00		LS	TENSION/COMPRESSION SEAL		121.21	8,000		176.26	11,633		265.15	121.21	
30.00		CUYD	PCC REPAIR MATERIAL		1,666.67	50,000		2,644.44	79,333		4,333.33	1,666.67	

BRIDGE NAME:	Hwy 2W EB Conn to Hwy 61 SB			BRIDGE NO:	09268B		KEY NO:	19533	
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION			COUNTY:	Multnomah		CONTR #	15098	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	10/18/2018		FAP NO:	SA00(029)	
STRUCT TYPE:	STEEL BOX GIRDER			# BIDS RECVD:	4		AWARDED TO:	WILDISH STANDARD PAVING CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW	
Bridge Deck Overlay									
177.00	SQYD	CLASS 2 PREPARATION	0.01	2	88.34	15,636	265.00	0.01	
333.30	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	766,590	2,358.33	786,032	2,500.00	2,275.00	
12,000.00	SQYD	CONSTRUCT PPC OVERLAY	35.00	420,000	28.67	344,000	35.00	21.00	
Additional Items									
1,760.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	85.23	150,000	76.70	135,000	113.64	31.25	



BRIDGE NAME:	Hwy 2W EB Conn to Hwy 61 NB	BRIDGE NO:	09268E	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				223,300		277,700		
PERCENT MOBILIZATION			11.10	24,800	11.10	30,800		
TOTAL				258,100		308,500		

Deck Overlay (PPC)

12753.00	SF	Deck Overlay Roadway Area Unit Costs	12.73		21.49			
SUBTOTAL				146,200		246,600		
PERCENT MOBILIZATION			11.10	16,200	11.10	27,400		
TOTAL				162,400		274,000		

Deck Overlay (HPC)

24840.00	SF	Deck Overlay Roadway Area Unit Costs	15.38		14.50			
SUBTOTAL				343,900		324,200		
PERCENT MOBILIZATION			11.10	38,200	11.10	36,000		
TOTAL				382,100		360,200		

DETAILS

Modular Joint and Seal Replacement

667.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	35.00	23,345	29.67	19,788	35.00	24.00
1,560.00	LB	REINFORCEMENT	2.56	3,994	5.34	8,331	8.01	2.56
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	22,000.00	22,000	58,000.00	3,000.00
1.00	LS	COATING APPLICATION	6,000.00	6,000	3,700.00	3,700	6,000.00	1,500.00
1.00	LS	COATING MATERIALS	2,000.00	2,000	1,116.67	1,117	2,000.00	500.00
1.00	LS	BIRD DETERRENT DEVICES	15,000.00	15,000	17,833.33	17,833	23,500.00	15,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS	50,000.00	50,000	68,166.67	68,167	84,500.00	50,000.00
126.00	FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS	119.05	15,000	95.79	12,070	119.05	61.19
38.00	FOOT	MODULAR BRIDGE JOINT SYSTEMS, 2 SEAL	2,105.26	80,000	2,526.31	96,000	2,763.16	2,105.26
10.00	CUYD	PCC REPAIR MATERIAL	2,500.00	25,000	2,866.67	28,667	4,000.00	2,100.00

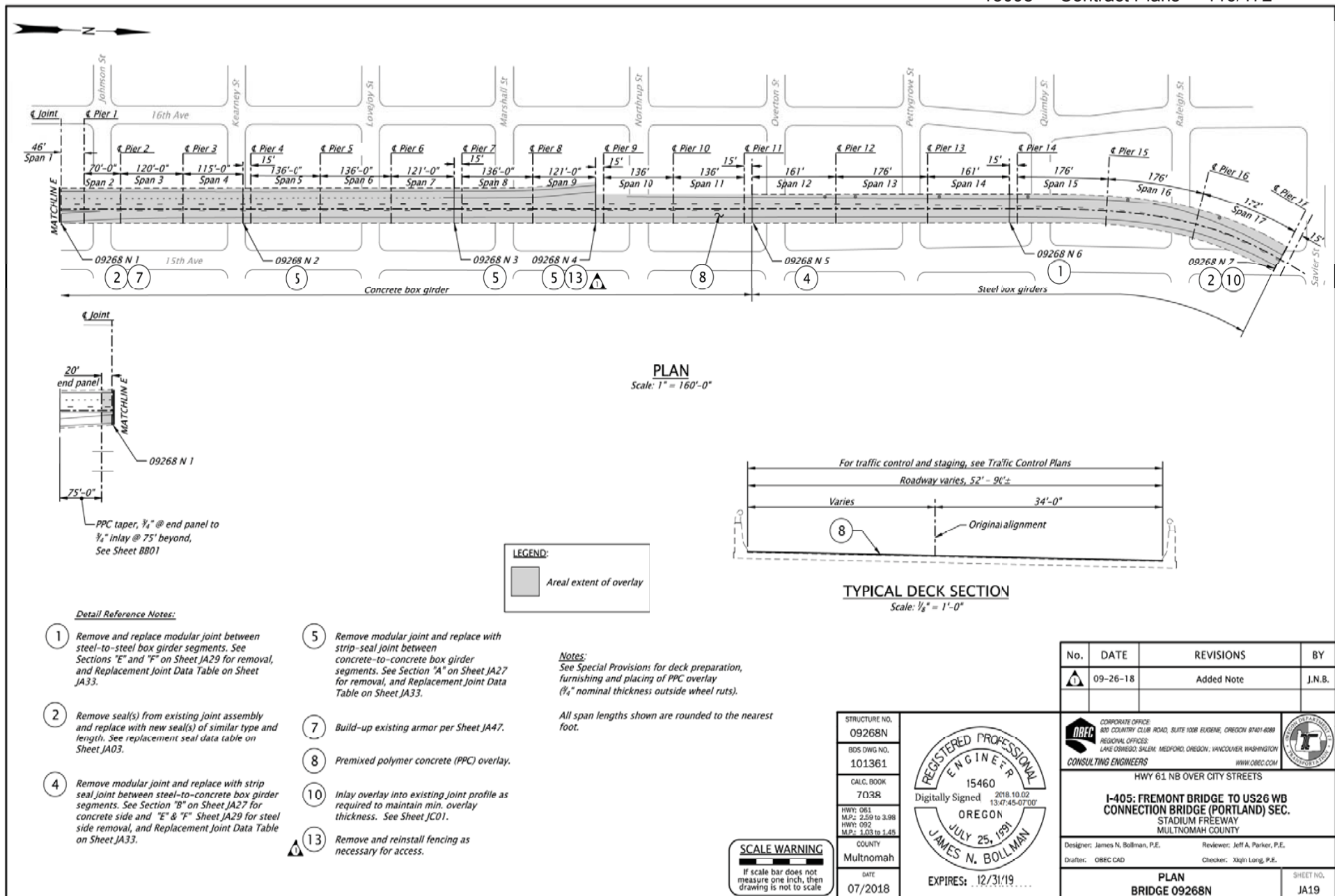
PPC Bridge Deck Overlay

1,715.00	SQYD	CLASS 2 PREPARATION	0.01	17	58.34	100,053	175.00	0.01
42.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	96,600	2,441.67	102,550	2,750.00	2,275.00
1,417.00	SQYD	CONSTRUCT PPC OVERLAY	35.00	49,595	31.03	43,974	35.00	26.10

BRIDGE NAME:	Hwy 2W EB Conn to Hwy 61 NB	BRIDGE NO:	09268E	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
HPC Bridge Deck Overlay								
115.00	CUYD	FURNISH HIGH PERFORMANCE CONCRETE	350.00	40,250	858.33	98,708	1,750.00	350.00
2,760.00	SQYD	CONSTRUCT HPC RESURFACING	100.00	276,000	77.17	212,980	100.00	51.50
2,760.00	SQYD	CONCRETE DECK FINISHING	10.00	27,600	4.53	12,512	10.00	1.60
Additional Items								
640.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	101.56	65,000	95.05	60,833	156.25	27.34



BRIDGE NAME:	Hwy 61 NB over City Streets	BRIDGE NO:	09268N	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				1,092,700		1,229,400		
PERCENT MOBILIZATION			11.10	121,300	11.10	136,500		
TOTAL				1,214,000		1,365,900		

Deck Overlay

136080.00	SF	Deck Overlay Roadway Area Unit Costs	12.21		11.82			
SUBTOTAL				1,495,200		1,448,300		
PERCENT MOBILIZATION			11.10	166,000	11.10	160,800		
TOTAL				1,661,200		1,609,100		

DETAILS

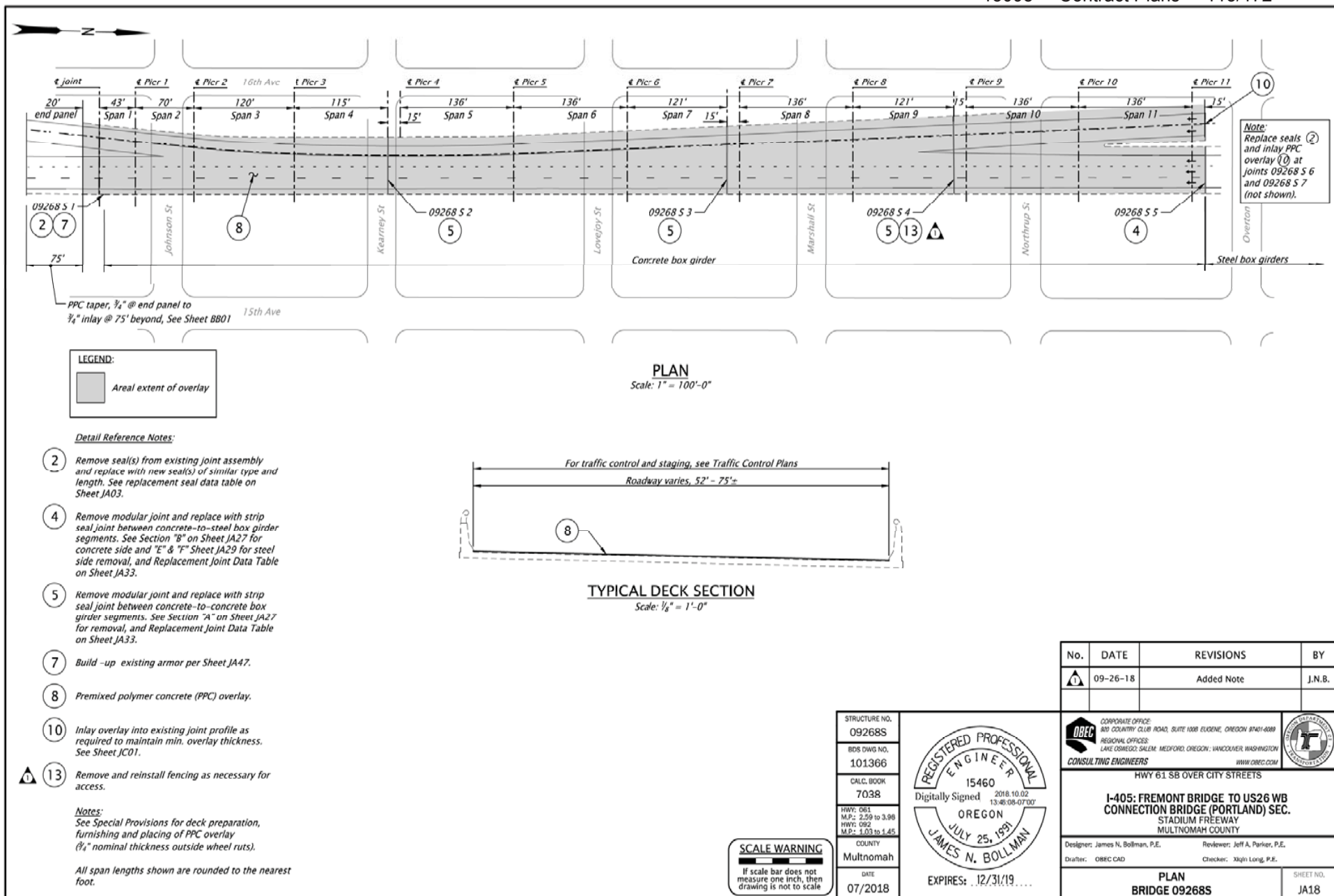
Modular Joint and Seal Replacement

433.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	50.00	21,650	36.85	15,955	50.00	25.54
11,240.00	LB	REINFORCEMENT	1.42	16,000	3.97	44,667	6.23	1.42
255.00	FOOT	STRIP SEALS	1,039.22	265,000	1,261.44	321,667	1,470.59	1,039.22
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	12,500.00	12,500	22,000.00	3,000.00
1.00	LS	COATING APPLICATION	6,000.00	6,000	10,000.00	10,000	18,000.00	6,000.00
1.00	LS	COATING MATERIALS	2,000.00	2,000	1,950.00	1,950	3,350.00	500.00
1.00	LS	BIRD DETERRENT DEVICES	70,000.00	70,000	89,333.33	89,333	100,000.00	70,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES	330,000.00	330,000	248,666.67	248,667	330,000.00	165,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS	75,000.00	75,000	86,666.67	86,667	110,000.00	75,000.00
134.00	FOOT	BUILT-UP ARMOR	223.88	30,000	216.42	29,000	223.88	201.49
162.00	FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS	123.46	20,000	127.57	20,667	135.80	123.46
52.00	FOOT	MODULAR BRIDGE JOINT SYSTEMS, 2 SEAL	2,211.54	115,000	2,698.72	140,333	3,000.00	2,211.54
66.00	FOOT	TENSION/COMPRESSION SEAL	60.61	4,000	145.76	9,620	257.58	60.61
70.00	CUYD	PCC REPAIR MATERIAL	1,928.57	135,000	2,833.33	198,333	4,642.86	1,928.57

Bridge Deck Overlay

202.00	SQYD	CLASS 2 PREPARATION	0.01	2	83.34	16,835	250.00	0.01
420.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	966,000	2,358.33	990,500	2,500.00	2,275.00
15,120.00	SQYD	CONSTRUCT PPC OVERLAY	35.00	529,200	29.17	441,000	35.00	25.00

BRIDGE NAME:	Hwy 61 NB over City Streets			BRIDGE NO:	09268N		KEY NO:	19533	
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE			COUNTY:	Multnomah		CONTR #	15098	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	10/18/2018		FAP NO:	SA00(029)	
STRUCT TYPE:	STEEL BOX GIRDER			# BIDS RECVD:	4		AWARDED TO:	WILDISH STANDARD PAVING CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Additional Items									
1,120.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT		102.68	115,000	122.02	136,667	223.21	40.18
40.00	FOOT	REMOVING AND REBUILDING FENCE		0.01	0.4	55.00	2,200	153.00	0.01



BRIDGE NAME:	Hwy 61 SB over City Streets	BRIDGE NO:	092685	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				976,200		1,033,100		
PERCENT MOBILIZATION			11.10	108,400	11.10	114,700		
TOTAL				1,084,600		1,147,800		

Deck Overlay

102150.00	SF	Deck Overlay Roadway Area Unit Costs	12.20		11.85			
SUBTOTAL				1,121,800		1,089,700		
PERCENT MOBILIZATION			11.10	124,600	11.10	121,000		
TOTAL				1,246,400		1,210,700		

DETAILS

Modular Joint and Seal Replacement

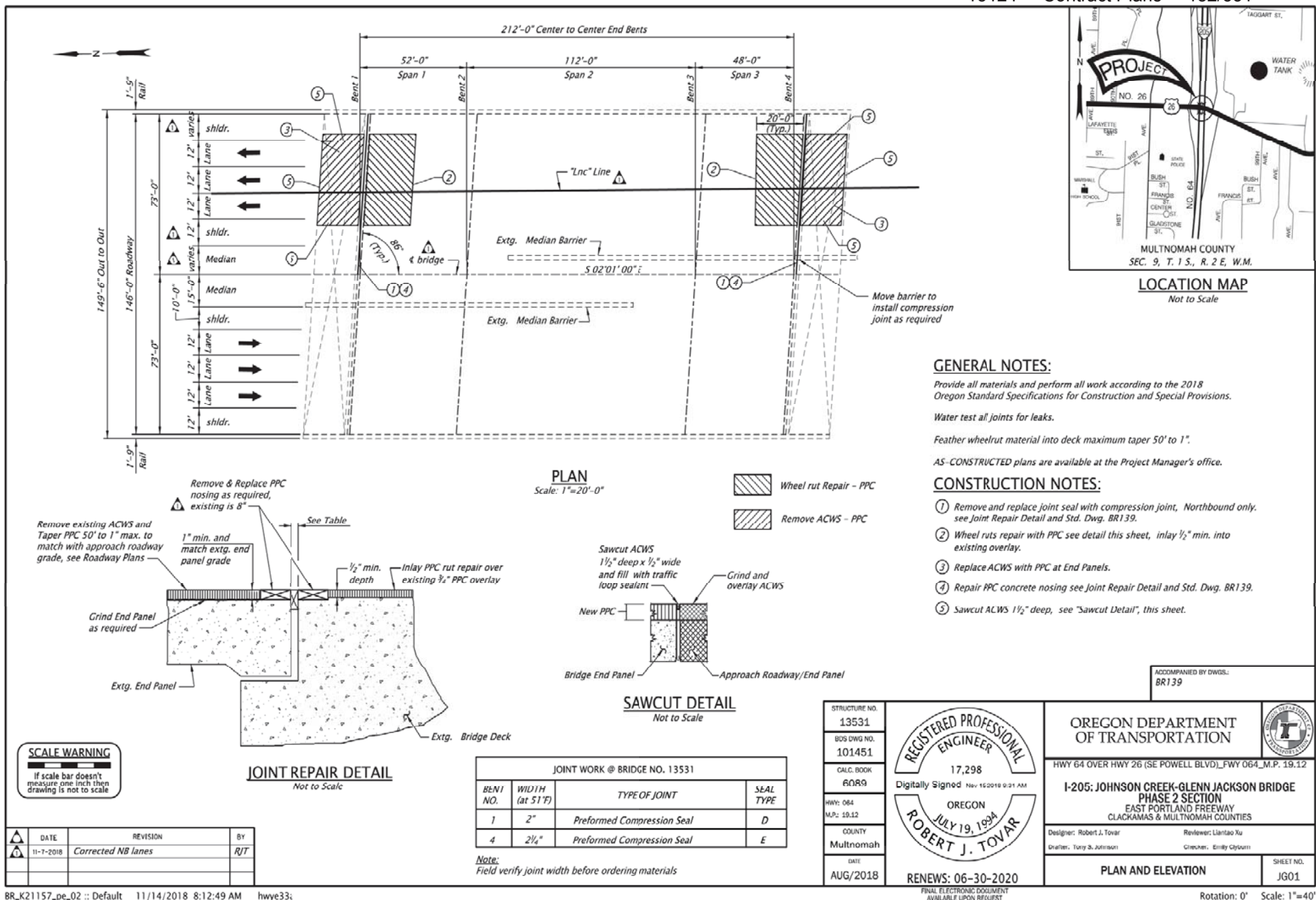
1,306.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	40.00	52,240	38.07	49,715	50.00	24.20
8,670.00	LB	REINFORCEMENT	1.61	14,000	3.69	32,033	5.77	1.61
279.00	FOOT	STRIP SEALS	1,075.27	300,000	1,326.17	370,000	1,648.75	1,075.27
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	8,666.67	8,667	17,500.00	3,000.00
1.00	LS	COATING APPLICATION	6,000.00	6,000	7,500.00	7,500	14,500.00	2,000.00
1.00	LS	COATING MATERIALS	2,000.00	2,000	1,883.33	1,883	3,400.00	250.00
1.00	LS	BIRD DETERRENT DEVICES	65,000.00	65,000	71,300.00	71,300	85,000.00	63,900.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES	35,000.00	350,000	263,333.33	263,333	350,000.00	180,000.00
156.00	FOOT	BUILT-UP ARMOR	224.36	35,000	210.26	32,800	256.41	150.00
327.00	FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS	107.03	34,999	98.57	32,233	122.32	66.36
80.00	FOOT	TENSION/COMPRESSION SEAL	50.00	4,000	139.67	11,173	250.00	50.00
55.00	CUYD	PCC REPAIR MATERIAL	2,000.00	110,000	2,772.73	152,500	4,545.46	1,772.73

Bridge Deck Overlay

76.00	SQYD	CLASS 2 PREPARATION	0.01	0.76	83.34	6,334	250.00	0.01
315.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	724,500	2,358.33	742,875	2,500.00	2,275.00
11,350.00	SQYD	CONSTRUCT PPC OVERLAY	35.00	397,250	30.00	340,500	35.00	25.00

Additional Items

640.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	117.19	75,000	187.50	120,000	390.63	54.69
120.00	FOOT	REMOVING AND REBUILDING FENCE	0.01	1.2	55.00	6,600	153.00	0.01



BRIDGE NAME:	Hwy 64 over Hwy 26 (SE Powell Blvd)	BRIDGE NO:	13531	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	RC BOX GIRDER-CONV REINF	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

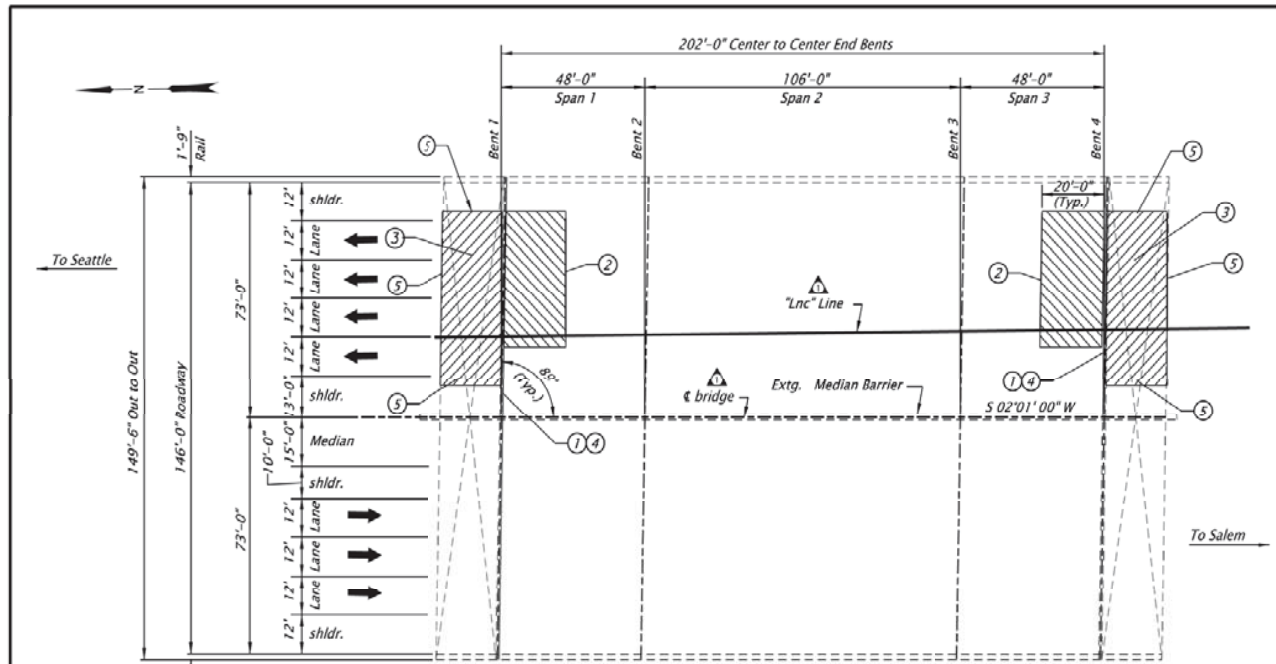
Miscellaneous Project - Joint Repair

SUBTOTAL				136,200		172,300		
PERCENT MOBILIZATION			11.11	15,100	11.06	19,100		
TOTAL				151,300		191,400		

DETAILS

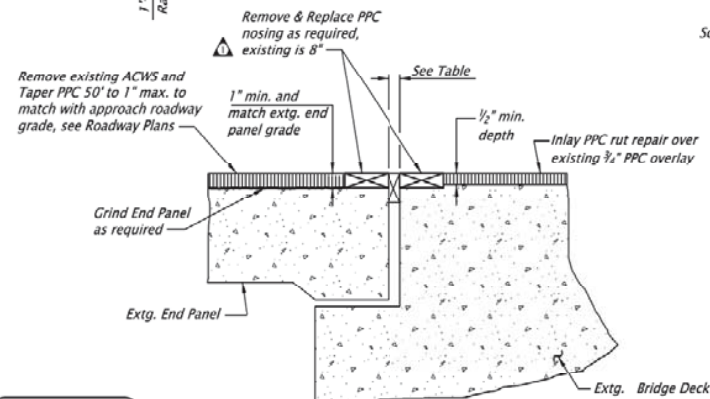
Joint Repair and Rut Repair

187.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	50.00	9,350	41.33	7,729	50.00	24.00
280.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	40.00	11,200	29.00	8,120	40.00	12.00
20.00	SQYD	CLASS 2 PREPARATION	150.00	3,000	188.33	3,767	255.00	150.00
14.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,263.00	31,682	2,837.67	39,727	3,750.00	2,263.00
467.00	SQYD	CONSTRUCT PPC OVERLAY	89.30	41,703	143.10	66,828	240.00	89.30
2.00	CUYD	ELASTOMERIC CONCRETE NOSING MATERIAL FOR REPAIR	1,500.00	3,000	2,725.00	5,450	3,675.00	1,500.00
148.00	FOOT	REPAIR ELASTOMERIC CONCRETE NOSING	130.00	19,240	146.67	21,707	160.00	130.00
74.00	FOOT	TYPE "D" COMPRESSION SEALS	114.86	8,500	126.13	9,333	135.14	114.86
74.00	FOOT	TYPE "E" COMPRESSION SEALS	114.86	8,500	130.63	9,667	148.65	114.86

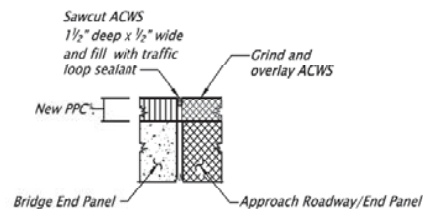


PLAN
Scale: 1"=20'-0"

Wheel rut Repair - PPC
Remove ACWS - PPC



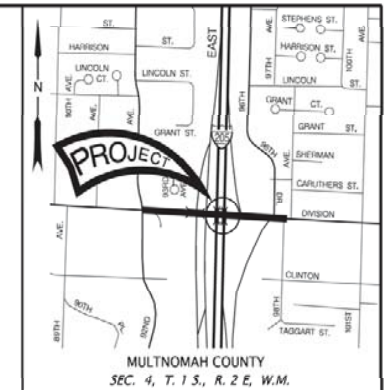
JOINT REPAIR DETAIL
Not to Scale



SAWCUT DETAIL
Not to Scale

JOINT WORK @ BRIDGE NO. 13528				
BENT NO.	WIDTH (at 51°F)	TYPE OF JOINT	SEAL TYPE	
1	2"	Preformed Compression Seal	D	
4	2 1/4"	Preformed Compression Seal	E	

Note:
Field verify joint width before ordering materials



LOCATION MAP
Not to Scale

GENERAL NOTES:

Provide all materials and perform all work according to the 2018 Oregon Standard Specifications for Construction and Special Provisions.

Water test all joints for leaks.

Feather wheelrut material into deck maximum taper 50' to 1".

AS-CONSTRUCTED plans are available at the Project Manager's office.

CONSTRUCTION NOTES:

- 1 Remove and replace joint seal with compression joint, Northbound only, see Joint Repair Detail and Std. Dwg. BR139.
- 2 Wheel ruts repair with PPC see detail this sheet, inlay 1/2" min. into existing overlay.
- 3 Replace ACWS with PPC at End Panels.
- 4 Repair PPC concrete nosing see Joint Repair Detail and Std. Dwg. BR139.
- 5 Sawcut ACWS 1 1/2" deep, see "Sawcut Detail", this sheet.

ACCOMPANIED BY DWGS:
BR139

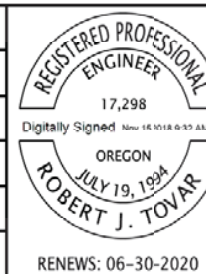
SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

DATE	REVISION	BY
11-8-2018	Minor Corrections	R/T

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STRUCTURE NO.	13528
BOS DWG NO.	101452
CALC. BOOK	6089
HWY: 064	
M.P.: 19.62	
COUNTY	Multnomah
DATE	AUG/2018



RENEWES: 06-30-2020

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

OREGON DEPARTMENT
OF TRANSPORTATION

HWY 64 OVER SE DIVISION ST. EAST PORTLAND FWY M.P. 19.62

I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION
EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES

Designer: Robert J. Tovar
Drafter: Tony S. Johnson

Reviewer: Liantao Xu
Checker: Emily Osburn

PLAN AND ELEVATION

SHEET NO.
JH01

Rotation: 0° Scale: 1"=40'

BRIDGE NAME:	Hwy 64 over SE Division Street	BRIDGE NO:	13528	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	RC BOX GIRDER-CONV REINF	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

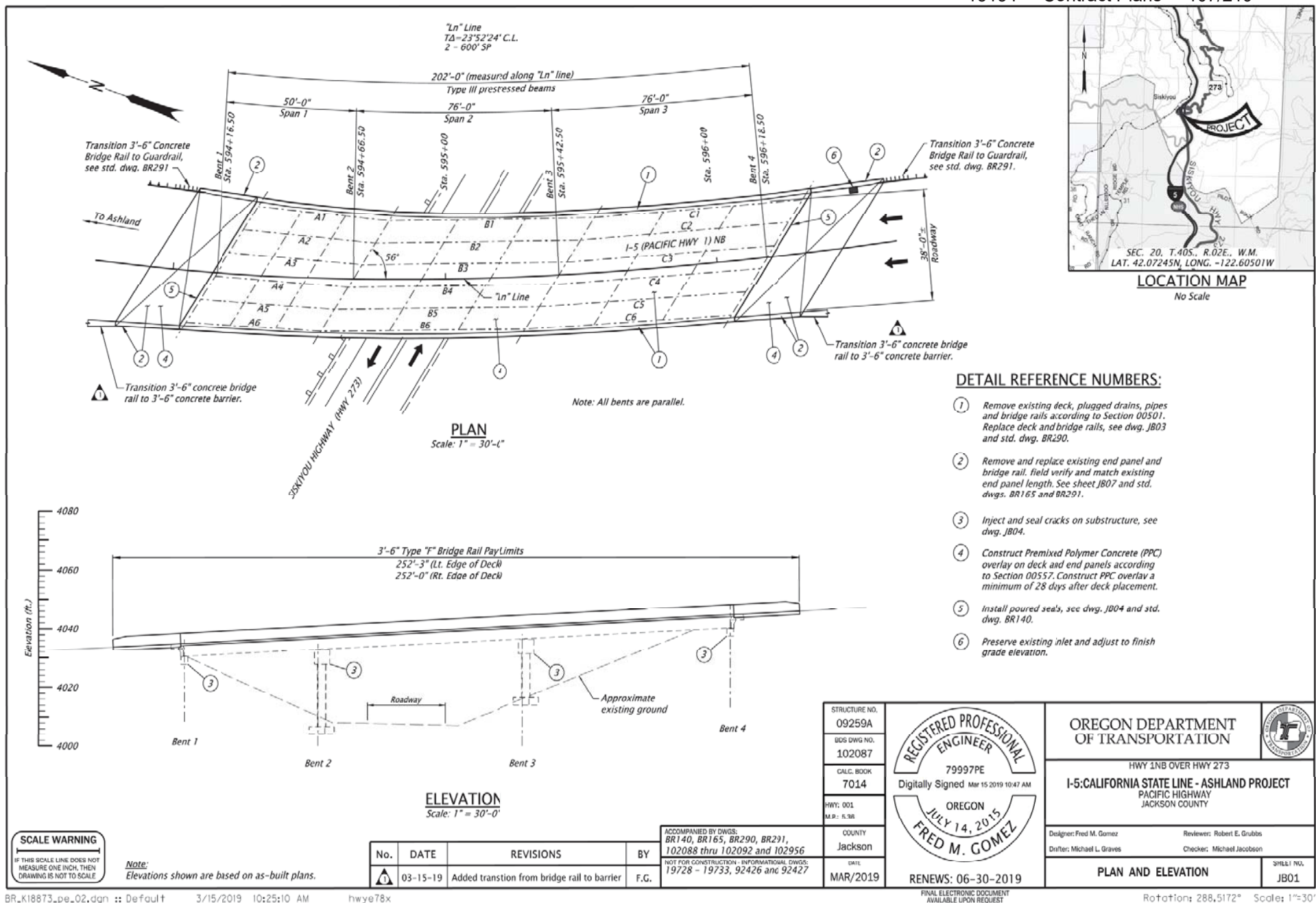
Miscellaneous Project - Joint Repair

SUBTOTAL				156,200		195,800		
PERCENT MOBILIZATION			11.11	17,400	11.06	21,700		
TOTAL				173,600		217,500		

DETAILS

Joint and Rut Repair

187.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	50.00	9,350	41.33	7,729	50.00	24.00
360.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	40.00	14,400	26.67	9,600	40.00	12.00
24.00	SQYD	CLASS 2 PREPARATION	150.00	3,600	188.67	4,528	256.00	150.00
18.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,263.00	40,734	2,854.33	51,378	3,800.00	2,263.00
547.00	SQYD	CONSTRUCT PPC OVERLAY	89.30	48,847	139.77	76,452	230.00	89.30
2.00	CUYD	ELASTOMERIC CONCRETE NOSING MATERIAL FOR REPAIR	1,500.00	3,000	2,725.00	5,450	3,675.00	1,500.00
148.00	FOOT	REPAIR ELASTOMERIC CONCRETE NOSING	130.00	19,240	146.67	21,707	160.00	130.00
74.00	FOOT	TYPE "D" COMPRESSION SEALS	114.86	8,500	126.13	9,333	135.14	114.86
74.00	FOOT	TYPE "E" COMPRESSION SEALS	114.86	8,500	130.63	9,667	148.65	114.86

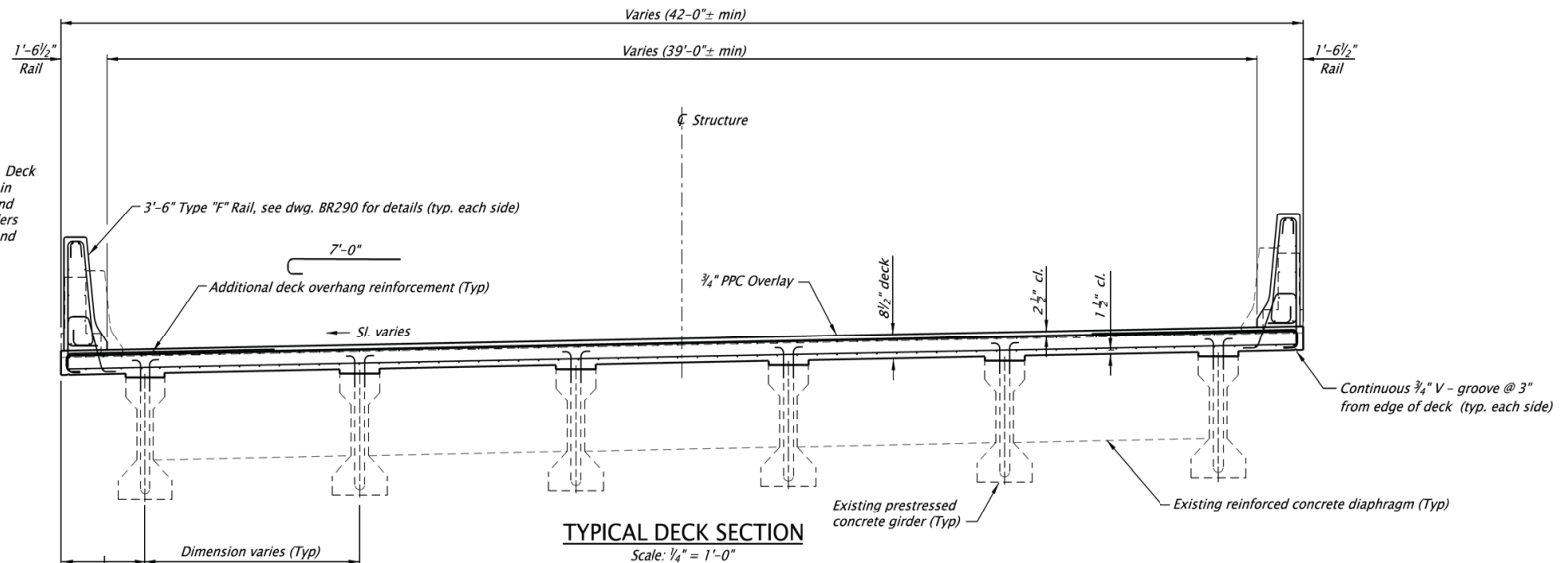


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FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotation: 288.5172° Scale: 1"=30'

NOTE:
Stay-in-place forms shall not be used. Deck falsework shall be attached to girders in manner that does not damage rebar and prestressing tendons. All holes in girders resulting from falsework attachment and removal shall be repaired.



EPOXY COATED DECK REINFORCEMENT

Longitudinal Bars:

- #4 @ 7 1/2" in top and bottom mat.
- Cut longitudinal bars as required at back of bents.
- #4 x 20'-0" @ 7 1/2" additional deck reinforcement at interior bents, top mat only, see detail this sheet.

Transverse Bars:

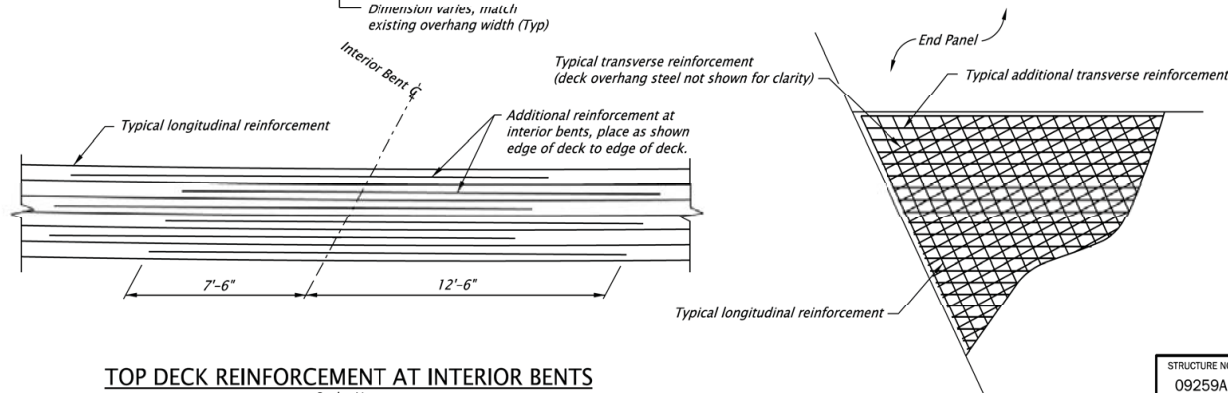
- #4 @ 5 1/2" in top and bottom mat.
- To be placed perpendicular to chord, measured along centerline of right beam (looking up station) and placed radially. Provide 180° hook in top bars at each side of deck.
- #6 x 7'-0" @ 5 1/2" w/180° std. hooks in deck overhang, top mat only.
- #4 @ 5 1/2" w/180° std. hook, additional deck reinforcement, top mat only. Place within 12'-0" from end of deck parallel to bent centerline. Total 26 each end of deck. See detail this sheet.

FOR ACCOMPANIED BY DRAWINGS, SEE SHEET JB01

STRUCTURE NO. 09259A		OREGON DEPARTMENT OF TRANSPORTATION HWY 1NB OVER HWY 273 I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT PACIFIC HIGHWAY JACKSON COUNTY	
BDS DWG NO. 102089			
CALC. BOOK 7014		Designer: Fred M. Gomez Drafter: Michael L. Gieraco	Reviewer: Robert E. Grubbs Checker: Michael J. Joudouni
HWY: 001 M.P.: 5.36 COUNTY: Jackson DATE: DEC/2018		RENEWS: 06-30-2019 FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST	SHEET NO. JB03

TOP DECK REINFORCEMENT AT INTERIOR BENTS

Scale: None



PLAN AT ACUTE CORNER DETAIL

Scale: None

SCALE WARNING

IF THIS SCALE LINE DOES NOT
MEASURE ONE INCH, THEN
DRAWING IS NOT TO SCALE

BRIDGE NAME:	Hwy 1 NB over Hwy 273	BRIDGE NO:	09259A	KEY NO:	18873
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT	COUNTY:	Jackson	CONTR #	15134
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	04/18/2019	FAP NO:	S001(475)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	5	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Rehabilitation

SUBTOTAL				739,800		870,200		
PERCENT MOBILIZATION			11.10	82,100	11.10	96,600		
TOTAL				821,900		966,800		

Rail_Replacement

504.00	LF	Linear Unit Cost	220.24		242.46			
SUBTOTAL				100,000		110,000		
PERCENT MOBILIZATION			11.01	11,000	11.11	12,200		
TOTAL				111,000		122,200		

Deck_Overlay

10251.00	SF	Deck Overlay Roadway Area Unit Costs	12.24		12.81			
SUBTOTAL				113,000		118,200		
PERCENT MOBILIZATION			11.10	12,500	11.10	13,100		
TOTAL				125,500		131,300		

DETAILS

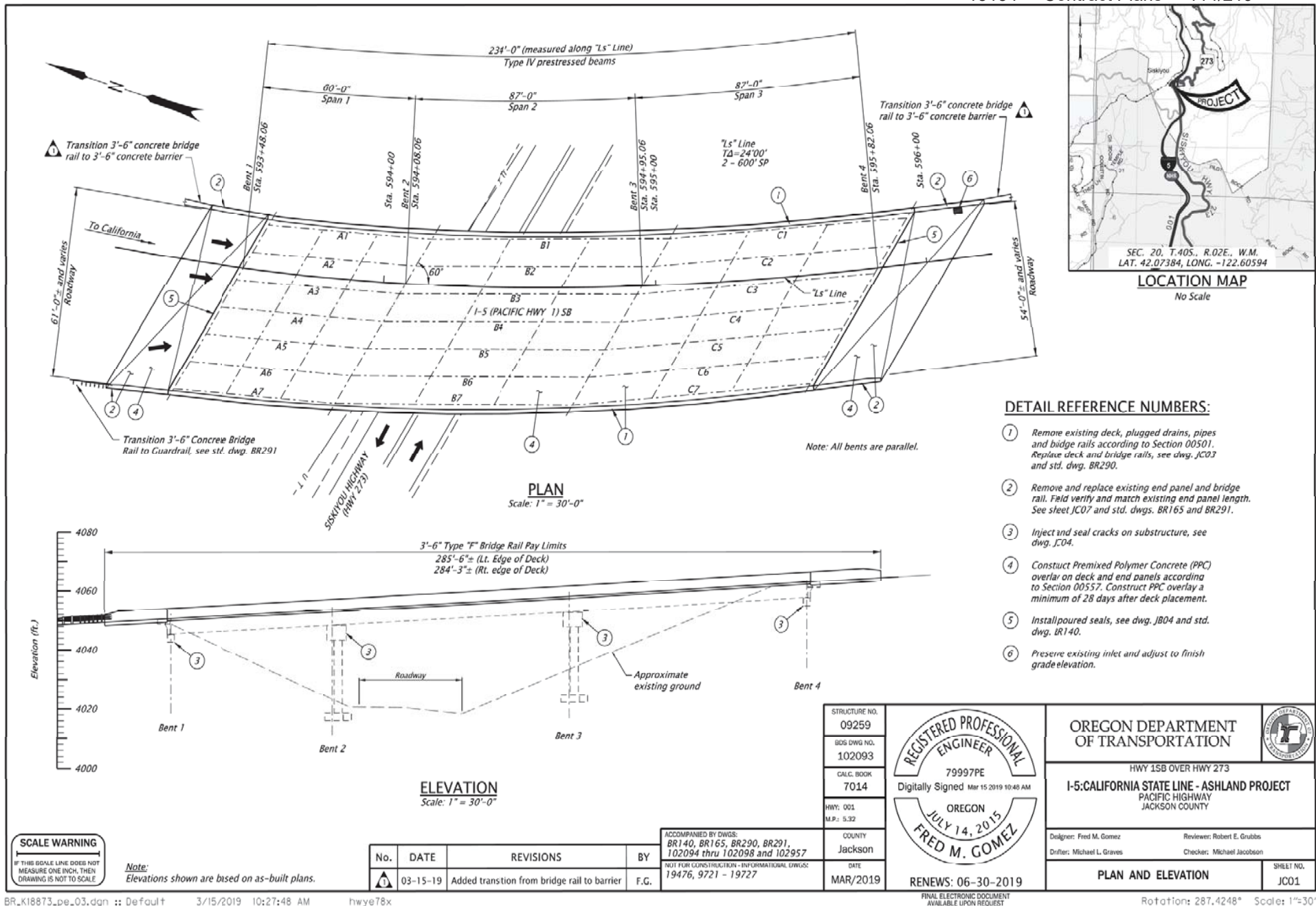
Deck Replacement

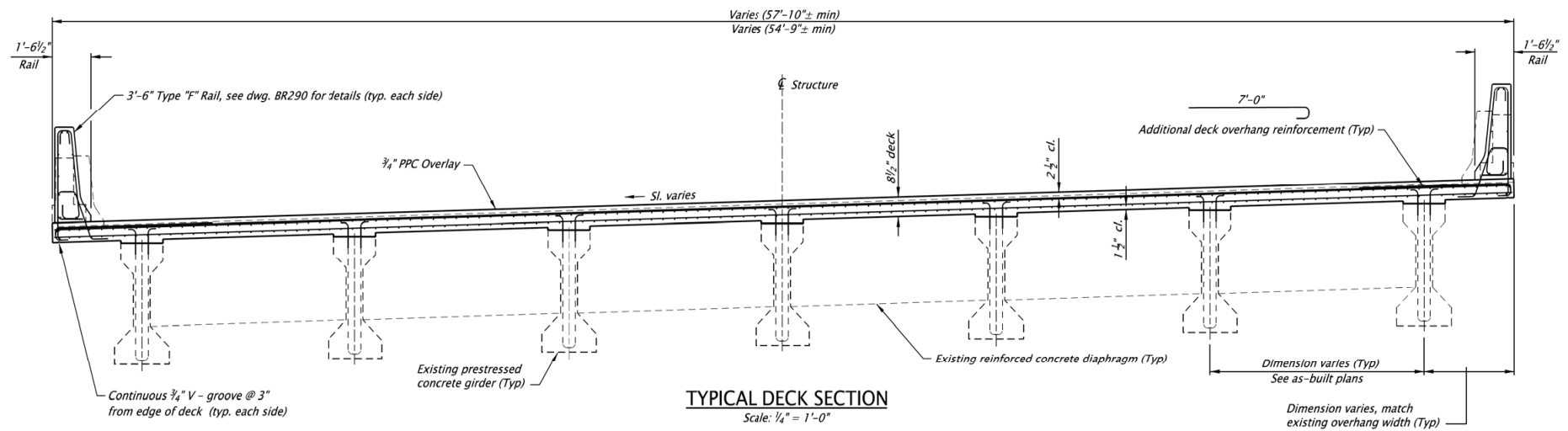
309.00	LB	STAINLESS STEEL REINFORCEMENT	12.94	4,000	17.80	5,500	24.27	12.94
71,681.00	LB	COATED REINFORCEMENT	2.79	200,000	2.70	193,333	3.14	2.16
110.00	FOOT	INJECT AND SEAL CRACKS	63.00	6,930	70.00	7,700	100.00	47.00
247.00	CUYD	DECK CONCRETE, CLASS HPC4500 W/FIBERS	1,133.60	280,000	1,592.44	393,333	2,024.29	1,133.60
1,074.00	SQYD	SAW CUT TEXTURING	5.00	5,370	4.92	5,281	6.00	3.75
244.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	435.00	106,140	486.67	118,747	575.00	435.00
110.00	FOOT	ELASTOMERIC CONCRETE NOSING	135.00	14,850	136.67	15,033	150.00	125.00
110.00	FOOT	POURED SEALS	27.27	3,000	24.24	2,667	27.27	18.18
85.00	SQFT	REPAIR DAMAGED CONCRETE GIRDERS	230.00	19,550	218.33	18,558	325.00	100.00

Rail Replacement

504.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH	198.41	100,000	218.25	110,000	257.94	198.41
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BRIDGE NAME:	Hwy 1 NB over Hwy 273			BRIDGE NO:	09259A		KEY NO:	18873	
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT			COUNTY:	Jackson		CONTR #	15134	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	04/18/2019		FAP NO:	S001(475)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III			# BIDS RECVD:	5		AWARDED TO:	CARTER & COMPANY INC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay									
24.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE		3,000.00	72,000	2,933.33	70,400	3,000.00	2,800.00
1,139.00	SQYD	CONSTRUCT PPC OVERLAY		36.00	41,004	42.00	47,838	50.00	36.00
Additional Items									
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT		100,000.00	100,000	73,333.33	73,333	100,000.00	30,000.00
10,814.00	SQFT	BRIDGE REMOVAL WORK		18.49	200,000	21.42	231,667	29.59	16.18
2.00	EACH	GUARDRAIL TRANSITION		3,350.00	6,700	3,566.67	7,133	4,000.00	3,350.00

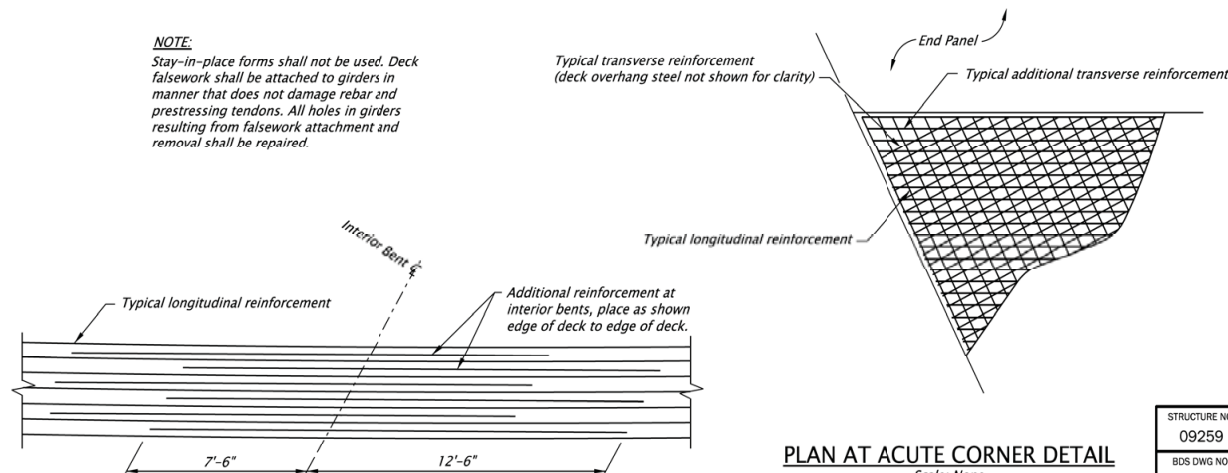


**NOTE:**

Stay-in-place forms shall not be used. Deck falsework shall be attached to girders in manner that does not damage rebar and prestressing tendons. All holes in girders resulting from falsework attachment and removal shall be repaired.

Typical transverse reinforcement
(deck overhang steel not shown for clarity)

Typical longitudinal reinforcement

**TOP DECK REINFORCEMENT AT INTERIOR BENTS**

Scale: None

SCALE WARNING

IF THIS SCALE LINE DOES NOT
MEASURE ONE INCH, THEN
DRAWING IS NOT TO SCALE

EPOXY COATED DECK REINFORCEMENT**Longitudinal Bars:**

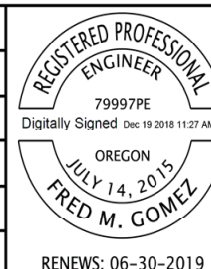
- #4 @ 7 1/2" in top and bottom mat.
Cut longitudinal bars as required at back of bents.
- #4 x 20'-0" @ 7 1/2" additional deck reinforcement at interior bents, top mat only, see detail this sheet.

Transverse Bars:

- #4 @ 5 1/2" in top and bottom mat.
To be placed perpendicular to chord, measured along centerline of right beam (looking up station) and placed radially. Provide 180° hook in top bars at each side of deck.
- #6 x 7'-0" @ 5 1/2" w/180° std. hooks in deck overhang, top mat only.
- #4 @ 5 1/2" w/180° std. hook, additional deck reinforcement, top mat only. Place within 12'-0" from end of deck parallel to bent centerline. Total 26 each end of deck. See detail this sheet.

FOR ACCOMPANIED BY DRAWINGS, SEE SHEET JC01

STRUCTURE NO.	09259
BDS DWG NO.	102095
CALC. BOOK	7014
HWY: 001	M.P.: 5.32
COUNTY	Jackson
DATE	DEC/2018



**OREGON DEPARTMENT
OF TRANSPORTATION**

HWY 15B OVER HWY 273

I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT
PACIFIC HIGHWAY
JACKSON COUNTY

Designer: Fred M. Gomez
Checker: Michael L. Graves

Reviewer: Robert E. Grubbs
Checker: Michael Jacobson

TYPICAL DECK SECTION

SHEET NO.
JC03

RENEW: 06-30-2019
FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

BRIDGE NAME:	Hwy 1 SB over Hwy 273	BRIDGE NO:	09259	KEY NO:	18873
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT	COUNTY:	Jackson	CONTR #	15134
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	04/18/2019	FAP NO:	S001(475)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE IV	# BIDS RECVD:	5	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Rehabilitation

SUBTOTAL				968,000		1,200,800		
PERCENT MOBILIZATION			11.10	107,400	11.10	133,300		
TOTAL				1,075,400		1,334,100		

Rail_Replacement

570.00	LF	Linear Unit Cost	194.74		230.53			
SUBTOTAL				100,000		118,300		
PERCENT MOBILIZATION			11.01	11,000	11.11	13,100		
TOTAL				111,000		131,400		

Deck_Overlay

16551.00	SF	Deck Overlay Roadway Area Unit Costs	11.33		12.41			
SUBTOTAL				168,800		184,900		
PERCENT MOBILIZATION			11.10	18,700	11.10	20,500		
TOTAL				187,500		205,400		

DETAILS

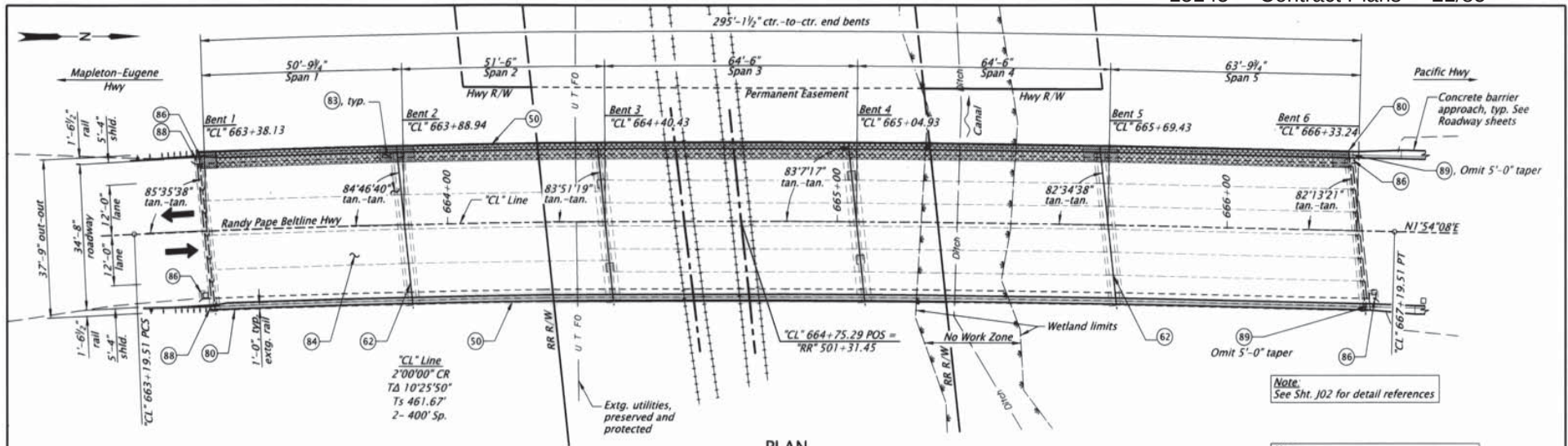
Deck Replacement

409.00	LB	STAINLESS STEEL REINFORCEMENT	12.22	5,000	19.97	8,167	24.45	12.22
104,735.00	LB	COATED REINFORCEMENT	2.39	250,000	2.53	265,000	3.10	2.10
161.00	FOOT	INJECT AND SEAL CRACKS	70.00	11,270	64.00	10,304	75.00	47.00
401.00	CUYD	DECK CONCRETE, CLASS HPC4500 W/FIBERS	997.51	400,000	1,463.01	586,667	1,870.32	997.51
1,765.00	SQYD	SAW CUT TEXTURING	5.00	8,825	4.92	8,678	6.00	3.75
322.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	430.00	138,460	468.33	150,803	525.00	430.00
146.00	FOOT	ELASTOMERIC CONCRETE NOSING	135.00	19,710	136.67	19,953	150.00	125.00
146.00	FOOT	POURED SEALS	25.34	3,700	23.29	3,400	27.40	17.12
135.00	SQFT	REPAIR DAMAGED CONCRETE GIRDERS	230.00	31,050	218.33	29,475	325.00	100.00

Rail Replacement

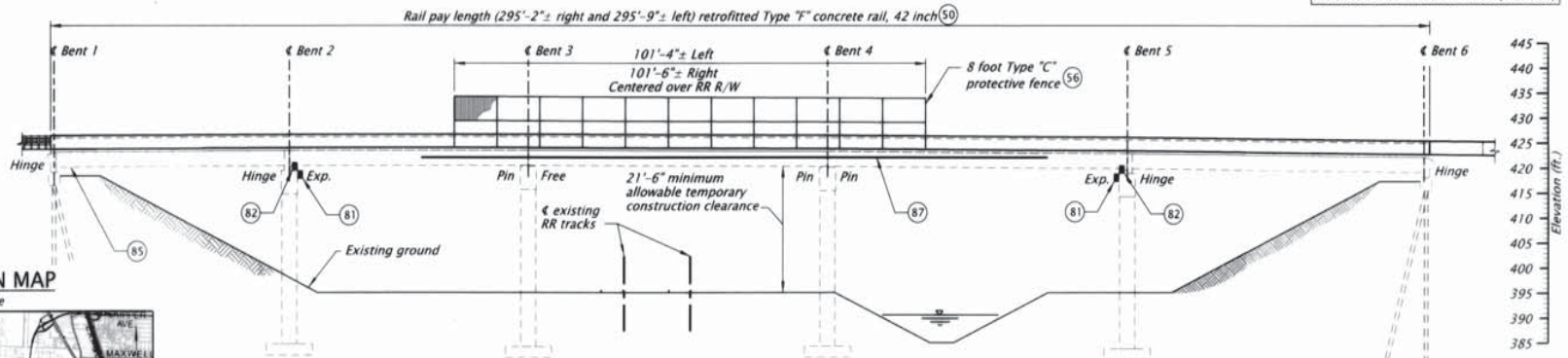
570.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH	175.44	100,000	207.60	118,333	228.07	175.44
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BRIDGE NAME:	Hwy 1 SB over Hwy 273			BRIDGE NO:	09259		KEY NO:	18873	
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT			COUNTY:	Jackson		CONTR #	15134	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	04/18/2019		FAP NO:	S001(475)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE IV			# BIDS RECVD:	5		AWARDED TO:	CARTER & COMPANY INC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay									
38.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE		2,700.00	102,600	2,833.33	107,667	3,000.00	2,700.00
1,839.00	SQYD	CONSTRUCT PPC OVERLAY		36.00	66,204	42.00	77,238	50.00	36.00
Additional Items									
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT		30,000.00	30,000	66,666.67	66,667	100,000.00	30,000.00
17,222.00	SQFT	BRIDGE REMOVAL WORK		11.61	200,000	16.45	283,333	23.23	11.61
2.00	EACH	GUARDRAIL TRANSITION		3,350.00	6,700	3,566.67	7,133	4,000.00	3,350.00



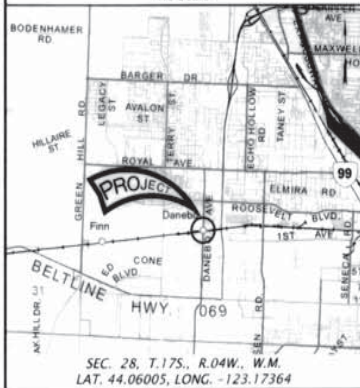
PLAN
Scale: 1" = 25'

Note:
Elevations shown are based on North American Vertical Datum 1988 (NAVD88)



ELEVATION
Scale: 1" = 25'

LOCATION MAP
No Scale



Accompanied by drawings BR02, J02-J09, BR140, BR195, BR240, BR290, and BR291

STRUCTURE NO.	09460
BOS DWG NO.	102759
CALC. BOOK	7105
HWY. 69	M.P.: 3.92
COUNTY	Lane
DATE	02/2019

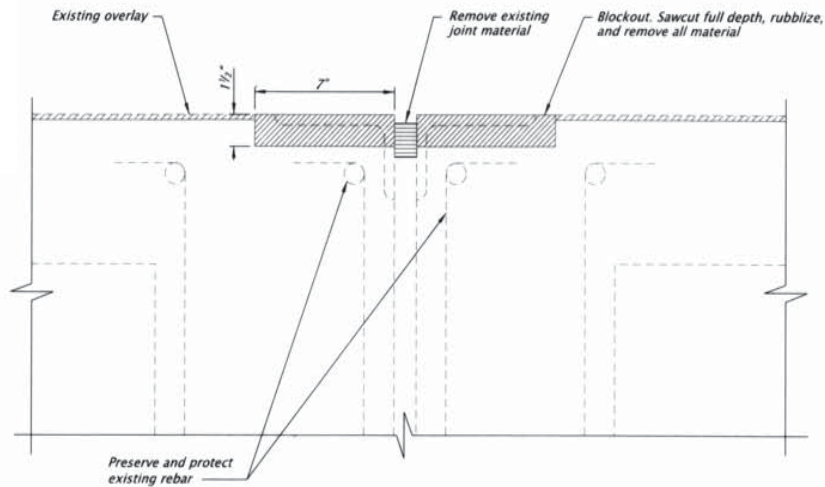


OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT RANDY PAPE BELTLINE HIGHWAY LANE COUNTY	
Designer: Pavan Patel, E.I.T. Drafter: Larry Withelm	Reviewer: Douglas Kirkpatrick, P.E. Checker: Eric E. Bonn, P.E.
PLAN AND ELEVATION	
SHEET NO. J01	

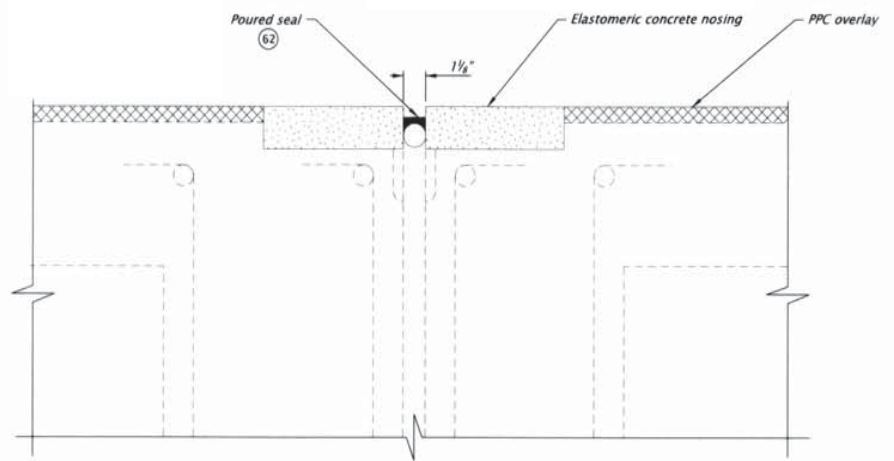
SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

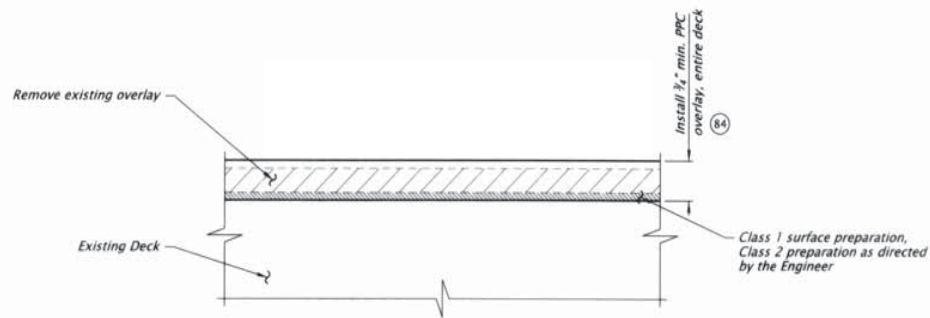
Rotations 0° - Scale Full Size 1:1

**JOINT BLOCK-OUT REMOVAL LIMITS**

Scale: 2" = 1'-0"

**POURED SEAL**

Scale: 2" = 1'-0"

**PPC OVERLAY DETAIL**

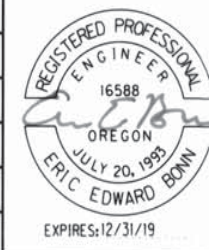
No Scale

Work To Be Done:

1. Construct deck preparation and PPC overlay.
2. Sawcut and remove armored corners and concrete.
3. Install elastomeric concrete nosing.
4. Install poured joint seals.

For Accompanied by drawings, see Sht. J01

STRUCTURE NO.	09460
BDS DWG NO.	102764
CALC. BOOK	7105
HWY. 69	
M.P.: 3.92	
COUNTY	Lane
DATE	02/2019



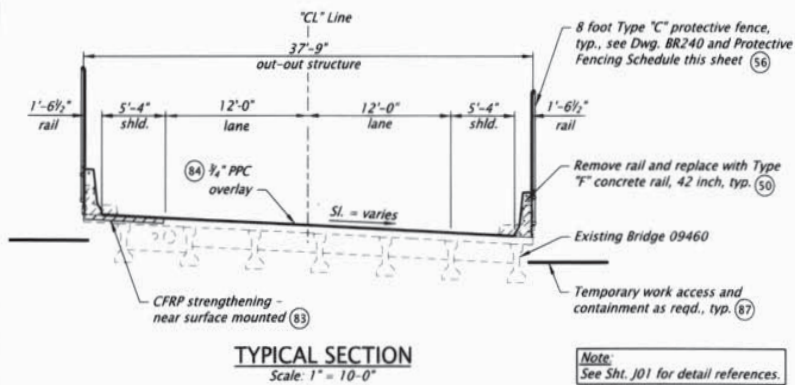
OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT RANDY PAPE BELTLINE HIGHWAY LANE COUNTY	
Designer: Payvan Patel, E.I.T. Drafter: Larry Wilhelm	Reviewer: Douglas Kirkpatrick, P.E. Checker: Eric E. Bonn, P.E.
DECK OVERLAY AND JOINT DETAILS	
SHEET NO. J06	

SCALE WARNING

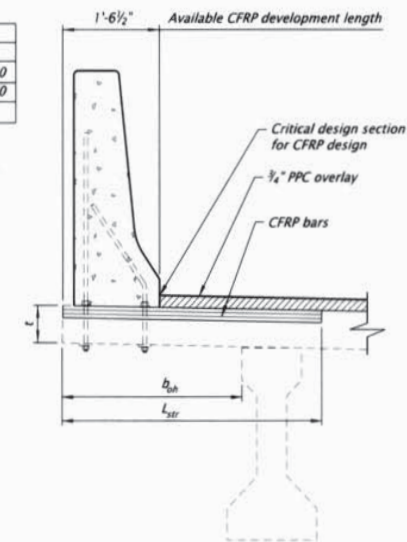
If scale bar doesn't measure one inch then drawing is not to scale

FINAL ELECTRONIC DOCUMENT
 AVAILABLE UPON REQUEST

Rotation: 0° Scale: Full Size 1:1



Protective Fencing Schedule		
	Left	Right
Start Station	664+23.00	664+26.50
End Station	665+24.00	665+28.50
Length along fence	101'-4"	101'-6"

**NSM CFRP Notes:**

NSM = Near surface mounted

CFRP = Carbon fiber reinforced polymer

 $L_{dev} = b_{ch} + L_d + 3" = \text{minimum reinforcement length}$ $L_d = \text{development length of CFRP}$

Strengthen the existing deck overhang to resist an ultimate moment of "M" and an ultimate tension force of "T" from the combined resistance of the NSM CFRP and the existing deck reinforcement.

Design the NSM CFRP using a Resistance Factor of 1.0 and an Environmental Reduction Factor of 0.85.

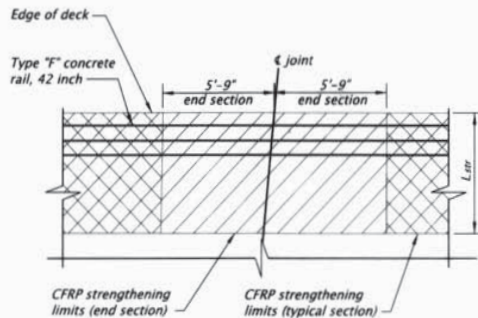
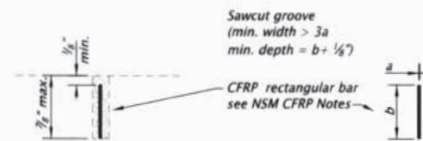
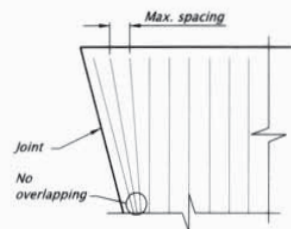
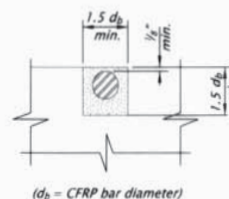
Avoid conflicts with rail anchors.

Orient sawcut groove and CFRP perpendicular to structure centerline. See detail, this sheet, for flare at skewed joints. Fill entire length of groove to top of deck with high-strength epoxy resin from the ODOT QPL.

Locate deck reinforcement, using ground penetrating radar or other method approved by the Engineer, prior to cutting for deck strengthening. Locate slots for deck strengthening so as not to conflict with existing reinforcement. Individual slot spacings may vary provided the average spacing meets the designed density and are as near as possible to the planned spacings.

CFRP STRENGTHENING

Scale: 1/2" = 1'-0"

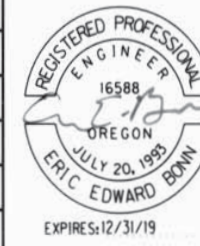
**PLAN - TYPICAL CFRP LONGITUDINAL DIMENSIONS**
No Scale**CFRP RECTANGULAR BAR DETAIL**
No Scale**FLARE DETAIL AT SKEWED JOINTS**
No Scale**CFRP ROUND BAR DETAIL**
No Scale

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale.

Deck Overhang Design Parameters						
	Thickness	Widths	Extg. reinf. (#5 bars)		"M"	"T"
Location	t	b _{oh}	Spacing	Clear (cl)	kip-ft ft	kip ft
End sections, Bents 1 and 2	7"	3'-0" ± 1"	5"	1½"	28.2	8.70
Typical sections, Spans 1 and 2					20.0	6.00
Joints at end sections, Bents 5 and 6					28.2	8.70
Typical sections, Spans 3,4 and 5			6½"			20.0

For Accompanied by drawings, see Sht. J01

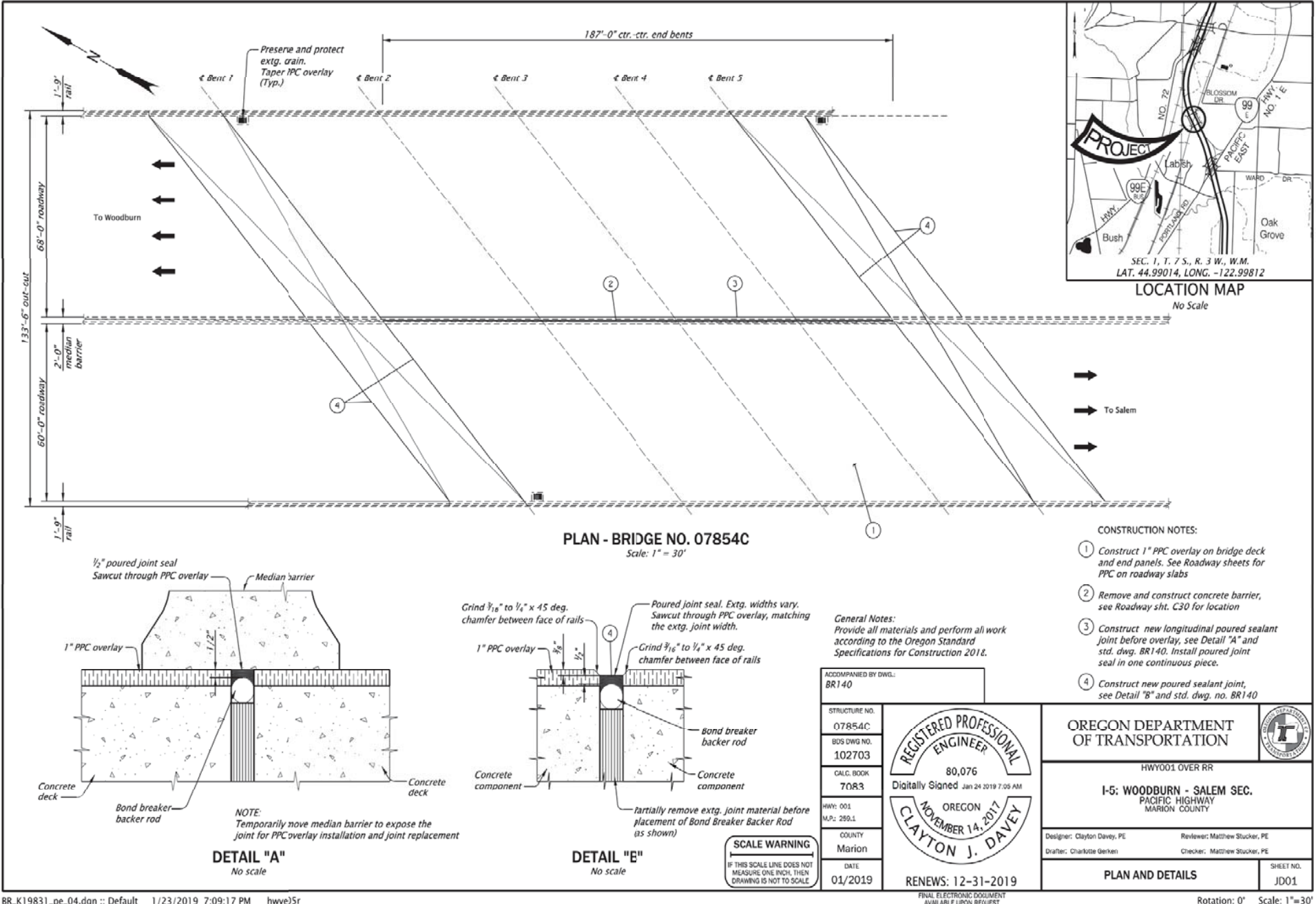
STRUCTURE NO.	09460
BDS DWG NO.	102761
CALC. BOOK	7105
HWY. 69	
M.P. 3.92	
COUNTY	Lane
DATE	02/2019



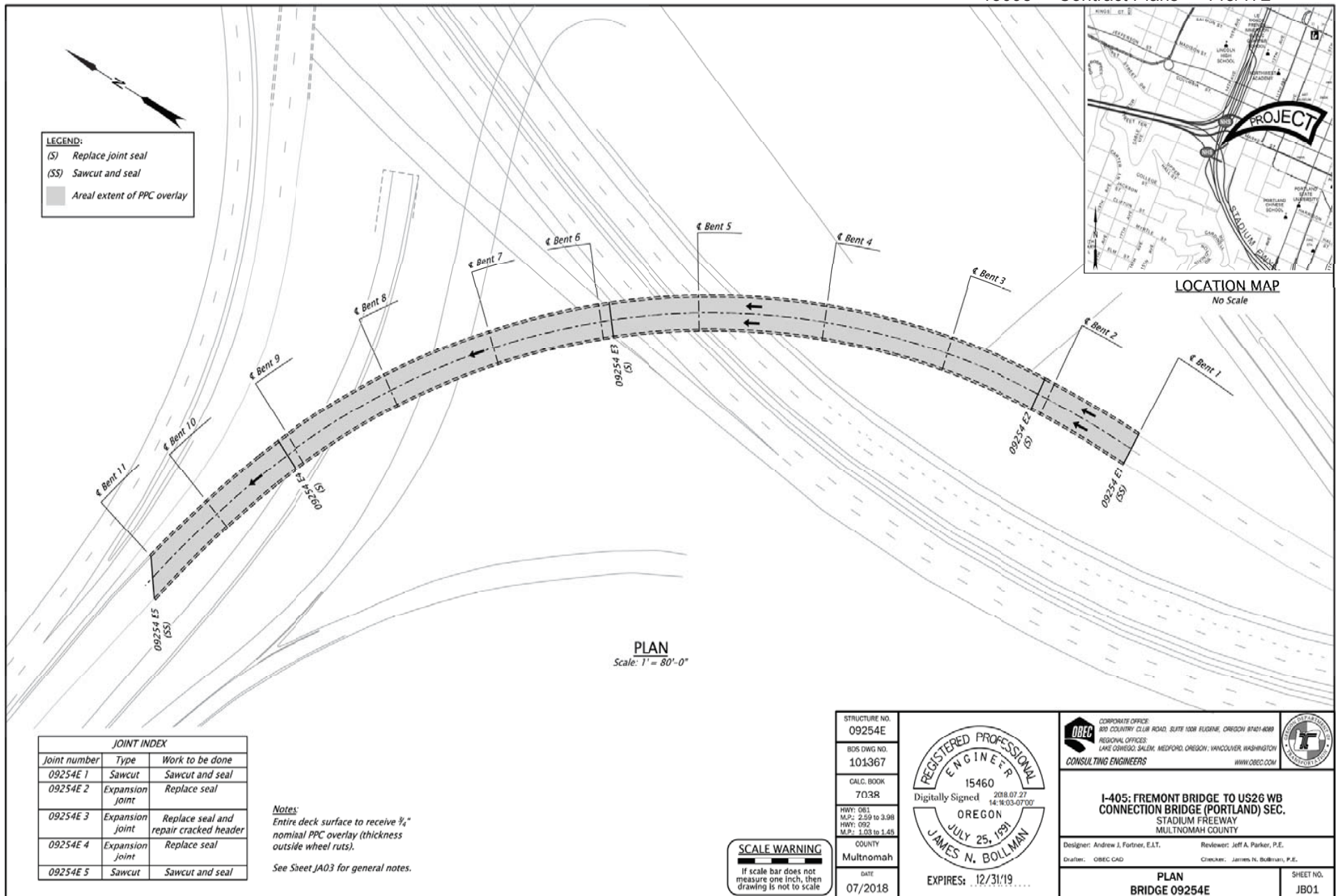
 OBEC CONSULTING ENGINEERS A DOWL LLC Company	COMPANY OFFICE: 800 COUNTRY CLUB ROAD, SUITE 100B, EUGENE, OREGON 97401-6889 REGIONAL OFFICES: LAKE OSWEGO, OREGON; MEDFORD, OREGON; WACOLIA, WASHINGTON	
	SCS Canal & UPRR, Hwy 69 OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT RANDY PAPE BELTLINE HIGHWAY LANE COUNTY	
Designer: Pawan Patel, E.I.T. Drafter: Larry Wilhelm	Reviewer: Douglas Kirkpatrick, P.E. Checker: Eric E. Bonn, P.E.	
TYPICAL SECTION AND DECK STRENGTHENING		SHEET NO. J03

BRIDGE NAME:	SCS Canal & UPRR, Hwy 69			BRIDGE NO:	09460		KEY NO:	18576	
SECTION NAME:	OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT			COUNTY:	Lane		CONTR #	15145	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	05/16/2019		FAP NO:	S069(020)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE II			# BIDS RECVD:	5		AWARDED TO:	HAMILTON CONSTRUCTION CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY		UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Rehabilitation									
SUBTOTAL					132,300		147,700		
PERCENT MOBILIZATION				11.01	14,600	11.11	16,400		
TOTAL					146,900		164,100		
Rail_Replacement									
591.00	LF	Linear Unit Cost		375.63		306.94			
SUBTOTAL					200,000		163,300		
PERCENT MOBILIZATION				11.01	22,000	11.11	18,100		
TOTAL					222,000		181,400		
Deck_Overlay									
10349.83	SF	Deck Overlay Roadway Area Unit Costs		17.31		16.12			
SUBTOTAL					161,400		150,100		
PERCENT MOBILIZATION				11.01	17,800	11.11	16,700		
TOTAL					179,200		166,800		
Seismic Retrofit Phase 1									
11140.97	SQFT	Deck Area Unit Costs		6.23		4.60			
SUBTOTAL					62,500		46,200		
PERCENT MOBILIZATION				11.01	6,900	11.11	5,100		
TOTAL					69,400		51,300		
DETAILS									
Deck Overhang Strengthening, Joint Seals and Concrete Repair									
2,650.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED		27.17	71,995	32.17	85,238	37.25	27.17
74.00	FOOT	ELASTOMERIC CONCRETE NOSING		100.00	7,400	130.54	9,660	200.00	91.63
74.00	FOOT	POURED SEALS		20.27	1,500	29.28	2,167	40.54	20.27
1.00	SQYD	REPAIR DAMAGED CONCRETE		5,000.00	5,000	2,666.67	2,667	5,000.00	1,000.00
2.00	EA	BRIDGE IDENTIFICATION MARKERS		150.00	300	150.00	300	150.00	150.00
203.00	FOOT	8 FOOT TYPE C PROTECTIVE FENCE		227.00	46,081	234.67	47,637	250.00	227.00
Rail Replacement									
591.00	FOOT	TYPE "F" CONCRETE RAIL, 42 INCH, RETROFIT		338.41	200,000	276.37	163,333	338.41	203.05

BRIDGE NAME:	SCS Canal & UPRR, Hwy 69			BRIDGE NO:	09460		KEY NO:	18576	
SECTION NAME:	OR569: SCS CANAL & UNION PACIFIC RAILROAD BRIDGE PROJECT			COUNTY:	Lane		CONTR #	15145	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	05/16/2019		FAP NO:	S069(020)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE II			# BIDS RECVD:	5		AWARDED TO:	HAMILTON CONSTRUCTION CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay									
6.00	SQYD	CLASS 2 PREPARATION		1,000.00	6,000	666.67	4,000	1,000.00	500.00
24.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE		3,600.00	86,400	3,595.37	86,289	3,600.00	3,586.10
1,150.00	SQYD	CONSTRUCT PPC OVERLAY		60.00	69,000	51.98	59,781	60.00	40.95
Seismic Retrofit - Beam Seat Extension / Transverse Retraint Retrofit									
1,000.00	LB	REINFORCEMENT		12.50	12,500	8.83	8,833	12.50	4.00
8.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000		6,250.00	50,000	4,666.67	37,333	6,250.00	1,500.00
DETAILS									
Additional Items									
900.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT		27.78	25,000	77.78	70,000	138.89	27.78
2,052.00	SQFT	BRIDGE REMOVAL WORK		29.01	59,535	51.09	104,845	63.35	29.01
2.00	EACH	GUARDRAIL TRANSITION		3,200.00	6,400	3,466.67	6,933	4,000.00	3,200.00



BRIDGE NAME:			Hwy 1 over UPRR Main Line		BRIDGE NO:		07854C		KEY NO:		19831		
SECTION NAME:			I-5: WOODBURN - SALEM SEC.		COUNTY:		Marion		CONTR #		15137		
PRIMARY PROJ:			Bridge Deck Overlay		BID DATE:		03/28/2019		FAP NO:		S001(508)		
STRUCT TYPE:			RC DECK GIRDER-PRECAST-TYPE II		# BIDS RECVD:		2		AWARDED TO:		OREGON MAINLINE PAVING LLC		
PREPARED BY:													
					CONTRACT			2 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Deck_Overlay													
32112.00		SF	Deck Overlay Roadway Area Unit Costs			15.16			15.28				
SUBTOTAL							438,200			445,800			
PERCENT MOBILIZATION						11.11	48,700		10.10	45,000			
TOTAL							486,900			490,800			
Miscellaneous Project - Bridge Repair													
SUBTOTAL							25,000			12,500			
PERCENT MOBILIZATION						11.11	2,800		10.10	1,300			
TOTAL							27,800			13,800			
DETAILS													
Bridge Deck Overlay													
112.00		CUYD	FURNISH PREMIXED POLYMER CONCRETE			2,750.00	308,000		2,800.00	313,600		2,850.00	2,750.00
3,568.00		SQYD	CONSTRUCT PPC OVERLAY			32.00	114,176		32.50	115,960		33.00	32.00
80.00		SQYD	CLASS 2 PREPARATION - SQYD			200.00	16,000		203.50	16,280		207.00	200.00
Joint Repair													
867.00		FOOT	POURED SEALS			28.84	25,000		14.43	12,515		28.84	0.03



BRIDGE NAME:	Hwy 61 NB Conn #2 to Hwy 47 WB over Hwy 61 & Conns	BRIDGE NO:	09254E	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	RC BOX GIRDER-CONV REINF	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Joint Repair

SUBTOTAL				44,000		56,700		
PERCENT MOBILIZATION			11.10	4,900	11.10	6,300		
TOTAL				48,900		63,000		

Deck Overlay

26883.00	SF	Deck Overlay Roadway Area Unit Costs	15.92		14.10			
SUBTOTAL				385,100		341,100		
PERCENT MOBILIZATION			11.10	42,800	11.10	37,900		
TOTAL				427,900		379,000		

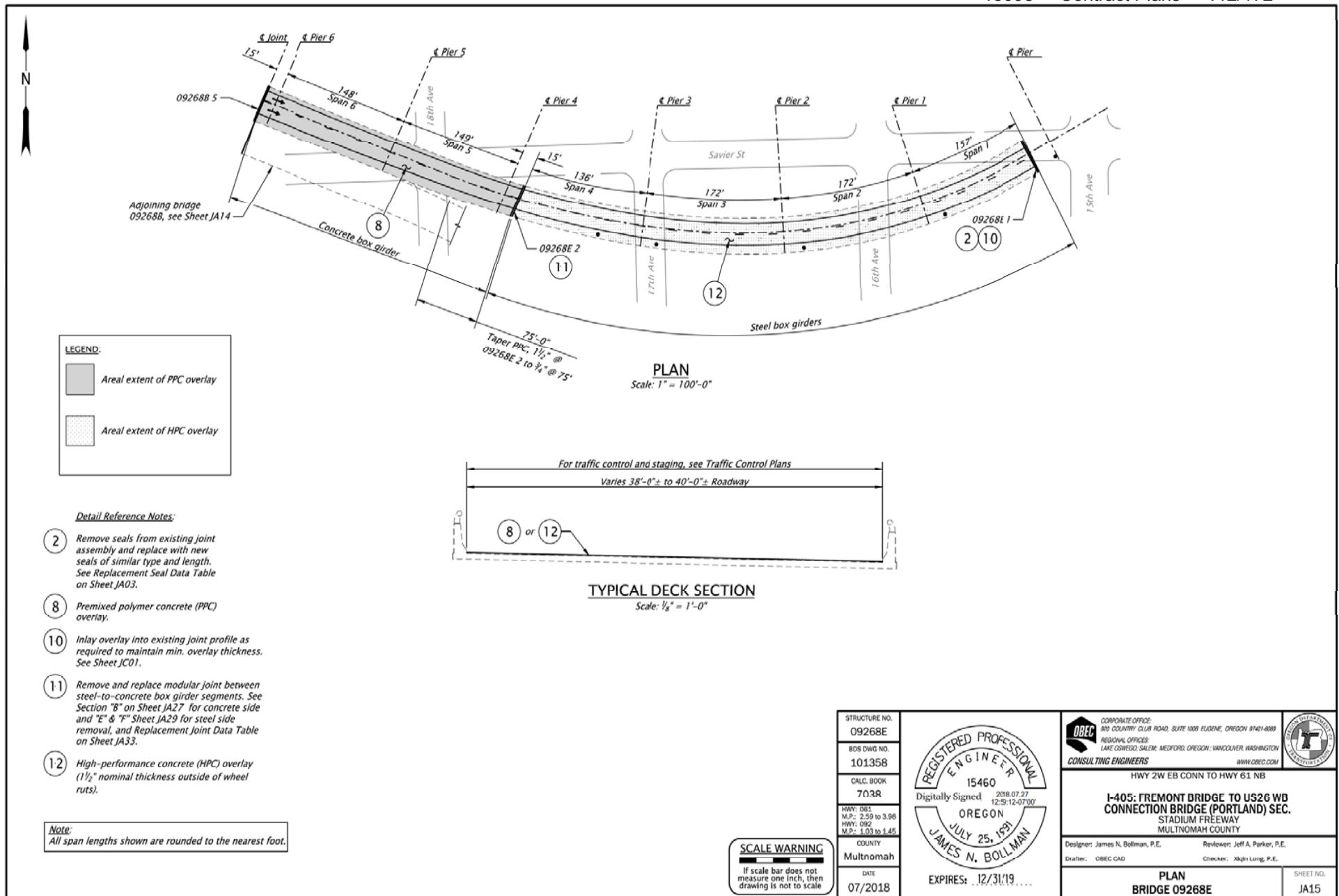
DETAILS

Joint Repair

1.00	LS	HEADER CRACK REPAIR	10,000.00	10,000	6,020.00	6,020	10,000.00	500.00
180.00	FOOT	BUILT-UP ARMOR	138.89	25,000	196.30	35,333	277.78	138.89
90.00	FOOT	TENSION/COMPRESSION SEAL	100.00	9,000	170.37	15,333	277.78	100.00

Bridge Deck Overlay

10.00	SQYD	CLASS 2 PREPARATION	0.01	0.1	100.01	1,000	300.00	0.01
83.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	190,900	2,358.33	195,742	2,500.00	2,275.00
2,987.00	SQYD	CONSTRUCT PPC OVERLAY	65.00	194,155	48.33	144,372	65.00	35.00



BRIDGE NAME:	Hwy 2W EB Conn to Hwy 61 NB	BRIDGE NO:	09268E	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				223,300		277,700		
PERCENT MOBILIZATION			11.10	24,800	11.10	30,800		
TOTAL				258,100		308,500		

Deck Overlay (PPC)

12753.00	SF	Deck Overlay Roadway Area Unit Costs	12.73		21.49			
SUBTOTAL				146,200		246,600		
PERCENT MOBILIZATION			11.10	16,200	11.10	27,400		
TOTAL				162,400		274,000		

Deck Overlay (HPC)

24840.00	SF	Deck Overlay Roadway Area Unit Costs	15.38		14.50			
SUBTOTAL				343,900		324,200		
PERCENT MOBILIZATION			11.10	38,200	11.10	36,000		
TOTAL				382,100		360,200		

DETAILS

Modular Joint and Seal Replacement

667.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	35.00	23,345	29.67	19,788	35.00	24.00
1,560.00	LB	REINFORCEMENT	2.56	3,994	5.34	8,331	8.01	2.56
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	22,000.00	22,000	58,000.00	3,000.00
1.00	LS	COATING APPLICATION	6,000.00	6,000	3,700.00	3,700	6,000.00	1,500.00
1.00	LS	COATING MATERIALS	2,000.00	2,000	1,116.67	1,117	2,000.00	500.00
1.00	LS	BIRD DETERRENT DEVICES	15,000.00	15,000	17,833.33	17,833	23,500.00	15,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS	50,000.00	50,000	68,166.67	68,167	84,500.00	50,000.00
126.00	FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS	119.05	15,000	95.79	12,070	119.05	61.19
38.00	FOOT	MODULAR BRIDGE JOINT SYSTEMS, 2 SEAL	2,105.26	80,000	2,526.31	96,000	2,763.16	2,105.26
10.00	CUYD	PCC REPAIR MATERIAL	2,500.00	25,000	2,866.67	28,667	4,000.00	2,100.00

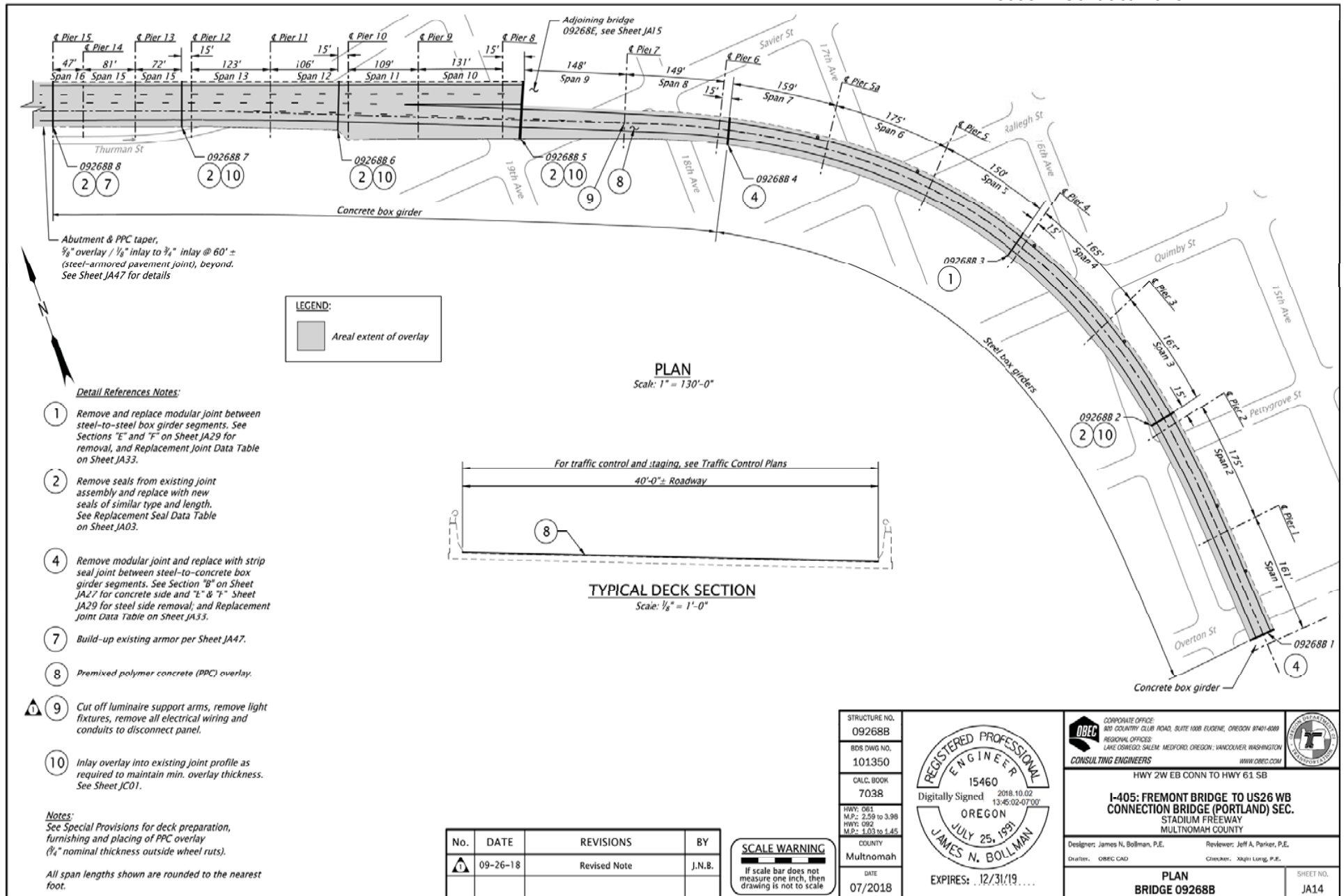
PPC Bridge Deck Overlay

1,715.00	SQYD	CLASS 2 PREPARATION	0.01	17	58.34	100,053	175.00	0.01
42.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	96,600	2,441.67	102,550	2,750.00	2,275.00
1,417.00	SQYD	CONSTRUCT PPC OVERLAY	35.00	49,595	31.03	43,974	35.00	26.10

BRIDGE NAME:	Hwy 2W EB Conn to Hwy 61 NB	BRIDGE NO:	09268E	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
HPC Bridge Deck Overlay								
115.00	CUYD	FURNISH HIGH PERFORMANCE CONCRETE	350.00	40,250	858.33	98,708	1,750.00	350.00
2,760.00	SQYD	CONSTRUCT HPC RESURFACING	100.00	276,000	77.17	212,980	100.00	51.50
2,760.00	SQYD	CONCRETE DECK FINISHING	10.00	27,600	4.53	12,512	10.00	1.60
Additional Items								
640.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	101.56	65,000	95.05	60,833	156.25	27.34

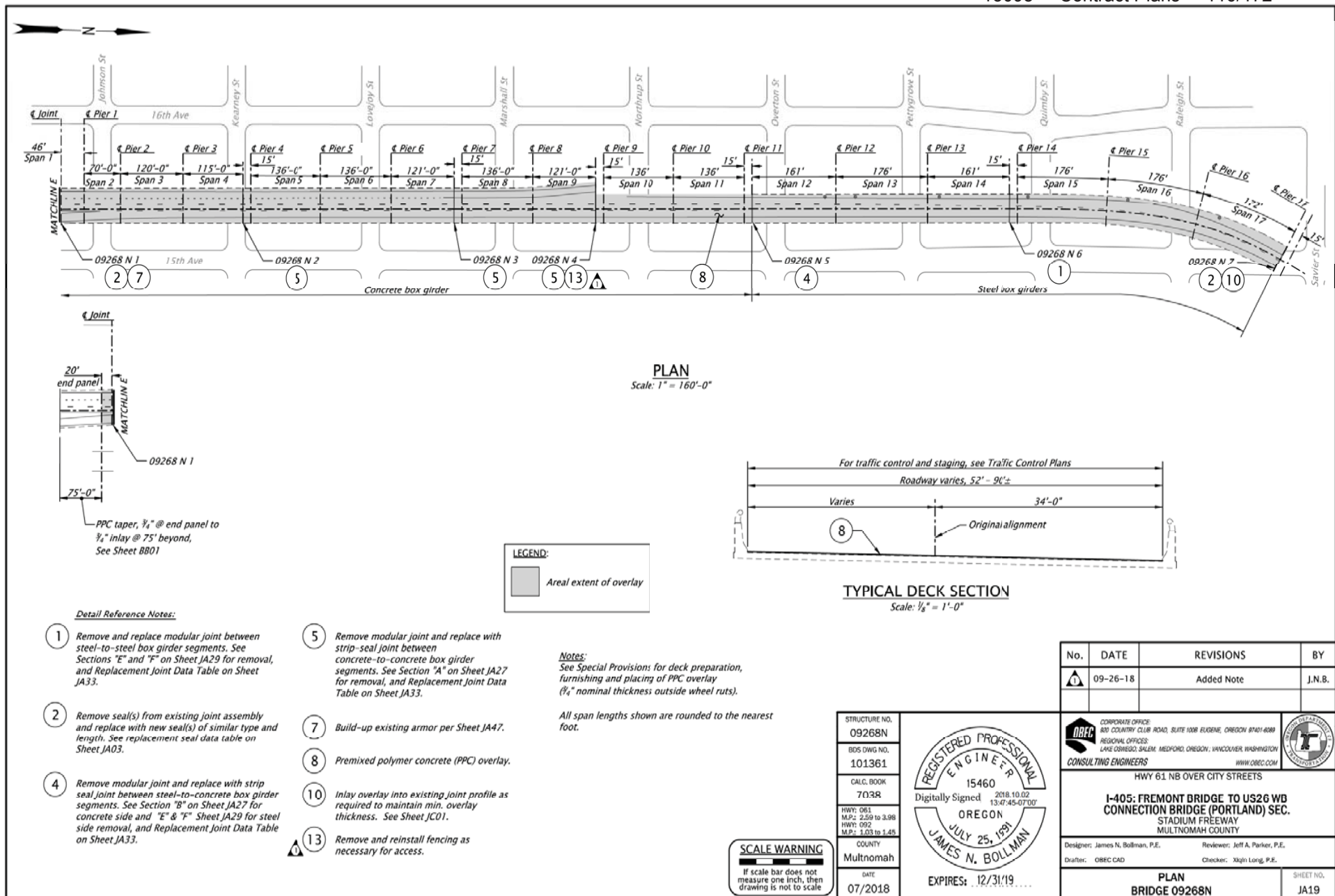


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Rotation: 0° Scale: Full Size 1=1

BRIDGE NAME:			Hwy 2W EB Conn to Hwy 61 SB		BRIDGE NO:		09268B		KEY NO:		19533		
SECTION NAME:			I-405: FREMONT BRIDGE TO US26 WB CONNECTION		COUNTY:		Multnomah		CONTR #		15098		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		10/18/2018		FAP NO:		SA00(029)		
STRUCT TYPE:			STEEL BOX GIRDER		# BIDS RECVD:		4		AWARDED TO:		WILDISH STANDARD PAVING CO		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM		UNIT	AMT		UNIT	AMT		HIGH	LOW	
Miscellaneous Project - Bridge Joint Repair													
SUBTOTAL						559,900			817,100				
PERCENT MOBILIZATION					11.10	62,100		11.10	90,700				
TOTAL						622,000			907,800				
Deck Overlay													
108000.00		SF	Deck Overlay Roadway Area Unit Costs		12.21			11.79					
SUBTOTAL						1,186,600			1,145,700				
PERCENT MOBILIZATION					11.10	131,800		11.10	127,200				
TOTAL						1,318,400			1,272,900				
DETAILS													
Modular Joint and Seal Replacement													
4,374.00		SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP		25.00	109,350		26.20	114,599		30.00	23.60	
142.00		SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL 1/8 TO 3/8 INCHES DEEP		60.00	8,520		43.43	6,168		60.00	27.80	
4,860.00		LB	REINFORCEMENT		1.65	8,000		5.69	27,667		8.23	1.65	
80.00		FOOT	STRIP SEALS		562.50	45,000		1,362.50	109,000		2,025.00	562.50	
1.00		LS	SURFACE PREPARATION		3,000.00	3,000		54,333.33	54,333		145,000.00	3,000.00	
1.00		LS	COATING APPLICATION		6,000.00	6,000		7,500.00	7,500		10,500.00	6,000.00	
1.00		LS	COATING MATERIALS		2,000.00	2,000		1,700.00	1,700		2,600.00	500.00	
1.00		LS	BIRD DETERRENT DEVICES		30,000.00	30,000		42,633.33	42,633		50,000.00	30,000.00	
1.00		LS	REMOVAL OF EXISTING JOINT SURFACES		50,000.00	50,000		85,666.67	85,667		107,000.00	50,000.00	
1.00		LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS		50,000.00	50,000		67,500.00	67,500		102,500.00	50,000.00	
128.00		FOOT	BUILT-UP ARMOR		234.38	30,000		206.25	26,400		234.38	150.00	
138.00		FOOT	GLAND REPLACEMENT		108.70	15,000		106.28	14,667		144.93	65.22	
252.00		FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS		99.21	25,000		125.66	31,667		158.73	99.21	
40.00		FOOT	MODULAR BRIDGE JOINT SYSTEMS, 3 SEAL		3,000.00	120,000		3,416.67	136,667		4,375.00	2,875.00	
66.00		LS	TENSION/COMPRESSION SEAL		121.21	8,000		176.26	11,633		265.15	121.21	
30.00		CUYD	PCC REPAIR MATERIAL		1,666.67	50,000		2,644.44	79,333		4,333.33	1,666.67	

BRIDGE NAME:	Hwy 2W EB Conn to Hwy 61 SB			BRIDGE NO:	09268B		KEY NO:	19533	
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION			COUNTY:	Multnomah		CONTR #	15098	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	10/18/2018		FAP NO:	SA00(029)	
STRUCT TYPE:	STEEL BOX GIRDER			# BIDS RECVD:	4		AWARDED TO:	WILDISH STANDARD PAVING CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay									
177.00	SQYD	CLASS 2 PREPARATION		0.01	2	88.34	15,636	265.00	0.01
333.30	CUYD	FURNISH PREMIXED POLYMER CONCRETE		2,300.00	766,590	2,358.33	786,032	2,500.00	2,275.00
12,000.00	SQYD	CONSTRUCT PPC OVERLAY		35.00	420,000	28.67	344,000	35.00	21.00
Additional Items									
1,760.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT		85.23	150,000	76.70	135,000	113.64	31.25



BRIDGE NAME:	Hwy 61 NB over City Streets	BRIDGE NO:	09268N	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				1,092,700		1,229,400		
PERCENT MOBILIZATION			11.10	121,300	11.10	136,500		
TOTAL				1,214,000		1,365,900		

Deck Overlay

136080.00	SF	Deck Overlay Roadway Area Unit Costs	12.21		11.82			
SUBTOTAL				1,495,200		1,448,300		
PERCENT MOBILIZATION			11.10	166,000	11.10	160,800		
TOTAL				1,661,200		1,609,100		

DETAILS

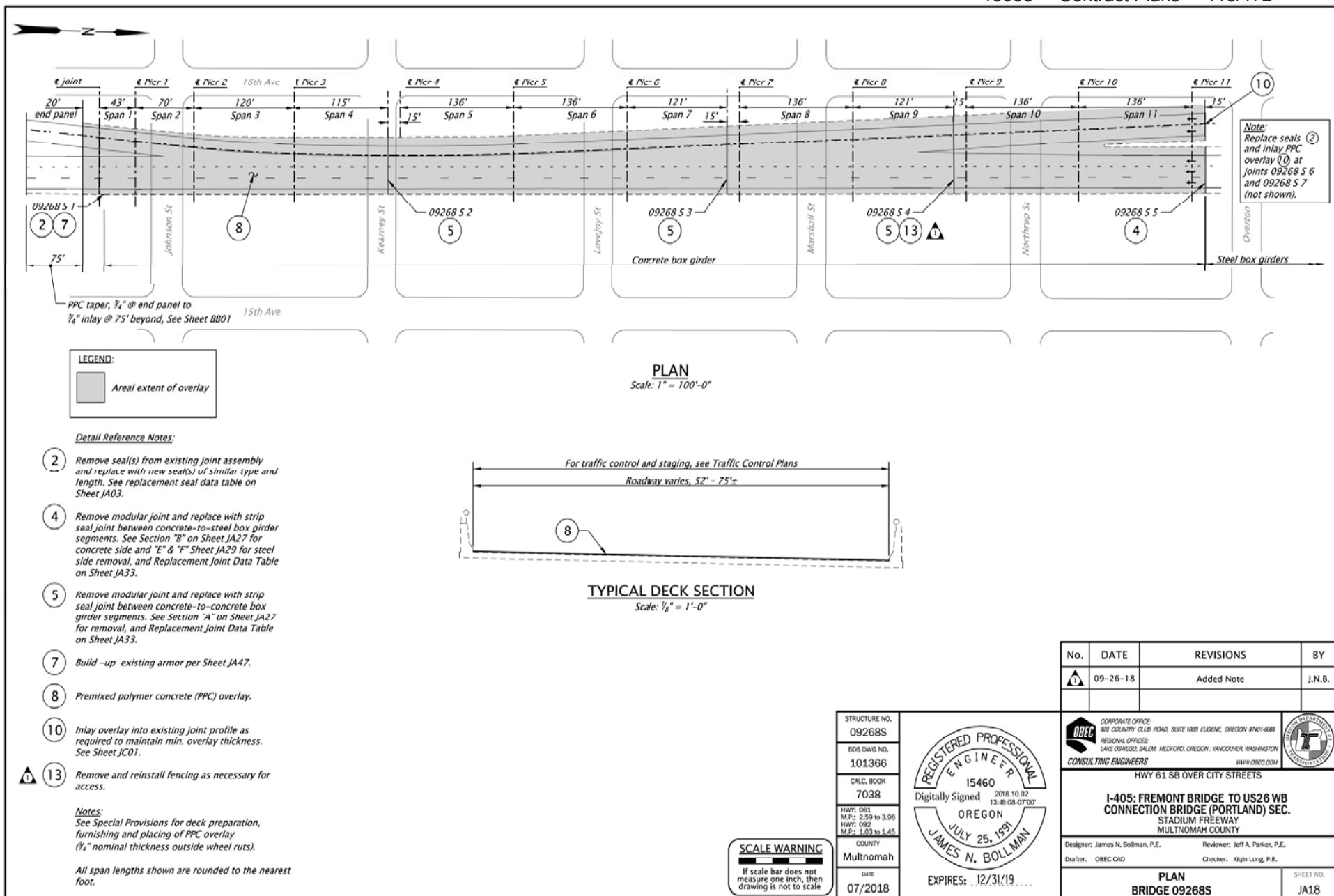
Modular Joint and Seal Replacement

433.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	50.00	21,650	36.85	15,955	50.00	25.54
11,240.00	LB	REINFORCEMENT	1.42	16,000	3.97	44,667	6.23	1.42
255.00	FOOT	STRIP SEALS	1,039.22	265,000	1,261.44	321,667	1,470.59	1,039.22
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	12,500.00	12,500	22,000.00	3,000.00
1.00	LS	COATING APPLICATION	6,000.00	6,000	10,000.00	10,000	18,000.00	6,000.00
1.00	LS	COATING MATERIALS	2,000.00	2,000	1,950.00	1,950	3,350.00	500.00
1.00	LS	BIRD DETERRENT DEVICES	70,000.00	70,000	89,333.33	89,333	100,000.00	70,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES	330,000.00	330,000	248,666.67	248,667	330,000.00	165,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS	75,000.00	75,000	86,666.67	86,667	110,000.00	75,000.00
134.00	FOOT	BUILT-UP ARMOR	223.88	30,000	216.42	29,000	223.88	201.49
162.00	FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS	123.46	20,000	127.57	20,667	135.80	123.46
52.00	FOOT	MODULAR BRIDGE JOINT SYSTEMS, 2 SEAL	2,211.54	115,000	2,698.72	140,333	3,000.00	2,211.54
66.00	FOOT	TENSION/COMPRESSION SEAL	60.61	4,000	145.76	9,620	257.58	60.61
70.00	CUYD	PCC REPAIR MATERIAL	1,928.57	135,000	2,833.33	198,333	4,642.86	1,928.57

Bridge Deck Overlay

202.00	SQYD	CLASS 2 PREPARATION	0.01	2	83.34	16,835	250.00	0.01
420.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	966,000	2,358.33	990,500	2,500.00	2,275.00
15,120.00	SQYD	CONSTRUCT PPC OVERLAY	35.00	529,200	29.17	441,000	35.00	25.00

BRIDGE NAME:	Hwy 61 NB over City Streets			BRIDGE NO:	09268N		KEY NO:	19533	
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE			COUNTY:	Multnomah		CONTR #	15098	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	10/18/2018		FAP NO:	SA00(029)	
STRUCT TYPE:	STEEL BOX GIRDER			# BIDS RECVD:	4		AWARDED TO:	WILDISH STANDARD PAVING CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Additional Items									
1,120.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT		102.68	115,000	122.02	136,667	223.21	40.18
40.00	FOOT	REMOVING AND REBUILDING FENCE		0.01	0.4	55.00	2,200	153.00	0.01



BRIDGE NAME:	Hwy 61 SB over City Streets	BRIDGE NO:	092685	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				976,200		1,033,100		
PERCENT MOBILIZATION			11.10	108,400	11.10	114,700		
TOTAL				1,084,600		1,147,800		

Deck Overlay

102150.00	SF	Deck Overlay Roadway Area Unit Costs	12.20		11.85			
SUBTOTAL				1,121,800		1,089,700		
PERCENT MOBILIZATION			11.10	124,600	11.10	121,000		
TOTAL				1,246,400		1,210,700		

DETAILS

Modular Joint and Seal Replacement

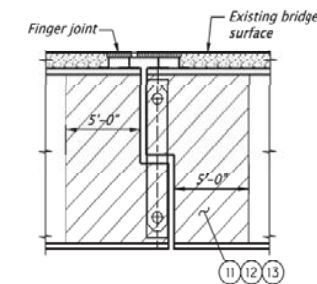
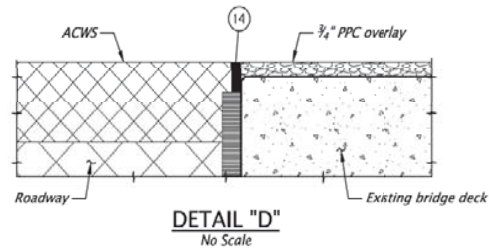
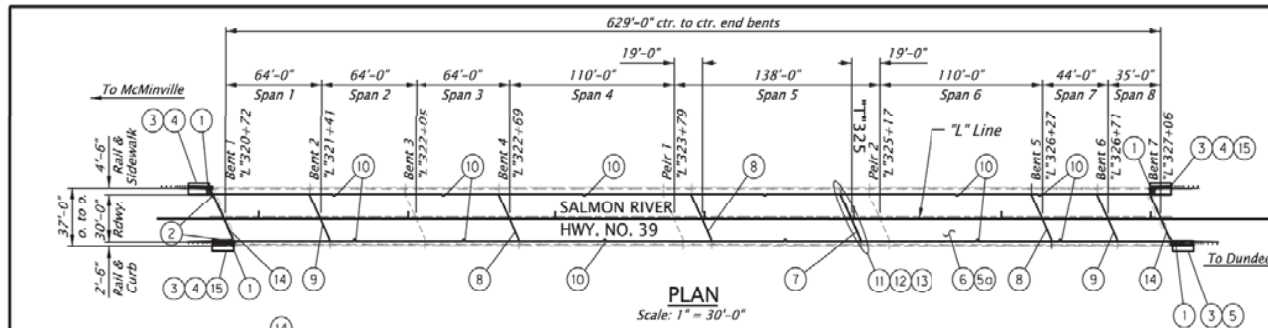
1,306.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	40.00	52,240	38.07	49,715	50.00	24.20
8,670.00	LB	REINFORCEMENT	1.61	14,000	3.69	32,033	5.77	1.61
279.00	FOOT	STRIP SEALS	1,075.27	300,000	1,326.17	370,000	1,648.75	1,075.27
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	8,666.67	8,667	17,500.00	3,000.00
1.00	LS	COATING APPLICATION	6,000.00	6,000	7,500.00	7,500	14,500.00	2,000.00
1.00	LS	COATING MATERIALS	2,000.00	2,000	1,883.33	1,883	3,400.00	250.00
1.00	LS	BIRD DETERRENT DEVICES	65,000.00	65,000	71,300.00	71,300	85,000.00	63,900.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES	35,000.00	350,000	263,333.33	263,333	350,000.00	180,000.00
156.00	FOOT	BUILT-UP ARMOR	224.36	35,000	210.26	32,800	256.41	150.00
327.00	FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS	107.03	34,999	98.57	32,233	122.32	66.36
80.00	FOOT	TENSION/COMPRESSION SEAL	50.00	4,000	139.67	11,173	250.00	50.00
55.00	CUYD	PCC REPAIR MATERIAL	2,000.00	110,000	2,772.73	152,500	4,545.46	1,772.73

Bridge Deck Overlay

76.00	SQYD	CLASS 2 PREPARATION	0.01	0.76	83.34	6,334	250.00	0.01
315.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	724,500	2,358.33	742,875	2,500.00	2,275.00
11,350.00	SQYD	CONSTRUCT PPC OVERLAY	35.00	397,250	30.00	340,500	35.00	25.00

Additional Items

640.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	117.19	75,000	187.50	120,000	390.63	54.69
120.00	FOOT	REMOVING AND REBUILDING FENCE	0.01	1.2	55.00	6,600	153.00	0.01



GENERAL NOTES:

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018.

