Heartland Corridor, Walton Virginia to Columbus Ohio

Preliminary Engineering Phase Report

Laurel
Tunnel
MP
N414.09
Rogers, WV

October 14, 2005, Rev. 2

Hatch Mott MacDonald

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Norfolk Southern Railway
Heartland Corridor, Walton VA to Columbus OH

Laurel Tunnel – MP N414.09

Statistics: Pocahontas Division
Double-width Tunnel for Main #1 and Main #2
Length = 803'
Concrete lined
Degree of Curvature = 5.9 RT (per Track Chart)
Superelevation = 3.5" (per Track Chart)

1. EXISTING CONDITIONS

1.1 Background

Valuation Maps V-13WV/38 & 39 (1629301 & 16294) for the Laurel Tunnel are dated June 30, 1916. Parcels for the tunnel were acquired in 1909. Therefore it is suspected that the tunnel was constructed in 1909 or shortly afterwards. A Norfolk Southern tunnel inspection sheet references a plan "12574-A – Plan of Tunnel Undercutting Program 1981. Additional information on this tunnel was obtained from various sources such as topographic maps, aerial photos, inspection reports, track charts, and field investigations that were performed on March 25, June 14, and July 6, 2005.

1.2 General Area

The tunnel is located in a lightly populated area of the Town of Rogers, McDowell County, West Virginia. Nearby land use includes a residential area near the east portal. There is a staging area close to the west portal. The site can be accessed from Route 52 near the Roderfield Tunnel. There is a rail bridge in close proximity of the east portal crossing the Tug Fork River and equipment will need to cross this bridge in order to access the tunnel.

1.3 Structural Conditions

The tunnel is 803' long with a concrete lining and a width of approximately 30'. It is a double-width tunnel for two tracks. The track circuit cable is mounted on the north wall of the tunnel lining. The tunnel lining is generally in good condition and dry, with only a few joints at the portals being wet.

Liner cores were taken on July 6th, 2005. Cores were drilled into the liner at locations 250' and 750' into the tunnel from the east portal. The cores were taken at the 7 and 12 o'clock positions at 250' and at the 7 and 10 o'clock positions at 750'. A borescope was inserted into the holes to view inside the liner. The video from the borescope was recorded onto a DVD. The liner probe investigation is summarized in the table below:

Summary of Laurel Tunnel Liner Core Investigation

Distance from East Portal	Position	Liner Thickness	Notes
250'	7 o'clock	35"	Retrieved 8" of sandstone followed by 6" of shale from immediately behind concrete liner.
250'	12 o'clock	30"	Retrieved 8" of rock from immediately behind concrete liner. No voids.

Summary of Laurel Tunnel Liner Core Investigation			
Distance from East Portal	**Position**	**Liner Thickness**	**Notes**
750'	7 o'clock	30"	Retrieved 3" of sandstone from immediately behind concrete liner. No void.
750'	10 o'clock	32"	Retrieved 5" of rock from immediately behind concrete liner. No void.

The bridge outside of the east portal of the tunnel was investigated on June 14, 2005. It is a 4-span timber deck girder bridge. The girders are built-up steel plate girders with the south pair of girders carrying Main #1 and the north pair carrying Main #2. The girders bear directly on the abutments. The bridge spans over the Tug Fork River. The structure type and site geometry, coupled with the proximity of rock below the rail make track lowering a difficult and expensive option.

Excavation was done to expose a small portion of the tunnel liner footing. The footing thickness was found to be 30". The vertical distance from the top of rail to the base of the footing was measured at 45".

1.4 Track

The track is continuous welded rail of conventional design with wooden crossties at approximately 19" on center and a stone ballast section. The rail is typically 132RE on 18" tie plates and fastened with rail spikes and anchors at every tie. The track curves right 5.9 degrees with a superelevation of 3.5" on both tracks. There are drainage ditches along each wall and in between the tracks, and drainage appears to be a problem as standing water is present in the ditches, causing pumping on both tracks. The water in the tunnel was tested and its pH reading was 8.18. This is a fairly neutral reading and indicates that the water is not unusually corrosive. The ballast, which is approximately 2' below the top of tie, is in generally poor condition. The ballast from this tunnel was tested and classified as being "Very Strong", requiring many blows of a geological hammer to break intact rock specimens. Most of the foundation is exposed on the south side of the tunnel where the pumping exists.

1.5 Geotechnical

The tunnels in the east-central part of the Pocahontas Division (including Laurel) are located in the Appalachian Plateaus Physiographic Province, a region characterized by deeply incised plateaus underlain by flat-lying sedimentary rock. The tunnel itself is lined and no rock was exposed. The description of the site geology at each tunnel is based on our observations of the rockmass at the portals and adjacent cuts and the 1968 West Virginia Geologic Map prepared by the West Virginia Geologic and Economic Survey.

The tunnel was excavated through the medium- to thick-bedded fine-to medium grained sandstone of the New River Formation. The sandstone is locally interbedded with thin-bedded sandstone, siltstone, shale, and coal. Bedding is subhorizontal and gently rolls back and forth towards the northwest and southeast. Joints in the rock cuts of the formations are typically steeply dipping and widely spaced. Most joints are less than 15 feet in length and are not through-going across the exposure face.

The rock quality designation, Q, at the portals was determined to be 23 at the east portal and 18 at the west portal. A Q rating between 10 and 40 is considered "Good" with 10 bordering on "Fair" and 40 bordering on "Very Good." A sample of rock was taken from the portal and tested. Lab testing of the sample indicates that the rock is sandstone and has a compressive strength of 11,554 psi.

The geoprobes indicate that the top of rock is located between 2.0' to 3.0' (averaging about 2.6') below the top of ballast throughout the tunnel for Main #1 and between 1.5' to 3.0' (averaging about 2.4') below the top of ballast throughout the tunnel for Main #2. Top of ballast is typically about 0.8' below top of low rail.

1.6 Clearances

The laser car measurements indicate that the existing tunnel has adequate horizontal clearance for both the "High-Wide Load" and the "Double-Stack Load" portions of the composite clearance envelope throughout the tunnel. For vertical clearance, the "Double Stack" portion of the envelope encroaches on the sides of the tunnel crown by about 15" to 18" on the left wall and about 22" to 25" on the right wall. The "High-Wide" portion of the envelope encroaches on the sides of the tunnel crown (at points lower than the "Double Stack") by an average of about 8" on the left wall (varies 6"-10") and 16" on the right wall (varies 15"-17".) Cross sections of the tunnel clearance encroachments are shown in the drawings at the end of this report. The maximum vertical encroachments are summarized in the table below:

	Crown Encroachment (radial inches)	
Distance (ft) from East Portal	**Left Side**	**Right Side**
0	20	25
101	18	25
201	18	25
301	16	23
401	14	18
502	16	23
602	15	23
702	13	23
754	15	25

2. CLEARANCE IMPROVEMENT ALTERNATIVES

Given the magnitude of the vertical clearance deficiency, there are several general alternatives that can be used to obtain the clearance; replacing the lining, notching the lining or using steel ties to lower the track. Combinations of the general methods may be required to obtain a design that is cost effective and that can be constructed within reasonable track outages. Track lowering by excavating or undercutting does not appear feasible due to the proximity of the top of rock to the surface.

2.1 Liner Replacement

To obtain the desired clearance, the concrete roof must be demolished, the native rock excavated to the clearance limits plus the new liner thickness, and a new concrete liner installed. This alternative appears necessary for most or all of the tunnel. If the encroachment could be reduced to a maximum of about 16”-18” using steel ties or other methods, then notching may be employed instead of liner replacement.

2.2 Notching the Crown

Notching in the upper quadrants of the tunnel crown would not cut entirely through the liner and could be an alternative to complete liner replacement. However, the encroachments may be large enough that a minimum liner thickness of at least 10” might not be maintained. The four cores taken in July 2005 varied in thickness from 30" to 35", which is more than the minimum thickness of 26" at crown and 34" minimum in the sidewalls that was indicated on drawings for adjacent tunnels. However additional investigations would be required before the apparent additional thickness of concrete can be relied on in the reconstruction. Therefore, deep notching of the tunnel crown will no longer be considered as a viable alternative for achieving the necessary vertical clearance, unless additional investigations in the Final Design Phase conclude that an adequate thickness can be maintained.

