



Virginia Division

2006

**THIS BOOK IS INTENDED FOR
GENERAL REFERENCE ONLY**

This book is prepared and published by the office of Engineering Design and Construction-Atlanta and is based on information contained in two data sources: (1) the Engineering D&C data file and (2) the corporate track database (CTRK).

ENGINEERING D&C DATABASE:

Engineering D&C maintains a departmental database, which is used to generate the track layout section or center portion of the track chart diagram. Questions or information concerning changes, corrections, additions, or deletions to this section should be directed to the Engineering D&C office as follows:

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CTRK-NS CORPORATE DATABASE:

Information related to rail, T&S, surfacing, curves, elevation, speeds, and, speed restrictions is obtained from the CTRK database. Various departments own and maintain these files. Questions or information concerning changes, corrections, additions, or deletions to these records should be directed as follows:

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VIRGINIA DIVISION

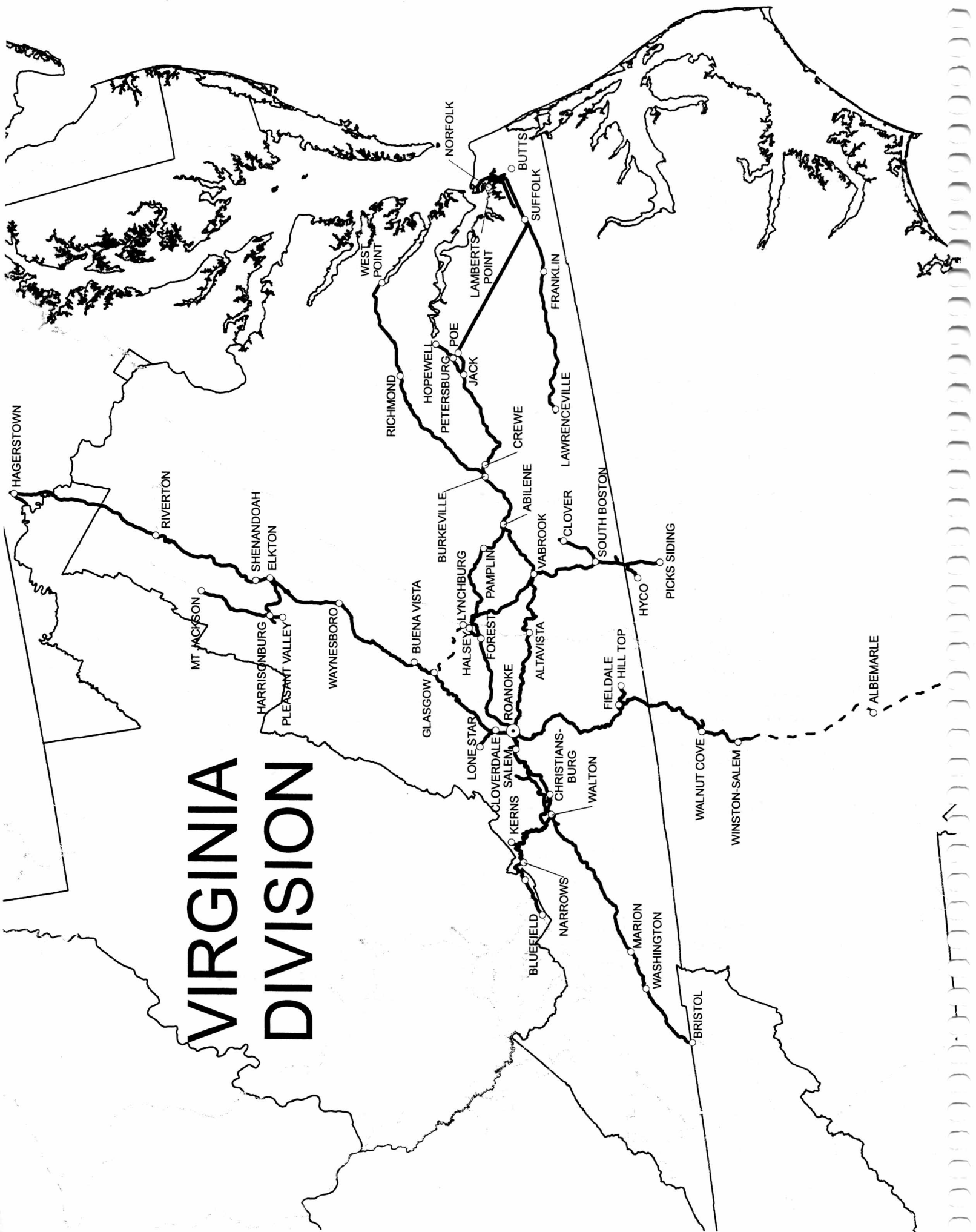
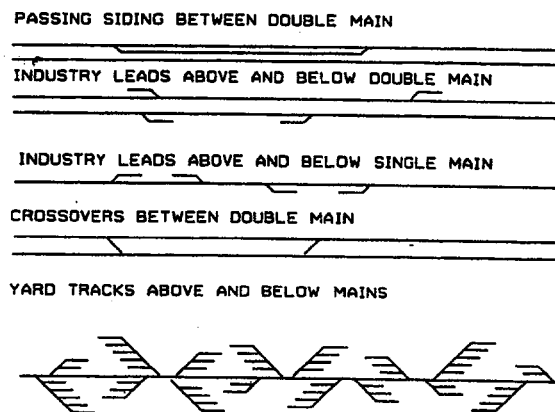
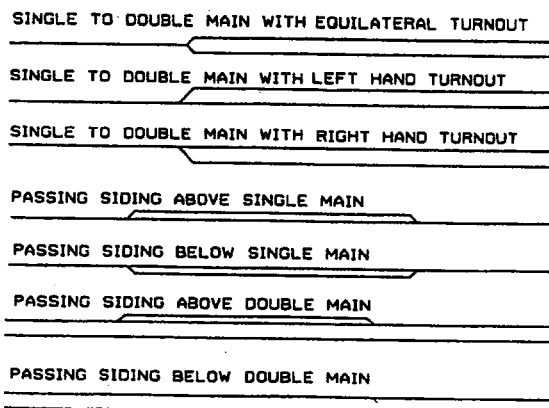
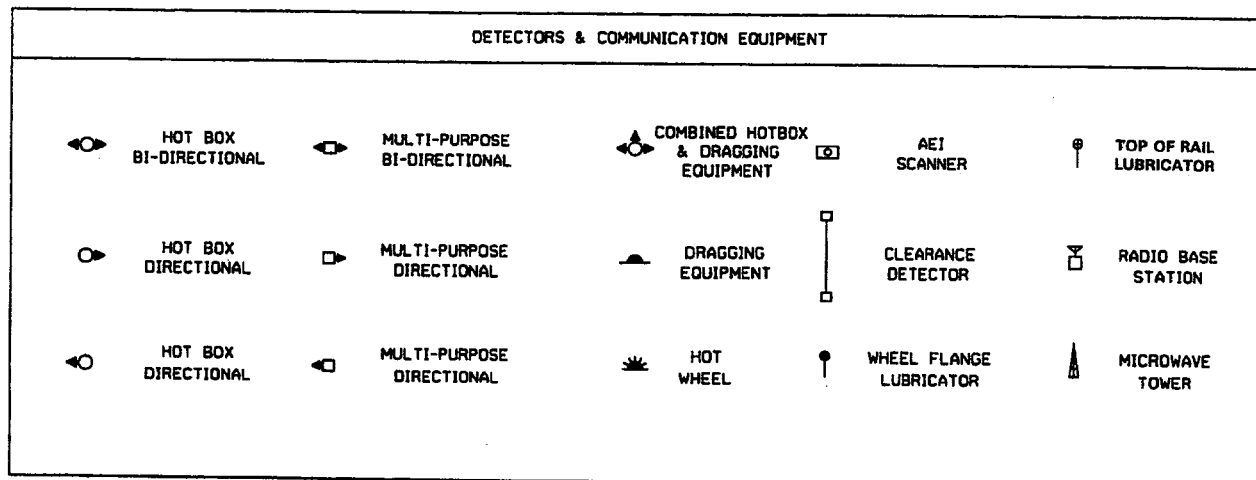
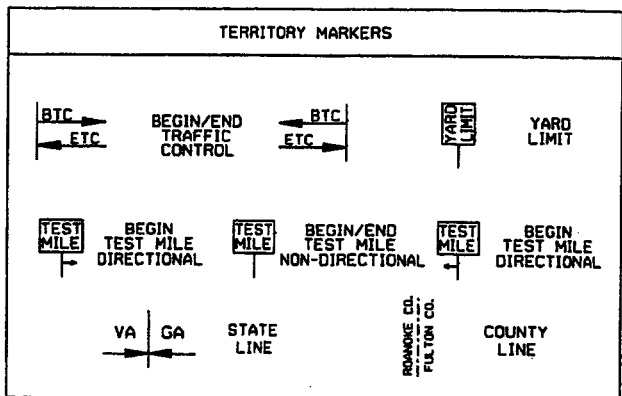
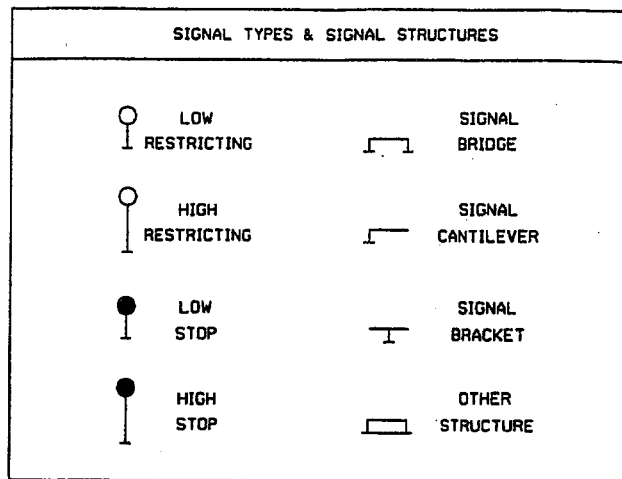
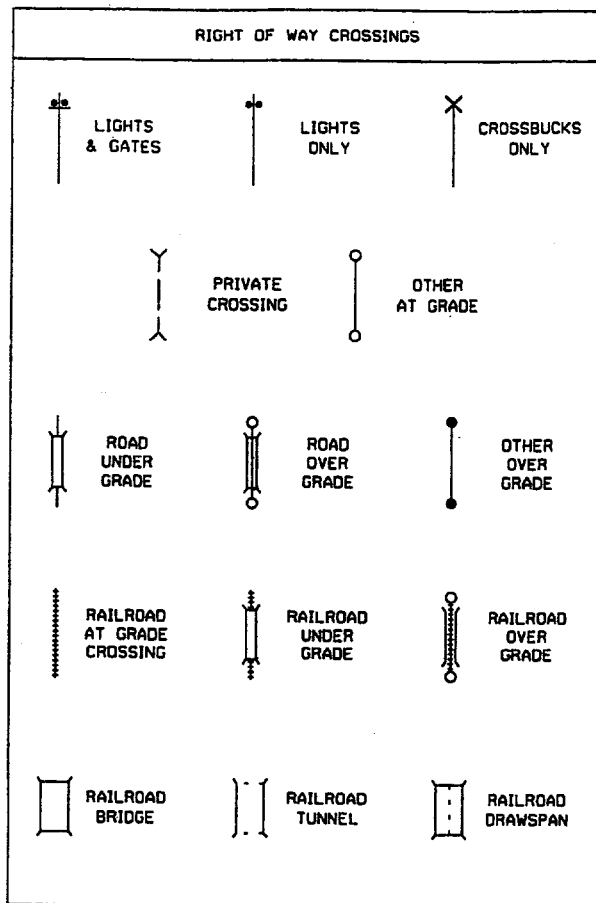


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TRACK CHART SYMBOL LEGEND



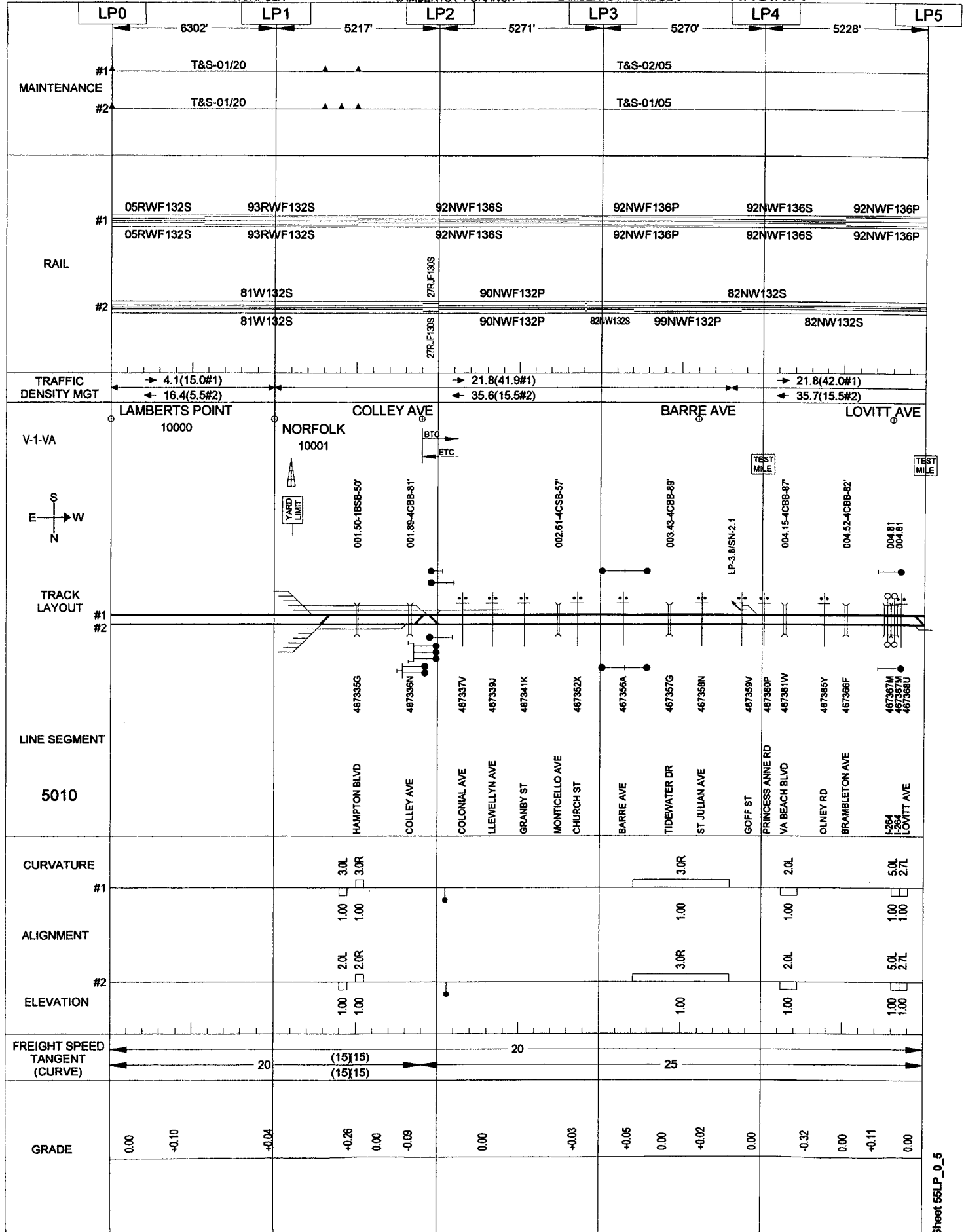
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NORFOLK

001
LAMBERTS PT BRANCH

LAMBERTS PT-BRIDGE 5

VIRGINIA



04/12/2006

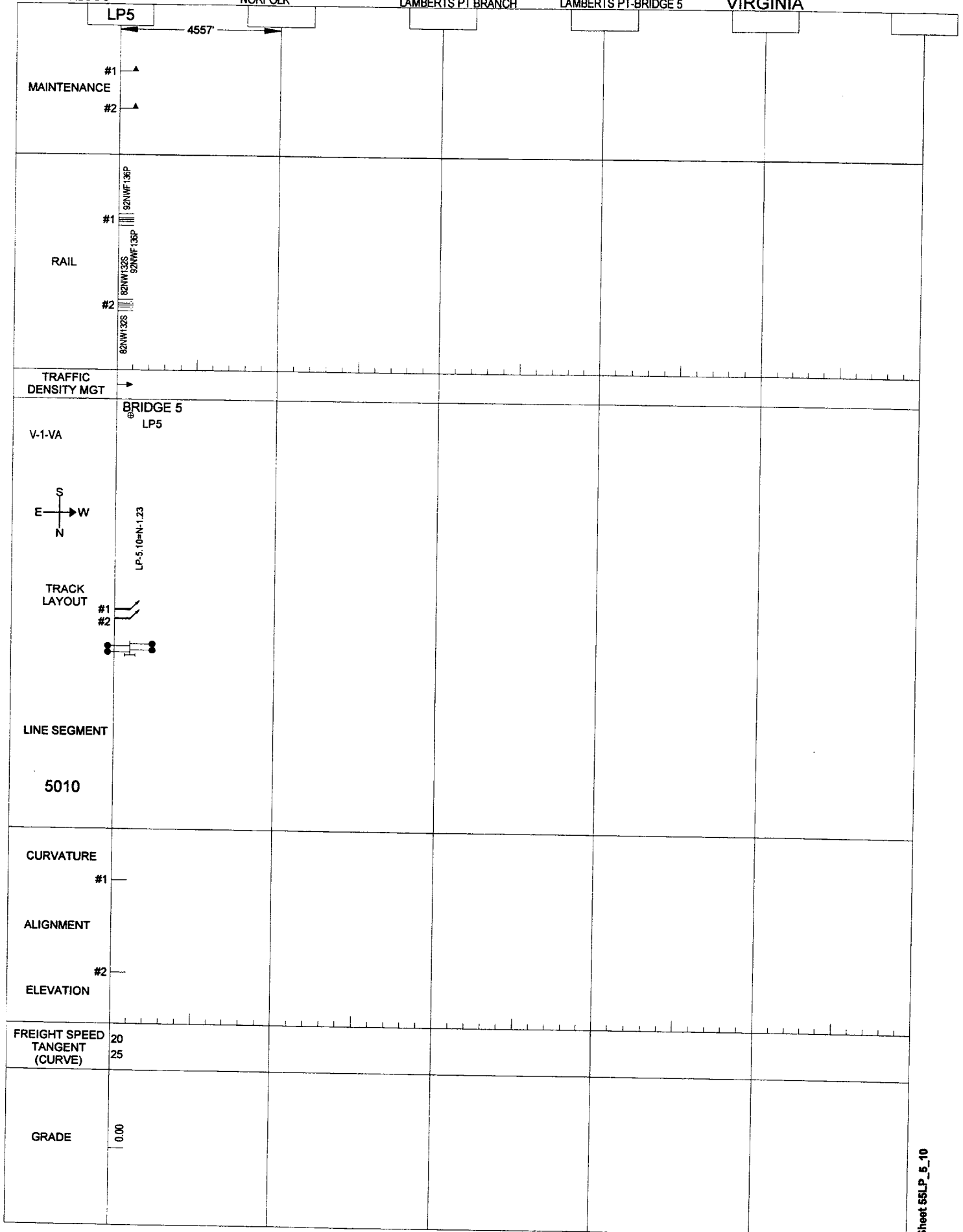
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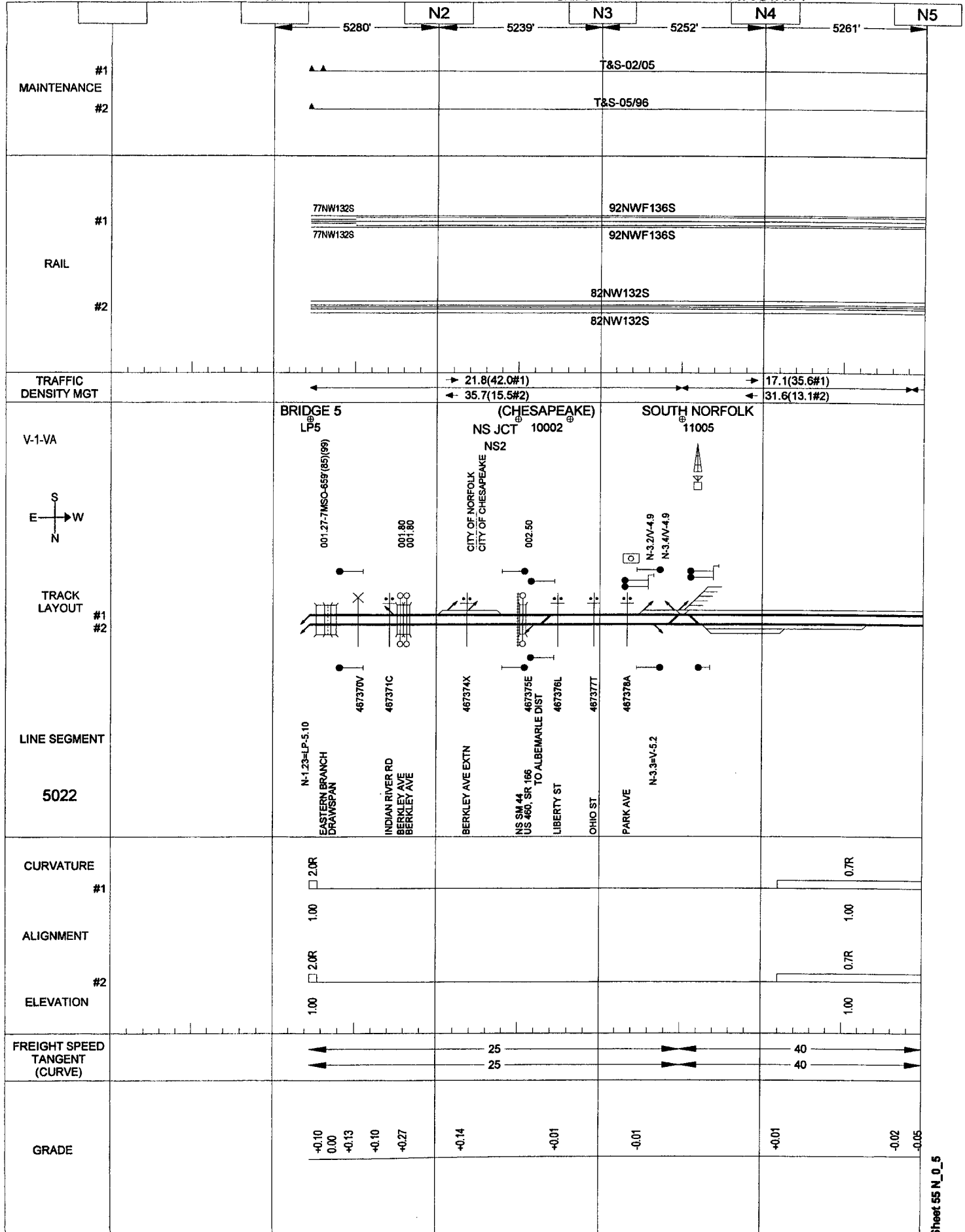
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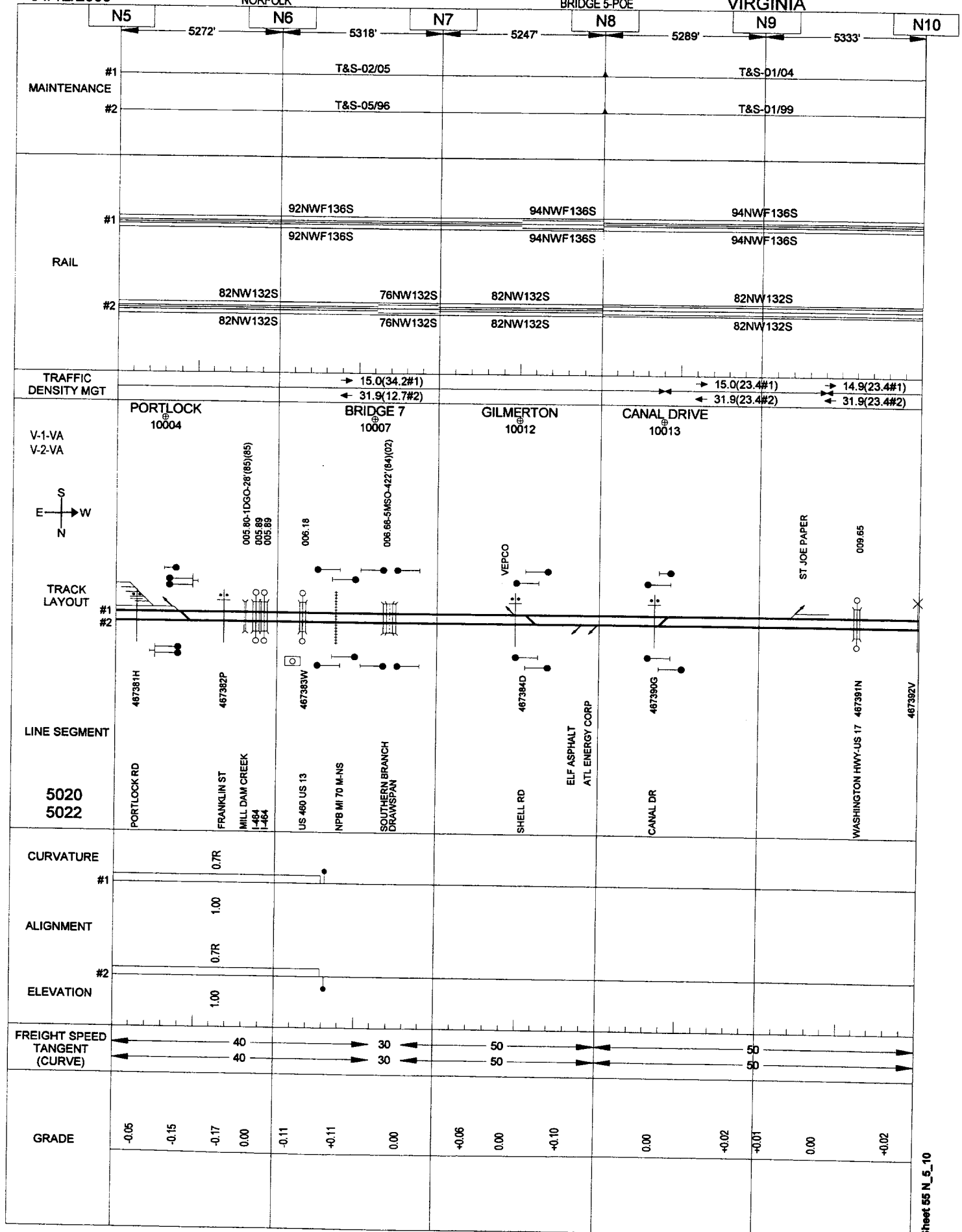
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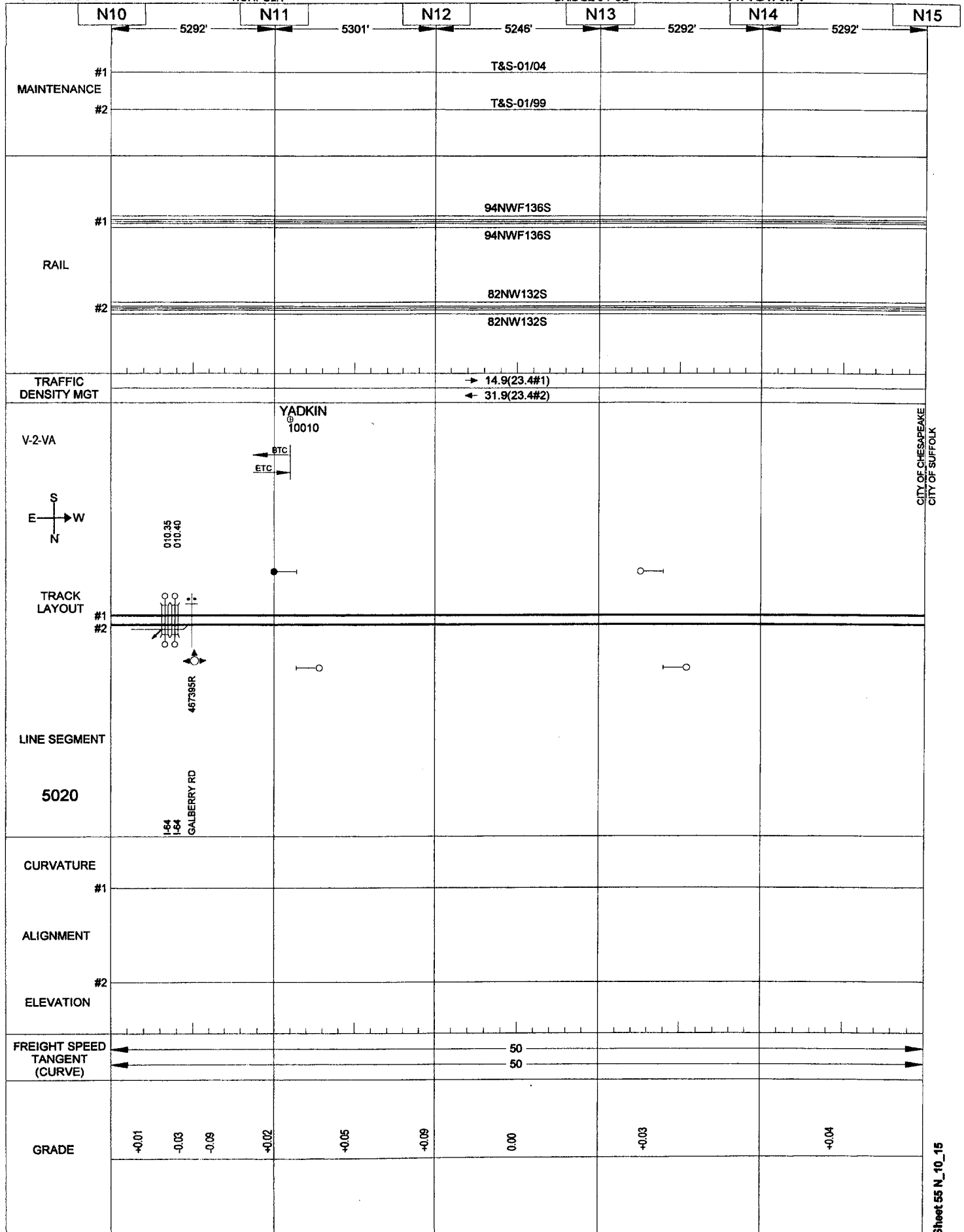
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005

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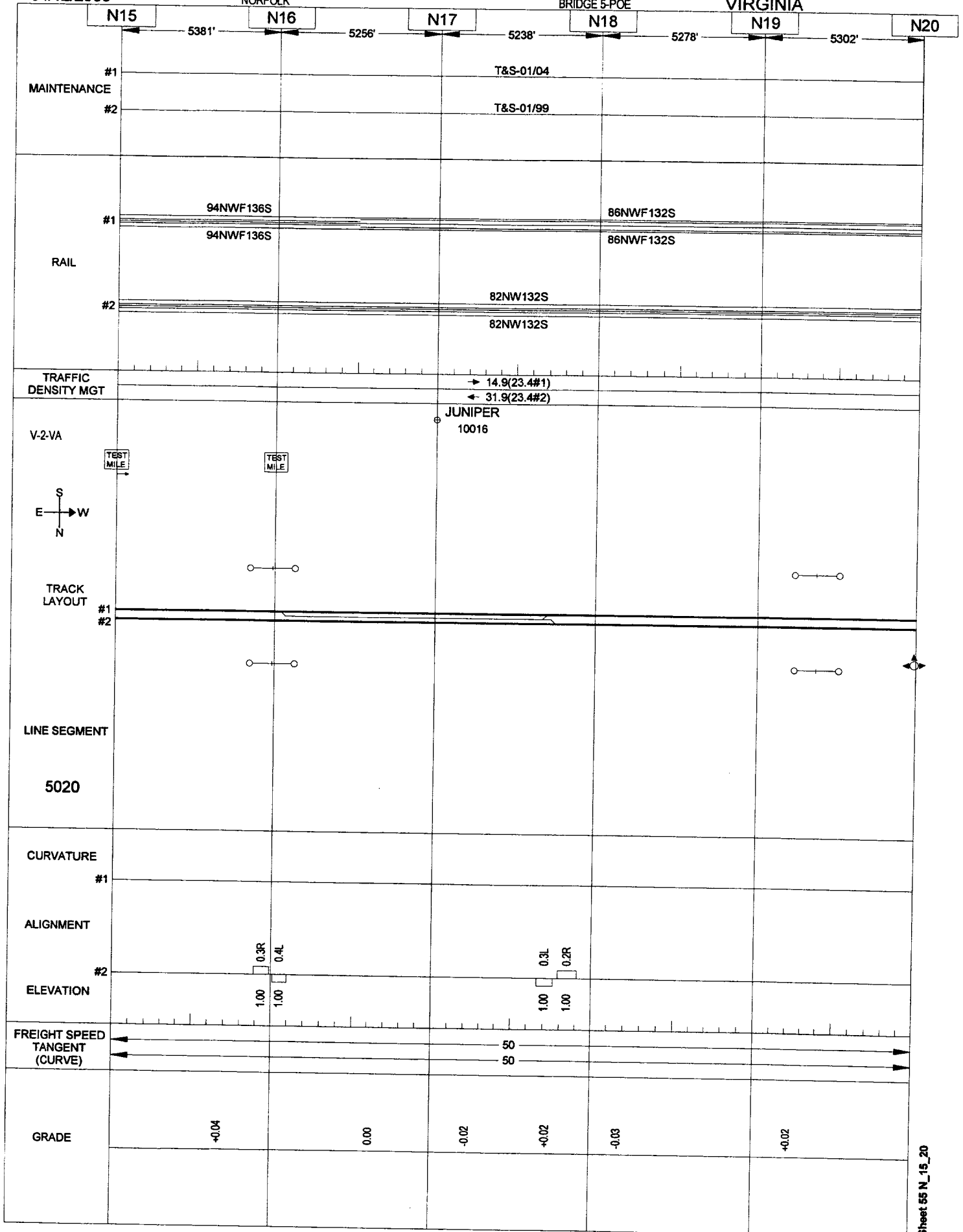
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006

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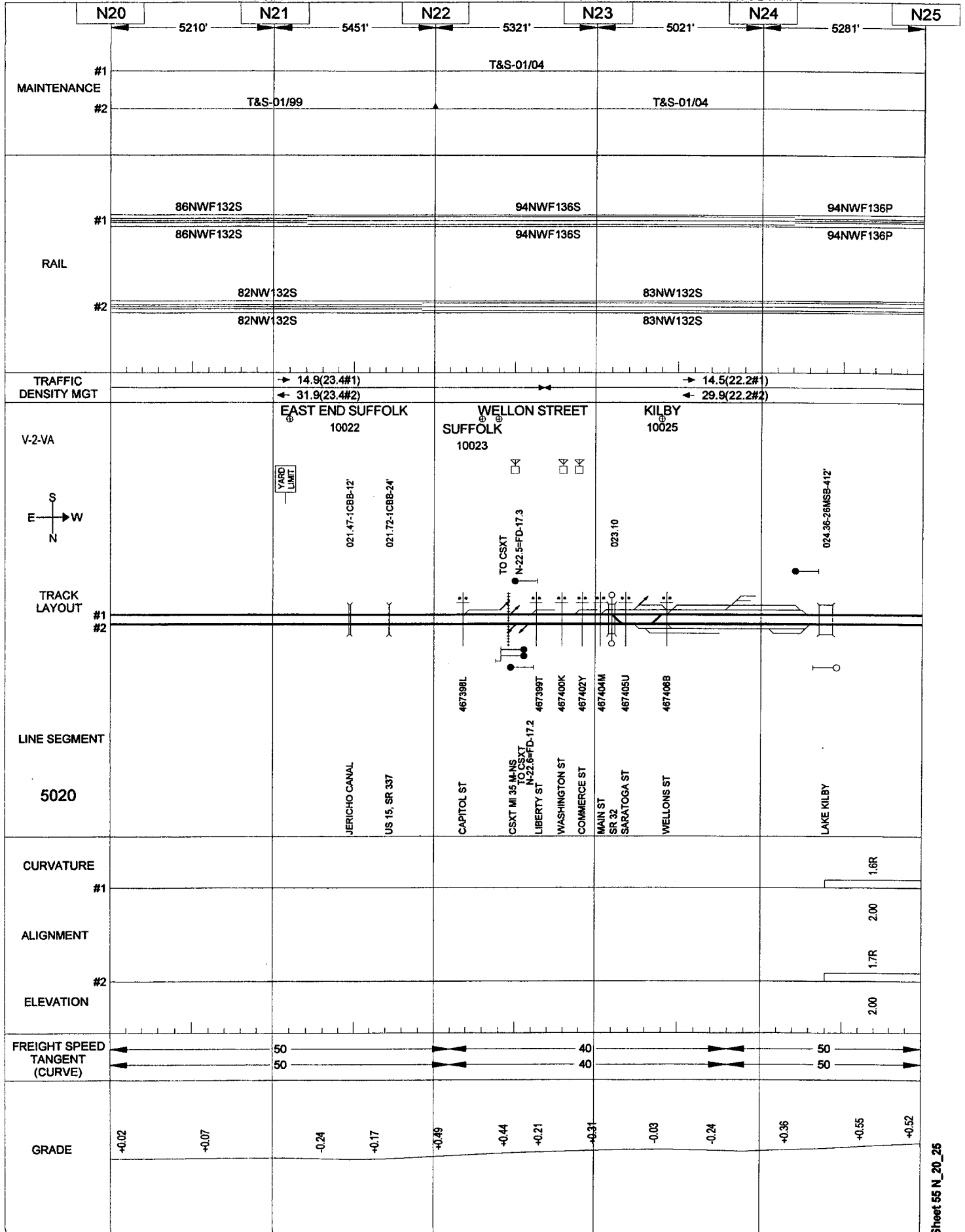
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007

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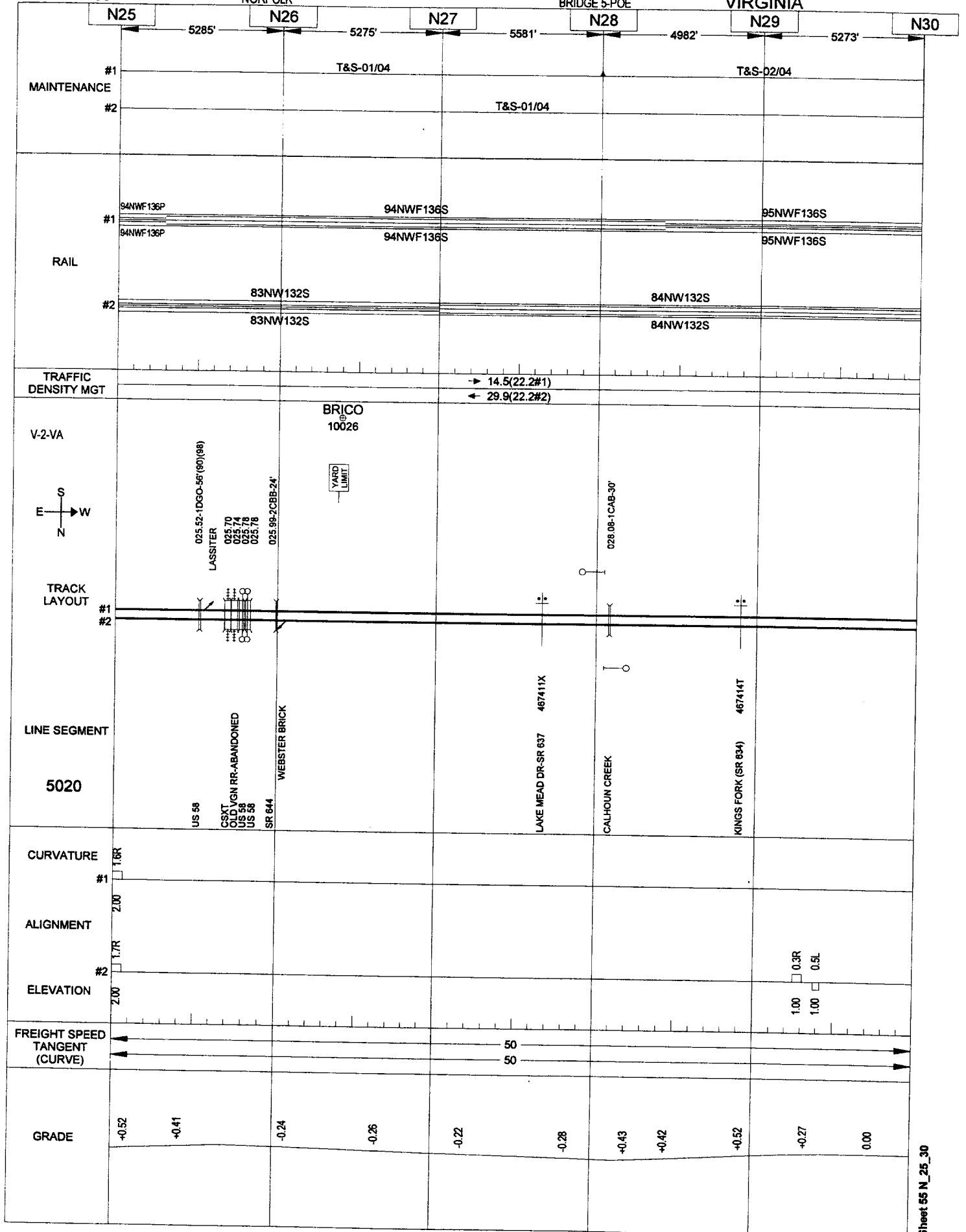
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NORFOLK

008

BRIDGE 5-POE

VIRGINIA



04/12/2006

NORFOLK

009

BRIDGE 5-POE

VIRGINIA

	N30	N31	N32	N33	N34	N35
	5363'	5199'	5330'	4333'	6172'	
MAINTENANCE	#1		T&S-02/04			
	#2		T&S-01/04			
RAIL	#1		95NWF136S			
			95NWF136S			
	#2		84NW132S			
			84NW132S			
TRAFFIC DENSITY MGT			→ 14.5(22.2#1) ← 29.9(22.2#2)			
V-2-VA	(MYRTLE) 10030	CITY OF SUFFOLK ISLE OF WIGHT CO	BD CROSSOVER	ISLE OF WIGHT CO WINDSOR CORP	WINDSOR 10033	WINDSOR CORP ISLE OF WIGHT CO
TRACK LAYOUT	#1					
	#2					
LINE SEGMENT	5020	OLD MYRTLE RD-SR 632	ELEYS KING (SR 607)	OLD SUFFOLK RD-SR 636	S COURT ST BANK ST	S PRINCE BLVD-SR 258
		467415A	467417N	467418V	467419C 467420W	467423S
CURVATURE	#1					
ALIGNMENT	#2					
ELEVATION			1.00 0.3L 1.00 0.3R			
FREIGHT SPEED TANGENT (CURVE)			50	50		
GRADE	0.00	+0.04	0.00	-0.25	+0.35	+0.25
				0.00	-0.25	0.00
					+0.45	-0.11
						+0.02
						0.00

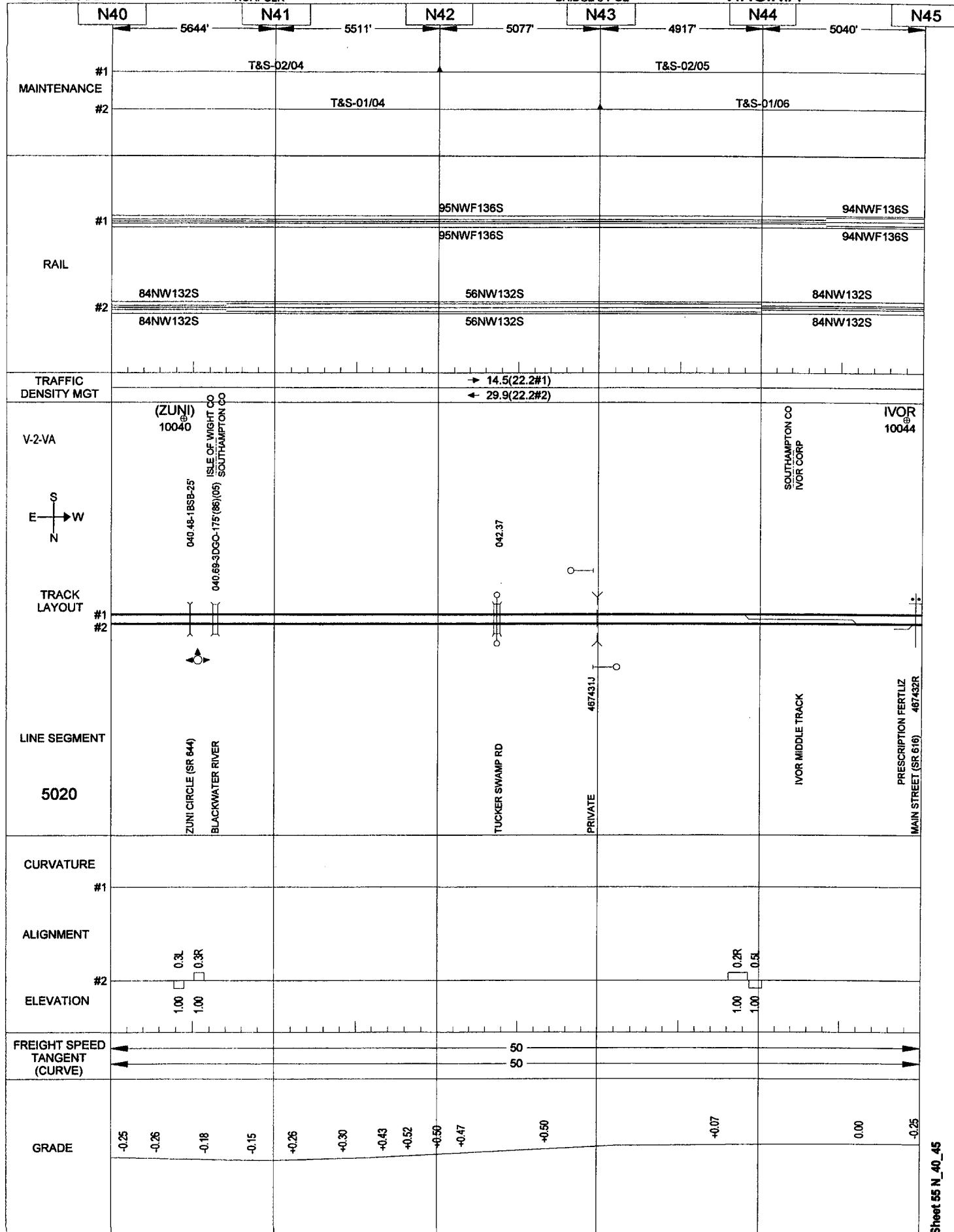
04/12/2006

NORFOLK

011

BRIDGE 5-POE

VIRGINIA



VIRGINIA

1150

ESQBI

T&S-02/05

T&S-01/06

94NWF136S
94NWF136S
84NW132S
84NW132S

→ 14.5(22.2#1)
← 29.9(22.2#2)

047.07-2CBB-24'

049 06-1CBB-10'
SOUTHAMPTON CO
SUSSEX CO

VOR HOUSE TRACK

5020

#1

#2

- 50
- 50

-0.25

0.00

+0.30

+0.11

-0.25

8

+0.50

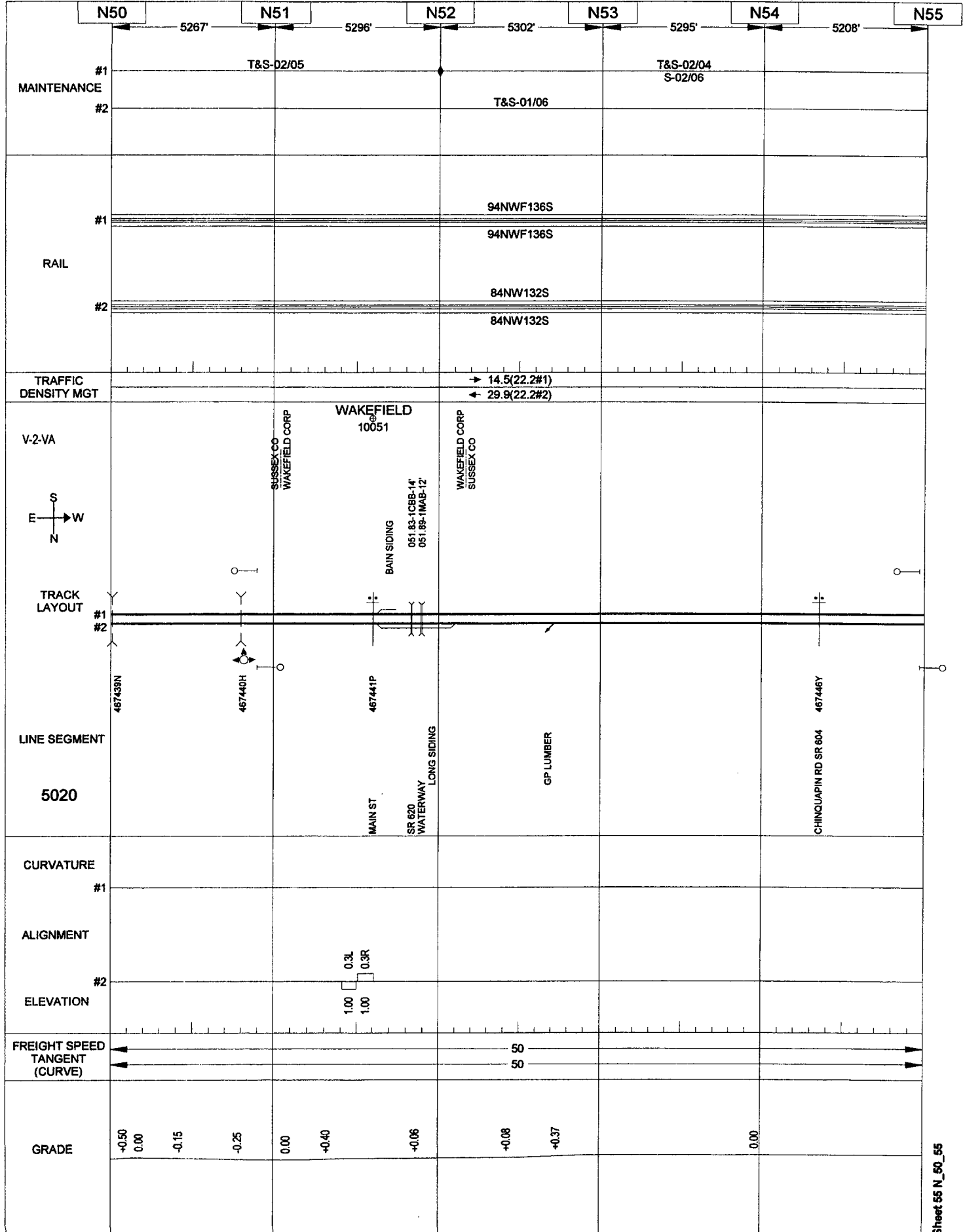
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NORFOLK

013

BRIDGE 5-POE

VIRGINIA



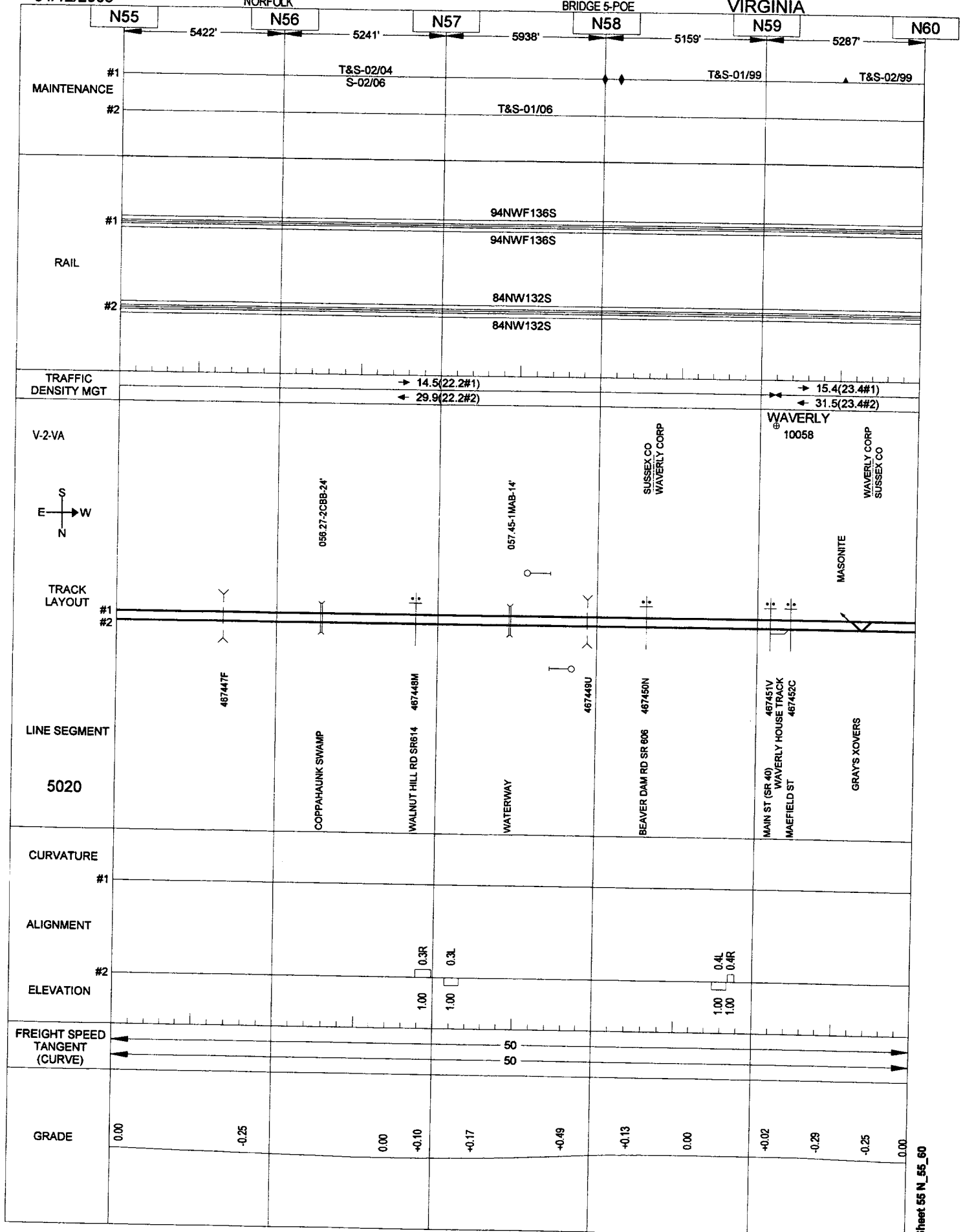
04/12/2006

NORFOLK

014

BRIDGE 5-POE

VIRGINIA



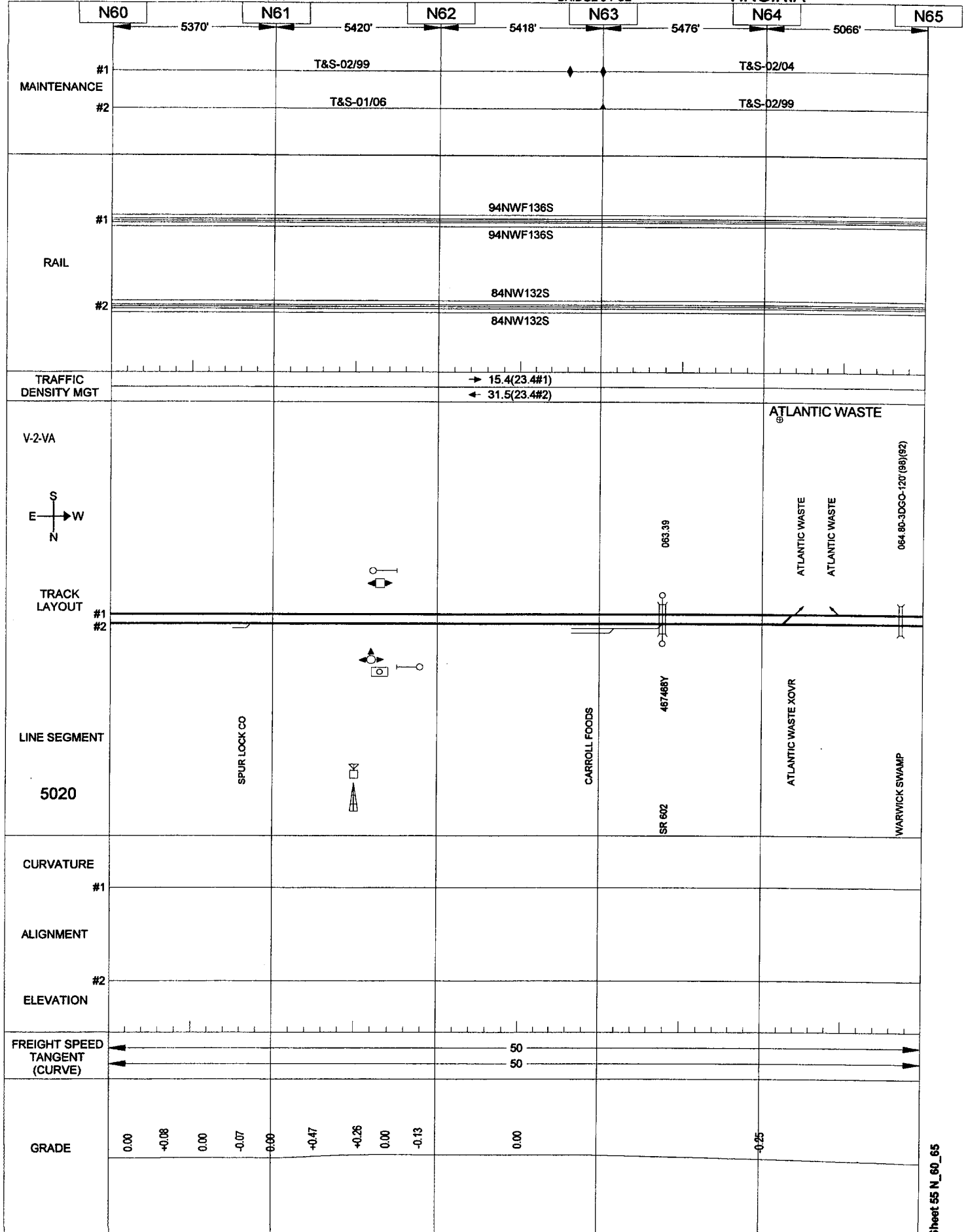
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NORFOLK

015

BRIDGE 5-POE

VIRGINIA



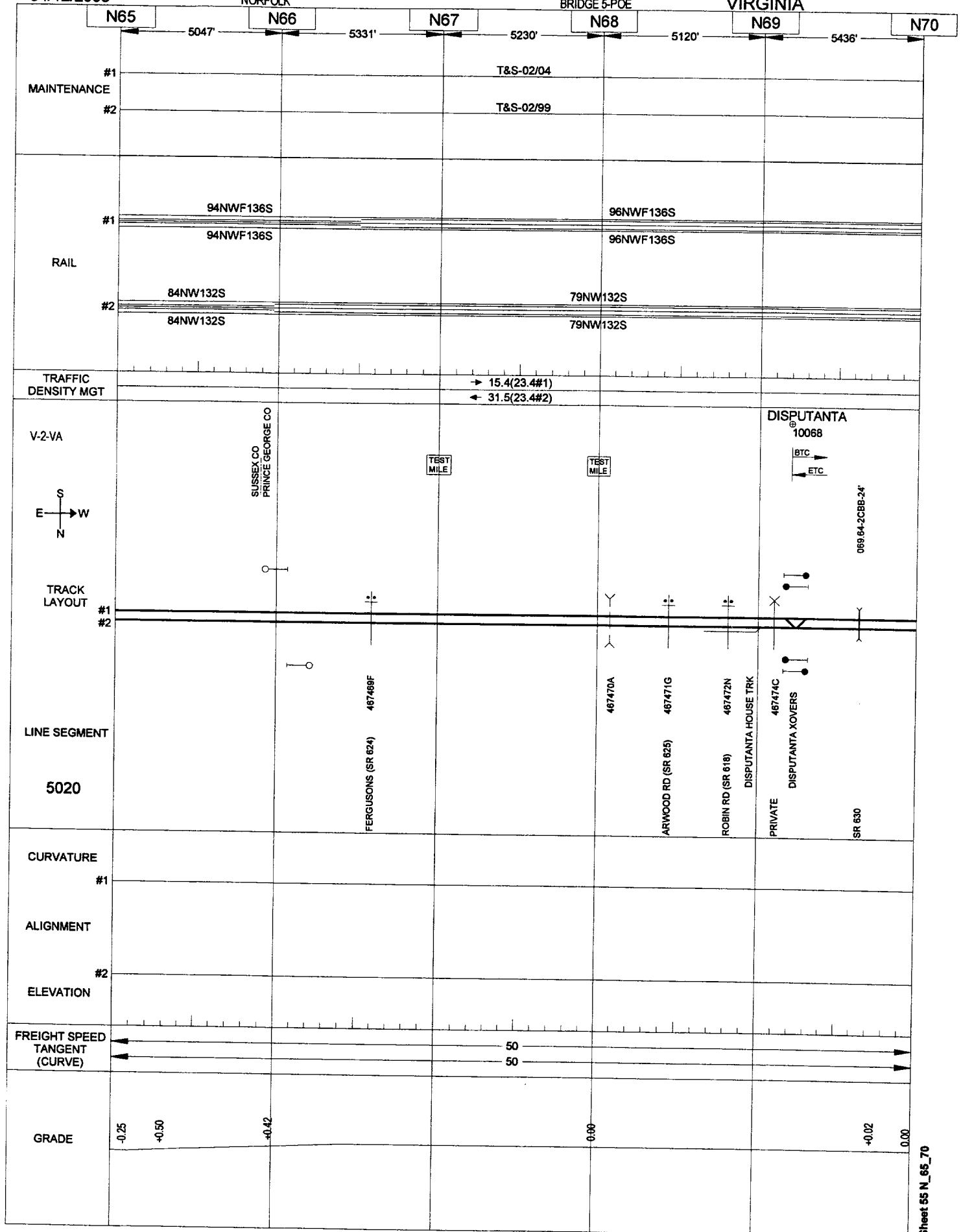
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NORFOLK

016

BRIDGE 5-POE

VIRGINIA



NORFOLK

017

BRIDGE 5-POE

VIRGINIA

		N70		N71		N72		N73		N74		N75	
		5475'		5038'		5378'		5180'		5311'			
MAINTENANCE	#1	T&S-02/04						T&S-01/05					
	#2	T&S-02/99											
RAIL	#1	96NWF136S											
		96NWF136S											
	#2	79NW132S						78NW132S					
		79NW132S						78NW132S					
TRAFFIC DENSITY MGT		→ 15.4(23.4#1) ← 31.5(23.4#2)											
V-2-VA													
TRACK LAYOUT	#1												
	#2												
LINE SEGMENT		5020											
CURVATURE	#1												
ALIGNMENT	#2												
ELEVATION													
FREIGHT SPEED TANGENT (CURVE)													
GRADE		0.00	+0.10	0.00	-0.10	0.00	+0.48	0.00	-0.25	0.00	+0.30		

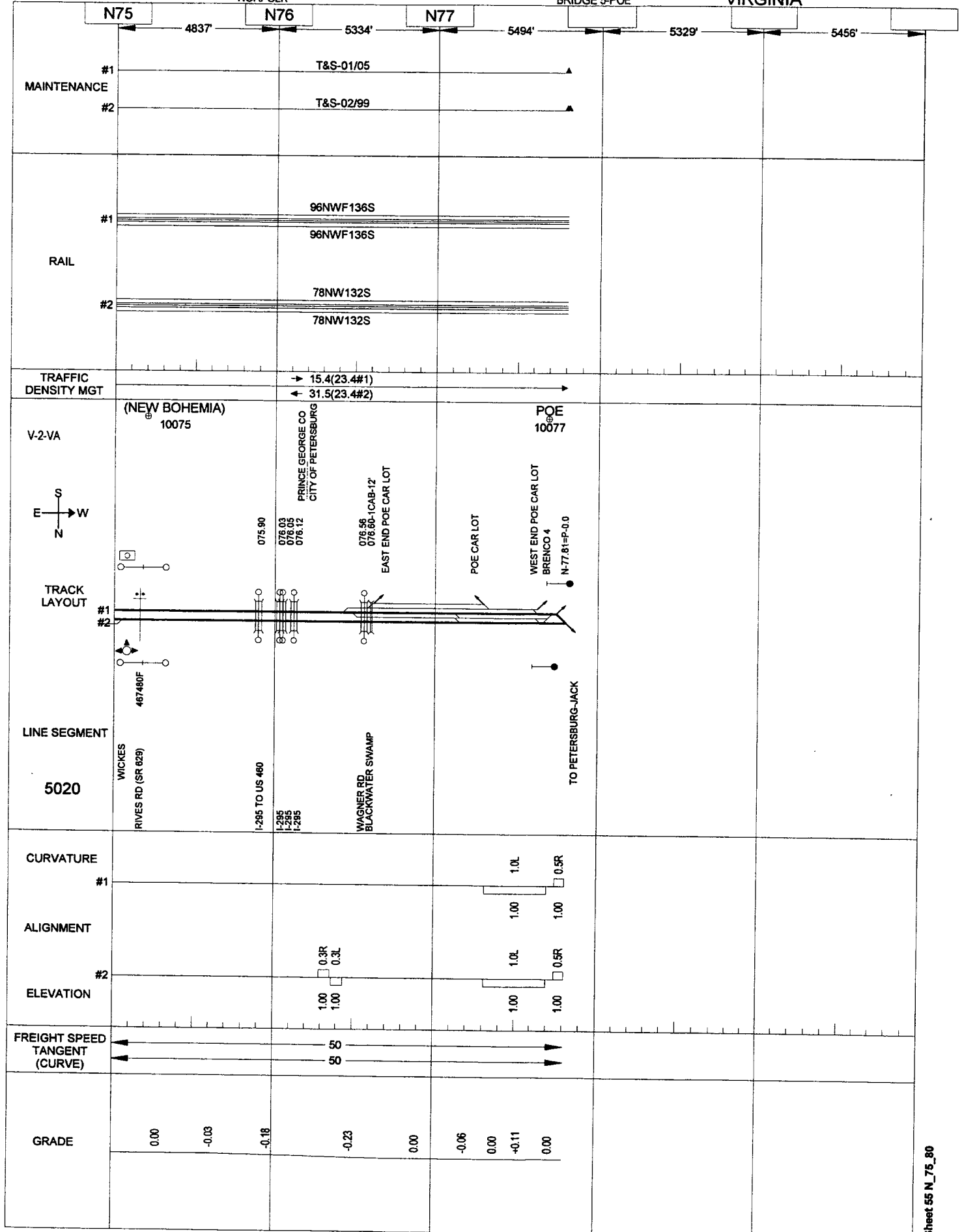
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NORFOLK

018

BRIDGE 5-POE

VIRGINIA



04/12/2006

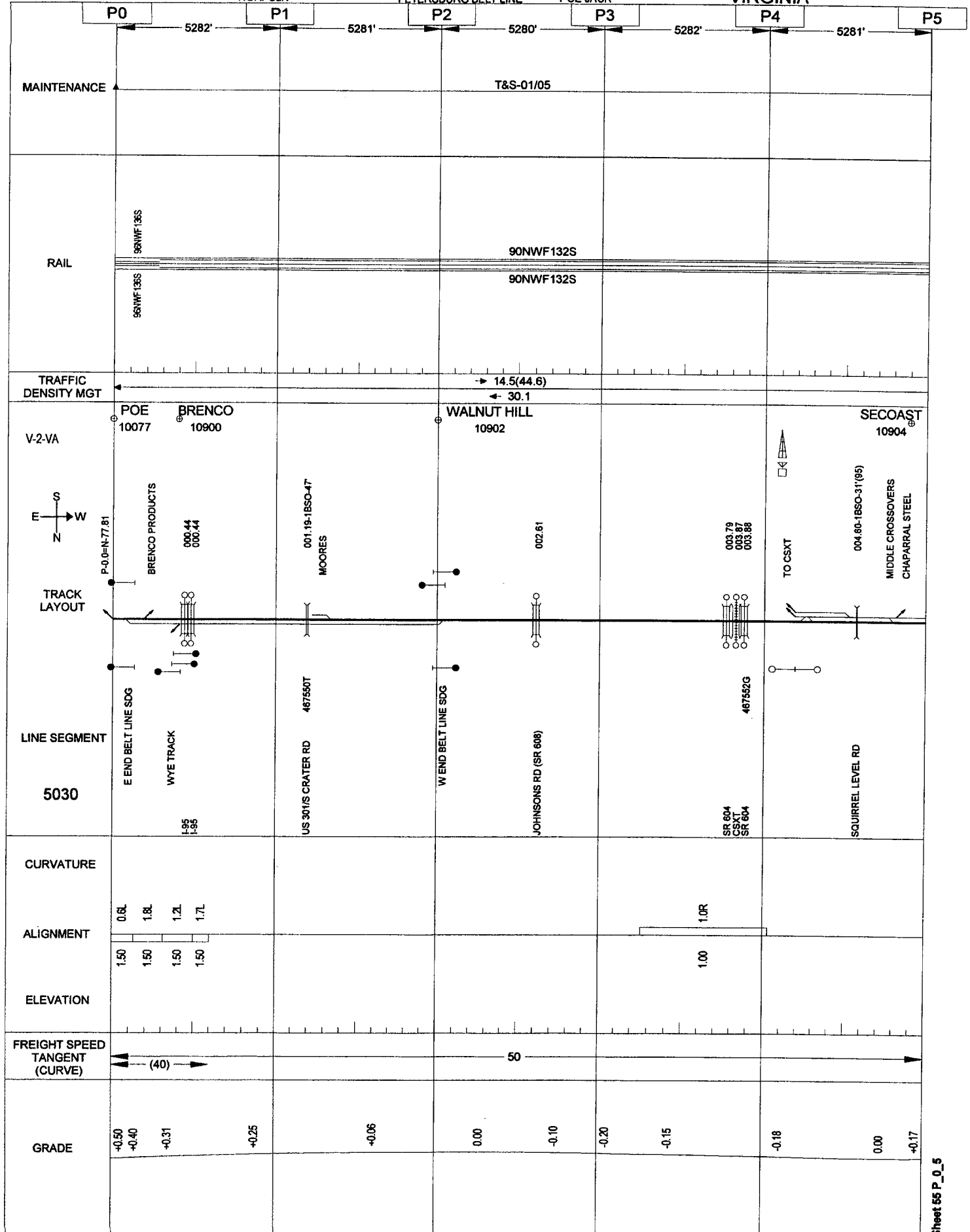
NORFOLK

019

PETERSBURG BELT LINE

POE-JACK

VIRGINIA



04/12/2006

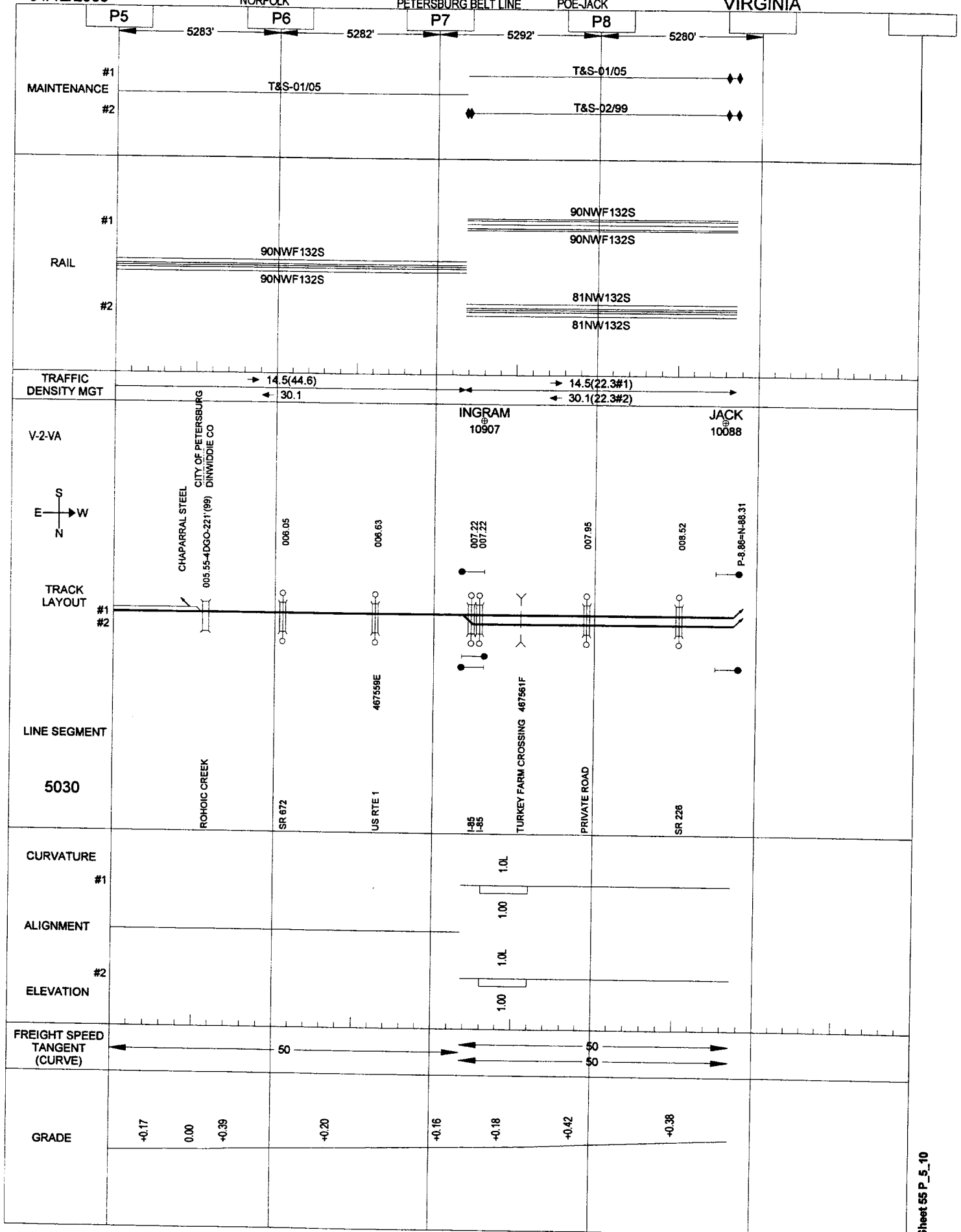
NORFOLK

020

PETERSBURG BELT LINE

POE-JACK

VIRGINIA



04/12/2006

NORFOLK

021

POE-PETERSBURG-JACK

VIRGINIA

N78

N79

N80

4837'

5334'

5494'

5329'

5456'

MAINTENANCE

T&S-02/06

RAIL

83W132S

83W132S

TRAFFIC
DENSITY MGT

1.0(2.8)

1.8

V-2-VA

POE
10077

LANE

S
E — W
N

WYE AT POE, VA

078.88
078.98

079.47-1CAB-12'

TRACK
LAYOUT

LINE SEGMENT

5050

TO NORFOLK

US 460
CRATER RD

POOL CREEK

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

1.3R
1.50

1.0R
1.50

0.6R
1.50

1.6L
1.50

-0.70

+0.75%

CREWE TO NORFOLK

-0.74

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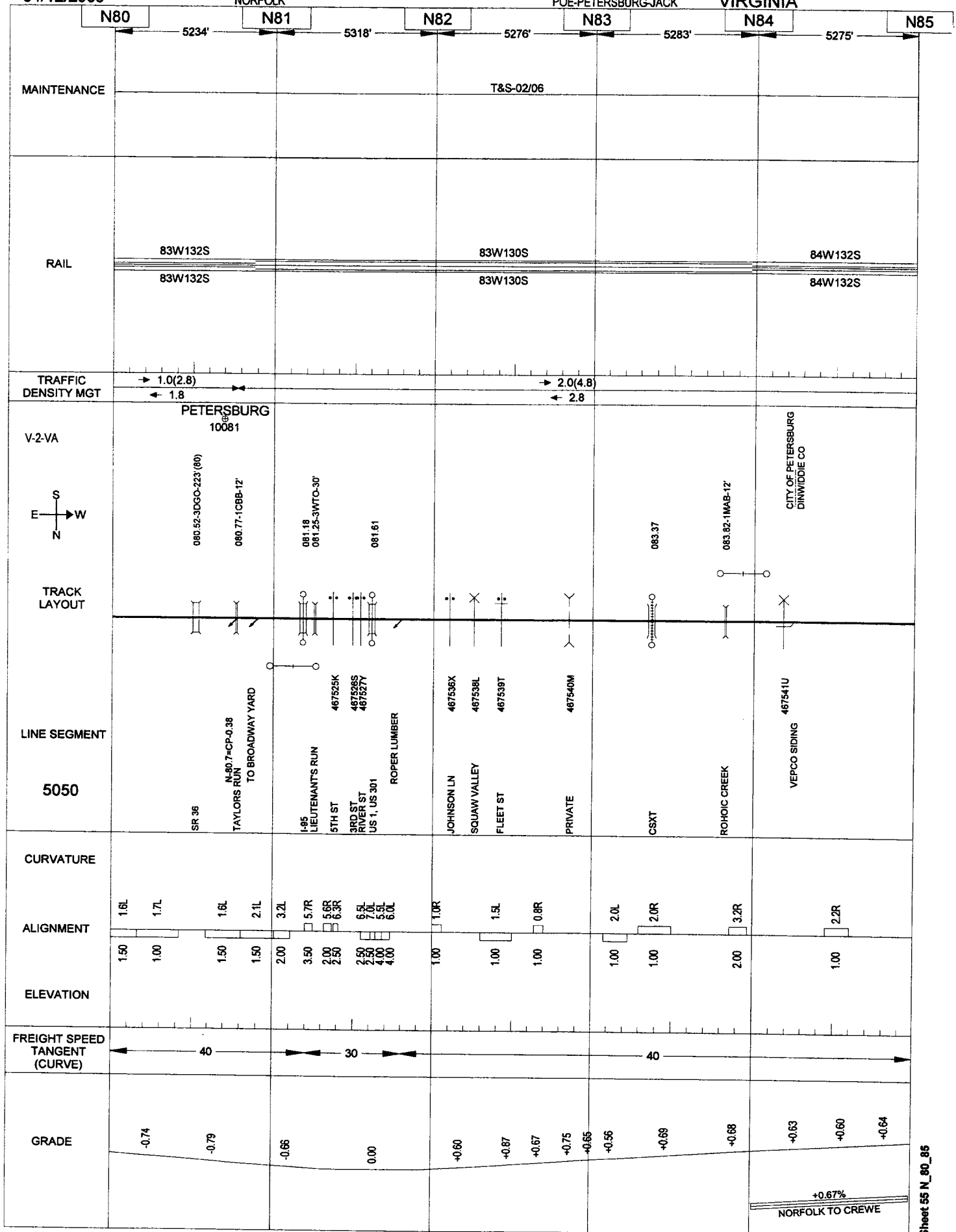
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NORFOLK

022

POE-PETERSBURG-JACK

VIRGINIA



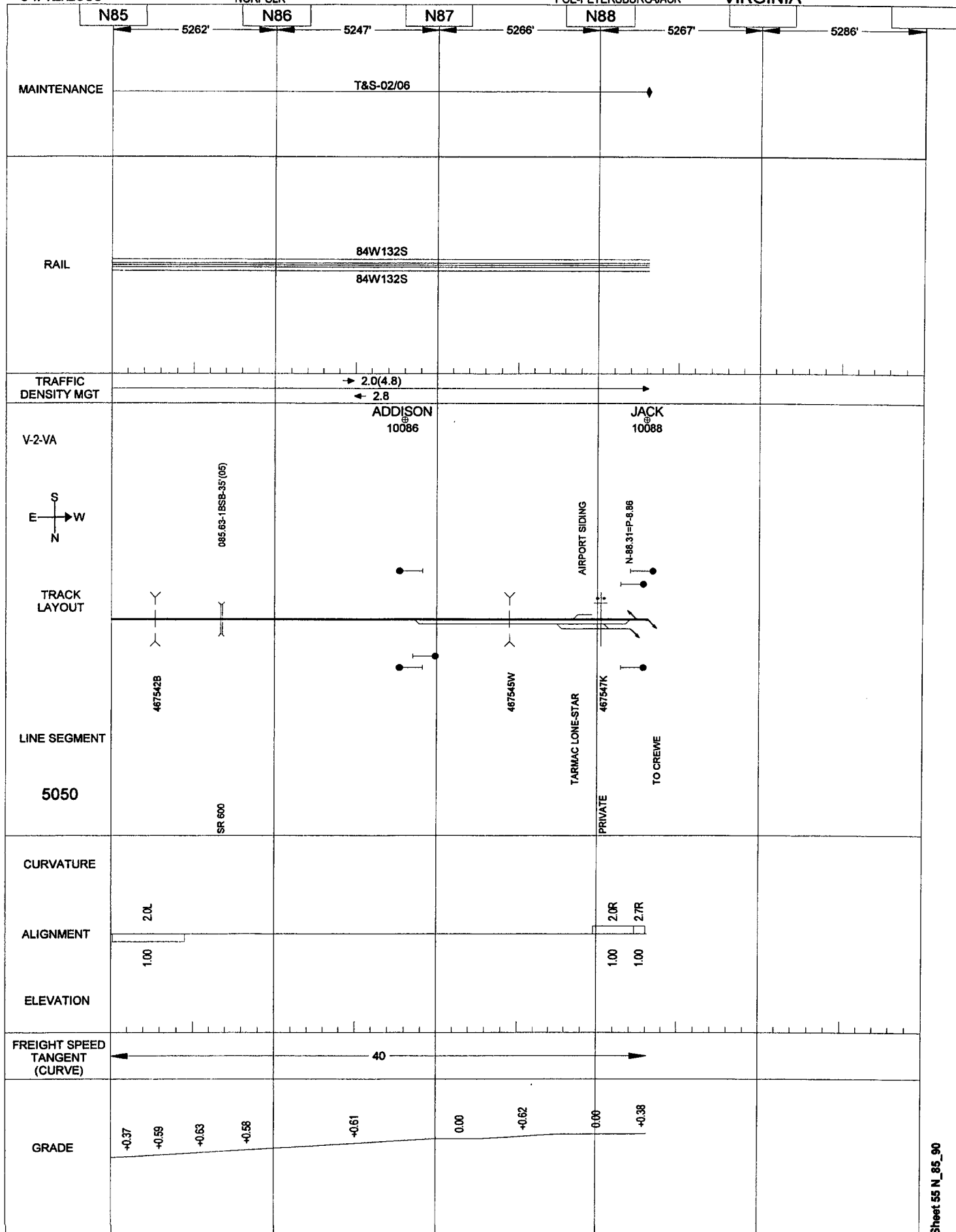
04/12/2006

NORFOLK

023

POE-PETERSBURG-JACK

VIRGINIA



04/12/2006

NORFOLK

024

CITY POINT BRANCH

PETERSBURG-HOPEWELL

VIRGINIA

CP1

CP2

CP3

CP4

CP5

5280'

5280'

5258'

5199'

5258'

MAINTENANCE

T&S-09/96

RAIL

84RWF130S

84RWF130S

TRAFFIC
DENSITY MGT→ 1.6(2.9)
← 1.3

V-2-VA

PETERSBURG

BROADWAY

(PUDDLEDOK)

(ROSEWOOD)

FT LEE

10914

PRINCE GEORGE CO.
CITY OF HOPEWELLTRACK
LAYOUT

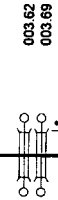
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BROADWAY YARD

DOMINION CHEMICAL
CITY OF PETERSBURG
PRINCE GEORGE CO

AGRI-TERMINAL

PUDDLEBROOK SIDING

003 62
003 69

LINE SEGMENT

5230

BROADWAY RELOAD
PRIVATE
PUDDLEDOK RD

904839N

467488K

467489S

US 144
US 144
REFORMATORY RD
TO FORT LEE

467483G

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

25

GRADE

-0.62

-0.40

+0.55

+0.55

+0.80

-0.10

-0.40

-0.18

0.00

+0.10

+0.60

+0.50

+0.75

+0.25

+0.75

+0.55

+0.40

+0.12

0.00

Sheet 55CP_0_5

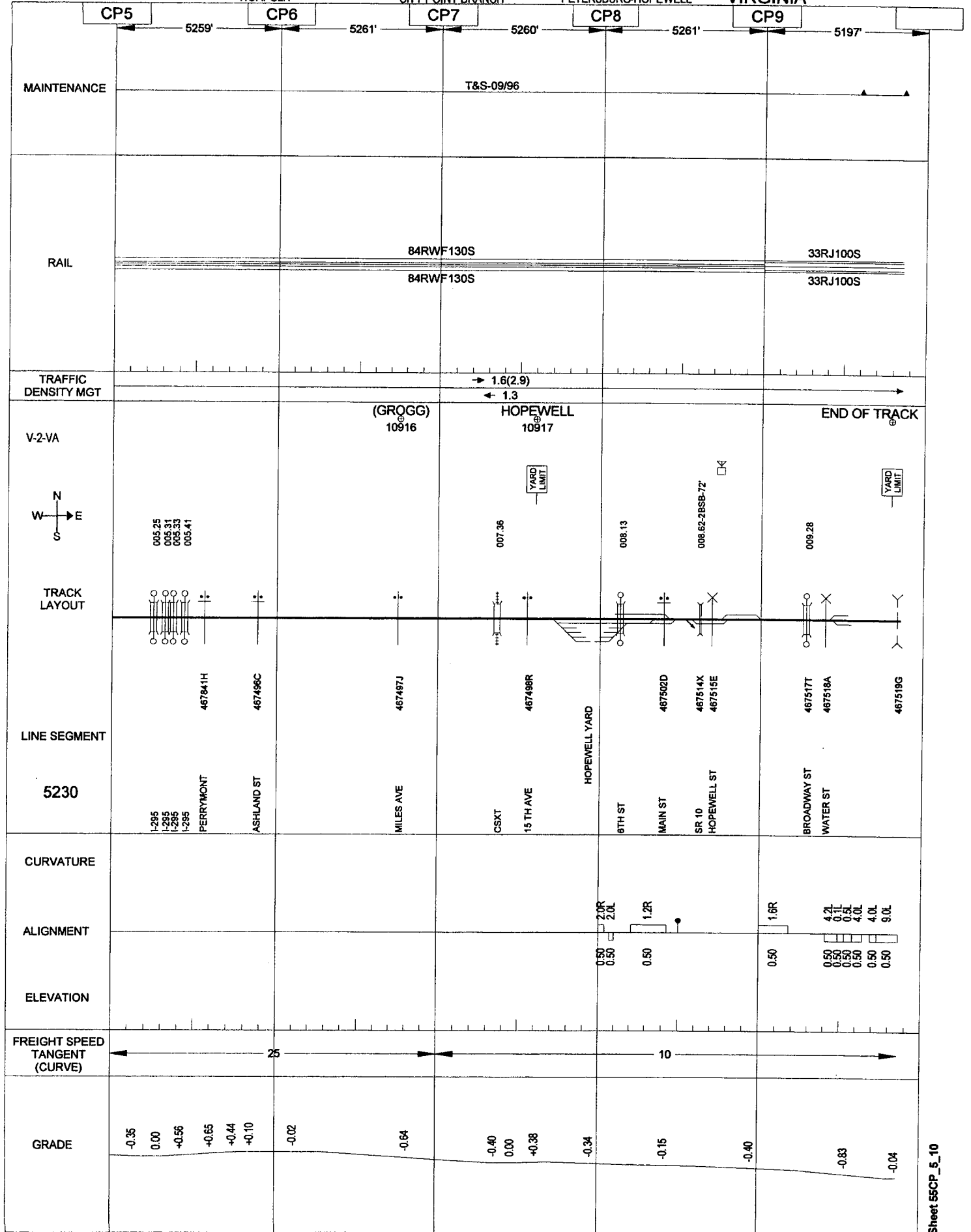
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NORFOLK

025
CITY POINT BRANCH

PETERSBURG-HOPEWELL

VIRGINIA



04/12/2006

NORFOLK

026

JACK-CREWE

VIRGINIA

N89

N90

5262'

5247'

5266'

5267'

5286'

#1
MAINTENANCE
#2

T&S-02/04
S-03/06
T&S-02/99

#1
RAIL
#2

84NW132S
84NW132S
84NWF132S
84NWF132S

TRAFFIC
DENSITY MGT

→ 16.5(24.7#1)
← 32.9(24.7#2)

V-2-VA

S
E → W
N

JACK
10088
BTC
ETC

088.49-1MAB-12'

N-88.31-P-8.86

TRACK
LAYOUT
#1
#2

LINE SEGMENT

5040

TO PETERSBURG

WATERWAY

OLGERS RD-SR 632 467565H

TINDALL CONCRETE

PRIVATE 467567W

467568D

CURVATURE
#1

ALIGNMENT

#2
ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

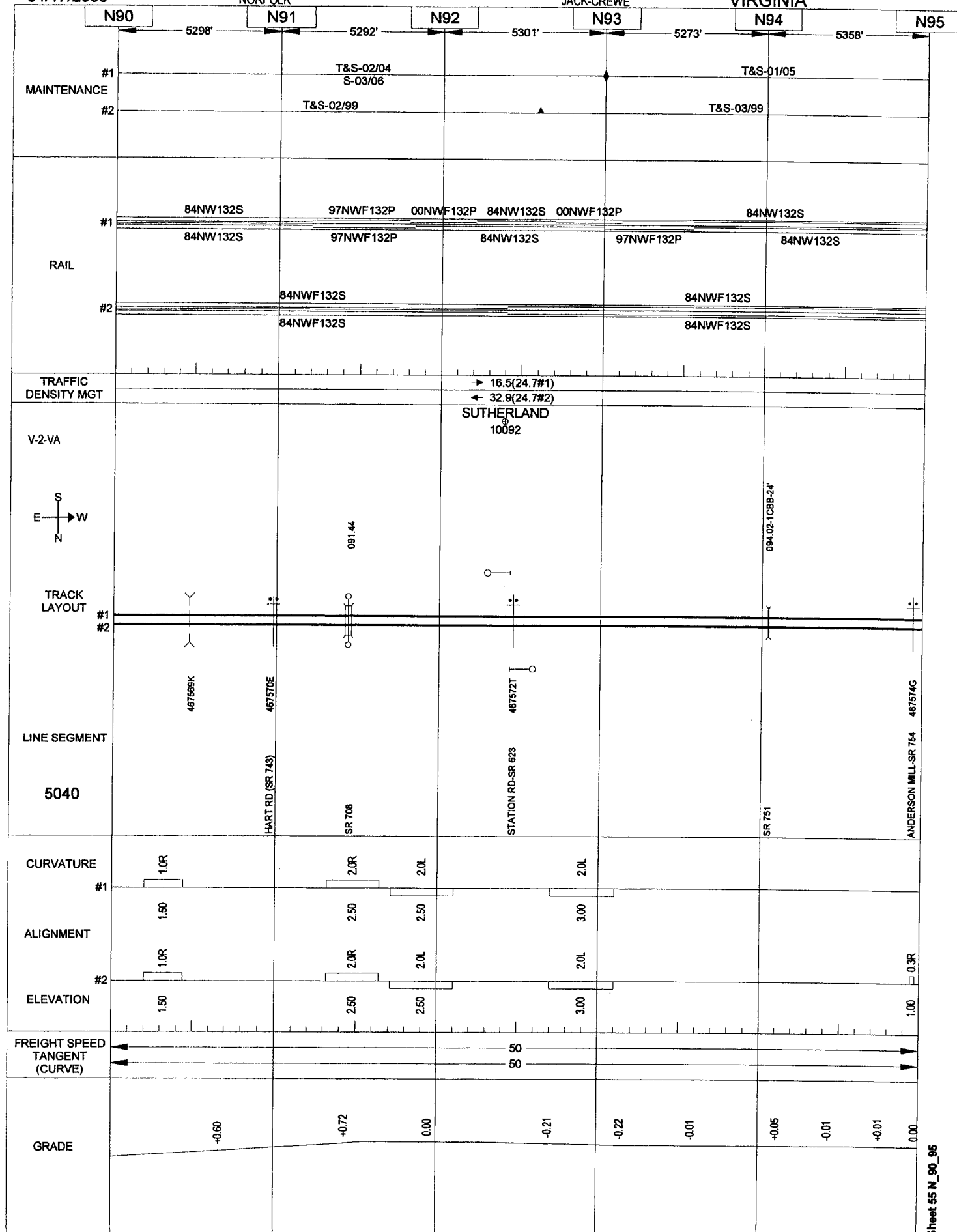
50
50

GRADE

+0.60

+0.65%
LAMBERTS PT TO CREWE

Sheet 55 N_85_90



VIRGINIA

N100

T&S-03/99

RAIL

84NDM1030

4/11/1988

14333

→ 16.5(24.7#1)
← 32.9(24.7#2)

V-2-VA

CHURCH ROAD
10095

(POOLE)
⊕
10098

TRACK LAYOUT

LINE SEGMENT

5040

CURVATURE

#1

ALIGNMENT

ELEVATION

**FREIGHT SPEED
TANGENT
(CURVE)**

GRADE

0.00

+0.3

+0.4

-0.0

0.0

+0.15
+0.20

4.5.

