Heartland Corridor, Walton Virginia to Columbus Ohio

Preliminary Engineering Phase Report

HUGER TUNNEL – MAIN #2

MP N395.56

HUGER, WV

October 14, 2005, Rev. 2

Preliminary Engineering Phase Report

October 14, 2005

Norfolk Southern Railway
Heartland Corridor, Walton VA to Columbus OH

Huger Main #2 Tunnel – MP N395.56
Huger, WV

Statistics: **Pocahontas Division**
Single-width Tunnel for Main #2
Length = 362'
Concrete lined
Degree of curvature = 3.1 Right (per Track Chart)
Superelevation = 1.5" (per Track Chart)

1. EXISTING CONDITIONS

1.1 Background

Valuation Map V-13WV/23 (16279) is dated June 30, 1916. The Changes/Additions/ Retirements table on this map is empty. According to the Schedule of Property, parcels for the tunnel were acquired in 1907. A Norfolk Southern tunnel inspection sheet reports that the tunnel was built in 1912. 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 16, June 9, and June 13, 2005.

1.2 General Area

The tunnel is located in a sparsely populated area with good access to the east portal from US Rt. 52. A railroad access road off of the highway is adequate for bringing equipment to a small staging area near the east portal. Access from the west side is not practical, with a railroad bridge over Elkhorn Creek only 140' west of the west portal. This bridge is approximately 116' long. US Rt. 52 crosses over the tunnel. Equipment can readily get onto the tracks from areas close to the tunnel.

1.3 Structural Conditions

Huger Main #2 Tunnel is one of a pair of twin tunnels along with Huger Main #1 Tunnel. Each tunnel is a concrete-lined single-width tunnel for one track. The tunnel is 362' long with a nominal width of 16'. There are two locations where there are significant spalls in the concrete liner and water is leaking through.

The bridge outside of the west portal of the tunnel was investigated on June 13, 2005. It is a 2-span, 2-girder, timber deck bridge. Each span is simply supported. The two girders are built-up steel plate girders. The girders rest on bearings at the abutments and center pier. The four bearing heights vary from 18" to 20". The bridge spans over a paved road, Elkhorn Creek, and a gravel road.

Ballast covers the top of the footing on both sides for most of the tunnel. A small portion of the tunnel invert material was excavated to fully expose the base of the tunnel liner footing. The footing thickness was found to be 16". The vertical distance from the top of rail to the base of the footing was measured at 46".

1.4 Track

The track is of conventional design with approximately 8'-6" long wooden crossties at 19" spacing and a stone ballast section. The rails are 132RE VE HT 1988 continuously welded rail.

1.5 Geotechnical

The tunnel is 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 the 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 Huger Tunnels were excavated through medium- to thick-bedded sandstone of the Pocahontas Formation. Minor interbeds of shale, siltstone, and coal may also be present in this formation, but were not observed in the exposures. Bedding is sub-horizontal.

The rock quality designation, Q, at the portals was determined to be 17. 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.

The geoprobes indicate that the top of rock is located between 3.9' to 5.0' (averaging 4.6') below the top of ballast throughout the tunnel. Top of ballast is typically about 0.8' below top of low rail. Geoprobes were also taken at 100' increments for 1000' outside of the east portal. Each probe reached a depth of 5.0' below the top of ballast without reaching refusal.

1.6 Clearances

The laser car measurements indicate that the existing tunnel has adequate horizontal clearance but there are encroachments at the 1 o'clock and 11 o'clock positions for the composite design template. Despite the Track Chart's reported 3.1 degree of curvature for the whole tunnel, the survey showed that a smaller amount of curvature exists, and only in the vicinity of the east portal. Therefore, based on the survey, a clearance template adjusted for a 1.6 degree of curvature was used for the first 100 feet of the tunnel and a clearance template for tangent track was used for the remainder of the tunnel. The encroachments vary from 3" to 12" and average about 8", with the greatest encroachment at the east portal where the clearance template was widened for curvature. See the Tunnel Clearance Cross Sections section of this report for an illustration of the clearance encroachments. The maximum vertical encroachments are summarized in the table below:

	Crown Encroachment (radial inches)	
Distance (ft) from East Portal	**Left Side**	**Right Side**
0	12	12
101	9	8
202	7	7
302	4	7
351	3	5

2. CLEARANCE IMPROVEMENT ALTERNATIVES

Given the magnitude of the clearance deficiency, there are three general alternatives that can be used to obtain the clearance; notching the lining, lowering the track, or undercutting the track. Combinations of the general methods with other improvements may be required to obtain a design that is cost effective and that can be constructed within reasonable track outages.

2.1 Notching the Crown

The modifications in the upper quadrants of the tunnel will not cut entirely through the liner at the 1 or 11 o'clock positions. Depending on the exact depth of the notch, minor or deep notching would be utilized through the tunnel on both sides. Deep notching requires installation of rock bolts prior to the notch being cut.

2.2 Track Lowering

The geoprobes indicate an elevation to refusal of 3.9' to 5.0' below the top of rail. Such a depth could allow for track lowering while retaining a standard ballast depth.

Excavation would involve removing the track and using conventional earth moving equipment to remove the ballast and subgrade materials. The entire operation would require approximately a 4-day outage and continuous work to remove the track, excavate the subgrade, and restore the track. The production rate would be limited by having to back the dump trucks down the tunnel. New drainage installation and subgrade stabilization could be accomplished from the subgrade directly. The resulting track structure would be completely new except for the rail.

The proximity of the bridge 150' to the west of the tunnel could cause difficulty in transitioning the lowered rail to match the existing rail elevations over a fairly short distance. If such grading is not possible, the track lowering method could also require bridge modifications or liner removal near the portal.

2.3 Track Undercutting

The geoprobes indicate an elevation to refusal of 3.9' to 5.0' below the top of rail. Such a depth could allow for track undercutting while retaining a standard ballast depth.

A mainline track undercutter with a conveyor and air dump cars could accomplish undercutting over the course of 1-2 days of 8-hour work windows. An evaluation of typical undercutting equipment showed that the size of the equipment is compatible with undercutting in this tunnel. Using a work train engine to move the air-dump cars to the disposal site would allow the undercutter to remain setup with the bar under the track. The run-in and run-out of the undercut area would need to be surfaced daily to accommodate the trains.

One to two 2 days of prep work will be required to plug and spike the exiting ties to keep them from falling off of the rail behind the undercutter bar. Plate-boys with modifications to the jacks could be used to lift the track to allow geotextile to be installed under the skeletonized track.

The proximity of the bridge 150' to the west of the tunnel could cause difficulty in transitioning the lowered rail to match the existing rail elevations over a fairly short distance. If such grading is not possible, the track undercutting method could also require bridge modifications or liner removal near the portal.