2.3 Steel Ties

Substitution of steel ties for the standard wood ties would permit the rails to be lowered about 6 inches. Transition sections would be constructed at the tunnel approaches for the vertical curves and for a gradual transition in track stiffness. A proper drainage system is required to minimize corrosion of the ties.

Steel ties would not be sufficient to fix the entire clearance deficiencies, but in some cases could be used in conjunction with notching to provide a more economical solution. However, in this case, even with steel ties the amount of encroachment of the tunnel crown would still be significant enough to eliminate deep notching as a practical alternative. Due to the close proximity of the rail bridge outside the east portal, steel ties would require expensive and impractical bridge modifications in order to lower the bridge. Also, lateral shifting of the track is a concern when using steel ties. Steel ties do not provide any significant advantages that would warrant their expense. Therefore, they will no longer be considered as a viable alternative.

3. PREFERRED ALTERNATIVE

Given the magnitude of the vertical encroachment, liner replacement of the tunnel crown is necessary to achieve the required clearance in the tunnel. Investigations in the final design phase may determine that notching is feasible for some of the tunnel. Drainage improvements are also recommended.

3.1 Preliminary Design

The preliminary design uses replacement of the liner crown. The existing track structure is planned to be flooded with ballast to the top of the rail to provide access into the tunnel for the contractor to work and to protect the track during the construction. The preliminary design also proposes to install a new drainage system and undercut the track to replace the fouled ballast.

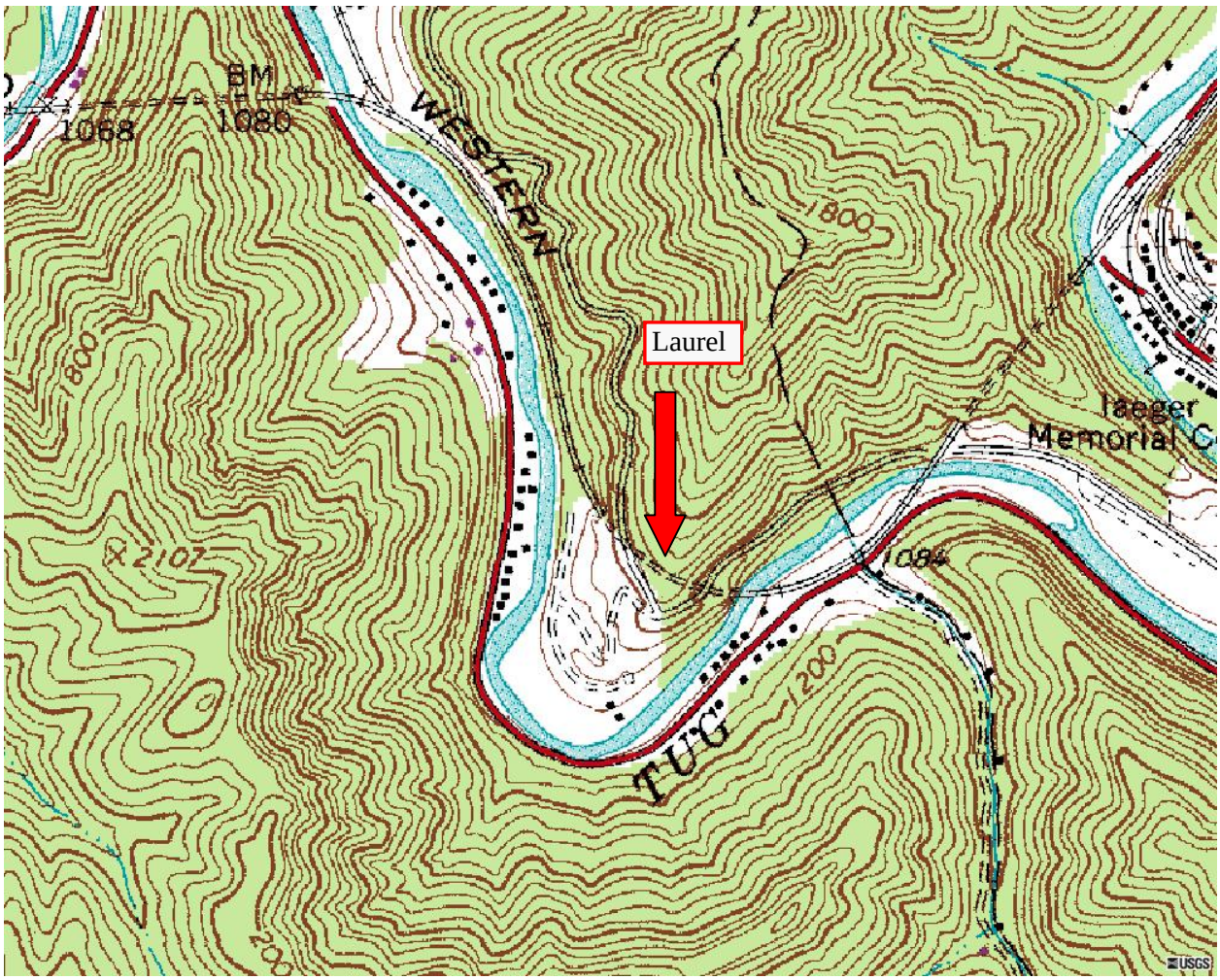
3.2 Schedule

The estimated schedule for completing improvements on this tunnel is thirty-two (32) weeks from mobilization to demobilization. The schedule assumes one track being closed at a time, for ten hours, five days a week. The schedule assumes 12' of crown removal each day, with concrete removal, rock removal, installation of rock dowels and installation of shotcrete all occurring on the same day for each 12' segment. Drainage improvement operations would be undertaken at the same time as the crown removal, but at different locations in the tunnel.

3.3 Estimate

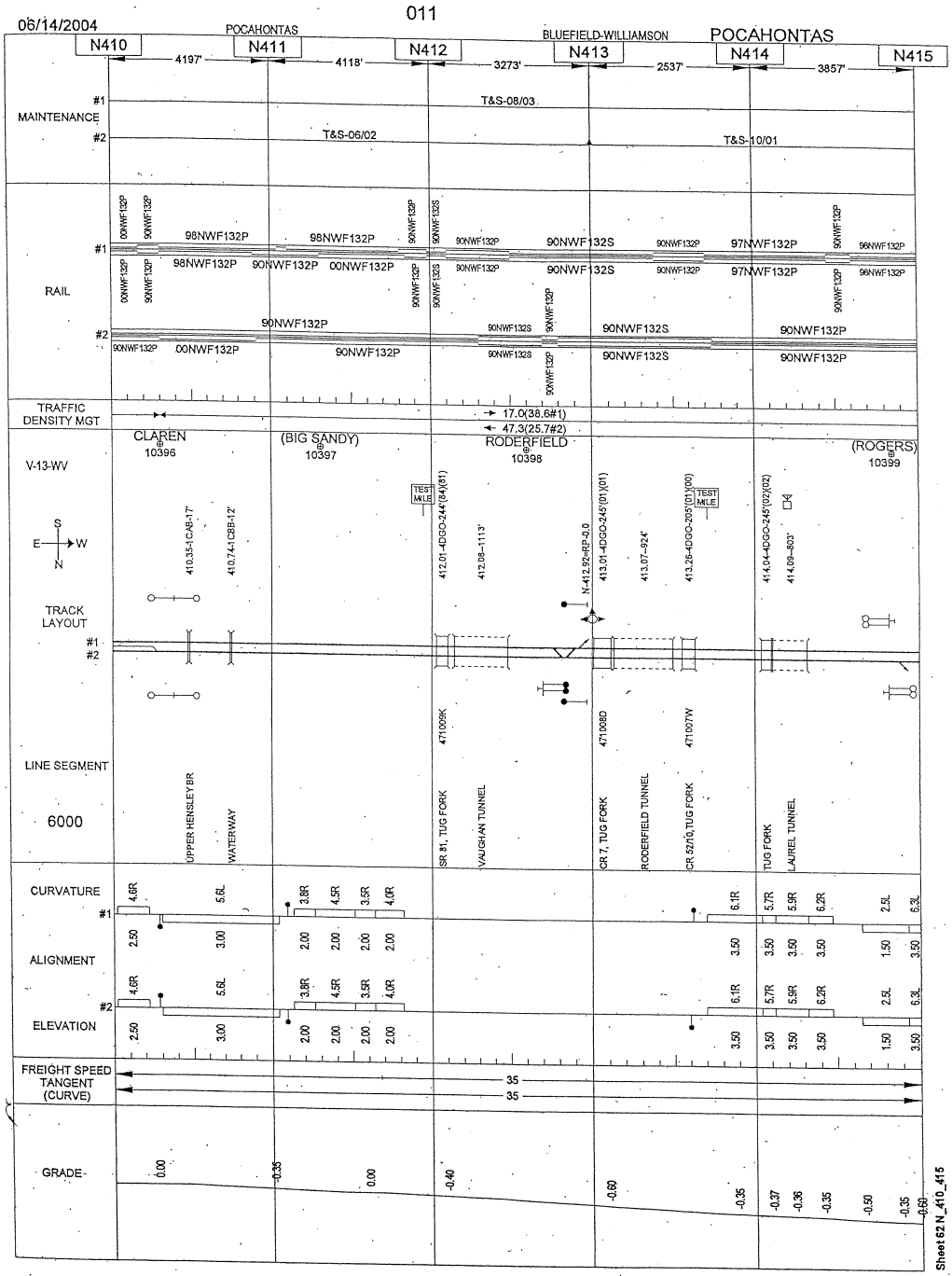
The total estimated cost for achieving clearance at this location is $6.0 million (2005 rates) or $7,421 per foot of tunnel. The work items include mobilization, surveying, liner removal, rock removal, rock dowels, crown installation, rock cut for drainage trench, tunnel drainage system, ballast cleaning, and demobilization. An allowance for grouting the invert void was also included. The total cost is made up of tunnel, track, signal, and site work items at $3.7 million, plus a 30% construction contingency, a 10% engineering allowance, and a 14% construction management allowance.

