

VTRW
ENGINEER'S REPORT
August 26, 2021

- **1. MOW Cost Summary** (SEE ACCOMPANING MATERIAL)
 - Spreadsheet of 2021 MOW & Inspections Costs for CY 2021 thru July Versus Estimate/Budget

- **2. Railbike “Block” Signs** (SEE ACCOMPANING MATERIAL)
 - Gabe placing “Begin Railbike Block,” “Start Railbike Block,” and “ Railbike Block Hold” signs per initial Railbike Block Plan prepared 07/03/21.

- **3. Overman Embankment Settlement Monitoring** (SEE ACCOMPANING MATERIAL)
 - Completed Field Survey by Manhard Consulting
 - KLD Compile Data & Review Settlement Data since 2014.
 - Geotechnical Review by Gary Luce with Wood Rodgers
 - Findings & Recommendations

- **4. MOW Supervision**
 - Coordinate Work Priorities with Gabe Willaman and authorize Initial Work to begin (incl Haywards, Vegetation Removal, Ditch Cleaning)
 - Status – Haywards East Switch, Vegetation Control, Ditch Work Pending Rental of Excavator, Overman & MP 15.3 Surfacing Pending cooler weather, Joint Oiling Program pending cooler weather

- **5. Track Maintenance Contractor (TMC) RFP Document Update**
 - Updated 2010 TMC RFP Documents

- **6. FRA Reports to DEPOT (Signal, Track, Accident, & Structure) - Hard Drive available?**
 - Work with Allyson to Coordinate

- **8. FRA Form 8160.55 Reports**
 - Prepared Ridership/Accident report for July, 2021
 - We need Start Tracking Excursion Train Passenger Counts, Train Miles & Passenger Train Miles Traveled starting 8/28
 - When does Allyson want to take over role as Safety Reporting Official?

- **9. Linehan Road Crossing Signal Arm Repairs**
 - New Arm Received – Installation planed prior to 8/28/21

- **10. Linehan Road “Fast Vehicles/Dust Issue along Tracks**
 - Email into Clarissa Wilson per information received from Tom Gray to address dust issue along tracks near Linehan Road –possible boulder placement. Have not heard back from Clarissa – no response to date

- **11. Current Slow Orders**
 - MP 16.2 - MP 16.4 10 MPH (Overman Embankment Track Surface)
 - MP 15.2 – MP 15.4 10 MPH (“soft” spot on Embankment)
 - MP 12.4 - MP 12.5 5 mph (Chinese Wall)
 - All Switches have 10 MPH Speed Limit per Timetable Speeds Published

VTRW
 CY 2021 Maintenance -of-Way & Engineering Cost Summary
 8/17/2021

INVOICE #	DATE	WORK CATEGORY	Quantity	Crew/Item Cost	Total Labor Cost	Equip Rental	Material Cost	TOTAL ITEM COST	COMMENTS
MAINTENANCE-OF-WAY WORK & INSPECTIONS									
W-280	04/15/21	Signal Inspection (Dec-March), Misc Track Maint, Place Crossing Tele Numbers	1	4725.00	4725.00			4725.00	LS is Total of Invoice T&M Items
W-284	05/28/21	Track Inspection - Railbikes Only 4/16 thru 5/27	13	200.00	2600.00			2600.00	
W-285	05/28/21	Signal Inspection (April, May & FRA Special Inspection)	3	375.00	1125.00			1125.00	
W-288	06/24/21	Track Inspection - Railbikes Only 6/03 thru 6/24	8	200.00	1600.00			1600.00	
W-289	06/24/21	Track Maint Incl E. Haywards Switch Surfacing/Lining; Linehan Signal Crossing Arm	1	3030.00	3030.00			3030.00	LS is Total of Invoice T&M Items
W-290	08/05/21	Track Repairs E. Haywards Switch Surfacing/Lining; Signal Inspections for June	1	1515.00	1515.00			1515.00	LS is Total of Invoice T&M Items
W-291	08/05/21	Track Inspection - Railbikes Only 6/28, 6/30	2	200.00	400.00			400.00	
W-292	08/05/21	Track Maint Incl Brush Removal , Signal Inspection for June, Ballast Regulator	1	4875.00	4875.00	750.00		5625.00	LS is Total of Invoice T&M Items
W-293	08/05/21	Track Inspection - Railbikes Only 7/07 yhru 7/29	8	200.00	1600.00			1600.00	
W-293	08/05/21	Track Maint, Ome Day 2-Man Crew Trash Removal	1	750.00	750.00			750.00	
				0.00	0.00			0.00	
Sub-Totals:					22220.00	750.00	0.00	22970.00	