3. PREFERRED ALTERNATIVE

The clearance can be best accomplished using the Track Undercutting methodology.
The only impediments to the undercutting procedure is the existing bridge at the west end of the tunnel. This bridge was raised on grillages to match the existing track profile at sometime in the past. The existing track alignment will be smoothed but no significant shifting is required.

3.1 Preliminary Design

The preliminary design combines undercutting and bridge modifications.

3.1.1 Bridge Modifications

The bridge modifications will be relatively minor, consisting of replacing the existing grillages with shorter grillages and replacing the backwall timber. The bridges will be jacked and the new grillages placed on the existing bridge seats.

3.1.2 Vertical Alignment

Due to the proximity of the bridge on the west side of the tunnel, the proposed undercutting operation was designed to restore a uniform track profile through the tunnel. Unlike the Huger Main #1 Tunnel, the profile in the Huger Main #2 Tunnel parallels the crown of the tunnel. The proposed profile extends the vertical tangent beyond the portals of the tunnels. Since the existing grade is relatively steep (-1.02%), the vertical profile was compressed to reduce the depth of undercutting. The grade in the tunnel is -0.99%, the western vertical alignment merely extended the vertical tangent from the tunnel to a point where a single crest vertical curve is used to connect to the existing profile at the west side end of the existing bridge. This area was not surveyed, but the general arrangement is applicable to this methodology.

The undercutter will lower the track on the west side of the bridge to meet the new profile.

The vertical tangents are connected by vertical curves based on the new AREMA procedures. The new procedures do not use different rates of changes for crest and sag curves, resulting in vertical curves of similar lengths. All of the vertical curves exceed the minimum recommended lengths.

The undercutter is assumed to have air dump cars fitted with a conveyor system to remove the spoil from the tunnel. The material outside of the tunnel can be cast to the side, however proper grading is essential to prevent the material from being washed into the new tack structure.

3.1.3 Other Construction

Proper drainage is vital to maintaining the track structure. A new drainage system is proposed in the tunnel. This drain will carry any water in the tunnel out of the tunnel to surface drainage along the tracks.

Lowering the track will place it below the existing ground surface. To allow drainage from beneath the track structure, the ground surface adjacent to the track must be excavated to provide new longitudinal ditches along the track. Likewise, the existing material on the tunnel invert must be lowered to the bottom of the ballast section and sloped to the trench drain.

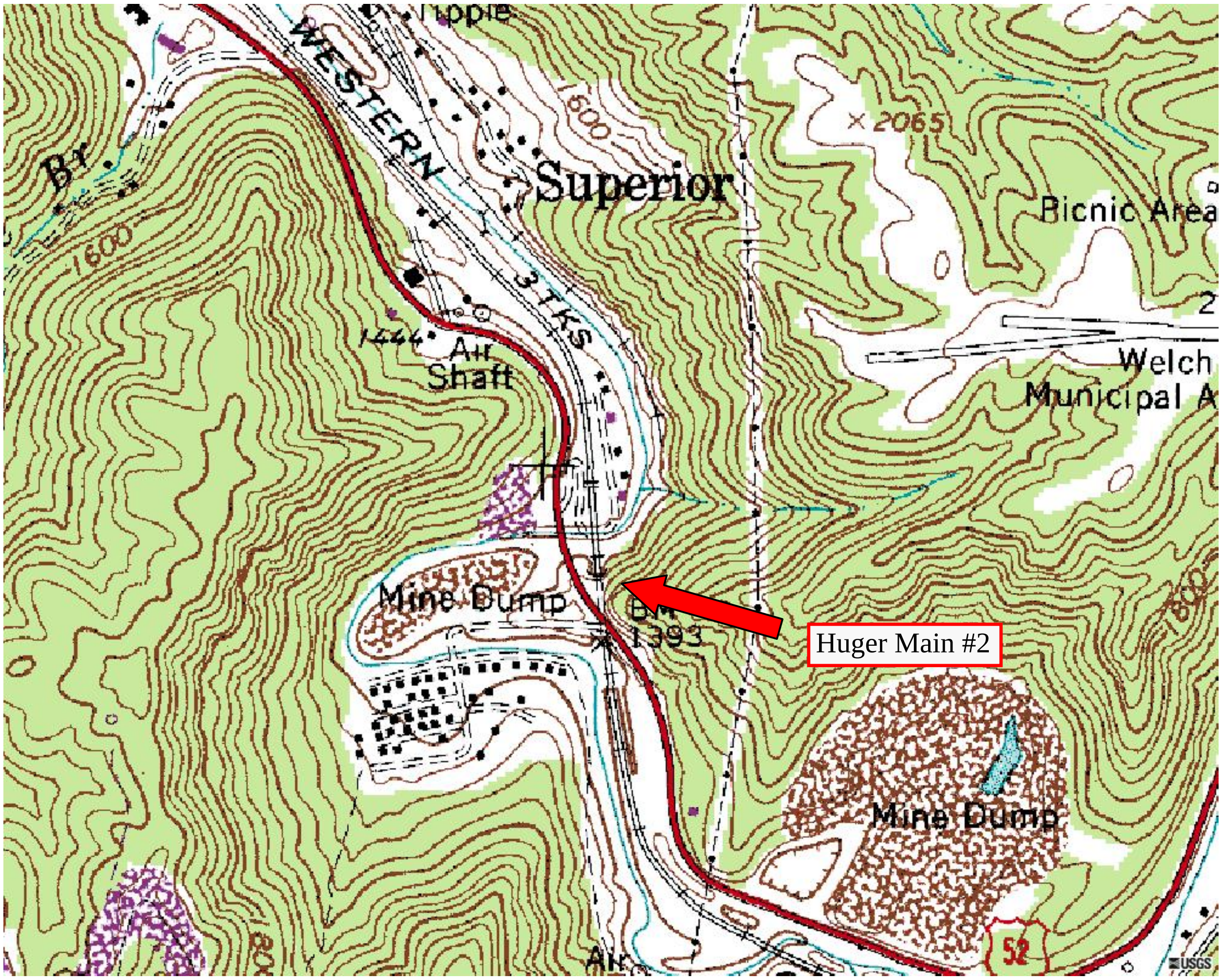
3.2 Schedule

The estimated schedule for completing improvements on this tunnel is seven (7) weeks from mobilization to demobilization.