4. USGS TOPOGRAPHIC MAP



5. AERIAL PHOTO

6. TRACK CHART



7. PHOTOS

Photo No. 1 – East Portal

Photo No. 2 – View from the East Portal

Photo No. 3. – West Portal

Photo No. 4. – View from the West Portal

Photo No. 5. – Mud Pumping Through Ballast

Photo No. 6. – Water Leaking at Vertical Construction Joint

8. ESTIMATE

Laurel

Tunnel Length	803	ft
Tunnel Width	29.5	ft
# of Tracks	2	

	Contractor		Railroad	
Work Window	10	hrs	10	hrs
Setup & Demobilization Allowance	2	hrs	2	hrs
Production Time	8	hrs	8	hrs

Tunnel Work Items	UOM	Quantity	Unit Rate	Total
Mobilization	%	5%		$154,292.10
Surveying	DY	5	$1,300.00	$6,500.00
Rock Dowels 14' with Chain Link Mesh - Crown	EA	1338	$601.22	$804,630.93
Crown Removal	SF	37840	$16.10	$609,217.60
Rock Removal - Crown	CY	1401	$425.13	$595,817.60
Crown Installation	SF	37840	$24.36	$921,852.42
Rock Cut Drainage Trench	LF	1203	$90.93	$109,387.20
Tunnel Drainage	LF	1203	$18.30	$22,020.33
Demobilization	DY	5	$3,283.20	$16,416.00
Total Tunnel Work Items	**LF**	**803**	**$4,035.04**	**$3,240,134.19**

Trackwork Items	UOM	Quantity	Unit Rate	Total
Mobilization	DY			
Undercutting	PF	1606	$16.21	$26,029.72
Surfacing & Lining	PF	4818	$2.14	$10,304.06
Ballasting Track	TN	1606	$38.57	$61,941.32
Demobilization	DY			
Total Trackwork Items				**$98,275.10**

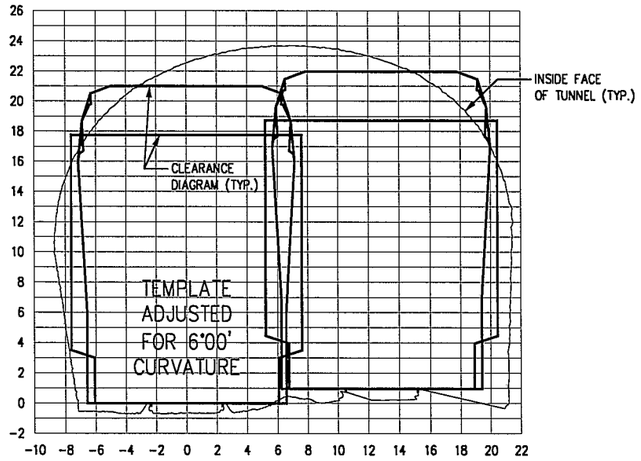
Signal Items	UOM	Quantity	Unit Rate	Total
Mobilization	DY			
Relocate Cables / Track Leads	LF	803	$12.03	$9,660.18
Demobilization	DY			
Total Signal Items				**$9,660.18**

Site Items	UOM	Quantity	Unit Rate	Total
Mobilization	DY	1	$2,483.60	$2,483.60
Erosion & Sedimentation Control	EA	1	$11,958.80	$11,958.80
Demobilization	DY			
Total Site Items				**$14,442.40**

Special Items	UOM	Quantity	Unit Rate	Total
Mobilization	DY			
Flagging	DY	159	$821.50	$130,618.50
Flood Track with Ballast for Protection	TN	3212	$39.34	$126,346.06
Remove Flooded Ballast	TN	3212	$10.16	$32,632.61
Invert/Crown Void Grouting	DY	10	$4,448.80	$44,488.00
Demobilization	DY			
Total Specialty Items				**$334,085.16**

Subtotal All Items		**$3,696,597.05**
Construction Contingency	**30%**	**$1,108,979.11**
Engineering Allowance	**10%**	**$480,557.62**
Construction Management Allowance	**14%**	**$672,780.66**
Total		**$5,958,914.44**

9. DRAWINGS



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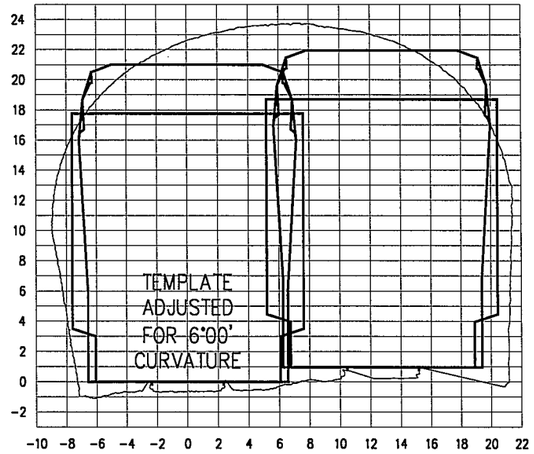

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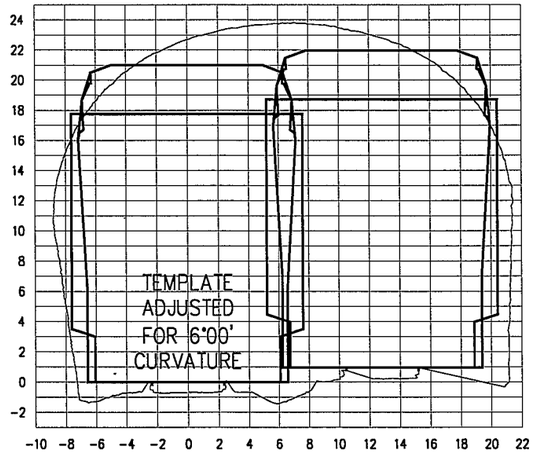

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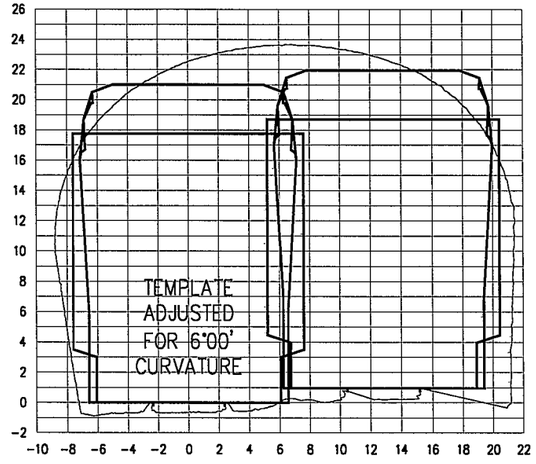