ANNUAL STRUCTURE INSPECTIONS									
Structure Inspections & Report (KL Dorr Consulting)									
Structure Inspections Support (Willaman)									
Sub-Totals:					0.00	0.00	0.00	0.00	

MISCELLANEOUS									
W-276	01/04/21	2 man crew to take down the Polar Buildings	1.5	750.00	1125.00	150.00		1275.00	Includes Truck Rental
W-281	04/15/21	1 man labor moving safe and watchmans trailer on 4/8.	0.5	375.00	187.50			187.50	
				0.00	0.00			0.00	
				0.00	0.00			0.00	
				0.00	0.00			0.00	
				0.00	0.00			0.00	
Sub-Totals:					1312.50	150.00	0.00	1462.50	

TOTALS: **23532.50** **900.00** **0.00** **24432.50**

RAILBIKE BLOCK CAPITAL IMPROVEMENTS									
KLD-349	8/17/2021	Rail Bike Block Signs, Incl Replacements		0.00	0.00	695.19		695.19	
				0.00	0.00			0.00	
Sub-Totals:					\$0	\$695	\$0	695.19	

US- 50 BRIDGE MAINTENANCE									
US-50 Bridge Maintenance (Willaman)									
US-50 Bridge Lighting Maintenance (To Be Contracted)									
				0.00	0.00			0.00	
				0.00	0.00			0.00	
Sub-Totals:					0.00	0.00	0.00	0.00	

MOW Supervision - KL Dorr Consulting									
KLD-340	05/09/21	MOW Supervision	1	337.50	337.50		47.85	385.35	Incl Purchase FRA Safety Manuals
KLD-341	06/01/21	MOW Supervision	1	641.25	641.25		206.92	848.17	Incl Purchase AREMA Bridge Inspection Manual
KLD-344	06/27/21	MOW Supervision	1	776.25	776.25			776.25	
KLD-348	08/02/21	MOW Supervision	1	742.50	742.50			742.50	
				0.00	0.00			0.00	
				0.00	0.00			0.00	
				0.00	0.00			0.00	
Sub-Totals:					2497.50	0.00	254.77	2752.27	

General Engineering - KL Dorr Consulting									
KLD-336	03/06/21	General Engineering	1	1080.00	1080.00	93.54		1173.54	Incl Prints NV Blue - Strategic Meeting
KLD-337	03/28/21	General Engineering	1	978.75	978.75			978.75	
KLD-339	05/09/21	General Engineering	1	999.00	999.00			999.00	
KLD-342	06/01/21	General Engineering	1	67.50	67.50			67.50	
KLD-343	06/27/21	General Engineering	1	1316.25	1316.25			1316.25	
KLD-347	08/02/21	General Engineering	1	1113.75	1113.75			1113.75	
				1	0.00	0.00		0.00	
				1	0.00	0.00		0.00	
				1	0.00	0.00		0.00	
Sub-Totals:					5555.25	93.54	0.00	5648.79	