3.3 Estimate

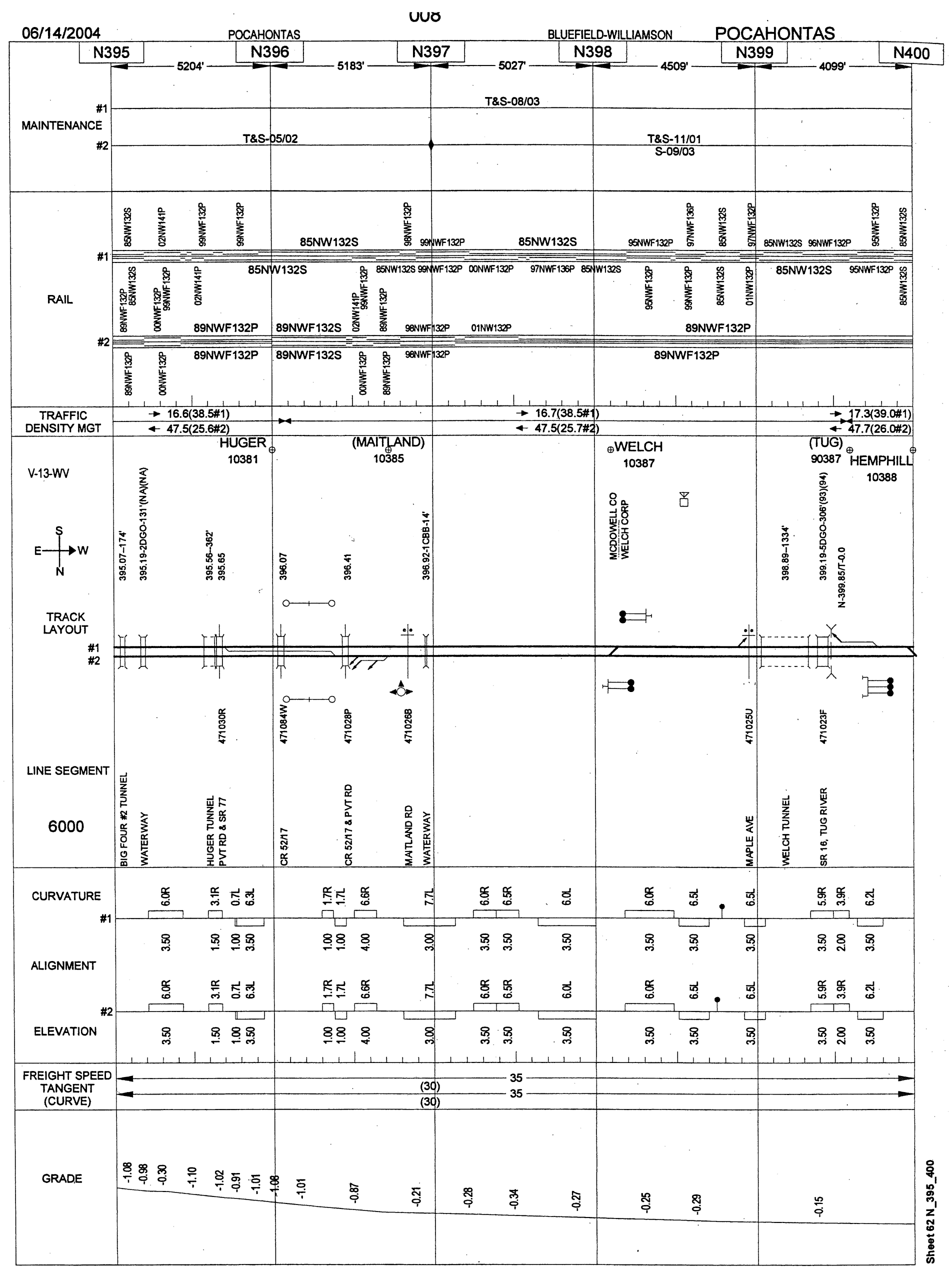
The total estimated cost for achieving clearance at this location is $1.15 million (2005 rates) or $3,187 per foot of tunnel. The work items include mobilization, surveying, rock dowels, deep notching, rock cut for drainage trench, tunnel drainage system, ballast cleaning, and demobilization. An allowance for grouting the invert void was also included. The total cost is made up of tunnel, track, signal and site work items at $744,406, plus a 25% 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 1. Main #2 east portal (Main #1 is on left)

Photo 2. Main #2, looking to the east from east of tunnel (Main # 1 is on right)

Photo 3. Main #2 west portal (Main #1 is on right)

Photo 4. Main #2, looking west from west of tunnel (Main #1 is on left)

Photo 5. Main #2, looking west from middle of tunnel. Note leaking at construction joint.

Photo 6. Main #2, looking east into tunnel from west portal.

8. ESTIMATE

Huger No. 2

Tunnel Length	362	ft
Tunnel Width	15.75	ft
# of Tracks	1	

	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%		$11,431.82
Wall Installation	SF			
Under Pinning	LF	362	$506.83	$183,473.87
Rock Cut Drainage Trench	LF	400	$84.14	$33,657.60
Tunnel Drainage	LF	400	$20.55	$8,221.69
Demobilization	DY	1	$3,283.20	$3,283.20
Total Tunnel Work Items	**LF**	**362**	**$663.17**	**$240,068.17**

Trackwork Items	UOM	Quantity	Unit Rate	Total
Mobilization	DY	1	$3,110.32	$3,110.32
Surveying	DY	4	$1,300.00	$5,200.00
Track Preparation/Restoration	DY	2	$3,431.32	$6,862.64
Undercutting	PF	5100	$15.31	$78,089.16
Saw Cuts	EA	6	$6,092.96	$36,557.76
Panel Track	TF			
Remove Track	TF			
Field Welds	EA	6	$2,698.37	$16,190.25
Surfacing & Lining	PF	6000	$1.72	$10,304.06
Ballasting Track	TN	1900	$38.02	$72,231.32
Equalizing rail	DY	1	$6,701.14	$6,701.14
Elastomeric Flangeway Crossing	EA			
Demobilization	DY			
Total Trackwork Items				**$235,246.66**

Signal Items	UOM	Quantity	Unit Rate	Total
Mobilization	DY			
Relocate Cables / Track Leads	LF	362	$12.80	$4,632.59
Signal Location Modification	EA			
New Cut Section	EA			
Demobilization	DY			
Total Signal Items				**$4,632.59**

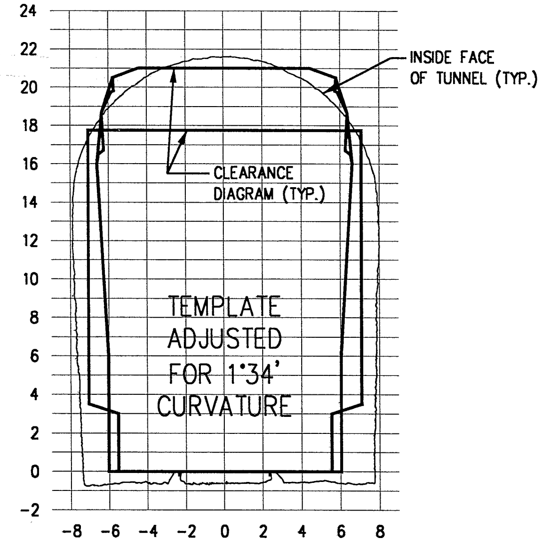
Bridge Items	UOM	Quantity	Unit Rate	Total
Mobilization	DY	1		
Replace Bearings	EA	8	$21,041.00	$168,328.03
Replace Timbers on Deck	EA	2	$2,257.01	$4,514.02
Demobilization	DY	1		
Total Bridge Items				**$172,842.05**