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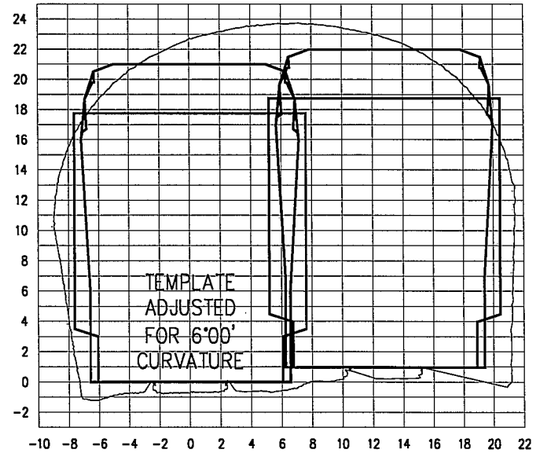

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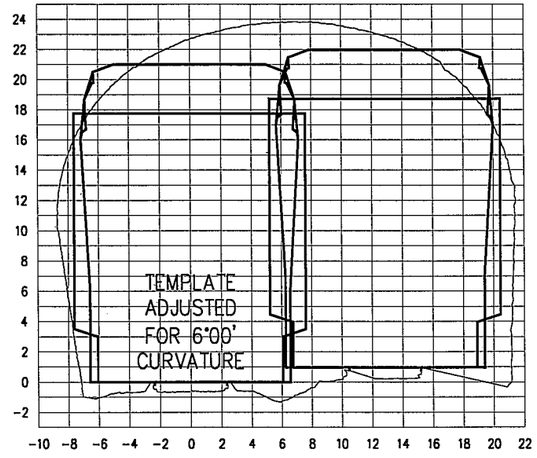

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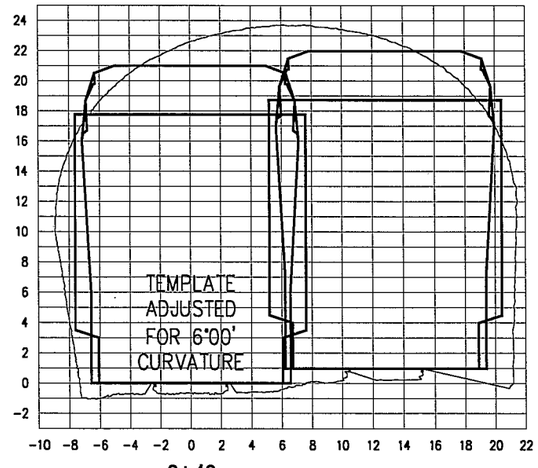

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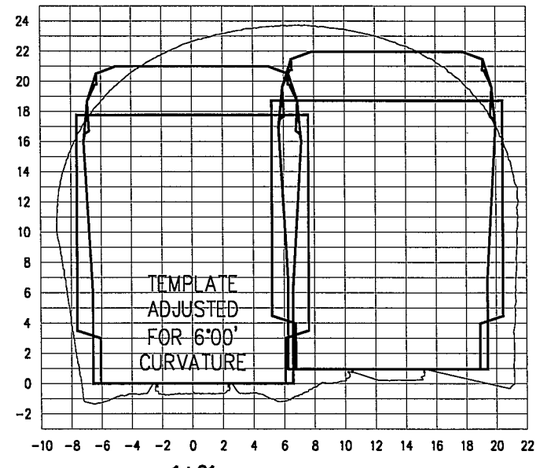

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NOTES:

1. HORIZONTAL DATUM IS PARALLEL TO TRACK. WHERE TRACK IS SUPERELEVATED, DATUM IS NOT PARALLEL WITH GROUND.
2. CROSS SECTION GIVEN FOR STA. 0+00 IS A COMPOSITE FOR THE TUNNEL FROM STA. 0+00 THROUGH 0+50. ALL OF THE SECTIONS FOLLOW THIS CONVENTION.

NOT FOR CONSTRUCTION

SCALE: 1"=100'

50 0 100 200 300

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OWNING COMPANY
POCAHONTAS
OPERATING DIVISION
OFFICE OF THE CHIEF ENGINEER - DESIGN AND CONSTRUCTION - ATLANTA, GA.

REV	BY	DATE	DESCRIPTION
P1	DJL	7/29/05	PRELIMINARY ENGINEERING PHASE REPORT

LOCATION: LAUREL TUNNEL, ROGERS, WV

TITLE: TUNNEL CLEARANCE CROSS SECTIONS – 1 OF 3

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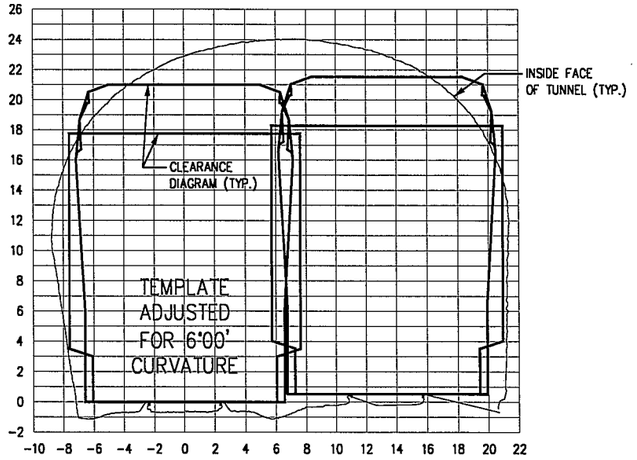

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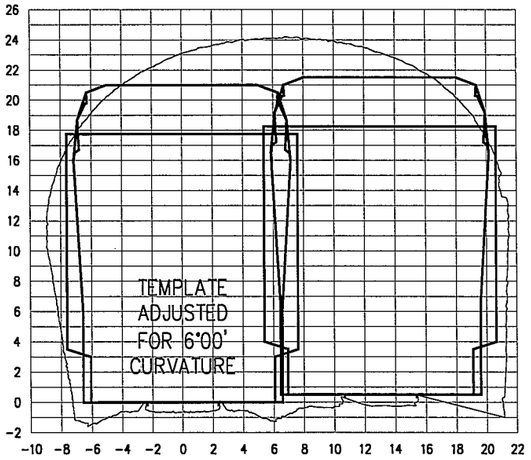

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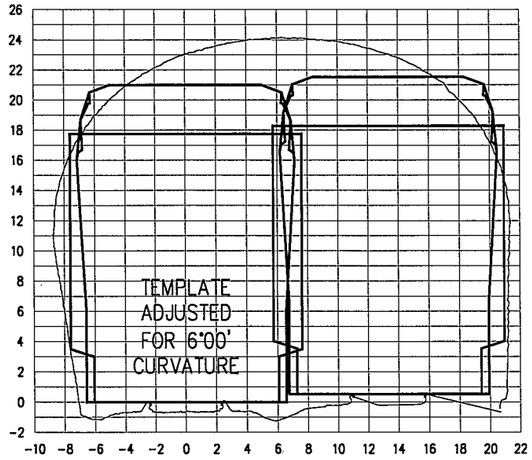

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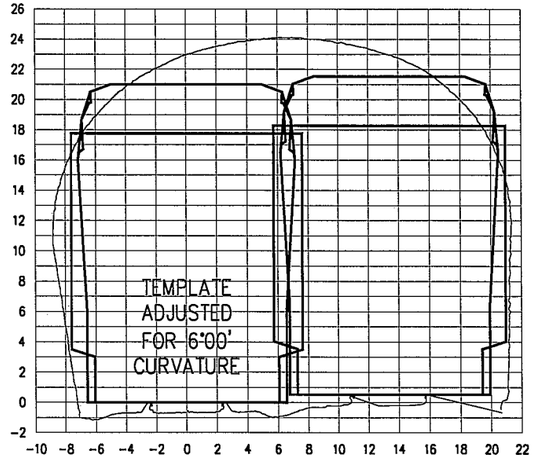

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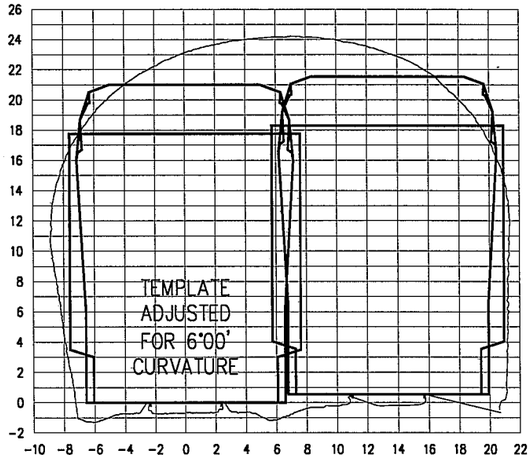