	WORK CATEGORY	Duration Days	Crew/Item Cost	Total Labor Estimate	Equipment Rental	Material Cost Estimate	TOTAL ITEM COST	COMMENTS
PRIORITY	REGULAR MAINTENANCE-OF-WAY WORK							
1	East Swith Haywards - Surface & Line (4-Man rew)	5	\$1,570	\$7,850			\$7,850	Includes Spike Lining
2	Overman Embankment - Surface & Line (3-Man Crew)	4	\$1,140	\$4,560	\$1,750		\$6,310	Defer Work until Train Running to "Set Track", Includes Tamper Rental & Ballast Regulator Rental
3	Initial Ditch Cleaning (2-Man Crew)	5	\$750	\$3,750	\$7,500		\$11,250	5-Days Excavator Rental
4	Brush/Vegetation Removal (2-Man Crew)	3	\$750	\$2,250	\$2,250		\$4,500	Includes Ballast Regulator Rental
5	MOW Material & Sign Purchases					\$5,000	\$5,000	Spikes, Bolts/Nuts/Washers, Plugs, Plate Lubricant, Joint Lubricants. ROW Signs & Rail Bike Block Sign Purchases
6	Joint Oiling (Willaman)(2-Man Crew)	4	\$750	\$3,000			\$3,000	
7	Miscellaneous "Rough Spot" MOW Work 2-Man Crew	5	\$750	\$3,750			\$3,750	Miscellaneous Work Including: Surfacing/Lining, Raise Low Spots, Clean Flangways
8	Weed Abatement Program (Willaman)(3-Man Crew)	3	\$1,140	\$3,420		\$10,000	\$13,420	Fall Work
9	Miscellaneous Ballast Placement - Various Locations (2-Man Crew)	2	\$750	\$1,500	\$5,000	\$4,000	\$10,500	Includes Work Tran @ \$2500 per Day, Ballast Purchase
10	Sign Replacements (2-Man Crew)	2	\$750	\$1,500			\$1,500	Miscellaneous Work Including: Surfacing/Lining, Raise Low Spots, Clean Flangways, Sign Replacement
	Sub-Totals:			\$31,580	\$16,500	\$19,000	\$67,080	

Number	TRACK INSPECTIONS & LIGHT MAINTENANCE	Quantity						
1	Railbike Inspections & Light Maintenance (Number of Inspections)	24	\$400	\$9,600			\$9,600	June Thru December
2	Regular Operating Season Inspections & Light Maintenance (Number of Inspections)	10	\$1,050	\$10,500			\$10,500	Unknown Dates
3	Polar Express Inspections & Light Maintenance (Number of Inspections)	TBD	\$750	TBD			TBD	Unknown Dates
4	Linehan Road Crossing Signal Inspections (Conducted Monthly)(Number of Inspections)	7	\$375	\$2,625			\$2,625	\$375/Month
	Sub-Totals:			\$22,725	\$0	\$0	\$22,725	

Number	ANNUAL STRUCTURE INSPECTIONS (KL Dorr Consulting)							
1	Structure Inspections & Report)	1	\$7,000	\$7,000			\$7,000	Include Subconsultant Work by Hanfors Consulting, Wood Rodgers, RCI
2	Structure Inspections Support (Willaman)	4	\$400	\$1,600			\$1,600	Incl Hi-Rail
	Sub-Totals:			\$8,600	\$0	\$0	\$8,600	

TOTALS: **\$62,905** **\$16,500** **\$19,000** **\$98,405**

Number	RAILBIKE BLOCK CAPITAL IMPROVEMENTS							
1	SPPS Derail @ MP 7.5 (Lump Sum - Willaman)	1	\$12,000	\$12,000	\$500		\$12,500	Includes Back Hoe Rental
2	Railbike Block Signage(Lump Sum)	1	\$1,500	\$1,500		\$500	\$2,000	
	Sub-Totals:			\$13,500	\$500	\$500	\$14,500	

Number	US- 50 BRIDGE MAINTENANCE							
1	US-50 Bridge Maintenance (Willaman)			\$2,500		\$500	\$3,000	Lump Sum Estimate
2	US-50 Bridge Lighting Maintenance (To Be Contracted)			\$3,500		\$500	\$4,000	Lump Sum Estimate
	Sub-Totals:			\$6,000	\$0	\$1,000	\$7,000	

Number	LONG TERM MOW CAPITAL EXPENDITURES							
1	Overman Embankment Reconstruction (Lump Sum Estimate)(To be Contracted)	1	\$250,000	\$250,000			\$250,000	Critical Need Dependant
2	MP 5.2 Culvert Replacement (Lump Sum Estimate)(To be Contracted)	1	\$75,000	\$75,000			\$75,000	Critical Need Dependant
	Sub-Totals:			\$325,000	\$0	\$0	\$325,000	

EXHIBIT "A"