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
Site Grading	CY	2400	$20.52	$49,243.34
Total Site Items				**$63,685.74**

Special Items	UOM	Quantity	Unit Rate	Total
Mobilization	DY			
Flagging	DY	34	$821.50	$27,931.00
Temporary Bridges	EA			
Total Specialty Items				**$27,931.00**

Subtotal All Items		**$744,406.21**
Construction Contingency	**25%**	**$186,101.55**
Engineering Allowance	**10%**	**$93,050.78**
Construction Management Allowance	**14%**	**$130,271.09**
Total		**$1,153,829.63**

9. DRAWINGS



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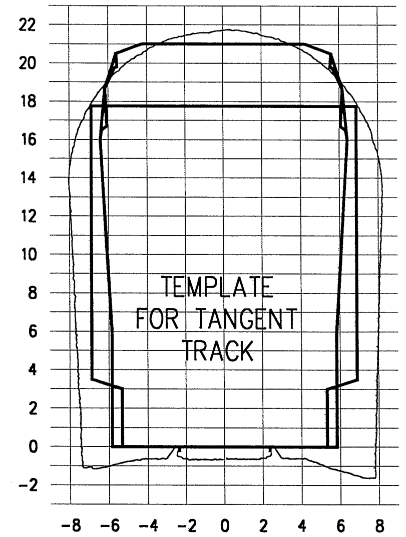

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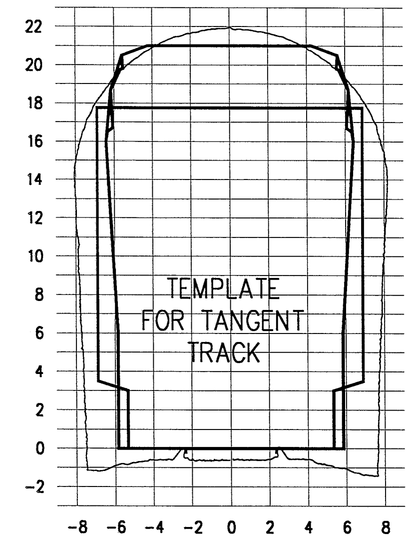

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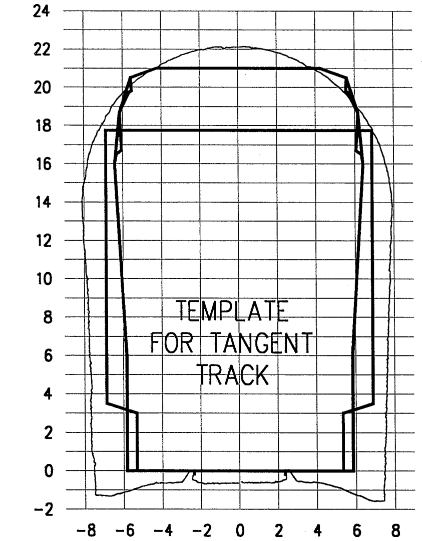

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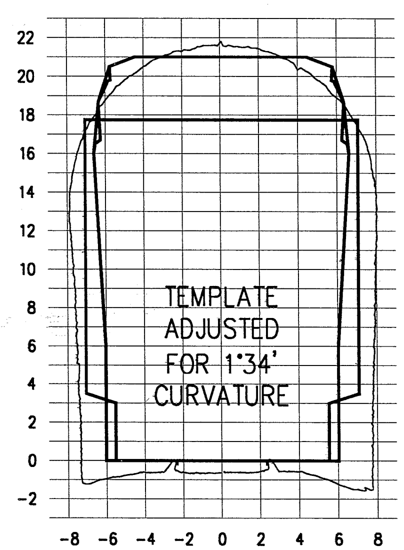

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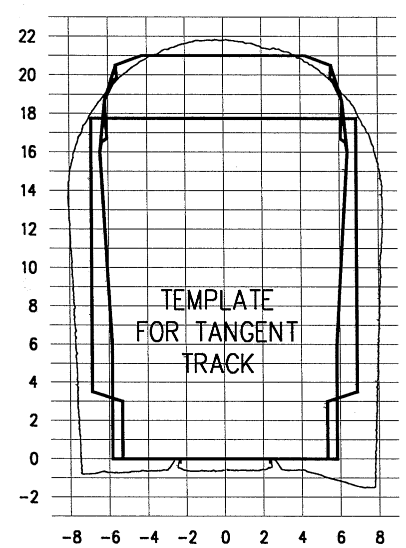

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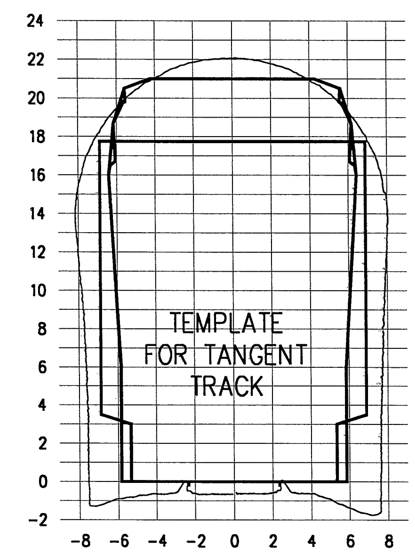

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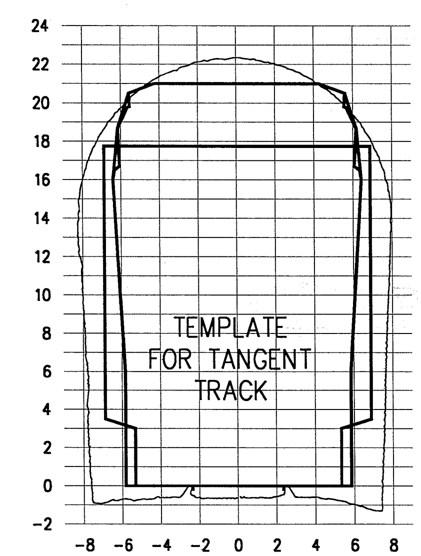

3+51

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

REV	BY	DATE	DESCRIPTION
P1	DJL	8/5/05	PRELIMINARY ENGINEERING PHASE REPORT

Hatch Mott MacDonald

NORFOLK SOUTHERN

OWNING COMPANY

POCAHONTAS

OPERATING DIVISION

OFFICE OF THE CHIEF ENGINEER - DESIGN AND CONSTRUCTION - ATLANTA, GA.