-0.0-



-0.0-

+0.0

-0.72
0.35

Sheet 55 N_95_100

VIRGINIA

		N100	N101	N102	N103	N104	N105	
		5286'	5296'	5600'	5668'	5672'		
MAINTENANCE	#1	T&S-01/05						
	#2	T&S-03/99						
RAIL	#1	84NW132S			84NW132S		84NW132S	
		84NW132S			84NW132S		84NW132S	
	#2	78NW132S			57NW132S		50NW132S 59NW132S	
		78NW132S			57NW132S		50NW132S 59NW132S	
TRAFFIC DENSITY MGT		→ 16.5(24.7#1) ← 32.9(24.7#2)						
V-2-VA		FORD 10101						
TRACK LAYOUT	#1							
	#2							
LINE SEGMENT		5040						
CURVATURE	#1	1.0L			2.0R		2.2L	
ALIGNMENT	#1	1.50			2.50		2.00	
ELEVATION	#2	1.50		1.00	3.00		4.00	
FREIGHT SPEED TANGENT (CURVE)		50 50						
GRADE		-0.25	-0.15	-0.11	0.00	-0.15 -0.27 -0.32	-0.17 -0.10 -0.30 -0.40 -0.50	-0.52 -0.44 -0.27 -0.16

Sheet 55 N_100_105

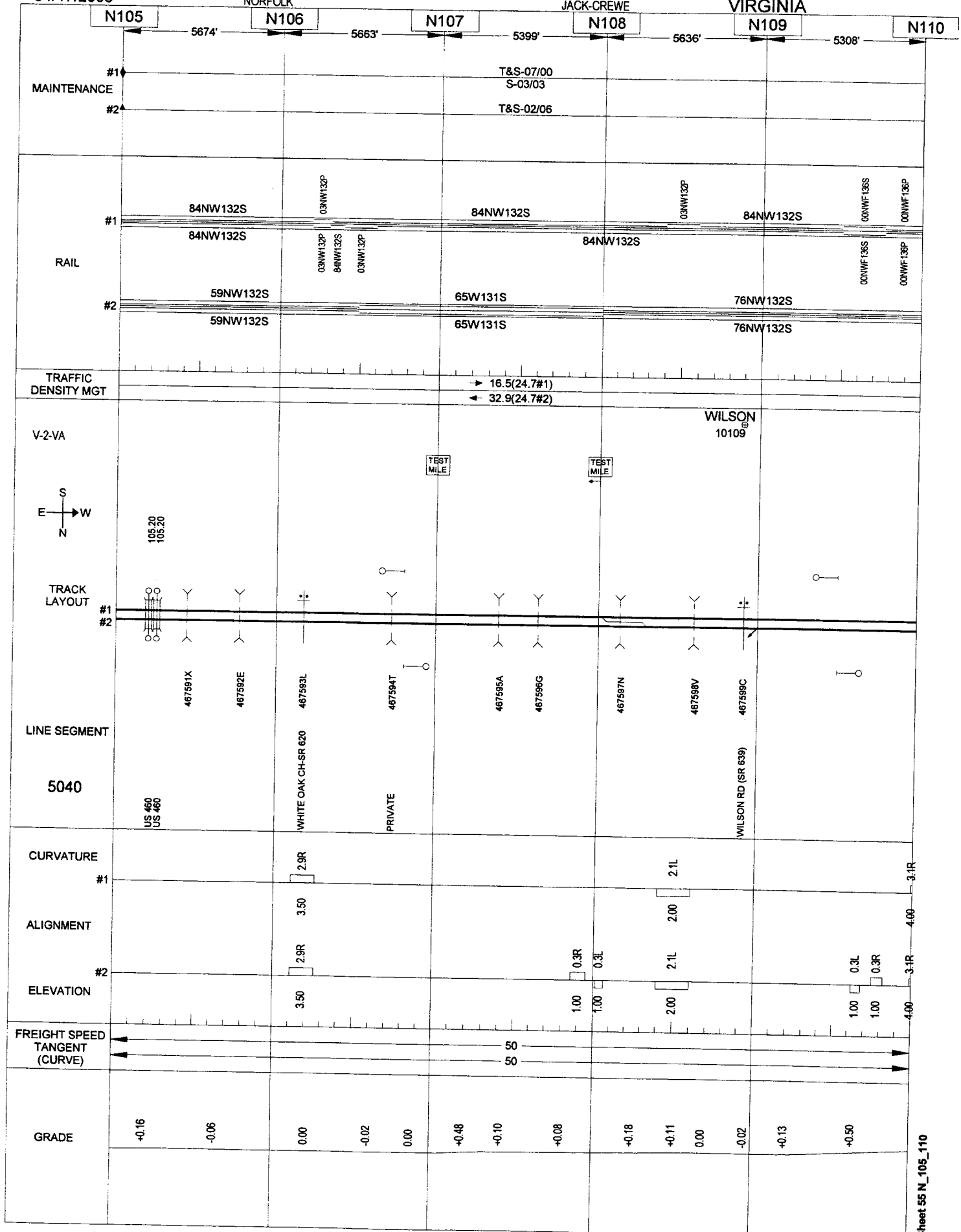
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NORFOLK

030

JACK-CREWE

VIRGINIA



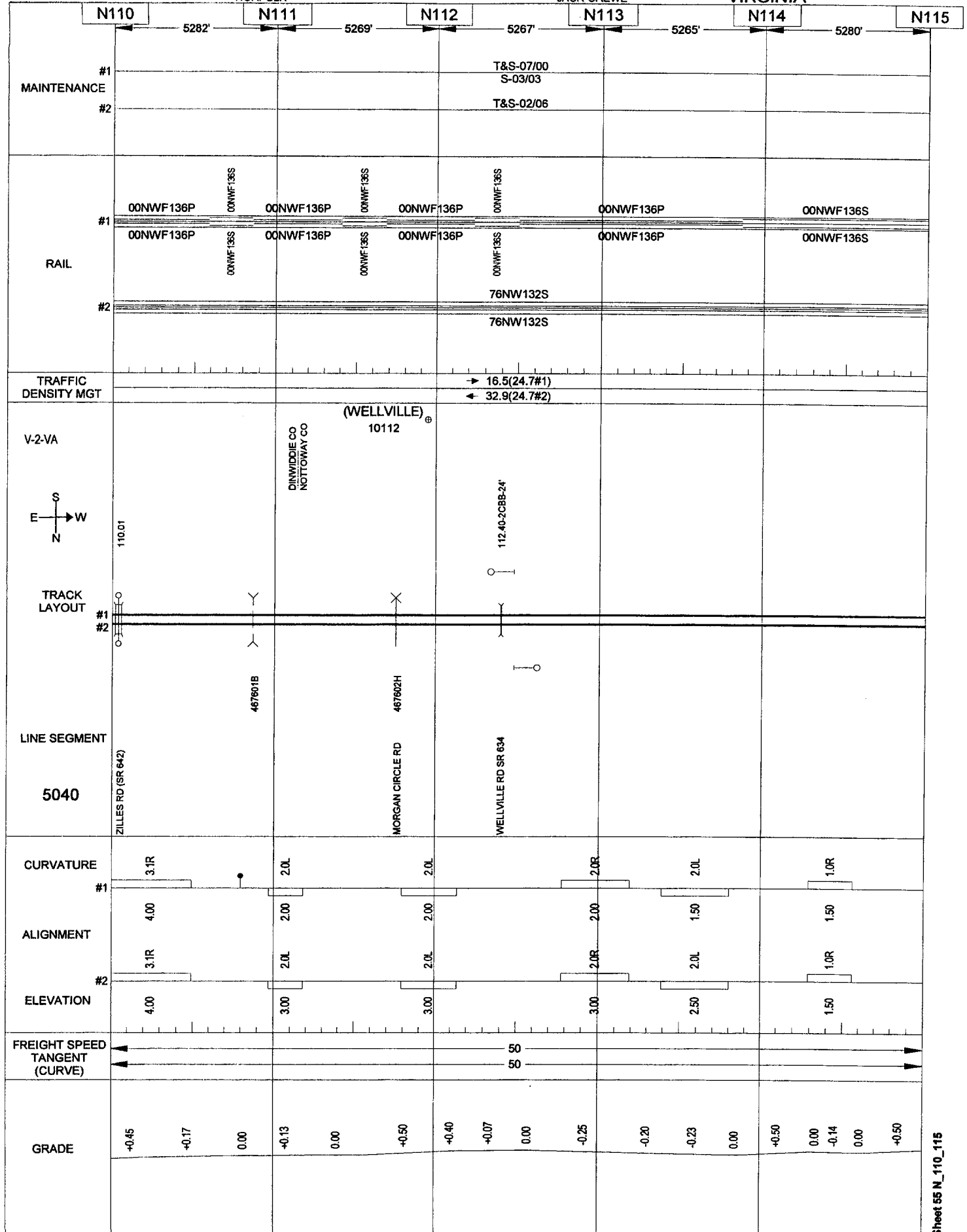
04/17/2006

NORFOLK

031

JACK-CREWE

VIRGINIA



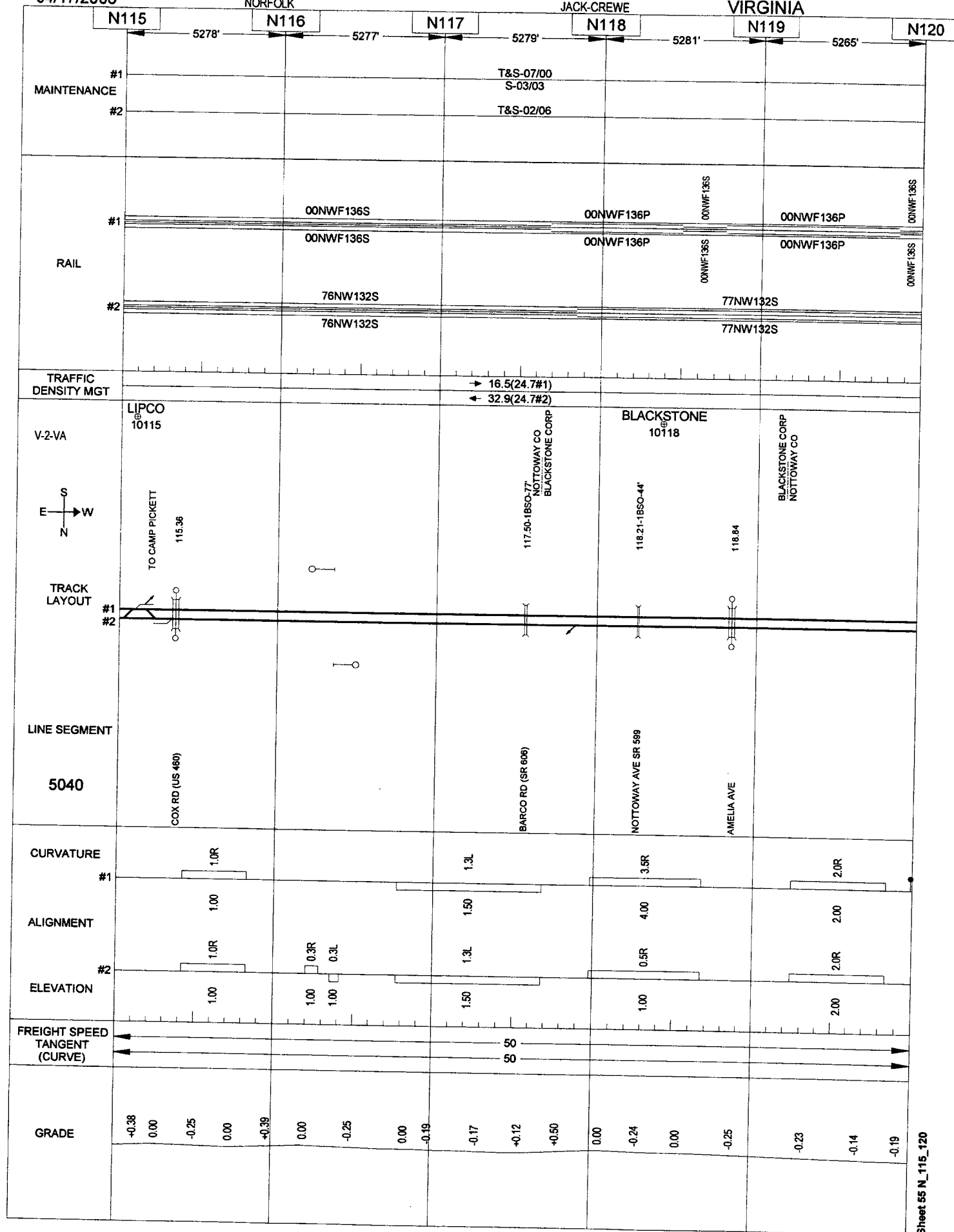
04/17/2006

NORFOLK

032

JACK-CREWE

VIRGINIA



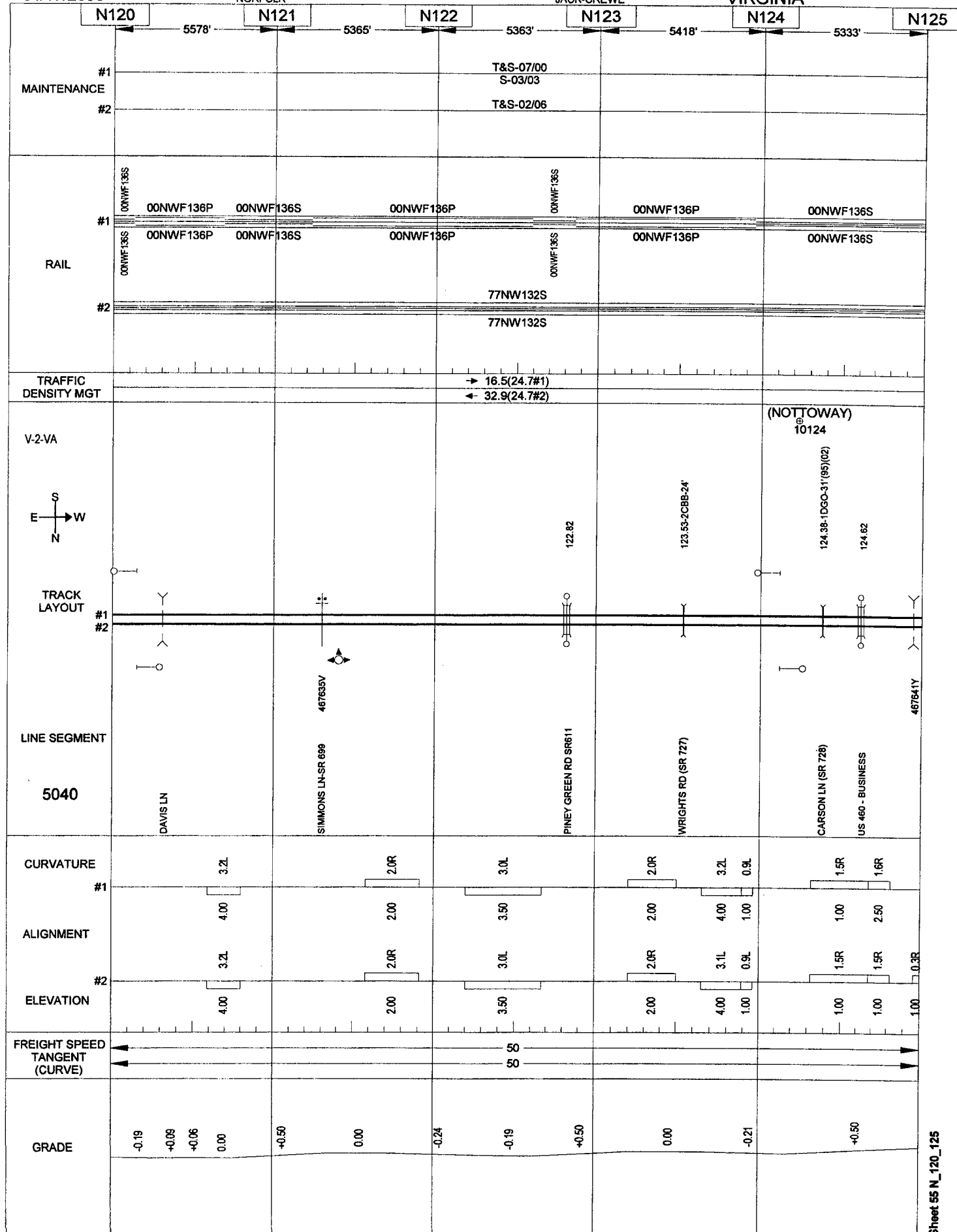
04/17/2006

NORFOLK

033

JACK-CREWE

VIRGINIA



VIRGINIA

N130

5360

MAINTENANCE

#

T&S-06/00

T&S-02/06

#2

RAIL

94NWF

NAME _____

136S

1366

TRAFFIC
DENSITY MGT

→ 16.5(24.7#1)

→ 18.8(27.0#1)

V-2-VA

E END CREW

OAKS

CREWE

TRACK LAYOUT

LINE SEGMENT

5040
5060

CURVATURE

#1

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

1.20

Sheet 55 N_125_130

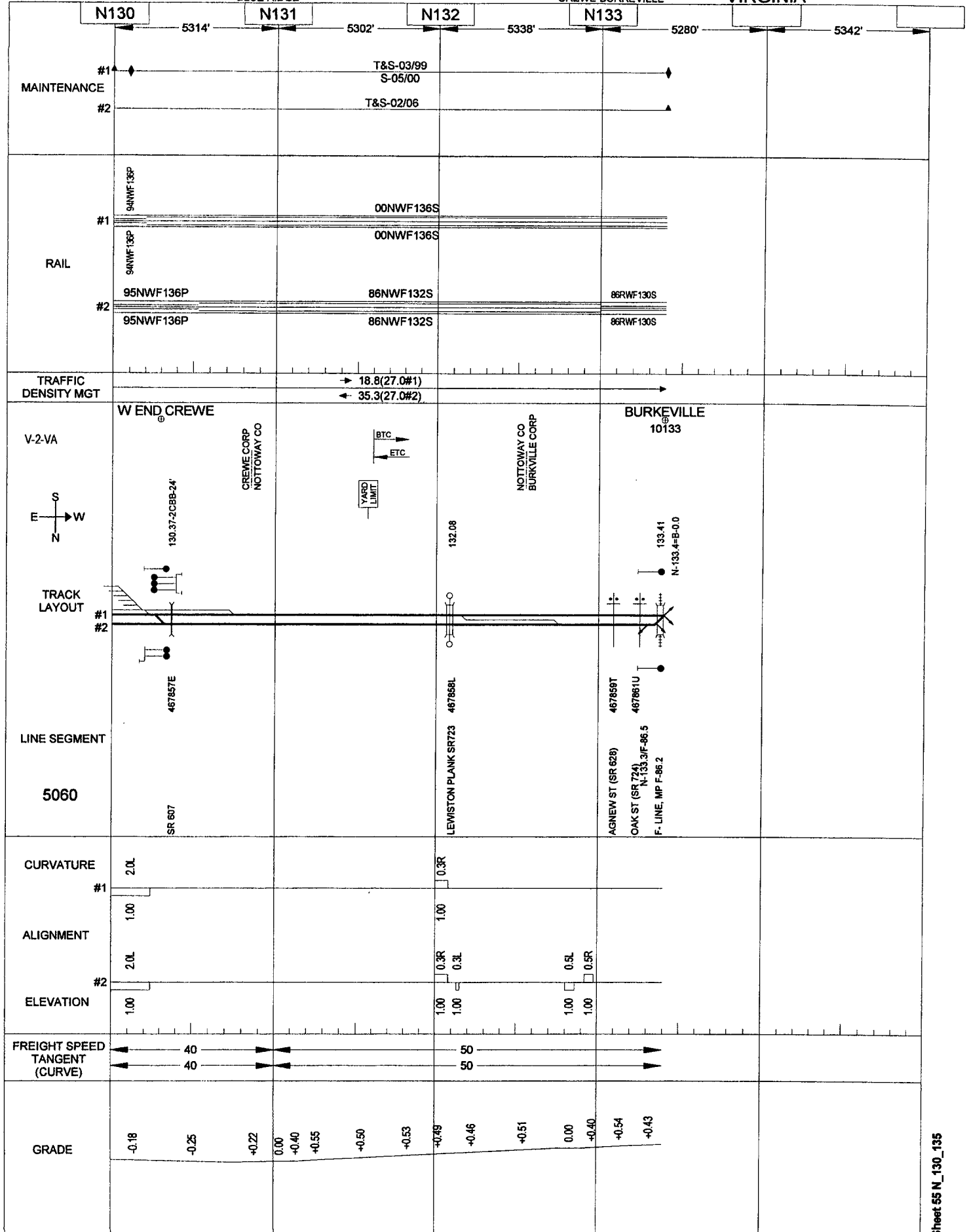
04/18/2006

035

BLUE RIDGE

CREWE-BURKEVILLE

VIRGINIA



04/12/2006

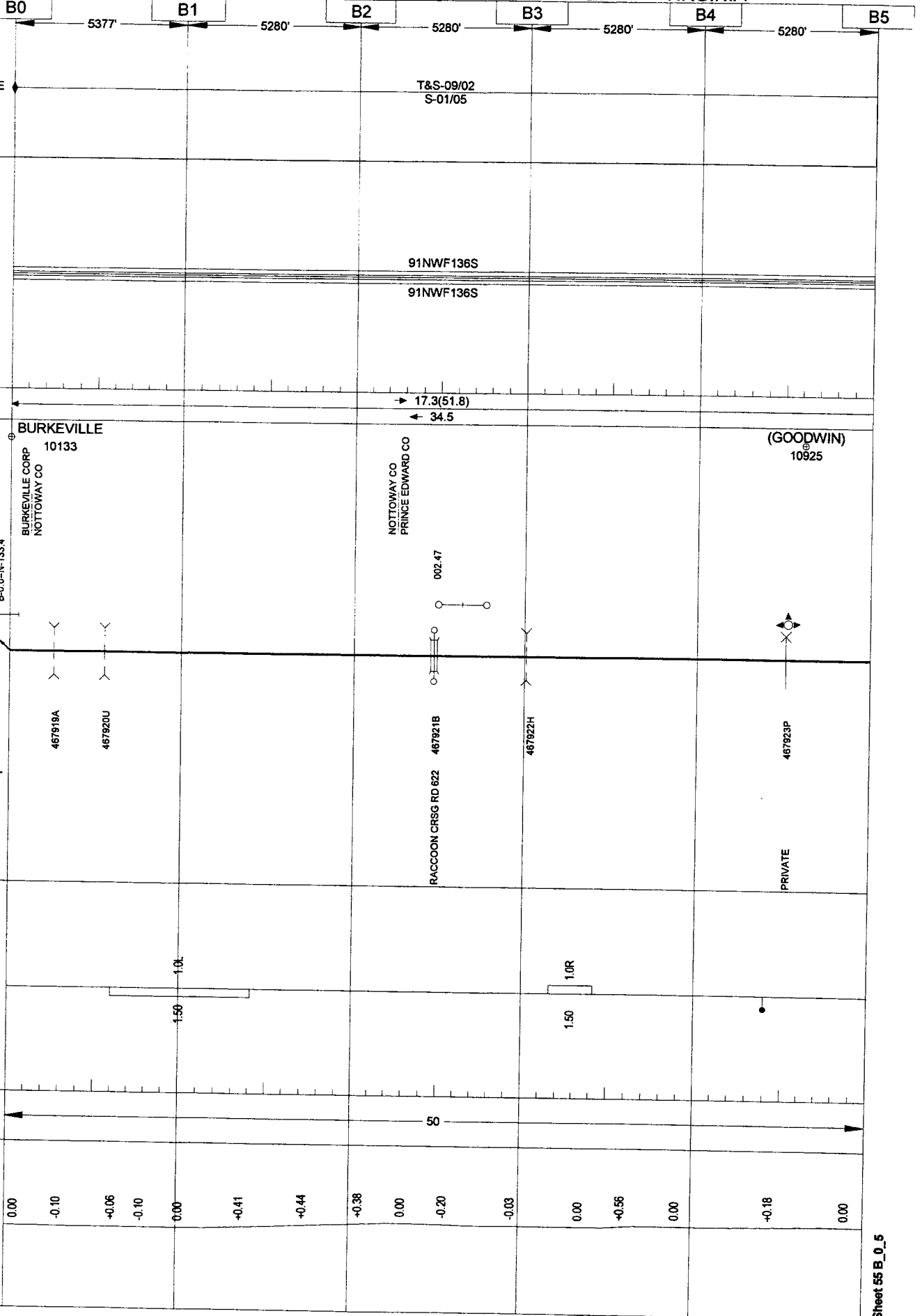
BLUE RIDGE

036

FARMVILLE BELT LINE

BURKEVILLE-PAMPLIN

VIRGINIA



04/12/2006

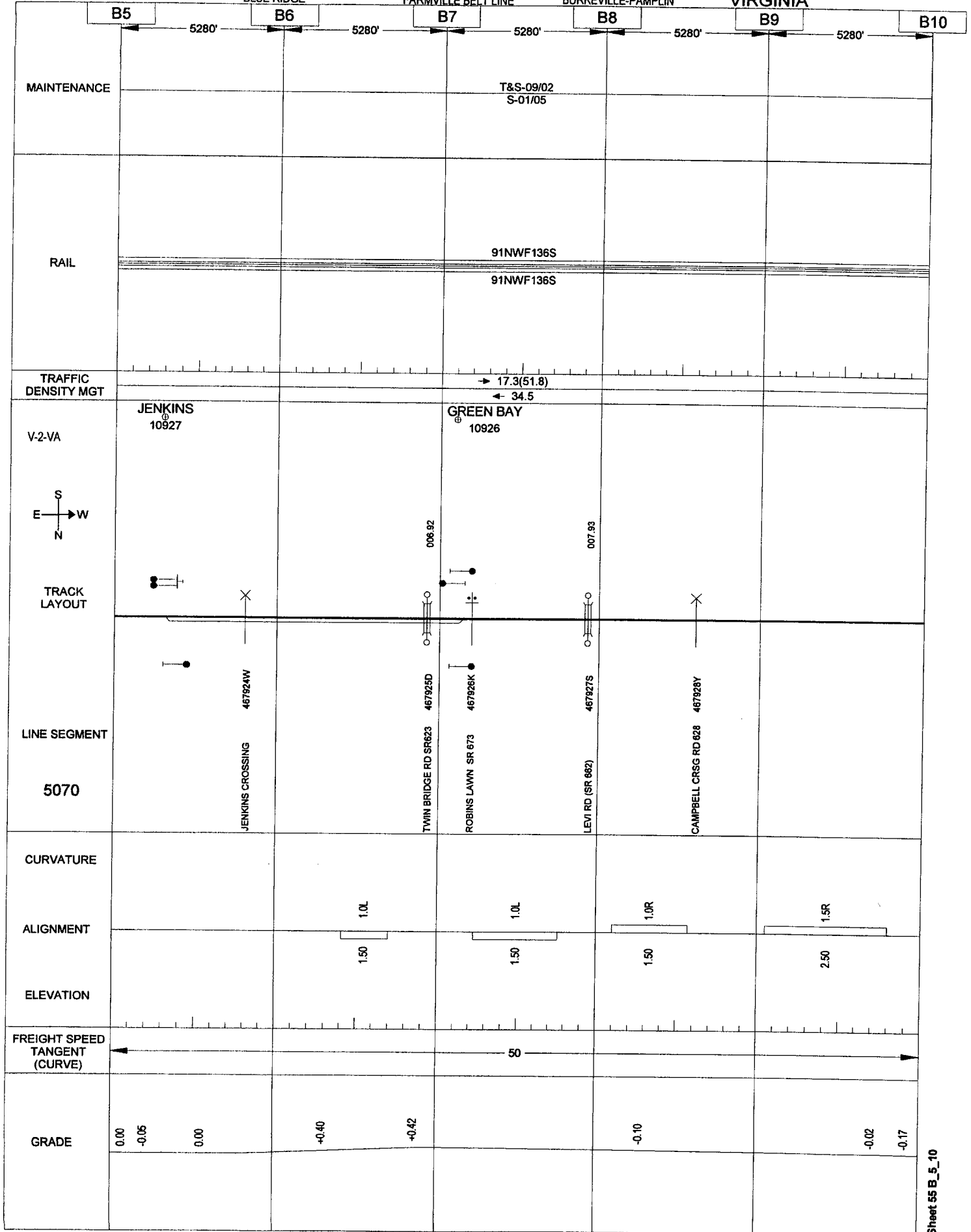
037

BLUE RIDGE

FARMVILLE BELT LINE

BURKEVILLE-PAMPLIN

VIRGINIA



04/12/2006

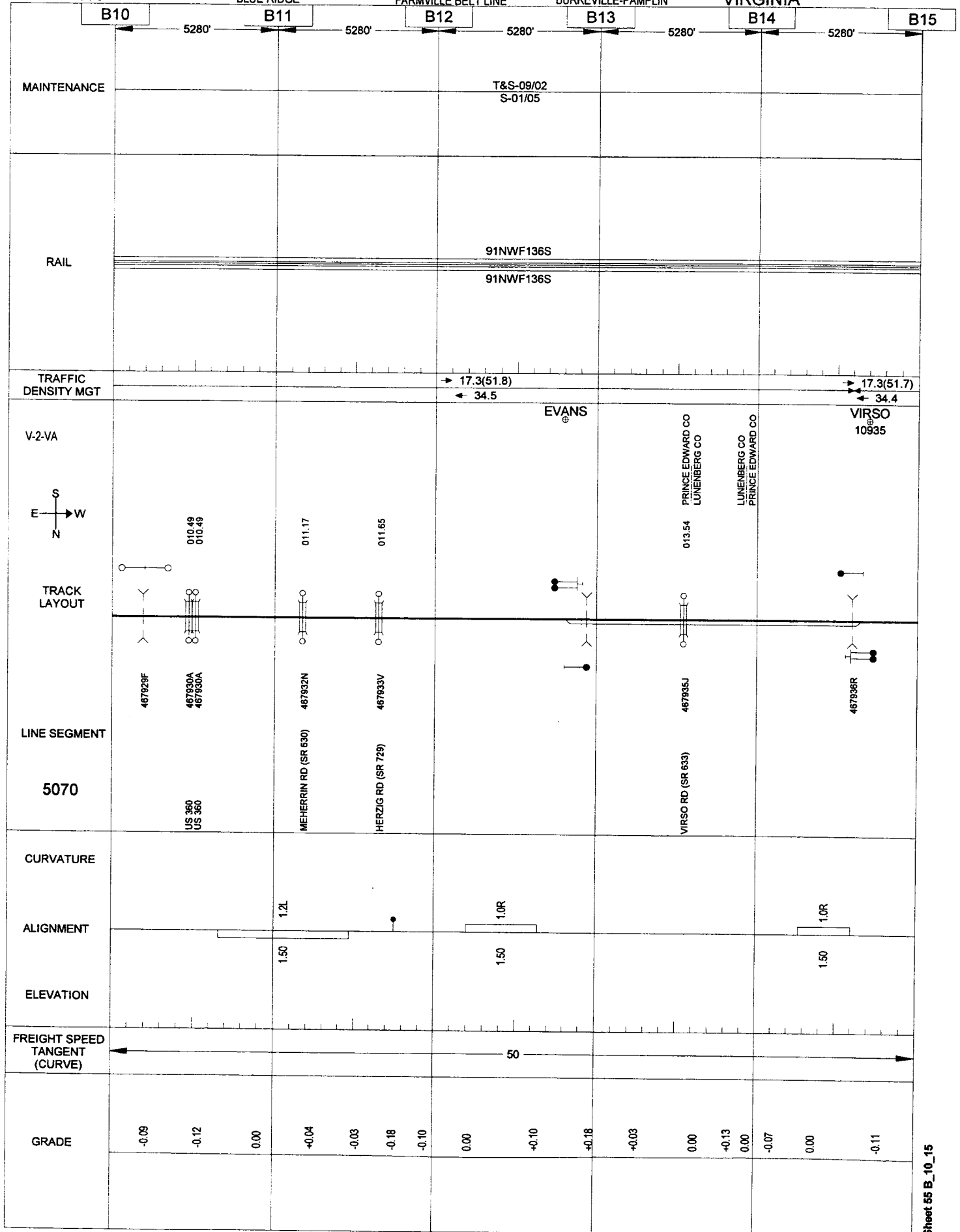
038

BLUE RIDGE

FARMVILLE BELT LINE

BURKEVILLE-PAMPLIN

VIRGINIA



04/12/2006

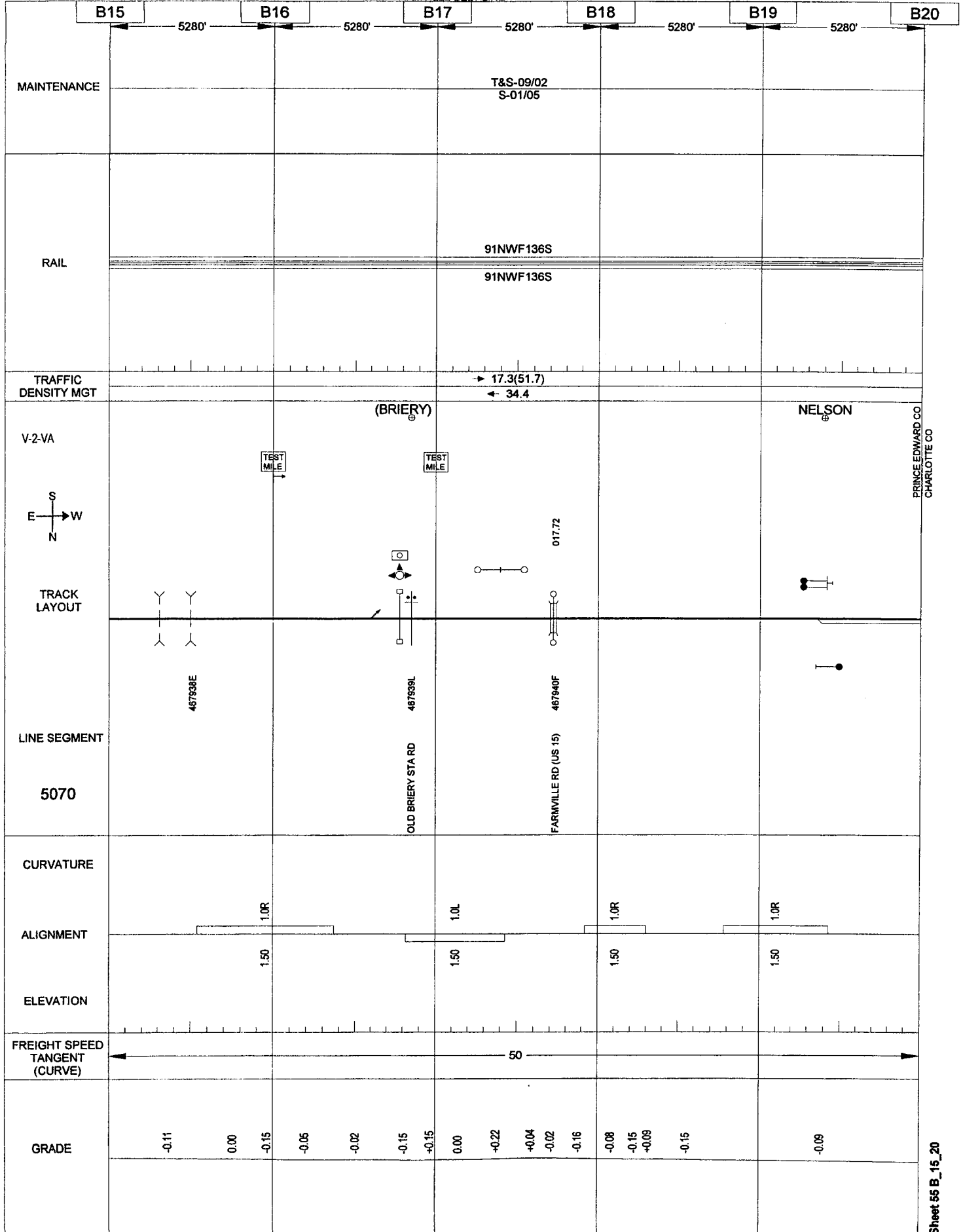
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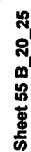
039

FARMVILLE BELT LINE

BURKEVILLE-PAMPLIN

VIRGINIA





04/12/2006

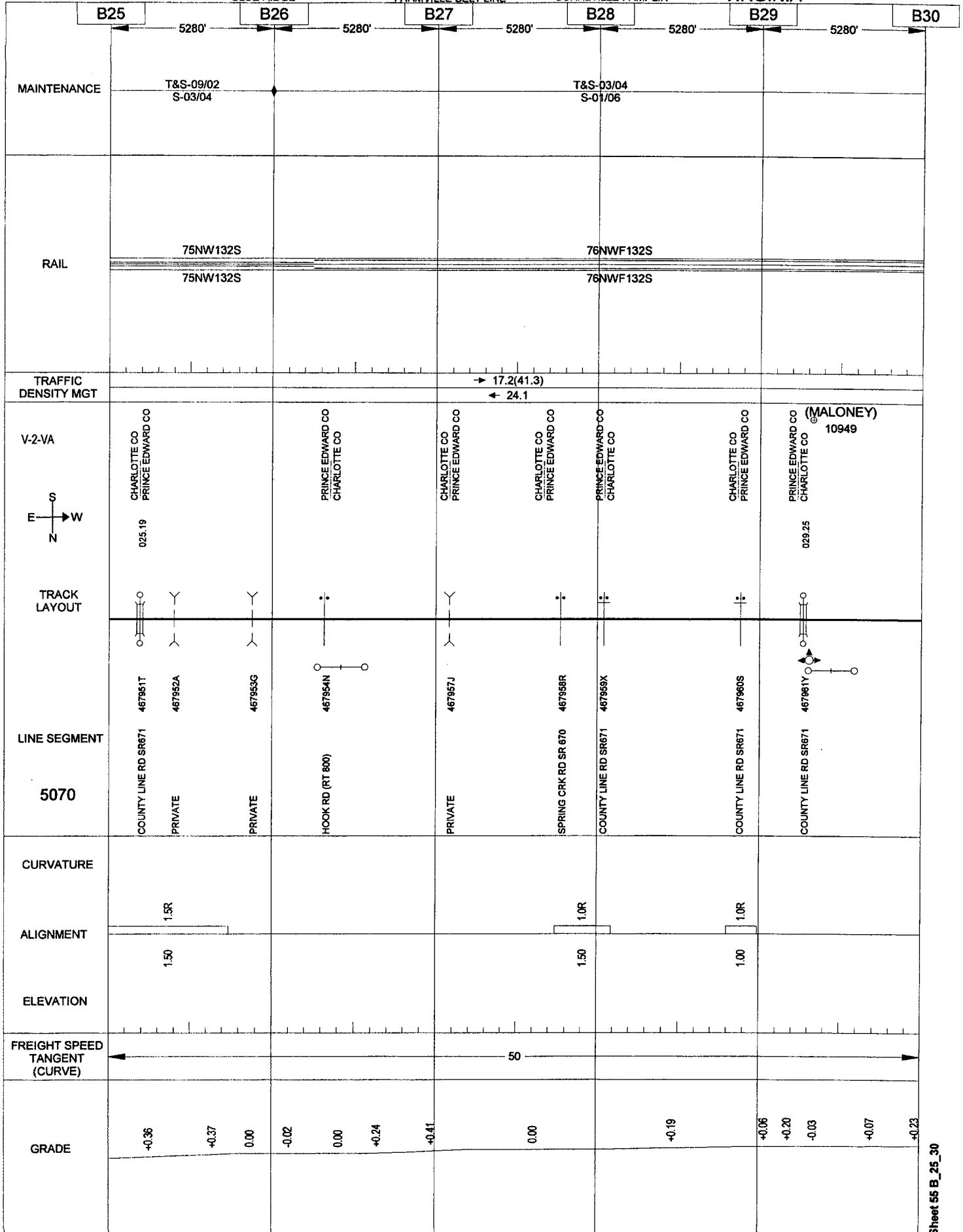
BLUE RIDGE

041

FARMVILLE BELT LINE

BURKEVILLE-PAMPLIN

VIRGINIA



04/12/2006

BLUE RIDGE

042

FARMVILLE BELT LINE

BURKEVILLE-PAMPLIN

VIRGINIA

B30

B31

B32

B33

B34

B35

5280'

5280'

5280'

5280'

5280'

MAINTENANCE

T&S-03/04
S-01/06

RAIL

76NWF132S

76NWF132S

TRAFFIC
DENSITY MGT

→ 17.2(41.3)
← 24.1

V-2-VA



CHARLOTTE CO
PRINCE EDWARD CO

030.86

032.17

PRINCE EDWARD CO
CHARLOTTE CO

034.71-2CBB-24'
CHARLOTTE CO
PRINCE EDWARD CO

TRACK
LAYOUT

LINE SEGMENT

5070

COUNTY LINE RD SR 671 467963M

PRIVATE ROAD 467965B

FARM MATTHEW'S 467967P
467968W

467970X

BAKER MTN RD SR 663 467971E

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

50

GRADE

+0.39

0.00

+0.22

0.00

+0.35

+0.07

0.00

+0.36

+0.37

04/12/2006

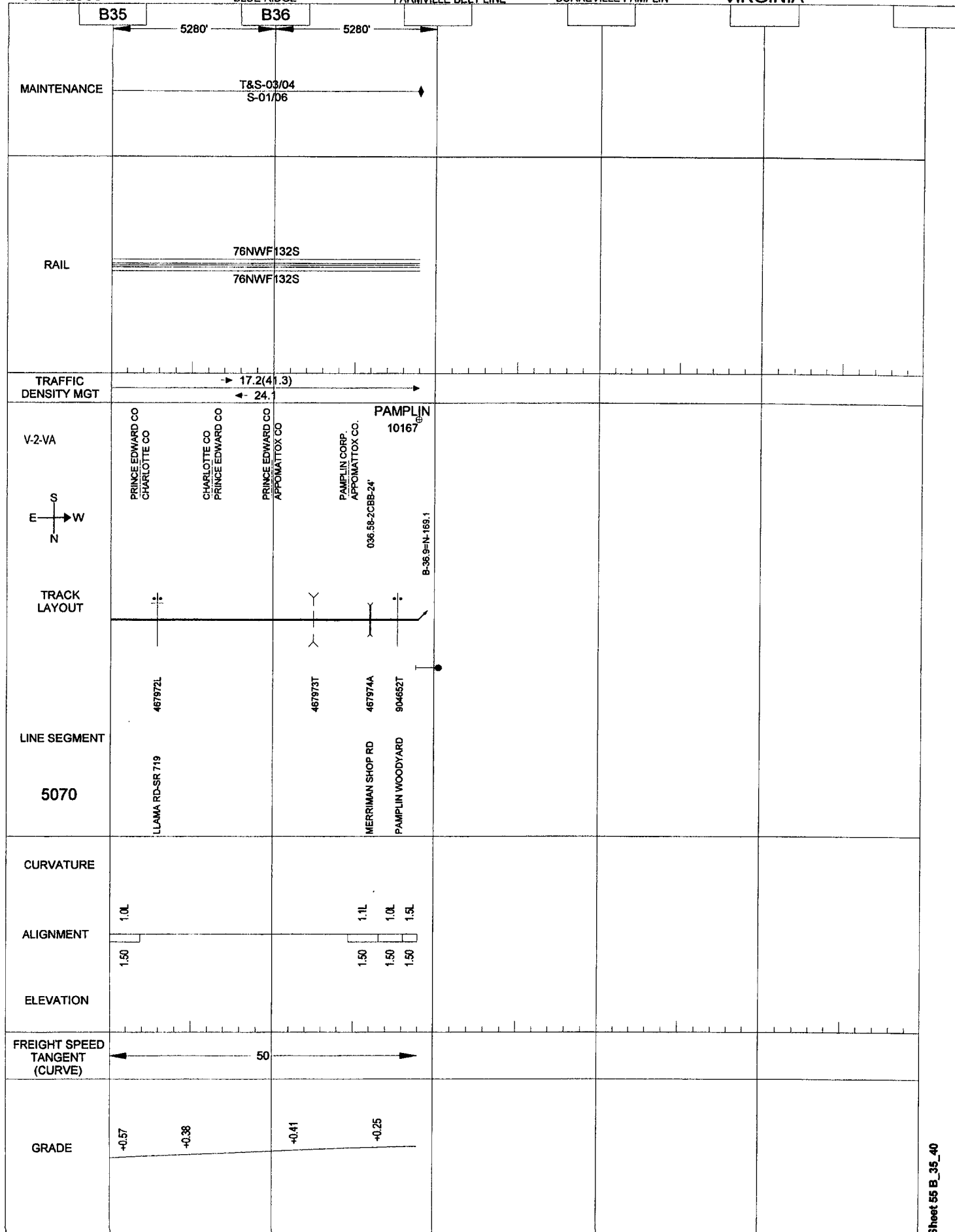
043

BLUE RIDGE

FARMVILLE BELT LINE

BURKEVILLE-PAMPLIN

VIRGINIA



04/18/2006

BLUE RIDGE

044

PAMPLIN-PHOEBE

VIRGINIA

N170

5078'

5084'

5087'

4993'

4769'

MAINTENANCE

T&S-01/05

RAIL

78NW132S

78NW132S

TRAFFIC
DENSITY MGT

→ 17.2(41.3)

← 24.1

V-2-VA

PAMPLIN
10167

PAMPLIN CORP.
APPOMATTOX CO.

S
E → W
N

N-169 1-B-36.9
169.11-36SB-118'

TRACK
LAYOUT



LINE SEGMENT

THOMAS JEFFERSON HWY 470685H

5080

CURVATURE

ALIGNMENT

ELEVATION

2.01
2.50

FREIGHT SPEED
TANGENT
(CURVE)

← 50 →

GRADE

-0.16 +0.50 0.00

Sheet 55 N_165_170

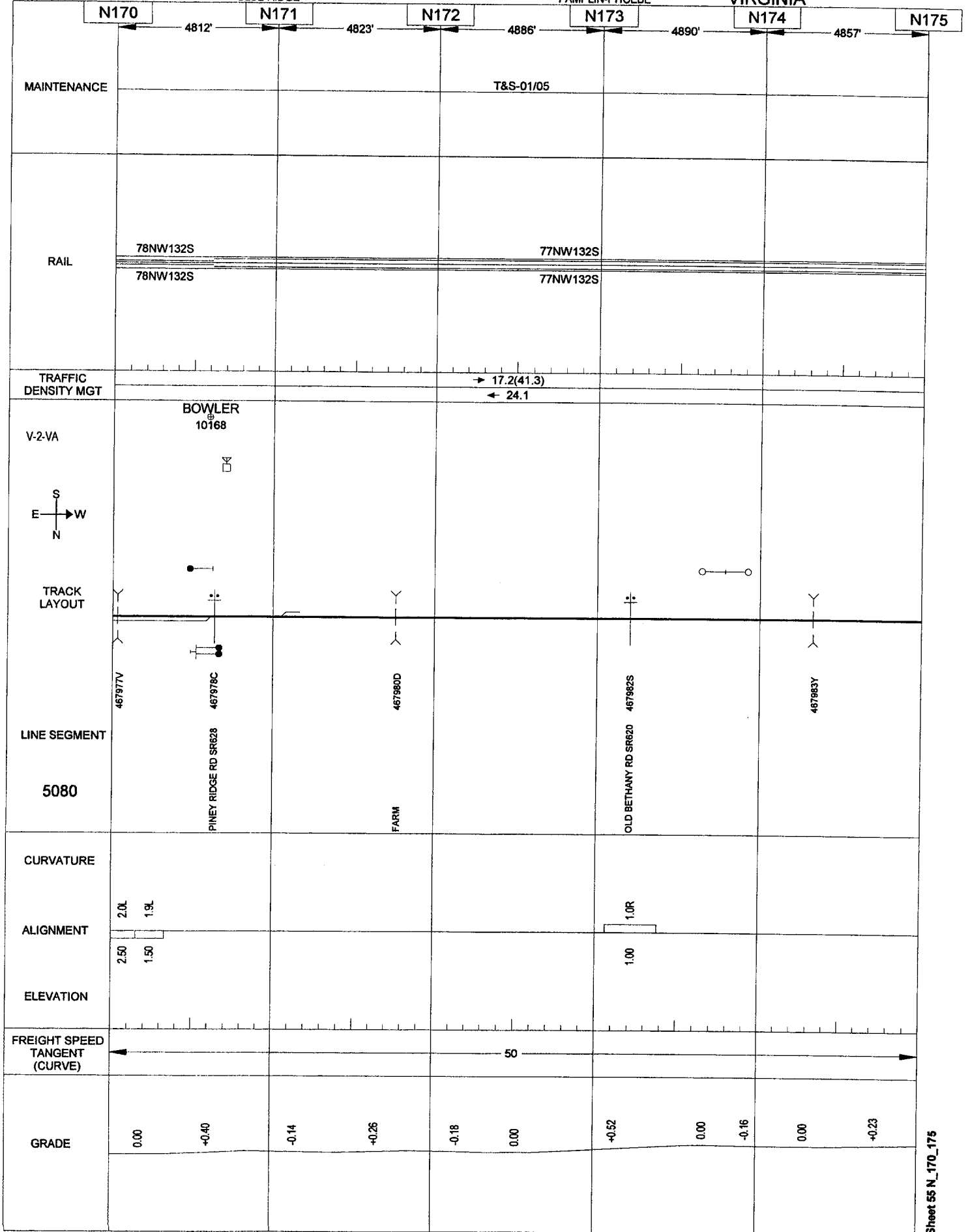
04/12/2006

045

BLUE RIDGE

PAMPLIN-PHOEBE

VIRGINIA



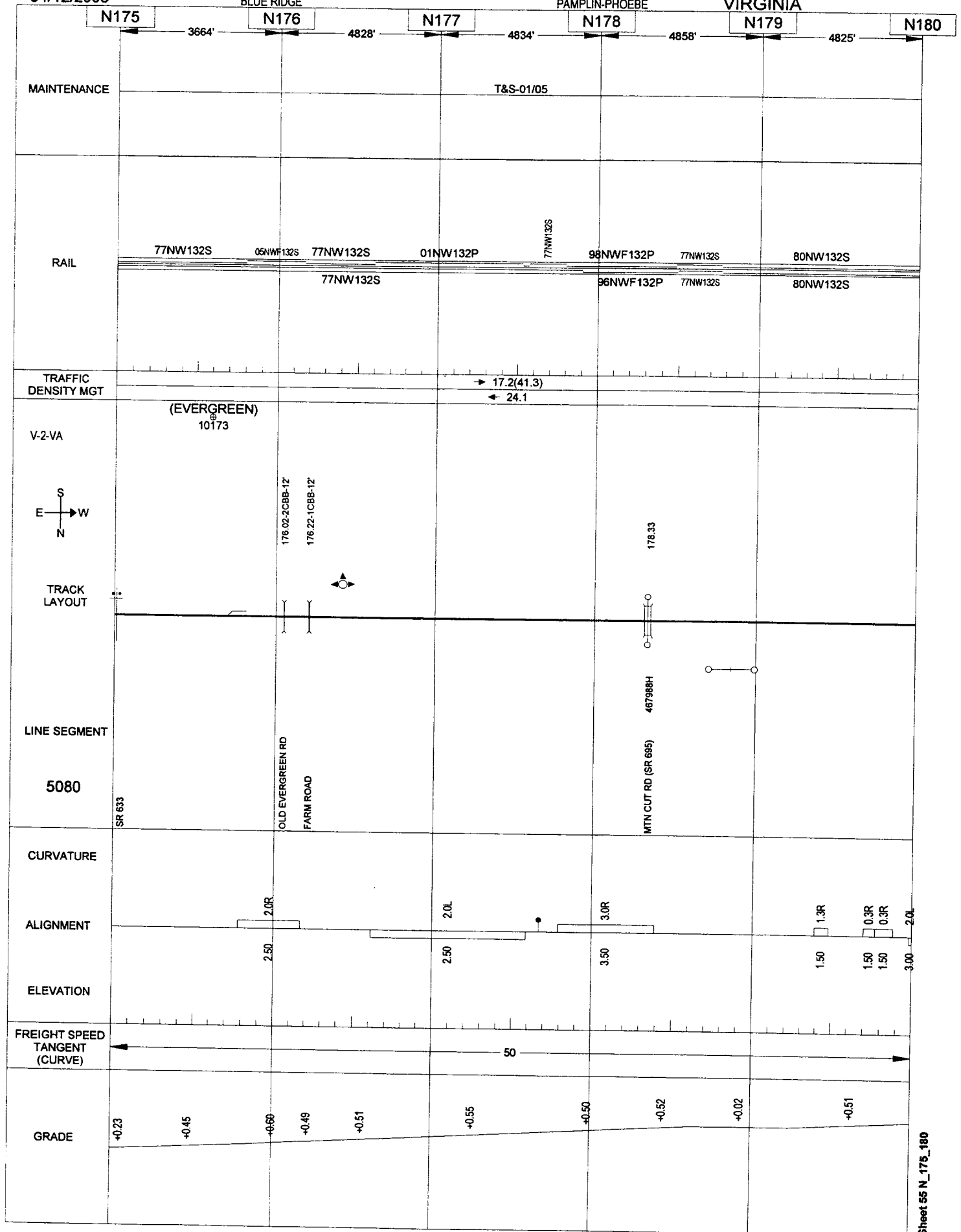
04/12/2006

046

BLUE RIDGE

PAMPLIN-PHOEBE

VIRGINIA



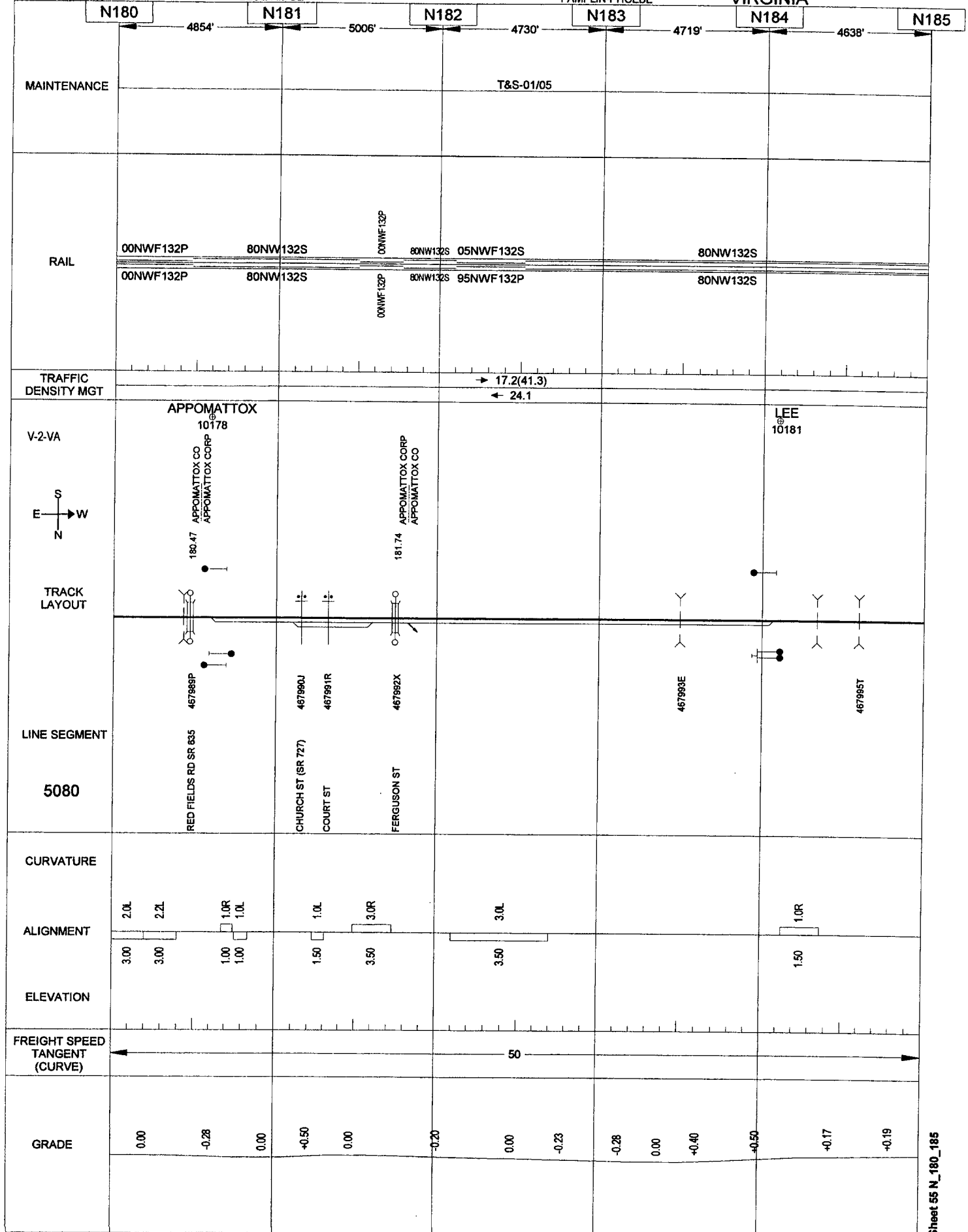
04/12/2006

047

BLUE RIDGE

PAMPLIN-PHOEBE

VIRGINIA



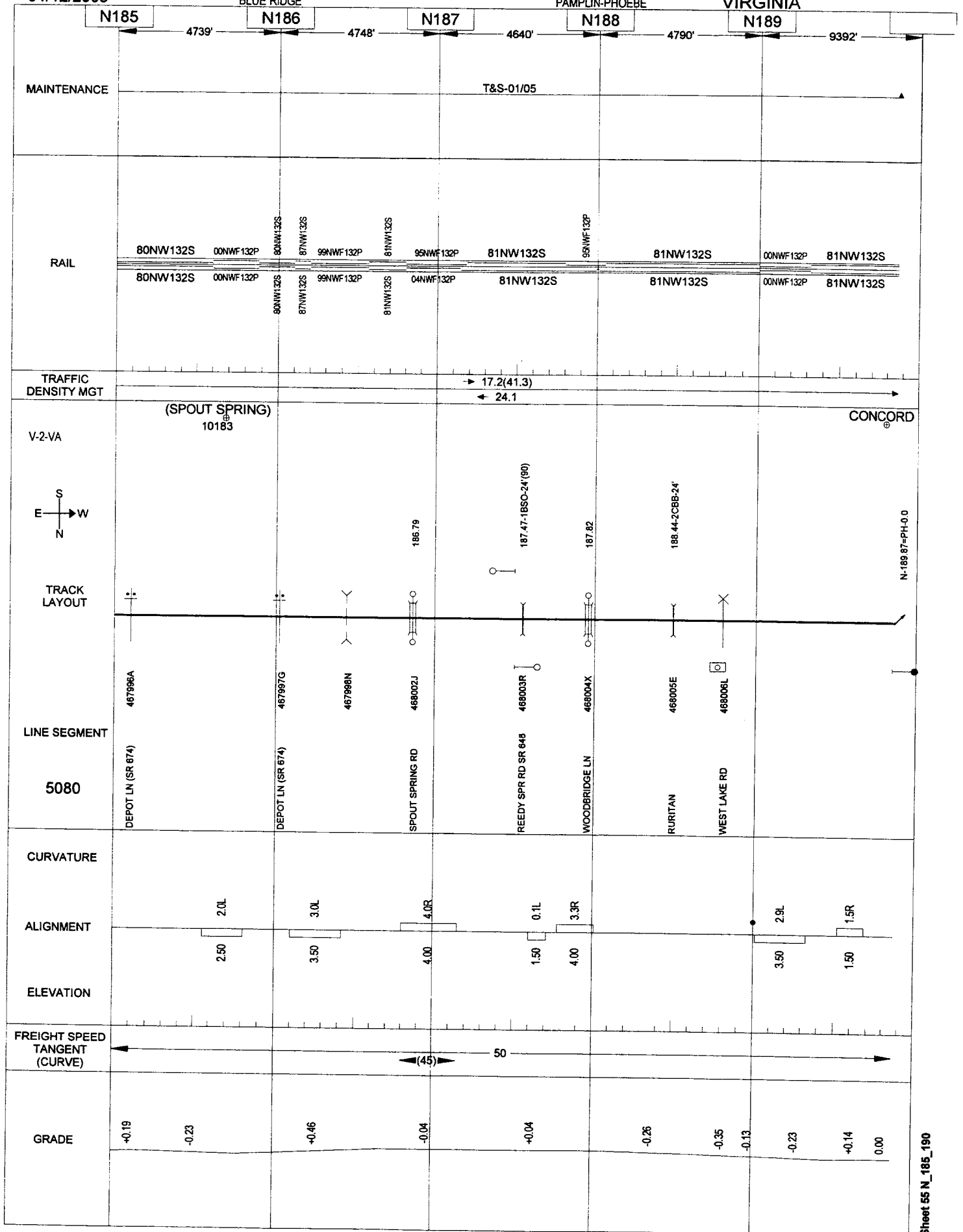
04/12/2006

048

BLUE RIDGE

PAMPLIN-PHOEBE

VIRGINIA



04/12/2006

BLUE RIDGE

049
HALSEY SPUR(OML)

HALSEY-FOREST

VIRGINIA

N208

N209

N210

5280'

5270'

5250'

MAINTENANCE

T&S-10/89

RAIL

27RJ130S

28RJ130S

27RJ130S

28RJ130S

TRAFFIC
DENSITY MGT

→ 0.0(0.0)

← 0.0

V-2-VA

(HALSEY)
ITO 10203
10202

(SIMS)
10204

S
E → W
N

TRACK
LAYOUT

208.20

THOMAS CEMENT

209.89

LINE SEGMENT

5260

488344J

SIMS WHOLESALE CO
FOREST BROOK RD 488343C

488342V

SR 291

SR 291

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

10

GRADE

+0.41

+1.03

+1.08

+1.27

+0.75

+1.34

+1.47

+1.09

+0.72

+1.03

+1.20

+0.94

+1.37

+1.04

+1.12

+0.92

+1.21

+1.08

04/12/2006

050

BLUE RIDGE

HALSEY SPUR (OML)

HALSEY-FOREST

VIRGINIA

N210

N211

N212

N213

N214

5257'

5001'

5275'

5412'

5280'

MAINTENANCE

T&S-10/89

RAIL

28RJ130S

29RJ130S

28RJ130S

29RJ130S

TRAFFIC
DENSITY MGT

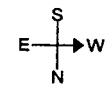
→ 0.0(0.0)

← 0.0

V-2-VA

CLAY
10207

FOREST
10210



CITY OF LYNCHBURG
BEDFORD CO

TRACK
LAYOUT

211.57

213.00

213.65

LINE SEGMENT

5260

CHAPEL LN (SR 735) 904640Y

JEFFERSON RIDGE PKWY 468340G

FRITO LAY

468339M

468338F

468337Y

468335K

904497R

468334D

468332P

US 221

BATEMAN BR RD SR 620 468331H

JCT WITH MAIN LINE

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

64L

59L

0.00

0.00

3.1R

3.1R

0.00

1.50

3.2R

0.00

3.0L

3.0L

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

3.1R

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

3.0R

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

1.0R

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

1.7L

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

04/12/2006

051

BLUE RIDGE

LYNCHBURG BELT LINE

PHOEBE-FOREST

VIRGINIA

PH0

PH1

PH2

PH3

PH4

PH5

5280'

5280'

5280'

5280'

5280'

MAINTENANCE

T&S-02/05

T&S-11/04
S-03/06

RAIL

81NW132S

81NW132S

81NW132S

95NW132P

00NW132P

81NW132S

81NW132S
09NW132S

00NW132P
98NW132P

00NW132P

81NW132S 97NW132P

00NW132P

TRAFFIC
DENSITY MGT

→ 17.2(41.3)
← 24.1

V-2-VA

CONCORD

PHOEBE
10186

S
E → W
N

PH-0.0-N-189.87

APPROXIMATE CO
CAMPBELL CO

001.06-1CAB-12

001.65

003.82

004.44

TRACK
LAYOUT

468290F

468295P

468297D

468298K

468299S

468301R

LINE SEGMENT

5090

WATERWAY

SR 846

PRIVATE

SR 666

SR 24

CURVATURE

ALIGNMENT

2.0L

1.0R

1.0R

3.5L

4.0R

3.0L

4.0R

ELEVATION

2.00

1.00

1.00

3.00

4.00

2.50

4.00

FREIGHT SPEED
TANGENT
(CURVE)

50

45

GRADE

-0.10

-0.30

-0.50

-0.40

-0.50

-0.36

-0.50

-0.39

-0.50

04/12/2006

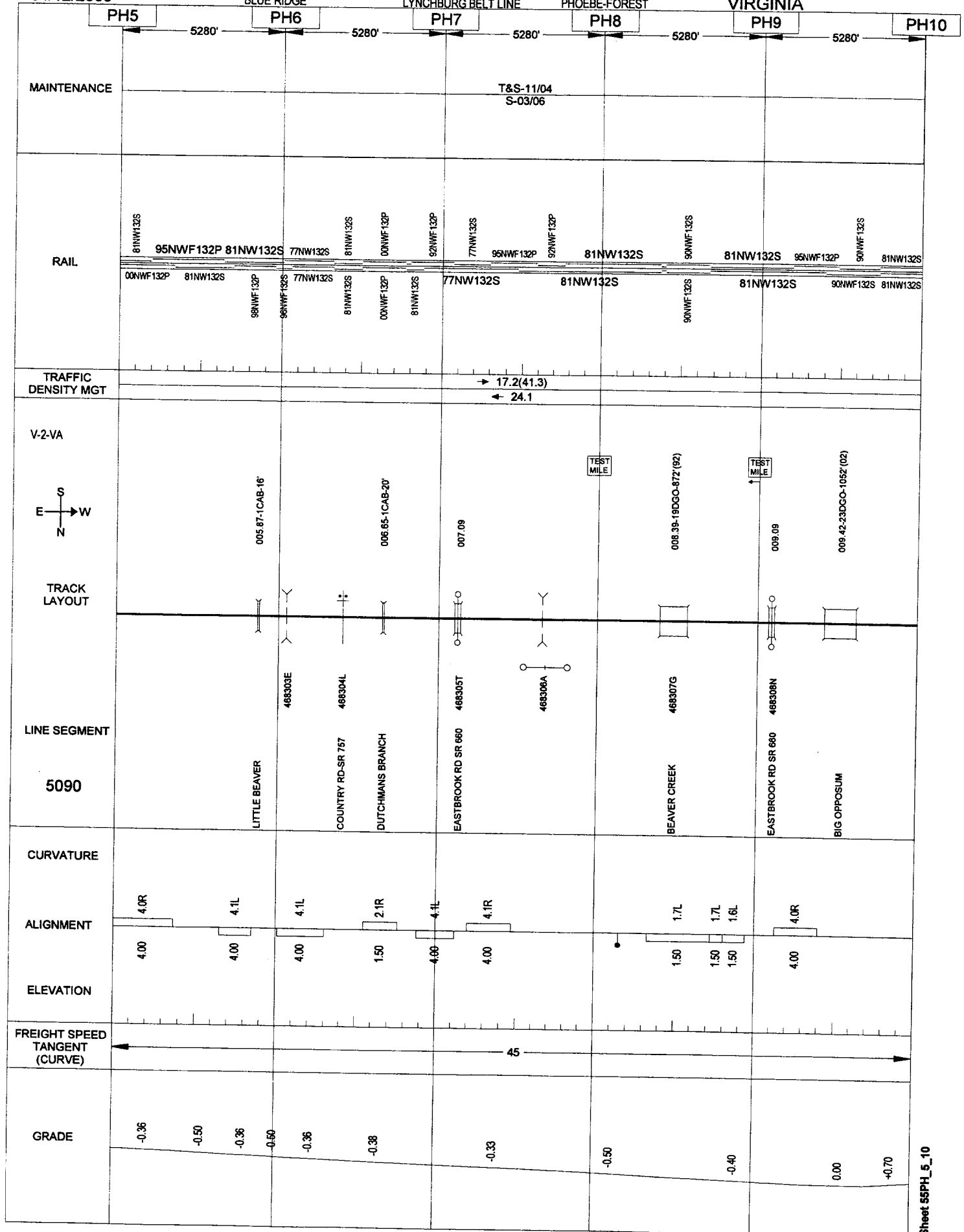
052

BLUE RIDGE

LYNCHBURG BELT LINE

PHOEBE-FOREST

VIRGINIA



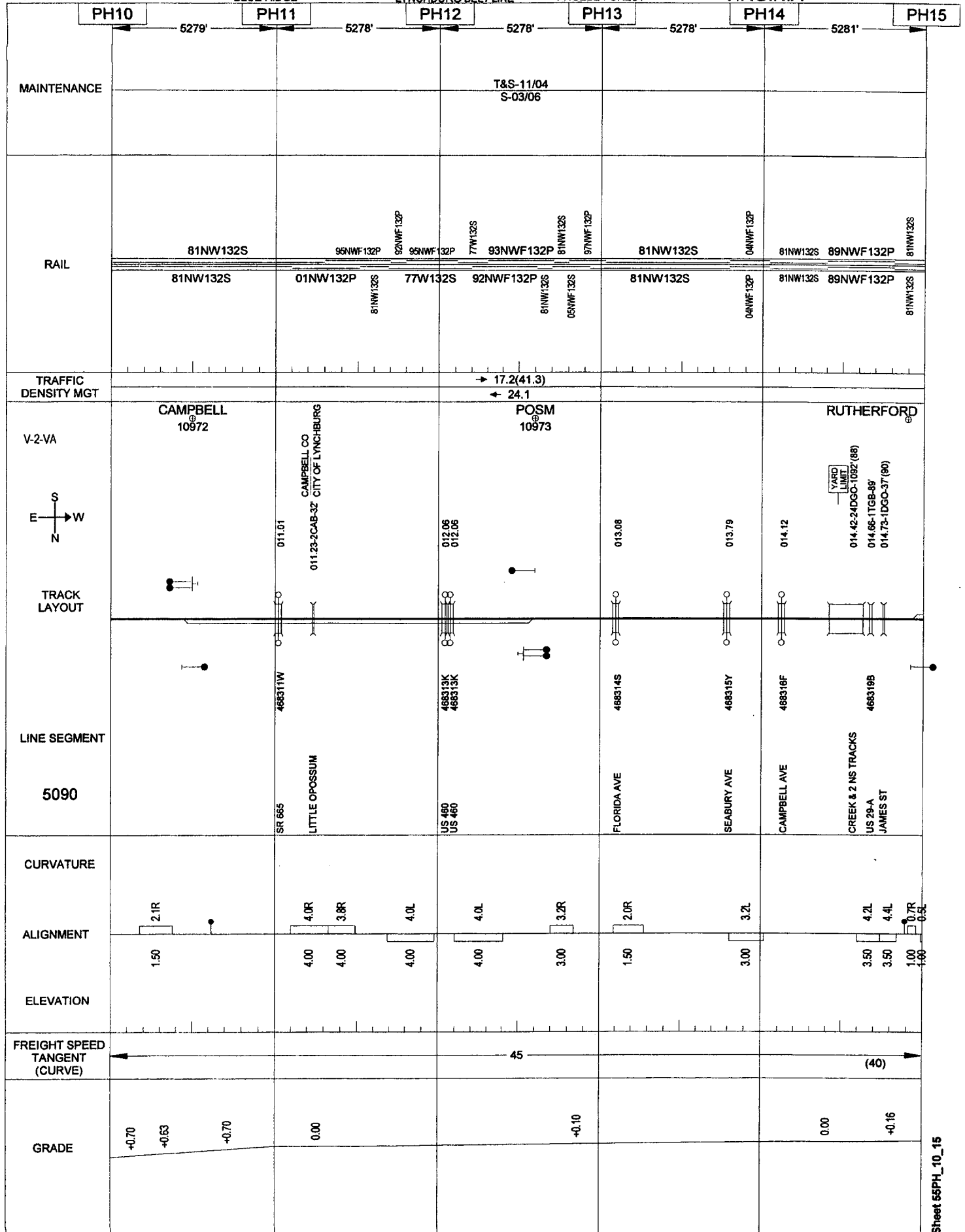
04/12/2006

BLUE RIDGE

053
LYNCHBURG BELT LINE

PHOEBE-FOREST

VIRGINIA



04/12/2006

054

BLUE RIDGE

LYNCHBURG BELT LINE

PHOEBE-FOREST

VIRGINIA

PH15

PH16

PH17

PH18

PH19

PH20

5291'

5218'

5332'

5281'

5281'

MAINTENANCE

T&S-11/04
S-03/06

RAIL

81NW132S

81NW132S

TRAFFIC
DENSITY MGT

17.7(41.9)
24.2

18.4(35.8)
17.4

V-2-VA

DOVER
10975

KINNEY
10977

LIBERTY
10980



TRACK
LAYOUT

PH-15.2=L-0.0

KINNEY YARD
015.77-1CAB-20'

PH-16.0/174.5

PH-16.3/175.1

YARD
LIMIT

016.83

017.06

017.84-2B50-11'

017.76-1CAB-24'

TEST
MILE

018.32

018.39-4DGB-235'

TEST
MILE

018.93-1CAB-20'

019.23

019.85-1CAB-20'

LINE SEGMENT

5090

BANKER STEEL
RUTHERFORD (PVT)
468320V

LIGGATES RD
468321C

WARDS RD US 29
468322J

BERKSHIRE PL
468323R

US 480
468324X

BURTON'S CREEK
PRIVATE
468325E

GRAVES MILL RD SR126
468326L

LYNCHBURG EXWY-US 501
468327T

DREAMING CREEK
468328A

OLD GRAVES MILL RD
468328A

TOMAHAWK CREEK
468328A

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

0.5L
1.00

3.0L
3.00

1.6R
2.00

2.0R
2.50

2.0L
2.50

1.0R
1.00

0.5L
1.00

45

50

+0.20

+0.29

+0.69

+0.66

-0.31

+0.15

0.00

+0.12

0.00

+0.09

+0.04

+0.53

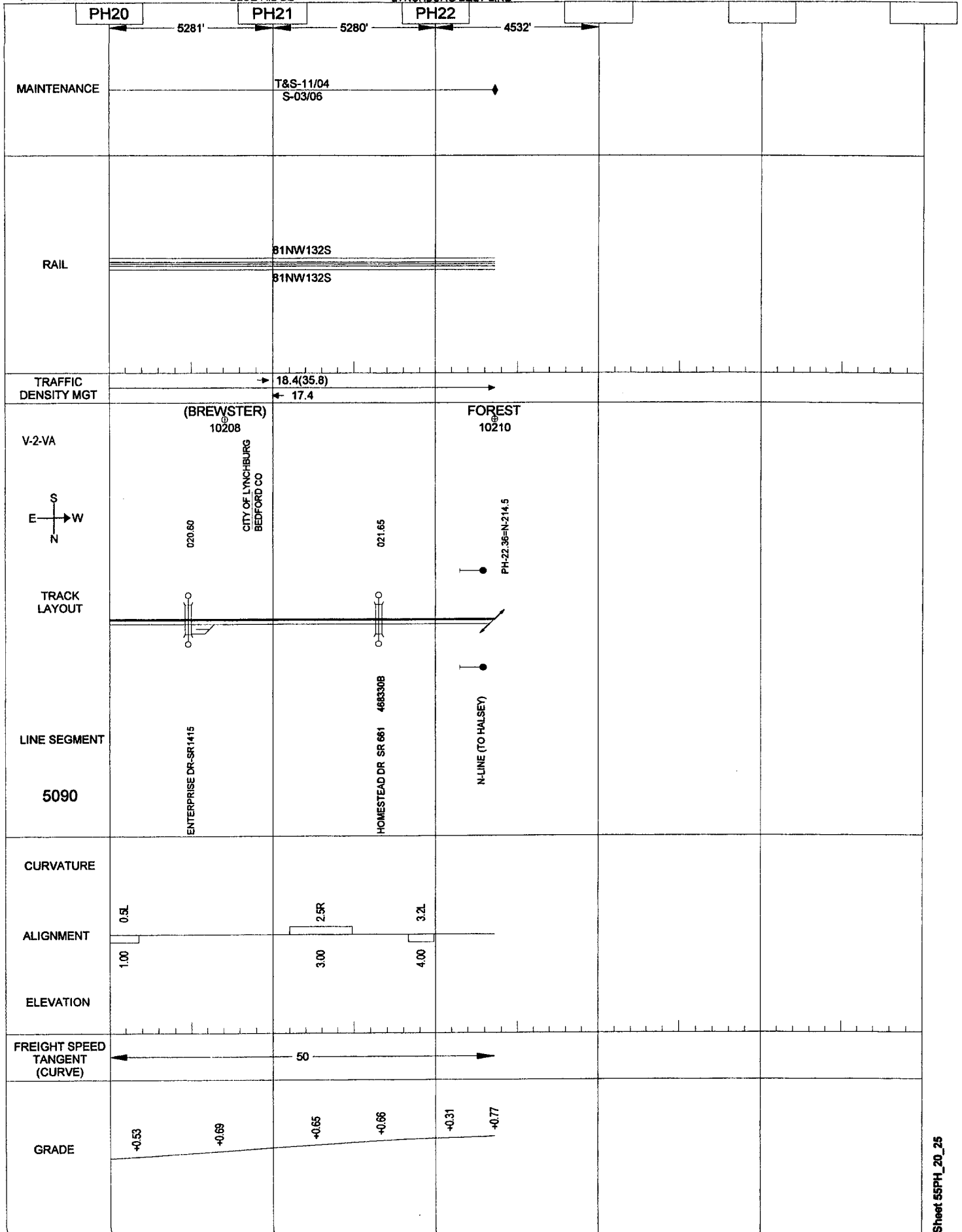
04/12/2006

BLUE RIDGE

055
LYNCHBURG BELT LINE

PHOEBE-FOREST

VIRGINIA



04/12/2006

BLUE RIDGE

056

FOREST-ROANOKE

VIRGINIA

N215

5257'

5001'

5275'

5412'

5280'

MAINTENANCE

T&S-02/05

RAIL

97NWF 13S
97NWF 13S
97NWF 13P
97NWF 13P

TRAFFIC
DENSITY MGT

18.4(35.9)
17.5

V-2-VA

FOREST
10210

S
E — W
N

TRACK
LAYOUT

N-214.5=PH-22.36

214.82

HALSEY SPUR

THOMAS JEFFERSON RD 488503N

LINE SEGMENT

5100

CURVATURE

ALIGNMENT

ELEVATION

2.0R
3.00

FREIGHT SPEED
TANGENT
(CURVE)