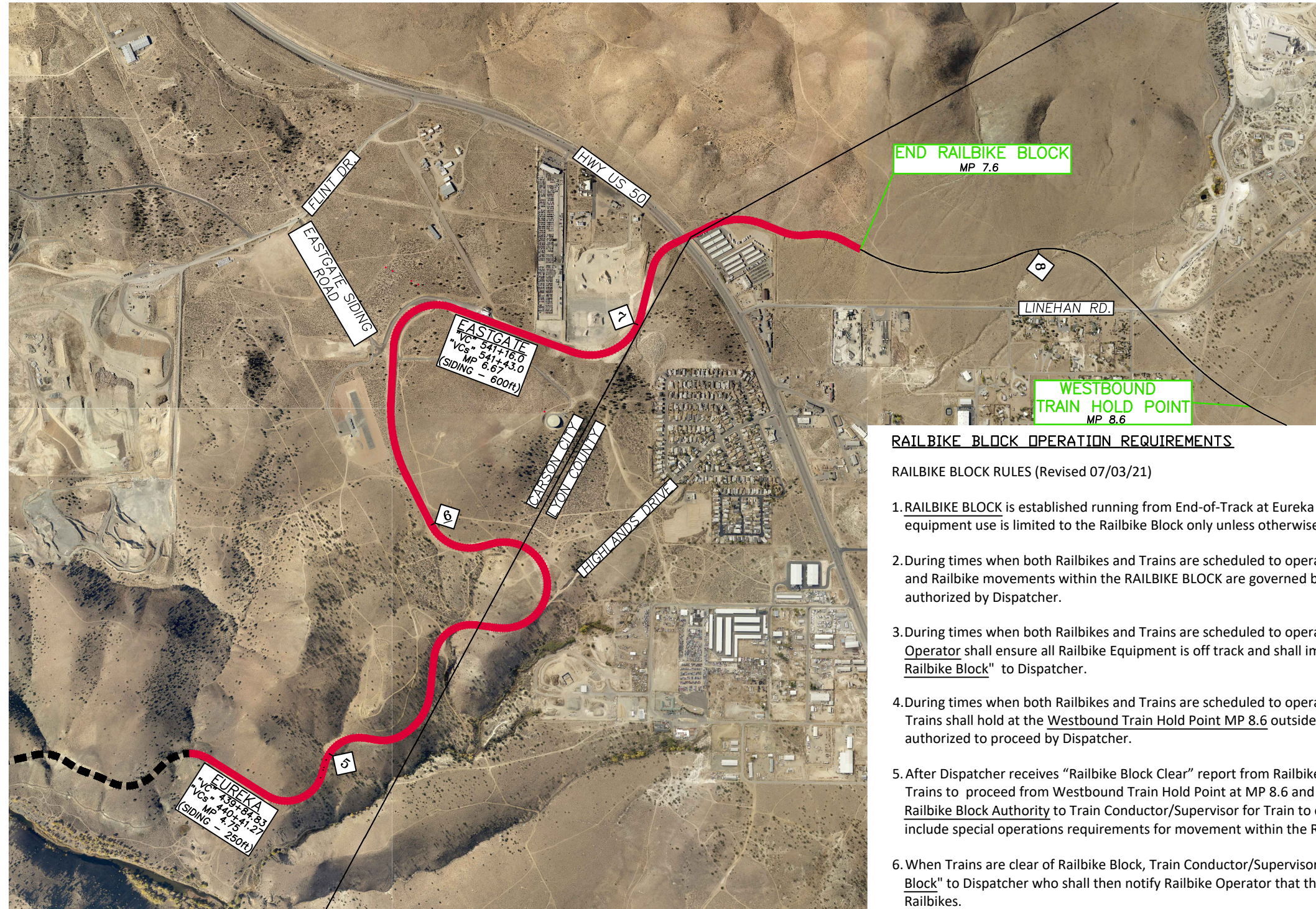
REVISED 07/03/21

VTRW MAINLINE

← TO EUREKA
TIMETABLE WEST

TO GOLD HILL
TIMETABLE EAST →

1"=1000'



2013 AERIAL PHOTO

RAILBIKE BLOCK OPERATION REQUIREMENTS

RAILBIKE BLOCK RULES (Revised 07/03/21)