LOCATION: HUGER TUNNEL MAIN #2, HUGER, WV

TITLE: TUNNEL CLEARANCE CROSS SECTIONS – 1 OF 1

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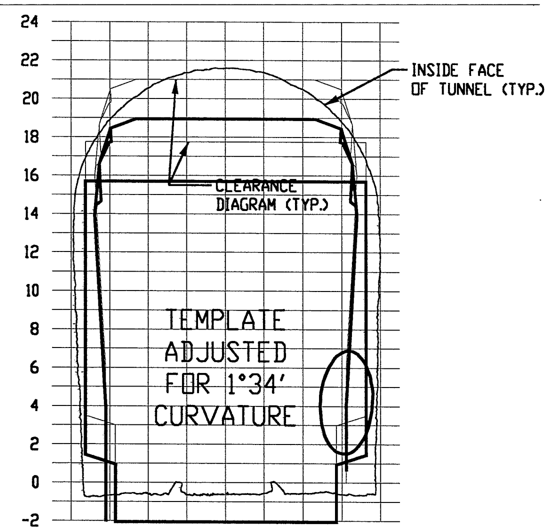

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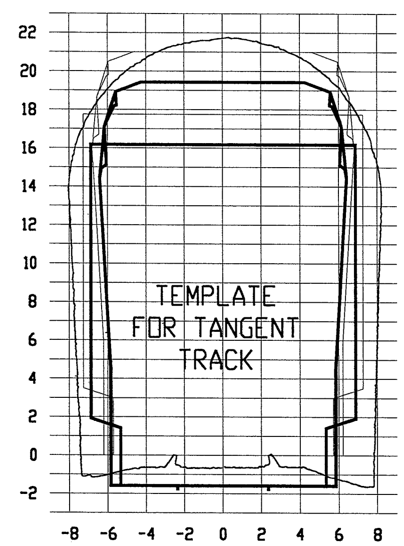

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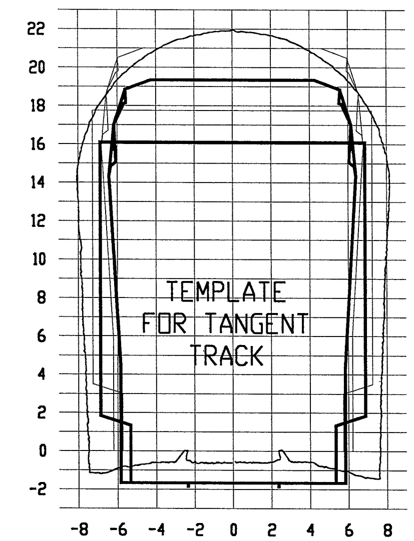

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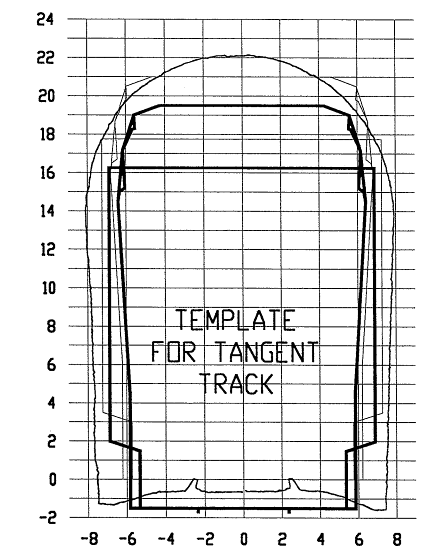

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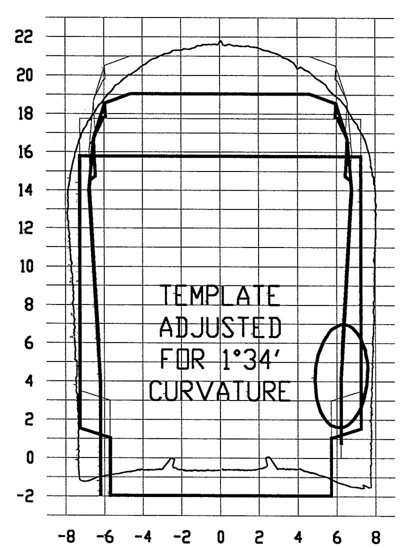

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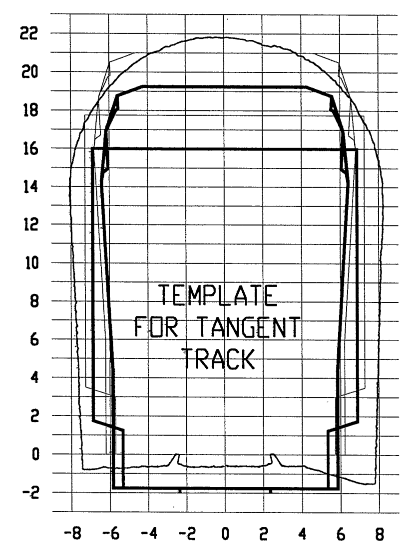

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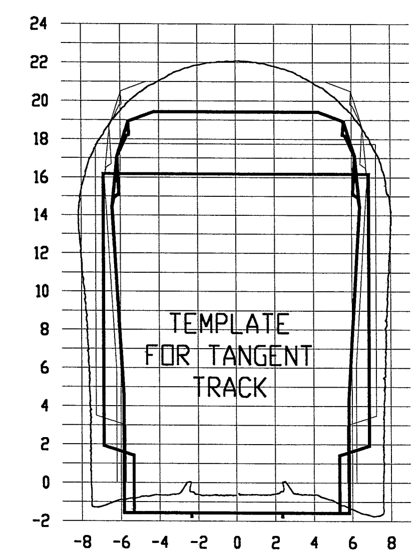

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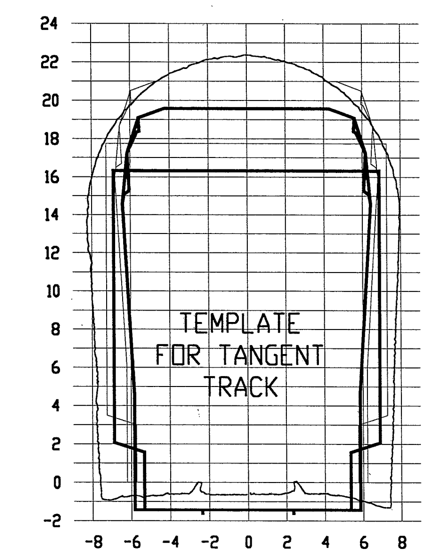

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NOT FOR CONSTRUCTION

SCALE: 1" = 100'

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REV	BY	DATE	DESCRIPTION
P1	DJL	8/16/05	PRELIMINARY ENGINEERING PHASE REPORT

Hatch Mott MacDonald

NORFOLK SOUTHERN

OWNING COMPANY

OPERATING DIVISION POCAHONTAS

OFFICE OF THE CHIEF ENGINEER - DESIGN AND CONSTRUCTION - ATLANTA, GA.