50

GRADE

-0.50

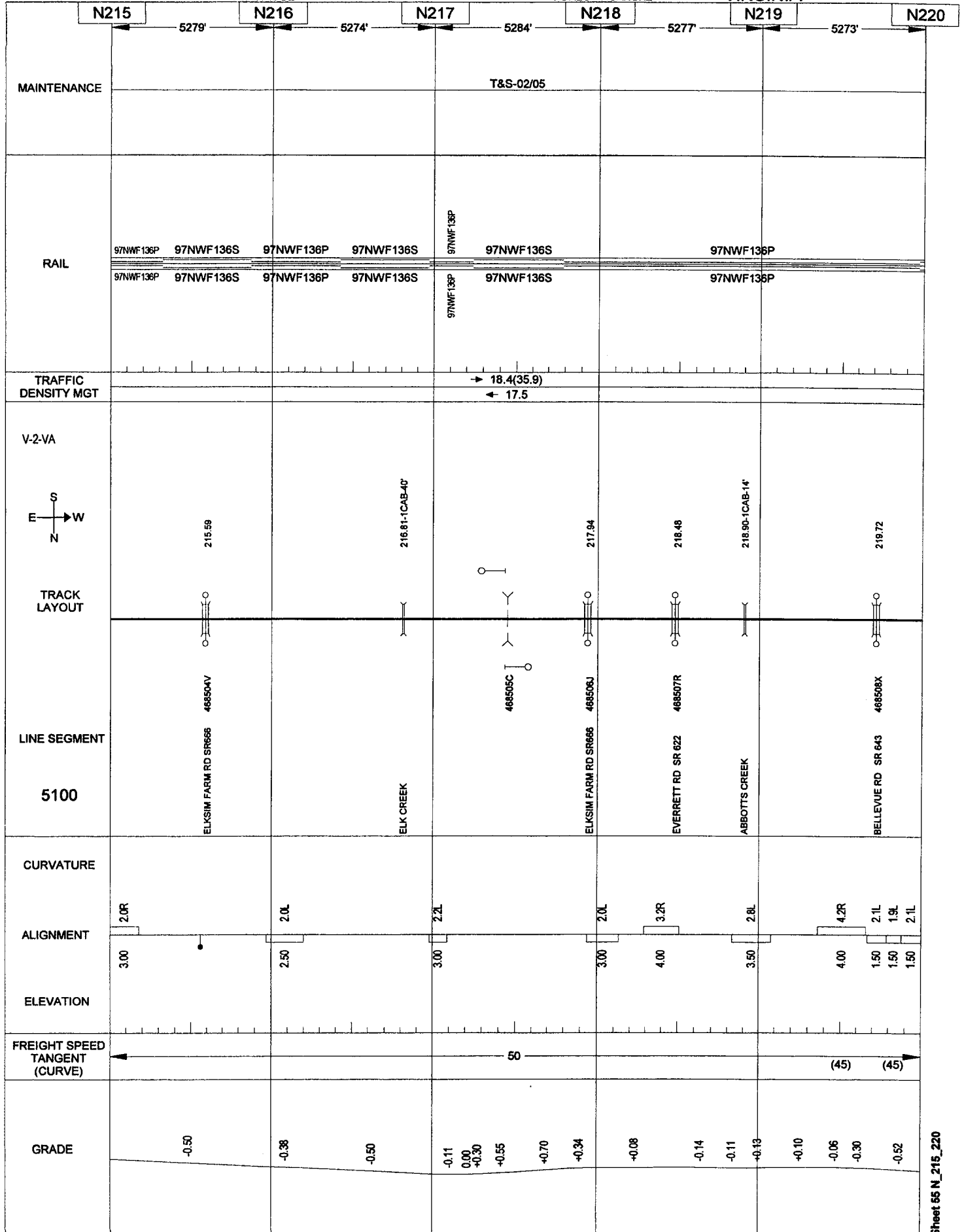
04/12/2006

057

BLUE RIDGE

FOREST-ROANOKE

VIRGINIA



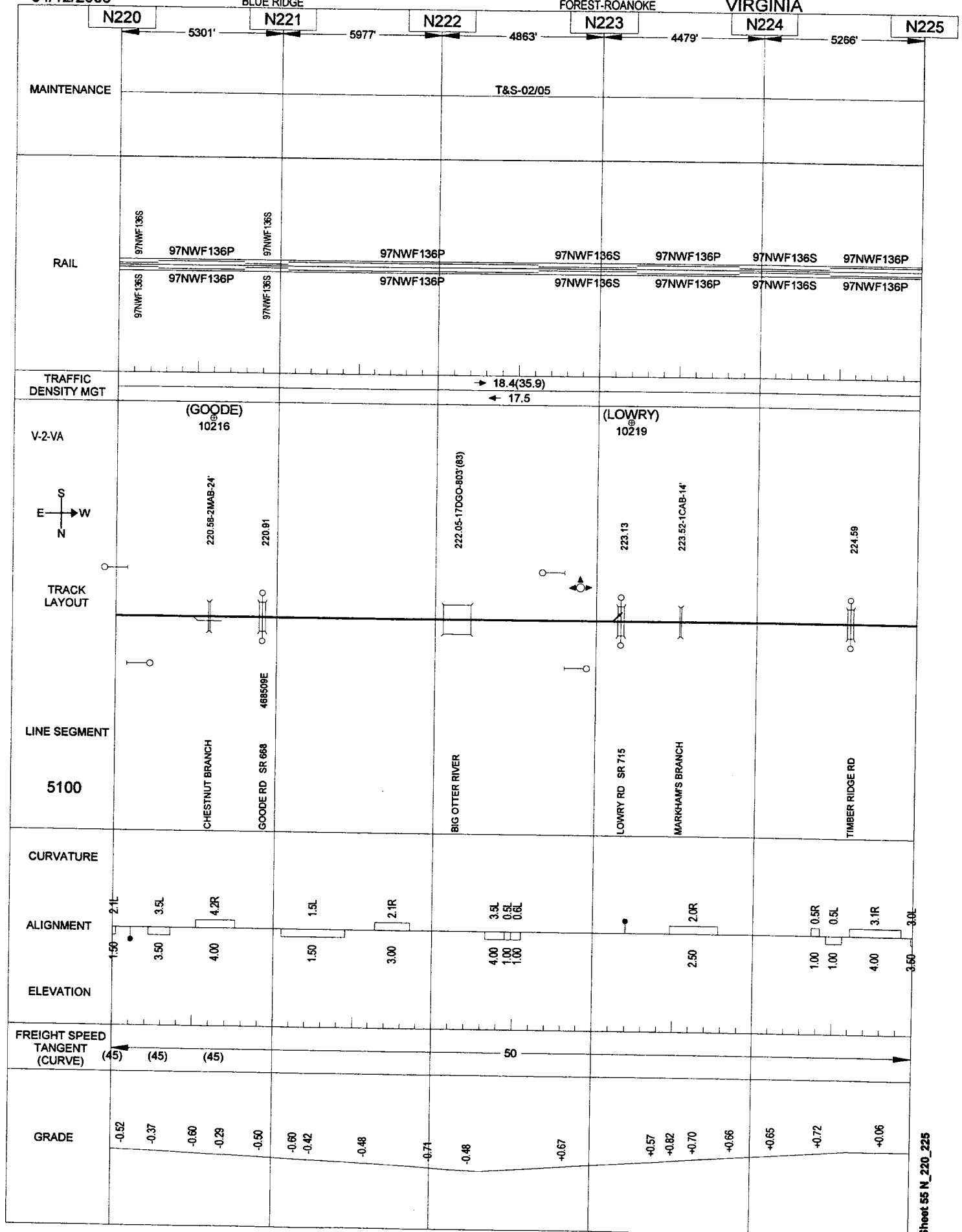
04/12/2006

BLUE RIDGE

058

FOREST-ROANOKE

VIRGINIA



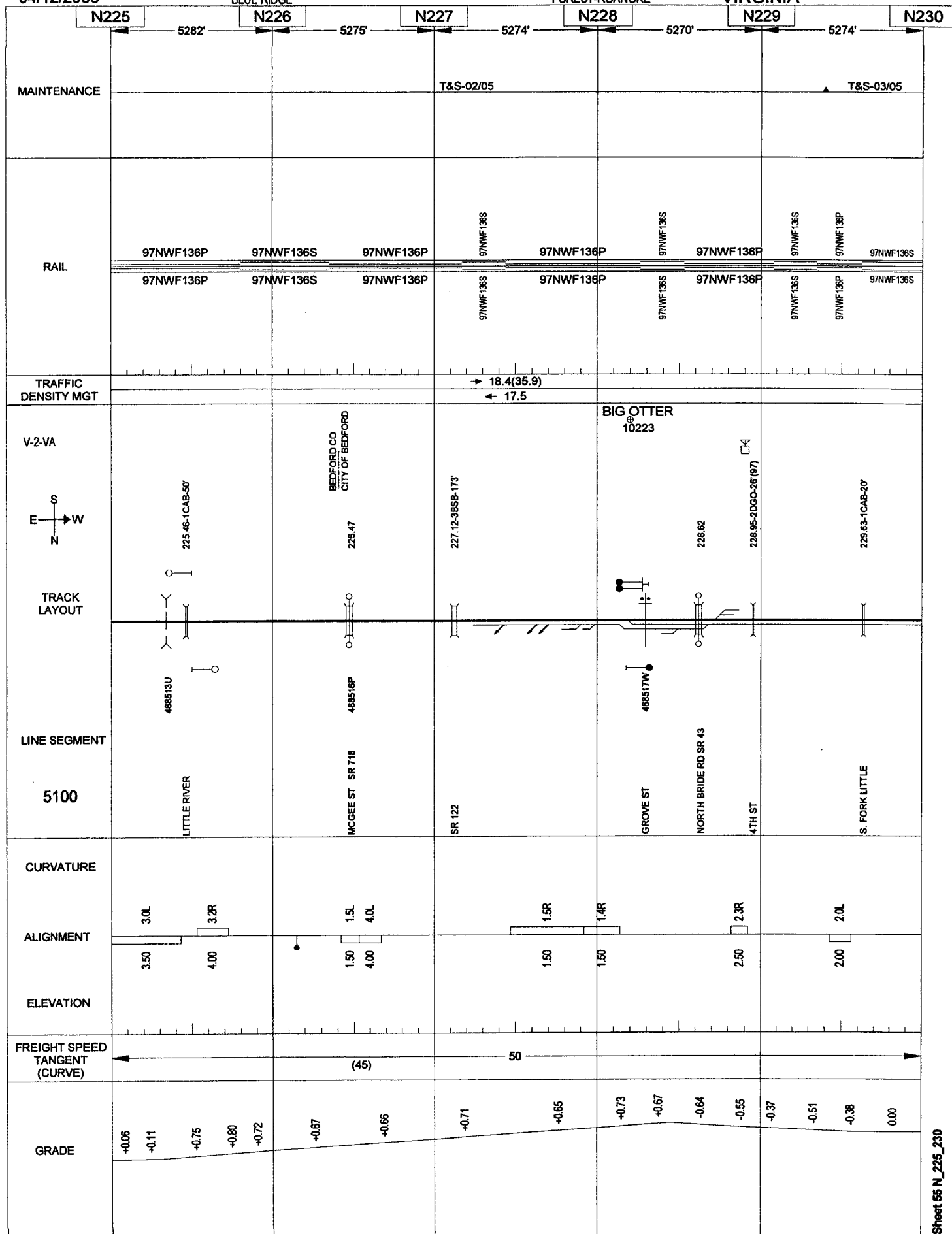
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059

BLUE RIDGE

FOREST-ROANOKE

VIRGINIA



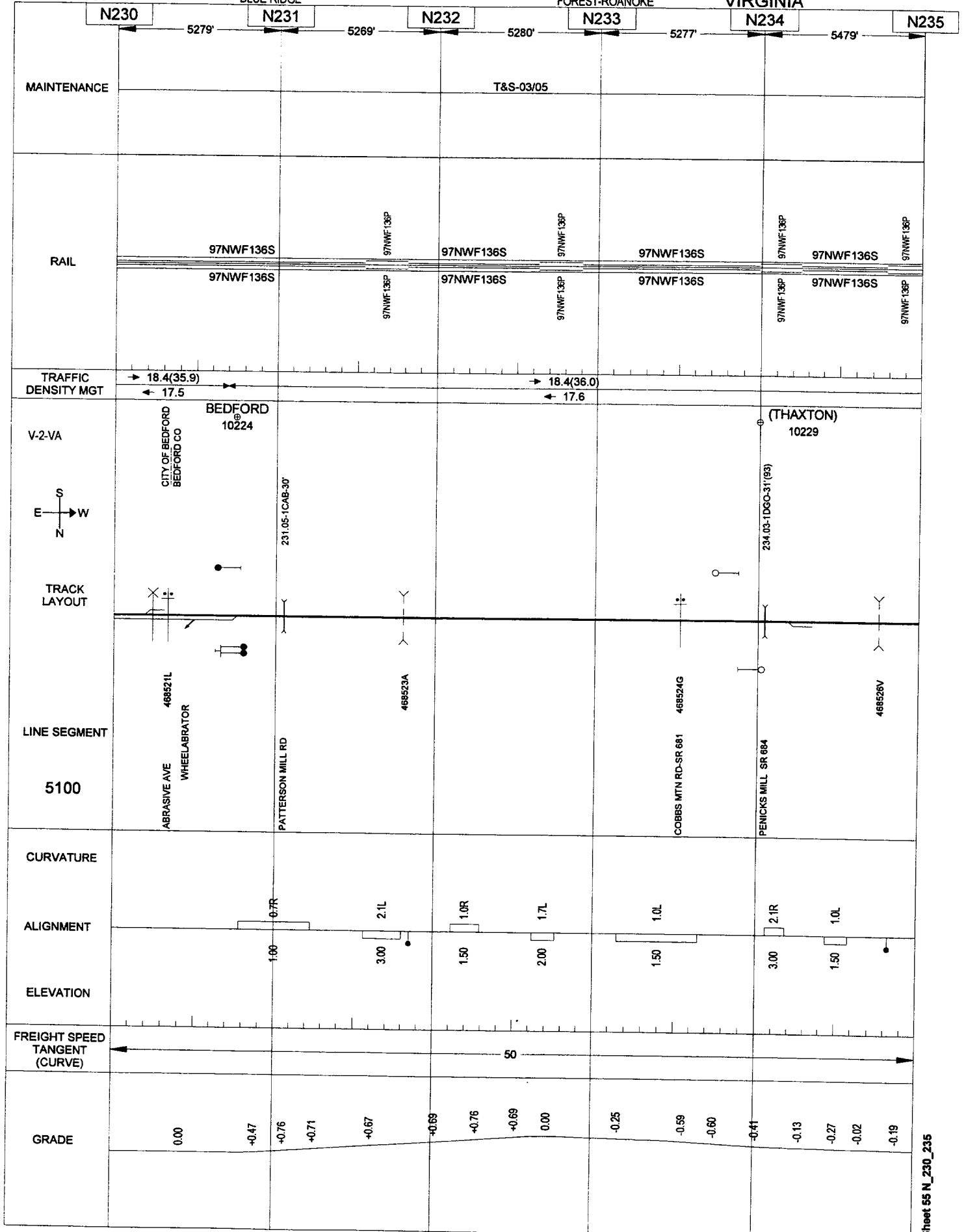
04/12/2006

060

BLUE RIDGE

FOREST-ROANOKE

VIRGINIA



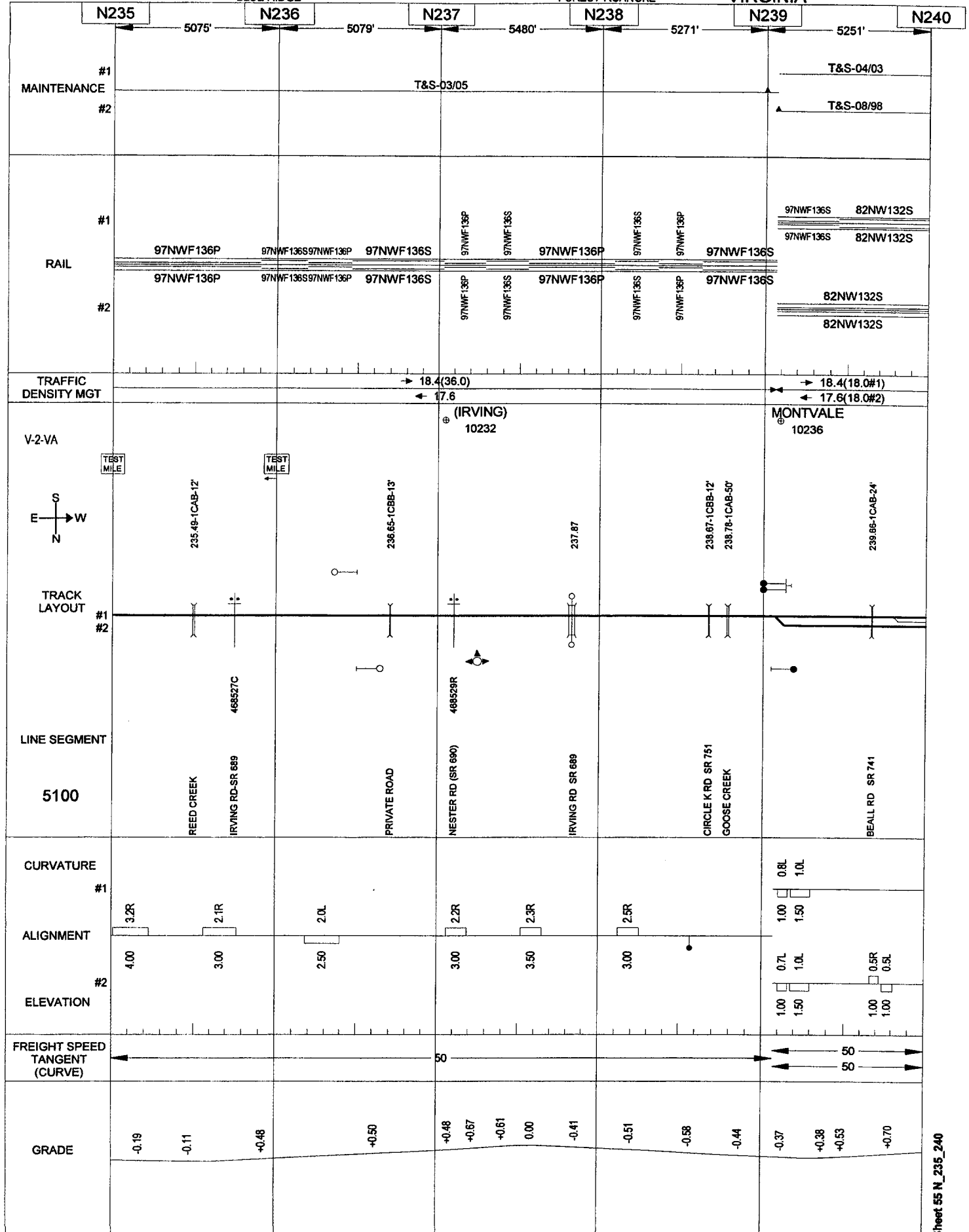
04/18/2006

BLUE RIDGE

061

FOREST-ROANOKE

VIRGINIA



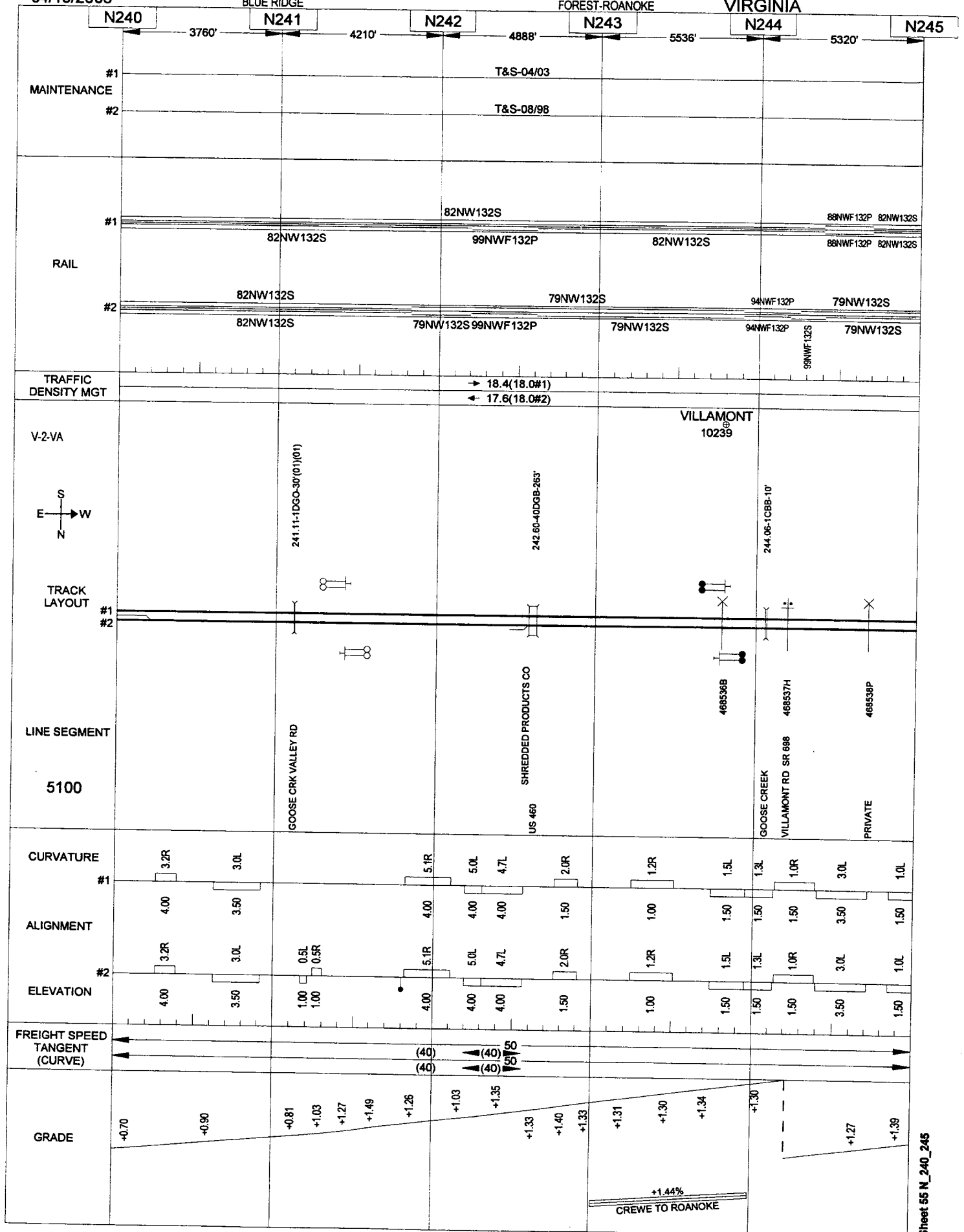
04/18/2006

BLUE RIDGE

062

FOREST-ROANOKE

VIRGINIA



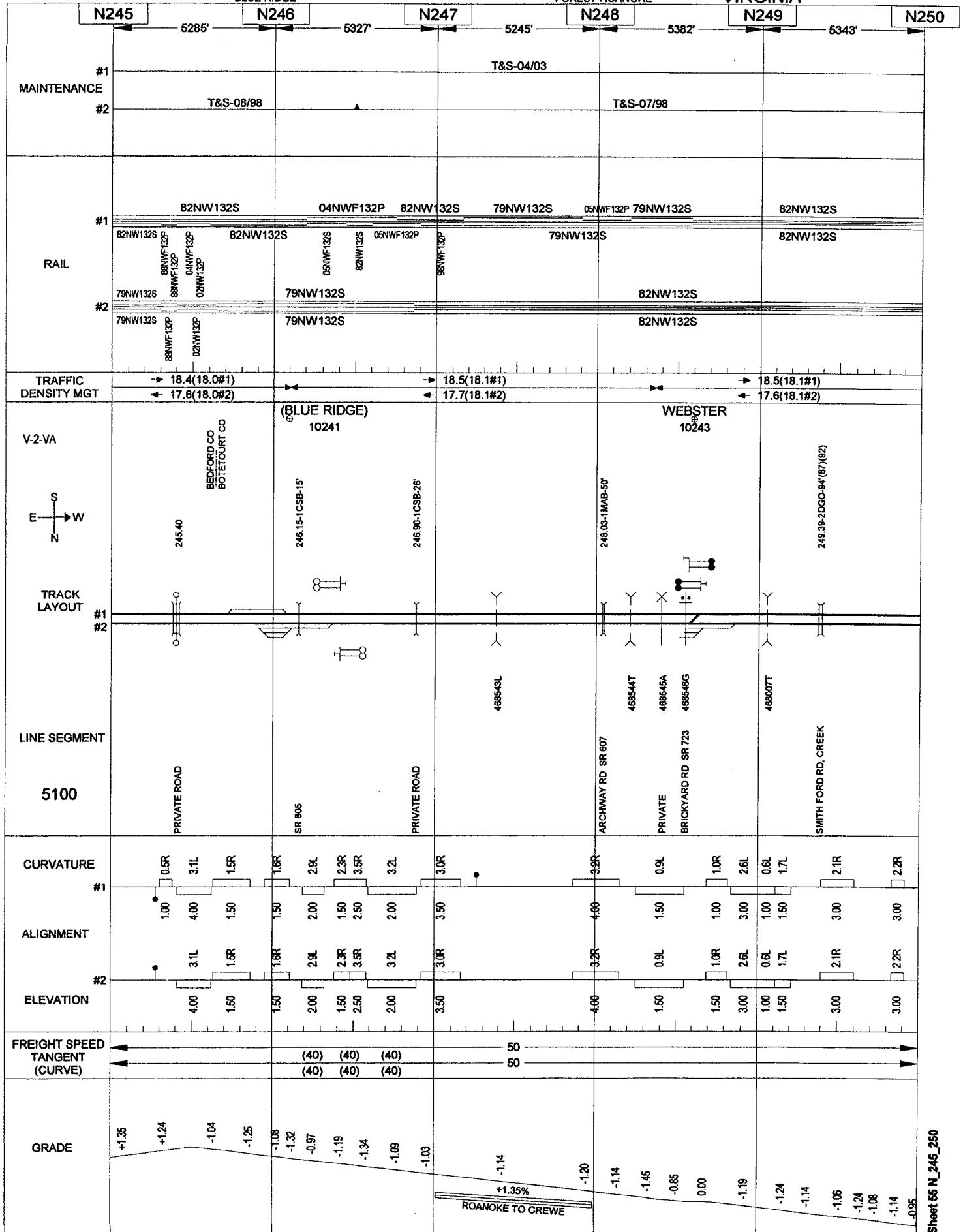
04/12/2006

BLUE RIDGE

063

FOREST-ROANOKE

VIRGINIA



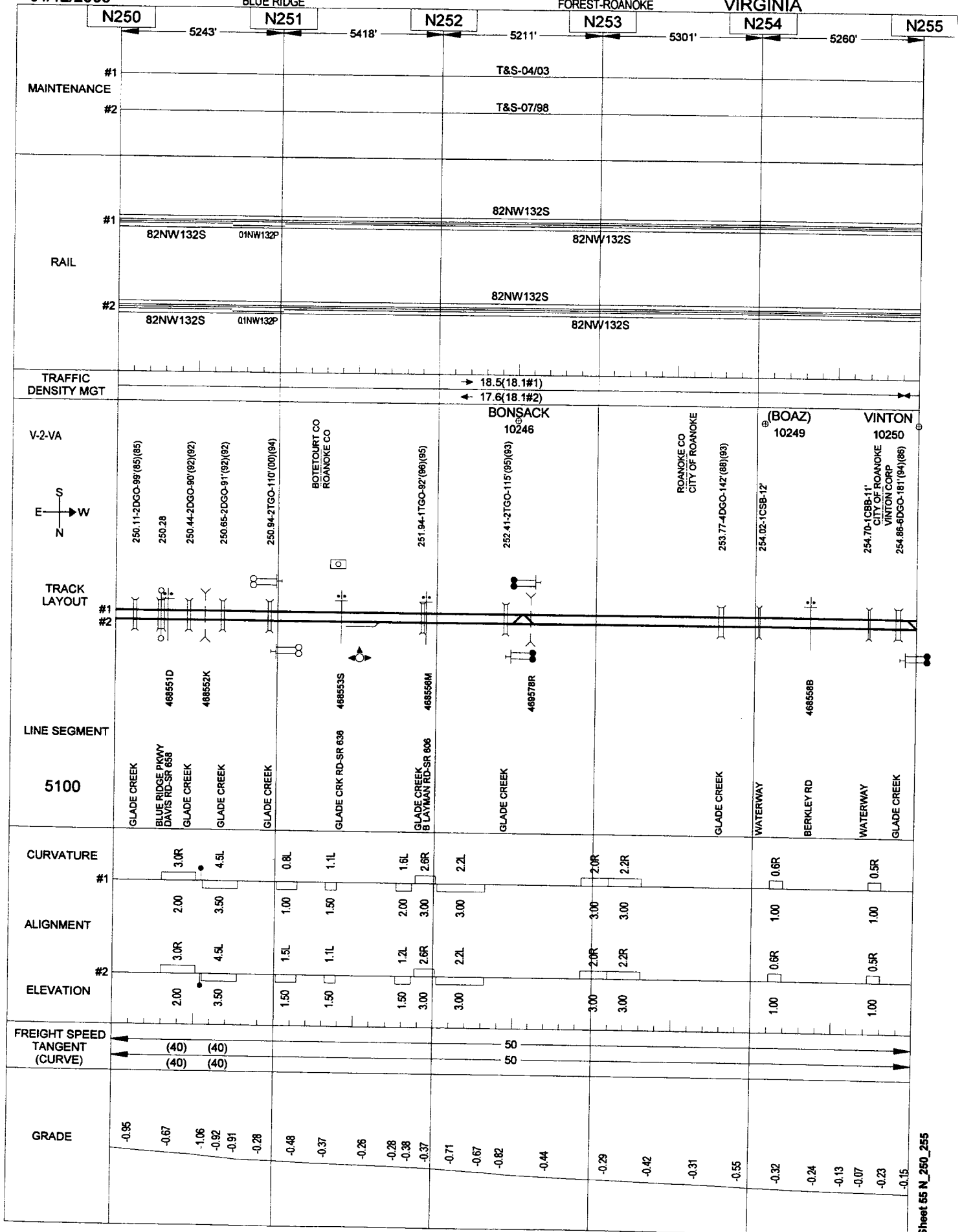
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064

BLUE RIDGE

FOREST-ROANOKE

VIRGINIA



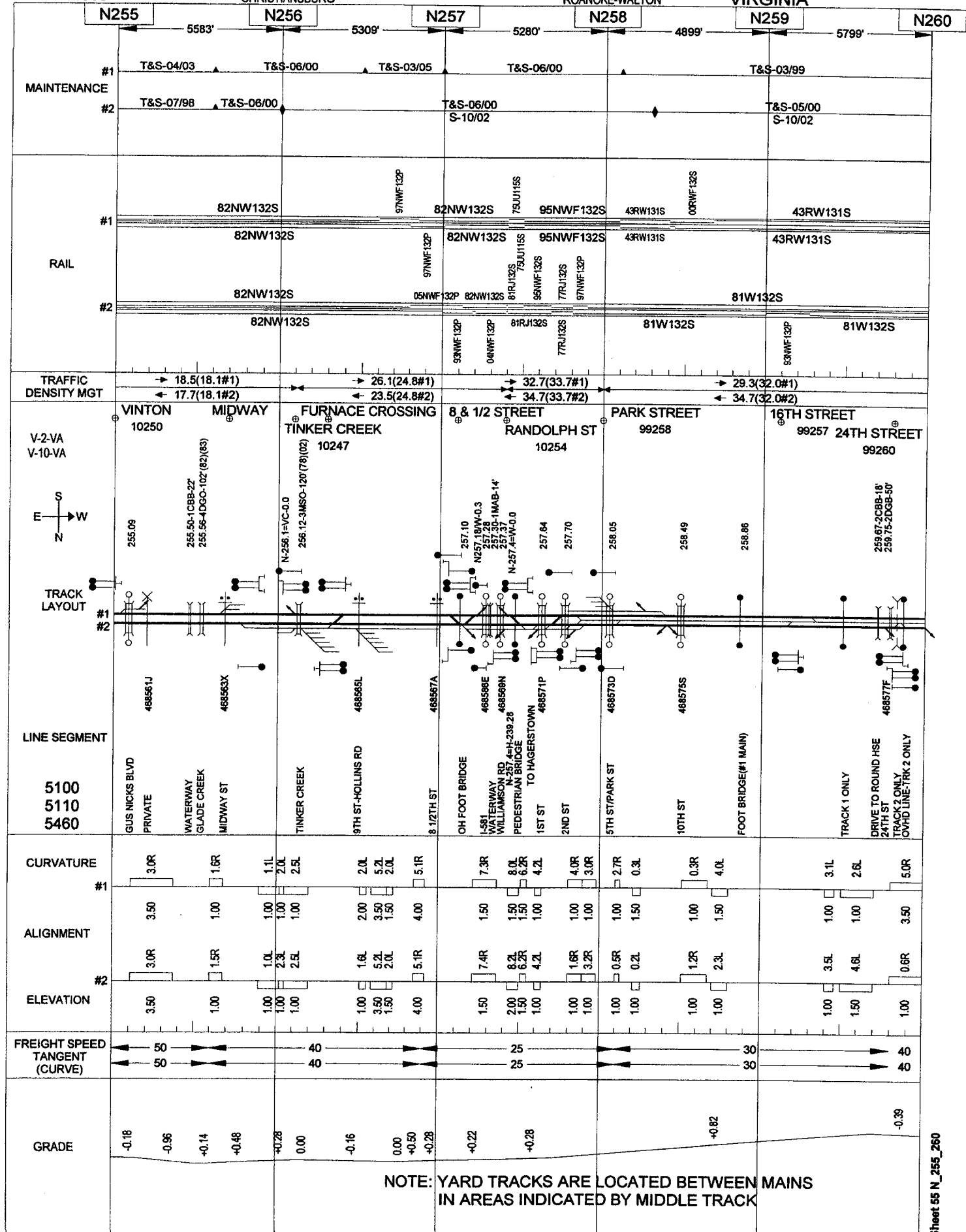
04/12/2006

065

CHRISTIANSBURG

ROANOKE-WALTON

VIRGINIA



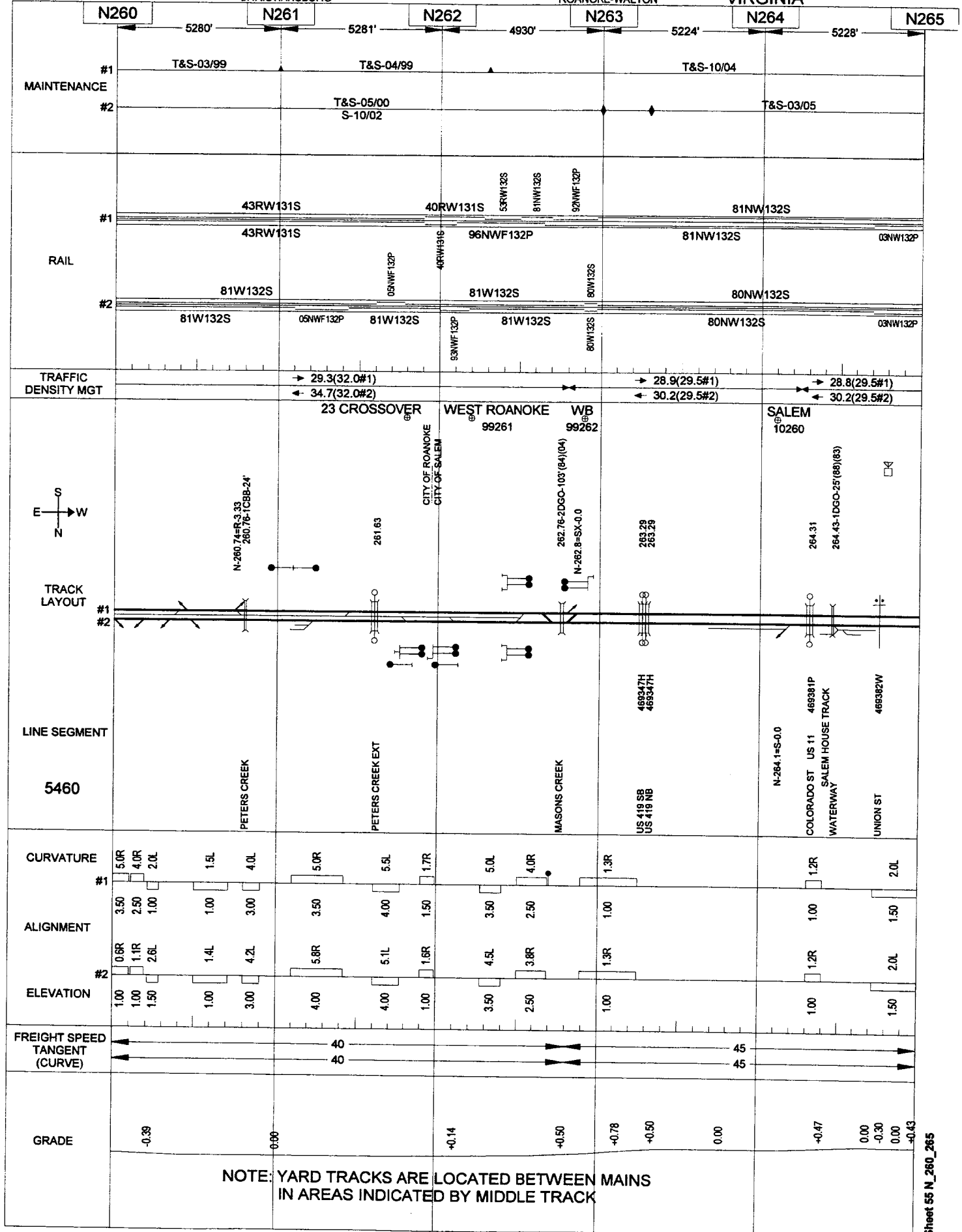
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CHRISTIANSBURG

066

ROANOKE-WALTON

VIRGINIA



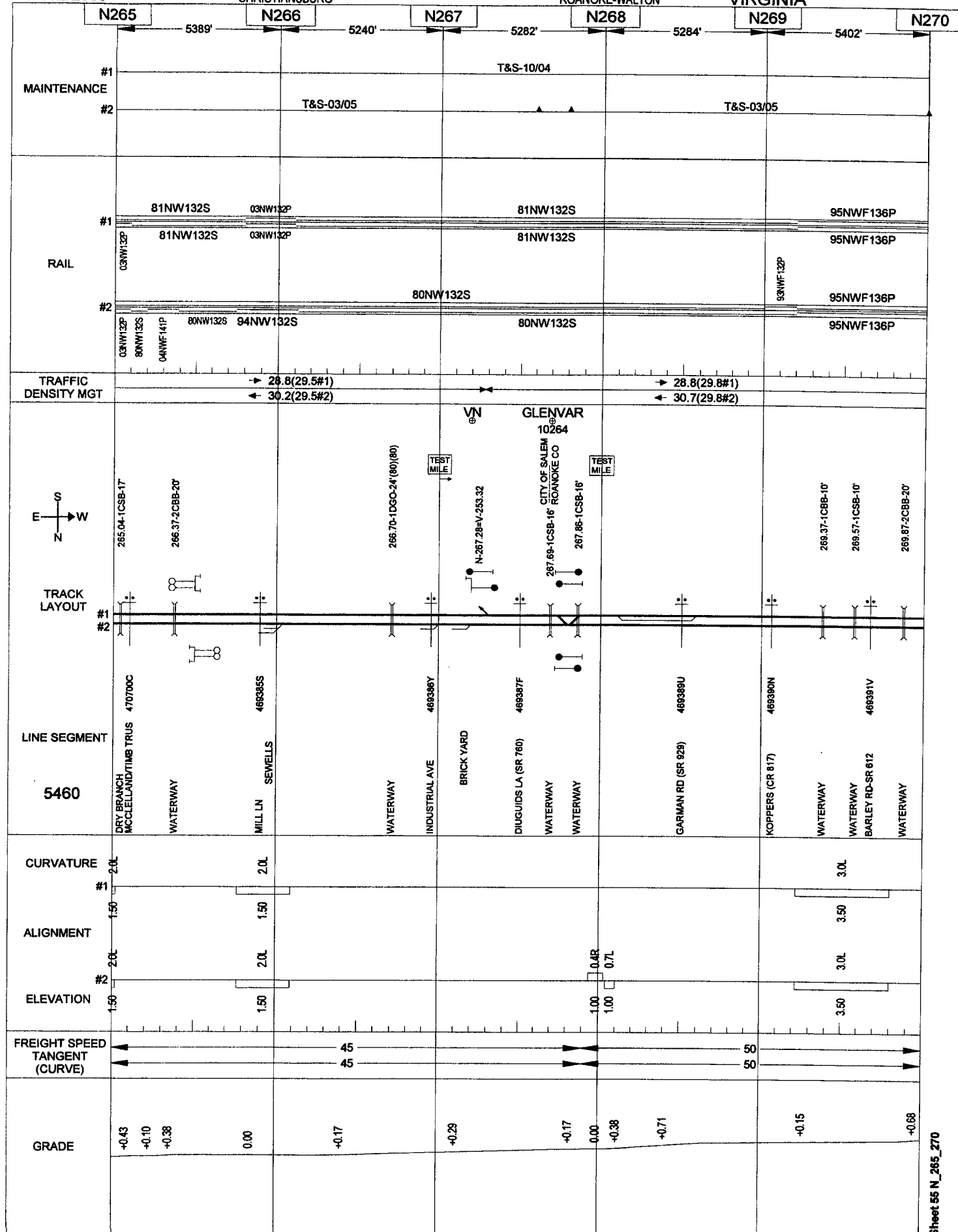
04/12/2006

CHRISTIANSBURG

067

ROANOKE-WALTON

VIRGINIA



N270

N271

N272

N273

N27	
-----	--

N275

- 5394'

- 5334' -

5078' —

- 5490 -

- 5126'

215

MAINTENANCE
#

T&S-10/04

T&S-04/05

RAIL

95NWF136P

95NWF136S

95NWF136P

365

95NWF136P

365

5NWF136P

3

136P

95NWF136S

95NWF136

1000

TRAFFIC DENSITY MGT

→ 28.8(29.8#1)
← 30.7(29.8#2)

→ 28.8(29.8#1)
← 30.7(29.8#2)

SINGER
⊕
10268

NOKE CO
ATTGOMERY CO

TRACK
LAYOUT

LINE SEGMENT

5460

CURVATURE

#1

ALIGNMENT

**FREIGHT SPEED
TANGENT
(CURVE)**

GRADE

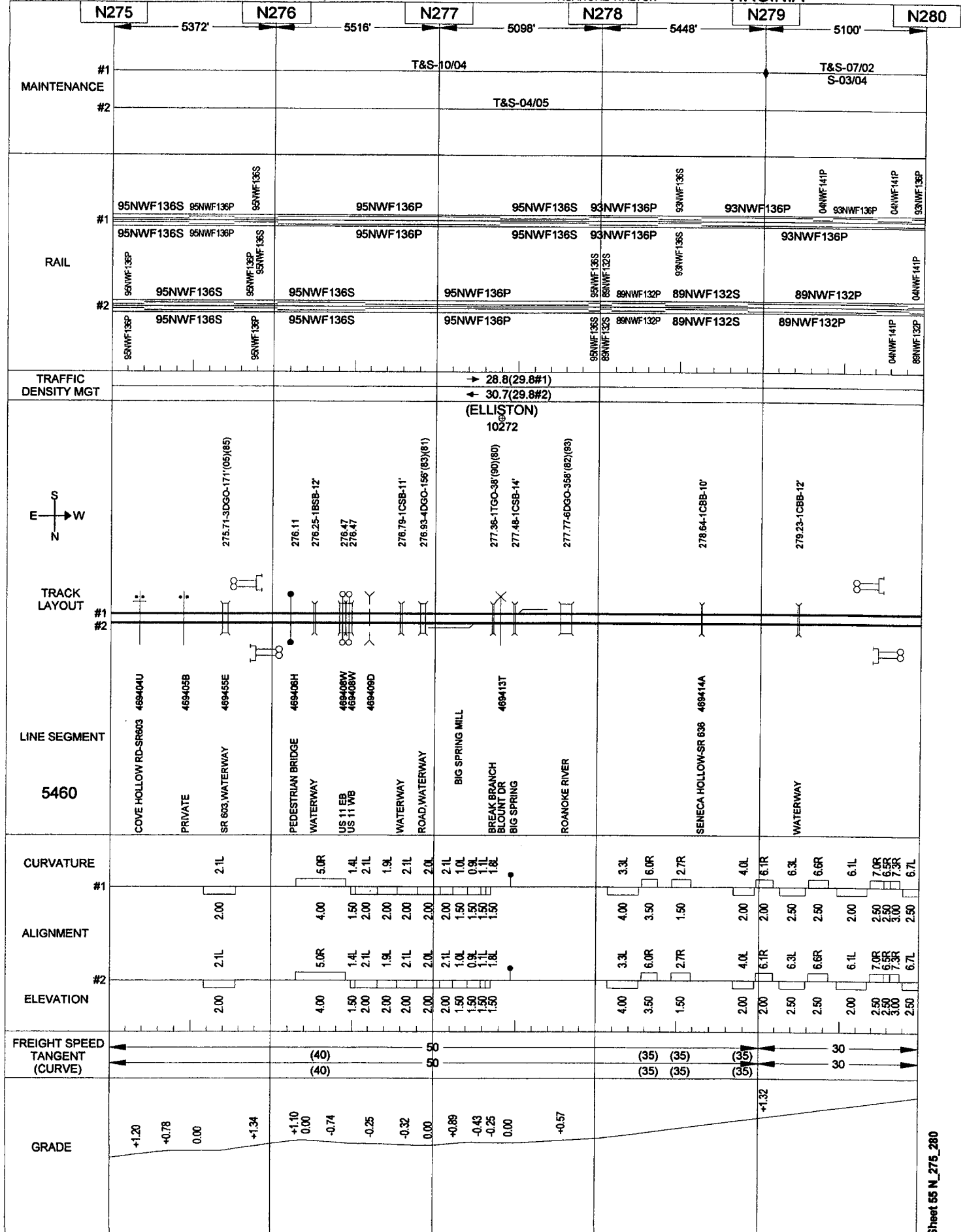
04/12/2006

CHRISTIANSBURG

069

ROANOKE-WALTON

VIRGINIA



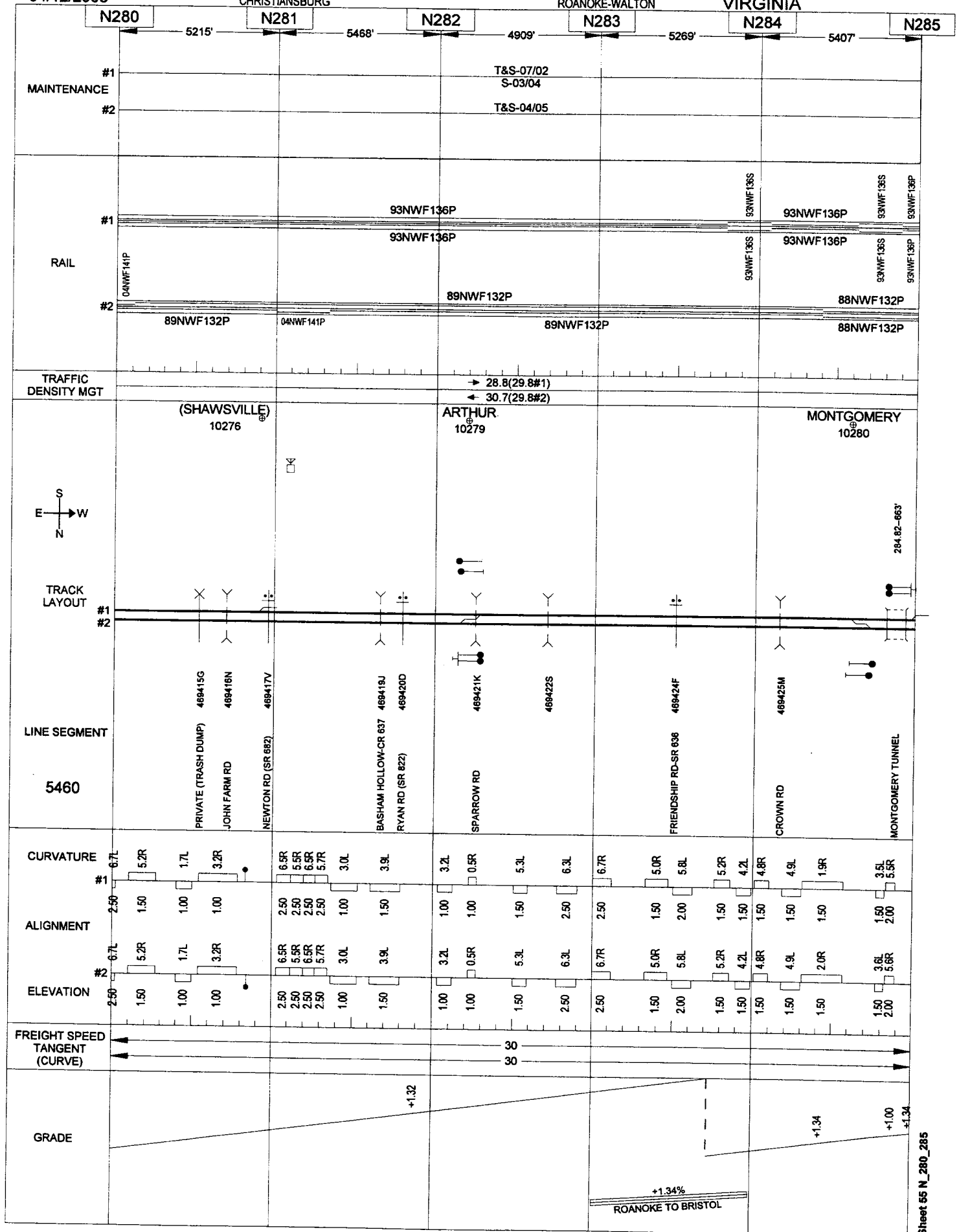
04/12/2006

CHRISTIANSBURG

070

ROANOKE-WALTON

VIRGINIA



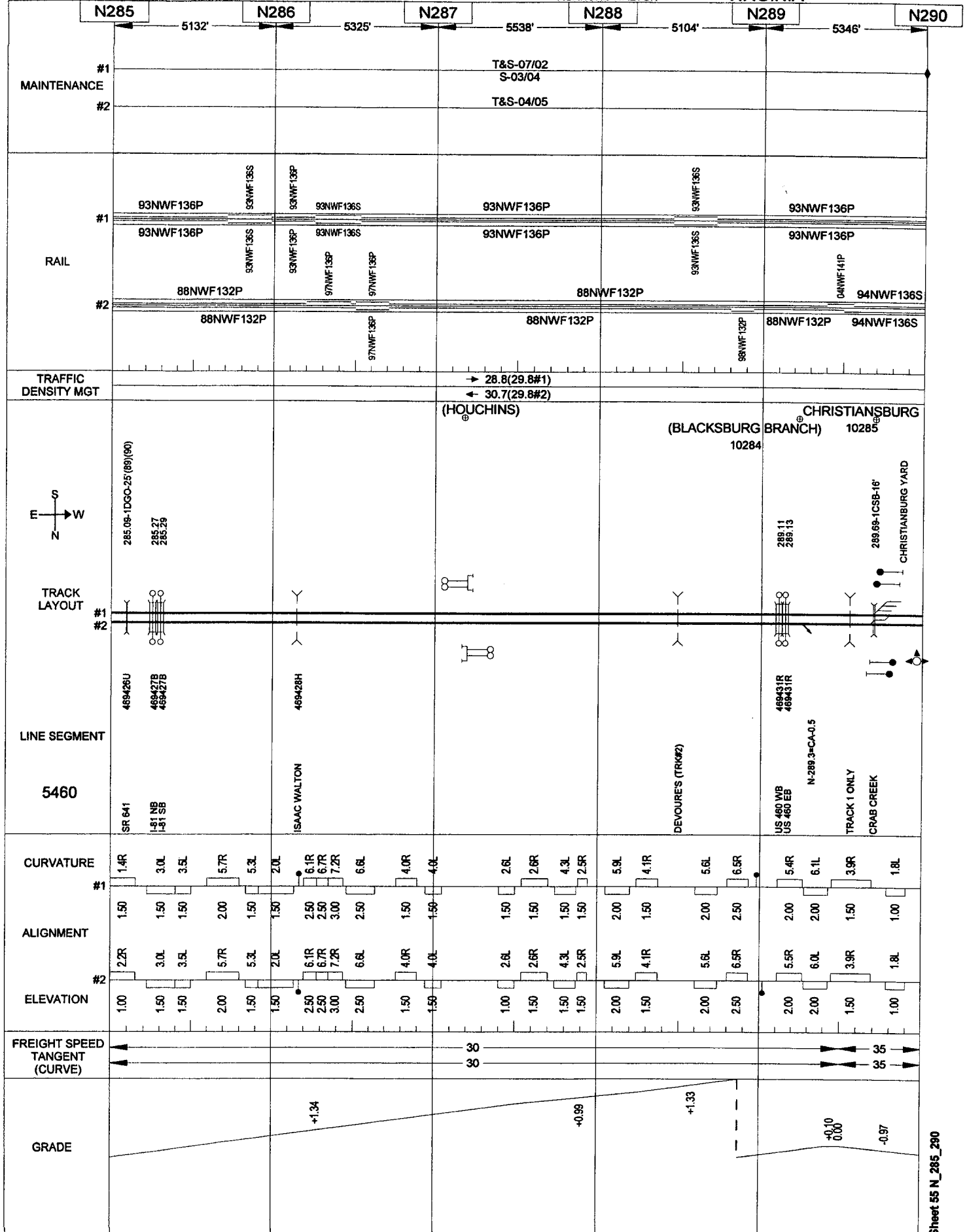
04/12/2006

071

CHRISTIANSBURG

ROANOKE-WALTON

VIRGINIA



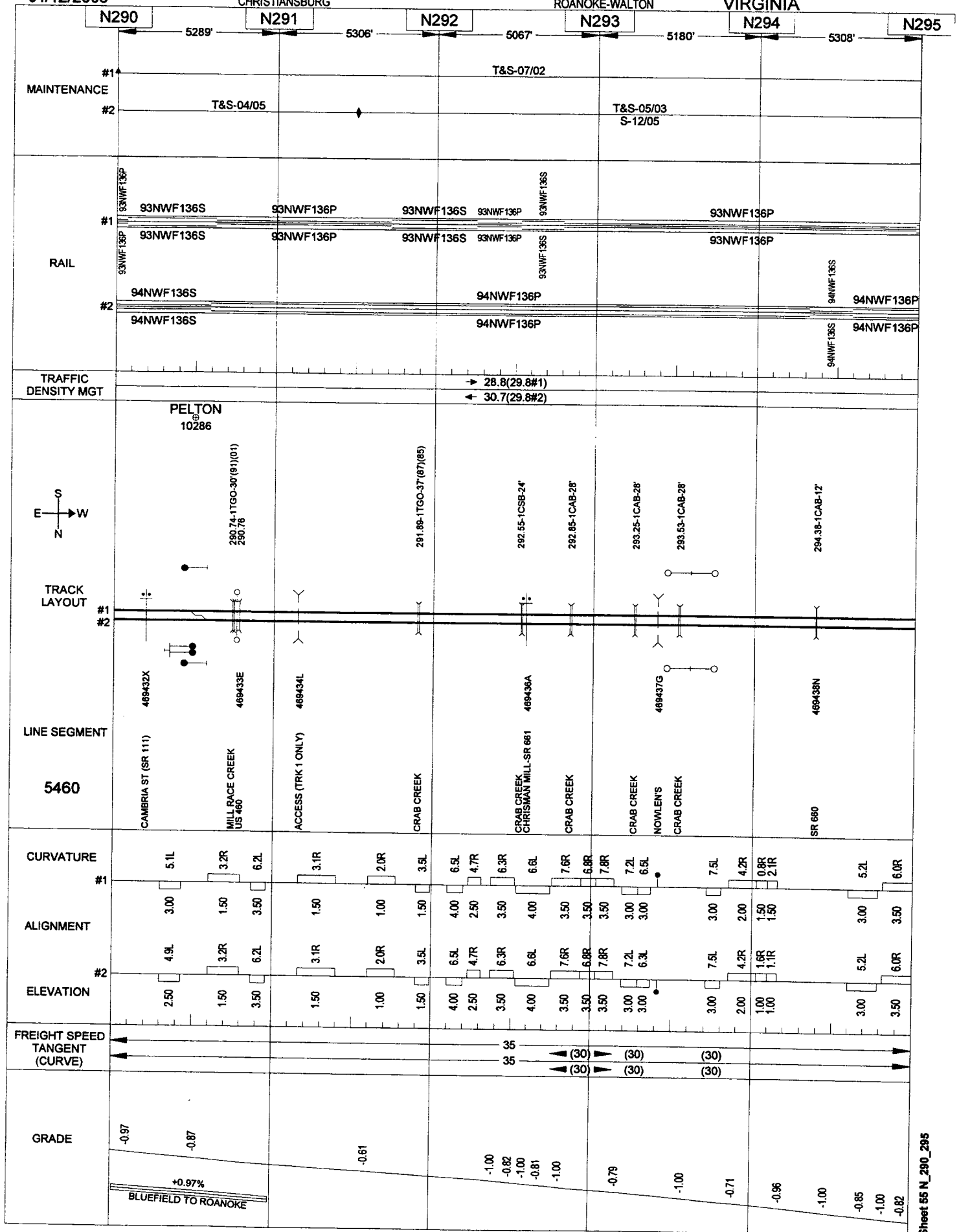
04/12/2006

CHRISTIANSBURG

072

ROANOKE-WALTON

VIRGINIA



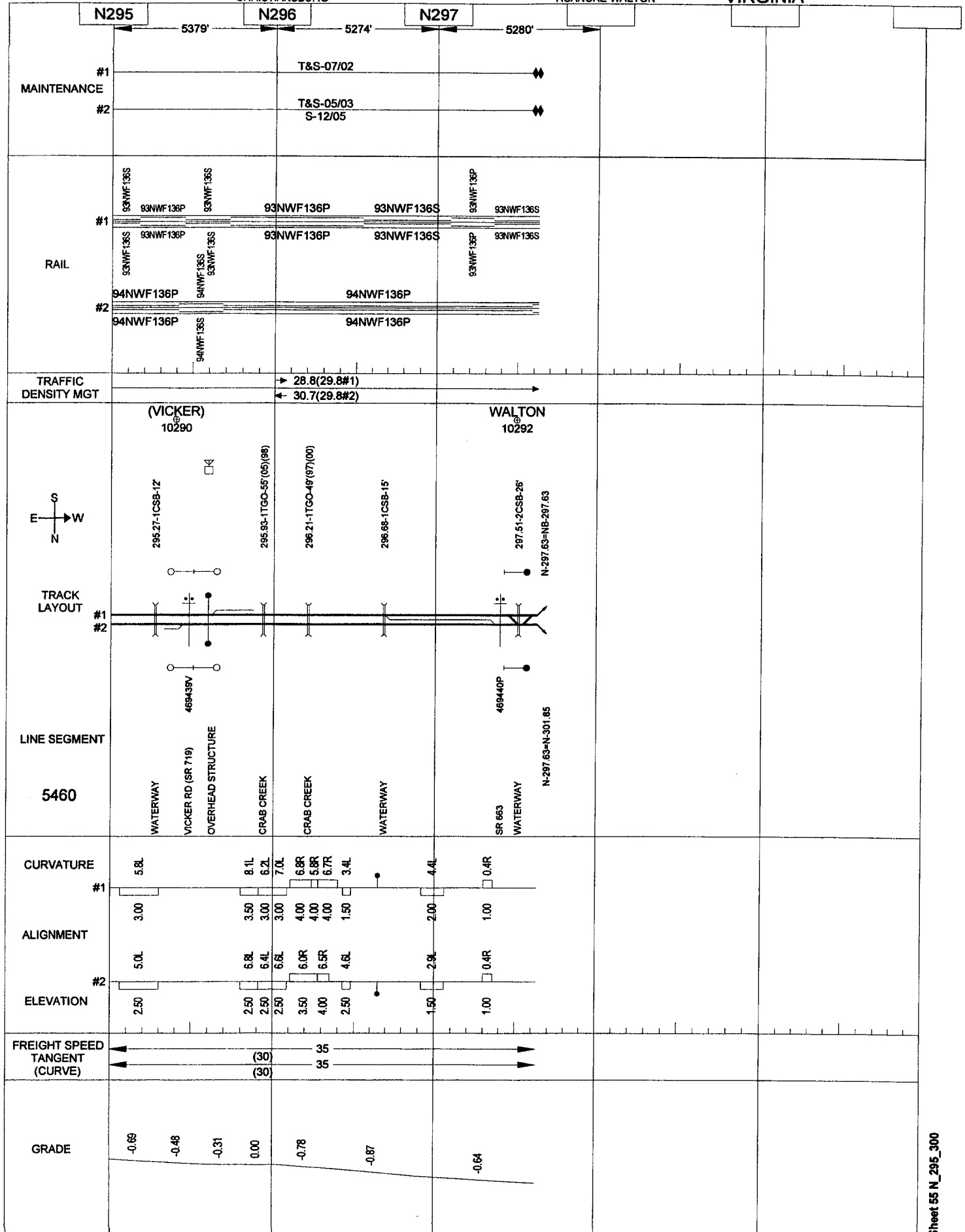
04/12/2006

CHRISTIANSBURG

073

ROANOKE-WALTON

VIRGINIA



04/12/2006

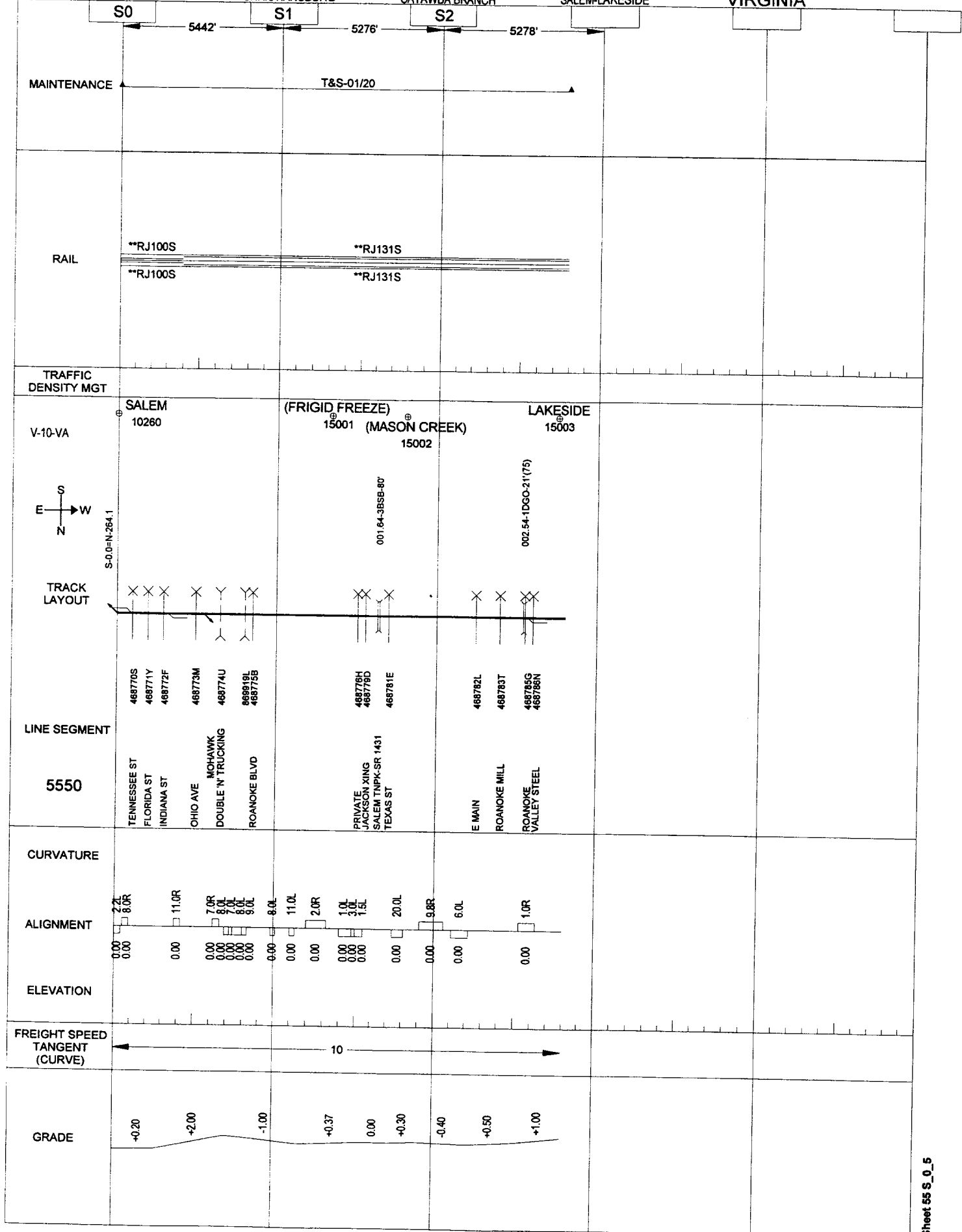
CHRISTIANSBURG

074

CATAWBA BRANCH

SALEM-LAKESIDE

VIRGINIA



04/12/2006

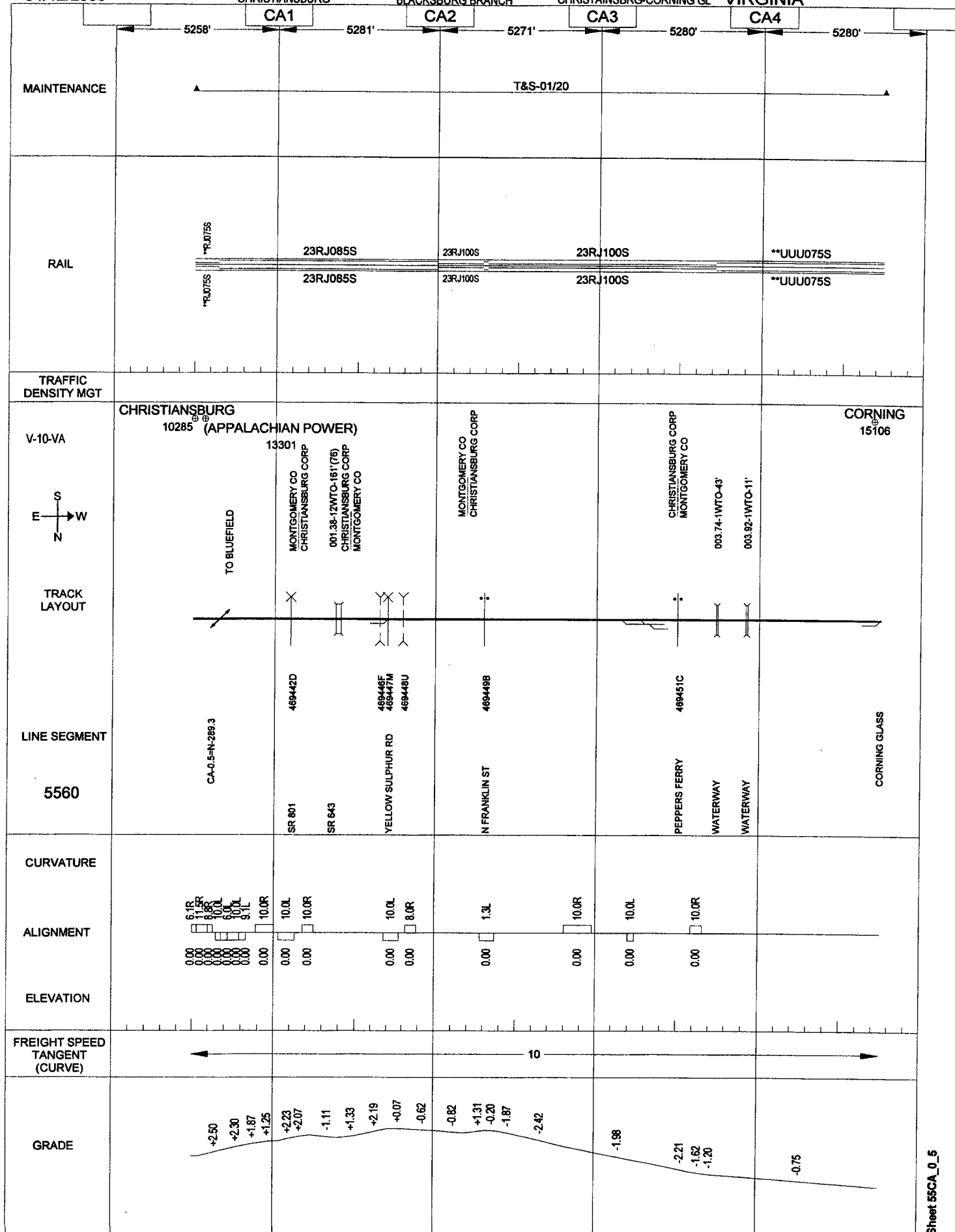
075

CHRISTIANSBURG

BLACKSBURG BRANCH

CHRISTIANSBURG-CORNING GL

VIRGINIA



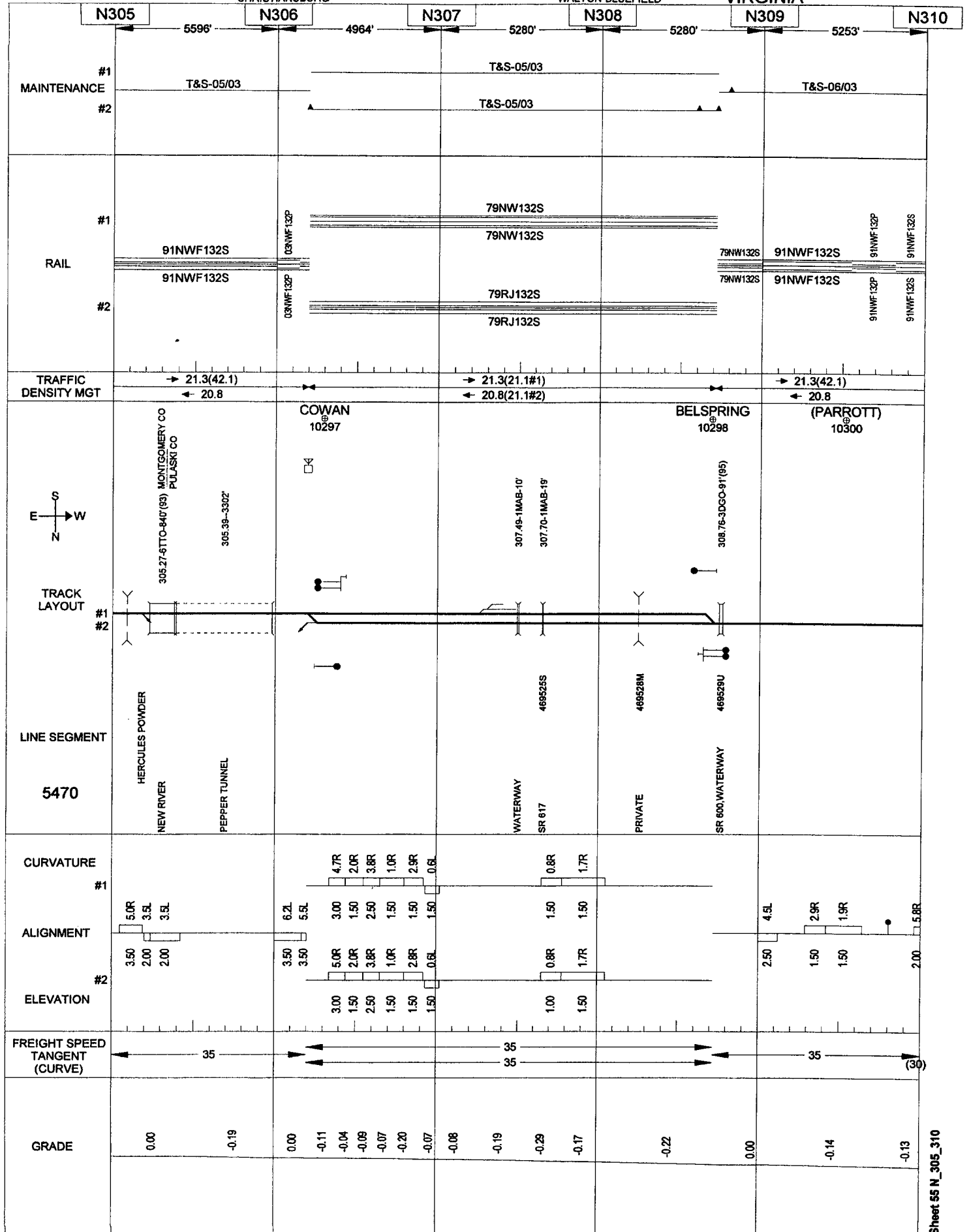
04/12/2006

CHRISTIANSBURG

077

WALTON-BLUEFIELD

VIRGINIA



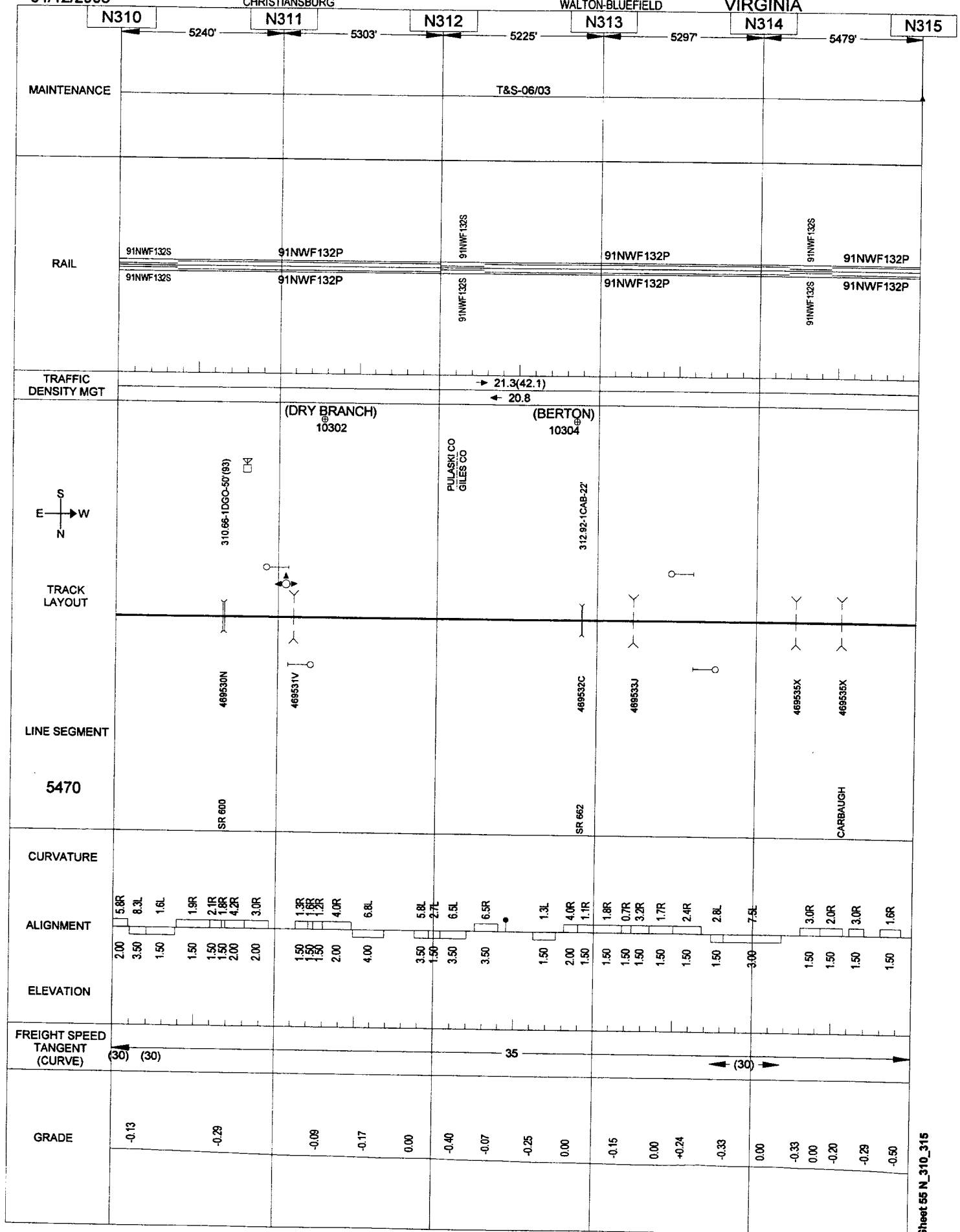
04/12/2006

CHRISTIANSBURG

078

WALTON-BLUEFIELD

VIRGINIA



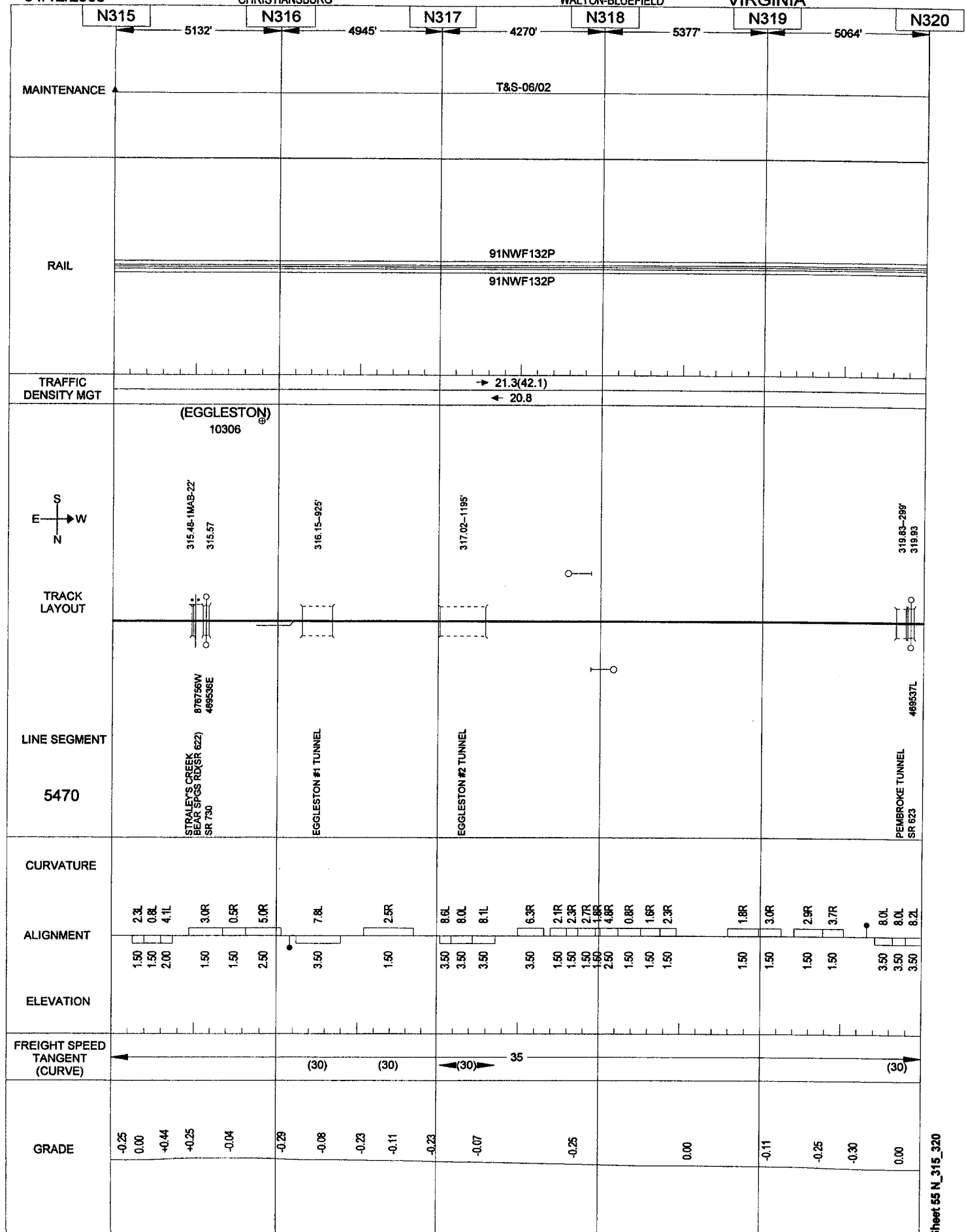
04/12/2006

CHRISTIANSBURG

079

WALTON-BLUEFIELD

VIRGINIA



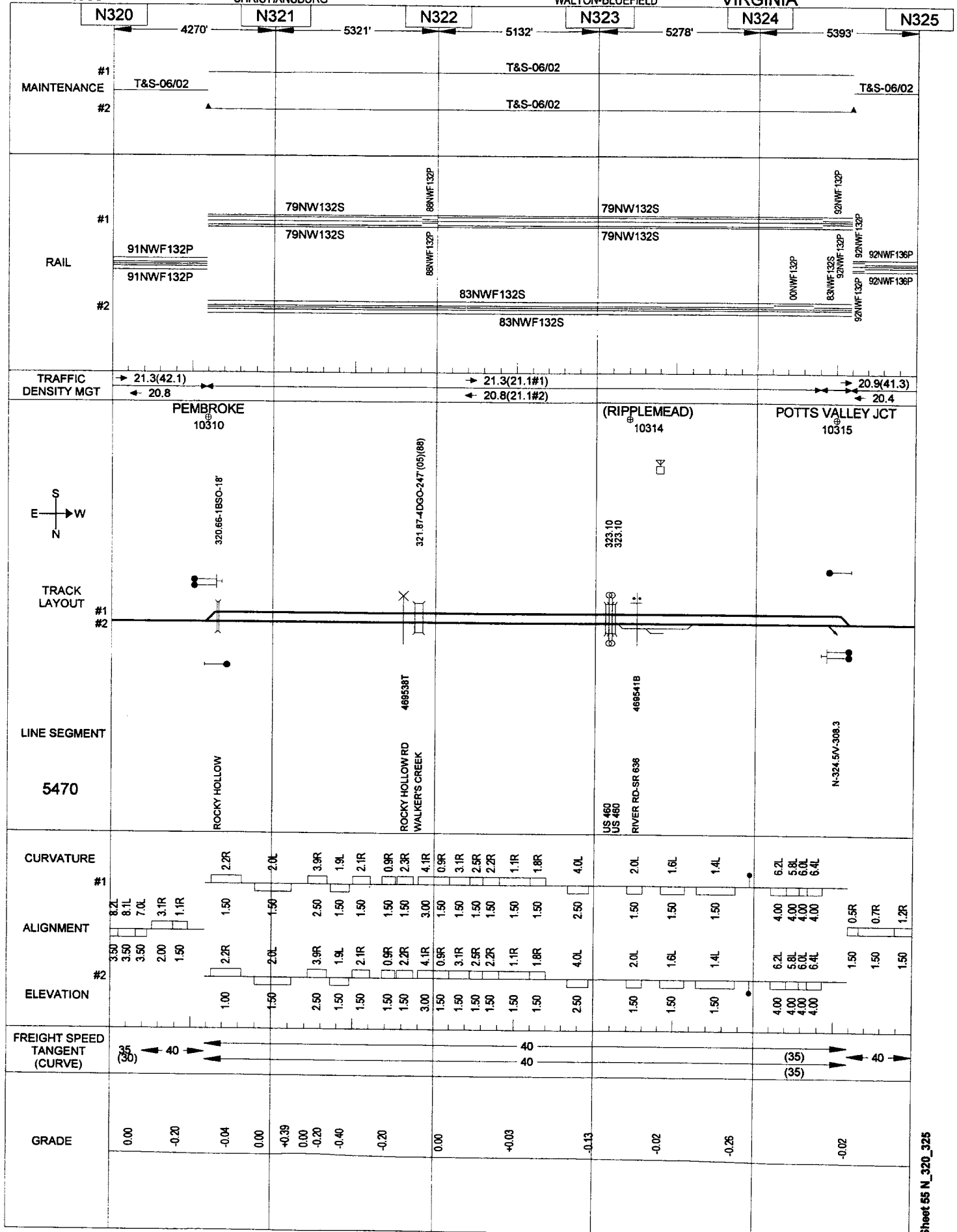
04/12/2006

080

CHRISTIANSBURG

WALTON-BLUEFIELD

VIRGINIA



CHRISTIANSBURG

081

WALTON-BLUEFIELD

VIRGINIA

		N325		N326		N327		N328		N329		N330	
		5162'		5420'		5385'		5205'		5132'			
MAINTENANCE	#1	T&S-06/02											
	#2												
RAIL	#1	92NWF136P 92NWF136S 92NWF136P 92NWF136P 92NWF136S 92NWF136S 92NWF136P 79NWF132S 67RJ132S 79NWF132S 67RJ132S 79NWF132S											
	#2												
TRAFFIC DENSITY MGT		→ 20.9(41.3) ← 20.4											
TRACK LAYOUT	#1	(CURVE) 469543P 904293E PRIVATE											
	#2												
LINE SEGMENT		5470											
CURVATURE	#1	1.2R 1.8R 2.6R 4.5R 4.4R 4.6R 4.1R 4.7R 4.0R 2.7R 1.4R 3.5L 1.4L 2.4L 5.0L 4.2L 4.2L 2.5L 2.5L 2.0L 6.0L 3.5L 0.5L 1.5L 3.7R 3.5R 0.5R 0.6R 3.0R 1.2L 3.5L 1.2R 4.3R 1.7R 3.3R 0.9R 3.0R 1.8R 3.5R 2.0R 1.8R 5.0R 3.0R 6.0L											
ALIGNMENT	#2	1.50 1.50 3.50 3.50 3.50 3.50 3.50 3.50 2.00 2.00 2.00 3.00 2.50 2.50 2.50 2.50 3.50 1.50 1.50 2.50 2.50 1.50 1.50 2.00 1.50 2.00 3.00 2.00 2.00 2.00 2.00 2.00 3.50 3.50											
ELEVATION		-0.02 -0.10 -0.24 -0.03 -0.10 0.00 -0.15 -0.09 -0.25 0.00 +0.03 0.00 -0.32 0.00 -0.05 -0.25											
FREIGHT SPEED TANGENT (CURVE)		(35) 40 (35) 40											
GRADE		+0.32% BLUEFIELD TO WALTON											

Sheet 55 N_325_330

VIRGINIA

N340

T&S-10/04

90NWF 132S

91NWF132P

→ 21.0(42.6#1
← 64.2(42.6#2

(LURICH)
10328

TEST
MILE

#1
#2

5470

#1

1

(35)

0.07

Sheet 55 N_335_340

N340 N341 N342 N343 N344 N345

MAINTENANCE
#

T&S-06/05

T&S-06/05

RAIL

TRAFFIC
DENSITY MGT

V-11-WV



TRACK LAYOUT

LINE SEGMENT

5470

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

VIRGINIA

T&S-06/05

#1	92NWF136P 92NWF136S 03NW141P 98NWF132P	92NWF136P 03NW141P	92NWF136P	92NWF136S	92NWF136P 92NWF136P 05NWF141P 92NWF136S	98NWF136P 04NWF141P 02NW141P
#2	91NWF132S 91NWF132P	92NWF136P	92NWF136S	92NWF136P 92NWF136S	92NWF136P	04NWF141P 04NWF141P 92NWF136P

→ 17.9(52.5#1)		→ 17.9(52.5#1)
← 57.1(22.5#2)	↔	← 57.1(22.5#2)

346.44-2DGO-88'(97)(97)
MERCER CO
OAKVALE CORP
346.62-2DGO-126'(89)(83)

MERCER CO.
DAKVALE CORP.