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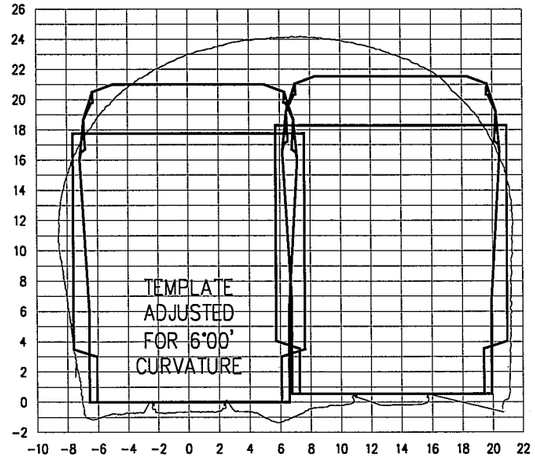

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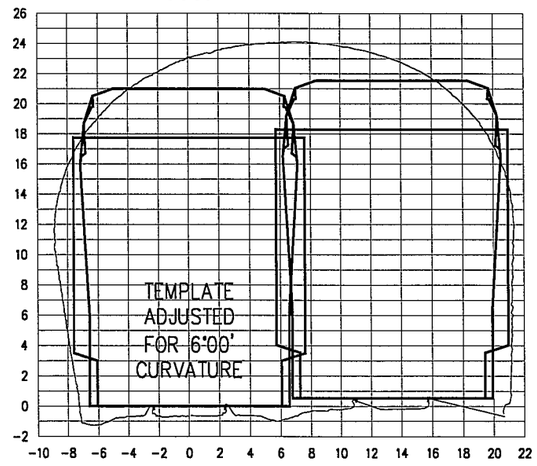

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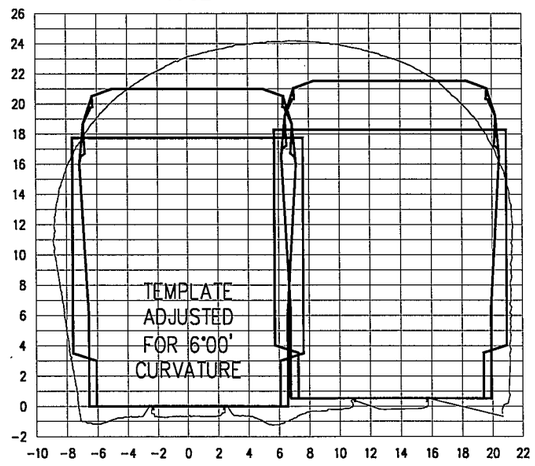

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2. CROSS SECTION GIVEN FOR STA. 0+00 IS A COMPOSITE FOR THE TUNNEL FROM STA. 0+00 THROUGH 0+50. ALL OF THE SECTIONS FOLLOW THIS CONVENTION.

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50 0 100 200 300

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LOCATION: LAUREL TUNNEL, ROGERS, WV

TITLE: TUNNEL CLEARANCE CROSS SECTIONS – 2 OF 3

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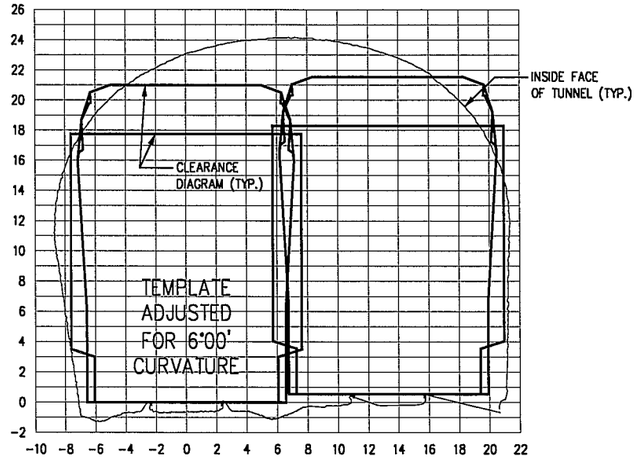

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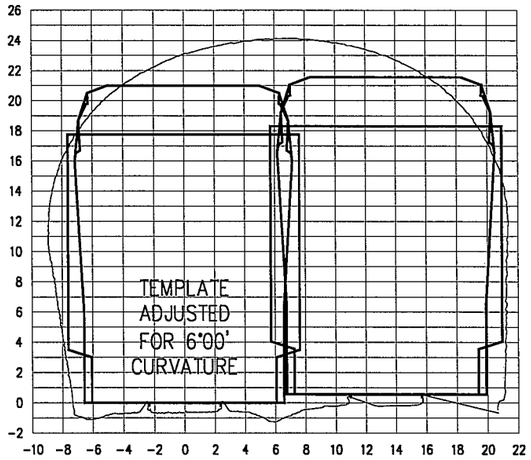

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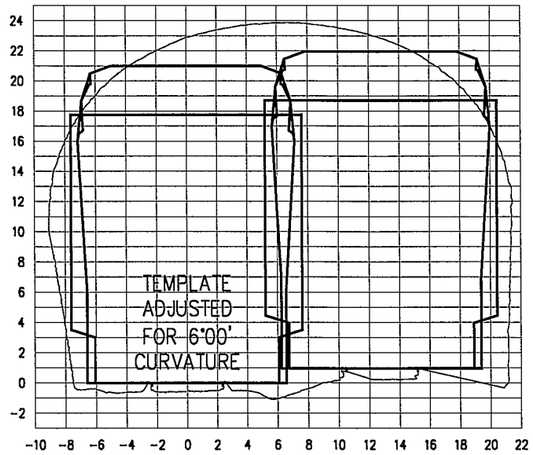

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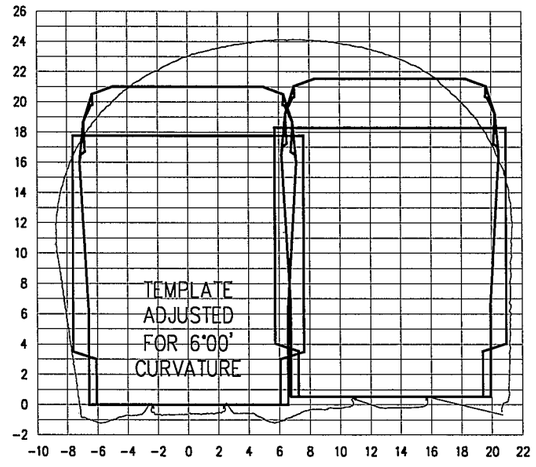

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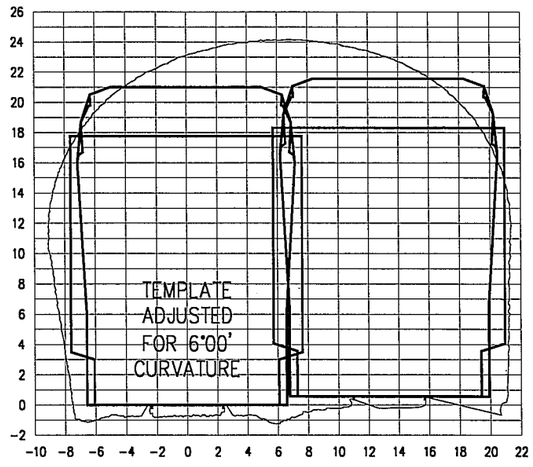

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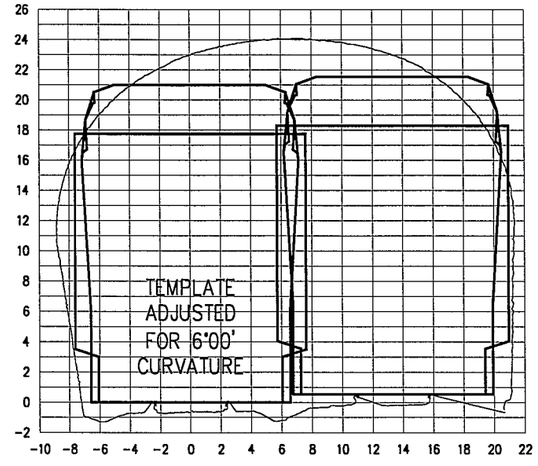