LOCATION: HUGER MAIN #2 TUNNEL, HUGER, WV

TITLE: PROPOSED TUNNEL CLEARANCE CROSS SECTIONS

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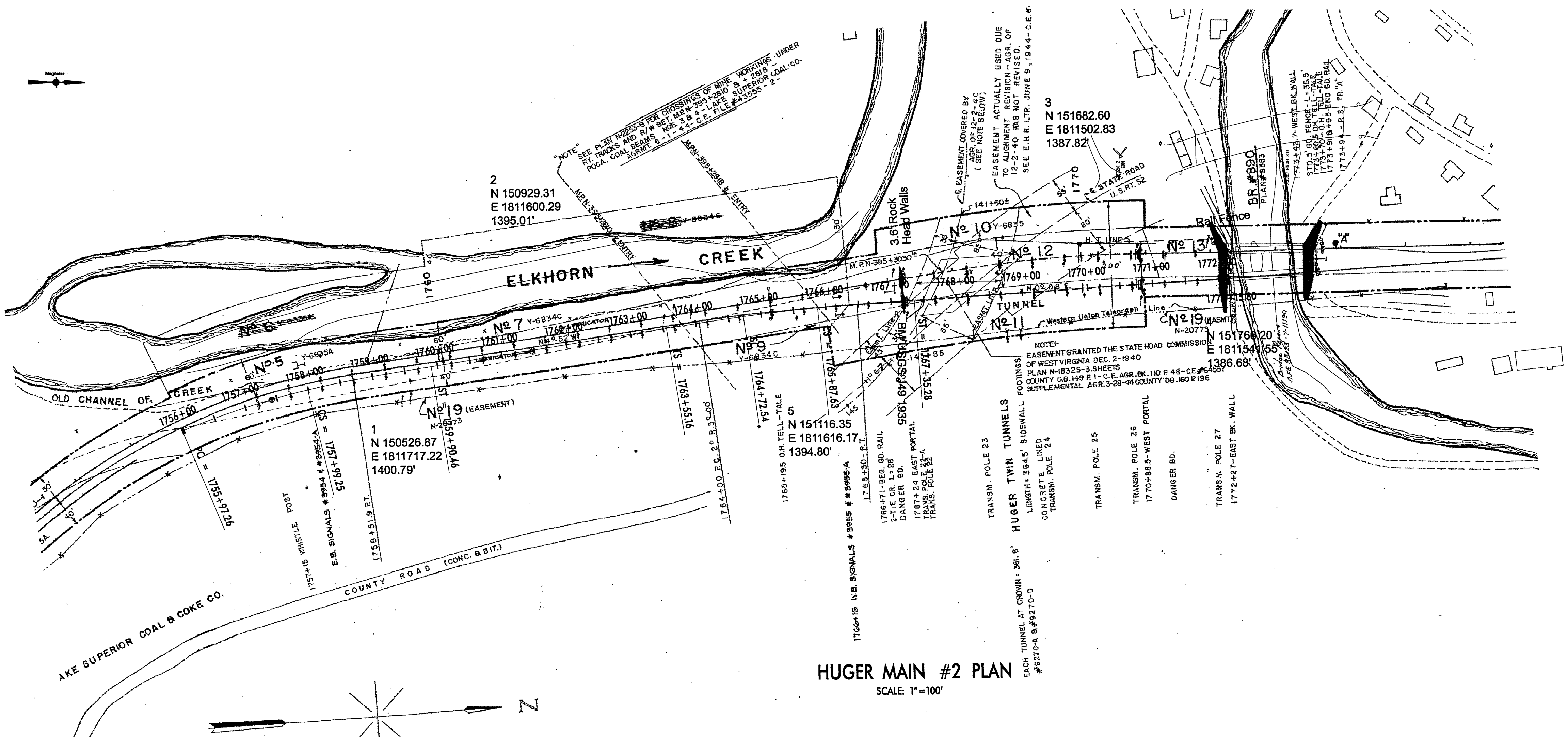
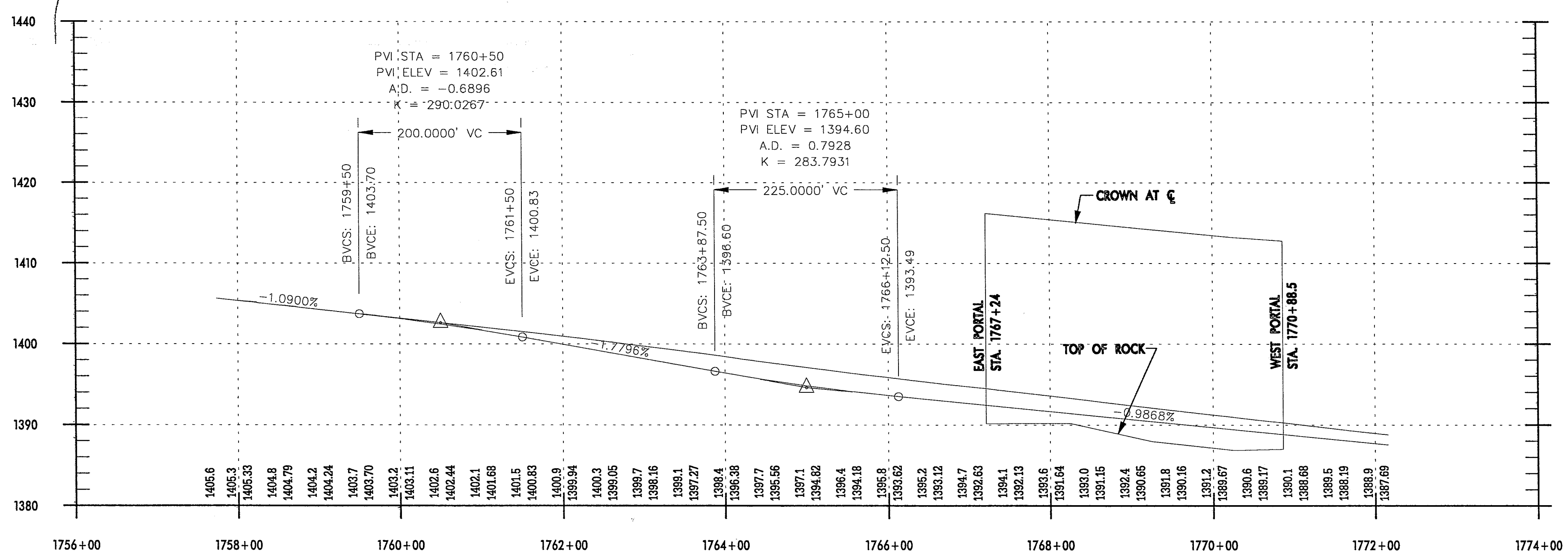


HUGER MAIN #2 PLAN
SCALE: 1"=100'



HUGER MAIN #2 PROFILE
SCALE: 1"=100' HORIZ.
1"=10' VERT.