Provide all reinforcing steel according to ASTM Specification A706 or AASHTO M31 (ASTM A615) Grade 60.

Place bars 2" clear of the nearest face of concrete unless specified otherwise.

Provide the following reinforcing splice length:

#4 - 1'-9"

#5 - 2'-2"

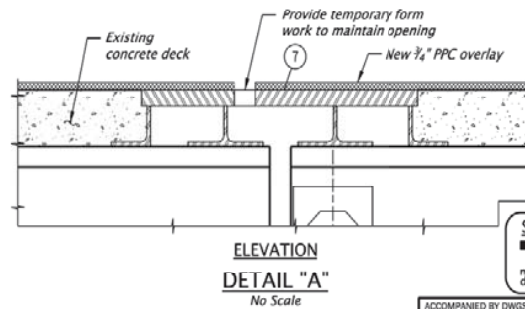
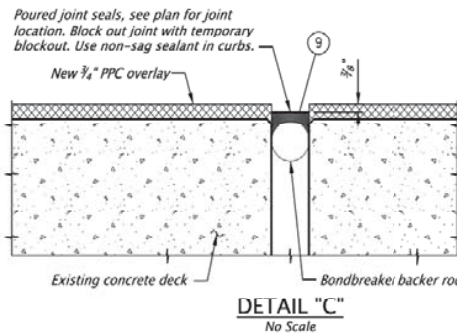
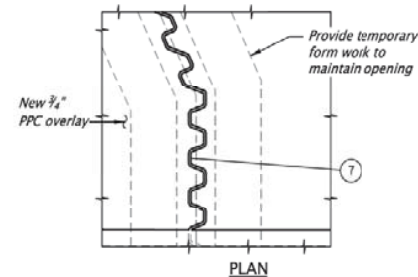
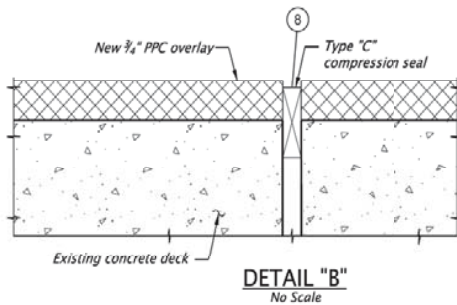
Provide Class 3300 - 1 1/2, 1 or 3/4 concrete for all concrete.

Field verify dimensions before fabrication.

BRIDGE ID MARKER TABLE

Phone Number (Agency Dispatch Center)	503-362-0457
Route (RTE)	OR18
Highway No. (HWY)	39
Milepoint (MP)	51.57
Bridge No. (BR)	08003
Structure Name	Yamhill River, Hwy. 39 (Dayton)

See dwg. BR195 for details.



ACCOMPANIED BY DWGS:
BR195, BR203, BR208, BR220, BR270

STRUCTURE NO. 08003	
BOS DWG NO. 101311	
CALC. BOOK 7032	
HWY: 39 M.P.: 51.57	
COUNTY Yamhill	RENEW: 12-31-2018
DATE July 2018	

OREGON DEPARTMENT OF TRANSPORTATION

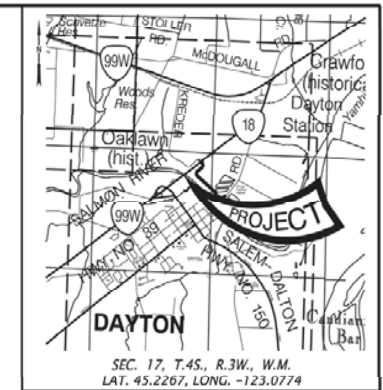
Yamhill River Hwy 39 (Dayton)
OR18: ASH ROAD -
MCDUGALL JUNCTION SEC.
SALMON RIVER HIGHWAY
YAMHILL COUNTY

Designer: Mark Lusby
Checker: Michael Sherrin

Reviewer: George Bornstedt
Checker: Clayton Darvey

PLAN AND DETAILS

SHEET NO.
JB01



- Remove ends of sidewalk/curb and rail (all corners) as shown on shts. JB02 to JB05.
- Remove existing catch basin.
- Construct moment slabs. See shts. JB02-JB06 for details.
- Install new bridge rail transition, see dwg. BR220 for details.
- Install new bridge rail transition, see dwg. BR270.
- Remove 0" - 1" of existing ACWS
- Construct 3/4" PPC Overlay.
- Overlay finger joint while maintaining opening, see Detail "A". Field verify dimensions of finger joint.
- Construct new expansion joint after overlay, see Detail "B".
- Construct new poured sealant joint after overlay, see Detail "C".
- Maintain existing deck drains.
- Prepare steel surfaces around the pin & hanger assembly of each girder.
- Remove pack rust.
- Apply paint coating around the pin & hanger assembly of each girder.
- Saw cut 1/2" x 1 1/2" deep through ACWS and Fill with traffic loop sealant, see Detail "D".
- Install Bridge ID Markers, see Bridge ID Marker Table and BR195.

BRIDGE NAME:	Yamhill River, Hwy 39 (Dayton)	BRIDGE NO:	08003	KEY NO:	18567
SECTION NAME:	OR18: ASH ROAD - MCDOUGALL JUNCTION SEC.	COUNTY:	Yamhill	CONTR #	15113
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/25/2018	FAP NO:	S039(050)
STRUCT TYPE:	STEEL DECK GIRDER	# BIDS RECVD:	2	AWARDED TO:	ROY HOUCK CONSTRUCTION LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				144,400		193,200		
PERCENT MOBILIZATION			7.99	11,500	9.60	18,500		
TOTAL				155,900		211,700		

Deck Overlay

18900.00	SF	Deck Overlay Roadway Area Unit Costs	12.67		12.89			
SUBTOTAL				221,800		222,400		
PERCENT MOBILIZATION			7.99	17,700	9.60	21,300		
TOTAL				239,500		243,700		

DETAILS

Moment Slabs, Expansion Joints Repair, Coating Steel Surface Around Pin & Hanger

62.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	32.00	1,984	22.25	1,380	32.00	12.50
50.00	CUYD	STRUCTURE EXCAVATION	80.00	4,000	90.00	4,500	100.00	80.00
20.00	CUYD	GRANULAR STRUCTURE BACKFILL	240.75	4,815	207.88	4,158	240.75	175.00
5,850.00	LB	REINFORCEMENT	2.70	15,795	3.05	17,842	3.40	2.70
50.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	1,390.00	69,500	1,445.00	72,250	1,500.00	1,390.00
1.00	LS	CRACK SEALANT REMOVAL	1,690.00	1,690	1,714.10	1,714	1,738.20	1,690.00
76.00	FOOT	POURED SEALS	45.39	3,450	45.93	3,491	46.47	45.39
114.00	FOOT	TYPE "C" COMPRESSION SEALS	72.98	8,320	74.01	8,437	75.04	72.98
1.00	LS	SURFACE PREPARATION	8,025.00	8,025	16,512.50	16,512	25,000.00	8,025.00
1.00	LS	COATING APPLICATION	10,700.00	10,700	40,350.00	40,350	70,000.00	10,700.00
1.00	LS	COATING MATERIALS	10,700.00	10,700	13,225.00	13,225	15,750.00	10,700.00
50.00	FOOT	PACK RUST REMOVAL	100.00	5,000	187.50	9,375	275.00	100.00

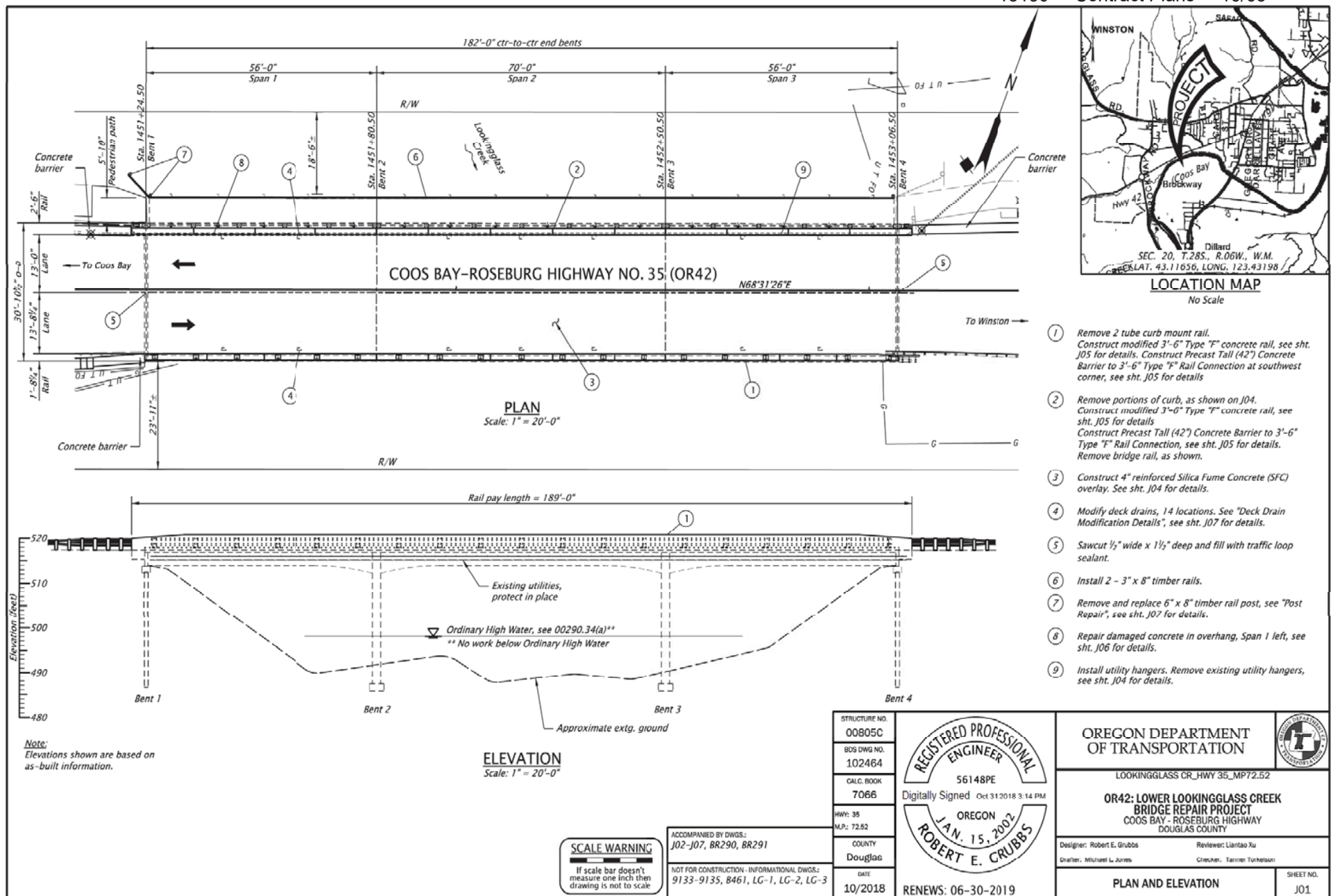
Bridge Deck Overlay

50.00	SQYD	CLASS 2 PREPARATION	250.00	12,500	253.65	12,682	257.29	250.00
44.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	3,015.00	132,660	3,107.50	136,730	3,200.00	3,015.00
2,100.00	SQYD	CONSTRUCT PPC OVERLAY	36.50	76,650	34.75	72,975	36.50	33.00

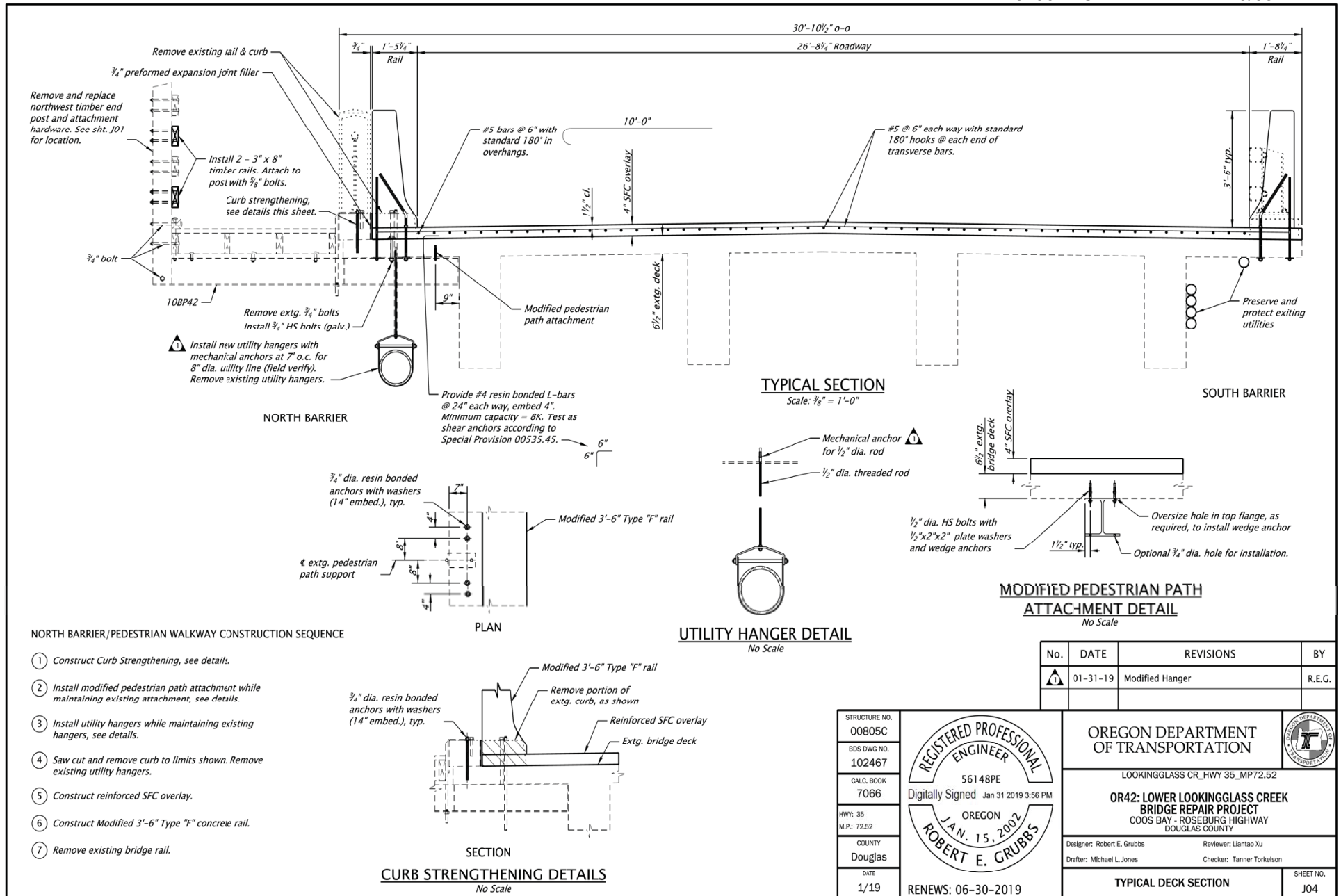
BRIDGE NAME:	Yamhill River, Hwy 39 (Dayton)	BRIDGE NO:	08003	KEY NO:	18567
SECTION NAME:	OR18: ASH ROAD - MCDOUGALL JUNCTION SEC.	COUNTY:	Yamhill	CONTR #	15113
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/25/2018	FAP NO:	S039(050)
STRUCT TYPE:	STEEL DECK GIRDER	# BIDS RECVD:	2	AWARDED TO:	ROY HOUCK CONSTRUCTION LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Additional Items								
800.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	33.44	26,750	55.47	44,375	77.50	33.44
42.00	SQFT	BRIDGE REMOVAL WORK	380.95	16,000	452.38	19,000	523.81	380.95
2.00	EACH	EXTRA FOR CURB RAMPS ON STRUCTURES	1,600.00	3,200	1,550.00	3,100	1,600.00	1,500.00
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	160.00	320	160.00	320	160.00	160.00
4.00	EACH	GURADRAIL TRANSITION	4,250.00	17,000	3,575.00	14,300	4,250.00	2,900.00



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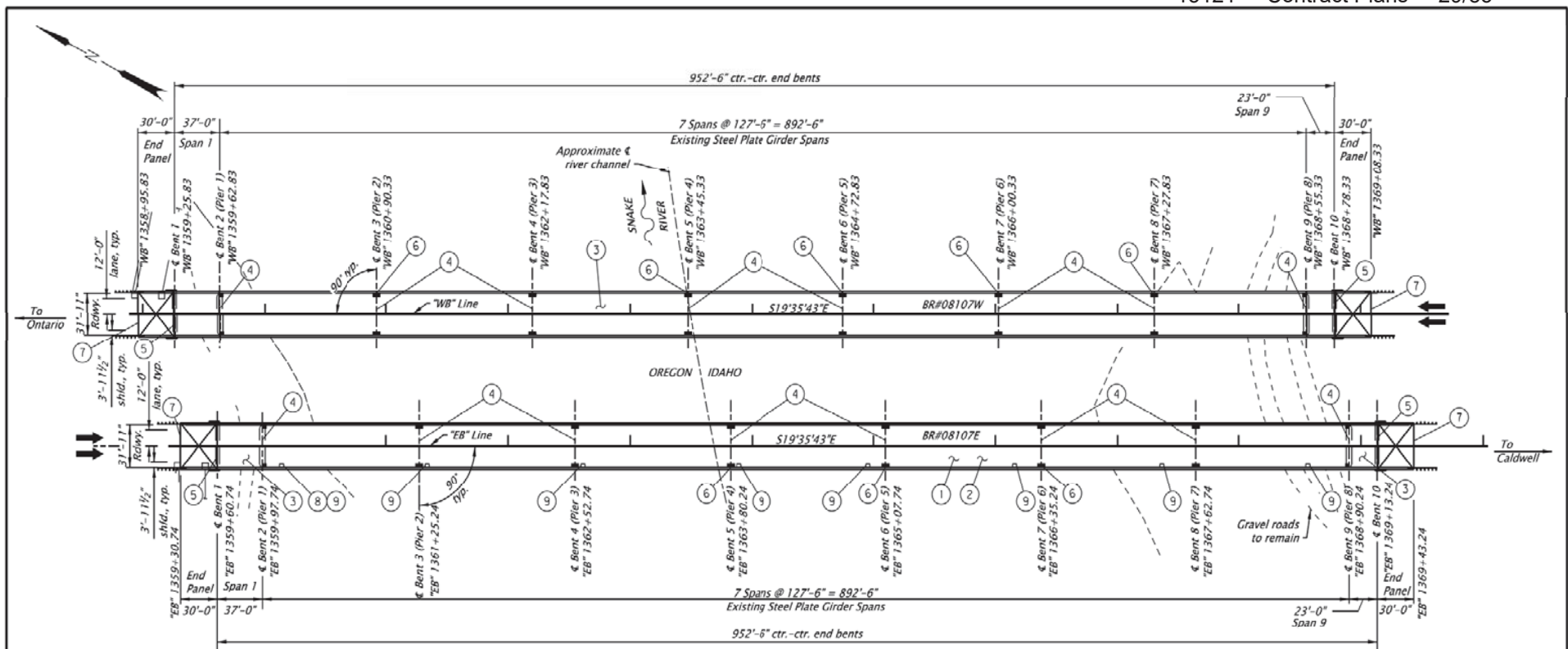
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FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotation: 0° Scale: 3/8" = 1'-0"

BRIDGE NAME:	Lower Lookingglass Creek, Hwy 35			BRIDGE NO:	00805C		KEY NO:	18586	
SECTION NAME:	OR42: LOWER LOOKINGGLASS CREEK BRIDGE REPAIR PROJECT			COUNTY:	Douglas		CONTR #	15130	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	02/07/2019		FAP NO:	S035(069)	
STRUCT TYPE:	RC DECK GIRDER-CIP			# BIDS RECVD:	10		AWARDED TO:	OREGON STATE BRIDGE	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Repair									
SUBTOTAL					102,200		101,900		
PERCENT MOBILIZATION				11.10	11,300	10.44	10,600		
TOTAL					113,500		112,500		
Rail Replacement									
378.00	LF	Linear Unit Cost		367.46		365.08			
SUBTOTAL					125,000		125,000		
PERCENT MOBILIZATION				11.10	13,900	10.44	13,000		
TOTAL					138,900		138,000		
Deck Overlay									
4878.00	SF	Deck Overlay Roadway Area Unit Costs		15.23		18.38			
SUBTOTAL					66,900		83,600		
PERCENT MOBILIZATION				11.10	7,400	10.44	8,700		
TOTAL					74,300		89,600		
DETAILS									
Bridge Repair									
26,555.00	LB	REINFORCEMENT		2.26	60,000	2.44	64,717	3.20	1.85
14.00	EACH	BRIDGE DRAINS		1,000.00	14,000	1,000.00	14,000	1,000.00	1,000.00
16.00	SQFT	REPAIR DAMAGED CONCRETE		310.00	4,960	303.33	4,853	450.00	150.00
0.75	MFBM	TIMBER AND LUMBER		4,357.00	3,268	7,119.00	5,339	10,000.00	4,357.00
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES		20,000.00	20,000	13,000.00	13,000	20,000.00	4,000.00
Rail Replacement									
378.00	FOOT	3'-6" TYPE "F" CONCRETE RAIL, MODIFIED		330.69	125,000	330.69	125,000	343.92	317.46
Bridge Deck SFC Overlay									
69.00	SQYD	CLASS 2 PREPARATION		163.00	11,247	332.67	22,954	485.00	163.00
66.00	CUYD	FURNISH SILICA FUME CONCRETE		191.00	12,606	223.67	14,762	300.00	180.00
542.00	SQYD	CONSTRUCT SFC RESURFACING		75.00	40,650	80.00	43,360	100.00	65.00
473.00	SQYD	SAW CUT TEXTURING		5.00	2,365	5.27	2,491	6.80	4.00

BRIDGE NAME:			Lower Lookingglass Creek, Hwy 35		BRIDGE NO:		00805C		KEY NO:		18586		
SECTION NAME:			OR42: LOWER LOOKINGGLASS CREEK BRIDGE REPAIR PROJECT		COUNTY:		Douglas		CONTR #		15130		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		02/07/2019		FAP NO:		S035(069)		
STRUCT TYPE:			RC DECK GIRDER-CIP		# BIDS RECVD:		10		AWARDED TO:		OREGON STATE BRIDGE		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT		AMT	UNIT		AMT	HIGH	LOW
Additional Items													
364.00		SQFT	BRIDGE REMOVAL WORK			137.36		50,000	96.15		35,000	137.36	68.68
1,092.00		LS	TEMPORARY WORK ACCESS AND CONTAINMENT			48.53		53,000	43.65		47,667	48.53	36.63

**CONSTRUCTION NOTES:**

- 1 Remove existing 2 1/2" PCC Overlay and remnant parapet curb - EB spans 2 thru 8, see Detail sht. J02.
- 2 Construct 2 1/2" nominal Silica Fume Overlay - EB spans 2 thru 8, see Detail sht. J02.
- 3 Construct 3/8" nom. Multilayer Polymer Concrete Overlay (MPCO) - all WB spans and EB spans 1 & 9. Remove existing bridge skip striping in accordance with SP00225.83 before constructing MPCO.
- 4 Remove and replace Type "E" compression joint seal, field verify joint width see std. dwg. BR139.
- 5 Remove and replace traffic loop sealant joint seals, see std. dwg. BR165.
- 6 Repair damaged concrete at bent cap, see Detail sht. J02. Locate and repair damaged concrete at all bent caps per SP0542, as required.
- 7 Sawcut joint and add loop sealant, see std. dwg. BR165.
- 8 Construct frame and adjust inlet $\pm 1 1/2$ ", see details sht. J03.
- 9 Install new grates, see details sht. J03 and std. dwg. RD365.

PLAN

Scale: 1"=80'-0"

GENERAL NOTES:

Provide all materials and perform all work according to the 2018 Oregon Standard Specifications for Construction and supplemental project Special Provisions.

Preserve and protect existing drains and joint armor.

No utility conflicts anticipated.

Removal of the existing PCC overlay by hydroblasting is not permitted.

OB107E Snake River Hwy 6EB
OB107W Snake River Hwy 6WB

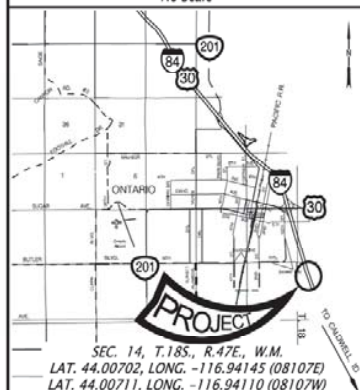
SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

ACCOMPANIED BY DWGS:
BR139, BR165, RD365

LOCATION MAP

No Scale



No.	DATE	REVISIONS	BY
1	11-13-18	Replace Sheet	M.D.J.

STRUCTURE NO.	See Above
BOS DWG NO.	101989
CALC. BOOK	6988
Hwy: 006	
MAP: 378.01	
COUNTY	Malheur
DATE	AUG 2018

**OREGON DEPARTMENT OF TRANSPORTATION**

VARIOUS STRUCTURES

I-84: SNAKE RIVER BRIDGES**DECK REPAIRS PROJECT**

OLD OREGON TRAIL HIGHWAY

MALHEUR COUNTY, OREGON & PAYETTE COUNTY, IDAHO

Designer: Michael D. Jacobson
& Tamarat Potisuk

Reviewer: George F. Bornstedt
Checker: Scott W. Hayes

PLAN

SHEET NO.
J01

BRIDGE NAME:	Snake River, Hwy 6 EB	BRIDGE NO:	08107E	KEY NO:	19660
SECTION NAME:	I-84: SNAKE RIVER BRIDGES DECK REPAIRS PROJECT	COUNTY:	Malheur	CONTR #	15121
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S006(157)
STRUCT TYPE:	STEEL PLATE GIRDER	# BIDS RECVD:	6	AWARDED TO:	FARLINE BRIDGE INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				164,400		126,400		
PERCENT MOBILIZATION			11.08	18,200	11.01	13,900		
TOTAL				182,600		140,300		

Deck Overlay - SFC

28485.90	SF	Deck Overlay Roadway Area Unit Costs	11.27		14.84			
SUBTOTAL				289,100		380,800		
PERCENT MOBILIZATION			11.08	32,000	11.01	41,900		
TOTAL				321,100		422,700		

Multi-Layer Polymer Concrete Overlay (MPCO)

1915.20	SF	MPCO Roadway Area Unit Costs	5.43		6.84			
SUBTOTAL				9,400		11,800		
PERCENT MOBILIZATION			11.08	1,000	11.01	1,300		
TOTAL				10,400		13,100		

DETAILS

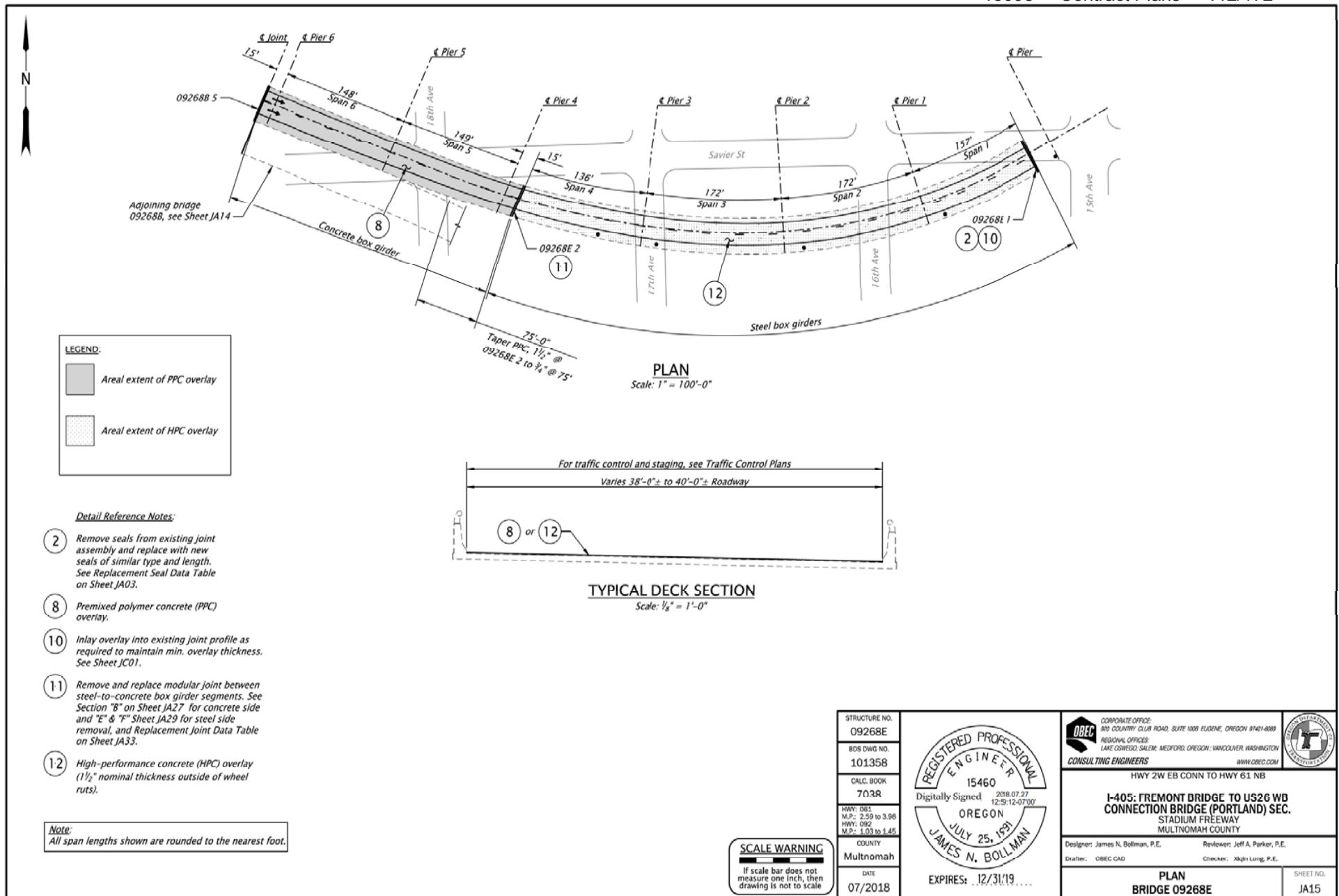
Bridge Repair

3,165.10	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2 1/2 INCHES DEEP	14.00	44,311	14.00	44,311	16.00	12.00
275.00	FOOT	TYPE "E" COMPRESSION SEALS	109.09	30,000	109.09	30,000	127.27	90.91
3.00	EACH	REPAIR DAMAGED REINFORCING BARS	1,000.00	3,000	613.33	1,840	1,000.00	375.00
1,250.00	SQFT	LOCATE DAMAGED CONCRETE	4.00	5,000	8.67	10,833	14.00	4.00
3.00	SQYD	REPAIR DAMAGED CONCRETE	1,000.00	3,000	1,966.67	5,900	2,700.00	1,000.00
0.80	SQYD	MORTAR BUILD-UP ON SHALLOW REBAR	2,000.00	1,600	2,066.67	1,653	2,950.00	1,250.00
1.00	SQYD	RESIN BUILDUP ON SHALLOW REBAR	1,000.00	1,000	1,600.00	1,600	2,550.00	1,000.00
1.00	EACH	DECK DRAIN FRAMES	1,500.00	1,500	1,275.83	1,276	2,000.00	327.49
8.00	EACH	DECK DRAIN GRATES	9,000.00	72,000	3,478.88	27,831	9,000.00	436.65
3.00	EACH	INSTALL ZINC ANODES	1,000.00	3,000	398.33	1,195	1,000.00	70.00

BRIDGE NAME:	Snake River, Hwy 6 EB	BRIDGE NO:	08107E	KEY NO:	19660
SECTION NAME:	I-84: SNAKE RIVER BRIDGES DECK REPAIRS PROJECT	COUNTY:	Malheur	CONTR #	15121
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S006(157)
STRUCT TYPE:	STEEL PLATE GIRDER	# BIDS RECVD:	6	AWARDED TO:	FARLINE BRIDGE INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay - SFC								
474.80	SQYD	CLASS 2 PREPARATION	86.15	40,904	179.55	85,250	400.00	52.50
219.80	CUYD	FURNISH SILICA FUME CONCRETE	300.00	65,940	323.33	71,069	345.00	300.00
3,165.10	SQYD	CONSTRUCT SFC RESURFACING	48.00	151,925	61.00	193,071	75.00	48.00
17.30	SQYD	CLASS 3 PREPARATION	1,000.00	17,300	810.00	14,013	1,000.00	430.00
2,900.70	SQYD	SAW CUT TEXTURING	4.50	13,053	6.00	17,414	9.01	4.50
MPCO								
1.00	SQYD	CLASS 2 PREPARATION	500.00	500	833.33	833	1,000.00	500.00
212.80	SQYD	FURNISH MPCO MATERIAL	21.01	4,471	20.67	4,399	21.01	20.00
212.80	SQYD	CONSTRUCT MPCO	21.01	4,471	30.67	6,527	50.00	21.01
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	75,000.00	75,000	60,000.00	60,000	100,000.00	5,000.00
338.60	SQFT	BRIDGE REMOVAL WORK	29.53	10,000	35.44	12,000	73.83	2.95



BRIDGE NAME:	Hwy 2W EB Conn to Hwy 61 NB	BRIDGE NO:	09268E	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Joint Repair

SUBTOTAL				223,300		277,700		
PERCENT MOBILIZATION			11.10	24,800	11.10	30,800		
TOTAL				258,100		308,500		

Deck Overlay (PPC)

12753.00	SF	Deck Overlay Roadway Area Unit Costs	12.73		21.49			
SUBTOTAL				146,200		246,600		
PERCENT MOBILIZATION			11.10	16,200	11.10	27,400		
TOTAL				162,400		274,000		

Deck Overlay (HPC)

24840.00	SF	Deck Overlay Roadway Area Unit Costs	15.38		14.50			
SUBTOTAL				343,900		324,200		
PERCENT MOBILIZATION			11.10	38,200	11.10	36,000		
TOTAL				382,100		360,200		

DETAILS

Modular Joint and Seal Replacement

667.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	35.00	23,345	29.67	19,788	35.00	24.00
1,560.00	LB	REINFORCEMENT	2.56	3,994	5.34	8,331	8.01	2.56
1.00	LS	SURFACE PREPARATION	3,000.00	3,000	22,000.00	22,000	58,000.00	3,000.00
1.00	LS	COATING APPLICATION	6,000.00	6,000	3,700.00	3,700	6,000.00	1,500.00
1.00	LS	COATING MATERIALS	2,000.00	2,000	1,116.67	1,117	2,000.00	500.00
1.00	LS	BIRD DETERRENT DEVICES	15,000.00	15,000	17,833.33	17,833	23,500.00	15,000.00
1.00	LS	REMOVAL OF EXISTING JOINT SURFACES FOR MBJS	50,000.00	50,000	68,166.67	68,167	84,500.00	50,000.00
126.00	FOOT	MODULAR BRIDGE JOINT GLAND REPLACEMENTS	119.05	15,000	95.79	12,070	119.05	61.19
38.00	FOOT	MODULAR BRIDGE JOINT SYSTEMS, 2 SEAL	2,105.26	80,000	2,526.31	96,000	2,763.16	2,105.26
10.00	CUYD	PCC REPAIR MATERIAL	2,500.00	25,000	2,866.67	28,667	4,000.00	2,100.00

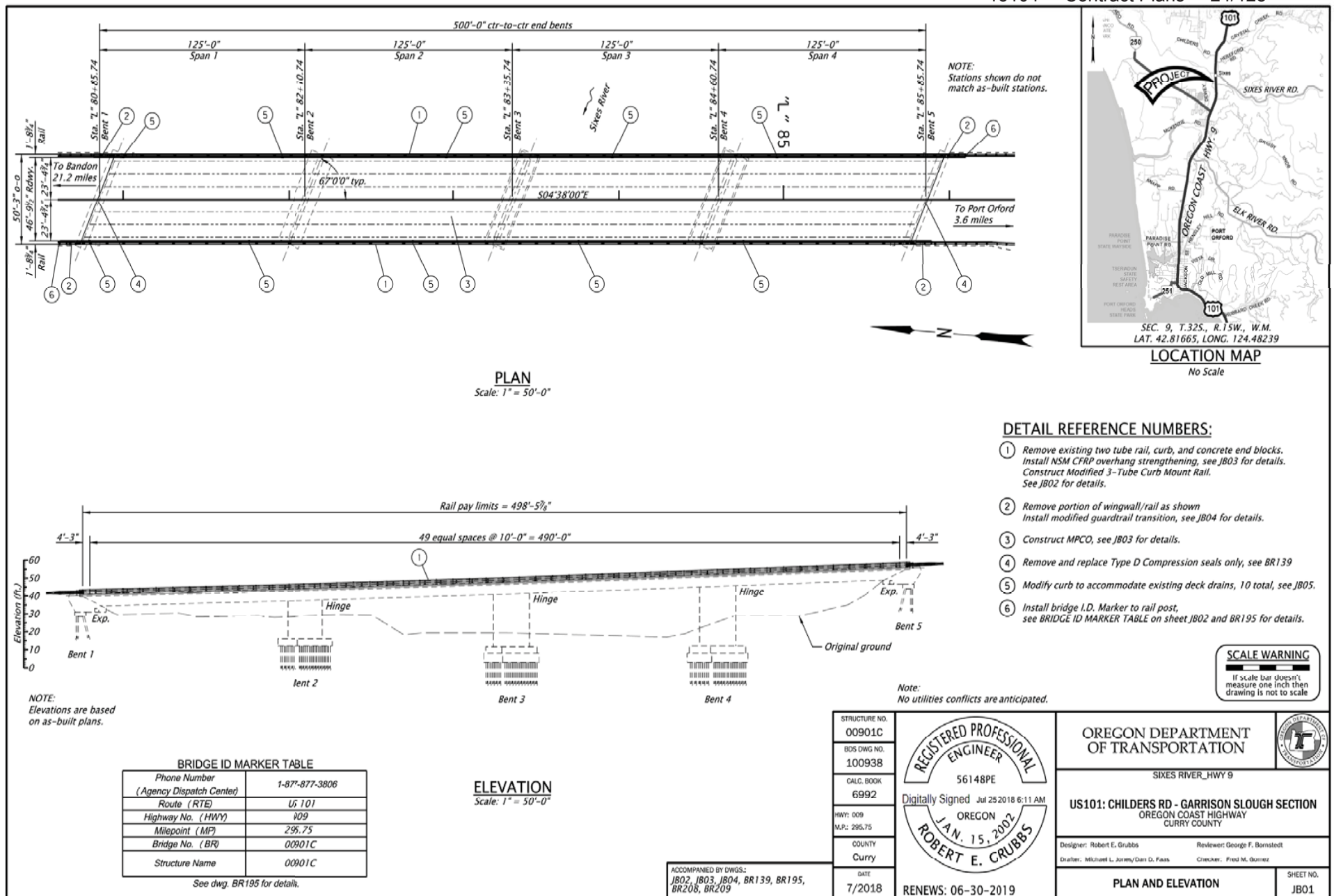
PPC Bridge Deck Overlay

1,715.00	SQYD	CLASS 2 PREPARATION	0.01	17	58.34	100,053	175.00	0.01
42.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	2,300.00	96,600	2,441.67	102,550	2,750.00	2,275.00
1,417.00	SQYD	CONSTRUCT PPC OVERLAY	35.00	49,595	31.03	43,974	35.00	26.10

BRIDGE NAME:	Hwy 2W EB Conn to Hwy 61 NB	BRIDGE NO:	09268E	KEY NO:	19533
SECTION NAME:	I-405: FREMONT BRIDGE TO US26 WB CONNECTION BRIDGE	COUNTY:	Multnomah	CONTR #	15098
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/18/2018	FAP NO:	SA00(029)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	4	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
HPC Bridge Deck Overlay								
115.00	CUYD	FURNISH HIGH PERFORMANCE CONCRETE	350.00	40,250	858.33	98,708	1,750.00	350.00
2,760.00	SQYD	CONSTRUCT HPC RESURFACING	100.00	276,000	77.17	212,980	100.00	51.50
2,760.00	SQYD	CONCRETE DECK FINISHING	10.00	27,600	4.53	12,512	10.00	1.60
Additional Items								
640.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	101.56	65,000	95.05	60,833	156.25	27.34



BRIDGE NAME:	Sixes River, Hwy 9	BRIDGE NO:	00901C	KEY NO:	18870
SECTION NAME:	US101: CHILDERS RD - GARRISON SLOUGH SECTION	COUNTY:	Curry	CONTR #	15104
PRIMARY PROJ:	Rail Replace	BID DATE:	10/11/2018	FAP NO:	S009(471)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-BULB T 65 IN	# BIDS RECVD:	2	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

997.00	LF	Linear Unit Cost	292.08		326.58			
SUBTOTAL				277,000		301,000		
PERCENT MOBILIZATION			5.11	14,200	8.19	24,600		
TOTAL				291,200		325,600		

Miscellaneous Project - Deck Overhang Strengthening, Joint Repair

SUBTOTAL				126,800		130,400		
PERCENT MOBILIZATION			5.11	6,500	8.19	10,700		
TOTAL				133,300		141,100		

Multi-Layer Polymer Concrete Overlay (MPCO)

23400.00	SF	MPCO Roadway Area Unit Costs	4.63		4.24			
SUBTOTAL				103,000		91,800		
PERCENT MOBILIZATION			5.11	5,300	8.19	7,500		
TOTAL				108,300		99,300		

DETAILS

Rail Replacement								
997.00	FOOT	3 TUBE STEEL RAIL, MODIFIED, CURB MOUNTED	277.83	277,000	301.91	301,000	325.98	277.83
Deck Overhang Strengthening, Joint Repair								
208.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	21.50	4,472	22.00	4,576	22.50	21.50
3,725.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	29.80	111,000	31.01	115,500	32.21	29.80
109.00	FOOT	TYPE "D" COMPRESSION SEALS	101.83	11,100	92.20	10,050	101.83	82.57
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	135.00	270	137.50	275	140.00	135.00
MPCO								
26.00	SQYD	CLASS 2 PREPARATION	500.00	13,000	250.01	6,500	500.00	0.01
2,600.00	SQYD	FURNISH MPCO MATERIAL	17.30	44,980	16.40	42,640	17.30	15.50
2,600.00	SQYD	CONSTRUCT MPCO	17.30	44,980	16.40	42,640	17.30	15.50

BRIDGE NAME:			Sixes River, Hwy 9		BRIDGE NO:		00901C		KEY NO:		18870		
SECTION NAME:			US101: CHILDERS RD - GARRISON SLOUGH SECTION		COUNTY:		Curry		CONTR #		15104		
PRIMARY PROJ:			Rail Replace		BID DATE:		10/11/2018		FAP NO:		S009(471)		
STRUCT TYPE:			RC DECK GIRDER-PRECAST-BULB T 65 IN		# BIDS RECVD:		2		AWARDED TO:		LTM INC		
										PREPARED BY:			
					CONTRACT			2 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Additional Items													
6,000.00		SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT			0.92	5,500		15.79	94,750		30.67	0.92
1,110.00		SQFT	BRIDGE REMOVAL WORK			100.00	111,000		95.05	105,500		100.00	90.09
4.00		EACH	GUARDRAIL TRANSITION			3,250.00	13,000		3,250.00	13,000		3,250.00	3,250.00

BRIDGE NAME:	Little Butte Creek, Hwy 270	BRIDGE NO:	09777	KEY NO:	19961
SECTION NAME:	OR140/OR238: BRIDGE & CULVERT RAIL UPGRADES PROJECT	COUNTY:	Jackson	CONTR #	15106
PRIMARY PROJ:	Rail Replacement	BID DATE:	10/11/2018	FAP NO:	STP - SA00(057)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE V	# BIDS RECVD:	6	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail Replacement

643.00	LF	Linear Unit Cost	367.03		287.25			
SUBTOTAL				212,300		164,900		
PERCENT MOBILIZATION			11.14	23,700	12.00	19,800		
TOTAL				236,000		184,700		

Miscellaneous Project - Deck Overhang Strengthening

SUBTOTAL				221,300		162,500		
PERCENT MOBILIZATION			11.14	24,700	12.00	19,500		
TOTAL				246,000		182,000		

Multi-Layer Polymer Concrete Overlay (MPCO)

16110.00	SF	MPCO Roadway Area Unit Costs	4.54		5.58			
SUBTOTAL				65,900		80,300		
PERCENT MOBILIZATION			11.14	7,300	12.00	9,600		
TOTAL				73,200		89,900		

DETAILS

Rail Replacement

643.00	FOOT	3 TUBE STEEL RAIL, MODIFIED	329.70	212,000	256.09	164,667	329.70	174.18
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	160.00	320	133.33	267	160.00	90.00

Deck Overhang Strengthening, End Block Replacement

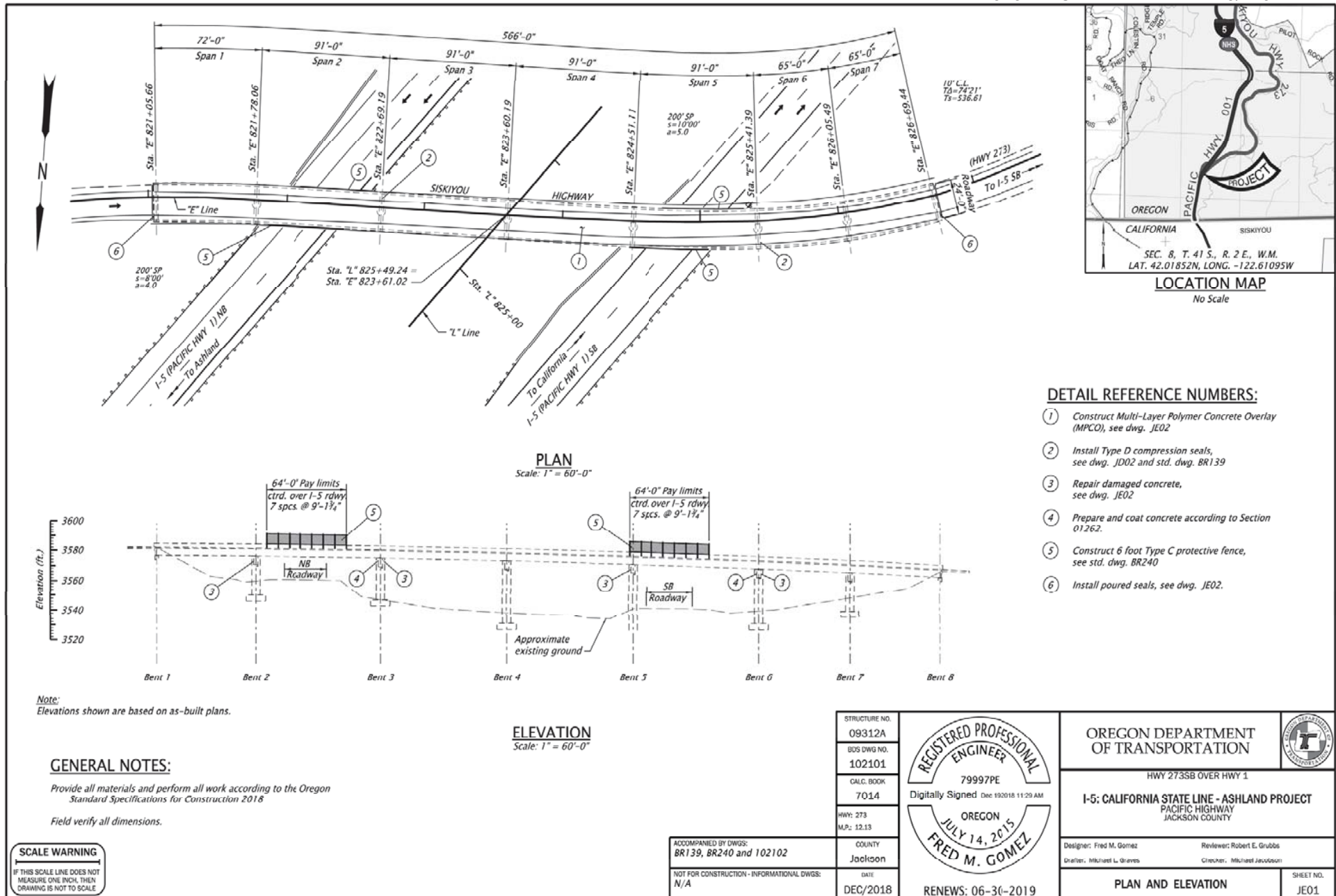
13.00	CUYD	STRUCTURE EXCAVATION	376.92	4,900	869.23	11,300	2,000.00	230.77
6,761.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	28.99	196,000	19.13	129,333	28.99	3.25
48.00	FOOT	END BLOCK, MODIFIED	425.00	20,400	456.00	21,888	700.00	243.00

MPCO

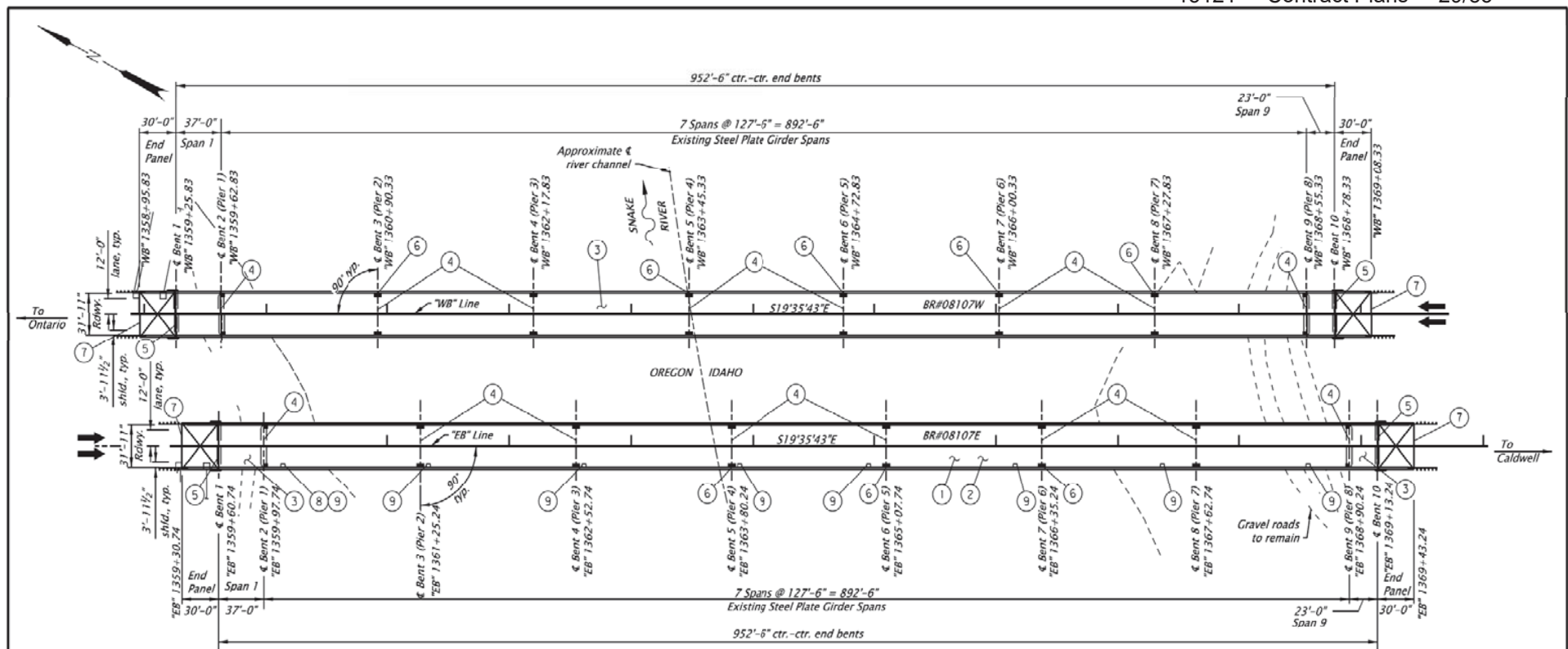
18.00	SQYD	CLASS 2 PREPARATION	480.00	8,640	716.67	12,900	1,200.00	470.00
1,790.00	FOOT	FURNISH MPCO MATERIAL	16.00	28,640	17.00	30,430	18.00	16.00
1,790.00	SQYD	CONSTRUCT MPCO	16.00	28,640	20.67	36,993	28.00	16.00

Additional Items

2,571.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	0.39	1,000	8.43	21,667	15.95	0.39
643.00	FOOT	BRIDGE REMOVAL WORK	44.79	28,800	52.26	33,600	65.32	44.79
4.00	EACH	GUARDRAIL TRANSITION	1,900.00	7,600	2,596.67	10,387	4,000.00	1,890.00



BRIDGE NAME:	Hwy 273 over Hwy 1			BRIDGE NO:	09312A		KEY NO:	18873	
SECTION NAME:	I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT			COUNTY:	Jackson		CONTR #	15134	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	04/18/2019		FAP NO:	S001(475)	
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE IV			# BIDS RECVD:	5		AWARDED TO:	CARTER & COMPANY INC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Repair									
SUBTOTAL					44,400		43,300		
PERCENT MOBILIZATION				11.10	4,900	11.10	4,800		
TOTAL					49,300		48,100		
Multi-Layer Polymer Concrete Overlay (MPCO)									
13581.00	SF	MPCO Roadway Area Unit Costs		5.43		6.27			
SUBTOTAL					66,300		76,700		
PERCENT MOBILIZATION				11.10	7,400	11.10	8,500		
TOTAL					73,700		85,200		
Protective_Fencing									
256.00	LF	Linear Unit Cost		366.80		400.00			
SUBTOTAL					84,500		92,200		
PERCENT MOBILIZATION				11.10	9,400	11.10	10,200		
TOTAL					93,900		102,400		
DETAILS									
Joint Seal and Concrete Repair									
54.00	FOOT	POURED SEALS		27.78	1,500	35.49	1,917	41.67	27.78
54.00	FOOT	TYPE "D" COMPRESSION SEALS		79.63	4,300	88.27	4,767	111.11	74.07
50.00	EACH	GALVANIC ZINC ANODES		65.00	3,250	70.00	3,500	75.00	65.00
1,020.00	SQFT	PREPARE AND COAT CONCRETE STRUCTURES		15.69	16,000	11.76	12,000	15.69	4.90
84.00	SQFT	REPAIR DAMAGED CONCRETE		230.00	19,320	251.67	21,140	325.00	200.00
MPCO									
30.00	SQYD	CLASS 2 PREPARATION		500.00	15,000	393.33	11,800	500.00	330.00
1,509.00	SQYD	FURNISH MPCO MATERIAL		21.00	31,689	22.83	34,456	30.00	17.50
1,509.00	SQYD	CONSTRUCT MPCO		13.00	19,617	20.17	30,432	30.00	13.00
Protective Fencing									
256.00	FOOT	6 FOOT TYPE C PROTECTIVE FENCE		330.00	84,480	360.00	92,160	400.00	330.00
Additional Items									
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT		20,000.00	20,000	18,333.33	18,333	27,000.00	8,000.00

**CONSTRUCTION NOTES:**

- 1 Remove existing 2 1/2" PCC Overlay and remnant parapet curb - EB spans 2 thru 8, see Detail sht. J02.
- 2 Construct 2 1/2" nominal Silica Fume Overlay - EB spans 2 thru 8, see Detail sht. J02.
- 3 Construct 3/8" nom. Multilayer Polymer Concrete Overlay (MPCO) - all WB spans and EB spans 1 & 9. Remove existing bridge skip striping in accordance with SP00225.83 before constructing MPCO.
- 4 Remove and replace Type "E" compression joint seal, field verify joint width see std. dwg. BR139.
- 5 Remove and replace traffic loop sealant joint seals, see std. dwg. BR165.
- 6 Repair damaged concrete at bent cap, see Detail sht. J02. Locate and repair damaged concrete at all bent caps per SP0542, as required.
- 7 Sawcut joint and add loop sealant, see std. dwg. BR165.
- 8 Construct frame and adjust inlet $\pm 1/2$ ", see details sht. J03.
- 9 Install new grates, see details sht. J03 and std. dwg. RD365.

PLAN

Scale: 1"=80'-0"

GENERAL NOTES:

Provide all materials and perform all work according to the 2018 Oregon Standard Specifications for Construction and supplemental project Special Provisions.

Preserve and protect existing drains and joint armor.

No utility conflicts anticipated.

Removal of the existing PCC overlay by hydroblasting is not permitted.

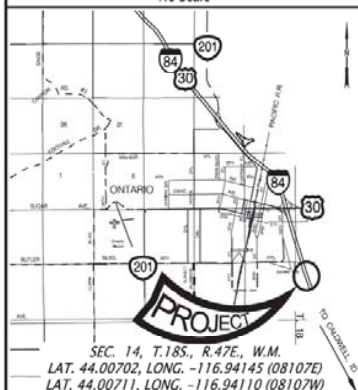
SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

ACCOMPANIED BY DWGS:
BR139, BR165, RD365

LOCATION MAP

No Scale



SEC. 14, T.18S., R.47E., W.M.
LAT. 44.00702, LONG. -116.94145 (08107E)
LAT. 44.00711, LONG. -116.94110 (08107W)

No.	DATE	REVISIONS	BY
1	11-13-18	Replace Sheet	M.D.J.

STRUCTURE NO.	See Above
BOS DWG NO.	101989
CALC. BOOK	6988
HWY. 006	
MAP: 378.01	
COUNTY	Malheur
DATE	AUG 2018

**OREGON DEPARTMENT OF TRANSPORTATION**

VARIOUS STRUCTURES

I-84: SNAKE RIVER BRIDGES**DECK REPAIRS PROJECT**

OLD OREGON TRAIL HIGHWAY

MALHEUR COUNTY, OREGON & PAYETTE COUNTY, IDAHO

Designer: Michael D. Jacobson
& Tenant Potluk
Drafter: Michael D. Jacobson

Reviewer: George F. Bornstedt
Checker: Scott W. Hayes

PLAN

SHEET NO.
J01

BRIDGE NAME:	Snake River, Hwy 6 EB	BRIDGE NO:	08107E	KEY NO:	19660
SECTION NAME:	I-84: SNAKE RIVER BRIDGES DECK REPAIRS PROJECT	COUNTY:	Malheur	CONTR #	15121
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S006(157)
STRUCT TYPE:	STEEL PLATE GIRDER	# BIDS RECVD:	6	AWARDED TO:	FARLINE BRIDGE INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				164,400		126,400		
PERCENT MOBILIZATION			11.08	18,200	11.01	13,900		
TOTAL				182,600		140,300		

Deck Overlay - SFC

28485.90	SF	Deck Overlay Roadway Area Unit Costs	11.27		14.84			
SUBTOTAL				289,100		380,800		
PERCENT MOBILIZATION			11.08	32,000	11.01	41,900		
TOTAL				321,100		422,700		

Multi-Layer Polymer Concrete Overlay (MPCO)

1915.20	SF	MPCO Roadway Area Unit Costs	5.43		6.84			
SUBTOTAL				9,400		11,800		
PERCENT MOBILIZATION			11.08	1,000	11.01	1,300		
TOTAL				10,400		13,100		

DETAILS

Bridge Repair

3,165.10	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2 1/2 INCHES DEEP	14.00	44,311	14.00	44,311	16.00	12.00
275.00	FOOT	TYPE "E" COMPRESSION SEALS	109.09	30,000	109.09	30,000	127.27	90.91
3.00	EACH	REPAIR DAMAGED REINFORCING BARS	1,000.00	3,000	613.33	1,840	1,000.00	375.00
1,250.00	SQFT	LOCATE DAMAGED CONCRETE	4.00	5,000	8.67	10,833	14.00	4.00
3.00	SQYD	REPAIR DAMAGED CONCRETE	1,000.00	3,000	1,966.67	5,900	2,700.00	1,000.00
0.80	SQYD	MORTAR BUILD-UP ON SHALLOW REBAR	2,000.00	1,600	2,066.67	1,653	2,950.00	1,250.00
1.00	SQYD	RESIN BUILDUP ON SHALLOW REBAR	1,000.00	1,000	1,600.00	1,600	2,550.00	1,000.00
1.00	EACH	DECK DRAIN FRAMES	1,500.00	1,500	1,275.83	1,276	2,000.00	327.49
8.00	EACH	DECK DRAIN GRATES	9,000.00	72,000	3,478.88	27,831	9,000.00	436.65
3.00	EACH	INSTALL ZINC ANODES	1,000.00	3,000	398.33	1,195	1,000.00	70.00

BRIDGE NAME:	Snake River, Hwy 6 EB	BRIDGE NO:	08107E	KEY NO:	19660
SECTION NAME:	I-84: SNAKE RIVER BRIDGES DECK REPAIRS PROJECT	COUNTY:	Malheur	CONTR #	15121
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S006(157)
STRUCT TYPE:	STEEL PLATE GIRDER	# BIDS RECVD:	6	AWARDED TO:	FARLINE BRIDGE INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Bridge Deck Overlay - SFC								
474.80	SQYD	CLASS 2 PREPARATION	86.15	40,904	179.55	85,250	400.00	52.50
219.80	CUYD	FURNISH SILICA FUME CONCRETE	300.00	65,940	323.33	71,069	345.00	300.00
3,165.10	SQYD	CONSTRUCT SFC RESURFACING	48.00	151,925	61.00	193,071	75.00	48.00
17.30	SQYD	CLASS 3 PREPARATION	1,000.00	17,300	810.00	14,013	1,000.00	430.00
2,900.70	SQYD	SAW CUT TEXTURING	4.50	13,053	6.00	17,414	9.01	4.50
MPCO								
1.00	SQYD	CLASS 2 PREPARATION	500.00	500	833.33	833	1,000.00	500.00
212.80	SQYD	FURNISH MPCO MATERIAL	21.01	4,471	20.67	4,399	21.01	20.00
212.80	SQYD	CONSTRUCT MPCO	21.01	4,471	30.67	6,527	50.00	21.01
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	75,000.00	75,000	60,000.00	60,000	100,000.00	5,000.00
338.60	SQFT	BRIDGE REMOVAL WORK	29.53	10,000	35.44	12,000	73.83	2.95

BRIDGE NAME:	Snake River, Hwy 6 WB	BRIDGE NO:	08107W	KEY NO:	19660
SECTION NAME:	I-84: SNAKE RIVER BRIDGES DECK REPAIRS PROJECT	COUNTY:	Malheur	CONTR #	15121
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S006(157)
STRUCT TYPE:	STEEL PLATE GIRDER	# BIDS RECVD:	6	AWARDED TO:	FARLINE BRIDGE INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				58,600		67,600		
PERCENT MOBILIZATION			11.08	6,500	11.01	7,400		
TOTAL				65,100		75,000		

Multi-Layer Polymer Concrete Overlay (MPCO)

30401.10	SF	MPCO Roadway Area Unit Costs	4.74		5.60			
SUBTOTAL				129,600		153,400		
PERCENT MOBILIZATION			11.08	14,400	11.01	16,900		
TOTAL				144,000		170,300		

DETAILS

Bridge Repair

275.00	FOOT	TYPE "E" COMPRESSION SEALS	109.09	30,000	109.09	30,000	127.37	90.98
7.00	EACH	REPAIR DAMAGED REINFORCING BARS	1,000.00	7,000	613.33	4,293	1,000.00	375.00
1,250.00	SQFT	LOCATE DAMAGED CONCRETE	4.00	5,000	11.33	14,167	22.00	4.00
7.00	SQYD	REPAIR DAMAGED CONCRETE	1,000.00	7,000	1,866.67	13,067	2,700.00	1,000.00
0.80	SQYD	MORTAR BUILD-UP ON SHALLOW REBAR	2,000.00	1,600	2,066.67	1,653	2,950.00	1,250.00
1.00	SQYD	RESIN BUILDUP ON SHALLOW REBAR	1,000.00	1,000	1,600.00	1,600	2,550.00	1,000.00
7.00	EACH	INSTALL ZINC ANODES	1,000.00	7,000	398.33	2,788	1,000.00	70.00

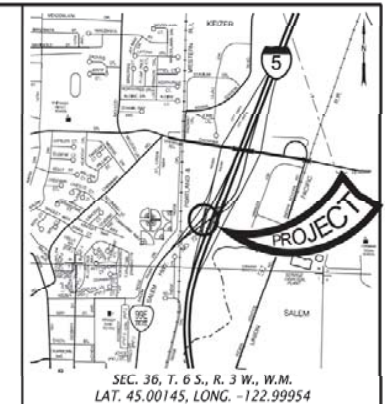
DETAILS

MPCO

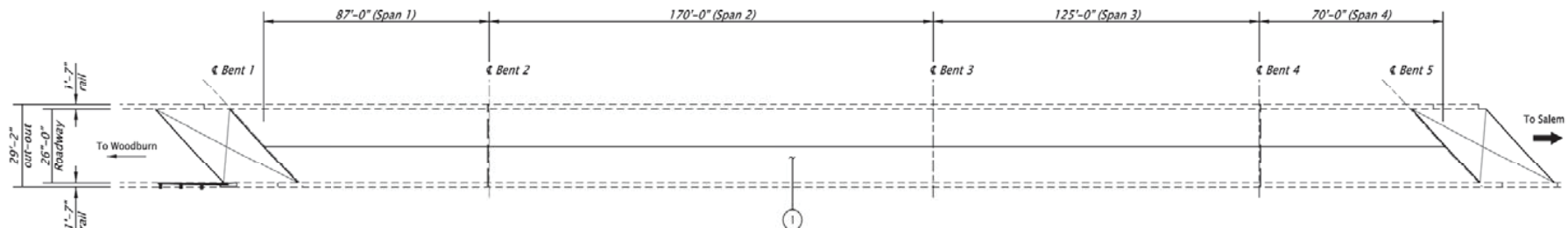
150.00	SQYD	CLASS 2 PREPARATION	86.15	12,922	203.72	30,558	450.00	75.00
3,377.90	SQYD	FURNISH MPCO MATERIAL	17.27	58,336	18.18	61,410	20.00	17.27
3,377.90	SQYD	CONSTRUCT MPCO	17.27	58,336	18.18	61,410	20.00	17.27

Additional Items

1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	65,000.00	65,000	65,000.00	65,000	125,000.00	5,000.00
338.60	SQFT	BRIDGE REMOVAL WORK	29.53	10,000	45.28	15,333	103.37	2.95
2.00	EACH	GUARDRAIL TRANSITION	2,700.00	5,400	3,213.10	6,426	4,239.29	2,700.00



LOCATION MAP
No Scale



PLAN - BRIDGE NO. 07855E

Scale: 1" = 40'

CONSTRUCTION NOTES:

- ① Const. $\frac{3}{8}$ " multi-layer polymer conc. overlay (MPCO) on bridge deck. Provide temporary tape or blocking to protect expansion joints and ensure clean edges on the overlay.

General Notes:
Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018.

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

STRUCTURE NO. 07855E		OREGON DEPARTMENT OF TRANSPORTATION			
BOS DWG NO. 102702		HWY001 (CONN 001PQ) OVER HWY072 (SALEM PDKWY)			
CALC. BOOK 7083		I-5: WOODBURN - SALEM SEC. PACIFIC HIGHWAY MARION COUNTY			
HWY: 001 M.P.: 289.49					
COUNTY Marion	DATE 01/2019	RENEW: 12-31-2019	DESIGNER: Clayton Davey, PE CHECKER: Charlotte Gresham	REVIEWER: Matthew Stucker, PE CHECKER: Matthew Stucker, PE	SHEET NO. JC01

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotation: 0° Scale: 1"=40'

BRIDGE NAME:	Chemawa Rd NE to Hwy 1 SB over Hwy 72 (Salem Pkwy)	BRIDGE NO:	07855E	KEY NO:	19831
SECTION NAME:	I-5: WOODBURN - SALEM SEC.	COUNTY:	Marion	CONTR #	15137
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	03/28/2019	FAP NO:	S001(508)
STRUCT TYPE:	RC BOX GIRDER - POST TENS	# BIDS RECVD:	2	AWARDED TO:	OREGON MAINLINE PAVING LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

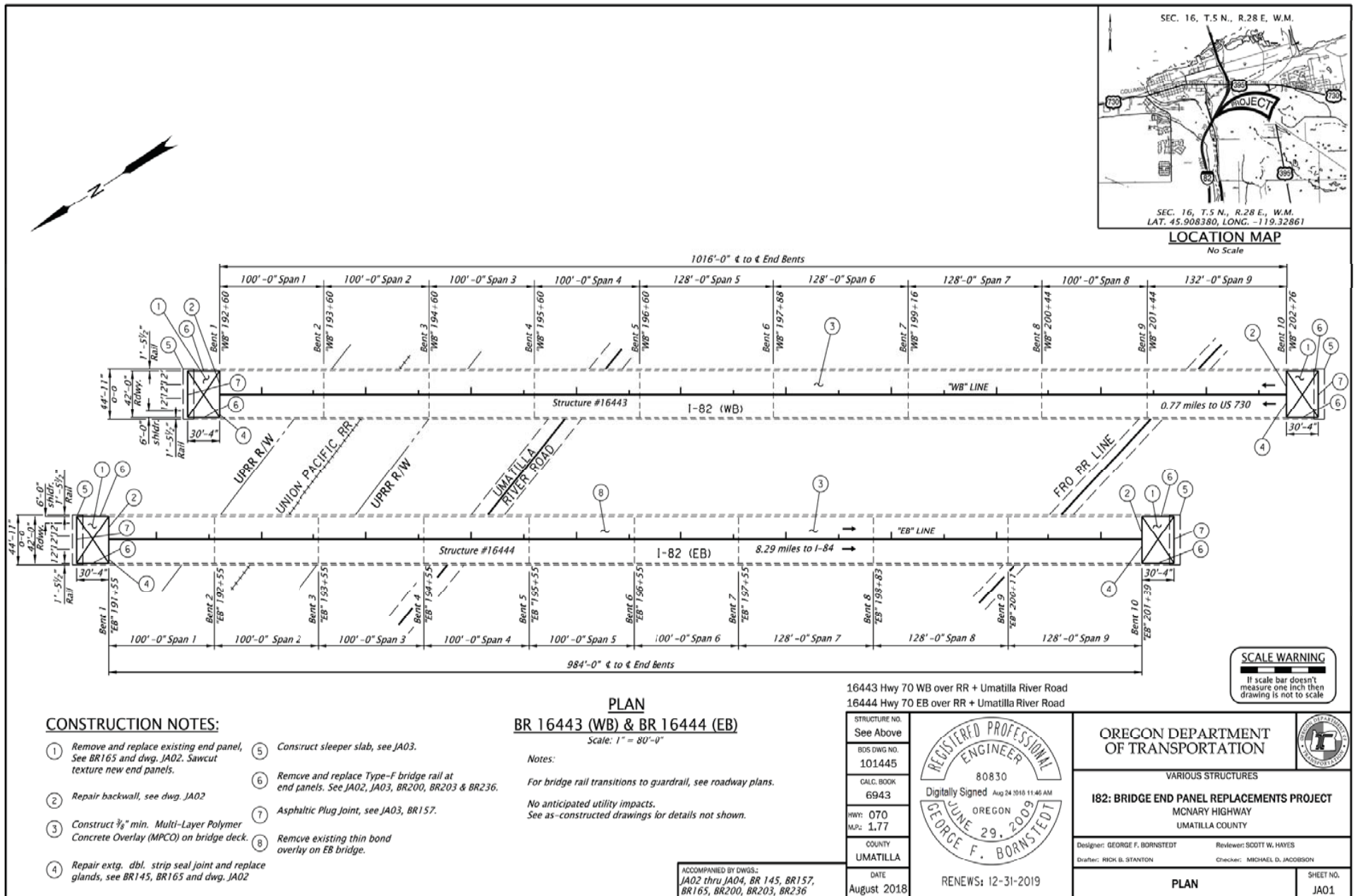
Multi-Layer Polymer Concrete Overlay (MPCO)

11754.00	SF	MPCO Roadway Area Unit Costs	6.97		7.05			
SUBTOTAL				73,700		75,300		
PERCENT MOBILIZATION			11.11	8,200	10.10	7,600		
TOTAL				81,900		82,900		

DETAILS

MPCO

65.00	SQYD	CLASS 2 PREPARATION	215.00	13,975	219.50	14,268	224.00	215.00
1,306.00	SQYD	FURNISH MPCO MATERIAL	20.50	26,773	20.93	27,328	21.35	20.50
1,306.00	SQYD	CONSTRUCT MPCO	25.20	32,911	25.83	33,727	26.45	25.20



BRIDGE NAME:	Hwy 70 WB over Umatilla R, UPRR, and Cnty Rd.	BRIDGE NO:	16443	KEY NO:	19793
SECTION NAME:	I-82: BRIDGE END PANEL REPLACEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15101
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/04/2018	FAP NO:	S070(001)
STRUCT TYPE:	RC BULB T GIRDER-PRECAST-TYPE I	# BIDS RECVD:	5	AWARDED TO:	MICHAEL A BECKER GENERAL CONTRACTOR

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge End Panel Replacement

SUBTOTAL				216,700		252,700		
PERCENT MOBILIZATION			10.40	22,500	10.88	27,500		
TOTAL				239,200		280,200		

Multi-Layer Polymer Concrete Overlay (MPCO)

42750.00	SF	MPCO Roadway Area Unit Costs	4.42		4.21			
SUBTOTAL				172,000		162,200		
PERCENT MOBILIZATION			10.40	17,900	10.88	17,600		
TOTAL				189,900		179,800		

DETAILS

End Panel Replacement

130.00	CUYD	STRUCTURE EXCAVATION	46.15	6,000	55.13	7,167	61.54	46.15
130.00	CUYD	GRANULAR STRUCTURE BACKFILL	88.46	11,500	97.44	12,667	107.69	88.46
6,100.00	LB	REINFORCEMENT	1.64	10,004	2.27	13,833	4.10	1.07
32.00	CUYD	FOUNDATION CONCRETE, CLASS 3300	125.00	4,000	510.42	16,333	781.25	125.00
20.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	935.00	18,700	1,645.00	32,900	2,000.00	935.00
280.00	SQYD	SAW CUT TEXTURING	15.00	4,200	14.67	4,107	15.00	14.00
300.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	360.00	108,000	361.67	108,500	400.00	325.00
88.00	FOOT	ASPHALTIC PLUG SEALS	136.36	12,000	133.14	11,717	147.73	115.34
88.00	FOOT	DOUBLE STRIP SEALS - REPAIR	125.00	11,000	208.33	18,333	250.00	125.00
120.00	FOOT	TYPE "F" CONCRETE RAIL	260.83	31,300	225.83	27,100	260.83	166.67

MPCO

95.00	SQYD	CLASS 2 PREPARATION	210.00	19,950	70.01	6,651	210.00	0.01
4,750.00	SQYD	FURNISH MPCO MATERIAL	16.00	76,000	16.75	79,562	18.00	16.00
4,750.00	SQYD	CONSTRUCT MPCO	16.00	76,000	16.00	76,000	18.00	14.00

Additional Items

2,700.00	SQFT	BRIDGE REMOVAL WORK	14.89	40,203	17.62	47,569	24.07	13.89
3.00	EACH	GUARDRAIL TRANSITION	1,925.00	5,775	1,950.00	5,850	2,000.00	1,925.00

BRIDGE NAME:	Hwy 70 EB over Umatilla River, UPRR, and Cnty Rd.	BRIDGE NO:	16444	KEY NO:	19793
SECTION NAME:	I-82: BRIDGE END PANEL REPLACEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15101
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/04/2018	FAP NO:	S070(001)
STRUCT TYPE:	RC BULB T GIRDER-PRECAST-TYPE I	# BIDS RECVD:	5	AWARDED TO:	MICHAEL A BECKER GENERAL CONTRACTOR

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge End Panel Replacement

SUBTOTAL				224,200		275,300		
PERCENT MOBILIZATION			10.40	23,300	10.88	30,000		
TOTAL				247,500		305,300		

Multi-Layer Polymer Concrete Overlay (MPCO)

41400.00	SF	MPCO Roadway Area Unit Costs	4.46		4.22			
SUBTOTAL				167,200		157,700		
PERCENT MOBILIZATION			10.40	17,400	10.88	17,200		
TOTAL				184,600		174,900		

DETAILS

End Panel Replacement

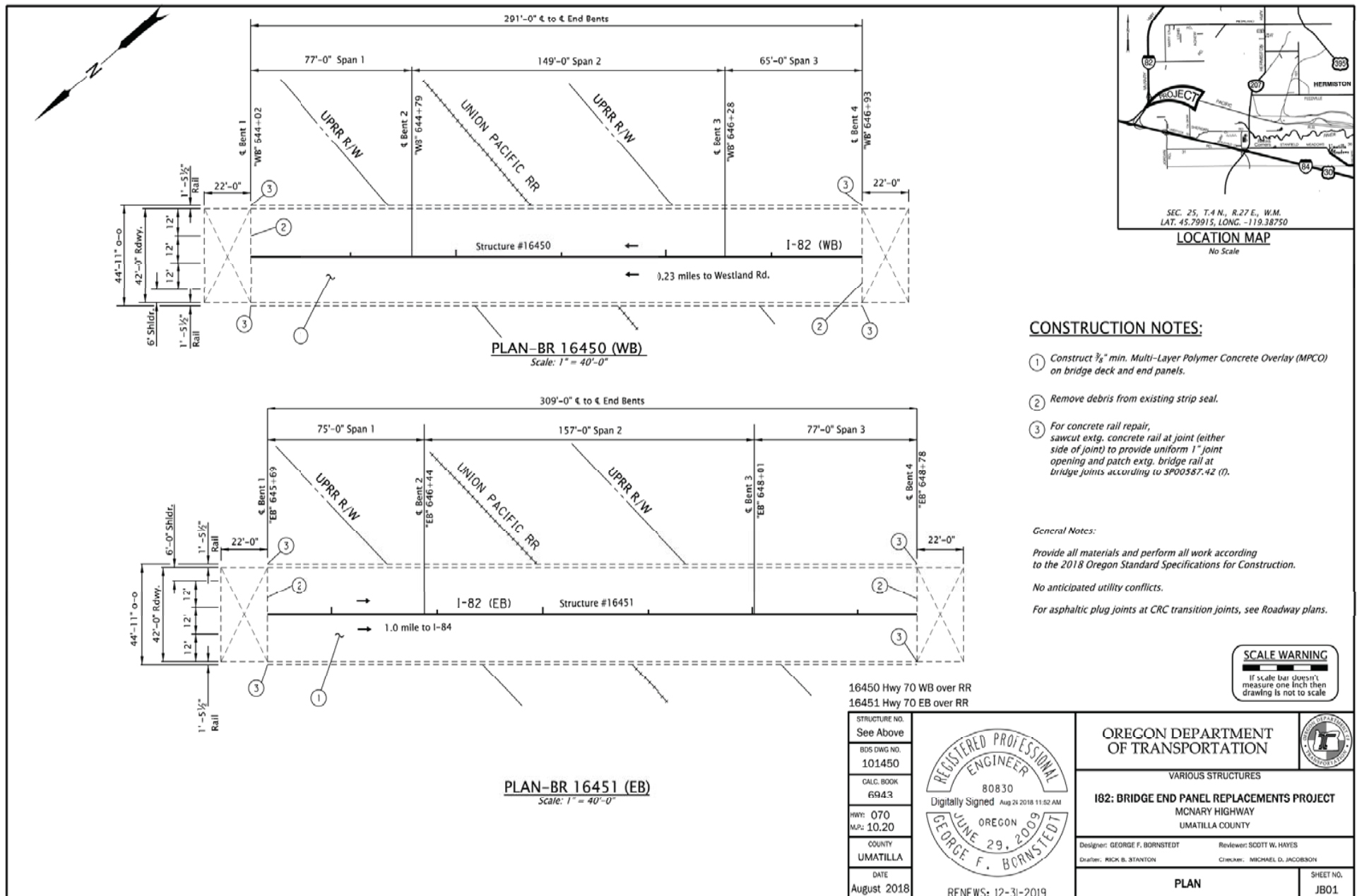
4,600.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	3.00	13,800	6.00	27,600	9.00	3.00
130.00	CUYD	STRUCTURE EXCAVATION	46.15	6,000	52.56	6,833	61.54	46.15
130.00	CUYD	GRANULAR STRUCTURE BACKFILL	88.46	11,500	97.44	12,667	107.69	88.46
6,100.00	LB	REINFORCEMENT	0.62	3,782	1.93	11,767	4.10	0.62
32.00	CUYD	FOUNDATION CONCRETE, CLASS 3300	125.00	4,000	458.33	14,667	781.25	125.00
20.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	935.00	18,700	1,561.67	31,233	2,000.00	935.00
280.00	SQYD	SAW CUT TEXTURING	15.00	4,200	14.67	4,107	15.00	14.00
300.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	360.00	108,000	361.67	108,500	400.00	325.00
88.00	FOOT	ASPHALTIC PLUG SEALS	136.36	12,000	133.14	11,717	147.73	115.34
88.00	FOOT	DOUBLE STRIP SEALS - REPAIR	123.86	10,900	219.32	19,300	284.09	123.86
120.00	FOOT	TYPE "F" CONCRETE RAIL	260.83	31,300	224.44	26,933	260.83	162.50

MPCO

95.00	SQYD	CLASS 2 PREPARATION	210.00	19,950	70.01	6,651	210.00	0.01
4,600.00	SQYD	FURNISH MPCO MATERIAL	16.00	73,600	16.83	77,433	18.00	16.00
4,600.00	SQYD	CONSTRUCT MPCO	16.00	73,600	16.00	73,600	18.00	14.00

Additional Items

2,700.00	SQFT	BRIDGE REMOVAL WORK	15.00	40,500	17.65	47,667	24.07	13.89
2.00	EACH	GUARDRAIL TRANSITION	1,925.00	3,850	1,950.00	3,900	2,000.00	1,925.00



BRIDGE NAME:	Hwy 70 WB over UPRR	BRIDGE NO:	16450	KEY NO:	19793
SECTION NAME:	I-82: BRIDGE END PANEL REPLACEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15101
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/04/2018	FAP NO:	S070(001)
STRUCT TYPE:	RC BOX GIRDER - POST TENSN	# BIDS RECVD:	5	AWARDED TO:	MICHAEL A BECKER GENERAL CONTRACTOR

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Multi-Layer Polymer Concrete Overlay (MPCO)

14130.00	SF	MPCO Roadway Area Unit Costs	4.74		4.44			
SUBTOTAL				60,700		56,600		
PERCENT MOBILIZATION			10.40	6,300	10.88	6,200		
TOTAL				67,000		62,800		

Miscellaneous Project - Concrete Rail Repair

SUBTOTAL				11,200		10,300		
PERCENT MOBILIZATION			10.40	1,200	10.88	1,100		
TOTAL				12,400		11,400		

DETAILS

MPCO

35.00	SQYD	CLASS 2 PREPARATION	210.00	7,350	70.01	2,450	210.00	0.01
1,570.00	SQYD	FURNISH MPCO MATERIAL	17.00	26,690	17.43	27,370	18.00	17.00
1,570.00	SQYD	CONSTRUCT MPCO	17.00	26,690	17.08	26,821	18.00	16.25

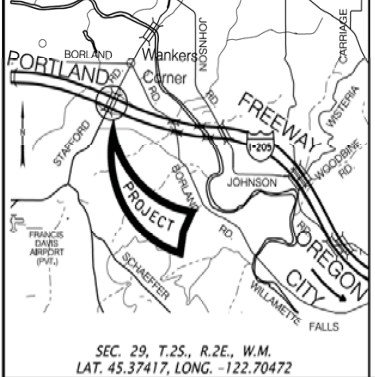
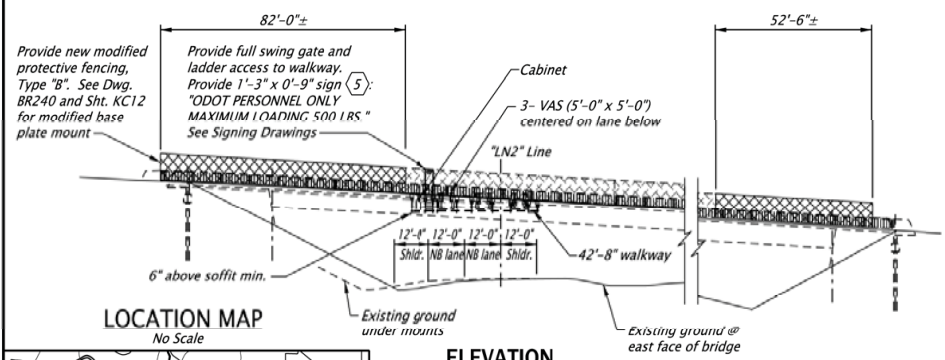
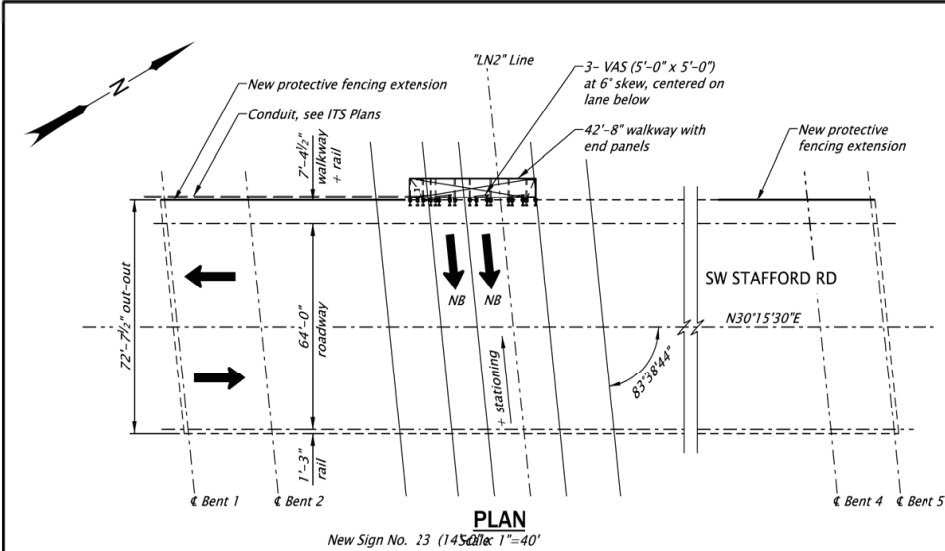
Concrete Rail Repair

52.00	FOOT	ASPHALTIC PLUG SEALS	138.46	7,200	141.03	7,333	153.85	130.77
10.00	FOOT	CONCRETE RAIL REPAIR	400.00	4,000	300.00	3,000	400.00	100.00

Additional Items

2.00	EACH	GUARDRAIL TRANSITION	1,925.00	3,850	1,950.00	3,900	2,000.00	1,925.00
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BRIDGE NAME:	Hwy 70 EB over UPRR			BRIDGE NO:	16451		KEY NO:	19793	
SECTION NAME:	I-82: BRIDGE END PANEL REPLACEMENTS PROJECT			COUNTY:	Umatilla		CONTR #	15101	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	10/04/2018		FAP NO:	S070(001)	
STRUCT TYPE:	RC BOX GIRDER - POST TENSN			# BIDS RECVD:	5		AWARDED TO:	MICHAEL A BECKER GENERAL CONTRACTOR	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Multi-Layer Polymer Concrete Overlay (MPCO)									
14895.00	SF	MPCO Roadway Area Unit Costs		4.43		4.34			
SUBTOTAL					59,800		58,300		
PERCENT MOBILIZATION				10.40	6,200	10.88	6,300		
TOTAL					66,000		64,600		
Miscellaneous Project - Concrete Rail Repair									
SUBTOTAL					11,200		10,300		
PERCENT MOBILIZATION				10.40	1,200	10.88	1,100		
TOTAL					12,400		11,400		
DETAILS									
MPCO									
17.00	SQYD	CLASS 2 PREPARATION		210.00	3,570	70.01	1,190	210.00	0.01
1,655.00	SQYD	FURNISH MPCO MATERIAL		17.00	28,135	17.43	28,852	18.00	17.00
1,655.00	SQYD	CONSTRUCT MPCO		17.00	28,135	17.08	28,273	18.00	16.25
Concrete Rail Repair									
52.00	FOOT	ASPHALTIC PLUG SEALS		138.46	7,200	141.03	7,333	153.85	130.77
10.00	FOOT	CONCRETE RAIL REPAIR		400.00	4,000	300.00	3,000	400.00	100.00
Additional Items									
2.00	EACH	GUARDRAIL TRANSITION		1,925.00	3,850	1,950.00	3,900	2,000.00	1,925.00



Construction Notes:

The bottom of the walkway shall be horizontal and 6" above bridge soffit unless noted otherwise.

Install signs on fully erected support structure. Do not install signs until after support structure erection and bolt tightening is 100% complete. Tighten resin bonded anchors 1/4" turn past snug tight.

The fabrication drawings shall be based on Contractor's field measurements.

MOUNTS ON BRIDGE M.P. 3.16 NB

General Notes:

All materials and workmanship shall conform to the 2018 Oregon Standard Specifications for Construction and the Special Provisions. Structure mounts are designed in accordance with the 5th Edition (2009) of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 1st edition, 2015 and interim revisions 2017.

Basic wind speed (1700 year recurrence interval) used for sign structure design is 115 mph, $G = 1.14$, $K_z = 0.98$ and Exposure C were used for design.

The walkway is designed for a total of 500 lbs. of personnel and equipment in addition to the self-weight of the walkway.

All structural steel shapes shall conform to ASTM A572, Grade 50, or ASTM A992, unless noted otherwise. All structural plates shall conform to ASTM A572, Grade 50. All structural tubing shall conform to ASTM A500, Grade B.

All bolts shall be considered high strength (H.S.) and slip critical and tightened according to Section 00930.40(d)(2)a, unless noted otherwise. Design slip resistance for bolts shall conform to the Bolt Specifications for Class C (slip coefficient = 0.33). See Dwg. TM608 for typical high strength bolt connection (steel to steel) and Dwg. TM607 for notes on bolts, washers and nuts.

All fasteners shall be ASTM A325 unless otherwise noted. All steel and fasteners shall be hot-dip galvanized after fabrication, unless noted otherwise. The silicon content of the base metal shall be according to the Special Provisions for all hot-dip galvanized steel, unless noted otherwise.

Holes drilled in existing concrete shall be core drilled. Hammer drills shall not be used. Contractor shall avoid drilling through concrete reinforcement when possible by adjusting support locations slightly. Reinforcement location prior to drilling is required. Notify Engineer immediately if conflict exists.

Contractor shall field verify conditions, work, locations, elevations and all dimensions prior to beginning fabrication. Existing traffic lane and structural dimensions shown are approximate and should not be used as a basis for development of fabrication drawings.

See Intelligent Transportation Systems (ITS) Plans for sign information. See ITS Plans for VAS and related electrical conduit information.

All welding shall conform to the 2010 AWS D1.1.

See Technical Specifications for approved mechanical expansion anchors.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

Fence Notes:

All fence posts shall be installed normal to grade in the longitudinal direction and plumb in the transverse direction. All posts shall be leveled using leveling nuts and grout pads.

Chain link fabric shall be stretched and fastened to posts at 1' 2" and 2' 0" maximum on center to fence posts and brace rails, respectively.

Steel pipe for the fence posts shall conform to ASTM Specifications A53, Grade B. All other material for chain link fence (fabric, pipes, and hardware) shall conform to AASHTO Specification M181 unless noted otherwise on the contract plans.

Anchors shall be installed according to manufacturer's instructions. Anchor embedment shall be such that the required strength is achieved, but not less than 6". See ODOT Specifications 00535 for construction requirements.

Avoid existing sign and rail supports. Field verify.

All resin bonded threaded anchors shall be hot-dip galvanized ASTM F1554, Grade 55 using high strength resin from the QPL. Fully fill hole with resin and provide double nuts.

Edge distance for resin bonded anchors shall be the manufacturer's specified minimum or as shown.

Chain link fabric to be within 1/4" of concrete surface where applicable (knuckle selvage at top and bottom of fence).

Provide one stretcher bar at the beginning and end of each run. Each run shall have no more than two fabric splices per run spaced at 50'-0".

Existing bridge plans located in Project Manager's office.

Existing structure #09739

STRUCTURE NO. 09739		EXISTING STRUCTURE #09739
BOS DWG NO. 102598		
CALC. BOOK 7084		
UNIT FILE CODE ITS-41		
DATE: 08/24/2019 MAY: 3.16 NB	DATE/TIME: 08/23/2019 08:33:08 PST	DATE/TIME: 08/23/2019 08:33:08 PST
SCALE WARNING IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE		EXPIRES: 06/30/20

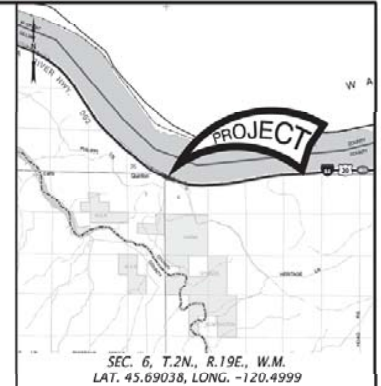
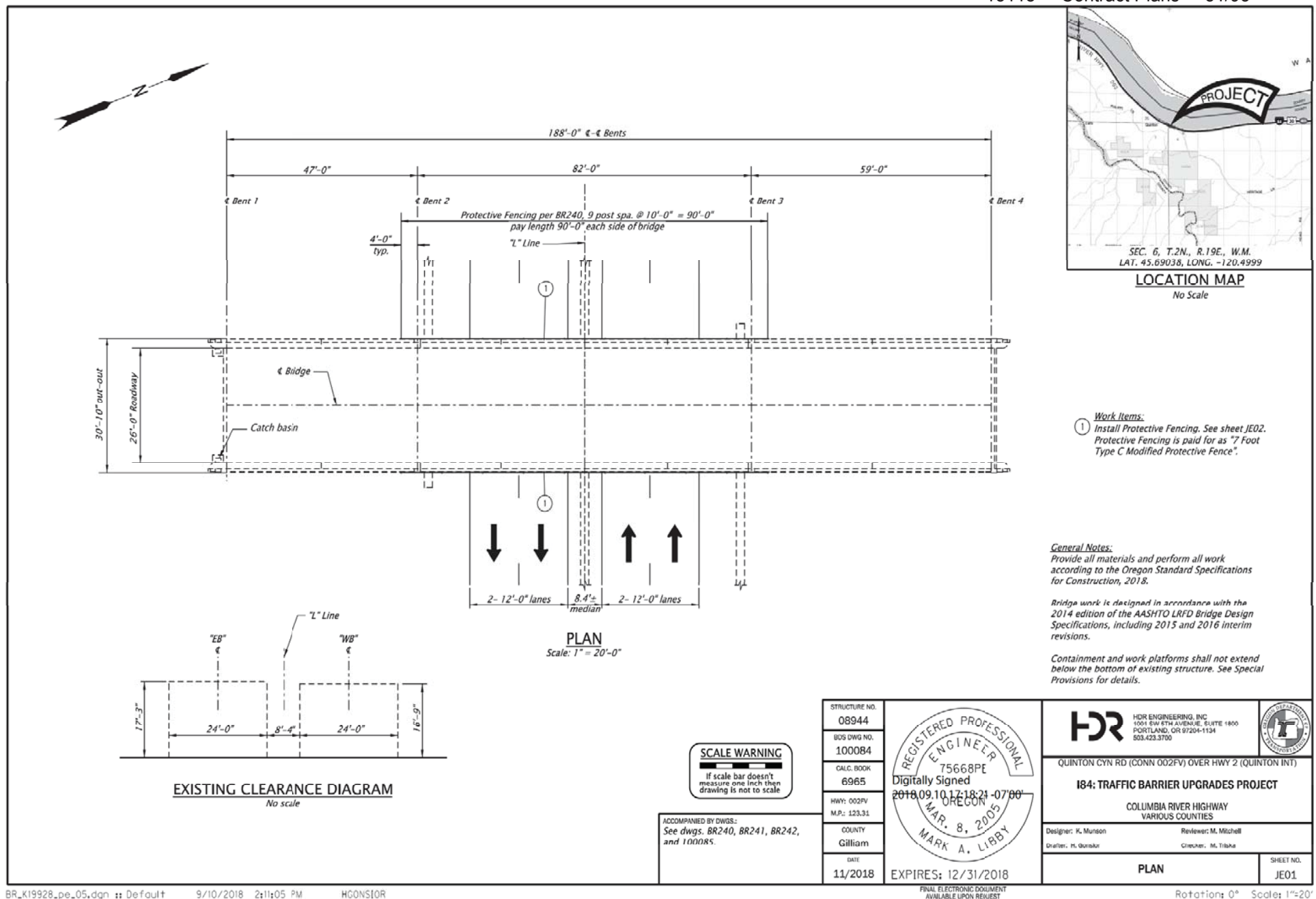
SITE M

CORPORATE OFFICE: 300 COUNTRY CLUB ROAD, SUITE 100B EAST OREGON AVENUE REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON	
Stafford Rd over Hwy 64	
I-205: I-5 - OR213, PHASE 3 SEC. EAST PORTLAND FREEWAY CLACKAMAS & WASHINGTON COUNTIES	
Designer: Peter G. Slocum, P.E., S.E. Drafter: Yuko Guezenneth	Reviewer: Jeff Bernardo, P.E. Checker: Wyatt Dean, E.I.
INTELLIGENT TRANSPORTATION SYSTEMS - SITE PLANS	
SHEET NO. KC09	

BRIDGE NAME:	Stafford Rd over Hwy 64	BRIDGE NO:	09739	KEY NO:	21400
SECTION NAME:	I-205: I-5 - OR213, PHASE 3 SEC.	COUNTY:	Clackamas	CONTR #	15163
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	09/19/2019	FAP NO:	S064(061)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	5	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		75,000		76,700		
		PERCENT MOBILIZATION	11.11	8,300	11.11	8,500		
		TOTAL		83,300		85,200		
Protective_Fencing								
134.50	LF	Linear Unit Cost	259.48		222.30			
		SUBTOTAL		31,400		26,900		
		PERCENT MOBILIZATION	11.11	3,500	11.11	3,000		
		TOTAL		34,900		29,900		
DETAILS								
Structure Mounts								
5,000.00	LB	BRIDGE STRUCTURE MOUNTS	15.00	75,000	15.33	76,667	16.00	15.00
Protective Fencing								
134.50	FOOT	8 FOOT TYPE B MODIFIED PROTECTIVE FENCE	200.00	26,900	166.67	22,417	250.00	50.00
1.00	EACH	8 FOOT X 30 INCH BRIDGE PROTECTIVE FENCE GATE	4,500.00	4,500	4,500.00	4,500	5,000.00	4,000.00
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	1.00	1	25,000.34	25,000	75,000.00	0.01
40.00	SQFT	BRIDGE REMOVAL WORK	150.00	6,000	219.88	8,795	384.63	125.00



LOCATION MAP
No Scale

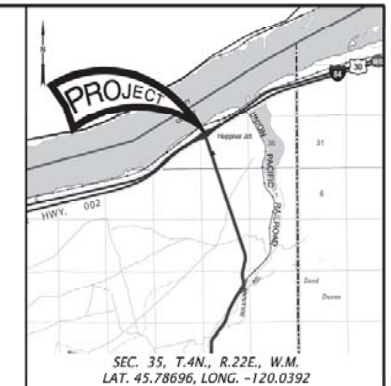
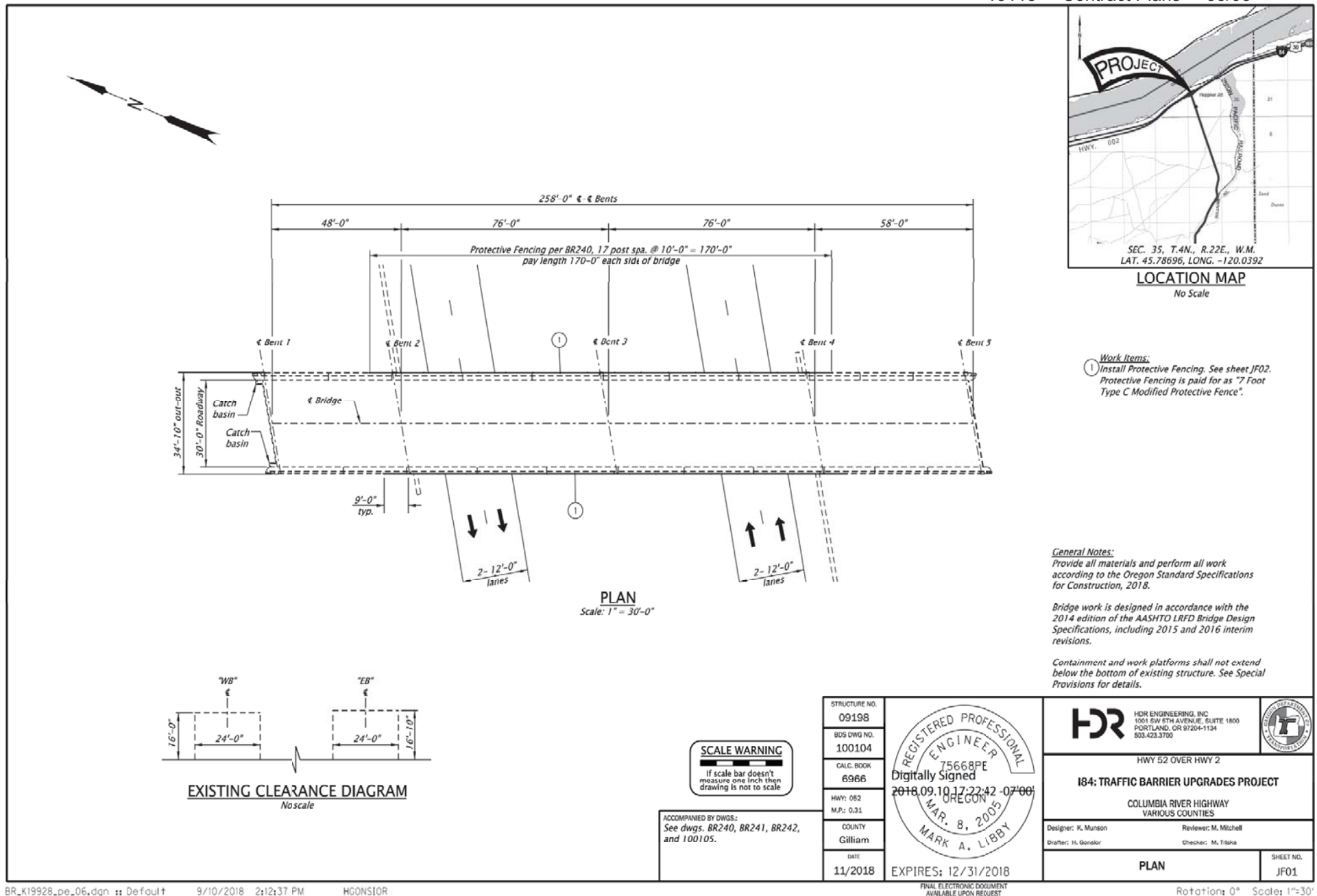
- Work Items:**
- 1 Install Protective Fencing. See sheet JE02. Protective Fencing is paid for as "7 Foot Type C Modified Protective Fence".

General Notes:
Provide all materials and perform all work according to the Oregon Standard Specifications for Construction, 2018.

Bridge work is designed in accordance with the 2014 edition of the AASHTO LRFD Bridge Design Specifications, including 2015 and 2016 Interim revisions.

Containment and work platforms shall not extend below the bottom of existing structure. See Special Provisions for details.