349.13-2DGO-84'(97')(90)

#1
#2

DENNY HILL
469565P

CR 219/6, WATERWAY 469566W

SR 112 469567D

OAKVALE CROSSOVER

BRINKLEY 469568K

SR 112

HOOT OWL 469571T

#1

Figure 1 is a cross-sectional diagram of a multi-layered structure. The diagram shows a central core with various layers and components labeled with numbers and letters. The layers are numbered 1 through 15, and the components are labeled with letters A through L. The diagram is a cross-section, showing the internal structure of the device. The layers are of varying thicknesses and are separated by interfaces. The components are distributed throughout the layers, with some located at the top and bottom surfaces and others embedded within the layers. The diagram is a technical drawing, likely for a patent application or a scientific publication.

30			25		
30			25		

+0.32	+0.01	+0.73	+0.55	+0.78	+0.53	0.00	+0.24	+0.52	+0.81	+0.40	+	-0.53	-0.46
-------	-------	-------	-------	-------	-------	------	-------	-------	-------	-------	---	-------	-------

VIRGINIA

N1355

T&S-06/0

#

→ 17.9(52.5#1

5470

3

1

GRADE

Sheet 55 N_350_355

VIRGINIA

N360

— 5338'

T&S-06/05

Q8NWE136D

→ 17.9(52.6#1)
← 57.2(22.5#2)

(ADA)

#1
#2

5470

#1

#2

(25) (25)

33

GRADE

ROANOKE TO BLUEFIELD

VIRGINIA

- 4999'

	#1	#2
99NWF 136P	99NWF 132P	99NWF 132P
89NWF 132P	99NWF 136P	80W 132S
	80W 132S	04NWF 141P
	04NWF 141P	89NWF 132P

RD

5470

Group	n
6.0L	1
4.3R	4

2.00	1.50
------	------

#2

2.00	1.50
------	------

+1.60

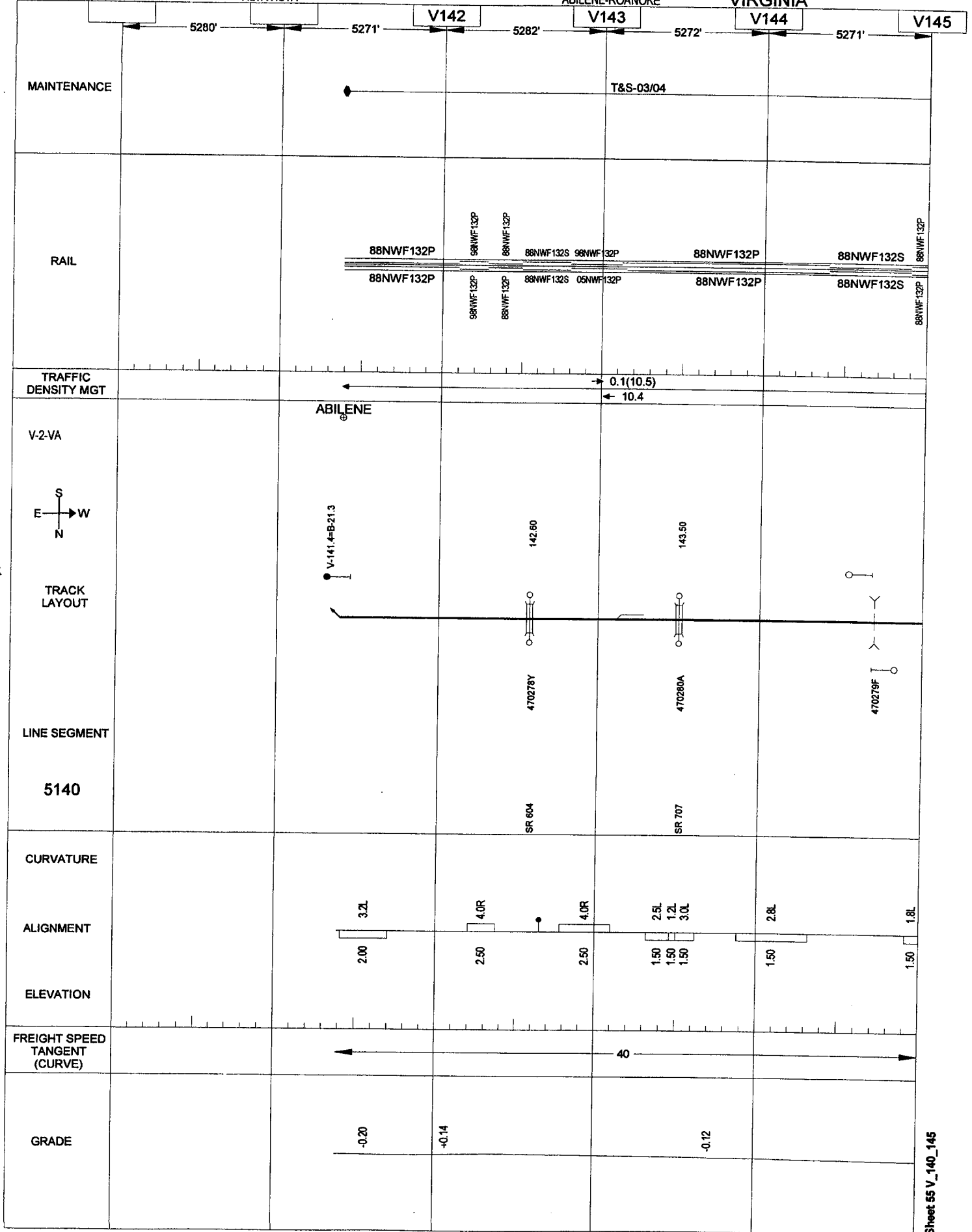
04/12/2006

089

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



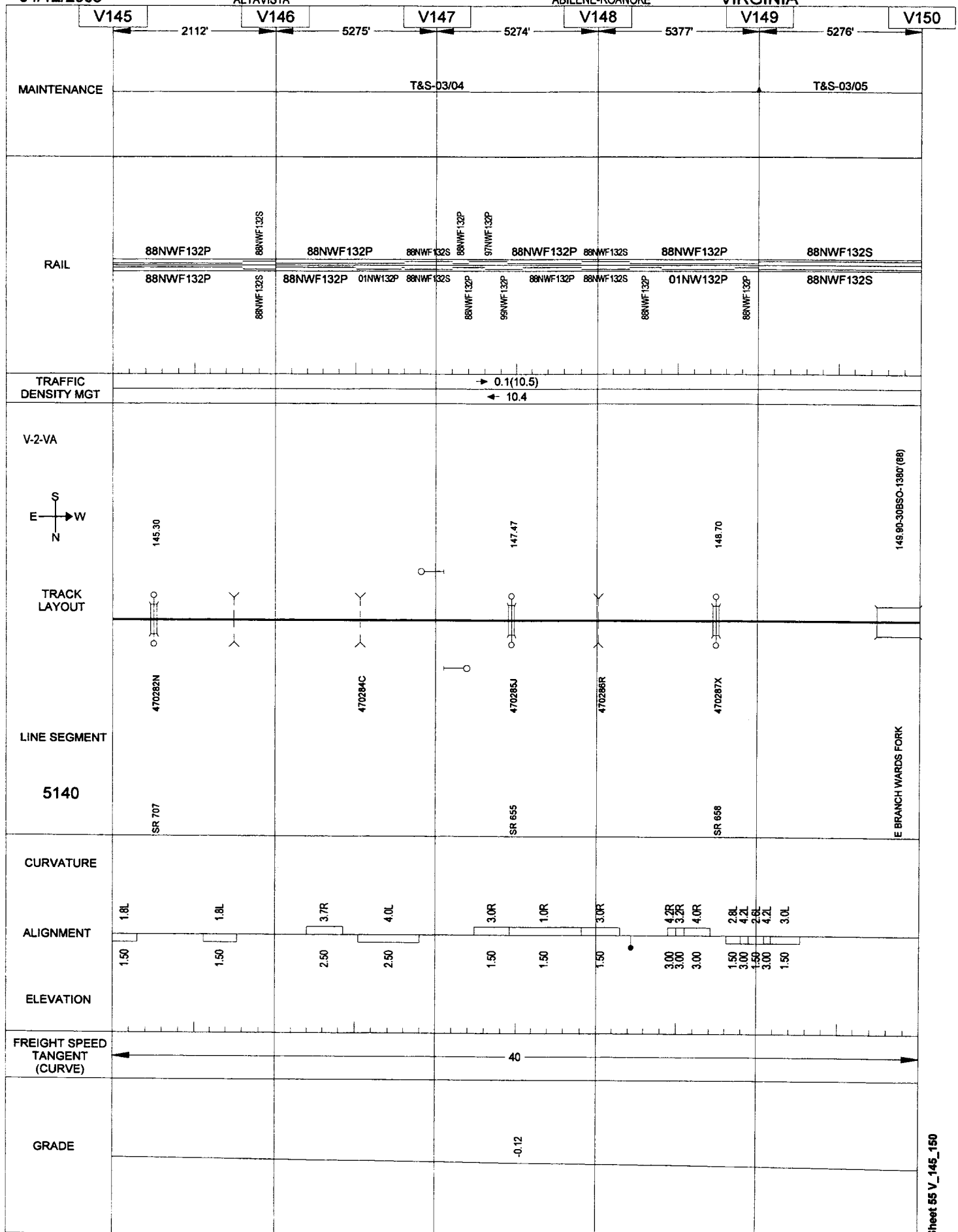
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090

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



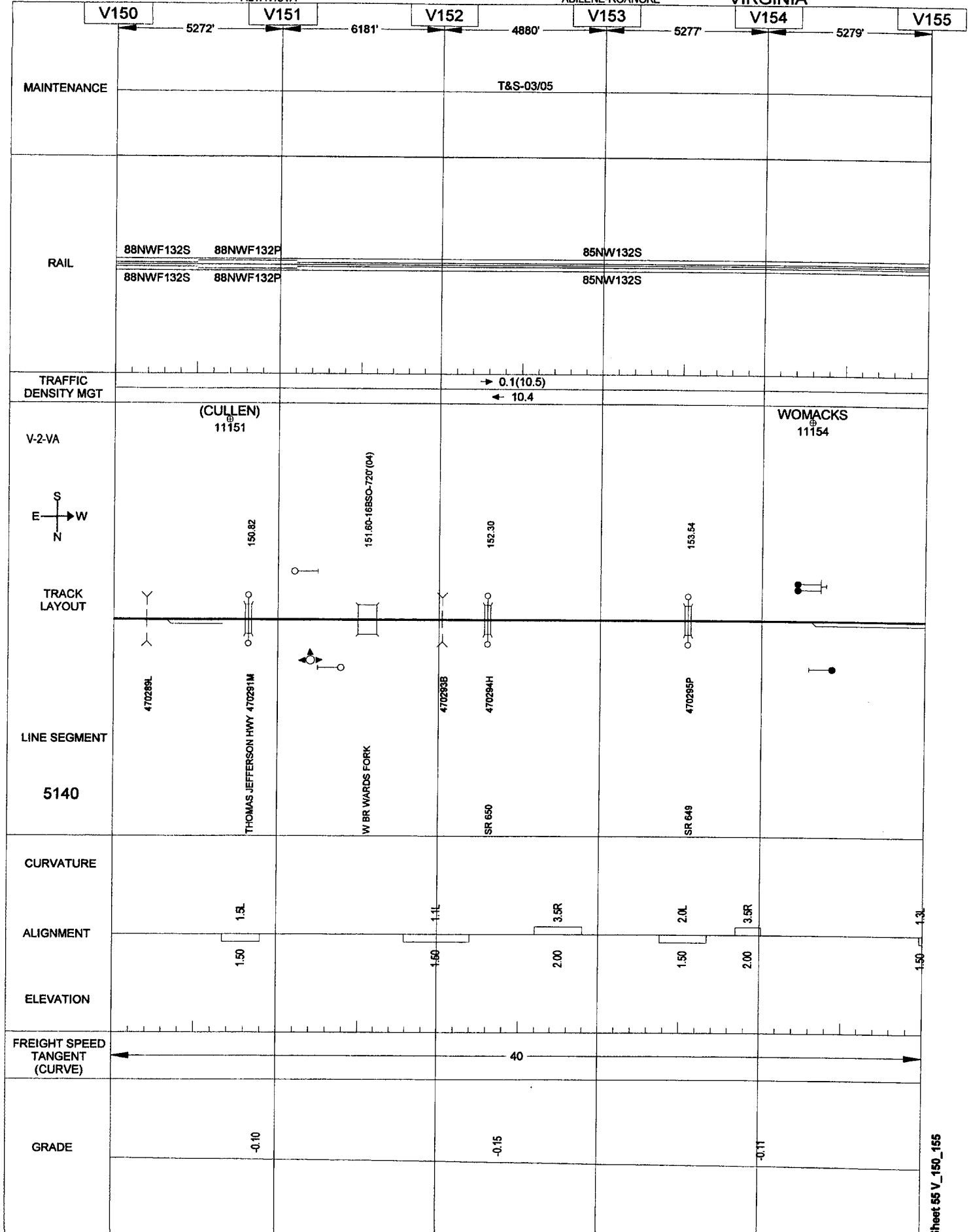
04/12/2006

091

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



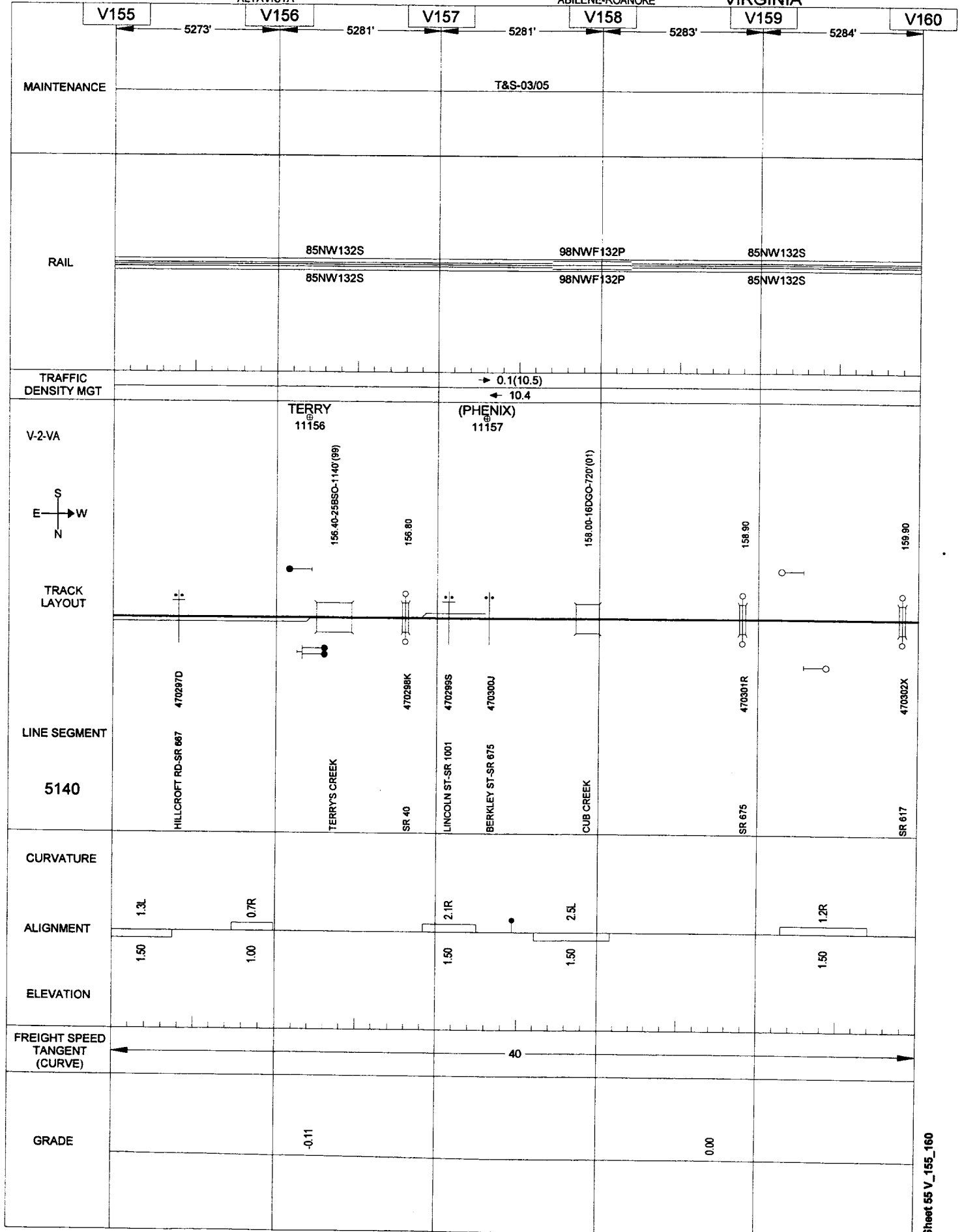
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092

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



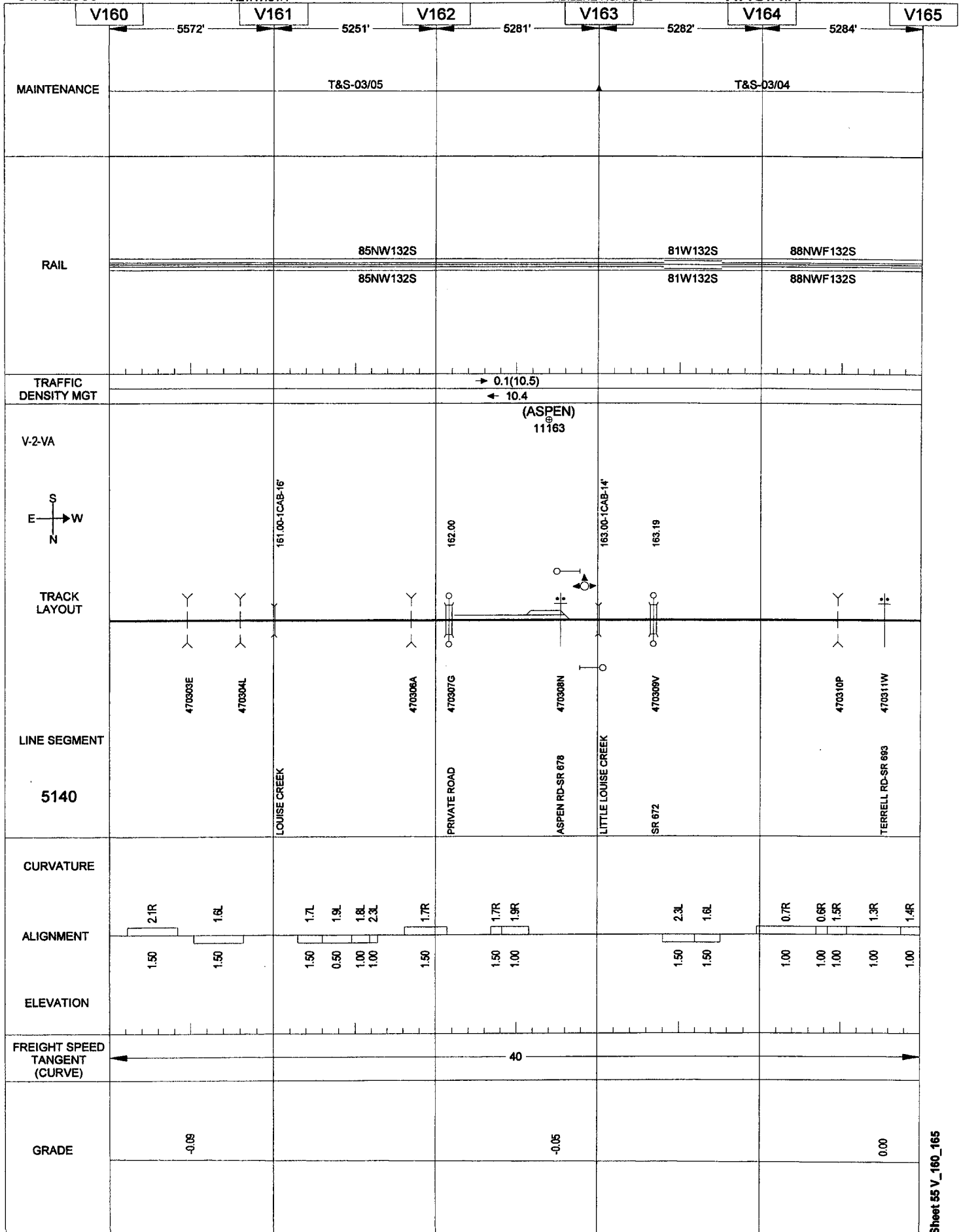
04/12/2006

093

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



VIRGINIA

1470

T&S-06/03
S-02/05

04NM1985

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

► 29(242)

RED HILL

1.5

04670R

DURHAM DISTRICT

—

8

40
(35)

3

Sheet 55 V_165_170

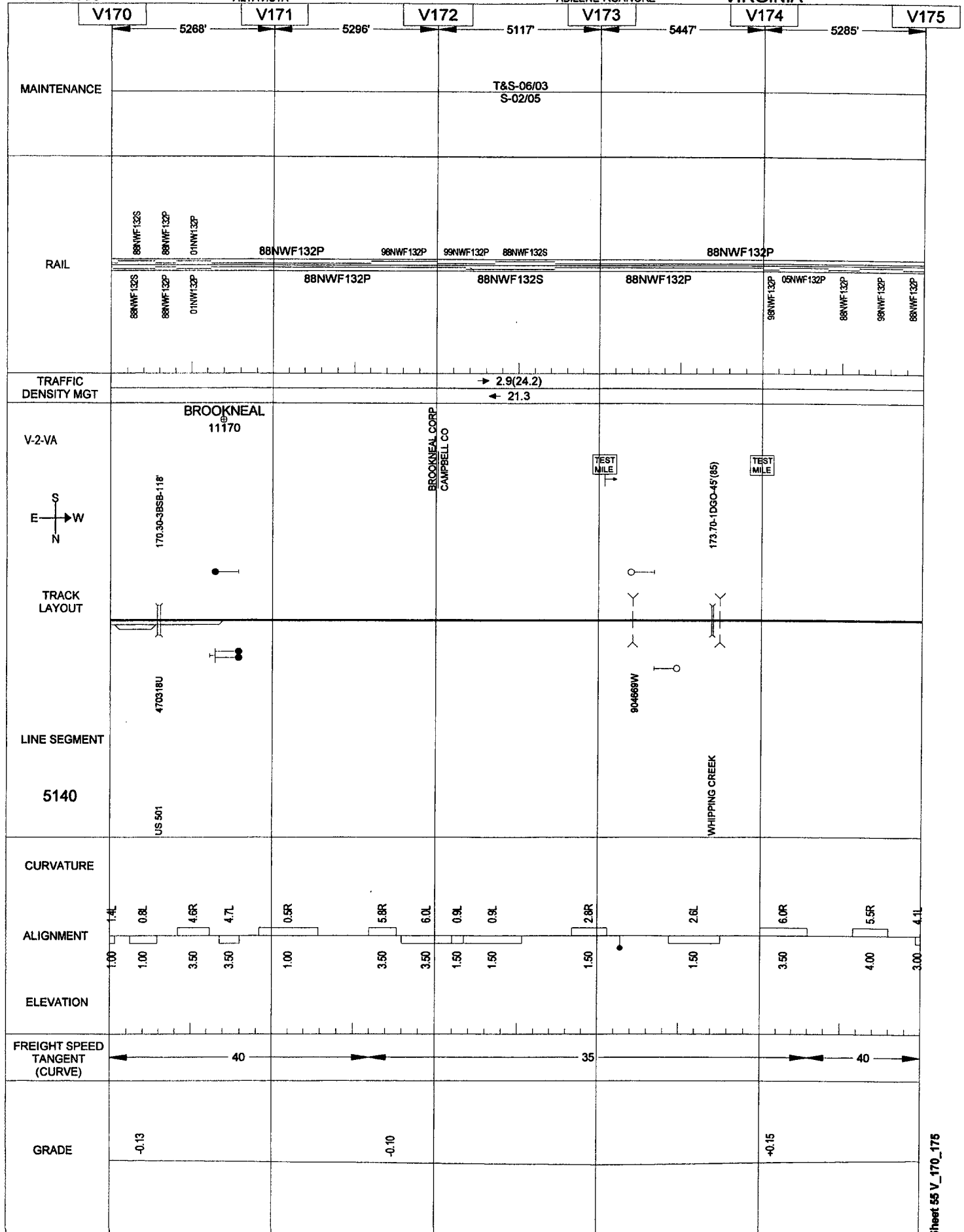
04/12/2006

095

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



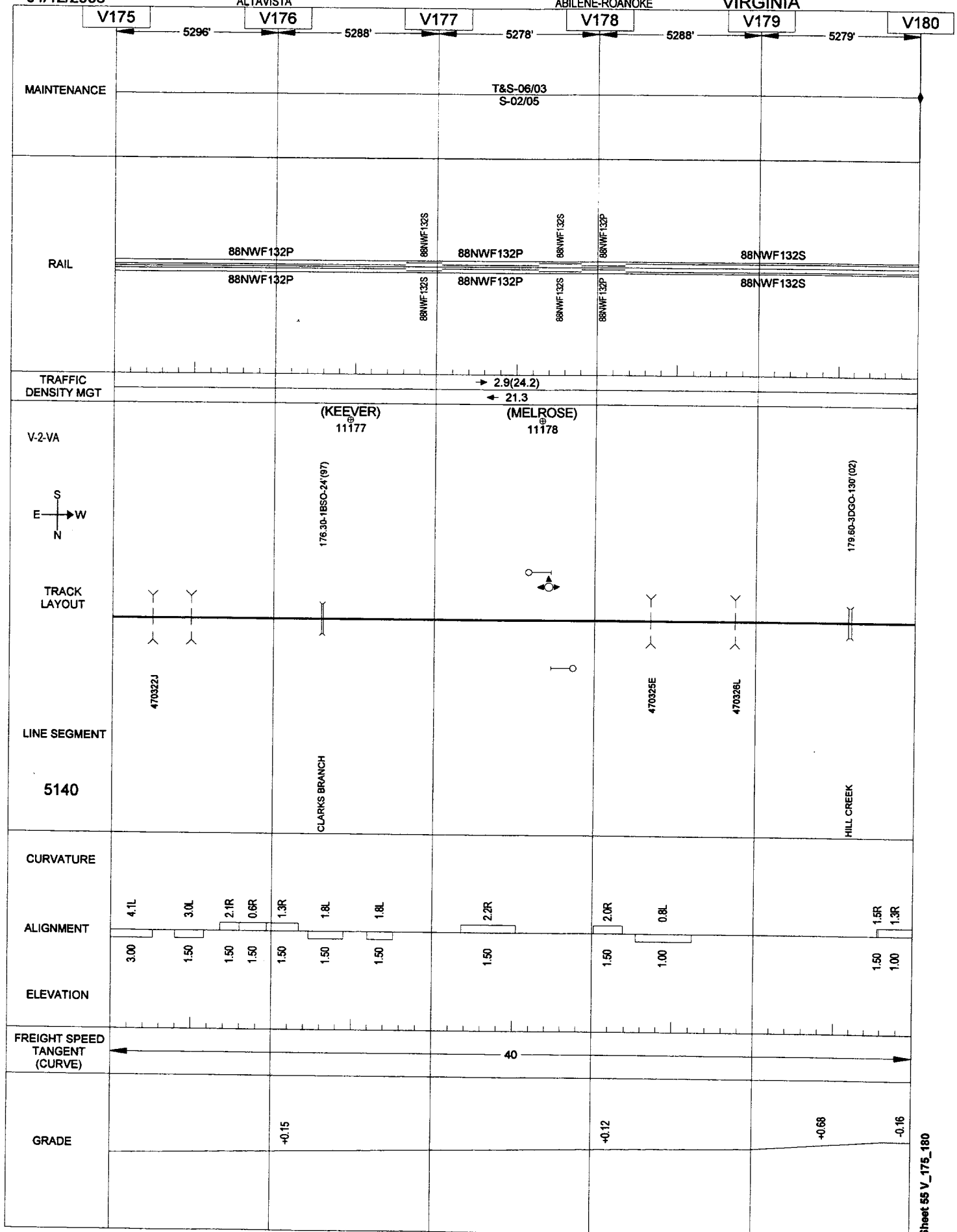
04/12/2006

096

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



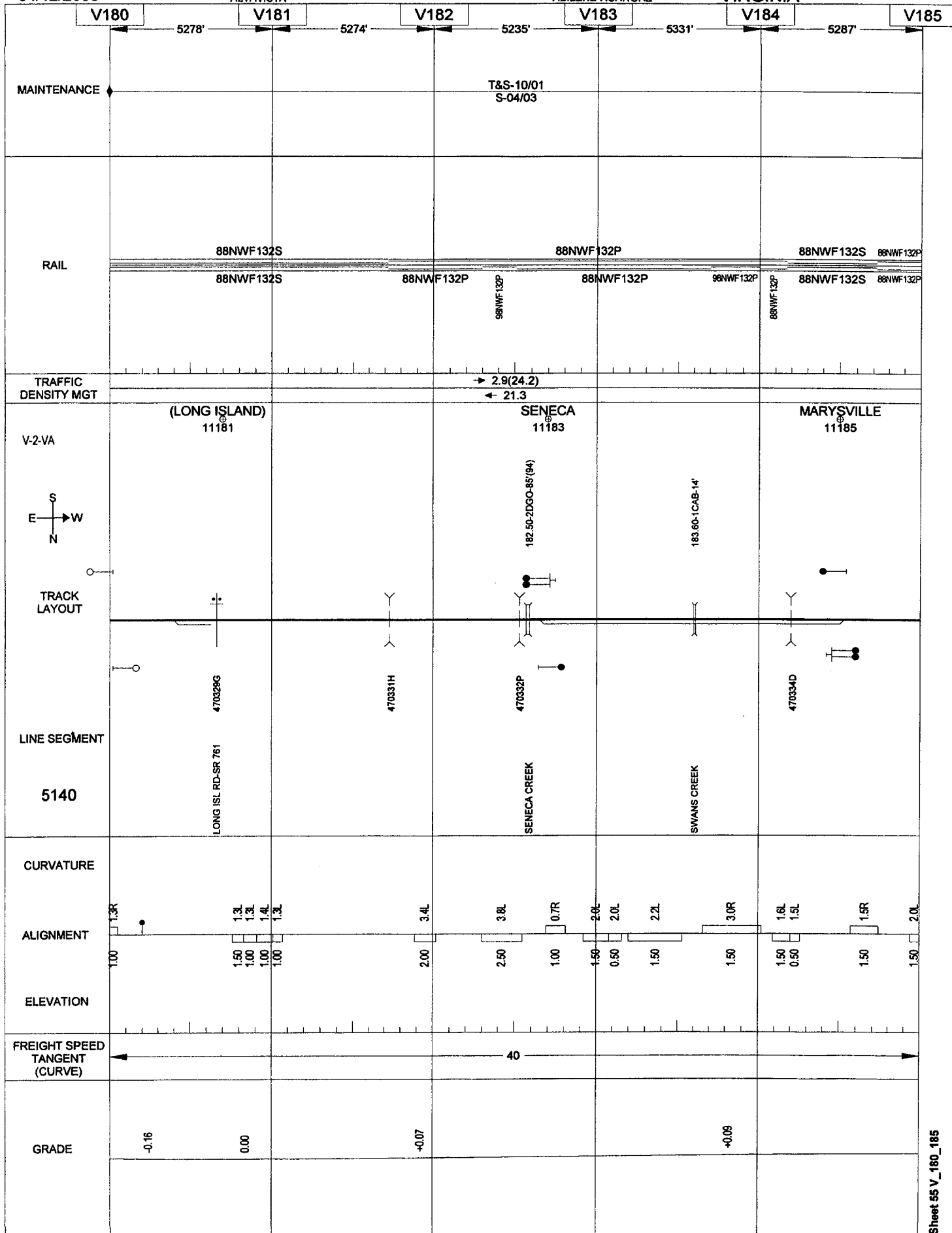
04/12/2006

097

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



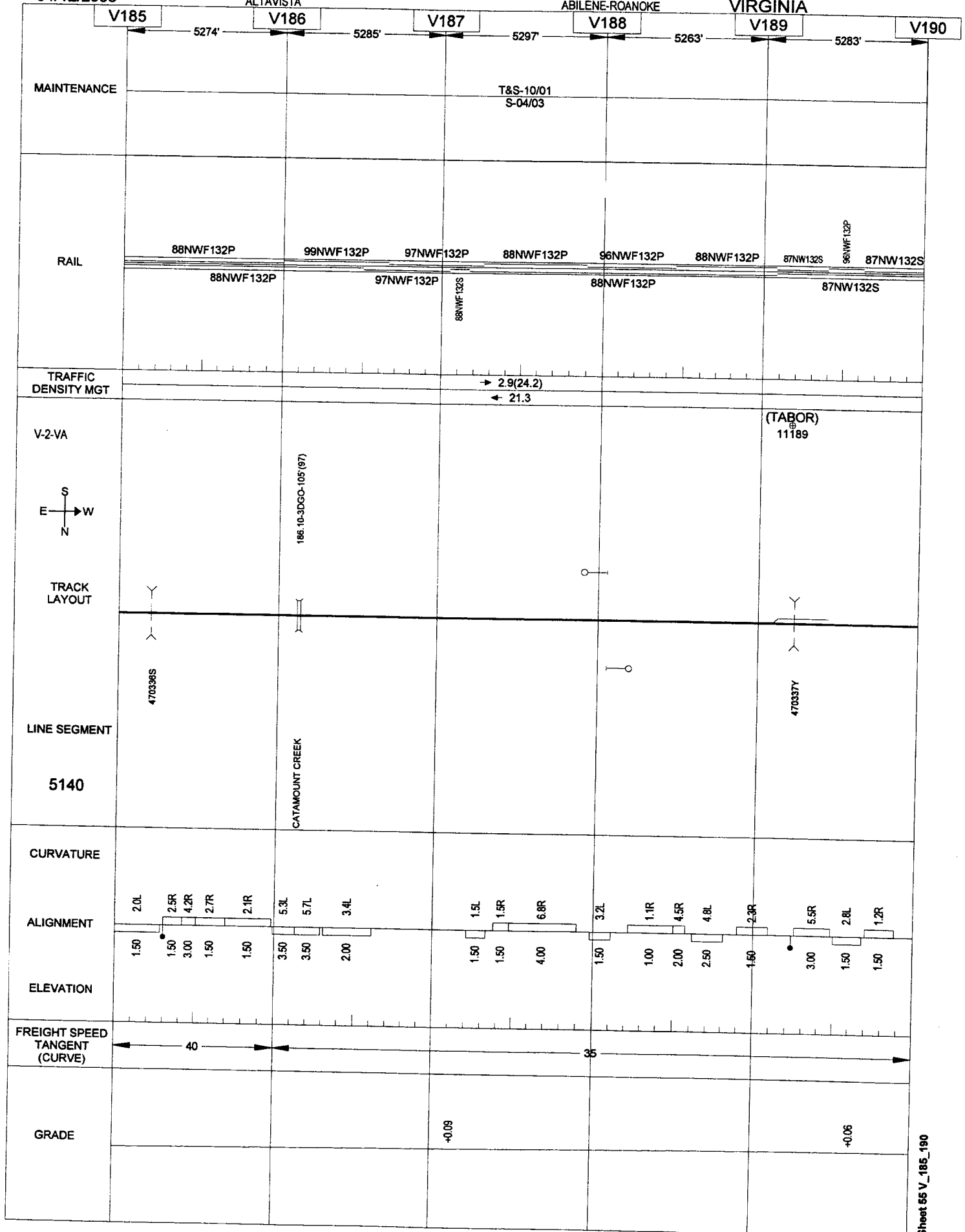
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ALTAVISTA

098

ABILENE-ROANOKE

VIRGINIA



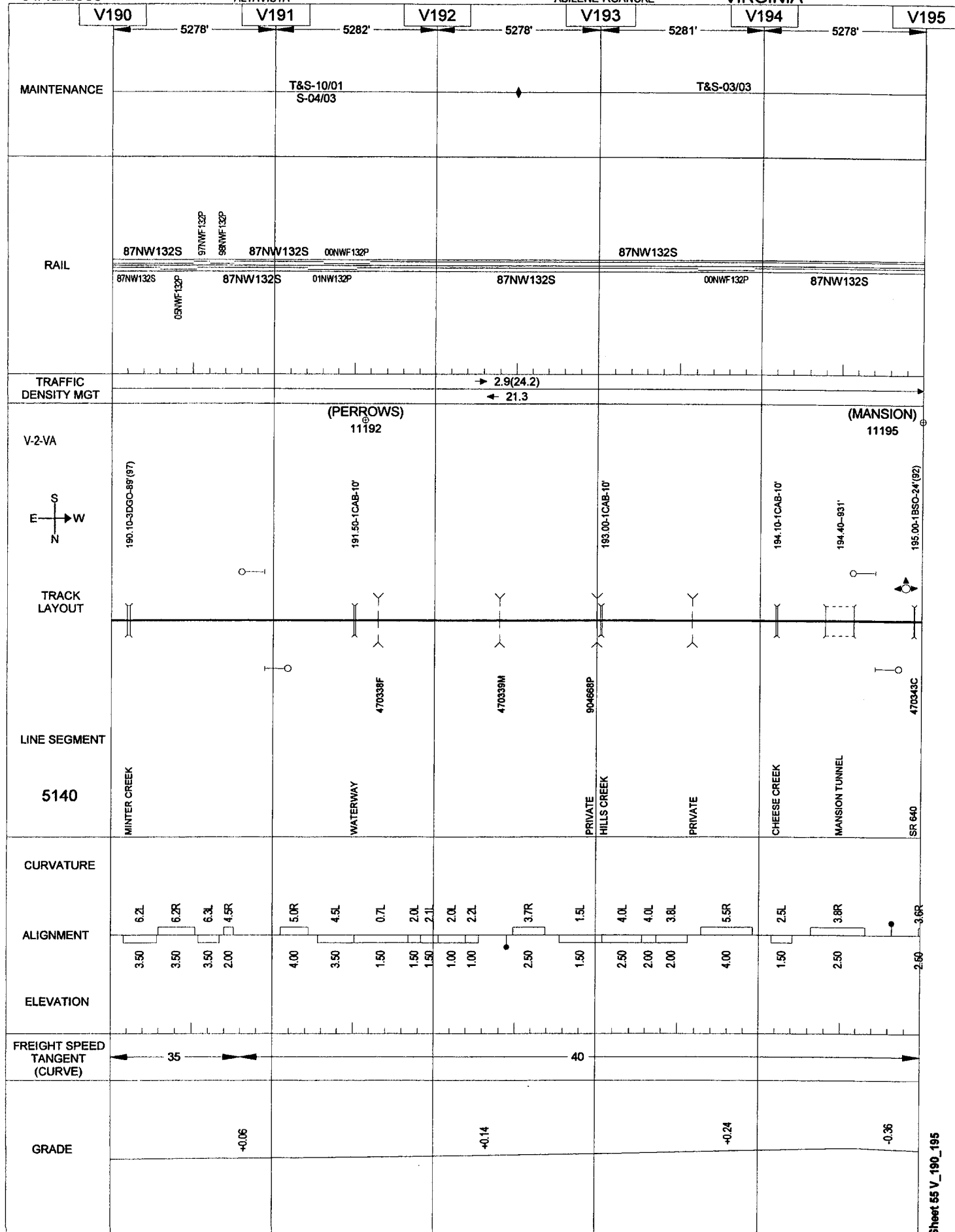
04/12/2006

099

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



04/12/2006

ALTAVISTA

100

ABILENE-ROANOKE

VIRGINIA

V195

V196

V197

V198

V199

V200

5280'

5278'

5268'

5291'

5275'

MAINTENANCE

T&S-03/03

T&S-10/01
S-04/03

RAIL

87NW132S

87NW132S

05NWF132P

87NW132S

TRAFFIC
DENSITY MGT→ 2.9(28.2)
← 25.3

V-2-VA

(MANSION)
11195DOGWOOD
11198ALTAVISTA
11199S
E → W
NTRACK
LAYOUT

LINE SEGMENT

5140

185.12

196.00-2DGO-140'(92)

197.50-1CBB-12'

199.00-1BSO-50'

199.40

199.50

SR 640

470344J

470345R

ROSS LABORATORIES
470347E

15

470350M

470351U

470352B

470354P

470355W

470357K

470360T

SR 640

OTTER RIVER

PRIVATE

PRIVATE

ROSS LABORATORIES

15

PRIVATE

PRIVATE WATERWAY

PRIVATE OVERHEAD PIPELINE

PRIVATE OVERHEAD PIPELINE

PEDESTRIAN BRIDGE

PRIVATE

PEDESTRIAN BRIDGE

SR 688

OVERHEAD WALKWAY

BUS US 29

SOU MAIN MP 196.00

CURVATURE

ALIGNMENT

3.6R
2.50
1.50
2.1L
1.50
2.6L
1.50
3.0L3.8L
2.50
2.00
3.2L1.3L
1.502.0R
1.50
1.50
3.0R
2.50
3.5R3.8R
2.50
1.00
0.4R
2.00
1.00
3.0R
1.00
0.4R

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

40

GRADE

-0.13

-0.07

-0.06

-0.16

-0.24

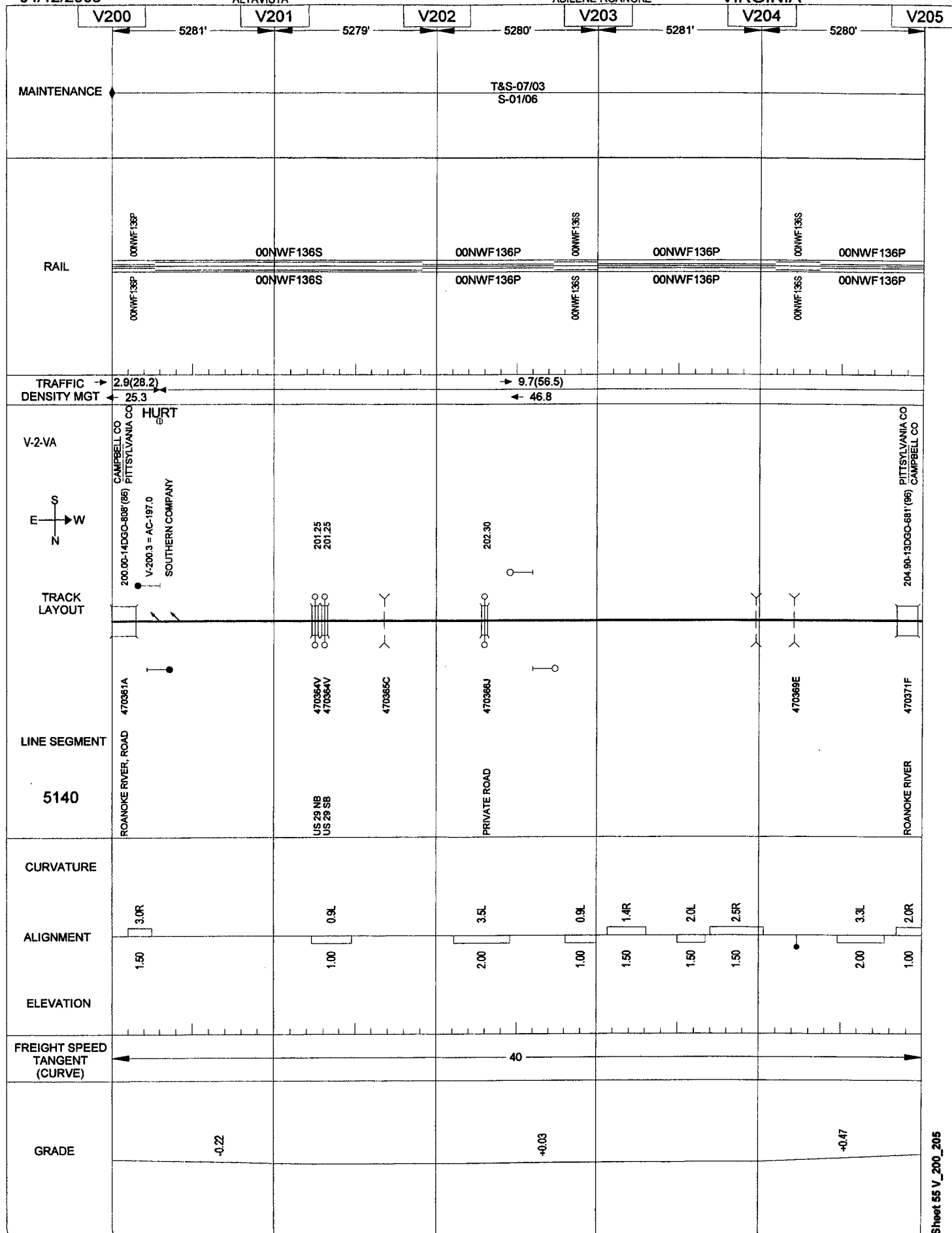
04/12/2006

101

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



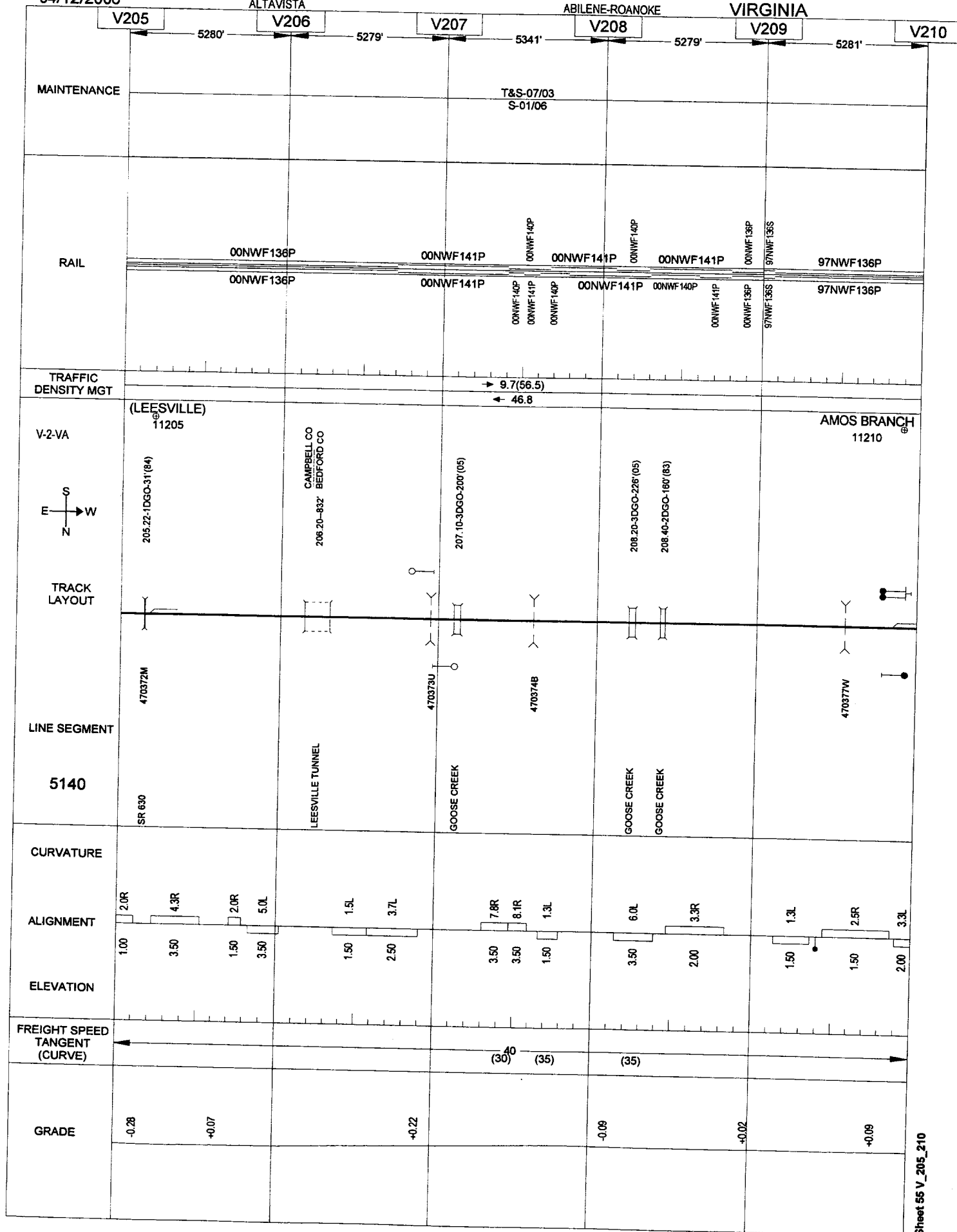
04/12/2006

102

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



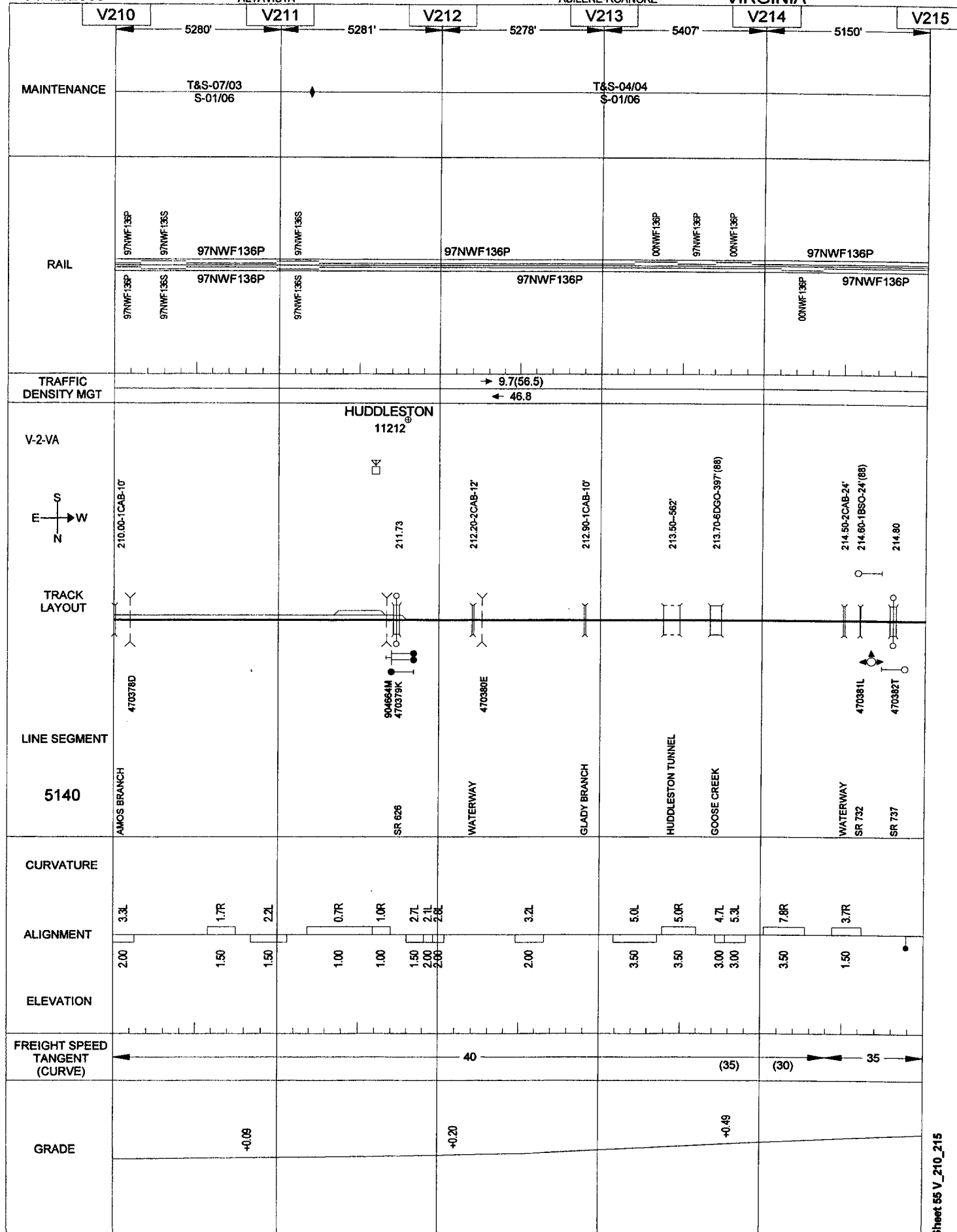
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103

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



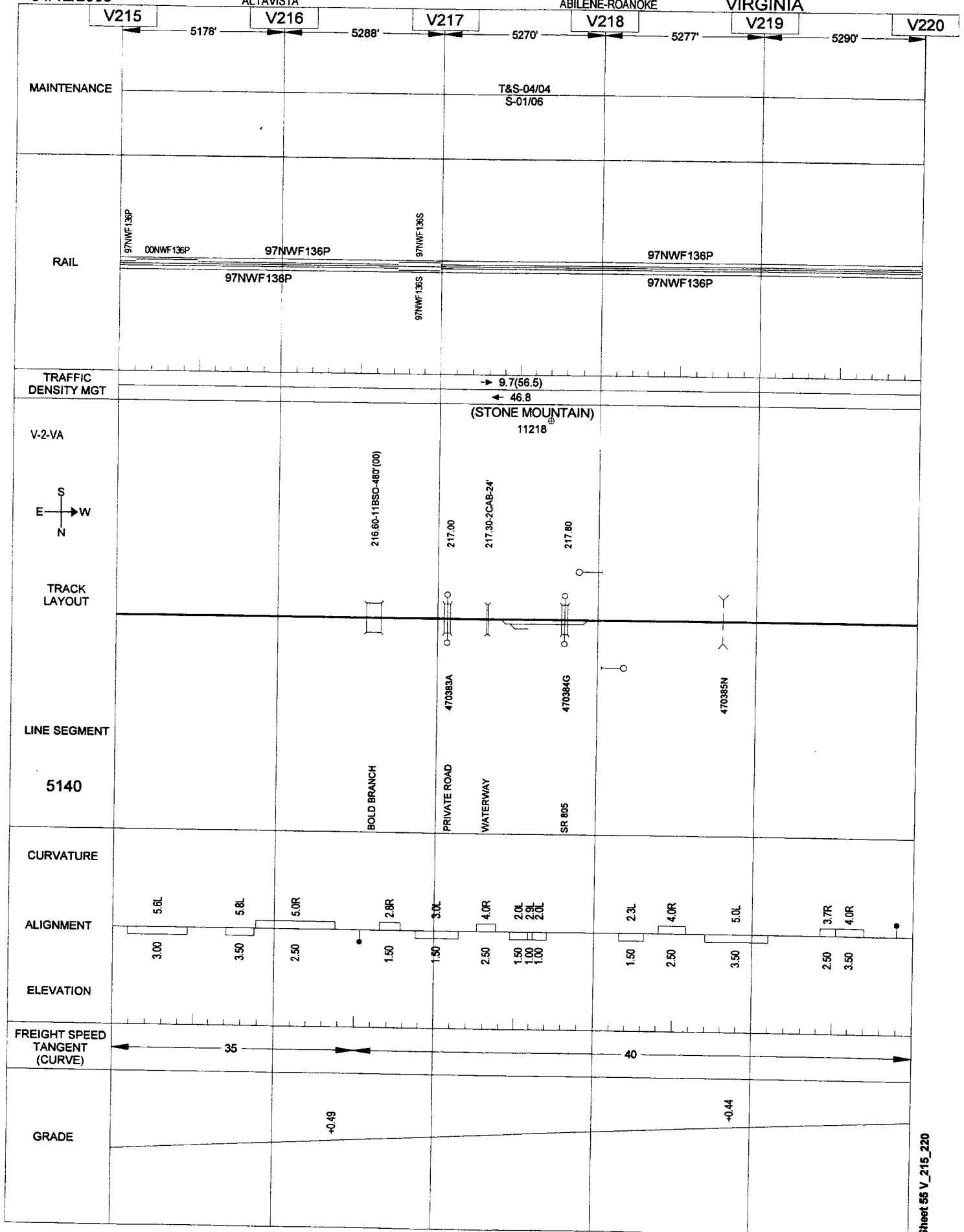
04/12/2006

104

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



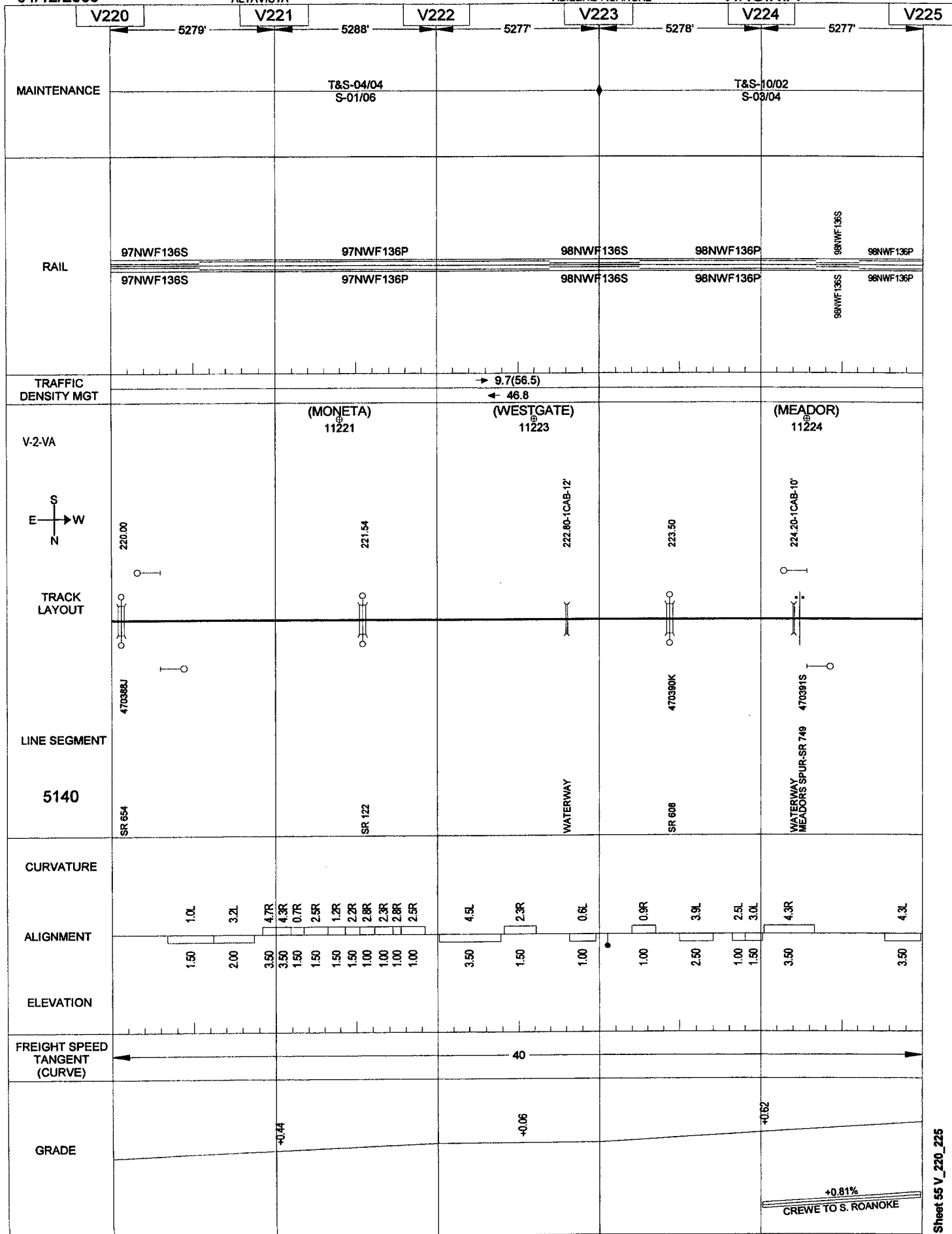
04/12/2006

ALTAVISTA

105

ABILENE-ROANOKE

VIRGINIA



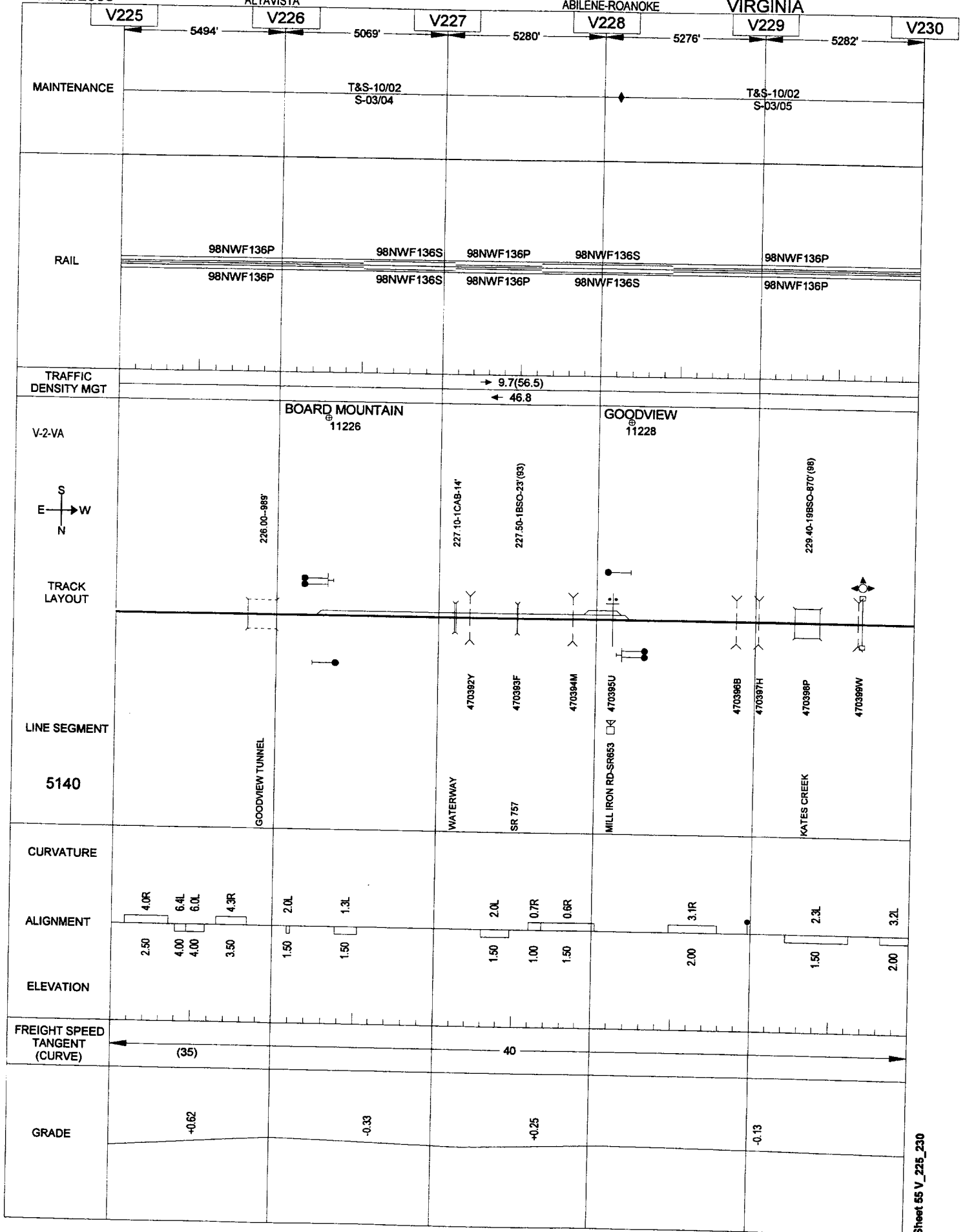
04/12/2006

106

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



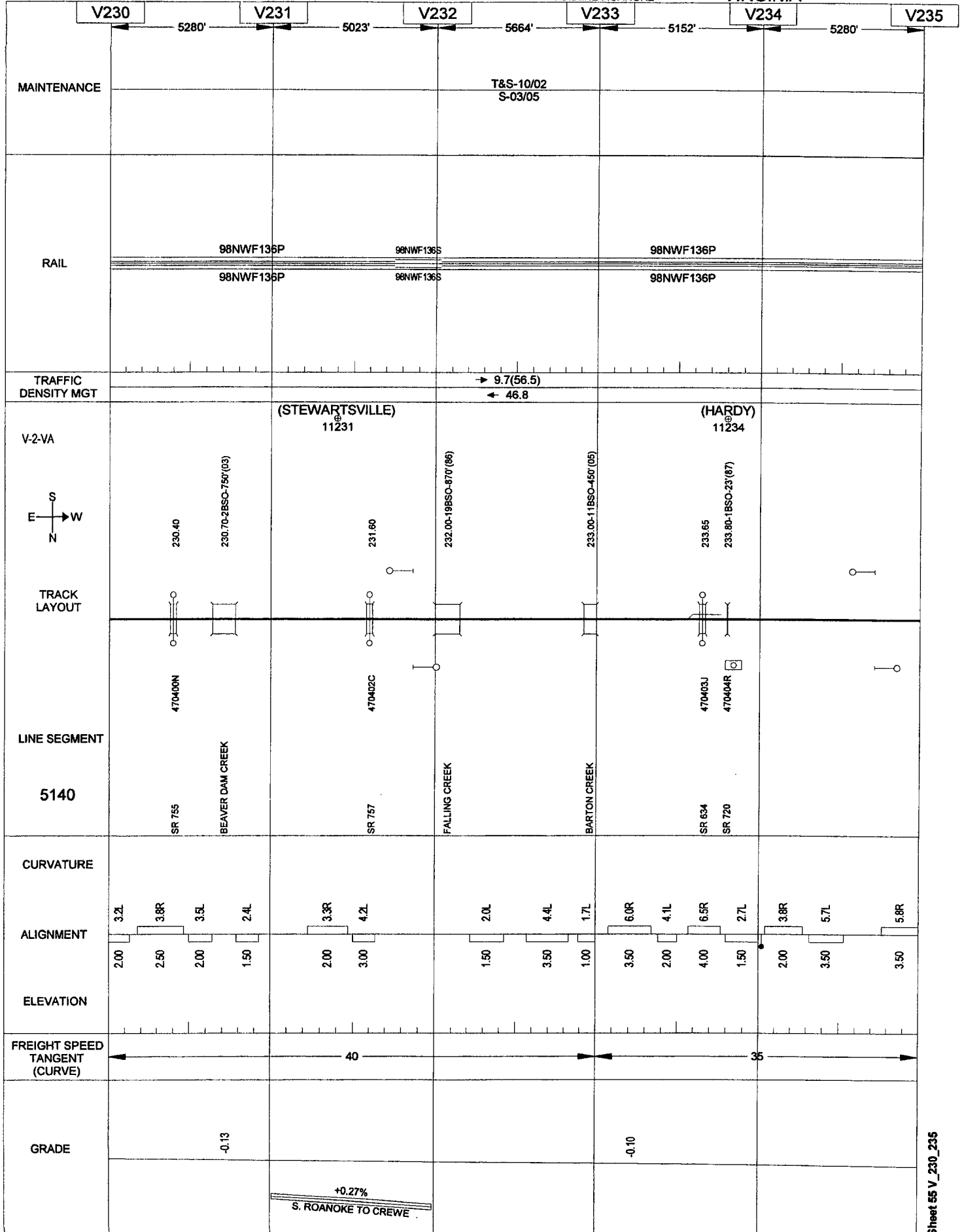
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107

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



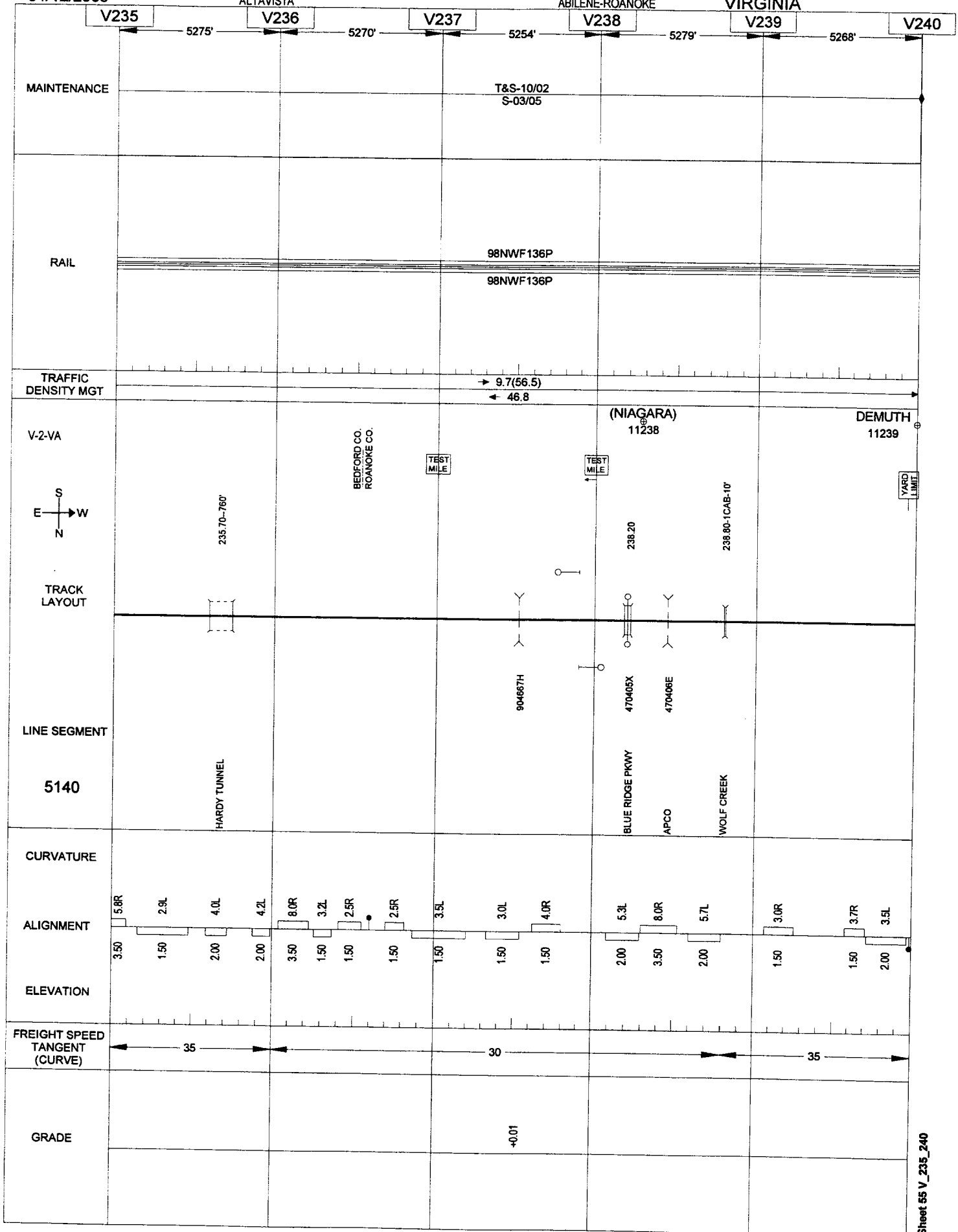
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108

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



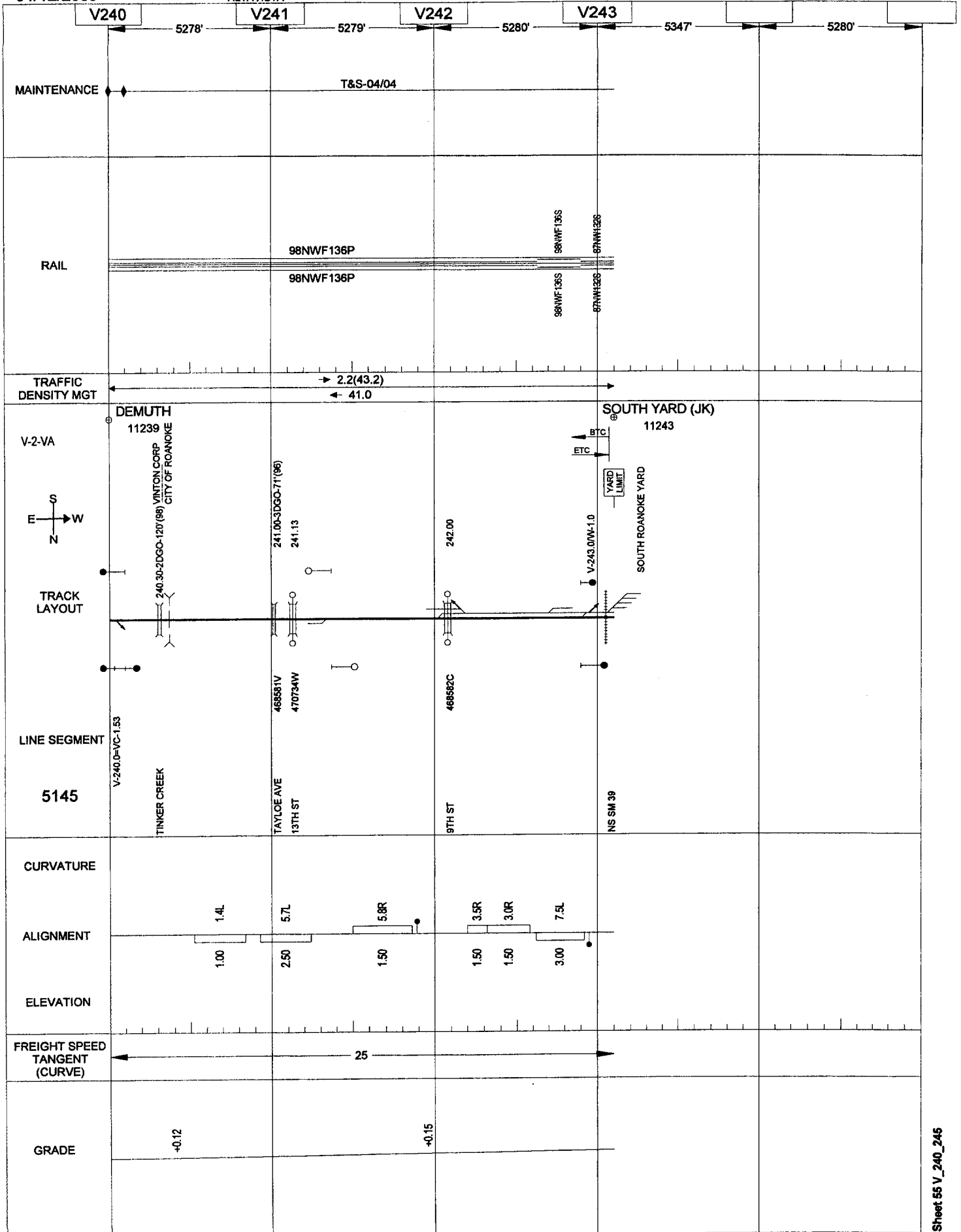
04/12/2006

109

ALTAVISTA

ABILENE-ROANOKE

VIRGINIA



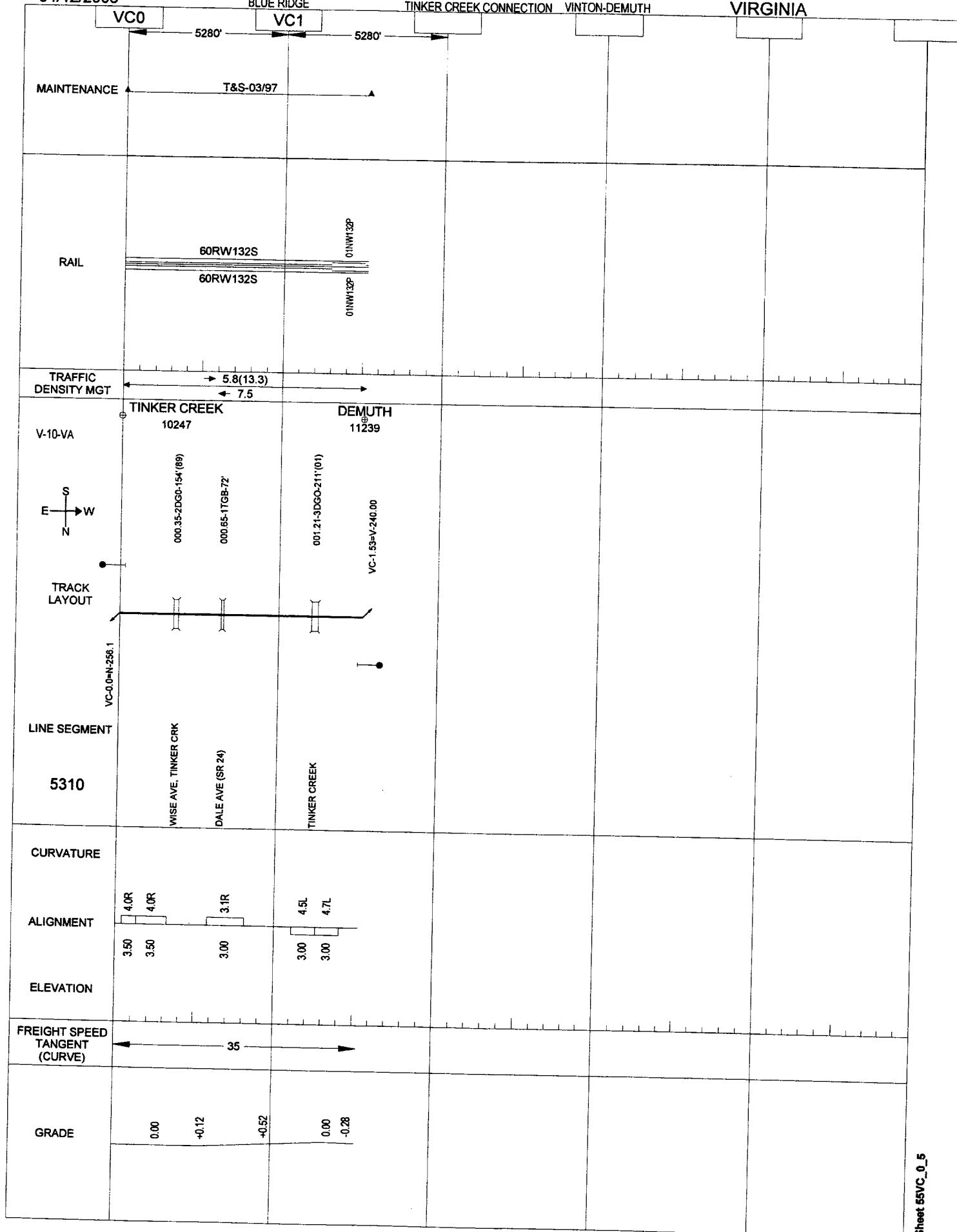
04/12/2006

BLUE RIDGE

110

TINKER CREEK CONNECTION VINTON-DEMUTH

VIRGINIA



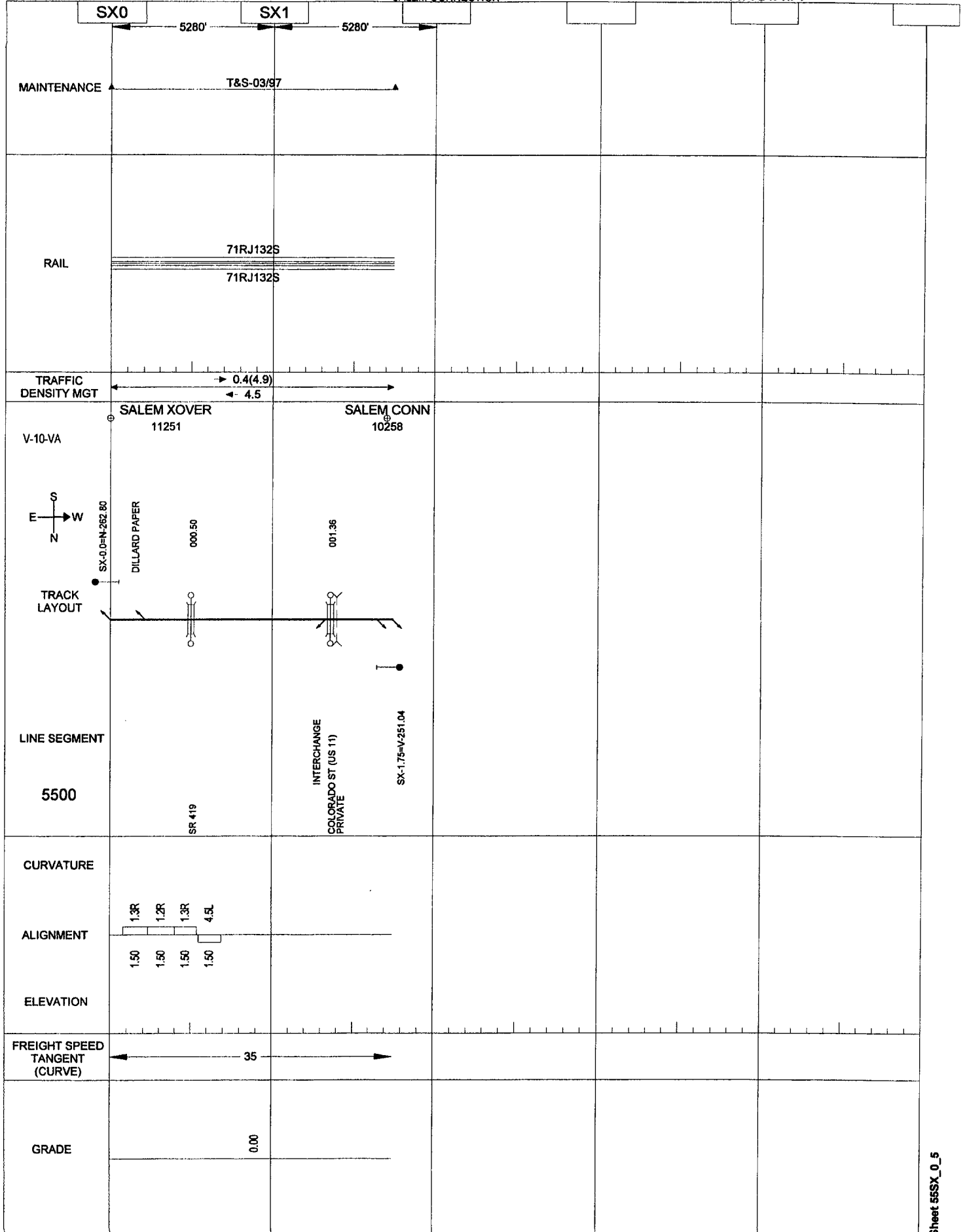
04/12/2006

CHRISTIANSBURG

111
SALEM CONNECTION

SALEM

VIRGINIA



04/12/2006

CHRISTIANSBURG

112

GLENVAR CROSSOVER

GLENVAR

VIRGINIA

GX0

5280'

MAINTENANCE

RAIL

*RW132S

*RW132S

TRAFFIC
DENSITY MGT

0.1(0.8)

0.7

VN

11252

V-10-VA

S
E — W
N

TRACK
LAYOUT

GX-0.28=V-253.32

GX-0.0=N-287.28

LINE SEGMENT

5510

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

35

GRADE

0.00

04/12/2006

WHITETHORNE

113

ROANOKE-NARROWS

VIRGINIA

V244

V245

5278'

5279'

5280'

5347'

5280'

MAINTENANCE

T&S-04/04

RAIL

80NW100S

80NW100S

80W100S

88RWF132S

80W100S

88RWF132S

TRAFFIC
DENSITY MGT

→ 0.0(39.5)

← 39.5

V-2-VA

SOUTH YARD (JK)
11243

BTC
ETC

S
E → W
N

YARD
LIMIT

243.11

243.19

243.55

243.75

244.35

TRACK
LAYOUT

468587L

468588T

468589A

LINE SEGMENT

5480

WALNUT ST
JEFFERSON ST

FRANKLIN RD
1-581

MAIN ST

CURVATURE

ALIGNMENT

ELEVATION

4.5R

3.6R

3.7R

3.6R

3.7R

5.2R

6.0L

1.9L

5.7L

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

FREIGHT SPEED
TANGENT
(CURVE)