1. RAILBIKE BLOCK is established running from End-of-Track at Eureka to MP 7.6. Railbike and Railbike Support equipment use is limited to the Railbike Block only unless otherwise authorized by Dispatcher.
2. During times when both Railbikes and Trains are scheduled to operate within the RAILBIKE BLOCK, all Train and Railbike movements within the RAILBIKE BLOCK are governed by DIRECT TRAFFIC CONTROL (DTC) as authorized by Dispatcher.
3. During times when both Railbikes and Trains are scheduled to operate within the RAILBIKE BLOCK, Railbike Operator shall ensure all Railbike Equipment is off track and shall immediately report "Railbikes are Clear of Railbike Block" to Dispatcher.
4. During times when both Railbikes and Trains are scheduled to operate within the RAILBIKE BLOCK, Westbound Trains shall hold at the Westbound Train Hold Point MP 8.6 outside Linehan Road Signal Circuit until authorized to proceed by Dispatcher.
5. After Dispatcher receives "Railbike Block Clear" report from Railbike Operator, Dispatcher shall authorize Trains to proceed from Westbound Train Hold Point at MP 8.6 and enter Railbike Block thru issuance of Railbike Block Authority to Train Conductor/Supervisor for Train to occupy Railbike Block. Dispatcher may include special operations requirements for movement within the Railbike Block.
6. When Trains are clear of Railbike Block, Train Conductor/Supervisor shall report "Train is Clear of Railbike Block" to Dispatcher who shall then notify Railbike Operator that the Railbike Block can now be used by Railbikes.

INITIAL PLAN
(subject to revision by VTRW Bulletin)

RAILBIKE BLOCK PLAN

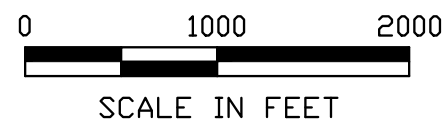
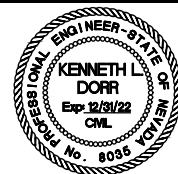
REVISION#	BY	DATE	DESCRIPTION

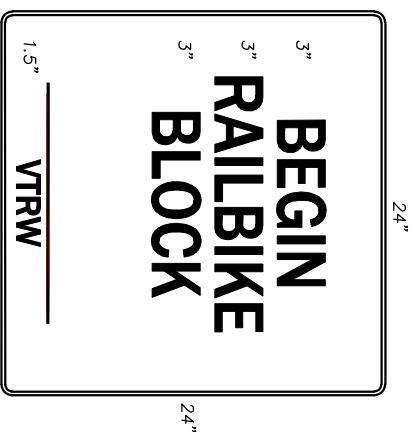
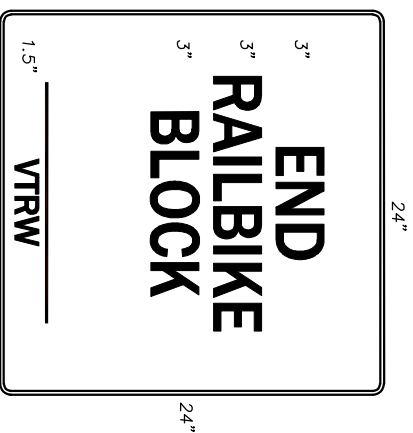
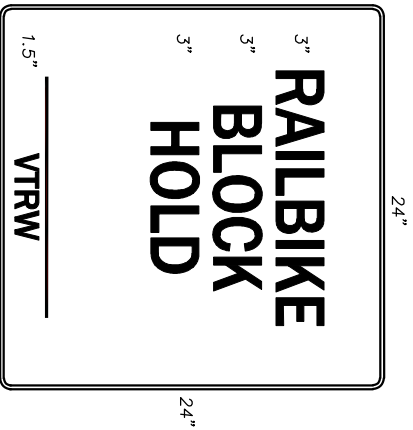
LEGEND
 RAILBIKE BLOCK - EUREKA TO MP 7.6 —————
 EXISTING VTRW TRACK OUTSIDE RAILBIKE BLOCK —————
 PROP VTRW TRACK - - - - -

DRAWN BY: KLD
 CHECKED BY:
 DATE: 07/03/21
 SHEET NUMBER
 1 OF 1

THE NEVADA COMMISSION FOR THE RECONSTRUCTION OF THE V&T RAILWAY (VTRW)
 LOCATION & DESCRIPTION:
 EASTGATE AREA - VTRW MAINLINE & SIDINGS
 CARSON CITY AND LYON COUNTY, NV.