BRIDGE NAME:			Phillipi Canyon Rd over Hwy 2			BRIDGE NO:		08944		KEY NO:		19928		
SECTION NAME:			I84: TRAFFIC BARRIER UPGRADES PROJECT			COUNTY:		Gilliam		CONTR #		15118		
PRIMARY PROJ:			Protective Fencing			BID DATE:		11/01/2018		FAP NO:		SA00(054)		
STRUCT TYPE:			RC DECK GIRDER-PRECAST-TYPE III			# BIDS RECVD:		8		AWARDED TO:		CONWAY CONSTRUCTION CO		
										PREPARED BY:				
						CONTRACT		3 LOW BIDDERS		SPREAD				
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT	HIGH	LOW		
Protective_Fencing														
180.00		LF	Linear Unit Cost			91.67		128.89						
SUBTOTAL						14,800		21,000						
PERCENT MOBILIZATION						11.44		1,700		10.44		2,200		
TOTAL						16,500		23,200						
DETAILS														
Protective Fencing														
180.00		FOOT	7 FOOT TYPE C MODIFIED PROTECTIVE FENCE			82.00		14,760		116.62		20,992	190.00	77.87
Additional Items														
1.00		LS	TEMPORARY WORK ACCESS AND CONTAINMENT			7,100.00		7,100		2,700.00		2,700	7,100.00	500.00



LOCATION MAP
No Scale

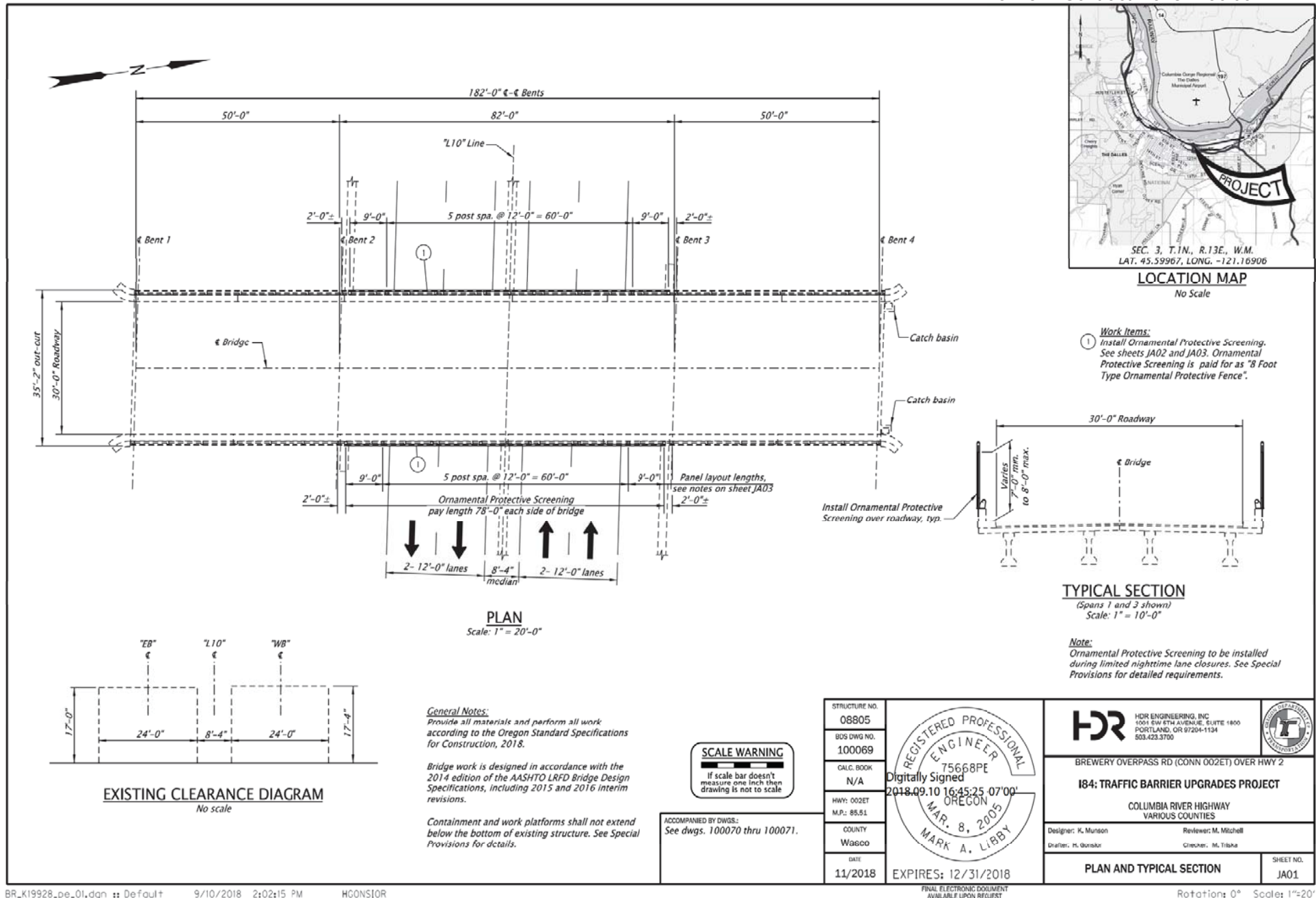
- Work Items:**
- 1 Install Protective Fencing. See sheet JF02. Protective Fencing is paid for as "7 Foot Type C Modified Protective Fence".

General Notes:
Provide all materials and perform all work according to the Oregon Standard Specifications for Construction, 2018.

Bridge work is designed in accordance with the 2014 edition of the AASHTO LRFD Bridge Design Specifications, including 2015 and 2016 interim revisions.

Containment and work platforms shall not extend below the bottom of existing structure. See Special Provisions for details.

BRIDGE NAME:			Hwy 52 over Hwy 2			BRIDGE NO:		09198		KEY NO:		19928	
SECTION NAME:			I84: TRAFFIC BARRIER UPGRADES PROJECT			COUNTY:		Gilliam		CONTR #		15118	
PRIMARY PROJ:			Protective Fencing			BID DATE:		11/01/2018		FAP NO:		SA00(054)	
STRUCT TYPE:			RC DECK GIRDER-PRECAST-TYPE III			# BIDS RECVD:		8		AWARDED TO:		CONWAY CONSTRUCTION CO	
										PREPARED BY:			
						CONTRACT		3 LOW BIDDERS		SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT	HIGH	LOW	
Protective_Fencing													
340.00		LF	Linear Unit Cost			91.47		128.82					
SUBTOTAL						27,900		39,700					
PERCENT MOBILIZATION						11.44		3,200		10.44		4,100	
TOTAL						31,100		43,800					
DETAILS													
Protective Fencing													
340.00		FOOT	7 FOOT TYPE C MODIFIED PROTECTIVE FENCE			82.00		27,880		116.62		39,652	
Additional Items													
1.00		LS	TEMPORARY WORK ACCESS AND CONTAINMENT			13,000.00		13,000		4,666.67		4,667	
												13,000.00	500.00



BRIDGE NAME:	Brewery Grade Conn over Hwy 2	BRIDGE NO:	08805	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Wasco	CONTR #	15118
PRIMARY PROJ:	Protective Fencing	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Protective_Fencing

156.00	LF	Linear Unit Cost	434.62		413.46			
SUBTOTAL				60,800		58,400		
PERCENT MOBILIZATION			11.44	7,000	10.44	6,100		
TOTAL				67,800		64,500		

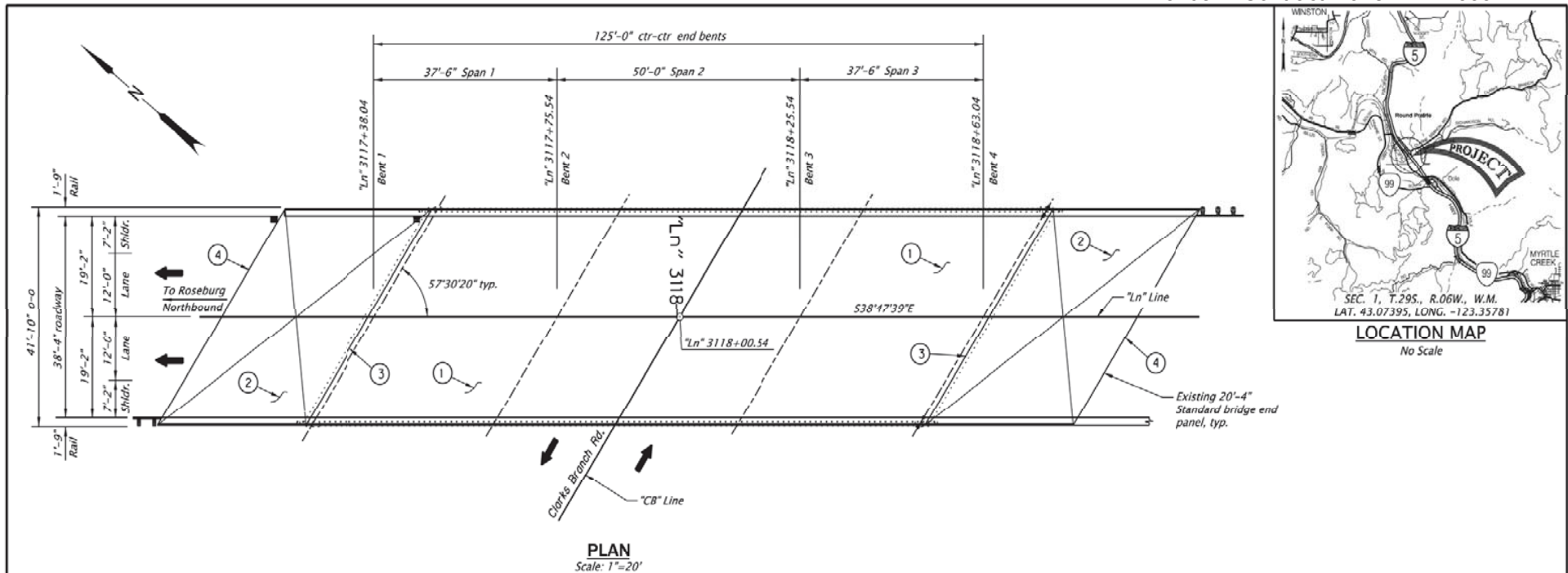
DETAILS

Protective Fencing

156.00	FOOT	8 FOOT TYPE ORNAMENTAL PROTECTIVE FENCE	390.00	60,840	374.33	58,396	390.00	358.00
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Additional Items

1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	12,000.00	12,000	4,666.67	4,667	12,000.00	500.00
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**CONSTRUCTION NOTES:**

- ① Perform Bridge Deck Cold Plane Pavement Removal 3" Deep. Perform Class 2 Preparation and place Polymer Membrane. Place 3" ACP.
- ② Perform Bridge End Panel Cold Plane Pavement Removal 2" Deep, Place 2" ACP.
- ③ Install Asphalt Plug Joint, see BR157.
- ④ Sawcut ACP 1 1/2" deep, fill with traffic loop sealant, see BR165.

GENERAL NOTES

Provide all materials and preform all work according to the Oregon Standard Specifications for Construction 2018.
For Information Only : Dwg. 19775, 19777, 19476, 51981, 43422, 43495, 43496, 48611 and 49061

SCALE WARNING
If scale bar doesn't
measure one inch then
drawing is not to scale

STRUCTURE NO. 07839A		OREGON DEPARTMENT OF TRANSPORTATION			
SOS DWG NO. 101421		HWY 1NB OVER CLARKS BRANCH RD (CONN 001GV)			
CALC. BOOK 6998		I-5: ROBERTS CREEK RD - SOUTH UMPQUA RIVER SECTION			
HWY: 001 M.P.: 113.44		PACIFIC HIGHWAY DOUGLAS COUNTY			
COUNTY Douglas	DATE 7/2018	RENEW: 06-30-2019	DESIGNER: Michael D. Jacobson DRAFTER: Michael L. Jones	REVIEWER: Robert Grubbs CHECKER: Scott Hayes	SHEET NO. JA01

BRIDGE NAME:	Hwy 1 NB over Clarks Branch Rd Conn #2	BRIDGE NO:	07839A	KEY NO:	18967
SECTION NAME:	I-5: ROBERTS CREEK RD - SOUTH UMPQUA RIVER SECTION	COUNTY:	Douglas	CONTR #	15108
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/01/2018	FAP NO:	S001(478)
STRUCT TYPE:	CAST-IN-PLACE SLABS	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair Deck Membrane and Joint Seal

SUBTOTAL				42,900		55,100		
PERCENT MOBILIZATION			9.44	4,000	9.56	5,300		
TOTAL				46,900		60,400		

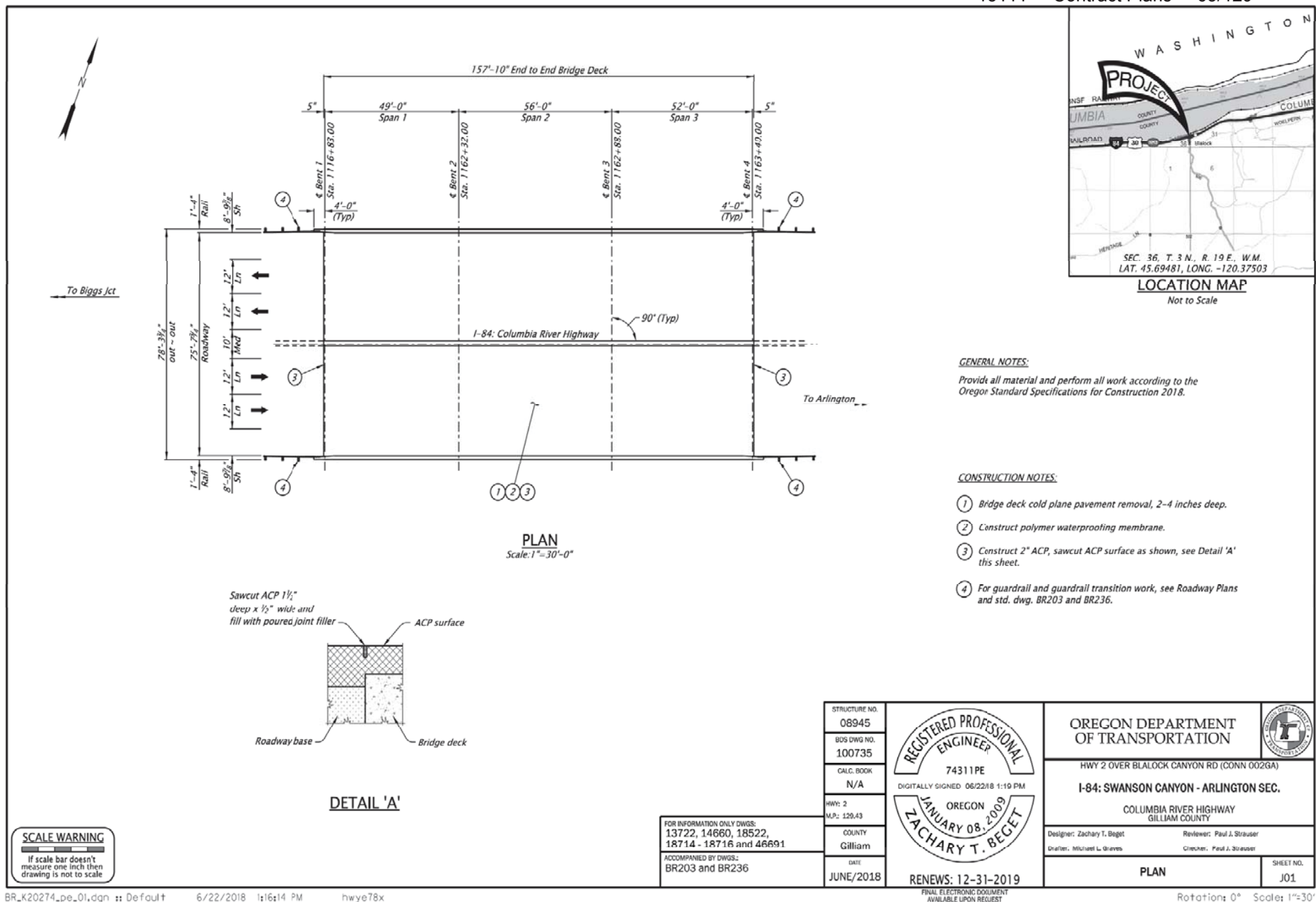
DETAILS

Bridge Repair - Deck Membrane and Joint Seal

532.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3 INCHES DEEP	18.00	9,576	23.33	12,413	32.00	18.00
91.00	FOOT	ASPHALTIC PLUG SEALS	1.54	140	92.09	8,380	142.86	1.54
0.25	CUYD	ASPHALTIC PLUG SEAL MATERIAL	5,700.00	1,425	6,066.67	1,517	6,500.00	5,700.00
4,792.00	SQFT	POLYMER MEMBRANE	5.00	23,960	5.05	24,200	5.15	5.00
72.00	SQFT	CLASS 2 PREPARATION	109.00	7,848	119.67	8,616	135.00	109.00

Additional Items

173.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	27.00	4,671	27.33	4,729	34.00	21.00
1.00	EACH	GUARDRAIL TRANSITION	1,850.00	1,850	2,748.33	2,748	3,245.00	1,850.00



BRIDGE NAME:	Hwy 2 over Blalock Conn	BRIDGE NO:	08945	KEY NO:	20274
SECTION NAME:	I-84: SWANSON CANYON - ARLINGTON SEC.	COUNTY:	Gilliam	CONTR #	15111
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/08/2018	FAP NO:	S002(226)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	6	AWARDED TO:	KERR CONTRACTORS OREGON LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Repair								
		SUBTOTAL		77,800		72,300		
		PERCENT MOBILIZATION	5.51	4,300	7.41	5,400		
		TOTAL		82,100		77,700		
DETAILS								
Waterproofing Membrane								
1,327.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2-4 INCHES DEEP	6.00	7,962	9.17	12,164	11.00	6.00
11,945.00	SQFT	POLYMER MEMBRANE	5.85	69,878	5.03	60,123	5.85	4.50
Additional Items								
2.00	EACH	GUARDRAIL TRANSITION	2,500.00	5,000	2,500.00	5,000	2,500.00	2,500.00
2.00	EACH	GUARDRAIL CONNECTIONS	1,000.00	2,000	2,500.00	2,000	1,000.00	1,000.00

Pole top tenon, see detail on Sht. KC08.
Connection to tenon by camera lowering
device supplier. Provide removable rain
tight cover (after galvanizing)

Design Load Application				
Point of Load	Projected Area	Weight	Area for Ice	C _f
"A"	5.4 ft ²	121 lb	10.8 ft ²	1.2
"B"	1.0 ft ²	7.2 lb	3.03 ft ²	1.2

* See Project Plans and Specifications
for specific hardware and equipment
details and requirements. These items
are not included as part of Traffic
Camera Support Pole, but are shown
for general information.

Weld threaded stud (2 each) to inside
wall shaft at top of handhole and connect
stainless steel eye nut for wire tie off
and camera lowering system cable connection

Handhole for lowering device, see
"Handhole Detail" on Sht. KC08

Weld grounding terminal to inside wall
of shaft opposite bottom of handhole

Pole ID Tag, see Sht. KC08

Fixed base plate w/anchor
bolts. See Sht. KC08

Build up embankment around
foundation as required. See
"Minimum Embankment
Requirements" on Dwg. TM653

Conduit sweep required (maintain 2"
concrete cover between conduit and
anchor rod or reinforcing steel). Size
and depth as required by Project Plans
and National Electric Code (3-2" dia.
conduit, see ITS Plans)

#7 @ 10" O.C. ea. way, top & btm.

#5 "C" bar @ 1'-8" O.C.

ELEVATION - CAMERA SUPPORT

No Scale
"Ls" 798+39

Note:
Elevations are based on the North
American Vertical Datum, 1988.

CAMERA SUPPORT TABLE

Pole Length "BL"	Anchor Rod Dia.	Rod Circle "BC"	Proj. "E" max.	Anchor Rod Length	Top Thread Length	Btm. Thread Length	Structure Number 23736	Footing Depth "D"	Hwy. No.	Station	Elevation "EL"
45'-0"	2"	19 1/2"	9 1/2"	4'-0"	7"	3"	Pole 1	6'-0"	064	"Ls" 798+39 (68" Rt.)	296.00'

General Notes:

Provide all materials and perform all work according to the 2018 Oregon Standard Specifications for Construction and the Special Provisions.

Camera Support Poles shall conform to the 2018 Oregon Standard Specifications for Construction and the Special Provisions. Poles are designed in accordance with the 5th Edition of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2001 and interim revisions through 2002.

Design wind velocity shall be 110 mph (3 second gust), 50 year recurrence.

Computed wind induced deflection of pole at 30 mph (non-gust) shall be limited to 1 inch measured at top of pole.

The Combined Stress Ratio (CSR) of the pole shall not exceed 0.60.

Grounding terminal and eye nut connection shall be 1/2" dia. x 1 1/8" Type 308, 309, or 310 threaded stainless steel welded stud.

Round and smooth all edges along electrical wire way.

Orientation of all devices, as shown on Sht. KB17, shall be verified in the field by the Engineer prior to constructing foundation.

Tenon dimensions are indicative of general configuration desired and may be varied depending on Camera Lowering Device Supplier's connection requirements. Variations from that shown shall be allowed as approved by the Engineer. See Special Provisions for requirements.

Steel sheet for poles and tenon shall conform to ASTM A595, Grade A or B, or approved equal. All other steel sheet and plate shall conform to ASTM A572 Gr. 50, or approved equal unless shown otherwise. Supplement S18 of ASTM A6 regarding maximum tensile strength shall apply.

All pole shafts may be round, hexadecagonal, dodecagonal or octagonal.

Pole shall be vertical in final position.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

See Shts. KB17 and KC08 and Dwg. TM652 and TM653 for details not shown.

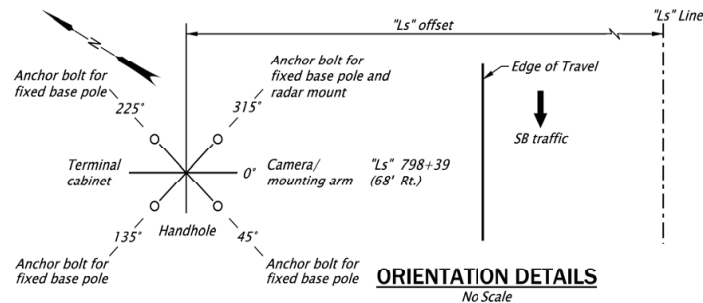
Bottom of base plate El. "EL" (field verify)
3'-0" sq. concrete pedestal w/#4 ties @ 4" O.C. 1-#6 tie at top. Provide 12-#6 equally spaced vertical bars w/1'-6" hooks at bottom

Notes:

Field verify to maintain clearance and embedment.

Excavation for spread footing will likely encounter rock. Refer to General Notes.

See "Pole Installation Detail" and "Camera Pole Orientation Detail" on Sht. KB17 for additional information and location of all equipment, hubs, cabinets, J-hooks, ground lug and weatherheads.



Orientation Notes:

All angles measure clockwise
from face of pole normal to
roadway as viewed from top
end of pole.

Orientation for optimal view
by camera to be field
verified by the Engineer.

STRUCTURE NO.
23736

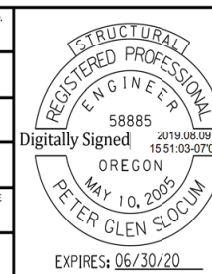
BDS DWG NO.
102281

CALC. BOOK
7084

Hwy: 064
M.P.: 7.60 SB

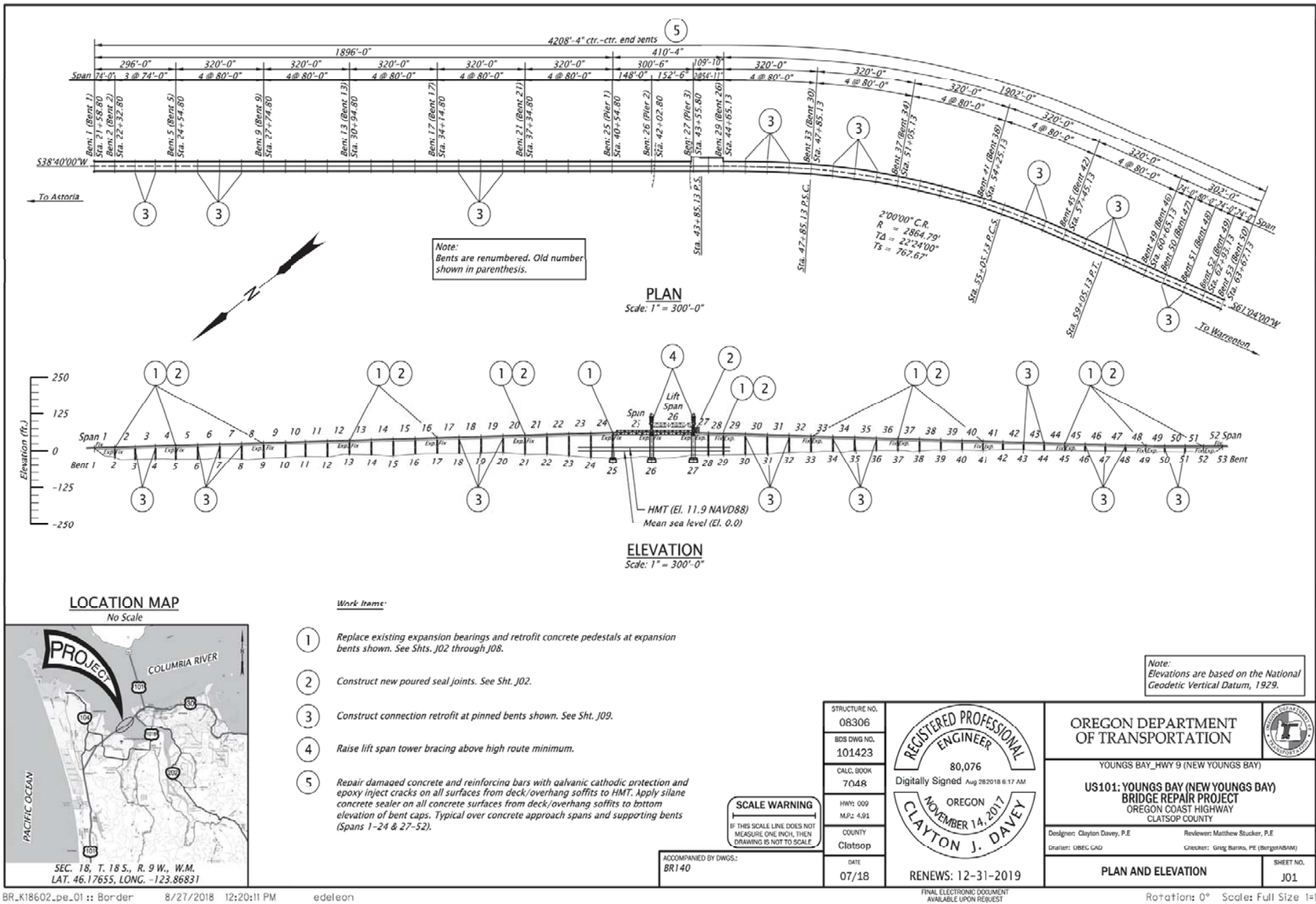
UNIT FILE CODE
ITS-39

DRY/ISSU NO.
N/A



OBEC CONSULTING ENGINEERS A DOWL LLC Company		CORPORATE OFFICE: 800 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6889 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON	
Its_Hwy064_MP7.60			
I-205: I-5 - OR213, PHASE 3 SEC. EAST PORTLAND FREEWAY CLACKAMAS & WASHINGTON COUNTIES			
Designer: Peter G. Slocum, P.E., S.E. Drafter: Yuka Garzenelli	Reviewer: Jeff Bernardo, P.E. Checker: Wyatt Dean, E.I.	INTELLIGENT TRANSPORTATION SYSTEMS - STRUCTURE DETAILS	
SHEET NO. KC07		Scale: Full Size 1 = 1	

BRIDGE NAME:			its_Hwy 064_SS_MP7.60		BRIDGE NO:		23736		KEY NO:		21400				
SECTION NAME:			I-205: I-5 - OR213, PHASE 3 SEC.		COUNTY:		Clackamas		CONTR #		15163				
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		09/19/2019		FAP NO:		S064(061)				
STRUCT TYPE:			CAMERA SUPPORT		# BIDS RECVD:		5		AWARDED TO:		HP CIVIL INC				
										PREPARED BY:					
					CONTRACT		3 LOW BIDDERS			SPREAD					
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW		
Miscellaneous Project - Camera Support															
SUBTOTAL							35,000			35,700					
PERCENT MOBILIZATION						11.11	3,900		11.11	4,000					
TOTAL							38,900			39,700					
DETAILS															
Camera Support															
1.00		LS	CAMERA POLES AND FOUNDATIONS			35,000.00		35,000		35,666.67		35,667		40,000.00	32,000.00



BRIDGE NAME:	Youngs Bay, Hwy 9 (New Youngs Bay)	BRIDGE NO:	08306	KEY NO:	18602
SECTION NAME:	US101: YOUNGS BAY (NEW YOUNGS BAY) BRIDGE REPAIR PROJECT	COUNTY:	Clatsop	CONTR #	15109
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/25/2018	FAP NO:	S009(445)
STRUCT TYPE:	STEEL-MOVABLE-LIFT	# BIDS RECVD:	4	AWARDED TO:	OREGON STATE BRIDGE

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				3,880,900		4,639,800		
PERCENT MOBILIZATION			11.11	431,200	9.53	442,200		
TOTAL				4,312,100		5,082,000		

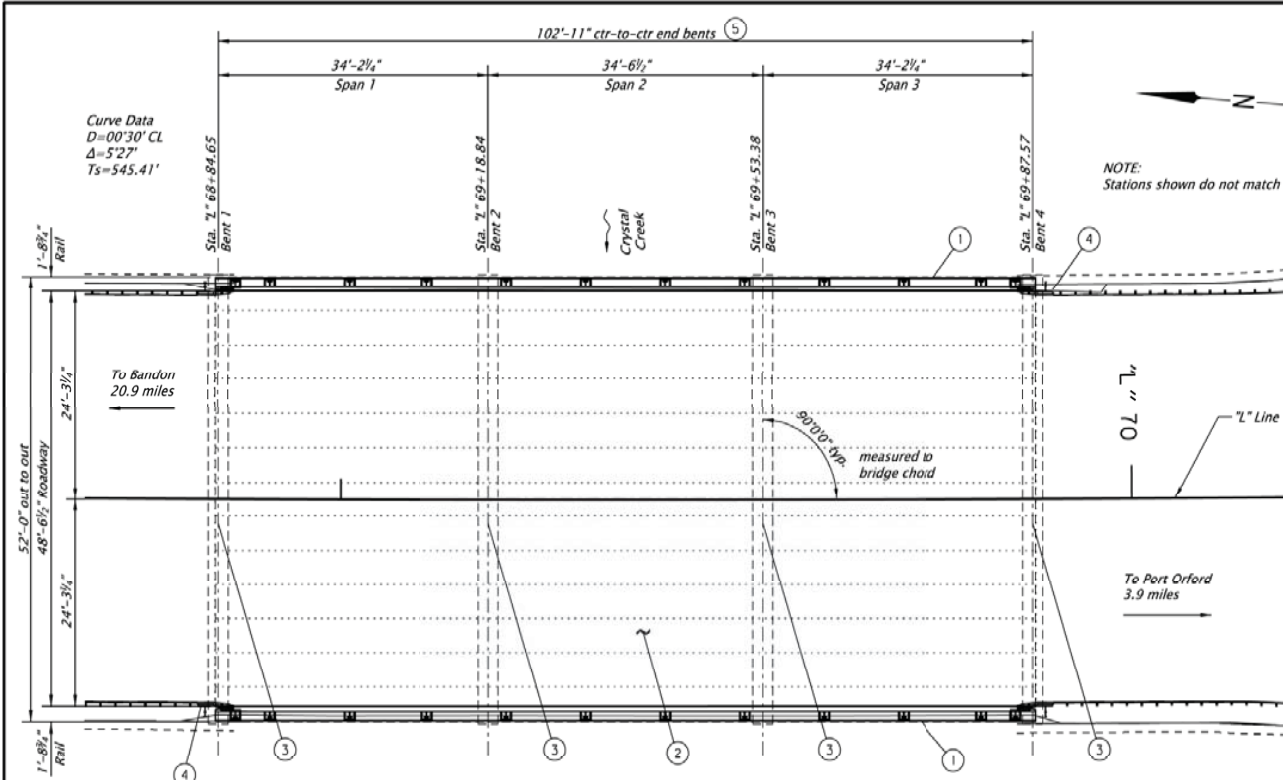
DETAILS

Bridge Repair

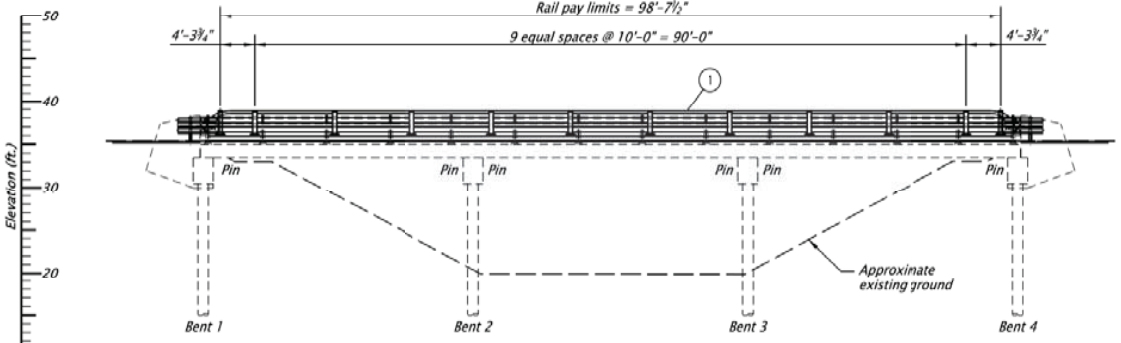
6,200.00	LB	REINFORCEMENT, GRADE 60	12.10	75,000	16.46	102,037	24.19	12.10
1,000.00	FOOT	INJECT AND SEAL CRACKS	56.00	56,000	53.33	53,333	59.00	45.00
11,626.00	LB	STRUCTURAL STEEL MAINTENANCE	15.05	175,000	9.30	108,167	15.05	5.98
56.00	EACH	BEARING DEVICES	3,000.00	168,000	3,202.67	179,349	3,500.00	3,000.00
514.00	FOOT	POURED SEALS	48.64	25,000	38.49	19,783	48.64	29.18
1.00	LS	PREPARE AND COAT CONCRETE STRUCTURES	750,000.00	750,000	1,557,000.00	1,557,000	2,621,000.00	750,000.00
1.00	LS	SURFACE PREPARATION	27,500.00	27,500	87,045.33	87,045	200,000.00	27,500.00
1.00	LS	COATING APPLICATION	25,000.00	25,000	45,360.67	45,361	80,000.00	25,000.00
1.00	LS	COATING MATERIALS	5,000.00	5,000	4,623.33	4,623	5,000.00	3,870.00
500.00	EACH	REPAIR DAMAGED REINFORCING BARS	450.00	225,000	305.00	152,500	450.00	150.00
1.00	LS	LOCATE DAMAGED CONCRETE	300,000.00	300,000	141,991.67	141,992	300,000.00	25,975.00
350.00	SQYD	REPAIR DAMAGED CONCRETE	2,267.00	793,450	2,144.33	750,517	2,366.00	1,800.00
200.00	SQYD	MORTAR BUILDUP ON SHALLOW REBAR	2,402.34	480,468	1,860.78	372,156	2,402.34	1,500.00
1.00	LS	BRIDGE JACKING	256,000.00	256,000	494,599.33	494,599	750,000.00	256,000.00
1.00	LS	QUALITY CONTROL PLAN	61,000.00	61,000	158,617.00	158,617	404,851.00	10,000.00
1,000.00	EACH	HAND PATCHING	70.00	70,000	92.67	92,667	108.00	70.00
700.00	EACH	INSTALL GALVANIC ZINC ANODES	148.00	103,600	83.67	58,567	148.00	50.00
24.00	CUYD	RETROFIT REPAIR MORTAR	11,870.00	284,880	10,897.00	261,528	13,821.00	7,000.00

Additional Items

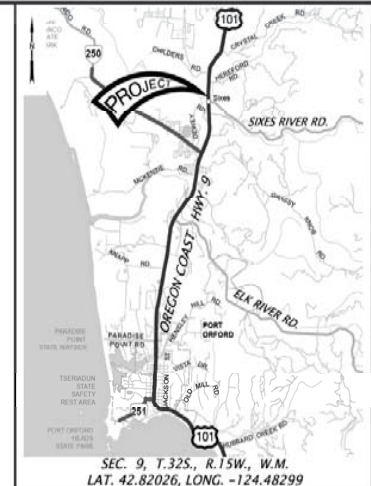
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	2,475,000.00	2,475,000	1,925,000.00	1,925,000	2,475,000.00	1,500,000.00
30.00	SQFT	BRIDGE REMOVAL WORK	1,000.00	30,000	2,173.16	65,195	5,000.00	519.47
1.00	LS	SELECT BRIDGE DEMOLITION	79,000.00	79,000	197,761.33	197,761	400,000.00	79,000.00



PLAN
Scale: 1" = 15'-0"



ELEVATION
Scale: 1" = 15'-0"



LOCATION MAP
No Scale

DETAIL REFERENCE NUMBERS:

- 1 Remove existing three tube rail, curb and concrete end blocks. Construct Modified 3-Tube Curb Mount Rail. See JA03 for details.
- 2 Field verify existing ACP thickness, 4 1/2" anticipated. Remove all ACP, place waterproof membrane, and place 4" ACP.
- 3 Sawcut ACP, 1/2" wide x 1 1/2" deep. Fill with traffic loop sealant.
- 4 Remove portions of the wingwall/rail as shown. Install modified guardrail transition. See JA03 for details.
- 5 Locate and repair damaged concrete. Replace damaged reinforcing steel and zinc anodes. See JA02 (BDS Dwg. No. 100245) for details.
- 6 Install bridge I.D. Marker to rail post, see BRIDGE ID MARKER TABLE on sheet JA03 and BR195 for details.

Note:

Anticipated that access for repairing damaged reinforcing and damaged concrete can be accomplished from ground using ladders and scaffolding

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

STRUCTURE NO. 00928A	
BOS DWG NO. 100935	
CALC. BOOK 6992	
HWY: 009 M.P.: 295.49	
COUNTY Curry	DATE 7/2018
RENEWALS: 06-30-2019	

OREGON DEPARTMENT OF TRANSPORTATION	
CRYSTAL CR. HWY 9	
US101: CHILDERS RD - GARRISON SLOUGH SECTION OREGON COAST HIGHWAY CURRY COUNTY	
Designer: Robert E. Grubbs	Reviewer: George F. Barnstedt
Drafter: Michael L. Jones/Dan D. Fahn	Checker: Fred M. Gornetz
PLAN AND ELEVATION	
SHEET NO. JA01	

BRIDGE NAME:	Crystal Creek, Hwy 9	BRIDGE NO:	00928A	KEY NO:	18870
SECTION NAME:	US101: CHILDERS RD - GARRISON SLOUGH SECTION	COUNTY:	Curry	CONTR #	15104
PRIMARY PROJ:	Rail Replace	BID DATE:	10/11/2018	FAP NO:	S009(471)
STRUCT TYPE:	PS SLABS SL18	# BIDS RECVD:	2	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

197.00	LF	Linear Unit Cost	413.20		487.22			
SUBTOTAL				77,500		88,800		
PERCENT MOBILIZATION			5.11	4,000	8.19	7,300		
TOTAL				81,500		96,100		

Miscellaneous Project - Bridge Repair

SUBTOTAL				80,000		77,400		
PERCENT MOBILIZATION			5.11	4,100	8.19	6,300		
TOTAL				84,100		83,700		

DETAILS

Rail Replacement

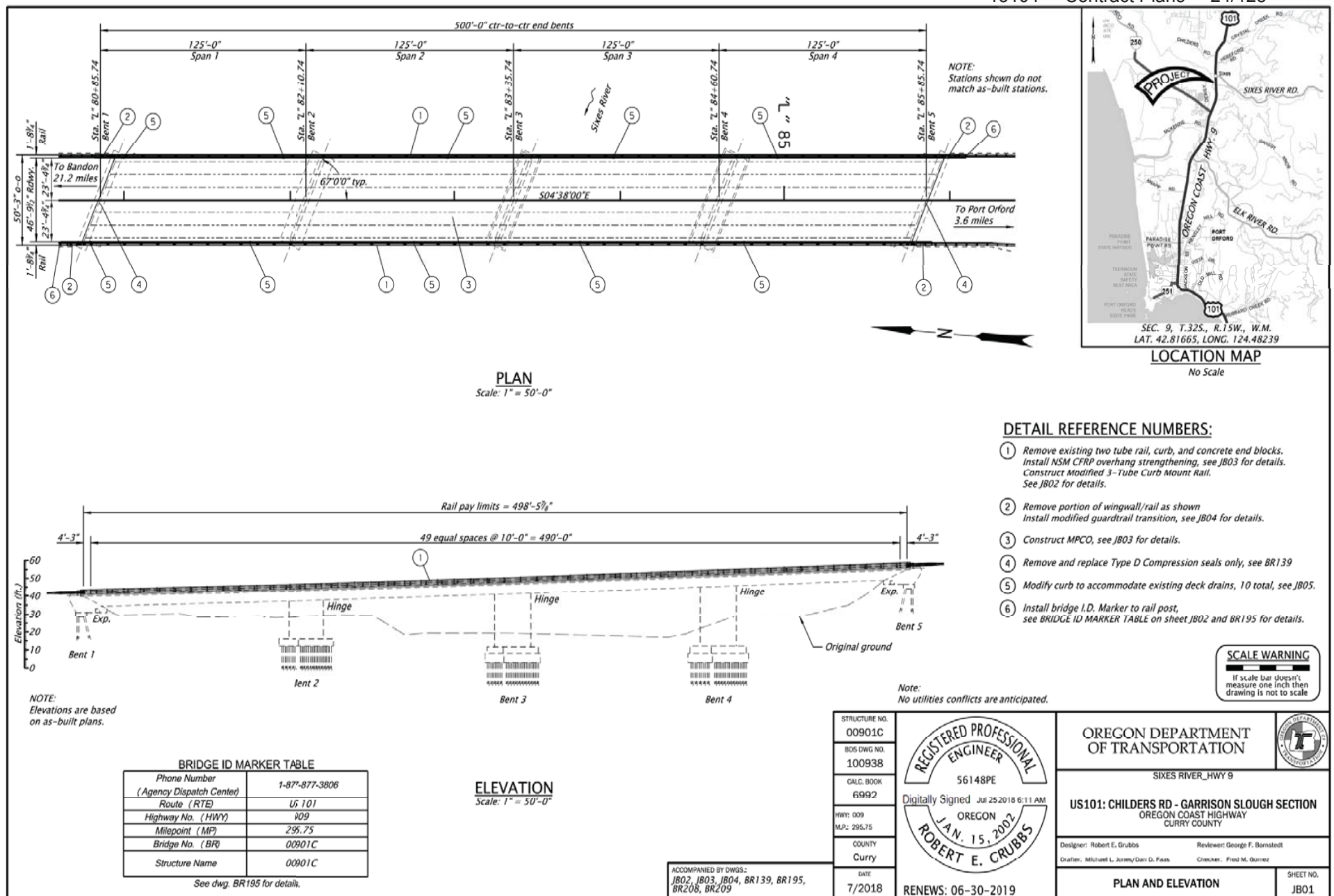
197.00	FOOT	3 TUBE STEEL RAIL, MODIFIED, CURB MOUNTED	393.40	77,500	450.51	88,750	507.61	393.40
--------	------	---	--------	--------	--------	--------	--------	--------

Bridge Repair - Locate and Repair Damage Concrete, Install Membrane

555.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	21.35	11,849	21.93	12,168	22.50	21.35
216.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	22.10	4,774	22.68	4,898	23.25	22.10
4,996.00	SQFT	WARRANTED SPRAY WATERPROOFING MEMBRANE	9.65	48,211	9.33	46,588	9.65	9.00
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	135.00	270	137.50	275	140.00	135.00
1.00	EACH	REPAIR DAMAGED REINFORCING BAR	1,100.00	1,100	2,050.00	2,050	3,000.00	1,100.00
5.00	SQYD	REPAIR DAMAGED CONCRETE	2,765.00	13,825	2,282.50	11,412	2,765.00	1,800.00

Additional Items

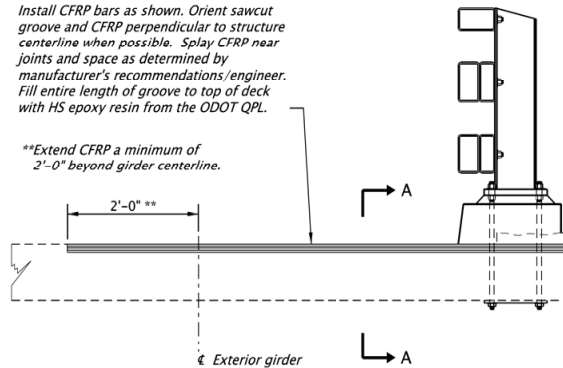
500.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	32.00	16,000	66.00	33,000	100.00	32.00
414.00	SQFT	BRIDGE REMOVAL WORK	53.14	22,000	50.72	21,000	53.14	48.31
4.00	EACH	GUARDRAIL TRANSITION	3,250.00	13,000	3,250.00	13,000	3,250.00	3,250.00



Construct CFRP reinforcing prior to deck preparation for MPCO installation

Install CFRP bars as shown. Orient sawcut groove and CFRP perpendicular to structure centerline when possible. Splay CFRP near joints and space as determined by manufacturer's recommendations/engineer. Fill entire length of groove to top of deck with HS epoxy resin from the ODOT QPL.

**Extend CFRP a minimum of 2'-0" beyond girder centerline.

**NSM CFRP Note:**

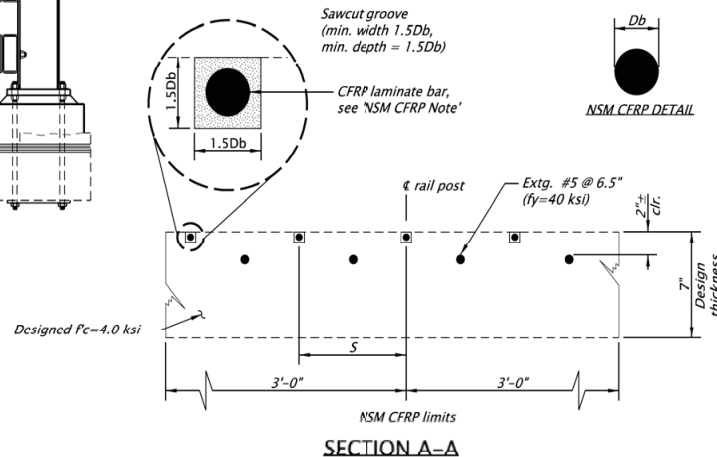
Strengthen the extg. deck overhang to resist an ultimate moment of 18.5 kip-ft/ft and an ultimate tension force of 8.0 kip/ft from the combined resistance of the NSM CFRP and the existing deck reinforcement.

Design the NSM CFRP using a Resistance Factor of 1.0 and an Environmental Reduction Factor of 0.85.

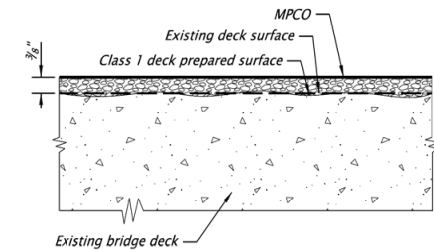
See Special Provision 00566 for additional requirements.

Provide a NSM CFRP that meets the following minimum properties:

Size	Diameter	Area	Tensile Strength	Tensile Modulus of Elasticity	Ultimate Strain
	in	in ²	ksi	ksi	%
#4	0.5	0.196	250	16500	1.5

**SECTION A-A****DECK OVERHANG STRENGTHENING DETAILS**

Scale: None

**MPCO DETAIL**

Scale: None

Db = Diameter of bar

S = Spacing of NSM CFRP bars, as determined by manufacturer's engineer. See NSM CFRP Note.

SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

STRUCTURE NO. 00901C		OREGON DEPARTMENT OF TRANSPORTATION	
BOS DWG NO. 100940		SIXES RIVER HWY 9	
CALC. BOOK 6992		US101: CHILDERS RD - GARRISON SLOUGH SECTION OREGON COAST HIGHWAY CURRY COUNTY	
HWY: 009 M.P.: 295.75		Designer: Robert E. Grubbs Checker: Michael L. Janssen/Darr D. Fazio	Reviewer: George F. Bornstedt Checker: Fred M. Quinlan
COUNTY Curry	DATE 7/2018	RENEWES: 06-30-2019	SHEET NO. JB03

BRIDGE NAME:	Sixes River, Hwy 9	BRIDGE NO:	00901C	KEY NO:	18870
SECTION NAME:	US101: CHILDERS RD - GARRISON SLOUGH SECTION	COUNTY:	Curry	CONTR #	15104
PRIMARY PROJ:	Rail Replace	BID DATE:	10/11/2018	FAP NO:	S009(471)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-BULB T 65 IN	# BIDS RECVD:	2	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

997.00	LF	Linear Unit Cost	292.08		326.58			
SUBTOTAL				277,000		301,000		
PERCENT MOBILIZATION			5.11	14,200	8.19	24,600		
TOTAL				291,200		325,600		

Miscellaneous Project - Deck Overhang Strengthening, Joint Repair

SUBTOTAL				126,800		130,400		
PERCENT MOBILIZATION			5.11	6,500	8.19	10,700		
TOTAL				133,300		141,100		

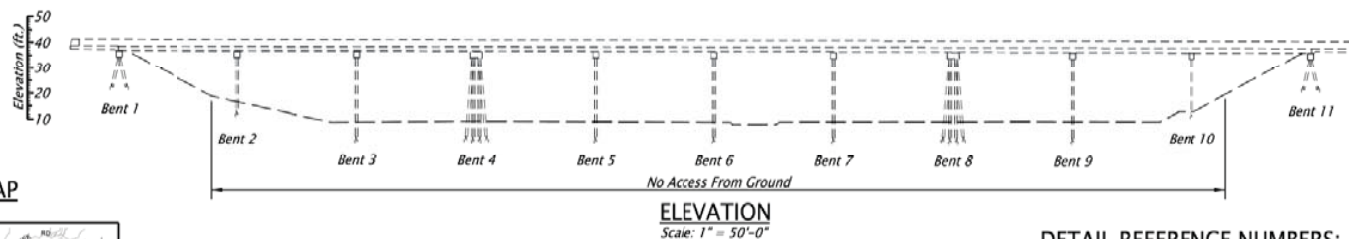
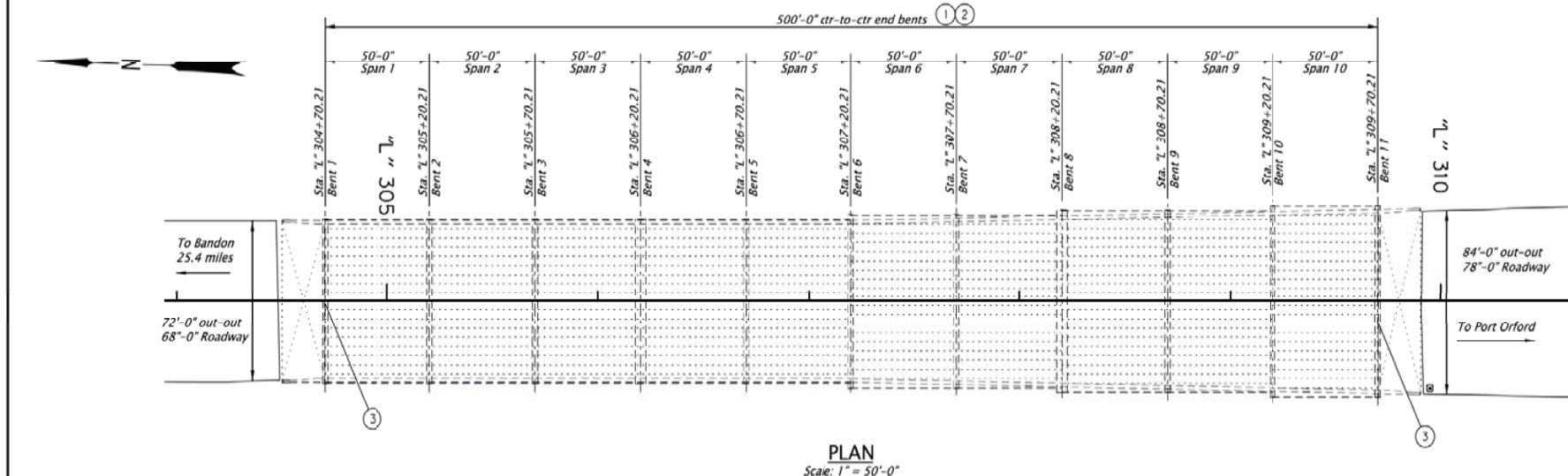
Multi-Layer Polymer Concrete Overlay (MPCO)

23400.00	SF	MPCO Roadway Area Unit Costs	4.63		4.24			
SUBTOTAL				103,000		91,800		
PERCENT MOBILIZATION			5.11	5,300	8.19	7,500		
TOTAL				108,300		99,300		

DETAILS

Rail Replacement								
997.00	FOOT	3 TUBE STEEL RAIL, MODIFIED, CURB MOUNTED	277.83	277,000	301.91	301,000	325.98	277.83
Deck Overhang Strengthening, Joint Repair								
208.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	21.50	4,472	22.00	4,576	22.50	21.50
3,725.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	29.80	111,000	31.01	115,500	32.21	29.80
109.00	FOOT	TYPE "D" COMPRESSION SEALS	101.83	11,100	92.20	10,050	101.83	82.57
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	135.00	270	137.50	275	140.00	135.00
MPCO								
26.00	SQYD	CLASS 2 PREPARATION	500.00	13,000	250.01	6,500	500.00	0.01
2,600.00	SQYD	FURNISH MPCO MATERIAL	17.30	44,980	16.40	42,640	17.30	15.50
2,600.00	SQYD	CONSTRUCT MPCO	17.30	44,980	16.40	42,640	17.30	15.50

BRIDGE NAME:			Sixes River, Hwy 9		BRIDGE NO:		00901C		KEY NO:		18870		
SECTION NAME:			US101: CHILDERS RD - GARRISON SLOUGH SECTION		COUNTY:		Curry		CONTR #		15104		
PRIMARY PROJ:			Rail Replace		BID DATE:		10/11/2018		FAP NO:		S009(471)		
STRUCT TYPE:			RC DECK GIRDER-PRECAST-BULB T 65 IN		# BIDS RECVD:		2		AWARDED TO:		LTM INC		
										PREPARED BY:			
					CONTRACT			2 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Additional Items													
6,000.00		SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT			0.92	5,500		15.79	94,750		30.67	0.92
1,110.00		SQFT	BRIDGE REMOVAL WORK			100.00	111,000		95.05	105,500		100.00	90.09
4.00		EACH	GUARDRAIL TRANSITION			3,250.00	13,000		3,250.00	13,000		3,250.00	3,250.00

**GENERAL NOTES:**

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018.

Field verify joint dimensions.

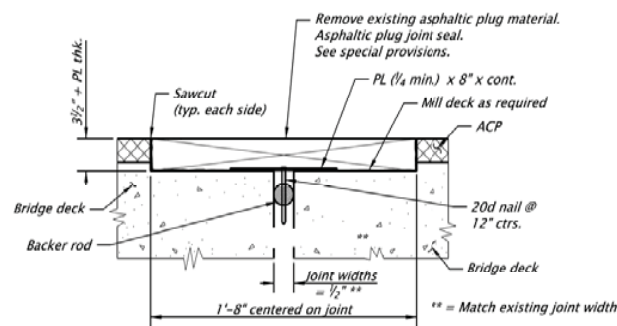
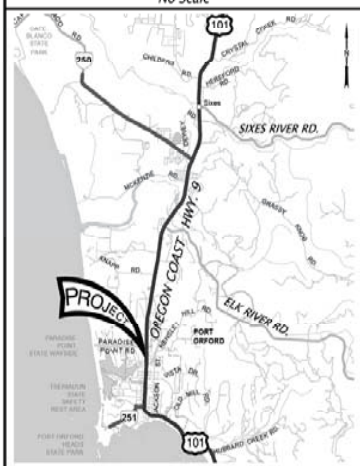
See BR157 for details not shown.

DETAIL REFERENCE NUMBERS:

- ① Locate and repair damaged concrete in exterior slabs. Replace damaged reinforcing steel and place zinc anodes. See JD02 for details.
- ② Locate and repair damaged concrete in prestressed piles.
- ③ Remove and replace asphaltic plug seal. See detail on this sheet.

**LOCATION MAP**

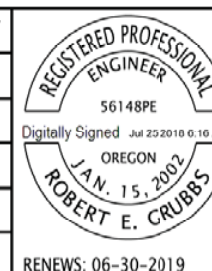
No Scale



SEC. 32, T.32S., R.15W., W.M.
LAT. 42.75760, LONG. 124.49747

ACCOMPANIED BY DWGS:
BR157, JD02, & JD03

STRUCTURE NO.	16231
BOS DWG NO.	100944
CALC. BOOK	6992
HWY: 009	
M.P.: 300.0	
COUNTY	Curry
DATE	7/2018

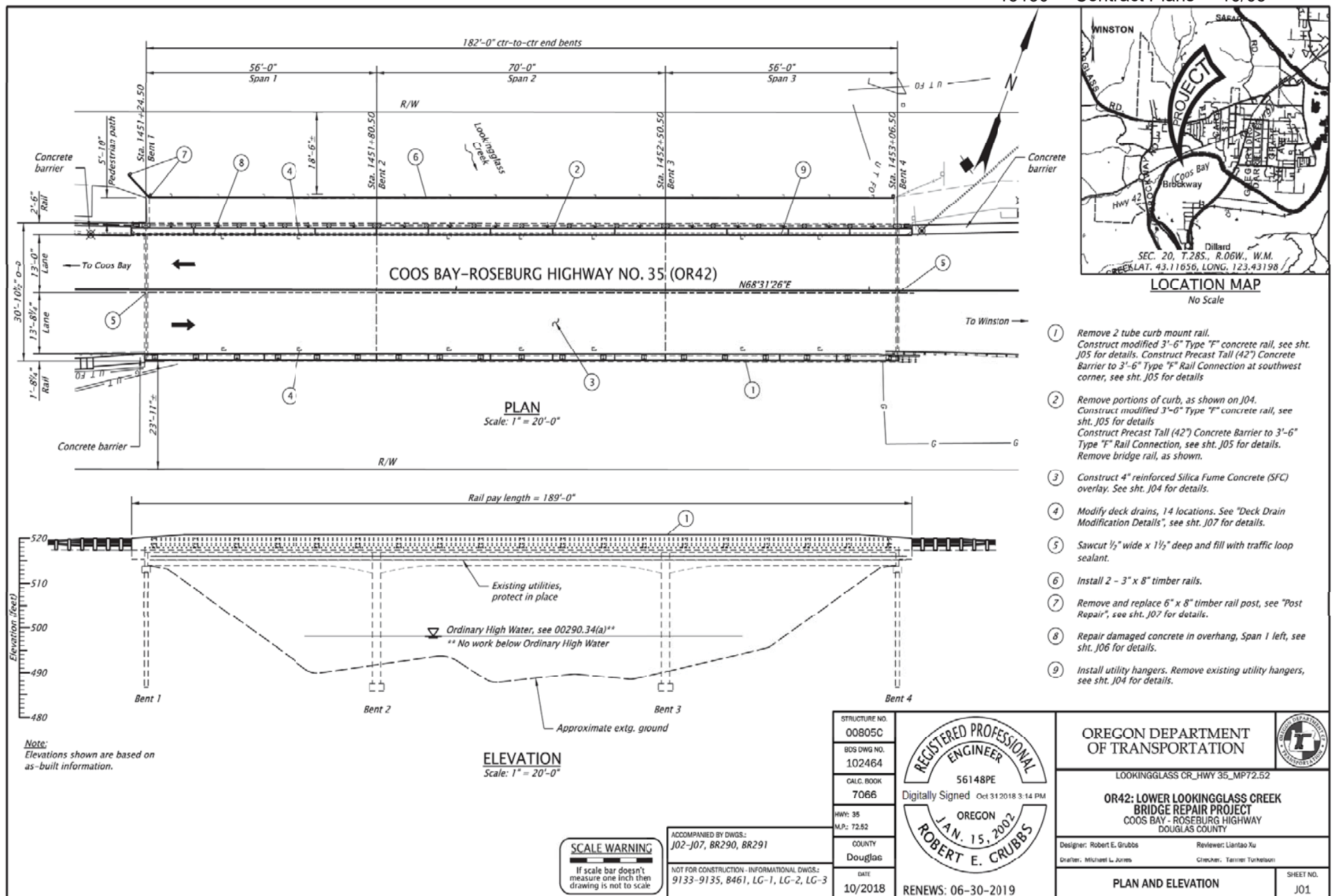


OREGON DEPARTMENT OF TRANSPORTATION	
GARRISON SL. HWY 9 (MILL CR)	
US101: CHILDERS RD - GARRISON SLOUGH SECTION	
OREGON COAST HIGHWAY	
CURRY COUNTY	
Designer: Robert E. Grubbs	Reviewer: George F. Bornstedt
Drafter: Michael L. Jones/Dan D. Foss	Checker: Fred M. Gomez
PLAN, ELEVATION, AND JOINT DETAILS	
SHEET NO. JD01	

BRIDGE NAME:	Garrison Slough, Hwy 9	BRIDGE NO:	16231	KEY NO:	18870
SECTION NAME:	US101: CHILDERS RD - GARRISON SLOUGH SECTION	COUNTY:	Curry	CONTR #	15104
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/11/2018	FAP NO:	S009(471)
STRUCT TYPE:	PS SLABS SL21	# BIDS RECVD:	2	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Repair								
		SUBTOTAL		679,300		555,800		
		PERCENT MOBILIZATION	5.11	34,700	8.19	45,500		
		TOTAL		714,000		601,300		
DETAILS								
Bridge Repair - Locate and Repair Damaged Concrete, Replace Joint Seal								
146.00	FOOT	ASPHALTIC PLUG SEALS	138.36	20,200	129.11	18,850	138.36	119.86
1.00	CUYD	ASPHALTIC PLUG SEAL MATERIAL	7,000.00	7,000	7,000.00	7,000	7,000.00	7,000.00
53.00	EACH	REPAIR DAMAGED REINFORCING BAR	830.00	43,990	665.00	35,245	830.00	500.00
17,380.00	SQFT	LOCATE DAMAGED CONCRETE	19.10	332,000	11.71	203,500	19.10	4.32
117.00	SQYD	REPAIR DAMAGED CONCRETE	1,825.00	213,525	1,762.50	206,212	1,825.00	1,700.00
56.00	SQYD	MORTAR BUILDUP ON SHALLOW REBAR	1,050.00	58,800	1,425.00	79,800	1,800.00	1,050.00
53.00	EACH	INSTALL ZINC ANODES	72.00	3,816	98.50	5,220	125.00	72.00
Additional Items								
6,000.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	13.33	80,000	15.00	90,000	16.67	13.33

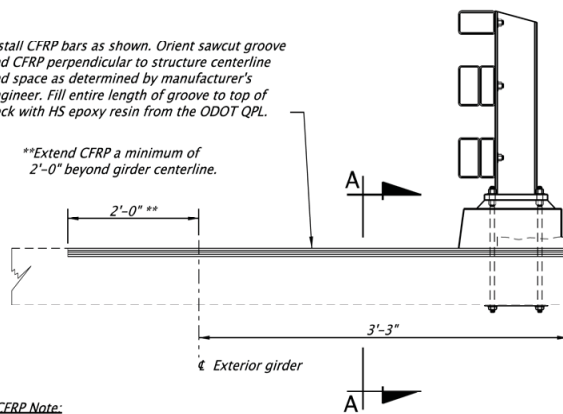


BRIDGE NAME:	Lower Lookingglass Creek, Hwy 35			BRIDGE NO:	00805C		KEY NO:	18586	
SECTION NAME:	OR42: LOWER LOOKINGGLASS CREEK BRIDGE REPAIR PROJECT			COUNTY:	Douglas		CONTR #	15130	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	02/07/2019		FAP NO:	S035(069)	
STRUCT TYPE:	RC DECK GIRDER-CIP			# BIDS RECVD:	10		AWARDED TO:	OREGON STATE BRIDGE	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Repair									
SUBTOTAL					102,200		101,900		
PERCENT MOBILIZATION				11.10	11,300	10.44	10,600		
TOTAL					113,500		112,500		
Rail Replacement									
378.00	LF	Linear Unit Cost		367.46		365.08			
SUBTOTAL					125,000		125,000		
PERCENT MOBILIZATION				11.10	13,900	10.44	13,000		
TOTAL					138,900		138,000		
Deck Overlay									
4878.00	SF	Deck Overlay Roadway Area Unit Costs		15.23		18.38			
SUBTOTAL					66,900		83,600		
PERCENT MOBILIZATION				11.10	7,400	10.44	8,700		
TOTAL					74,300		89,600		
DETAILS									
Bridge Repair									
26,555.00	LB	REINFORCEMENT		2.26	60,000	2.44	64,717	3.20	1.85
14.00	EACH	BRIDGE DRAINS		1,000.00	14,000	1,000.00	14,000	1,000.00	1,000.00
16.00	SQFT	REPAIR DAMAGED CONCRETE		310.00	4,960	303.33	4,853	450.00	150.00
0.75	MFBM	TIMBER AND LUMBER		4,357.00	3,268	7,119.00	5,339	10,000.00	4,357.00
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES		20,000.00	20,000	13,000.00	13,000	20,000.00	4,000.00
Rail Replacement									
378.00	FOOT	3'-6" TYPE "F" CONCRETE RAIL, MODIFIED		330.69	125,000	330.69	125,000	343.92	317.46
Bridge Deck SFC Overlay									
69.00	SQYD	CLASS 2 PREPARATION		163.00	11,247	332.67	22,954	485.00	163.00
66.00	CUYD	FURNISH SILICA FUME CONCRETE		191.00	12,606	223.67	14,762	300.00	180.00
542.00	SQYD	CONSTRUCT SFC RESURFACING		75.00	40,650	80.00	43,360	100.00	65.00
473.00	SQYD	SAW CUT TEXTURING		5.00	2,365	5.27	2,491	6.80	4.00

BRIDGE NAME:			Lower Lookingglass Creek, Hwy 35		BRIDGE NO:		00805C		KEY NO:		18586		
SECTION NAME:			OR42: LOWER LOOKINGGLASS CREEK BRIDGE REPAIR PROJECT		COUNTY:		Douglas		CONTR #		15130		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		02/07/2019		FAP NO:		S035(069)		
STRUCT TYPE:			RC DECK GIRDER-CIP		# BIDS RECVD:		10		AWARDED TO:		OREGON STATE BRIDGE		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT		AMT	UNIT		AMT	HIGH	LOW
Additional Items													
364.00		SQFT	BRIDGE REMOVAL WORK			137.36		50,000	96.15		35,000	137.36	68.68
1,092.00		LS	TEMPORARY WORK ACCESS AND CONTAINMENT			48.53		53,000	43.65		47,667	48.53	36.63

Install CFRP bars as shown. Orient sawcut groove and CFRP perpendicular to structure centerline and space as determined by manufacturer's engineer. Fill entire length of groove to top of deck with HS epoxy resin from the ODOT QPL.

**Extend CFRP a minimum of 2'-0" beyond girder centerline.



NSM CFRP Note:

Strengthen the existing deck overhang within 3 feet of all rail posts to resist the ultimate moment of 35.9 kip-ft and ultimate tension of 15.9 kip/ft using the combined resistance of the NSM CFRP and the existing deck reinforcement (deck reinforcement development length, $l_d=10'$).

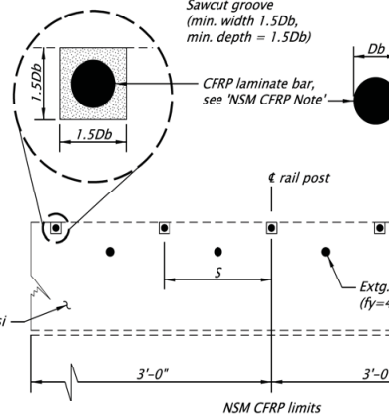
Design the NSM CFRP using a Resistance Factor of 1.0 and an Environmental Reduction Factor of 0.85.

See Special Provision 00566 for additional requirements.

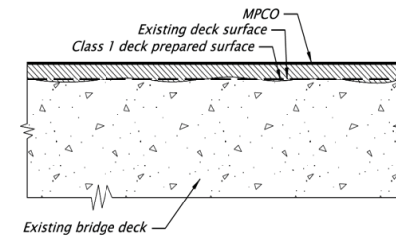
Field verify dimensions prior to construction.

Provide a NSM CFRP that meets the following minimum properties:

Size	Diameter	Area	Tensile Strength	Tensile Modulus of Elasticity	Ultimate Strain
	in	in ²	ksi	ksi	%
#4	0.5	0.196	250	16500	1.5



SECTION A-A



MPCO DETAIL
Scale: No Scale

Db = Diameter of bar

S = Spacing of NSM CFRP bars, as determined by manufacturer's engineer. See NSM CFRP Note.

DECK OVERHANG STRENGTHENING DETAILS

Scale: No Scale

STRUCTURE NO. 09777		OREGON DEPARTMENT OF TRANSPORTATION		
BOS DWG NO. 100747		LITTLE BUTTE CR HWY 270		
CALC. BOOK 6967		OR140/OR238: BRIDGE & CULVERT RAIL UPGRADES PROJECT LAKE OF THE WOODS HIGHWAY 270, OR 140 JACKSON COUNTY		
HWY: 270 M.P.: 7.75		Designer: Robert E. Grubbs Drafter: Michael L. Jones / Daniel D. Foss	Reviewer: Zachary T. Beget Checker: Michael D. Jacobson	
COUNTY JACKSON	DECK OVERHANG STRENGTHENING AND MPCO DETAILS		SHEET NO. JA03	
DATE 08/18	RENEWS: 06-30-2019 FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST		Rotation: 0° Scale: NO SCALE	

BRIDGE NAME:	Little Butte Creek, Hwy 270	BRIDGE NO:	09777	KEY NO:	19961
SECTION NAME:	OR140/OR238: BRIDGE & CULVERT RAIL UPGRADES PROJECT	COUNTY:	Jackson	CONTR #	15106
PRIMARY PROJ:	Rail Replacement	BID DATE:	10/11/2018	FAP NO:	STP - SA00(057)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE V	# BIDS RECVD:	6	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail Replacement

643.00	LF	Linear Unit Cost	367.03		287.25			
SUBTOTAL				212,300		164,900		
PERCENT MOBILIZATION			11.14	23,700	12.00	19,800		
TOTAL				236,000		184,700		

Miscellaneous Project - Deck Overhang Strengthening

SUBTOTAL				221,300		162,500		
PERCENT MOBILIZATION			11.14	24,700	12.00	19,500		
TOTAL				246,000		182,000		

Multi-Layer Polymer Concrete Overlay (MPCO)

16110.00	SF	MPCO Roadway Area Unit Costs	4.54		5.58			
SUBTOTAL				65,900		80,300		
PERCENT MOBILIZATION			11.14	7,300	12.00	9,600		
TOTAL				73,200		89,900		

DETAILS

Rail Replacement

643.00	FOOT	3 TUBE STEEL RAIL, MODIFIED	329.70	212,000	256.09	164,667	329.70	174.18
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	160.00	320	133.33	267	160.00	90.00

Deck Overhang Strengthening, End Block Replacement

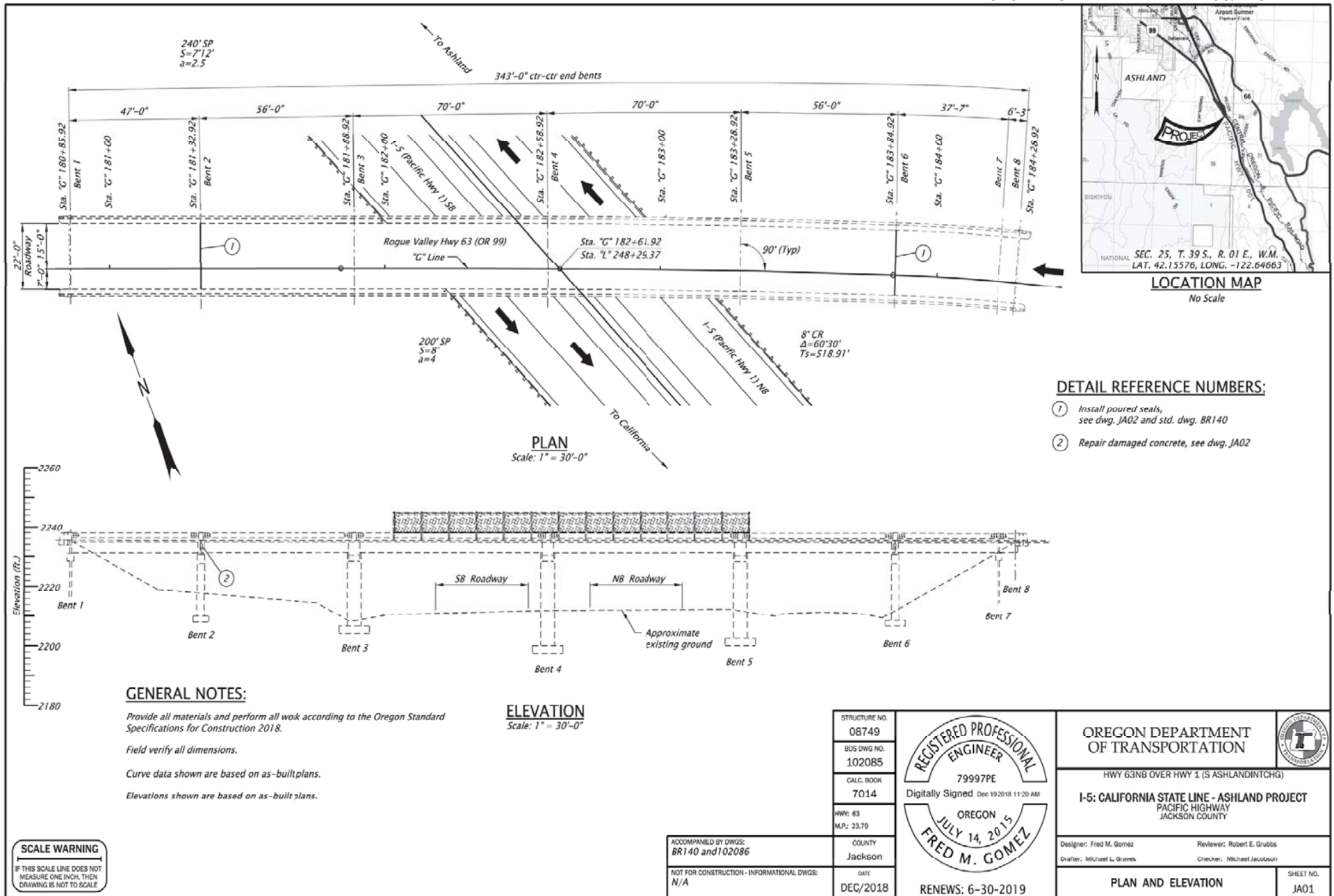
13.00	CUYD	STRUCTURE EXCAVATION	376.92	4,900	869.23	11,300	2,000.00	230.77
6,761.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	28.99	196,000	19.13	129,333	28.99	3.25
48.00	FOOT	END BLOCK, MODIFIED	425.00	20,400	456.00	21,888	700.00	243.00

MPCO

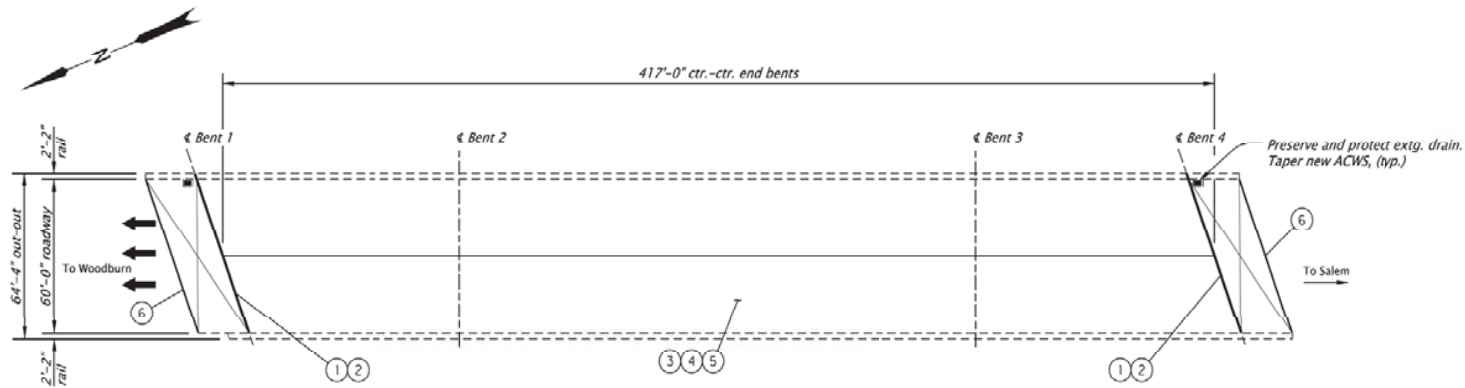
18.00	SQYD	CLASS 2 PREPARATION	480.00	8,640	716.67	12,900	1,200.00	470.00
1,790.00	FOOT	FURNISH MPCO MATERIAL	16.00	28,640	17.00	30,430	18.00	16.00
1,790.00	SQYD	CONSTRUCT MPCO	16.00	28,640	20.67	36,993	28.00	16.00

Additional Items

2,571.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	0.39	1,000	8.43	21,667	15.95	0.39
643.00	FOOT	BRIDGE REMOVAL WORK	44.79	28,800	52.26	33,600	65.32	44.79
4.00	EACH	GUARDRAIL TRANSITION	1,900.00	7,600	2,596.67	10,387	4,000.00	1,890.00

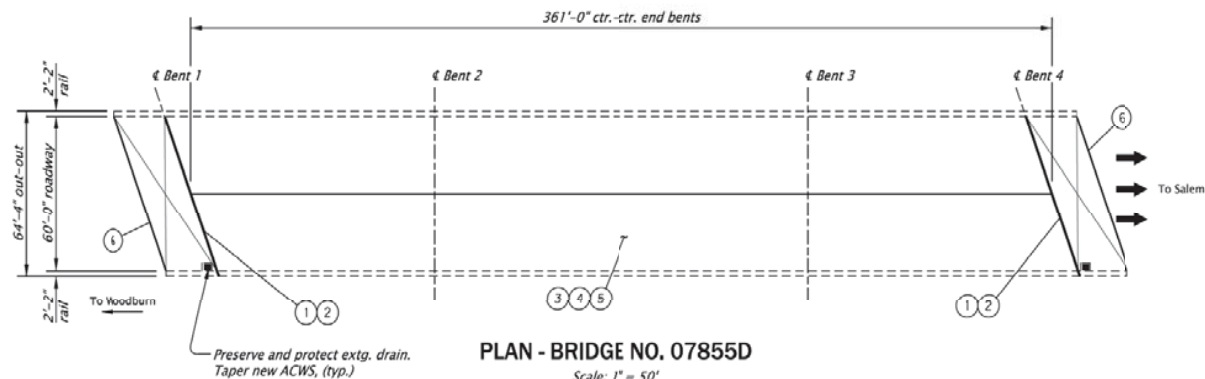


BRIDGE NAME:			Hwy 63 over Hwy 1 (S Ashland Intchg)		BRIDGE NO:		08749		KEY NO:		18873			
SECTION NAME:			I-5: CALIFORNIA STATE LINE - ASHLAND PROJECT		COUNTY:		Jackson		CONTR #		15134			
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		04/18/2019		FAP NO:		S001(475)			
STRUCT TYPE:			RC DECK GIRDER-CIP		# BIDS RECVD:		5		AWARDED TO:		CARTER & COMPANY INC			
										PREPARED BY:				
					CONTRACT		3 LOW BIDDERS			SPREAD				
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW	
Miscellaneous Project - Bridge Repair														
					SUBTOTAL		13,300			18,000				
					PERCENT MOBILIZATION	11.10	1,500		11.10	2,000				
					TOTAL		14,800			20,000				
DETAILS														
Bridge Repair														
44.00		FOOT	POURED SEALS			25.00	1,100		36.55		1,608		45.45	25.00
53.00		SQFT	REPAIR DAMAGED CONCRETE			230.00	12,190		310.00		16,430		500.00	200.00
Additional Items														
1.00		LS	TEMPORARY WORK ACCESS AND CONTAINMENT			20,000.00	20,000		10,833.33		10,833		20,000.00	2,500.00



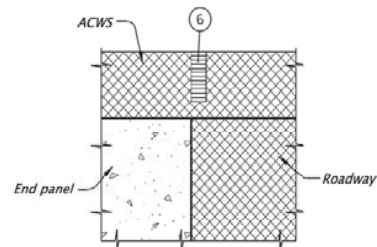
PLAN - BRIDGE NO. 07855C

Scale: 1" = 50'



PLAN - BRIDGE NO. 07855D

Scale: 1" = 50'



DETAIL "A"

No scale

Note:
For Bridge No. 07855D
Remove existing membrane prior to
constructing polymer membrane.

07855C HWY. 1 NB OVER HWY. 72 N3
07855D HWY. 1 SB OVER HWY. 72 N3

ACCOMPANIED BY DWGS.:
BR157

SCALE WARNING
IF THIS SCALE LINE DOES NOT
MEASURE ONE INCH, THEN
DRAWING IS NOT TO SCALE

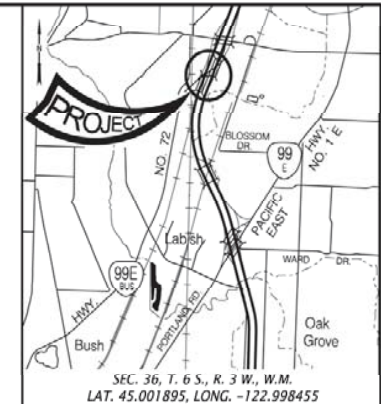
STRUCTURE NO. See above	
SOS DWG NO. 102701	
CALC. BOOK 7083	
DATE 01/2019	
HWY: 001 M.P.: 269.96	RENEWED: 12-31-2019 FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION VARIOUS STRUCTURES I-5: WOODBURN - SALEM SEC. PACIFIC HIGHWAY MARION COUNTY		
Designer: Clayton Davey, PE Checker: Matthew Stucker, PE	Reviewer: Matthew Stucker, PE Checker: Matthew Stucker, PE	
PLAN AND DETAILS		SHEET NO. JB01

General Notes:
Provide all materials and perform all
work according to the Oregon Standard
Specifications for Construction 2018.

CONSTRUCTION NOTES:

- 1 Remove extg. asphaltic plug seal joint
- 2 Const. new asphaltic plug seal joint, see std. dwg. no. BR157
- 3 Remove 3" of extg. ACWS to bare concrete deck on bridge and end panels. Perform class 2 preparation
- 4 Const. polymer membrane on bridge. Membrane is not required on end panels.
- 5 Const. up to 3" ACWS
- 6 Sawcut ACWS 1 1/2" deep x 1/2" wide, fill with hot poured joint filler from QPL, see Detail "A"

LOCATION MAP
No Scale

BRIDGE NAME:	Hwy 1 NB over Hwy 72 NB	BRIDGE NO:	07855C	KEY NO:	19831
SECTION NAME:	I-5: WOODBURN - SALEM SEC.	COUNTY:	Marion	CONTR #	15137
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	03/28/2019	FAP NO:	S001(508)
STRUCT TYPE:	RC BOX GIRDER - POST TENSN	# BIDS RECVD:	2	AWARDED TO:	OREGON MAINLINE PAVING LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				208,600		224,700		
PERCENT MOBILIZATION			11.11	23,200	10.10	22,700		
TOTAL				231,800		247,400		

DETAILS

Joint Seal Replacement & Deck Membrane

2,780.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2-4 INCHES DEEP	3.25	9,035	6.83	18,974	10.40	3.25
405.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2" DEEP	3.25	1,316	7.88	3,189	12.50	3.25
128.00	FOOT	ASPHALTIC PLUG SEALS	144.53	18,500	148.14	18,963	151.76	144.53
0.30	CUYD	ASPHALTIC PLUG SEAL MATERIAL	6,750.00	2,025	6,897.50	2,069	7,045.00	6,750.00
72.00	FOOT	POURED SEALS	27.78	2,000	27.99	2,015	28.19	27.78
25,020.00	SQFT	POLYMER MEMBRANE	4.80	120,096	4.93	123,224	5.05	4.80
278.00	SQYD	CLASS 2 PREPARATION	200.00	55,600	202.50	56,295	205.00	200.00

BRIDGE NAME:	Hwy 1 SB over Hwy 72 NB	BRIDGE NO:	07855D	KEY NO:	19831
SECTION NAME:	I-5: WOODBURN - SALEM SEC.	COUNTY:	Marion	CONTR #	15137
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	03/28/2019	FAP NO:	S001(508)
STRUCT TYPE:	RC BOX GIRDER - POST TENSN	# BIDS RECVD:	2	AWARDED TO:	OREGON MAINLINE PAVING LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

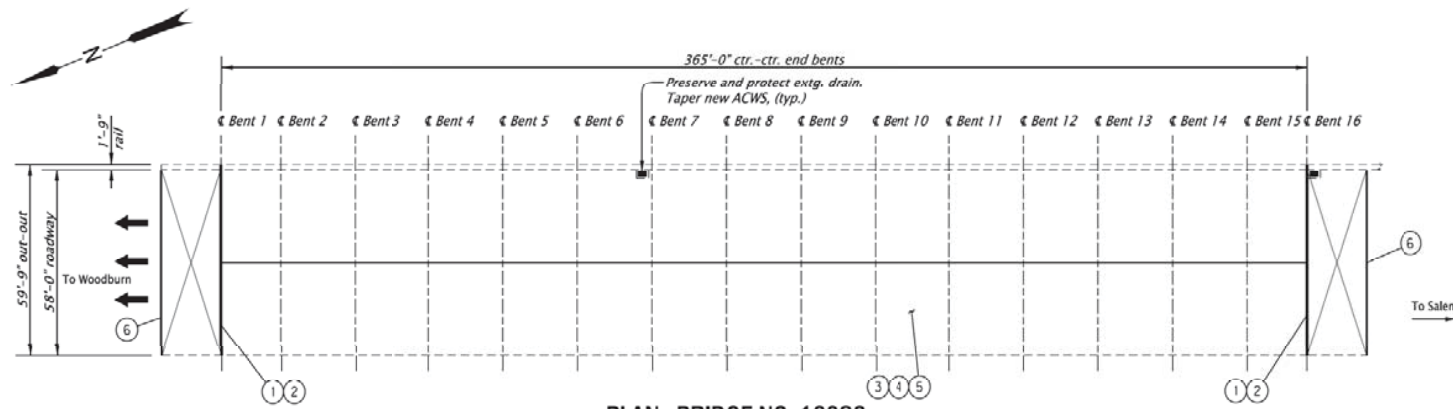
Miscellaneous Project - Bridge Repair

SUBTOTAL				186,400		199,700		
PERCENT MOBILIZATION			11.11	20,700	10.10	20,200		
TOTAL				207,100		219,900		

DETAILS

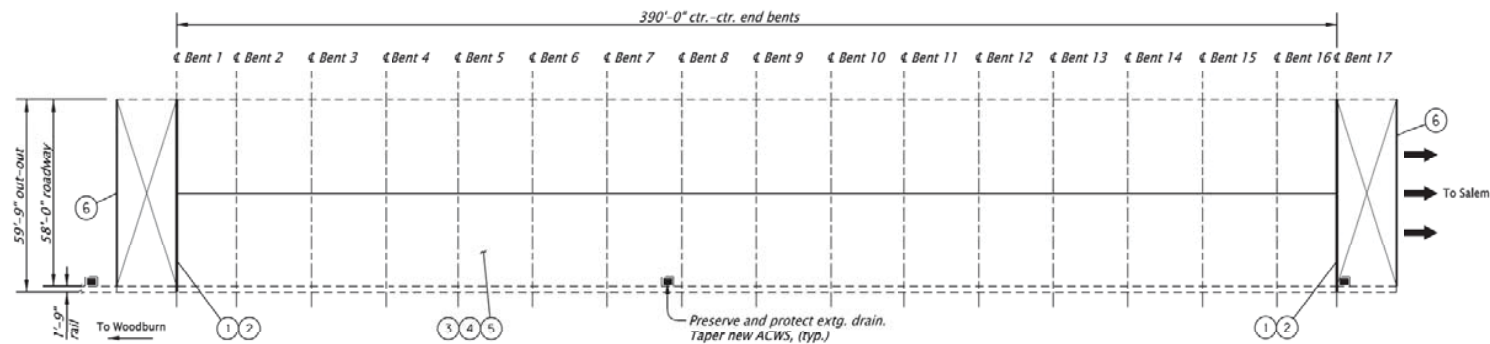
Joint Seal Replacement & Deck Membrane

2,407.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2-4 INCHES DEEP	3.25	7,823	6.83	16,428	10.40	3.25
405.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2" DEEP	3.25	1,316	7.88	3,189	12.50	3.25
128.00	FOOT	ASPHALTIC PLUG SEALS	144.53	18,500	148.05	18,950	151.56	144.53
0.30	CUYD	ASPHALTIC PLUG SEAL MATERIAL	6,750.00	2,025	6,897.50	2,069	7,045.00	6,750.00
72.00	FOOT	POURED SEALS	29.86	2,150	15.15	1,091	29.86	0.44
21,660.00	SQFT	POLYMER MEMBRANE	4.80	103,968	4.93	106,676	5.05	4.80
241.00	SQYD	CLASS 2 PREPARATION	210.00	50,610	213.00	51,333	216.00	210.00



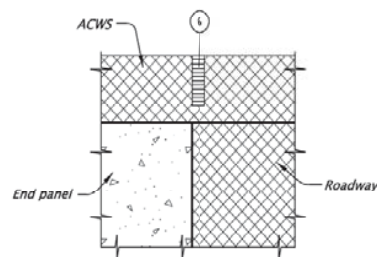
PLAN - BRIDGE NO. 16086

Scale: 1" = 40'



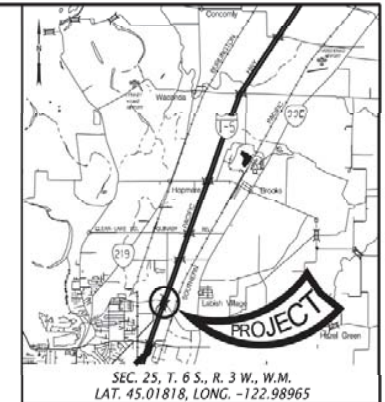
PLAN - BRIDGE NO. 16086A

Scale: 1" = 40'



DETAIL "A"

No scale



LOCATION MAP

No Scale

General Notes:

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018.

CONSTRUCTION NOTES:

- 1 Remove extg. asphaltic plug seal joint
- 2 Const. new asphaltic plug seal joint, see std. dwg. no. BR157
- 3 Remove 3" of extg. ACWS to bare concrete deck on bridge and end panels. Perform class 2 preparation
- 4 Const. polymer membrane on bridge. Membrane is not required on end panels.
- 5 Const. up to 3" ACWS
- 6 Sawcut ACWS 1 1/2" deep x 1/2" wide, fill with hot poured joint filler from QPL, see Detail "A"

16086 LABISH BOTTOM_HWY001NB
16086A LABISH BOTTOM_HWY001SB

STRUCTURE NO. See above	
BOS DWG NO. 102700	
CALC. BOOK 70R3	
DATE 01/2019	
ACCOMPANIED BY DWGS.: BR157	
HWY: 001 M.P.: 261.12 COUNTY Marion	Digitally Signed Jan 24 2019 7:03 AM OREGON NOVEMBER 14, 2017 CLAYTON J. DAVEY RENEW: 12-31-2019

SCALE WARNING
IF THIS SCALE LINE DOES NOT
MEASURE ONE INCH, THEN
DRAWING IS NOT TO SCALE

OREGON DEPARTMENT
OF TRANSPORTATION



VARIOUS STRUCTURES

I-5: WOODBURN - SALEM SEC.
PACIFIC HIGHWAY
MARION COUNTY

Designer: Clayton Davey, PE
Checker: Chankosha Gresham

Reviewer: Matthew Stucker, PE
Checker: Matthew Stucker, PE

PLAN AND DETAILS

SHEET NO.
JA01

BRIDGE NAME:	Labish Bottom, Hwy 1 NB	BRIDGE NO:	16086	KEY NO:	19831
SECTION NAME:	I-5: WOODBURN - SALEM SEC.	COUNTY:	Marion	CONTR #	15137
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	03/28/2019	FAP NO:	S001(508)
STRUCT TYPE:	CAST-IN-PLACE SLABS	# BIDS RECVD:	2	AWARDED TO:	OREGON MAINLINE PAVING LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				183,500		200,400		
PERCENT MOBILIZATION			11.11	20,400	10.10	20,200		
TOTAL				203,900		220,600		

DETAILS

Joint Seal Replacement & Deck Membrane

2,353.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2-4 INCHES DEEP	3.25	7,647	8.13	19,118	13.00	3.25
391.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2" DEEP	3.25	1,271	8.13	3,177	13.00	3.25
116.00	FOOT	ASPHALTIC PLUG SEALS	150.86	17,500	154.74	17,950	158.62	150.86
0.27	CUYD	ASPHALTIC PLUG SEAL MATERIAL	6,750.00	1,822	6,897.50	1,862	7,045.00	6,750.00
72.00	FOOT	POURED SEALS	12.50	900	12.85	925	13.19	12.50
21,170.00	SQFT	POLYMER MEMBRANE	4.95	104,792	5.05	106,908	5.15	4.95
236.00	SQYD	CLASS 2 PREPARATION	210.00	49,560	214.00	50,504	218.00	210.00

BRIDGE NAME:	Labish Bottom, Hwy 1 SB	BRIDGE NO:	16086A	KEY NO:	19831
SECTION NAME:	I-5: WOODBURN - SALEM SEC.	COUNTY:	Marion	CONTR #	15137
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	03/28/2019	FAP NO:	S001(508)
STRUCT TYPE:	CAST-IN-PLACE SLABS	# BIDS RECVD:	2	AWARDED TO:	OREGON MAINLINE PAVING LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

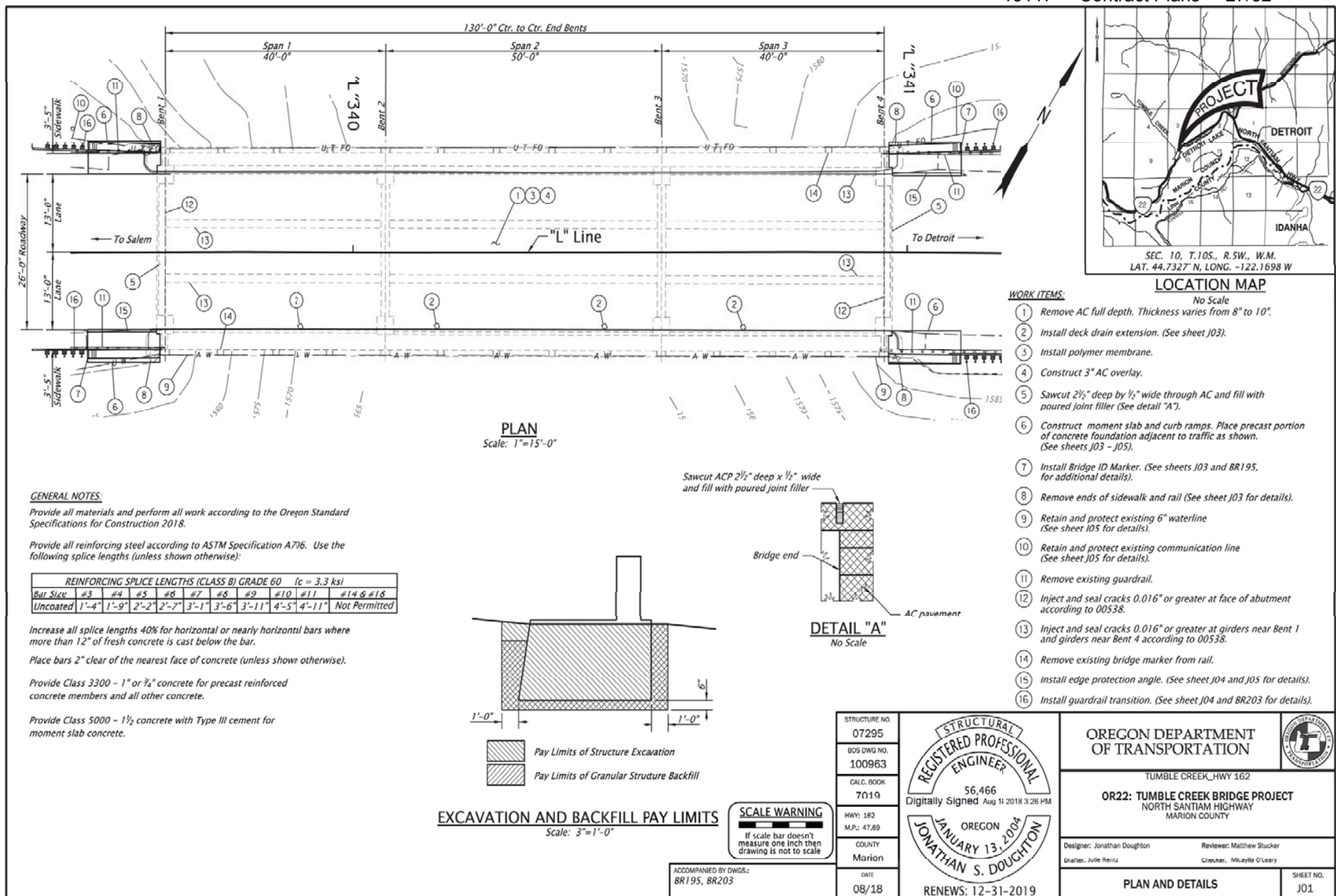
Miscellaneous Project - Bridge Repair

SUBTOTAL				189,900		206,700		
PERCENT MOBILIZATION			11.11	21,100	10.10	20,900		
TOTAL				211,000		227,600		

DETAILS

Joint Seal Replacement & Deck Membrane

2,514.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 2-4 INCHES DEEP	3.25	8,170	7.88	19,798	12.50	3.25
391.00	SQYD	BRIDGE END PANEL COLD PLANE PAVEMENT REMOVAL, 2" DEEP	3.25	1,271	7.88	3,079	12.50	3.25
116.00	FOOT	ASPHALTIC PLUG SEALS	150.86	17,500	154.74	17,950	158.62	150.86
0.27	CUYD	ASPHALTIC PLUG SEAL MATERIAL	6,750.00	1,822	6,897.50	1,862	7,045.00	6,750.00
72.00	FOOT	POURED SEALS	12.50	900	12.85	925	13.19	12.50
22,620.00	SQFT	POLYMER MEMBRANE	4.80	108,576	4.90	110,838	5.00	4.80
252.00	SQYD	CLASS 2 PREPARATION	205.00	51,660	207.50	52,290	210.00	205.00



BRIDGE NAME:	Tumble Creek, Hwy 162	BRIDGE NO:	07295	KEY NO:	18568
SECTION NAME:	OR22: TUMBLE CREEK BRIDGE PROJECT	COUNTY:	Marion	CONTR #	15117
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/01/2018	FAP NO:	S162(057)
STRUCT TYPE:	RC DECK GIRDER-CIP	# BIDS RECVD:	4	AWARDED TO:	NORTH SANTIAM PAVING CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				193,700		183,700		
PERCENT MOBILIZATION			10.68		12.49			
TOTAL								

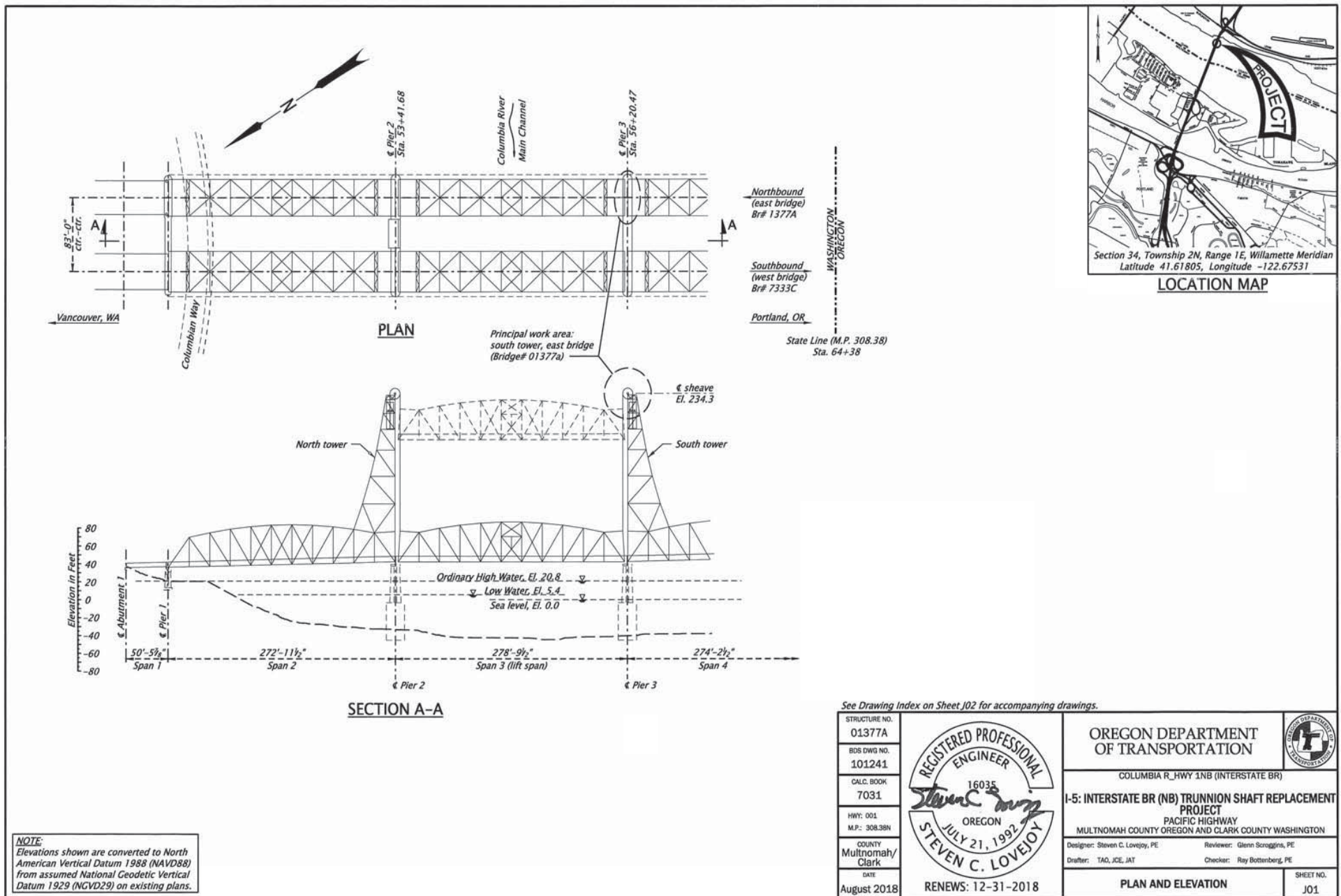
DETAILS

Construct Moment Slab, Install Membrane, Seal Cracks

82.00	CUYD	STRUCTURE EXCAVATION	170.73	14,000	93.50	7,667	170.73	48.78
30.00	CUYD	GRANULAR STRUCTURE BACKFILL	233.33	7,000	166.67	5,000	233.33	83.33
6,600.00	LB	REINFORCEMENT	1.52	10,000	2.42	15,983	3.17	1.52
60.00	FOOT	INJECT AND SEAL CRACKS	52.00	3,120	51.33	3,080	52.00	51.00
47.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 5000	1,702.13	80,000	1,198.58	56,333	1,702.13	765.96
381.00	SQFT	CLASS 2 PREPARATION	91.00	34,671	93.33	35,560	96.00	91.00
3,472.00	SQFT	POLYMER MEMBRANE	5.20	18,054	5.40	18,749	6.00	5.00
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	155.00	310	185.00	370	250.00	150.00
4.00	EACH	EXTRA FOR CURB RAMPS ON STRUCTURES	700.00	2,800	1,788.33	7,153	4,195.00	470.00
388.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 8-10 INCHES DEEP	25.00	9,700	27.50	10,670	44.50	13.00
20.00	CUYD	PRECAST REINFORCED CONCRETE MEMBERS	700.00	14,000	1,158.33	23,167	1,675.00	700.00

Additional Items

46.00	SQFT	BRIDGE REMOVAL WORK	260.87	12,000	246.38	11,333	260.87	217.39
4.00	EACH	GUARDRAIL TRANSITION	2,100.00	8,400	2,100.00	8,400	2,100.00	2,100.00

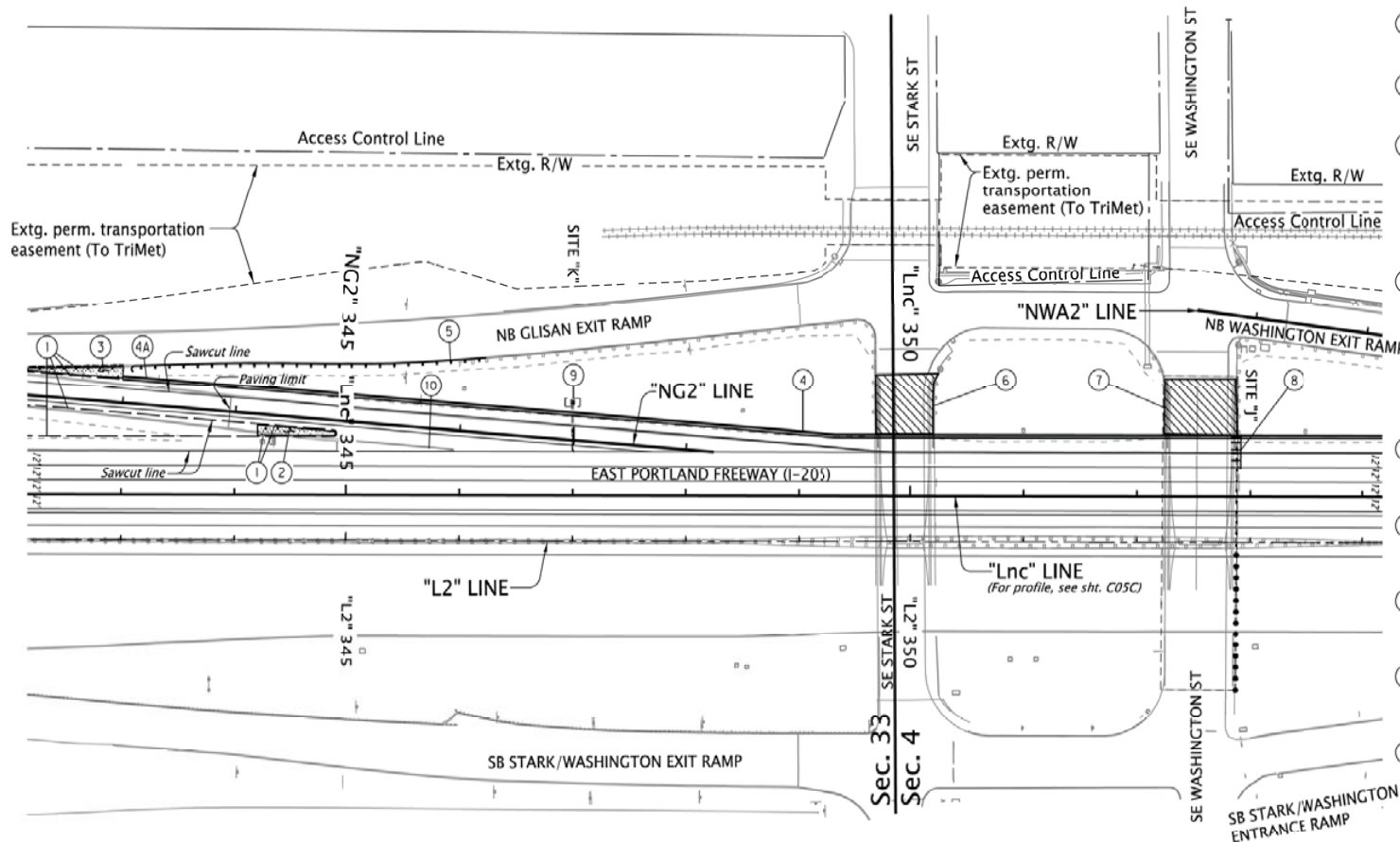
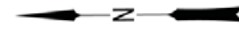


BRIDGE NAME:	Columbia R & N Hayden Isl Dr, Hwy1 NB (Interstate)	BRIDGE NO:	01377A	KEY NO:	19651
SECTION NAME:	I-5: INTERSTATE BR (NB) TRUNNION SHAFT REPLACEMENT PROJECT	COUNTY:	Multnomah	CONTR #	15119
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	12/06/2018	FAP NO:	S001(482)
STRUCT TYPE:	STEEL-MOVABLE-LIFT	# BIDS RECVD:	1	AWARDED TO:	HAMILTON CONSTRUCTION CO

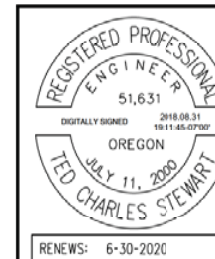
PREPARED BY:

			CONTRACT		1 LOW BIDDER		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Trunnion Shaft Replacement								
		SUBTOTAL		3,346,500		3,346,500		
		PERCENT MOBILIZATION	11.00	368,100	11.00	368,100		
		TOTAL		3,714,600		3,714,600		
DETAILS								
Trunnion Shaft Replacement								
2.00	CUYD	GRANULAR STRUCTURE BACKFILL	750.00	1,500	750.00	1,500	750.00	750.00
1.00	LS	LEAD PAINT REMOVAL/CONTAINMENT	40,000.00	40,000	40,000.00	40,000	40,000.00	40,000.00
1.00	LS	LIFT SPAN REHABILITATION	125,000.00	125,000	125,000.00	125,000	125,000.00	125,000.00
1.00	LS	LIFT SPAN TESTING AND REACTIVATION	30,000.00	30,000	30,000.00	30,000	30,000.00	30,000.00
1.00	LS	PROVIDE BEARING ASSEMBLIES	800,000.00	800,000	800,000.00	800,000	800,000.00	800,000.00
1.00	LS	PROVIDE COUNTERWEIGHT ROPE LOAD EQUALIZE	375,000.00	375,000	375,000.00	375,000	375,000.00	375,000.00
1.00	LS	PROVIDE COUNTERWEIGHT ROPES	675,000.00	675,000	675,000.00	675,000	675,000.00	675,000.00
1.00	LS	PROVIDE SHEAVE AND TRUNNION ASSEMBLIES	1,300,000.00	1,300,000	1,300,000.00	1,300,000	1,300,000.00	1,300,000.00
Additional Items								
1.00	LS	TEMPORARY COUNTERWEIGHT SUPPORT	1,200,000.00	1,200,000	1,200,000.00	1,200,000	1,200,000.00	1,200,000.00
1.00	LS	TEMPORARY CRANE SERVICE	645,000.00	645,000	645,000.00	645,000	645,000.00	645,000.00

Sec. 33, T. 1N, R. 2E, W.M.
Sec. 4, T. 1S, R. 2E, W.M.