15

GRADE

+0.27

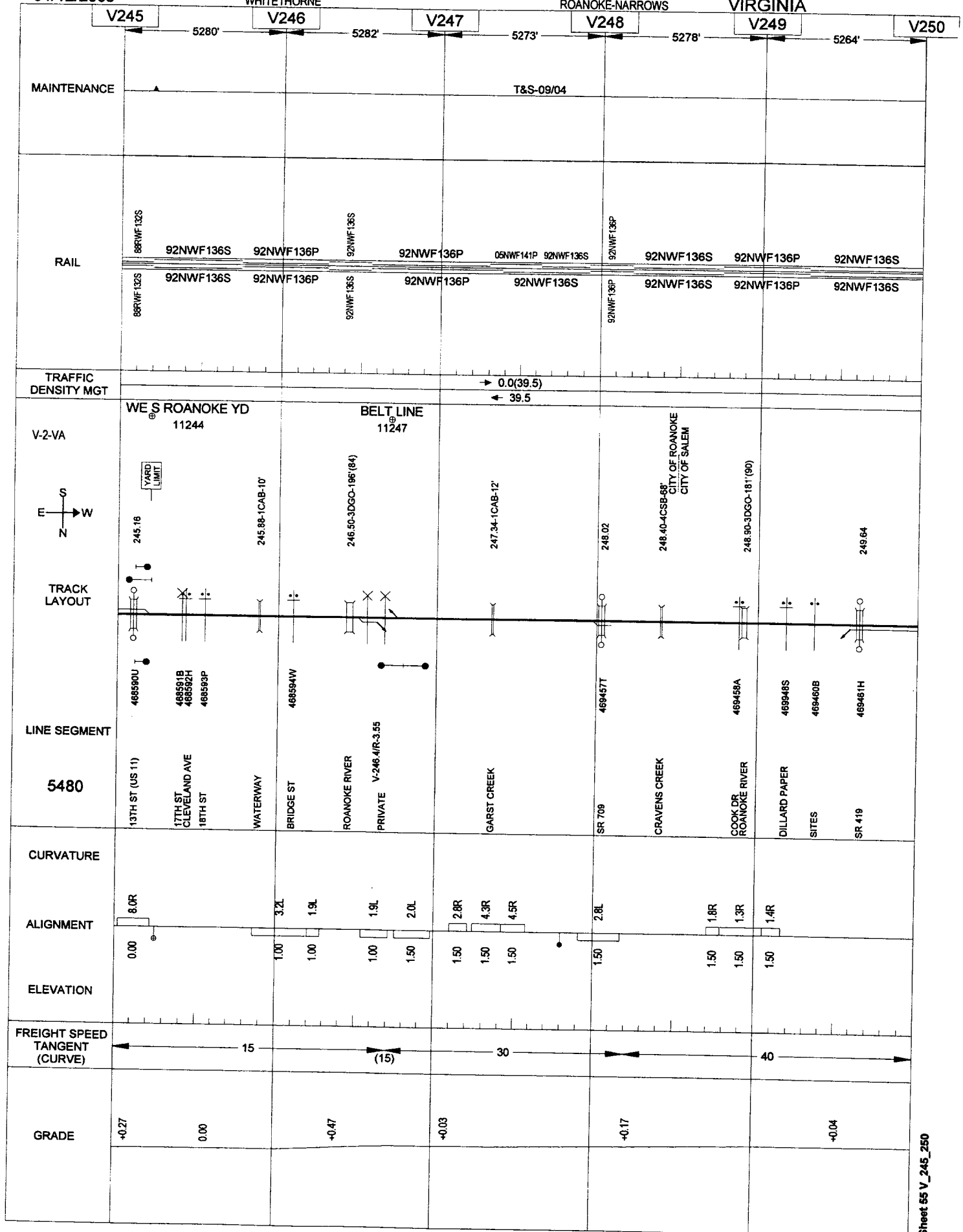
04/12/2006

114

WHITETHORNE

ROANOKE-NARROWS

VIRGINIA



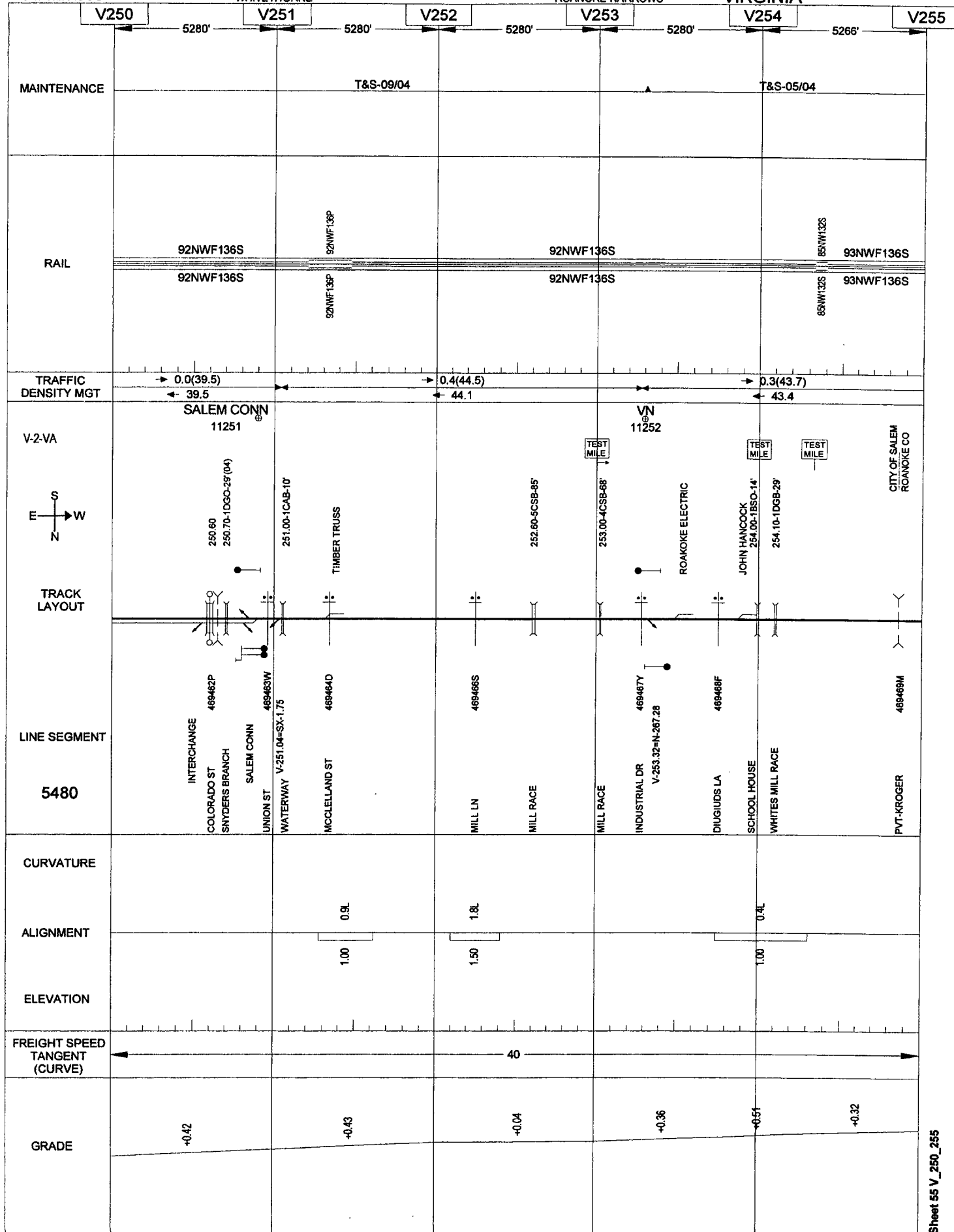
04/12/2006

115

WHITETHORNE

ROANOKE-NARROWS

VIRGINIA



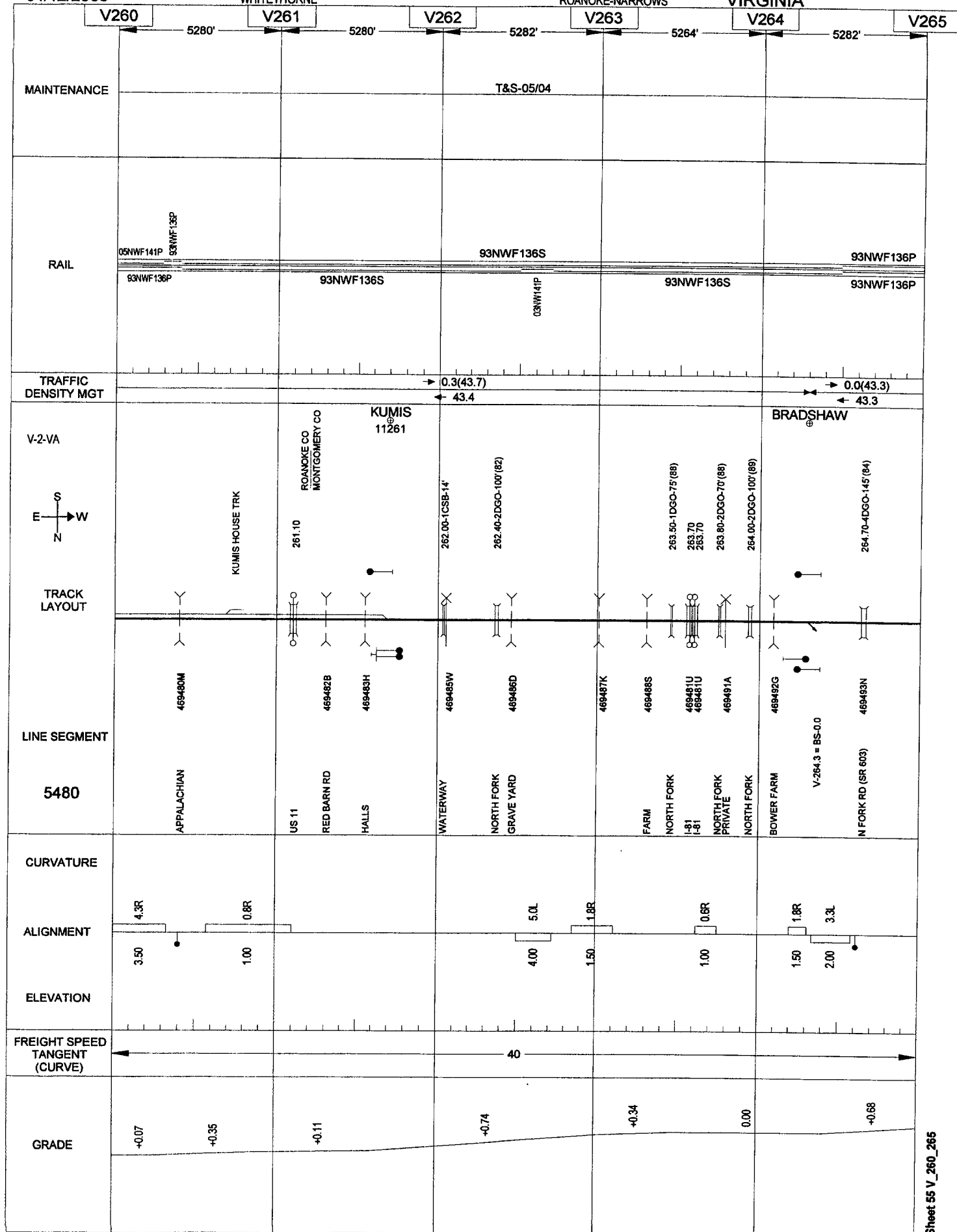
04/12/2006

WHITETHORNE

117

ROANOKE-NARROWS

VIRGINIA



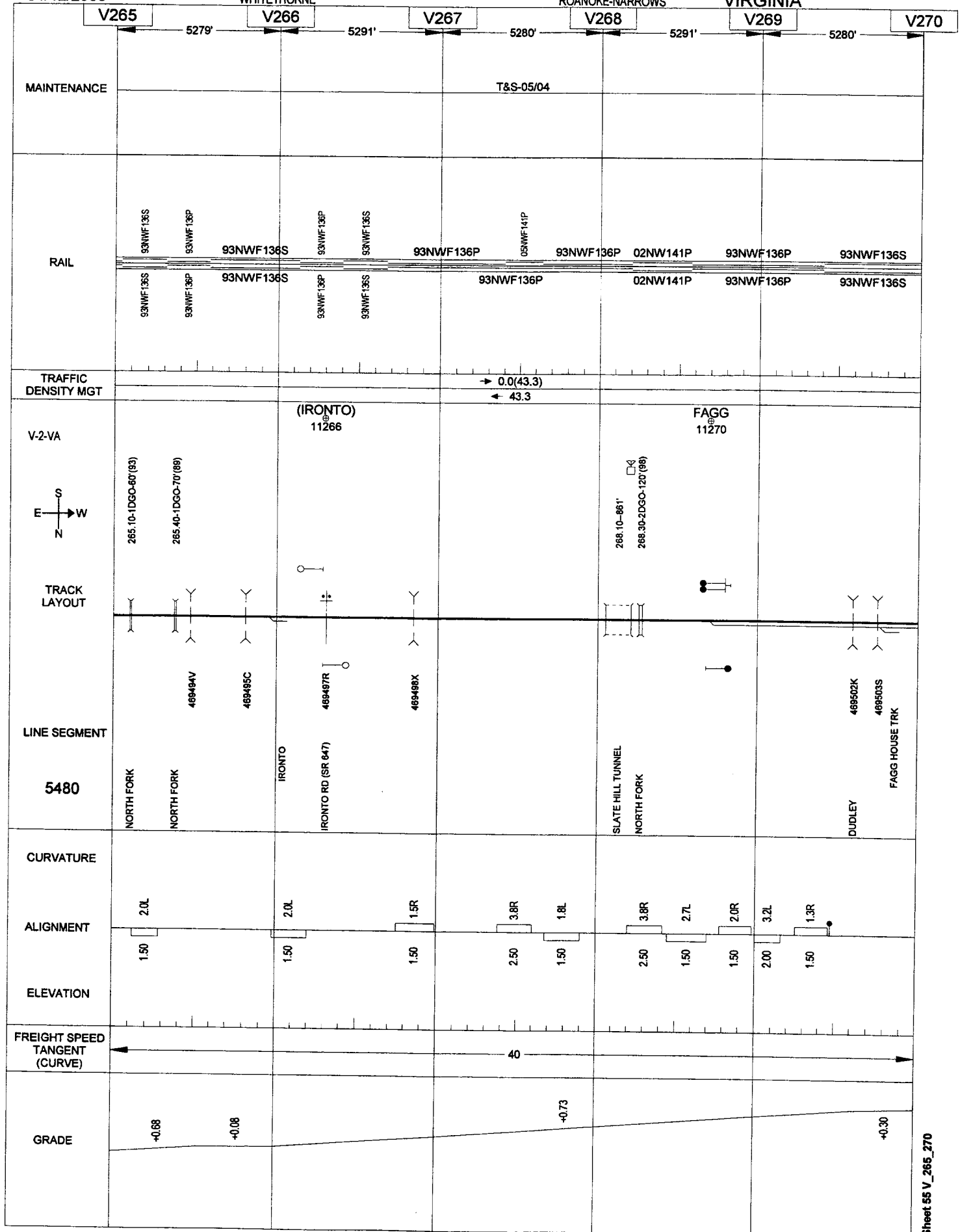
04/12/2006

118

WHITETHORNE

ROANOKE-NARROWS

VIRGINIA



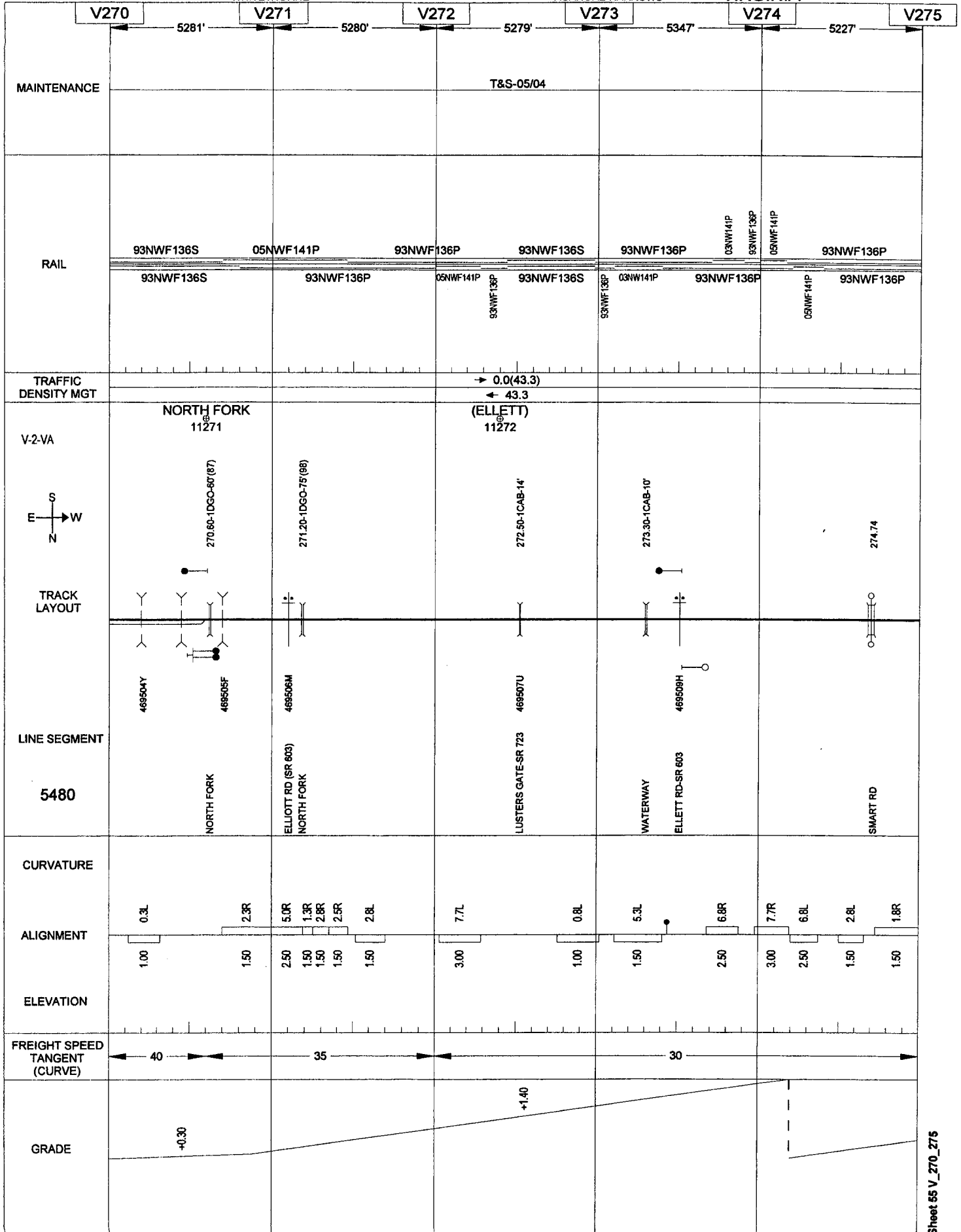
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119

WHITETHORNE

ROANOKE-NARROWS

VIRGINIA



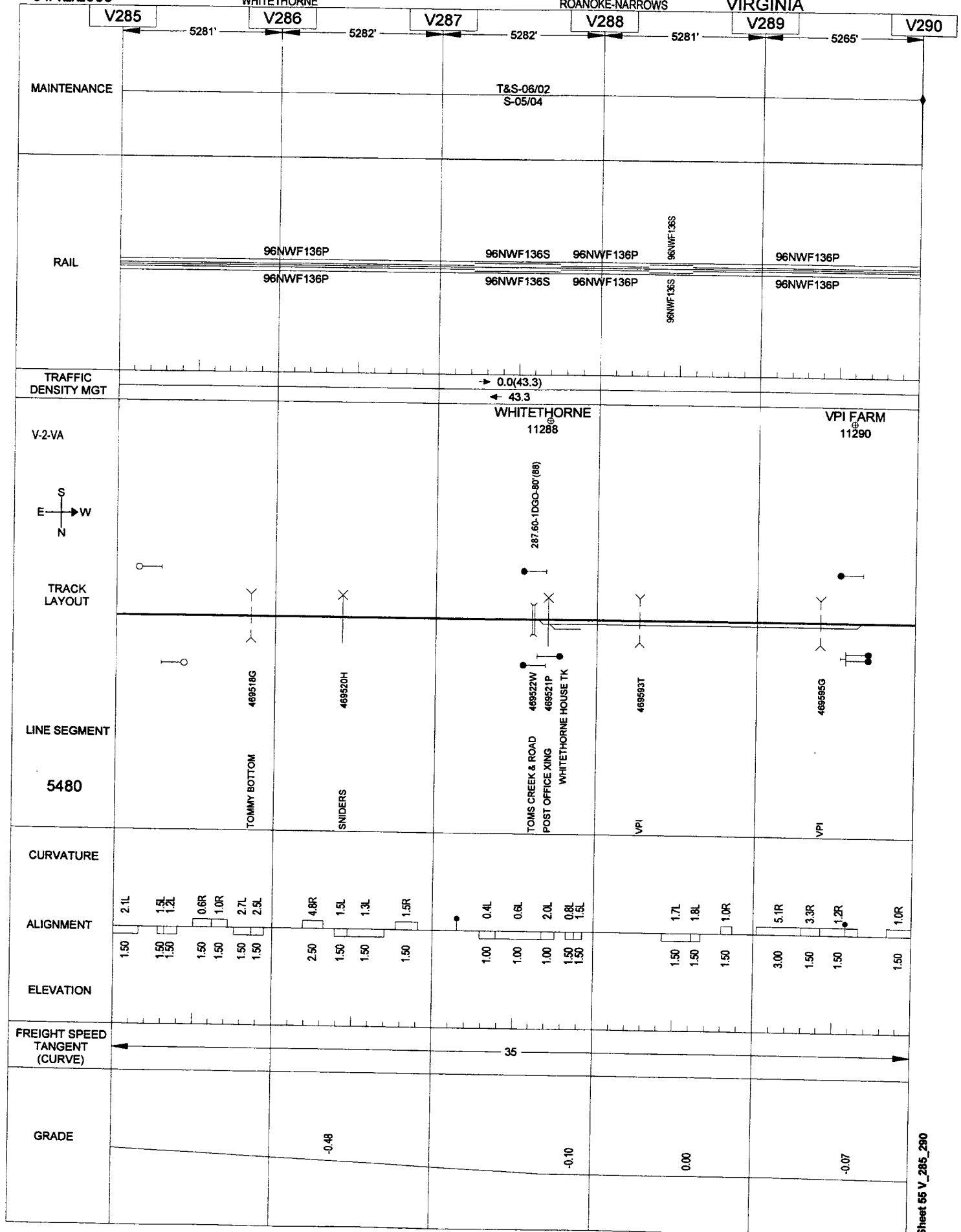
04/12/2006

122

WHITETHORNE

ROANOKE-NARROWS

VIRGINIA



WHITETHORNE

123

ROANOKE-NARROWS

VIRGINIA

V290

V291

V292

V293

V294

V295

- 5172' -

- 5396'

5289'

— 5280

— 5312

MAINTENANCE

T&S-09/05

RAIL

96NWF136P

96NWF136S

87NW132S

93NWF136S

93NWF136P

96NWF136P

96NWF136S

87NW132S

36S	03NW141P
-----	----------

93NWF136P

TRAFFIC
DENSITY MGT

→ 0.0(43.3)
← 43.3

V-2-VA

TRACK LAYOUT

LINE SEGMENT

5480

CURVATURE

ALIGNMENT

ELEVATION

**FREIGHT SPEED
TANGENT
(CURVE)**

— 35

GRADE

-0.07

-0.10

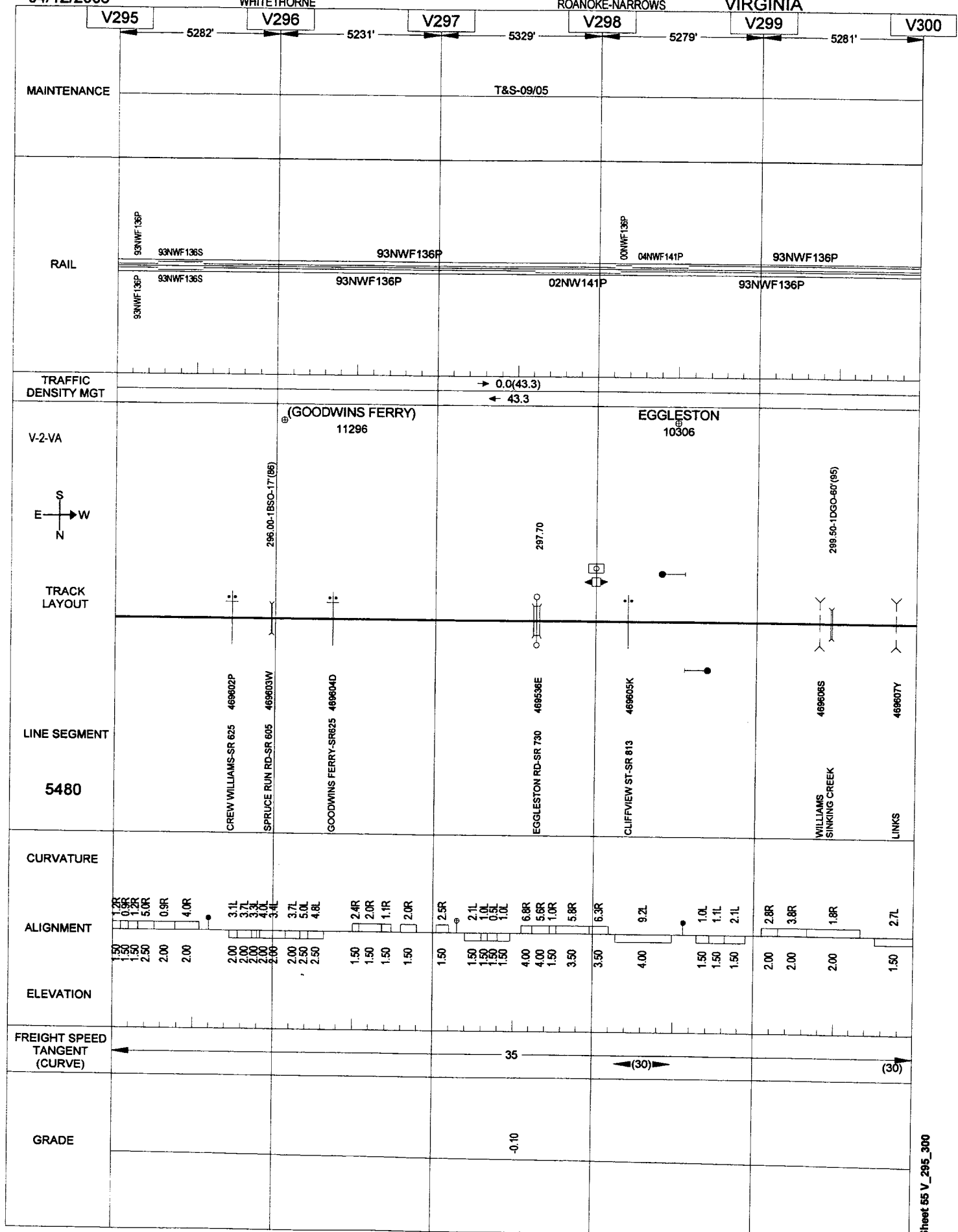
04/12/2006

WHITETHORNE

124

ROANOKE-NARROWS

VIRGINIA



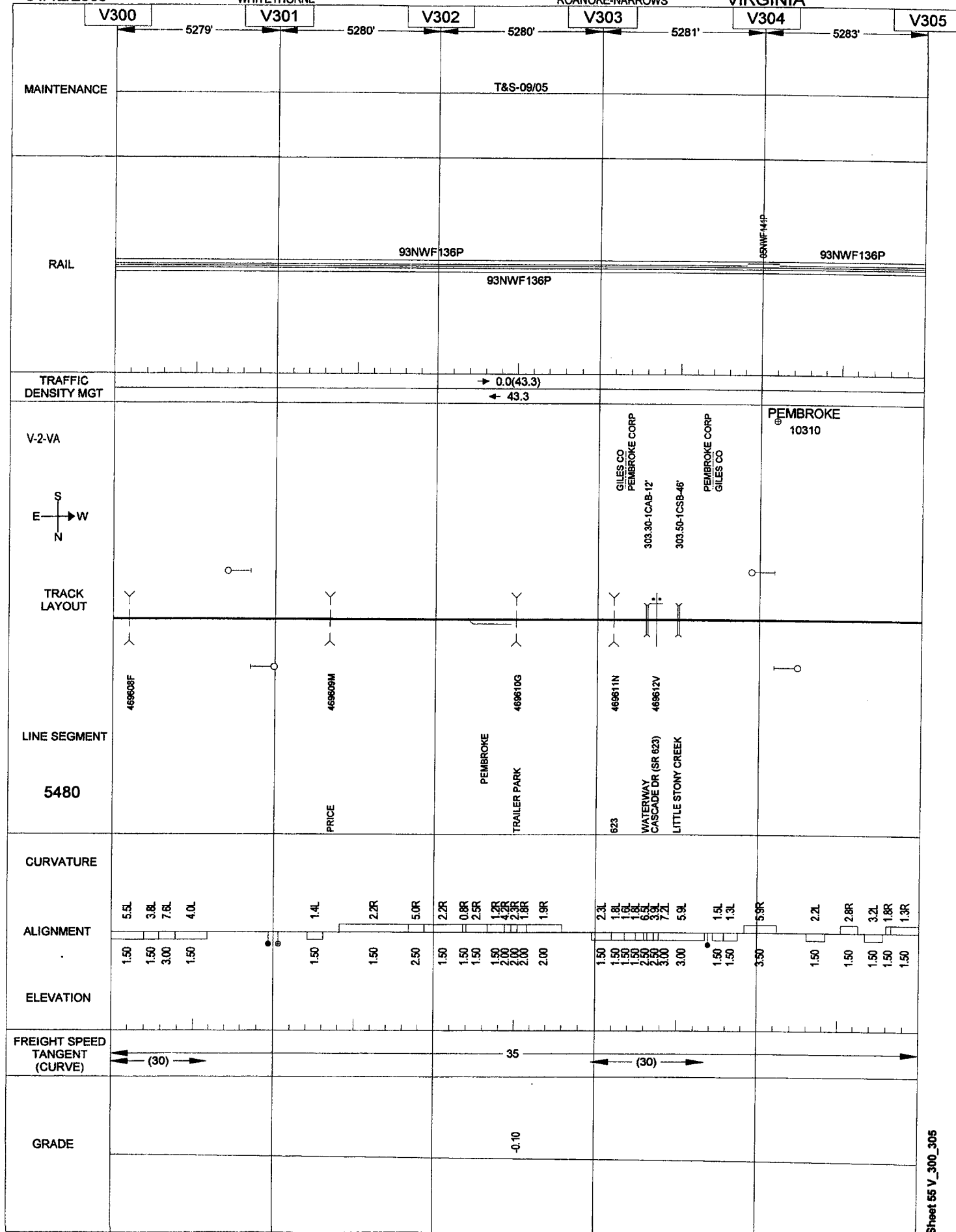
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125

WHITETHORNE

ROANOKE-NARROWS

VIRGINIA



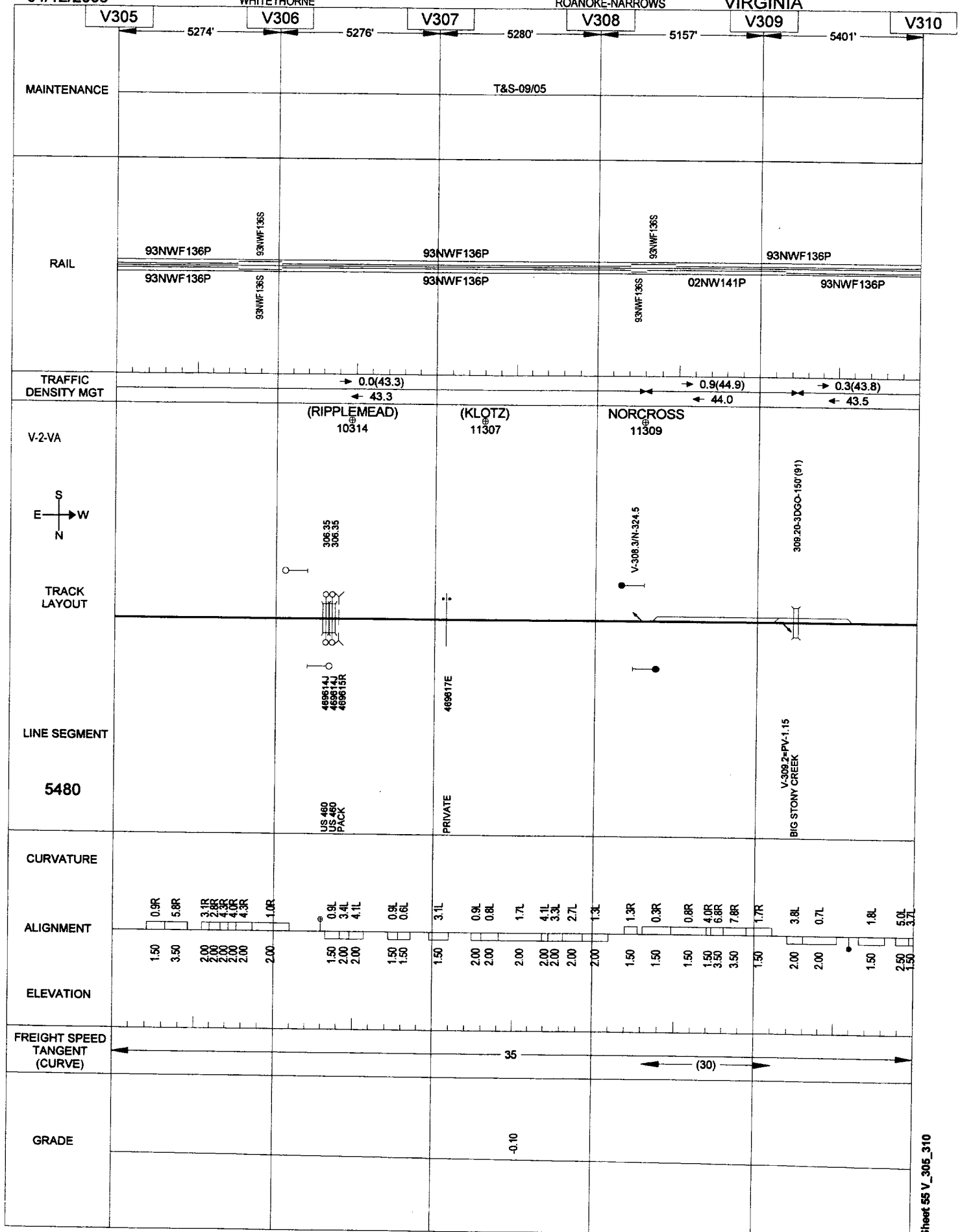
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WHITETHORNE

126

ROANOKE-NARROWS

VIRGINIA



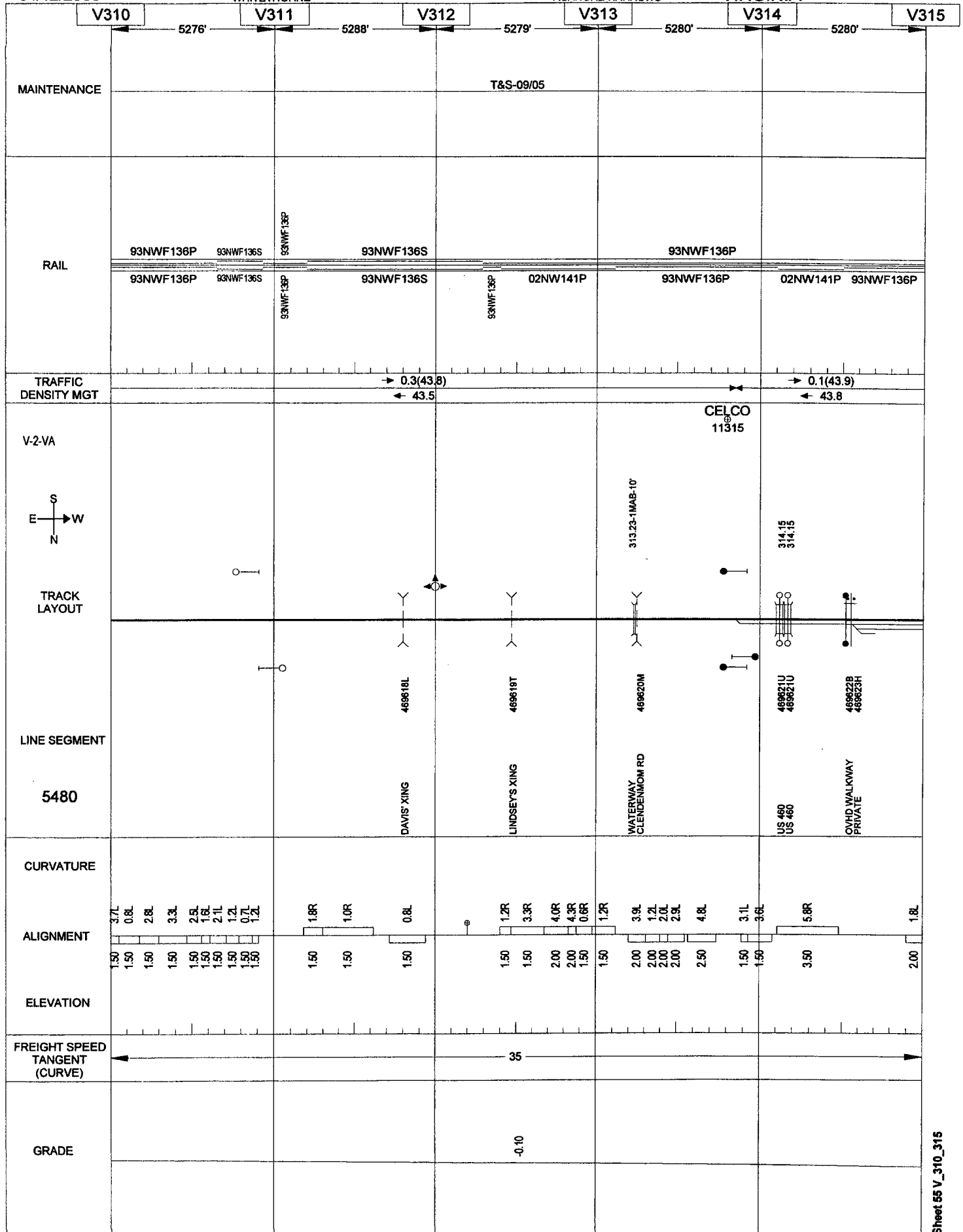
04/12/2006

WHITETHORNE

127

ROANOKE-NARROWS

VIRGINIA



04/12/2006

WHITETHORNE

128

ROANOKE-NARROWS

VIRGINIA

V315

V316

5280'

5280'

MAINTENANCE

T&S-09/05

RAIL

93NWF136S 93NWF136P 84NW136S 84NW132S
93NWF136S 93NWF136P 84NW136S 84NW132S

TRAFFIC
DENSITY MGT

→ 0.1(43.9)
← 43.8

V-2-VA



TRACK
LAYOUT

NARROWS
SCALE TRACK
11316

316 30-10 DGO-1270 (87)

489625W

NEW RIVER

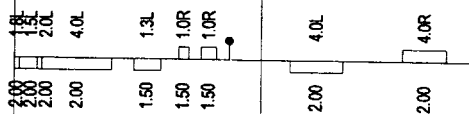
V-316.88-N-332.80

LINE SEGMENT

5480

CURVATURE

ALIGNMENT



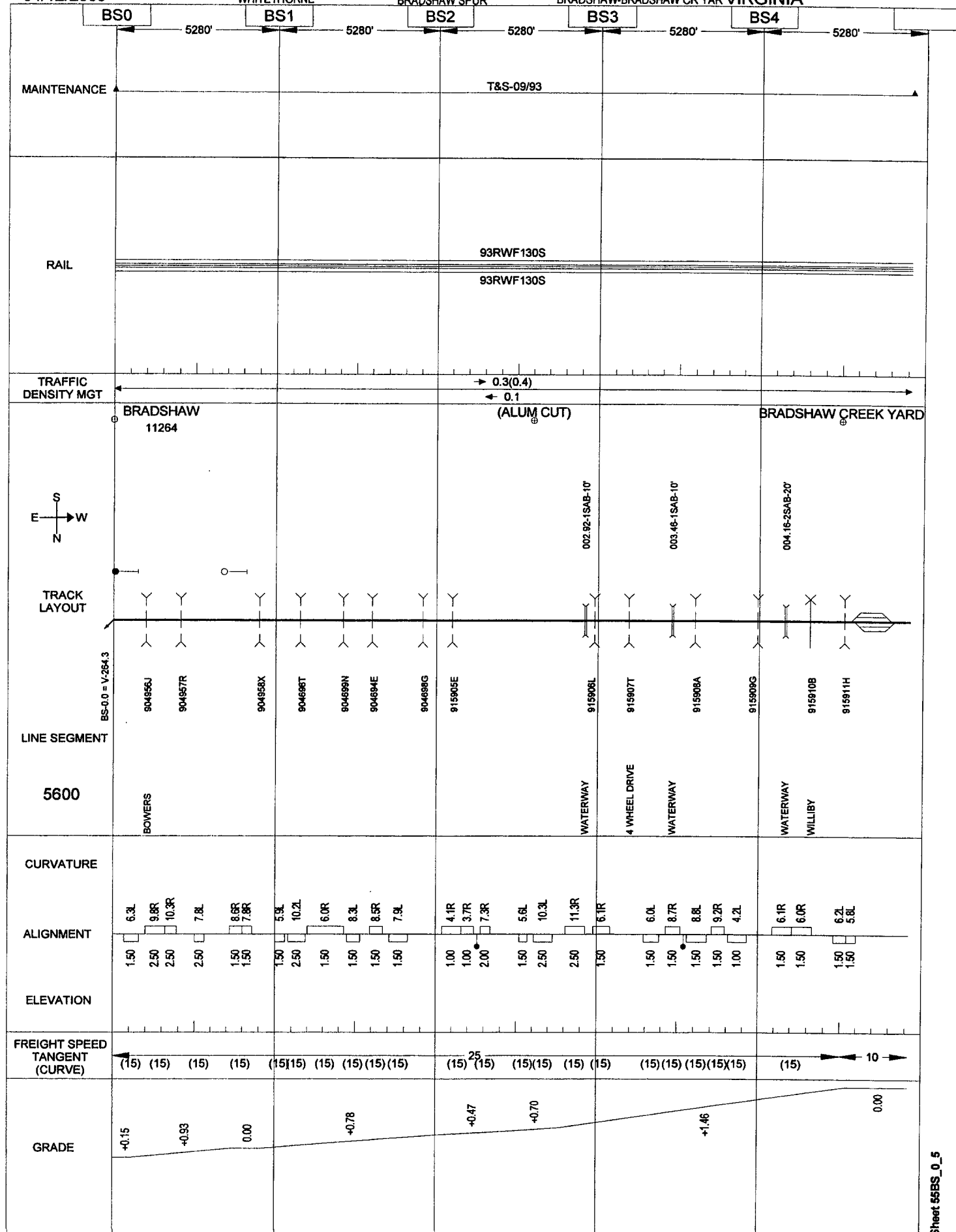
ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

35

GRADE

-0.10



04/12/2006

130

WHITETHORNE

POTTS VALLEY BRANCH

POTTS VALLEY JCT-KERNS

VIRGINIA

PV0

PV2

PV3

PV4

4323'

3766'

5366'

5479'

3896'

MAINTENANCE

T&S-09/93

RAIL

91RJ132S
91RJ132S

46RJ131S
46RJ131S

TRAFFIC DENSITY MGT
0.9(1.7)
0.8

0.2(0.4)
0.2

0.0(0.0)
0.0

V-10-VA

NORCROSS
10315

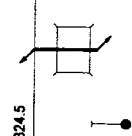
KIMBALLTON
15203

KERNS
15204

S
E
N
W

000.00-7MSO-572 (81-89)
PV-0.25=V-308.3

TRACK LAYOUT



LINE SEGMENT

5530
5540

NEW RIVER

PV-1.15=V-309.2

469628Y

469631A

469634V
469635C

469636J

469637R

SR 684

BIG STONY CREEK
SR 720
SR 683

SNIDER

CR 739
BIG STONY CREEK
SR 635

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

14.7R
1.50

11.0R 4.5L 4.0R 6.5R 12.5L 10.0R 7.0L 3.0R 1.5R 3.0L 11.0L 14.0R 2.5L 6.0R 3.0L 3.5R 2.5L 8.0R 7.0L 1.0R 13.0R 8.0L 16.5R 16.0L

10

10

-0.30
-0.66

0.00

04/12/2006

PULASKI

131

WALTON-BRISTOL

VIRGINIA

NB298

NB299

NB300

5280'

5500'

5254'

#1
MAINTENANCE
#2T&S-03/04
S-12/05T&S-07/98
S-12/05
T&S-03/04

RAIL

#1

#2

91RWF132S
90NWF132P 97NWF132S

91RWF132S

09NWF132P

91RWF132S

03NWF132P

91RWF132S

37NW131S

37NW131S

TRAFFIC
DENSITY MGT

8.6(19.9)

11.3

8.6(9.9#1)

11.3(9.9#2)

V-10-VA

S
E → W
NTRACK
LAYOUT

#1

#2

WALTON

TYLER

10292

PLUM CREEK

15554

YARD
LIMITMONTGOMERY CO
CITY OF RADFORD

NB-297.63=N-297.63

297.84-1MAB-35'

298.98-1MAB-20'

LINE SEGMENT

5490

CROSSOVER TO N-LINE
CRAB CREEK
NB-298.0/N-302.30

PLUM RUN

RADFORD YARD

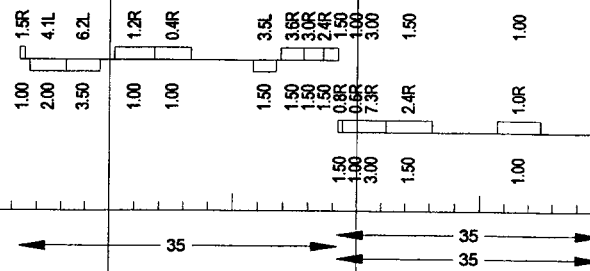
CURVATURE

#1

ALIGNMENT

#2

ELEVATION



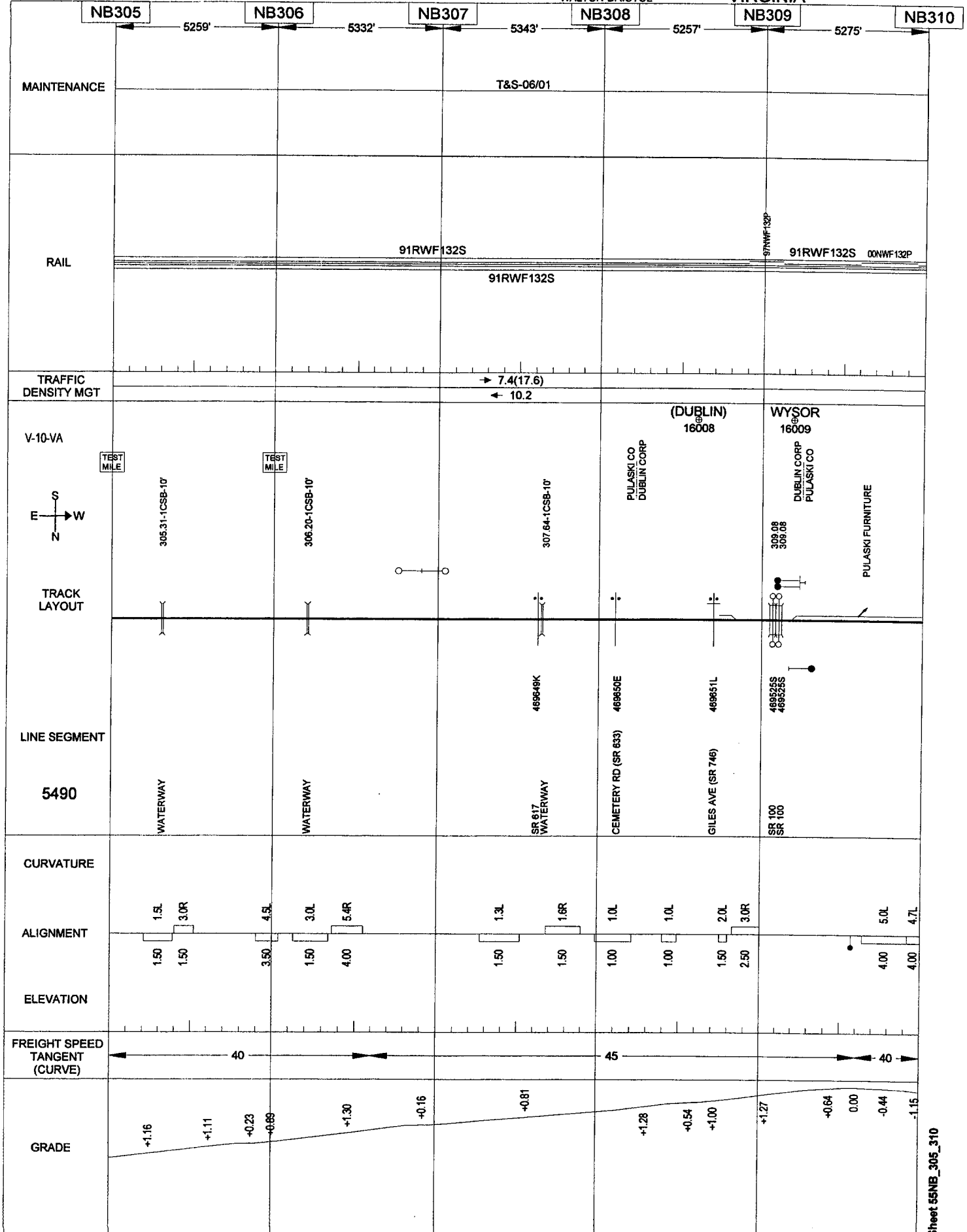
04/12/2006

133

PULASKI

WALTON-BRISTOL

VIRGINIA



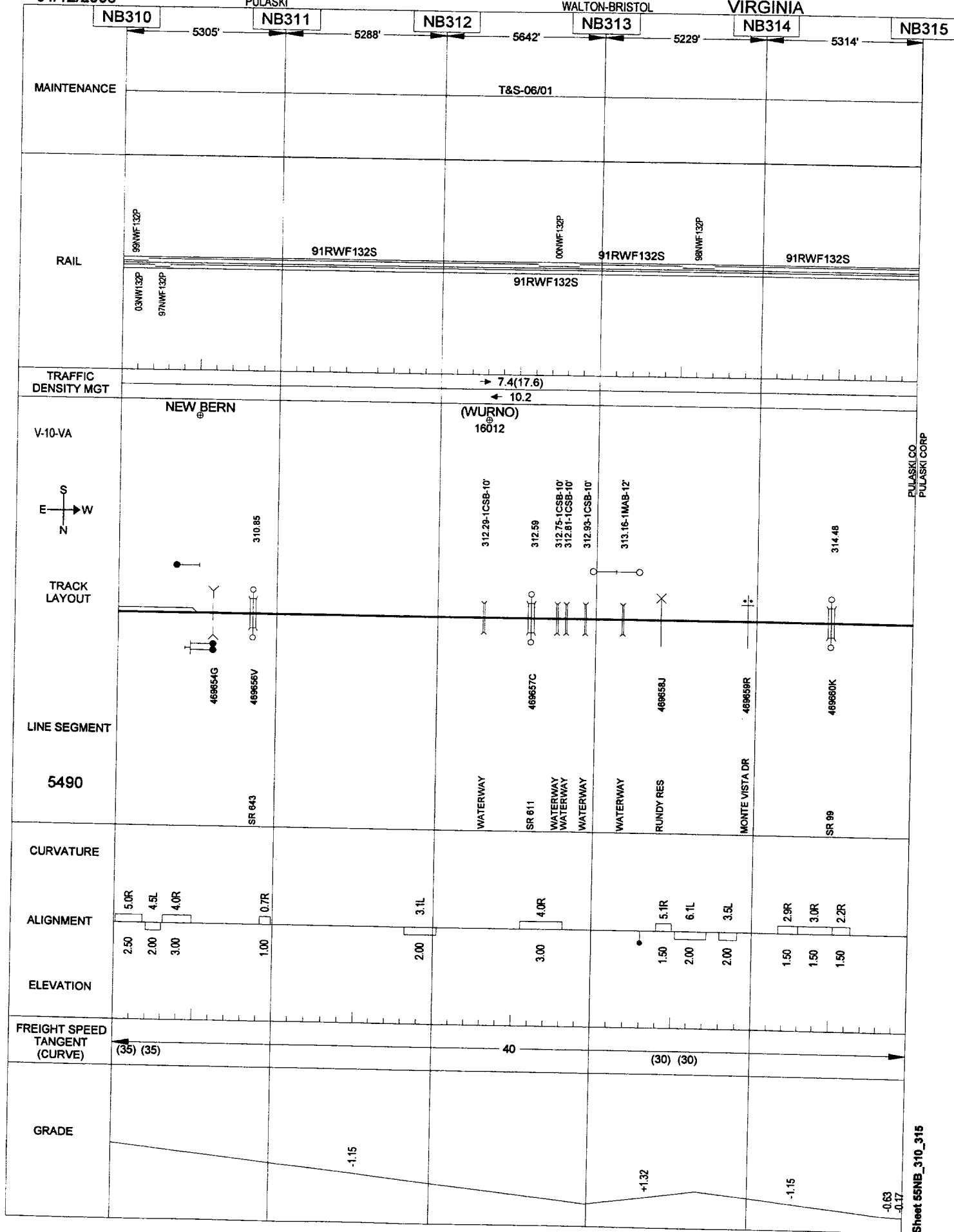
04/12/2006

134

PULASKI

WALTON-BRISTOL

VIRGINIA



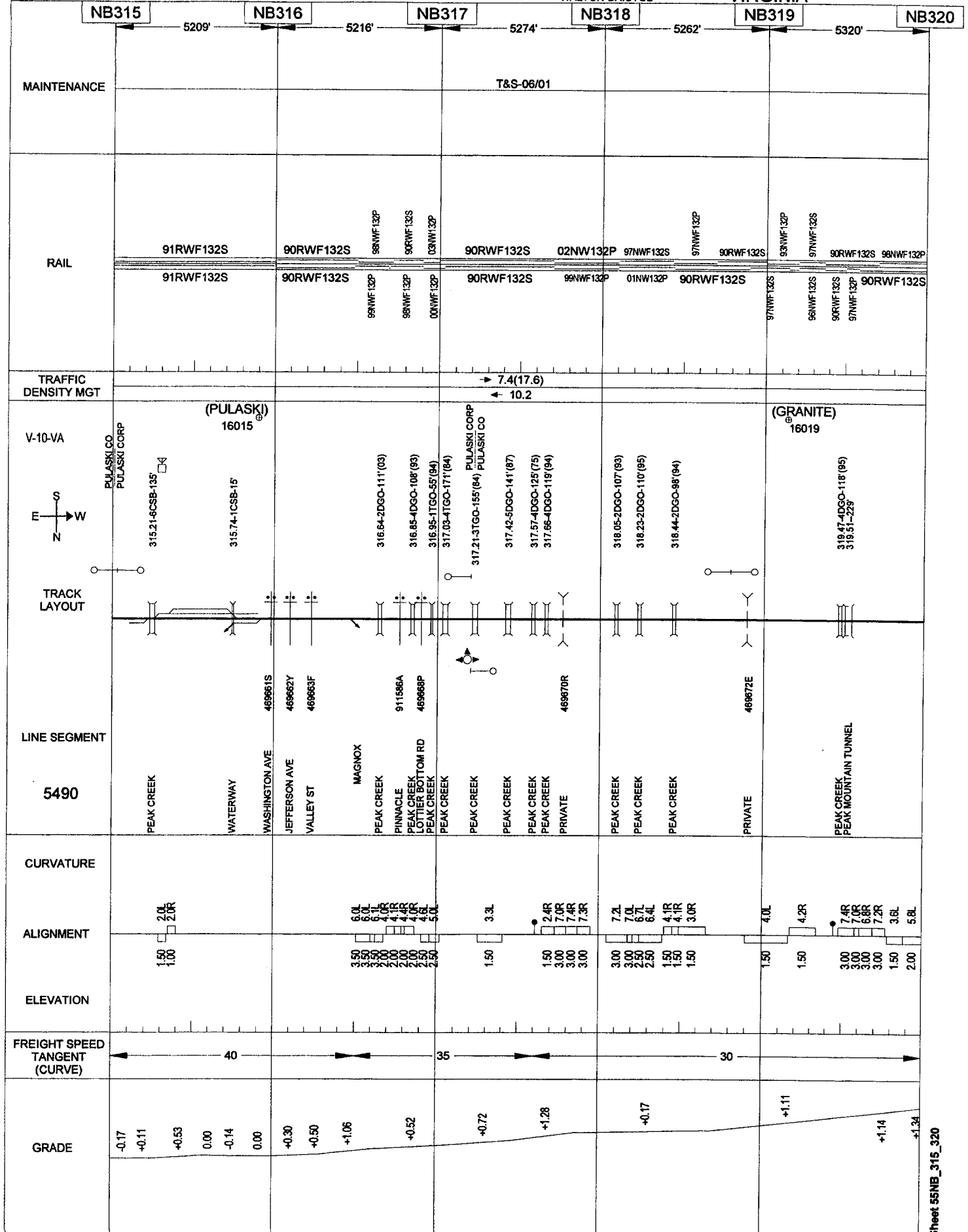
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135

PULASKI

WALTON-BRISTOL

VIRGINIA



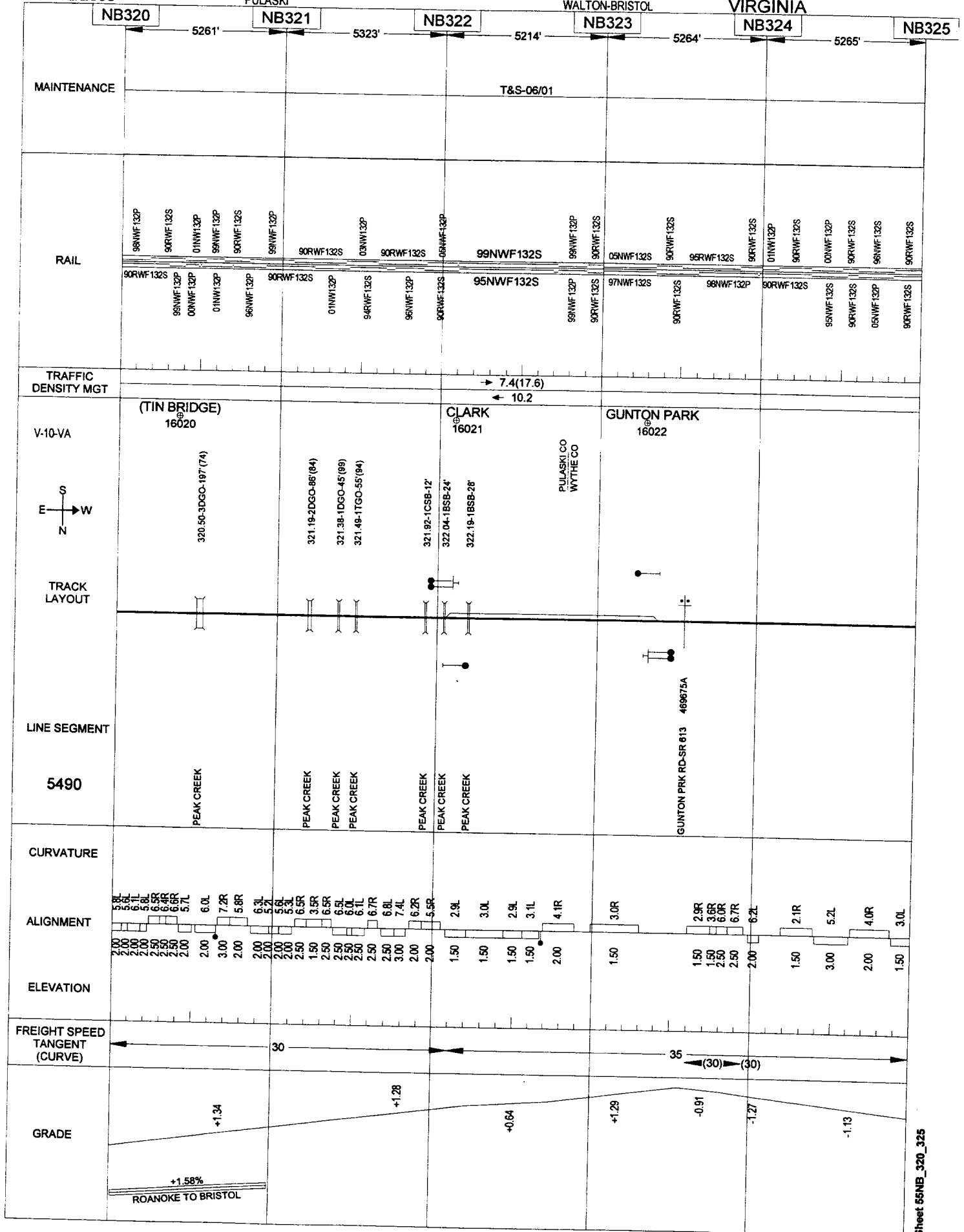
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136

PULASKI

WALTON-BRISTOL

VIRGINIA



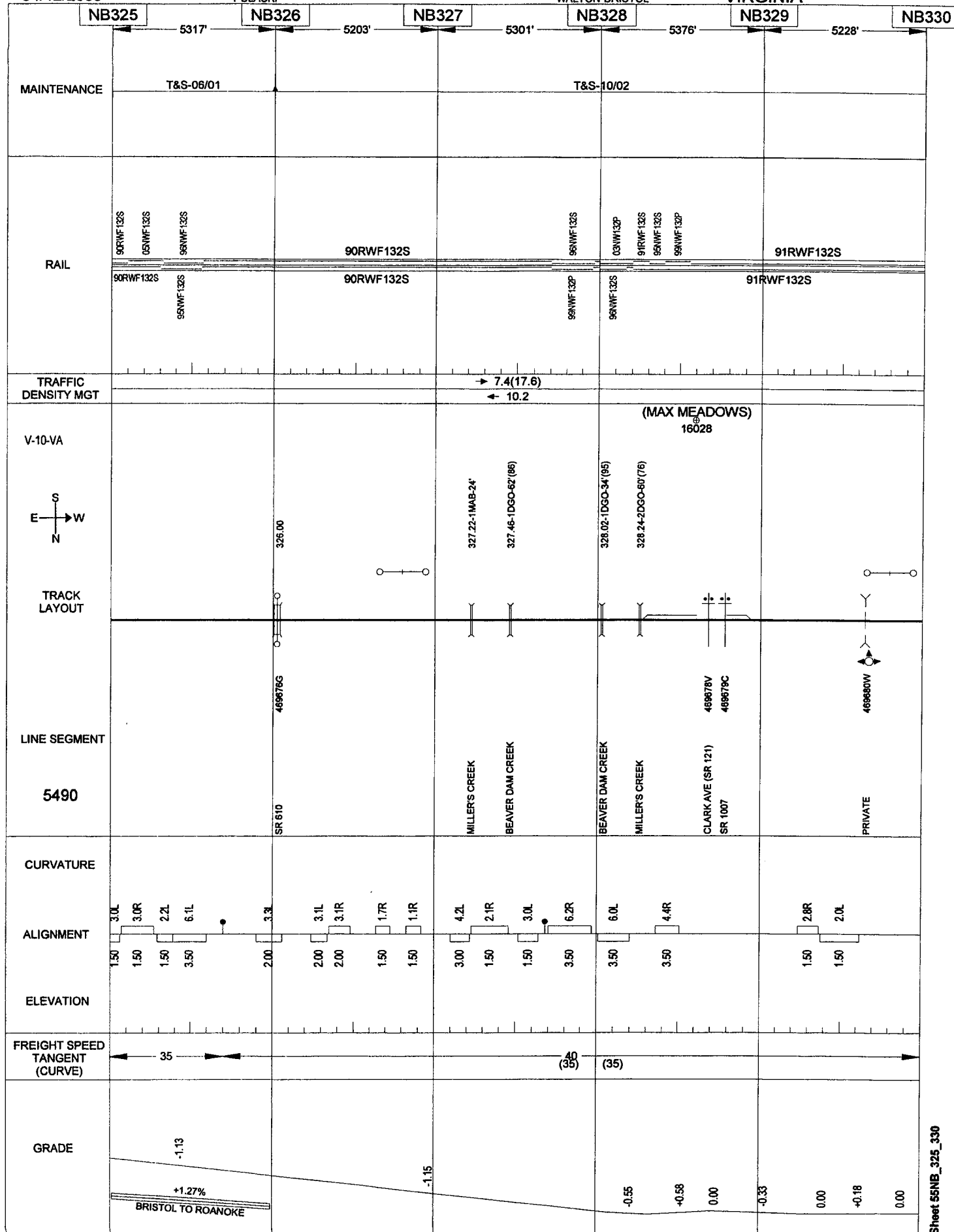
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137

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WALTON-BRISTOL

VIRGINIA



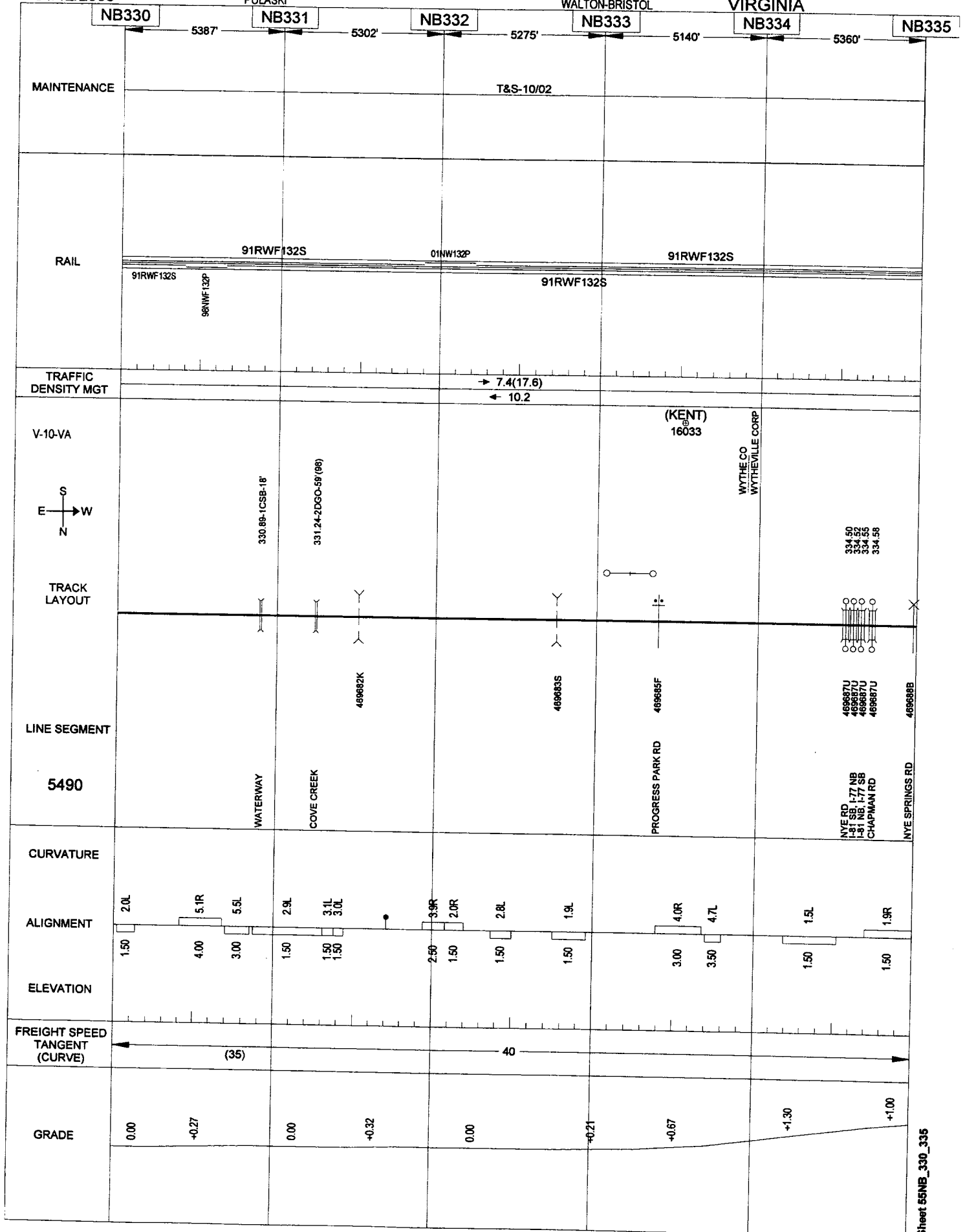
04/12/2006

138

PULASKI

WALTON-BRISTOL

VIRGINIA



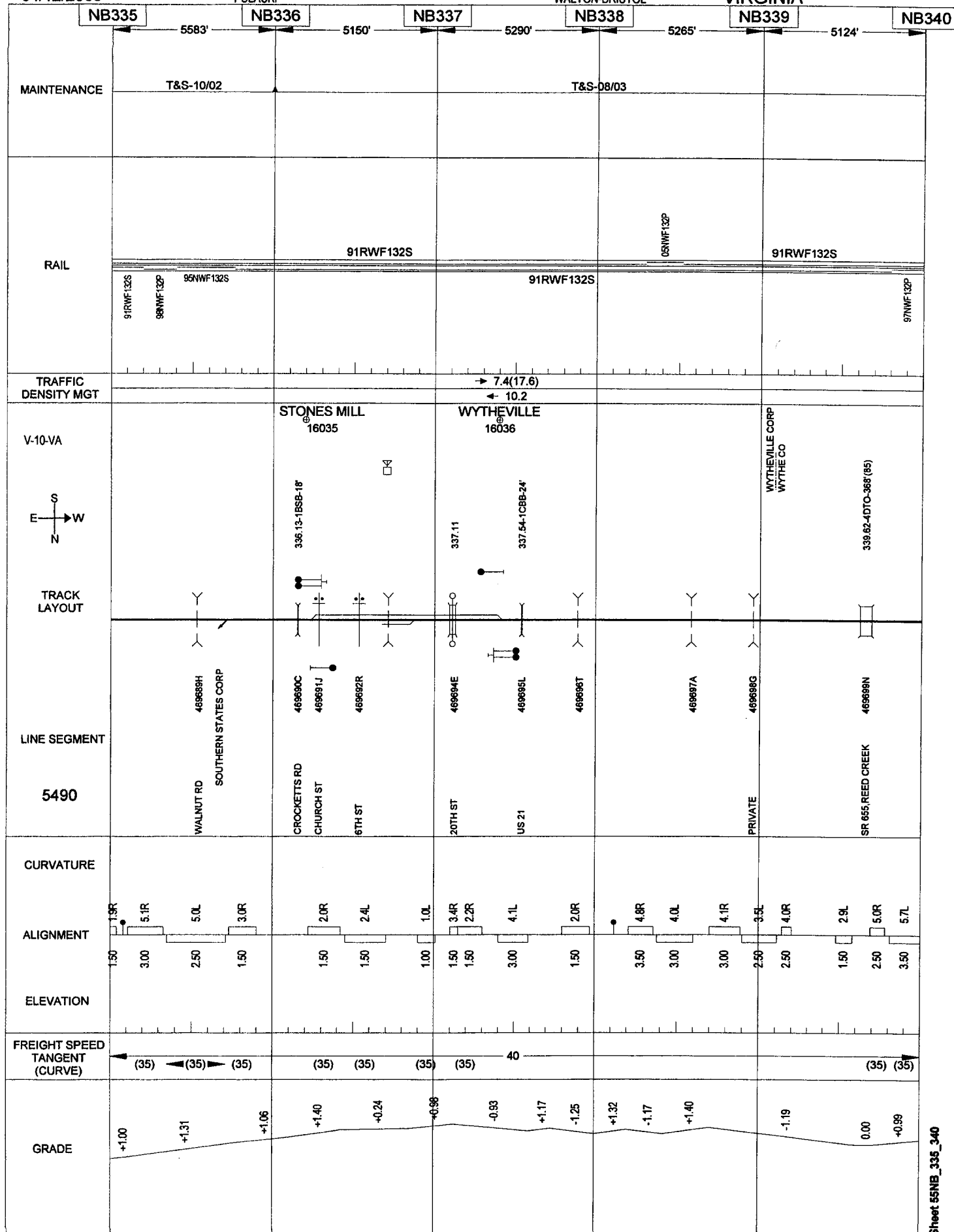
04/12/2006

139

PULASKI

WALTON-BRISTOL

VIRGINIA



NB340

NB341

NB342

NB343

NB344

NR345

- 6032'

5128'

47001

References

45

MAINTENANCE

T&S-08/03

RAIL

91RWF132S

W1332P

MF132S

QCE 1/18

91RWF132S

91RW

Si

91RWF132S

91RWF132S

TRAFFIC
DENSITY MGT

→ 7.4(17.6)
← 10.2

V-10-VA

(GRUBB)
16041



TRACK LAYOUT

LINE SEGMENT

5490

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

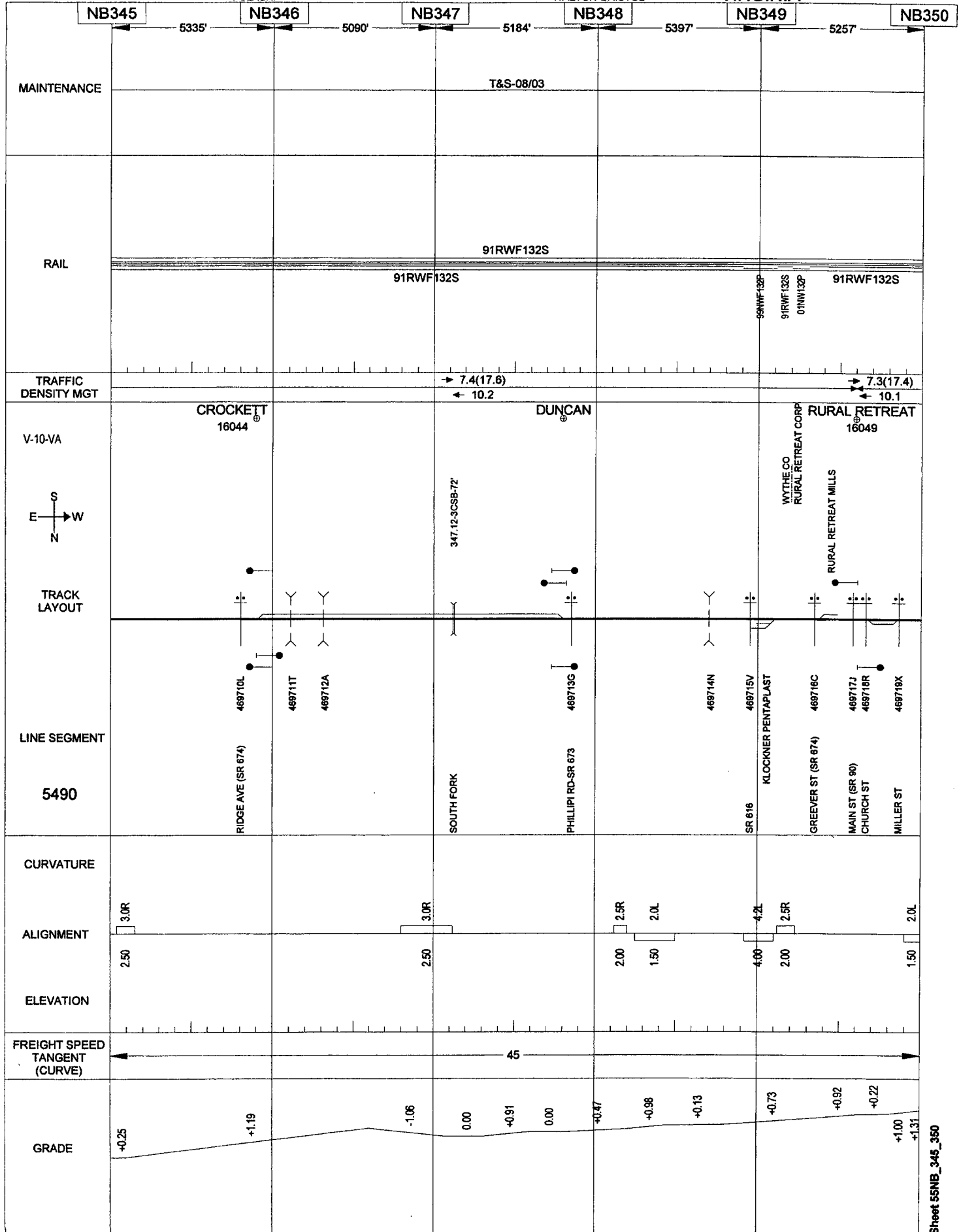
04/12/2006

PULASKI

141

WALTON-BRISTOL

VIRGINIA



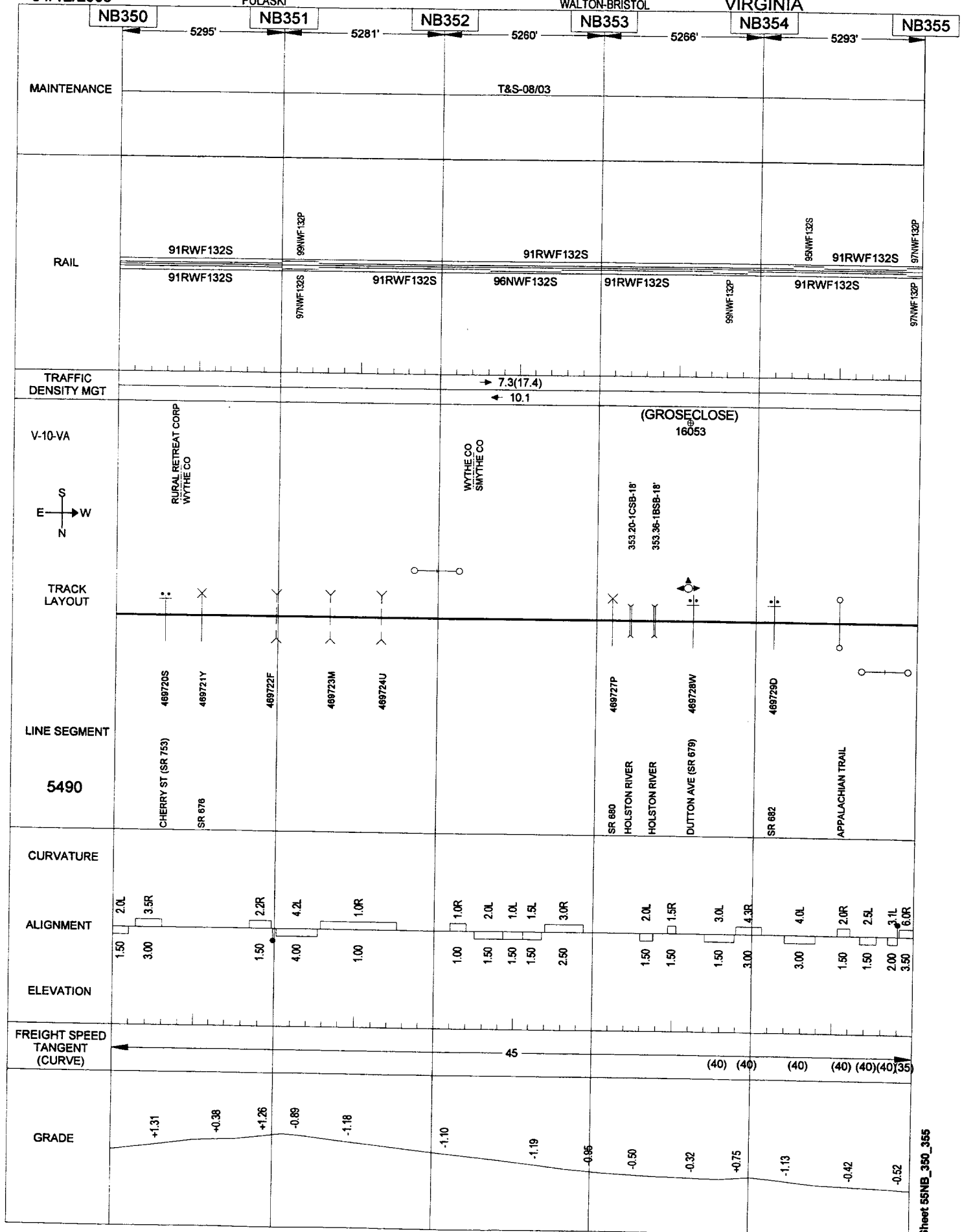
04/12/2006

PULASKI

142

WALTON-BRISTOL

VIRGINIA



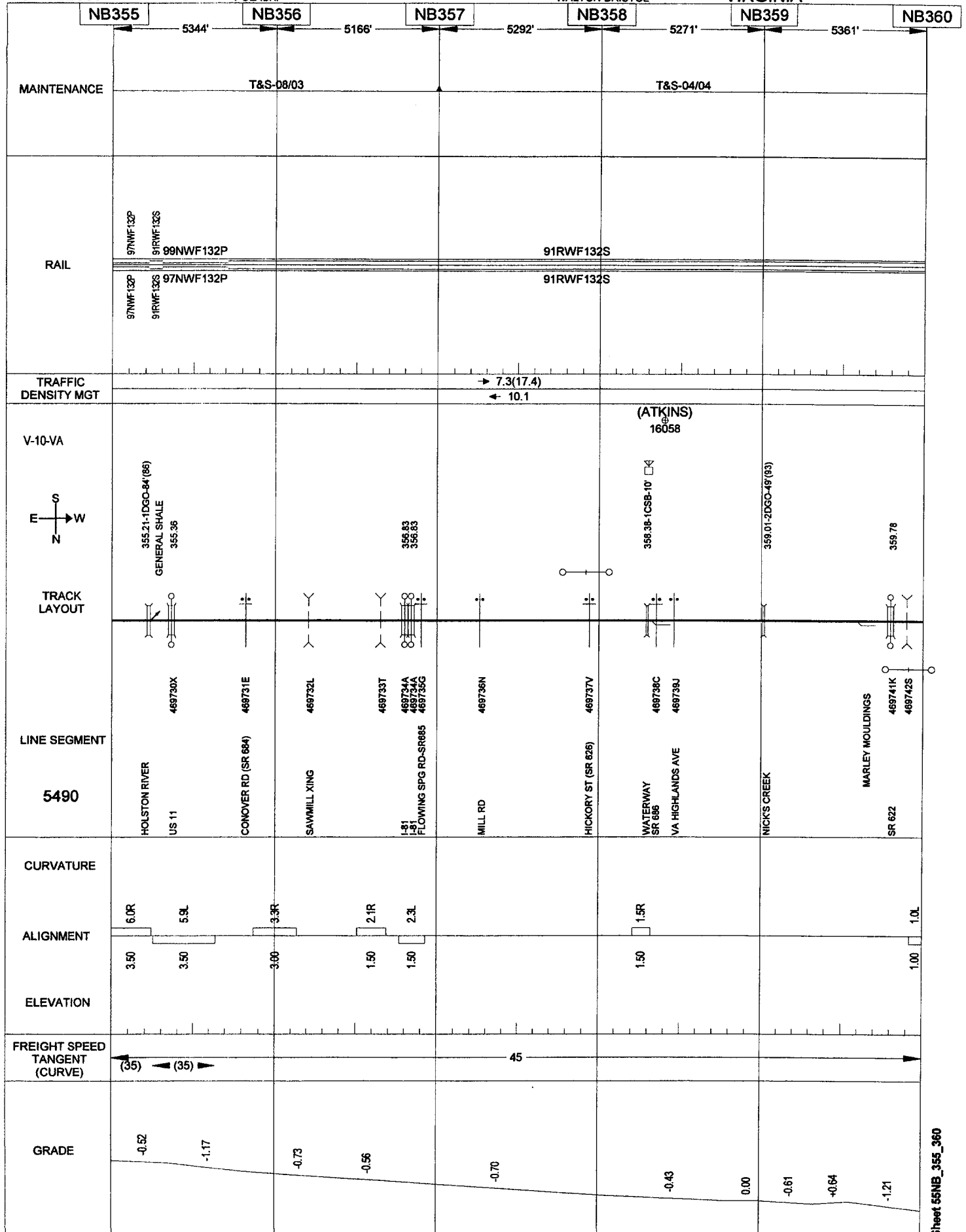
04/12/2006

143

PULASKI

WALTON-BRISTOL

VIRGINIA



04/12/2006

PULASKI

144

WALTON-BRISTOL

VIRGINIA

NB360

NB361

NB362

NB363

NB364

NB365

5277'

5201'

5371'

5189'

5192'

MAINTENANCE

T&S-04/04

RAIL

91RWF132S

97NWF132P

91RWF132S

91RWF132S

97NWF132S

91RWF132S

05NWF132P

97NWF132P

91RWF132S

TRAFFIC
DENSITY MGT→ 7.3(17.4)
← 10.1

V-10-VA

(MT CARMEL)
16060SCHULEEN
16062MARION
16064

(ABBOTT)

S
E
N
WTRACK
LAYOUTNAPCO/SUPERIOR CHEM
361.01-1CSB-16'361.39-2DGO-98'
361.59-2DGO-104'(97)

362.01

362.34-2DGO-99'(78)
362.59-1DGO-29'(96)

SCHULEEN

SMYTHE CO
MARION CORP
MARION COMPOSITE364.62
364.66-1DGO-88'(03)

LINE SEGMENT

5490

SR 775

WATERWAY

DRY RUN RD (SR 889)

HOLSTON RIVER

SR 714

MILL RD, WATERWAY

US 11

HOLSTON RIVER

BRANCH OF
JOHNSTON RD (SR 891)

PVT-MARION COMPOSITE

MAIN ST (US 11)

PRATER LN

CHATHAM HILL RD

CHILHOWIE ST

CHURCH ST

HOLSTON RIVER

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

1.0L

1.00

1.50

2.3L

3.50

5.7R

2.00

4.1L

3.8L

2.00

4.2L

1.00

1.0L

1.3R

1.00

2.00

6.0R

1.50

6.2L

1.50

5.3L

0.8L

1.50

1.50

1.50

2.0L

1.50

4.5L

1.50

4.7R

1.00

1.6L

4.6L

45

35

(25)