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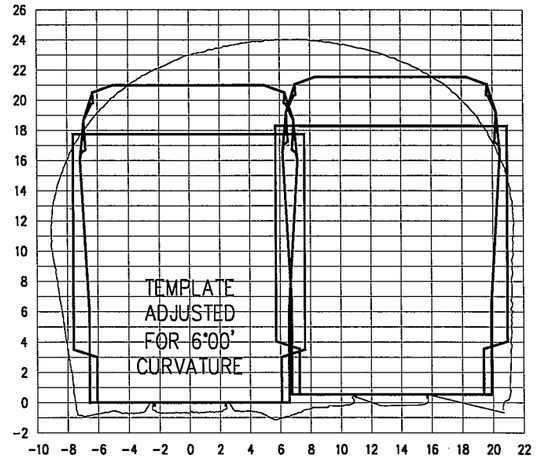

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POCAHONTAS
OPERATING DIVISION
OFFICE OF THE CHIEF ENGINEER - DESIGN AND CONSTRUCTION - ATLANTA, GA

LOCATION	LAUREL TUNNEL, ROGERS, WV		
TITLE	TUNNEL CLEARANCE CROSS SECTIONS – 3 OF 3		
DSN	PID No.	VRN 1629301 & 16294	MILE POST N-414.09
DWN	FILE No.		DRAWING NUMBER
CHK	DATE APRIL 22, 2005		

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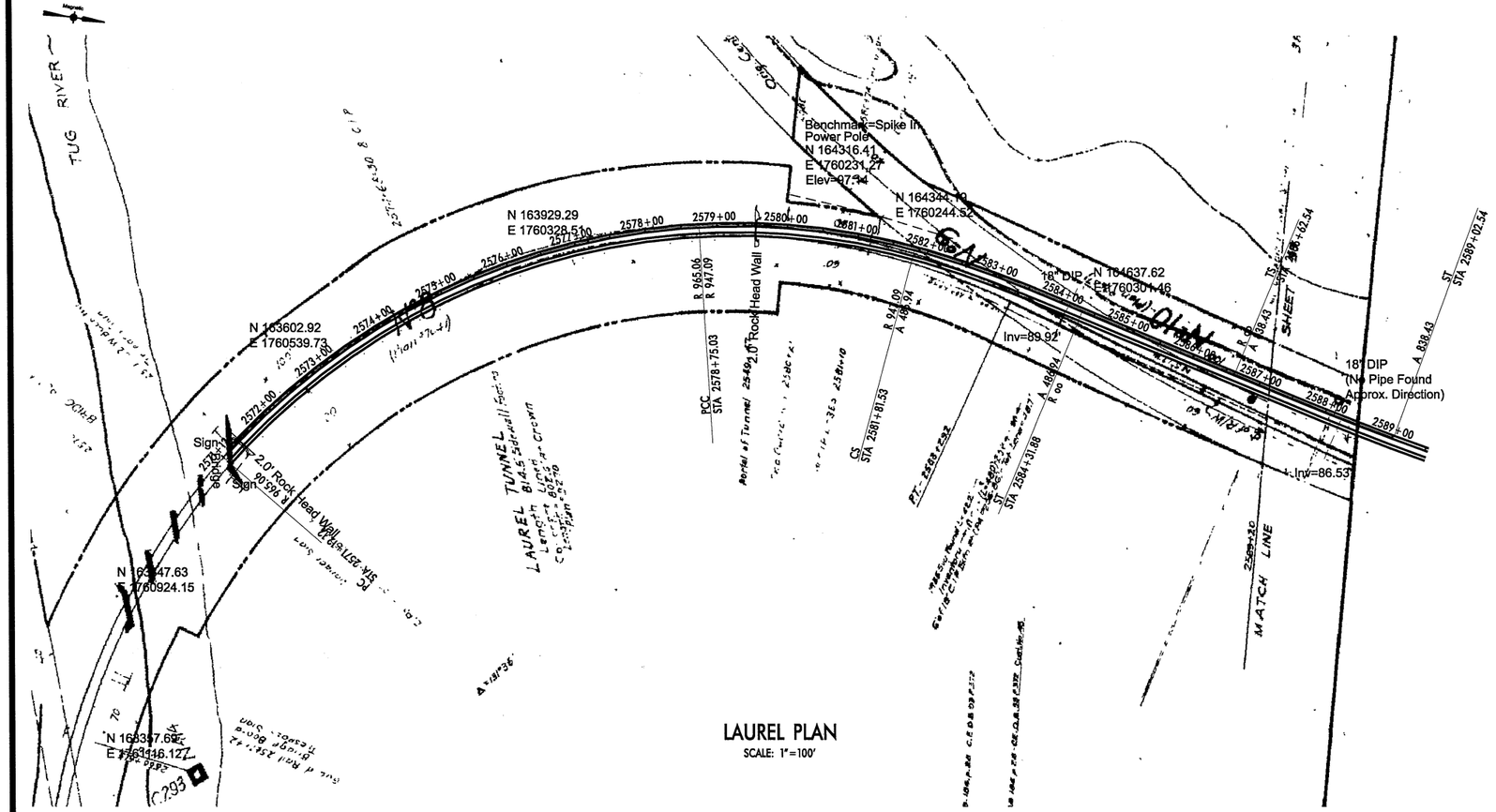
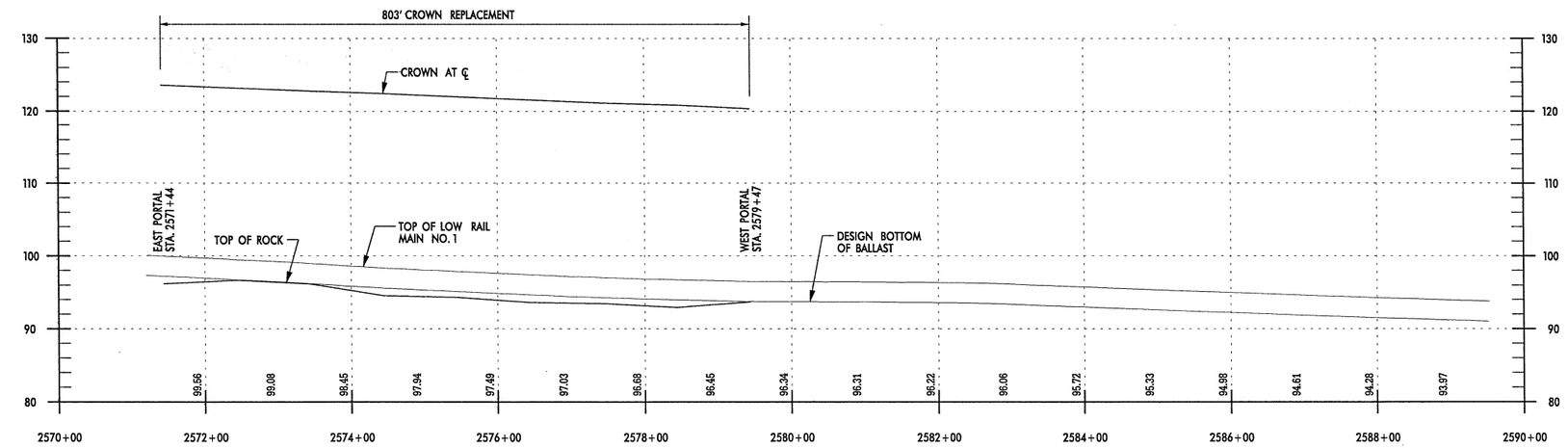


LAUREL PLAN
SCALE: 1"=100'



LAUREL PROFILE
SCALE: 1"=100' HORIZ.
1"=10' VERT.