- ① Const. low profile mountable curb
- ② Const. 6" conc. surfacing - 373.1 sq. ft.
(For details, see sht. BB03)
- ③ See sht. C04A, note 3
Const. 6" conc. surfacing
- ④ Sta. "NG2" 342+98.3 to Sta. "Lnc" 356+57.2
Const. tall conc. barrier (backfilled) - 1359'
Anchor barrier
(See drg. nos. RD516 and RD545)
(For details, see sht. BB06)
- ④A Const. tall conc. barrier to curb transition
(For details, see shts. BB05)
- ⑤ Sta. "NG2" 343+07.6 to Sta. "NG2" 346+18.5, Lt.
Remove extg. guardrail - 25'
Const. 31" guardrail - 312.5' (Type 2A)
W=1', E=2'
Const. 31" guardrail height conversion
Connect to extg. guardrail
Install end piece (Type B)
Const. anchor (Type 1 mod.)
(See drg. no. RD481)
- ⑥ Remove and reconstruct slope paving - 2550 sq. ft.
(For details, see sht. BB06)
(See drg. no. BR115)
- ⑦ Remove and reconstruct slope paving - 3040 sq. ft.
(For details, see sht. BB06)
(See drg. no. BR115)
- ⑧ Structure No. 13523
Const. structure mounted sign
(For drg. nos., see sht. A02)
- ⑨ Structure No. 19490
Const. structure mounted sign
(For drg. nos., see sht. A02)
- ⑩ P.C. conc. pvmt. repair - 880.2 sq. ft.
(For details, see shts. BB03 and BB10)



**DAVID EVANS
AND ASSOCIATES INC.**
2100 SW River Parkway
Portland Oregon 97201
Phone: 503.223.6663



**I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION
EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES**

Designer: Benjamin Hart
Drafter: Tammie Taggart

Reviewer: Ted Stewart
Checker: Terry Wintner

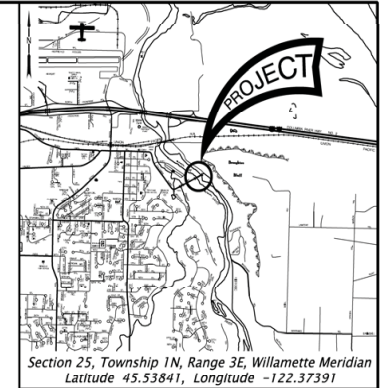
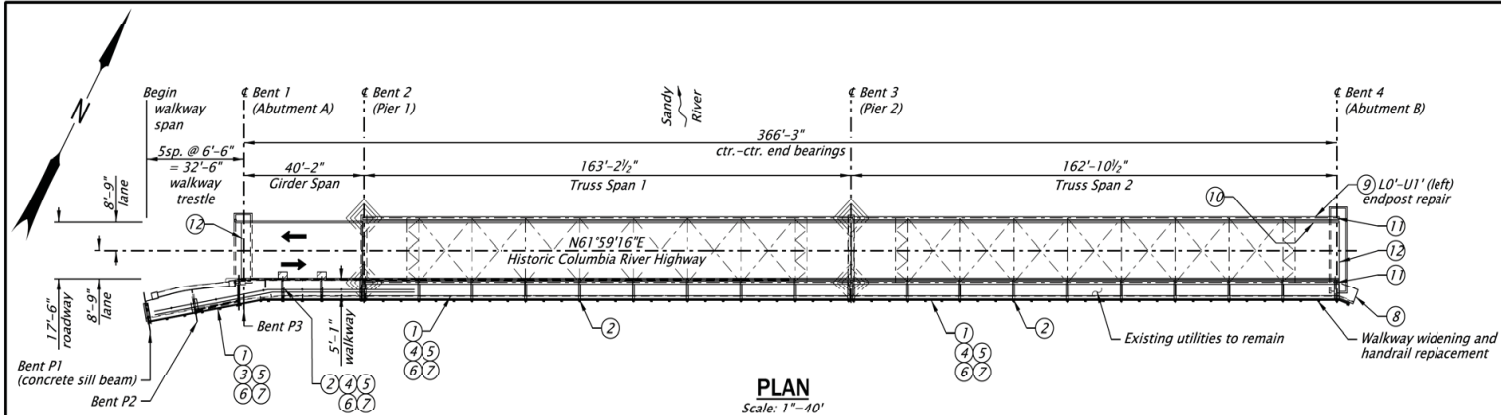
GENERAL CONSTRUCTION

SHEET NO.
C05A

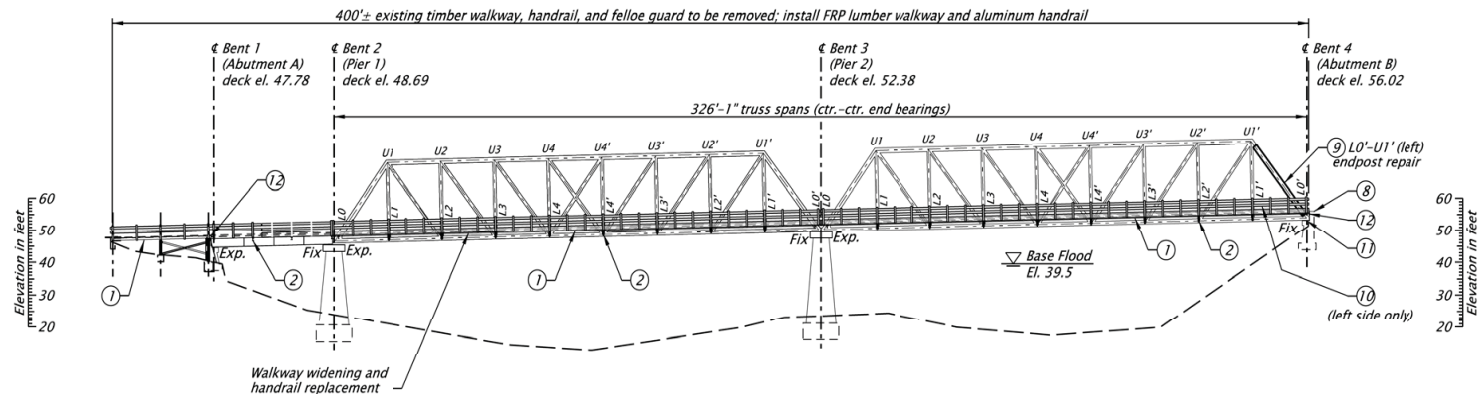
BRIDGE NAME:	SE Stark Street over Hwy 64	BRIDGE NO:	13522	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	RC BOX GIRDER - POST TENSN	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous_Project								
		SUBTOTAL		33,100		62,900		
		PERCENT MOBILIZATION	11.11	3,700	11.06	7,000		
		TOTAL		36,800		69,900		
DETAILS								
Miscellaneous Proj								
2,856.00	SQFT	CONCRETE SLOPE PAVING	10.00	28,560	20.33	58,072	41.00	10.00
114.00	FOOT	SLOPE PAVING CURBS	40.00	4,560	42.00	4,788	46.00	40.00

**WORK ITEMS:**

- ① Remove existing timber walkway, handrail, felloe guard, and treated timber trestle down to ground level.
- ② Remove existing steel walkway brackets.
- ③ Construct concrete footing and steel frame for walkway trestle replacement.
- ④ Install steel walkway brackets.
- ⑤ Construct steel walkway framing.
- ⑥ Construct fiber reinforced plastic (FRP) lumber walkway deck.
- ⑦ Construct aluminum handrail.
- ⑧ Widen pedestrian ramp.
- ⑨ Repair truss endpost L0'-L1' (left).
- ⑩ Replace lattice rail panel, left side only.
- ⑪ Prepare and coat truss fixed bearings, truss span 2, Bent 4.
- ⑫ Replace poured joints at Bents 1 and 4.

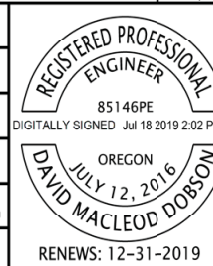


NOTE:
Elevations shown are converted from assumed National Geodetic Vertical Datum 1929 (NGVD29) on existing plans to North American Vertical Datum 1988 (NAVD88).
Conversion used: NGVD29 + 3.37' = NAVD88.

ACCOMPANIED BY DWGS.:
J02 through J24; and BR140.

NOT FOR CONSTRUCTION - INFORMATIONAL DWGS.:
6693, 9404 through 9406, 51947,
52134, and 67797 through 67798.

STRUCTURE NO.	02019
BDS DWG NO.	103347
CALC. BOOK	7166
HWY: 100	
M.P.: 0.03	
COUNTY	Multnomah
DATE	June 2019



OREGON DEPARTMENT
OF TRANSPORTATION

SANDY R. HWY 100 (Sandy River Bridge at Troutdale)

US30: TROUTDALE (SANDY RIVER) BRIDGE PROJECT

HISTORIC COLUMBIA RIVER HIGHWAY
MULTNOMAH COUNTY

Designer: David M. Dobson, PE

Reviewer: Raymond D. Bottenberg, PE

Checker: J. Tillman

Checker: Kelly B. Froese, PE

PLAN AND ELEVATION

SHEET NO.
J01

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

BRIDGE NAME:	Sandy River, Hwy 100	BRIDGE NO:	02019	KEY NO:	20703
SECTION NAME:	US30: TROUTDALE (SANDY RIVER) BRIDGE	COUNTY:	Multnomah	CONTR #	15160
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	09/05/2019	FAP NO:	S100(065)
STRUCT TYPE:	STEEL TRUSS	# BIDS RECVD:	5	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				590,800		741,000		
PERCENT MOBILIZATION			6.16	36,400	9.80	72,600		
TOTAL				627,200		813,600		

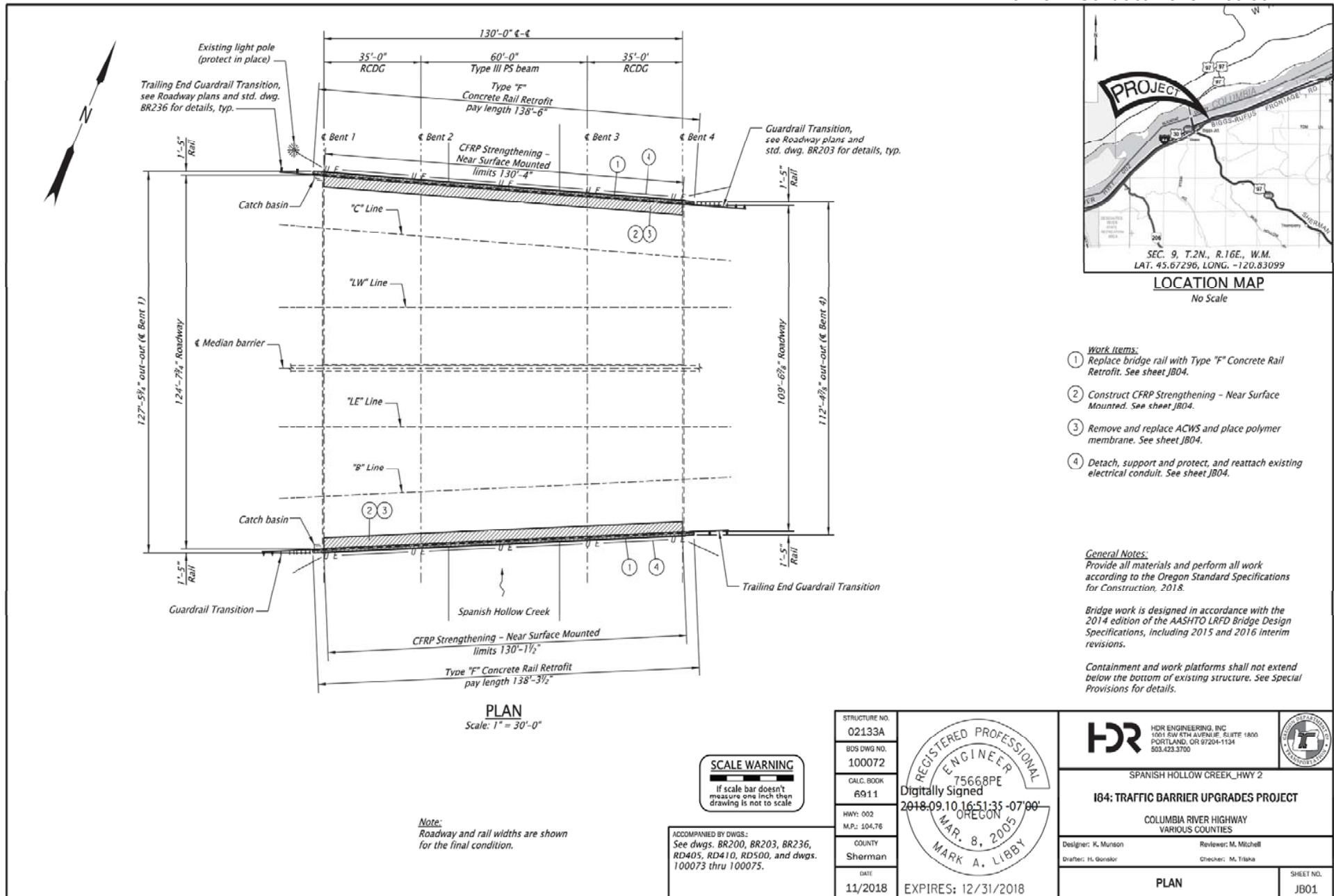
DETAILS

Timber and Steel Walkway Replacement

3.00	CUYD	STRUCTURE EXCAVATION	333.33	1,000	722.22	2,167	1,000.00	333.33
2.00	CUYD	GRANULAR STRUCTURE BACKFILL	700.00	1,400	1,316.67	2,633	2,000.00	700.00
100.00	LB	REINFORCEMENT	5.00	500	16.67	1,667	35.00	5.00
3.00	CUYD	FOUNDATION CONCRETE, CLASS 3300	1,600.00	4,800	2,300.00	6,900	2,800.00	1,600.00
3.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	2,500.00	7,500	2,500.00	7,500	3,500.00	1,500.00
25,812.00	LB	STRUCTURAL STEEL MAINTENANCE	12.67	327,000	13.91	359,000	17.43	11.62
35.00	FOOT	POURED SEALS	17.14	600	86.67	3,033	200.00	17.14
23.00	EACH	GAS LINE UTILITY ATTACHMENTS	260.00	5,980	436.67	10,043	850.00	200.00
1.00	LS	SURFACE PREPARATION	26,000.00	26,000	22,000.00	22,000	26,000.00	15,000.00
1.00	LS	COATING APPLICATION	26,000.00	26,000	22,000.00	22,000	26,000.00	15,000.00
1.00	LS	COATING MATERIALS	4,000.00	4,000	3,333.33	3,333	4,000.00	3,000.00
10.00	EACH	FASTENER REPLACEMENT	800.00	8,000	383.33	3,833	800.00	100.00
42.00	EACH	SEWER PIPE UTILITY ATTACHMENTS	760.00	31,920	820.00	34,440	1,200.00	500.00
410.00	FOOT	ALUMINUM HANDRAIL	315.00	129,150	605.00	248,050	900.00	315.00
18.00	FOOT	STEEL LATTICE RAIL	720.00	12,960	540.00	9,720	720.00	400.00
8,000.00	FBM	PLASTIC LUMBER	0.50	4,000	0.59	4,693	1.25	0.01

Additional Items

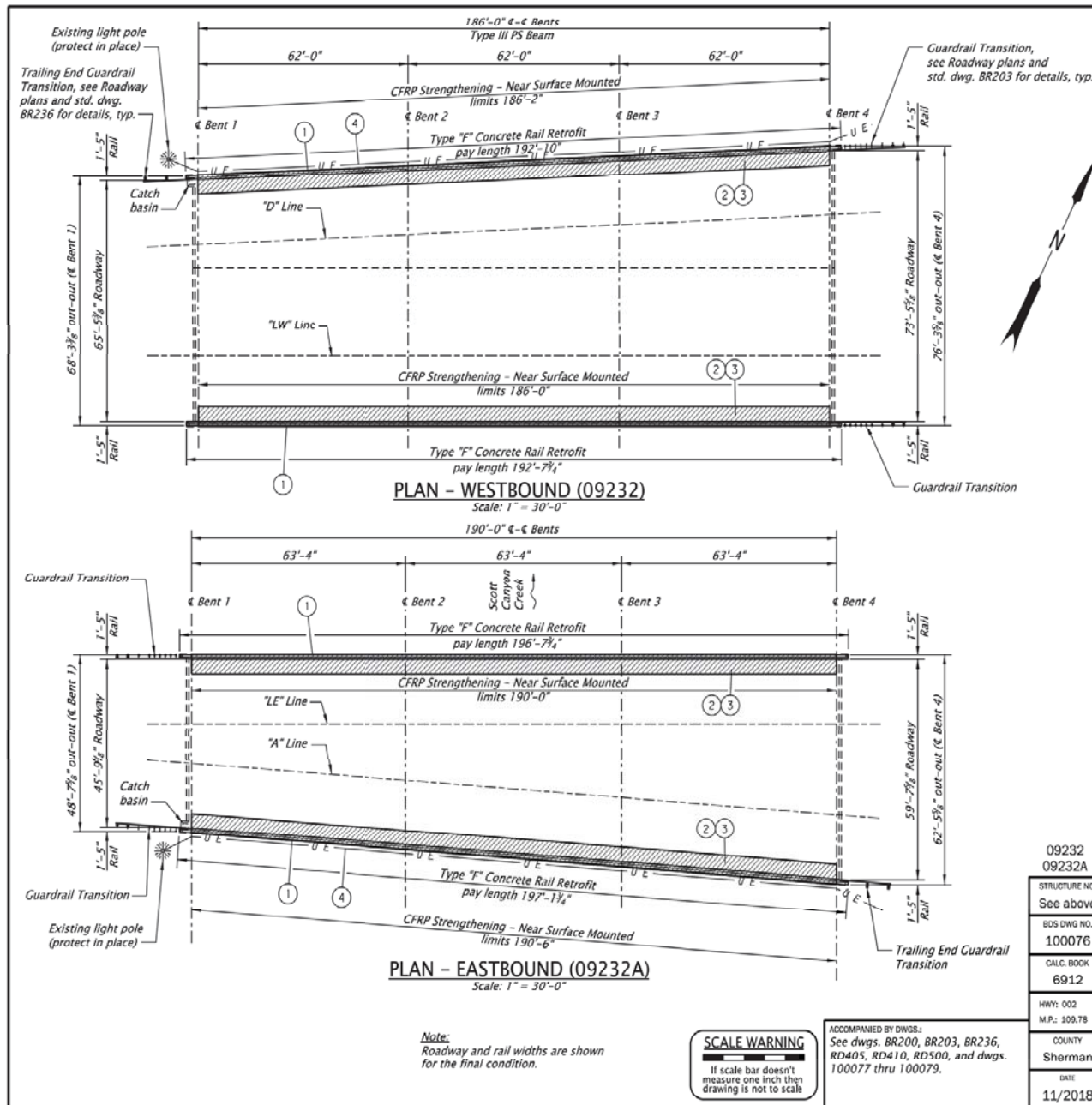
3,586.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	11.15	40,000	21.84	78,333	51.59	2.79
1,600.00	SQFT	BRIDGE REMOVAL WORK	31.25	50,000	46.88	75,000	84.38	25.00
1.00	LS	BRIDGE REMOVAL TEMPORARY CONTAINMENT	10,000.00	10,000	43,333.33	43,333	100,000.00	10,000.00



BRIDGE NAME:	Spanish Hollow Creek, Hwy 2	BRIDGE NO:	02133A	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Rail Replacement								
277.00	LF	Linear Unit Cost	288.09		305.05			
		SUBTOTAL		71,600		76,500		
		PERCENT MOBILIZATION	11.44	8,200	10.44	8,000		
		TOTAL		79,800		84,500		
Miscellaneous Project - Bridge Repair								
		SUBTOTAL		71,600		73,200		
		PERCENT MOBILIZATION	11.44	8,200	10.44	7,600		
		TOTAL		79,800		80,800		
DETAILS								
Rail Replacement								
277.00	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	258.48	71,600	276.29	76,533	351.99	218.41
Overhang Strengthening and Install Membrane								
120.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	3,360	66.00	7,920	100.00	28.00
2,670.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	7.49	20,000	9.34	24,933	10.41	7.49
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES	4,800.00	4,800	9,266.67	9,267	18,000.00	4,800.00
1,070.00	SQFT	POLYMER MEMBRANE	6.00	6,420	6.33	6,777	7.00	6.00
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	22,000.00	22,000	18,000.00	18,000	30,000.00	2,000.00
1.00	LS	WORK CONTAINMENT PLAN	15,000.00	15,000	6,333.33	6,333	15,000.00	1,500.00
277.00	FOOT	BRIDGE REMOVAL WORK	90.25	25,000	87.85	24,333	101.08	72.20
23.00	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	577.00	13,271	462.33	10,634	577.00	260.00
4.00	EACH	GUARDRAIL TRANSITION	2,000.00	8,000	2,850.00	11,400	3,500.00	2,000.00



LOCATION MAP
No Scale

- Work Items:**
- 1 Replace bridge rail with Type "F" Concrete Rail Retrofit. See sheet JC04.
 - 2 Construct CFRP Strengthening - Near Surface Mounted. See sheet JC04.
 - 3 Remove and replace ACWS and place polymer membrane. See sheet JC04.
 - 4 Detach, support and protect, and reattach existing electrical conduit. See sheet JC04.

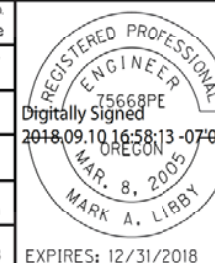
General Notes:
Provide all materials and perform all work according to the Oregon Standard Specifications for Construction, 2018.

Bridge work is designed in accordance with the 2014 edition of the AASHTO LRFD Bridge Design Specifications, including 2015 and 2016 Interim revisions.

Containment and work platforms shall not extend below the bottom of existing structure. See Special Provisions for details.

09232
09232A

STRUCTURE NO.	See above
BOS DWG NO.	100076
CALC. BOOK	6912
HWY: 002	
M.P.: 109.78	
COUNTY	Sherman
DATE	11/2018



 HDR ENGINEERING, INC. 1001 SW 8TH AVENUE, SUITE 1800 PORTLAND, OR 97204-1134 503.423.3700	
SCOTT CANYON HWY 2 WB SCOTT CANYON HWY 2 EB 184: TRAFFIC BARRIER UPGRADES PROJECT COLUMBIA RIVER HIGHWAY VARIOUS COUNTIES	
Designer: K. Munson Drafter: H. Gonsior	Reviewer: M. Mitchell Checker: M. Triha
PLAN	SHEET NO. JC01

BRIDGE NAME:	Scott Canyon, Hwy 2 WB	BRIDGE NO:	09232	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

382.00	LF	Linear Unit Cost	286.39		291.88			
SUBTOTAL				98,200		101,000		
PERCENT MOBILIZATION			11.44	11,200	10.44	10,500		
TOTAL				109,400		111,500		

Miscellaneous Project - Bridge Repair

SUBTOTAL				55,300		65,800		
PERCENT MOBILIZATION			11.44	6,300	10.44	6,900		
TOTAL				61,600		72,700		

DETAILS

Rail Replacement

382.00	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	257.18	98,243	264.32	100,969	320.51	215.26
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Overhang Strengthening and Install Membrane

208.41	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	5,835	50.17	10,455	72.50	28.00
4,475.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	7.73	34,613	8.47	37,910	9.94	7.73
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES (49%)	3,430.00	3,430	6,043.33	6,043	25,000.00	5,000.00
1,904.00	SQFT	POLYMER MEMBRANE	6.00	11,424	6.00	11,424	6.00	6.00

Additional Items

1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT (56%)	12,320.00	12,320	15,681.87	15,682	600,000.00	2,010.00
1.00	LS	WORK CONTAINMENT PLAN (56%)	8,960.00	8,960	3,360.00	3,360	16,000.00	500.00
382.00	FOOT	BRIDGE REMOVAL WORK	50.00	19,100	65.81	25,140	83.33	50.00
39.40	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	551.00	21,709	445.33	17,546	551.00	260.00
3.00	EACH	GUARDRAIL TRANSITION	2,000.00	6,000	2,850.00	8,550	3,500.00	2,000.00

BRIDGE NAME:	Scott Canyon, Hwy 2 EB	BRIDGE NO:	09232A	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE III	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

398.00	LF	Linear Unit Cost	286.43		291.96			
SUBTOTAL				102,300		105,200		
PERCENT MOBILIZATION			11.44	11,700	10.44	11,000		
TOTAL				114,000		116,200		

Miscellaneous Project - Bridge Repair

SUBTOTAL				52,300		62,000		
PERCENT MOBILIZATION			11.44	6,000	10.44	6,500		
TOTAL				58,300		68,500		

DETAILS

Rail Replacement

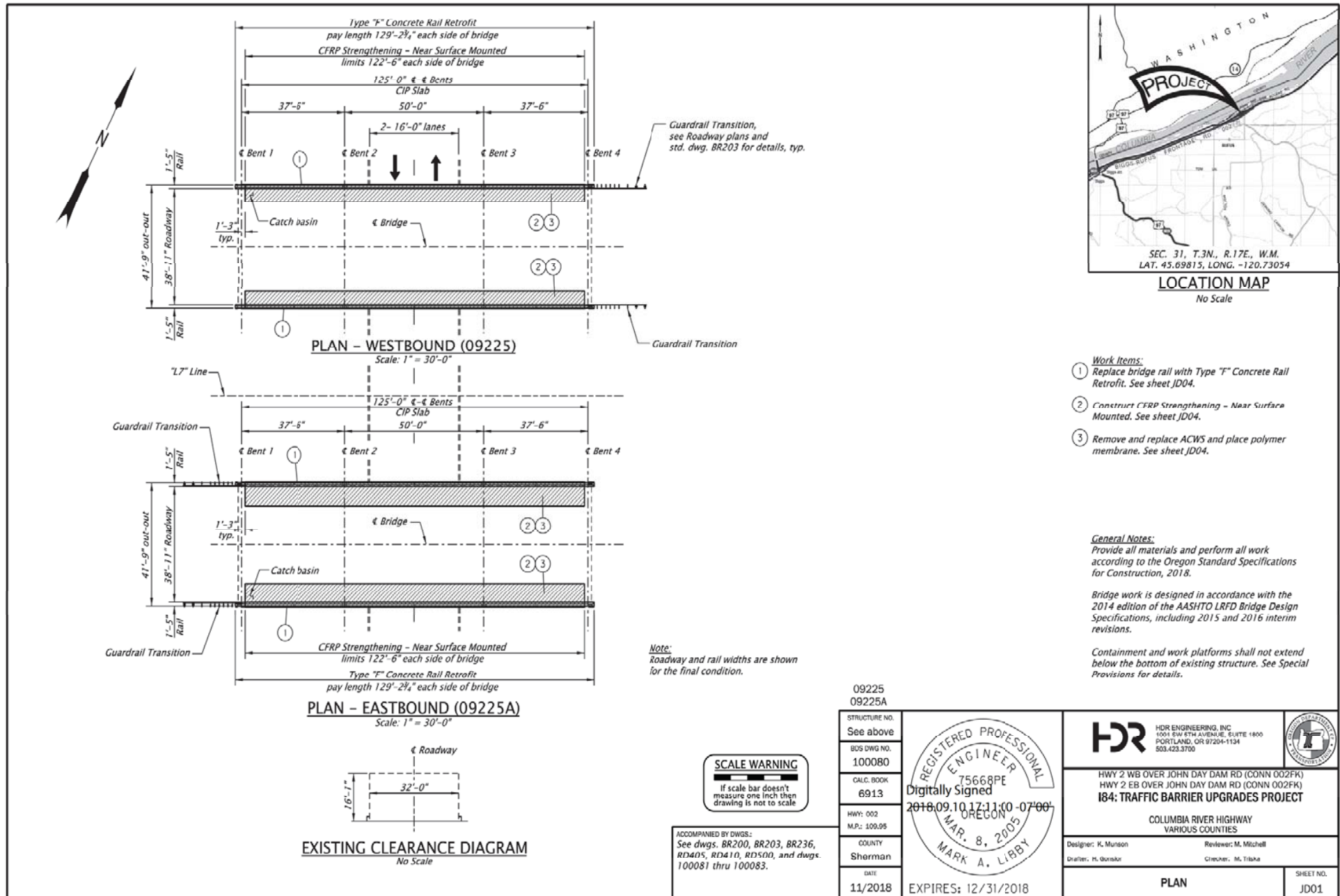
398.00	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	257.18	102,357	264.32	105,198	320.51	215.26
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Miscellaneous Proj

161.59	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	4,525	50.17	8,106	72.50	28.00
4,575.00	FT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	7.73	35,387	8.47	38,757	9.94	7.73
1.00	LS	UTILITY ATTACHMENT ON STRUCTURES (51%)	3,570.00	3,570	6,290.00	6,290	25,000.00	5,000.00
1,476.00	SQFT	POLYMER MEMBRANE	6.00	8,856	6.00	8,856	6.00	6.00

Additional Items

1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT (44%)	9,680.00	9,680	12,321.47	12,321	60,000.00	2,010.00
1.00	LS	WORK CONTAINMENT PLAN (44%)	7,040.00	7,040	2,640.00	2,640	16,000.00	500.00
398.00	FOOT	BRIDGE REMOVAL WORK	50.00	19,900	65.81	26,193	83.33	50.00
30.60	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	551.00	16,861	445.33	13,627	551.00	260.00
3.00	EACH	GUARDRAIL TRANSITION	2,000.00	6,000	2,850.00	8,550	3,500.00	2,000.00



BRIDGE NAME:	Hwy 2 EB over Rufus Conn	BRIDGE NO:	09225	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	CAST-IN-PLACE SLABS	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

258.50	LF	Linear Unit Cost	286.65		290.14			
SUBTOTAL				66,500		67,900		
PERCENT MOBILIZATION			11.44	7,600	10.44	7,100		
TOTAL				74,100		75,000		

Miscellaneous Project - Bridge Repair

SUBTOTAL				29,600		34,500		
PERCENT MOBILIZATION			11.44	3,400	10.44	3,600		
TOTAL				33,000		38,100		

DETAILS

Rail Replacement

258.50	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	257.25	66,500	262.57	67,875	327.37	203.09
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Overhang Strengthening and Install Membrane

125.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	3,500	53.50	6,688	72.50	28.00
825.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	22.42	18,500	24.44	20,167	30.30	20.61
1,270.00	SQFT	POLYMER MEMBRANE	6.00	7,620	6.00	7,620	6.00	6.00

Additional Items

1.00	LS	WORK CONTAINMENT PLAN	22,000.00	11,000	8,500.00	4,250	22,000.00	500.00
258.50	FOOT	BRIDGE REMOVAL WORK	77.37	20,000	103.80	26,833	154.74	77.37
2.00	EACH	GUARDRAIL TRANSITION	2,000.00	4,000	2,850.00	5,700	3,500.00	2,000.00
30.00	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	551.00	16,530	445.33	13,360	551.00	260.00
2.00	EACH	GUARDRAIL TRANSITION	2,000.00	4,000	2,850.00	5,700	3,500.00	2,000.00

BRIDGE NAME:	Hwy 2 WB over Rufus Conn	BRIDGE NO:	09225A	KEY NO:	19928
SECTION NAME:	I84: TRAFFIC BARRIER UPGRADES PROJECT	COUNTY:	Sherman	CONTR #	15118
PRIMARY PROJ:	Rail Replacement	BID DATE:	11/01/2018	FAP NO:	SA00(054)
STRUCT TYPE:	CAST-IN-PLACE SLABS	# BIDS RECVD:	8	AWARDED TO:	CONWAY CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Rail_Replacement

258.50	LF	Linear Unit Cost	286.65		290.14			
SUBTOTAL				66,500		67,900		
PERCENT MOBILIZATION			11.44	7,600	10.44	7,100		
TOTAL				74,100		75,000		

Miscellaneous Project - Bridge Repair

SUBTOTAL				29,600		34,500		
PERCENT MOBILIZATION			11.44	3,400	10.44	3,600		
TOTAL				33,000		38,100		

DETAILS

Rail Replacement

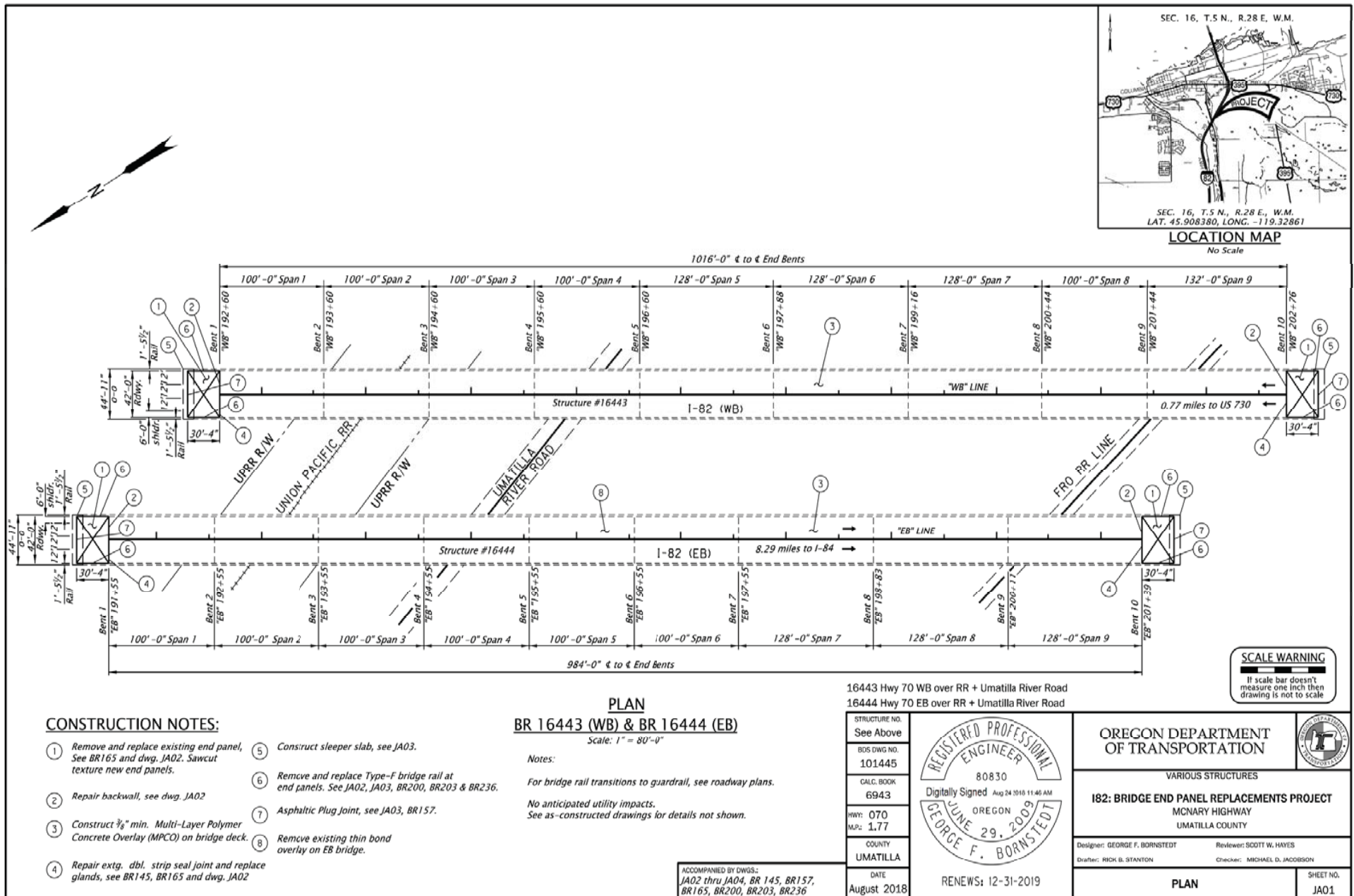
258.50	FOOT	TYPE "F" CONCRETE RAIL, RETROFIT	257.25	66,500	262.57	67,875	327.37	203.09
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Overhang Strengthening and Install Membrane

125.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 3-5 INCHES DEEP	28.00	3,500	53.50	6,688	72.50	28.00
825.00	FOOT	CFRP STRENGTHENING - NEAR SURFACE MOUNTED	22.42	18,500	24.44	20,167	30.30	20.61
1,270.00	SQFT	POLYMER MEMBRANE	6.00	7,620	6.00	7,620	6.00	6.00

Additional Items

1.00	LS	WORK CONTAINMENT PLAN	22,000.00	11,000	8,500.00	4,250	22,000.00	500.00
258.50	FOOT	BRIDGE REMOVAL WORK	77.37	20,000	103.80	26,833	154.74	77.37
2.00	EACH	GUARDRAIL TRANSITION	2,000.00	4,000	2,850.00	5,700	3,500.00	2,000.00
30.00	TON	LEVEL 3, 1/2 INCH ACP MIXTURE	551.00	16,530	445.33	13,360	551.00	260.00
2.00	EACH	GUARDRAIL TRANSITION	2,000.00	4,000	2,850.00	5,700	3,500.00	2,000.00



BRIDGE NAME:	Hwy 70 WB over Umatilla R, UPRR, and Cnty Rd.	BRIDGE NO:	16443	KEY NO:	19793
SECTION NAME:	I-82: BRIDGE END PANEL REPLACEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15101
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/04/2018	FAP NO:	S070(001)
STRUCT TYPE:	RC BULB T GIRDER-PRECAST-TYPE I	# BIDS RECVD:	5	AWARDED TO:	MICHAEL A BECKER GENERAL CONTRACTOR

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge End Panel Replacement

SUBTOTAL				216,700		252,700		
PERCENT MOBILIZATION			10.40	22,500	10.88	27,500		
TOTAL				239,200		280,200		

Multi-Layer Polymer Concrete Overlay (MPCO)

42750.00	SF	MPCO Roadway Area Unit Costs	4.42		4.21			
SUBTOTAL				172,000		162,200		
PERCENT MOBILIZATION			10.40	17,900	10.88	17,600		
TOTAL				189,900		179,800		

DETAILS

End Panel Replacement

130.00	CUYD	STRUCTURE EXCAVATION	46.15	6,000	55.13	7,167	61.54	46.15
130.00	CUYD	GRANULAR STRUCTURE BACKFILL	88.46	11,500	97.44	12,667	107.69	88.46
6,100.00	LB	REINFORCEMENT	1.64	10,004	2.27	13,833	4.10	1.07
32.00	CUYD	FOUNDATION CONCRETE, CLASS 3300	125.00	4,000	510.42	16,333	781.25	125.00
20.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	935.00	18,700	1,645.00	32,900	2,000.00	935.00
280.00	SQYD	SAW CUT TEXTURING	15.00	4,200	14.67	4,107	15.00	14.00
300.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	360.00	108,000	361.67	108,500	400.00	325.00
88.00	FOOT	ASPHALTIC PLUG SEALS	136.36	12,000	133.14	11,717	147.73	115.34
88.00	FOOT	DOUBLE STRIP SEALS - REPAIR	125.00	11,000	208.33	18,333	250.00	125.00
120.00	FOOT	TYPE "F" CONCRETE RAIL	260.83	31,300	225.83	27,100	260.83	166.67

MPCO

95.00	SQYD	CLASS 2 PREPARATION	210.00	19,950	70.01	6,651	210.00	0.01
4,750.00	SQYD	FURNISH MPCO MATERIAL	16.00	76,000	16.75	79,562	18.00	16.00
4,750.00	SQYD	CONSTRUCT MPCO	16.00	76,000	16.00	76,000	18.00	14.00

Additional Items

2,700.00	SQFT	BRIDGE REMOVAL WORK	14.89	40,203	17.62	47,569	24.07	13.89
3.00	EACH	GUARDRAIL TRANSITION	1,925.00	5,775	1,950.00	5,850	2,000.00	1,925.00

BRIDGE NAME:	Hwy 70 EB over Umatilla River, UPRR, and Cnty Rd.	BRIDGE NO:	16444	KEY NO:	19793
SECTION NAME:	I-82: BRIDGE END PANEL REPLACEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15101
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/04/2018	FAP NO:	S070(001)
STRUCT TYPE:	RC BULB T GIRDER-PRECAST-TYPE I	# BIDS RECVD:	5	AWARDED TO:	MICHAEL A BECKER GENERAL CONTRACTOR

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge End Panel Replacement

SUBTOTAL				224,200		275,300		
PERCENT MOBILIZATION			10.40	23,300	10.88	30,000		
TOTAL				247,500		305,300		

Multi-Layer Polymer Concrete Overlay (MPCO)

41400.00	SF	MPCO Roadway Area Unit Costs	4.46		4.22			
SUBTOTAL				167,200		157,700		
PERCENT MOBILIZATION			10.40	17,400	10.88	17,200		
TOTAL				184,600		174,900		

DETAILS

End Panel Replacement

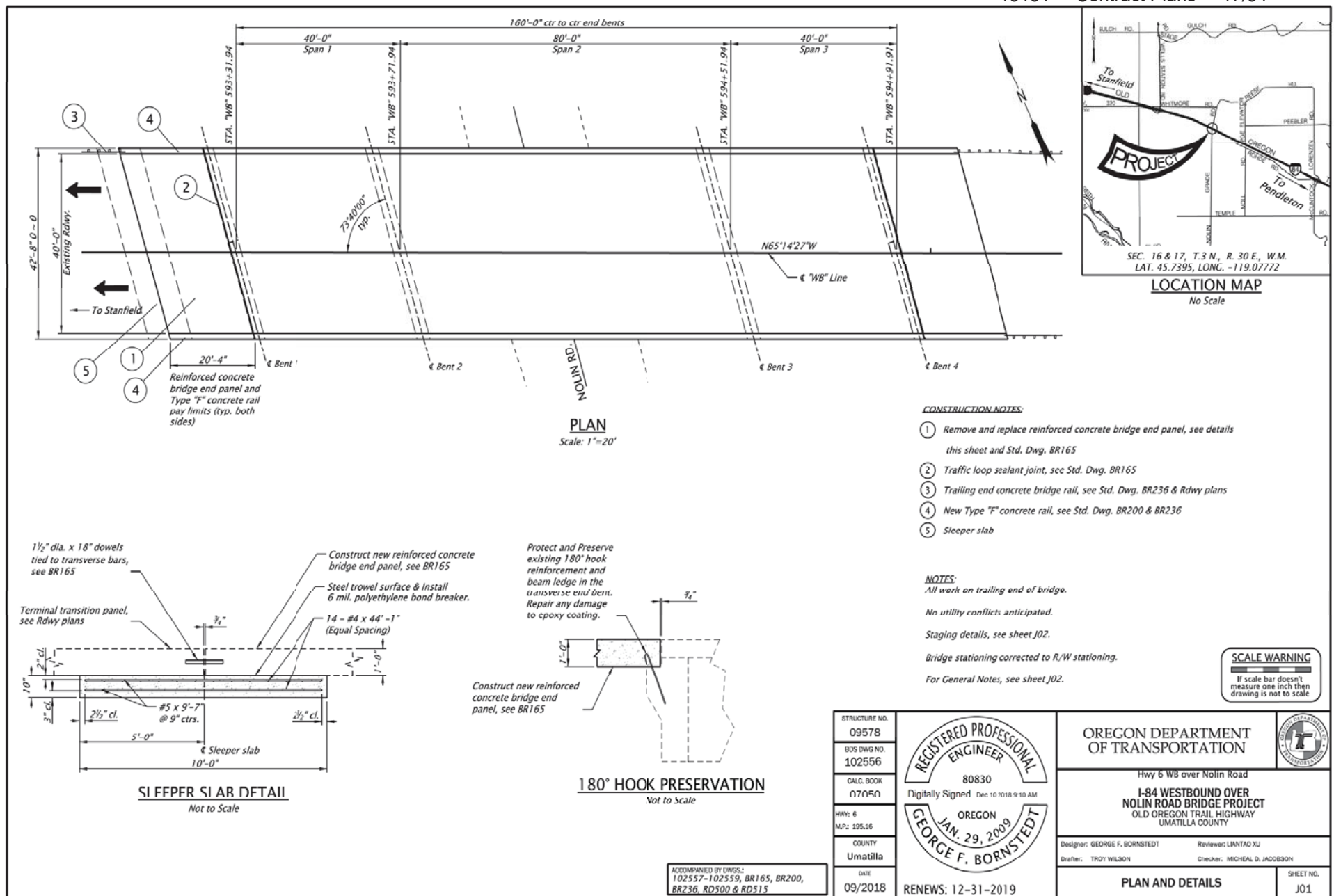
4,600.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	3.00	13,800	6.00	27,600	9.00	3.00
130.00	CUYD	STRUCTURE EXCAVATION	46.15	6,000	52.56	6,833	61.54	46.15
130.00	CUYD	GRANULAR STRUCTURE BACKFILL	88.46	11,500	97.44	12,667	107.69	88.46
6,100.00	LB	REINFORCEMENT	0.62	3,782	1.93	11,767	4.10	0.62
32.00	CUYD	FOUNDATION CONCRETE, CLASS 3300	125.00	4,000	458.33	14,667	781.25	125.00
20.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 4000	935.00	18,700	1,561.67	31,233	2,000.00	935.00
280.00	SQYD	SAW CUT TEXTURING	15.00	4,200	14.67	4,107	15.00	14.00
300.00	SQYD	REINFORCED CONCRETE BRIDGE END PANELS	360.00	108,000	361.67	108,500	400.00	325.00
88.00	FOOT	ASPHALTIC PLUG SEALS	136.36	12,000	133.14	11,717	147.73	115.34
88.00	FOOT	DOUBLE STRIP SEALS - REPAIR	123.86	10,900	219.32	19,300	284.09	123.86
120.00	FOOT	TYPE "F" CONCRETE RAIL	260.83	31,300	224.44	26,933	260.83	162.50

MPCO

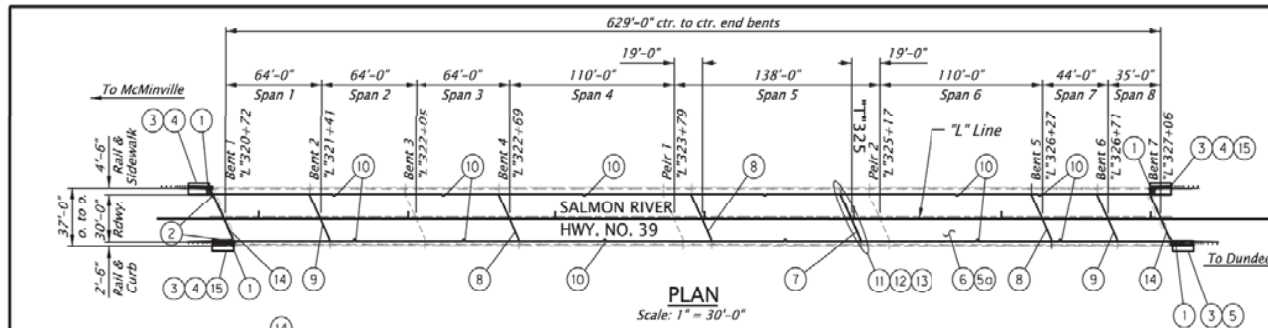
95.00	SQYD	CLASS 2 PREPARATION	210.00	19,950	70.01	6,651	210.00	0.01
4,600.00	SQYD	FURNISH MPCO MATERIAL	16.00	73,600	16.83	77,433	18.00	16.00
4,600.00	SQYD	CONSTRUCT MPCO	16.00	73,600	16.00	73,600	18.00	14.00

Additional Items

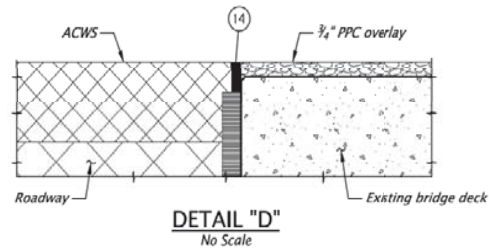
2,700.00	SQFT	BRIDGE REMOVAL WORK	15.00	40,500	17.65	47,667	24.07	13.89
2.00	EACH	GUARDRAIL TRANSITION	1,925.00	3,850	1,950.00	3,900	2,000.00	1,925.00



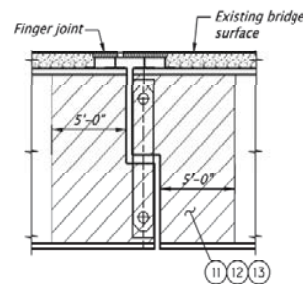
BRIDGE NAME:			Hwy 6 WB over Nolan Road		BRIDGE NO:		09578		KEY NO:		20492		
SECTION NAME:			I-84 WB OVER NOLIN ROAD BRIDGE PROJECT		COUNTY:		Umatilla		CONTR #		15131		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		02/28/2019		FAP NO:		S006(162)		
STRUCT TYPE:			RC DECK GIRDER-PRECAST-TYPE III		# BIDS RECVD:		8		AWARDED TO:		HP CIVIL INC		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT		AMT	UNIT		AMT	HIGH	LOW
Miscellaneous Project - Bridge Repair													
					SUBTOTAL			91,400			88,400		
					PERCENT MOBILIZATION		11.11	10,200	10.98		9,700		
					TOTAL			101,600			98,100		
DETAILS													
Bridge End Panel Repair													
2,100.00		LB	REINFORCEMENT			1.90		3,990	2.88		6,048	4.36	1.90
14.00		CUYD	FOUNDATION CONCRETE, CLASS 4000			2,142.86		30,000	1,431.79		20,045	2,142.86	714.29
91.00		SQYD	SAW CUT TEXTURING			10.00		910	41.00		3,731	58.00	10.00
96.00		SQYD	REINFORCED CONCRETE BRIDGE END PANELS			380.00		36,480	446.67		42,880	585.00	375.00
41.00		FOOT	TYPE "F" CONCRETE RAIL			487.80		20,000	383.21		15,712	487.80	207.32
Additional Items													
926.00		SQFT	BRIDGE REMOVAL WORK			48.60		45,000	26.81		24,822	48.60	10.80



PLAN
Scale: 1" = 30'-0"



DETAIL "D"
No Scale



PAINTING DETAIL
No Scale

GENERAL NOTES:

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018.

Provide all reinforcing steel according to ASTM Specification A706 or AASHTO M31 (ASTM A615) Grade 60.

Place bars 2" clear of the nearest face of concrete unless specified otherwise.

Provide the following reinforcing splice length:

#4 - 1'-9"

#5 - 2'-2"

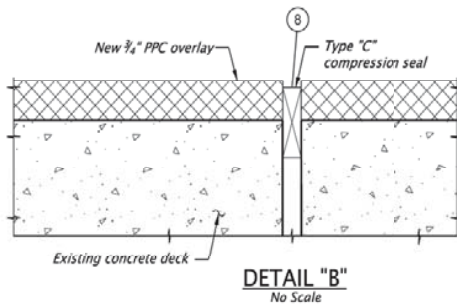
Provide Class 3300 - 1 1/2, 1 or 3/4 concrete for all concrete.

Field verify dimensions before fabrication.

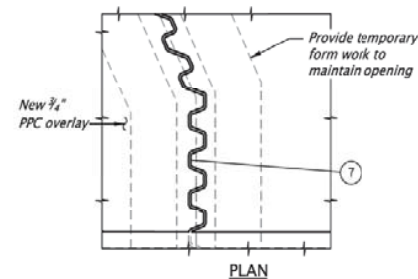
BRIDGE ID MARKER TABLE

Phone Number (Agency Dispatch Center)	503-362-0457
Route (RTE)	OR18
Highway No. (HWY)	39
Milepoint (MP)	51.57
Bridge No. (BR)	08003
Structure Name	Yamhill River, Hwy. 39 (Dayton)

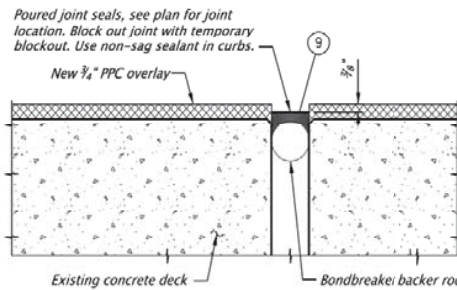
See dwg. BR195 for details.



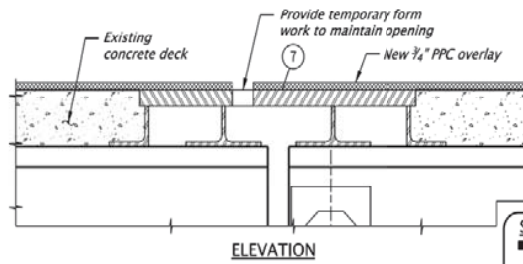
DETAIL "B"
No Scale



PLAN



DETAIL "C"
No Scale

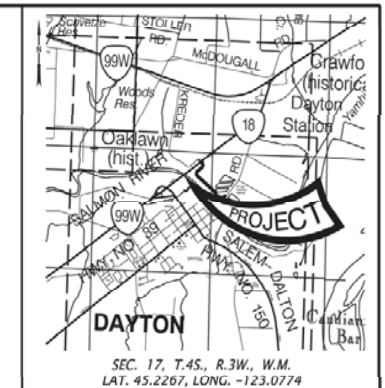


ELEVATION
DETAIL "A"
No Scale



ACCOMPANIED BY DWGS:
BR195, BR203, BR208, BR220, BR270

STRUCTURE NO. 08003		DATE July 2018
BOS DWG NO. 101311		
CALC. BOOK 7032		
HWY: 39 M.P.: 51.57		
COUNTY Yamhill		
RENEW: 12-31-2018		



LOCATION MAP

No Scale

- 1 Remove ends of sidewalk/curb and rail (all corners) as shown on shts. JB02 to JB05.
- 2 Remove existing catch basin.
- 3 Construct moment slabs. See shts. JB02-JB06 for details.
- 4 Install new bridge rail transition, see dwg. BR220 for details.
- 5 Install new bridge rail transition, see dwg. BR270.
- 6 Remove 0" - 1" of existing ACWS
- 6 Construct 3/4" PPC Overlay.
- 7 Overlay finger joint while maintaining opening, see Detail "A". Field verify dimensions of finger joint.
- 8 Construct new expansion joint after overlay, see Detail "B".
- 9 Construct new poured sealant joint after overlay, see Detail "C".
- 10 Maintain existing deck drains.
- 11 Prepare steel surfaces around the pin & hanger assembly of each girder.
- 12 Remove pack rust.
- 13 Apply paint coating around the pin & hanger assembly of each girder.
- 14 Saw cut 1/2" x 1 1/2" deep through ACWS and Fill with traffic loop sealant, see Detail "D".
- 15 Install Bridge ID Markers, see Bridge ID Marker Table and BR195.

OREGON DEPARTMENT OF TRANSPORTATION

Yamhill River Hwy 39 (Dayton)
OR18: ASH ROAD -
MCDUGALL JUNCTION SEC.
SALMON RIVER HIGHWAY
YAMHILL COUNTY

Designer: Mark Lusby
Checker: Michael Sherton

Reviewer: George Bornstedt
Checker: Clayton Darvey

PLAN AND DETAILS

SHEET NO.
JB01

BRIDGE NAME:	Yamhill River, Hwy 39 (Dayton)	BRIDGE NO:	08003	KEY NO:	18567
SECTION NAME:	OR18: ASH ROAD - MCDOUGALL JUNCTION SEC.	COUNTY:	Yamhill	CONTR #	15113
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/25/2018	FAP NO:	S039(050)
STRUCT TYPE:	STEEL DECK GIRDER	# BIDS RECVD:	2	AWARDED TO:	ROY HOUCK CONSTRUCTION LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Bridge Repair

SUBTOTAL				144,400		193,200		
PERCENT MOBILIZATION			7.99	11,500	9.60	18,500		
TOTAL				155,900		211,700		

Deck Overlay

18900.00	SF	Deck Overlay Roadway Area Unit Costs	12.67		12.89			
SUBTOTAL				221,800		222,400		
PERCENT MOBILIZATION			7.99	17,700	9.60	21,300		
TOTAL				239,500		243,700		

DETAILS

Moment Slabs, Expansion Joints Repair, Coating Steel Surface Around Pin & Hanger

62.00	SQYD	BRIDGE DECK COLD PLANE PAVEMENT REMOVAL, 0-2 INCHES DEEP	32.00	1,984	22.25	1,380	32.00	12.50
50.00	CUYD	STRUCTURE EXCAVATION	80.00	4,000	90.00	4,500	100.00	80.00
20.00	CUYD	GRANULAR STRUCTURE BACKFILL	240.75	4,815	207.88	4,158	240.75	175.00
5,850.00	LB	REINFORCEMENT	2.70	15,795	3.05	17,842	3.40	2.70
50.00	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	1,390.00	69,500	1,445.00	72,250	1,500.00	1,390.00
1.00	LS	CRACK SEALANT REMOVAL	1,690.00	1,690	1,714.10	1,714	1,738.20	1,690.00
76.00	FOOT	POURED SEALS	45.39	3,450	45.93	3,491	46.47	45.39
114.00	FOOT	TYPE "C" COMPRESSION SEALS	72.98	8,320	74.01	8,437	75.04	72.98
1.00	LS	SURFACE PREPARATION	8,025.00	8,025	16,512.50	16,512	25,000.00	8,025.00
1.00	LS	COATING APPLICATION	10,700.00	10,700	40,350.00	40,350	70,000.00	10,700.00
1.00	LS	COATING MATERIALS	10,700.00	10,700	13,225.00	13,225	15,750.00	10,700.00
50.00	FOOT	PACK RUST REMOVAL	100.00	5,000	187.50	9,375	275.00	100.00

Bridge Deck Overlay

50.00	SQYD	CLASS 2 PREPARATION	250.00	12,500	253.65	12,682	257.29	250.00
44.00	CUYD	FURNISH PREMIXED POLYMER CONCRETE	3,015.00	132,660	3,107.50	136,730	3,200.00	3,015.00
2,100.00	SQYD	CONSTRUCT PPC OVERLAY	36.50	76,650	34.75	72,975	36.50	33.00

BRIDGE NAME:	Yamhill River, Hwy 39 (Dayton)	BRIDGE NO:	08003	KEY NO:	18567
SECTION NAME:	OR18: ASH ROAD - MCDOUGALL JUNCTION SEC.	COUNTY:	Yamhill	CONTR #	15113
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	10/25/2018	FAP NO:	S039(050)
STRUCT TYPE:	STEEL DECK GIRDER	# BIDS RECVD:	2	AWARDED TO:	ROY HOUCK CONSTRUCTION LLC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Additional Items								
800.00	SQFT	TEMPORARY WORK ACCESS AND CONTAINMENT	33.44	26,750	55.47	44,375	77.50	33.44
42.00	SQFT	BRIDGE REMOVAL WORK	380.95	16,000	452.38	19,000	523.81	380.95
2.00	EACH	EXTRA FOR CURB RAMPS ON STRUCTURES	1,600.00	3,200	1,550.00	3,100	1,600.00	1,500.00
2.00	EACH	BRIDGE IDENTIFICATION MARKERS	160.00	320	160.00	320	160.00	160.00
4.00	EACH	GURADRAIL TRANSITION	4,250.00	17,000	3,575.00	14,300	4,250.00	2,900.00

Retaining Walls

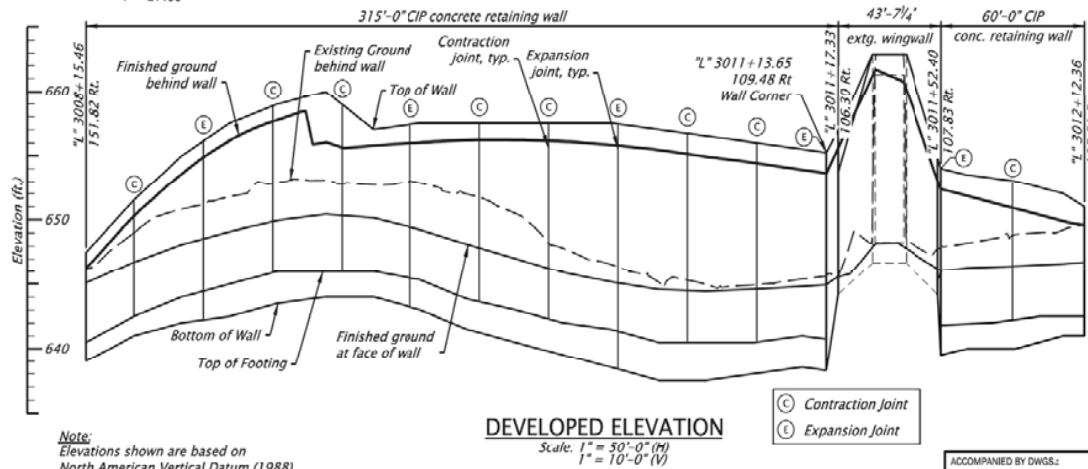
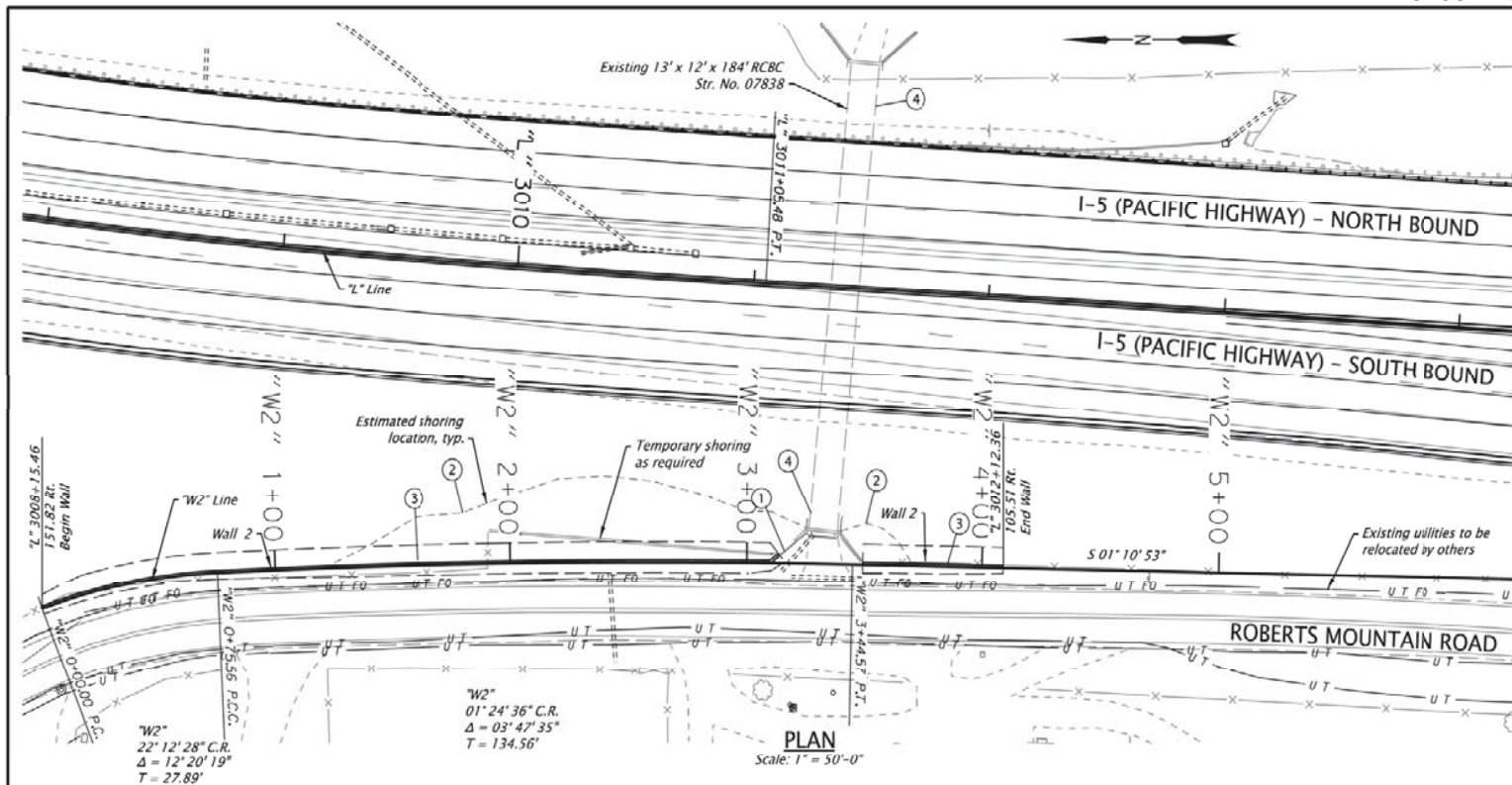
2019 BRIDGE COST DATA

RETAINING WALLS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Area SQFT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Cast-in-Place Concrete Retaining Wall</u>										
22631	RTW_HWY 1SB_WS_43.10258/ 123.36771	Douglas	15108	Retaining wall, cast-in- place, L 375'	101405	6,380	\$ 493,760	\$ 77.39	\$ 689,587	\$108.09
23261	rtw_Hwy 91_ES_45.44588/ -122.73068	Multnomah	15139	Retaining wall, cast-in- place concrete semi- gravity cantilever	100751	695	\$ 12,000	\$ 17.27	\$ 12,000	\$ 17.27
Subtotal Cast-in-Place Wall (sq.ft.)						7,075	\$ 505,760	\$ 71.49	\$ 701,587	\$ 99.16
<u>MSE Retaining Walls</u>										
23326	rtw_Hwy 069WB (Conn AQ)_WS_44.09178/ 123.09881	Lane	15159	MSE abutment wall "A", L 130-0"	102535	2,120	\$ 283,000	\$ 133.49	\$ 230,105	\$108.54
23327	rtw_Hwy069 WB (Conn AQ)_ES_44.09097/ 123.09898	Lane	15159	MSE abutment wall "B", L 149.93'	102538	2,780	\$ 359,500	\$ 129.32	\$ 296,535	\$106.67
23303	rtw_Graham Rd_ES_45.5449/ 122.3909	Multnomah	15110	Retaining wall, MSE, L 263'	101131	2,541	\$ 217,512	\$ 85.60	\$ 191,064	\$ 75.19
23304	rtw_Graham Rd_WS_45.5449/ 122.3909	Multnomah	15110	Retaining wall, MSE, L 227'	101131 (shared)	2,686	\$ 214,768	\$ 79.96	\$ 189,911	\$ 70.70
Subtotal MSE Wall (sq.ft.)						10,127	\$1,074,780	\$ 106.13	\$ 907,616	\$ 89.62
<u>Prefabricated Modular</u>										
23578	rtw_Hwy32_NS_ 45.10262/123.77720	Yamhill	15132	Retaining wall, Sta. "T" 27+70 to Sta. "T" 30+90.0, L 320'	102680	2,275	\$ 198,235	\$ 87.14	\$ 176,078	\$ 77.40

RETAINING WALLS

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Area SQFT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Prefabricated Modular (Agency-Furnished)</u>										
23247	rtw_E Main St_NS_42.469021/ 122.797574	Jackson	15149	Retaining wall "A", Sta. "S" 103+89.32 to Sta. "S" 104+80.82 Rt., L 87.50'	102669	340	\$ 23,640	\$ 69.53	\$ 23,644	\$ 69.54
23249	rtw_E Main St_SS_42.468893/ 122.797586	Jackson	15149	Retaining wall "B", Sta. "S" 104+00.87 to "S" 106+86.39 Lt., L 270.0'	102670	2,300	\$ 96,640	\$ 42.02	\$ 86,708	\$ 37.70
23248	rtw_E Main St_NS_42.468714/ 122.798043	Jackson	15149	Retaining wall "C", Sta. "S" 104+93.00 to Sta. "S" 106+54.06 Rt., L 175.0'	102672	950	\$ 49,700	\$ 52.32	\$ 65,851	\$ 69.32
Subtotal Prefabricated Modular Wall (sq.ft.)						3,590	\$ 169,980	\$ 47.35	\$ 176,203	\$ 49.08
<u>Soldier Pile Wall</u>										
22632	RTW_HWY 1NB_ES_43.11203/ 123.35502	Douglas	15108	23 Soldier piles, L 184'	101396	2,367	\$ 667,161	\$ 281.86	\$ 650,363	\$274.76
23328	rtw_Delta Hwy NB_ES_44.08998/ 123.09824	Lane	15159	Soldier pile wall, 14 pile spaces @ 8'-0", L 112'	102493	848	\$ 117,500	\$ 138.56	\$ 162,500	\$191.63
23329	rtw_Delta Hwy NB_ES_44.08831/ 123.10032	Lane	15159	Soldier pile wall, 8 pile spaces @ 8'-0", L 64'	102497	608	\$ 80,000	\$ 131.58	\$ 101,667	\$167.21
Subtotal Soldier Pile Wall (sq.ft.)						3,823	\$ 864,661	\$ 226.17	\$ 914,530	\$239.22
<u>Soil Nail Wall</u>										
23262	rtw_SW Commercial St_NS_45.43155/ -122.77158	Washington	15139	Soil nail wall, Sta. 30+0.00 "Wall 3" to Sta. 31+20.00, L 120'	100754	1,220	\$ 332,000	\$ 272.13	\$ 332,000	\$272.13



AUSTIN RD
GLEN ROSE RD
To Winston
To Roseburg
PACIFIC HWY
S. WICHITA RIVER
Carnes
Glengary
GLEN ROSE LOOP RD
99
To Myrtle Creek

52V-006

SEC. 26, T.28S., R.06W., W.M.
LAT. 43.10258, LONG. 123.36771

LOCATION MAP
No Scale

Note:
Construction on Douglas County owned
right-of-way by Cooperative Improvement
Agreement #32542

Provide all shoring as required for construction. The locations and limits shown are only to alert the Contractor shoring may be needed. The Contractor shall determine the actual locations and limits of all shoring required.

CONSTRUCTION SEQUENCE:

- ① Retrofit existing wingwalls, see Sheet GB209.
- ② Install shoring as required
- ③ Construct retaining wall, see Sheet GB207.
- ④ Repair spalls in existing culvert in accordance with SP00542. Approx. locations shown.



STRUCTURE NO. 22631		OREGON DEPARTMENT OF TRANSPORTATION		
BOS DWG NO. 101405		RTW_HWY 15B_WS_43.10258/123.36771		
CALC. BOOK 6997		Digitally Signed Jul 18 2018 11:49 AM		I-5: ROBERTS CREEK RD - SOUTH UMPQUA RIVER SECTION PACIFIC HIGHWAY DOUGLAS COUNTY
HWY: 001 M.P.: 115.47		Designer: Michael Jacobson Drafter: Michael Jacobson		
COUNTY Douglas		DATE 7/2018		SHEET NO. GB201
RENEW: 06-30-2019		PLAN AND ELEVATION		

BRIDGE NAME:	RTW_HWY 1SB_WS_43.10258/123.36771	BRIDGE NO:	22631	KEY NO:	18967
SECTION NAME:	I-5: ROBERTS CREEK RD - SOUTH UMPQUA RIVER SECTION	COUNTY:	Douglas	CONTR #	15108
PRIMARY PROJ:	Retaining Wall	BID DATE:	11/01/2018	FAP NO:	S001(478)
STRUCT TYPE:	RW-CIP-CONCRETE SEMI-GRAVITY CANTI	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Retaining_Wall

17.01	FT	WEIGHTED AVERAGE HEIGHT						
375.00	FT	LENGTH						
6380.00	SF	Area Unit Cost	84.70		121.85			
SUBTOTAL				493,800		689,600		
PERCENT MOBILIZATION			9.44	46,600	9.56	87,800		
TOTAL				540,400		777,400		

Miscellaneous Project - Repair Existing Wingwall and Culvert

SUBTOTAL				377,900		229,500		
PERCENT MOBILIZATION			9.44	35,700	9.56	21,900		
TOTAL				413,600		251,400		

DETAILS

Retaining Wall

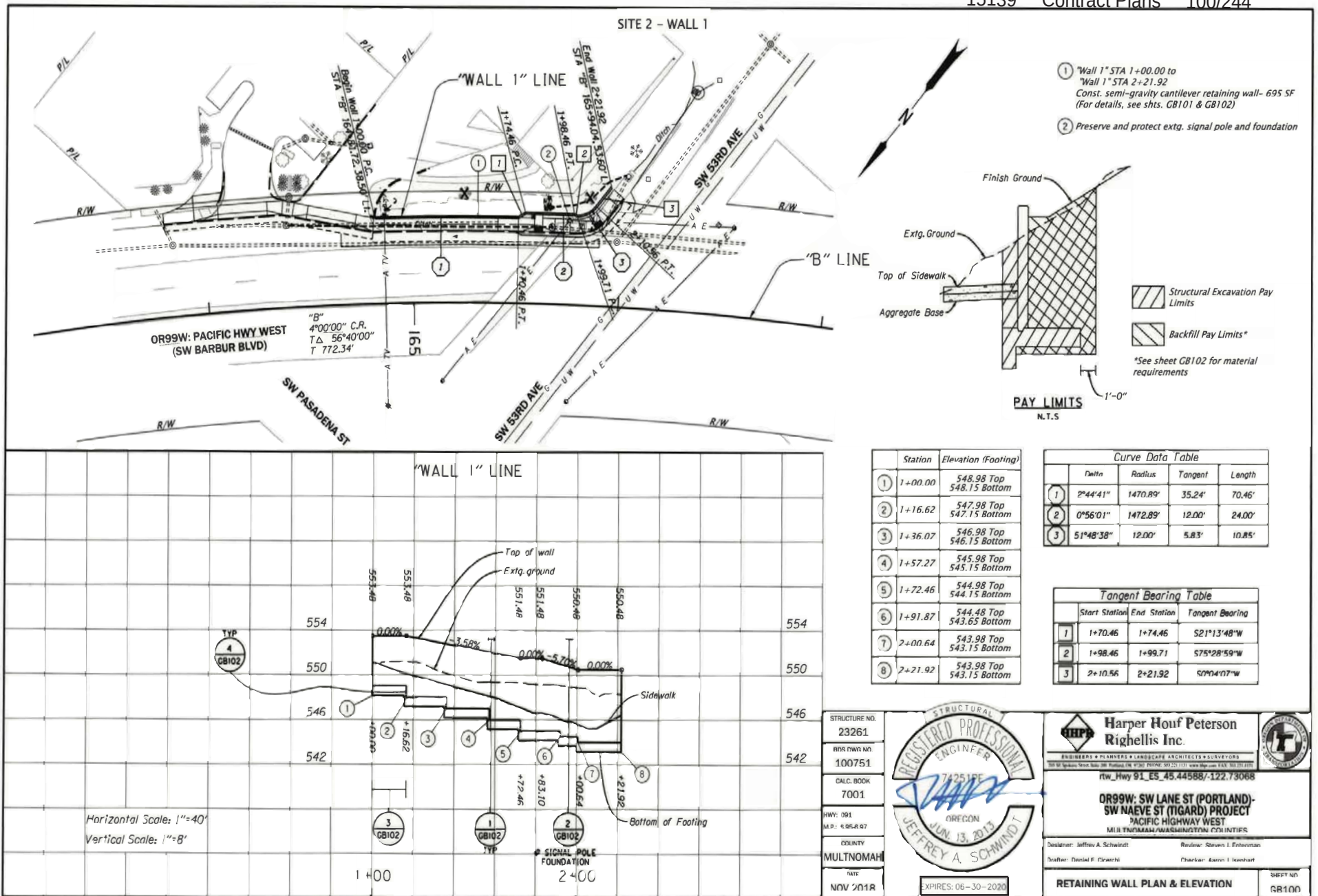
6,380.00	SQFT	RETAINING WALL, CAST-IN-PLACE CONCRETE SEMI-GRAVITY CANTILEVER	77.39	493,760	108.09	689,587	137.15	77.39
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Repair Existing Wingwall and Culvert

3.00	CUYD	GRANULAR WALL BACKFILL	30,591.67	91,775	10,313.89	30,942	30,591.67	100.00
360.00	LB	REINFORCEMENT	701.61	252,578	470.41	169,349	250.00	105.00
10.00	SQFT	CONCRETE AND CRACK SEALER	218.60	2,186	191.20	1,912	250.00	105.00
1.50	CUYD	GENERAL STRUCTURAL CONCRETE, CLASS 3300	5,842.00	8,763	5,614.00	8,421	6,000.00	5,000.00
2.00	EACH	HOLLOW BAR ANCHOR	10,000.00	20,000	8,516.67	17,033	10,000.00	7,550.00
0.10	SQYD	REPAIR DAMAGED CONCRETE	26,031.00	2,603	18,523.67	1,852	26,031.00	3,540.00

Additional Items

3,000.00	SQFT	BRIDGE REMOVAL WORK	44.36	133,070	21.79	65,357	44.36	7.00
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BRIDGE NAME:	rtw_Hwy 91_ES_45.44588/-122.73068	BRIDGE NO:	23261	KEY NO:	18838
SECTION NAME:	OR99W: SW LANE ST (PORTLAND)- SW NAEVE ST (TIGARD) PROJECT	COUNTY:	Multnomah	CONTR #	15139
PRIMARY PROJ:	Retaining Wall	BID DATE:	04/11/2019	FAP NO:	0000(239)
STRUCT TYPE:	RW-CIP-CONCRETE SEMI-GRAVITY CANTI	# BIDS RECVD:	1	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

			CONTRACT		1 LOW BIDDER		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Retaining_Wall

5.79	FT	WEIGHTED AVERAGE HEIGHT						
120.00	FT	LENGTH						
695.00	SF	Area Unit Cost	19.14		19.14			
		SUBTOTAL		12,000		12,000		
		PERCENT MOBILIZATION	11.07	1,300	11.07	1,300		
		TOTAL		13,300		13,300		

DETAILS

Retaining Wall

695.00	SQFT	RETAINING WALL, CAST-IN-PLACE CONCRETE SEMI-GRAVITY CANTILEVER	17.27	12,000	17.27	12,000	17.27	17.27
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Notes:

End panel and bridge superstructure not shown for clarity, see Bridge sheets for details.

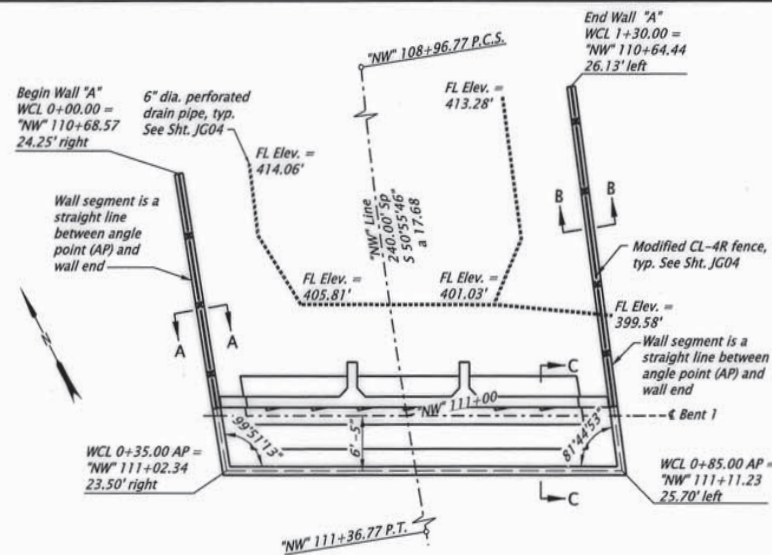
See Sht. JG04 for Sections A-A and B-B.

See Sht. JG05 for Section C-C.

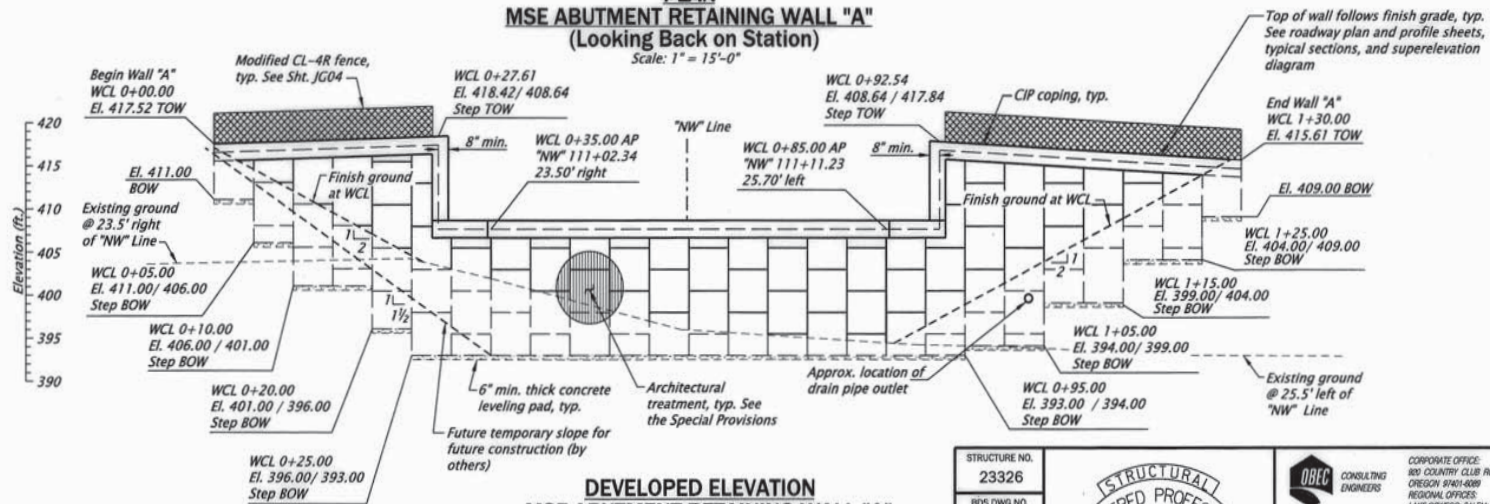
Field verify drain pipe locations and elevations and adjust drain pipe as required.

Legend:

TOW = Top of wall coping
BOW = Bottom of wall
WCL = Wall control line
FL = Flowline



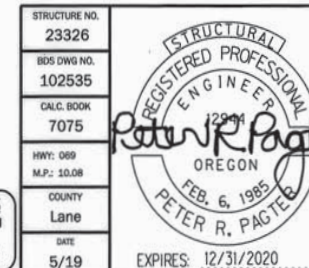
PLAN
MSE ABUTMENT RETAINING WALL "A"
(Looking Back on Station)



DEVELOPED ELEVATION
MSE ABUTMENT RETAINING WALL "A"
Scale: 1" = 15'-0"

Note:
Elevations shown are based on
North American Vertical Datum (1988).

SCALE WARNING
If scale bar doesn't
measure one inch then
drawing is not to scale



BRIDGE NAME:	rtw_Hwy 069WB (Conn AQ)_WS_44.09178/123.09881	BRIDGE NO:	23326	KEY NO:	19490
SECTION NAME:	OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.	COUNTY:	Lane	CONTR #	15159
PRIMARY PROJ:	Retaining Wall	BID DATE:	08/29/2019	FAP NO:	S069(019)
STRUCT TYPE:	MSE RETAINING WALL	# BIDS RECVD:	6	AWARDED TO:	HAMILTON CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Retaining_Wall

16.31	FT	WEIGHTED AVERAGE HEIGHT						
130.00	FT	LENGTH						
2120.00	SF	Area Unit Cost	147.64		120.28			
SUBTOTAL				283,000		230,100		
PERCENT MOBILIZATION			10.62	30,000	10.83	24,900		
TOTAL				313,000		255,000		

DETAILS

Retaining Wall

236.00	SQYD	ARCHITECTURAL TREATMENT	500.00	118,000	177.00	41,772	500.00	1.00
2,120.00	SQFT	RETAINING WALL, MSE	77.83	165,000	88.84	188,333	94.34	77.83

Additional Items

65.00	FOOT	TYPE CL-4R MODIFIED CHAIN LINK FENCE	100.00	6,500	100.00	6,500	100.00	100.00
1.00	EACH	2.5 FOOT X 48 INCH CHAIN LINK SINGLE GATES	800.00	800	866.67	867	1,000.00	800.00

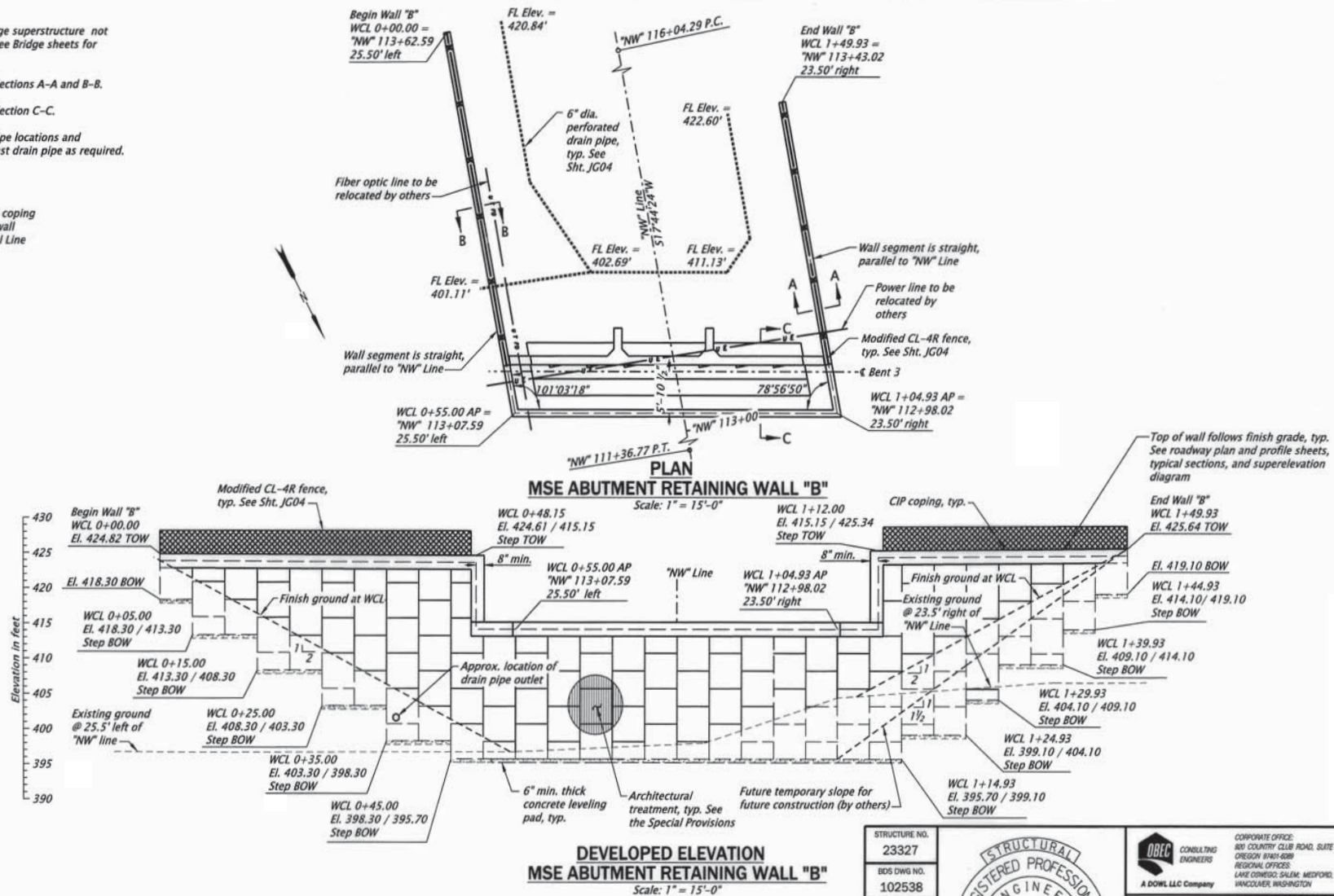
Notes:
End panel and bridge superstructure not shown for clarity, see Bridge sheets for details.

See Sht. JG04 for Sections A-A and B-B.

See Sht. JG05 for Section C-C.

Field verify drain pipe locations and elevations and adjust drain pipe as required.

Legend:
TOW = Top of wall coping
BOW = Bottom of wall
WCL = Wall Control Line
FL = Flowline



SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

STRUCTURE NO. 23327		
BDS DWG NO. 102538		
CALC. BOOK 7075		
HWY: 069 M.P.: 10.08		
COUNTRY Lane	DATE 5/19	EXPIRES: 12/31/2020
DESIGNER: Wyatt Dean, E.I. REVIEWER: Jeff A. Parker, P.E. DRAFTER: A. Doughan CHECKER: Peter R. Pagter, P.E. MSE ABUTMENT WALL "B" PLAN AND DEVELOPED ELEVATION		
SHEET NO. JG03		Rotation: 0° Scale: Full Size 1=1

BRIDGE NAME:	rtw_Hwy069 WB (Conn AQ)_ES_44.09097/123.09898	BRIDGE NO:	23327	KEY NO:	19490
SECTION NAME:	OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.	COUNTY:	Lane	CONTR #	15159
PRIMARY PROJ:	Retaining Wall	BID DATE:	08/29/2019	FAP NO:	S069(019)
STRUCT TYPE:	MSE RETAINING WALL	# BIDS RECVD:	6	AWARDED TO:	HAMILTON CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Retaining_Wall

18.54	FT	WEIGHTED AVERAGE HEIGHT						
149.93	FT	LENGTH						
2780.00	SF	Area Unit Cost	143.06		118.20			
SUBTOTAL				359,500		296,500		
PERCENT MOBILIZATION			10.62	38,200	10.83	32,100		
TOTAL				397,700		328,600		

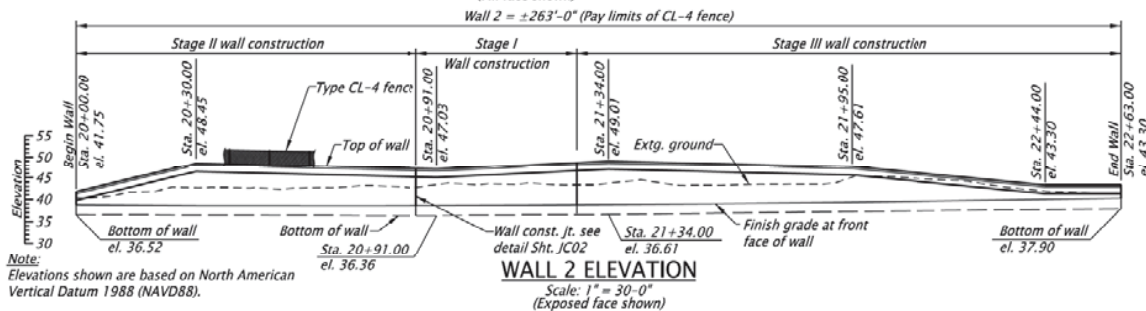
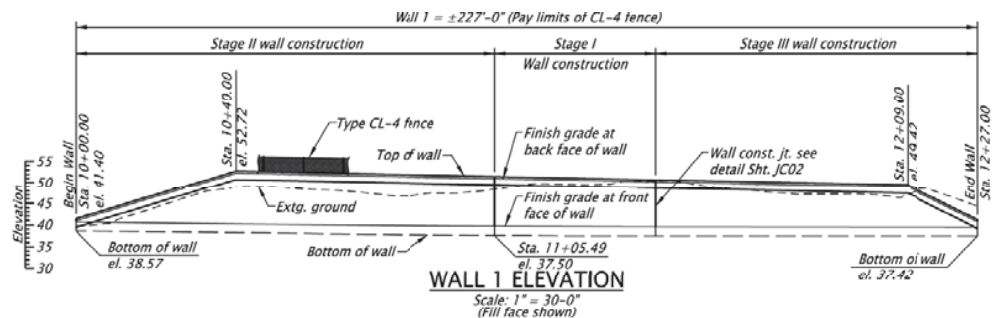
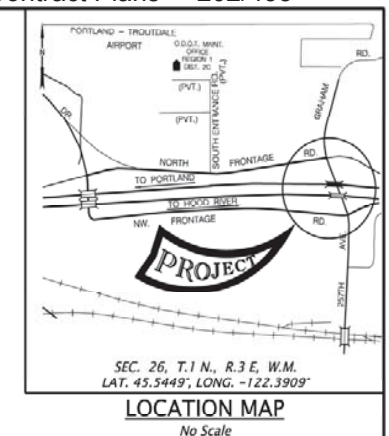
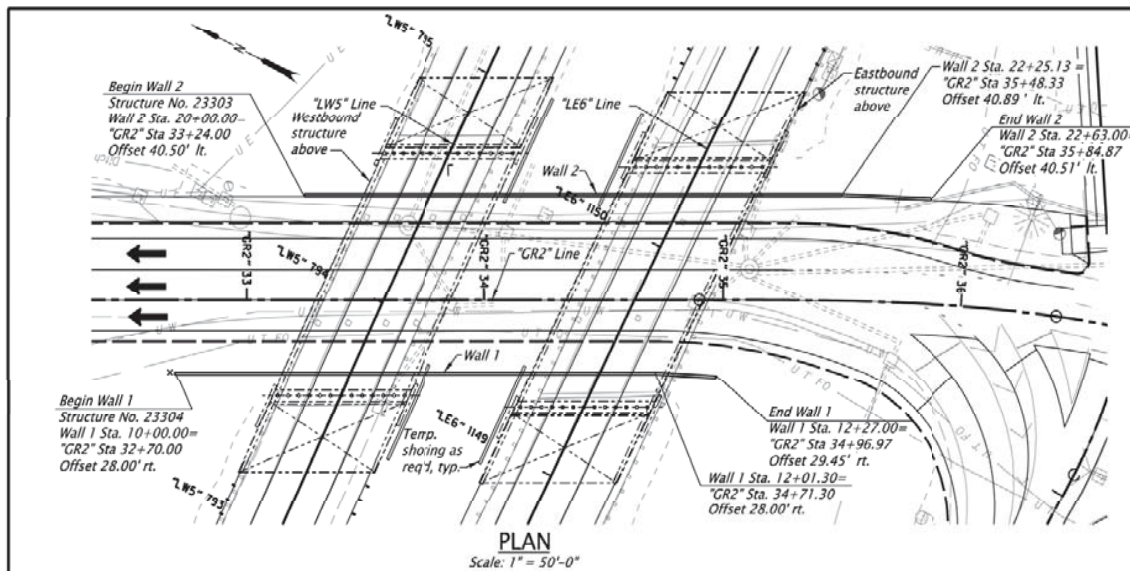
DETAILS

Retaining Wall

319.00	SQYD	ARCHITECTURAL TREATMENT	500.00	159,500	172.00	54,868	500.00	1.00
2,780.00	SQFT	RETAINING WALL, MSE	71.94	200,000	86.93	241,667	98.92	71.94

Additional Items

86.00	FOOT	TYPE CL-4R MODIFIED CHAIN LINK FENCE	100.00	8,600	100.00	8,600	100.00	100.00
1.00	EACH	2.5 FOOT X 48 INCH CHAIN LINK SINGLE GATES	800.00	800	866.67	867	1,000.00	800.00



Note:
Elevations shown are based on North American
Vertical Datum 1988 (NAVD88).

SCALE WARNING
If scale bar doesn't
measure one inch then
drawing is not to scale

STRUCTURE NO.
23303
23304
BOS DWG NO.
101131
CALC. BOOK
702R
HWY: 002
M.P.: 17.37
COUNTY
MULTNOMAH
DATE
08/2018

REGISTERED PROFESSIONAL ENGINEER
78231PE
DIGITALLY SIGNED
2018.08.20
16:56:08-0700
OREGON
MAY 23, 2006
DOUGLAS M. JOHNSON
RENEWES: 06-30-2019

DAVID EVANS AND ASSOCIATES INC.
630 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8855
RTW_GRAHAM RD, ES
RTW_GRAHAM RD, WS
I-84: GRAHAM ROAD BRIDGES PROJECT
COLUMBIA RIVER HWY NO. 002
MULTNOMAH COUNTY
Designer: Laura Baughman
Reviewer: Terry Stones
Drafters: Dustin Allenburg
Checker: Doug Johnson
MSE WALL PLAN AND ELEVATION
SHEET NO.
JC01

BRIDGE NAME:	rtw_Graham Rd_ES_45.5449/122.3909	BRIDGE NO:	23303	KEY NO:	19763
SECTION NAME:	I-84: GRAHAM ROAD BRIDGES PROJECT	COUNTY:	Multnomah	CONTR #	15110
PRIMARY PROJ:	Retaining Wall	BID DATE:	11/15/2018	FAP NO:	S002(222)
STRUCT TYPE:	MSE RETAINING WALL	# BIDS RECVD:	6	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Retaining_Wall

9.66	FT	WEIGHTED AVERAGE HEIGHT						
263.00	FT	LENGTH						
2541.00	SF	Area Unit Cost	95.04		83.55			
SUBTOTAL				217,500		191,100		
PERCENT MOBILIZATION			11.04	24,000	11.08	21,200		
TOTAL				241,500		212,300		

DETAILS

Retaining Wall

2,541.00	SQFT	RETAINING WALL, MSE	83.83	213,012	68.50	174,053	83.83	48.86
282.00	SQYD	MSE WALL #2, ARCHITECTURAL TREATMENT	16.00	4,512	60.33	17,014	138.00	16.00

Additional Items

263.00	FOOT	CL- 4 CHAIN LINK FENCE	41.00	10,783	29.00	7,627	41.00	23.00
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BRIDGE NAME:	rtw_Graham Rd_WS_45.5449/122.3909	BRIDGE NO:	23304	KEY NO:	19763
SECTION NAME:	I-84: GRAHAM ROAD BRIDGES PROJECT	COUNTY:	Multnomah	CONTR #	15110
PRIMARY PROJ:	Retaining Wall	BID DATE:	11/15/2018	FAP NO:	S002(222)
STRUCT TYPE:	MSE RETAINING WALL	# BIDS RECVD:	6	AWARDED TO:	CARTER & COMPANY INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Retaining_Wall

11.83	FT	WEIGHTED AVERAGE HEIGHT						
227.00	FT	LENGTH						
2686.00	SF	Area Unit Cost	88.79		78.52			
SUBTOTAL				214,800		189,900		
PERCENT MOBILIZATION			11.04	23,700	11.08	21,000		
TOTAL				238,500		210,900		

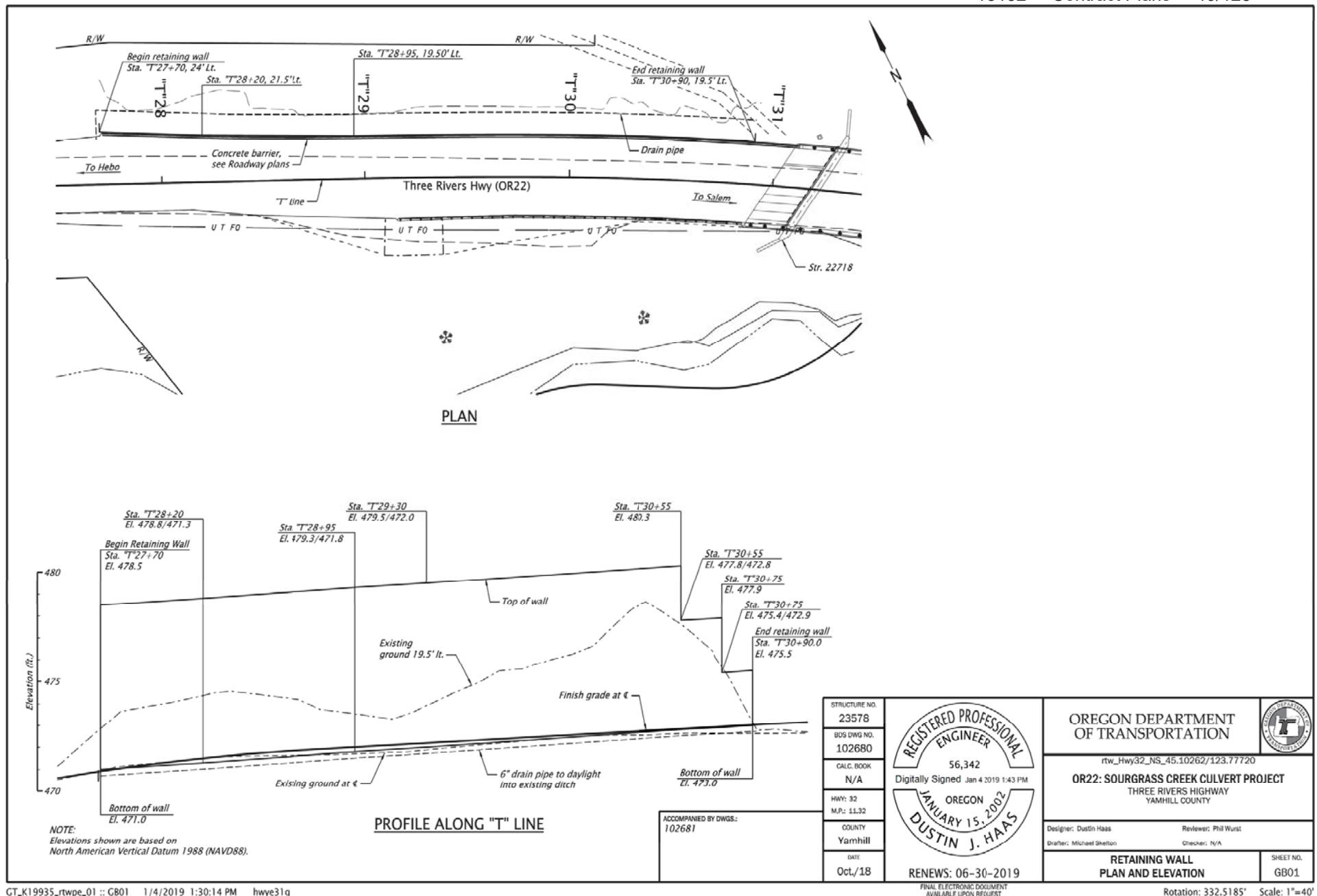
DETAILS

Retaining Wall

2,686.00	SQFT	RETAINING WALL, MSE	78.18	209,991	64.03	171,979	78.18	45.03
298.00	SQYD	MSE WALL #1, ARCHITECTURAL TREATMENT	16.00	4,768	60.17	17,930	137.50	16.00

Additional Items

227.00	FOOT	CL- 4 CHAIN LINK FENCE	41.00	9,307	29.00	6,583	41.00	23.00
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BRIDGE NAME:	rtw_Hwy32_NS_45.10262/123.77720	BRIDGE NO:	23578	KEY NO:	19935
SECTION NAME:	OR22: SOURGRASS CREEK CULVERT PROJECT	COUNTY:	Yamhill	CONTR #	15132
PRIMARY PROJ:	Retaining Wall	BID DATE:	02/28/2019	FAP NO:	S032(012)
STRUCT TYPE:	RW-PREFABRICATED MODULAR GRAVITY	# BIDS RECVD:	9	AWARDED TO:	LEGACY CONTRACTING INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

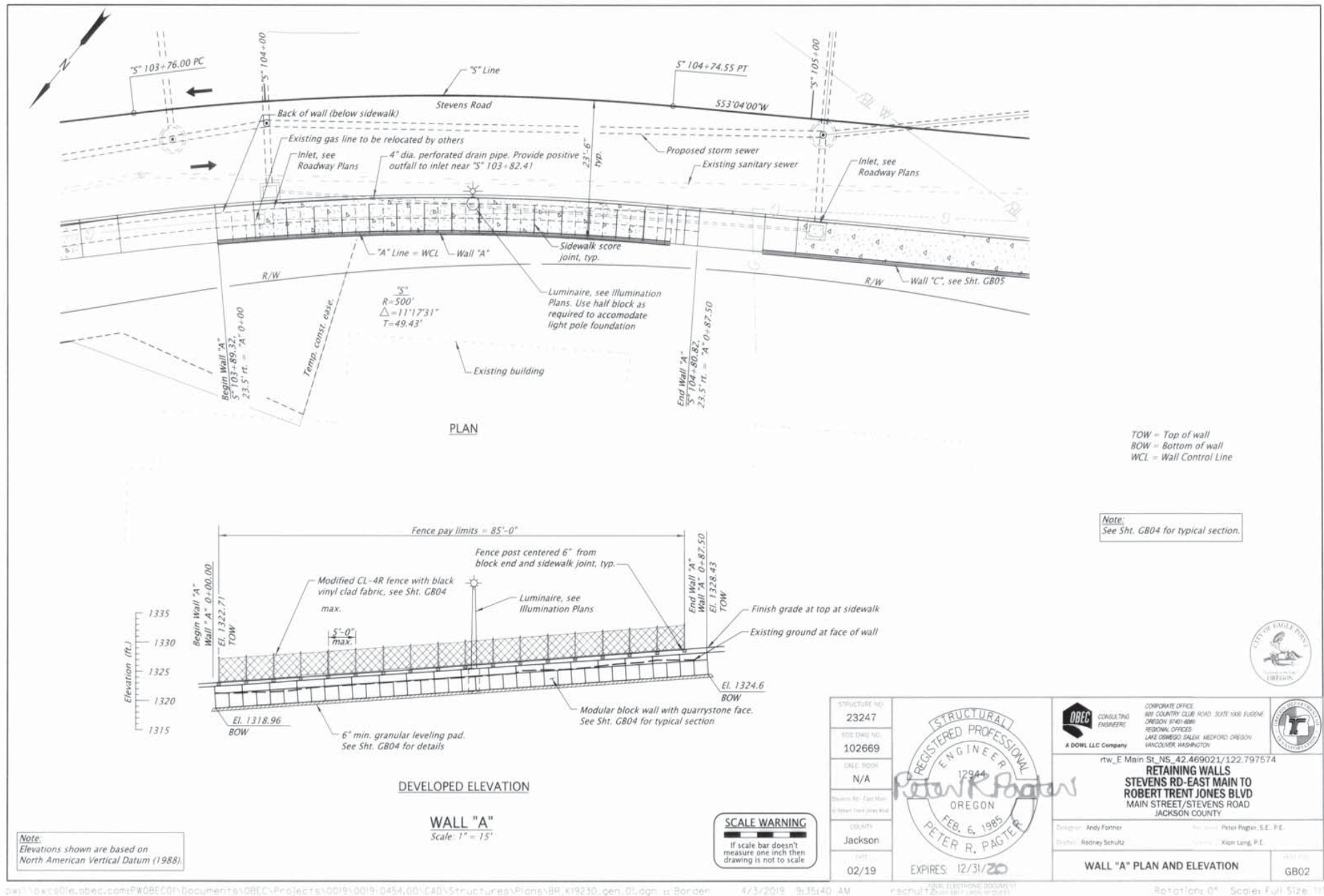
Retaining_Wall

7.11	FT	WEIGHTED AVERAGE HEIGHT						
320.00	FT	LENGTH						
2275.00	SF	Area Unit Cost	96.75		85.67			
		SUBTOTAL		198,200		176,100		
		PERCENT MOBILIZATION	11.03	21,900	10.66	18,800		
		TOTAL		220,100		194,900		

DETAILS

Retaining Wall

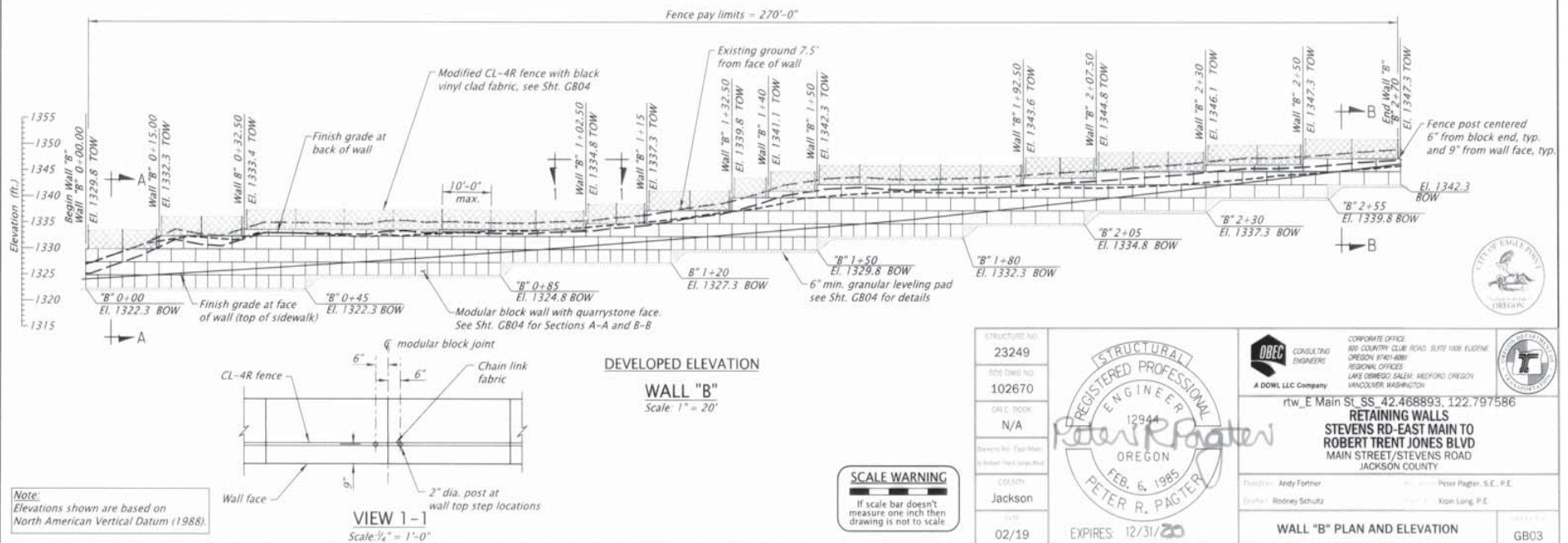
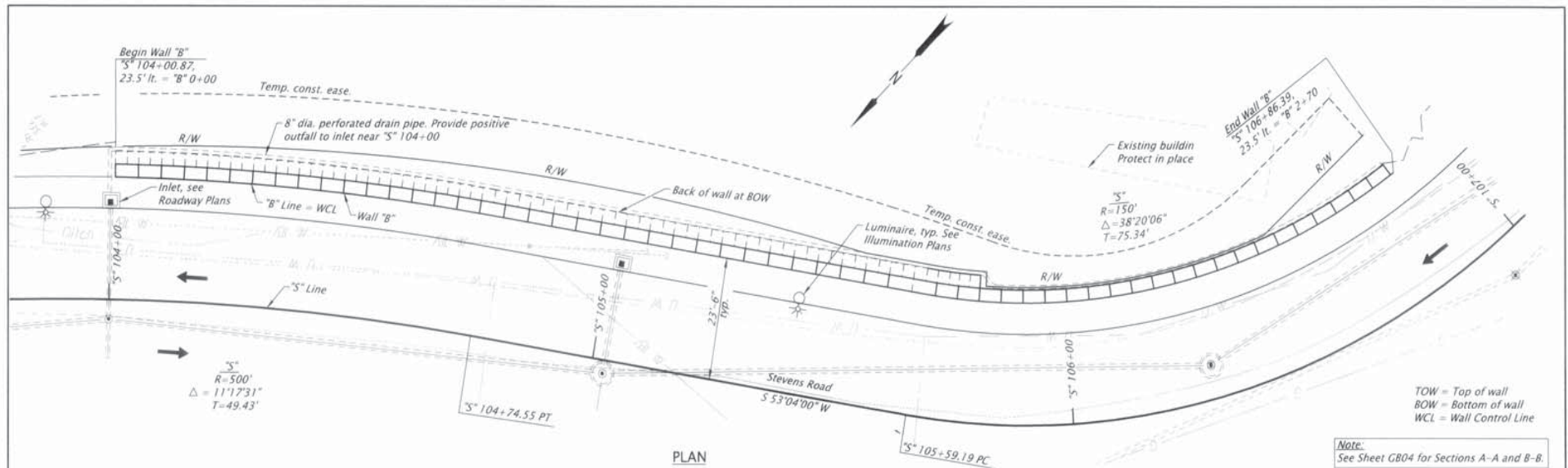
2,275.00	SQFT	RETAINING WALL, PREFABRICATED MODULAR GRAVITY	87.14	198,235	77.40	176,078	87.14	68.13
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BRIDGE NAME:	rtw_E Main St_NS_42.469021/122.797574	BRIDGE NO:	23247	KEY NO:	19230
SECTION NAME:	STEVENS RD-EAST MAIN ST TO ROBERT TRENT JONES BLVD PROJECT	COUNTY:	Jackson	CONTR #	15149
PRIMARY PROJ:	Retaining Wall	BID DATE:	05/30/2019	FAP NO:	2155(002)
STRUCT TYPE:	RW-PREFABRICATED MODULAR GRAVITY	# BIDS RECVD:	3	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Retaining_Wall								
3.89	FT	WEIGHTED AVERAGE HEIGHT						
87.50	FT	LENGTH						
340.00	SF	Area Unit Cost	73.24		77.65			
		SUBTOTAL		23,600		23,600		
		PERCENT MOBILIZATION	5.44	1,300	11.67	2,800		
		TOTAL		24,900		26,400		
DETAILS								
Retaining Wall								
340.00	SQFT	RETAINING WALL, AGENCY-FURNISHED PREFABRICATED MODULAR GRAVITY	36.76	12,500	36.15	12,290	46.68	25.00
1.00	LS	LOAD AND TRANSPORT AGENCY-FURNISHED RETAINING WALLS	2,300.00	2,300	2,500.00	2,500	3,400.00	1,800.00
85.00	FOOT	MODIFIED CL-4R CHAIN LINK FENCE WITH BLACK VINLY CLAD FABRIC	104.00	8,840	104.17	8,854	105.00	103.50