Horizontal Alignment Station and Curve Report.
Alignment: mt-2
Desc: Huger Main track 2

Desc.	Station	Spiral/Curve Data				Northing	Easting
PI	1755+97.26					150179.8820	1811798.6090
		Length:	154.6559	Course:	N 23-12-18 W		
PI	1757+51.92					150322.0265	1811737.6714
		Length:	788.6962	Course:	N 09-41-30 W		
		Delta:	13-30-47				
		Circular Curve Data					
PC	1755+97.26					150179.8820	1811798.6090
RP						150677.0549	1812958.3275
SC	1757+99.25					150371.0927	1811734.1890
		Delta:	09	Type:	RIGHT		
		Radius:	1261.7955	DOC:	05		
		Length:	201.9864	Tangent:	101.2094		
		Mid-Ord:	4.0396	External:	4.0525		
		Chord:	201.7708	Course:	N 18-37-08 W		
		Es:	9.4426				
		Spiral Curve Data: CLOTHOID					
SC	1757+99.25					150371.0927	1811734.1890
SPI						150432.9620	1811718.7253
PC	1759+90.46					150558.6557	1811697.2587
		Length:	191.2129	L Tan:	127.5136		
		Radius:	1261.7955	S Tan:	63.7725		
		Theta:	4-20-29	P:	1.2071		
		X:	191.1032	K:	95.5882		
		Y:	4.8274	A:	491.1940		
		Chord:	191.1641	Course:	N 11-08-20 W		
		Ts:	240.0553				
PI	1765+39.10					151099.4662	1811604.8965
		Length:	676.8943	Course:	N 04-27-35 W		
		Delta:	5-13-55				
		Tangent Data					
	1759+90.46					150558.6557	1811697.2587
	1763+55.16					150918.1558	1811635.8616
		Length:	364.7052	Course:	N 09-41-30 W		
		Spiral Curve Data: CLOTHOID					
TS	1763+55.16					150918.1558	1811635.8616
SPI						150995.2894	1811622.6883
SC	1764+72.54					151033.9906	1811616.9378
		Length:	117.3729	L Tan:	78.2505		
		Radius:	2711.5213	S Tan:	39.1260		
		Theta:	1-14-24	P:	0.2117		
		X:	117.3674	K:	58.6855		
		Y:	0.8468	A:	564.1445		
		Chord:	117.3704	Course:	N 09-16-42 W		
		Ts:	183.9357				
		Circular Curve Data					
SC	1764+72.54					151033.9906	1811616.9378
RP						151432.5166	1814299.0125
SC	1765+87.63					151148.1609	1811602.4425
		Delta:	02	Type:	RIGHT		
		Radius:	2711.5213	DOC:	02		
		Length:	115.0954	Tangent:	57.5563		
		Mid-Ord:	0.6107	External:	0.6108		
		Chord:	115.0868	Course:	N 07-14-08 W		
		Es:	3.1027				
		Spiral Curve Data: CLOTHOID					
SC	1765+87.63					151148.1609	1811602.4425
SPI						151197.1083	1811597.2810
PC	1767+35.28					151295.2448	1811589.6269
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		Radius:	2711.5213	S Tan:	49.2188		
		Theta:	1-33-36	P:	0.3350		
		X:	147.6351	K:	73.8212		
		Y:	1.3399	A:	632.7286		
		Chord:	147.6412	Course:	N 04-58-47 W		
		Ts:	196.3731				
PI	1772+15.80					151774.3111	1811552.2623
		Tangent Data					
	1767+35.28					151295.2448	1811589.6269
	1772+15.80					151774.3111	1811552.2623
		Length:	480.5212	Course:	N 04-27-35 W		

NOT FOR CONSTRUCTION

SCALE: 1"=100'

REV	BY	DATE	DESCRIPTION
P2	DJL	10/14/05	PRELIMINARY ENGINEERING PHASE REPORT
P1	DJL	8/19/05	PRELIMINARY ENGINEERING PHASE REPORT