30

-1.21

-0.89

-0.52

0.00

+0.54

-1.02

+0.86

-1.15

-0.28

0.00

+0.23

-0.57

0.00

+0.30

-1.17

0.00

-1.11

+0.94

-1.06

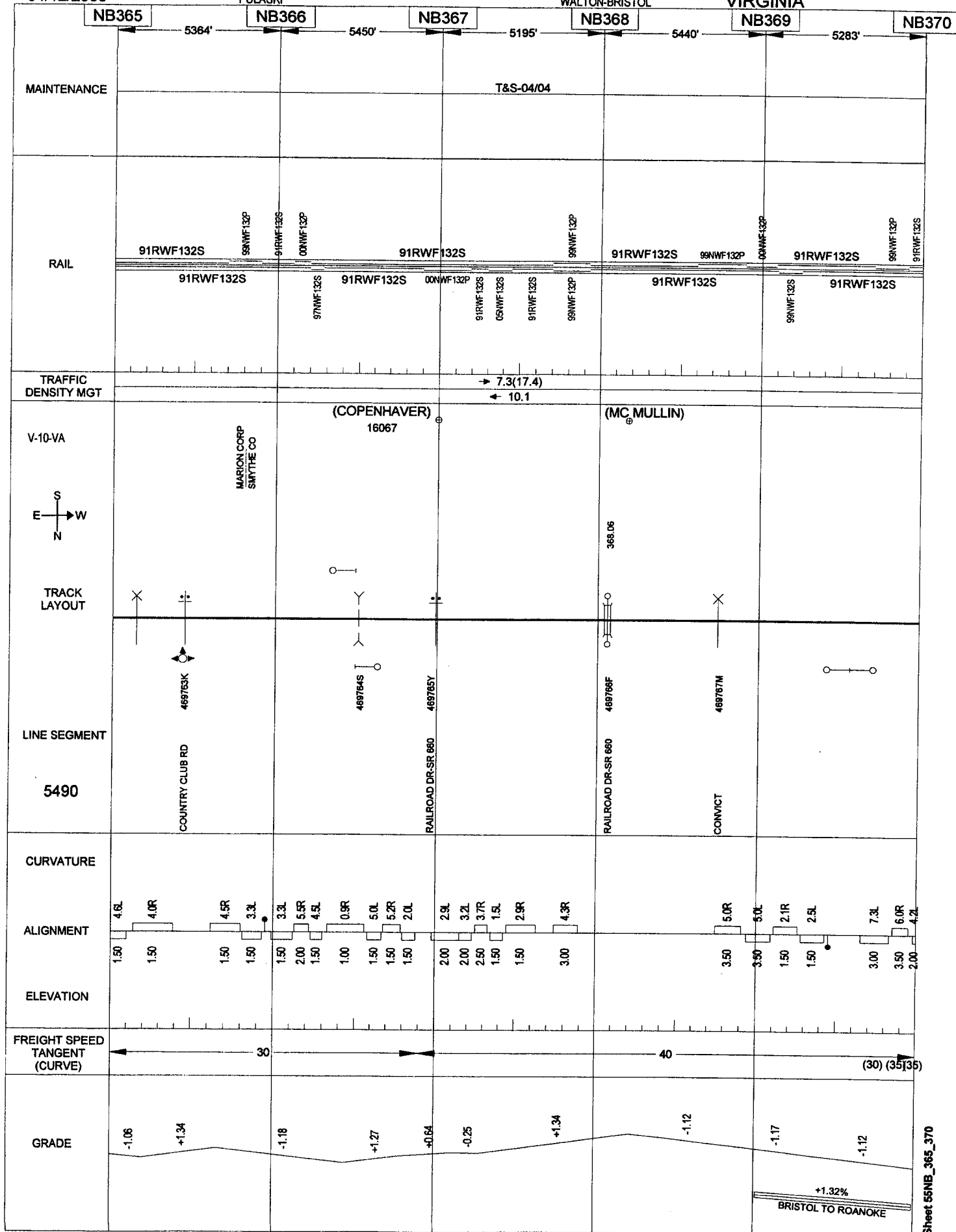
04/12/2006

145

PULASKI

WALTON-BRISTOL

VIRGINIA



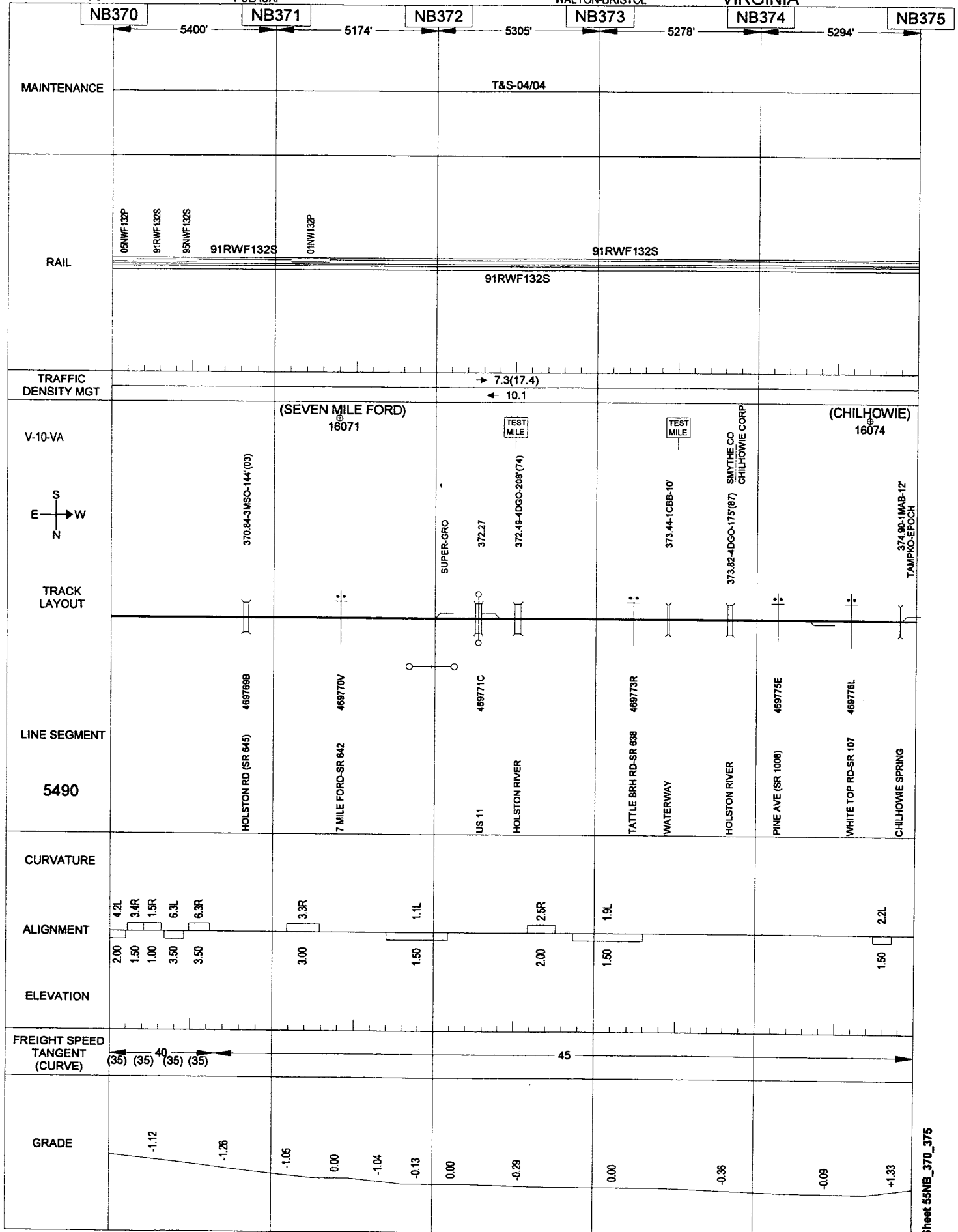
04/12/2006

PULASKI

146

WALTON-BRISTOL

VIRGINIA



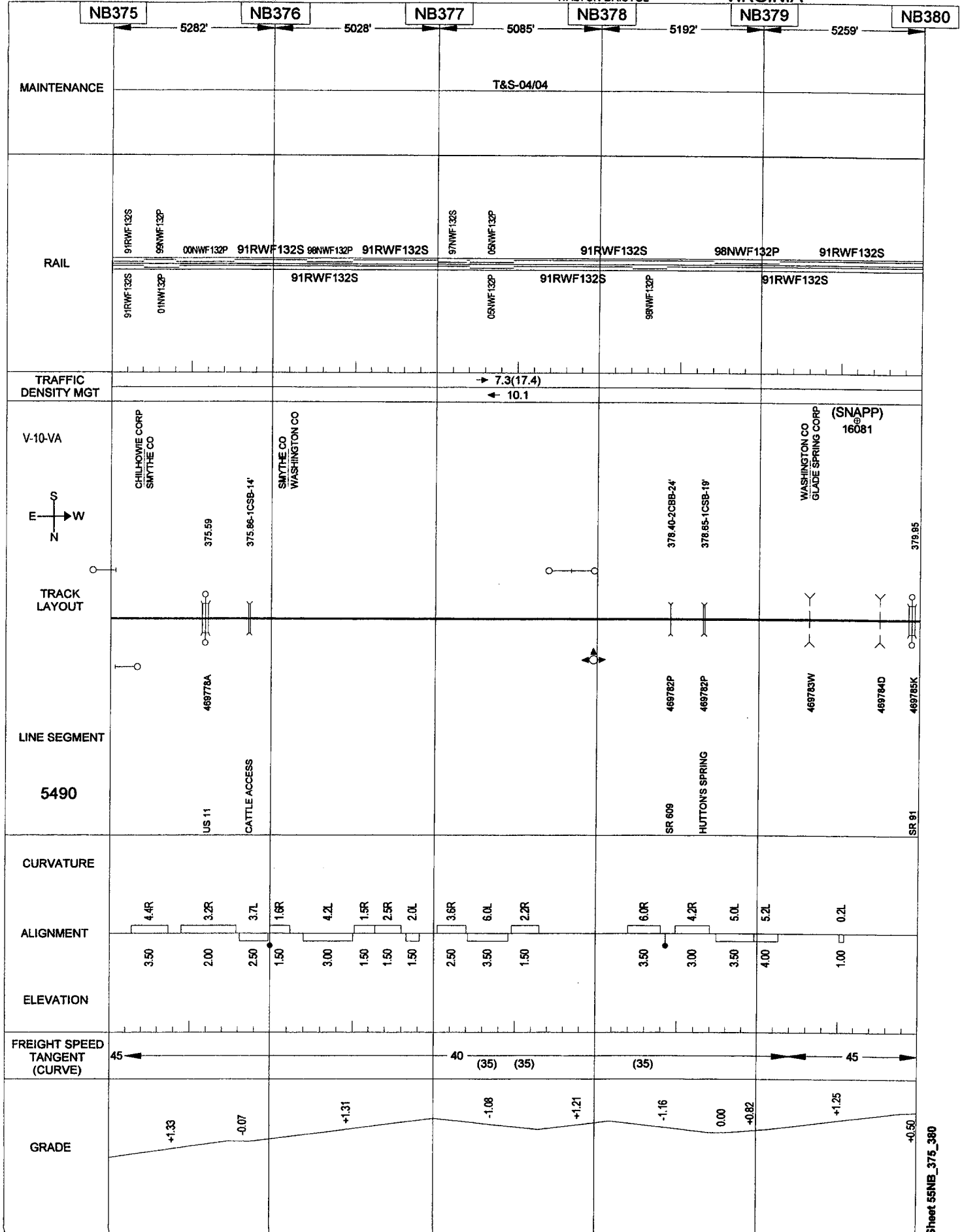
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147

PULASKI

WALTON-BRISTOL

VIRGINIA



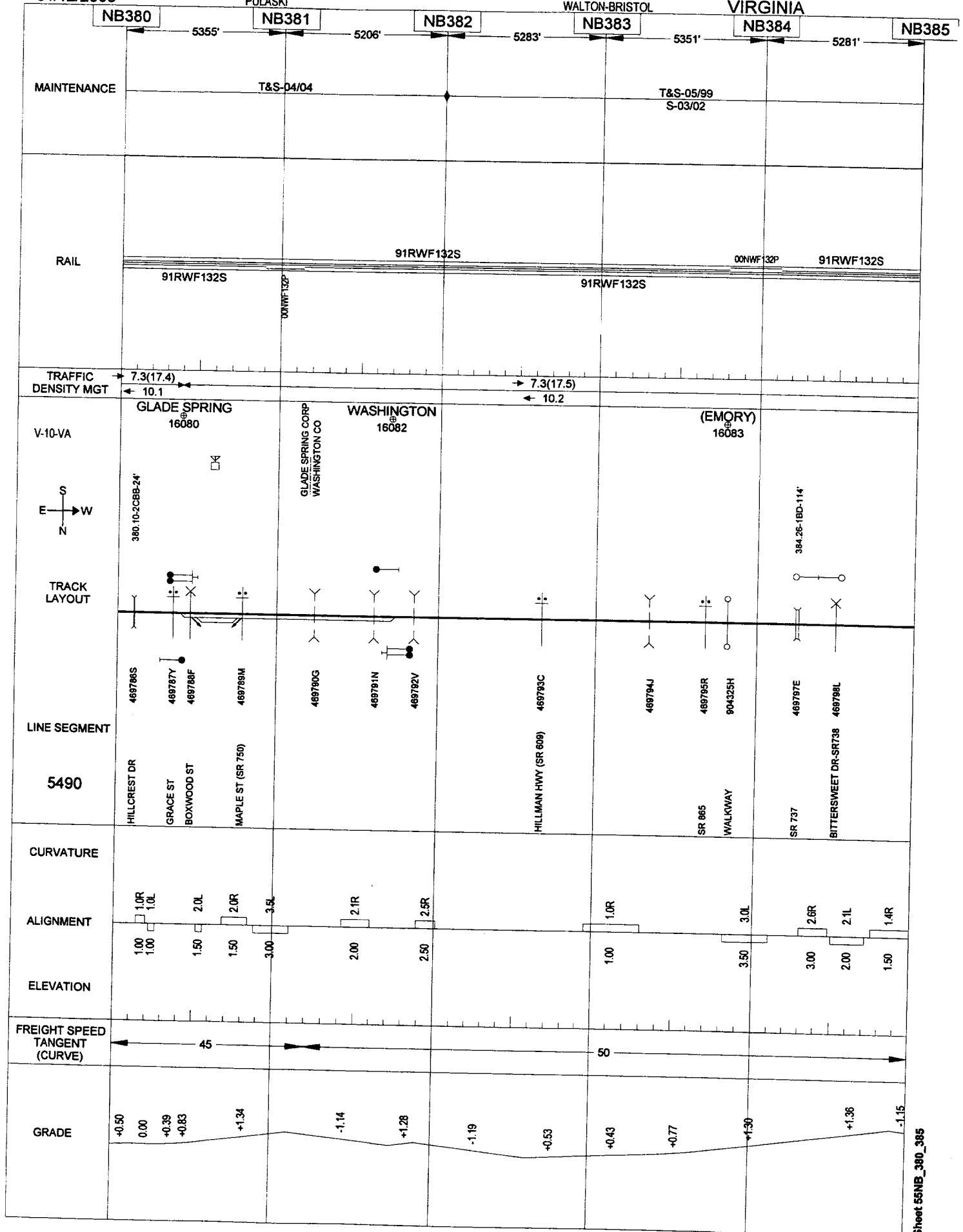
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148

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WALTON-BRISTOL

VIRGINIA



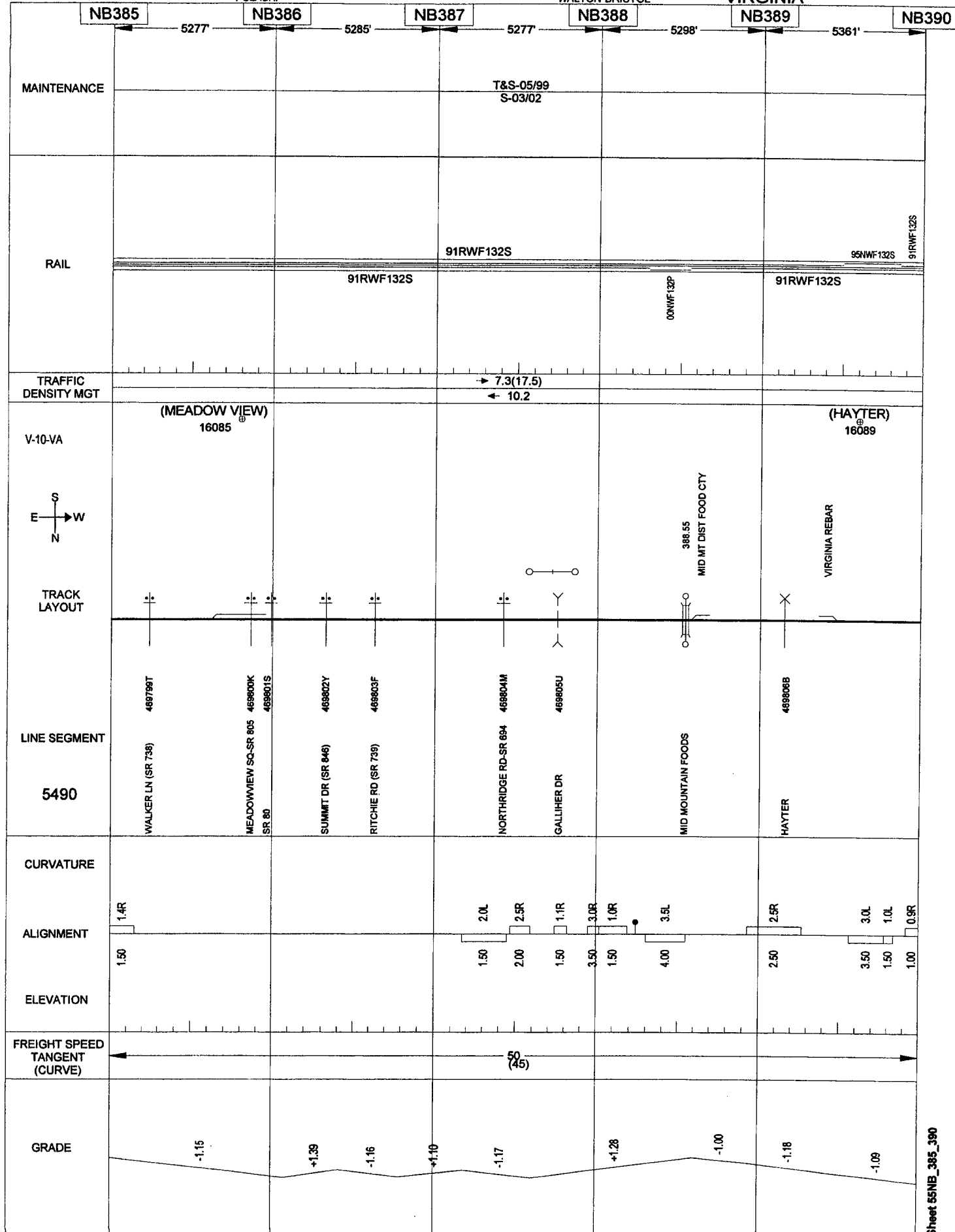
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149

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WALTON-BRISTOL

VIRGINIA



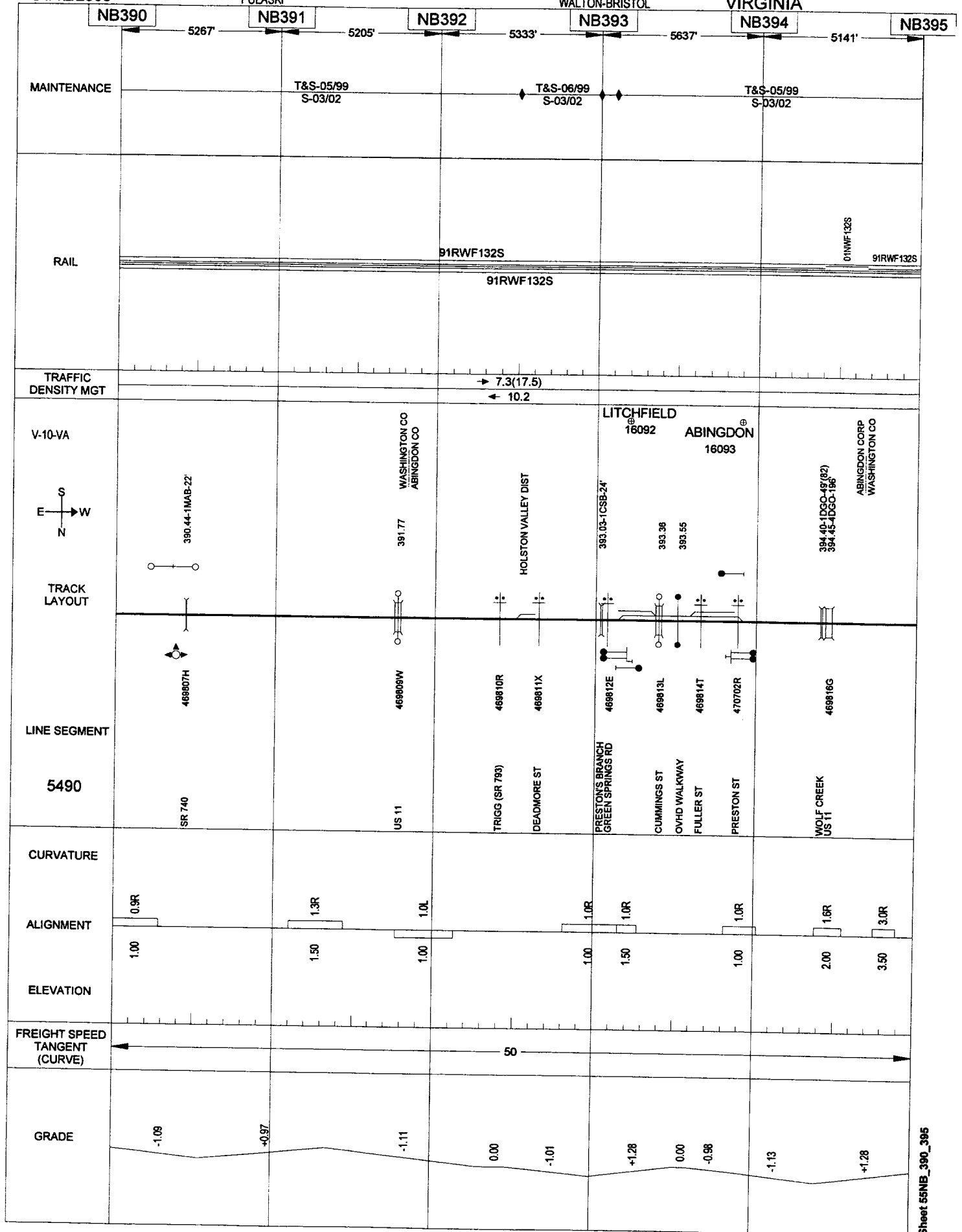
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PULASKI

150

WALTON-BRISTOL

VIRGINIA



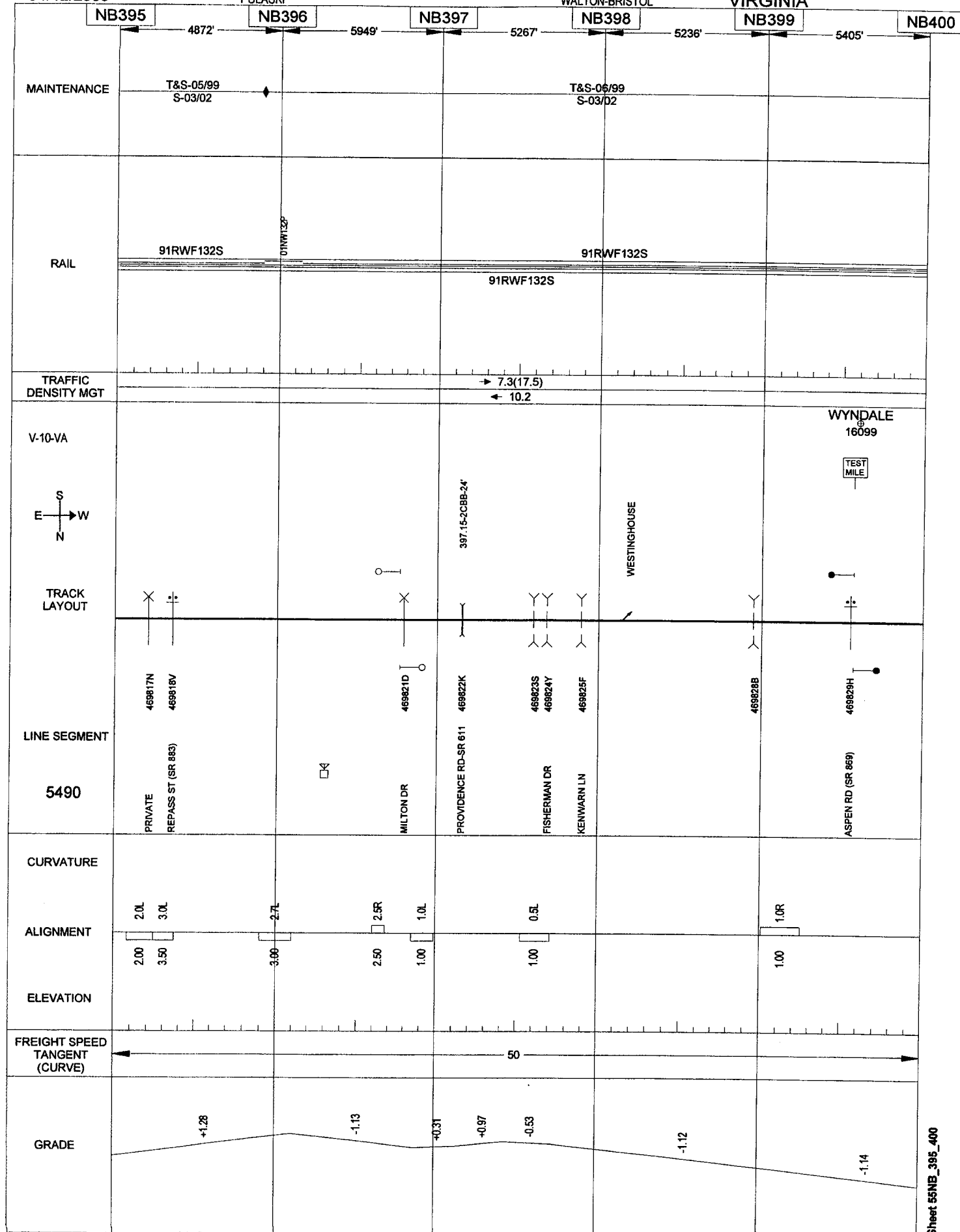
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151

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VIRGINIA



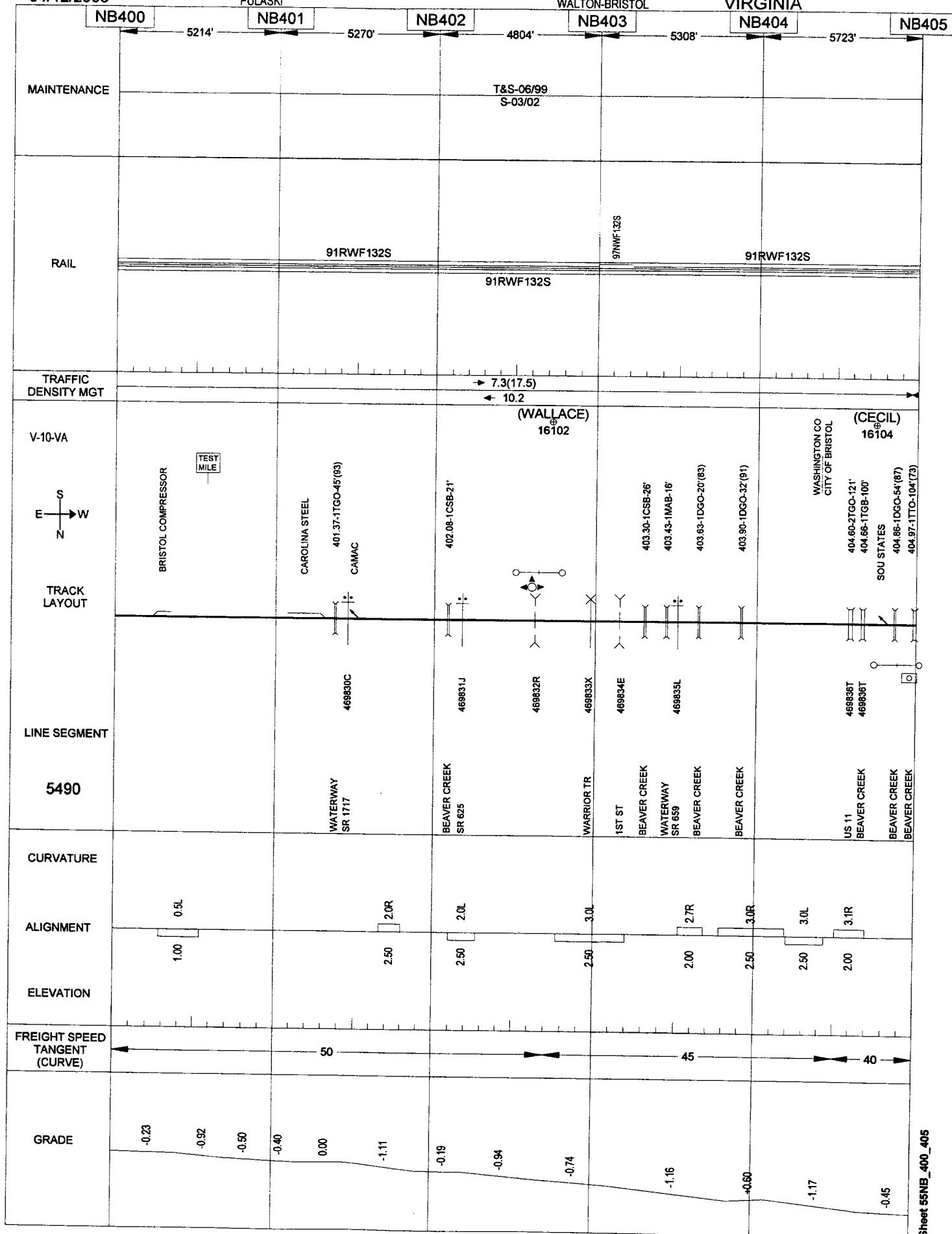
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152

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WALTON-BRISTOL

VIRGINIA



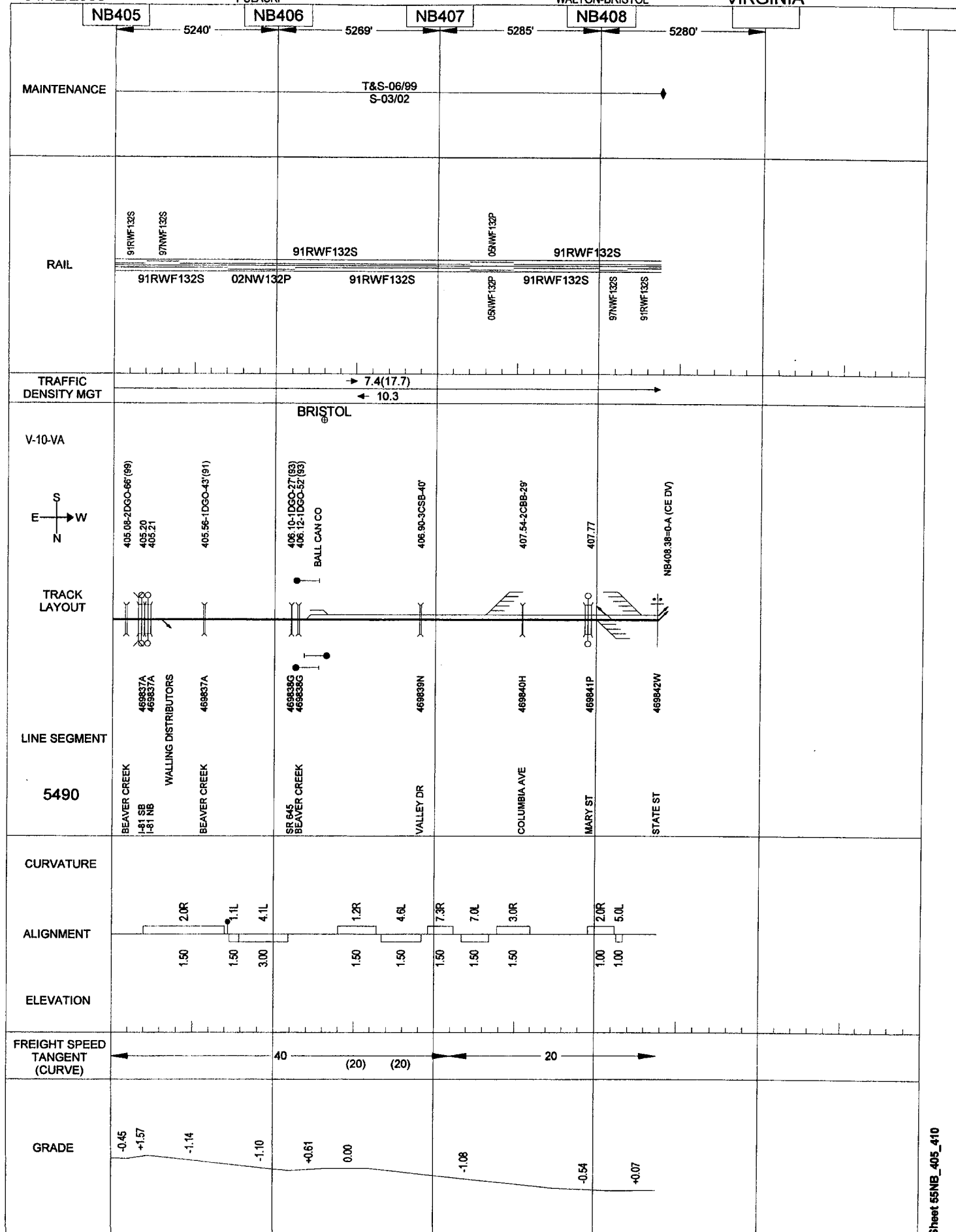
04/12/2006

PULASKI

153

WALTON-BRISTOL

VIRGINIA



04/12/2006

PULASKI

154

RADFORD BRANCH

RADFORD-FOREST AVENUE

VIRGINIA

RB0

RB1

5280'

3013'

MAINTENANCE

T&S-01/20

RAIL

48RW130S

48RW130S

TRAFFIC
DENSITY MGT

0.0(0.0)
0.0

V-10-VA

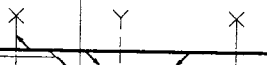
RADFORD
16001

FOREST AVE
16203

E
N — S
W

RB-0.0-NB-302.1

TRACK
LAYOUT



PVT-INTERMET FOUNDRY 470129X

PVT-INTERMET FOUNDRY 470128R

INGLES ST 470127J

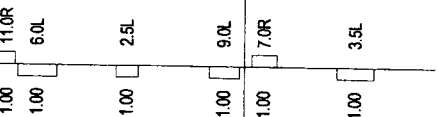
LINE SEGMENT

5494

CURVATURE

ALIGNMENT

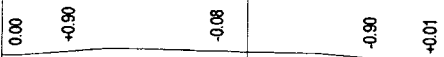
ELEVATION



FREIGHT SPEED
TANGENT
(CURVE)

10

GRADE



04/12/2006

HAGERSTOWN

155
HAGERSTOWN SEC.

SHIPPENSBURG-HAGERSTOWN VIRGINIA

HW74

1594'

5370'

MAINTENANCE

T&S-08/00

RAIL

88RW127S

88RW127S

TRAFFIC
DENSITY MGT

13.9(30.1)

16.2

E
N → S
W

TRACK
LAYOUT

TOWN

HAGER
(HAGERSTOWN)

BEGIN HARRISBURG DIV
YARD LIMIT

MARYLAND METALS
073.91-1CAB-60'

074.01-1CAB-60'

074.10-1CAB-65'

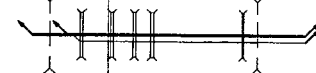
074.18-1TGB-69'

074.54-1CSB-20'

HW-74.80=H-0.63

LINE SEGMENT

2442



534955X

534897L

FRANKLIN ST

WASHINGTON ST

ANTIETAM ST

CSXT RR ACCESS ROAD

CURVATURE

ALIGNMENT

1.00 4.0R

1.00 4.0R

1.00 2.0L

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

10

GRADE

-0.60

+0.68

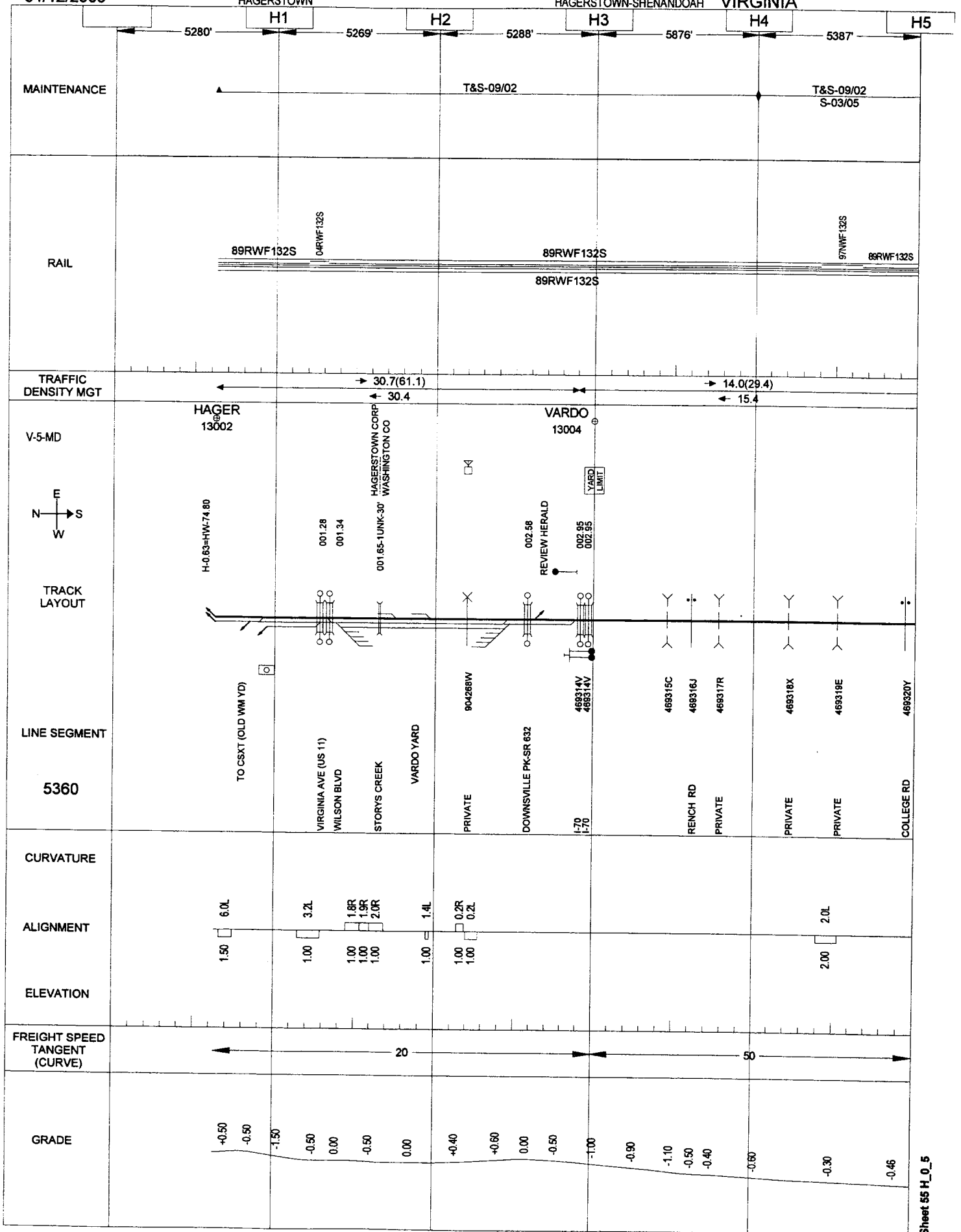
04/12/2006

156

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



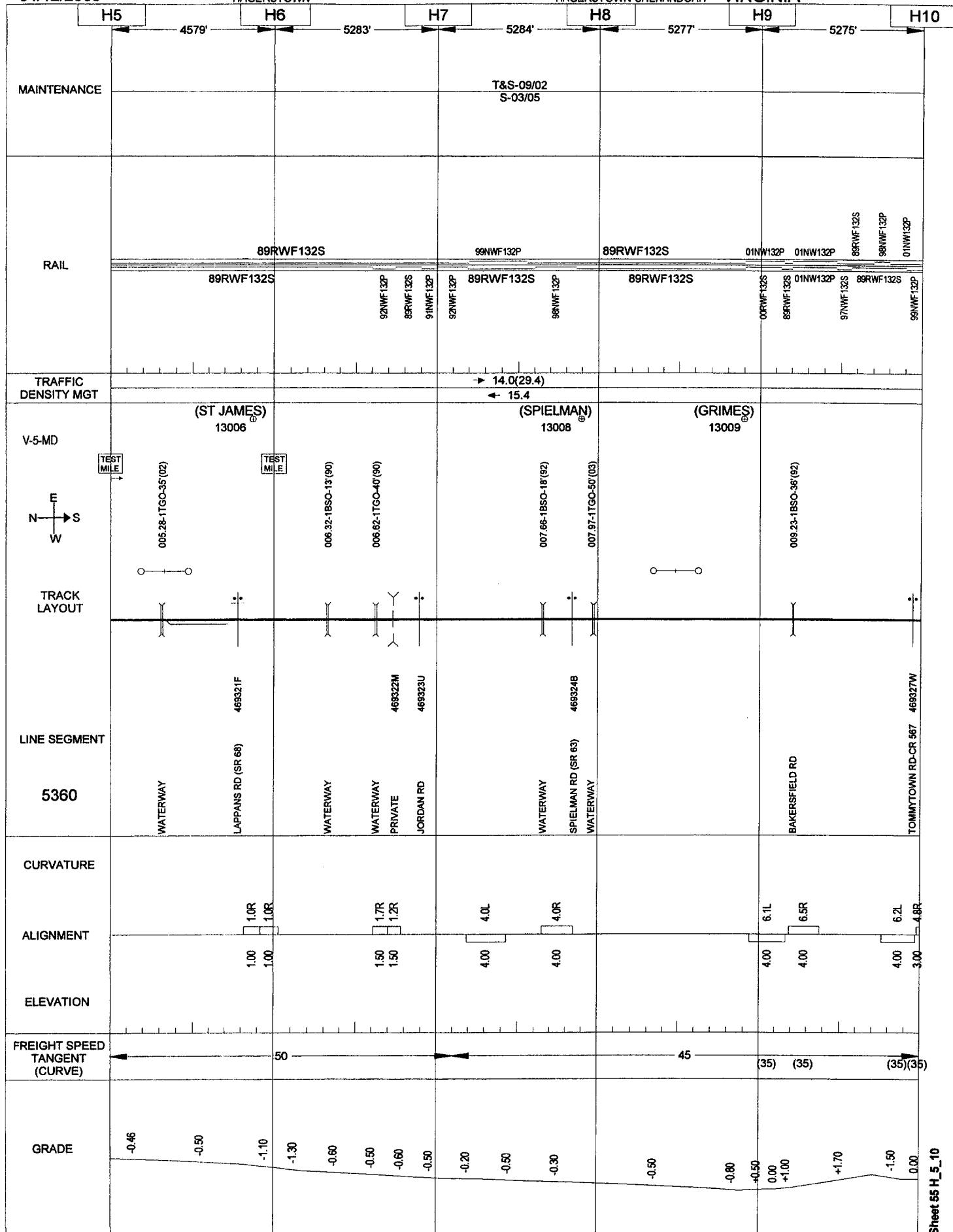
04/12/2006

HAGERSTOWN

157

HAGERSTOWN-SHENANDOAH

VIRGINIA



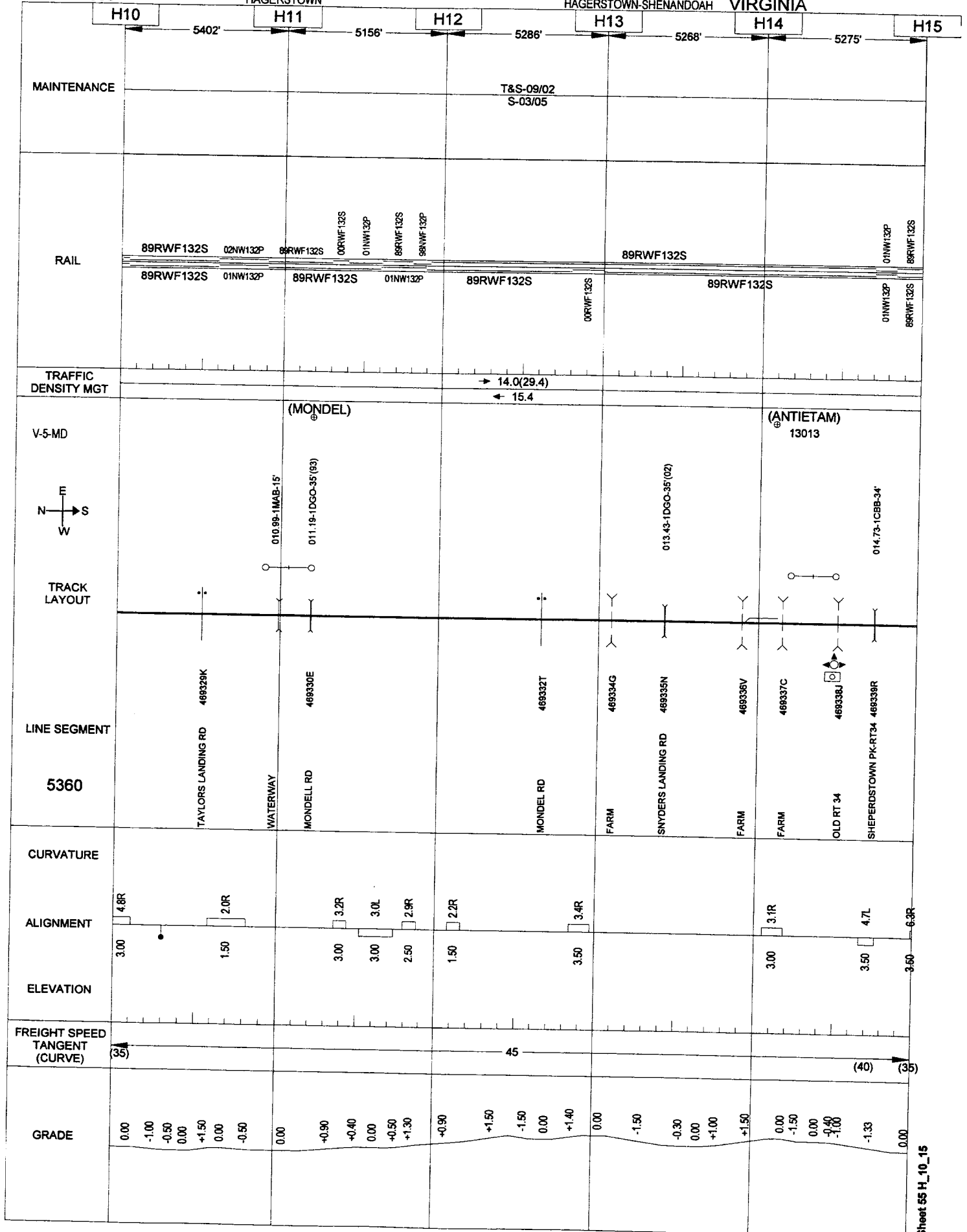
04/12/2006

HAGERSTOWN

158

HAGERSTOWN-SHENANDOAH

VIRGINIA



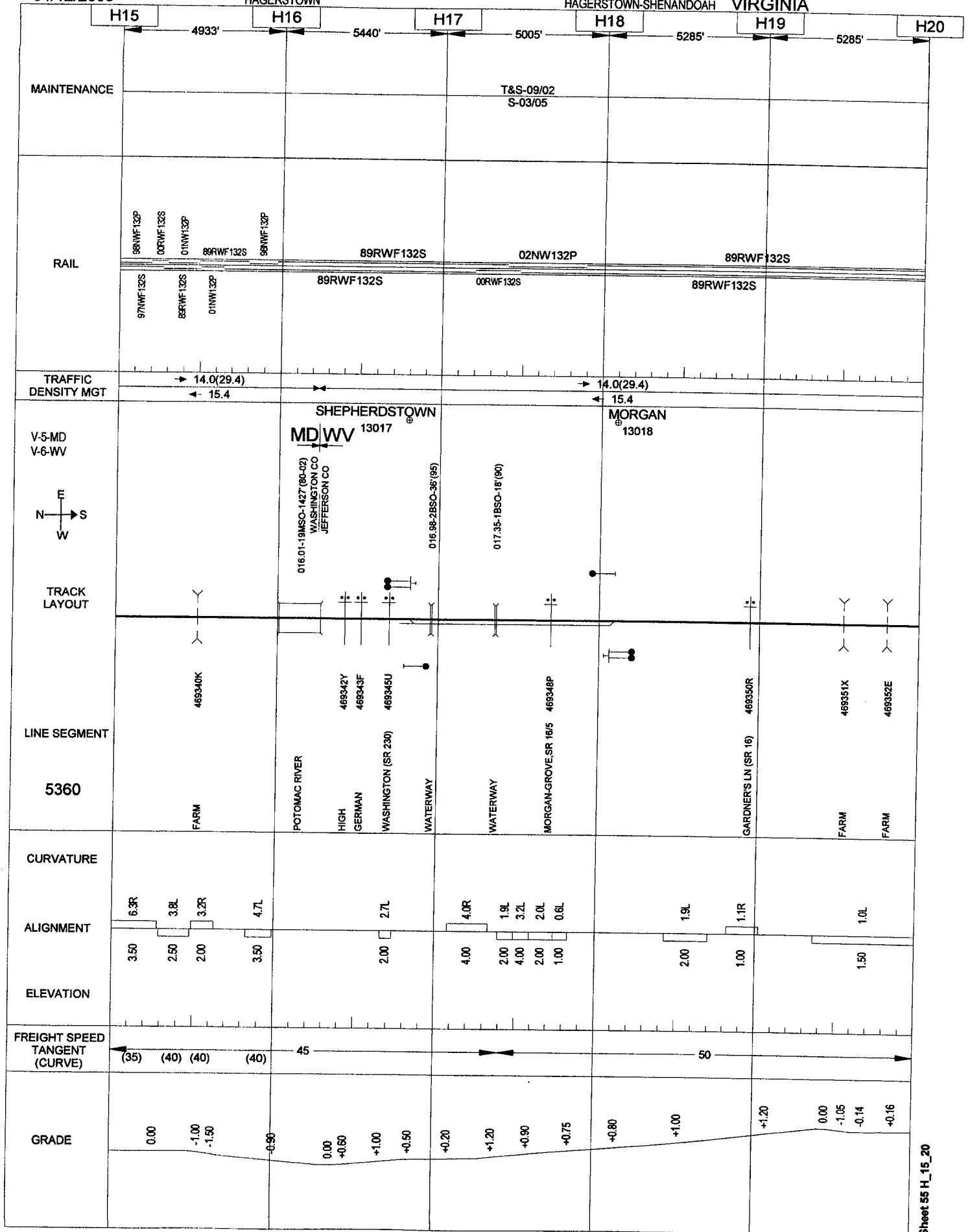
04/12/2006

HAGERSTOWN

159

HAGERSTOWN-SHENANDOAH

VIRGINIA



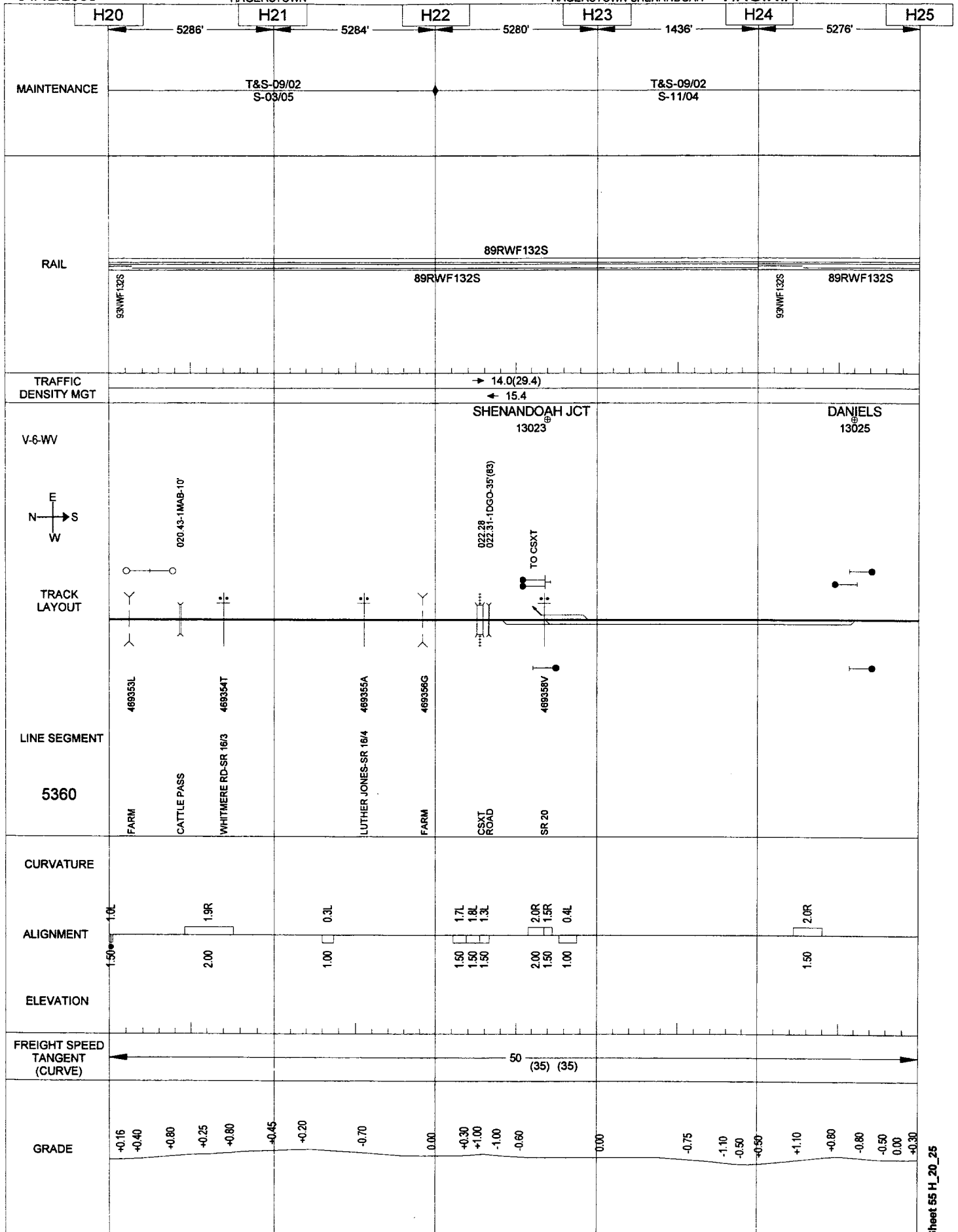
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160

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



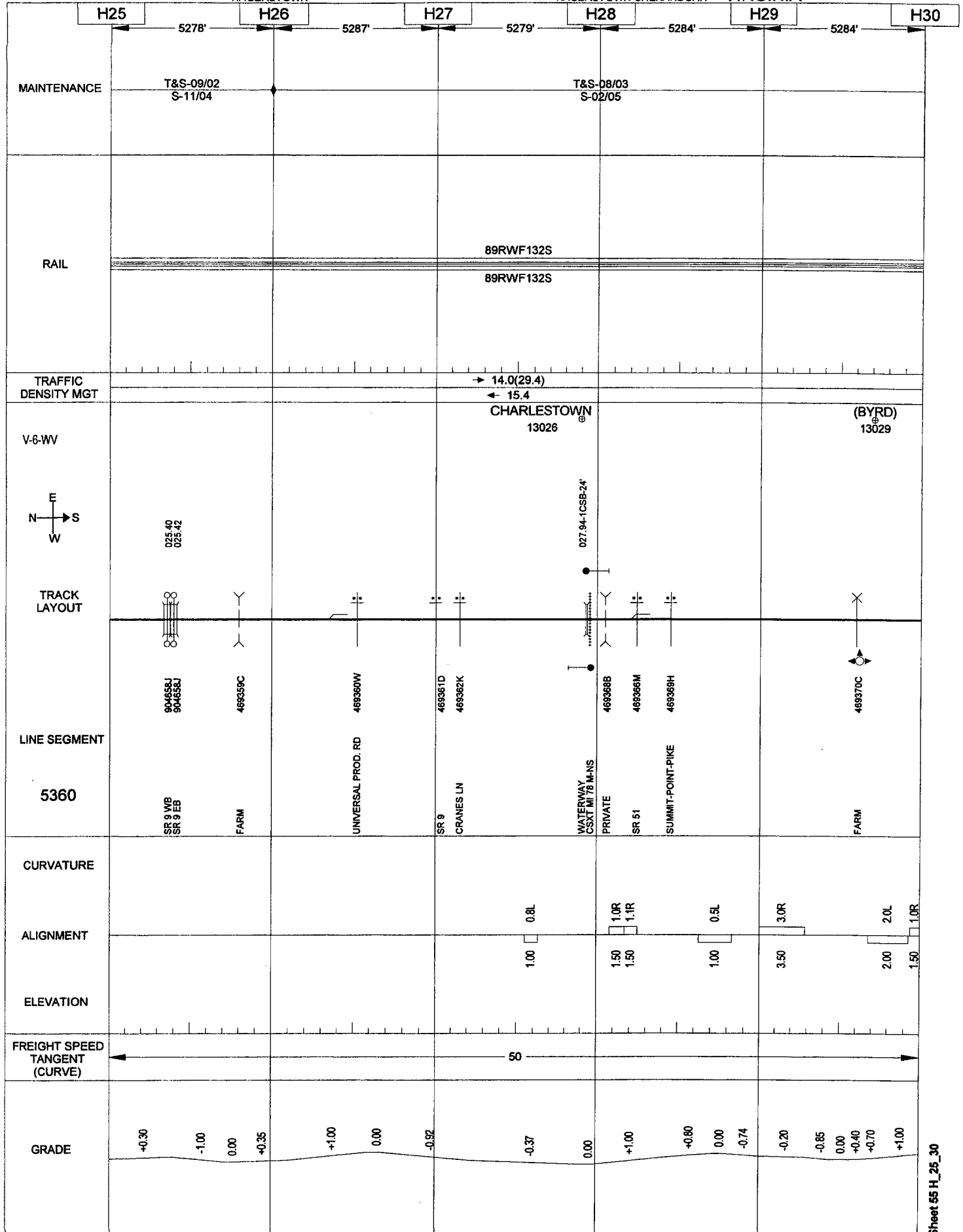
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161

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



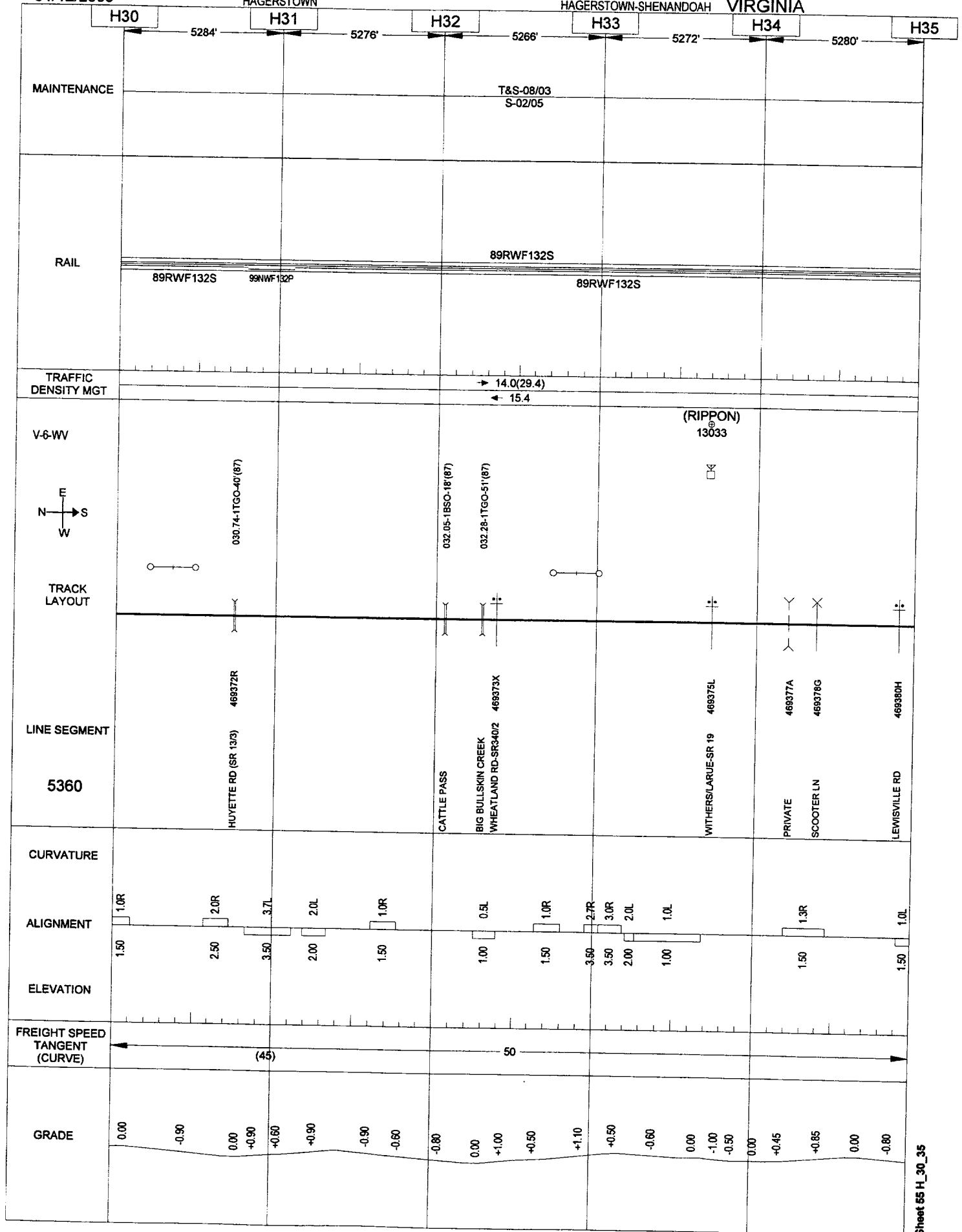
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HAGERSTOWN