BRIDGE NAME:	rtw_E Main St_SS_42.468893/122.797586	BRIDGE NO:	23249	KEY NO:	19230
SECTION NAME:	STEVENS RD-EAST MAIN ST TO ROBERT TRENT JONES BLVD PROJECT	COUNTY:	Jackson	CONTR #	15149
PRIMARY PROJ:	Retaining Wall	BID DATE:	05/30/2019	FAP NO:	2155(002)
STRUCT TYPE:	RW-PREFABRICATED MODULAR GRAVITY	# BIDS RECVD:	3	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Retaining_Wall

8.52	FT	HEIGHT						
270.00	FT	LENGTH						
2300.00	SF	Area Unit Cost	44.30		42.09			
SUBTOTAL				96,600		86,700		
PERCENT MOBILIZATION			5.44	5,300	11.67	10,100		
TOTAL				101,900		96,800		

DETAILS

2,300.00	SQFT	RETAINING WALL, AGENCY-FURNISHED PREFABRICATED MODULAR GRAVITY	27.39	63,000	23.30	53,600	27.39	16.43
1.00	LS	LOAD AND TRANSPORT AGENCY-FURNISHED RETAINING WALLS	11,500.00	11,500	10,833.33	10,833	17,000.00	4,000.00
270.00	FOOT	MODIFIED CL-4R CHAIN LINK FENCE WITH BLACK VINLY CLAD FABRIC	82.00	22,140	82.50	22,275	84.00	81.50

BRIDGE NAME:	rtw_E Main St_NS_42.468714/122.798043	BRIDGE NO:	23248	KEY NO:	19230
SECTION NAME:	STEVENS RD-EAST MAIN ST TO ROBERT TRENT JONES BLVD PROJECT	COUNTY:	Jackson	CONTR #	15149
PRIMARY PROJ:	Retaining Wall	BID DATE:	05/30/2019	FAP NO:	2155(002)
STRUCT TYPE:	RW-PREFABRICATED MODULAR GRAVITY	# BIDS RECVD:	3	AWARDED TO:	LTM INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

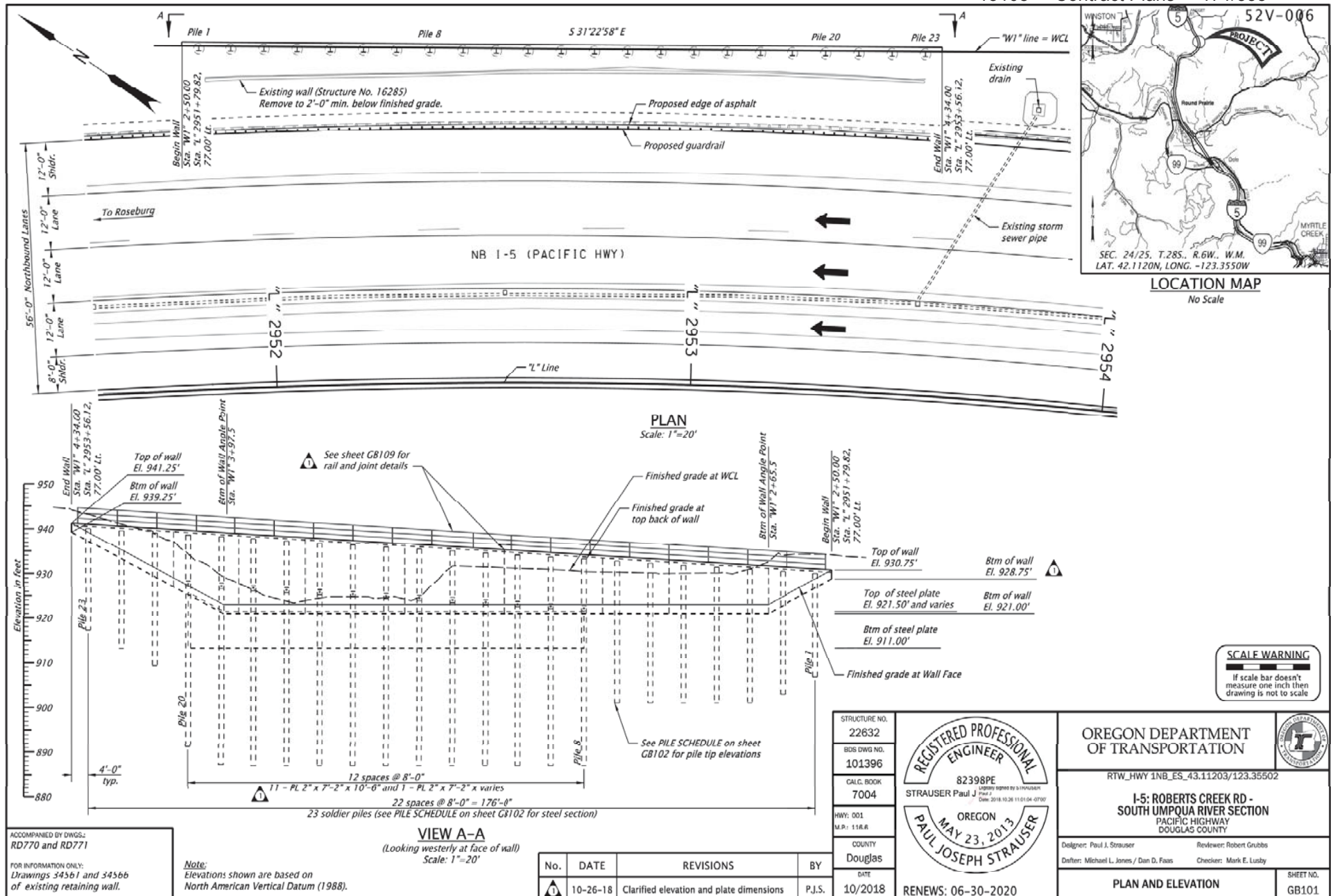
Retaining_Wall

5.43	FT	HEIGHT						
175.00	FT	LENGTH						
950.00	SF	Area Unit Cost	55.16		77.47			
SUBTOTAL				49,700		65,900		
PERCENT MOBILIZATION			5.44	2,700	11.67	7,700		
TOTAL				52,400		73,600		

DETAILS

Retaining Wall 1

950.00	SQFT	RETAINING WALL, AGENCY-FURNISHED PREFABRICATED MODULAR GRAVITY	26.84	25,500	41.71	39,622	71.96	26.32
1.00	LS	LOAD AND TRANSPORT AGENCY-FURNISHED RETAINING WALLS	6,000.00	6,000	8,000.00	8,000	9,000.00	6,000.00
175.00	FOOT	MODIFIED CL-4R CHAIN LINK FENCE WITH BLACK VINLY CLAD FABRIC	104.00	18,200	104.17	18,229	105.00	103.50



BRIDGE NAME:	RTW_HWY 1NB_ES_43.11203/123.35502	BRIDGE NO:	22632	KEY NO:	18967
SECTION NAME:	I-5: ROBERTS CREEK RD - SOUTH UMPQUA RIVER SECTION	COUNTY:	Douglas	CONTR #	15108
PRIMARY PROJ:	Retaining Wall	BID DATE:	11/01/2018	FAP NO:	S001(478)
STRUCT TYPE:	RETAINING WALL-SOLDIER PILE	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Retaining_Wall

12.86	FT	WEIGHTED AVERAGE HEIGHT						
184.00	FT	LENGTH						
2367.00	SF	Area Unit Cost	308.49		301.06			
SUBTOTAL				667,200		650,400		
PERCENT MOBILIZATION			9.44	63,000	9.56	62,200		
TOTAL				730,200		712,600		

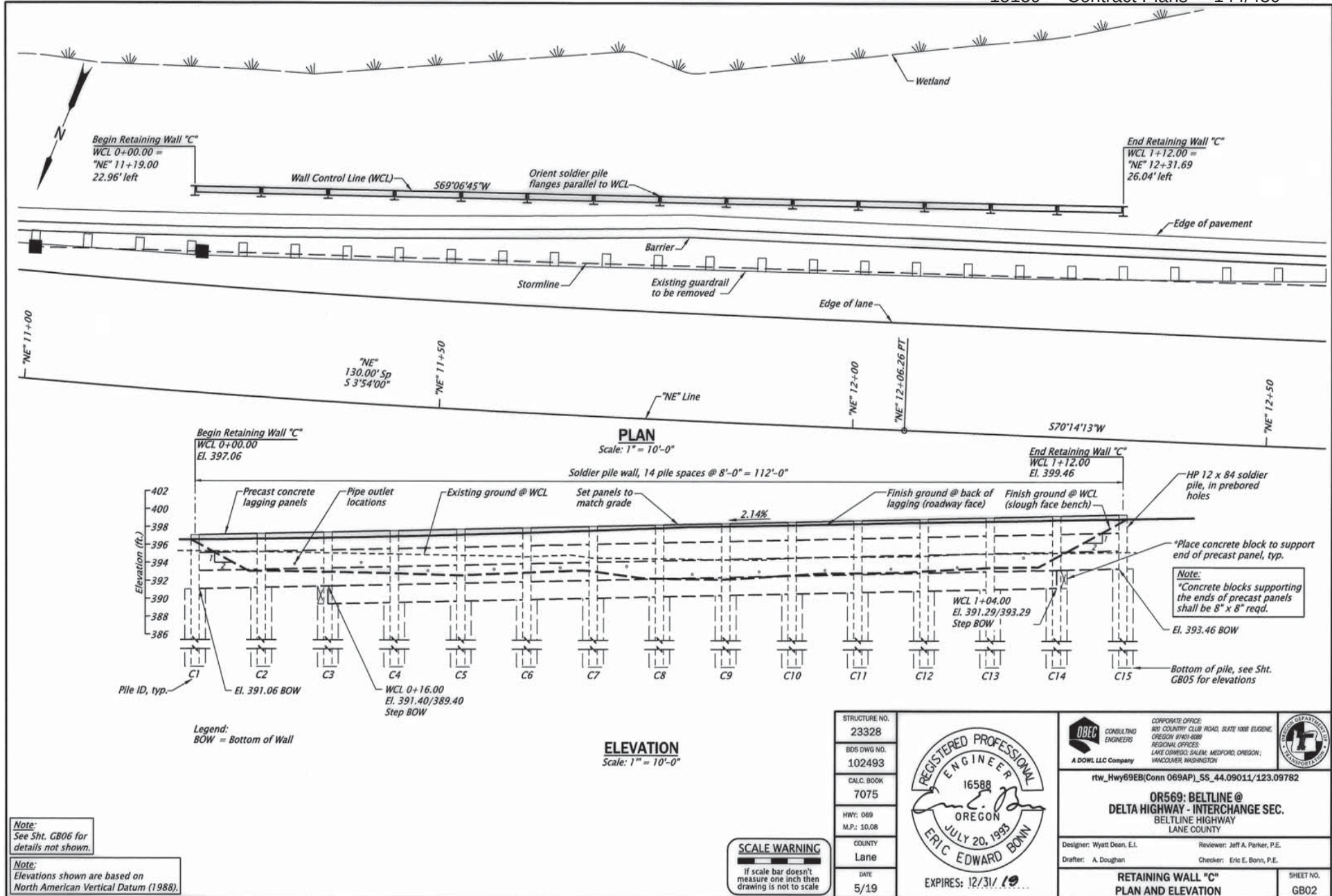
DETAILS

Retaining Wall

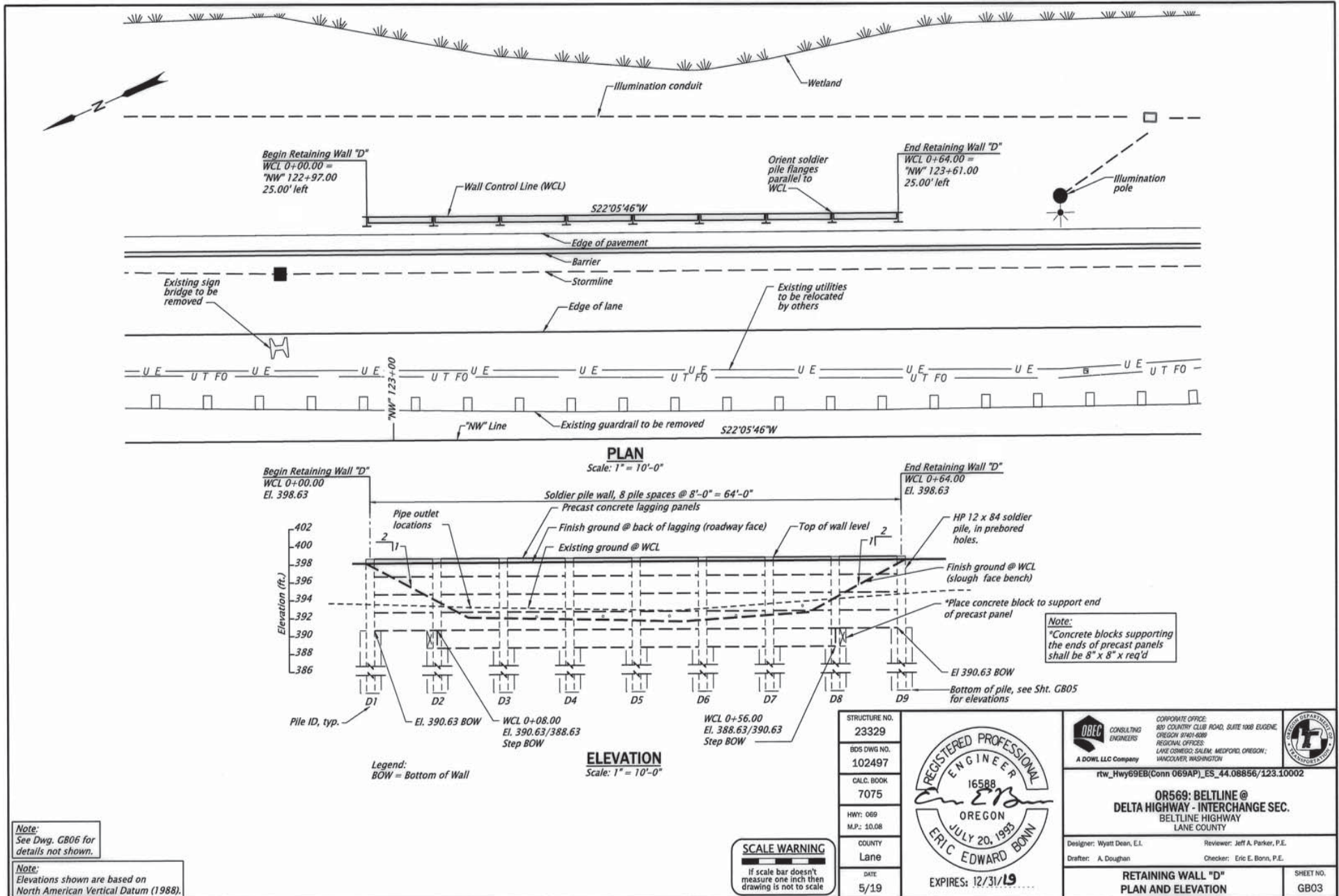
3.00	EACH	PERFORMANCE TEST	1,000.00	3,000	1,516.67	4,550	2,300.00	1,000.00
13.00	EACH	PERMANENT GROUND ANCHOR	2,302.00	29,926	4,312.33	56,060	5,470.00	2,302.00
2.00	EACH	PREPRODUCTION TEST	2,500.00	5,000	6,195.00	12,390	8,085.00	2,500.00
12.00	EACH	STEEL PLATE FACING	12,000.00	144,000	10,833.33	130,000	12,000.00	9,000.00
2,367.00	SQFT	RETAINING WALL, SOLDIER PILE TIEBACK	205.00	485,235	189.00	447,363	205.00	162.00

Additional Items

1,280.00	SQFT	BRIDGE REMOVAL WORK	3.13	4,000	5.88	7,522	7.81	3.13
181.00	FOOT	METAL HANDRAIL, 3 RAILS	109.10	19,747	92.03	16,658	109.10	67.00

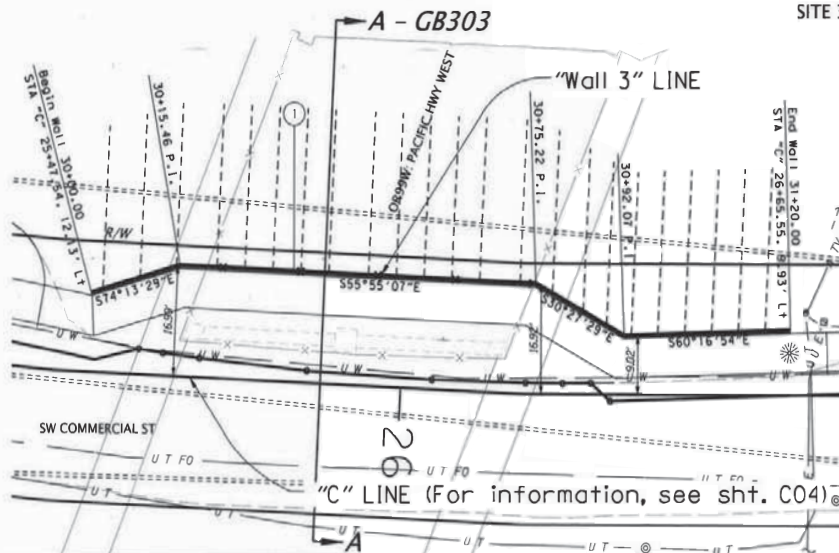


BRIDGE NAME:	rtw_Delta Hwy NB_ES_44.08998/123.09824			BRIDGE NO:	23328		KEY NO:	19490	
SECTION NAME:	OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.			COUNTY:	Lane		CONTR #	15159	
PRIMARY PROJ:	Retaining Wall			BID DATE:	08/29/2019		FAP NO:	S069(019)	
STRUCT TYPE:	RETAINING WALL-SOLDIER PILE			# BIDS RECVD:	6		AWARDED TO:	HAMILTON CONSTRUCTION CO	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Retaining_Wall									
7.57	FT	WEIGHTED AVERAGE HEIGHT							
112.00	FT	LENGTH							
848.00	SF	Area Unit Cost		153.30		212.38			
SUBTOTAL					117,500		162,500		
PERCENT MOBILIZATION				10.62	12,500	10.83	17,600		
TOTAL					130,000		180,100		
DETAILS									
Retaining Wall									
848.00	SQFT	SOLDIER PILE RETAINING WALL		138.56	117,500	191.63	162,500	259.43	138.56



BRIDGE NAME:			rtw_Delta Hwy NB_ES_44.08831/123.10032		BRIDGE NO:		23329		KEY NO:		19490		
SECTION NAME:			OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.		COUNTY:		Lane		CONTR #		15159		
PRIMARY PROJ:			Retaining Wall		BID DATE:		08/29/2019		FAP NO:		S069(019)		
STRUCT TYPE:			RETAINING WALL-SOLDIER PILE		# BIDS RECVD:		6		AWARDED TO:		HAMILTON CONSTRUCTION CO		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT		AMT	UNIT		AMT	HIGH	LOW
Retaining_Wall													
9.50		FT	WEIGHTED AVERAGE HEIGHT										
64.00		FT	LENGTH										
608.00		SF	Area Unit Cost			145.56			185.36				
SUBTOTAL								80,000		101,700			
PERCENT MOBILIZATION						10.62		8,500	10.83	11,000			
TOTAL								88,500		112,700			
DETAILS													
Retaining Wall													
608.00		SQFT	SOLDIER PILE RETAINING WALL			131.58		80,000	167.21	101,667		189.14	131.58

SITE 3 - WALL 3



- ① "Wall 3" STA 30+00.00 to
 "Wall 3" STA 31+20.00
 Const. soil nail wall- 1220.0 SF
 (For details, see shts. GB301 thru GB307)

General Notes:

Soil nails to be perpendicular to wall alignment, except from STA "Wall 3" 30+00.00 to 30+15.78 and STA "Wall 3" 30+14.76 to 30+92.56. Within those excepted locations, install soil nails parallel to adjacent non-excepted locations.

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018 and the Special Provisions.

Retaining wall design, including seismic design, is in accordance with the "AASHTO LRFD Bridge Design Specifications," 5th Edition as modified by the "ODOT Geotechnical Design Manual," 2016. The 2014 USGS Seismic Hazard Maps have been used to collect the Seismic Values for the site.

Seismic design is in accordance with 1000-year return period criteria.

Operational Criteria ("Serviceable" criteria)

- Horizontal Peak Ground Acceleration Coefficient, $PGA=0.191g$
- The site is defined as a Site Class B with a Site Factor $F_{pga}=1.33$

Life Safety Criteria ("No Collapse" criteria)

- Horizontal Peak Ground Acceleration Coefficient, $PGA=0.269g$
- The site is defined as a Site Class D with a Site Factor $F_{pga}=1.33$

Provide welded wire reinforcement according to ASTM A185.

Provide reinforcing steel according to ASTM Specification A706, or ASTM A615 Grade 60. The following splice lengths shall be used unless shown otherwise:

Reinforcing Splice Lengths (Class B) Grade 60, $f'_c=4.0$ ksi

Bar Size	#3	#4	#5	#6	#7	#8	#9	#10	#11
Uncoated	2'-0"	2'-0"	2'-0"	2'-4"	2'-9"	3'-7"	4'-6"	5'-9"	7'-0"

Increase the splice lengths 40% for horizontal or nearly horizontal bars so placed that more than 1'-0" of fresh concrete is cast below the bar.

Splice reinforcing bars at alternate bars, staggered at least one splice length or as far as possible, unless shown otherwise.

Splice welded wire reinforcing by lapping at least two cross wires minimum.

Place bars 2" clear of the nearest face of concrete unless shown otherwise.

Provide welded headed studs with material, welding and inspection according to Clause 7 of AWS D1.5.

Provide ASTM F1554, Grade 55 anchor rod concrete anchors resin bonded using resin from the QPL.

Provide $f'_c=4,000$ psi $1\frac{1}{2}$, $1\frac{3}{4}$, or $\frac{3}{8}$ concrete for all concrete, unless shown otherwise.

Shotcrete facing shall attain 4,000 psi compressive strength in 72 hours.

See the Special Provisions for details of constructing soil nail wall.

Oregon law requires the rules adopted by the Oregon Utility Notification Center to be observed. These rules are set forth in OAR 952-001-0010 through 952-001-0090. Copies of these rules may be obtained from the Center by calling 1-800-32-2344.

STRUCTURE NO.	23262
BOS DWG NO.	100754
CALC. BOOK	7002
HWY: NA	
M.P.: NA	
COUNTY	WASHINGTON
DATE	NOV 2018



Harper Houf Peterson Righellis Inc. ENGINEERS & PLANNERS • LANDSCAPE ARCHITECTS & SURVEYORS 200 NE Spokane Street, Suite 200 Portland, OR 97207 PHONE: 503.221.1111 FAX: 503.221.1111 rtw_SW Commercial ST_NS_45.43155/-122.77158		
OR99W: SW LANE ST (PORTLAND)- SW NAEVE ST (TIGARD) PROJECT PACIFIC HIGHWAY WEST MULTNOMAH/WASHINGTON COUNTIES		
Designer: Steven J. Entenman Drafter: Daniel E. Cicerchi	Review: Steven J. Entenman Checker: Aaron J. Isenhardt	
SOIL NAIL WALL PLAN & ELEVATION		

SHEET NO.
GB300

BRIDGE NAME:	rtw_SW Commercial St_NS_45.43155/-122.77158	BRIDGE NO:	23262	KEY NO:	18838
SECTION NAME:	OR99W: SW LANE ST (PORTLAND)- SW NAEVE ST (TIGARD) PROJECT	COUNTY:	Washington	CONTR #	15139
PRIMARY PROJ:	Retaining Wall	BID DATE:	04/11/2019	FAP NO:	0000(239)
STRUCT TYPE:	SOIL NAIL	# BIDS RECVD:	1	AWARDED TO:	WILDISH STANDARD PAVING CO

PREPARED BY:

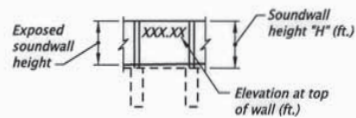
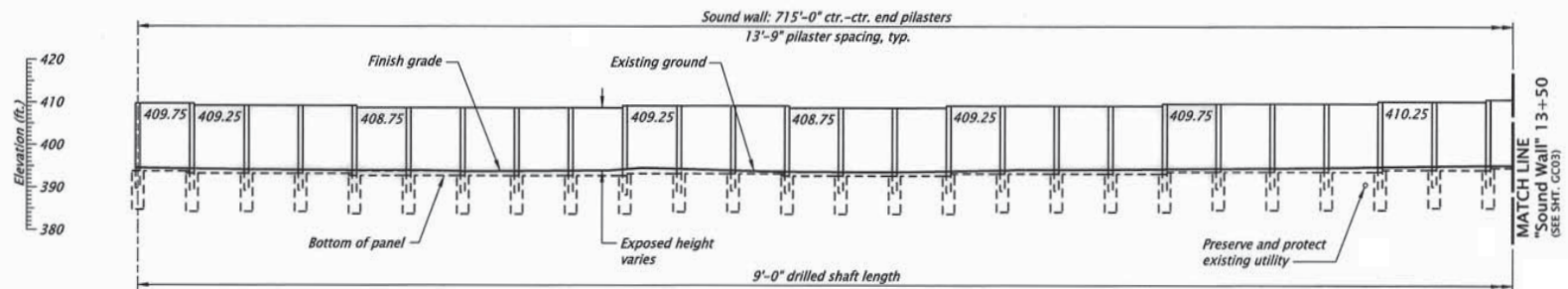
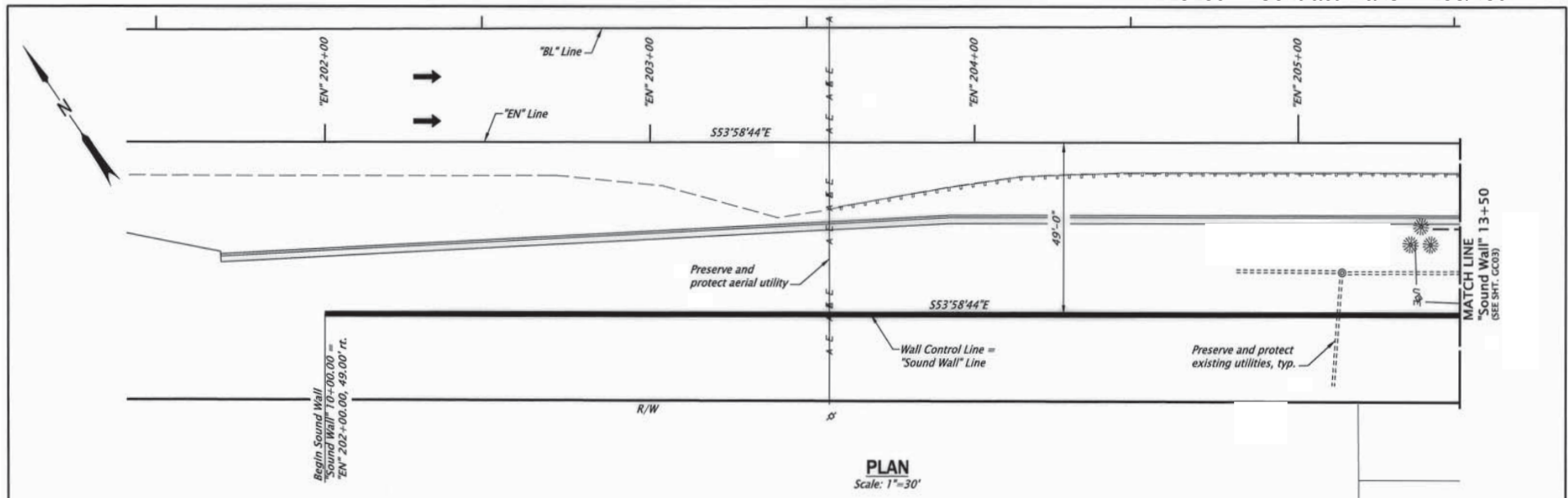
			CONTRACT		1 LOW BIDDER		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Retaining_Wall								
10.17	FT	WEIGHTED AVERAGE HEIGHT						
120.00	FT	LENGTH						
1220.00	SF	Area Unit Cost	302.30		302.30			
		SUBTOTAL		332,000		332,000		
		PERCENT MOBILIZATION	11.07	36,800	11.07	36,800		
		TOTAL		368,800		368,800		
DETAILS								
Retaining Wall								
9.00	EACH	PROOF TEST NAIL	1,000.00	9,000	1,000.00	9,000	1,000.00	1,000.00
2.00	EACH	VERIFICATON TEST NAILS	4,000.00	8,000	4,000.00	8,000	4,000.00	4,000.00
1,220.00	SQFT	RETAINING WALL, SOIL NAIL	258.20	315,000	258.20	315,000	172.66	172.66

Sound Walls

2019 BRIDGE COST DATA

SOUND WALL

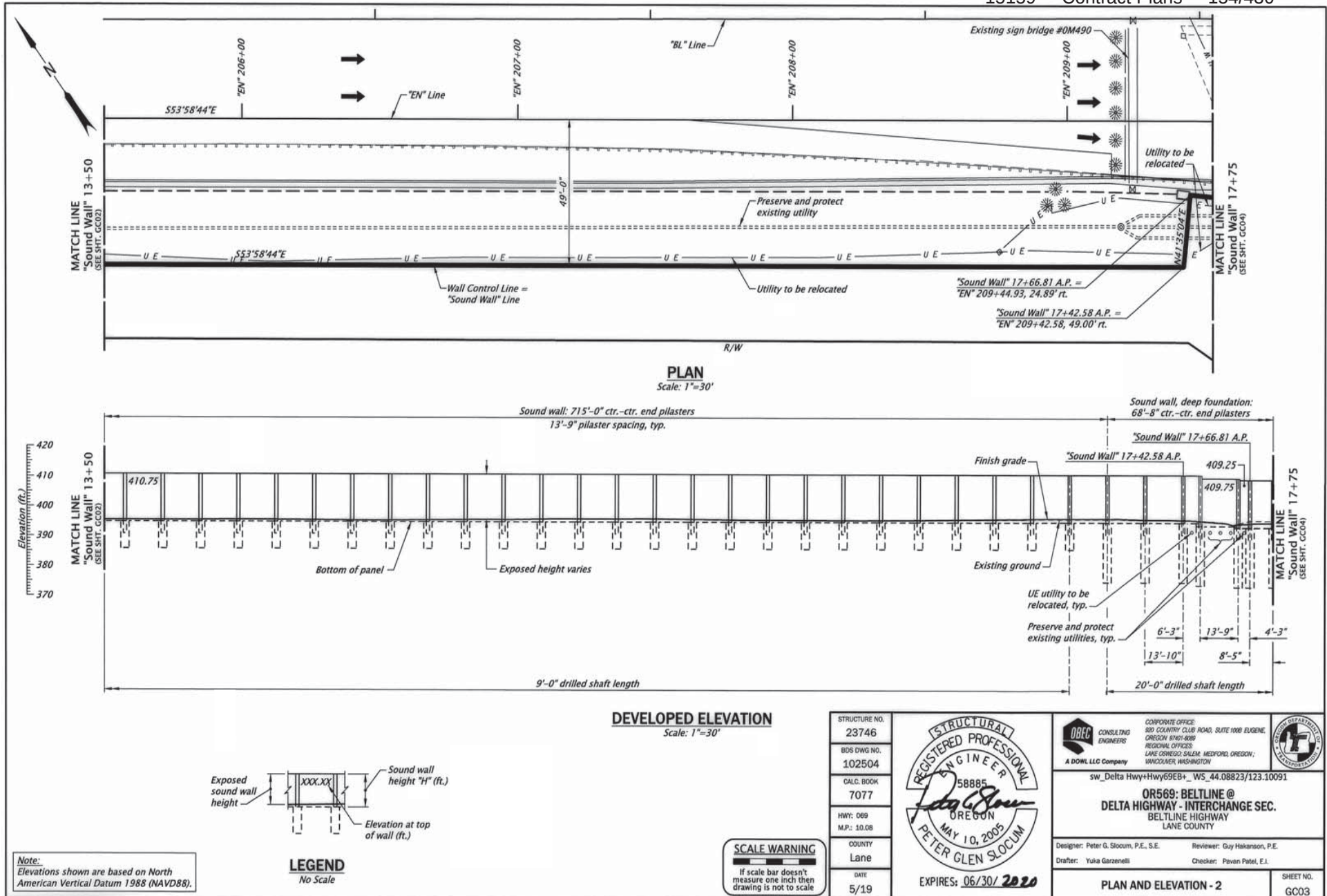
Str. No.	Str. Name	County	Contract	Description	Dwg No.	Area SQFT	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Precast Panel</u>										
23746	sw_Hwy069EB (Conn 069AM)_WS_44.0936 9/123.10422	Lane	15159	Sound wall precast panels, L 1625'-1", and deep foundation L 623'-1"	102503 thru 102509	35,970	\$1,020,405		\$1,095,017	
<u>Breakdown</u>										
Sound walls (sqft)						26,000	\$ 656,500	\$ 25.25	\$ 712,833	\$ 27.42
Sound walls, deep foundation (sqft)						9,970	\$ 363,905	\$ 36.50	\$ 382,183	\$ 38.33
23313	sw_Hwy026_SS_45.4 9742/122.52625	Multnomah	15125	20 panel spaces at 13'-9", Length is 275'	101393	2,828	\$ 101,808	\$ 36.00	\$ 115,477	\$ 40.83
23314	sw_Hwy026_SS_45.4 9745/122.52537	Multnomah	15125	13 panel spaces at 13'-9", Length is 178'-9"	101395	1,702	\$ 61,272	\$ 36.00	\$ 69,498	\$ 40.83
<u>Subtotal Precast Panel (sq.ft.)</u>						40,500	\$1,183,485	\$ 29.22	\$1,279,992	\$ 31.60
<u>Sound Wall, Metal, Bridge</u>										
08704A	Willamette River Ofrow, Hwy 69 EB	Lane	15159	Sound wall, metal, bridge, 188'-0" ctr-ctr end pilasters (sqft)	102539	5,679	\$ 136,775	\$ 24.08	\$ 137,258	\$ 24.17
<u>Subtotal Sound Wall, Metal, Bridge (sq.ft.)</u>						5,679	136,775	\$ 24.08	137,258	\$ 24.17
<u>Sound Wall with Retaining Wall</u>										
23562	rtw_Hwy069EB (Conn 069AM)_WS_44.0909 8/123.10087	Lane	15159	Sound wall/Retaining Wall "E", precast sound wall panels on top of precast lagging, L 55'-0" (sqft)	102498	1,185	\$ 65,175	\$ 55.00	\$ 80,185	\$ 67.67
<u>Subtotal Sound Wall w/Retaining Wall (sq.ft.)</u>						1,185	\$ 65,175	\$ 55.00	\$ 80,185	\$ 67.67



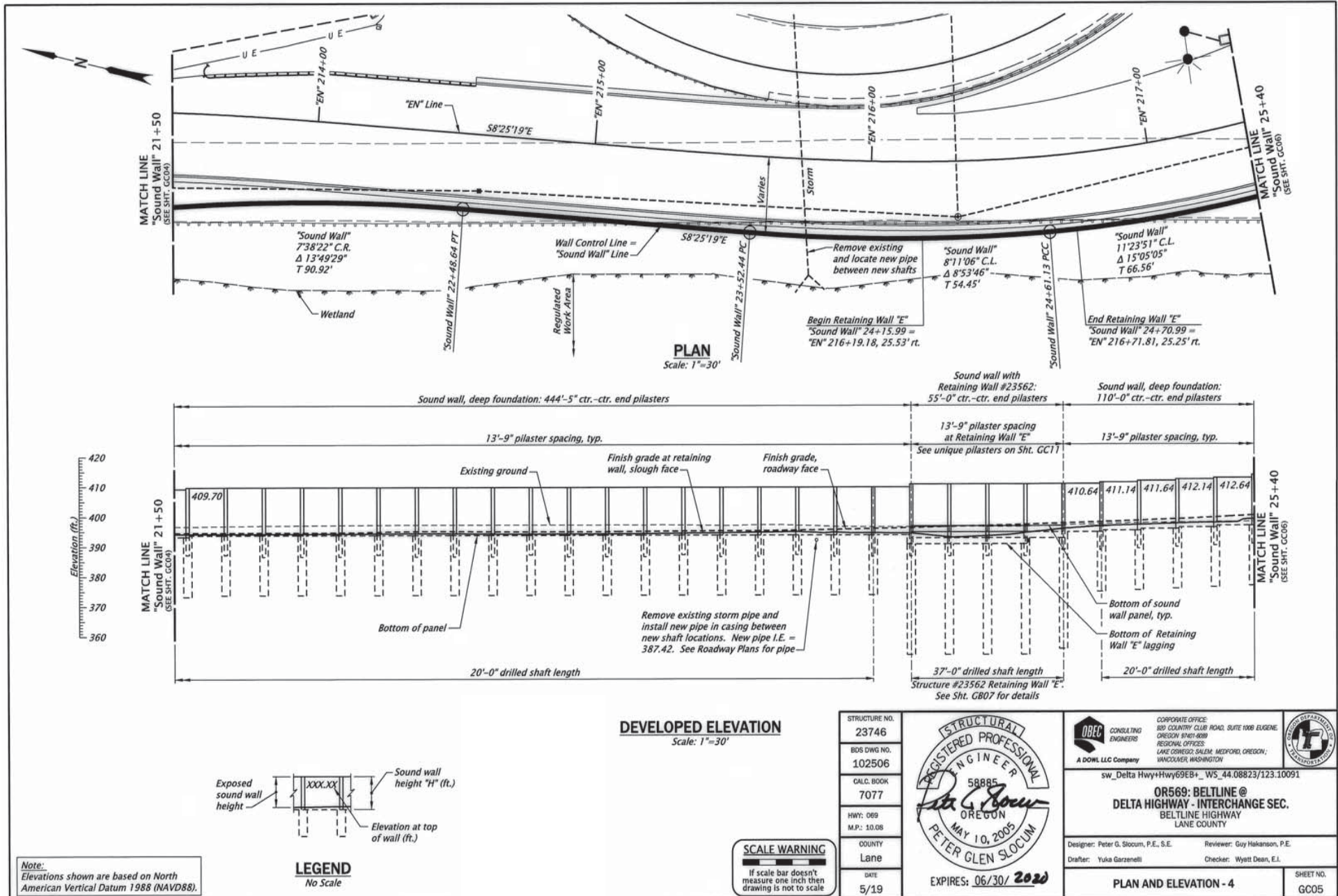
Note:
Elevations shown are based on North American Vertical Datum 1988 (NAVD88).

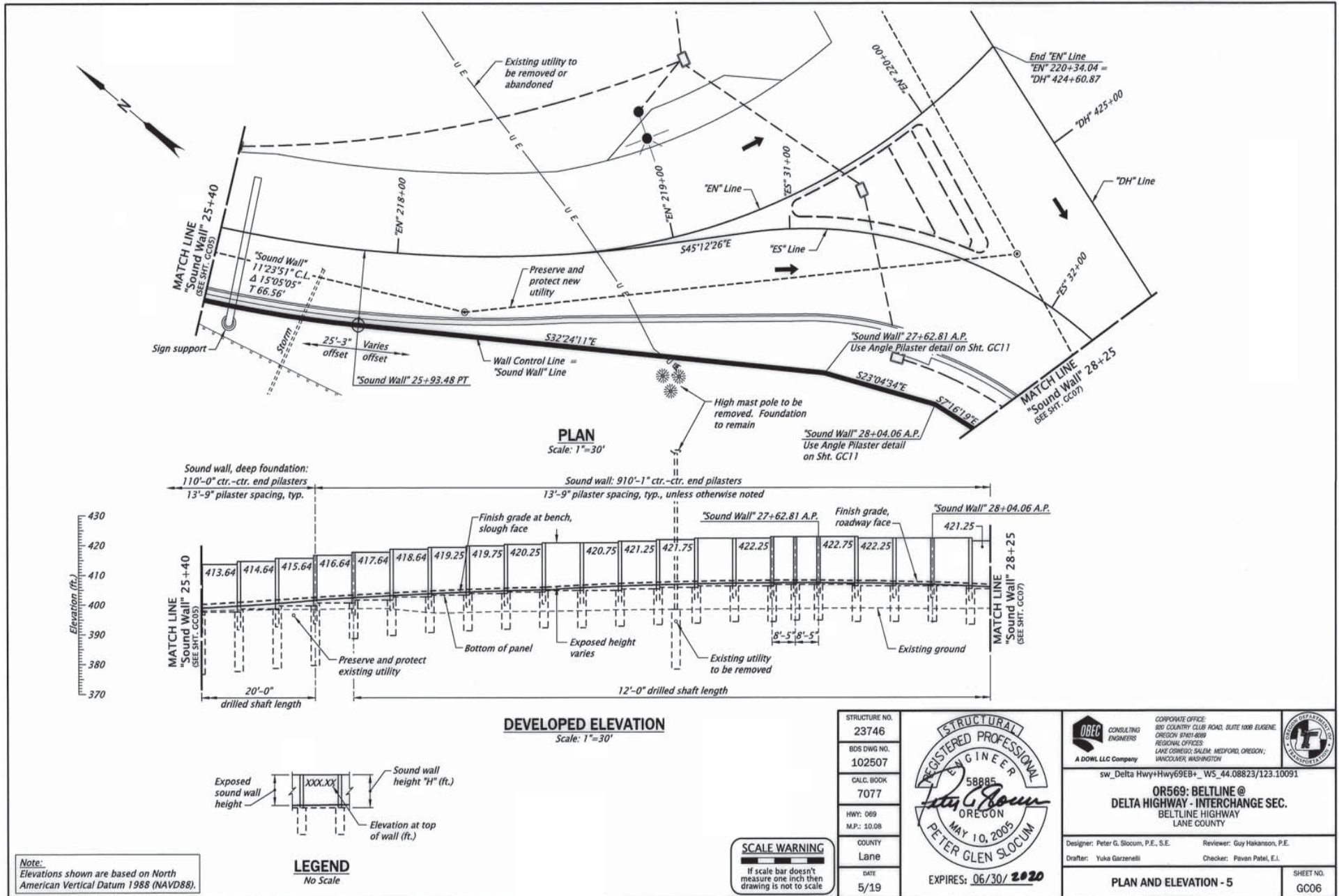
SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

STRUCTURE NO. 23746		
BOS DWG NO. 102503		
CALC. BOOK 7077		
HWY: 089 M.P.: 10.08		
COUNTY Lane	DATE 5/19	EXPIRES: 06/30/2020
DESIGNER: Peter G. Slocum, P.E., S.E. DRAFTER: Yuka Garzendell REVIEWER: Guy Hakanson, P.E. CHECKER: Pawan Patel, E.I.		
PLAN AND ELEVATION - 1		
SHEET NO. GC02		













BRIDGE NAME:	sw_Hwy069EB (Conn 069AM)_WS_44.09369/123.10422	BRIDGE NO:	23746	KEY NO:	19490
SECTION NAME:	OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.	COUNTY:	Lane	CONTR #	15159
PRIMARY PROJ:	Sound Walls	BID DATE:	08/29/2019	FAP NO:	S069(019)
STRUCT TYPE:	SOUND WALL PRECAST PANEL	# BIDS RECVD:	6	AWARDED TO:	HAMILTON CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sound_Wall

16.00	FT	HEIGHT						
1,625.08	FT	LENGTH						
26000.00	SF	Sound Walls Unit Cost	27.93		30.38			
SUBTOTAL				656,500		712,800		
PERCENT MOBILIZATION			10.62	69,700	10.83	77,200		
TOTAL				726,200		790,000		

Sound Wall - Deep Foundation

16.00	FT	HEIGHT						
623.08	FT	LENGTH						
9970.00	SF	Sound Walls Unit Cost	40.37		42.49			
SUBTOTAL				363,900		382,200		
PERCENT MOBILIZATION			10.62	38,600	10.83	41,400		
TOTAL				402,500		423,600		

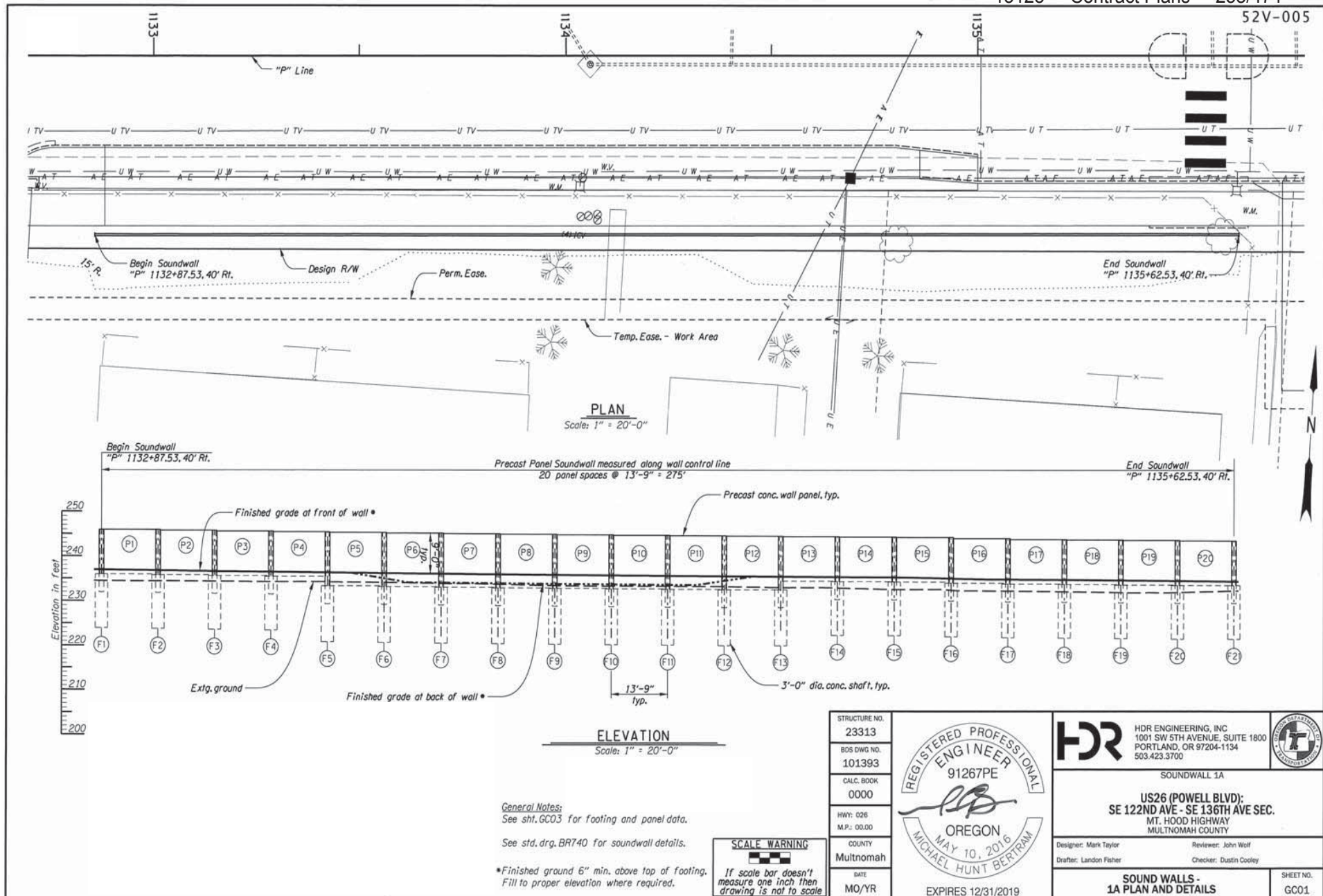
DETAILS

Sound Wall - Precast Panel

26,000.00	SQFT	SOUND WALLS	25.25	656,500	27.42	712,833	32.00	25.00
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Sound Wall - Deep Foundation

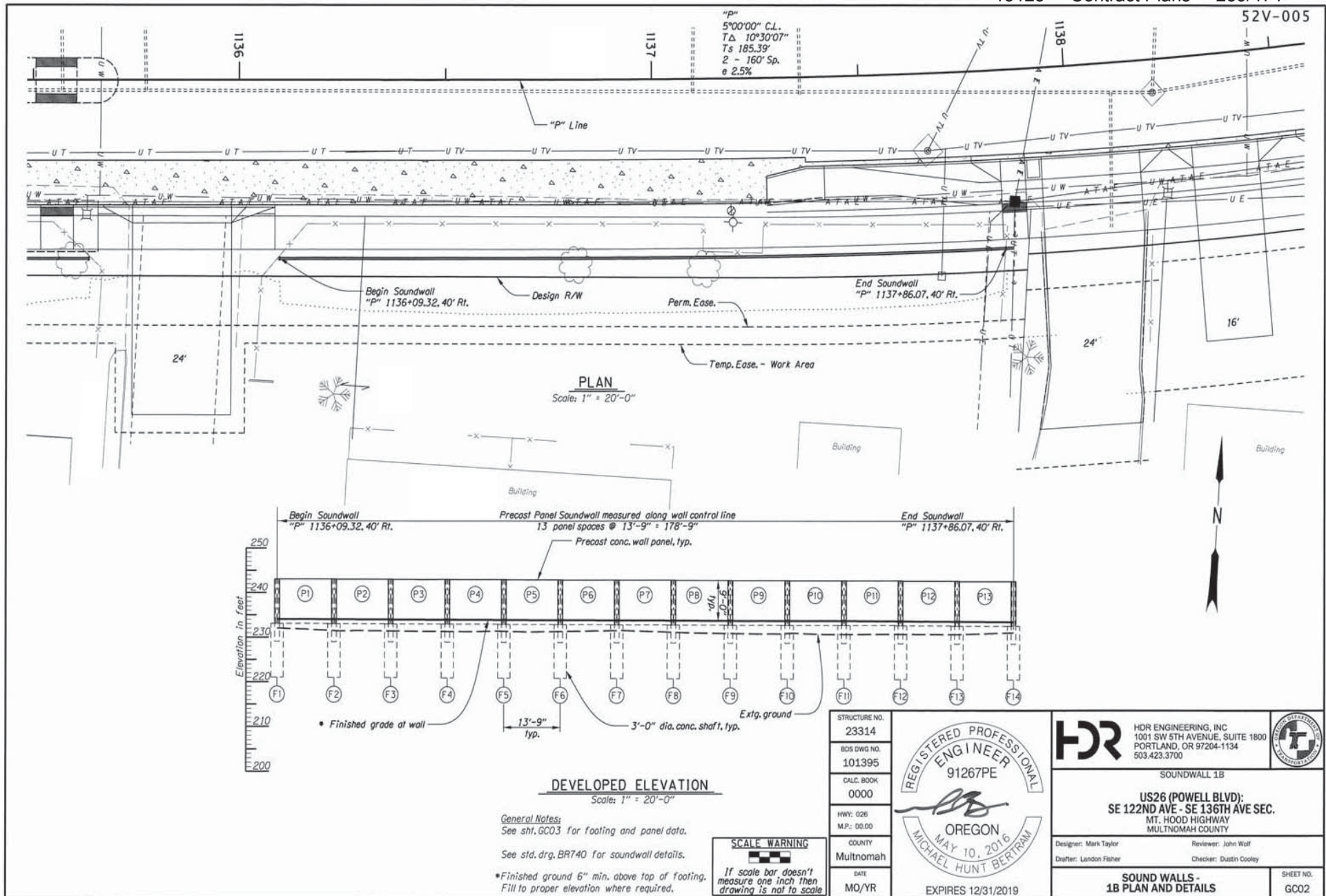
9,970.00	SQFT	SOUND WALLS, DEEP FOUNDATION	36.50	363,905	38.33	382,183	43.50	35.00
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BRIDGE NAME:	sw_Hwy026_SS_45.49742/122.52625	BRIDGE NO:	23313	KEY NO:	19690
SECTION NAME:	US26 (POWELL BLVD): SE 122ND AVE - SE 136TH AVE SEC.	COUNTY:	Multnomah	CONTR #	15125
PRIMARY PROJ:	Sound Walls	BID DATE:	12/13/2018	FAP NO:	S026(126)
STRUCT TYPE:	SOUND WALL PRECAST PANEL	# BIDS RECVD:	9	AWARDED TO:	TAPANI INC

PREPARED BY:

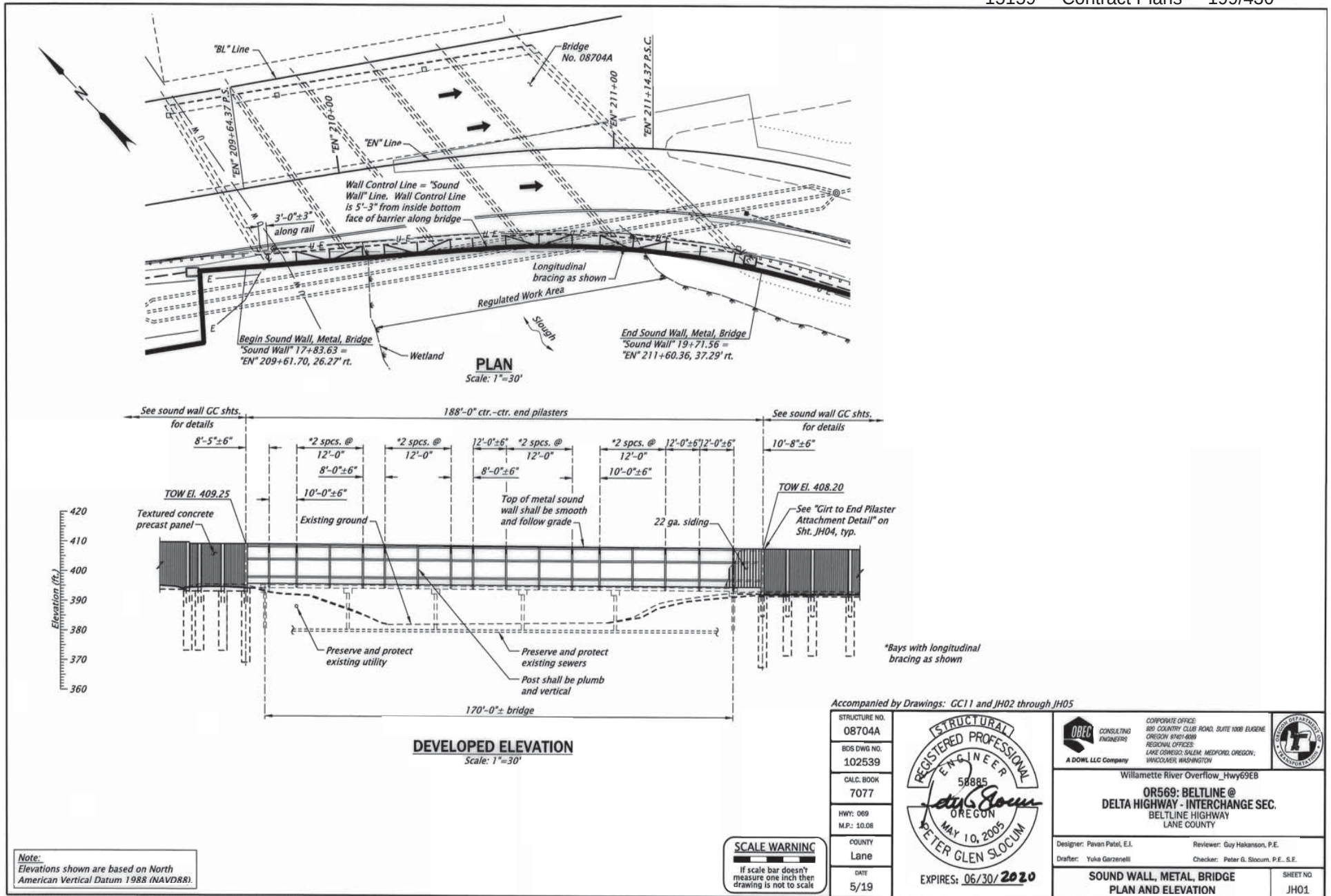
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sound_Wall								
10.28	FT	HEIGHT						
275.00	FT	LENGTH						
2828.00	SF	Sound Walls Unit Cost	39.67		44.91			
		SUBTOTAL		101,800		115,500		
		PERCENT MOBILIZATION	10.26	10,400	9.98	11,500		
		TOTAL		112,200		127,000		
DETAILS								
Sound Walls								
2,828.00	SQFT	SOUND WALLS	36.00	101,808	40.83	115,477	44.00	36.00



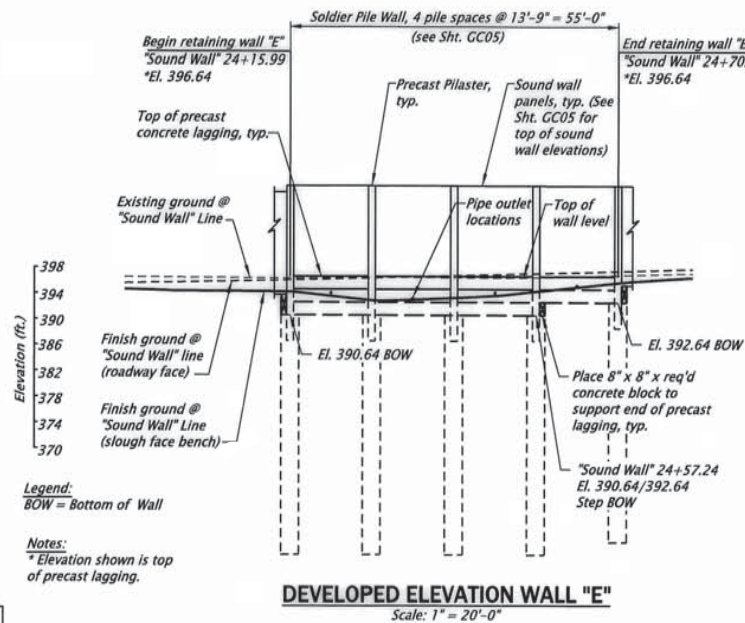
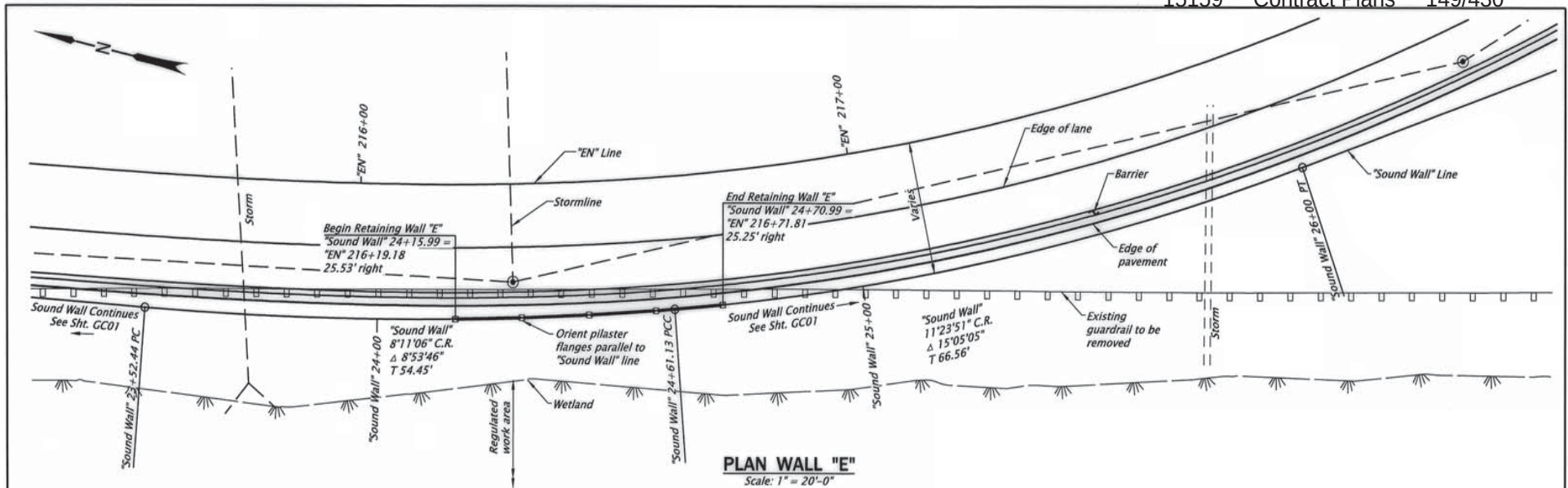
BRIDGE NAME:	sw_Hwy026_SS_45.49745/122.52537	BRIDGE NO:	23314	KEY NO:	19690
SECTION NAME:	US26 (POWELL BLVD): SE 122ND AVE - SE 136TH AVE SEC.	COUNTY:	Multnomah	CONTR #	15125
PRIMARY PROJ:	Sound Walls	BID DATE:	12/13/2018	FAP NO:	S026(126)
STRUCT TYPE:	SOUND WALL PRECAST PANEL	# BIDS RECVD:	9	AWARDED TO:	TAPANI INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sound_Wall								
9.52	FT	HEIGHT						
178.75	FT	LENGTH						
1702.00	SF	Sound Walls Unit Cost						
			39.72		44.89			
		SUBTOTAL		61,300		69,500		
		PERCENT MOBILIZATION	10.26	6,300	9.98	6,900		
		TOTAL		67,600		76,400		
DETAILS								
Sound Walls								
1,702.00	SQFT	SOUND WALLS	36.00	61,272	40.83	69,498	44.00	36.00



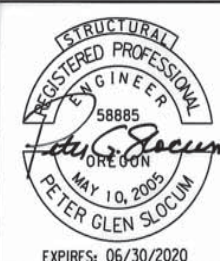
BRIDGE NAME:			Willamette River Oflow, Hwy 69 EB		BRIDGE NO:		08704A		KEY NO:		19490		
SECTION NAME:			OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.		COUNTY:		Lane		CONTR #		15159		
PRIMARY PROJ:			Sound Walls		BID DATE:		08/29/2019		FAP NO:		S069(019)		
STRUCT TYPE:			METAL SOUND WALL		# BIDS RECVD:		6		AWARDED TO:		HAMILTON CONSTRUCTION CO		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT		AMT	UNIT		AMT	HIGH	LOW
Sound_Wall													
30.21		FT	HEIGHT										
188.00		FT	LENGTH										
5679.00		SF	Sound Walls Unit Cost			178.42			179.48				
SUBTOTAL								136,800		137,300			
PERCENT MOBILIZATION						10.62		14,500	10.83	14,900			
TOTAL								151,300		152,200			
DETAILS													
Sound Walls													
5,679.00		SQFT	SOUND WALL, METAL, BRIDGE			24.08		136,773	24.17	137,258		26.41	22.01



Note:
Elevations shown are based on North American Vertical Datum (1988).

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

STRUCTURE NO.	23562
BOS DWG NO.	102498
CALC. BOOK	7075
HWY: 069	
M.P.: 10.08	
COUNTY	Lane
DATE	5/19



OBEC CONSULTING ENGINEERS A DOWL LLC Company		CORPORATE OFFICE: 800 COUNTRY CLUB ROAD, SUITE 1000 EUGENE, OREGON 97401-6000 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON	
rtw_hwy69EB(Conn 069AM)_WS_44.09083/123.10081			
OR569: BELTLINE @ DELTA HIGHWAY - INTERCHANGE SEC. BELTLINE HIGHWAY LANE COUNTY			
Designer: Wyatt Dean, E.I. Drafter: A. Doughan	Reviewer: Jeff A. Parker, P.E. Checker: Peter G. Slocum, P.E., S.E.		
RETAINING WALL "E" PLAN AND ELEVATION			SHEET NO. GB07

BRIDGE NAME:			rtw_Hwy069EB (Conn 069AM)_WS_44.09098/123.10087		BRIDGE NO:		23562		KEY NO:		19490			
SECTION NAME:			OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.		COUNTY:		Lane		CONTR #		15159			
PRIMARY PROJ:			Sound Walls		BID DATE:		08/29/2019		FAP NO:		S069(019)			
STRUCT TYPE:			RETAINING WALL-SOLDIER PILE		# BIDS RECVD:		6		AWARDED TO:		HAMILTON CONSTRUCTION CO			
										PREPARED BY:				
					CONTRACT			3 LOW BIDDERS			SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW	
Sound_Wall														
21.55		FT	HEIGHT											
55.00		FT	LENGTH											
1185.00		SF	Sound Walls Unit Cost			60.84				75.02				
SUBTOTAL								65,200				80,200		
PERCENT MOBILIZATION						10.62		6,900		10.83		8,700		
TOTAL								72,100				88,900		
DETAILS														
Sound Walls														
1,185.00		SQFT	SOUND WALL WITH RETAINING WALL			55.00		65,175		67.67		80,185		
												83.00		55.00

Sign Support Structures

2019 BRIDGE COST DATA

SIGN SUPPORT STRUCTURES

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Linear Feet	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Truss Sign Bridge</u>										
23833	its_Hwy064_MP10.18	Clackamas	15163	Sign truss bridge, Span "S" 141'-0"	102594	141	\$ 372,501	\$ 2,641.85	\$ 362,072	\$ 2,567.89
23836	its_Hwy064_MP0.95	Clackamas	15163	Sign truss (VMS) bridge, span "S" 145'	102597	145	\$ 412,501	\$ 2,844.83	\$ 405,750	\$ 2,798.28
23308	sn_HWY69_44.0863/123.10151	Lane	15159	Sign truss bridge, span "S" 132'-6"	102546	133	\$ 337,200	\$ 2,544.91	\$ 362,467	\$ 2,735.60
23309	sn_HWY69_44.0882/1/123.10067	Lane	15159	Sign truss bridge, span "S" 136'-6"	102549	137	\$ 337,200	\$ 2,470.33	\$ 365,134	\$ 2,674.97
23278	sn_Hwy 64NB_MP19.8	Multnomah	15124	Sign truss bridge, Span "S" 92'-8"	101171	93	\$ 172,444	\$ 1,860.90	\$ 201,548	\$ 2,174.97
23279	sn_Hwy 64NB_MP20.4	Multnomah	15124	Sign truss bridge, span "S" 115'-6"	101181	116	\$ 172,444	\$ 1,493.02	\$ 201,548	\$ 1,745.00
23287	its_Hwy 64_MP25.6	Multnomah	15124	Sign truss bridge, span "S" 166'-0"	101219	166	\$ 199,664	\$ 1,202.80	\$ 223,988	\$ 1,349.33
23851	its_Hwy 1_MP307.3	Multnomah	15150	VMS truss bridge, site "A", span "S" 137'-8"	102810	138	\$ 390,600	\$ 2,837.28	\$ 441,250	\$ 3,205.20
23852	its_Hwy 1_MP304.3	Multnomah	15150	VMS truss bridge, site "E", span "S" 133'-0"	102822	133	\$ 343,900	\$ 2,585.71	\$ 406,516	\$ 3,056.51
Subtotal Truss Sign Bridge (ft)						1,200	\$2,738,454	\$ 2,282.36	\$2,970,273	\$ 2,475.57
<u>Monotube Sign Bridge</u>										
23834	its_Hwy064_MP7.60	Clackamas	15163	Monotube sign VMS bridge, span "S" 87'	102595	87	\$ 310,000	\$ 3,563.22	\$ 297,630	\$ 3,421.03
23310	sn_HWY69_44.0943/123.09981	Lane	15159	Monotube sign bridge, span "S" 78'-0"	102550	78	\$ 187,750	\$ 2,407.05	\$ 192,833	\$ 2,472.22
23275	its_Hwy 64SB_MP16.3	Multnomah	15124	Monotube sign bridge, span "S" 88'-0"	101165	88	\$ 156,028	\$ 1,773.05	\$ 182,276	\$ 2,071.32

SIGN SUPPORT STRUCTURES

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Linear Feet	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
23277	its_Hwy 64NB_MP19.6	Multnomah	15124	Monotube sign bridge, span "S" 87'-6"	101169	88	\$ 146,182	\$ 1,670.65	\$ 172,894	\$ 1,975.93
23280	sn_Hwy 64NB_MP20.95	Multnomah	15124	Monotube sign bridge, span "S" 99'-4"	101192	99	\$ 159,362	\$ 1,604.37	\$ 182,754	\$ 1,839.87
23281	its_Hwy 64SB_MP21.8	Multnomah	15124	Monotube sign bridge, span "S" 92'-6"	101205	93	\$ 146,590	\$ 1,584.76	\$ 178,480	\$ 1,929.51
23282	its_Hwy 64NB_MP22.1	Multnomah	15124	Monotube sign bridge, span "S" 93'-0"	101207	93	\$ 161,276	\$ 1,734.15	\$ 186,925	\$ 2,009.95
23284	its_Hwy 64NB_MP23.8	Multnomah	15124	Monotube sign bridge, span "S" 84'-6"	101211	85	\$ 159,610	\$ 1,888.88	\$ 180,587	\$ 2,137.12
Subtotal Monotube Sign Bridge (ft)						710	\$1,426,798	\$ 2,010.06	\$1,574,379	\$ 2,217.97
<u>Cantilever Sign Support Structures</u>										
23274	sn_Hwy 1E_ES_MP12.73	Clackamas	15103	Monotube cantilever sign support, LA 35'-2 1/4"	100867	35	\$ 167,250	\$ 4,753.11	\$ 165,500	\$ 4,703.37
23250	sn_Hwy 064NB_ES_MP14.0 3	Clackamas	15115	Monotube cantilever sign support, LA 39.25'	100950	39	\$ 108,300	\$ 2,759.24	\$ 116,517	\$ 2,968.58
23251	sn_Hwy 064NB_ES_MP13.7	Clackamas	15115	Monotube cantilever sign support, LA 39'-	100951	39	\$ 98,300	\$ 2,504.46	\$ 99,433	\$ 2,533.33
23311	sn_HWY69_WS_44 .09059/123.10068	Lane	15159	Monotube cantilever sign support, LA 50'	102551	50	\$ 103,750	\$ 2,075.00	\$ 115,417	\$ 2,308.33
23276	sn_Hwy 64NB_ES_MP19.6	Multnomah	15124	Monotube cantilever sign support, LA 40'	101167	40	\$ 70,680	\$ 1,767.00	\$ 92,627	\$ 2,315.67
23283	its_Hwy 64SB_WS_MP23.1	Multnomah	15124	Monotube cantilever sign support, LA 45'	101209	45	\$ 77,612	\$ 1,724.71	\$ 97,137	\$ 2,158.61

SIGN SUPPORT STRUCTURES

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Linear Feet	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
23285	its_Hwy 64SB(Conn 064DC)_MP23.9	Multnomah	15124	Monotube cantilever sign support, LA 45.5'	101213	46	\$ 107,626	\$ 2,365.41	\$ 126,539	\$ 2,781.07
23286	sn_Hwy 64SB_WS_MP25.5	Multnomah	15124	Monotube cantilever sign support, LA 40.5'	101217	41	\$ 82,678	\$ 2,041.43	\$ 100,909	\$ 2,491.59
23563	its_Hwy6EB_SS_MP 200.59	Umatilla	15116	Cantilever VMS support, LA 33'-4"	102055	33	\$ 157,500	\$ 4,725.47	\$ 180,417	\$ 5,413.04
23564	its_Hwy6WB_SS_MP220.83	Umatilla	15116	Cantilever VMS support, LA 44'-0"	102039	44	\$ 155,000	\$ 3,522.73	\$ 178,333	\$ 4,053.03
23565	its_Hwy6_SS_MP22 1.57	Umatilla	15116	Cantilever VMS support, LA 44'-0"	102051	44	\$ 155,000	\$ 3,522.73	\$ 185,333	\$ 4,212.12
23566	its_Hwy6WB_SS_MP222.54	Umatilla	15116	Cantilever VMS support, LA 44'-0"	102051 (shared)	44	\$ 163,500	\$ 3,715.91	\$ 188,467	\$ 4,283.33
23567	its_Hwy6 WB_SS_MP223.52	Umatilla	15116	Cantilever VMS support, LA 44'-0"	102039 (shared)	44	\$ 168,750	\$ 3,835.23	\$ 190,333	\$ 4,325.76
23568	its_Hwy6 EB_SS_MP225.24	Umatilla	15116	Cantilever VMS support, LA 44'-0"	102039 (shared)	44	\$ 154,000	\$ 3,500.00	\$ 178,667	\$ 4,060.61
23569	its_Hwy6 WB_SS_MP224.59	Umatilla	15116	Cantilever VMS support, LA 40'-6"	102033	41	\$ 139,000	\$ 3,432.10	\$ 170,000	\$ 4,197.53
23570	its_Hwy6 EB_SS_MP228.58	Umatilla	15116	Cantilever VMS support, LA 44'-0"	102039 (shared)	44	\$ 148,000	\$ 3,363.64	\$ 170,333	\$ 3,871.21
23571	its_Hwy6 WB_SS_MP229.87	Umatilla	15116	Cantilever VMS support, LA 40'-6"	102060	41	\$ 145,000	\$ 3,580.25	\$ 168,167	\$ 4,152.26
23572	its_Hwy6 WB_SS_MP237.86	Umatilla	15116	Cantilever VMS support, LA 44'-0"	102039 (shared)	44	\$ 167,250	\$ 3,801.14	\$ 193,417	\$ 4,395.83
23573	its_Hwy6 EB_SS_MP239.89	Umatilla	15116	Cantilever VMS support, LA 44'-0"	102039 (shared)	44	\$ 153,500	\$ 3,488.64	\$ 185,000	\$ 4,204.55

SIGN SUPPORT STRUCTURES

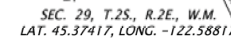
Str. No.	Structure Name	County	Contract	Description	Dwg No.	Linear Feet	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
23574	its_Hwy6 EB_SS_MP251.59	Union	15116	Cantilever VMS support, LA 40'-6"	102033 (shared)	41	\$ 137,250	\$ 3,388.89	\$ 169,583	\$ 4,187.24
23575	its_Hwy6 WB_SS_MP259.97	Union	15116	Cantilever VMS support, LA 44'-8 3/4"	102033 (shared)	45	\$ 133,500	\$ 2,984.57	\$ 165,833	\$ 3,707.43
Subtotal Cantilever Sign Support (ft)						886	\$2,793,446	\$ 3,151.99	\$3,237,962	\$ 3,653.56
<u>Structure Mounts</u>										
17118	SE Sunnybrook Road Over Hwy 64	Clackamas	15115	Bridge structure mounts for sign # 2 (lb)	100947	1,120	\$ 14,500	\$ 12.95	\$ 15,500	\$ 13.84
09739	Stafford Rd over Hwy 64	Clackamas	15163	Install bridge structure mounts for VAS and walkway supports (lb)	102598	5,000	\$ 75,000	\$ 15.00	\$ 76,667	\$ 15.33
20310	Sign Truss Br, Hwy 64 SB at MP 11.62 (VMS)	Clackamas	15163	Install vertical sign mounts for VMS and walkway supports (lb)	102592	1,800	\$ 35,000	\$ 19.44	\$ 36,000	\$ 20.00
009359	Goodpasture Island Rd over Delta Hwy	Lane	15159	Install bridge structure mounts for sign # 69	102544	1,500	\$ 13,925	\$ 9.28	\$ 14,308	\$ 9.54
13520	NE Glisan Street over Hwy 64	Multnomah	15124	Install bridge structure mounts (lb)	101202	8,500	\$ 85,000	\$ 10.00	\$ 70,000	\$ 8.24
13521	E Burnside St over Hwy 64	Multnomah	15124	Install bridge structure mounts for sign # 31 & # 29 (lb)	101188	14,100	\$ 120,000	\$ 8.51	\$ 86,667	\$ 6.15
13523	SE Washington St over Hwy 64	Multnomah	15124	Install bridge structure mounts for sign # 41 & # 40 (lb)	101185	4,700	\$ 40,000	\$ 8.51	\$ 28,333	\$ 6.03
13527	SE Market St over Hwy 64 at MP 20.06	Multnomah	15124	Install bridge structure mounts for sign # 61 and # 57 (lb)	101175	4,600	\$ 43,000	\$ 9.35	\$ 30,000	\$ 6.52

SIGN SUPPORT STRUCTURES

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Linear Feet	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
13516D	Hwy 64 NB Conn #4 to Hwy 2 WB over Hwy 2 & Hwy 64 & MAX LRT	Multnomah	15124	Install bridge structure mounts for sign # 14 (lb)	101997	5,800	\$ 26,000	\$ 4.48	\$ 20,333	\$ 3.51
20309	VMS I-205 Airport Way, MP 24.48 SB	Multnomah	15124	Install vertical sign mount on existing structure (lb)	101215	6,600	\$ 75,000	\$ 11.36	\$ 51,333	\$ 7.78
17469	Sign Truss Bridge, Hwy 64 NB at MP 20.17	Multnomah	15124	Install vertical sign mount on existing structure (lb)	101178	2,100	\$ 34,000	\$ 16.19	\$ 26,000	\$ 12.38
19490	Sign Cantilever Bridge, Hwy 64 NB at MP 20.68	Multnomah	15124	Install vertical sign mount for sign # 64 (lb)	101317	300	\$ 7,000	\$ 23.33	\$ 12,333	\$ 41.11
09016	Pedestrian Bridge (N Bryant St) over Hwy 1	Multnomah	15150	Install bridge mounts for VAS and walkway support, site "D" (lb)	102796	10,300	\$ 72,700	\$ 7.06	\$ 90,900	\$ 8.83
09012	N Skidmore St over Hwy 1 & Conn	Multnomah	15150	Install bridge mounts for VAS and sign # 21, site "F" (lb)	102799	6,000	\$ 46,600	\$ 7.77	\$ 55,533	\$ 9.26
08958G	Ivy St Conn to Hwy 61 SB over Hwy1 (E Fremont Int)	Multnomah	15150	Install bridge mounts for VAS and walkway support, site "G" (lb)	102804	12,700	\$ 72,700	\$ 5.72	\$ 105,900	\$ 8.34
20690	Sign Truss Bridge, Hwy 1 at MP 306.46	Multnomah	15150	Install vertical sign mounts for VAS (lb)	102816	4,300	\$ 41,600	\$ 9.67	\$ 52,200	\$ 12.14
20691	Sign Truss Bridge, Hwy 1 at MP 306.10	Multnomah	15150	Install vertical sign mounts for VAS (lb)	102819	3,300	\$ 36,400	\$ 11.03	\$ 45,467	\$ 13.78
Subtotal Structure Mounts (lb)						92,720	\$ 838,425	\$ 9.04	\$ 817,475	\$ 8.82

SIGN SUPPORT STRUCTURES

Str. No.	Structure Name	County	Contract	Description	Dwg No.	Linear Feet	Low Bid Total Cost	Low Bid Unit Cost	Ave 3 Bid Total Cost	Ave 3 Bid Unit Cost
<u>Other</u>										
18930	Sign Cantilever Br, Hwy 64 NB at MP 13.98	Clackamas	15115	Remove cantilever sign support structure (LS)	LA02	1	\$ 7,500	\$ 7,500.00	\$ 9,500	\$ 9,500.00
19467	Sign Cantilever Br, Hwy 64 NB at MP 13.86	Clackamas	15115	Remove cantilever sign support structure (LS)	LA02 (shared)	1	\$ 7,500	\$ 7,500.00	\$ 9,500	\$ 9,500.00
19481	Sign Cantilever Br, Hwy 64 NB at MP 19.58	Multnomah	15124	Remove sign bridge structure for sign #23 (LS)	LA10	1	\$ 3,790	\$ 3,790.00	\$ 6,930	\$ 6,930.00
19492	Sign Cantilever Br, Hwy 64 NB at MP 20.99	Multnomah	15124	Remove cantilever sign support structure for sign #21 (LS)	LA04	1	\$ 3,790	\$ 3,790.00	\$ 6,930	\$ 6,930.00
19512	Sign Cantilever Br, Hwy 64 SB at MP 25.46	Multnomah	15124	Remove cantilever sign support structure for sign #63 (LS)	LA01	1	\$ 3,790	\$ 3,790.00	\$ 6,930	\$ 6,930.00
19514	Sign Cantilever Br, Hwy 64 SB at MP 25.67	Multnomah	15124	Remove cantilever sign support structure for sign #2 (LS)	LA01 (shared)	1	\$ 3,790	\$ 3,790.00	\$ 6,930	\$ 6,930.00
16458N	Sign Truss Bridge, Hwy 64 NB at MP 20.36	Multnomah	15124	Remove sign support for sign #53 \$ #54 (LS)	LA07	1	\$ 15,600	\$15,600.00	\$ 17,533	\$17,533.33
16713	Sign Truss Bridge, Hwy 6 WB_MP226.62	Umatilla	15116	VMS replacement (LS)	102057	1	\$ 15,500	\$15,500.00	\$ 78,500	\$78,500.00



LOCATION MAP
No Scale

Scale: 1"=20'

Scale: 1"=20'



Scale: 1"=20' *Elevation view is looking ahead on station SB direction.

See Dwg. TM607 for General Notes.

The sign support shall meet the requirements for span length, post height, and sign area, as shown on Dwg.TM606. Use sign bridge design for "S" = 128' to 148'.

Sign support structure is designed for all items shown including future signs (by others).

See Dwgs. TM606 through TM612 for details not shown.

Excavation shall be inspected by project geotechnical engineer and approved prior to constructing foundation. See Project Geotechnical Investigation for additional information and requirements.

Field verify conditions, elevations, dimensions, and span prior to fabrication. Field verify utility locations and conditions prior to construction.

See Intelligent Transportation Systems Plans for sign information.

Right of way line is outside limits of view.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

SITE D

PROJECT DATA (Left and Right are as seen while looking ahead on station)									
Sign Bridge		"S" Span	Foundation Drawing Number	Spread Footing Foundation Design Number See Dwg. TM611	"HP" Post Height see Dwg. TM614 (Field Verify)		"HF" Foundation Height see Dwg. TM611 (Field Verify)		Luminaires ("Yes" or "No" see Dwg. TM618
					Left	Right	Left	Right	
At Station	M.P.								
"L" 662+83	10.17 SB	141'-0"	TM611	5A	27'-4½"	28'-7½"	7'-0"	7'-0"	No

Note:
Elevations are based on the North American Vertical Datum, 1988.

ACCOMPANIED BY DWGS.:
102603, 102628, 102958,
TM606-TM612, TM614, TM618,
TM695, TM696

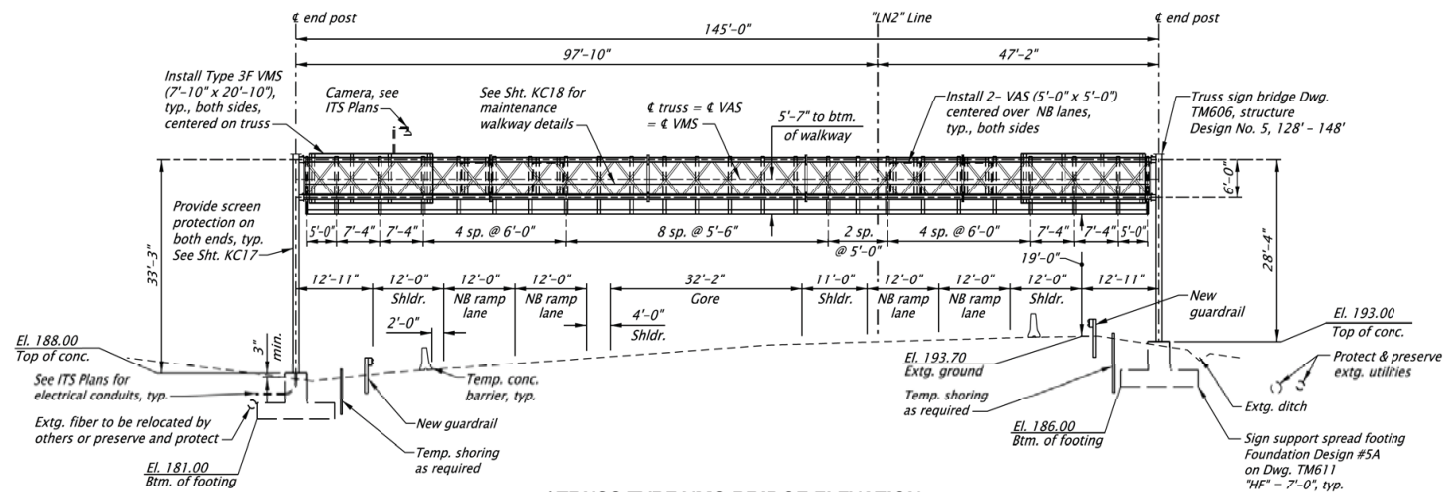
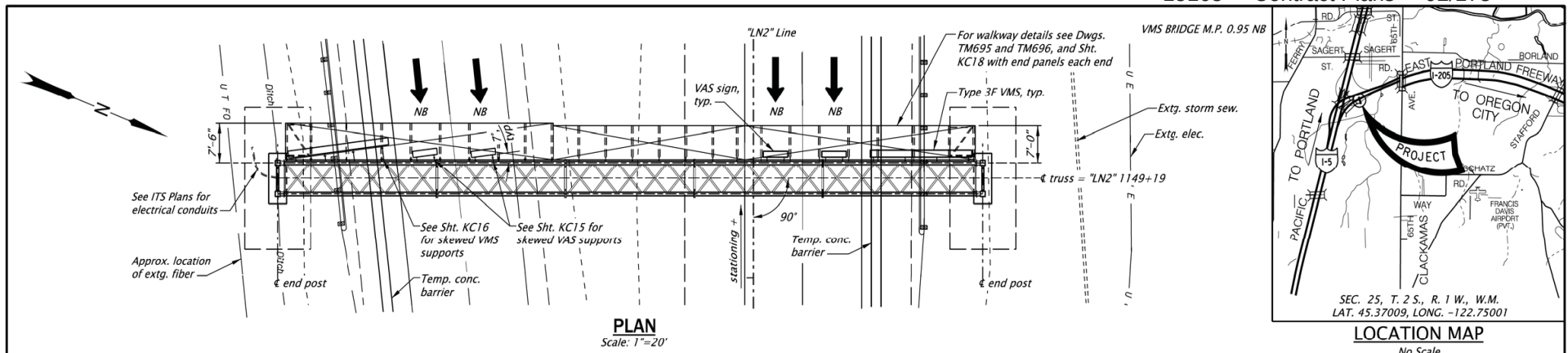
SCALE WARNING
IF THIS SCALE LINE DOES NOT
MEASURE ONE INCH, THEN
DRAWING IS NOT TO SCALE.

STRUCTURE NO	23833
BDS DWG NO	102594
CALC. BOOK	7084
HWY: 064	
M.P.: 10.17 SB	
UNIT FILE CODE	ITS-37
DIR/TSU/NO.	N/A

STRUCTURAL
REGISTERED PROFESSIONAL
ENGINEER
58885
Digitally Signed 2019.08.13 15:12:07
OREGON
MAY 10, 2005
PETER GLEN SOCUM
EXPIRES: 06/30/20

 OBEC CONSULTING ENGINEERING A DOWL LLC Company	CORPORATE OFFICE 880 COUNTRY CLUB ROAD, SUITE 100B ELGIN, OREGON 97101-6000 REGIONAL OFFICES LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON	
its_Hwy064_MP10.17 I-205; I-5 - OR213, PHASE 3 SEC. EAST PORTLAND FREEWAY CLACKAMAS & WASHINGTON COUNTIES		
Designer: Peter G. Slocum, P.E., S.E. Drafter: Yuhua Guozemelli	Reviewer: Jeff Bernardo, P.E. Checker: Wyatt Osari, E.I.	
INTELLIGENT TRANSPORTATION SYSTEMS - SITE PLANS		SHEET NO. KC03

BRIDGE NAME:			its_Hwy064_MP10.18		BRIDGE NO:		23833		KEY NO:		21400				
SECTION NAME:			I-205: I-5 - OR213, PHASE 3 SEC.		COUNTY:		Clackamas		CONTR #		15163				
PRIMARY PROJ:			Sign Support		BID DATE:		09/19/2019		FAP NO:		S064(061)				
STRUCT TYPE:			TRUSS SIGN BRIDGE		# BIDS RECVD:		5		AWARDED TO:		HP CIVIL INC				
										PREPARED BY:					
					CONTRACT			3 LOW BIDDERS			SPREAD				
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW		
Sign_Support															
141.00		LF	Linear Unit Cost			3,009.22				2,944.68					
SUBTOTAL								381,900		373,700					
PERCENT MOBILIZATION						11.11		42,400		11.11		41,500			
TOTAL								424,300		415,200					
DETAILS															
Sign Support															
56.00		SQYD	SHORING, CRIBBING, AND COFFERDAMS			0.02		1	73.52		4,117		125.00	0.02	
79.00		CUYD	SIGN SUPPORT FOOTINGS			1,107.60		87,500		1,092.26		86,288		1,283.10	886.08
46,700.00		LB	TRUSS SIGN BRIDGE			6.10		285,000		5.82		271,667		6.10	5.46
590.00		SQFT	GRAFFITI DETERRENT SCREENING			16.00		9,440		19.67		11,603		23.00	16.00
Additional Items															
1.00		LS	ITS INSTALLATION, SITE D			30,000.00		30,000		181,666.67		181,667		30,000.00	115,000.00

**General Notes:**

See Dwg. TM607 for General Notes.

The sign support shall meet the requirements for span length, post height, and sign area, as shown on Dwg. TM606. Use sign bridge design for "S" = 128' to 148'.

Sign support structure is designed for all items shown including future signs (by others).

See Dwgs. TM606 through TM612, TM691, TM695 and TM696 for details not shown.

Excavation shall be inspected by project geotechnical engineer and approved prior to constructing foundation. See Project Geotechnical Investigation for additional information and requirements.

Field verify conditions, elevations, dimensions, and span prior to fabrication. Field verify utility locations and conditions prior to construction.

See Intelligent Transportation Systems Plans for sign information.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

See Sht. KC18 for details on walkway and VAS attachment.

SITE S

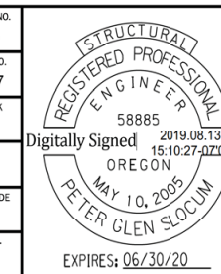
PROJECT DATA (Left and Right are as seen while looking ahead on station)							
Sign Bridge	"S" Span	Foundation Drawing Number	Spread Footing Foundation Design Number See Dwg. TM611	"HP" Post Height see Dwg. TM614 (Field Verify)	"HF" Foundation Height see Dwg. TM611 (Field Verify)	Luminaires ("Yes" or "No") see Dwg. TM618	
At Station	M.P.			Left	Right	Left	Right
"LN2" 1149+19	0.95 NB	145'-0"	TM611	5A	33'-7 1/2"	28'-8 1/2"	7'-0"

Note:
Elevations are based on the North American Vertical Datum, 1988.

ACCOMPANIED BY DWGS:
102603, 102628, 102768, 102769,
102960, TM606-TM612, TM614,
TM618, TM691, TM695, TM696

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

STRUCTURE NO.	23836
BOS DWG NO.	102597
CALC. BOOK	70R4
HWY: 064	
M.P.: 0.95 NB	
UNIT FILE CODE	ITS-16
DFT/ISSU NO.	N/A



OBEC CONSULTING ENGINEERS A DOW LLC Company		CORPORATE OFFICE: 800 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-0080 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON	
Its_Hwy064_MP0.95		I-205: I-5 - OR213, PHASE 3 SEC. EAST PORTLAND FREEWAY CLACKAMAS & WASHINGTON COUNTIES	
Designer: Peter G. Slocum, P.E., S.E.	Reviewer: Jeff Bernardo, P.E.	INTELLIGENT TRANSPORTATION SYSTEMS - SITE PLANS	
Drafter: Yuhai Qian	Checker: Wyatt Dean, E.I.	SHEET NO. KC13	

BRIDGE NAME:	its_Hwy064_MP0.95	BRIDGE NO:	23836	KEY NO:	21400
SECTION NAME:	I-205: I-5 - OR213, PHASE 3 SEC.	COUNTY:	Clackamas	CONTR #	15163
PRIMARY PROJ:	Sign Support	BID DATE:	09/19/2019	FAP NO:	S064(061)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	5	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

145.00	LF	Linear Unit Cost	3,245.52		3,207.59			
SUBTOTAL				423,500		418,600		
PERCENT MOBILIZATION			11.11	47,100	11.11	46,500		
TOTAL				470,600		465,100		

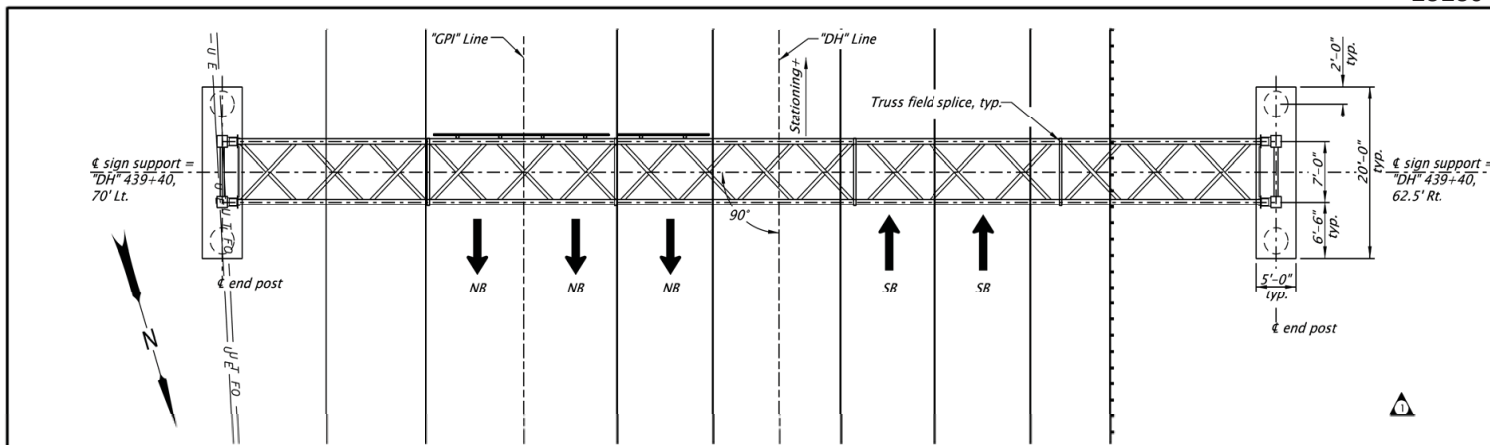
DETAILS

Sign Support

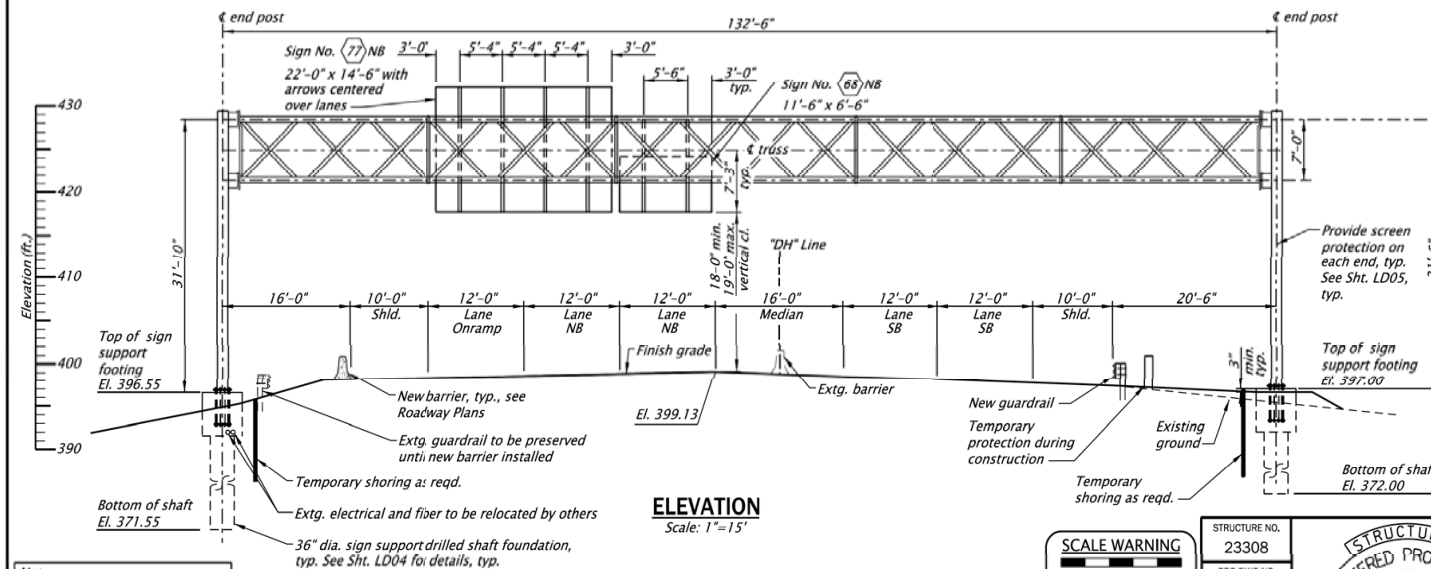
56.00	SQYD	SHORING, CRIBBING, AND COFFERDAMS	0.01	1	79.47	4,450	125.00	0.01
79.00	CUYD	SIGN SUPPORT FOOTINGS	1,044.30	82,500	1,071.31	84,633	1,283.54	886.08
57,000.00	LB	TRUSS SIGN BRIDGE	5.79	330,000	5.56	316,667	5.79	5.26
690.00	SQFT	GRAFFITI DETERRENT SCREENING	16.00	11,040	18.67	12,880	20.00	16.00

Additional Items

1.00	LS	ITS INSTALLATION, SITE S	145,000.00	145,000	173,333.33	173,333	200,000.00	145,000.00
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PLAN
Scale: 1"=15'



ELEVATION
Scale: 1"=15'

Note:
Elevations are based on the North American Vertical Datum, 1988.

No.	DATE	REVISIONS	BY
1	08-22-19	Detail removed	PGS

PROJECT DATA (Left and Right are as seen while looking ahead in station)									
Sign Bridge		"S" Span	Foundation Sheet Number	Spread Footing Foundation Design Number See Dwg. TM619	"HP" Post Height see Dwg. TM614 (Field Verit)	"HF" Foundation Height see Dwg. TM619 (Field Verit)	Luminaires ("Yes" or "No") see Dwg. TM618		
At Station	M.P.			Left	Right	Left	Right	Left	Right
"DH" 439+40	-	132'-6"	LD04	N/A	31'-10"	31'-5"	N/A	N/A	No

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

STRUCTURE NO.	23308
BIDS DWG NO.	102546
CALC. BOOK	7076
HWY. ORR	M.P. 2.000
UNIT FILE CODE	S-18019
DFV/TSSU NO.	NA



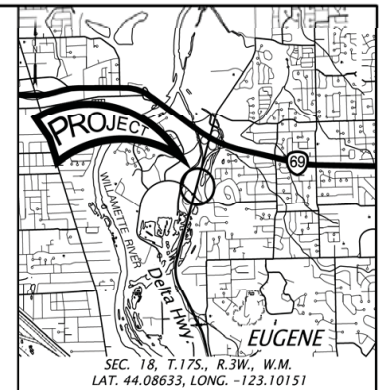
Accompanied by Drawings: LD04, LD05, TM614-TM620

OR569: BELTLINE @ DELTA HIGHWAY - INTERCHANGE SEC.
BELTLINE HIGHWAY
LANE COUNTY

Design: Peter G. Socum, P.E., S.E.
Reviewer: Guy Hakanson, P.E.
Checker: Wajid Dattari, E.I.

TRUSS SIGN BRIDGE
"DH" 439+40

SHEET NO. LD03



LOCATION MAP
No Scale

Notes:

All materials and workmanship shall conform to the Oregon Standard Specifications for Construction 2018 and the Special Provisions. Truss type sign bridge structure is hot dip galvanized and designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 4th edition, with 2001 and 2002 Interim Revisions and Dwg. TM614 through TM620.

The sign support shall meet the requirements for span length, post height, and sign area, as shown on Dwg. TM614. Use sign bridge design for "S" = 128' to 148'.

Sign support structure is designed for all items shown including future signs (by others).

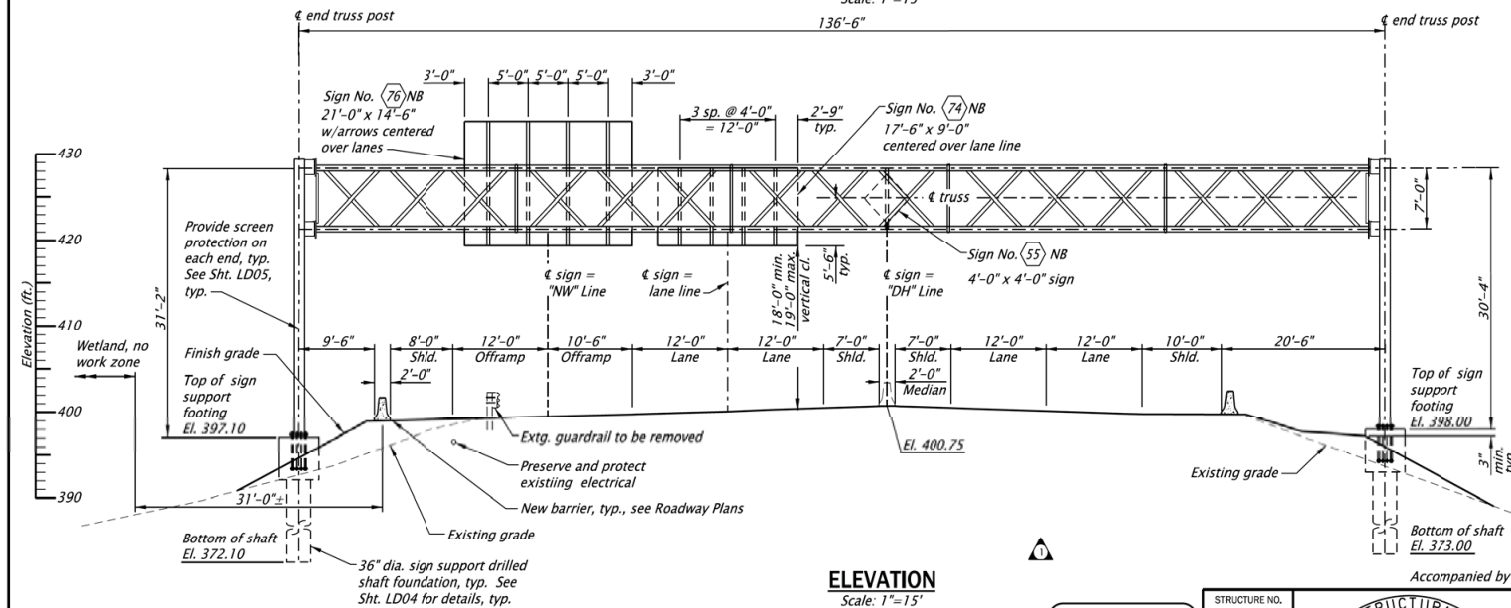
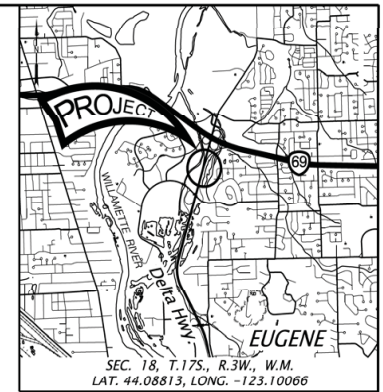
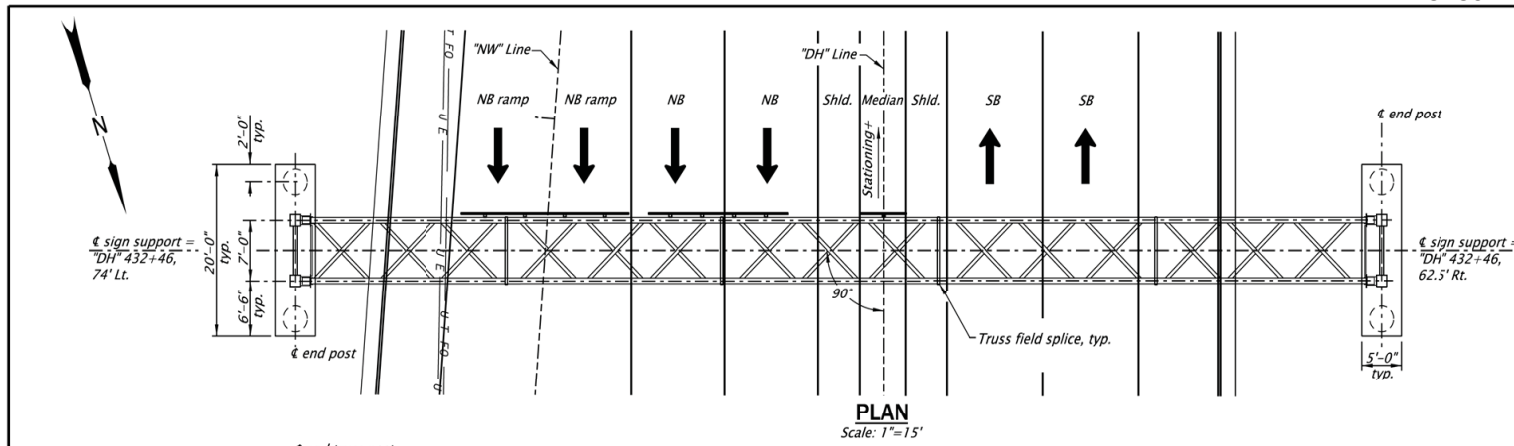
Field verify conditions, elevations, dimensions, and span prior to fabrication. Field verify utility locations and conditions prior to construction.

See Traffic Plans for sign information.

Right of way line and wetland boundary are outside limits of view.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

BRIDGE NAME:			sn_HWY69_44.08633/123.10151		BRIDGE NO:		23308		KEY NO:		19490	
SECTION NAME:			OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.		COUNTY:		Lane		CONTR #		15159	
PRIMARY PROJ:			Sign Support		BID DATE:		08/29/2019		FAP NO:		S069(019)	
STRUCT TYPE:			TRUSS SIGN BRIDGE		# BIDS RECVD:		6		AWARDED TO:		HAMILTON CONSTRUCTION CO	
										PREPARED BY:		
					CONTRACT			3 LOW BIDDERS			SPREAD	
QTY		UNIT	BID ITEM			UNIT	AMT	UNIT	AMT	HIGH	LOW	
Sign_Support												
132.50		LF	Linear Unit Cost			2,815.09		3,032.45				
SUBTOTAL							337,200		362,500			
PERCENT MOBILIZATION						10.62	35,800	10.83	39,300			
TOTAL							373,000		401,800			
DETAILS												
Sign Support												
1.00		SQYD	SHORING, CRIBBING, AND COFFERDAMS			3,000.00	3,000	1,400.33	1,400	3,000.00	1.00	
37.00		CUYD	SIGN SUPPORT FOOTINGS			945.95	35,000	1,036.04	38,333	1,351.35	810.81	
80.00		FOOT	36 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION			615.00	49,200	971.67	77,733	1,300.00	615.00	
45,800.00		LB	TRUSS SIGN BRIDGE			5.46	250,000	5.35	245,000	5.46	5.13	



Note:
Elevations are based on the North American Vertical Datum, 1988.