Hatch Mott MacDonald

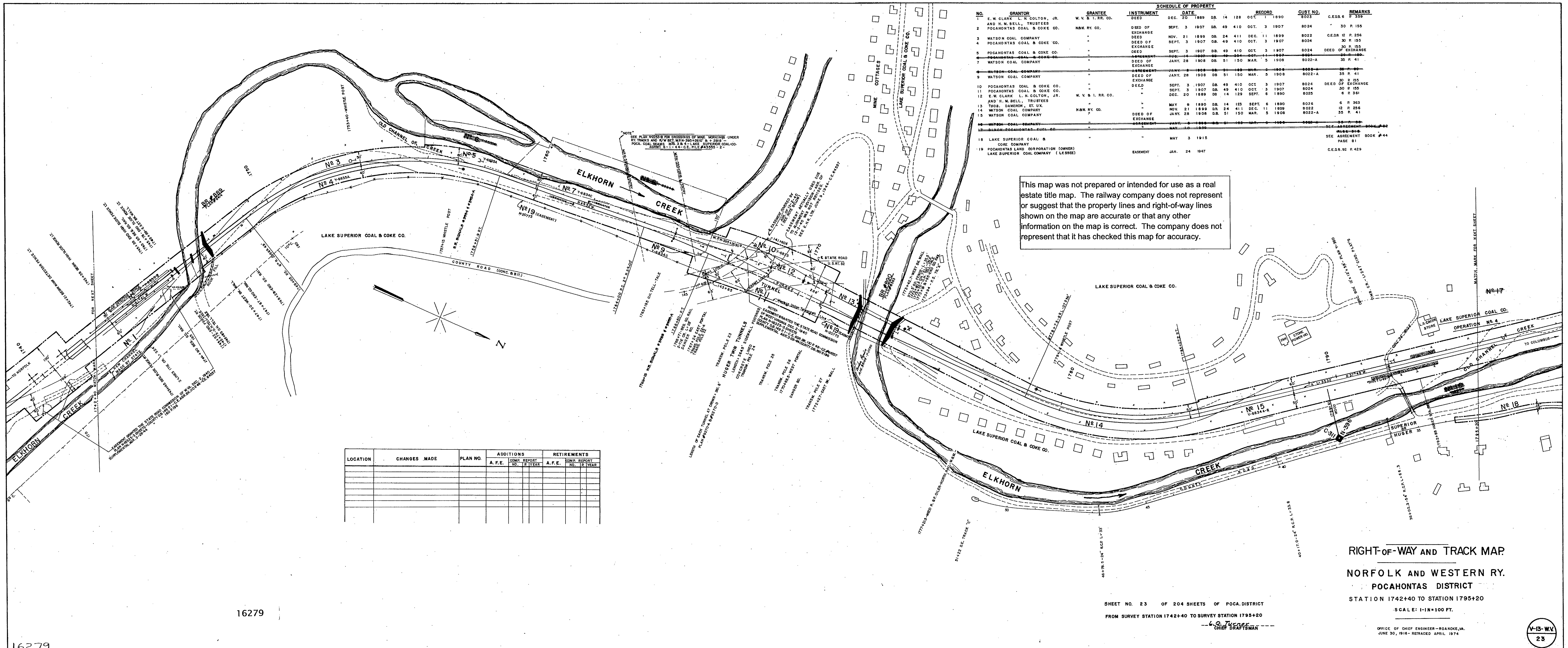
NORFOLK SOUTHERN

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

LOCATION: HUGER MAIN #2 TUNNEL, HUGER, WV
TITLE: PLAN AND PROFILE

DGN	PID No.	FRN 14279	MILE POST N-395.56
DWN	FILE No.		DRAWING NUMBER
CHK	DATE APRIL 8, 2005		

FILE NAME = P:\NSRR\93399\CAD\survey info\395.56 Huger\395.56 huger main 2.dgn
DATE/TIME = 10/11/2005 03:16:21 PM



SCHEDULE OF PROPERTY

NO.	GRANTOR	GRANTEE	INSTRUMENT	DATE	RECORD	CUST. NO.	REMARKS
1	E. W. CLARK L. N. COLTON, JR. AND H. M. BELL, TRUSTEES	W. V. & I. RR. CO.	DEED	DEC. 20 1889	D.B. 14 128 OCT. 1 1890	8023	C.E.D.B. 6 P. 359
2	POCAHONTAS COAL & COKE CO.	N.&W. RY. CO.	DEED OF EXCHANGE	SEPT. 3 1907	D.B. 49 410 OCT. 3 1907	8024	" 30 P. 155
3	WATSON COAL COMPANY	"	DEED	NOV. 21 1899	D.B. 24 411 DEC. 11 1899	8022	C.E.D.B. 12 P. 256
4	POCAHONTAS COAL & COKE CO.	"	DEED OF EXCHANGE	SEPT. 3 1907	D.B. 49 410 OCT. 3 1907	8024	30 P. 155
5	POCAHONTAS COAL & COKE CO.	"	DEED	SEPT. 3 1907	D.B. 49 410 OCT. 3 1907	8024	30 P. 155 DEED OF EXCHANGE
~~6~~	~~POCAHONTAS COAL & COKE CO.~~	"	~~AGREEMENT~~	~~AUG. 14 1907~~	~~D.B. 49 354 OCT. 11 1907~~	~~8024~~	~~30 P. 180~~
7	WATSON COAL COMPANY	"	DEED OF EXCHANGE	JANY. 28 1908	D.B. 51 150 MAR. 5 1908	8022-A	35 P. 41
~~8~~	~~WATSON COAL COMPANY~~	"	~~AGREEMENT~~	~~JANY. 8 1908~~	~~D.B. 51 183 MAR. 5 1908~~	~~8022-A~~	~~35 P. 80~~
9	WATSON COAL COMPANY	"	DEED OF EXCHANGE	JANY. 28 1908	DB 51 150 MAR. 5 1908	8022-A	35 P. 41
10	POCAHONTAS COAL & COKE CO.	"	DEED	SEPT. 3 1907	D.B. 49 410 OCT. 3 1907	8024	30 P. 155 DEED OF EXCHANGE
11	POCAHONTAS COAL & COKE CO.	"	"	SEPT. 3 1907	D.B. 49 410 OCT. 3 1907	8024	30 P. 155
12	E. W. CLARK L. N. COLTON, JR. AND H. M. BELL, TRUSTEES	W. V. & I. RR. CO.	"	DEC. 20 1889	DB 14 129 SEPT. 6 1890	8025	6 P. 361
13	THOS. DAMERON, ET. UX.	"	"	MAY 9 1890	D.B. 14 123 SEPT. 6 1890	8026	6 P. 363
14	WATSON COAL COMPANY	N.&W. RY. CO.	"	NOV. 21 1899	D.B. 24 411 DEC. 11 1899	8022	12 P. 256
15	WATSON COAL COMPANY	"	DEED OF EXCHANGE	JANY. 28 1908	D.B. 51 150 MAR. 5 1908	8022-A	35 P. 41
~~16~~	~~WATSON COAL COMPANY~~	"	~~AGREEMENT~~	~~JANY. 8 1908~~	~~D.B. 51 183 MAR. 5 1908~~	~~8022-A~~	~~35 P. 80~~
~~17~~	~~DIXON POCAHONTAS FUEL CO.~~	"	"	~~MAY 10 1909~~			~~SEE AGREEMENT BOOK #32 PAGE 318~~
18	LAKE SUPERIOR COAL & COKE COMPANY	"	"	MAY 3 1915			SEE AGREEMENT BOOK #44 PAGE 81
19	POCAHONTAS LAND CORPORATION (OWNER) LAKE SUPERIOR COAL COMPANY (LESSEE)		EASEMENT	JAN. 24 1947			C.E.D.B. 92 P. 429

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			RETIREMENTS		
			A.F.E.	COMP. REPORT NO.	COMP. REPORT YR. YEAR	A.F.E.	COMP. REPORT NO.	COMP. REPORT YR. YEAR

SHEET NO. 23 OF 204 SHEETS OF POCA. DISTRICT

FROM SURVEY STATION 1742+40 TO SURVEY STATION 1795+20

L. O. Turner
CHIEF DRAFTSMAN

RIGHT-OF-WAY AND TRACK MAP

NORFOLK AND WESTERN RY.

POCAHONTAS DISTRICT

STATION 1742+40 TO STATION 1795+20

SCALE: 1-IN = 100 FT.

OFFICE OF CHIEF ENGINEER—ROANOKE, VA.
JUNE 30, 1916—RETRACED APRIL 1974

V-13-W.V.
23

16279

16279