LAUREL CURVE DATA

Project Name: laurel
Description:
Description:
Style:
Input Factor: 1.0000

	STATION	NORTHING	EASTING
Element: Circular			
PC (11)	2571+12.12	163466.87	1760706.96
PI ( )	2575+14.97	163684.50	1760367.96
CC (12)		164278.98	1761228.32
PCC (13)	2578+75.03	164078.56	1760284.30
Radius:	965.06		
Delta:	45°18'52" Right		
Degree of Curvature(Chord):	5°56'23"		
Length:	763.25		
Length(Chorded):	762.91		
Tangent:	402.85		
Chord:	743.51		
Middle Ordinate:	74.48		
External:	80.71		
Tangent Direction:	302°41'59"		
Radial Direction:	32°41'59"		
Chord Direction:	325°21'25"		
Radial Direction:	78°00'51"		
Tangent Direction:	348°00'51"		
Element: Circular			
PCC (13)	2578+75.03	164078.56	1760284.30
PI ( )	2580+29.70	164229.87	1760252.18
CC (14)		164275.25	1761210.74
CS (20)	2581+81.53	164383.53	1760269.86
Radius:	947.09		
Delta:	18°33'03" Right		
Degree of Curvature(Chord):	6°03'09"		
Length:	306.64		
Length(Chorded):	306.50		
Tangent:	154.68		
Chord:	305.31		
Middle Ordinate:	12.38		
External:	12.55		
Tangent Direction:	348°00'51"		
Radial Direction:	78°00'51"		
Chord Direction:	357°17'22"		
Radial Direction:	96°33'54"		
Tangent Direction:	6°33'54"		
Element: Clothoid			
CS ( )	2581+81.53	164383.53	1760269.86
SPI ( )	2582+65.12	164466.57	1760279.42
ST ( )	2584+31.88	164628.57	1760320.22
Entrance Radius:	947.09		
Exit Radius:	0.00		
Length:	250.35		
Angle:	7°34'22" Right		
Constant:	486.94		
Long Tangent:	167.05		
Short Tangent:	83.59		
Long Chord:	250.16		
Xs:	249.92		
Ys:	11.02		
P:	2.76		
K:	125.10		
Tangent Direction:	6°33'54"		
Radial Direction:	96°33'54"		
Chord Direction:	11°36'50"		
Radial Direction:	104°08'16"		
Tangent Direction:	14°08'16"		
Element: Linear			
ST (23)	2584+31.88	164628.57	1760320.22
TS (15)	2586+62.54	164852.23	1760376.56
Tangent Direction:	14°08'16"		
Tangent Length:	230.66		
Element: Clothoid			
TS (15)	2586+62.54	164852.23	1760376.56
SPI (16)	2588+22.55	165007.40	1760415.65
ST (17)	2589+02.54	165085.73	1760431.99
Entrance Radius:	0.00		
Exit Radius:	2929.00		
Length:	240.00		
Angle:	2°20'51" Left		
Constant:	838.43		
Long Tangent:	160.01		
Short Tangent:	80.01		
Long Chord:	239.98		
Xs:	239.96		
Ys:	3.28		
P:	0.82		
K:	119.99		
Tangent Direction:	14°08'16"		
Radial Direction:	104°08'16"		
Chord Direction:	13°21'19"		
Radial Direction:	101°47'25"		
Tangent Direction:	11°47'25"		

NOT FOR CONSTRUCTION

SCALE: 1"=100'
50 0 100 200 300

Hatch Mott MacDonald

NORFOLK SOUTHERN
OWNING COMPANY
POCAHONTAS
OPERATING DIVISION
OFFICE OF THE CHIEF ENGINEER - DESIGN AND CONSTRUCTION - ATLANTA, GA.

REV	BY	DATE	DESCRIPTION
P2	DJL	101405	PRELIMINARY ENGINEERING PHASE REPORT
P1	DJL	7/25/05	PRELIMINARY ENGINEERING PHASE REPORT

LOCATION: LAUREL TUNNEL, ROGERS, WV
TITLE: PLAN AND PROFILE

DGN	PID No.	VRH 1629301 & 16294	MILE POST N-414.09
DWN	FILE No.	DRAWING NUMBER	
CHK	DATE APRIL 22, 2005		

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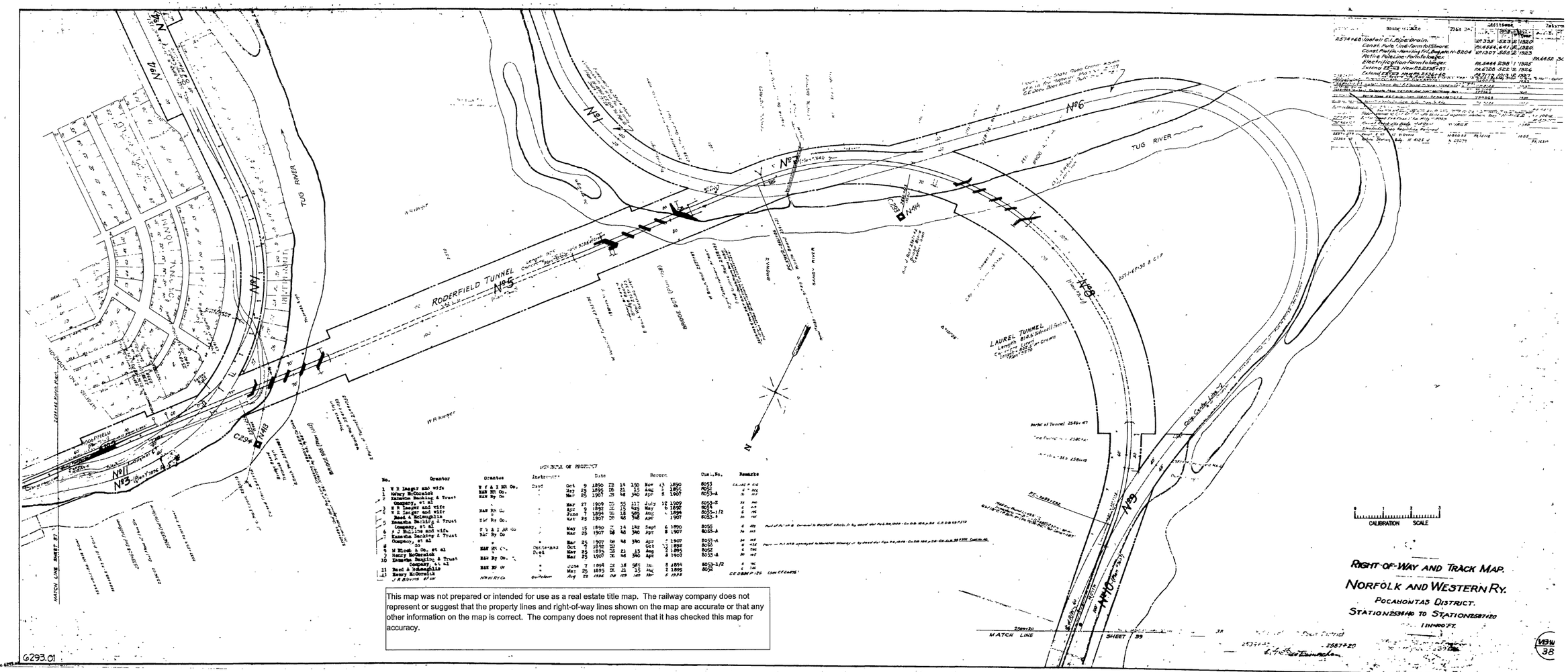
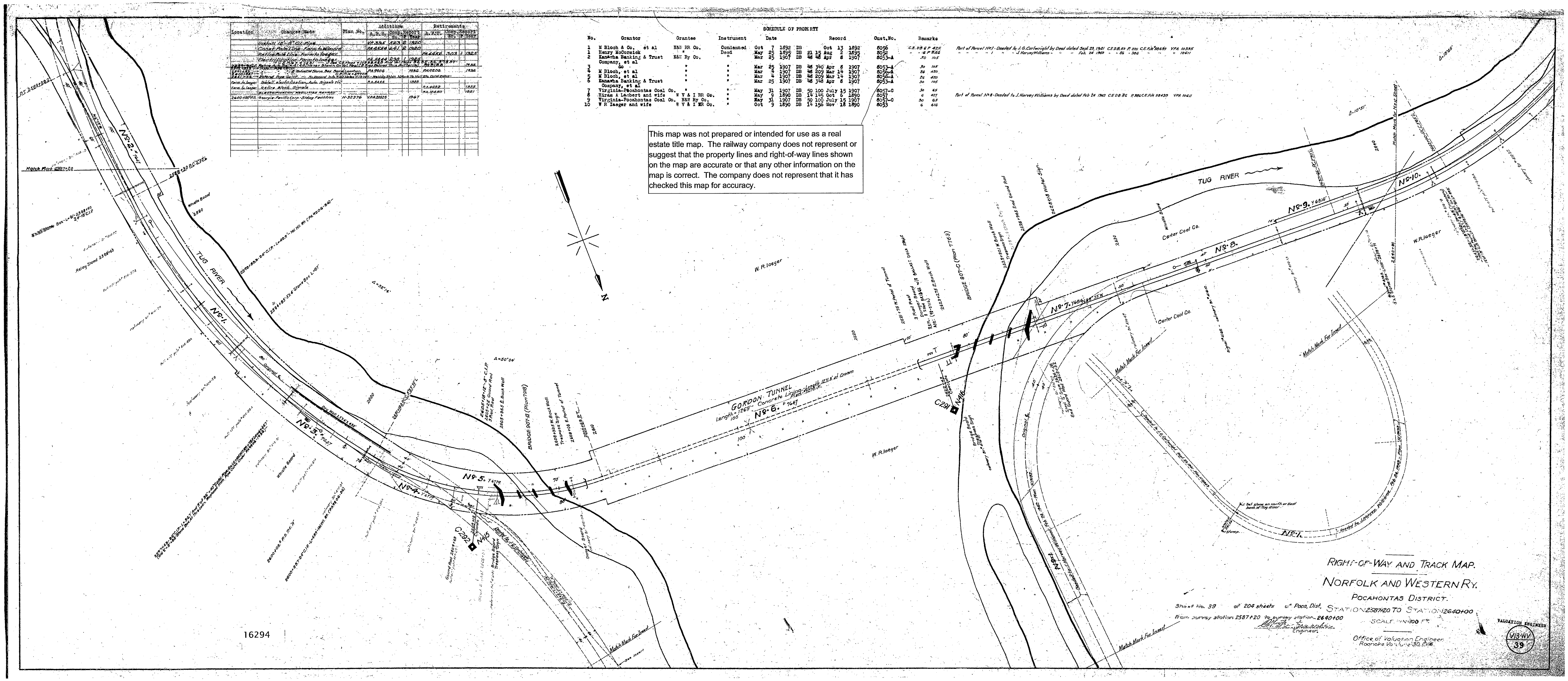