No.	DATE	REVISIONS	BY
1	08-22-19	Detail removed	PGS

PROJECT DATA (Left and Right are as seen while looking ahead on station)						
Sign Bridge	"S" Span	Foundation Sheet Number	Spread Footing Foundation Design Number see Dwg. TM619	"HP" Post Height see Dwg. TM614 (Field Verify)	"HF" Foundation Height see Dwg. TM619 (Field Verify)	Luminaires ("Yes" or "No") see Dwg. TM618
At Station	M.P.			Left	Right	
"DH" 432+46	-	136'-6"	LD04	N/A	31'-2" 30'-4"	N/A N/A No

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

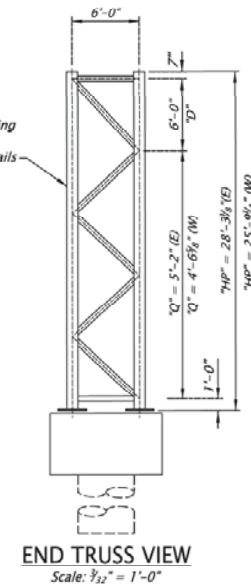
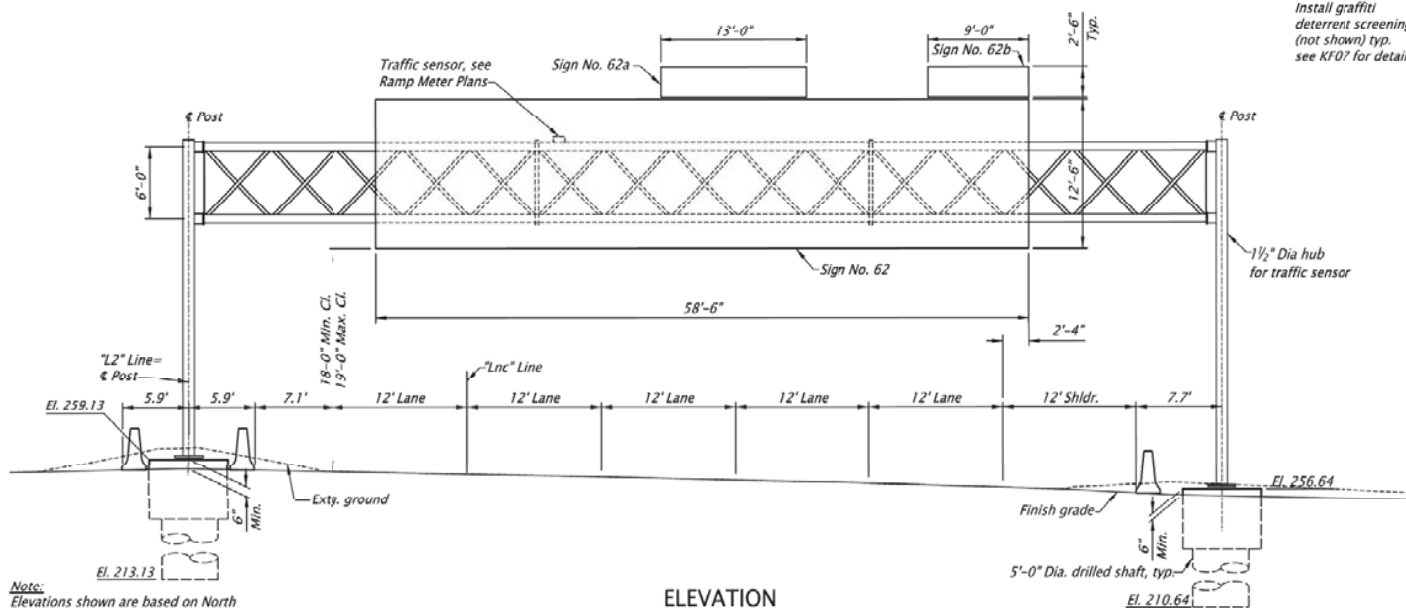
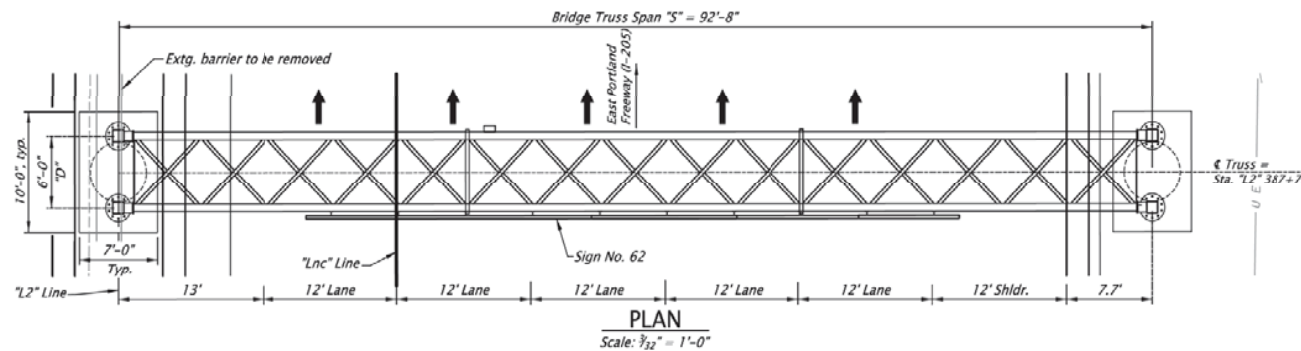
STRUCTURE NO.	23309
BOS DWG NO.	102549
CALC. BOOK	7076
HWY: 069	
M.P.: XXX	
UNIT FILE CODE	S-18022
DR/TSSU NO.	NA



OBEC CONSULTING ENGINEERS A DOWLL LLC Company		CORPORATE OFFICE: 880 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6008 REGIONAL OFFICES: LAKE OSWEGO, SALT LAKE, MEDFORD, OREGON; VANCOUVER, WASHINGTON
sn_0814 HWY_44.08808/123.10044 OR569: BELTLINE @ DELTA HIGHWAY - INTERCHANGE SEC. BELTLINE HIGHWAY LAKE COUNTY		Designer: Peter G. Socum, P.E., S.E. Drafter: Yukar Guezennell Reviewer: Guy Hakanson, P.E. Checker: Wyatt Deary, E.I.
TRUSS SIGN BRIDGE "DH" 432+46		SHEET NO. LD06

BRIDGE NAME:			sn_HWY69_44.08821/123.10067		BRIDGE NO:		23309		KEY NO:		19490	
SECTION NAME:			OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.		COUNTY:		Lane		CONTR #		15159	
PRIMARY PROJ:			Sign Support		BID DATE:		08/29/2019		FAP NO:		S069(019)	
STRUCT TYPE:			TRUSS SIGN BRIDGE		# BIDS RECVD:		6		AWARDED TO:		HAMILTON CONSTRUCTION CO	
										PREPARED BY:		
					CONTRACT			3 LOW BIDDERS			SPREAD	
QTY		UNIT	BID ITEM			UNIT	AMT	UNIT	AMT	HIGH	LOW	
Sign_Support												
136.50		LF	Linear Unit Cost			2,732.60		2,964.10				
SUBTOTAL							337,200		365,100			
PERCENT MOBILIZATION						10.62	35,800	10.83	39,500			
TOTAL							373,000		404,600			
DETAILS												
Sign Support												
1.00		SQYD	SHORING, CRIBBING, AND COFFERDAMS			3,000.00	3,000	1,400.33	1,400	3,000.00	1.00	
37.00		CUYD	SIGN SUPPORT FOOTINGS			945.95	35,000	1,036.04	38,333	1,351.35	810.81	
80.00		FOOT	36 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION			615.00	49,200	1,005.00	80,400	1,300.00	615.00	
46,600.00		LB	TRUSS SIGN BRIDGE			5.36	250,000	5.26	245,000	5.36	5.04	

Note:
Truss sign bridge to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished and installed by Contractor. See Special Provisions.



SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

Note:
Elevations shown are based on North American Vertical Datum 1988 (NAVD88).

General Notes:
All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning construction.

See Ramp Meter plans for equipment mounting details.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

Bottom of signs shall be horizontal.

See signing sheets for sign details

General Notes Continued:
Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000- $\frac{3}{8}$ " Drilled shaft concrete.

Shaft caps shall be Class 3600- $\frac{3}{4}$ " commercial grade concrete.

Sign bridge is designed and detailed in accordance with the requirements on Dwg. TM614-TM620, "S" > 89' - 108'.

STRUCTURE NO.
23278
BOS DWG NO.
101171
CALC. BOOK
7016
HWY: 064
M.P.: 19.8
COUNTY
Multnomah
DATE
08/2018

REGISTERED PROFESSIONAL
ENGINEER
78231PE
DIGITALLY SIGNED
2018.09.19
15:27:12-0700
OREGON
MAY 23, 2006
DOUGLAS M. JOHNSON
RENEWS: 06-30-2019



**DAVID EVANS
AND ASSOCIATES INC.**
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655



**I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION**

**EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES**

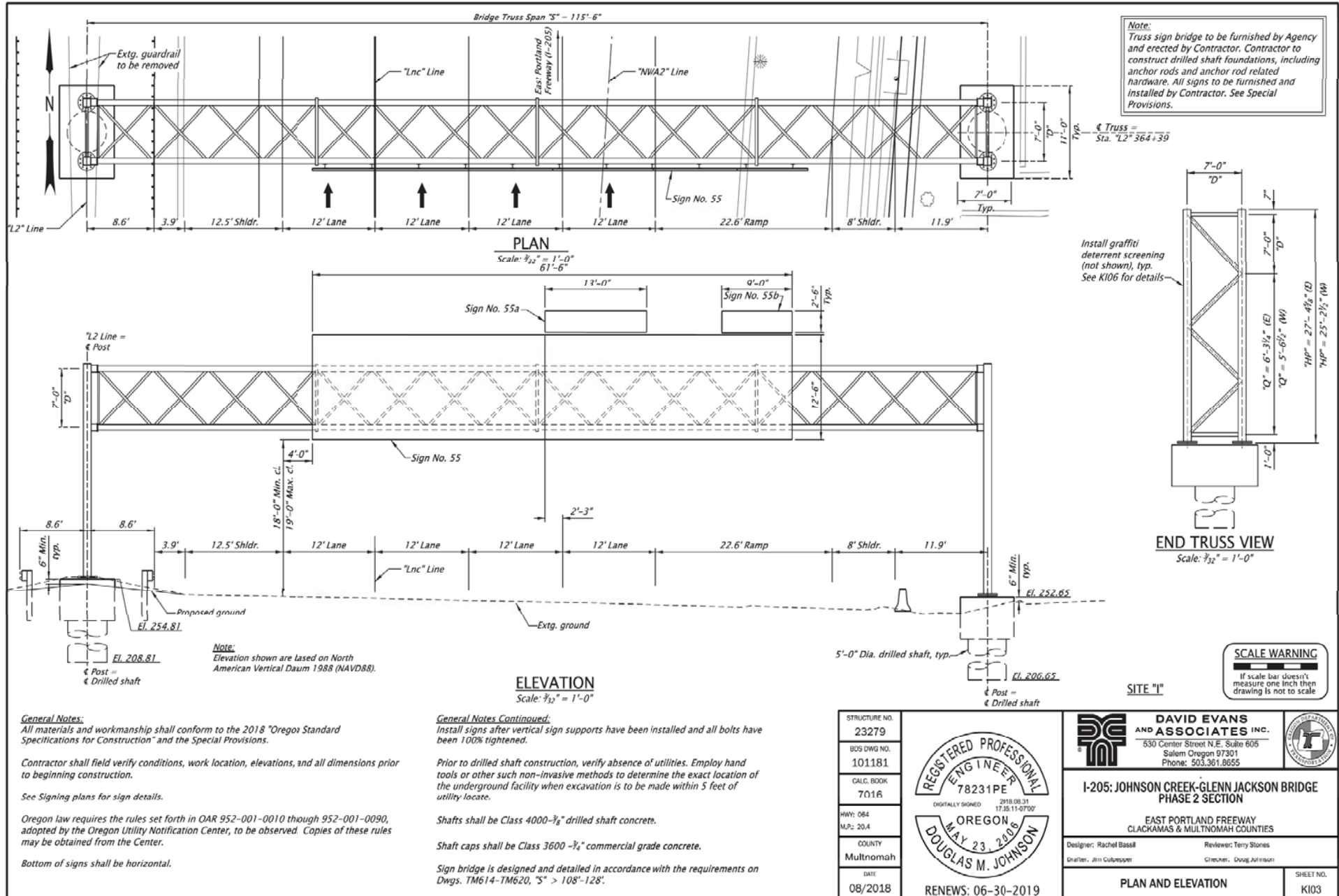
Designer: Rachel Bassil
Checker: Jim Cummings

Reviewer: Terry Stones
Checker: Doug Johnson

PLAN AND ELEVATION

SHEET NO.
KF04

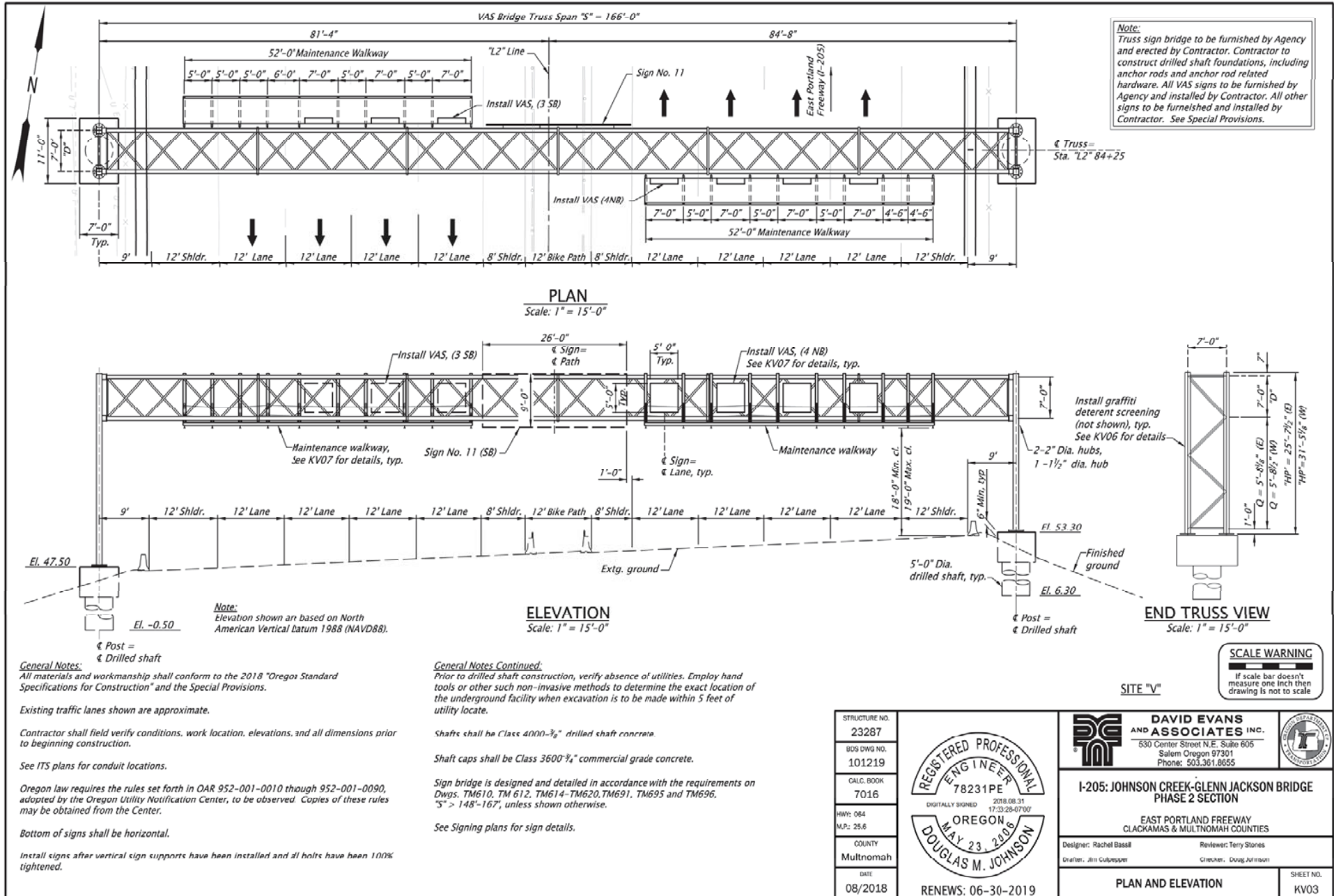
BRIDGE NAME:	sn_Hwy 64NB_MP19.8			BRIDGE NO:	23278		KEY NO:	21157	
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION			COUNTY:	Multnomah		CONTR #	15124	
PRIMARY PROJ:	Sign Support			BID DATE:	11/29/2018		FAP NO:	S064(059)	
STRUCT TYPE:	TRUSS SIGN BRIDGE			# BIDS RECVD:	3		AWARDED TO:	KERR CONTRACTORS OREGON INC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support									
92.67	LF	Linear Unit Cost		2,067.55		2,415.02			
SUBTOTAL					172,400		201,500		
PERCENT MOBILIZATION				11.11	19,200	11.06	22,300		
TOTAL					191,600		223,800		
DETAILS									
Sign Support									
92.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION		1,657.00	152,444	1,835.67	168,881	2,000.00	1,657.00
35,600.00	LB	TRUSS SIGN BRIDGE		0.56	20,000	0.92	32,666	1.69	0.51
Additional Items									
1.00	LS	TEMPORARY WORK ACCESS ROAD, SITE "F"		10,300.00	10,300	13,766.67	13,767	25,000.00	6,000.00



BRIDGE NAME:	sn_Hwy 64NB_MP20.4	BRIDGE NO:	23279	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

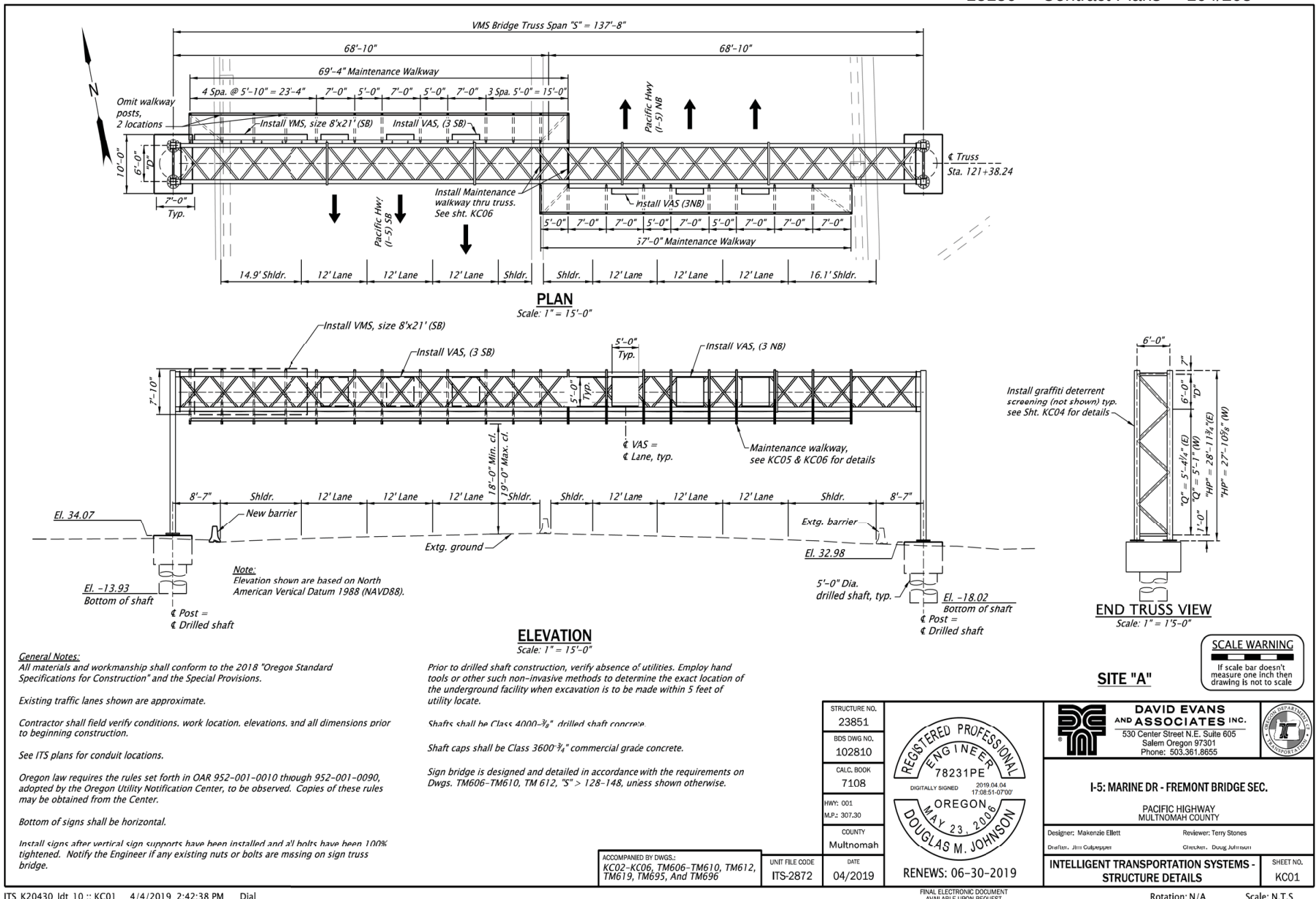
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
115.50	LF	Linear Unit Cost	1,658.87		1,937.66			
		SUBTOTAL		172,400		201,500		
		PERCENT MOBILIZATION	11.11	19,200	11.06	22,300		
		TOTAL		191,600		223,800		
DETAILS								
Sign Support								
92.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,657.00	152,444	1,835.67	168,881	2,000.00	1,657.00
43,800.00	LB	TRUSS SIGN BRIDGE	0.46	20,000	0.75	32,666	1.37	0.41
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "I"	5,700.00	5,700	10,566.67	10,567	20,000.00	5,700.00



BRIDGE NAME:	its_Hwy 64_MP25.6	BRIDGE NO:	23287	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
166.00	LF	Linear Unit Cost	1,336.75		1,498.80			
		SUBTOTAL		199,700		224,000		
		PERCENT MOBILIZATION	11.11	22,200	11.06	24,800		
		TOTAL		221,900		248,800		
DETAILS								
Sign Support								
94.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,656.00	155,664	1,868.67	175,655	2,100.00	1,656.00
61,900.00	LB	TRUSS SIGN BRIDGE	0.71	44,000	0.78	48,333	0.97	0.66
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "V"	36,000.00	36,000	20,666.67	20,667	36,000.00	6,000.00
1.00	LS	ITS INSTALLATION, SITE "V"	251,520.00	251,520	217,173.33	217,173	251,520.00	150,000.00



BRIDGE NAME:	its_Hwy 1_MP307.3	BRIDGE NO:	23851	KEY NO:	20430
SECTION NAME:	I-5: MARINE DR - FREMONT BRIDGE SEC.	COUNTY:	Multnomah	CONTR #	15150
PRIMARY PROJ:	Sign Support	BID DATE:	05/30/2019	FAP NO:	S001(509)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	NORTHEAST ELECTRIC LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

137.67	LF	Linear Unit Cost	3,142.30		3,559.24			
		SUBTOTAL		390,600		441,300		
		PERCENT MOBILIZATION	10.76	42,000	11.04	48,700		
		TOTAL		432,600		490,000		

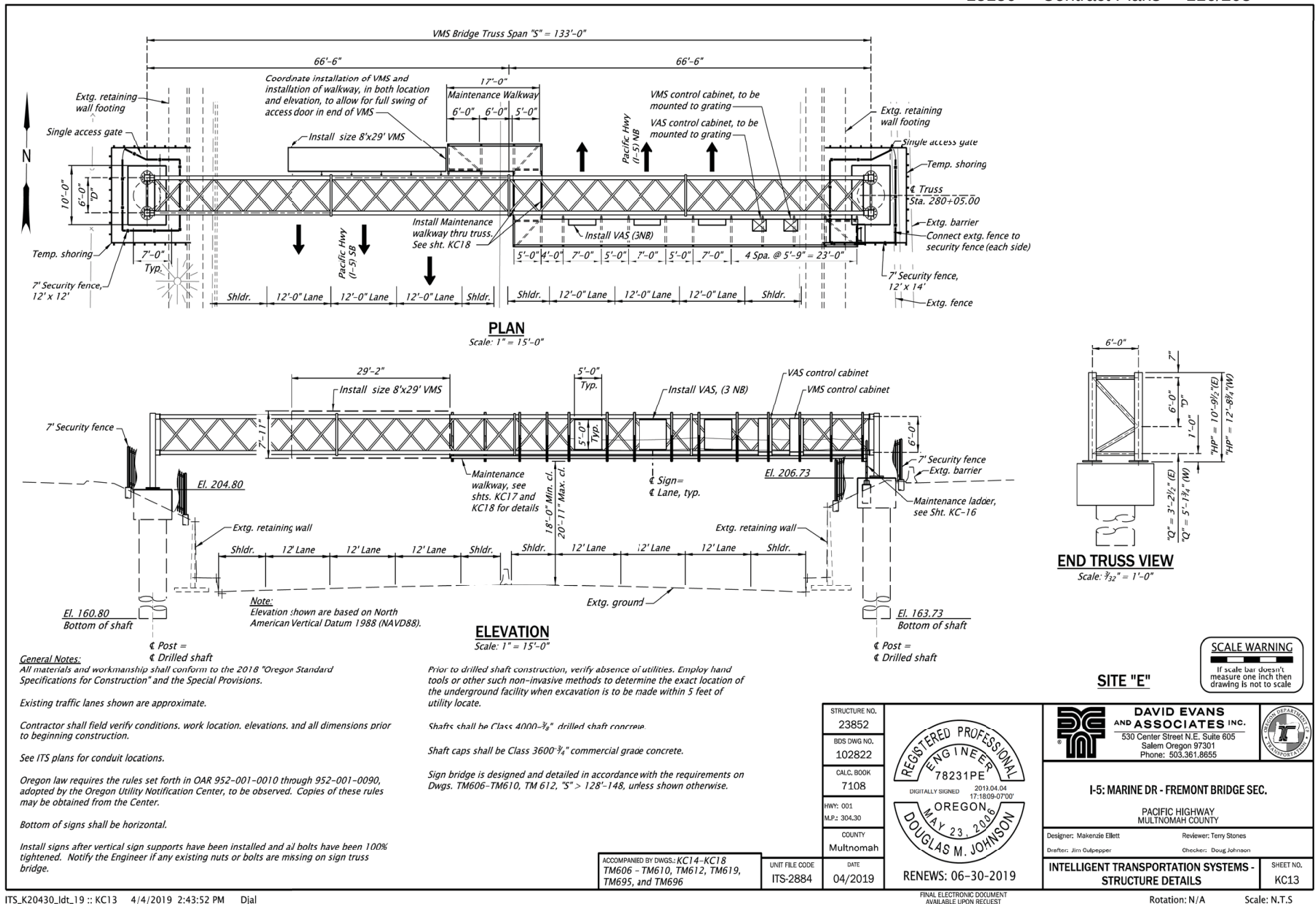
DETAILS

Sign Support

26.00	CUYD	SIGN SUPPORT FOOTINGS	961.54	25,000	1,730.77	45,000	2,307.69	961.54
89.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,500.00	133,500	1,616.67	143,883	2,000.00	1,350.00
51,200.00	LB	TRUSS SIGN BRIDGE	4.53	232,100	4.93	252,367	5.37	4.53

Additional Items

1.00	LS	TEMPORARY WORK ACCESS, SITE "A"	15,000.00	15,000	13,333.33	13,333	20,000.00	5,000.00
1.00	LS	ITS INSTALLATION - SITE "A"	250,000.00	250,000	243,333.33	243,333	250,000.00	240,000.00

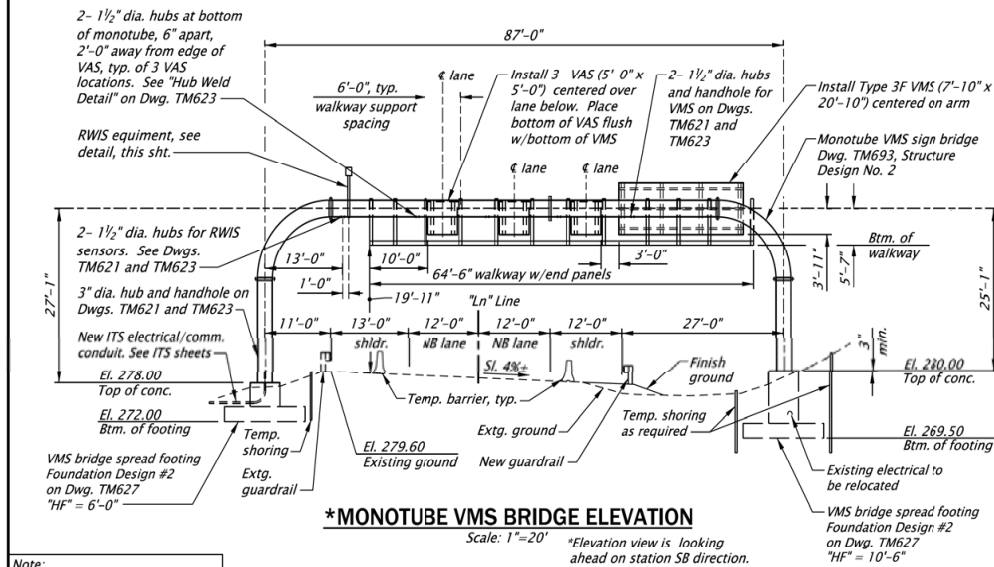
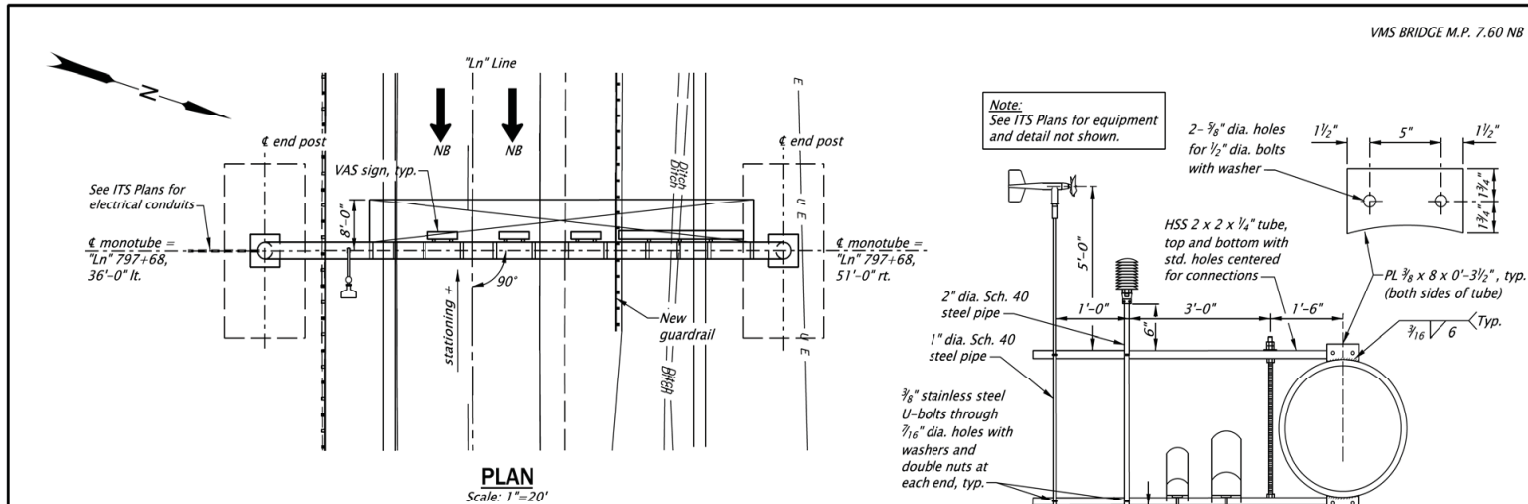


ITS_K20430_Idt_19:: KC13 4/4/2019 2:43:52 PM Djal

BRIDGE NAME:	its_Hwy 1_MP304.3	BRIDGE NO:	23852	KEY NO:	20430
SECTION NAME:	I-5: MARINE DR - FREMONT BRIDGE SEC.	COUNTY:	Multnomah	CONTR #	15150
PRIMARY PROJ:	Sign Support	BID DATE:	05/30/2019	FAP NO:	S001(509)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	NORTHEAST ELECTRIC LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
133.00	LF	Linear Unit Cost	2,863.91		3,393.98			
		SUBTOTAL		343,900		406,500		
		PERCENT MOBILIZATION	10.76	37,000	11.04	44,900		
		TOTAL		380,900		451,400		
DETAILS								
Sign Support								
26.00	CUYD	SIGN SUPPORT FOOTINGS	961.54	25,000	1,730.77	45,000	2,307.69	961.54
77.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,500.00	115,500	1,650.00	127,050	2,000.00	1,450.00
40,600.00	LB	TRUSS SIGN BRIDGE	5.01	203,400	5.78	234,466	6.16	5.01
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS, SITE "E"	15,000.00	15,000	26,666.67	26,667	45,000.00	15,000.00
1.00	LS	ITS INSTALLATION - SITE "E"	200,000.00	200,000	201,666.67	201,667	230,000.00	175,000.00



Note:
Elevations are based on the North American Vertical Datum, 1988.

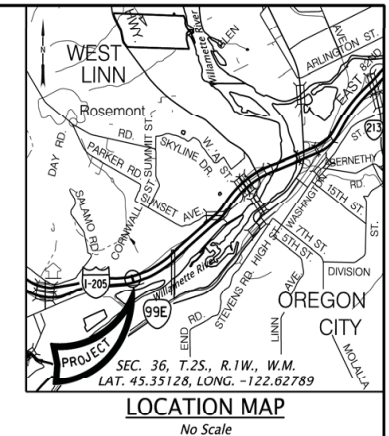
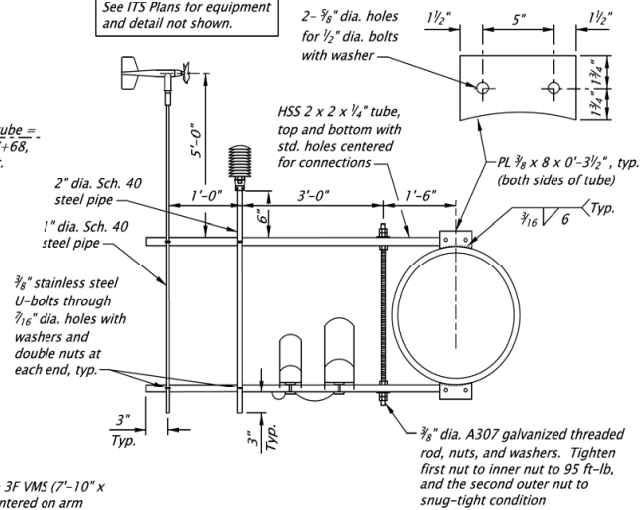
No.	DATE	REVISIONS	BY
1	09-09-19	Drawing list changed	PCS

PROJECT DATA (Left and Right are as seen while looking ahead on station)						
Sign Bridge	"S" Span	Foundation Drawing Number	Spread Footing Foundation Design Number See Dwg. TM627	Post Length (Field Verify)	Foundation Height see Dwg. TM627 (Field Verify)	Luminaires ("Yes" or "No") see Dwg. TM624
At Station	M.P.			Left	Right	
"Ln" 797+68	7.60 NB	87'-0"	TM627	2	27'-1" 25'-1"	6'-0" 10'-6"

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

RWIS EQUIPMENT MOUNTING DETAIL

No Scale



General Notes:

See Dwg. TM694 for General Notes.

The sign support shall meet the requirements for 87'-0" span length, post height, and maximum sign area as shown on Dwg. TM693.

See Dws. TM693-TM697, and TM627 for details not shown.

Field verify conditions, elevations, and span prior to fabrication. Field verify utility conditions and dimensions prior to construction.

See Intelligent Transportation Systems Plans for sign information.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

Right of way is outside limits of view.

For sign mounting details, see Dwg. TM690.

ACCOMPANIED BY DWGS:
102959, TM621, TM623, TM624, TM627, TM690, TM693*, TM694*, TM695, TM696, TM697*
*Version effective 12/01/19 - 05/31/20

STRUCTURE NO.

23834

BOS DWG NO.

102595

CALC. BOOK

70R4

HWY: 064

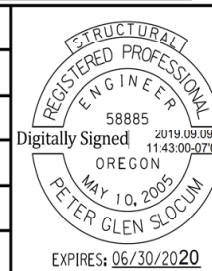
M.P.: 7.60 NB

UNIT FILE CODE

ITS-38

DR/TSO NO.

N/A



OBEC CONSULTING ENGINEERS
A DOW LLC Company

CORPORATE OFFICE:
885 COUNTRY CLUB ROAD, SUITE 100B
EUGENE, OREGON 97401-6090
REGIONAL OFFICES:
LANE COUNTY, SALEM, MEDFORD, OREGON;
VANCOUVER, WASHINGTON

Its_Hwy064_MP7.60

I-205: I-5 - OR213, PHASE 3 SEC.
EAST PORTLAND FREEWAY
CLACKAMAS & WASHINGTON COUNTIES

Designer: Peter G. Slocum, P.E., S.E.
Drafter: Yuka Garzenelli

Reviewer: Jeff Bernardo, P.E.
Checker: Wyatt Dean, E.I.

INTELLIGENT TRANSPORTATION SYSTEMS - SITE PLANS

SHEET NO.
KC05

BRIDGE NAME:	its_Hwy064_MP7.60	BRIDGE NO:	23834	KEY NO:	21400
SECTION NAME:	I-205: I-5 - OR213, PHASE 3 SEC.	COUNTY:	Clackamas	CONTR #	15163
PRIMARY PROJ:	Sign Support	BID DATE:	09/19/2019	FAP NO:	S064(061)
STRUCT TYPE:	MONOTUBE SIGN BRIDGE	# BIDS RECVD:	5	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

87.00	LF	Linear Unit Cost	3,958.62		3,801.15			
		SUBTOTAL		310,000		297,600		
		PERCENT MOBILIZATION	11.11	34,400	11.11	33,100		
		TOTAL		344,400		330,700		

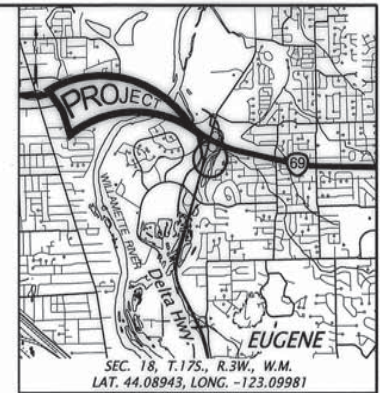
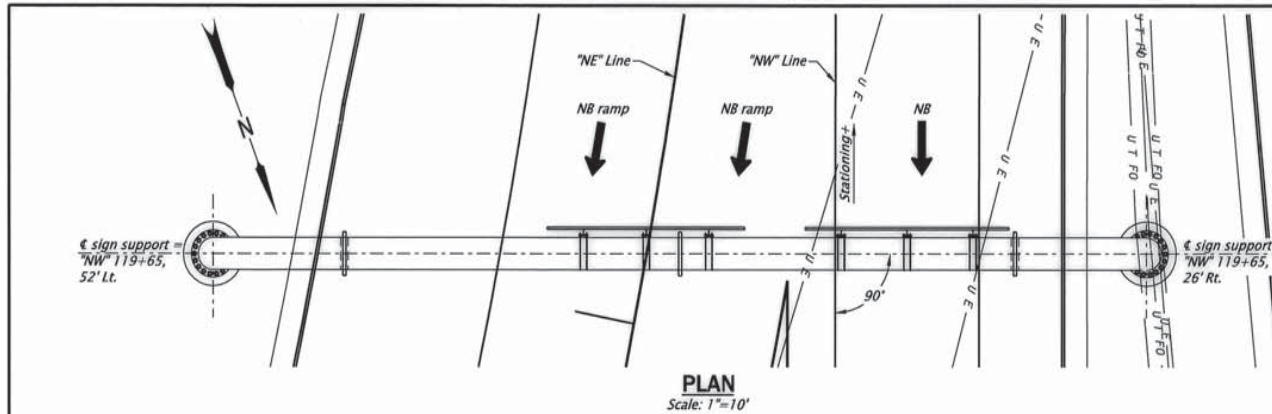
DETAILS

Sign Support

100.00	SQYD	SHORING, CRIBBING, AND COFFERDAMS	50.00	5,000	47.53	4,753	70.00	22.60
71.00	CUYD	SIGN SUPPORT FOOTINGS	1,126.76	80,000	1,284.65	91,210	1,811.69	915.49
31,800.00	LB	MONOTUBE SIGN BRIDGE	7.08	225,000	6.34	201,666	7.08	5.66

Additional Items

1.00	LS	ITS INSTALLATION, SITE K	130,000.00	130,000	183,333.33	183,333	225,000.00	130,000.00
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LOCATION MAP
No Scale

Notes:

All materials and workmanship shall conform to the Oregon Standard Specifications for Construction 2018 and the Special Provisions. Monotube sign bridge structure is hot dip galvanized and designed in accordance with the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, First Edition, 2015, with 2017 Interim Revisions and Dwg. TM693 through TM697 and TM628. API-SL Grade B or higher, PS2 steel is allowed structural steel option.

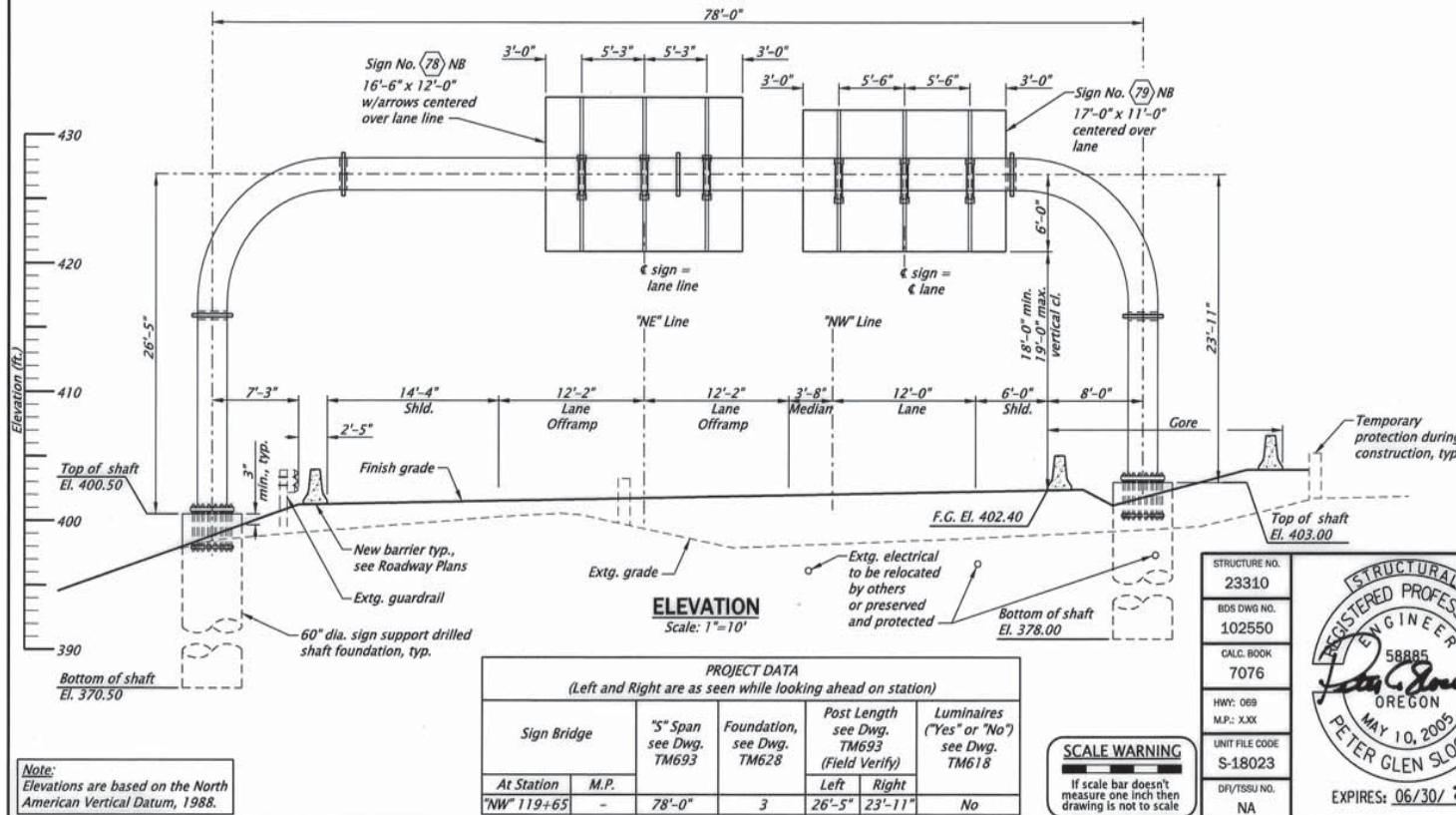
The sign support shall meet the requirements for maximum span length, post height, and sign area as shown on Dwg. TM693. Use bridge design for maximum "S" = 80'.

Field verify conditions, elevations, and span prior to fabrication. Field verify utility conditions and dimensions prior to construction.

See Traffic Plans for sign information.

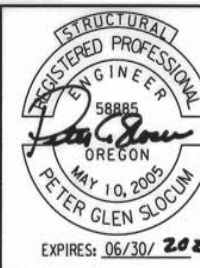
Right of way line and wetland boundaries are outside limits of view.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.



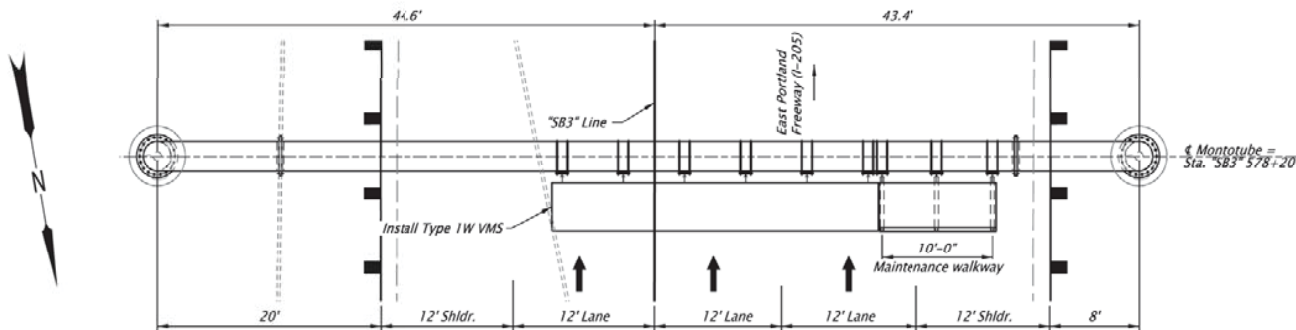
Accompanied by Drawings: TM628, TM693-TM697

STRUCTURE NO.
23310
BOS DWG NO.
102550
CALC. BOOK
7076
HWY: 008
M.P.: X.XX
UNIT FILE CODE
S-18023
DPI/TSSU NO.
NA



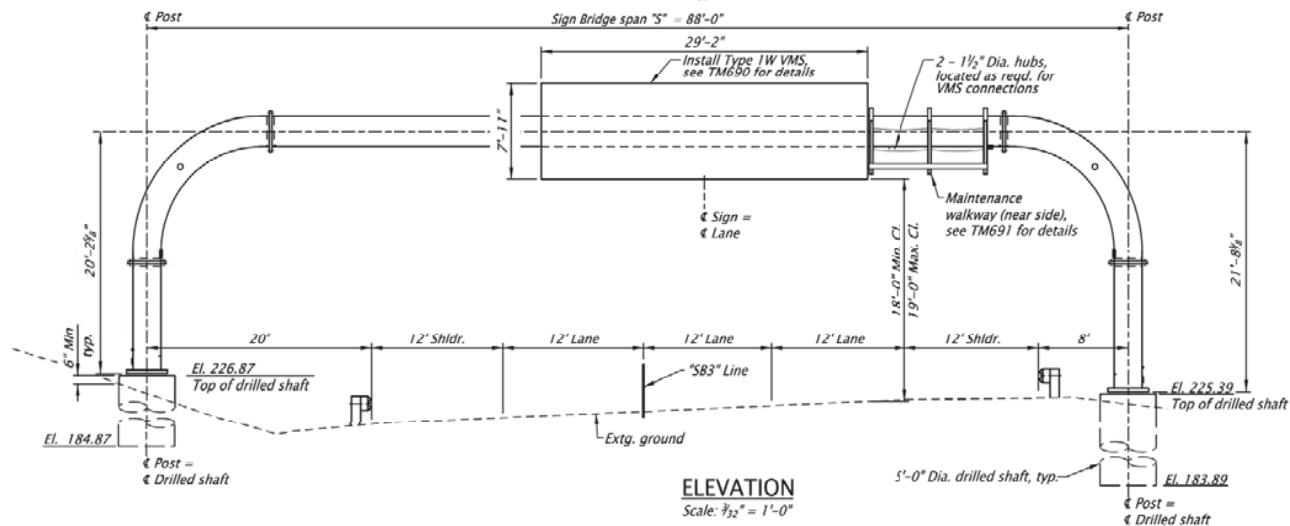
OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC. BELTLINE HIGHWAY LANE COUNTY	
Designer: Peter G. Slocum, P.E., S.E. Drafter: Yuka Garzenelli	Reviewer: Guy Hakanson, P.E. Checker: Wyatt Dean, E.I.
MONOTUBE SIGN BRIDGE PLAN AND ELEVATION	
SHEET NO. LD07	

BRIDGE NAME:			sn_HWY69_44.0943/123.09981		BRIDGE NO:		23310		KEY NO:		19490		
SECTION NAME:			OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.		COUNTY:		Lane		CONTR #		15159		
PRIMARY PROJ:			Sign Support		BID DATE:		08/29/2019		FAP NO:		S069(019)		
STRUCT TYPE:			MONOTUBE SIGN BRIDGE		# BIDS RECVD:		6		AWARDED TO:		HAMILTON CONSTRUCTION CO		
										PREPARED BY:			
					CONTRACT		3 LOW BIDDERS			SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Sign_Support													
78.00		LF	Linear Unit Cost			2,664.10			2,739.74				
SUBTOTAL							187,800			192,800			
PERCENT MOBILIZATION						10.62	20,000		10.83	20,900			
TOTAL							207,800			213,700			
DETAILS													
Sign Support													
55.00		FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION			1,050.00	57,750		1,233.33	67,833		1,500.00	1,050.00
24,800.00		LB	MONOTUBE SIGN BRIDGE			5.24	130,000		5.04	125,000		5.24	4.64



PLAN

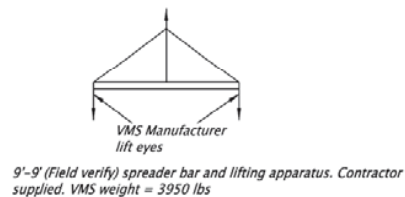
Scale: $\frac{1}{32}'' = 1'-0''$



ELEVATION

Scale: $\frac{1}{32}'' = 1'-0''$

Note:
Elevations shown are based on North
American Vertical Datum 1988 (NAVD88)



LIFTING DIAGRAM

No Scale

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

Existing traffic lanes shown are approximate.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning construction.

See ITS plans for conduit locations.

Posts shall be installed plumb.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000 $\frac{3}{8}''$ drilled shaft concrete.

Shaft caps shall be Class 3600 $\frac{3}{4}''$ commercial grade concrete.

Use details for Structure Design No. 2 see Dwg. TM690, TM691, TM693-TM697 and TM628.

Note:

Monotube sign bridge to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished by Agency and installed by Contractor. See Special Provisions.

SCALE WARNING

If scale bar doesn't
measure one inch then
drawing is not to scale

SITE "A"

STRUCTURE NO.	23275
BOS DWG NO.	101165
CALC. BOOK	7016
HWY: 064	
M.P.: 16.3	
COUNTY	Clackamas
DATE	08/2018



DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.361.8655	
I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES	
Designer: Rachel Bassil Drafter: Jim Culpepper	Reviewer: Terry Stones Checker: Doug Johnson
PLAN AND ELEVATION	
SHEET NO. KA03	

BRIDGE NAME:	its_Hwy 64SB_MP16.3	BRIDGE NO:	23275	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

88.00	LF	Linear Unit Cost	1,969.32		2,301.14			
		SUBTOTAL		156,000		182,300		
		PERCENT MOBILIZATION	11.11	17,300	11.06	20,200		
		TOTAL		173,300		202,500		

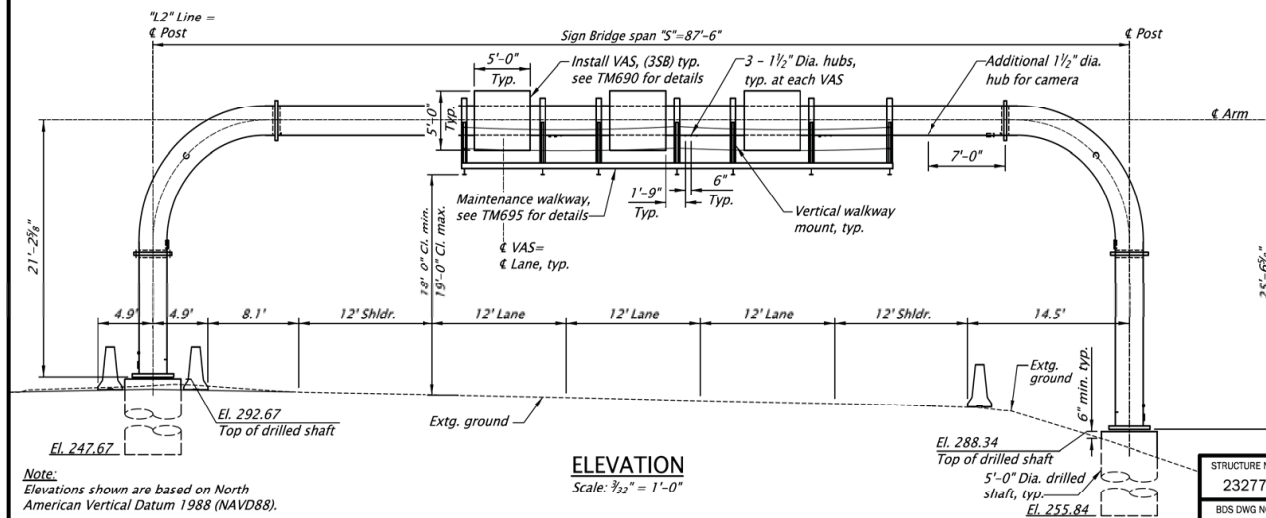
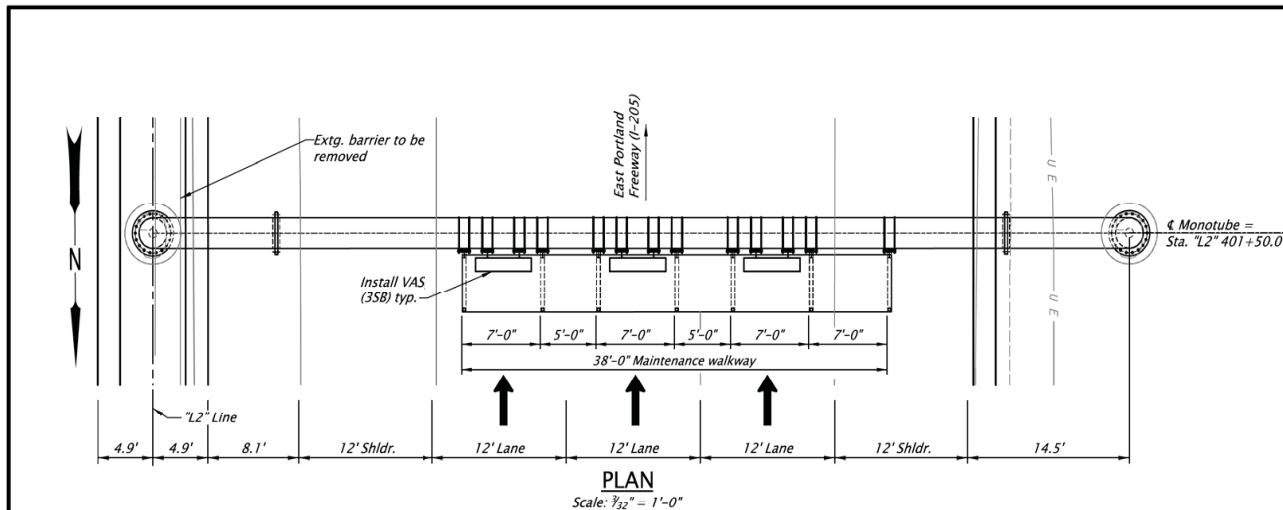
DETAILS

Sign Support

84.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,667.00	140,028	1,789.00	150,276	1,850.00	1,667.00
27,700.00	LB	MONOTUBE SIGN BRIDGE	0.58	16,000	1.16	32,000	2.35	0.54

Additional Items

1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "A"	24,900.00	24,900	18,633.33	18,633	25,000.00	6,000.00
1.00	LS	ITS INSTALLATION, SITE "A"	37,162.00	37,162	35,720.67	35,721	40,000.00	30,000.00



Note:
Elevations shown are based on North American Vertical Datum 1988 (NAVD88).

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

Existing traffic lanes shown are approximate.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning construction.

See ITS plans for conduit locations.

Pests shall be installed plumb.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000 $\frac{3}{8}$ " drilled shaft concrete.

Shaft caps shall be Class 3600 $\frac{3}{4}$ " commercial grade concrete.

Use details for Structure Design No. 2 see Dwg. TM690, TM691, TM693-TM697 and TM628.

Note:
Monotube sign bridge to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished by Agency and installed by Contractor. See Special Provisions.

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

SITE "E"

STRUCTURE NO.
23277
BOS DWG NO.
101169
CALC. BOOK
7016
HWY: 064
M.P.: 19.6
COUNTY
Multnomah
DATE
08/2018



DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655



**I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION**

**EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES**

Designer: Rachel Bassil
Drafter: Jim Culpepper

Reviewer: Terry Stones
Checker: Doug Johnson

PLAN AND ELEVATION

SHEET NO.
KE04

RENEW: 06-30-2019
FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

BRIDGE NAME:	its_Hwy 64NB_MP19.6	BRIDGE NO:	23277	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

87.50	LF	Linear Unit Cost	1,856.00		2,194.29			
SUBTOTAL				146,200		172,900		
PERCENT MOBILIZATION			11.11	16,200	11.06	19,100		
TOTAL				162,400		192,000		

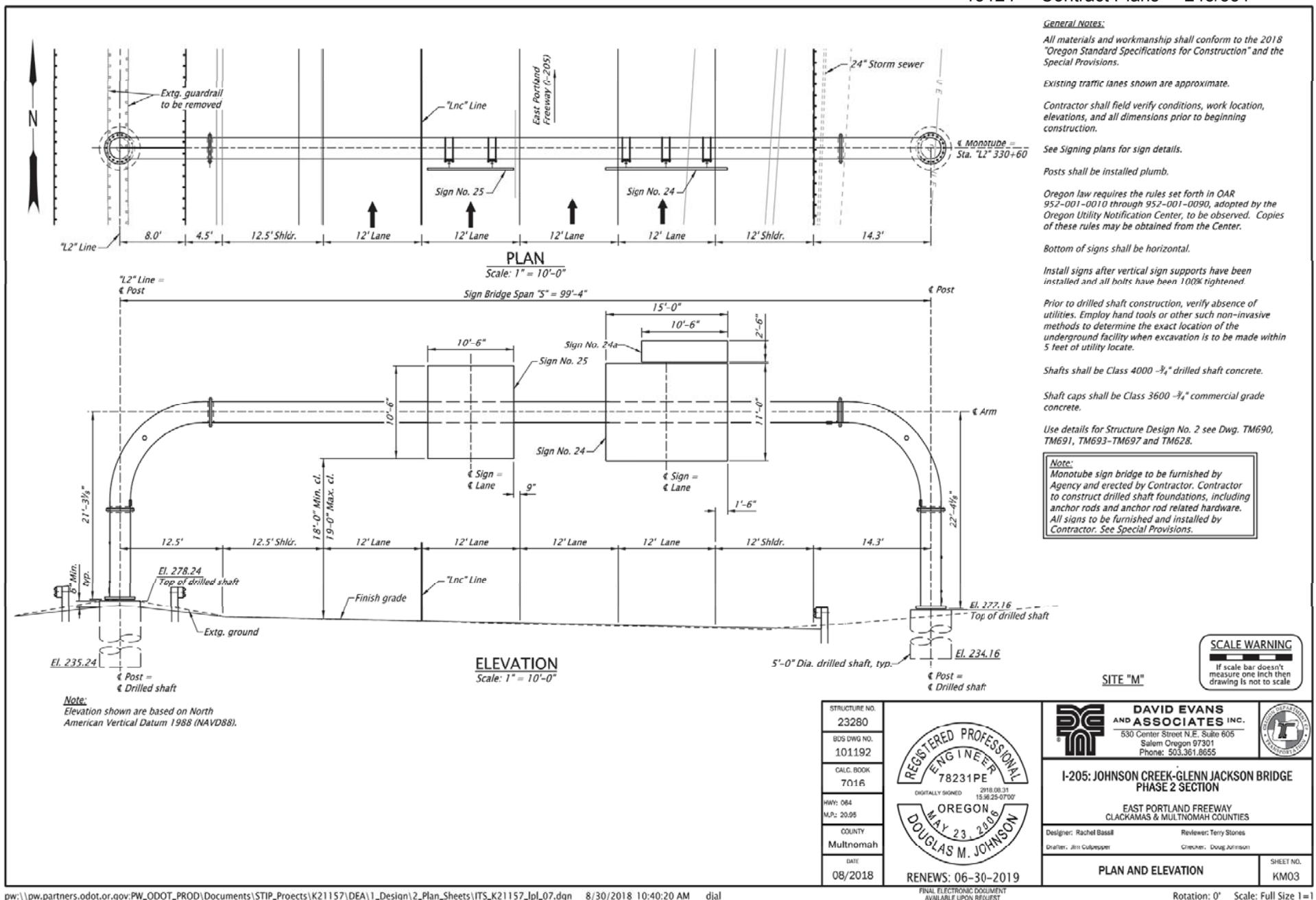
DETAILS

Sign Support

78.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,669.00	130,182	1,806.33	140,894	1,900.00	1,669.00
31,300.00	LB	MONOTUBE SIGN BRIDGE	0.51	16,000	1.02	32,000	2.08	0.48

Additional Items

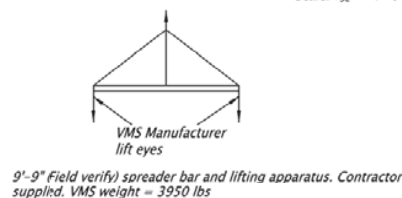
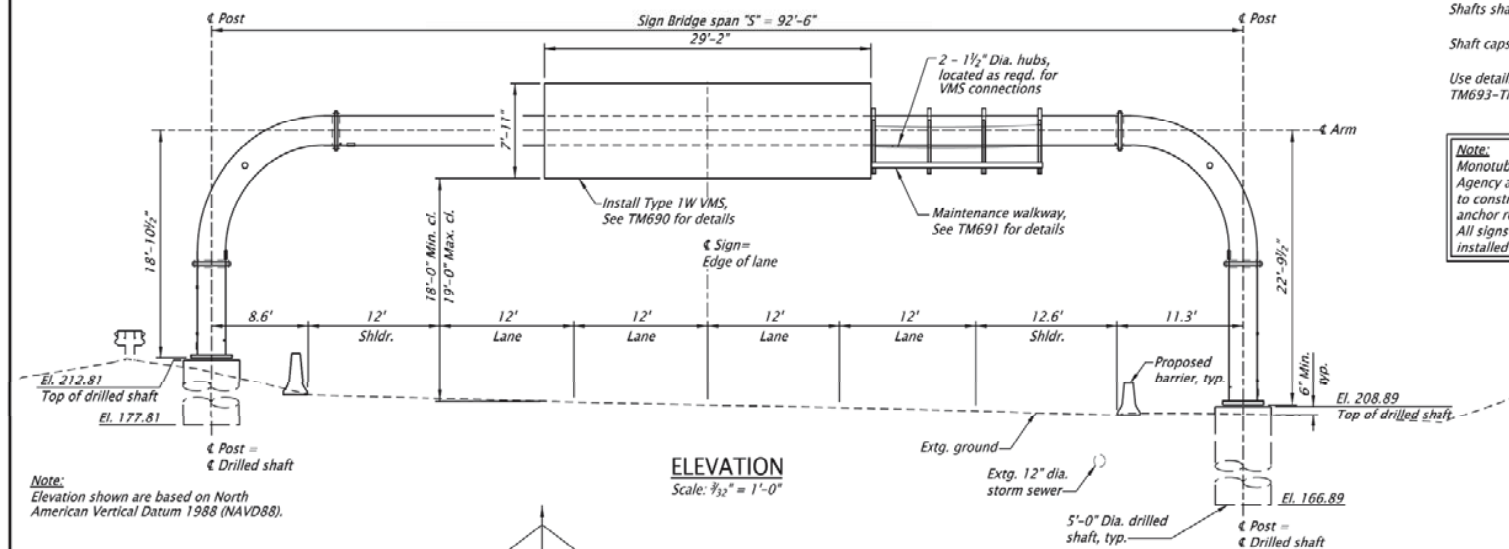
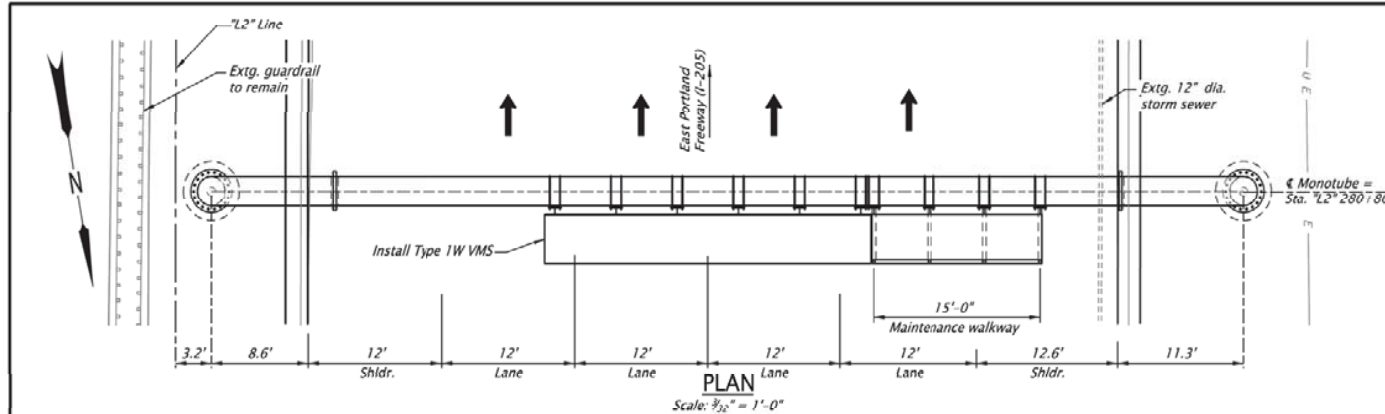
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "E"	14,900.00	14,900	15,300.00	15,300	25,000.00	6,000.00
1.00	LS	ITS INSTALLATION, SITE "E"	33,043.00	33,043	34,347.67	34,348	35,000.00	33,043.00



BRIDGE NAME:	sn_Hwy 64NB_MP20.95	BRIDGE NO:	23280	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
99.33	LF	Linear Unit Cost	1,782.89		2,043.63			
		SUBTOTAL		159,400		182,800		
		PERCENT MOBILIZATION	11.11	17,700	11.06	20,200		
		TOTAL		177,100		203,000		
DETAILS								
Sign Support								
86.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,667.00	143,362	1,772.33	152,421	1,850.00	1,667.00
28,300.00	LB	MONOTUBE SIGN BRIDGE	0.57	16,000	1.07	30,333	2.12	0.53
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "M"	7,400.00	7,400	12,800.00	12,800	25,000.00	6,000.00

**General Notes:**

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

Existing traffic lanes shown are approximate.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning construction.

See ITS plans for conduit locations.

Post shall be installed plumb.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000- $\frac{3}{8}$ " drilled shaft concrete.

Shaft caps shall be Class 3600- $\frac{3}{4}$ " commercial grade concrete.

Use details for Structure Design No. 2, see Dwg. TM690, TM691, TM693-TM697 and TM628.

Note:

Monotube sign bridge to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished by Agency and installed by Contractor. See Special Provisions.

SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

SITE "Q"

STRUCTURE NO.	23281
SDS DWG NO.	101205
CALC. BOOK	7016
HWY: 064	
M.P.: 21.8	
COUNTY	Multnomah
DATE	08/2018



RENEW: 06-30-2019



DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655



**I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION**

**EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES**

Designer: Rachel Bassil
Checker: Jim Colquhoun

Reviewer: Terry Stones
Checker: Doug Johnson

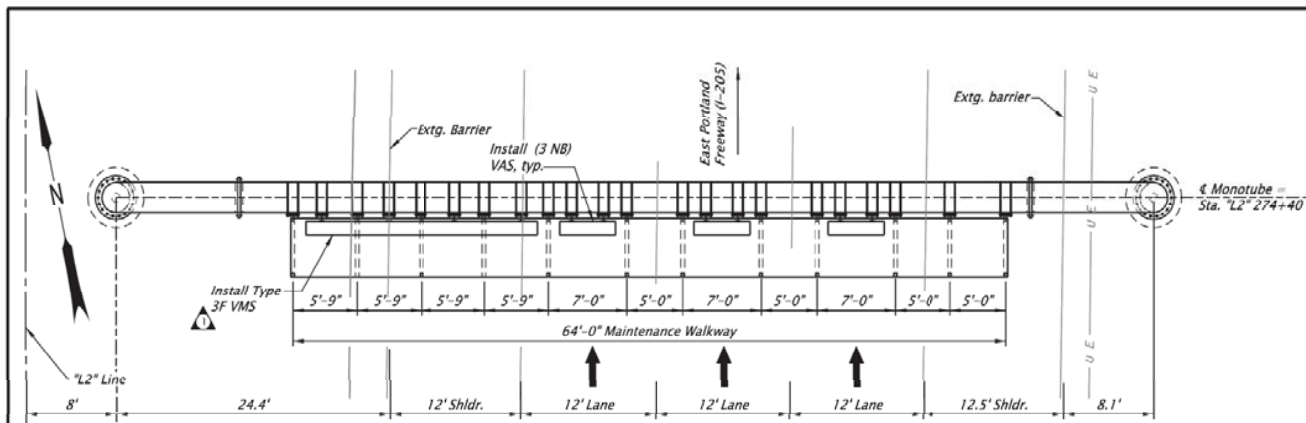
PLAN AND ELEVATION

SHEET NO.
K004

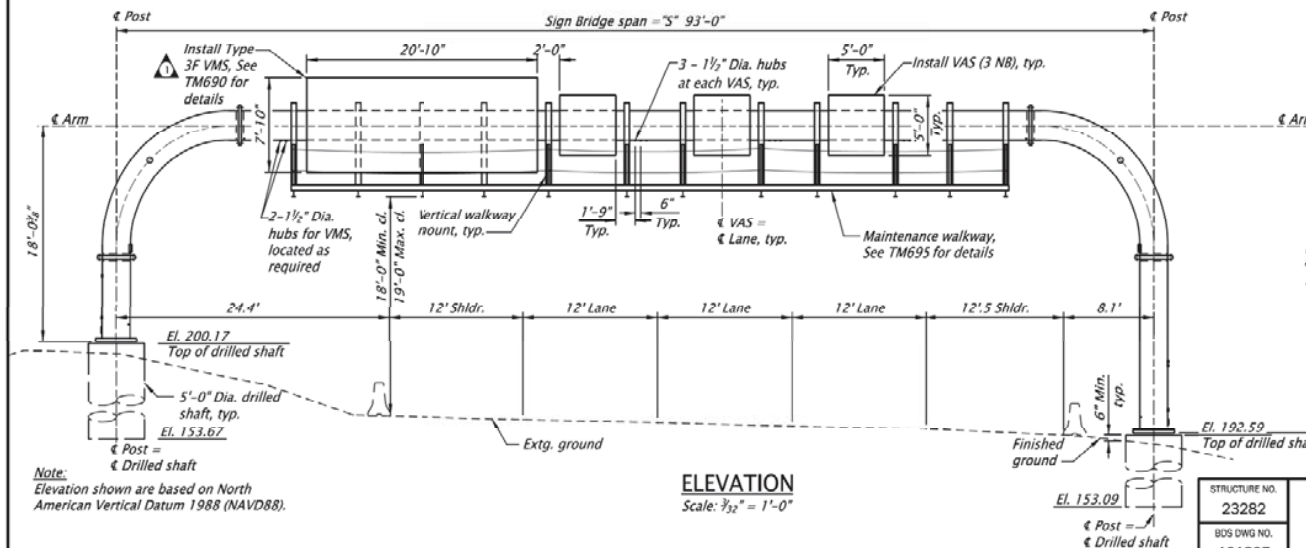
BRIDGE NAME:	its_Hwy 64SB_MP21.8	BRIDGE NO:	23281	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
92.50	LF	Linear Unit Cost	1,761.08		2,142.70			
		SUBTOTAL		146,600		178,500		
		PERCENT MOBILIZATION	11.11	16,300	11.06	19,700		
		TOTAL		162,900		198,200		
DETAILS								
Sign Support								
77.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,670.00	128,590	1,906.67	146,813	2,200.00	1,670.00
28,700.00	LB	MONOTUBE SIGN BRIDGE	0.63	18,000	1.10	31,667	2.09	0.59
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "O"	23,970.00	23,970	13,323.33	13,323	23,970.00	6,000.00
1.00	LS	ITS INSTALLATION, SITE "O"	78,201.00	78,201	81,067.00	81,067	85,000.00	78,201.00



PLAN
Scale: $\frac{1}{32}'' = 1'-0''$



ELEVATION
Scale: $\frac{1}{32}'' = 1'-0''$

No.	DATE	REVISIONS	BY
1	11-20-18	Revised sign type	D.M.J.

STRUCTURE NO.	23282
BOS DWG NO.	101207
CALC. BOOK	7016
HWY: 064	
M.P.: 22.1	
COUNTY	Multnomah
DATE	08/2018



DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.361.8655		
I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION		
EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES		
Designer: Rachel Bassil Drafter: Jim Culpepper	Reviewer: Terry Stones Checker: Doug Johnson	SHEET NO. KP05
PLAN AND ELEVATION		Scale: Full Size 1=1

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

Existing traffic lanes shown are approximate.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning construction.

See ITS plans for conduit locations.

Post shall be installed plumb.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000 $\frac{3}{8}$ " drilled shaft concrete.

Shaft caps shall be Class 3600 $\frac{3}{4}$ " commercial grade concrete.

Use details for Structure Design No. 2, see Dwg. TM690, TM691, TM693-TM697 and TM628.

Note:
Monotube sign bridge to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished by Agency and installed by Contractor. See Special Provisions.



BRIDGE NAME:	its_Hwy 64NB_MP22.1	BRIDGE NO:	23282	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

93.00	LF	Linear Unit Cost	1,926.88		2,232.26			
SUBTOTAL				161,300		186,900		
PERCENT MOBILIZATION			11.11	17,900	11.06	20,700		
TOTAL				179,200		207,600		

DETAILS

Sign Support

86.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,666.00	143,276	1,805.33	155,259	1,900.00	1,666.00
34,000.00	LB	MONOTUBE SIGN BRIDGE	0.53	18,000	0.93	31,667	1.76	0.50

Additional Items

1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "P"	23,970.00	23,970	13,323.33	13,323	23,970.00	6,000.00
1.00	LS	ITS INSTALLATION, SITE "P"	47,137.00	47,137	50,712.33	50,712	55,000.00	47,137.00

Existing traffic lanes shown are approximate.

See ITS plans for conduit locations.

Post shall be installed plumb.

Bottom of signs shall be horizontal.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000- $\frac{3}{8}$ " drilled shaft concrete.

Shaft caps shall be Class 3600 $\frac{3}{4}$ " commercial grade concrete.

Note:

Monotube sign bridge to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished by Agency and installed by Contractor. See Special Provisions.



Scale: $\frac{3}{32}'' = 1'-0''$



Scale: $\frac{3}{4}$ in. = 1'-0"

Note:
Elevation shown are based on North
American Vertical Datum 1988 (NAVD88).

SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

SITE "R"

REGISTERED PROFESSIONAL
ENGINEER
78231PE
DIGITALLY SIGNED 2018.08.31
15:32:02-0700
OREGON
MAY 23, 2008
DOUGLAS M. JOHNSON
RENEW: 06-30-2019



**DAVID EVANS
AND ASSOCIATES INC.**
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655

I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTIONEAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES

Designer: Rachel Bassil
 Drafter: Jim Culpepper

Reviewer: Terry Stones
Critic: Doug Johnson

PLAN AND ELEVATION

SHEET NO.
KR03

BRIDGE NAME:	its_Hwy 64NB_MP23.8			BRIDGE NO:	23284		KEY NO:	21157	
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION			COUNTY:	Multnomah		CONTR #	15124	
PRIMARY PROJ:	Sign Support			BID DATE:	11/29/2018		FAP NO:	S064(059)	
STRUCT TYPE:	MONOTUBE SIGN BRIDGE			# BIDS RECVD:	3		AWARDED TO:	KERR CONTRACTORS OREGON INC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support									
84.50	LF	Linear Unit Cost		2,098.22		2,373.96			
SUBTOTAL					159,600		180,600		
PERCENT MOBILIZATION				11.11	17,700	11.06	20,000		
TOTAL					177,300		200,600		
DETAILS									
Sign Support									
85.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION		1,666.00	141,610	1,752.00	148,920	1,850.00	1,666.00
29,500.00	LB	MONOTUBE SIGN BRIDGE		0.61	18,000	1.07	31,666	2.03	0.58
Additional Items									
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "R"		23,700.00	23,700	14,900.00	14,900	23,700.00	6,000.00
1.00	LS	ITS INSTALLATION, SITE "R"		35,844.00	35,844	37,281.33	37,281	40,000.00	35,844.00

Notes:

See dwg. TM622 for Std. Monotube Cantilever Sign/VMS Cantilever notes.

For Monotube Cantilever details, see dwgs. TM621 through TM628.

The sign support shall meet the requirements for arm length, maximum post height, and maximum sign area, shown on dwg. TM621. Details for the structure correspond to those shown for a VMS Type 4F, Structure Design No. 4.

For VMS plan and conduit routing, see sheet KA02.

See ITS plans for conduit and electrical.

Coordinate and field verify state furnished Type 4 VMS for all dimensions and electrical hub locations.

*Orient support so that VMS is as shown, perpendicular to traffic at location.
The bottom of signs and VMS shall be horizontal.*

Field verify all measurements and elevations before ordering material and fabricating structure. Do not reduce post height without approval from Engineer. Increase post height if minimum clearance is not met. Provide field drawing with elevations, dimensions, and lane striping shown clearly for approval by Engineer prior to fabrication.

Design and construct temporary shoring as required.

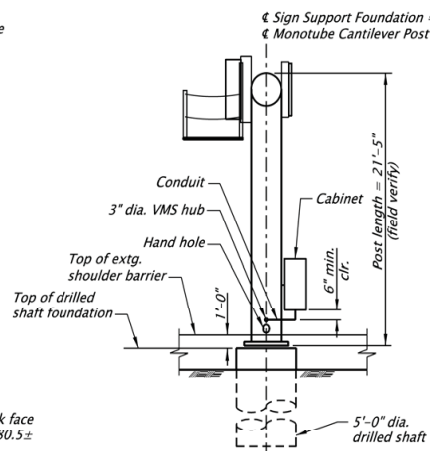
For drilled shaft foundation details, see dwg. TM628.

For Geotechnical Data, see sheet KC02.

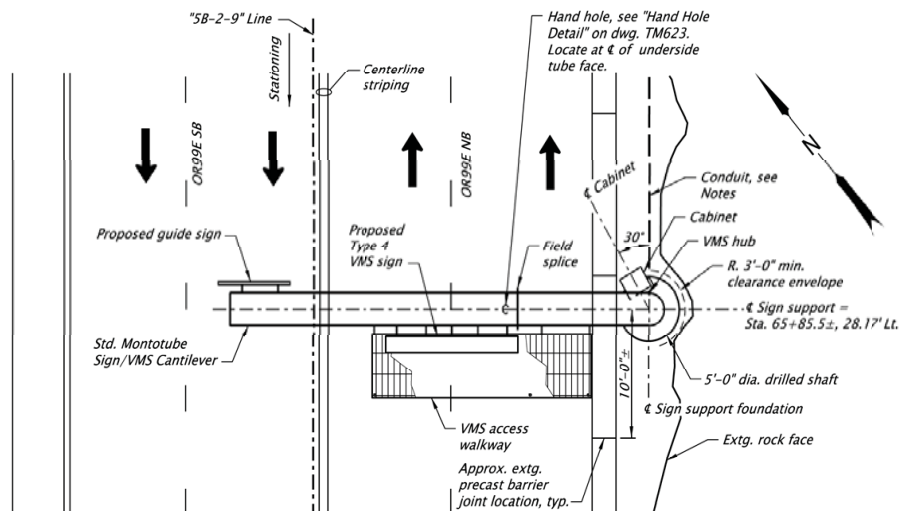
Drilled shaft foundation shall meet the requirements of the Final Geotechnical Report, dated May 16, 2018 by Rhino One Geotechnical. Excavation shall be inspected and approved by project geotechnical engineer prior to constructing foundation.

For VMS access walkway framing plan, see sheet KC03.

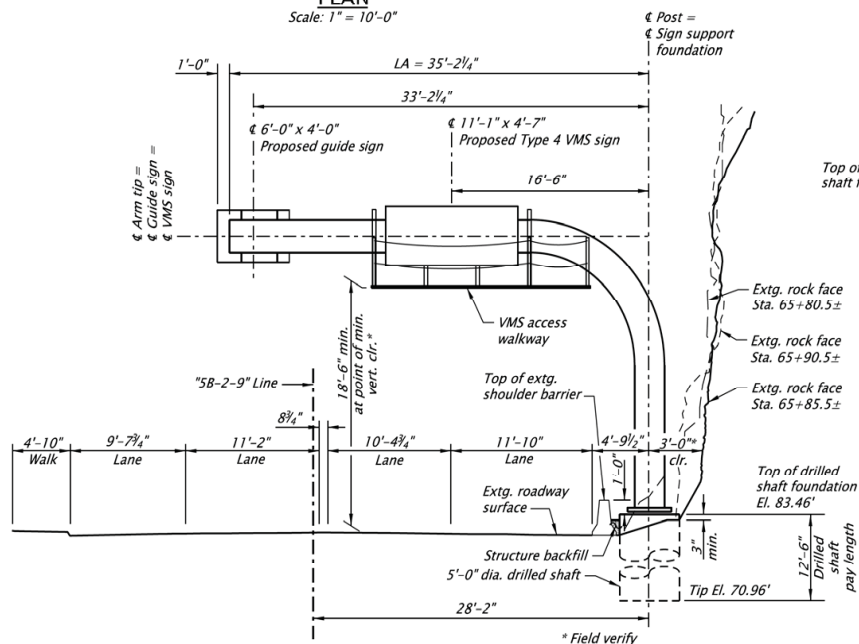
Oregon law requires the rules adopted by the Oregon Utilities Notification Center to be observed. These rules are set forth in OAR 952-001-0010 through 952-001-0090, and copies of these rules may be obtained from the Center. Field verify utility locations and conditions prior to construction.



END VIEW
Scale: 1" = 10'-0"



PLAN
Scale: 1" = 10'-0"



ELEVATION
(Looking back on station)
Scale: 1" = 10'-0"

STRUCTURE NO. 23274			HDR ENGINEERING, INC 1050 SW 6TH AVENUE, SUITE 1000 PORTLAND, OR 97204-1134 503.423.3700	
BOS DWS NO. 100867				
CALC. BOOK 7012				
HWY: 01E(81) M.P.: 12.73				
COUNTY Clackamas			sn_Hwy 1_E_S_MP12.73 OR99E RAILROAD TUNNEL ILLUMINATION AND ITS SEC. PACIFIC HIGHWAY EAST CLACKAMAS COUNTY	
ITS DWS NO. ITS-2595	EXPIRES: DEC. 31, 2018	Designer: K. Schweitzer Drafter: H. Okunaka	Reviewer: M. Libby Checker: M. Rudenka	SHEET NO. KC01

BRIDGE NAME:	sn_Hwy 1E_ES_MP12.73	BRIDGE NO:	23274	KEY NO:	18759
SECTION NAME:	OR99E RAILROAD TUNNEL ILLUMINATION AND ITS SEC.	COUNTY:	Clackamas	CONTR #	15103
PRIMARY PROJ:	Sign Support	BID DATE:	10/04/2018	FAP NO:	S081(076)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	2	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		2 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

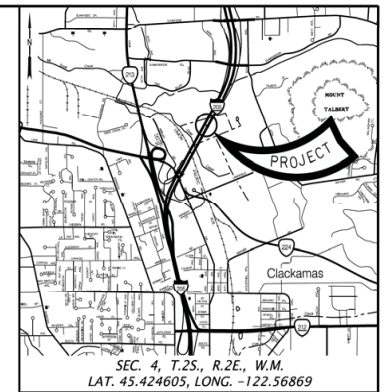
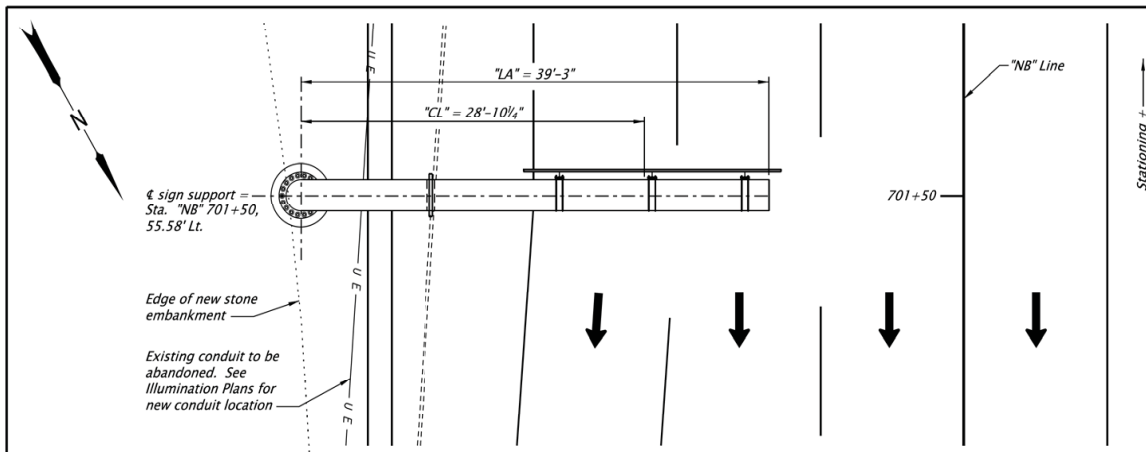
Sign_Support

35.19	LF	Linear Unit Cost	5,283.13		5,214.92			
		SUBTOTAL		167,300		165,500		
		PERCENT MOBILIZATION	11.11	18,600	10.85	18,000		
		TOTAL		185,900		183,500		

DETAILS

Sign Support

12.50	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	6,500.00	81,250	6,000.00	75,000	6,500.00	5,500.00
15,000.00	LB	MONOTUBE CANTILER SIGN STRUCTURES	5.73	86,000	6.03	90,500	6.33	5.73



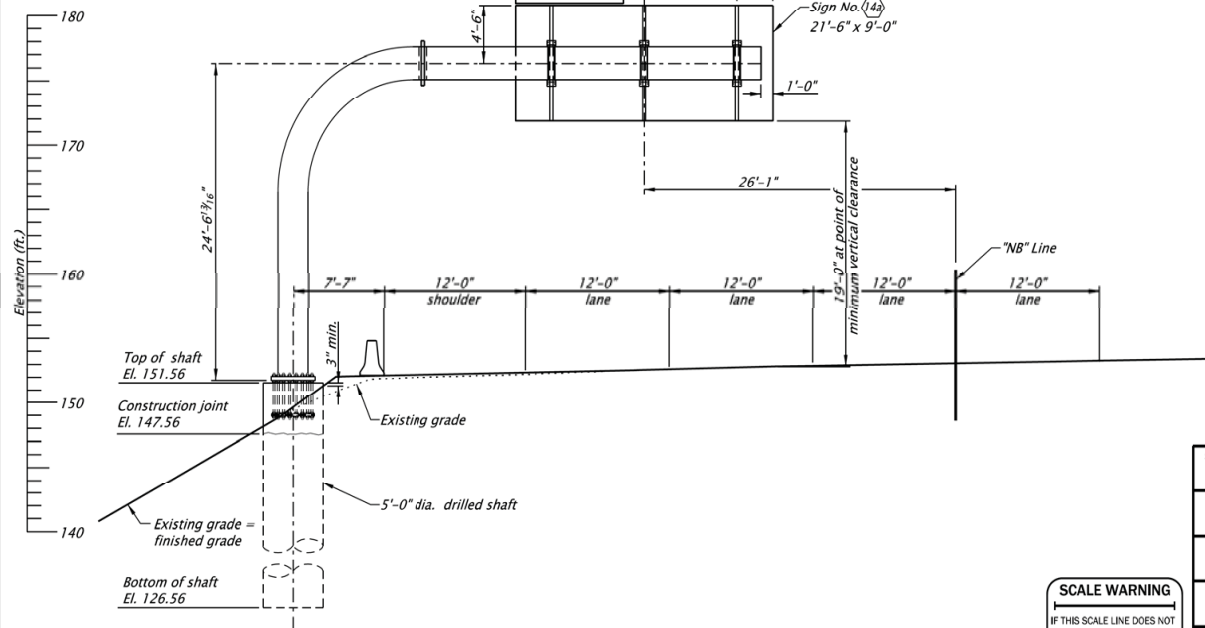
LOCATION MAP
No Scale

Note:
Right of way lines are outside limits shown.

Mount exit number sign per Dwg. TM220. Attachment not shown for clarity.

PLAN
Scale: 1" = 10'

Sign No. (14b)
21'-6" x 9'-0"



Note:
Elevations are based on the North American Vertical Datum, 1988.

ELEVATION
Scale: 1" = 10'

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

ACCOMPANIED BY DWGS.:
TM220, TM621 through TM624,
TM626, and TM628

Notes:

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018 and the Contract Special Provisions.

Monotube cantilever sign support structure was designed in accordance with AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals 1st editions, 2015 with 2017 interim revisions and Dwg. TM621 through TM628 as applicable.

For sign details, see Traffic Plans.

For Monotube Cantilever Details and General Notes, see Dwg. TM621 through TM623 and TM626. Use Structure No. 3.

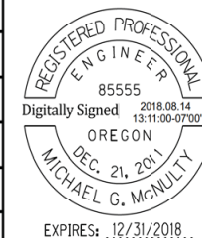
For sign mounting details, see Dwg. TM624.

For Foundation Data sheet, see Sheet GA01.

For drilled shaft details and required concrete strength, see Dwg. TM528. Provide a 25' long shaft and cap. Temporary casing is required. Permanent casing is not permitted.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-322-2344 or 811.

STRUCTURE NO.	23250
BDS DWG NO.	100950
CALC. BOOK	7018
HWY:	205
M.P.:	14.03
COUNTY	Clackamas
DATE	8/2018

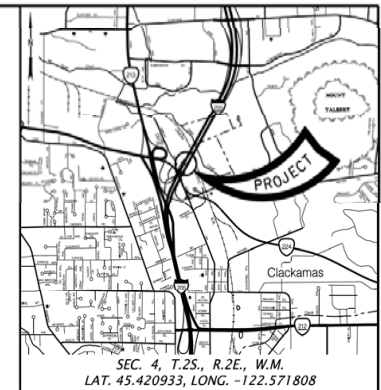
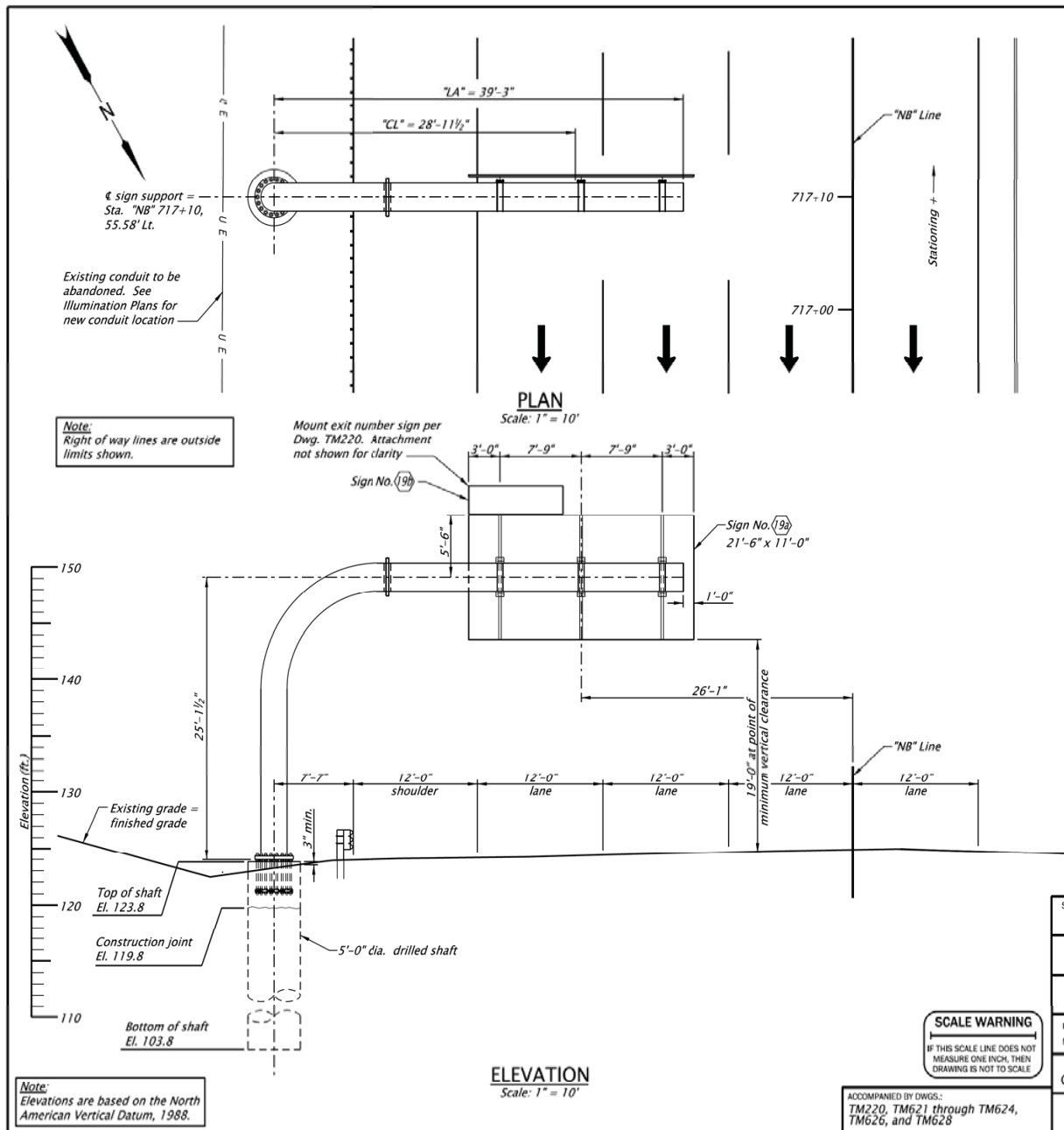


CORPORATE OFFICE: 380 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089 ADDITIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON CONSULTING ENGINEERS www.obec.com	
sn_Hwy 064NB_ES_MP14.03 I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC. EAST PORTLAND FREEWAY CLACKAMAS COUNTY	
Designer: Michael McNulty, P.E. Drafter: Yukie Gascenelli	Reviewer: Robert Goodrich, P.E. Checker: Kevin Burello
CANTILEVER SIGN SUPPORT PLAN AND ELEVATION	SHEET NO. LD01

BRIDGE NAME:	sn_Hwy 064NB_ES_MP14.03	BRIDGE NO:	23250	KEY NO:	19721
SECTION NAME:	I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC.	COUNTY:	Clackamas	CONTR #	15115
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S064(056)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
39.25	LF	Linear Unit Cost	3,042.00		3,238.22			
		SUBTOTAL		108,300		116,500		
		PERCENT MOBILIZATION	10.25	11,100	9.09	10,600		
		TOTAL		119,400		127,100		
DETAILS								
Sign Support								
25.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	2,000.00	50,000	2,083.33	52,083	2,500.00	1,750.00
12,740.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	4.58	58,298	5.06	64,433	5.49	4.58

**Notes:**

Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018 and the Contract Special Provisions.

Monotube cantilever: sign support structure was designed in accordance with AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals 1st editions, 2015 with 2017 interim revisions.

Sign structure was designed for 259 sq. ft. of sign area placed as shown plus an additional equivalent 22 sq. ft. sign area for future illumination applied 1'-2" above the highest sign with the following Extreme Event I Limit State design parameters:

- 145 mph basic wind speed (3 second gust)
- Unfactored wind pressure of 58 psf on the sign area
- Unfactored wind pressure of 22 psf on the monotube projected surface area

For sign details, see Traffic Plans.

For Monotube Cantilever Details and General Notes, see Dwg. TM621 through TM623 and TM626. Use Structure No. 3.

For sign mounting details, see Dwg. TM624.

For Foundation Data sheet, see Sheet GA02.

For drilled shaft details and required concrete strength, see Dwg. TM628. Provide a 20' long shaft and cap. Temporary casing is required. Permanent casing is not permitted.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-322-2344 or 811.

STRUCTURE NO.	23251
BDS DWG NO.	100951
CALC. BOOK	7018
HWY:	205
M.P.:	13.74
COUNTY	Clackamas
DATE	8/2018

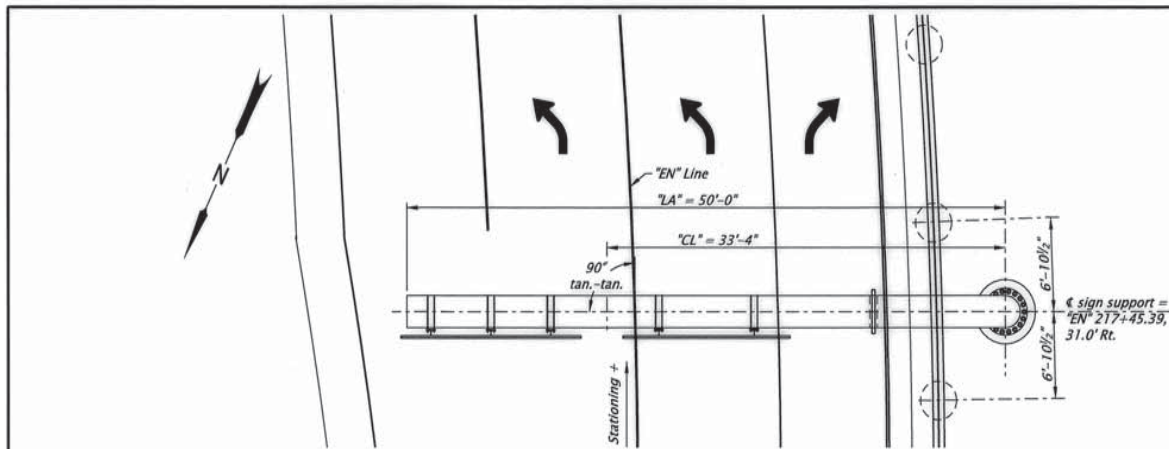


CORPORATE OFFICE: 880 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6088 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON www.obec.com	
CONSULTING ENGINEERS	
sn_Hwy 064NB_ES_MP13.74 I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC.	
EAST PORTLAND FREEWAY CLACKAMAS COUNTY	
Designer: Michael McNulty, P.E. Drafter: Yuka Garzenelli	Reviewer: Robert Goodrich, P.E. Checker: Kevin Bowles
CANTILEVER SIGN SUPPORT PLAN AND ELEVATION	
SHEET NO. LE01	

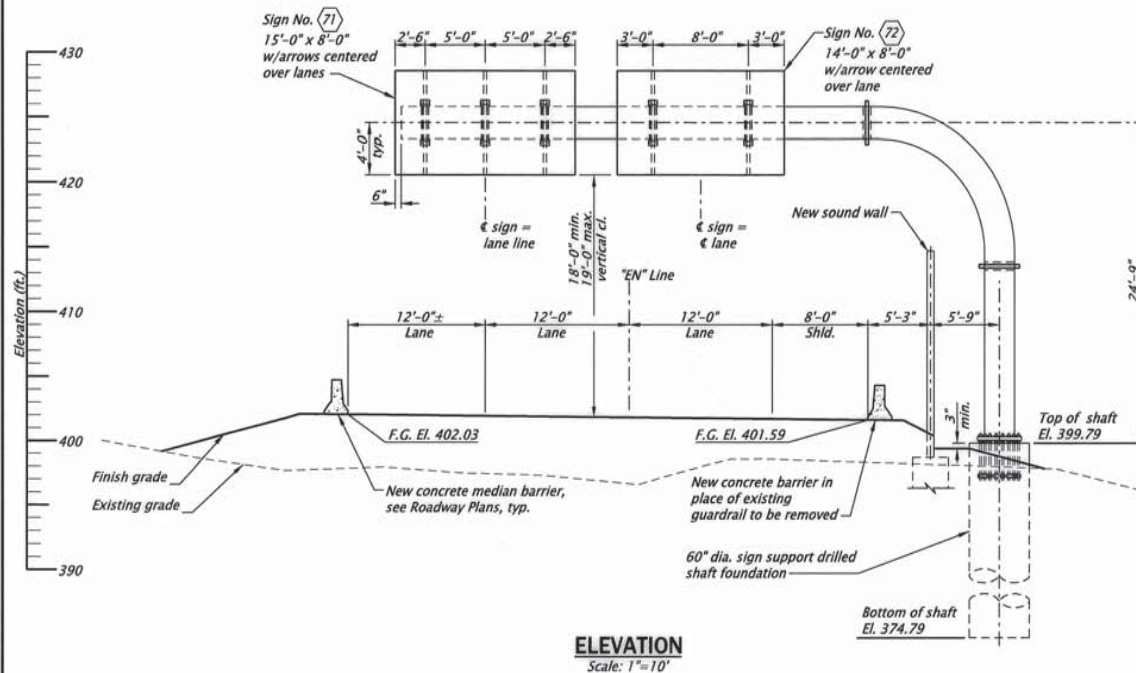
BRIDGE NAME:	sn_Hwy 064NB_ES_MP13.74	BRIDGE NO:	23251	KEY NO:	19721
SECTION NAME:	I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC.	COUNTY:	Clackamas	CONTR #	15115
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S064(056)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
39.25	LF	Linear Unit Cost	2,761.78		2,761.78			
		SUBTOTAL		98,300		99,400		
		PERCENT MOBILIZATION	10.25	10,100	9.09	9,000		
		TOTAL		108,400		108,400		
DETAILS								
Sign Support								
20.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	2,000.00	40,000	1,750.00	35,000	2,000.00	1,500.00
12,830.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	4.54	58,300	5.02	64,433	5.46	4.54



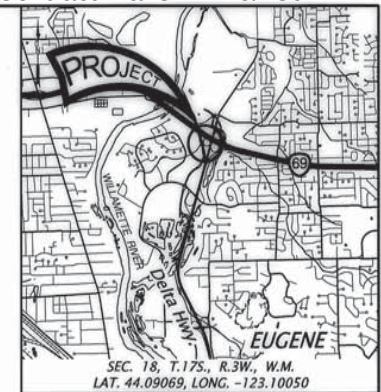
PLAN
Scale: 1"=10'



ELEVATION
Scale: 1"=10'

Note:
Elevations are based on the North American Vertical Datum, 1988.

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale



LOCATION MAP
No Scale

Notes:

All materials and workmanship shall conform to the Oregon Standard Specifications for Construction 2018 and the Special Provisions. Monotube cantilever sign support structure is hot dip galvanized and designed in accordance with the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, First Edition, 2015, with 2017 Interim Revisions and Dwg. TM621 through TM628. API-5L Grade 8 or higher PS2 steel is allowed structural steel option.

For sign details, see Traffic Plans.

Use Structure Design No. 2 on Dwg. TM621.

For sign mounting details, see Dwg. TM624.

For drilled shaft details and required concrete strength, see Dwg. TM628. Temporary casing is required. Permanent casing is not permitted.

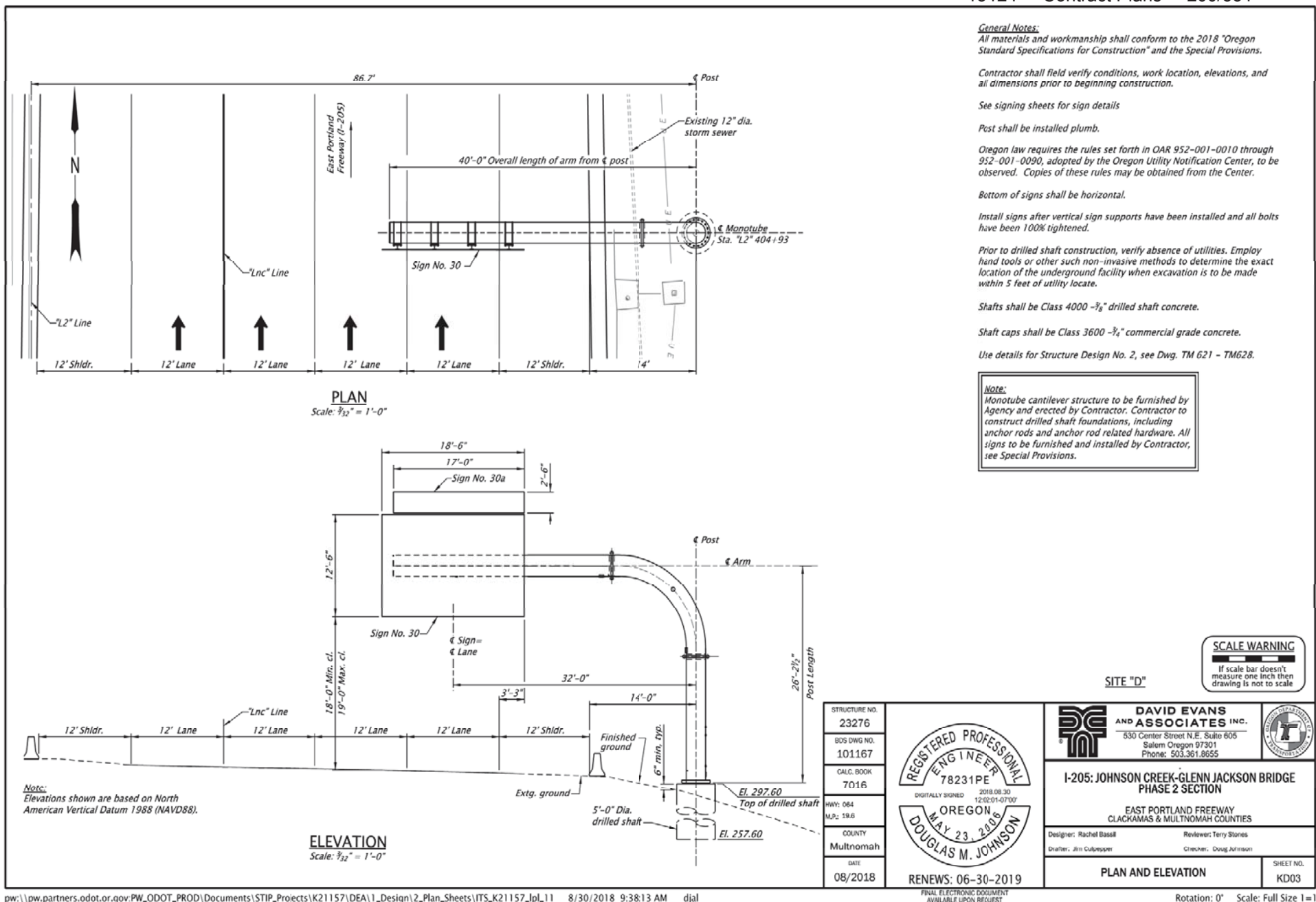
Right of way line is outside limits of view.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

Accompanied by Drawings: TM621-TM628

STRUCTURE NO. 23311		
BDS DWG NO. 102551		
CALC. BOOK 7076		
HWY: 069 M.P.: XXX		
UNIT FILE CODE S-18024		CORPORATE OFFICE: 800 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-4008 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON
DFV/TSU NO. NA	sn_HWY69_WS_44.09059/123.10068 OR569: BELTLINE @ DELTA HIGHWAY - INTERCHANGE SEC. BELTLINE HIGHWAY LANE COUNTY	Designer: Peter G. Slocum, P.E., S.E. Drafter: Yuka Garzenelli
EXPIRES: 06/30/2020		Reviewer: Guy Hakanson, P.E. Checker: Wyatt Dean, E.I.
MONOTUBE CANTILEVER SIGN SUPPORT PLAN AND ELEVATION		SHEET NO. LD08

BRIDGE NAME:			sn_HWY69_WS_44.09059/123.10068		BRIDGE NO:		23311		KEY NO:		19490				
SECTION NAME:			OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.		COUNTY:		Lane		CONTR #		15159				
PRIMARY PROJ:			Sign Support		BID DATE:		08/29/2019		FAP NO:		S069(019)				
STRUCT TYPE:			MONOTUBE CANTILEVER SIGN SUPPORT		# BIDS RECVD:		6		AWARDED TO:		HAMILTON CONSTRUCTION CO				
										PREPARED BY:					
					CONTRACT			3 LOW BIDDERS			SPREAD				
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW		
Sign_Support															
50.00		LF	Linear Unit Cost			2,296.00				2,558.00					
SUBTOTAL								103,800		115,400					
PERCENT MOBILIZATION						10.62		11,000		10.83		12,500			
TOTAL								114,800		127,900					
DETAILS															
Sign Support															
25.00		FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION			1,150.00		28,750		1,616.67		40,417		2,000.00	1,150.00
23,308.00		LB	MONOTUBE CANTILEVER SIGN STRUCTURES			3.22		75,000		3.22		75,000		3.43	3.00



BRIDGE NAME:	sn_Hwy 64NB_ES_MP19.6	BRIDGE NO:	23276	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
40.00	LF	Linear Unit Cost	1,965.00		2,570.00			
		SUBTOTAL		70,700		92,600		
		PERCENT MOBILIZATION	11.11	7,900	11.06	10,200		
		TOTAL		78,600		102,800		
DETAILS								
Sign Support								
40.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,667.00	66,680	1,839.00	73,560	2,000.00	1,667.00
15,900.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURE	0.25	4,000	1.20	19,067	3.14	0.20
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "D"	8,000.00	8,000	11,333.33	11,333	20,000.00	6,000.00

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

Existing traffic lanes shown are approximate.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning construction.

See ITS plans for conduit locations.

Post shall be installed plumb.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

Bottom of signs shall be horizontal.

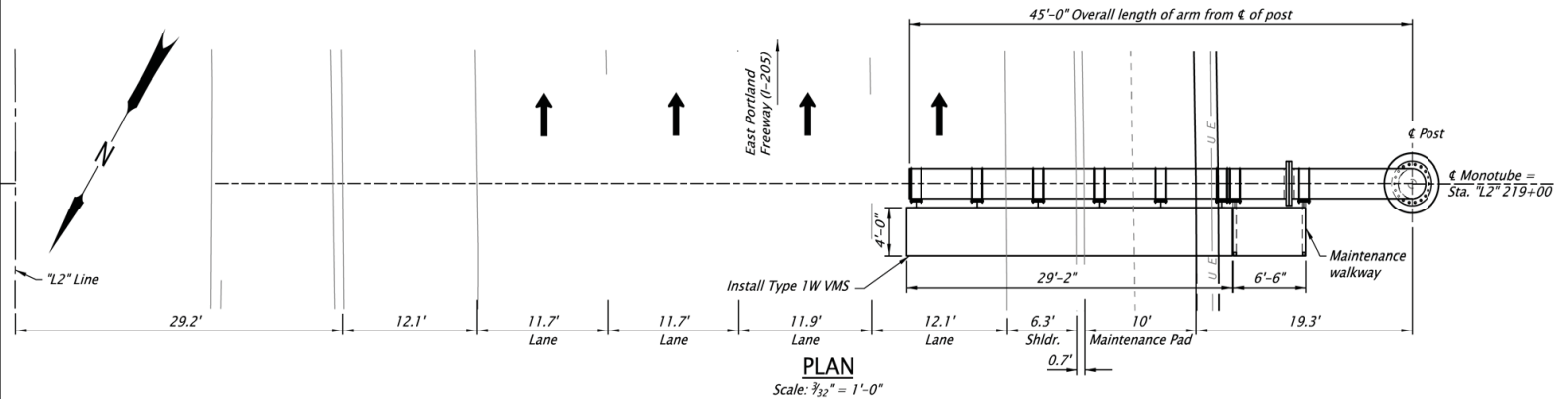
Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000 $\frac{3}{4}$ " drilled shaft concrete.