162

HAGERSTOWN-SHENANDOAH

VIRGINIA



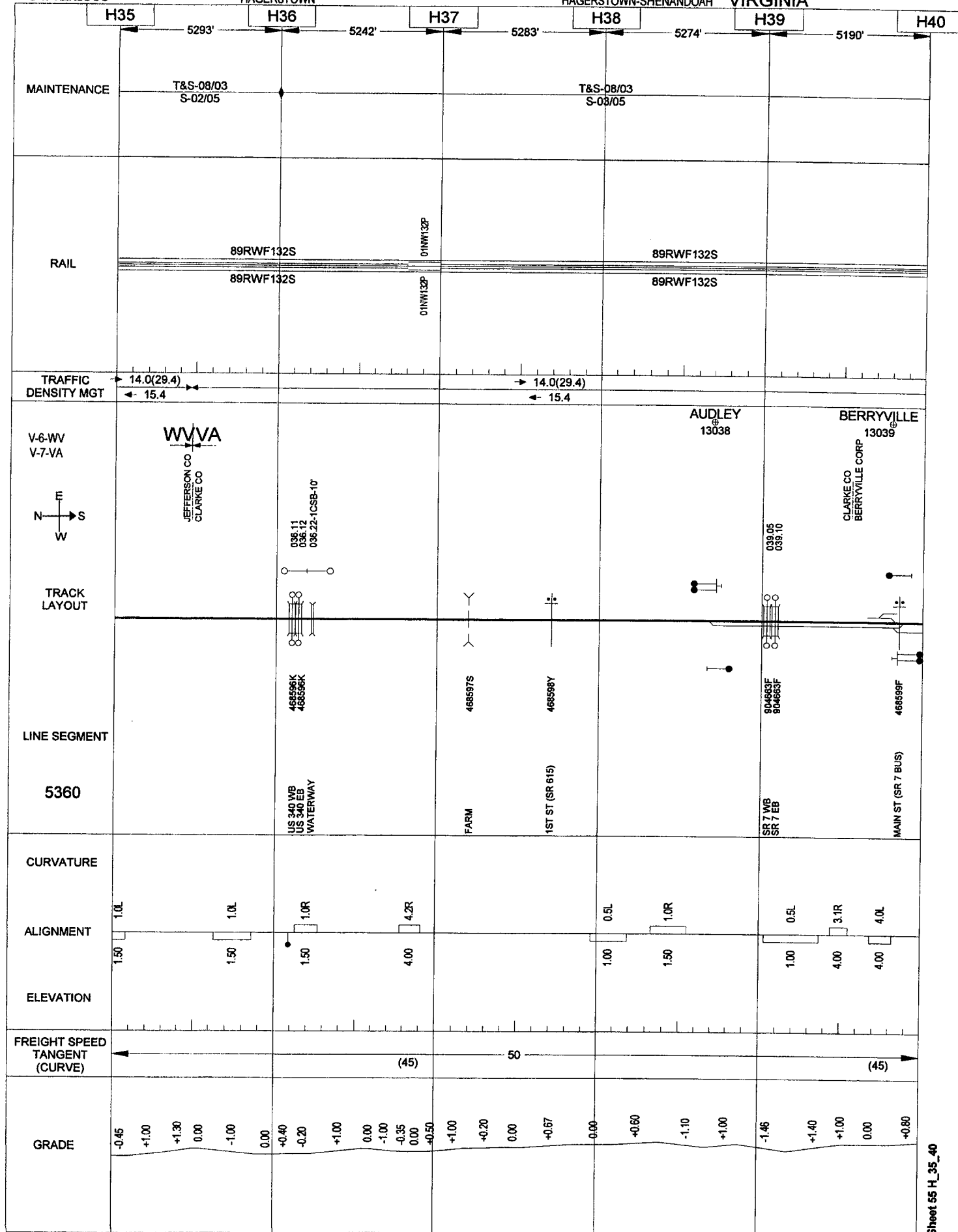
04/12/2006

163

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



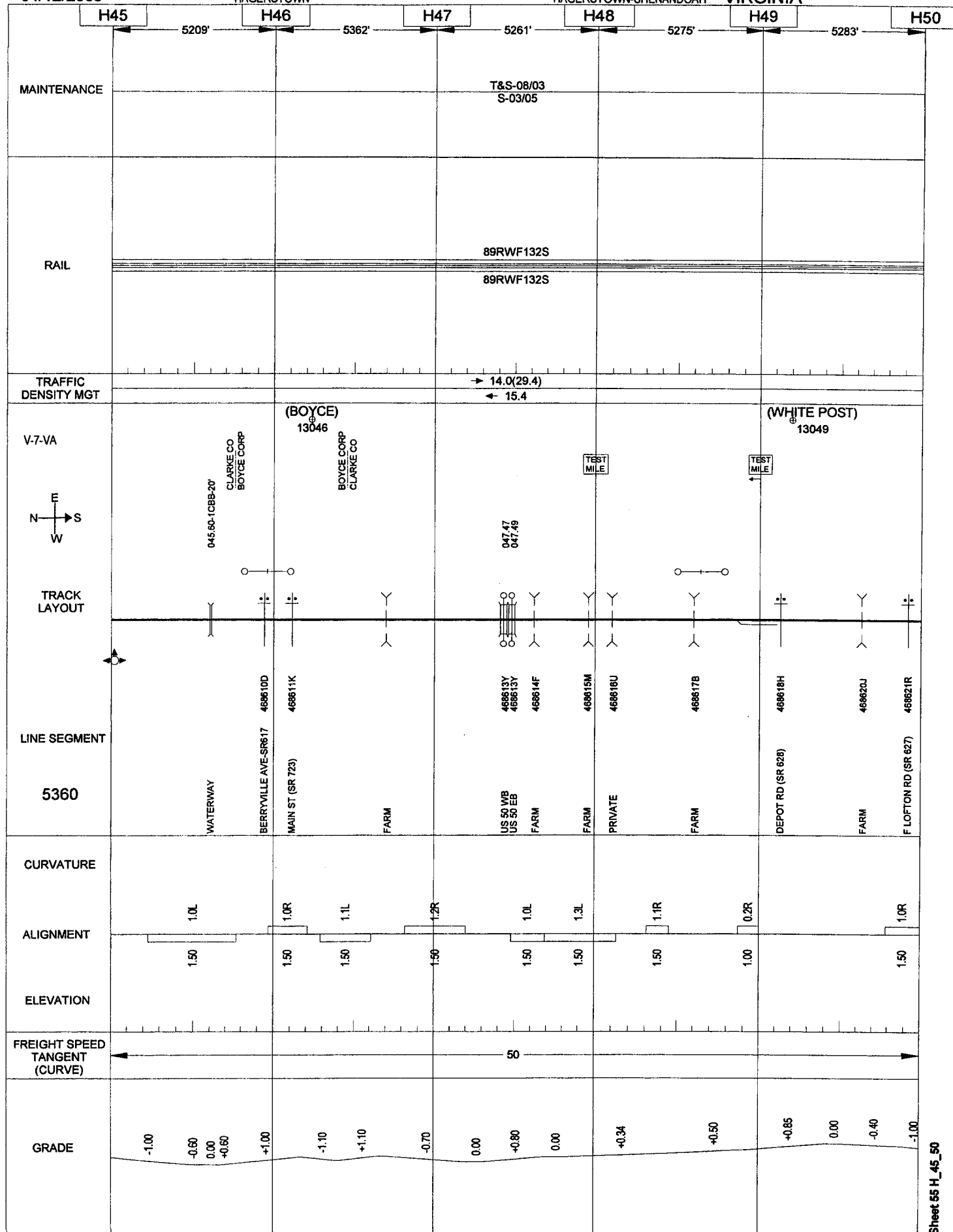
04/12/2006

HAGERSTOWN

165

HAGERSTOWN-SHENANDOAH

VIRGINIA



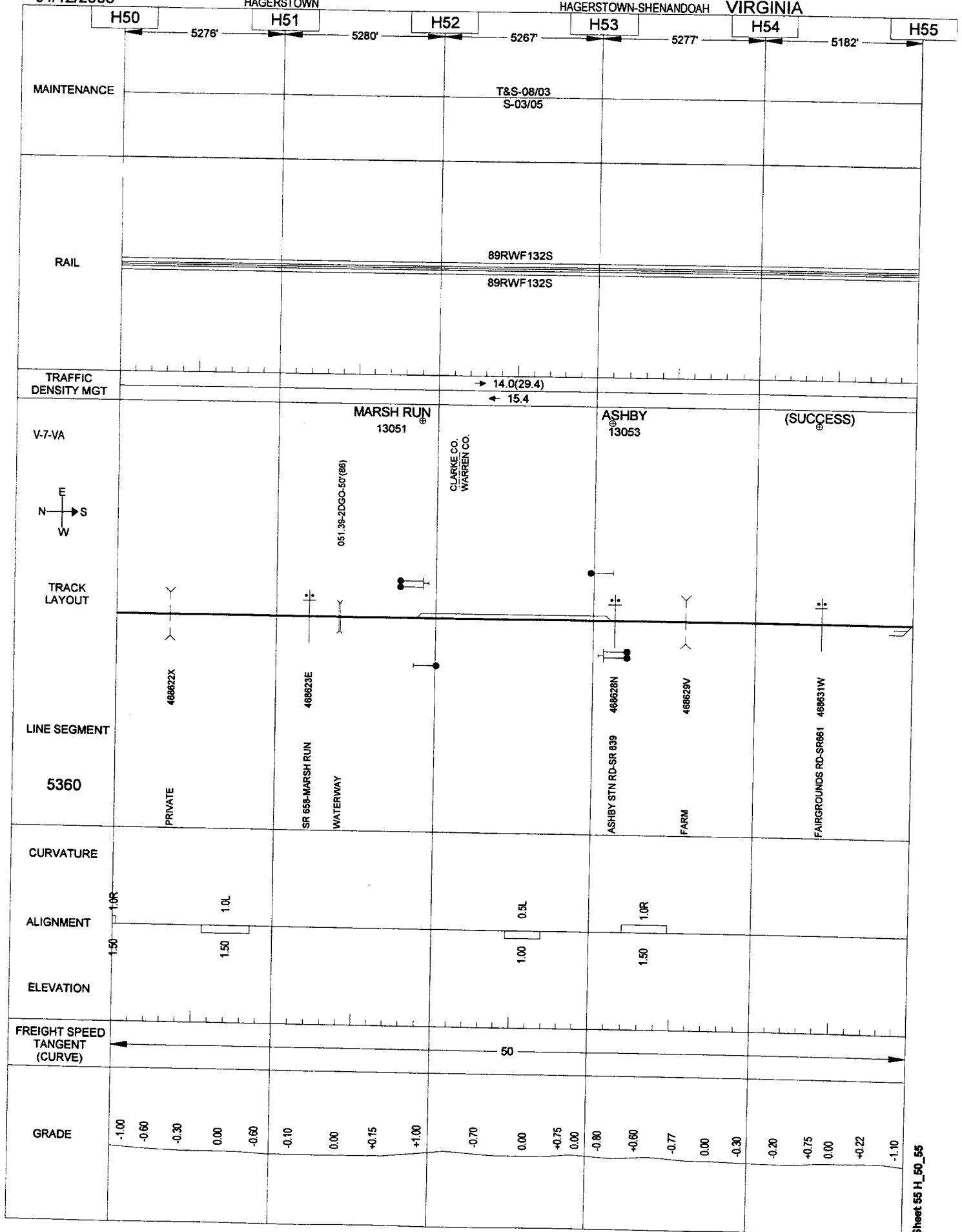
04/12/2006

HAGERSTOWN

166

HAGERSTOWN-SHENANDOAH

VIRGINIA



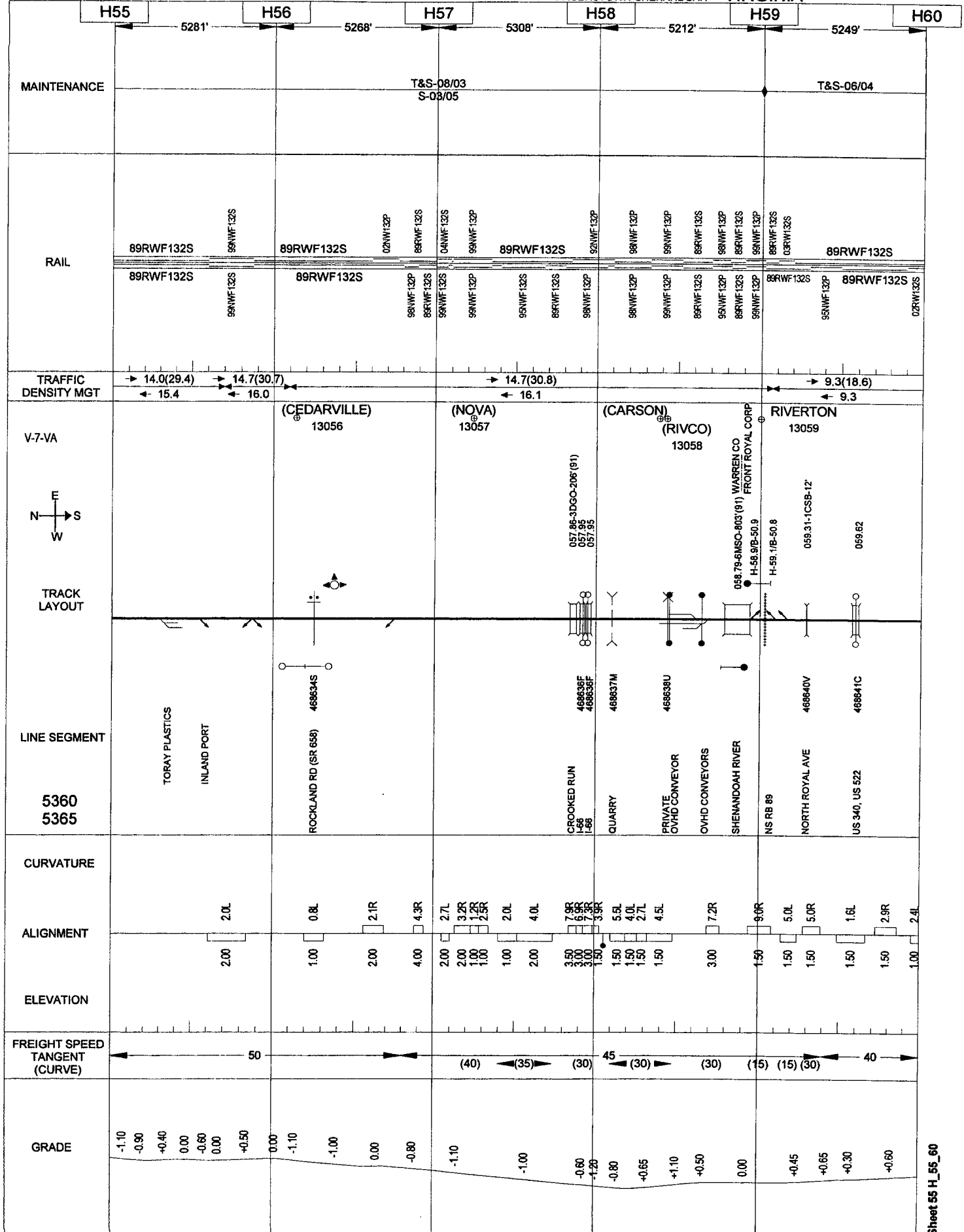
04/12/2006

167

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



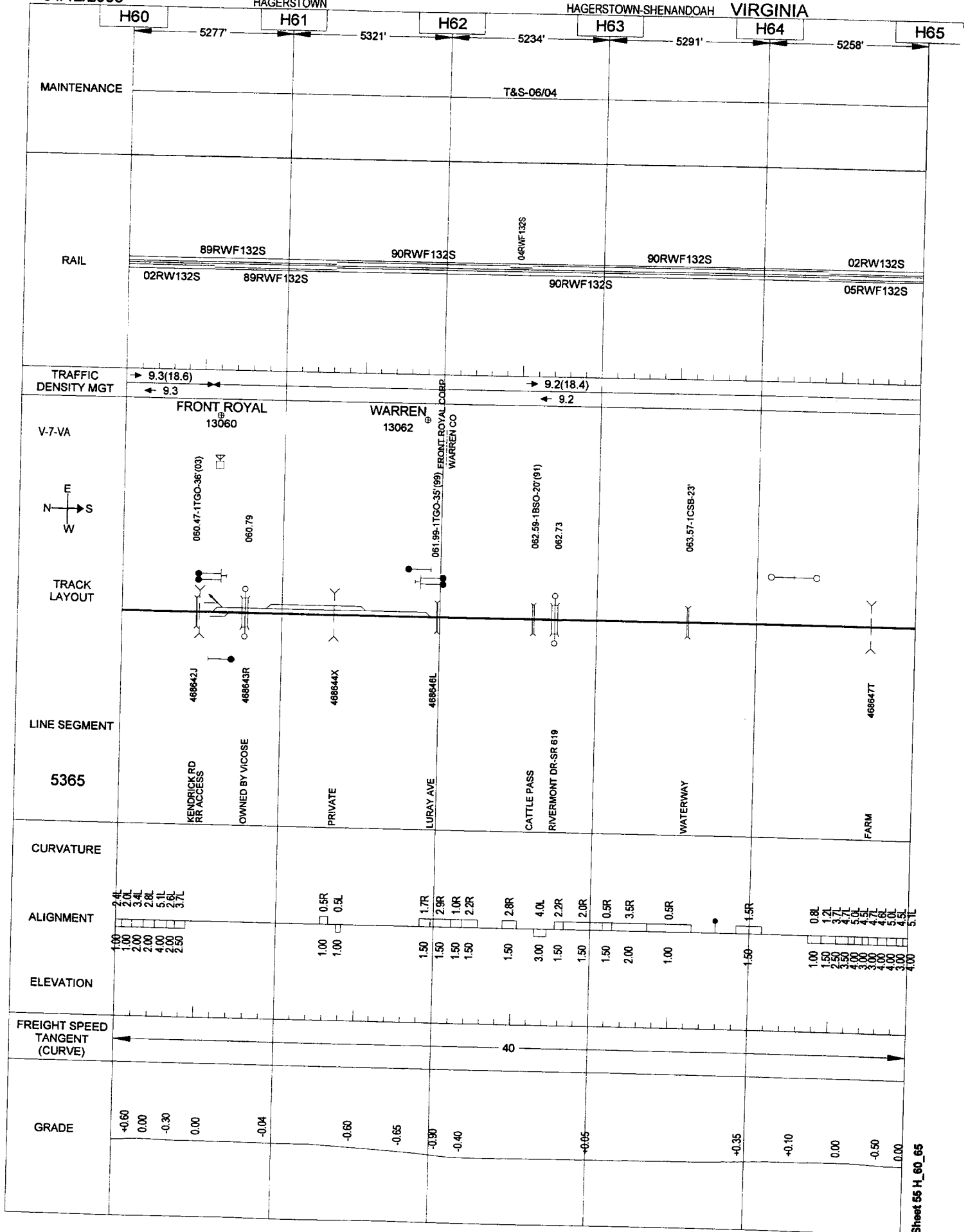
04/12/2006

168

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



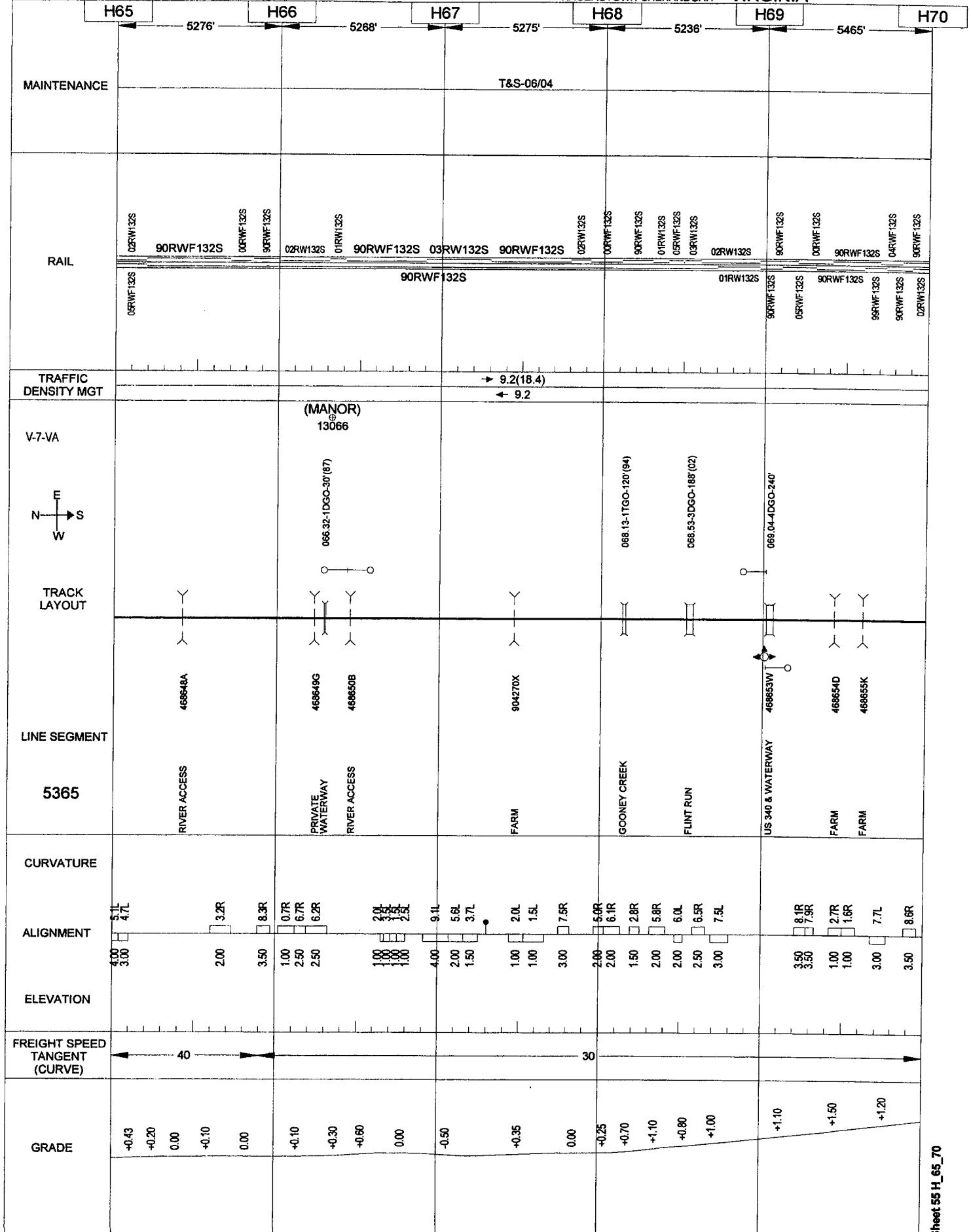
04/12/2006

169

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



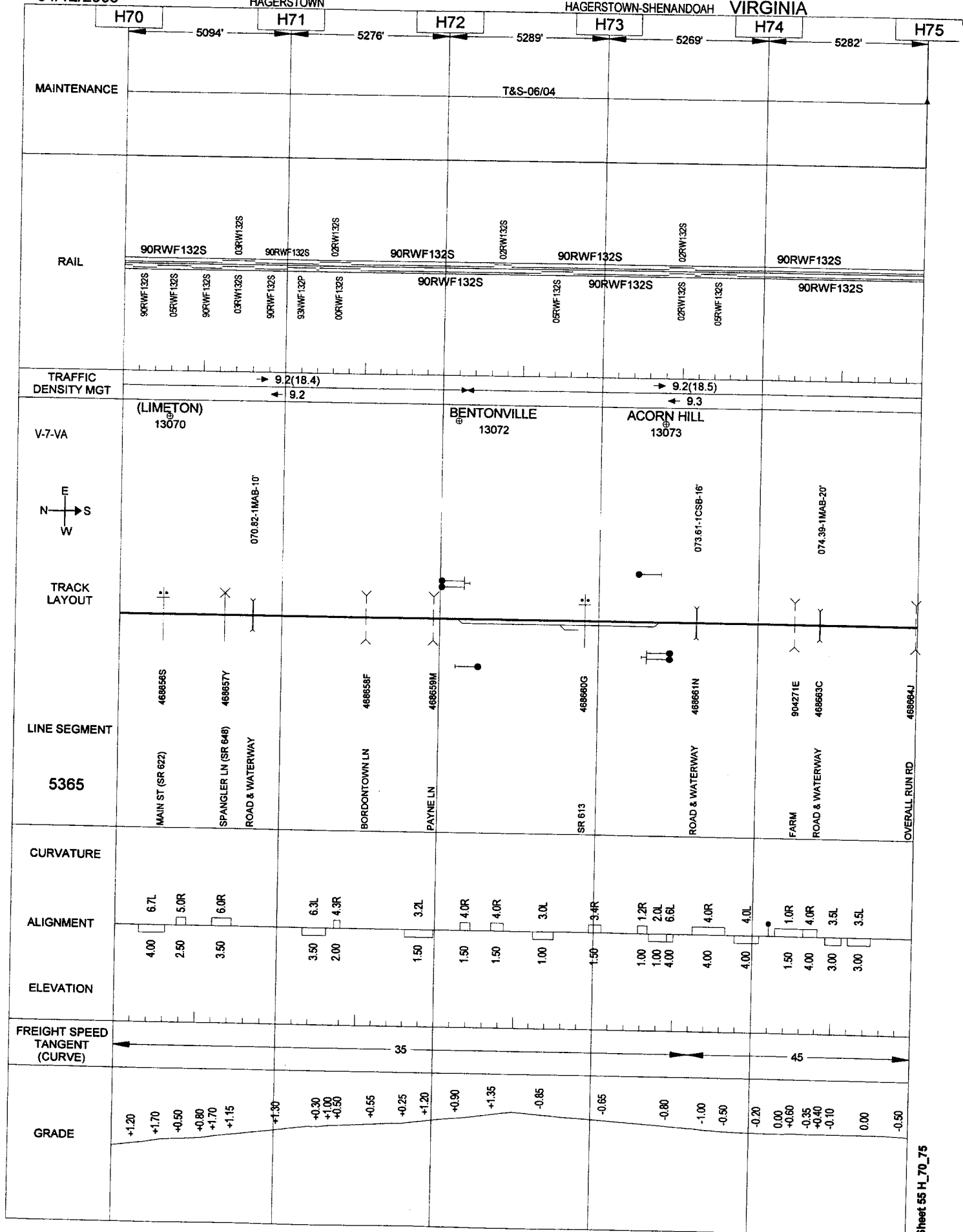
04/12/2006

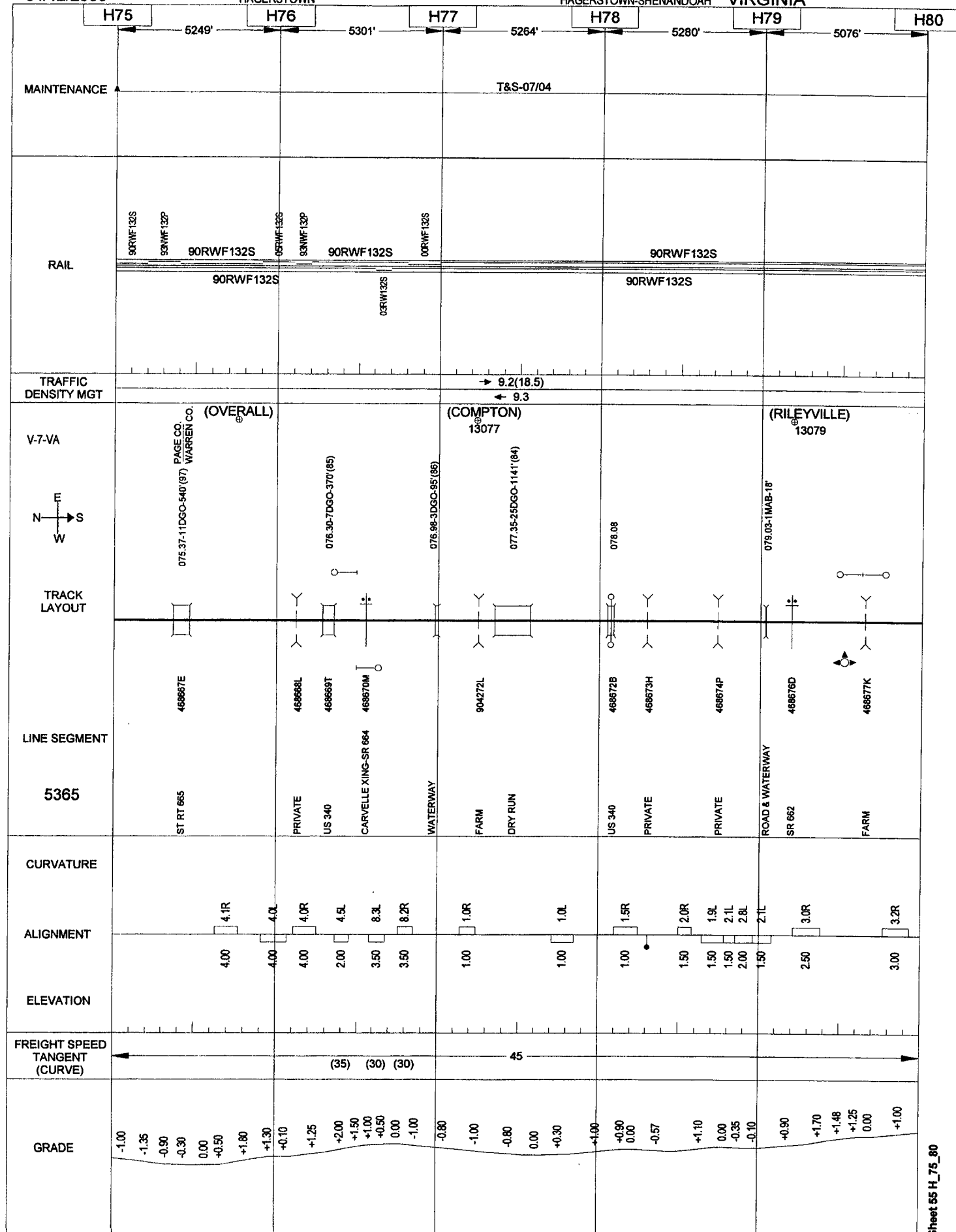
170

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA





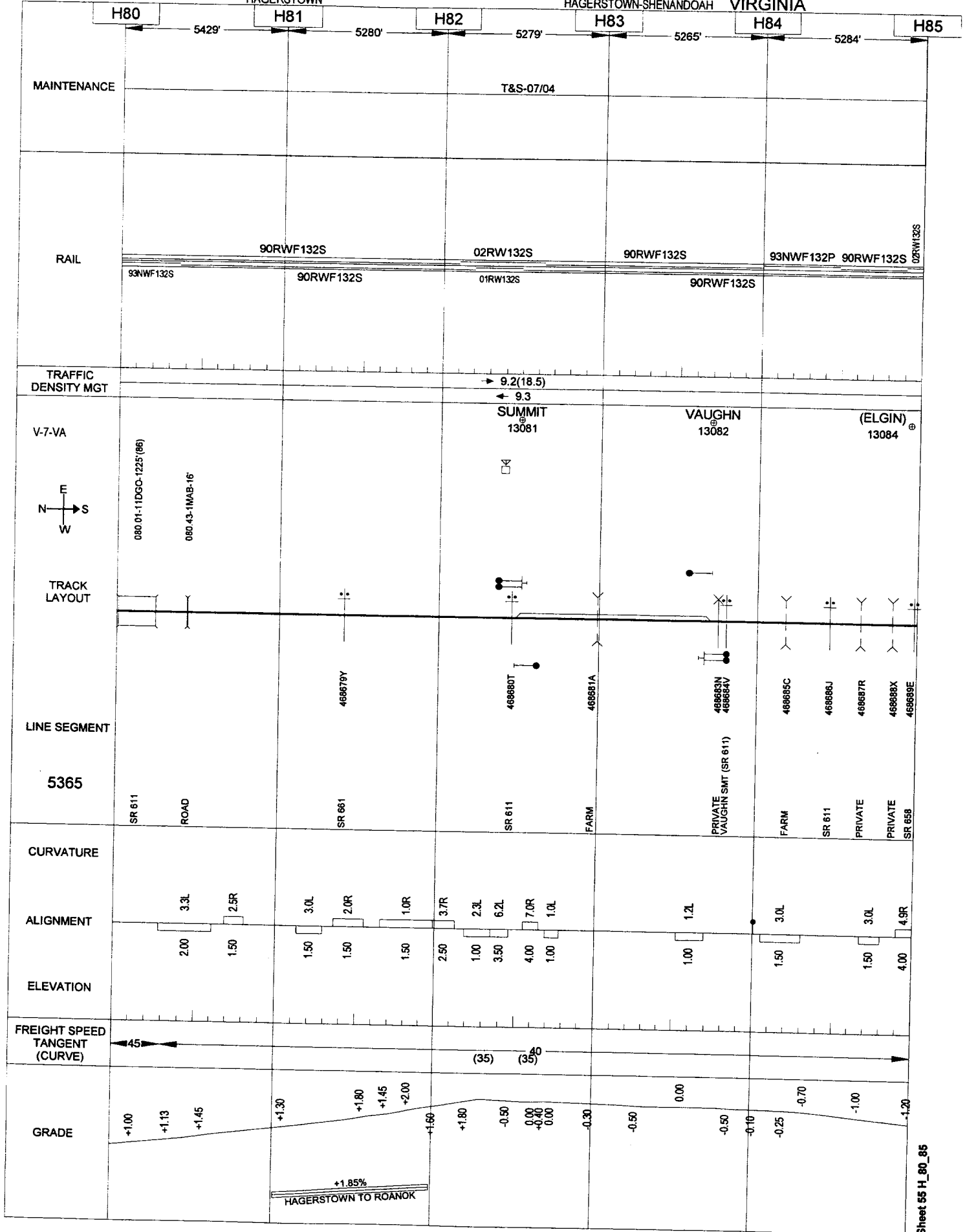
04/12/2006

172

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



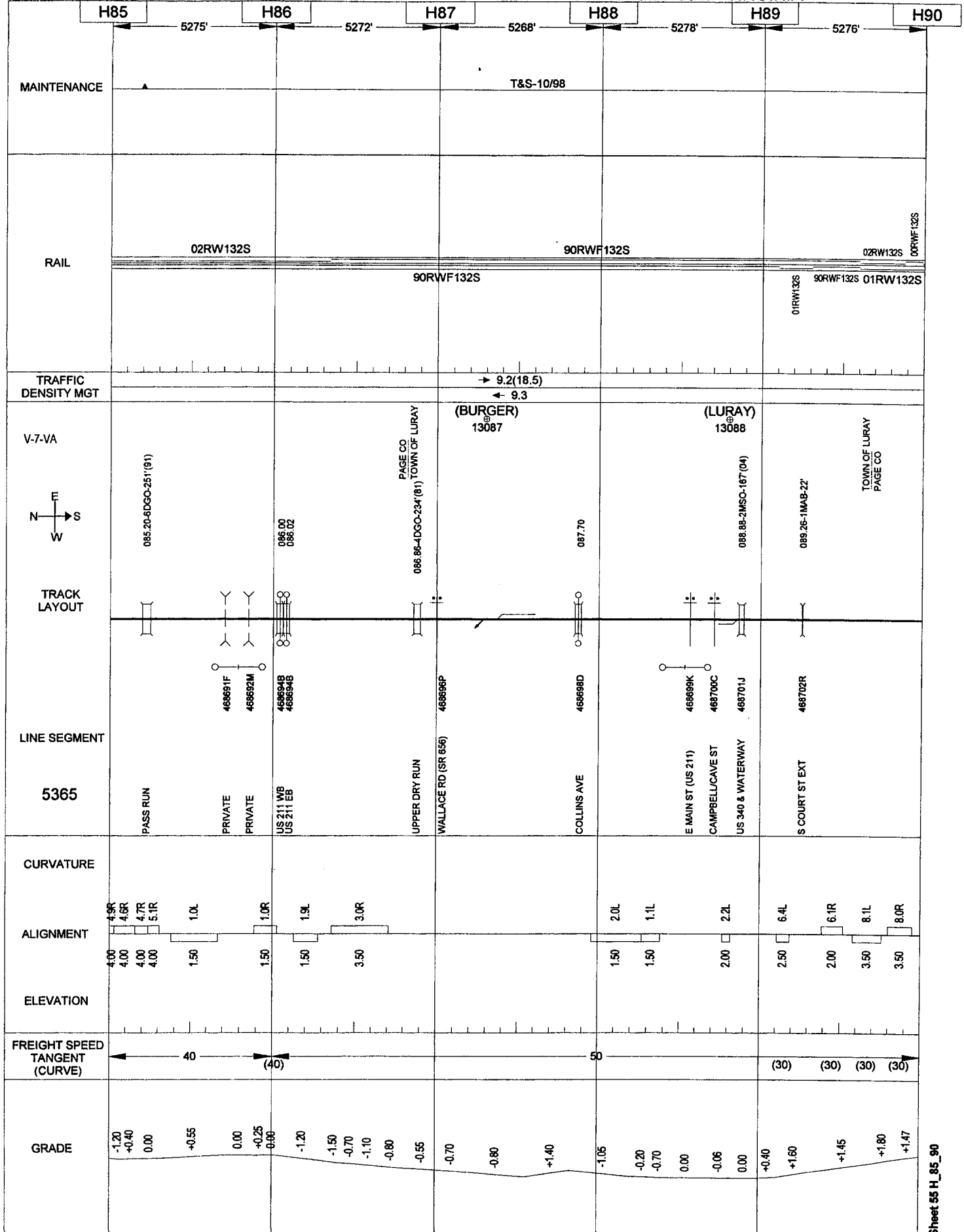
04/12/2006

173

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



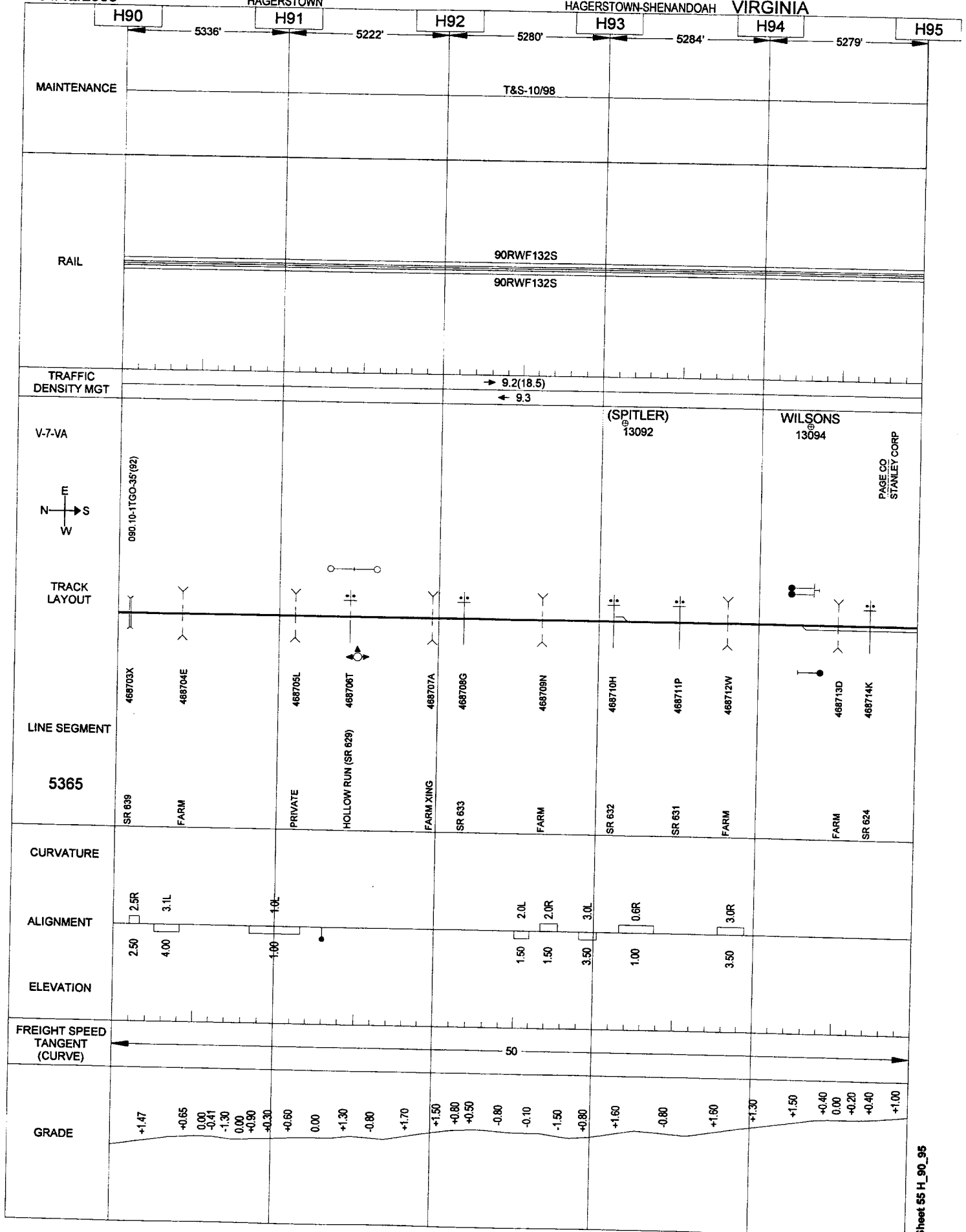
04/12/2006

174

HAGERSTOWN

HAGERSTOWN-SHENANDOAH

VIRGINIA



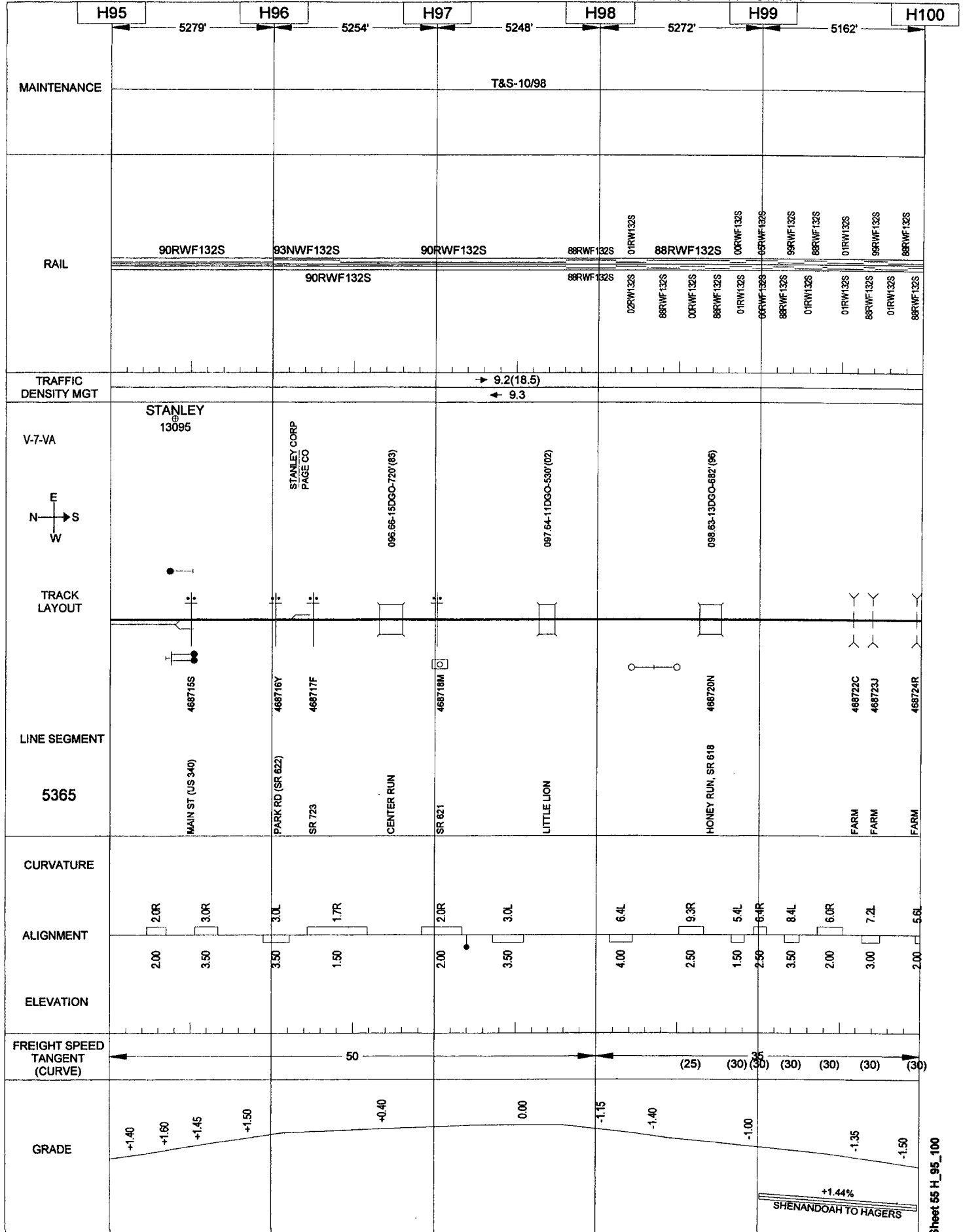
04/12/2006

HAGERSTOWN

175

HAGERSTOWN-SHENANDOAH

VIRGINIA



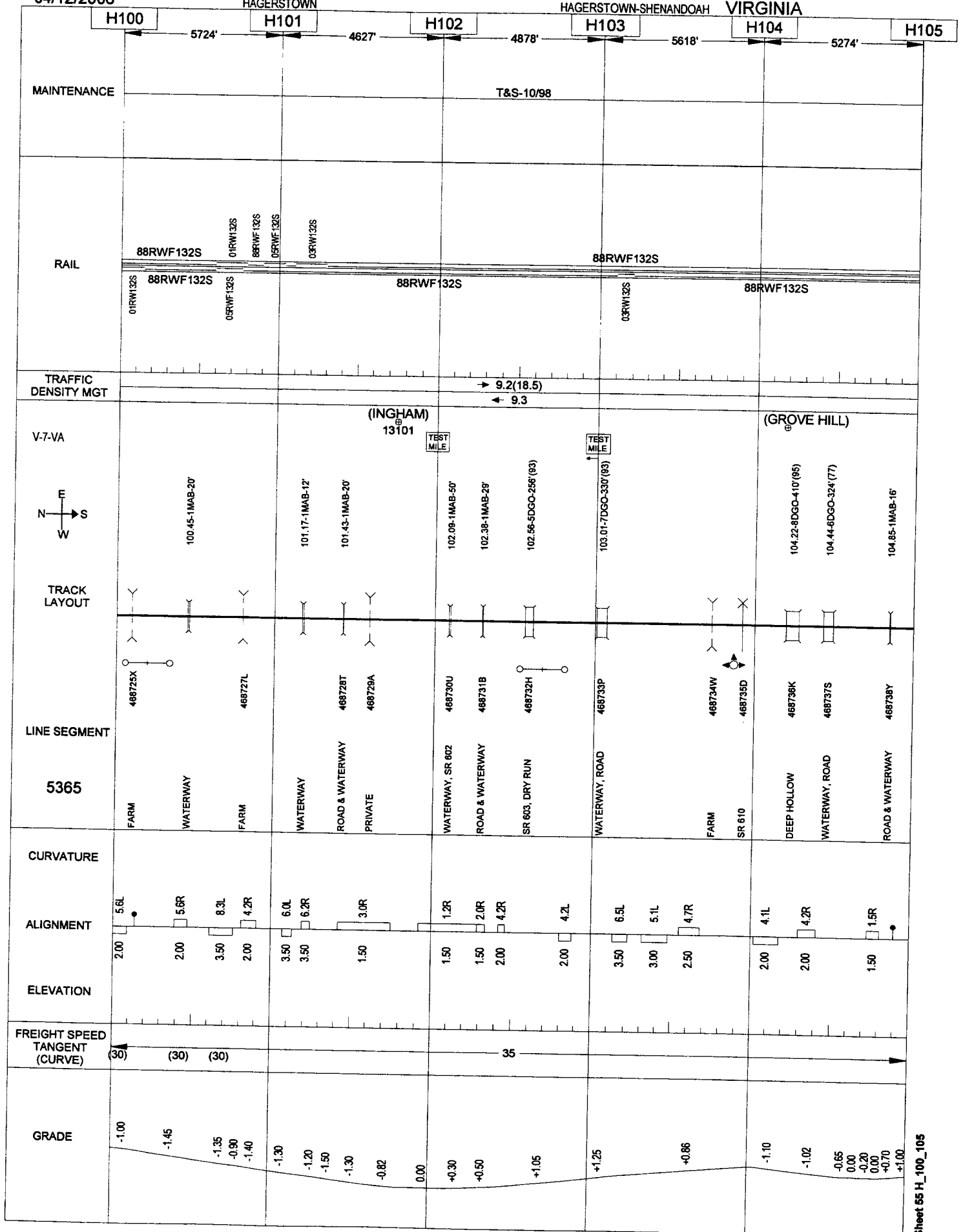
04/12/2006

HAGERSTOWN

176

HAGERSTOWN-SHENANDOAH

VIRGINIA



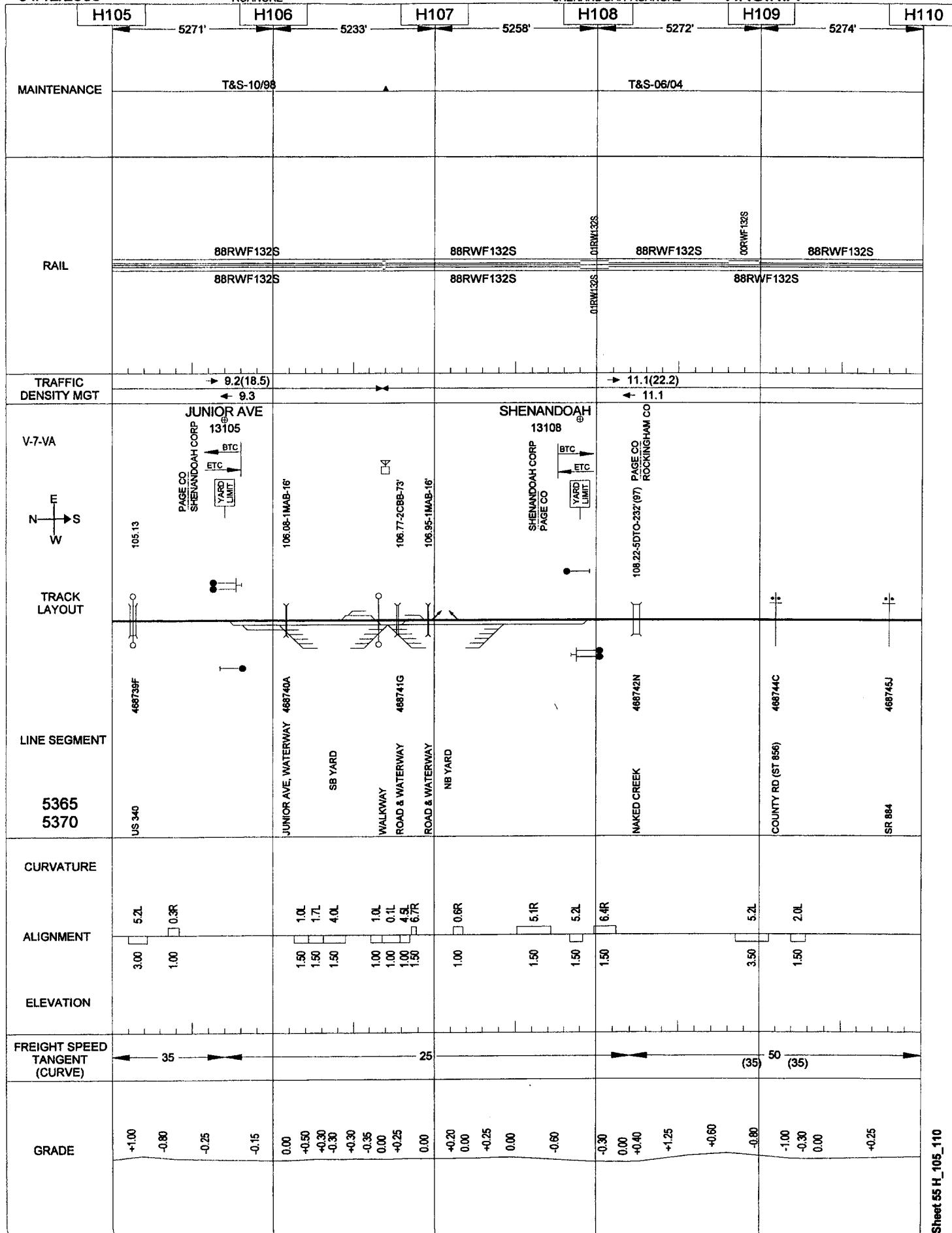
04/12/2006

ROANOKE

177

SHENANDOAH-ROANOKE

VIRGINIA



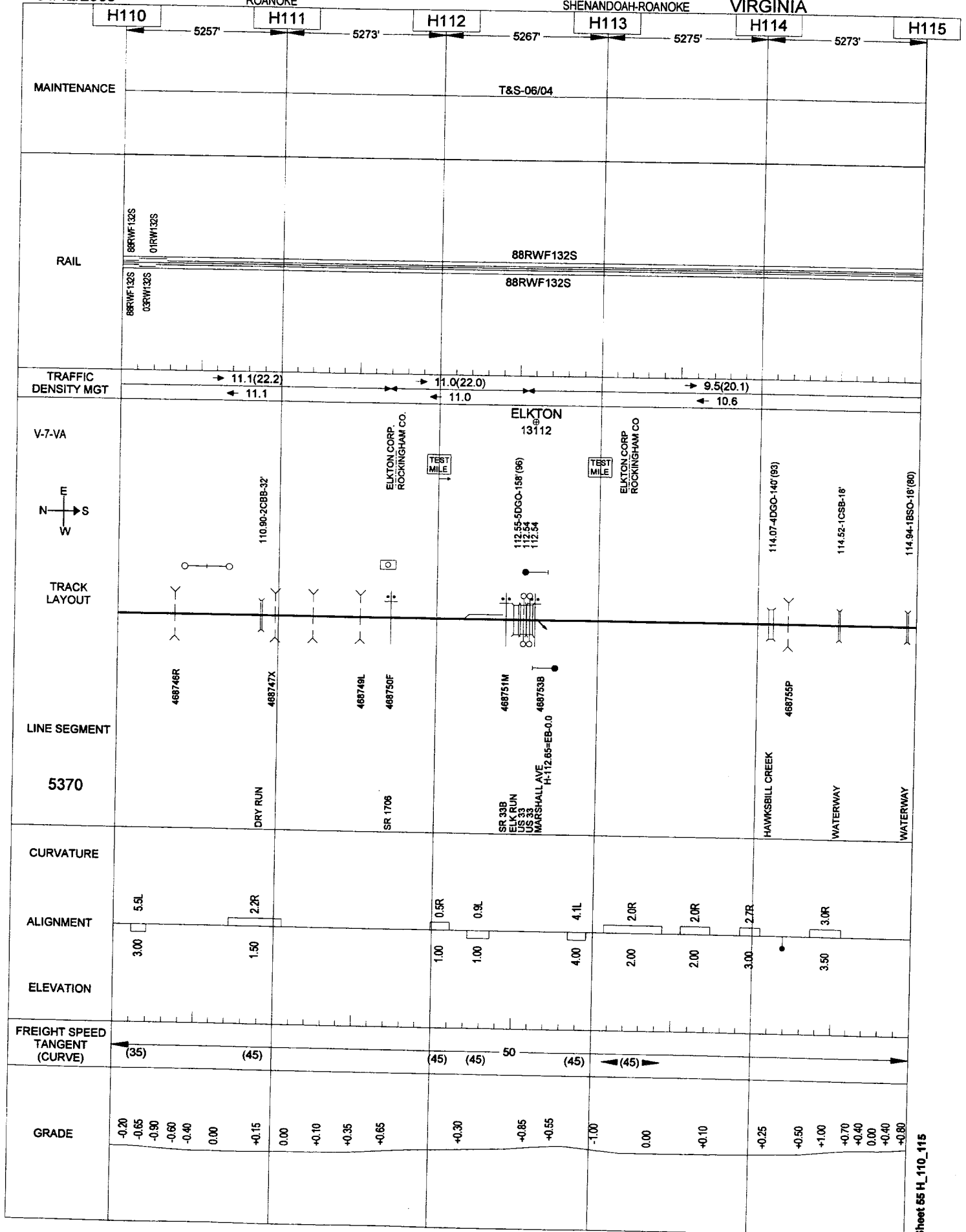
04/12/2006

ROANOKE

178

SHENANDOAH-ROANOKE

VIRGINIA



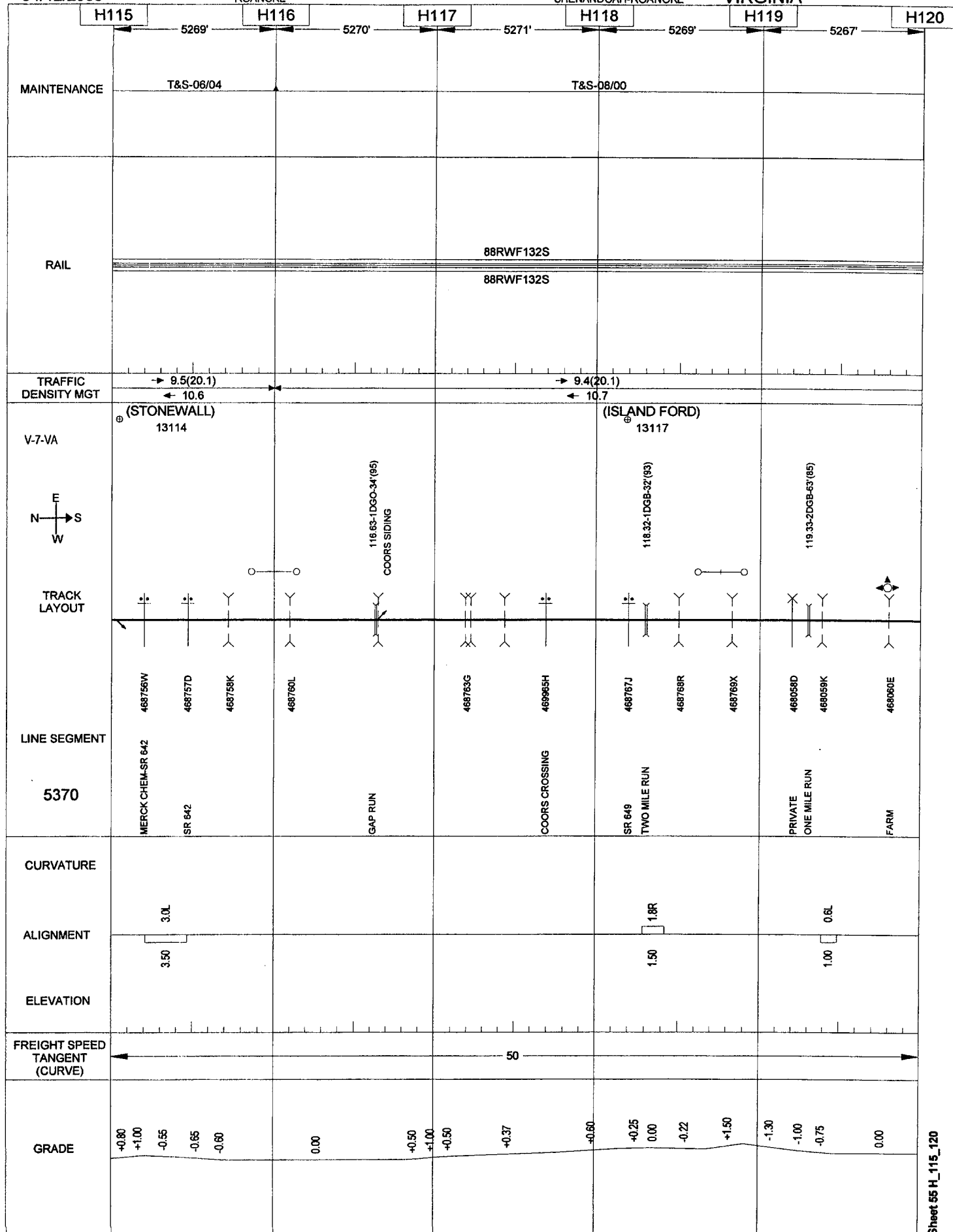
04/12/2006

ROANOKE

179

SHENANDOAH-ROANOKE

VIRGINIA



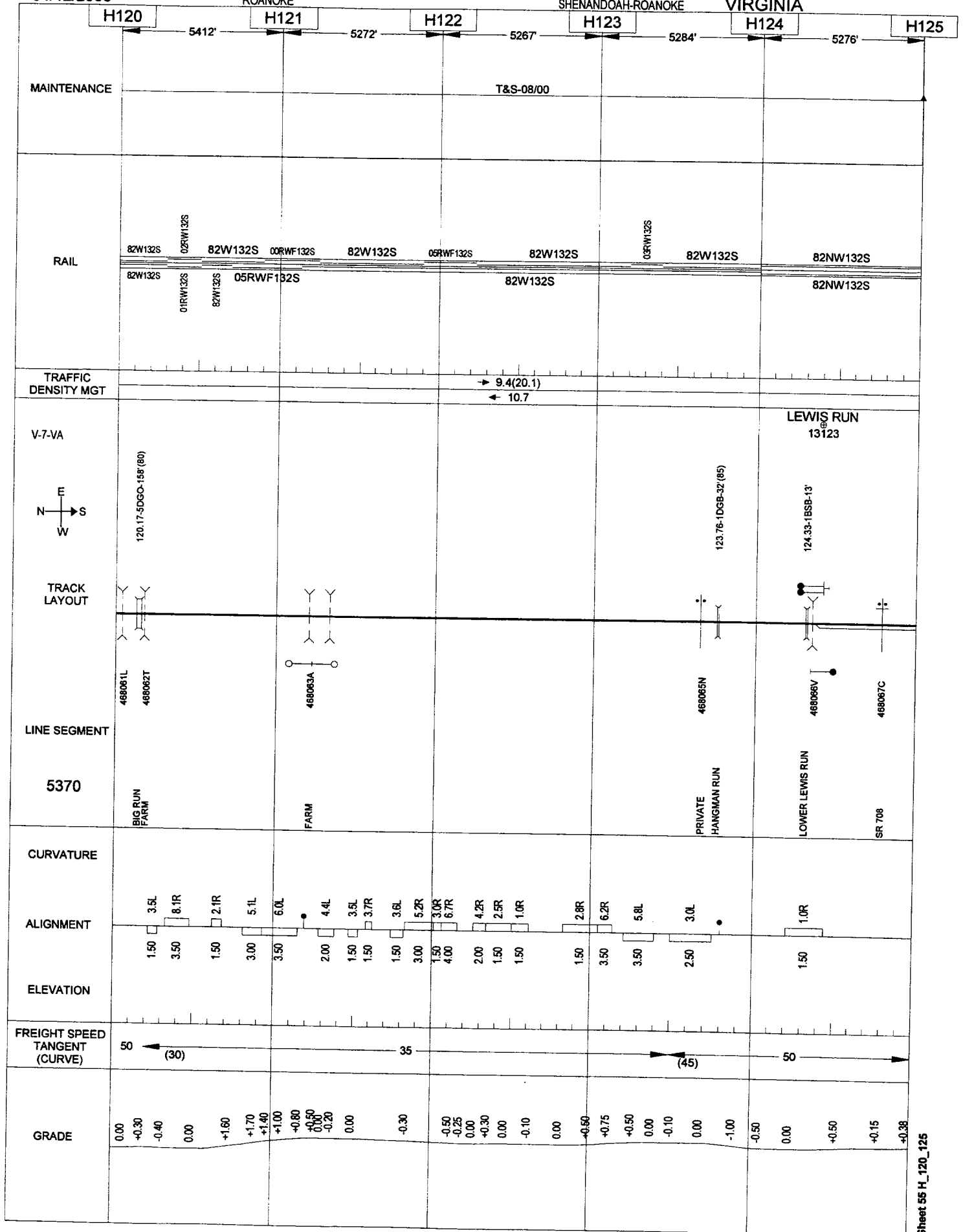
04/12/2006

ROANOKE

180

SHENANDOAH-ROANOKE

VIRGINIA



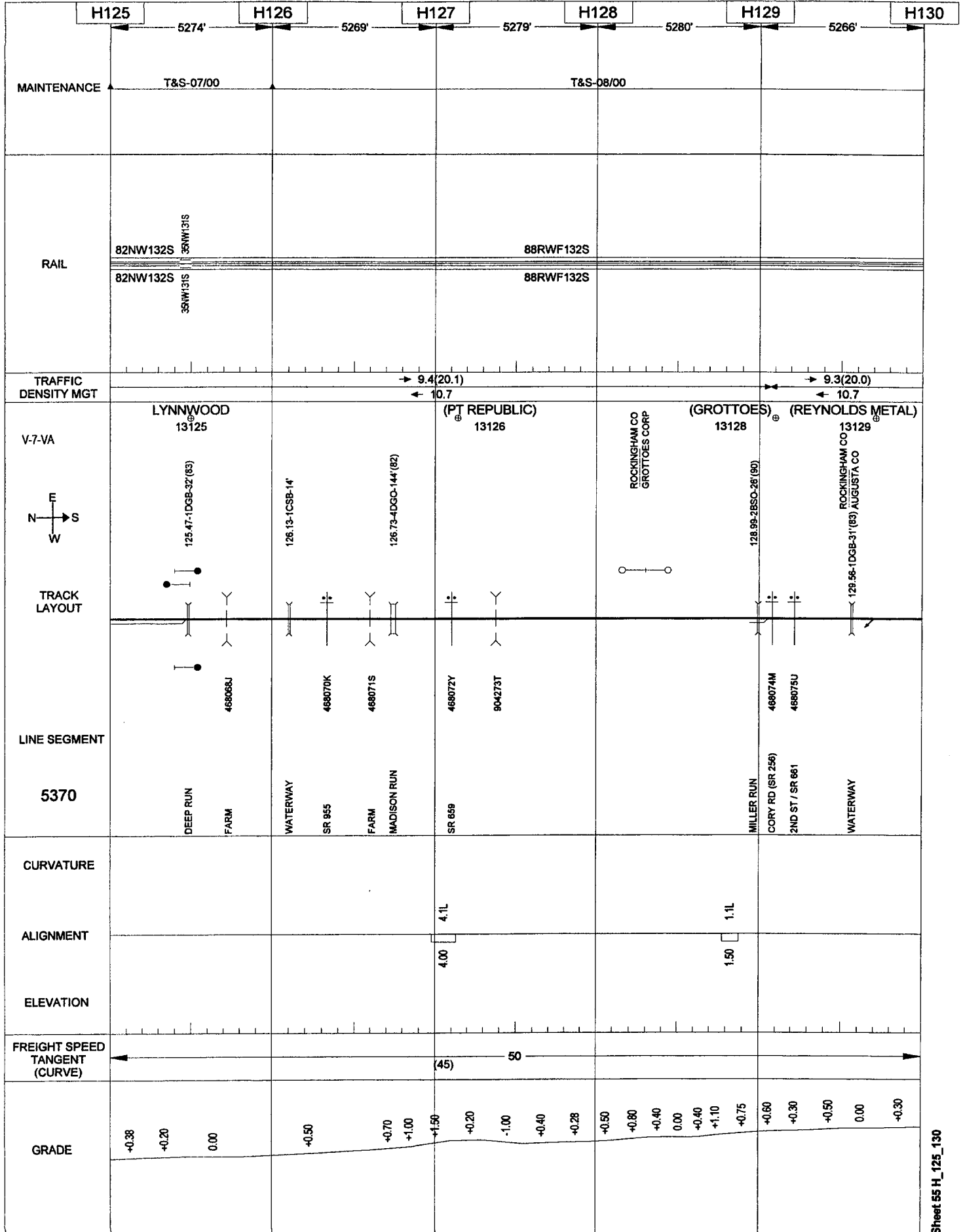
04/12/2006

ROANOKE

181

SHENANDOAH-ROANOKE

VIRGINIA



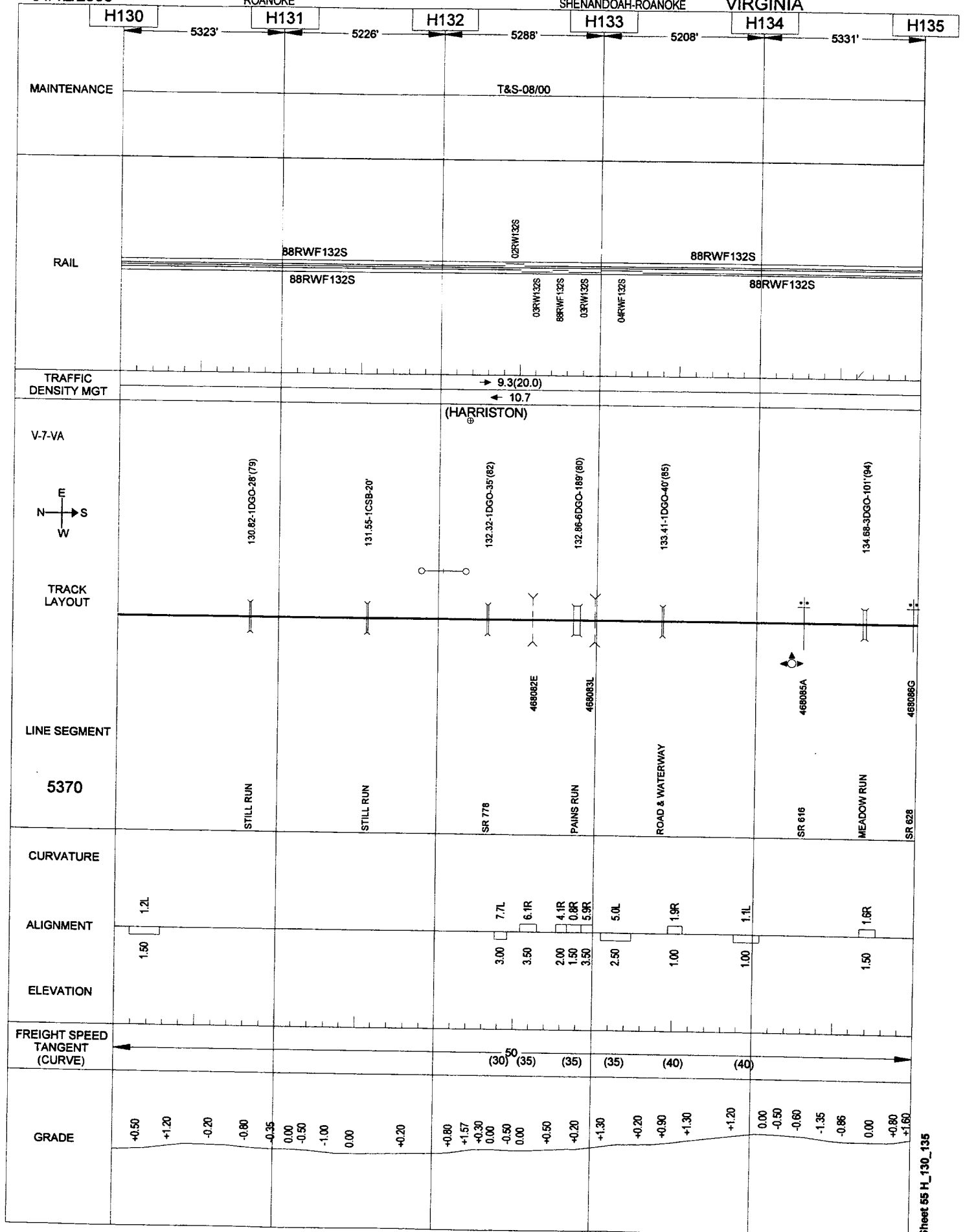
04/12/2006

ROANOKE

182

SHENANDOAH-ROANOKE

VIRGINIA



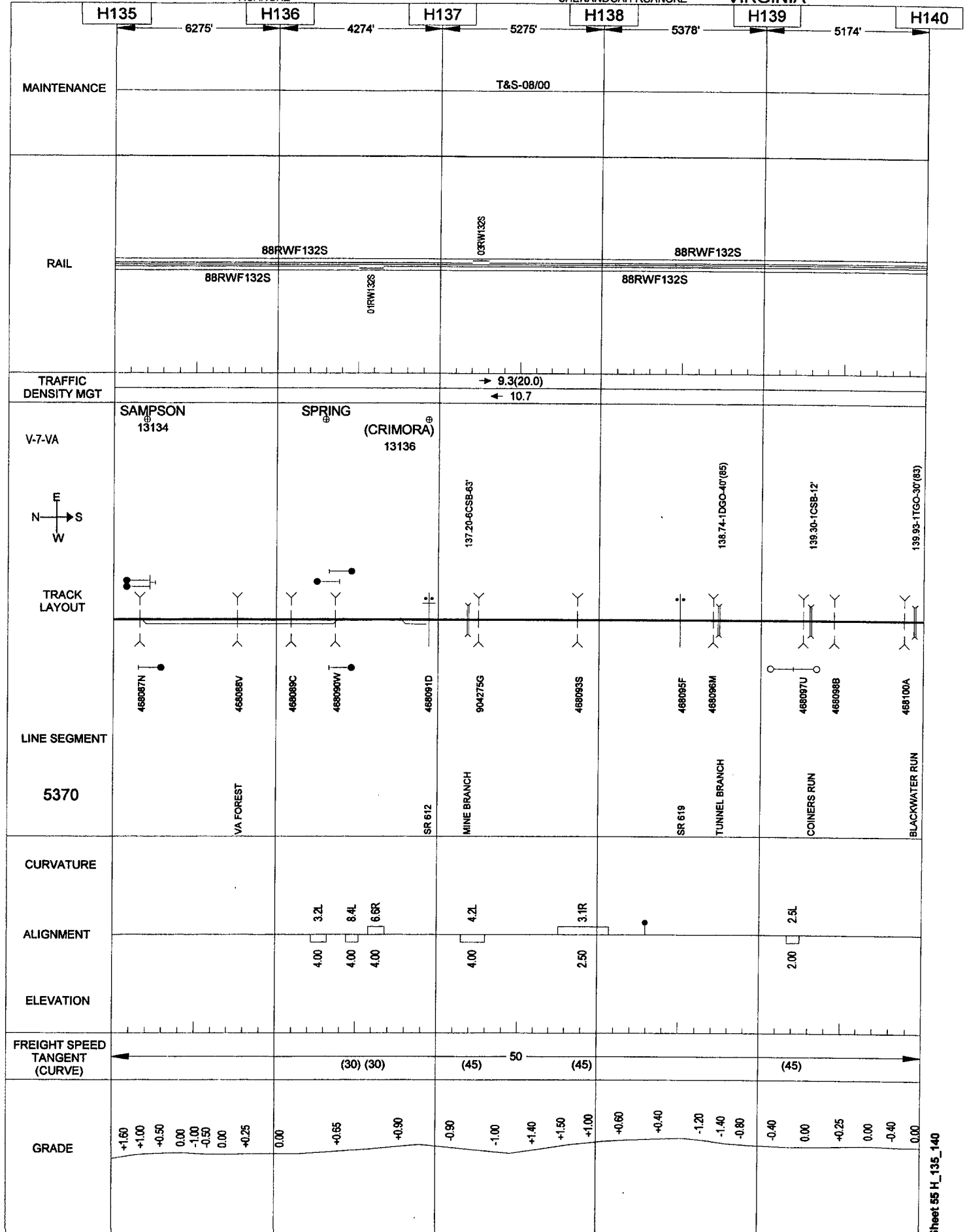
04/12/2006

ROANOKE

183

SHENANDOAH-ROANOKE

VIRGINIA



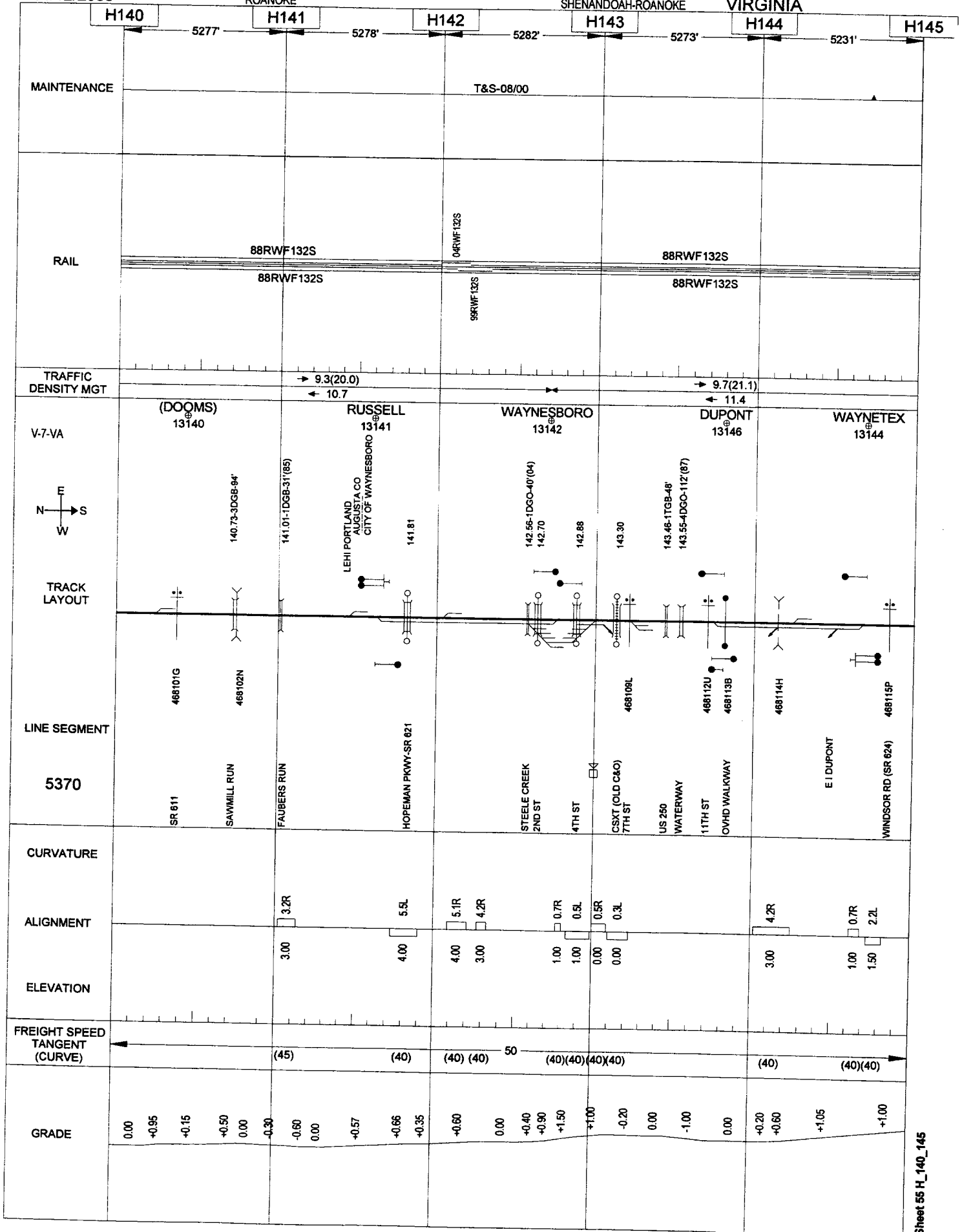
04/12/2006

184

ROANOKE

SHENANDOAH-ROANOKE

VIRGINIA



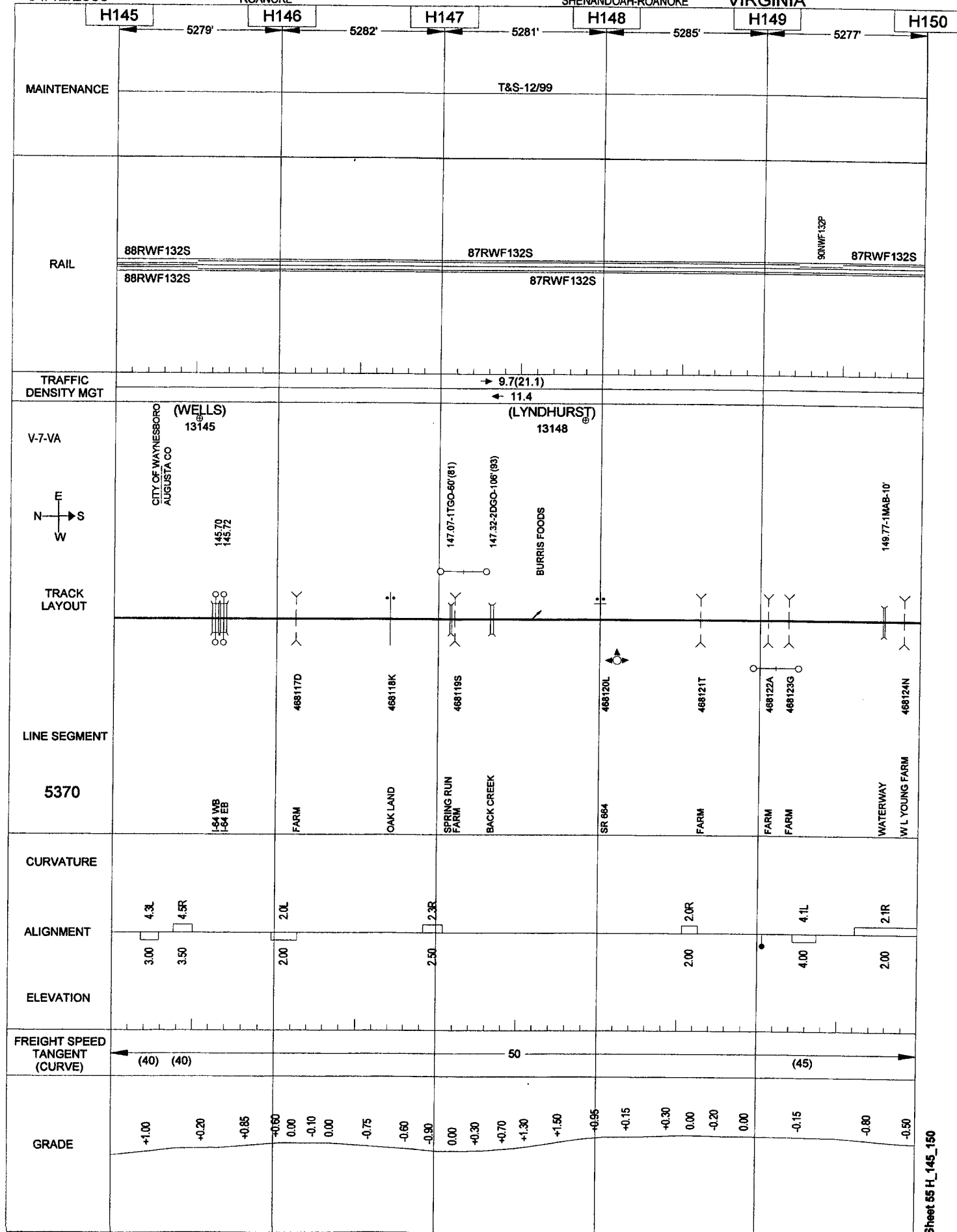
04/12/2006

ROANOKE

185

SHENANDOAH-ROANOKE

VIRGINIA



04/12/2006

ROANOKE

186

SHENANDOAH-ROANOKE

VIRGINIA

H150

H151

H152

H153

H154

H155

5279'

5280'

5241'

5318'

5280'

MAINTENANCE

T&S-12/99

RAIL

87RWF132S

87RWF132S

91NWF132P

TRAFFIC
DENSITY MGT→ 9.7(21.1)
← 11.4→ 9.4(20.7)
← 11.3

V-7-VA

LIPSCOMB
13151STUARTS DRAFT
13152(HERSHEY FOODS)
13153

E
N → S
W

TRACK
LAYOUT

150.19-7DGO-194'(80)

151.89-1CSB-10'

152.32-1CSB-20'

154.70-5DGO-147'(87)

ALCOA

LINE SEGMENT

5370

468125V

468126C

468127J

468128X

468131Y

468133M

468135B

468137P

468138D

LIPSCOMB RD SR 971

SOUTH FORK OF

MCKEE BAKING

PATTON FARM RD-SR634

FARM

ROAD

FARM

WATERWAY

FARM

SR 808

SR 909

SOUTH RIVER

SR 656

CURVATURE

ALIGNMENT

ELEVATION

2.1R

2.0L

2.00

2.00

1.0L

1.50

FREIGHT SPEED
TANGENT
(CURVE)