No.	Grantor	Grantee	Instrument	Date	Record	Dist. No.	Remarks
1	W R Laeger and wife	W F & I RR Co.	Deed	Oct 9 1890	Bk 14 Pg 190 Nov 13 1890	8053	
1	Henry McCormick	N&W Ry Co.	"	May 25 1895	Bk 18 Pg 21 Aug 5 1895	8052	
2	Kanawha Banking & Trust Company, et al	N&W Ry Co	"	Mar 25 1907	Bk 48 Pg 340 Apr 8 1907	8053-A	
3	W R Laeger and wife	N&W RR Co.	"	Mar 27 1909	Bk 55 Pg 117 July 12 1909	8053-B	
4	W R Laeger and wife	"	"	Apr 9 1892	Bk 15 Pg 485 May 6 1892	8053	
	Reed A McLaughlin	"	"	June 7 1894	Bk 16 Pg 563 Aug 4 1894	8053-1/2	
	Reed A McLaughlin	N&W Ry Co.	"	Apl 25 1907	Bk 48 Pg 338 Apr 8 1907	8053-B	
5	Kanawha Banking & Trust Company, et al	"	"	May 15 1890	Bk 7 Pg 14 Sept 6 1890	8050	
6	J J Shilling and wife	N & W Ry Co	"	Mar 25 1907	Bk 48 Pg 340 Apr 8 1907	8053-A	
7	Kanawha Banking & Trust Company, et al	"	"	Mar 25 1907	Bk 48 Pg 340 Apr 8 1907	8053-A	
8	do	N&W RY Co.	Quitclaim	Oct 7 1898	Bk 21 Pg 433 Oct 1/2 1898	8050	
9	M Block & Co. et al	"	Deed	Mar 25 1895	Bk 18 Pg 23 Aug 5 1895	8052	
7	Henry McCormick	N&W Ry Co.	"	Mar 25 1907	Bk 48 Pg 340 Apr 8 1907	8052-A	
10	Kanawha Banking & Trust Company, et al	"	"	June 7 1894	Bk 16 Pg 561 Aug 4 1894	8053-1/2	
11	Reed A McLaughlin	N&W RY Co	"	May 25 1895	Bk 18 Pg 23 Aug 5 1895	8052	
	Henry McCormick J A Bivins et ux	N&W Ry Co	Quitclaim	Aug 22 1934	Bk 109 Pg 185 Nov 5 1934		

This map was not prepared or intended for use as a real estate title map. The railway company does not represent or suggest that the property lines and right-of-way lines shown on the map are accurate or that any other information on the map is correct. The company does not represent that it has checked this map for accuracy.



Location	Changes Made	Plan No.	Additions A.F.E.	Comp. Report No.	P	Year	Retirements A.F.E.	Comp. Report No.	P	Year
	Install 12"-8" C.I. Pipe		VP.395	523	2	1920				
	Const. Pole Line - Farm to Wilmore		PA.4554	641	2	1920				
	Retire Pole Line - Farm to Iaeger						PA.6452	303	1	1925
	Electrification - Farm to Iaeger		PA.5444	298	1	1925				
2589+20(L)	Retire Auto Sig. - A144 (Never Shown On Val. Map) (C.E. Sigs Retired This Authority) C.E. File #47591 — See C.E. Maps #10688 A&B And Val. Maps 33, 35, 36, 37 & 39						PA.9183			1935
2592+83.3	Install Pipe Culv.		PA.9206			1936				
2597+43 / 2600+88.7	Retire Old Stone Box Same Location C.E. File #59906						PA.9206			1936
2641+52	Extend Pipe Culvt. — No Record Info. Field Notes V-13-WV - Rebldg. Shldr. N. Fork To Hull Etc. Culvt. Extns.									
Farm to Iaeger	Install electrification, Auto. Signals Etc.		P.A.5444			1925				
Farm to Iaeger	Retire Block Signals						P.A.6452			1925
	Electrification Facilities Retired						P.A.12480			1951
2600+08.5 P.S.	Georgia-Pacific Corp. - Siding Facilities	N-32376	V.P.A.20525			1967				

SCHEDULE OF PROPERTY

No.	Grantor	Grantee	Instrument	Date	Record	Cust. No.	Remarks
1	M Bloch & Co. et al	N&W RR Co.	Condemned	Oct 7 1892	DB Oct 13 1892	8056	C.E. DB G P 425
1	Henry McCormick	"	Deed	May 25 1895	DB 21 15 Aug 2 1895	8052	" 6 P 246
2	Kanawha Banking & Trust Company, et al	N&W Ry Co.	"	Mar 25 1907	DB 48 48 Apr 8 1907	8053-A	30 105
3	do	"	"	Mar 25 1907	DB 48 340 Apr 8 1907	8053-A	30 105
4	M Bloch, et al	"	"	Mar 4 1907	DB 48 209 Mar 14 1907	8056-A	26 420
5	M Bloch, et al	"	"	Mar 4 1907	DB 48 209 Mar 14 1907	8056-A	26 420
6	Kanawha Banking & Trust Company, et al	"	"	Mar 25 1907	DB 48 348 Apr 8 1907	8053-A	30 105
7	Virginia-Pocahontas Coal Co.	"	"	May 31 1907	DB 50 100 July 15 1907	8057-C	30 65
8	Hiram A Lambert and wife	W V & I RR Co.	"	May 9 1890	DB 14 145 Oct 6 1890	8057	6 427
9	Virginia-Pocahontas Coal Co.	N&W Ry Co.	"	May 31 1907	DB 50 100 July 15 1907	8057-C	30 65
10	W R Iaeger and wife	W V & I RR Co.	"	Oct 9 1890	DB 14 156 Nov 18 1890	8053	6 416

Part of Parcel No. 1 - Deeded to J. G. Cartwright by Deed dated Sept. 23, 1941 C.E.D.B. 89 P. 235 C.E. File #58439 VPA 10395
" " " " 1 " " J. Harvey Williams " " Feb. 24 1942 " " 86 - 386 " " " " 10611

Part of Parcel No. 8 - Deeded to J. Harvey Williams by Deed dated Feb 24 1942 C.E.D.B. 86 P. 386 C.E. File 58439 VPA 10611

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RIGHT-OF-WAY AND TRACK MAP.

NORFOLK AND WESTERN RY.

POCAHONTAS DISTRICT.

Sheet No. 39 of 204 sheets of Poco. Dist. STATION 2587+20 TO STATION 2640+00

from survey station 2587+20 to survey station 2640+00

SCALE 1 IN.=100 FT.

Engineer.

Office of Valuation Engineer. Roanoke Va. June 30, 1916.

VALUATION ENGINEER V13-WV 39

16294