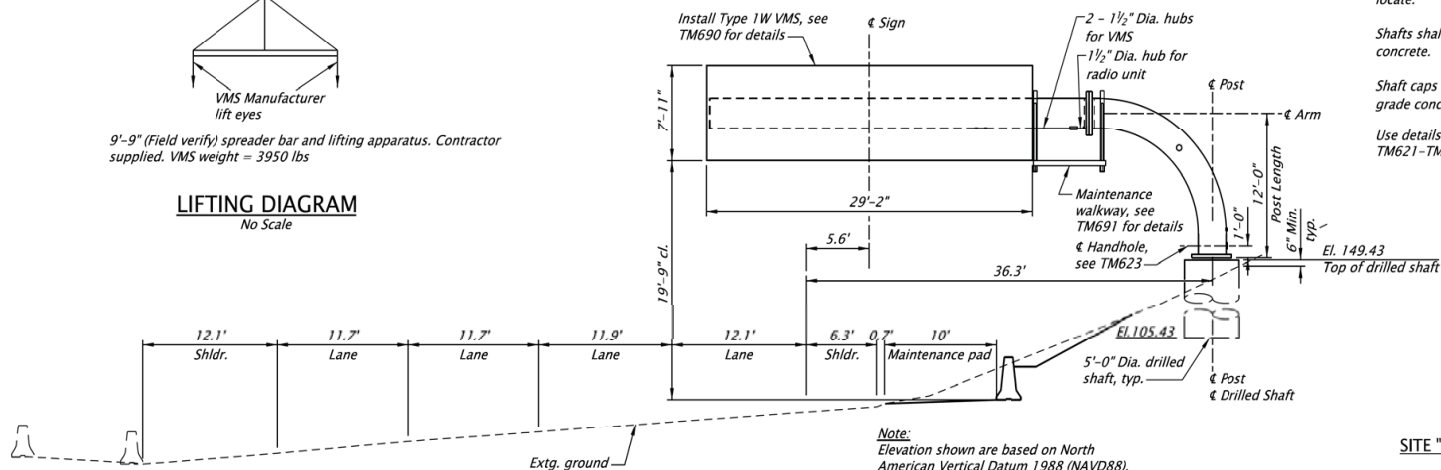
Shaft caps shall be Class 3600 $\frac{3}{4}$ " commercial grade concrete.

Use details for Structure Design No. 9, see Dwg. TM621-TM628, TM690 and TM691.



VMS Manufacturer lift eyes
9'-9" (Field verify) spreader bar and lifting apparatus. Contractor supplied. VMS weight = 3950 lbs

LIFTING DIAGRAM
No Scale



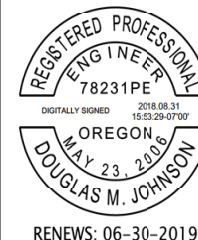
Note:
Elevation shown are based on North American Vertical Datum 1988 (NAVD88).

SITE "Q"

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale

Note:
Monotube cantilever structure to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished by Agency and installed by Contractor. See Special Provisions.

STRUCTURE NO.	23283
BOS DWG NO.	101209
CALC. BOOK	7016
HWY: 064	
M.P.: 23.1	
COUNTY	Multnomah
DATE	08/2018



RENEW: 06-30-2019



DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655



**I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION**

EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES

Designer: Rachel Bassil

Reviewer: Terry Stones

Drafter: Jim Gullapen

Checker: Dong Hui

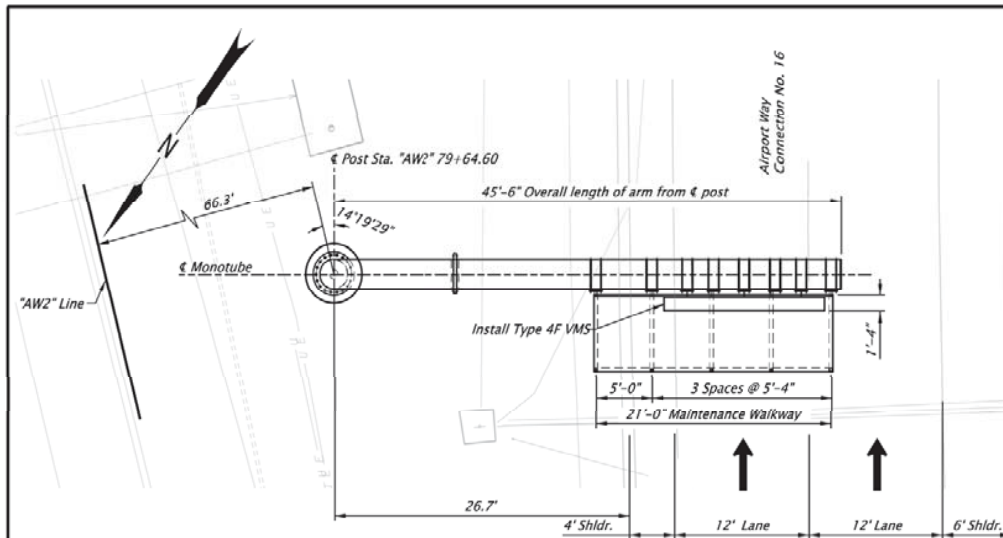
PLAN AND ELEVATION

SHEET NO.
KQ03

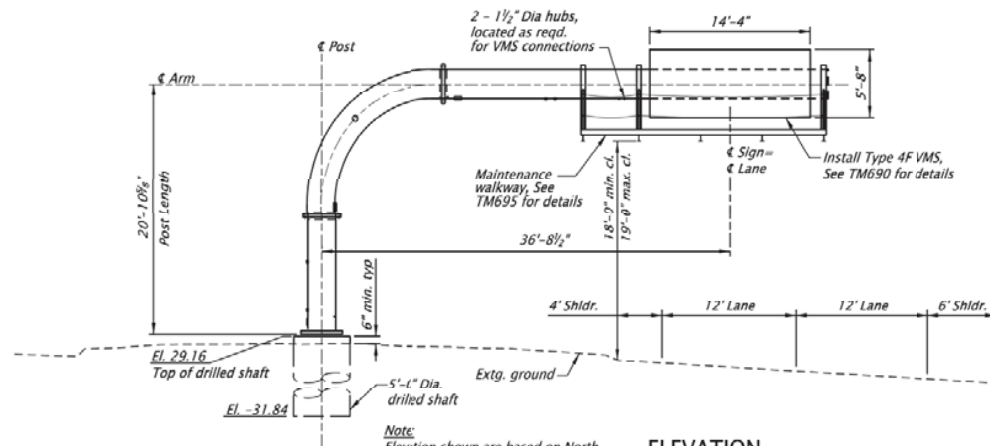
BRIDGE NAME:	its_Hwy 64SB_WS_MP23.1	BRIDGE NO:	23283	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
45.00	LF	Linear Unit Cost	1,915.56		2,395.56			
		SUBTOTAL		77,600		97,100		
		PERCENT MOBILIZATION	11.11	8,600	11.06	10,700		
		TOTAL		86,200		107,800		
DETAILS								
Sign Support								
44.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,673.00	73,612	1,774.33	78,071	1,850.00	1,673.00
13,900.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	0.29	4,000	1.37	19,067	3.60	0.23
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "Q"	40,300.00	40,300	25,433.33	25,433	40,300.00	6,000.00
1.00	LS	ITS INSTALLATION, SITE "Q"	27,651.00	27,651	27,550.33	27,550	30,000.00	25,000.00



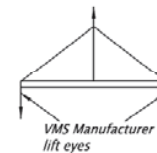
PLAN

Scale: $\frac{1}{32}'' = 1'-0''$ 

ELEVATION

Scale: $\frac{1}{32}'' = 1'-0''$

Note:
Elevation shown are based on North
American Vertical Datum 1988 (NAVD88).



13'-0" (Field verify) spreader bar and lifting apparatus. Contractor supplied. VMS weight = 1680 lbs

LIFTING DIAGRAM

No Scale

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

Existing traffic lanes shown are approximate.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning construction.

See ITS plans for conduit locations.

Post shall be installed plumb.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000-3/8" drilled shaft concrete.

Shaft caps shall be Class 3600-3/4" commercial grade concrete.

Use details for Structure Design No. 2, see Dwg. TM621 - TM628, TM690, TM691, TM695 and TM696.

Note:

Monotube cantilever structure to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished by Agency and installed by Contractor. See Special Provisions.

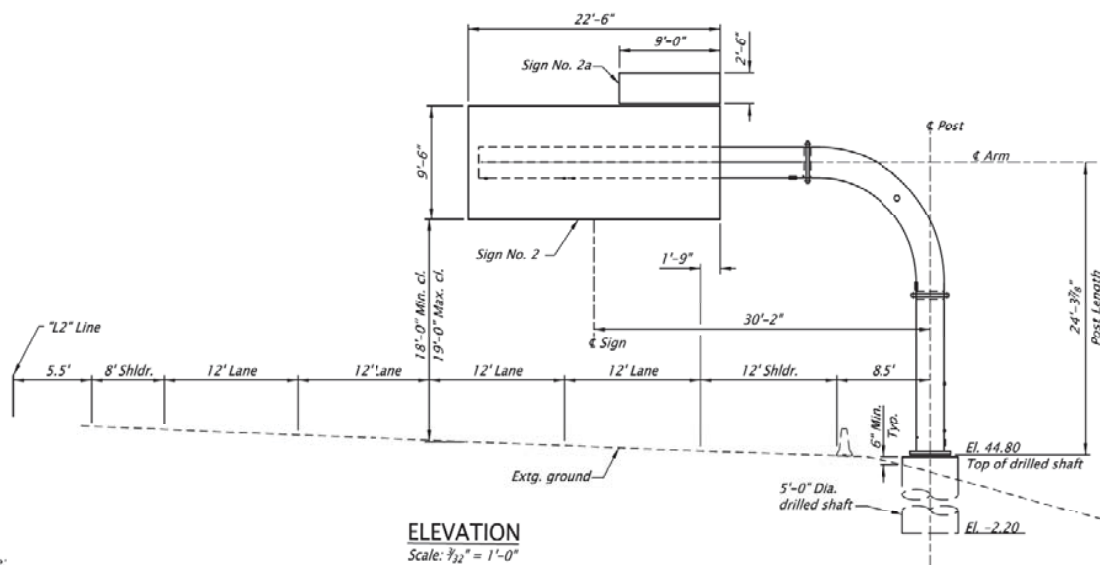
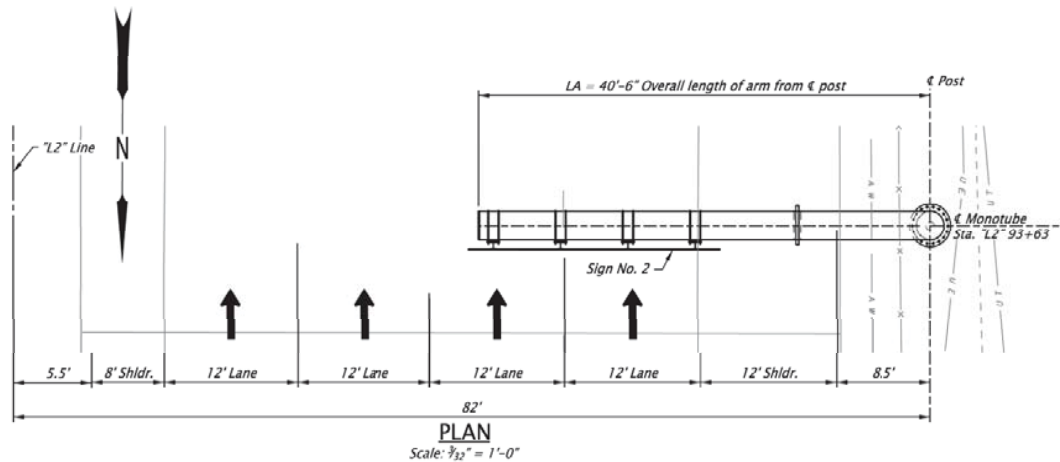
SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

SITE "S"

STRUCTURE NO. 23285			DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.361.8655	
BOS DWG NO. 101213				
CALC. BOOK 7016				
DATE 08/2018				
HWY: 084 M.P.: 23.9 COUNTY Multnomah	I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES	Designer: Rachel Bassil Checker: Jim Gullaparr	Reviewer: Terry Stones Checker: Doug Johnson	SHEET NO. KS03
PLAN AND ELEVATION				

BRIDGE NAME:			its_Hwy 64SB(Conn 064DC)_MP23.9		BRIDGE NO:		23285		KEY NO:		21157		
SECTION NAME:			I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION		COUNTY:		Multnomah		CONTR #		15124		
PRIMARY PROJ:			Sign Support		BID DATE:		11/29/2018		FAP NO:		S064(059)		
STRUCT TYPE:			MONOTUBE CANTILEVER SIGN SUPPORT		# BIDS RECVD:		3		AWARDED TO:		KERR CONTRACTORS OREGON INC		
										PREPARED BY:			
					CONTRACT			3 LOW BIDDERS			SPREAD		
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Sign_Support													
45.50		LF	Linear Unit Cost			2,628.57				3,087.91			
SUBTOTAL								107,600		126,500			
PERCENT MOBILIZATION						11.11		12,000		11.06		14,000	
TOTAL								119,600		140,500			
DETAILS													
Sign Support													
61.00		FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION			1,666.00		101,626		1,685.33		102,805	
14,900.00		LB	MONOTUBE CANTILEVER SIGN STRUCTURES			0.40		6,000		1.59		23,733	
Additional Items													
1.00		LS	TEMPORARY WORK ACCESS ROAD SITE "S"			13,000.00		13,000		11,333.33		11,333	
1.00		LS	ITS INSTALLATION, SITE "S"			63,673.00		63,673		71,224.33		71,224	



Note:
Elevations shown are based on North
American Vertical Datum 1988 (NAVD88).

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

Existing traffic lanes shown are approximate.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning construction.

See Signing plans for sign details.

Post shall be installed plumb.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Prior to drilled shaft construction, verify absence of utilities. Employ hand tools or other such non-invasive methods to determine the exact location of the underground facility when excavation is to be made within 5 feet of utility locate.

Shafts shall be Class 4000- $\frac{3}{8}$ " drilled shaft concrete.

Shaft caps shall be Class 3600 - $\frac{3}{4}$ " commercial grade concrete.

Use details for Structure Design No. 2, see Dwg. TM621 - TM628, TM690, TM691, TM695 and TM696.

Note:

Monotube cantilever structure to be furnished by Agency and erected by Contractor. Contractor to construct drilled shaft foundations, including anchor rods and anchor rod related hardware. All signs to be furnished and installed by Contractor. See Special Provisions.

SCALE WARNING

If scale bar doesn't
measure one inch then
drawing is not to scale

SITE "U"

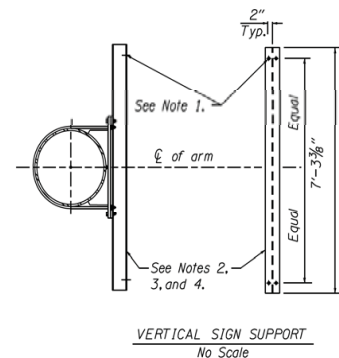
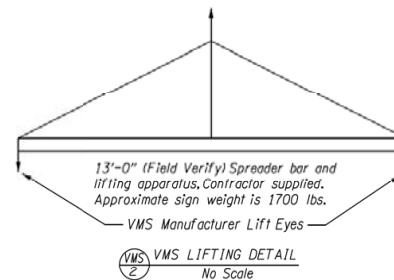
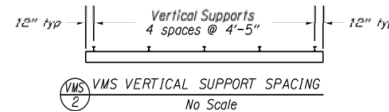
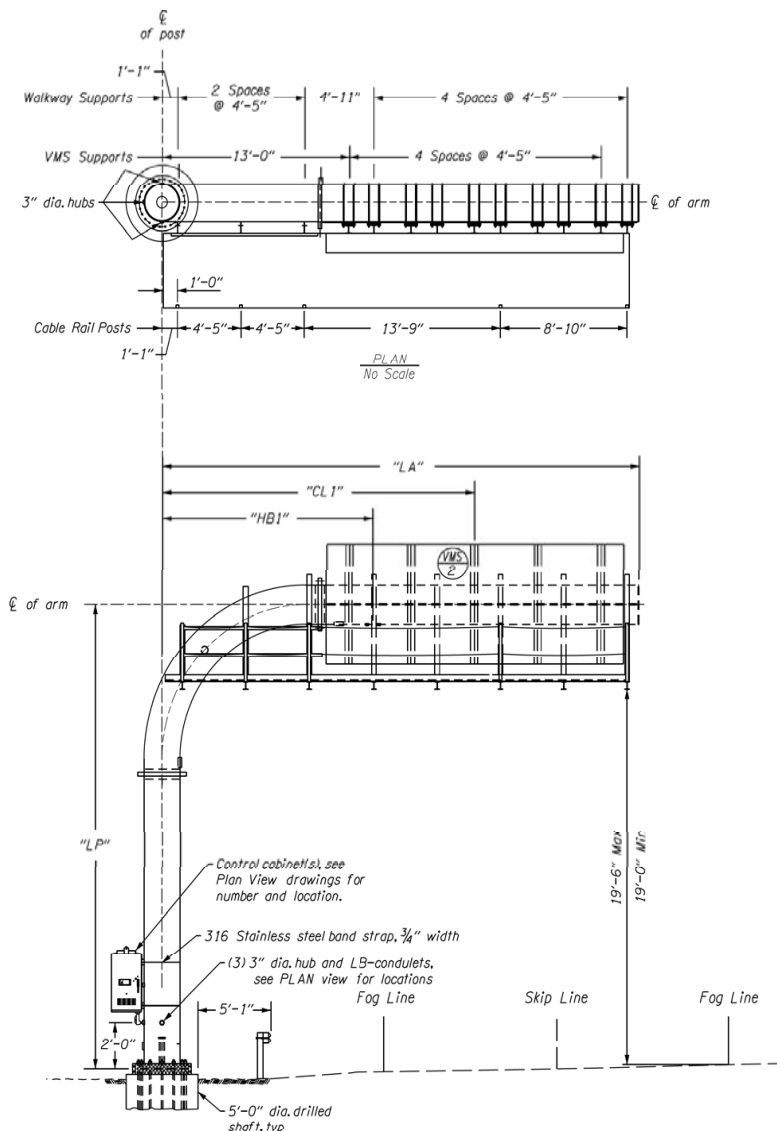
STRUCTURE NO. 23286		DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.361.8655	
BOS DWG NO. 101217			
CALC. BOOK 7016			
HWY: 064 M.P.: 25.5			
COUNTY Multnomah			
DATE 08/2018	RENEW: 06-30-2019	I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES	Designer: Rachel Bassil Drafter: Jim Culpepper Reviewer: Terry Stones Checker: Doug Johnson
PLAN AND ELEVATION		SHEET NO. KU03	

BRIDGE NAME:	sn_Hwy 64SB_WS_MP25.5	BRIDGE NO:	23286	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Sign Support	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
40.50	LF	Linear Unit Cost	2,269.14		2,767.90			
		SUBTOTAL		82,700		100,900		
		PERCENT MOBILIZATION	11.11	9,200	11.06	11,200		
		TOTAL		91,900		112,100		
DETAILS								
Sign Support								
47.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,674.00	78,678	1,741.33	81,843	1,850.00	1,674.00
12,200.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	0.33	4,000	1.56	19,067	4.10	0.26
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS ROAD SITE "U"	11,700.00	11,700	10,900.00	10,900	15,000.00	6,000.00

CANTILEVER VMS SUPPORT DETAILS OLD OREGON TRAIL HWY (006)



GENERAL NOTES:

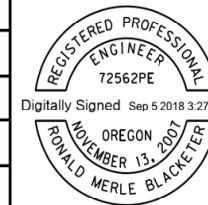
1. Use temporary shoring as required.
2. Field verify all dimensions, lengths, offsets, and elevations before fabrication.
3. Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the center.
4. Engineer to provide exact location of structure prior to construction.
5. When lifting display with lift eyes use a spreader beam to ensure vertical reactions at the lift eyes. See VMS Lifting Details.
6. See Legend & Symbols on Dwg. KA01.
7. Install signs after vertical sign supports have been installed and all bolts have been 100% tightened. Bottom of signs shall be horizontal.

NOTES

1. Contractor to provide all bolts, nuts, shims, and washers required to connect the sign to the sign mount.
2. Contractor shall verify vertical spacing of manufacturer supplied Z-brackets prior to drilling the vertical supports. Provide (4) 1/16" holes for 5/8" fasteners. Tighten 5/8" diameter nuts to 97 ft-lb torque. The field drilled holes are to be centered on the VMS Z-Bracket flange no closer than 2" from the end.
3. Bolts and rods connecting galvanized steel members to aluminum members shall be stainless steel and meet the requirements of ASTM A193 Class 2 Grade B8M. Nuts used with A193 bolts shall be heavy hex, and shall meet the requirements of ASTM A194 Grade 8M with supplementary requirement "S1". Use a stainless steel flatwasher and double nut at each bolt.
4. When attaching aluminum Z-brackets to steel support posts use 1/16" thick stainless steel shims (ASTM A240 Type 304) over full contact area between the dissimilar metals. Tighten 5/8" diameter nuts to 97 ft-lb torque.

Accompanied by dwgs. TM621, TM623, TM624, TM625, TM626, TM627, TM628, TM690, TM691

STRUCTURE NO.
23563
BOS DWG NO.
102055
HWY: 006 (EB)
M.P.: 220.59
COUNTY
UMATILLA
ITS DWG. NO.
ITS-2775



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RENEWS: 12-31-2019

OREGON DEPARTMENT
OF TRANSPORTATION



I-84: NE OR SNOW ZONE SAFETY
IMPROVEMENTS PROJECT
OLD OREGON TRAIL HIGHWAY
UMATILLA & UNION COUNTIES

Designer: RON BLACKETER
Drafter: RON BLACKETER

Reviewer: BLAINE VAN DYKE
Checker: DOUG SPENCER

INTELLIGENT TRANSPORTATION SYSTEMS
STRUCTURE DETAILS

SHEET NO.
KC05

BRIDGE NAME:	its_Hwy6EB_SS_MP200.59	BRIDGE NO:	23563	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

33.25	LF	Linear Unit Cost	5,263.16		6,027.07			
SUBTOTAL				157,500		180,400		
PERCENT MOBILIZATION			11.11	17,500	11.09	20,000		
TOTAL				175,000		200,400		

DETAILS

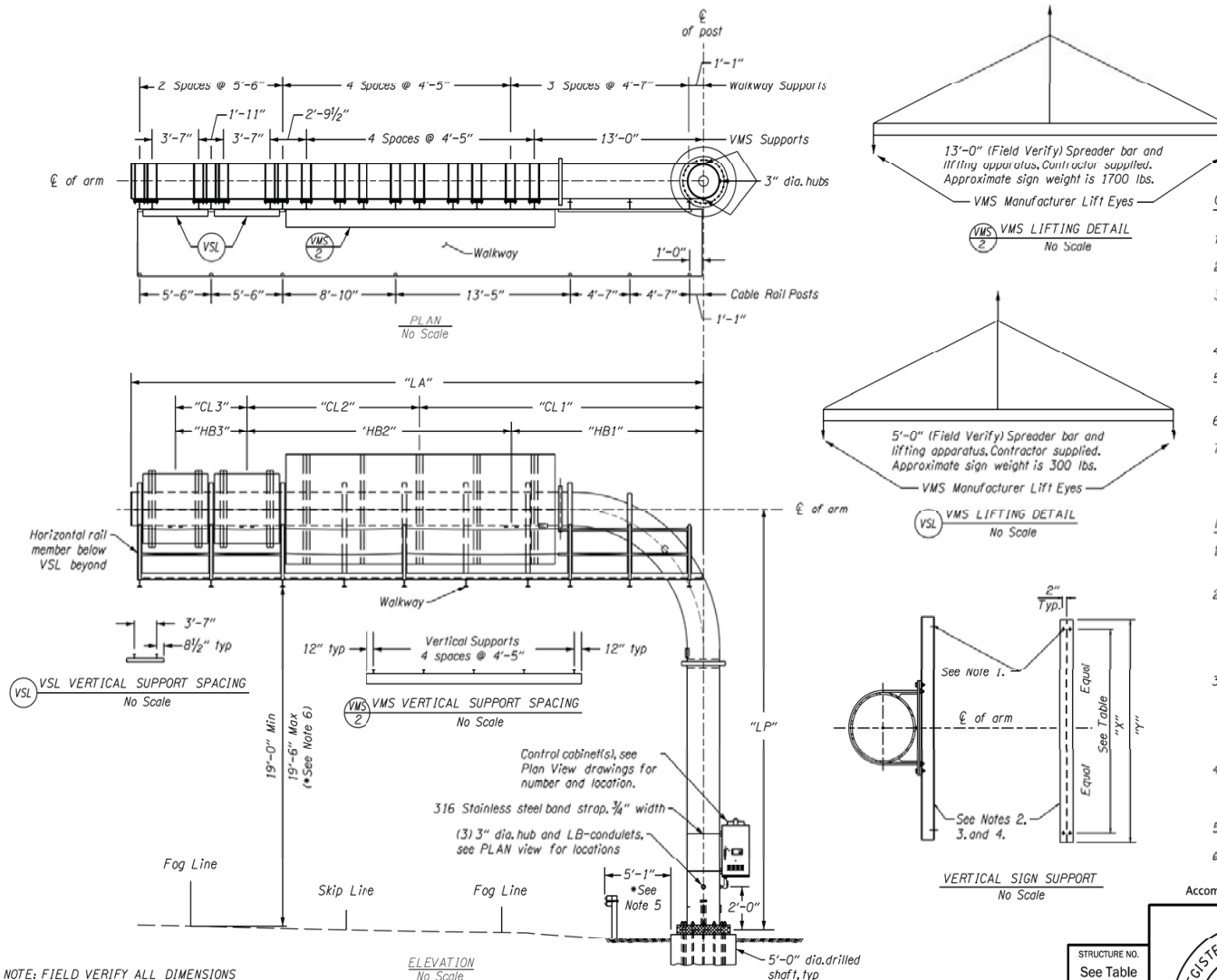
Sign Support

25.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	2,300.00	57,500	3,083.33	77,083	4,000.00	2,300.00
13,090.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	7.64	100,000	7.89	103,333	9.17	6.88

Additional Items

1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 3	30,000.00	30,000	33,333.33	33,333	40,000.00	30,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 3	15,000.00	15,000	15,000.00	15,000	15,000.00	15,000.00

CANTILEVER VMS SUPPORT DETAILS OLD OREGON TRAIL HWY (006)



NOTE: FIELD VERIFY ALL DIMENSIONS

ELEVATION
No Scale

Site	Structure Number	Mile Point	Station	Structure Design #	Post Length (LP)	Arm Length (LA)	Center of Sign			Hub Location			Drilled Shaft		VMS 2		VSL		
							(CL1)	(CL2)	(CL3)	"HB1"	"HB2"	"HB3"	Dia. (ft)	Depth (ft)	Req'd Rock Socket (ft)	"X"	"Y"	"X"	"Y"
5	23564	220.83 WB	723+82.00 L1	9	25'-3 1/2"	44'-0"	21'-10"	13'-5"	5'-6"	14'-9"	20'-6"	5'-6"	5	25'-0"	19'-0"	7'-3 3/8"	7'-11 3/8"	5'-3 1/16"	5'-11 1/4"
10	23567	223.52 WB	865+42.00 L1	9	24'-5 1/2"	44'-0"	21'-10"	13'-5"	5'-6"	14'-9"	20'-6"	5'-6"	5	25'-0"	20'-0"				
12	23568	225.24 EB	921+58.00 Rt	9	24'-4"	44'-0"	21'-10"	13'-5"	5'-6"	14'-9"	20'-6"	5'-6"	5	20'-0"	15'-0"				
15	23570	228.58 EB	1074+70.00 Rt	9	24'-0"	44'-0"	21'-10"	13'-5"	5'-6"	14'-9"	20'-6"	5'-6"	5	20'-0"	17'-0"				
19	23572	237.86 WB	833+85.02 L1	9	24'-4"	44'-0"	21'-10"	13'-5"	5'-6"	14'-9"	20'-6"	5'-6"	5	35'-0"	13'-0"				
20	23573	239.89 EB	941+20.06 Rt	9	24'-7"	44'-0"	21'-10"	13'-5"	5'-6"	14'-9"	20'-6"	5'-6"	5	30'-0"	20'-0"				

Accompanied by dwgs. TM621, TM622, TM623, TM624, TM626, TM628, TM690, TM691

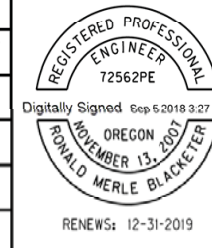
STRUCTURE NO.
See Table

BOS DWG NO.
102039

HWY: 006
M.P.: VARIES

COUNTY
UMATILLA

ITS DWG. NO.
ITS-2773



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RENEWALS: 12-31-2019

OREGON DEPARTMENT
OF TRANSPORTATION

I-84: NE OR SNOW ZONE SAFETY
IMPROVEMENTS PROJECT
OLD OREGON TRAIL HIGHWAY
UMATILLA & UNION COUNTIES

Designer: RON BLACKETER
Drafter: RON BLACKETER

Reviewer: BLAINE VAN DYKE
Checker: DOUG SPENCER

INTELLIGENT TRANSPORTATION SYSTEMS
STRUCTURE DETAILS

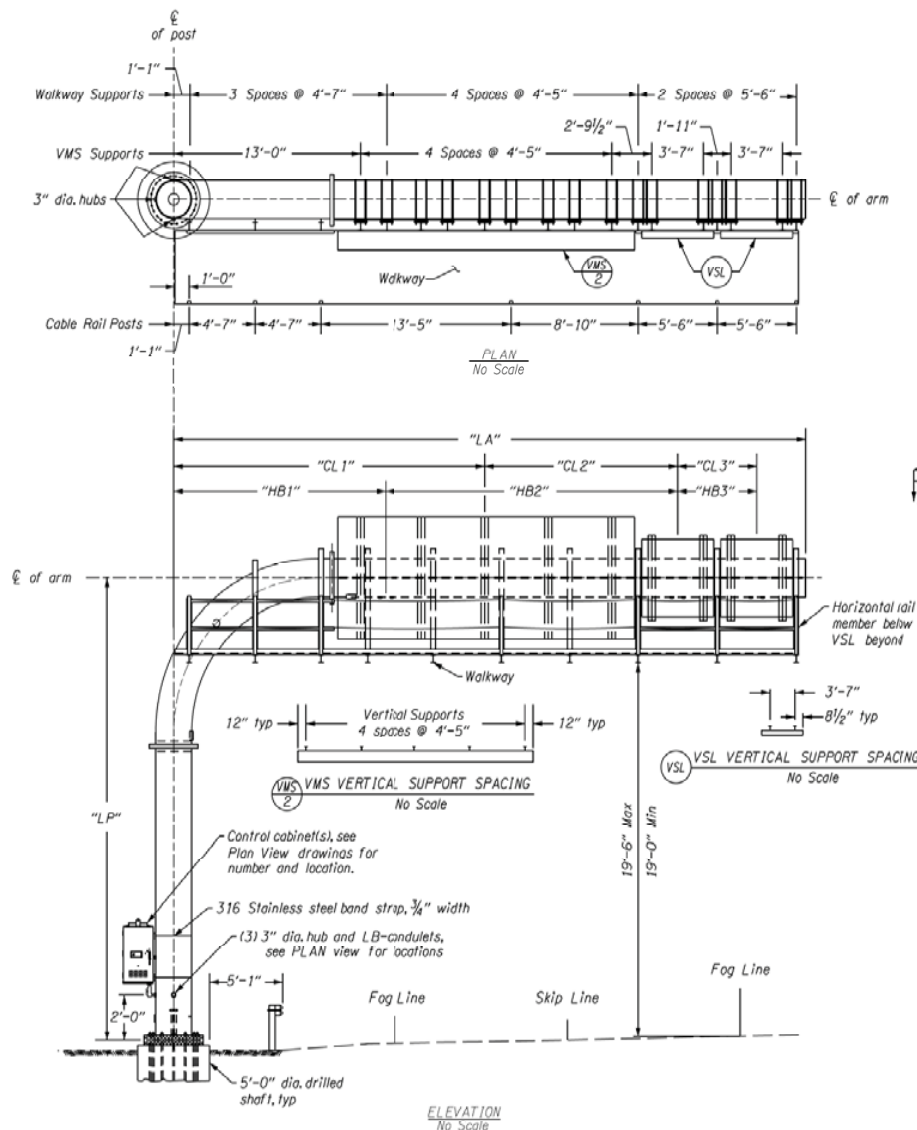
SHEET NO.
KC03

BRIDGE NAME:	its_Hwy6WB_SS_MP220.83	BRIDGE NO:	23564	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

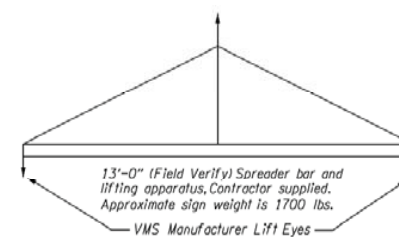
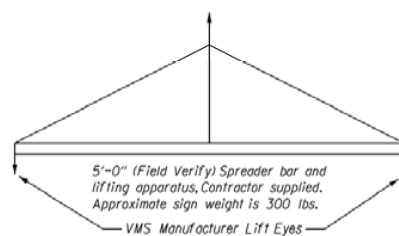
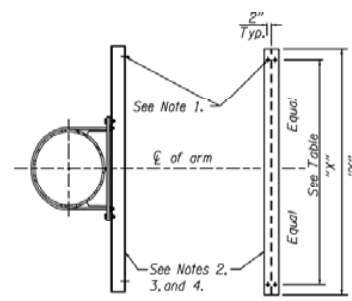
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
44.00	LF	Linear Unit Cost	3,913.64		4,502.27			
		SUBTOTAL		155,000		178,300		
		PERCENT MOBILIZATION	11.11	17,200	11.09	19,800		
		TOTAL		172,200		198,100		
DETAILS								
Sign Support								
25.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,800.00	45,000	2,506.67	62,667	3,540.00	1,800.00
15,073.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	7.30	110,000	7.67	115,667	8.29	7.30
Additional Items								
1.00	LS	METAL POLES AND FOUNDATIONS	10,000.00	10,000	10,200.00	10,200	12,600.00	8,000.00
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 5	30,000.00	30,000	36,333.33	36,333	43,000.00	30,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 5	90,000.00	90,000	76,000.00	76,000	90,000.00	53,000.00

CANTILEVER VMS SUPPORT DETAILS OLD OREGON TRAIL HWY (006)



NOTE: FIELD VERIFY ALL DIMENSIONS

Site	Structure Number	Mile Point	Station	Structure Design #	Post Length	Arm Length	Center of Sign			Hub Location			Drilled Shaft			VMS 2	VSL		
							ICL 1	ICL 2	ICL 3	"HB1"	"HB2"	"HB3"	Dia. (ft)	Depth (ft)	Req'd Rock Socket (ft)				
7	23565	221.57 WB	762+82.00 Rt	1 M621	(LP)	(LA)	(ICL 1)	(ICL 2)	(ICL 3)	"HB1"	"HB2"	"HB3"	5	30'-0"	10'-0"	7'-3 3/8"	7'-11 3/8"	5'-3 1/8"	5'-11 1/8"
9	23566	222.54 WB	813+57.00 Rt	9	24'-0"	14'-0"	21'-10"	13'-5"	5'-6"	14'-9"	20'-6"	5'-6"	5	30'-0"	N/A	7'-3 3/8"	7'-11 3/8"	5'-3 1/8"	5'-11 1/8"

VMS LIFTING DETAIL
No ScaleVMS LIFTING DETAIL
No ScaleVERTICAL SIGN SUPPORT
No Scale

GENERAL NOTES:

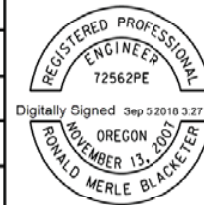
1. Use temporary shoring as required.
2. Field verify all dimensions, lengths, offsets, and elevations before fabrication.
3. Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the center.
4. Engineer to provide exact location of structure prior to construction.
5. When lifting display with lift eyes use a spreader beam to ensure vertical reactions at the lift eyes. See VMS Lifting Details.
6. See Legend & Symbols on Dwg. KAO1.
7. Install signs after vertical sign supports have been installed and all bolts have been 100% tightened. Bottom of signs shall be horizontal.

NOTES

1. Contractor to provide all bolts, nuts, shims, and washers required to connect the sign to the sign mount.
2. Contractor shall verify vertical spacing of manufacturer supplied Z-brackets prior to drilling the vertical supports. Provide (4) 1/2" holes for 5/8" fasteners. Tighten 5/8" diameter nuts to 97 ft-lb torque. The field drilled holes are to be centered on the VMS Z-Bracket flange no closer than 2" from the end.
3. Bolts and rods connecting galvanized steel members to aluminum members shall be stainless steel and meet the requirements of ASTM A193 Class 2 Grade 8B. Nuts used with A193 bolts shall be heavy hex, and shall meet the requirements of ASTM A194 Grade 8B with supplementary requirement "S1". Use a stainless steel flatwasher and double nut at each bolt.
4. When attaching aluminum Z-brackets to steel support posts use 1/16" thick stainless steel shims (ASTM A240 Type 304) over full contact area between the dissimilar metals. Tighten 5/8" diameter nuts to 97 ft-lb torque.

Accompanied by dwgs. TM621, TM623, TM624, TM625, TM626, TM627, TM628, TM690, TM691

STRUCTURE NO.	See Table
BOS DWG NO.	102051
HWY: 006	
M.A.: VARIES	
COUNTY	UMATILLA
ITS DWG. NO.	ITS-2774



RENEW: 12-31-2019

OREGON DEPARTMENT
OF TRANSPORTATIONI-84: NE OR SNOW ZONE SAFETY
IMPROVEMENTS PROJECT
OLD OREGON TRAIL HIGHWAY
UMATILLA & UNION COUNTIESDesigner: RON BLACKETER
Drafter: RON BLACKETERReviewer: BLAINE VAN DYKE
Checker: DOUG SPENCERINTELLIGENT TRANSPORTATION SYSTEMS
STRUCTURE DETAILSSHEET NO.
KC04

BRIDGE NAME:	its_Hwy6_SS_MP221.57	BRIDGE NO:	23565	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
44.00	LF	Linear Unit Cost	4,204.55		5,011.36			
		SUBTOTAL		166,500		198,500		
		PERCENT MOBILIZATION	11.11	18,500	11.09	22,000		
		TOTAL		185,000		220,500		
DETAILS								
Sign Support								
30.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,500.00	45,000	2,333.33	70,000	3,500.00	1,500.00
14,820.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	7.42	110,000	7.78	115,333	8.43	7.42
Additional Items								
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 7	25,000.00	25,000	28,333.33	28,333	30,000.00	25,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 7	11,500.00	11,500	13,166.67	13,167	18,000.00	10,000.00

BRIDGE NAME:	its_Hwy6WB_SS_MP222.54	BRIDGE NO:	23566	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
44.00	LF	Linear Unit Cost	4,129.55		4,759.09			
		SUBTOTAL		163,500		188,500		
		PERCENT MOBILIZATION	11.11	18,200	11.09	20,900		
		TOTAL		181,700		209,400		
DETAILS								
Sign Support								
30.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,450.00	43,500	2,293.33	68,800	3,500.00	1,450.00
14,820.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	8.10	120,000	8.07	119,667	8.57	7.56
Additional Items								
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 9	25,000.00	25,000	30,000.00	30,000	35,000.00	25,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 9	12,000.00	12,000	17,000.00	17,000	27,000.00	12,000.00

BRIDGE NAME:	its_Hwy6WB_SS_MP223.52	BRIDGE NO:	23567	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

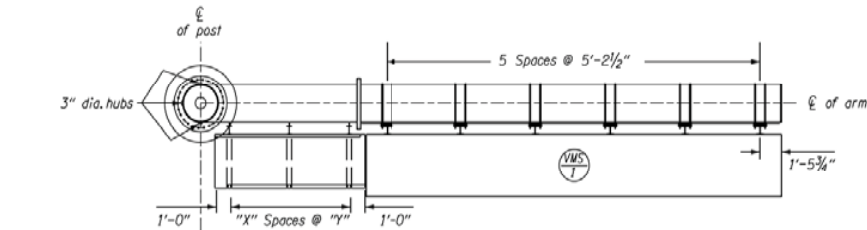
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
44.00	LF	Linear Unit Cost	4,263.64		4,804.55			
		SUBTOTAL		168,800		190,300		
		PERCENT MOBILIZATION	11.11	18,800	11.09	21,100		
		TOTAL		187,600		211,400		
DETAILS								
Sign Support								
25.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,950.00	48,750	2,840.00	71,000	4,000.00	1,950.00
14,910.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	8.05	120,000	8.00	119,333	8.45	7.51
Additional Items								
1.00	LS	METAL POLES AND FOUNDATIONS	10,000.00	10,000	10,000.00	10,000	12,000.00	8,000.00
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 10	25,000.00	25,000	37,666.67	37,667	45,000.00	25,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 10	90,000.00	90,000	77,666.67	77,667	90,000.00	53,000.00

BRIDGE NAME:	its_Hwy6EB_SS_MP225.24	BRIDGE NO:	23568	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

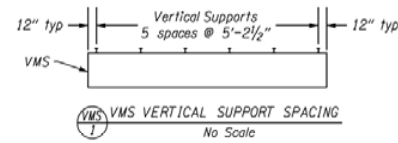
PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
44.00	LF	Linear Unit Cost	3,888.64		4,511.36			
		SUBTOTAL		154,000		178,700		
		PERCENT MOBILIZATION	11.11	17,100	11.09	19,800		
		TOTAL		171,100		198,500		
DETAILS								
Sign Support								
20.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	2,200.00	44,000	3,133.33	62,667	4,200.00	2,200.00
14,885.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	7.39	110,000	7.79	116,000	8.46	7.39
Additional Items								
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 12	42,500.00	42,500	57,166.67	57,167	70,000.00	42,500.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 12	10,000.00	10,000	14,000.00	14,000	20,000.00	10,000.00

CANTILEVER VMS SUPPORT DETAILS OLD OREGON TRAIL HWY (006)



PLAN
No Scale

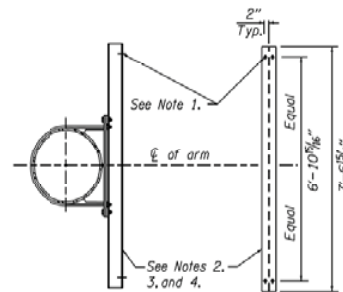
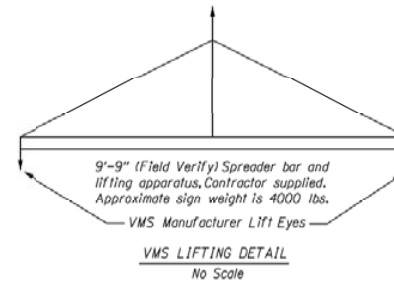


GENERAL NOTES:

1. Use temporary shoring as required.
2. Field verify all dimensions, lengths, offsets, and elevations before fabrication.
3. Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the center.
4. Engineer to provide exact location of structure prior to construction.
5. When lifting display with lift eyes use a spreader beam to ensure vertical reactions at the lift eyes. See VMS Lifting Details.
6. See Legend & Symbols on Dwg. KA01.
7. Install signs after vertical sign supports have been installed and all bolts have been 100% tightened. Bottom of signs shall be horizontal.

NOTES

1. Contractor to provide all bolts, nuts, shims, and washers required to connect the sign to the sign mount.
2. Contractor shall verify vertical spacing of manufacturer supplied Z-brackets prior to drilling the vertical supports. Provide (4) 1/4" holes for 5/8" fasteners. Tighten 5/8" diameter nuts to 97 ft-lb torque. The field drilled holes are to be centered on the VMS Z-Bracket flange no closer than 2" from the end.
3. Bolts and rods connecting galvanized steel members to aluminum members shall be stainless steel and meet the requirements of ASTM A193 Class 2 Grade 8B. Nuts used with A193 bolts shall be heavy hex, and shall meet the requirements of ASTM A194 Grade 8M with supplementary requirement "S1". Use a stainless steel flatwasher and double nut at each bolt.
4. When attaching aluminum Z-brackets to steel support posts use 1/16" thick stainless steel shims (ASTM A240 Type 304) over full contact area between the dissimilar metals. Tighten 5/8" diameter nuts to 97 ft-lb torque.



VERTICAL SIGN SUPPORT
No Scale

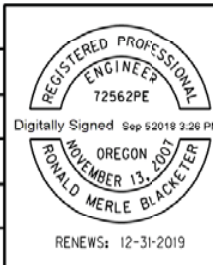
Accompanied by dvgs. TM621, TM622, TM623, TM624, TM626, TM628, TM690, TM691

NOTE: FIELD VERIFY ALL DIMENSIONS

Site	Structure Number	Mile Point	Station	County	Structure Design #	Post Length (LP)	Arm Length (LA)	Center of Sign (CL 1)	Hub Location ("HB")	Radar Speed Sensor	Walkway "x" "y"	Drilled Shaft		
												Dia. (ft)	Depth (ft)	Req'd Rock Socket (ft)
13	23569	224.59 WB	921+79.92 Rt	Umatilla	TM621	9' 23'-0"	40'-6"	26'-1"	13'-6"	No	2 4'-2"	5 35'-0"	8'-0"	
22	23574	251.59 EB	559+00.00 Lt	Union	9	9' 23'-0"	40'-6"	26'-1"	13'-6"	Yes	2 4'-2"	5 35'-0"	N/A	
23	23575	259.97 WB	76+54.33 Rt	Union	9	9' 22'-5"	44'-8 1/4"	30'-3"	17'-6"	Yes	3 4'-2"	5 30'-0"	N/A	

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STRUCTURE NO.	See Table
BOS DWG NO.	102033
HWY: 006	
M.P.: VARIES	
COUNTY	See Table
ITS DWG. NO.	ITS-2772



RENEW: 12-31-2019

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

OREGON DEPARTMENT
OF TRANSPORTATION



I-84: NE OR SNOW ZONE SAFETY
IMPROVEMENTS PROJECT
OLD OREGON TRAIL HIGHWAY
UMATILLA & UNION COUNTIES

Designer: RON BLACKETER Reviewer: BLAINE VAN DYKE
Checker: DOUG SPENCER

INTELLIGENT TRANSPORTATION SYSTEMS
STRUCTURE DETAILS

SHEET NO.
KC02

BRIDGE NAME:	its_Hwy6WB_SS_MP224.59	BRIDGE NO:	23569	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

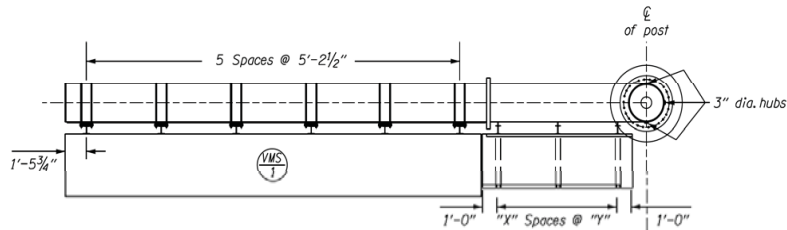
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
40.50	LF	Linear Unit Cost	3,812.35		4,664.20			
		SUBTOTAL		139,000		170,000		
		PERCENT MOBILIZATION	11.11	15,400	11.09	18,900		
		TOTAL		154,400		188,900		
DETAILS								
Sign Support								
35.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,400.00	49,000	2,133.33	74,667	3,250.00	1,400.00
14,075.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	6.39	90,000	6.77	95,333	8.17	5.75
Additional Items								
1,040.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 13	17,500.00	18,200,000	28,500.00	29,640,000	35,000.00	17,500.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 13	11,500.00	11,500	11,166.67	11,167	12,000.00	10,000.00

BRIDGE NAME:	its_Hwy6EB_SS_MP228.58	BRIDGE NO:	23570	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

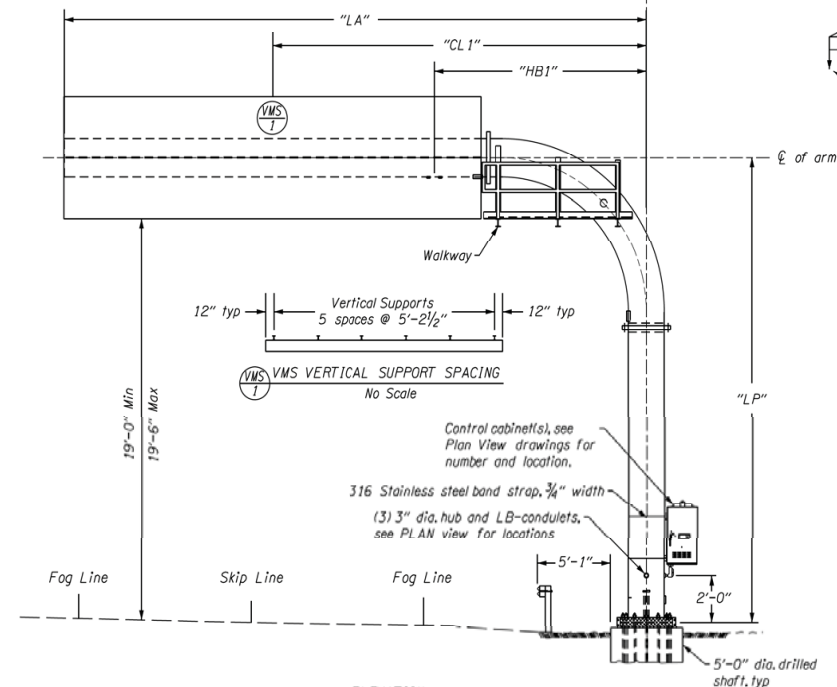
PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
44.00	LF	Linear Unit Cost	3,736.36		4,300.00			
		SUBTOTAL		148,000		170,300		
		PERCENT MOBILIZATION	11.11	16,400	11.09	18,900		
		TOTAL		164,400		189,200		
DETAILS								
Sign Support								
20.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,900.00	38,000	2,716.67	54,333	3,750.00	1,900.00
14,820.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	7.42	110,000	7.83	116,000	8.50	7.42
Additional Items								
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 15	30,000.00	30,000	40,333.33	40,333	50,000.00	30,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 15	11,000.00	11,000	12,000.00	12,000	13,000.00	11,000.00

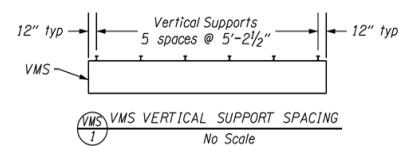
CANTILEVER VMS SUPPORT DETAILS OLD OREGON TRAIL HWY (006)



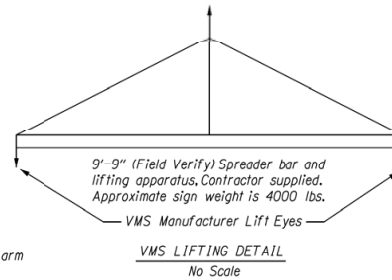
PLAN
No Scale



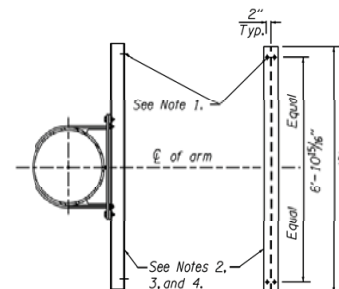
ELEVATION
No Scale



VMS VERTICAL SUPPORT SPACING
No Scale



VMS LIFTING DETAIL
No Scale



VERTICAL SIGN SUPPORT
No Scale

GENERAL NOTES:

1. Use temporary shoring as required.
2. Field verify all dimensions, lengths, offsets, and elevations before fabrication.
3. Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the center.
4. Engineer to provide exact location of structure prior to construction.
5. When lifting display with lift eyes use a spreader beam to ensure vertical reactions at the lift eyes. See VMS Lifting Details.
6. See Legend & Symbols on Dwg. KA01.
7. Install signs after vertical sign supports have been installed and all bolts have been 100% tightened. Bottom of signs shall be horizontal.

NOTES

1. Contractor to provide all bolts, nuts, shims, and washers required to connect the sign to the sign mount.
2. Contractor shall verify vertical spacing of manufacturer supplied Z-brackets prior to drilling the vertical supports. Provide (4) 1/16\"/>

NOTE: FIELD VERIFY ALL DIMENSIONS

Site	Structure Number	Mile Point	Station	Structure Design #	Post Length	Arm Length	Center of Sign	Hub Location	Walkway	Drilled Shaft			
										Dia. (ft)	Depth (ft)	Req'd Rock Socket (ft)	Actual (ft)
17	23571	229.87 WB	411+66.00 Lt	TM621	(LP)	(LA)	(CL 1)	"HB1"	"X"	"Y"	5	20'-0"	15'-0"
				9	23'-2 3/4"	40'-6"	26'-1"	13'-6"	2	4'-2"			

Accompanied by dwgs. TM621, TM622, TM623, TM624, TM626, TM628, TM690, TM691

STRUCTURE NO.	23571
BOS DWG NO.	102060
HWY: 006 (WB)	M.P.: 229.87
COUNTY	UMATILLA
ITS DWG. NO.	ITS-2771



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RENEWS: 12-31-2019

OREGON DEPARTMENT
OF TRANSPORTATION



I-84: NE OR SNOW ZONE SAFETY
IMPROVEMENTS PROJECT
OLD OREGON TRAIL HIGHWAY
UMATILLA & UNION COUNTIES

Designer: RON BLACKETER Reviewer: BLAINE VAN DYKE
Drafter: RON BLACKETER Checker: DOUG GPCNGER

INTELLIGENT TRANSPORTATION SYSTEMS
STRUCTURE DETAILS

SHEET NO.
KC01

BRIDGE NAME:	its_Hwy6WB_SS_MP229.87	BRIDGE NO:	23571	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

40.50	LF	Linear Unit Cost	3,977.78		4,614.81			
		SUBTOTAL		145,000		168,200		
		PERCENT MOBILIZATION	11.11	16,100	11.09	18,700		
		TOTAL		161,100		186,900		

DETAILS

Sign Support

20.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	2,750.00	55,000	3,633.33	72,667	4,650.00	2,750.00
14,075.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	6.39	90,000	6.79	95,500	8.17	5.79

Additional Items

1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 17	100,000.00	100,000	71,000.00	71,000	100,000.00	53,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 17	11,500.00	11,500	11,833.33	11,833	12,000.00	11,500.00

BRIDGE NAME:	its_Hwy6WB_SS_MP237.86	BRIDGE NO:	23572	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Sign_Support

44.00	LF	Linear Unit Cost	4,225.00		4,884.09			
SUBTOTAL				167,300		193,400		
PERCENT MOBILIZATION			11.11	18,600	11.09	21,500		
TOTAL				185,900		214,900		

DETAILS

Sign Support

35.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,350.00	47,250	2,116.67	74,083	3,250.00	1,350.00
14,885.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	8.06	120,000	8.02	119,333	8.46	7.52

Additional Items

1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 19	25,000.00	25,000	31,166.67	31,167	35,000.00	25,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 19	11,500.00	11,500	14,166.67	14,167	19,000.00	11,500.00

BRIDGE NAME:	its_Hwy6EB_SS_MP239.89	BRIDGE NO:	23573	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
44.00	LF	Linear Unit Cost	3,877.27		4,670.45			
		SUBTOTAL		153,500		185,000		
		PERCENT MOBILIZATION	11.11	17,100	11.09	20,500		
		TOTAL		170,600		205,500		
DETAILS								
Sign Support								
30.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,450.00	43,500	2,300.00	69,000	3,500.00	1,450.00
14,935.00	FOOT	MONOTUBE CANTILEVER SIGN STRUCTURES	7.37	110,000	7.77	116,000	8.44	7.37
Additional Items								
1.00	LS	METAL POLES AND FOUNDATIONS	10,000.00	10,000	10,666.67	10,667	14,000.00	8,000.00
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 20	55,000.00	55,000	68,000.00	68,000	75,000.00	55,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 20	85,000.00	85,000	76,166.67	76,167	90,000.00	53,500.00

BRIDGE NAME:	its_Hwy6EB_SS_MP251.59	BRIDGE NO:	23574	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Union	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

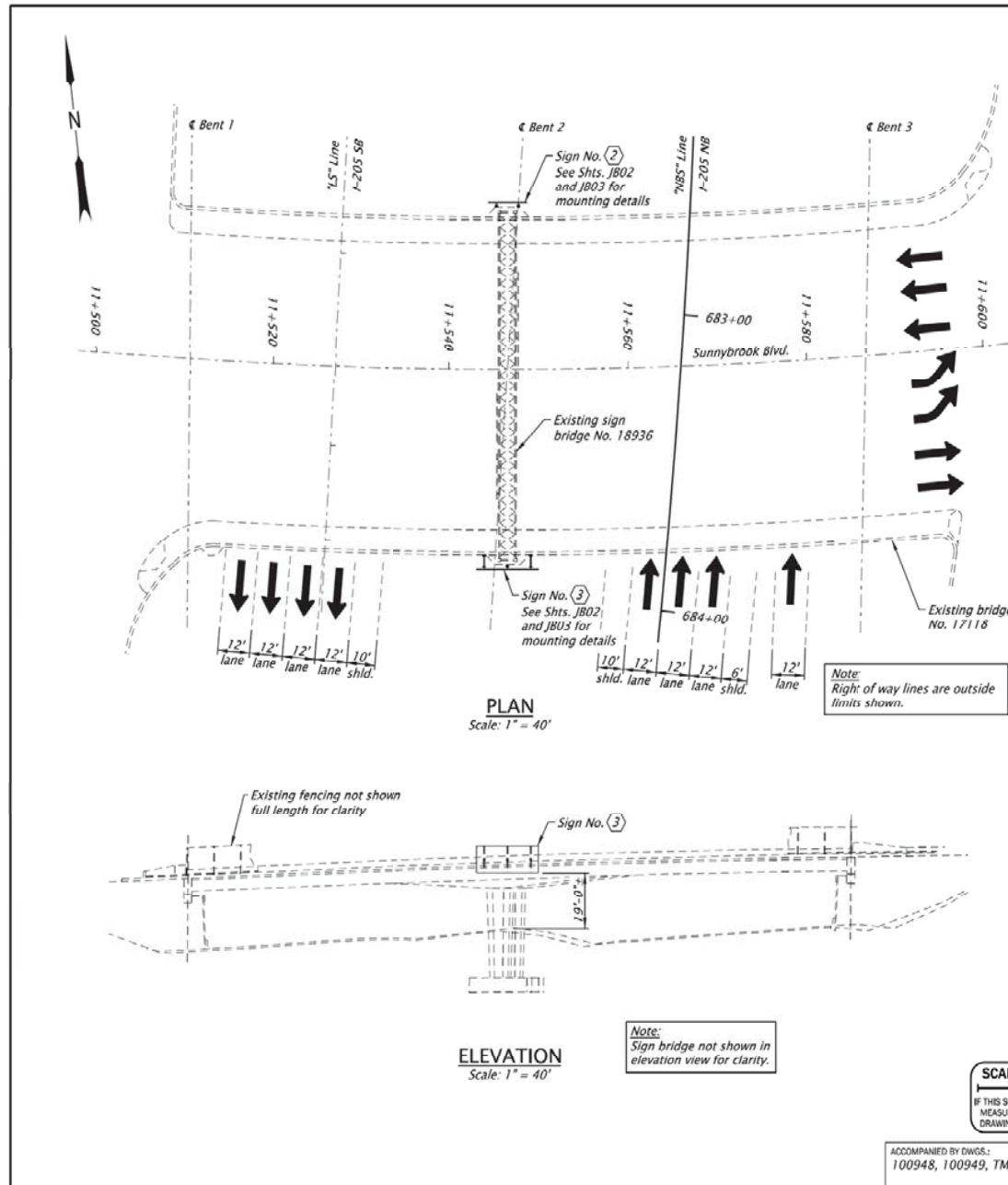
PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
40.50	LF	Linear Unit Cost	3,767.90		4,651.85			
		SUBTOTAL		137,300		169,600		
		PERCENT MOBILIZATION	11.11	15,300	11.09	18,800		
		TOTAL		152,600		188,400		
DETAILS								
Sign Support								
35.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,350.00	47,250	2,116.67	74,083	3,250.00	1,350.00
14,075.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	6.39	90,000	6.79	95,500	8.17	5.79
Additional Items								
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 22	32,500.00	32,500	43,500.00	43,500	60,000.00	32,500.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 22	11,000.00	11,000	11,333.33	11,333	13,000.00	10,000.00

BRIDGE NAME:	its_Hwy6WB_SS_MP259.97	BRIDGE NO:	23575	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Union	CONTR #	15116
PRIMARY PROJ:	Sign Support	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Sign_Support								
44.73	LF	Linear Unit Cost	3,315.45		4,118.04			
		SUBTOTAL		133,500		165,800		
		PERCENT MOBILIZATION	11.11	14,800	11.09	18,400		
		TOTAL		148,300		184,200		
DETAILS								
Sign Support								
30.00	FOOT	60 INCH DIAMETER SIGN SUPPORT DRILLED SHAFT FOUNDATION	1,450.00	43,500	2,300.00	69,000	3,500.00	1,450.00
14,642.00	LB	MONOTUBE CANTILEVER SIGN STRUCTURES	6.15	90,000	6.61	96,833	7.92	5.77
Additional Items								
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 23	35,000.00	35,000	43,666.67	43,667	60,000.00	35,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 23	11,500.00	11,500	13,833.33	13,833	18,000.00	11,500.00

**General Notes:**

Provide all materials and workmanship according to the Oregon Standard Specifications for Construction 2018 and the Special Provisions. Structure mounts are designed in accordance with the AASHTO Standard Specifications for Highway Signs, Luminaires and Traffic Signals, Fifth Edition.

Basic wind speed (3 second gust) used for design is 95 mph, $I_r = 1.0$, $C_v = 1.0$, $K_z = 0.94$, $G = 1.14$. Exposure C was assumed for design.

All high strength bolts shall be considered slip critical and tightened according to the Special Provisions. Design slip resistance for bolts shall conform to the Bolt Specifications for Class C (slip coefficient = 0.33). See Dwg. TM616 for typical high strength bolt connection (steel to steel).

All fasteners shall be ASTM A325 and hot-dip galvanized unless noted otherwise. High strength bolts shall conform to ASTM A325, Type I. Nuts for high strength bolts shall be heavy hex and conform to ASTM A563 Grade DH, with supplementary requirements S1 and S2. Hardened steel washers shall conform to ASTM F436, Type I. Use washers under turning element in tightening unless otherwise specified. All structural steel shall be hot-dip galvanized after fabrication.

HSS sections shall be ASTM A500, Grade B.

S shapes, angles and plates shall be ASTM A36 or A992.

All structural welding shall conform to AWS D1.1.

Contractor shall verify conditions, work, location, elevations and all dimensions prior to beginning fabrication.

Existing traffic lanes and structural dimensions shown are approximate and should not be used as a basis for development of fabrication drawings.

See Traffic Plans for sign information.

Oregon law requires the rules set forth in GAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-322-2344 or 811.

Construction Notes:

Bottom of signs shall be horizontal.

Signs to be mounted in median, centered on bulb-out for existing sign bridge.

Do not install sign until after support structure is constructed and bolt tightening is 100% complete.

Fabrication drawings shall be based on the Contractor's field measurements.

Contractor to provide erosion control measures as needed.



STRUCTURE NO.
17118
BOS DWG NO.
100947
CALC. BOOK
7018
HWY: 205
M.P.: 13.30
COUNTY
Clackamas
DATE
8/2018

REGISTERED PROFESSIONAL
ENGINEER
85555
Digitally Signed 2018.08.14
13:07:40-07'00'
OREGON
MICHAEL G. McNULTY
EXPIRES: 12/31/2018

CORPORATE OFFICE: 900 COUNTRY CLUB ROAD, SUITE 1000 EUGENE, OREGON 97401-6000 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VINICOLA, WASHINGTON www.obec.com		
CONSULTING ENGINEERS		
SE SUNNYBROOK ROAD OVER HWY 64 I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC.		
EAST PORTLAND FREEWAY CLACKAMAS COUNTY		
Designer: Michael McNulty, P.E. Drafter: Yuhua Guzman	Reviewer: Robert Goodrich, P.E. Checker: Kevin Barnes	SHEET NO. JB01
STRUCTURE MOUNTED SIGN SUPPORT EXISTING BRIDGE PLAN AND ELEVATION		

BRIDGE NAME:	SE Sunnybrook Road Over Hwy 64	BRIDGE NO:	17118	KEY NO:	19721
SECTION NAME:	I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC.	COUNTY:	Clackamas	CONTR #	15115
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/08/2018	FAP NO:	S064(056)
STRUCT TYPE:	RC BOX GIRDER - POST TENS	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Bridge Structure Mounts								
		SUBTOTAL		7,500		9,500		
		PERCENT MOBILIZATION	10.25	800	9.09	900		
		TOTAL		8,300		10,400		
DETAILS								
Bridge Structure Mounts								
1,120.00	LB	BRIDGE STRUCTURE MOUNTS	12.95	14,500	13.84	15,500	15.18	12.95

General Notes:

All materials and workmanship shall conform to the 2018 Oregon Standard Specifications for Construction and the Special Provisions. Structure mounts are designed in accordance with the 5th Edition (2009) of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 1st edition, 2015 and interim revisions 2017.

Basic wind speed (1700 year recurrence interval) used for sign structure design is 115 mph, $G = 1.14$, $K_z = 0.98$ and Exposure C were used for design.

The walkway is designed for a total of 500 lbs. of personnel and equipment in addition to the self-weight of the walkway.

All structural steel shapes shall conform to ASTM A572, Grade 50, or ASTM A992, unless noted otherwise. All structural plates shall conform to ASTM A572, Grade 50. All structural tubing shall conform to ASTM A500, Grade B.

All bolts shall be considered high strength (H.S.) and slip critical and tightened according to Section 00930.40(d)(2)a, unless noted otherwise. Design slip resistance for bolts shall conform to the Bolt Specifications for Class C (slip coefficient = 0.33). See Dwg. TM608 for typical high strength bolt connection (steel to steel) and Dwg. TM607 for notes on bolts, washers and nuts.

All fasteners shall be ASTM A325 unless otherwise noted. All steel and fasteners shall be hot-dip galvanized after fabrication, unless noted otherwise. The silicon content of the base metal shall be according to the Special Provisions for all hot-dip galvanized steel, unless noted otherwise.

Holes drilled in existing concrete shall be core drilled. Hammer drills shall not be used. Contractor shall avoid drilling through concrete reinforcement when possible by adjusting support locations slightly. Reinforcement location prior to drilling is required. Notify Engineer immediately if conflict exists.

Contractor shall field verify conditions, work, locations, elevations and all dimensions prior to beginning fabrication. Existing traffic lane and structural dimensions shown are approximate and should not be used as a basis for development of fabrication drawings.

See Intelligent Transportation Systems (ITS) Plans for sign information. See ITS Plans for VAS and related electrical conduit information.

All welding shall conform to the 2010 AWS D1.1.

See Technical Specifications for approved mechanical expansion anchors.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

Fence Notes:

All fence posts shall be installed normal to grade in the longitudinal direction and plumb in the transverse direction. All posts shall be leveled using leveling nuts and grout pads.

Chain link fabric shall be stretched and fastened to posts at 1' 2" and 2' 0" maximum on center to fence posts and brace rails, respectively.

Steel pipe for the fence posts shall conform to ASTM Specifications A53, Grade B. All other material for chain link fence (fabric, pipes, and hardware) shall conform to AASHTO Specification M181 unless noted otherwise on the contract plans.

Anchors shall be installed according to manufacturer's instructions. Anchor embedment shall be such that the required strength is achieved, but not less than 6". See ODOT Specifications 00535 for construction requirements.

Avoid existing sign and rail supports. Field verify.

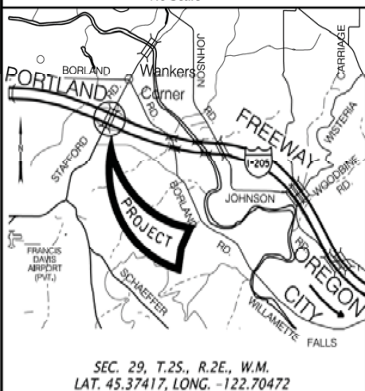
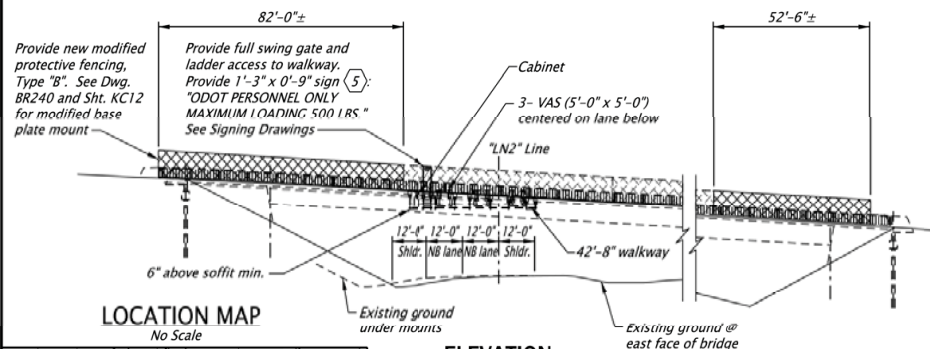
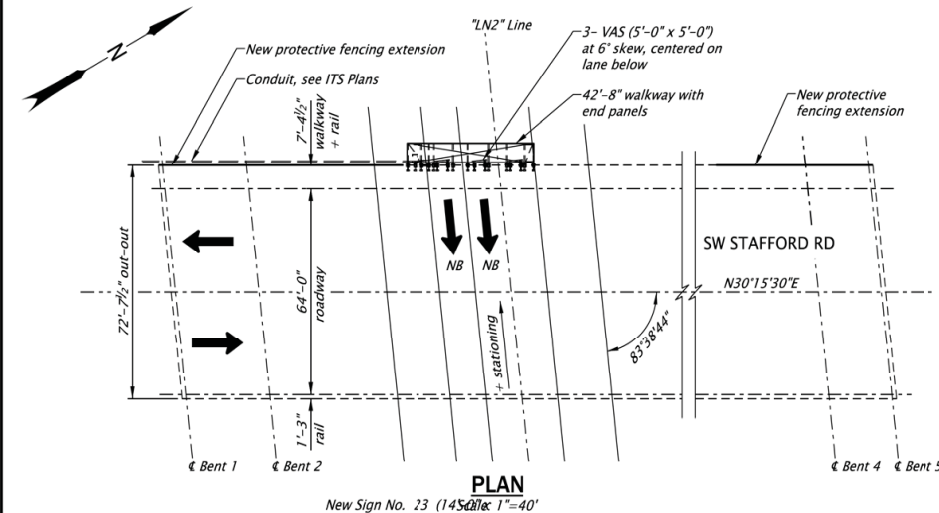
All resin bonded threaded anchors shall be hot-dip galvanized ASTM F1554, Grade 55 using high strength resin from the QPL. Fully fill hole with resin and provide double nuts.

Edge distance for resin bonded anchors shall be the manufacturer's specified minimum or as shown.

Chain link fabric to be within 1/4" of concrete surface where applicable (knuckle selvage at top and bottom of fence).

Provide one stretcher bar at the beginning and end of each run. Each run shall have no more than two fabric splices per run spaced at 50'-0".

Existing bridge plans located in Project Manager's office.

Construction Notes:

The bottom of the walkway shall be horizontal and 6" above bridge soffit unless noted otherwise.

Install signs on fully erected support structure. Do not install signs until after support structure erection and bolt tightening is 100% complete. Tighten resin bonded anchors 1/4" turn past snug tight.

The fabrication drawings shall be based on Contractor's field measurements.

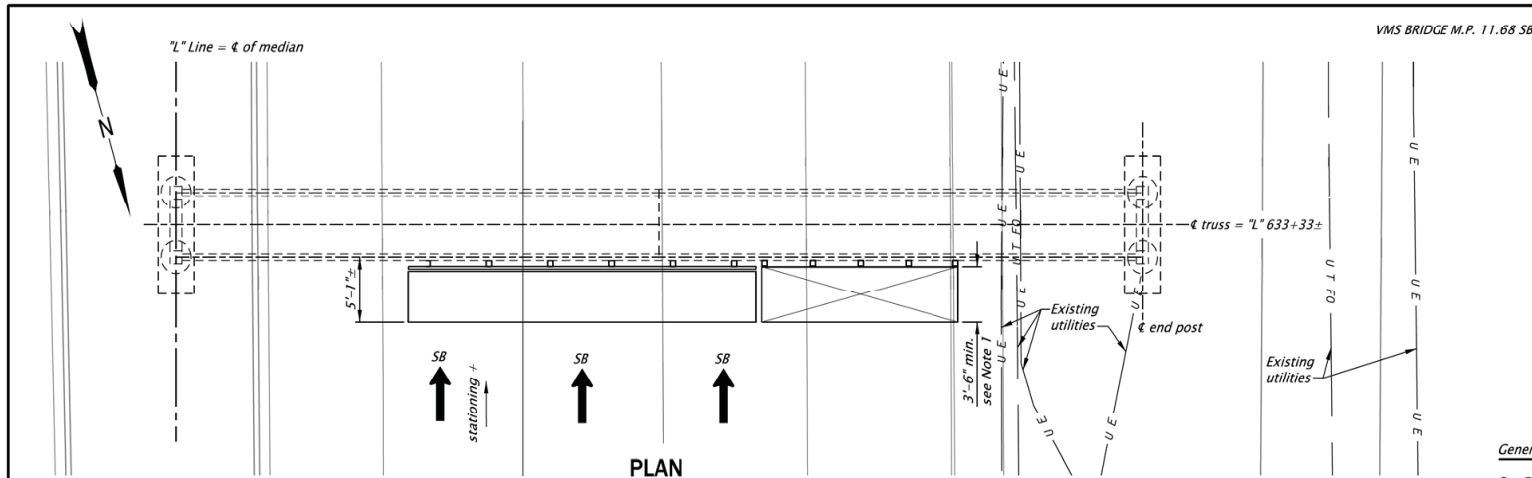
MOUNTS ON BRIDGE M.P. 3.16 NB

STRUCTURE NO. 09739 BOS DWG NO. 102598 CALC. BOOK 7084 HWY: 084 M.P.: 3.16 NB UNIT FILE CODE ITS-41 DATE/ISSUED NO. N/A		REGISTERED PROFESSIONAL ENGINEER 58885 Digitally Signed 2019.07.11 08:33:08 PST PETER GLEN SLOCUM MAY 10, 2005 EXPIRES: 06/30/20		Existing structure #09739 SITE M CORPORATE OFFICE: 300 COUNTRY CLUB ROAD, SUITE 100B BENDING, OREGON 97109-4000 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON Stafford Rd over Hwy 64 I-205: I-5 - OR213, PHASE 3 SEC. EAST PORTLAND FREEWAY CLACKAMAS & WASHINGTON COUNTIES Designer: Peter G. Slocum, P.E., S.E. Drafter: Yuko Garenzelli Reviewer: Jeff Bernardo, P.E. Checker: Wyatt Dean, E.I. INTELLIGENT TRANSPORTATION SYSTEMS - SITE PLANS SHEET NO. KC09	
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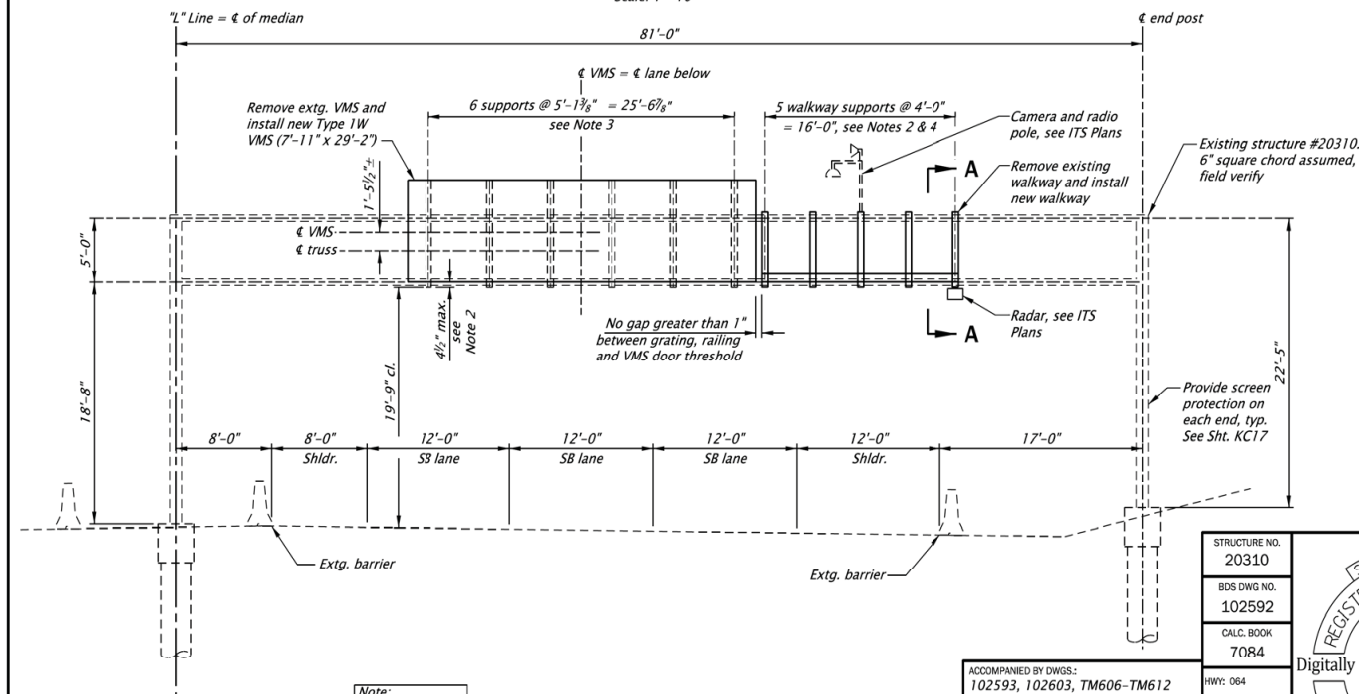
BRIDGE NAME:	Stafford Rd over Hwy 64	BRIDGE NO:	09739	KEY NO:	21400
SECTION NAME:	I-205: I-5 - OR213, PHASE 3 SEC.	COUNTY:	Clackamas	CONTR #	15163
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	09/19/2019	FAP NO:	S064(061)
STRUCT TYPE:	STEEL BOX GIRDER	# BIDS RECVD:	5	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		75,000		76,700		
		PERCENT MOBILIZATION	11.11	8,300	11.11	8,500		
		TOTAL		83,300		85,200		
Protective_Fencing								
134.50	LF	Linear Unit Cost	259.48		222.30			
		SUBTOTAL		31,400		26,900		
		PERCENT MOBILIZATION	11.11	3,500	11.11	3,000		
		TOTAL		34,900		29,900		
DETAILS								
Structure Mounts								
5,000.00	LB	BRIDGE STRUCTURE MOUNTS	15.00	75,000	15.33	76,667	16.00	15.00
Protective Fencing								
134.50	FOOT	8 FOOT TYPE B MODIFIED PROTECTIVE FENCE	200.00	26,900	166.67	22,417	250.00	50.00
1.00	EACH	8 FOOT X 30 INCH BRIDGE PROTECTIVE FENCE GATE	4,500.00	4,500	4,500.00	4,500	5,000.00	4,000.00
Additional Items								
1.00	LS	TEMPORARY WORK ACCESS AND CONTAINMENT	1.00	1	25,000.34	25,000	75,000.00	0.01
40.00	SQFT	BRIDGE REMOVAL WORK	150.00	6,000	219.88	8,795	384.63	125.00



PLAN
Scale: 1"=10'

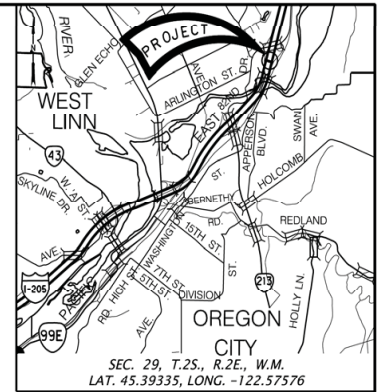


Note:
See Sht. KC02 for
Section A-A.

***TRUSS BRIDGE ELEVATION**

Scale: 1"=10' *Elevation view is looking
ahead on station, SB direction.

Note:
Elevations are based on the North
American Vertical Datum, 1988.



LOCATION MAP
No Scale

General Notes:

See Dwg. TM607 for General Notes.

See Dwgs. TM606 through TM612 for details not shown.

Field verify conditions, elevations, dimensions, and span
prior to fabrication.

See Intelligent Transportation Systems Plans for sign information.

Right of way line is outside limits of view.

Oregon law requires the rules set forth in OAR 952-001-0010
through 952-001-0090, adopted by the Oregon Utility Notification
Center, to be observed. Copies of these rules may be obtained
from the Center by calling 1-800-332-2344 or 811.

Notes:

1. Width to accommodate the approved VMS with fully 90°
opened door.
2. Mount new VMS and raised walkway no lower than 4 1/2" below
centerline of bottom chord of truss bridge.
3. Field verify spacing prior to fabrication. Reuse VMS
attachments welded to truss chord (ODOT Standard Plate A).
Bolt in new vertical supports with new Plate B and fasteners as
shown on Sht. KC02.
4. Position top of walkway grating to allow door to fully open
and match threshold.

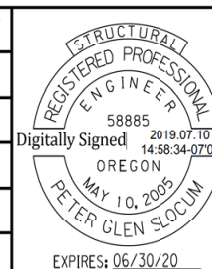
SITE A

STRUCTURE NO.	20310
BOS DWG NO.	102592
CALC. BOOK	70R4
HWY: 064	
M.P.: 11.68 SB	

ACCOMPANIED BY DWGS:
102593, 102603, TM606-TM612

SCALE WARNING
IF THIS SCALE LINE DOES NOT
MEASURE ONE INCH, THEN
DRAWING IS NOT TO SCALE

UNIT FILE CODE	ITS-35
DRY/TSSU NO.	N/A

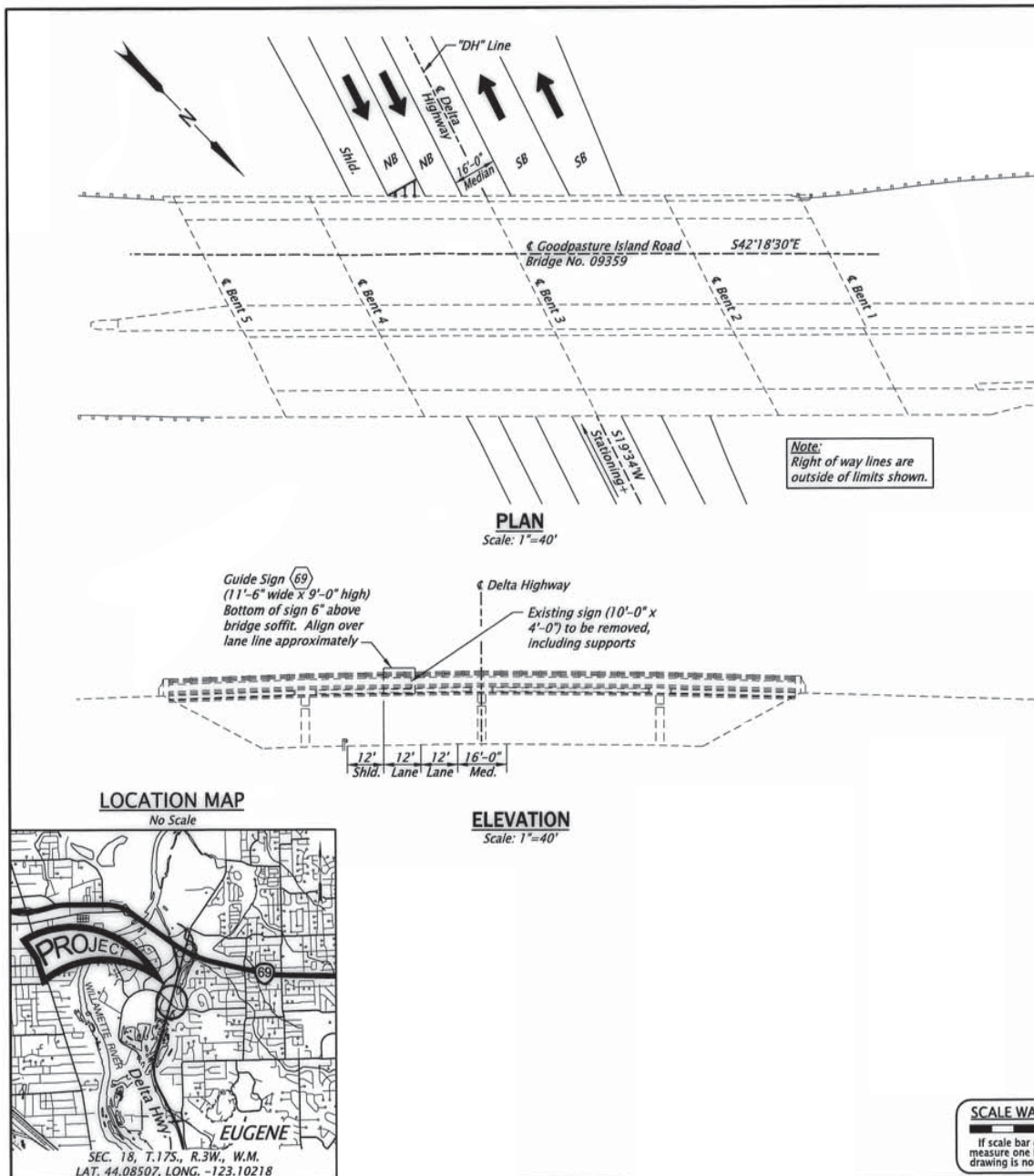


 OBEC CONSULTING ENGINEERS A DOWL LLC Company		CORPORATE OFFICE: 580 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-4000 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON Its_Hwy064_MP11.68	
I-205: I-5 - OR213, PHASE 3 SEC. EAST PORTLAND FREEWAY CLACKAMAS & WASHINGTON COUNTIES		Designer: Peter G. Slocum, P.E., S.E. Reviewer: Jeff Bernardo, P.E. Drafters: Yuko Gascarelli Checkers: Wyatt Dean, E.I.	
INTELLIGENT TRANSPORTATION SYSTEMS - SITE PLANS		SHEET NO. KC01	

BRIDGE NAME:	Sign Truss Br, Hwy 64 SB at MP 11.62 (VMS)	BRIDGE NO:	20310	KEY NO:	21400
SECTION NAME:	I-205: I-5 - OR213, PHASE 3 SEC.	COUNTY:	Clackamas	CONTR #	15163
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	09/19/2019	FAP NO:	S064(061)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	5	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		41,700		46,600		
		PERCENT MOBILIZATION	11.11	4,600	11.11	5,200		
		TOTAL		46,300		51,800		
DETAILS								
Structure Mounts								
1,800.00	LB	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURES	19.44	35,000	20.00	36,000	22.22	18.33
420.00	SQFT	GRAFFITI DETERRENT SCREENING	16.00	6,720	25.33	10,640	35.00	16.00
Additional Items								
1.00	LS	BRIDGE REMOVAL WORK	3,000.00	3,000	7,266.67	7,267	15,000.00	3,000.00
1.00	LS	ITS INSTALLATION, SITE A	40,000.00	40,000	44,333.33	44,333	50,000.00	40,000.00

**Construction Notes:**

The bottom of the signs shall be horizontal and 6" above bridge soffit unless noted otherwise.

Install signs on fully erected support structure. Do not install signs until after support structure erection and bolt tightening is 100% complete. Tighten resin bonded anchors $\frac{1}{4}$ turn past snug tight.

The fabrication drawings shall be based on Contractor's field measurements.

General Notes:

All materials and workmanship shall conform to the Oregon Standard Specifications for Construction 2018 and the Special Provisions. Structure mounts are designed in accordance with the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, First Edition, 2015, with 2017 Interim Revisions.

Basic wind speed (1700 year recurrence interval), used for sign structure design is 115 mph, $G = 1.14$, $K_z = 0.98$ and Exposure C were used for design.

All structural steel shapes shall conform to ASTM A572, Grade 50, unless noted otherwise. All structural plates shall conform to ASTM A36.

All bolts shall be considered high strength (H.S.) and slip critical and tightened according to Section 00930.40(d)(2)a, unless noted otherwise. Design slip resistance for bolts shall conform to the Bolt Specifications for Class C (slip coefficient = 0.33). See Dwg. TM608 for typical high strength bolt connection (steel to steel) and Dwg. TM607 for notes on bolts, washers and nuts.

All fasteners shall be ASTM A325 unless noted otherwise. All structural steel and fasteners shall be hot-dip galvanized after fabrication, unless noted otherwise. The silicon content of the base metal shall be in the ranges of 0.0% to 0.04% or 0.15% to 0.25% for all hot-dip galvanized steel, unless noted otherwise.

All resin bonded threaded anchors shall be hot-dip galvanized ASTM F1554, Grade 55 using high strength resin from the QPL. Fully fill hole with resin and provide double nuts. The minimum pullout strength is 4,500 lbs. with a minimum 6 inch embedment. Install anchors according to the manufacturer's directions and the Special Provisions.

Minimum edge distance to resin bonded anchors shall be manufacturer's specified minimum.

Holes drilled in existing concrete shall be core drilled. Hammer drills shall not be used. Contractor shall avoid drilling through concrete reinforcement. Reinforcement location prior to drilling is required. Notify Engineer immediately if conflict exists.

Contractor shall field verify conditions, work, locations, elevations and all dimensions prior to beginning fabrication.

Existing traffic lanes and structural dimensions shown are approximate and should not be used as a basis for development of fabrication drawings.

See Dwg. TM220, TM618 and TM675 for sign mounting details not shown.

See Traffic Plans for sign information.

All welding shall conform to the AWS D1.1.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center by calling 1-800-332-2344 or 811.

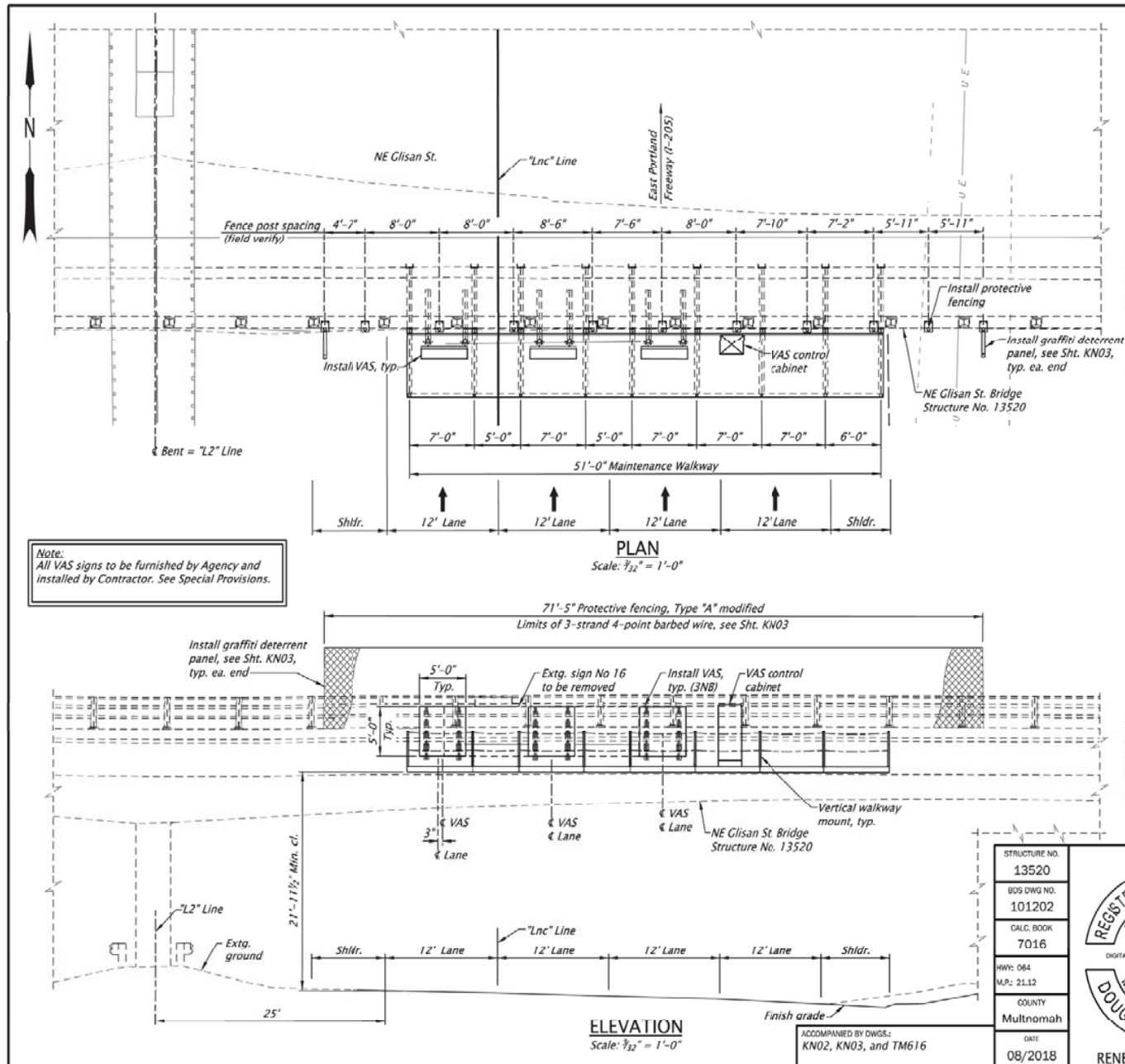
Accompanied by Drawings: LD02, TM220, TM607, TM608, TM618, TM675

STRUCTURE NO. 09359			CORPORATE OFFICE: 889 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089 REGIONAL OFFICES: LAKE OSWEGO, SALEM, MEDFORD, OREGON; VANCOUVER, WASHINGTON	
BIDS DWG NO. 102544				
CALC. BOOK 7076				
HWY: 069 M.P.: XXX				
UNIT FILE CODE S-18017				
DRY/ISSU NO. NA	EXPIRES: 06/30/2020	GOODPASTURE ISLAND RD. OVER HWY 69 OR569: BELTLINE @ DELTA HIGHWAY - INTERCHANGE SEC. BELTLINE HIGHWAY LAKE COUNTY		
Designer: Peter G. Slocum, P.E., S.E. Drafter: Yuka Garzenelli		Reviewer: Guy Hakanson, P.E. Checker: Wyatt Dean, E.I.		SHEET NO. LD01
PLAN AND ELEVATION		PLAN AND ELEVATION		

BRIDGE NAME:	Goodpasture Island Rd over Delta Hwy	BRIDGE NO:	009359	KEY NO:	19490
SECTION NAME:	OR569: BELTLINE @ DELTA HIGHWAY INTERCHANGE SEC.	COUNTY:	LANE	CONTR #	15159
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	08/29/2019	FAP NO:	S069(019)
STRUCT TYPE:	RC DECK GIRDER-PRECAST-TYPE II	# BIDS RECVD:	6	AWARDED TO:	HAMILTON CONSTRUCTION CO

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		13,900		14,300		
		PERCENT MOBILIZATION	10.62	1,500	10.83	1,500		
		TOTAL		15,400		15,800		
DETAILS								
Structure Mounts								
1,500.00	LB	BRIDGE STRUCTURE MOUNTS	9.28	13,925	9.54	14,308	10.00	9.28
Additional Items								
1.00	LS	REMOVE EXISTING BRIDGE - ATTACHED SIGNS	2,000.00	2,000	2,333.33	2,333	3,000.00	2,000.00



Construction Notes:
Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Install protective fencing and graffiti deterrent panels before installing VAS cabinets

Before drilling holes in existing concrete, locate reinforcing bars using non-destructive methods and adjust location to avoid reinforcing, as approved by engineer.

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions. Structure supports are designed in accordance with the First Edition (2015) of the "LRFD Specifications for Structure Supports for Highway Signs, Luminaires, and Traffic Signals" with the 2017 Interim Revisions, and the Special Provisions.

The maintenance walkway is designed for a 500 pound concentrated live load.

All structural plates, channels, and angles shall conform to ASIM A36, unless otherwise noted. All hollow structural sections (HSS) shall conform to ASTM A500, Grade B. All structural steel pipe shall conform to ASTM A53, Grade B. All other structural steel shapes shall conform to ASTM A992 or ASTM A572, Grade 50, unless otherwise noted. All structural steel shall be hot-dipped galvanized after fabrication, unless noted otherwise.

Provide and install ASTM F1554 Grade 105 resin bonded anchors with high strength resin from the QPL. Install anchors to the sizes and minimum embedments shown, according to the manufacturer's directions and the Special Provisions.

See Dwg. TM616 for typical high strength bolt connection (steel to steel) and Dwg. TM615 for notes on bolts, washers, nuts, and content requirements for base metal.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning fabrication. Existing structural dimensions shown are approximate.

See ITS plans for conduit locations.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

For Protective Fencing details not shown, see BR240.

SITE "N"

SCALE WARNING
If scale bar doesn't measure one inch then drawing is not to scale



LOCATION MAP

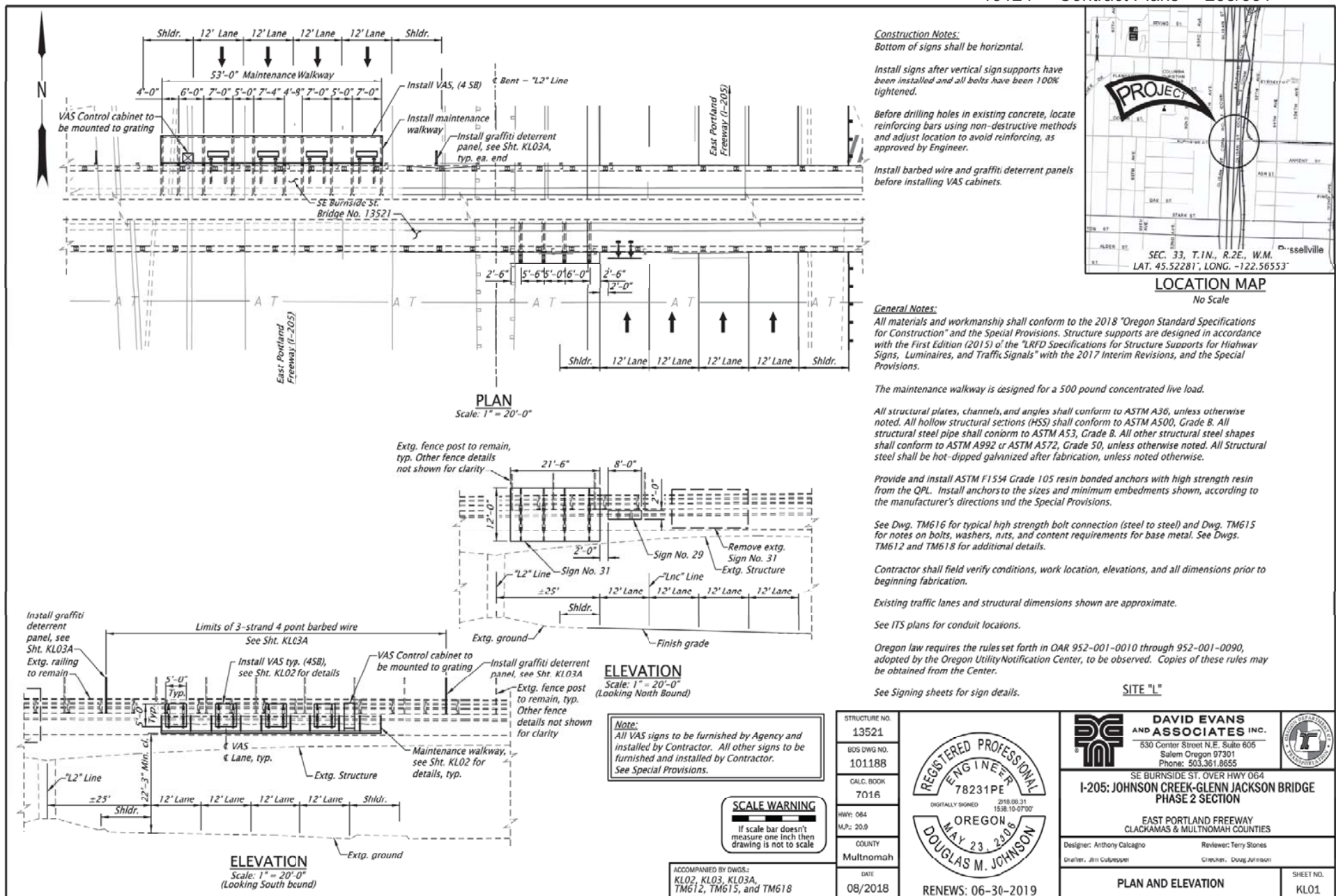
No Scale

STRUCTURE NO.	13520
SOS DWG NO.	101202
CALC. BOOK	7016
HWY: 064	
M.P.: 21.12	
COUNTY	Multnomah
DATE	08/2018



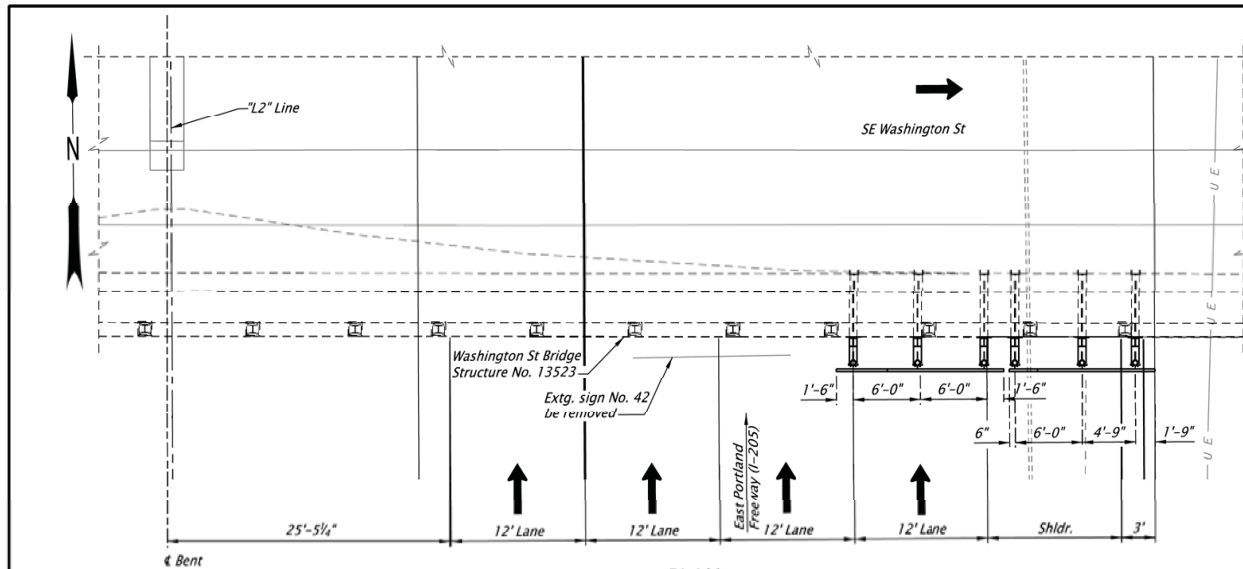
DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.361.8655	
NE GLISAN ST. OVER HWY 064 I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	
EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES	
Designer: Anthony Calcagno Drafter: Jim Culpepper	Reviewer: Terry Stones Checker: Doug Johnson
PLAN AND ELEVATION	
SHEET NO. KN01	

BRIDGE NAME:		NE Glisan Street over Hwy 64		BRIDGE NO:		13520		KEY NO:		21157	
SECTION NAME:		I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION		COUNTY:		Multnomah		CONTR #		15124	
PRIMARY PROJ:		Miscellaneous Proj		BID DATE:		11/29/2018		FAP NO:		S064(059)	
STRUCT TYPE:		RC BOX GIRDER - POST TENSN		# BIDS RECVD:		3		AWARDED TO:		KERR CONTRACTORS OREGON INC	
								PREPARED BY:			
				CONTRACT		3 LOW BIDDERS		SPREAD			
QTY		UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW	
Miscellaneous Project - Structure Mounts											
				SUBTOTAL		85,000		70,000			
				PERCENT MOBILIZATION	11.11	9,400	11.06	7,700			
				TOTAL		94,400		77,700			
DETAILS											
Structure Mounts											
8,500.00		LB	BRIDGE STRUCTURE MOUNTS		10.00	85,000	8.24	70,000	10.00	6.47	
Additional Items											
71.42		LS	4 FOOT TYPE CL-4 PROTECTIVE FENCE		31.00	2,214	30.33	2,166	32.00	28.00	



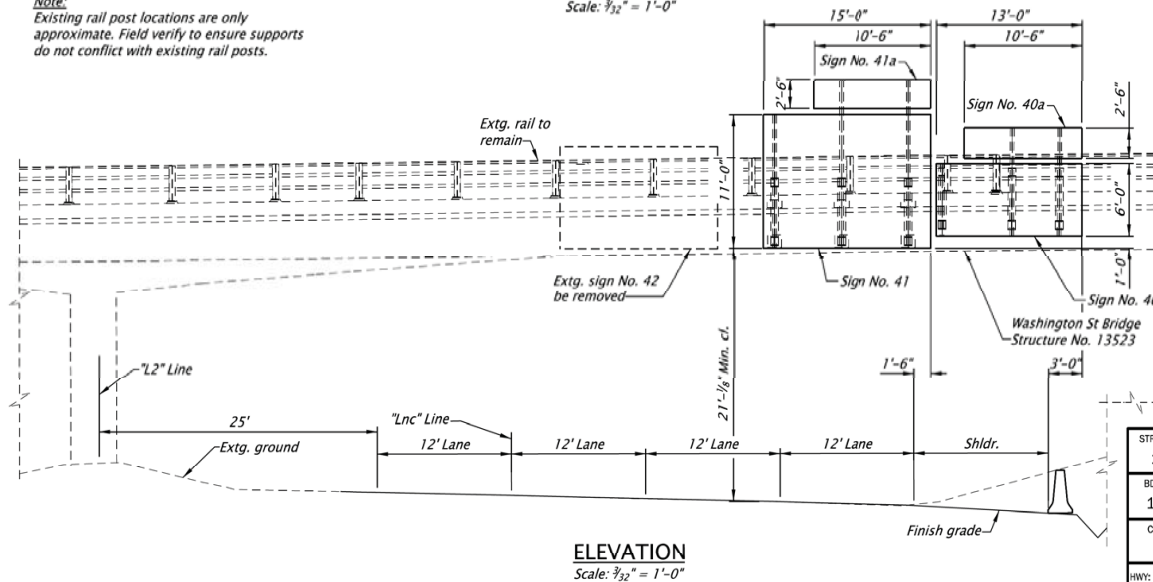
BRIDGE NAME:	E Burnside St over Hwy 64			BRIDGE NO:	13521	KEY NO:	21157	
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION			COUNTY:	Multnomah	CONTR #	15124	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	11/29/2018	FAP NO:	S064(059)	
STRUCT TYPE:	RC BOX GIRDER - POST TENSN			# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC	
						PREPARED BY:		

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		120,000		86,700		
		PERCENT MOBILIZATION	11.11	13,300	11.06	9,600		
		TOTAL		133,300		96,300		
DETAILS								
Structure Mounts								
14,100.00	LB	BRIDGE STRUCTURE MOUNTS	8.51	120,000	6.15	86,667	8.51	2.48



Note:
Existing rail post locations are only approximate. Field verify to ensure supports do not conflict with existing rail posts.

PLAN
Scale: $\frac{1}{32}'' = 1'-0''$



ELEVATION
Scale: $\frac{1}{32}'' = 1'-0''$

Construction Notes:
Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Before drilling holes in existing concrete, locate reinforcing bars using non-destructive method; and adjust location to avoid reinforcing, as approved by Engineer.

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions. Structure supports are designed in accordance with the First Edition (2015) of the "LRFD Specifications for Structure Supports for Highway Signs, Luminaires, and Traffic Signals" with the 2017 Interim Revisions, and the Special Provisions.

All structural plates, channels, and angles shall conform to ASTM A36, unless otherwise noted. All hollow structural sections (HSS) shall conform to ASTM A500, Grade B. All structural steel pipe shall conform to ASTM A53, Grade B. All other structural steel shapes shall conform to ASTM A992 or ASTM A572, Grade 50, unless otherwise noted. All Structural steel shall be hot-dipped galvanized after fabrication, unless noted otherwise.

Provide and install ASTM F1554 Grade 105 resin bonded anchors with high strength resin from the QPL. Install anchors to the sizes and minimum embedments shown, according to the manufacturer's directions and the Special Provisions.

See Dwg. TM616 for typical high strength bolt connection (steel to steel) and Dwg. TM615 for notes on bolts, washers, nuts, and content requirements for base metal. See Dwg. TM618 for sign support bracket.

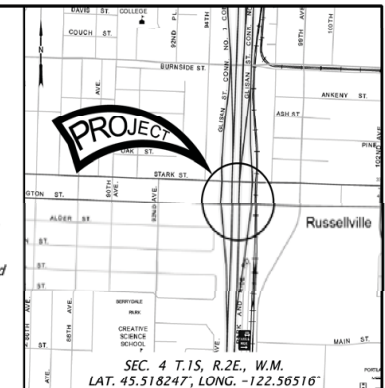
Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning fabrication.

Existing traffic lanes and structural dimensions shown are approximate.

See ITS plans for conduit locations.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

See Signing sheets for sign details.