KL DORR CONSULTING LLC
 2720 GOLD MINE CT.
 RENO, NV 89521
 (775) 721-2020
 ken.dorr@gmail.com







WOOD RODGERS

August 16, 2021

Kenneth L. Dorr, P.E.
KL Dorr Consulting LLC
2720 Gold Mine Ct
Reno, Nevada 89521

**Subject: V&T Railway
Storey County, Nevada
Overman Pit Embankment Monitoring**

Dear Mr. Dorr:

In accordance with your request, Wood Rodgers has performed a review of the most recent Overman Pit settlement monitoring data collected in July 2021 and the previously submitted Geocon Consultants Overman Pit Settlement monitoring report from November 2011.

The Overman Pit Embankment was originally constructed in 2005 and consists of approximately 300,000 cubic yards of soil and rock fill. The maximum height of the embankment is approximately 120 feet. The northerly, about one half of the embankment was constructed on mine waste and alluvial outwash. This is the area that has and is experiencing significant settlements.

Settlements although persistent, have been most pronounced after significant precipitation events. This observation prompted lining of the uphill ditches and sealing the culvert pipe at the north (RRE) end of the embankment in 2008. Contemporaneous with this work, rebar control points were installed to provide for long term monitoring of the northerly portion of the embankment. Settlements continued such that numerous track raises occurred between 2008 and 2014. In 2014 mitigation was necessary to stabilize the ballast section which had become excessive. In 2014 the track structure was removed, the subgrade raised with compacted fill and an impermeable HDPE membrane was installed over the subgrade. Monitoring control points were re-established and extended as part of this mitigation work.

Based on our review we have the following conclusions:

1. Settlements continue to occur but since 2014 within operational limits.
2. Settlement in the area that was previously mitigated in 2014, Sta. VT 58+50 to VT 63+50 settlements have decreased substantially compared to 2014-2019. Settlements in this area are approximately one quarter of what had occurred between 2014 and 2019 indicating an overall decline in the general rate of settlement of approximately 50%. Current rates of settlement are about three quarter of an inch per year or 0.06 tenths of a foot per year.
3. Settlement is occurring south of the previously mitigation section from approximate station VT 54+25 to VT 58+50. Settlement in this area was not monitored until 2019. Measured settlements since 2019 are minimal except for the from Station VT 57+00 to Station VT 58+50. Settlements for this area are in the range of the previously mitigated area (about 0.06 tenths of a foot per year).

**V&T Overman Pit
Embankment Monitoring
Geotechnical**

4. Based on the average rate of settlement, mitigation of the subgrade is likely to be required about every eight to ten years. Due to the anticipated slowing of settlement rates, it can be expected that the interval between major mitigations will lengthen provided normal or near normal yearly precipitation occurs. If settlement rates continue to decline, mitigation of the embankment subgrade will likely be needed only after large precipitation events.

Based on our review and history with the Overman design and construction we have the following recommendations:

1. Periodic raising of the track by adding ballast is anticipated to be needed for the foreseeable future. Longer time intervals between ballast additions and subgrade mitigations are likely.
2. Survey monitoring of the embankment settlement control points should be conducted every two years at a minimum and immediately after any major precipitation events.
3. Visual inspection of the embankment should be conducted by qualified geotechnical personnel yearly. This inspection should be focused on surficial and global embankment stability. A written field inspection and analysis report should be prepared and presented to the project civil engineer within five days of the completion of the inspection provided that no imminent concerns are noted. Should any hazardous conditions be observed, the engineer should be notified immediately, and subsequent written reports forwarded as soon as possible.
4. Visual inspection of the embankment surface should be conducted by maintenance personnel during routine track inspections. Significant track deflections, tension cracks along the embankment crest, or any "slip outs" should be reported to geotechnical staff immediately for follow up inspections and the development of action plans if necessary.

Thank you for the opportunity to be of continuing service.

Wood Rodgers, Inc.



August 16, 2021

**Gary Luce, PE
Senior Engineer**