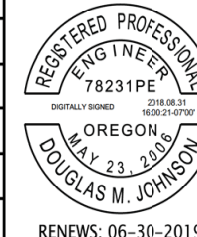
LOCATION MAP

No Scale

SITE "J"



STRUCTURE NO.	13523
BOS DWG NO.	101185
CALC. BOOK	7016
HWY: 064	
M.P.: 20.57	
COUNTY	Multnomah
DATE	08/2018

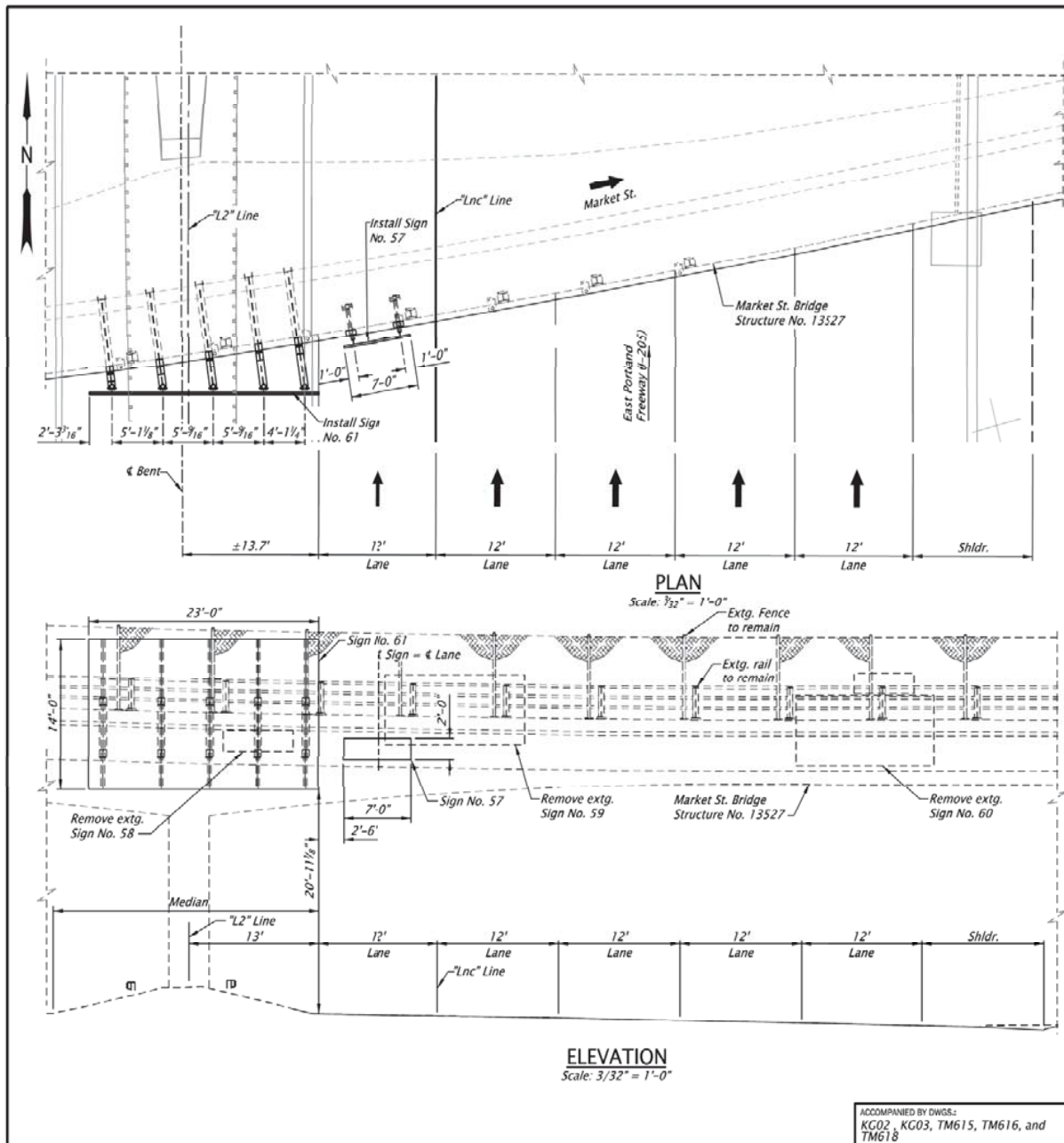


DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.361.8655	
WASHINGTON ST. OVER HWY 064 I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	
EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES	
Designer: Anthony Calcagno Drafter: Jim Culppepper	Reviewer: Terry Stones Checker: Doug Johnson
PLAN AND ELEVATION	
SHEET NO. KJ01	

BRIDGE NAME:	SE Washington St over Hwy 64	BRIDGE NO:	13523	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	RC BOX GIRDER - POST TENSN	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		40,000		28,300		
		PERCENT MOBILIZATION	11.11	4,400	11.06	3,100		
		TOTAL		44,400		31,400		
DETAILS								
Structure Mounts								
4,700.00	LB	BRIDGE STRUCTURE MOUNTS	8.51	40,000	6.03	28,333	8.51	3.19
Additional Items								
3,403.00	SQFT	CONCRETE SLOPE PAVING	10.00	34,030	20.33	69,194	41.00	10.00
110.00	FOOT	SLOPE PAVING CURBS	40.00	4,400	42.00	4,620	46.00	40.00

**Construction Notes:**

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.

Before drilling holes in existing concrete, locate reinforcing bars using non-destructive methods and adjust location to avoid reinforcing, as approved by Engineer.

**LOCATION MAP**

No Scale

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions. Structure supports are designed in accordance with the First Edition (2015) of the "LRFD Specifications for Structure Supports for Highway Signs, Luminaires, and Traffic Signals" with the 2017 Interim Revisions, and the Special Provisions.

All structural plates, channels, and angles shall conform to ASTM A36, unless otherwise noted. All hollow structural sections (HSS) shall conform to ASTM A500, Grade B. All structural steel pipe shall conform to ASTM A53, Grade B. All other structural steel shapes shall conform to ASTM A992 or ASTM A572, Grade 50, unless otherwise noted. All Structural steel shall be hot-dipped galvanized after fabrication, unless noted otherwise.

Provide and install ASTM F1554 Grade 105 resin bonded anchors with high strength resin from the QPL. Install anchors to the sizes and minimum embedments shown, according to the manufacturer's directions and the Special Provisions.

See Dwg. TM616 for typical high strength bolt connection (steel to steel) and Dwg. TM615 for notes on bolts, washers, nuts, and content requirements for base metal.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning fabrication.

Existing traffic lanes and structural dimensions shown are approximate.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

See Signing plans for sign details.

SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

SITE "G"

STRUCTURE NO.	13527
BOS DWG NO.	101175
CALC. BOOK	7016
HWY: 064	
M.P.: 20.1	
COUNTY	Multnomah
DATE	08/2018



DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655



MARKET ST. OVER HWY 064
I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION

EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES

Designer: Anthony Calcagno
Checker: Jim Cullis

Reviewer: Terry Stones
Checker: Doug Johnson

PLAN AND ELEVATION

SHEET NO.
KG01

BRIDGE NAME:	SE Market St over Hwy 64 at MP 20.06	BRIDGE NO:	13527	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	RC BOX GIRDER - POST TENSN	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

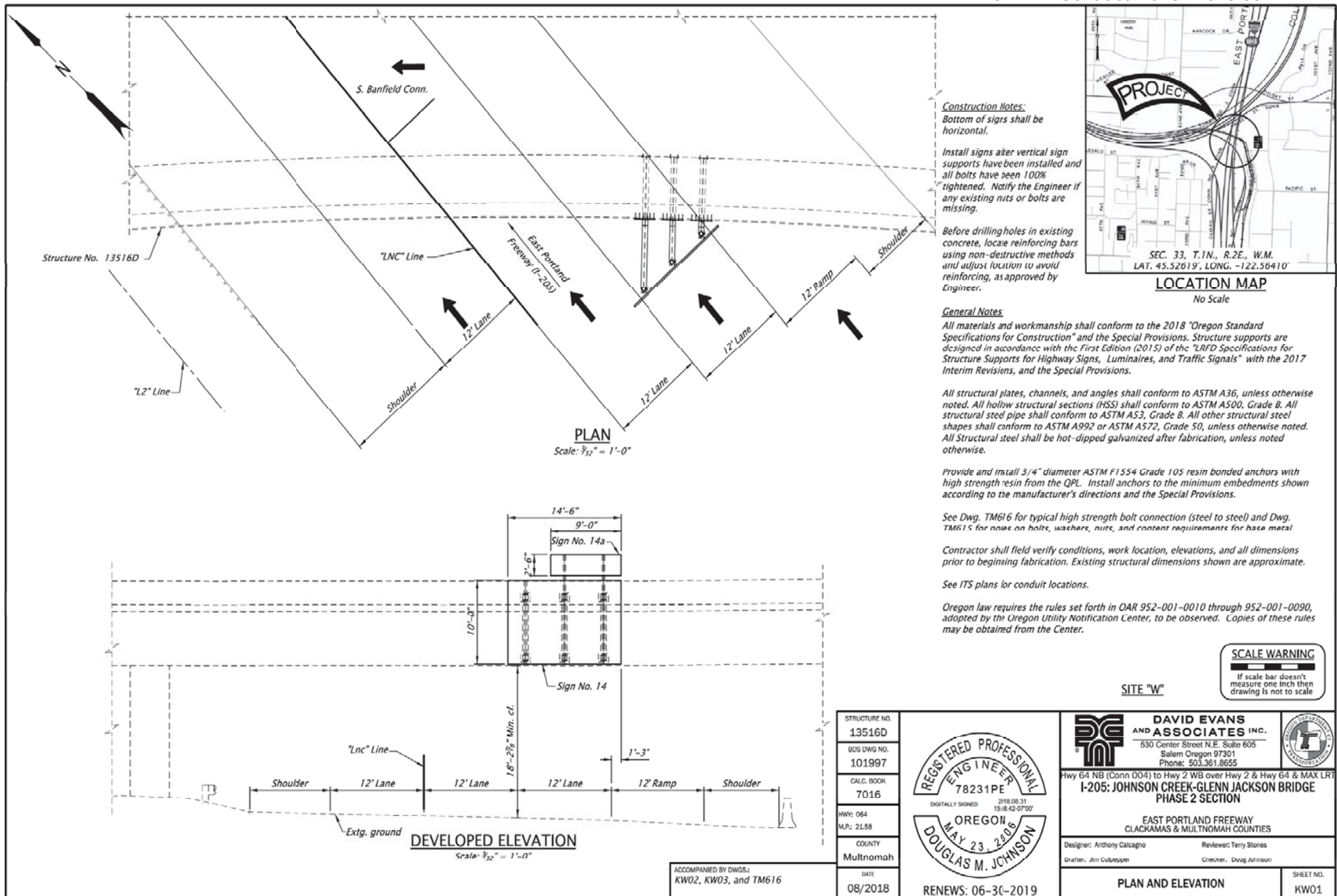
Miscellaneous Project - Structure Mounts

SUBTOTAL				43,000		30,000		
PERCENT MOBILIZATION			11.11	4,800	11.06	3,300		
TOTAL				47,800		33,300		

DETAILS

Structure Mounts

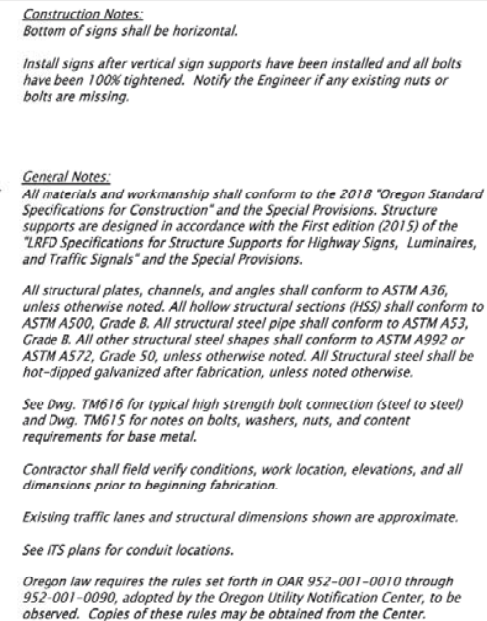
4,600.00	LB	BRIDGE STRUCTURE MOUNTS	9.35	43,000	6.52	30,000	9.35	3.26
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BRIDGE NAME:	Hwy 64 NB Conn #4 over Hwy 2 & Hwy 64 & MAX LRT	BRIDGE NO:	13516D	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	RC BOX GIRDER - POST TENSN	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		26,000		20,300		
		PERCENT MOBILIZATION	11.11	2,900	11.06	2,200		
		TOTAL		28,900		22,500		
DETAILS								
Structure Mounts								
5,800.00	LB	BRIDGE STRUCTURE MOUNTS	4.48	26,000	3.51	20,333	4.48	2.59



Note:
All VAS signs to be furnished by Agency and installed by Contractor. All other signs to be furnished and installed by Contractor.
See Special Provisions.



SITE "T"

ELEVATION
Scale: $\frac{3}{32}'' = 1'-0''$

No.	DATE	REVISIONS	BY
1	11-20-18	Revised sign type	D.M.J.

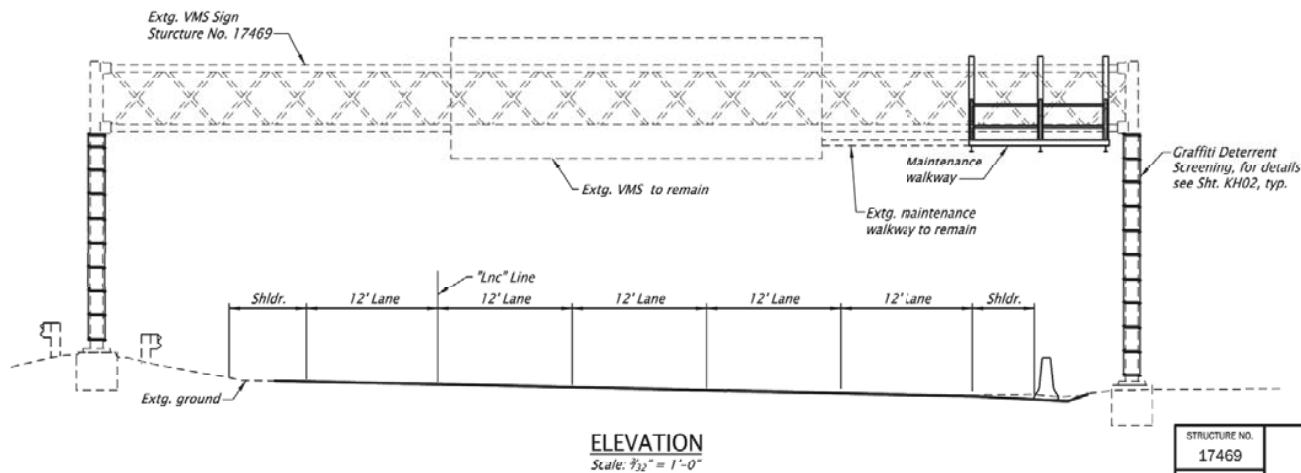
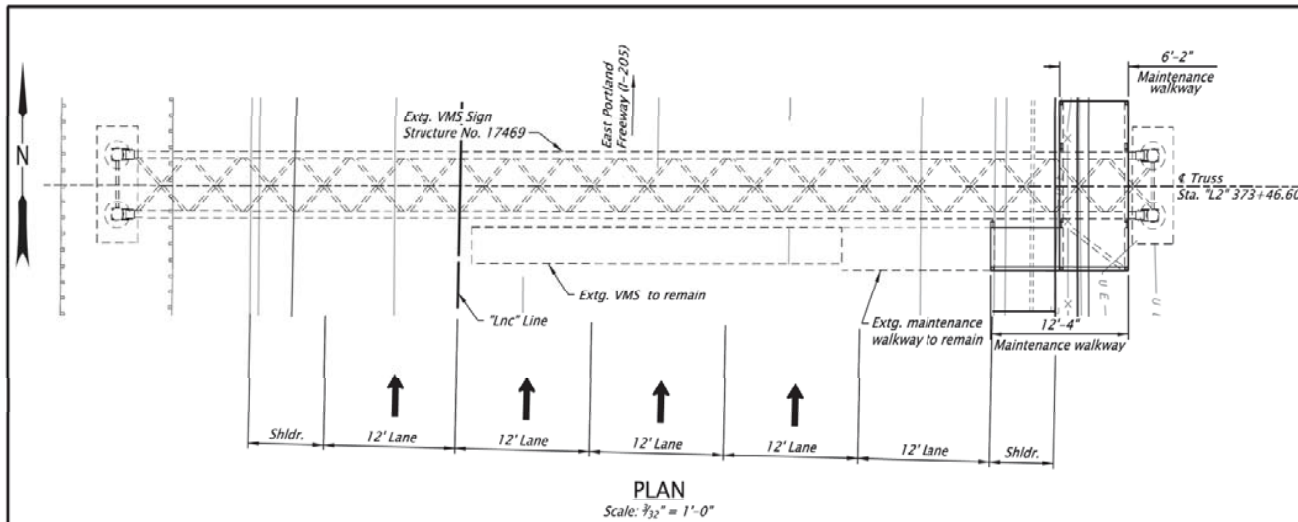
STRUCTURE NO. 20309	
BOS DWS NO. 101215	
CALC. BOOK 7016	
HWY: 064 M.P.: 28.5	
COUNTY Multnomah	
DATE 08/2018	RENEWES: 06-30-2019

	DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.361.8655	
I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES		
Designer: Rachel Bassil Checker: Jim Colquhoun	Reviewer: Terry Stones Checker: Doug Johnson	
PLAN AND ELEVATION		SHEET NO. KT02

BRIDGE NAME:	Sign Truss Br, Hwy 64 SB at MP 24.48 (VMS)	BRIDGE NO:	20309	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		75,000		51,300		
		PERCENT MOBILIZATION	11.11	8,300	11.06	5,700		
		TOTAL		83,300		57,000		
DETAILS								
Structure Mounts								
6,600.00	LB	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURES	11.36	75,000	7.78	51,333	11.36	2.12

**General Notes:**

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions.

All structural plates, channels, and angles shall conform to ASTM A36, unless otherwise noted. All hollow structural sections (HSS) shall conform to ASTM A500, Grade B. All structural steel pipe shall conform to ASTM A53, Grade B. All other structural steel shapes shall conform to ASTM A992 or ASTM A572, Grade 50, unless otherwise noted. All Structural steel shall be hot-dipped galvanized after fabrication, unless noted otherwise.

See Dwg. TM616 for typical high strength bolt connection (steel to steel) and Dwg. TM615 for notes on bolts, washers, nuts, and content requirements for base metal.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning fabrication.

Existing traffic lanes and structural dimensions shown are approximate.

See ITS plans for conduit locations.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

See Dwg. TM612 for walkway details not shown.

Construction Note:

Notify the Engineer if any existing nuts or bolts are missing.

SCALE WARNING

If scale bar doesn't measure one inch then drawing is not to scale

SITE "H"

STRUCTURE NO.
17469
BOS DWG NO.
101178
CALC. BOOK
7016
HWY: 064
M.P.: 20.2
COUNTY
Multnomah
DATE
08/2018



RENEWES: 06-30-2019



DAVID EVANS AND ASSOCIATES INC.
630 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8655



**I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION**

**EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES**

Designer: Rachel Bassil

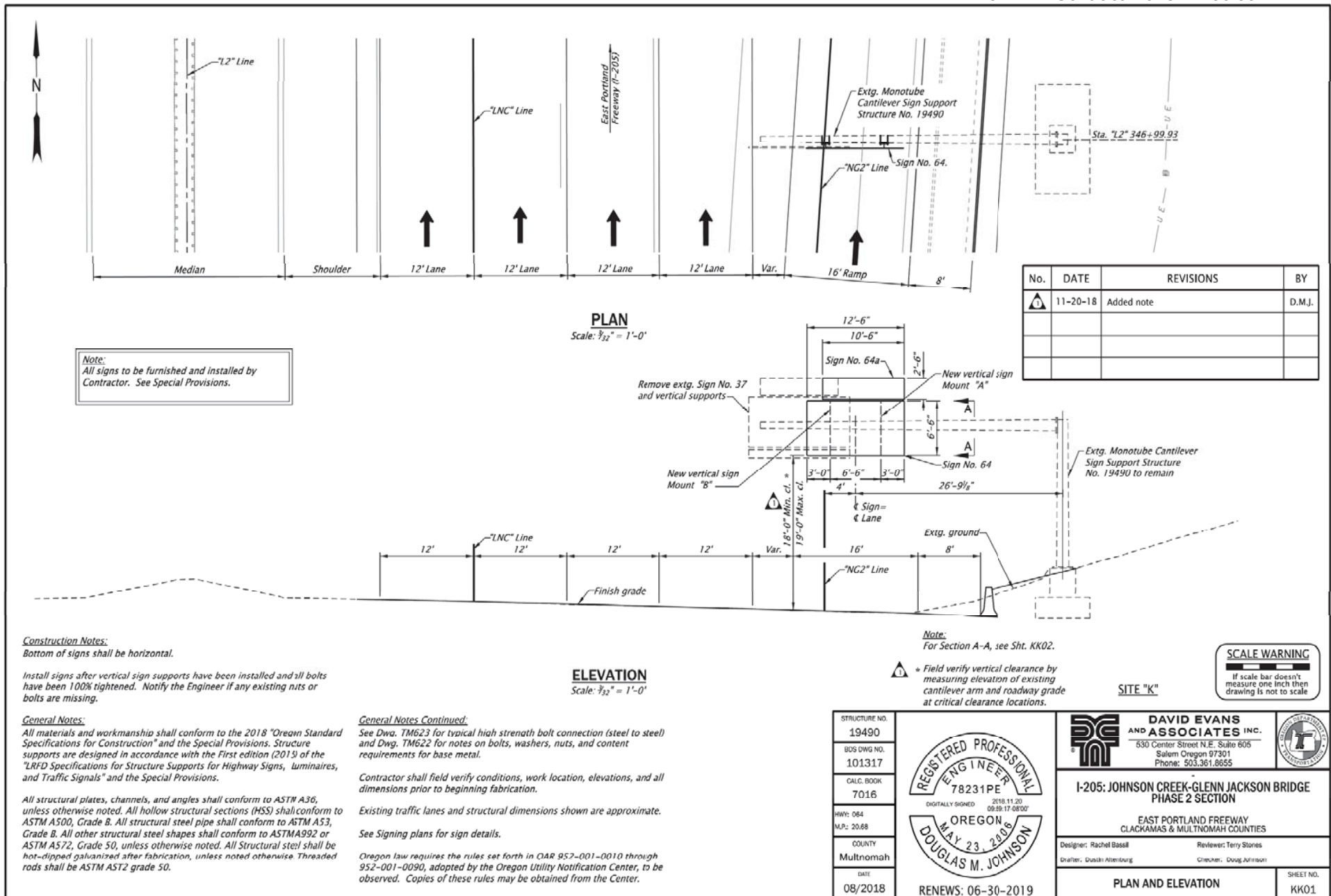
Reviewer: Terry Stones

Drafters: Jim Culpepper

Checker: Doug Johnson

PLAN AND ELEVATIONSHEET NO.
KH01

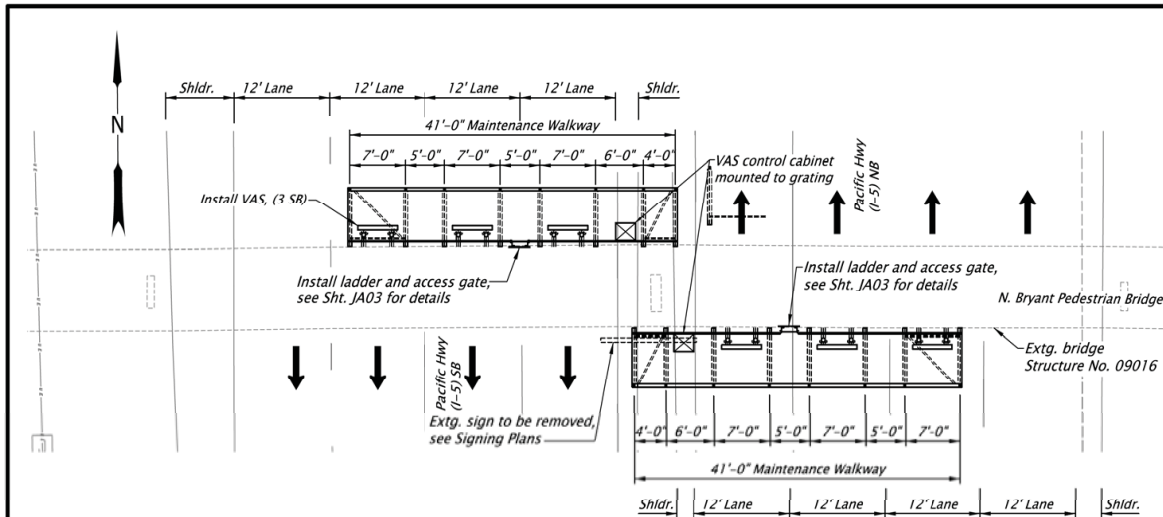
BRIDGE NAME:			Sign Truss Br, Hwy 64 NB at MP 20.17 (VMS)			BRIDGE NO:		17469		KEY NO:		21157	
SECTION NAME:			I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION			COUNTY:		Multnomah		CONTR #		15124	
PRIMARY PROJ:			Miscellaneous Proj			BID DATE:		11/29/2018		FAP NO:		S064(059)	
STRUCT TYPE:			TRUSS SIGN BRIDGE			# BIDS RECVD:		3		AWARDED TO:		KERR CONTRACTORS OREGON INC	
										PREPARED BY:			
						CONTRACT		3 LOW BIDDERS		SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Miscellaneous Project - Structure Mounts													
SUBTOTAL							34,000			26,000			
PERCENT MOBILIZATION						11.11	3,800		11.06	2,900			
TOTAL							37,800			28,900			
DETAILS													
Structure Mounts													
2,100.00		LB	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURES			16.19	34,000		12.38	26,000		16.19	6.67



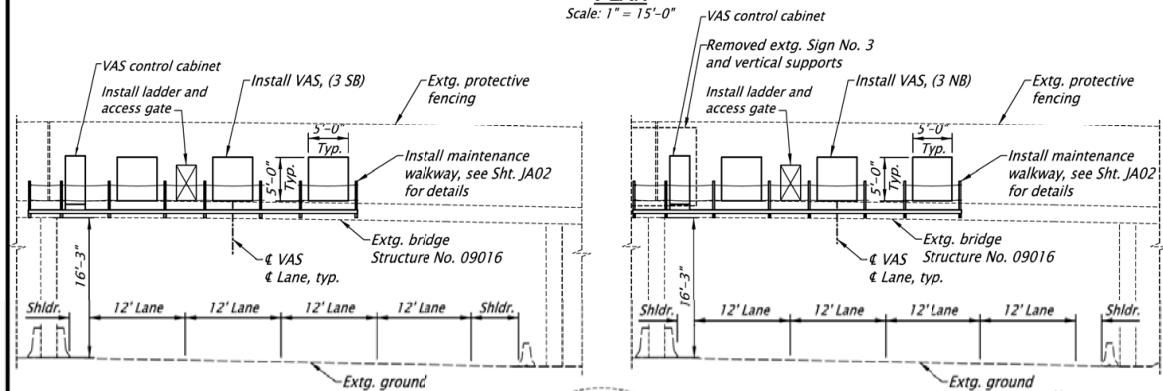
BRIDGE NAME:	Sign Cantilever Br, Hwy 64 NB at MP 20.68	BRIDGE NO:	19490	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

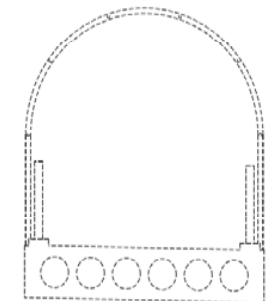
			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		7,000		12,300		
		PERCENT MOBILIZATION	11.11	800	11.06	1,400		
		TOTAL		7,800		13,700		
DETAILS								
Structure Mounts								
300.00	LB	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURES	23.33	7,000	41.11	12,333	83.33	16.67

**PLAN**

Scale: 1" = 15'-0"

**ELEVATION (SB)**Scale: 1" = 15'-0"
(Looking South)**ELEVATION (NB)**Scale: 1" = 15'-0"
(Looking North)

Note:
Existing railing (continuous across structure; not shown continuous for clarity).

**EXISTING TYPICAL SECTION**

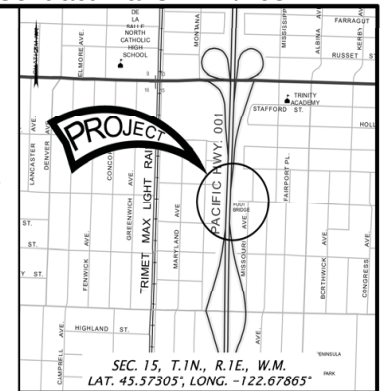
No Scale

Construction Notes:

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened. Notify the Engineer if any existing nuts or bolts are missing.

Maintain pedestrian traffic at all times. See Sht. E807 for details.

**LOCATION MAP**

No Scale

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions. Structure supports are designed in accordance with the First Edition (2015) of the "LRID Specifications for Structure Supports for Highway Signs, Luminaires, and Traffic Signals" with the 2017 Interim Revisions, and the Special Provisions.

The maintenance walkway is designed for a 500 pound concentrated live load.

All structural plates, channels, and angles shall conform to ASTM A36, unless otherwise noted. All hollow structural sections (HSS) shall conform to ASTM A500, Grade B. All structural steel pipe shall conform to ASTM A53, Grade B. All other structural steel shapes shall conform to ASTM A992 or ASTM A572, Grade 50, unless otherwise noted. All Structural steel shall be hot-dipped galvanized after fabrication, unless noted otherwise.

See Dwg. TM616 for typical high strength bolt connection (steel to steel) and Dwg. TM607 for notes on bolts, washers, nuts, and content requirements for base metal.

Provide Expansion Anchors from the Qualified Products List (QPL).

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning fabrication.

Prior to drilling holes in existing concrete, contractor to locate existing reinforcing bars using nondestructive methods and adjust drill locations to avoid reinforcing as directed by Engineer.

Existing traffic lanes and structural dimensions shown are approximate.

See ITS plans for conduit locations.

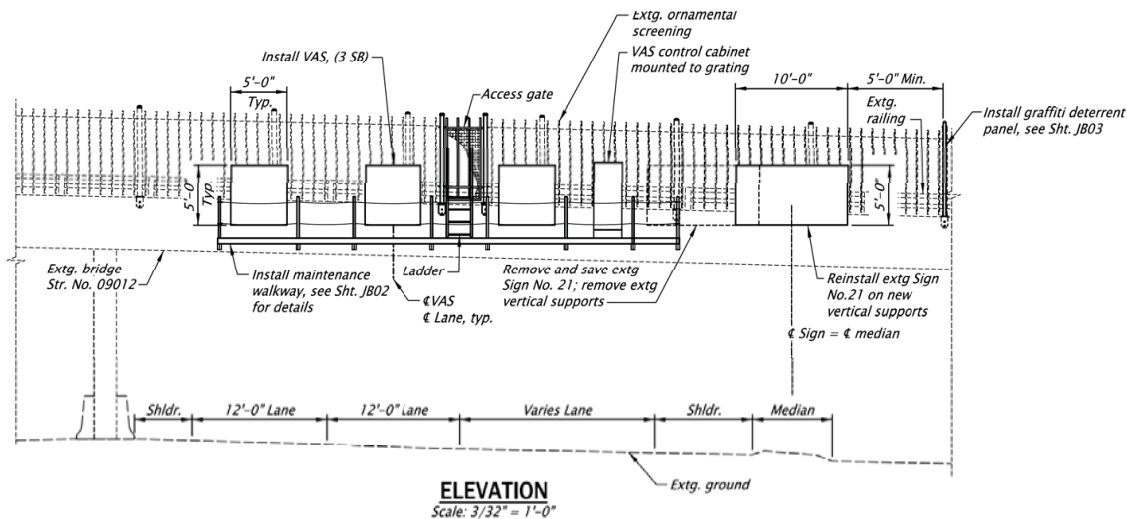
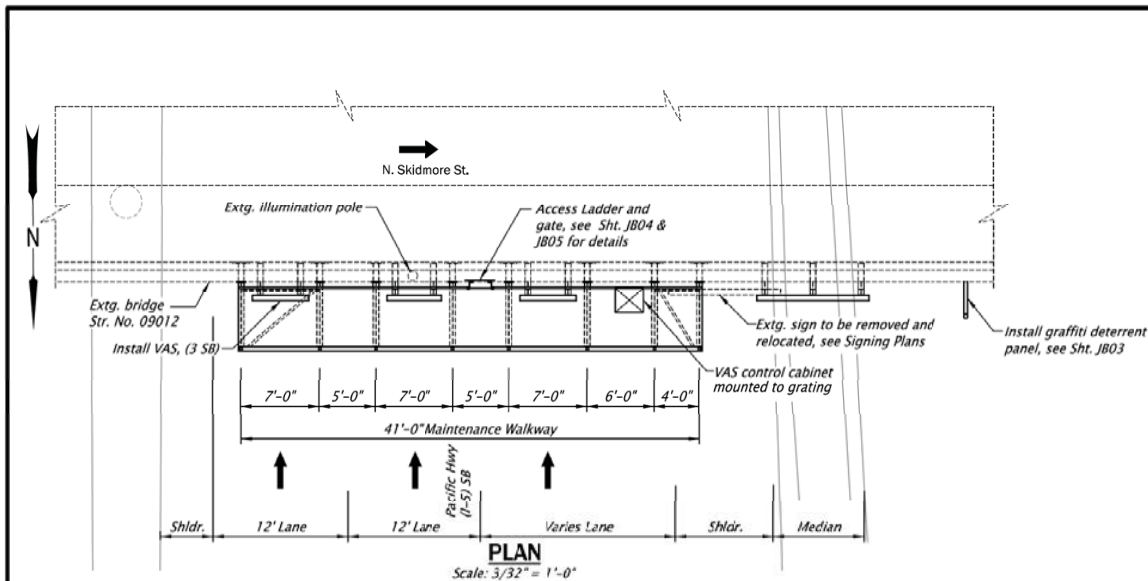
Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

See Signing sheets for sign details.

SITE "D"

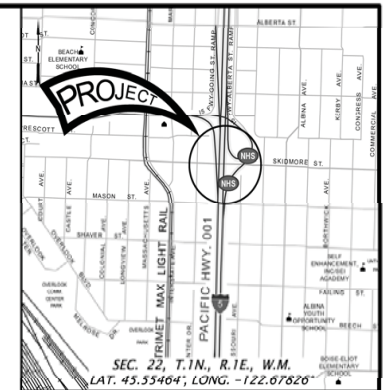
STRUCTURE NO. 09016			DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E. Suite 605 Salem Oregon 97301 Phone: 503.361.8655		
BDS DWG NO. 102796					
CALC. BOOK 710R					
DATE 04/2019					
WBY: 001 M/P: 305.14	COUNTY Multnomah	RENEW: 06-30-2019	DESIGNER: Jiri Pertold DRAFTER: Jim Culpepper	REVIEWER: Terry Stones CHECKER: Doug Johnson	SHEET NO. JA01
PLAN AND ELEVATION			PEDESTRIAN BR (N BRYANT ST) OVER HWY 1 I-5: MARINE DR - FREMONT BRIDGE SEC. PACIFIC HIGHWAY MULTNOMAH COUNTY		Scale: N.T.S.

BRIDGE NAME:	Pedestrian Br (N Bryant St) over Hwy 1			BRIDGE NO:	09016		KEY NO:	20430	
SECTION NAME:	I-5: MARINE DR - FREMONT BRIDGE SEC.			COUNTY:	Multnomah		CONTR #	15150	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	05/30/2019		FAP NO:	S001(509)	
STRUCT TYPE:	CIP-SLAB			# BIDS RECVD:	3		AWARDED TO:	NORTHEAST ELECTRIC LLC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts									
SUBTOTAL					72,700		90,900		
PERCENT MOBILIZATION				10.76	7,800	11.04	10,000		
TOTAL					80,500		100,900		
DETAILS									
Structure Mounts									
10,300.00	LB	BRIDGE STRUCTURE MOUNTS		7.06	72,700	8.83	90,900	10.68	7.06
Additional Items									
1.00	LS	ITS INSTALLATION, SITE "D"		150,000.00	150,000	128,333.33	128,333	150,000.00	115,000.00



Construction Notes:
Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened.



LOCATION MAP
No Scale

General Notes:
All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions. Structure supports are designed in accordance with the First Edition (2015) of the "LRFD Specifications for Structure Supports for Highway Signs, Luminaires, and Traffic Signals" with the 2017 Interim Revisions, and the Special Provisions.

The maintenance walkway is designed for a 500 pound concentrated live load.

All structural plates, channels, and angles shall conform to ASTM A36, unless otherwise noted. All hollow structural sections (HSS) shall conform to ASTM A500, Grade B. All structural steel pipe shall conform to ASTM A53, Grade B. All other structural steel shapes shall conform to ASTM A992 or ASTM A572, Grade 50, unless otherwise noted. All Structural steel shall be hot-dipped galvanized after fabrication, unless noted otherwise.

See Dwg. TM616 for typical high strength bolt connection (steel to steel) and Dwg. TM607 for notes on bolts, washers, nuts, and content requirements for base metal.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning fabrication.

Prior to drilling holes in existing concrete, contractor to locate existing reinforcing bars using nondestructive methods and adjust drill locations to avoid reinforcing as directed by Engineer.

Existing traffic lanes and structural dimensions shown are approximate.

See ITS plans for conduit locations.

Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

See Signing sheets for sign details.



SITE "F"

STRUCTURE NO. 09012			DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E., Suite 605 Salem Oregon 97301 Phone: 503.361.8655		
BOS DWG NO. 102799					
CALC. BOOK 7108					
HWY: 001 M.P.: 303.88					
COUNTY Multnomah	DATE 04/2019	RENEWS: 06-30-2019	N SKIDMORE ST OVER HWY 1 & CONN I-5: MARINE DR - FREMONT BRIDGE SEC. PACIFIC HIGHWAY MULTNOMAH COUNTY	Designer: Andrew Walker Drafter: Jim Gullerger	Reviewer: Terry Stones Checker: Doug Johnson
PLAN AND ELEVATION			SHEET NO. JB01		

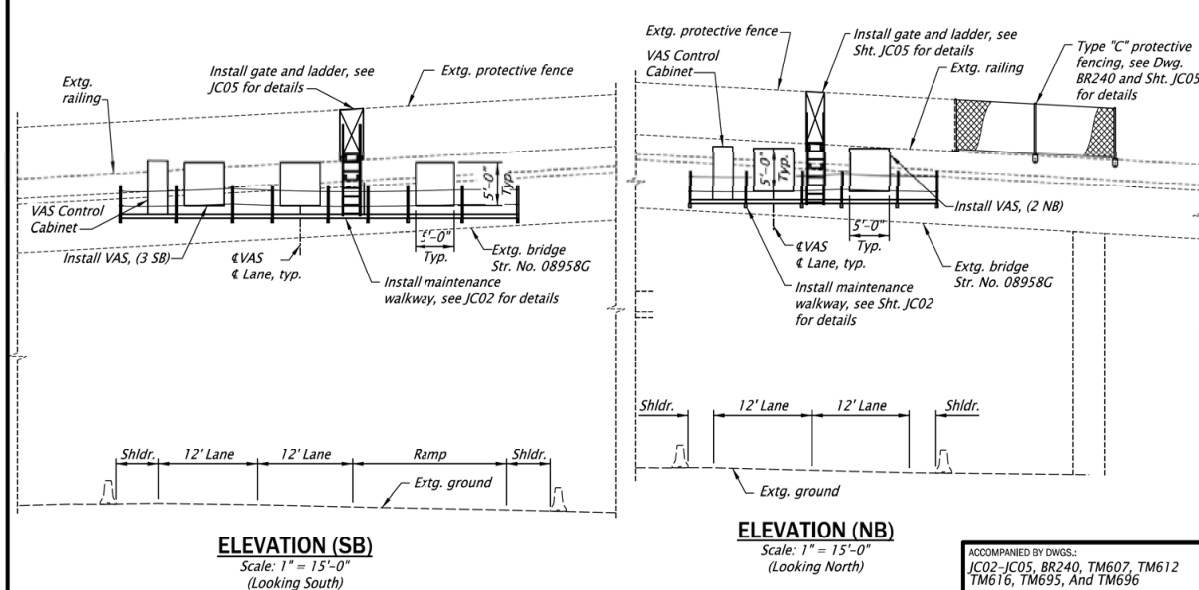
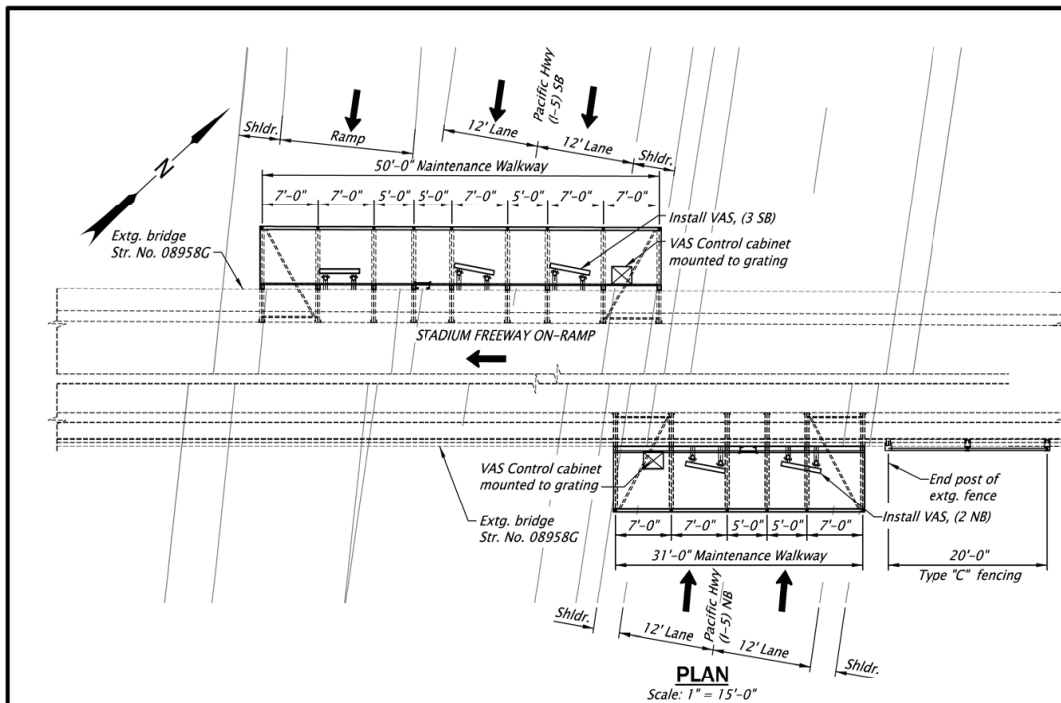
ACCOMPANIED BY DWGS.:
JB02-JB05, TM607, TM612, TM616,
TM695 And TM696

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotation: N/A

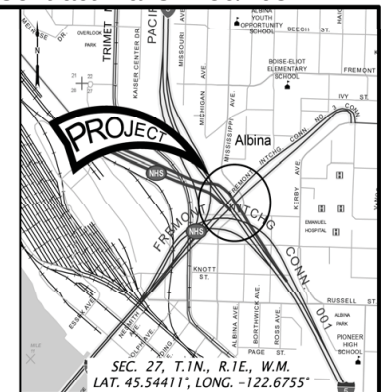
Scale: N.T.S

BRIDGE NAME:	N Skidmore St over Hwy 1 & Conn			BRIDGE NO:	09012		KEY NO:	20430	
SECTION NAME:	I-5: MARINE DR - FREMONT BRIDGE SEC.			COUNTY:	Multnomah		CONTR #	15150	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	05/30/2019		FAP NO:	S001(509)	
STRUCT TYPE:	RC BOX GIRDER - CONV REINF			# BIDS RECVD:	3		AWARDED TO:	NORTHEAST ELECTRIC LLC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts									
SUBTOTAL					46,600		55,600		
PERCENT MOBILIZATION				10.76	5,000	11.04	6,100		
TOTAL					51,600		61,700		
DETAILS									
Structure Mounts									
6,000.00	LB	BRIDGE STRUCTURE MOUNTS		7.77	46,600	9.26	55,533	10.00	7.77
Additional Items									
1.00	LS	ITS INSTALLATION - SITE "F"		73,405.00	73,405	109,468.33	109,468	130,000.00	73,405.00



Construction Notes:
Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened. Notify the Engineer if any existing nuts or bolts are missing.



LOCATION MAP

No Scale

General Notes:
All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions. Structure supports are designed in accordance with the First Edition (2015) of the "LRFD Specifications for Structure Supports for Highway Signs, Luminaires, and Traffic Signals" with the 2017 Interim Revisions, and the Special Provisions.

The maintenance walkway is designed for a 500 pound concentrated live load.

All structural plates, channels, and angles shall conform to ASTM A36, unless otherwise noted. All hollow structural sections (HSS) shall conform to ASIM A500, Grade B. All structural steel pipe shall conform to ASTM A53, Grade B. All other structural steel shapes shall conform to ASTM A992 or ASTM A572, Grade 50, unless otherwise noted. All Structural steel shall be hot-dipped galvanized after fabrication, unless noted otherwise.

See Dwg. TM616 for typical high strength bolt connection (steel to steel) and Dwg. TM607 for notes on bolts, washers, nuts, and content requirements for base metal.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning fabrication.

Prior to drilling holes in existing concrete, contractor to locate existing reinforcing bars using nondestructive methods and adjust drill locations to avoid reinforcing as directed by Engineer.

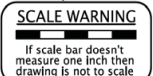
Existing traffic lanes and structural dimensions shown are approximate.

See ITS plans for conduit locations.

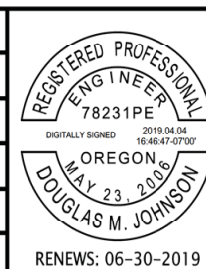
Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

See Signing sheets for sign details.

SITE "C"



STRUCTURE NO.	08958G
BOS DWG NO.	102804
CALC. BOOK	7108
HWY: 001	
M.P.: 303.09	
COUNTY	Multnomah
DATE	04/2019



DAVID EVANS AND ASSOCIATES INC. 530 Center Street N.E., Suite 605 Salem Oregon 97301 Phone: 503.361.8655	
Ivy St Conn to Hwy 61 SB over Hwy 1 (E Fremont Int)	
I-5: MARINE DR - FREMONT BRIDGE SEC.	
PACIFIC HIGHWAY MULTNOMAH COUNTY	
Designer: Andrew Walker	Reviewer: Terry Stones
Drafter: Jim Oulppinger	Checker: Doug Johnson
PLAN AND ELEVATION	
SHEET NO. JC01	

ACCOMPANIED BY DWGS:
JC02-JC05, BR240, TM607, TM612
TM616, TM695, And TM696

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotation: N/A

Scale: N.T.S

BRIDGE NAME:			Ivy St Conn to Hwy 61 SB over Hwy1 (E Fremont Int)		BRIDGE NO:		08958G		KEY NO:		20430		
SECTION NAME:			I-5: MARINE DR - FREMONT BRIDGE SEC.		COUNTY:		Multnomah		CONTR #		15150		
PRIMARY PROJ:			Miscellaneous Proj		BID DATE:		05/30/2019		FAP NO:		S001(509)		
STRUCT TYPE:			STEEL BOX GIRDER		# BIDS RECVD:		3		AWARDED TO:		NORTHEAST ELECTRIC LLC		
										PREPARED BY:			
					CONTRACT		3 LOW BIDDERS			SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Miscellaneous Project - Structure Mounts													
					SUBTOTAL		246,300			287,100			
					PERCENT MOBILIZATION	10.76	26,500		11.04	31,700			
					TOTAL		272,800			318,800			
DETAILS													
Structure Mounts													
12,700.00		LB	BRIDGE STRUCTURE MOUNTS			5.72	72,700		8.34	105,900		10.24	5.72
Additional Items													
20.00		FOOT	6 FOOT TYPE C PROTECTIVE FENCE			100.00	2,000		183.33	3,667		350.00	100.00
1.00		LS	ITS INSTALLATION - SITE "G"			173,648.00	173,648		181,216.00	181,216		200,000.00	170,000.00

BRIDGE NAME:	Sign Truss Br, Hwy 1 at MP 306.46			BRIDGE NO:	20690		KEY NO:	20430	
SECTION NAME:	I-5: MARINE DR - FREMONT BRIDGE SEC.			COUNTY:	Multnomah		CONTR #	15150	
PRIMARY PROJ:	Miscellaneous Proj			BID DATE:	05/30/2019		FAP NO:	S001(509)	
STRUCT TYPE:	TRUSS SIGN BRIDGE			# BIDS RECVD:	3		AWARDED TO:	NORTHEAST ELECTRIC LLC	
							PREPARED BY:		
				CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM		UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts									
SUBTOTAL					41,600		52,200		
PERCENT MOBILIZATION				10.76	4,500	11.04	5,800		
TOTAL					46,100		58,000		
DETAILS									
Structure Mounts									
4,300.00	LB	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURES		9.67	41,600	12.14	52,200	13.95	9.67
Additional Items									
1.00	LS	ITS INSTALLATION - SITE "B"		150,000.00	150,000	141,666.67	141,667	150,000.00	125,000.00

Construction Notes:

Bottom of signs shall be horizontal.

Install signs after vertical sign supports have been installed and all bolts have been 100% tightened. Notify the Engineer if any existing nuts or bolts are missing.

General Notes:

All materials and workmanship shall conform to the 2018 "Oregon Standard Specifications for Construction" and the Special Provisions. Structure supports are designed in accordance with the First edition (2015) of the "LRFD Specifications for Structure Supports for Highway Signs, Luminaires, and Traffic Signals" and the Special Provisions.

All structural plates, channels, and angles shall conform to ASTM A36, unless otherwise noted. All hollow structural sections (HSS) shall conform to ASTM A500, Grade B. All structural steel pipe shall conform to ASTM A53, Grade B. All other structural steel shapes shall conform to ASTM A992 or ASTM A572, Grade 50, unless otherwise noted. All Structural steel shall be hot-dipped galvanized after fabrication, unless noted otherwise.

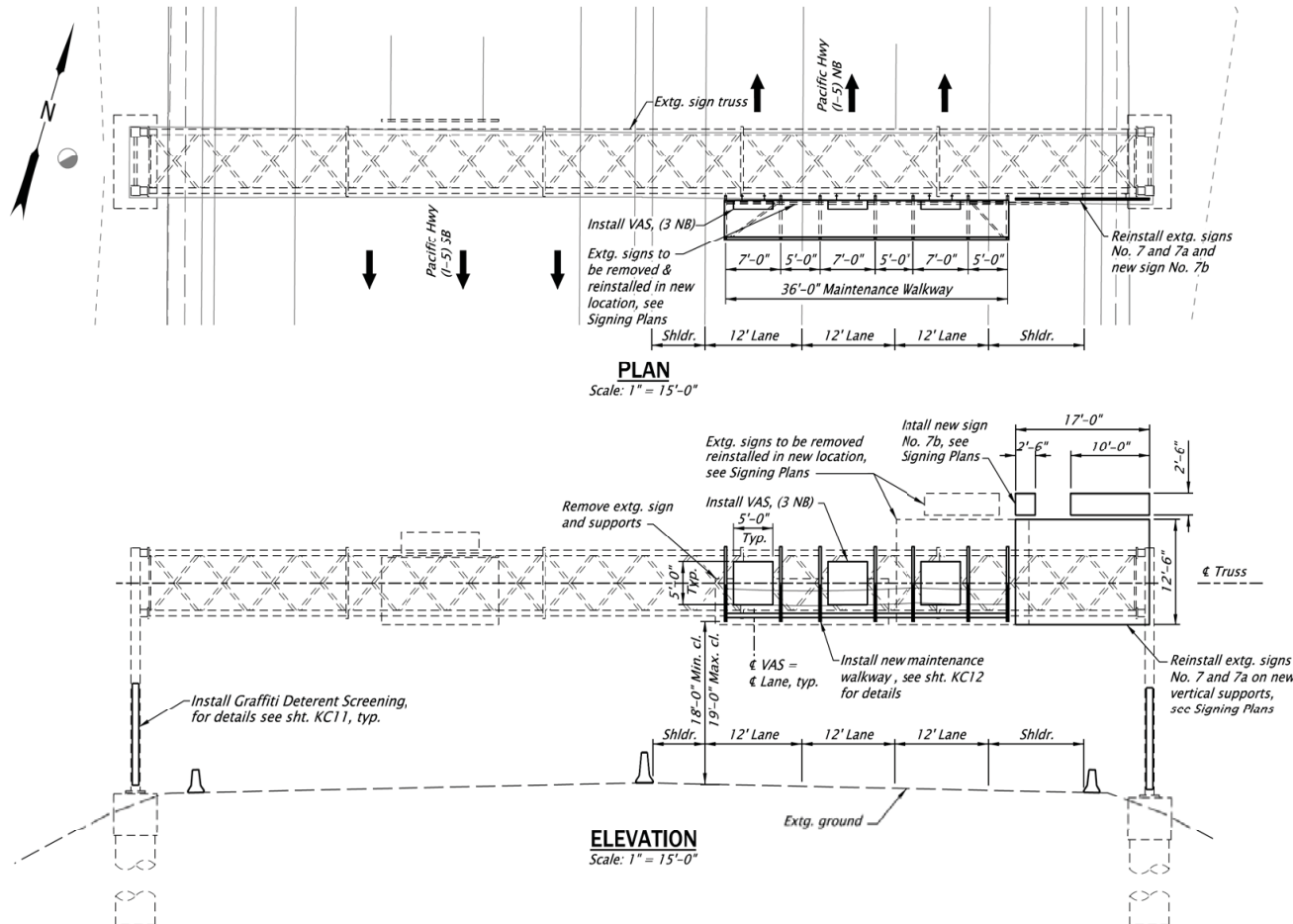
See Dwg. TM616 for typical high strength bolt connection (steel to steel) and Dwg. TM607 for notes on bolts, washers, nuts, and content requirements for base metal.

Contractor shall field verify conditions, work location, elevations, and all dimensions prior to beginning fabrication.

Existing traffic lanes and structural dimensions shown are approximate.

See ITS plans for conduit locations.

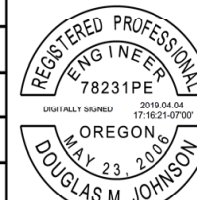
Oregon law requires the rules set forth in OAR 952-001-0010 through 952-001-0090, adopted by the Oregon Utility Notification Center, to be observed. Copies of these rules may be obtained from the Center.

**SCALE WARNING**

If scale bar doesn't measure one inch then drawing is not to scale

SITE "C"

STRUCTURE NO.	20691
BOS DWG NO.	102819
CALC. BOOK	710R
HWY: 001	
M.P.: 306.08	
COUNTY	Multnomah



RENEWS: 06-30-2019



DAVID EVANS AND ASSOCIATES INC.
530 Center Street N.E. Suite 605
Salem Oregon 97301
Phone: 503.361.8855

**I-5: MARINE DR - FREMONT BRIDGE SEC.**

PACIFIC HIGHWAY
MULTNOMAH COUNTY

Designer: Makende Ellett
Drafter: Jim Culppepper

Reviewer: Terry Stones
Checker: Doug Johnson

**INTELLIGENT TRANSPORTATION SYSTEMS -
STRUCTURE DETAILS**

SHEET NO.
KC10

ACCOMPANIED BY DWGS:
KC11-KC12, TM607, TM610, TM612,
TM616, TM695, And TM696

UNIT FILE CODE
ITS-2881

DATE
04/2019

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

Rotation: N/A

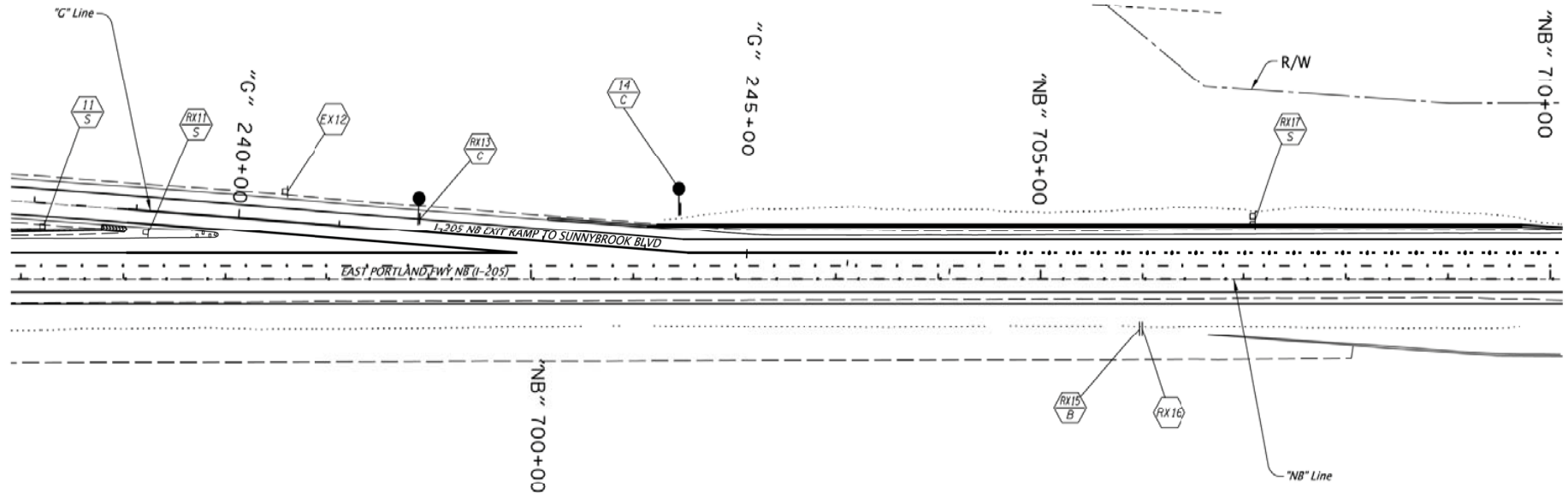
Scale: N.T.S

BRIDGE NAME:	Sign Truss Br, Hwy 1 at MP 306.10	BRIDGE NO:	20691	KEY NO:	20430
SECTION NAME:	I-5: MARINE DR - FREMONT BRIDGE SEC.	COUNTY:	Multnomah	CONTR #	15150
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	05/30/2019	FAP NO:	S001(509)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	3	AWARDED TO:	NORTHEAST ELECTRIC LLC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Structure Mounts								
		SUBTOTAL		36,400		45,500		
		PERCENT MOBILIZATION	10.76	3,900	11.04	5,000		
		TOTAL		40,300		50,500		
DETAILS								
Structure Mounts								
3,300.00	LB	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURES	11.03	36,400	13.78	45,467	15.15	11.03
Additional Items								
1.00	LS	ITS INSTALLATION - SITE "C"	100,000.00	100,000	93,333.33	93,333	100,000.00	80,000.00

SIGN INSTALLATION PLAN
 STA. "NB" 695+00 TO 710+00
 STA. "G" 237+77 TO 245+00

**LEGEND**

- Install new sign (N) on new (M) sign support
 Maintain and protect existing sign (N) and support
 Remove existing sign (N)
 Remove existing sign (N) and (M) sign support

N = Sign Number
 M = Material

Material options:

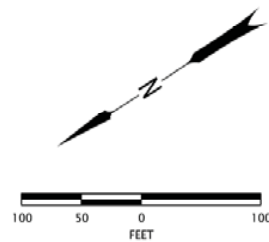
S = Steel Breakaway Support (TBB or MPB)
 C = Cantilever
 B = Butterfly

NOTE:

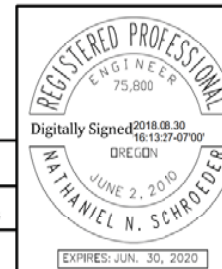
The locations of sign installations shown are approx., with exact locations to be determined in the field.

NOTE:

Existing signs not shown are to remain in place unless otherwise directed by the Engineer.



HWY: 064
 M.P.: 13.6 - 14.3
 TRS
 S-17873
 D/N/TSB/NO.
 00000



DKS 720 SW Washington Street, Suite 500 Portland, Oregon 97205 (503) 243-3500 www.dksassociates.com		
I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC. EAST PORTLAND FREEWAY CLACKAMAS COUNTY		
Designer: NICOLE GUO Drafter: NICOLE GUO	Reviewer: LONG TRAN Checker: NATE SCHROEDER	SHEET NO. LA02
SIGN INSTALLATION PLAN		

BRIDGE NAME:	Sign Cantilever Br, Hwy 64 NB at MP 13.98	BRIDGE NO:	18930	KEY NO:	19721
SECTION NAME:	I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC.	COUNTY:	Clackamas	CONTR #	15115
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/08/2018	FAP NO:	S064(056)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW

Miscellaneous Project - Sign Structure Removal

SUBTOTAL				7,500		9,500		
PERCENT MOBILIZATION			10.25	800	9.09	900		
TOTAL				8,300		10,400		

DETAILS

Sign Structure Removal

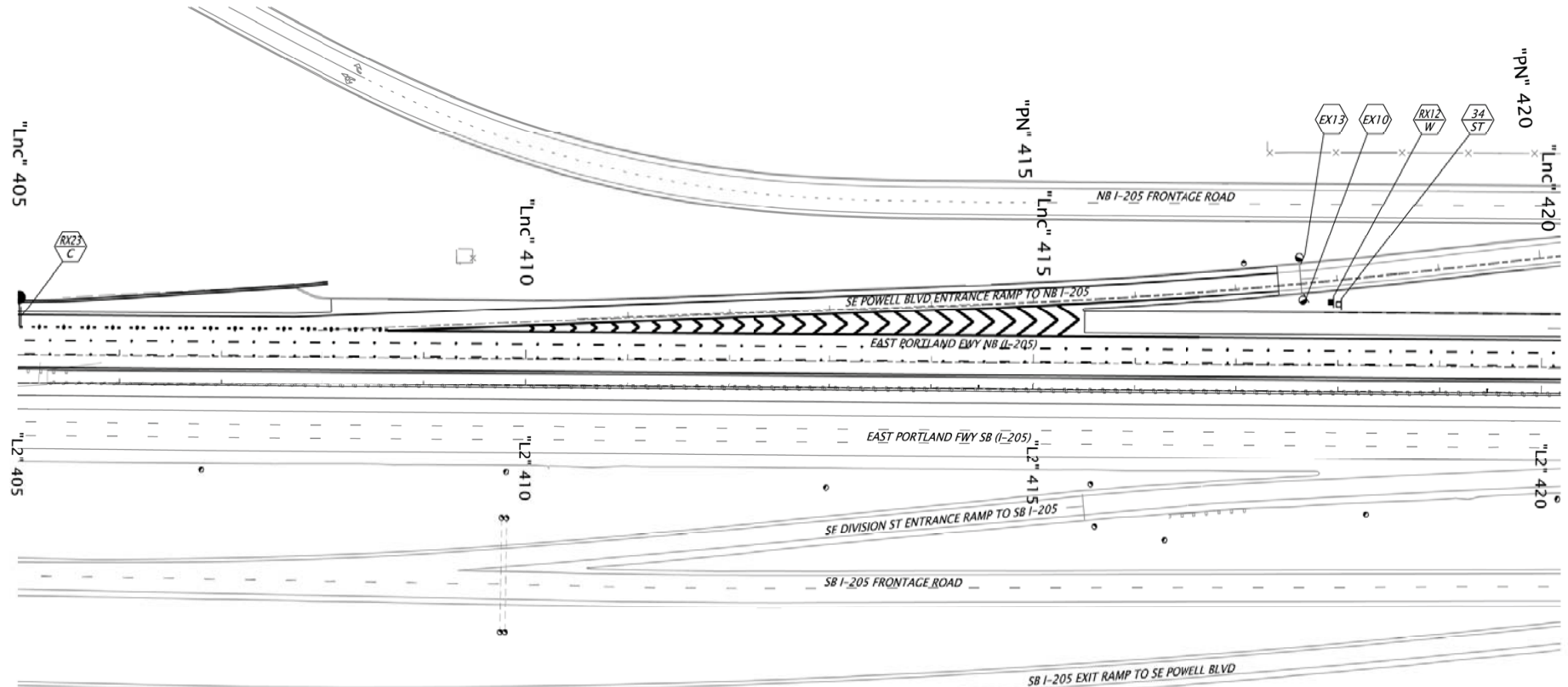
1.00	LS	BRIDGE REMOVAL WORK	7,500.00	7,500	9,500.00	9,500	15,000.00	6,000.00
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BRIDGE NAME:	Sign Cantilever Br, Hwy 64 NB at MP 13.86	BRIDGE NO:	19467	KEY NO:	19721
SECTION NAME:	I-205: OR224(SUNRISE EXPRESSWAY) - SUNNYBROOK BLVD SEC.	COUNTY:	Clackamas	CONTR #	15115
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/08/2018	FAP NO:	S064(056)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	4	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - Sign Structure Removal								
		SUBTOTAL		7,500		9,500		
		PERCENT MOBILIZATION	10.25	800	9.09	900		
		TOTAL		8,300		10,400		
DETAILS								
Sign Structure Removal								
1.00	LS	BRIDGE REMOVAL WORK	7,500.00	7,500	9,500.00	9,500	15,000.00	6,000.00

SIGN INSTALLATION PLAN
 STA. "Lnc" 405+00 TO 420+00
 STA. "PN" 415+00 TO 420+00
 STA. "L2" 405+00 TO 420+00

**LEGEND**

- Install new sign (N) on new (M) sign support
 Maintain and protect existing sign (N) and support
 Remove existing sign (N) and (M) sign support
 N = Sign Number
 M = Material
 Material options:
 C = Cantilever
 W = Wood post
 ST = Perforated steel square tube sign support

NOTE:

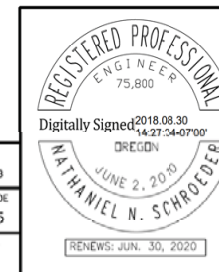
The locations of sign installations shown are approx. with exact locations to be determined in the field.

NOTE:

Existing signs not shown are to remain in place unless otherwise directed by the Engineer.

NOTE:

Where not shown, R/W extends beyond the limit of the sheet.



HWY: 064
 M.P.: 19.5 - 19.3
 UNIT FILE CODE
 S-17965
 DWT/BSU NO.



720 SW Washington Street, Suite 500
 Portland, Oregon 97205
 (503) 243-3500
 www.dksassocdates.com



**I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
 PHASE 2 SECTION**

EAST PORTLAND FREEWAY
 CLACKAMAS & MULTNOMAH COUNTIES

Designer: J. Pan
 Drafter: DKS CAD

Reviewer: N. Schroeder
 Checker: R. Hurtado

SIGN INSTALLATION PLAN

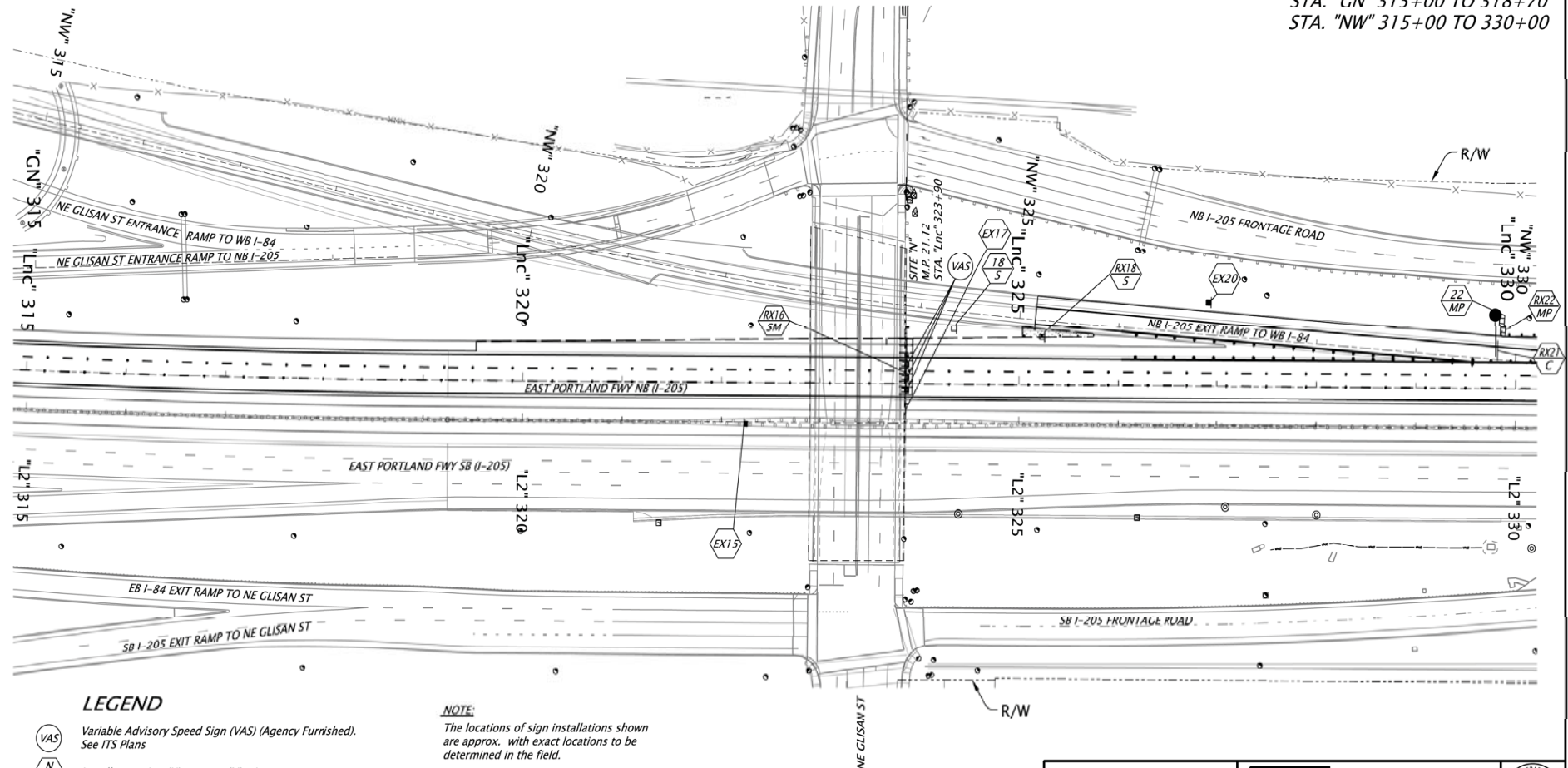
SHEET NO.
 LA10

BRIDGE NAME:	Sign Cantilever Br, Hwy 64 NB at MP 19.58	BRIDGE NO:	19481	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous_Project								
		SUBTOTAL		3,800		6,900		
		PERCENT MOBILIZATION	11.11	400	11.06	800		
		TOTAL		4,200		7,700		
DETAILS								
Miscellaneous Proj								
1.00	LS	BRIDGE REMOVAL WORK	3,790.00	3,790	6,930.00	6,930	15,000.00	2,000.00

SIGN INSTALLATION PLAN
 STA. "Lnc" 315+00 TO 330+00
 STA. "L2" 315+00 TO 330+00
 STA. "GN" 315+00 TO 318+70
 STA. "NW" 315+00 TO 330+00

**LEGEND**

(VAS) Variable Advisory Speed Sign (VAS) (Agency Furnished).
See ITS Plans

(N/M) Install new sign (N) on new (M) sign support

(EXN) Maintain and protect existing sign (N) and support

(RXN/M) Remove existing sign (N) and (M) sign support

N = Sign Number

M = Material

Material options:

S = Steel Breakaway Support (TBB or MPB)

SM = Structure Mount

C = Cantilever

MP = Milepost Marker Post

NOTE:

The locations of sign installations shown are approx. with exact locations to be determined in the field.

NOTE:

Existing signs not shown are to remain in place unless otherwise directed by the Engineer.

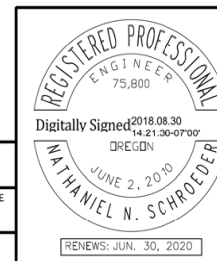
NOTE:

Where not shown, R/W extends beyond the limit of the sheet.

HWY: 064
M.P.: 21.2 - 21.0

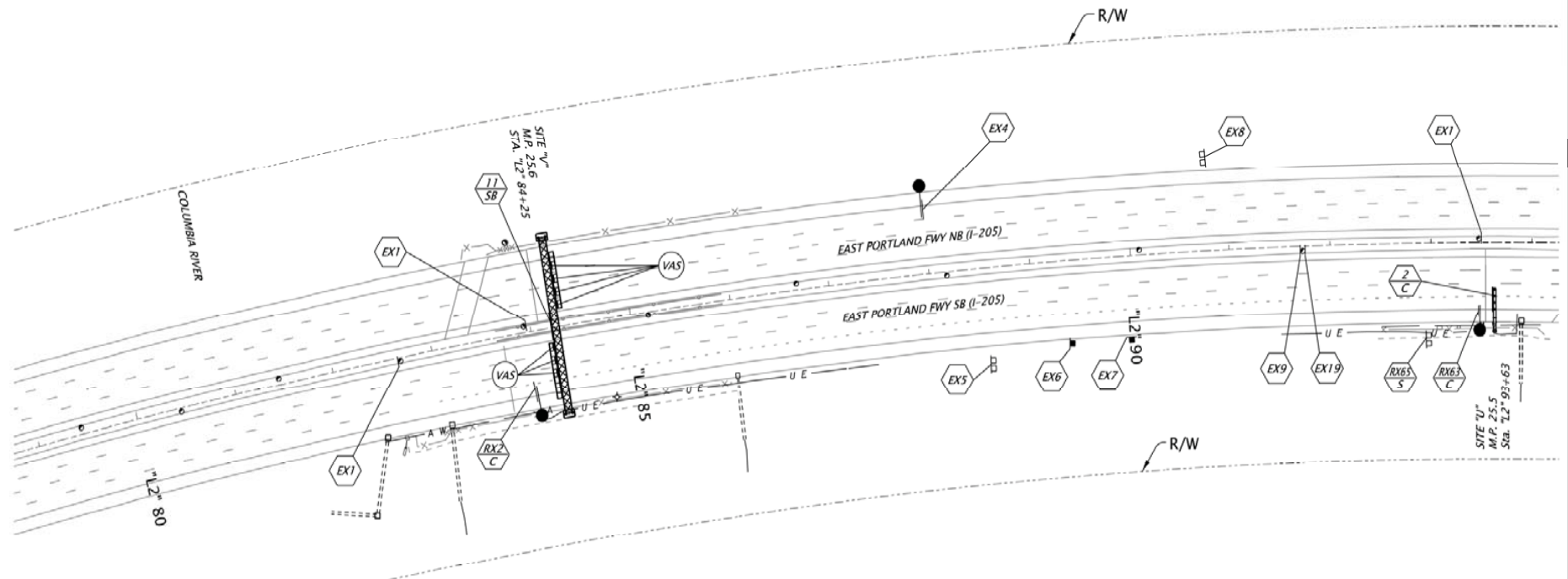
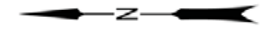
UNIT FILE CODE
S-17959

DR/TSU NO.



DKS 720 SW Washington Street, Suite 500 Portland, Oregon 97205 (503) 243-3500 www.dksassociates.com		
I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION		
EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES		
Designer: J. Pan Drafter: DKS CAD	Reviewer: N. Schroeder Checker: R. Hurtado	
SIGN INSTALLATION PLAN		SHEET NO. LA04

BRIDGE NAME:			Sign Cantilever Br, Hwy 64 NB at MP 20.99			BRIDGE NO:		19492		KEY NO:		21157	
SECTION NAME:			I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION			COUNTY:		Multnomah		CONTR #		15124	
PRIMARY PROJ:			Miscellaneous Proj			BID DATE:		11/29/2018		FAP NO:		S064(059)	
STRUCT TYPE:			MONOTUBE CANTILEVER SIGN SUPPORT			# BIDS RECVD:		3		AWARDED TO:		KERR CONTRACTORS OREGON INC	
										PREPARED BY:			
						CONTRACT		3 LOW BIDDERS		SPREAD			
QTY		UNIT	BID ITEM			UNIT		AMT	UNIT	AMT	HIGH	LOW	
Miscellaneous_Project													
SUBTOTAL								3,800			6,900		
PERCENT MOBILIZATION						11.11		400	11.06		800		
TOTAL								4,200			7,700		
DETAILS													
Miscellaneous Proj													
100.00		FOOT	BRIDGE REMOVAL WORK			37.90		3,790	69.30		6,930	150.00	20.00

SIGN INSTALLATION PLAN
STA. "L2" 79+00 TO 94+00

LEGEND

- Variable Advisory Speed sign (VAS) (Agency furnished). See ITS Plans
 Install new sign (N) on new (M) sign support
 Maintain and protect existing sign (N) and support
 Remove existing sign (N) and (M) sign support

N = Sign Number

M = Material

Material options:

C = Cantilever

SB = Sign Bridge

S = Steel Breakaway support (TBB or MPR)

NOTE:

The locations of sign installations shown are approx. with exact locations to be determined in the field.

NOTE:

Existing signs not shown are to remain in place unless otherwise directed by the Engineer.

ACCOMPANIED BY DWGS:

TM200, TM201, TM211, TM220, TM221, TM222, TM223, TM224, TM225, TM231, TM232, TM233, TM600, TM601, TM602, TM635, TM671, TM675, TM676, TM677, TM678, TM681, TM687, TM688, and LA02-LC03

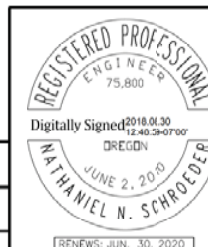
HWY: 064

M.P.: 25.7 - 25.4

UNIT FILE CODE

S-17956

DWG/TSU NO.



Digitally Signed 2018.01.30

12:40:34-0700

OREGON

JUNE 2, 2020

NATHANIEL N. SCHROEDER

RENEWED JUN. 30, 2020

DKS

720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE
PHASE 2 SECTION

EAST PORTLAND FREEWAY
CLACKAMAS & MULTNOMAH COUNTIES

Designer: J. Pan

Draftsman: DKS CAD

Reviewer: N. Schroeder

Checker: R. Hurtado

SIGN INSTALLATION PLAN

SHEET NO.

LA01

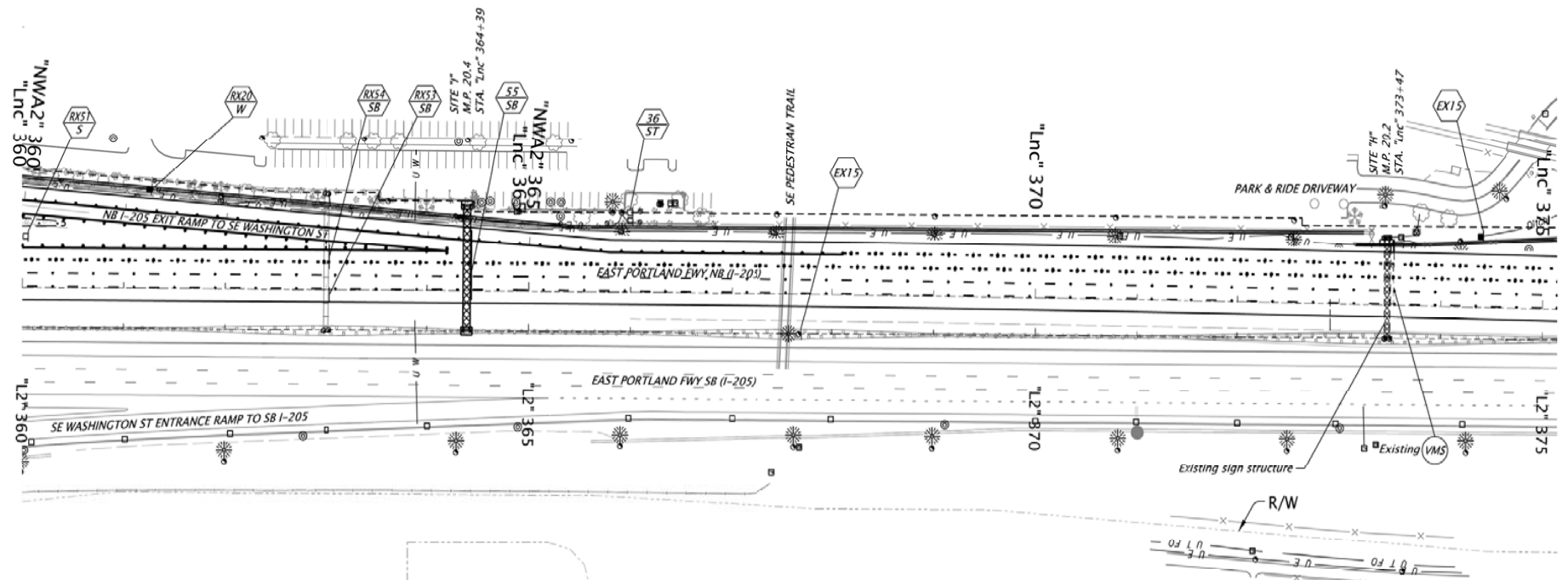
BRIDGE NAME:			Sign Cantilever Br, Hwy 64 SB at MP 25.46			BRIDGE NO:		19512		KEY NO:		21157	
SECTION NAME:			I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION			COUNTY:		Multnomah		CONTR #		15124	
PRIMARY PROJ:			Miscellaneous Proj			BID DATE:		11/29/2018		FAP NO:		S064(059)	
STRUCT TYPE:			MONOTUBE CANTILEVER SIGN SUPPORT			# BIDS RECVD:		3		AWARDED TO:		KERR CONTRACTORS OREGON INC	
										PREPARED BY:			
						CONTRACT		3 LOW BIDDERS		SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT	UNIT	AMT	HIGH	LOW		
Miscellaneous_Project													
SUBTOTAL							3,800		6,900				
PERCENT MOBILIZATION						11.11	400	11.06	800				
TOTAL							4,200		7,700				
DETAILS													
Miscellaneous Proj													
100.00	FOOT	BRIDGE REMOVAL WORK				37.90	3,790	69.30	6,930	150.00	20.00		

BRIDGE NAME:	Sign Cantilever Br, Hwy 64 SB at MP 25.67	BRIDGE NO:	19514	KEY NO:	21157
SECTION NAME:	I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION	COUNTY:	Multnomah	CONTR #	15124
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/29/2018	FAP NO:	S064(059)
STRUCT TYPE:	MONOTUBE CANTILEVER SIGN SUPPORT	# BIDS RECVD:	3	AWARDED TO:	KERR CONTRACTORS OREGON INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous_Project								
		SUBTOTAL		3,800		6,900		
		PERCENT MOBILIZATION	11.11	400	11.06	800		
		TOTAL		4,200		7,700		
DETAILS								
Miscellaneous Proj								
100.00	FOOT	BRIDGE REMOVAL WORK	37.90	3,790	69.30	6,930	150.00	20.00

SIGN INSTALLATION PLAN
 STA. "Lnc" 360+00 TO 375+00
 STA. "L2" 360+00 TO 375+00
 STA. "NWA2" 360+00 TO 365+00

**LEGEND**

- (VMS) Variable Message Sign (VMS) (Agency Furnished).
 See ITS Plans
- (N) Install new sign (N) on new (M) sign support
- (EXN) Maintain and protect existing sign (N) and support
- (RXN) Remove existing sign (N) and (M) sign support
- N = Sign Number
 M = Material
 Material options:
 W = Wood Post
 S = Steel Breakaway Support (TBB or MPB)
 SB = Sign Bridge
 ST = Perforated Steel Square Tube Sign Support

NOTE:

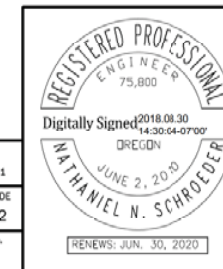
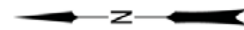
The locations of sign installations shown are approx. with exact locations to be determined in the field.

NOTE:

Existing signs not shown are to remain in place unless otherwise directed by the Engineer.

NOTE:

Where not shown, R/W extends beyond the limit of the sheet.



HWY: 064
 M.P.: 20.4 - 20.1
 UNIT FILE CODE
 S-17962
 Q/R/ISSU NO.

DKS 720 SW Washington Street, Suite 500 Portland, Oregon 97205 (503) 243-3500 www.dksassociates.com		
I-205: JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION EAST PORTLAND FREEWAY CLACKAMAS & MULTNOMAH COUNTIES		
Designer: J. Pan Drafter: DKS CAD	Reviewer: N. Schroeder Checker: R. Hurtado	SHEET NO. LA07
SIGN INSTALLATION PLAN		

BRIDGE NAME:			Sign Truss Br, Hwy 64 NB at MP 20.36			BRIDGE NO:		16458N		KEY NO:		21157	
SECTION NAME:			I-205:JOHNSON CREEK-GLENN JACKSON BRIDGE PHASE 2 SECTION			COUNTY:		Multnomah		CONTR #		15124	
PRIMARY PROJ:			Miscellaneous Proj			BID DATE:		11/29/2018		FAP NO:		S064(059)	
STRUCT TYPE:			TRUSS SIGN BRIDGE			# BIDS RECVD:		3		AWARDED TO:		KERR CONTRACTORS OREGON INC	
										PREPARED BY:			
						CONTRACT		3 LOW BIDDERS		SPREAD			
QTY		UNIT	BID ITEM			UNIT	AMT		UNIT	AMT		HIGH	LOW
Miscellaneous_Project													
SUBTOTAL							15,600			17,500			
PERCENT MOBILIZATION						11.11	1,700		11.06	1,900			
TOTAL							17,300			19,400			
DETAILS													
Miscellaneous Proj													
100.00		FOOT	BRIDGE REMOVAL WORK			156.00		15,600		175.33		17,533 250.00 120.00	

EXISTING VMS SIGN
TRUSS BRIDGE DETAILS
I-84 WB (HWY 006) MP 226.62

General Notes:

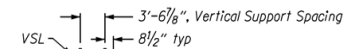
1. Provide all materials and perform all work according to the Oregon Standard Specifications for Construction 2018 and the accompanying Special Provisions.
2. See Plan drawings for conduit and conductor requirements.
3. See ITS Drawings KC07 and KC08 for additional sign bridge/work-platform details and cross-sections not shown.

Notes

1. Contractor to provide all bolts, nuts, and washers required to connect the sign to the sign mount.
2. Verify vertical spacing in horizontal mounting members prior to drilling the vertical support members. Provide $\frac{1}{16}$ " holes for $\frac{3}{8}$ " fasteners.
3. Bolts and rods connecting galvanized steel members to aluminum members shall be stainless steel and meet the requirements of ASTM A193 Class 2 Grade B8M. Nuts used with A193 bolts shall be heavy hex, and shall meet the requirements of ASTM A194 Grade 8M with supplementary requirement "S1". Use a stainless steel flatwasher and double nut at each bolt.
4. When attaching aluminum Z-brackets to steel vertical supports use $\frac{1}{16}$ " thick stainless steel shims (ASTM A240 Type 304) over full contact area between the dissimilar metals. Tighten $\frac{3}{8}$ " diameter nuts to 97 ft-lb torque.
5. The field drilled holes are to be centered on the Z-bracket flange no closer than 2" from the end.
6. When lifting display with lift eyes use a spreader beam to ensure vertical reactions at the lift eyes. See Detail A.
7. Field verify all dimensions prior to fabricating and/or installing any components.



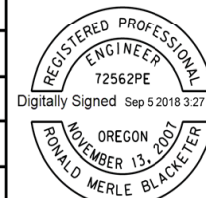
VMS VERTICAL SUPPORT SPACING
No Scale



VSL VERTICAL SUPPORT SPACING
No Scale

Accompanied by dwgs: TM621, TM623, TM624, TM625, TM626, TM627, TM628, TM690, TM691, TM696

STRUCTURE NO.
16713
BOS DWG NO.
102057
HWY: 006 (WB)
M.P.: 226.62
COUNTY
UMATILLA
ITS DWG. NO.
ITS-2776



RENEWS: 12-31-2019

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

OREGON DEPARTMENT
OF TRANSPORTATION



I-84: NE OR SNOW ZONE SAFETY
IMPROVEMENTS PROJECT
OLD OREGON TRAIL HIGHWAY
UMATILLA & UNION COUNTIES

Designer: RON BLACKETER

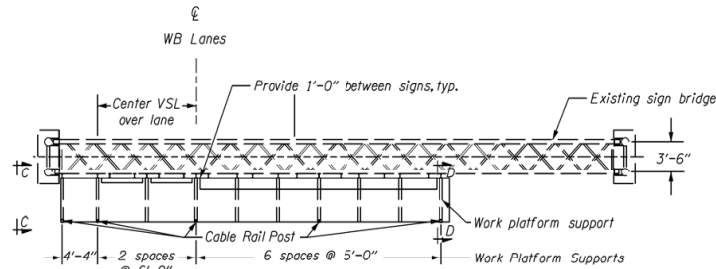
Reviewer: BLAINE VAN DYKE

Drafter: RON BLACKETER

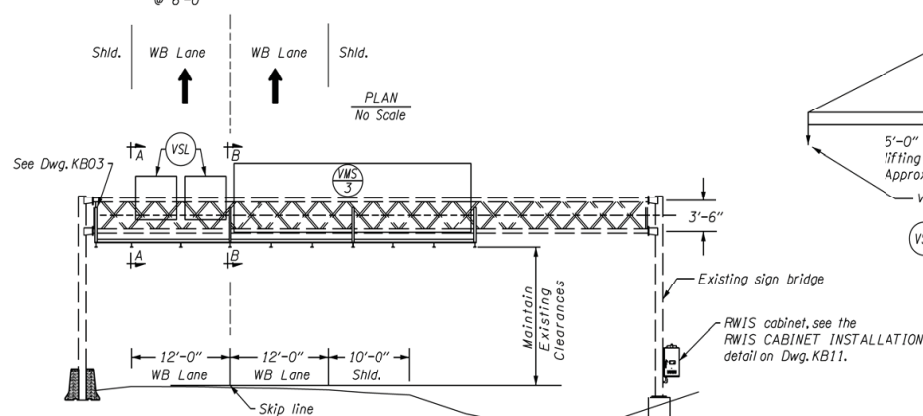
Checker: DOUG SPENCER

INTELLIGENT TRANSPORTATION SYSTEMS
STRUCTURE DETAILS

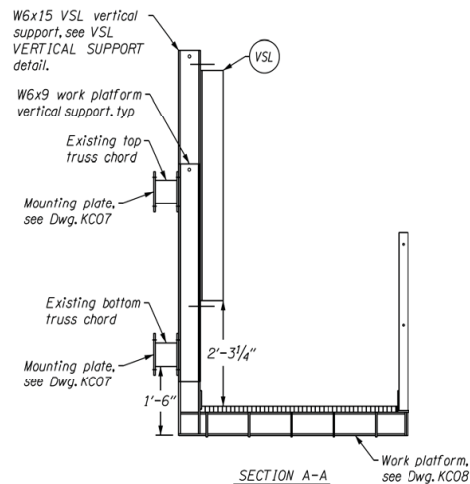
SHEET NO.
KC06



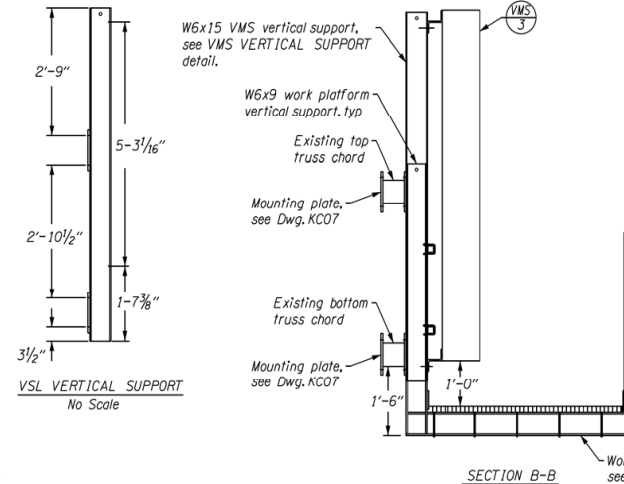
PLAN
No Scale



ELEVATION
No Scale



SECTION A-A
No Scale



SECTION B-B
No Scale

BRIDGE NAME:	Sign Truss Bridge, Hwy 6 WB_MP226.62	BRIDGE NO:	16713	KEY NO:	18994
SECTION NAME:	I-84: NE OR SNOW ZONE SAFETY IMPROVEMENTS PROJECT	COUNTY:	Umatilla	CONTR #	15116
PRIMARY PROJ:	Miscellaneous Proj	BID DATE:	11/08/2018	FAP NO:	S006(153)
STRUCT TYPE:	TRUSS SIGN BRIDGE	# BIDS RECVD:	4	AWARDED TO:	HP CIVIL INC

PREPARED BY:

			CONTRACT		3 LOW BIDDERS		SPREAD	
QTY	UNIT	BID ITEM	UNIT	AMT	UNIT	AMT	HIGH	LOW
Miscellaneous Project - VMS Replacement								
		SUBTOTAL		15,500		78,500		
		PERCENT MOBILIZATION	11.11	1,700	11.09	8,700		
		TOTAL		17,200		87,200		
DETAILS								
VMS Replacement								
1.00	LS	ELECTRICAL SYSTEMS INSTALLATION, SITE 14	6,000.00	6,000	13,666.67	13,667	23,000.00	6,000.00
1.00	LS	ITS EQUIPMENT INSTALLATION, SITE 14	9,500.00	9,500	64,833.33	64,833	95,000.00	9,500.00

Index

2019 BRIDGE COST DATA

INDEX

Str. No.	Structure Name	Type	Contract	Let Date	Key Number
22533	Ash Swale_Hwy 1W_MP 51.06	PS Slabs - 18"	15095	10/11/2018	18584
22757	Wildlife Pass_Hwy 4_MP180.10	PS Slabs - 26"	15138	4/11/2019	19784
22654	Farmer Creek Hwy 9	PS Slabs - 30"	15152	7/11/2019	17525
22718	Sourgrass Creek_HWY 32_MP 11.33	PS Deck BT60	15132	2/28/2019	19935
23324	Hwy 069WB (Delta Hwy) (CONN AQ)	PS BT60 Girder	15159	8/29/2019	19490
22516	Hwy 2 EB Over NW Graham Road	RCBG 36"	15110	11/15/2018	19763
22517	Hwy 2 WB Over NW Graham Road	RCBG 36"	15110	11/15/2018	19763
09460	SCS Canal & UPRR, Hwy 69	Seismic Retrofit	15145	5/16/2019	18576
00928A	Crystal Creek, Hwy 9	Rail Retrofit	15104	10/11/2018	18870
00901C	Sixes River, Hwy 9	Rail Retrofit	15104	10/11/2018	18870
09777	Little Butte Creek, Hwy 270	Rail Retrofit	15106	10/11/2018	19961
07813	Jackson Creek, Hanley Rd #789 at MP 3.34	Rail Retrofit	15106	10/11/2018	19961
07333	Columbia R & N Hayden Isl Dr, Hwy1 SB (Interstate)	Rail Retrofit	15119	12/6/2018	19651
00805C	Lower Lookingglass Creek, Hwy 35	Rail Retrofit	15130	2/7/2019	18586
02133A	Spanish Hollow Creek, Hwy 2	Rail Retrofit	15118	11/1/2018	19928
09232	Scott Canyon, Hwy 2 WB	Rail Retrofit	15118	11/1/2018	19928
09232A	Scott Canyon, Hwy 2 EB	Rail Retrofit	15118	11/1/2018	19928
09225	Hwy 2 EB over Rufus Conn	Rail Retrofit	15118	11/1/2018	19928
09225A	Hwy 2 WB over Rufus Conn	Rail Retrofit	15118	11/1/2018	19928
09259A	Hwy 1 NB over Hwy 273	Rail Retrofit	15134	4/18/2019	18873
09259	Hwy 1 SB over Hwy 273	Rail Retrofit	15134	4/18/2019	18873
09460	SCS Canal & UPRR, Hwy 69	Rail Retrofit	15145	5/16/2019	18576
08013	Hwy 39 over Hwy 150	Rail Retrofit	15113	10/25/2018	18567
22743	Culvert_Hwy 62_MP31.72	Culvert	15126	12/20/2018	19661
22667	cl_channel_Hwy 45_MP7.52	Culvert	15141	4/11/2019	19810
22668	cl_Hoagland Cr_Hwy 45	Culvert	15141	4/11/2019	19810
23743	Cogswell Cr_Hwy 19	Culvert	15161	9/19/2019	19943
22534	Plum Creek Culvert, Hwy 1W at MP 49.75	Culvert	15095	10/11/2018	18584
23828	Crooked Creek Culvert	Culvert	15161	9/19/2019	19943
07836	Wildlife Pass_Hwy 1_MP116.86	Culvert	15108	11/1/2018	18967
01820	Yaquina Bay, Hwy 9	Miscellaneous	15094	10/11/2018	19654
01823	Coos Bay, Hwy 9 (McCullough)	Miscellaneous	15099	10/18/2018	18914
02716A	Lost River Diversion Canal, Hwy 50	Miscellaneous	15158	8/15/2019	18683
07839	Hwy 1 SB over Clarks Branch Rd Conn #2	Miscellaneous	15108	11/1/2018	18967
18276	USRS Main Canal A, Hwy 50	Miscellaneous	15158	8/15/2019	18683
09717	Hwy 64 NB over UPRR	Miscellaneous	15115	11/8/2018	19721
09260A	Hwy 1 over Hwy 273 at MP 4.63	Miscellaneous	15134	4/18/2019	18873
00901C	Sixes River, Hwy 9	Miscellaneous	15104	10/11/2018	18870
00902C	Elk River, Hwy 9	Miscellaneous	15104	10/11/2018	18870
16231	Garrison Slough, Hwy 9	Miscellaneous	15104	10/11/2018	18870
00805C	Lower Lookingglass Creek, Hwy 35	Miscellaneous	15130	2/7/2019	18586
09777	Little Butte Creek, Hwy 270	Miscellaneous	15106	10/11/2018	19961
08749	Hwy 63 over Hwy 1 (S Ashland Intchg)	Miscellaneous	15134	4/18/2019	18873

INDEX					
Str. No.	Structure Name	Type	Contract	Let Date	Key Number
09259A	Hwy 1 NB over Hwy 273	Miscellaneous	15134	4/18/2019	18873
09259	Hwy 1 SB over Hwy 273	Miscellaneous	15134	4/18/2019	18873
09460	SCS Canal & UPRR, Hwy 69	Miscellaneous	15145	5/16/2019	18576
09312A	Hwy 273 over Hwy 1	Miscellaneous	15134	4/18/2019	18873
08958B	Hwy 61 over City Strs & RR (E Fremont Bridge Appr)	Miscellaneous	15098	10/18/2018	19533
08958D	Hwy 61 NB to Hwy 1 SB over Strs (E Fremont Intchg)	Miscellaneous	15098	10/18/2018	19533
08958I	Hwy1 SB Conn to Hwy61 SB over Conn (E Fremont Int)	Miscellaneous	15098	10/18/2018	19533
09254E	Hwy 61 NB Conn #2 to Hwy 47 WB over Hwy 61 & Conns	Miscellaneous	15098	10/18/2018	19533
09268B	Hwy 2W EB Conn to Hwy 61 SB	Miscellaneous	15098	10/18/2018	19533
09268E	Hwy 2W EB Conn to Hwy 61 NB	Miscellaneous	15098	10/18/2018	19533
09268N	Hwy 61 NB over City Streets	Miscellaneous	15098	10/18/2018	19533
09268S	Hwy 61 SB over City Streets	Miscellaneous	15098	10/18/2018	19533
13531	Hwy 64 over Hwy 26 (SE Powell Blvd)	Miscellaneous	15124	11/29/2018	21157
13528	Hwy 64 over SE Division Street	Miscellaneous	15124	11/29/2018	21157
08107E	Snake River, Hwy 6 EB	Miscellaneous	15121	11/29/2018	19660
08107W	Snake River, Hwy 6 WB	Miscellaneous	15121	11/29/2018	19660
07855E	Chemawa Rd NE to Hwy 1 SB over Hwy 72	Miscellaneous	15137	3/28/2019	19831
07854C	Hwy 1 over UPRR Main Line	Miscellaneous	15137	3/28/2019	19831
07855C	Hwy 1 NB over Hwy 72 NB	Miscellaneous	15137	3/28/2019	19831
07855D	Hwy 1 SB over Hwy 72 NB	Miscellaneous	15137	3/28/2019	19831
16086	Labish Bottom, Hwy 1 NB	Miscellaneous	15137	3/28/2019	19831
16086A	Labish Bottom, Hwy 1 SB	Miscellaneous	15137	3/28/2019	19831
07295	Tumble Creek, Hwy 162	Miscellaneous	15117	11/1/2018	18568
01377A	Columbia R & N Hayden Isl Dr, Hwy1 NB (Interstate)	Miscellaneous	15119	12/6/2018	19651
13522	SE Stark Street over Hwy 64	Miscellaneous	15124	11/29/2018	21157
02019	Sandy River, Hwy 100	Miscellaneous	15160	9/5/2019	20703
02133A	Spanish Hollow Creek, Hwy 2	Miscellaneous	15118	11/1/2018	19928
09232	Scott Canyon, Hwy 2 WB	Miscellaneous	15118	11/1/2018	19928
09232A	Scott Canyon, Hwy 2 EB	Miscellaneous	15118	11/1/2018	19928
09225	Hwy 2 EB over Rufus Conn	Miscellaneous	15118	11/1/2018	19928
09225A	Hwy 2 WB over Rufus Conn	Miscellaneous	15118	11/1/2018	19928
16443	Hwy 70 WB over Umatilla R, UPRR, and Cnty Rd.	Miscellaneous	15101	10/4/2018	19793
16444	Hwy 70 EB over Umatilla R, UPRR, and Cnty Rd.	Miscellaneous	15101	10/4/2018	19793
16450	Hwy 70 WB over UPRR	Miscellaneous	15101	10/4/2018	19793
16451	Hwy 70 EB over UPRR	Miscellaneous	15101	10/4/2018	19793
08944	Phillipi Canyon Rd over Hwy 2	Miscellaneous	15118	11/1/2018	19928
09198	Hwy 52 over Hwy 2	Miscellaneous	15118	11/1/2018	19928

INDEX

Str. No.	Structure Name	Type	Contract	Let Date	Key Number
08805	Brewery Grade Conn over Hwy 2	Miscellaneous	15118	11/1/2018	19928
07839A	Hwy 1 NB over Clarks Branch Rd Conn #2	Miscellaneous	15108	11/1/2018	18967
08945	Hwy 2 over Blalock Conn	Miscellaneous	15111	11/8/2018	20274
09739	Stafford Rd over Hwy 64	Miscellaneous	15163	9/19/2019	21400
23736	its_Hwy 064_SS_MP7.60	Miscellaneous	15163	9/19/2019	21400
08306	Youngs Bay, Hwy 9 (New Youngs Bay)	Miscellaneous	15109	10/25/2018	18602
09578	Hwy 6 WB over Nolan Road	Miscellaneous	15131	2/28/2019	20492
08003	Yamhill River, Hwy 39 (Dayton)	Miscellaneous	15113	10/25/2018	18567
22631	RTW_HWY 1SB_WS_43.10258/123.36771	Retaining Wall	15108	11/1/2018	18967
23261	rtw_Hwy 91_ES_45.44588/-122.73068	Retaining Wall	15139	4/11/2019	18838
23326	rtw_Hwy 069WB (Conn AQ)_WS_44.09178/123.09881	Retaining Wall	15159	8/29/2019	19490
23327	rtw_Hwy069 WB (Conn AQ)_ES_44.09097/123.09898	Retaining Wall	15159	8/29/2019	19490
23303	rtw_Graham Rd_ES_45.5449/ 122.3909	Retaining Wall	15110	11/15/2018	19763
23304	rtw_Graham Rd_WS_45.5449/ 122.3909	Retaining Wall	15110	11/15/2018	19763
23578	rtw_Hwy32_NS_45.10262/123.77720	Retaining Wall	15132	2/28/2019	19935
23247	rtw_E Main St_NS_42.469021/ 122.797574	Retaining Wall	15149	5/30/2019	19230
23249	rtw_E Main St_SS_42.468893/ 122.797586	Retaining Wall	15149	5/30/2019	19230
23248	rtw_E Main St_NS_42.468714/ 122.798043	Retaining Wall	15149	5/30/2019	19230
22632	RTW_HWY 1NB_ES_43.11203/123.35502	Retaining Wall	15108	11/1/2018	18967
23328	rtw_Delta Hwy NB_ES_44.08998/123.09824	Retaining Wall	15159	8/29/2019	19490
23329	rtw_Delta Hwy NB_ES_44.08831/123.10032	Retaining Wall	15159	8/29/2019	19490
23262	rtw_SW Commercial St_NS_45.43155/-122.77158	Retaining Wall	15139	4/11/2019	18838
23746	sw_Hwy069EB (Conn 069AM)_WS_44.09369/123.10422	Sound Wall	15159	8/29/2019	19490
23313	sw_Hwy026_SS_45.49742/122.52625	Sound Wall	15125	12/13/2018	19690
23314	sw_Hwy026_SS_45.49745/122.52537	Sound Wall	15125	12/13/2018	19690
08704A	Willamette River Oflow, Hwy 69 EB	Sound Wall	15159	8/29/2019	19490
23562	rtw_Hwy069EB (Conn 069AM)_WS_44.09098/123.10087	Sound Wall	15159	8/29/2019	19490
23833	its_Hwy064_MP10.18	Sign Support	15163	9/19/2019	21400
23836	its_Hwy064_MP0.95	Sign Support	15163	9/19/2019	21400
23308	sn_HWY69_44.08633/123.10151	Sign Support	15159	8/29/2019	19490
23309	sn_HWY69_44.08821/123.10067	Sign Support	15159	8/29/2019	19490
23278	sn_Hwy 64NB_MP19.8	Sign Support	15124	11/29/2018	21157
23279	sn_Hwy 64NB_MP20.4	Sign Support	15124	11/29/2018	21157
23287	its_Hwy 64_MP25.6	Sign Support	15124	11/29/2018	21157
23851	its_Hwy 1_MP307.3	Sign Support	15150	5/30/2019	20430
23852	its_Hwy 1_MP304.3	Sign Support	15150	5/30/2019	20430
23834	its_Hwy064_MP7.60	Sign Support	15163	9/19/2019	21400
23310	sn_HWY69_44.0943/123.09981	Sign Support	15159	8/29/2019	19490

INDEX

Str. No.	Structure Name	Type	Contract	Let Date	Key Number
23275	its_Hwy 64SB_MP16.3	Sign Support	15124	11/29/2018	21157
23277	its_Hwy 64NB_MP19.6	Sign Support	15124	11/29/2018	21157
23280	sn_Hwy 64NB_MP20.95	Sign Support	15124	11/29/2018	21157
23281	its_Hwy 64SB_MP21.8	Sign Support	15124	11/29/2018	21157
23282	its_Hwy 64NB_MP22.1	Sign Support	15124	11/29/2018	21157
23284	its_Hwy 64NB_MP23.8	Sign Support	15124	11/29/2018	21157
23274	sn_Hwy 1E_ES_MP12.73	Sign Support	15103	10/4/2018	18759
23250	sn_Hwy 064NB_ES_MP14.03	Sign Support	15115	11/8/2018	19721
23251	sn_Hwy 064NB_ES_MP13.74	Sign Support	15115	11/8/2018	19721
23311	sn_HWY69_WS_44.09059/123.10068	Sign Support	15159	8/29/2019	19490
23276	sn_Hwy 64NB_ES_MP19.6	Sign Support	15124	11/29/2018	21157
23283	its_Hwy 64SB_WS_MP23.1	Sign Support	15124	11/29/2018	21157
23285	its_Hwy 64SB(Conn 064DC)_MP23.9	Sign Support	15124	11/29/2018	21157
23286	sn_Hwy 64SB_WS_MP25.5	Sign Support	15124	11/29/2018	21157
23563	its_Hwy6EB_SS_MP200.59	Sign Support	15116	11/8/2018	18994
23564	its_Hwy6WB_SS_MP220.83	Sign Support	15116	11/8/2018	18994
23565	its_Hwy6_SS_MP221.57	Sign Support	15116	11/8/2018	18994
23566	its_Hwy6WB_SS_MP222.54	Sign Support	15116	11/8/2018	18994
23567	its_Hwy6 WB_SS_MP223.52	Sign Support	15116	11/8/2018	18994
23568	its_Hwy6 EB_SS_MP225.24	Sign Support	15116	11/8/2018	18994
23569	its_Hwy6 WB_SS_MP224.59	Sign Support	15116	11/8/2018	18994
23570	its_Hwy6 EB_SS_MP228.58	Sign Support	15116	11/8/2018	18994
23571	its_Hwy6 WB_SS_MP229.87	Sign Support	15116	11/8/2018	18994
23572	its_Hwy6 WB_SS_MP237.86	Sign Support	15116	11/8/2018	18994
23573	its_Hwy6 EB_SS_MP239.89	Sign Support	15116	11/8/2018	18994
23574	its_Hwy6 EB_SS_MP251.59	Sign Support	15116	11/8/2018	18994
23575	its_Hwy6 WB_SS_MP259.97	Sign Support	15116	11/8/2018	18994
17118	SE Sunnybrook Road Over Hwy 64	Sign Support	15115	11/8/2018	19721
09739	Stafford Rd over Hwy 64	Sign Support	15163	9/19/2019	21400
20310	Sign Truss Br, Hwy 64 SB at MP 11.62 (VMS)	Sign Support	15163	9/19/2019	21400
009359	Goodpasture Island Rd over Delta Hwy	Sign Support	15159	8/29/2019	19490
13520	NE Glisan Street over Hwy 64	Sign Support	15124	11/29/2018	21157
13521	E Burnside St over Hwy 64	Sign Support	15124	11/29/2018	21157
13523	SE Washington St over Hwy 64	Sign Support	15124	11/29/2018	21157
13527	SE Market St over Hwy 64 at MP 20.06	Sign Support	15124	11/29/2018	21157
13516D	Hwy 64 NB Conn #4 to Hwy 2 WB over Hwy 2 & Hwy 64 & MAX LRT	Sign Support	15124	11/29/2018	21157
20309	VMS I-205 Airport Way, MP 24.48 SB	Sign Support	15124	11/29/2018	21157
17469	Sign Truss Bridge, Hwy 64 NB at MP 20.17	Sign Support	15124	11/29/2018	21157
19490	Sign Cantilever Bridge, Hwy 64 NB at MP 20.68	Sign Support	15124	11/29/2018	21157
09016	Pedestrian Bridge (N Bryant St) over Hwy 1	Sign Support	15150	5/30/2019	20430

INDEX

Str. No.	Structure Name	Type	Contract	Let Date	Key Number
09012	N Skidmore St over Hwy 1 & Conn	Sign Support	15150	5/30/2019	20430
08958G	Ivy St Conn to Hwy 61 SB over Hwy1 (E Fremont Int)	Sign Support	15150	5/30/2019	20430
20690	Sign Truss Bridge, Hwy 1 at MP 306.46	Sign Support	15150	5/30/2019	20430
20691	Sign Truss Bridge, Hwy 1 at MP 306.10	Sign Support	15150	5/30/2019	20430
18930	Sign Cantilever Br, Hwy 64 NB at MP 13.98	Sign Support	15115	11/8/2018	19721
19467	Sign Cantilever Br, Hwy 64 NB at MP 13.86	Sign Support	15115	11/8/2018	19721
19481	Sign Cantilever Br, Hwy 64 NB at MP 19.58	Sign Support	15124	11/29/2018	21157
19492	Sign Cantilever Br, Hwy 64 NB at MP 20.99	Sign Support	15124	11/29/2018	21157
19512	Sign Cantilever Br, Hwy 64 SB at MP 25.46	Sign Support	15124	11/29/2018	21157
19514	Sign Cantilever Br, Hwy 64 SB at MP 25.67	Sign Support	15124	11/29/2018	21157
16458N	Sign Truss Bridge, Hwy 64 NB at MP 20.36	Sign Support	15124	11/29/2018	21157
16713	Sign Truss Bridge, Hwy 6 WB_MP226.62	Sign Support	15116	11/8/2018	18994