50

GRADE

-0.85

-0.20

+0.70

+1.10

-0.30

-0.50

0.00

+0.30

+1.10

-0.90

-0.70

0.00

-0.60

-0.90

-0.40

0.00

+0.25

0.00

-0.30

-0.70

-0.40

0.00

0.00

+0.30

0.00

+0.10

0.00

+0.14

0.00

+0.15

+0.75

-0.53

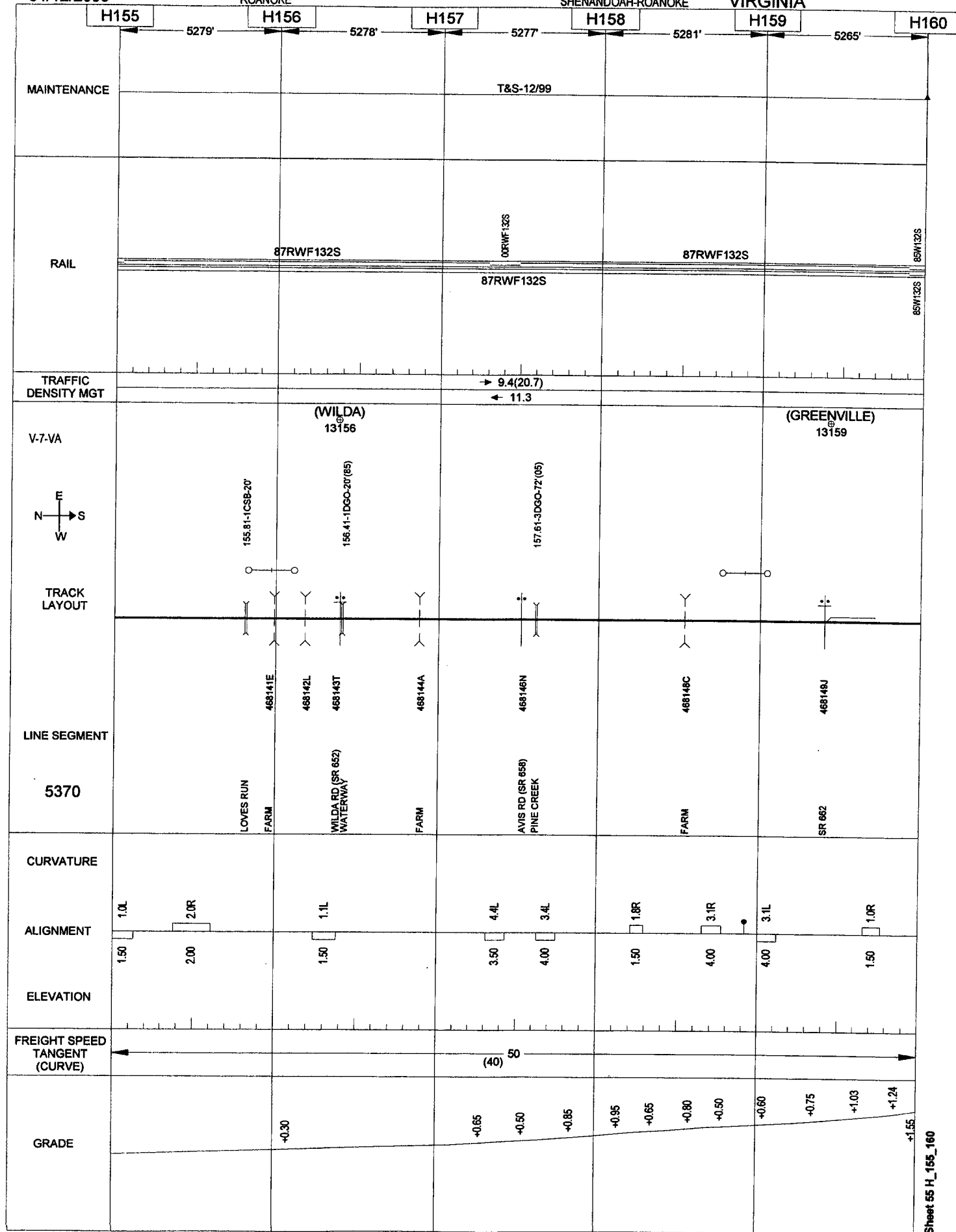
04/12/2006

ROANOKE

187

SHENANDOAH-ROANOKE

VIRGINIA



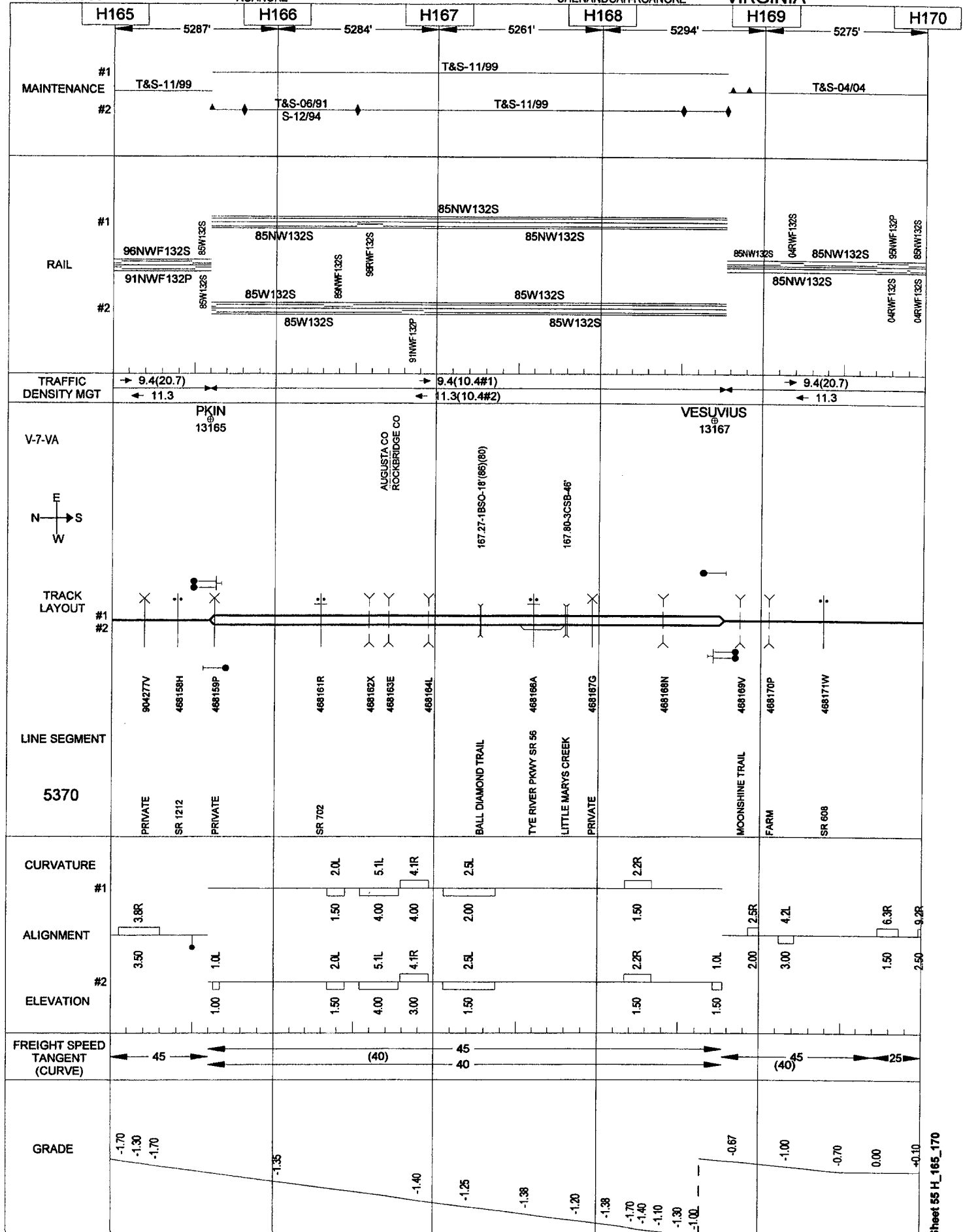
04/12/2006

ROANOKE

189

SHENANDOAH-ROANOKE

VIRGINIA



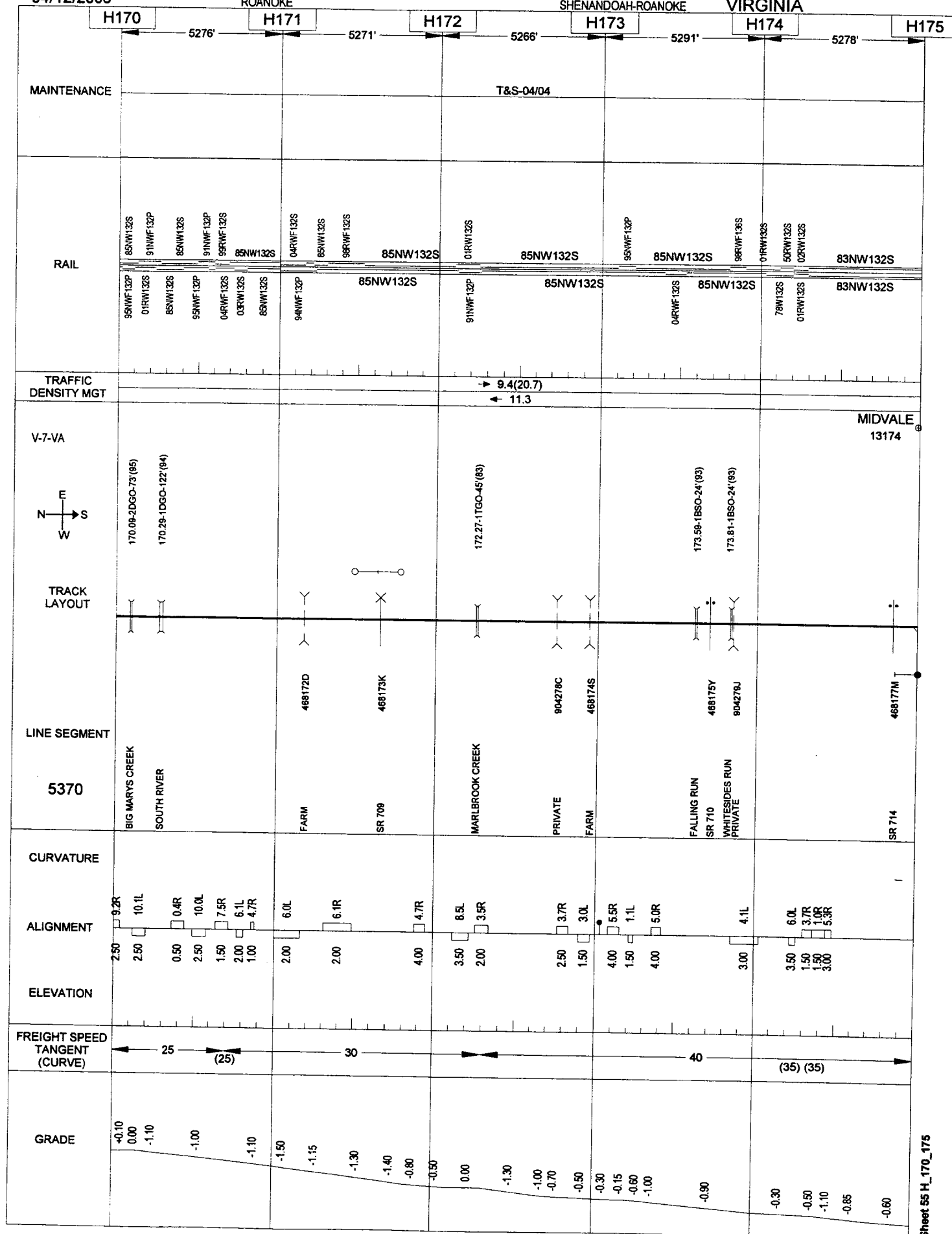
04/12/2006

ROANOKE

190

SHENANDOAH-ROANOKE

VIRGINIA



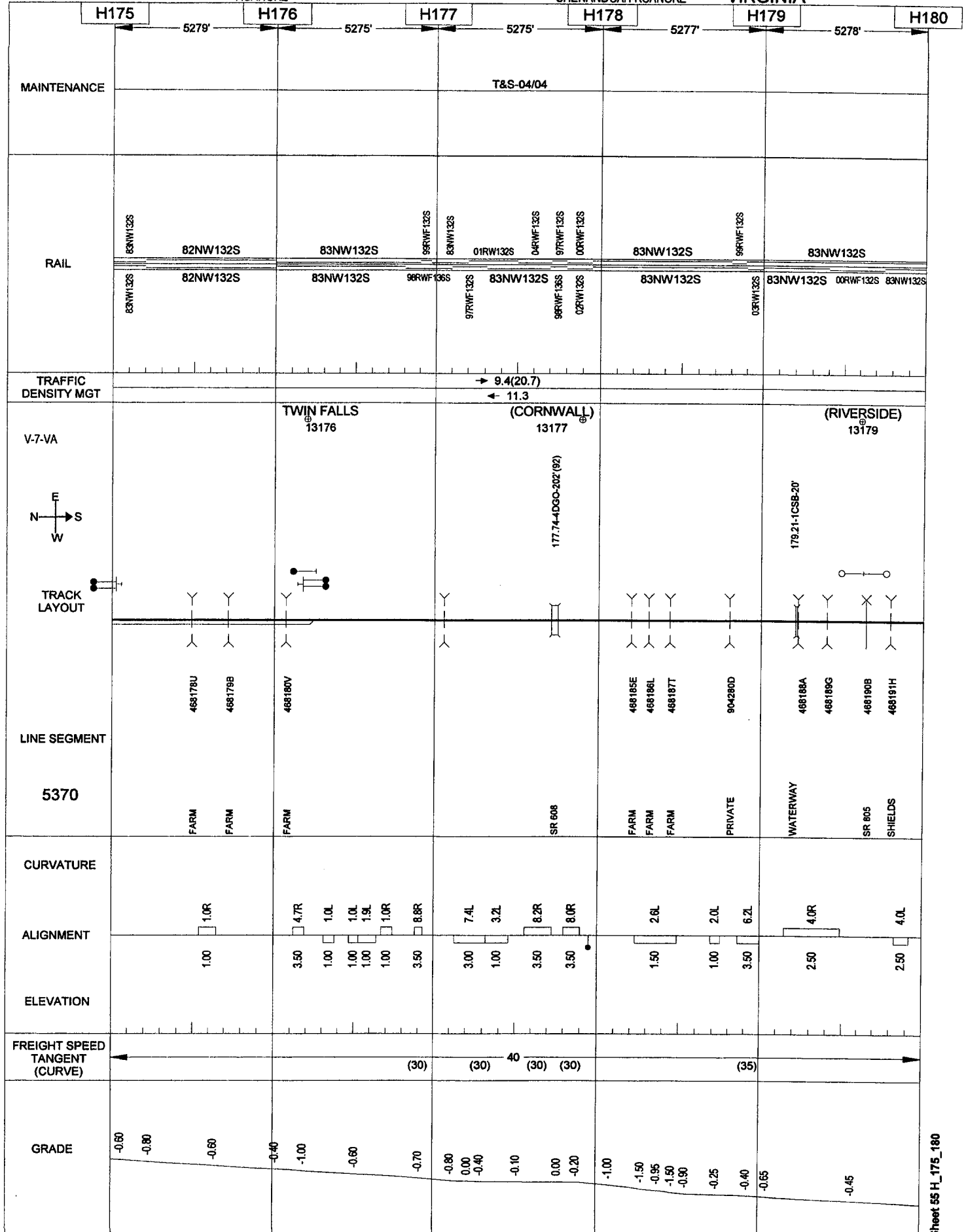
04/12/2006

ROANOKE

191

SHENANDOAH-ROANOKE

VIRGINIA



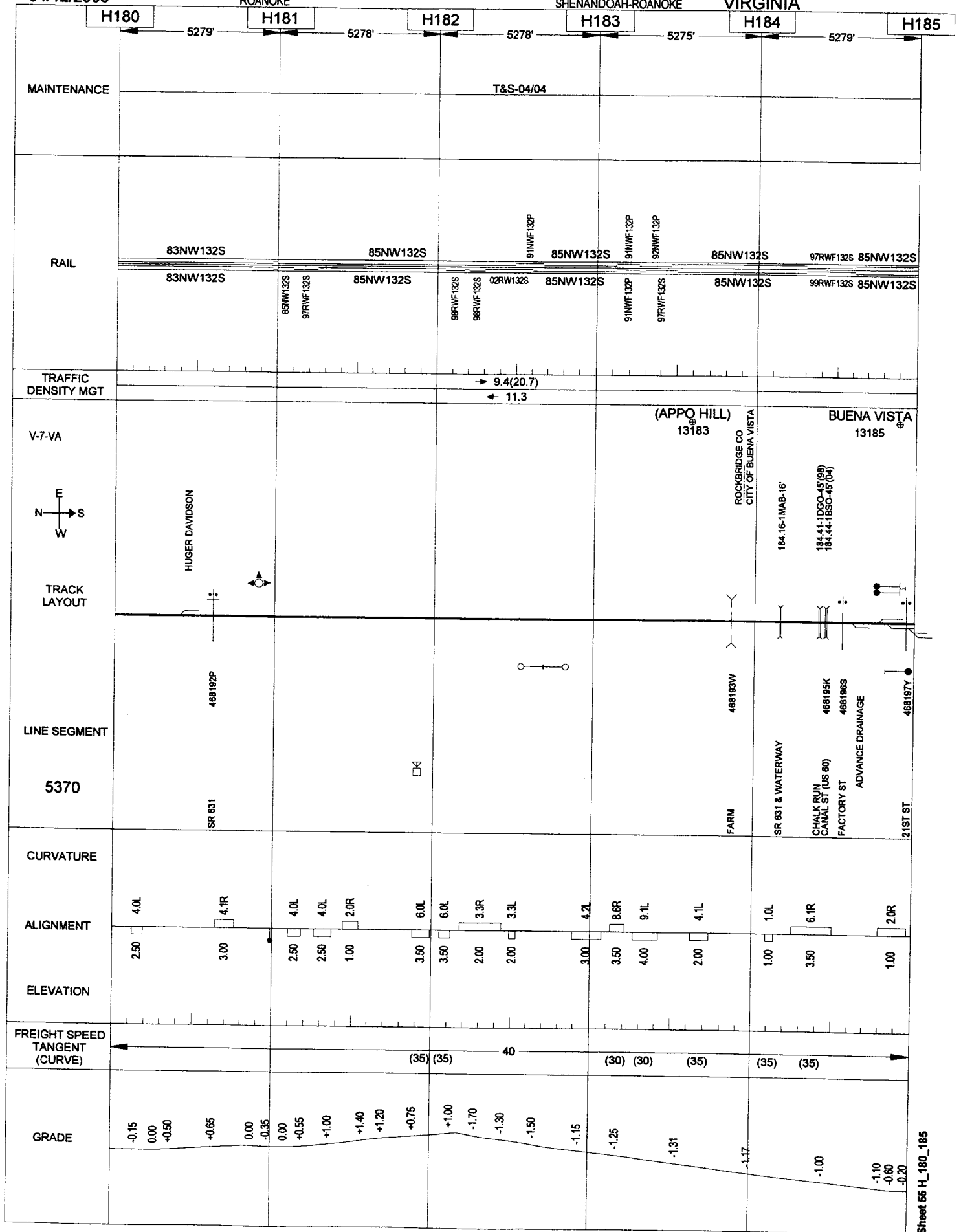
04/12/2006

ROANOKE

192

SHENANDOAH-ROANOKE

VIRGINIA



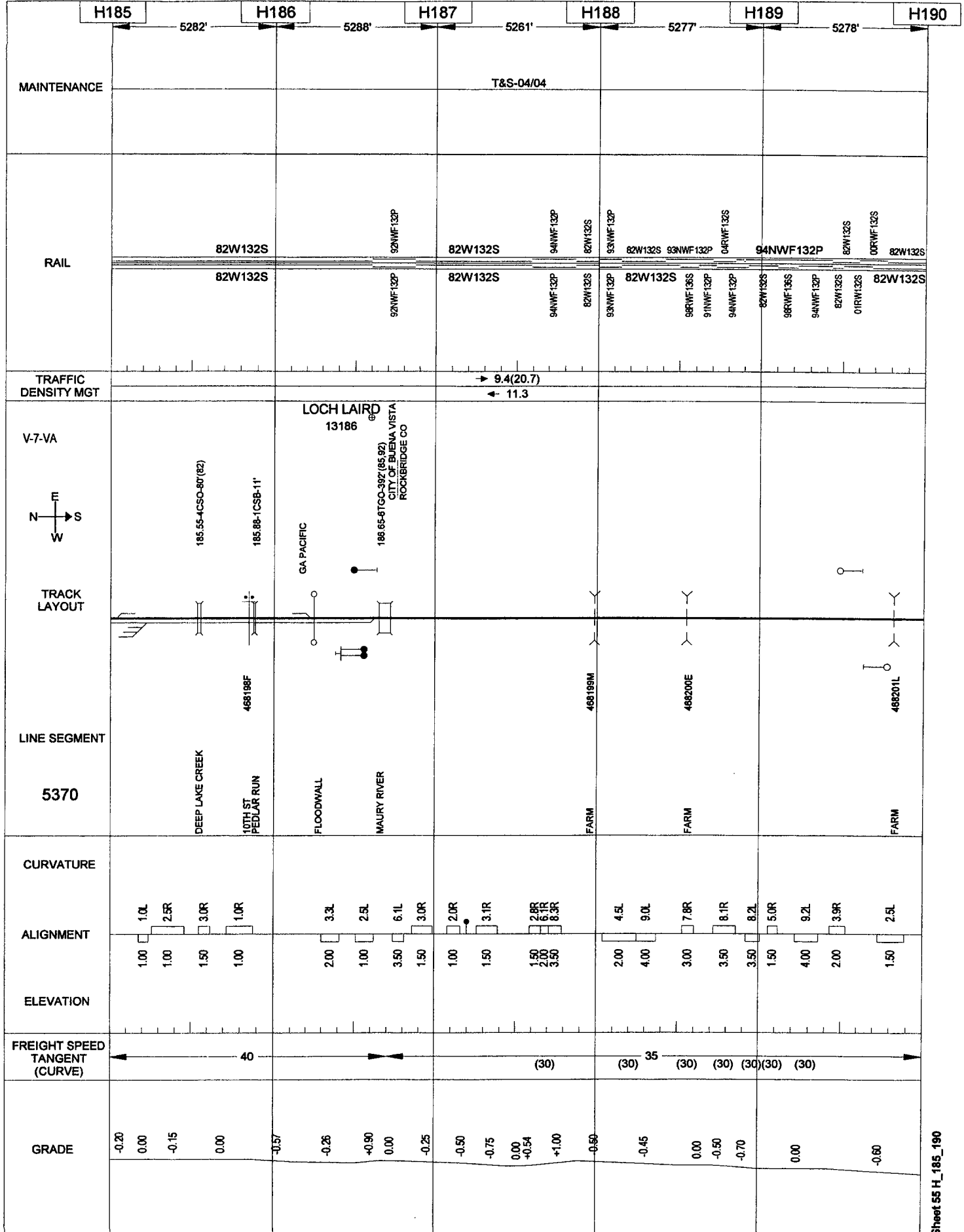
04/12/2006

ROANOKE

193

SHENANDOAH-ROANOKE

VIRGINIA



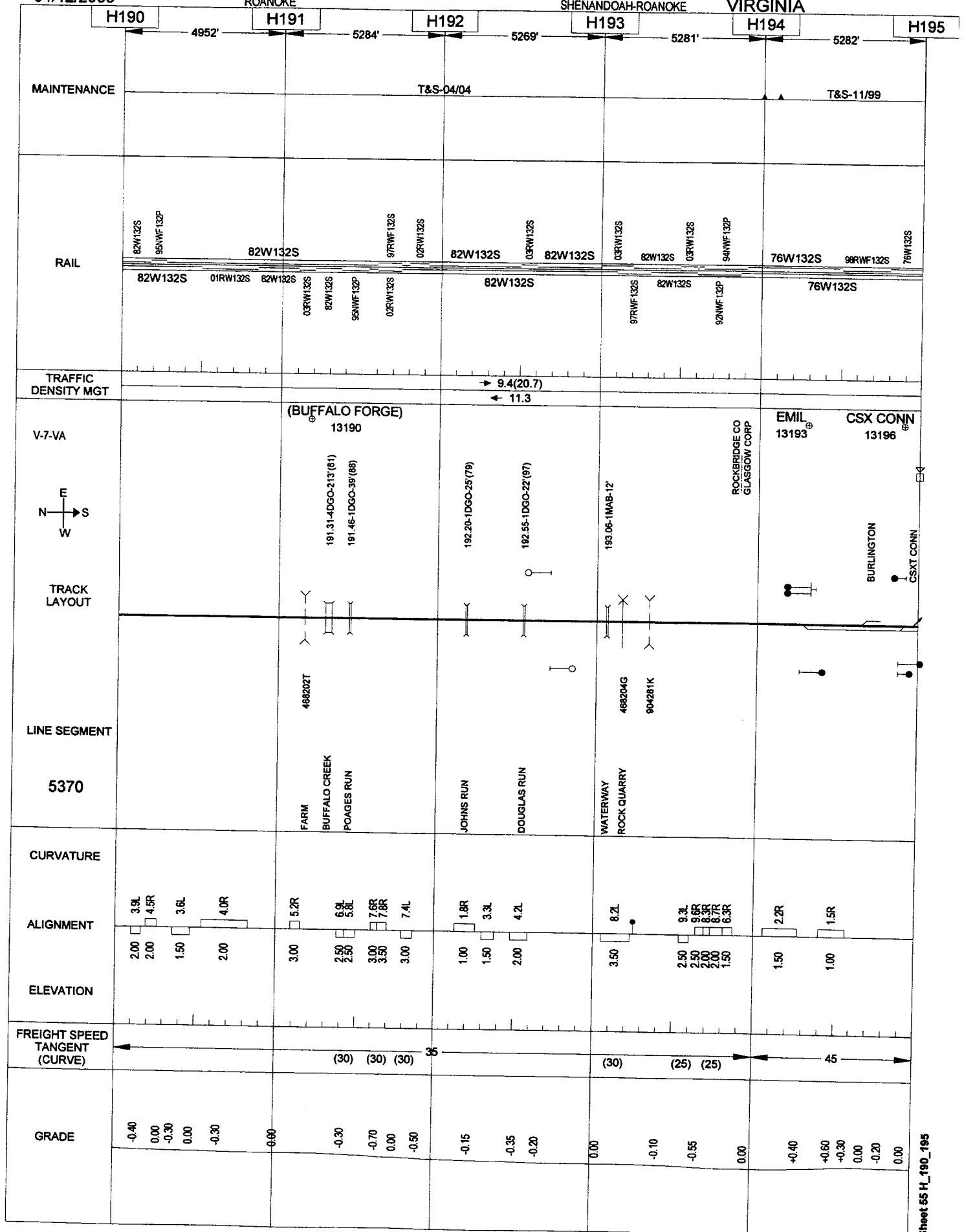
04/12/2006

ROANOKE

194

SHENANDOAH-ROANOKE

VIRGINIA



VIRGINIA

Sheet 55 H_200_205

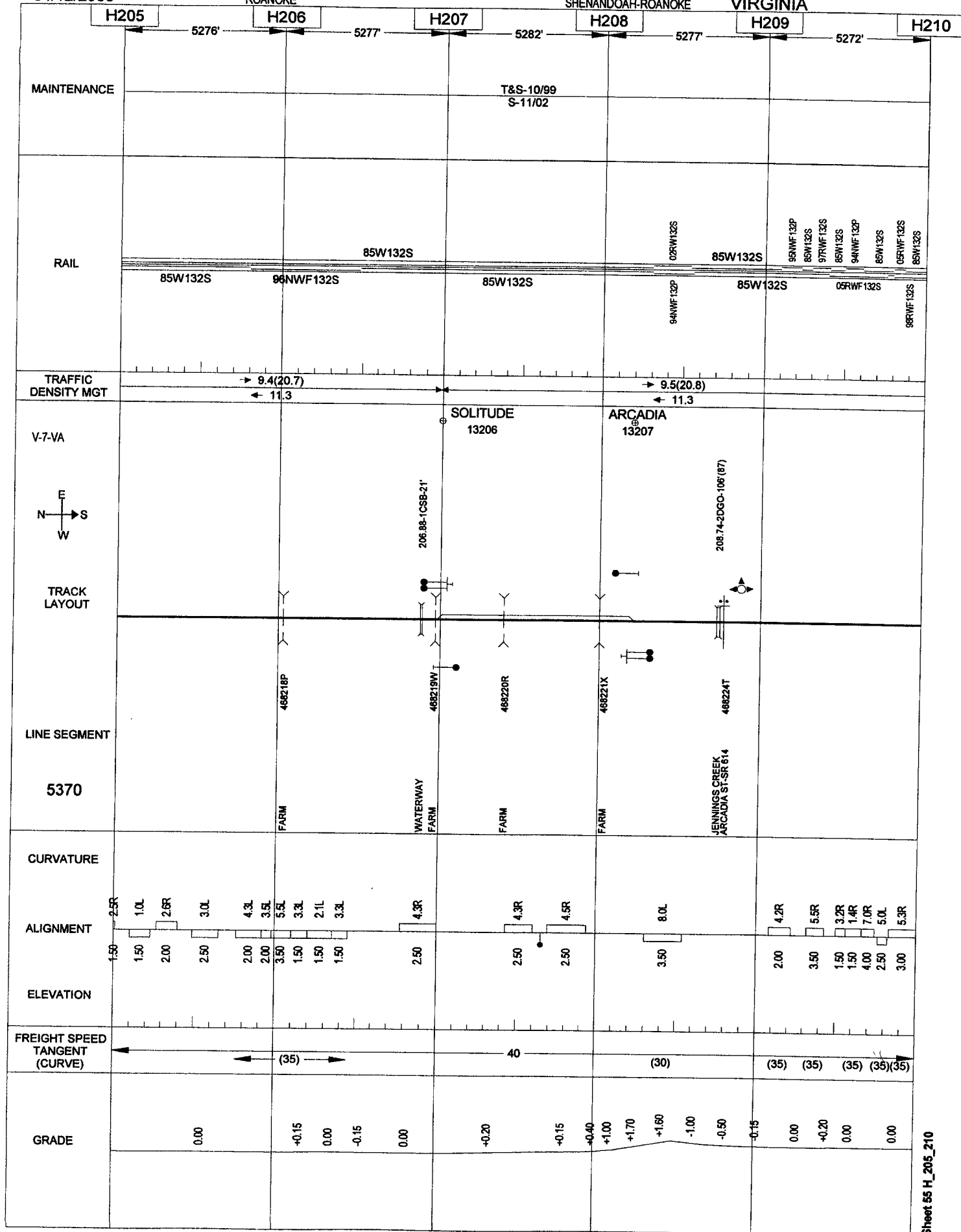
04/12/2006

197

ROANOKE

SHENANDOAH-ROANOKE

VIRGINIA



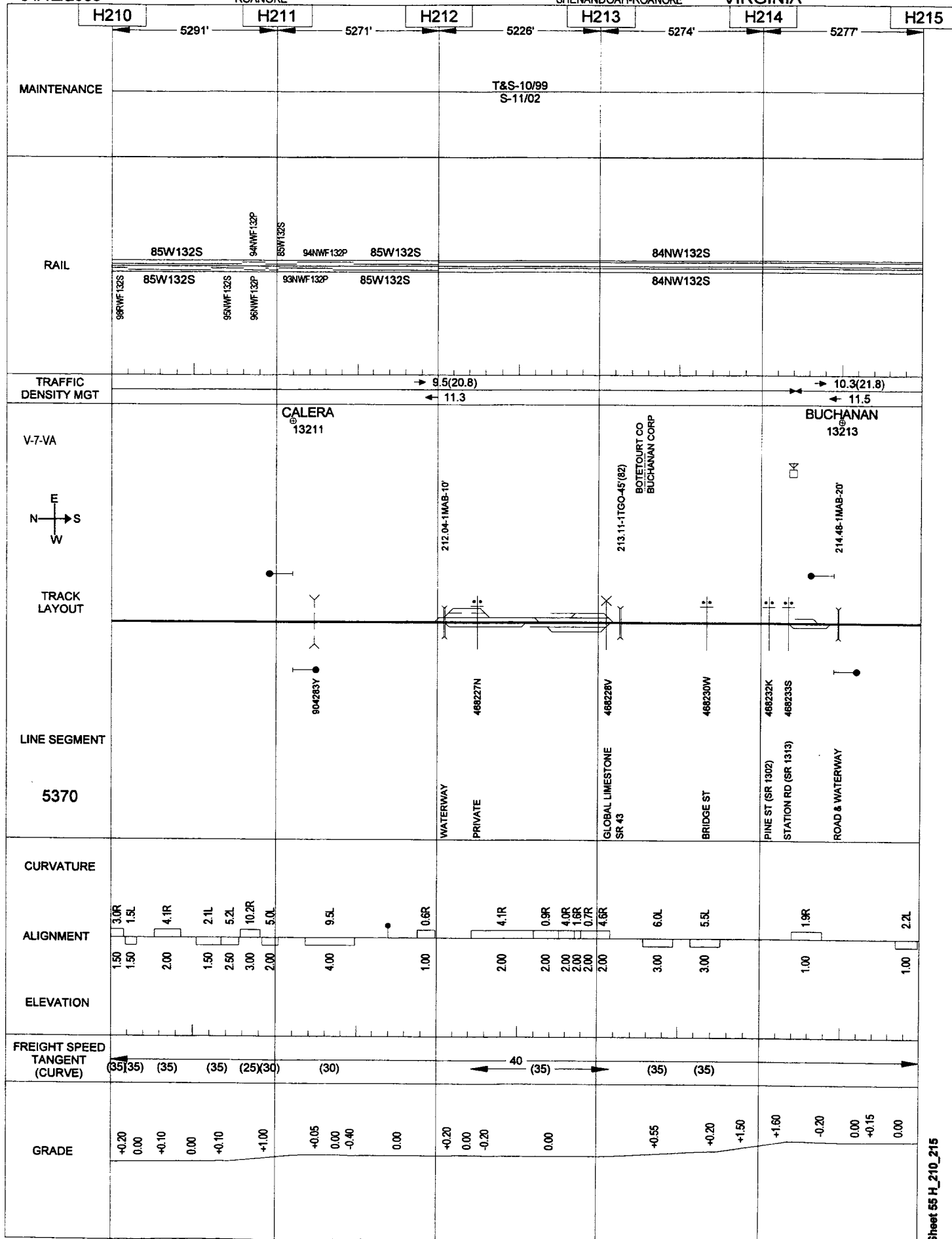
04/12/2006

ROANOKE

198

SHENANDOAH-ROANOKE

VIRGINIA



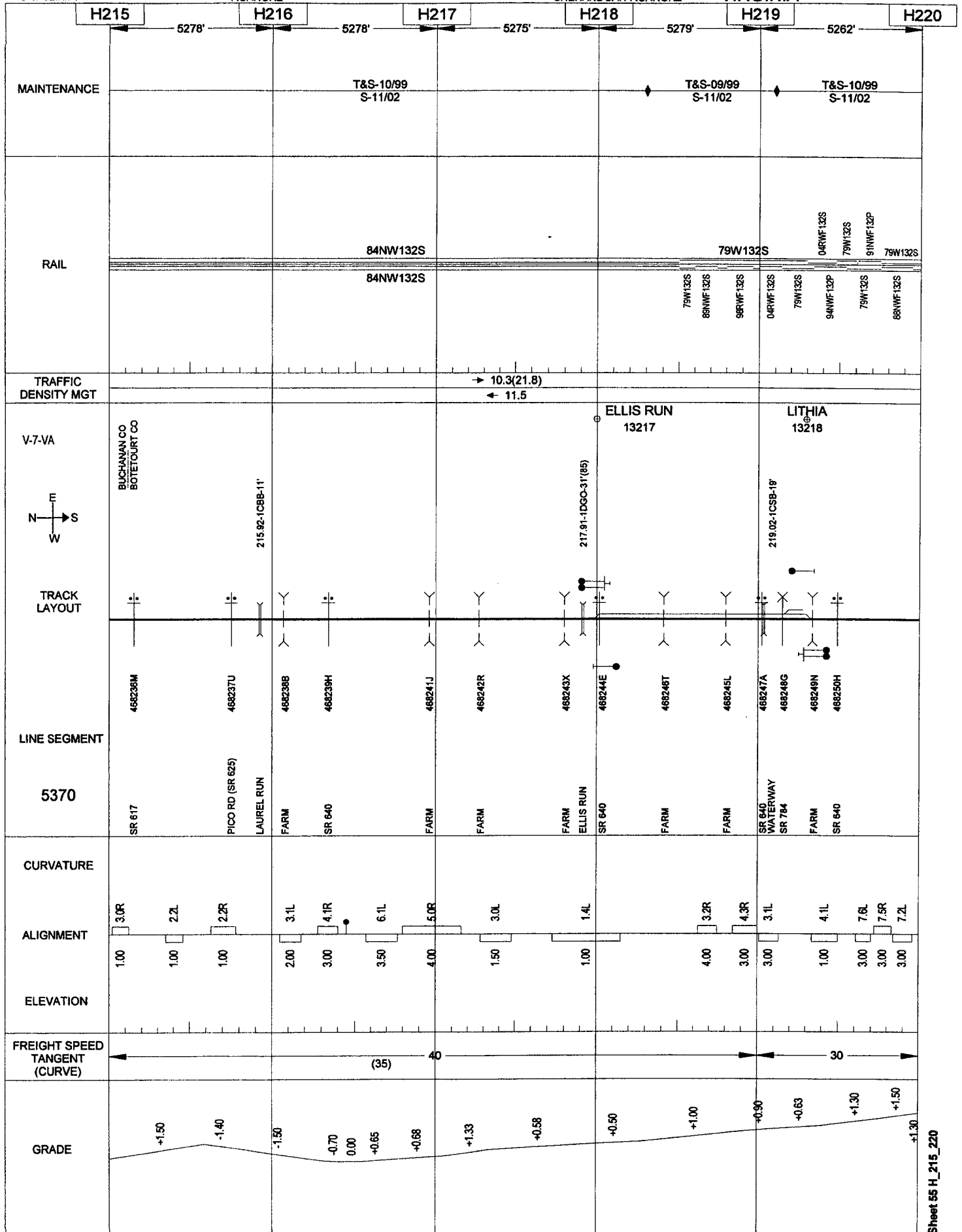
04/12/2006

ROANOKE

199

SHENANDOAH-ROANOKE

VIRGINIA



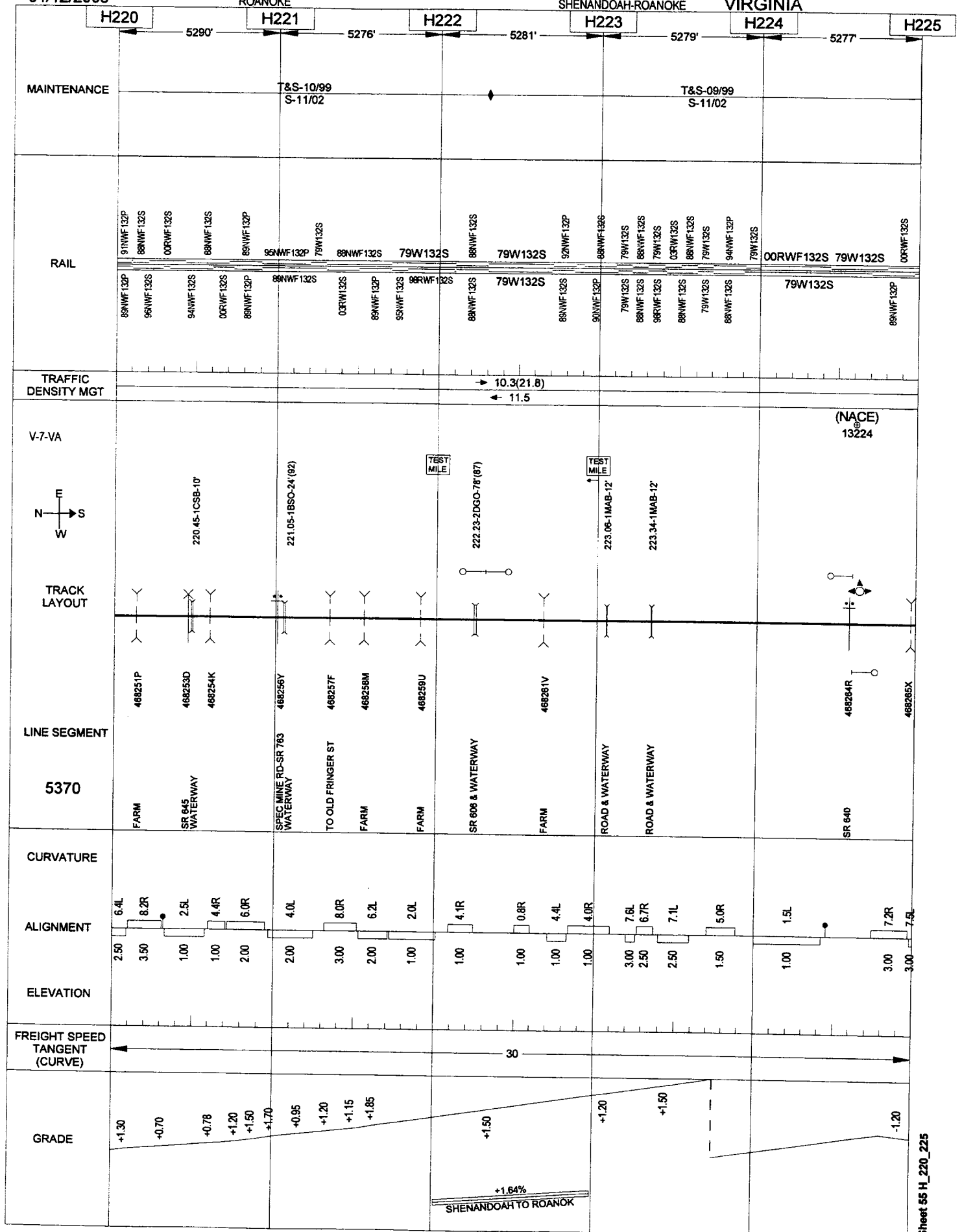
04/12/2006

ROANOKE

200

SHENANDOAH-ROANOKE

VIRGINIA



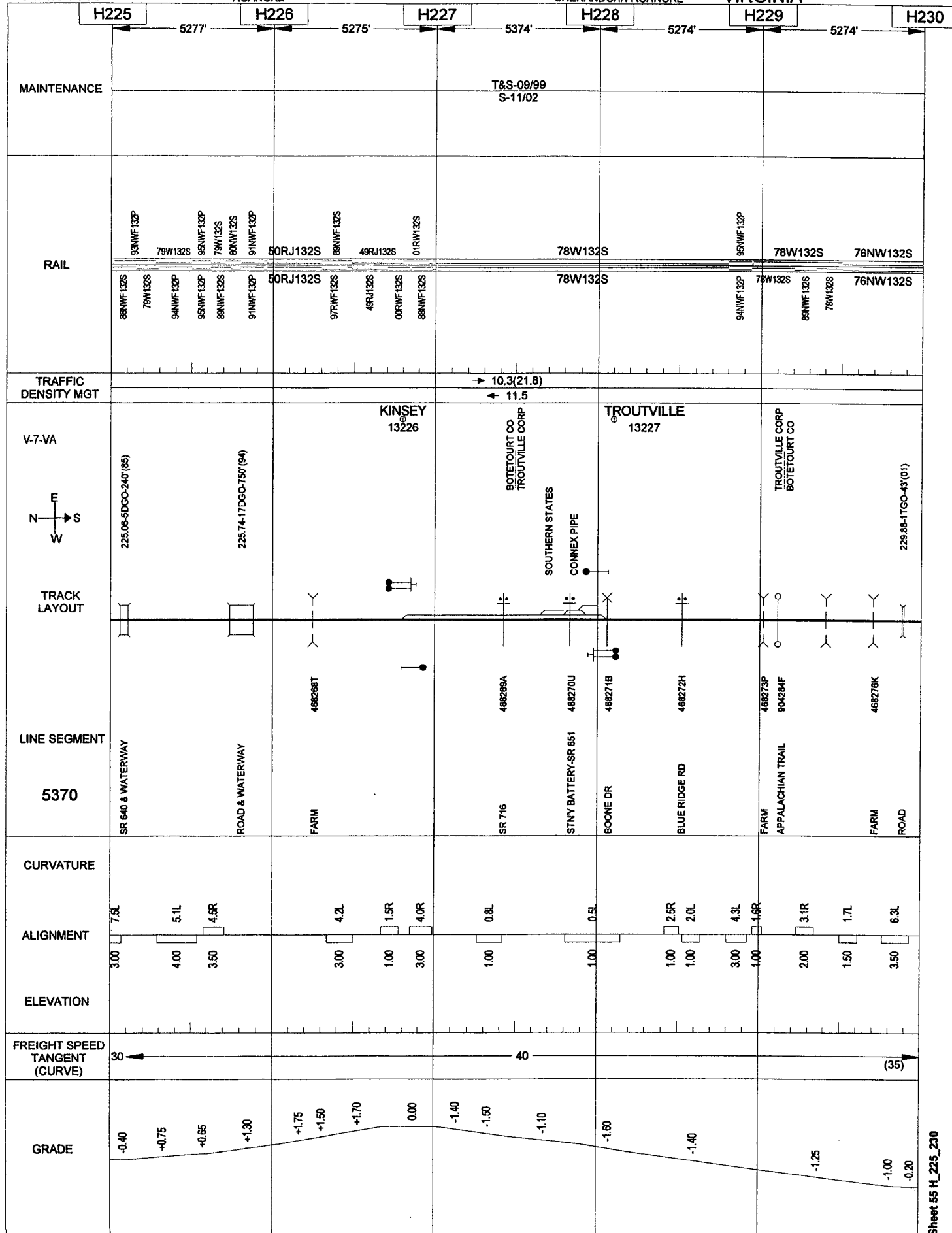
04/12/2006

ROANOKE

201

SHENANDOAH-ROANOKE

VIRGINIA



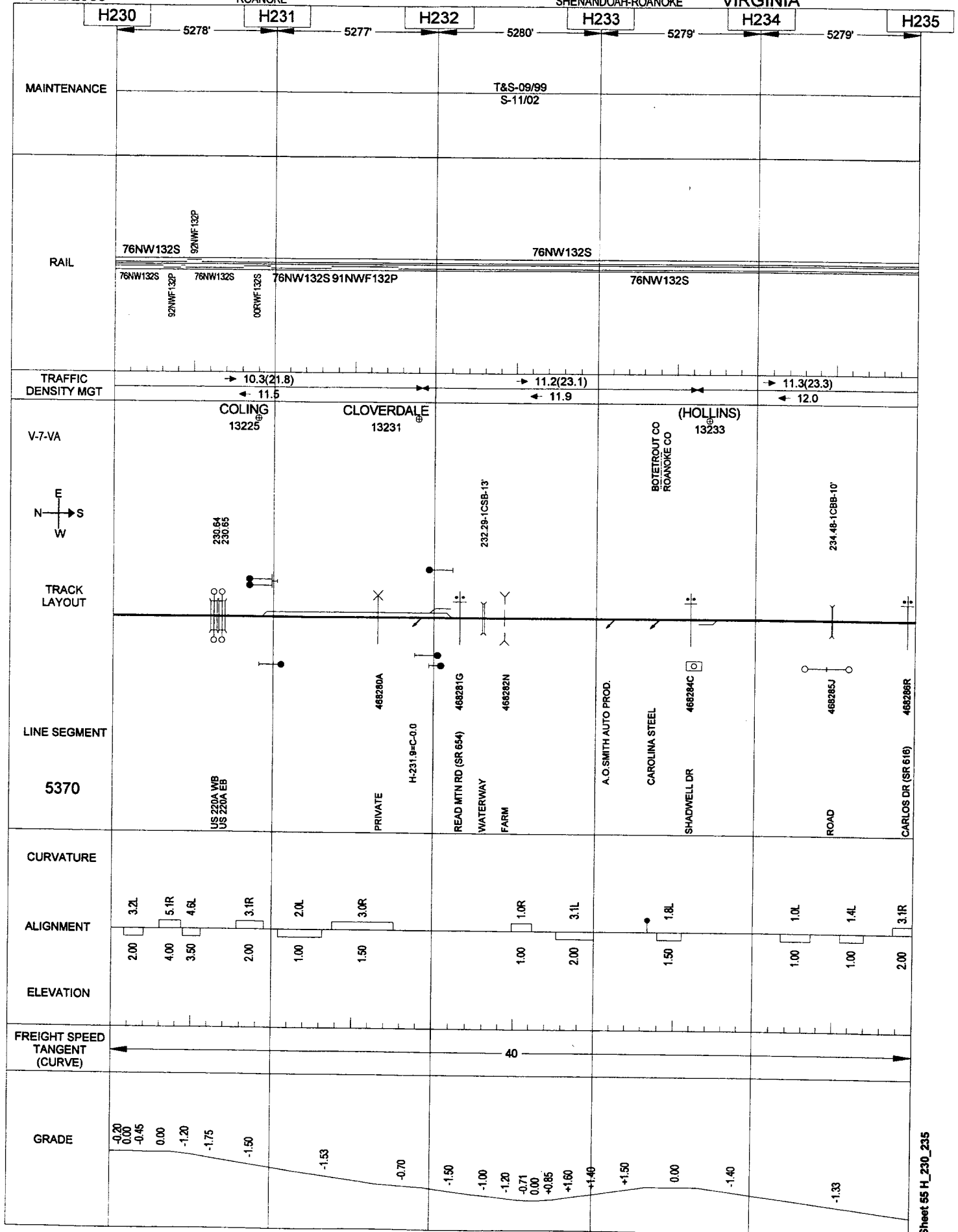
04/12/2006

ROANOKE

202

SHENANDOAH-ROANOKE

VIRGINIA



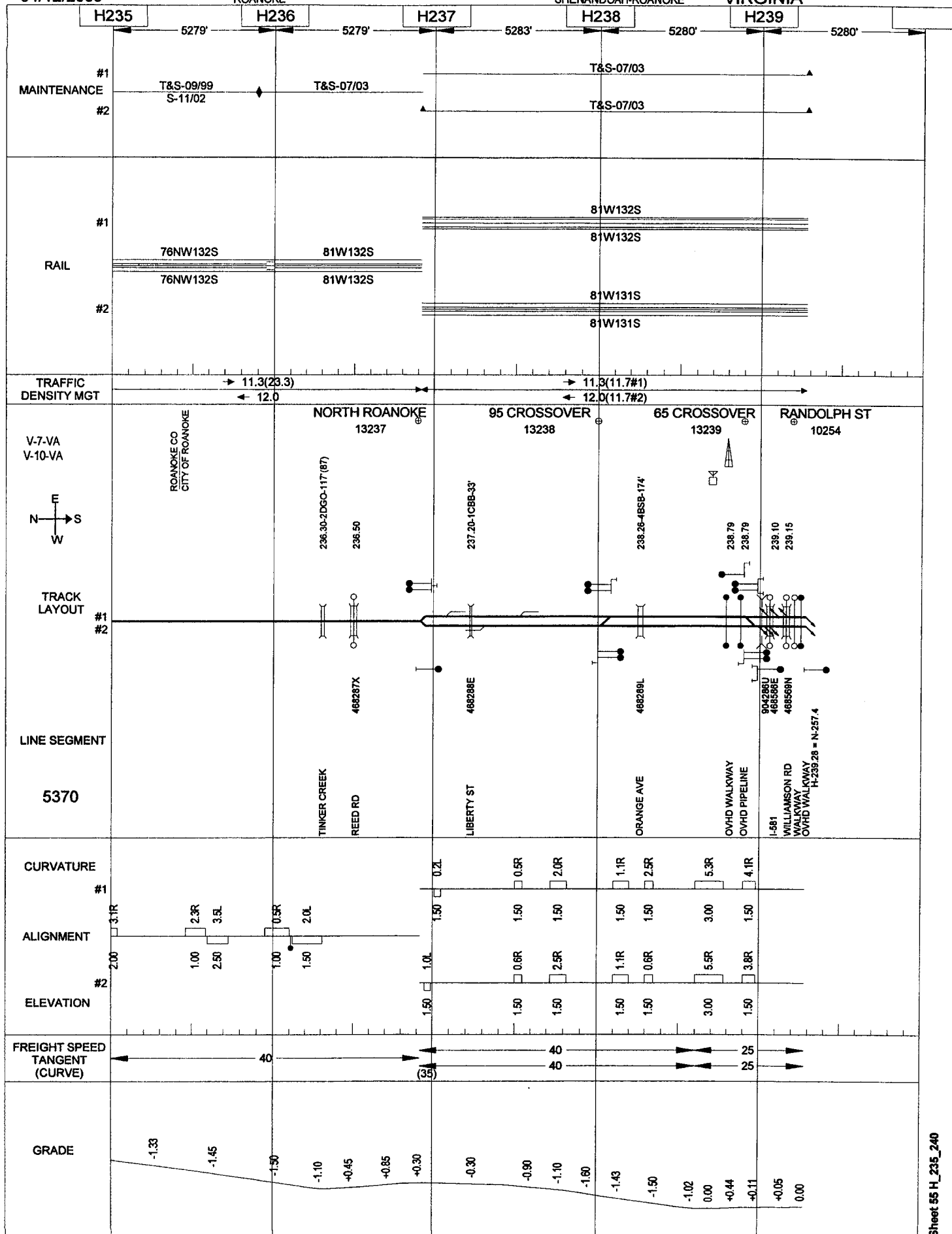
04/12/2006

203

ROANOKE

SHENANDOAH-ROANOKE

VIRGINIA



04/12/2006

HAGERSTOWN

204
WILLIAMSPORT I.T.

HAGERSTOWN-WILLIAMSPORT VIRGINIA

HW75

1594'

5370'

MAINTENANCE

RAIL

42N130S
42N130S

TRAFFIC
DENSITY MGT

HAGER



TRACK
LAYOUT

HW-74.80/H-1.31
074.87



534888T

LINE SEGMENT

2443

BURHANS BLVD

CURVATURE

ALIGNMENT

ELEVATION

20L

1.00

FREIGHT SPEED
TANGENT
(CURVE)

10

GRADE

+0.75
-0.31

04/12/2006

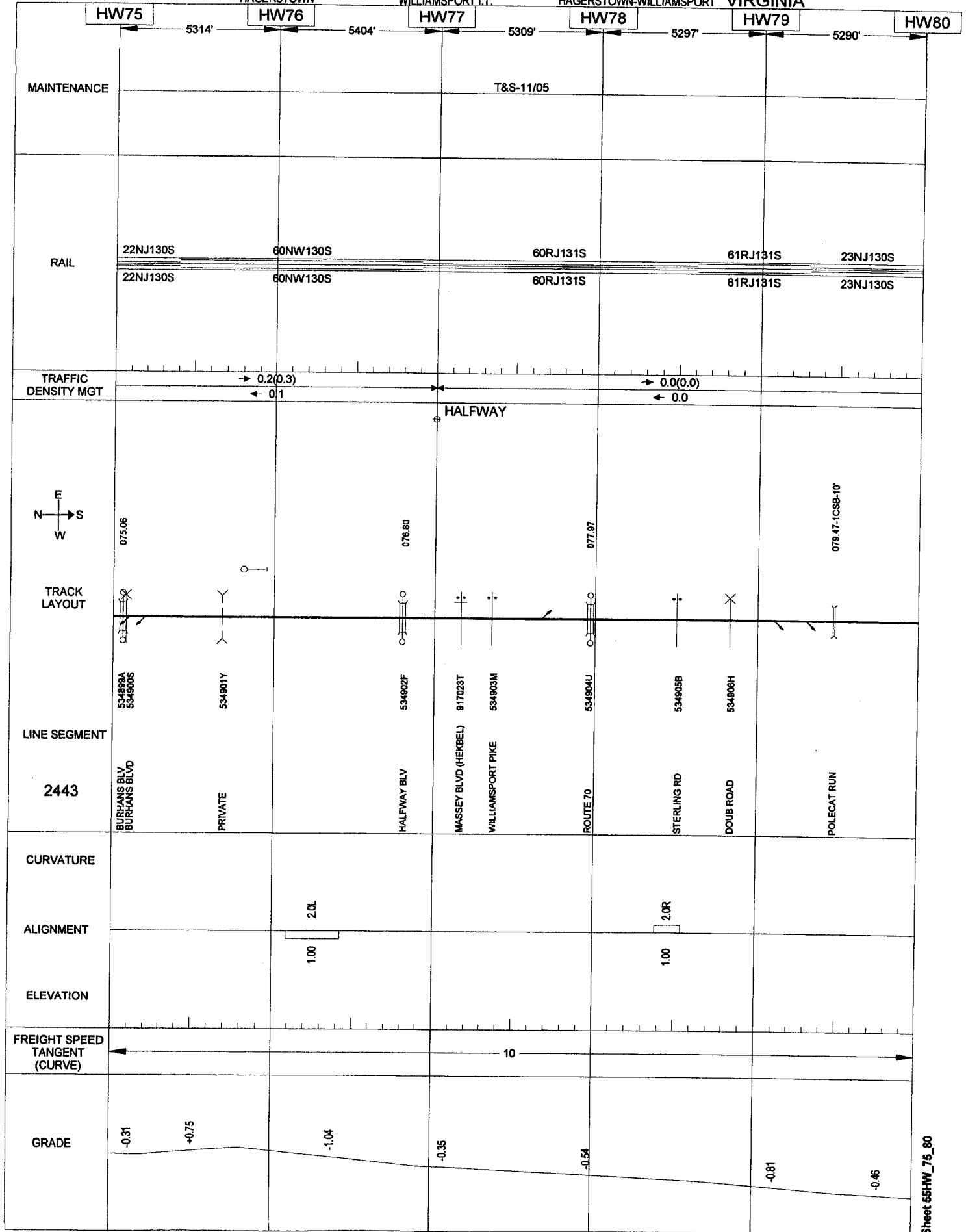
205

HAGERSTOWN

WILLIAMSPORT I.T.

HAGERSTOWN-WILLIAMSPORT

VIRGINIA



04/12/2006

HAGERSTOWN

206

WILLIAMSPORT I.T.

HAGERSTOWN-WILLIAMSPORT

VIRGINIA

HW80

5286'

MAINTENANCE

T&S-11/05

RAIL

23NJ130S

23NJ130S

TRAFFIC
DENSITY MGT0.0(0.0)
0.0

TRACK
LAYOUT

LINE SEGMENT

2443

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

10

GRADE

0.00

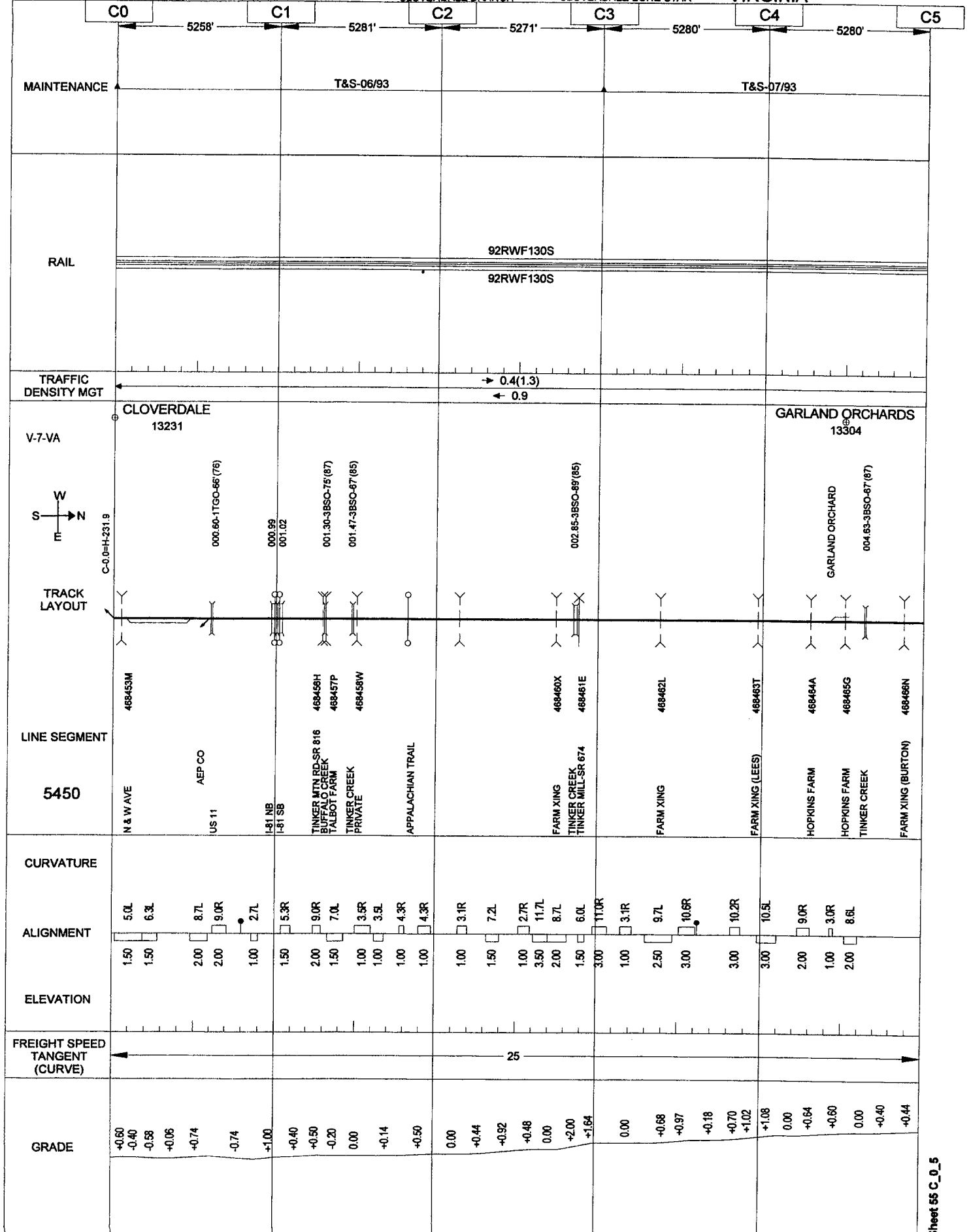
04/12/2006

ROANOKE

207
CLOVERDALE BRANCH

CLOVERDALE-LONE STAR

VIRGINIA



04/12/2006

ROANOKE

208

CLOVERDALE BRANCH

CLOVERDALE-LONE STAR

VIRGINIA

C5 5280' C6 5280' C7 5280' C8 5280'

MAINTENANCE

T&S-07/93

RAIL

92RWF130S

92RWF130S

TRAFFIC DENSITY MGT

→ 0.4(1.3)
← 0.9

V-7-VA

(MT. UNION)

LONE STAR
13309

W
S → N
E

005.16-1BSO-39'(88)

005.90-1BSO-29'(87)

008.48-1BSO-22'(85)

TRACK LAYOUT

LINE SEGMENT

5450

SR 872
TINKER CREEK

TINKER CREEK

PRIVATE
FARM XING

PRIVATE

MOUNTAIN TRAIL RD

POTTER FARM
PAINTER
GOAD

FARM
TINKER CREEK

FARM

46846TV

468468C

468468J

468470D

468471K

468472S

468473Y

468474F

468475M

468478H

468479P

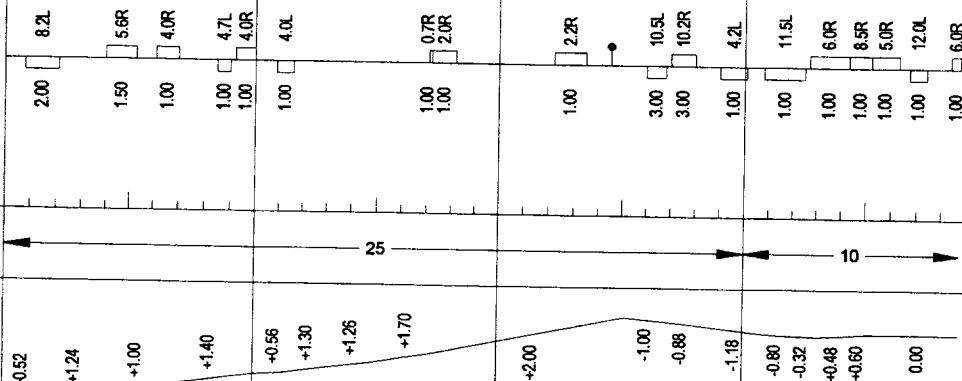
CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE



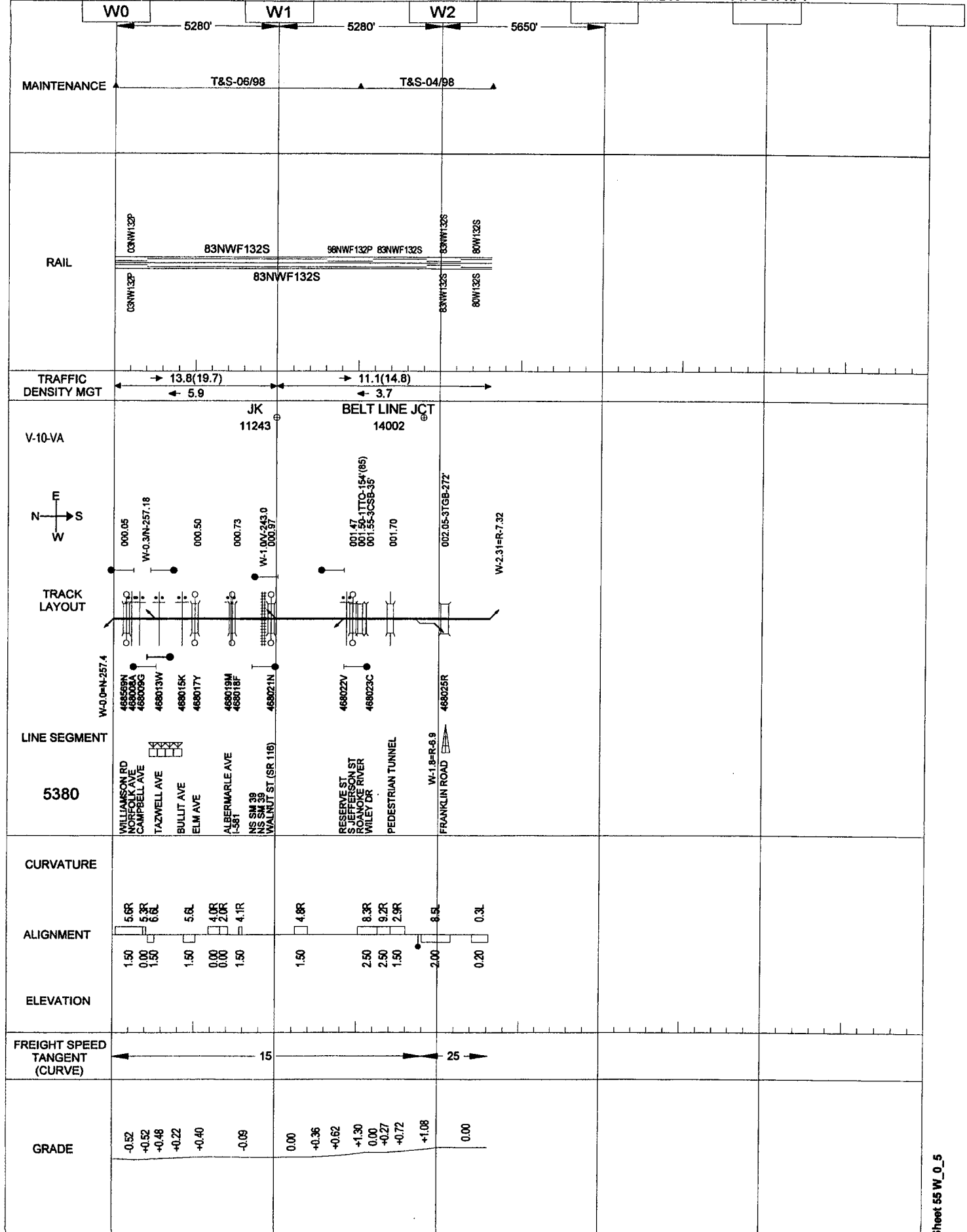
04/12/2006

209

WINSTON SALEM

ROANOKE-BELT LINE JCT

VIRGINIA



04/12/2006

ROANOKE TERMINAL

210
ROANOKE BELT LINE

BELT LINE XING-JUNCTION

VIRGINIA

R4

R5

5280'

5280'

MAINTENANCE

T&S-05/85

RAIL

26RJ130S

26RJ130S

TRAFFIC
DENSITY MGT

0.0(0.0)

0.0

V-10-VA

BELT LINE CROSSING
11247

S
E → W
N

R-3.33-N-260.74
003.51-7MSO-233(98)
R-3.55-V-246.4

TRACK
LAYOUT



LINE SEGMENT

5570

TO ROWAY MATL YARD
ROANOKE RIVER

468480J
468481R
468482X
VA SCRAP IRON RD

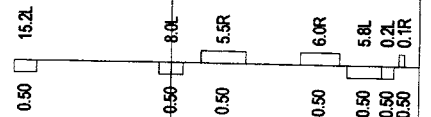
468483E
BRIDGE ST

468486A
468487G
PRIVATE
BEDFORD ST

CURVATURE

ALIGNMENT

ELEVATION



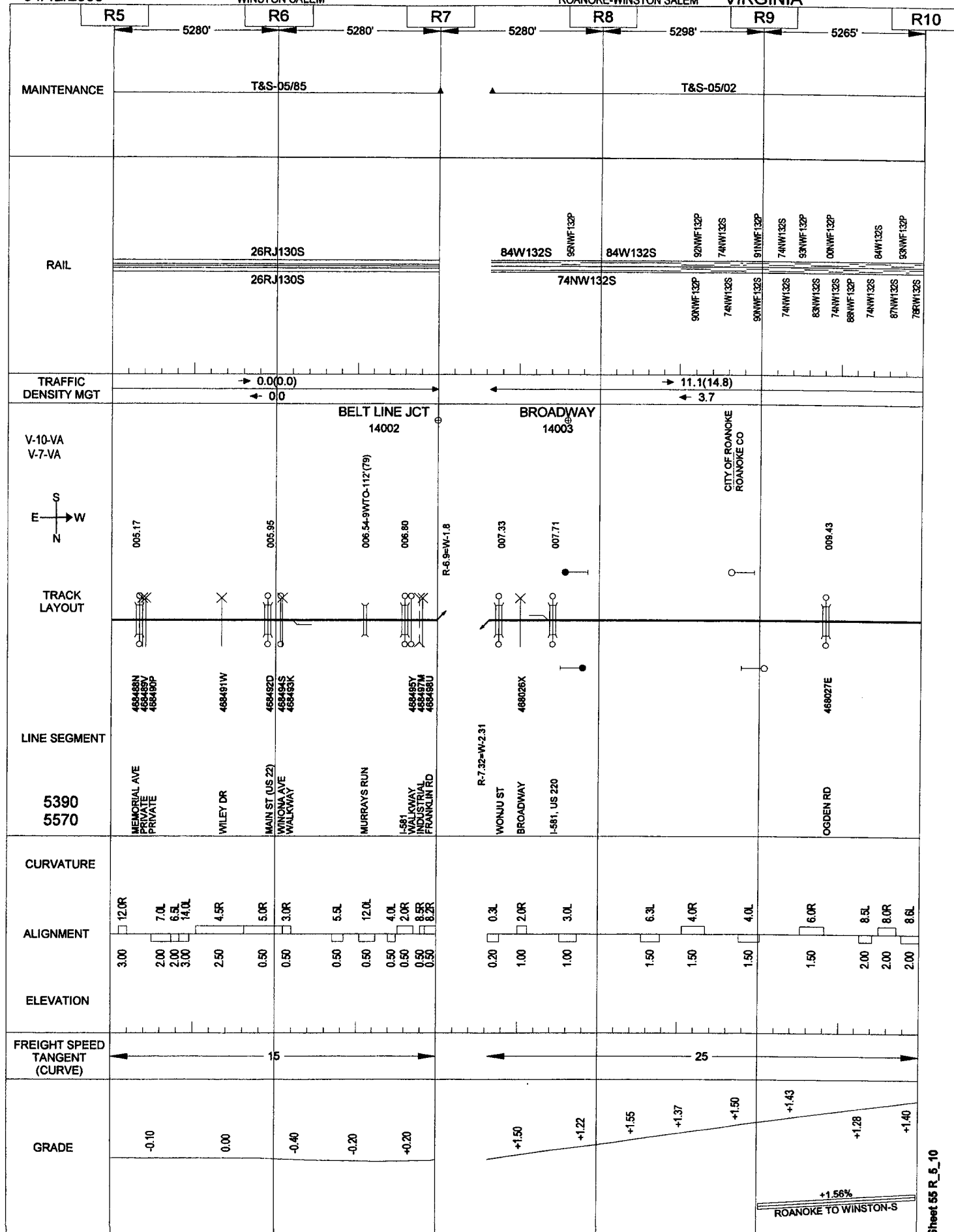
FREIGHT SPEED
TANGENT
(CURVE)

15

GRADE

-0.10 -0.70 -0.10

VIRGINIA



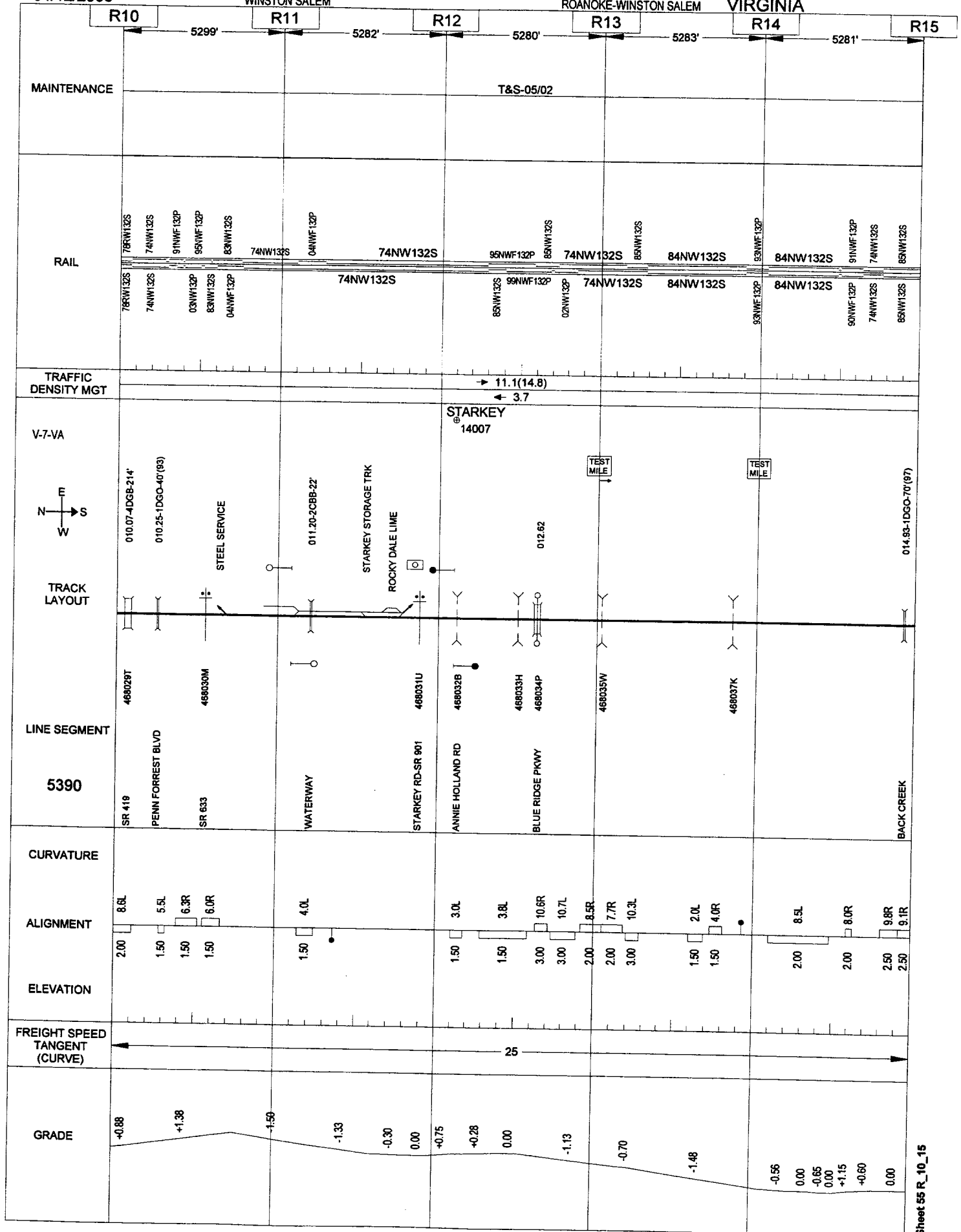
04/12/2006

WINSTON SALEM

212

ROANOKE-WINSTON SALEM

VIRGINIA



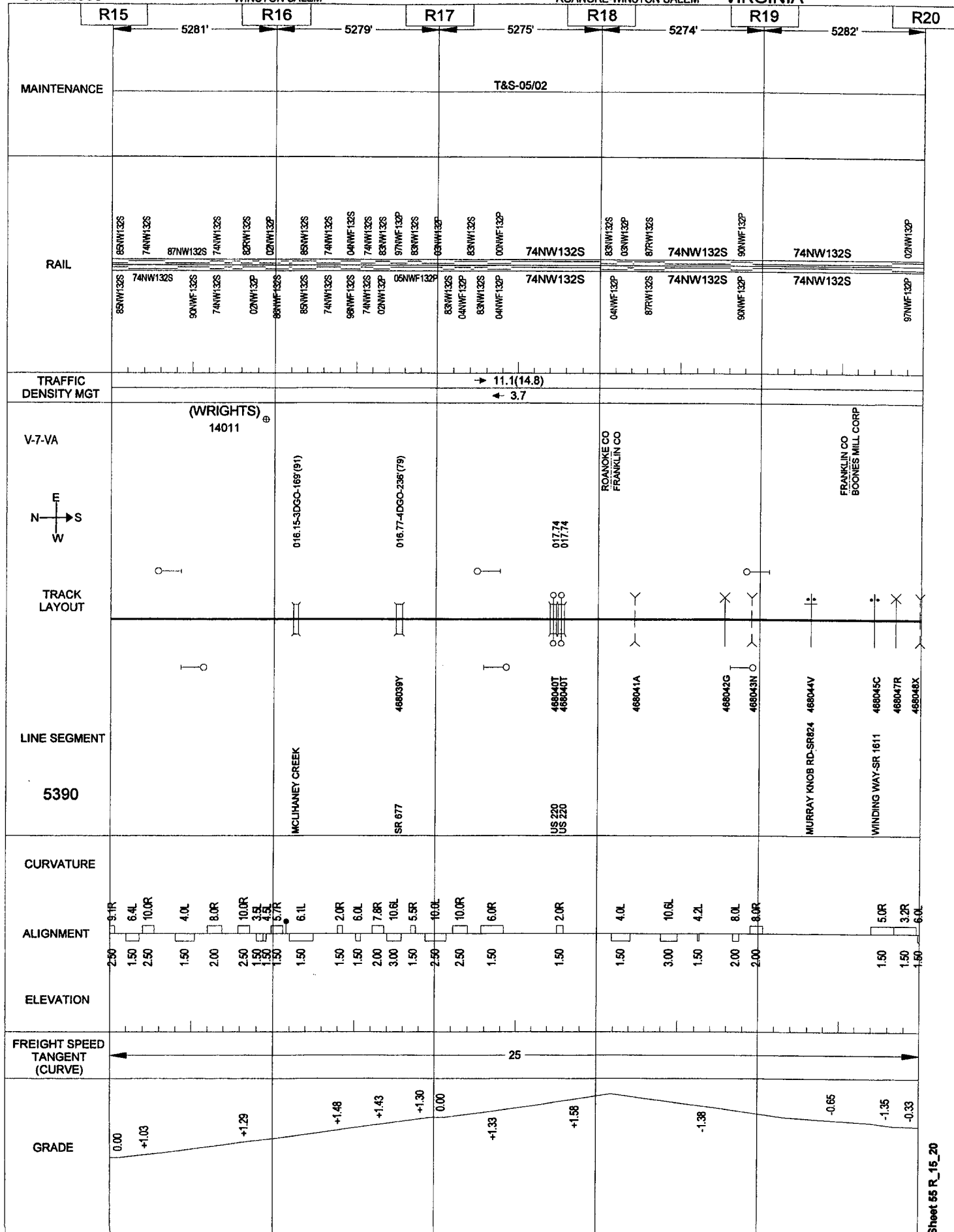
04/12/2006

WINSTON SALEM

213

ROANOKE-WINSTON SALEM

VIRGINIA



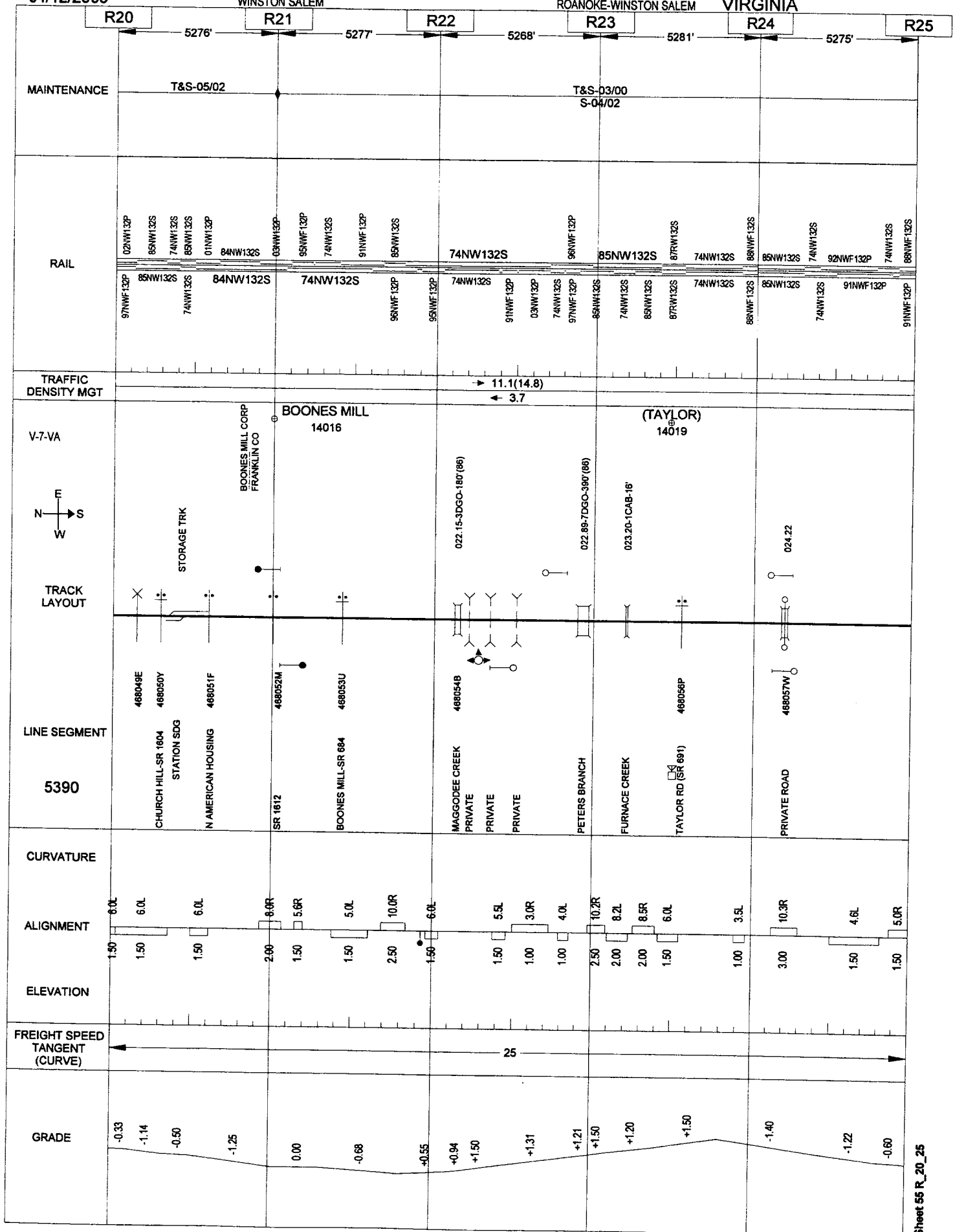
04/12/2006

WINSTON SALEM

214

ROANOKE-WINSTON SALEM

VIRGINIA



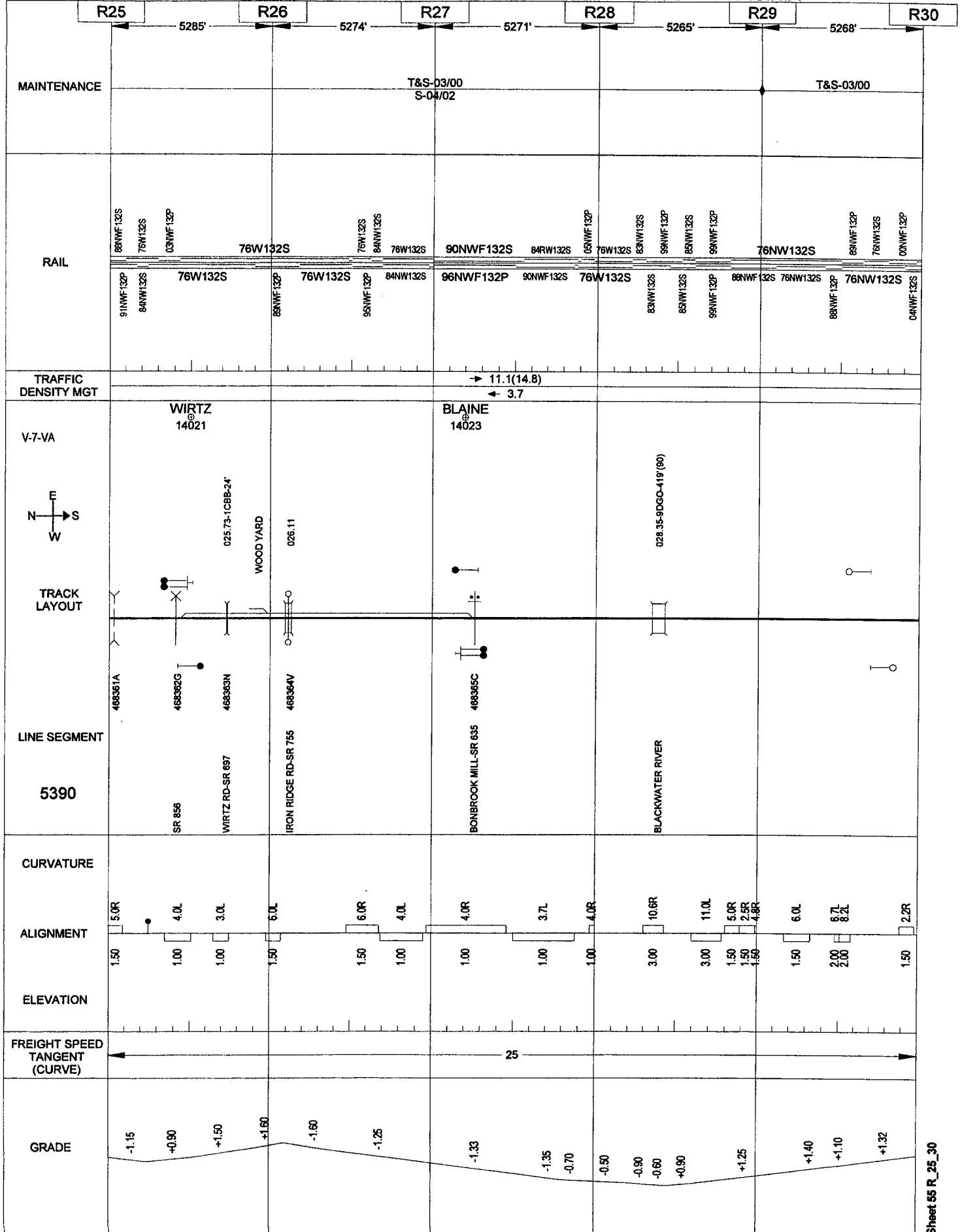
04/12/2006

WINSTON SALEM

215

ROANOKE-WINSTON SALEM

VIRGINIA



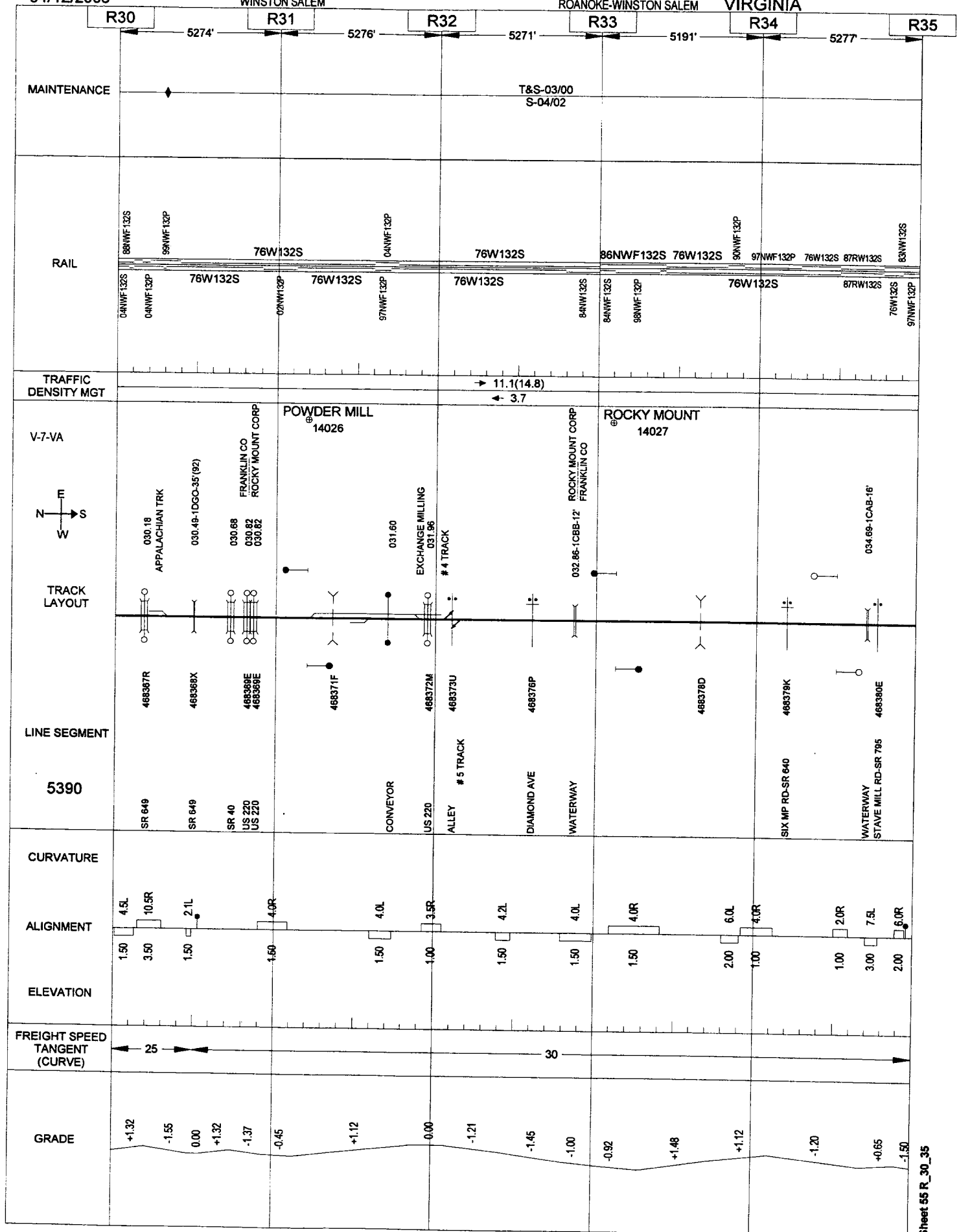
04/12/2006

WINSTON SALEM

216

ROANOKE-WINSTON SALEM

VIRGINIA



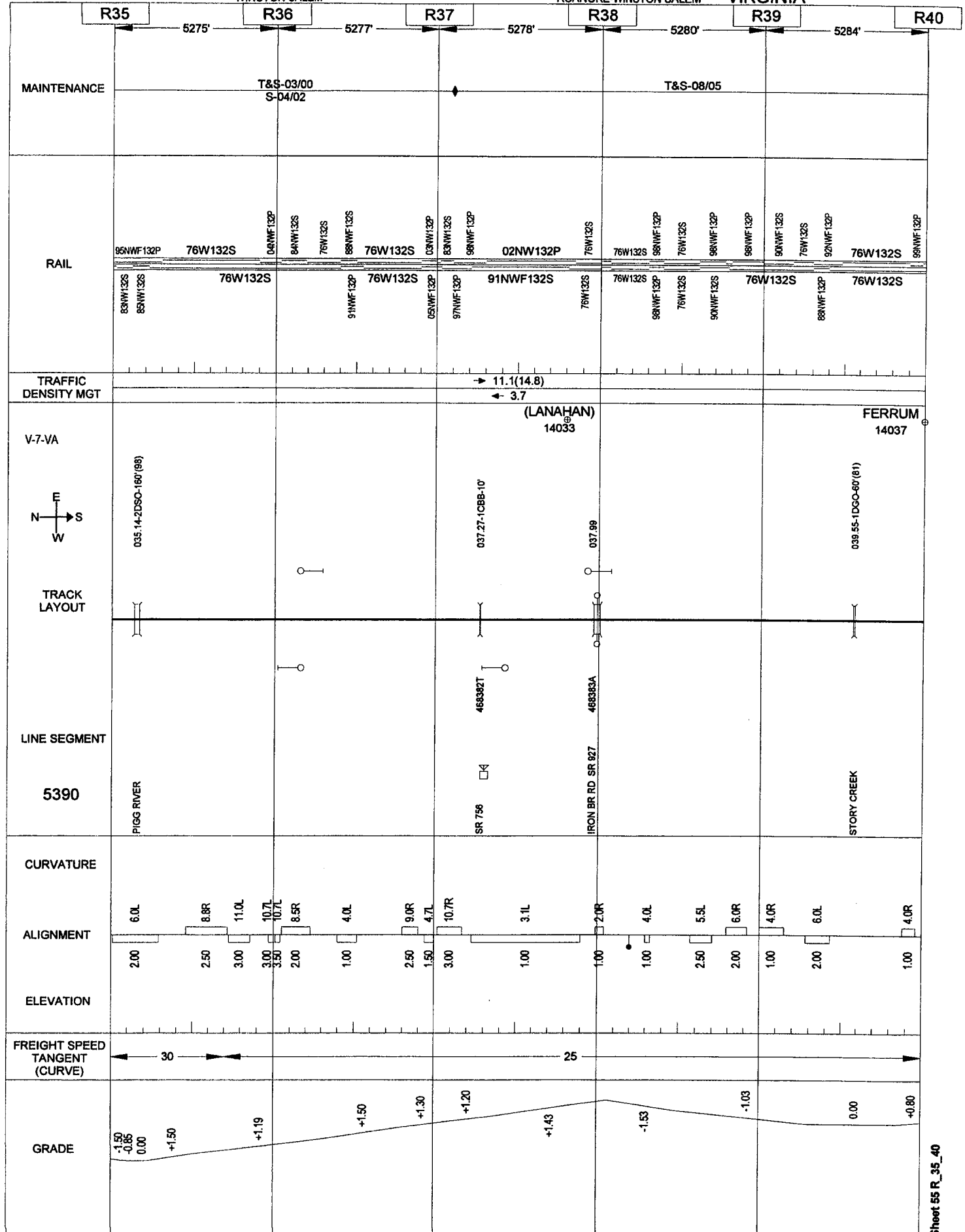
04/12/2006

WINSTON SALEM

217

ROANOKE-WINSTON SALEM

VIRGINIA



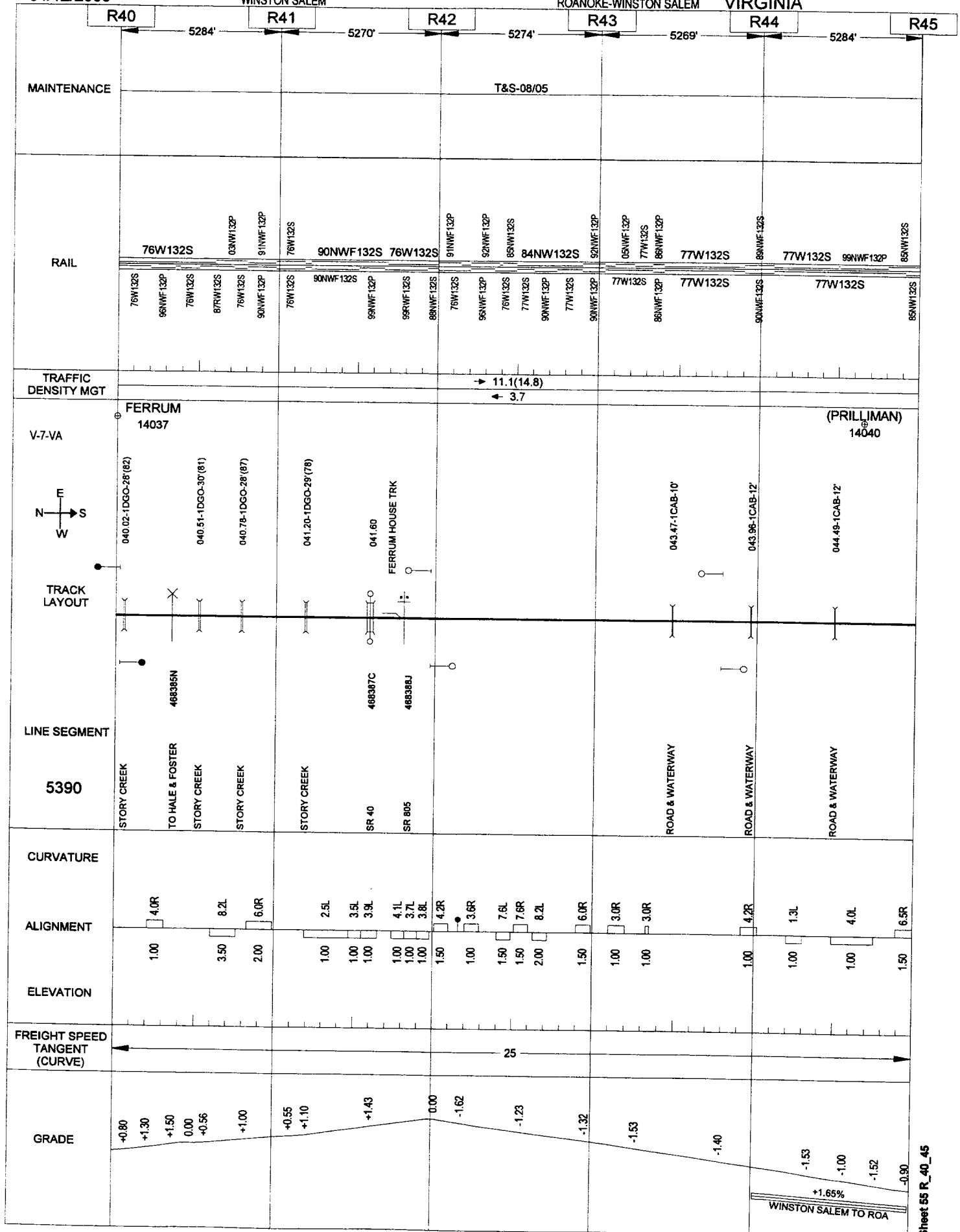
04/12/2006

WINSTON SALEM

218

ROANOKE-WINSTON SALEM

VIRGINIA



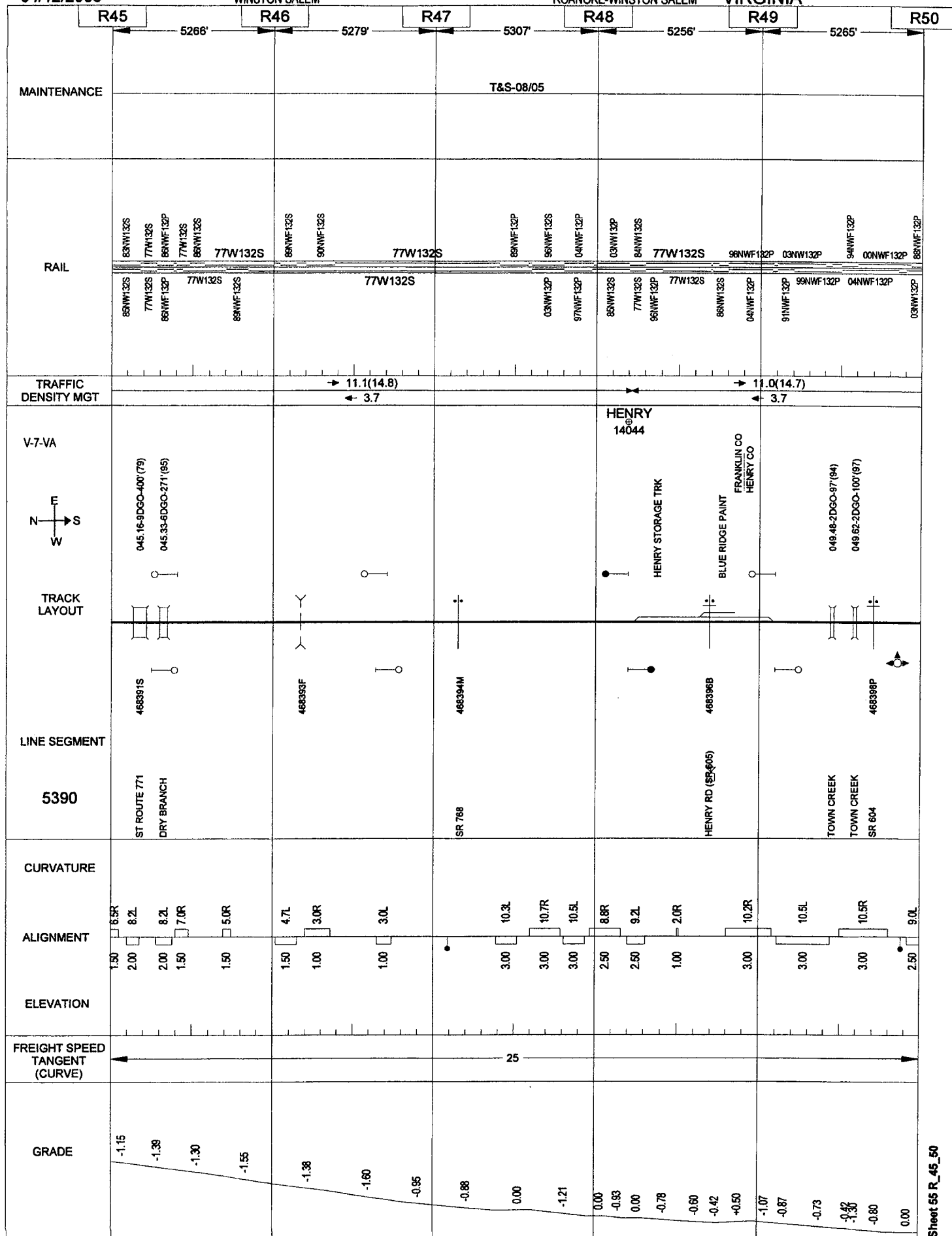
04/12/2006

WINSTON SALEM

219

ROANOKE-WINSTON SALEM

VIRGINIA



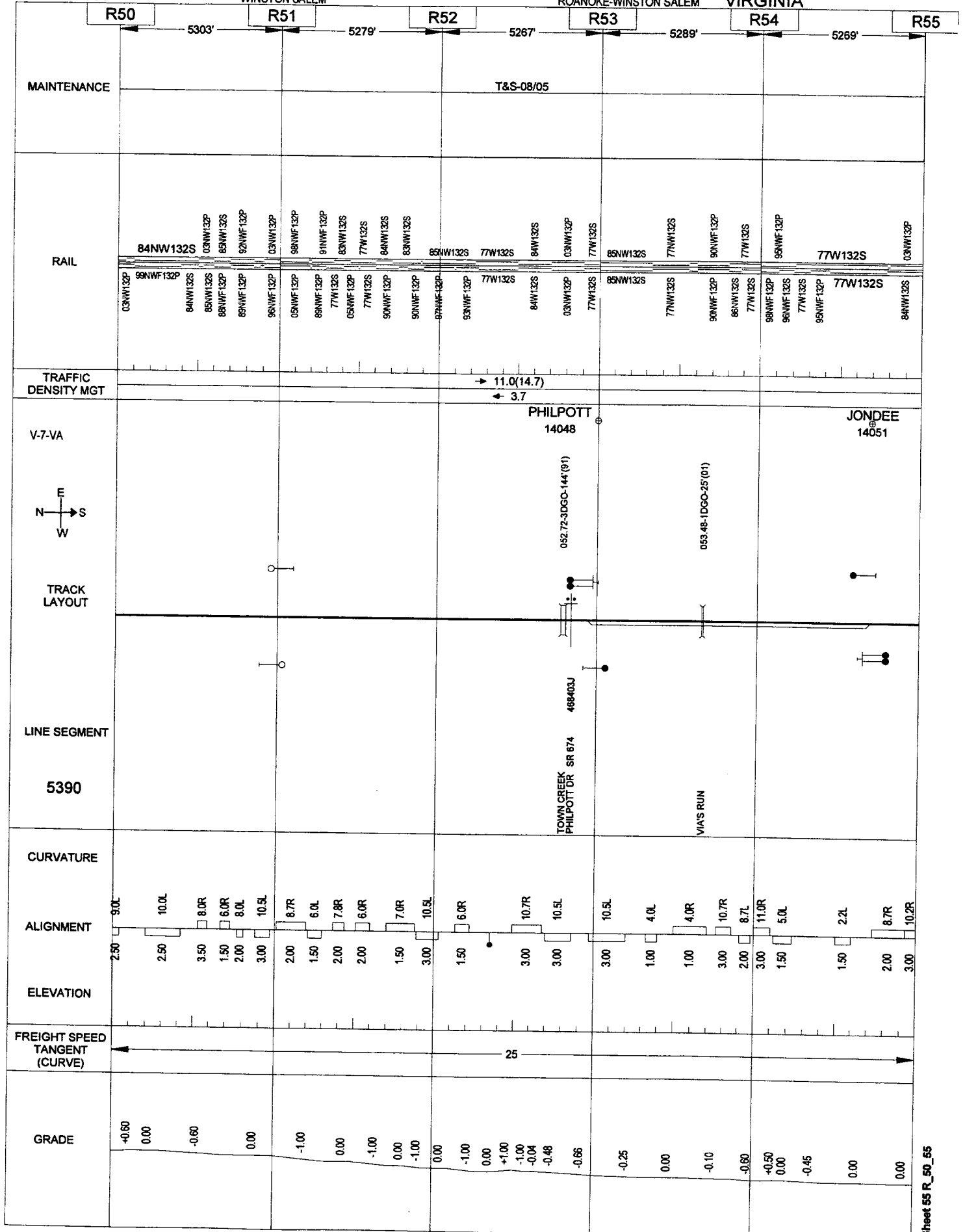
04/12/2006

WINSTON SALEM

220

ROANOKE-WINSTON SALEM

VIRGINIA



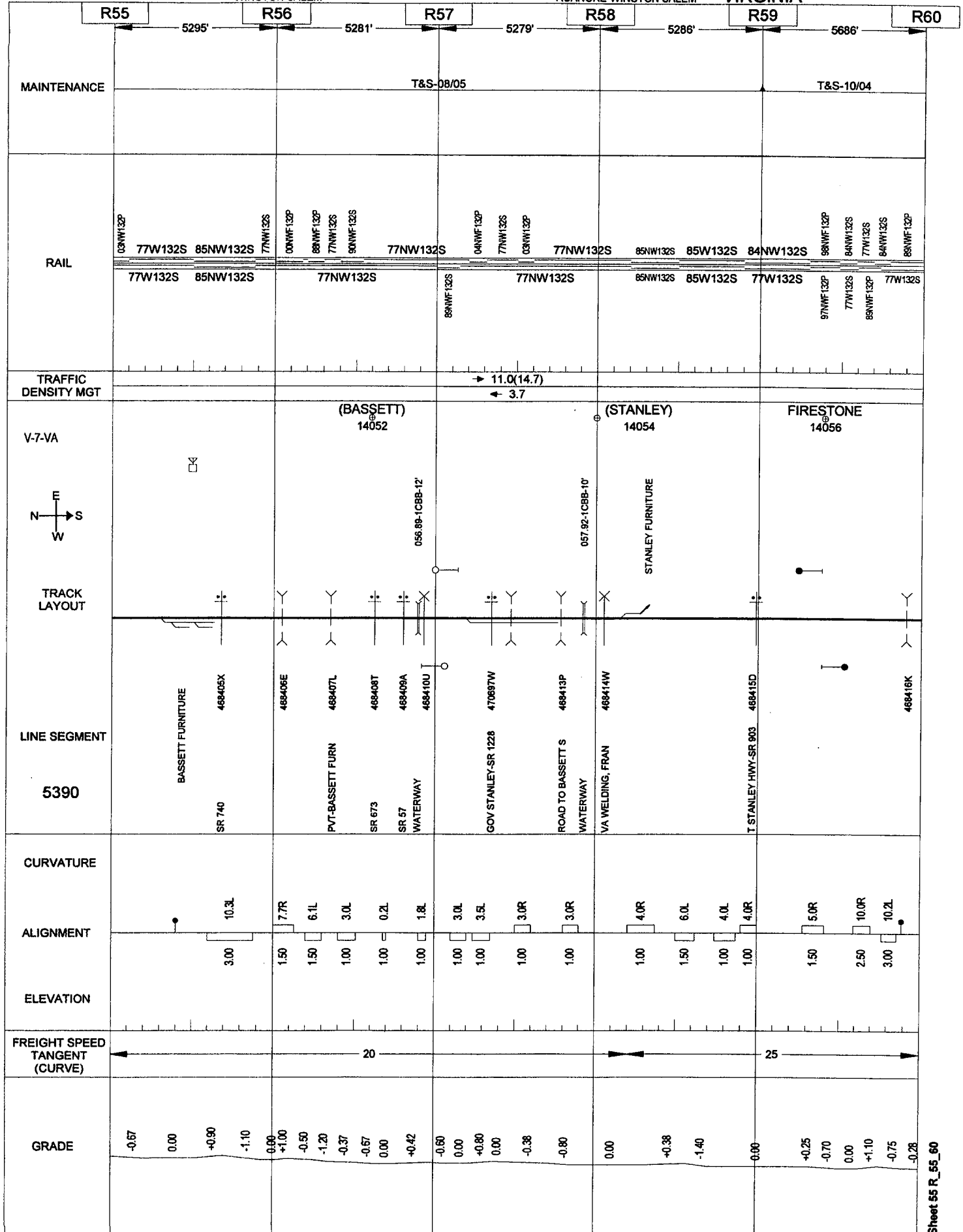
04/12/2006

WINSTON SALEM

221

ROANOKE-WINSTON SALEM

VIRGINIA



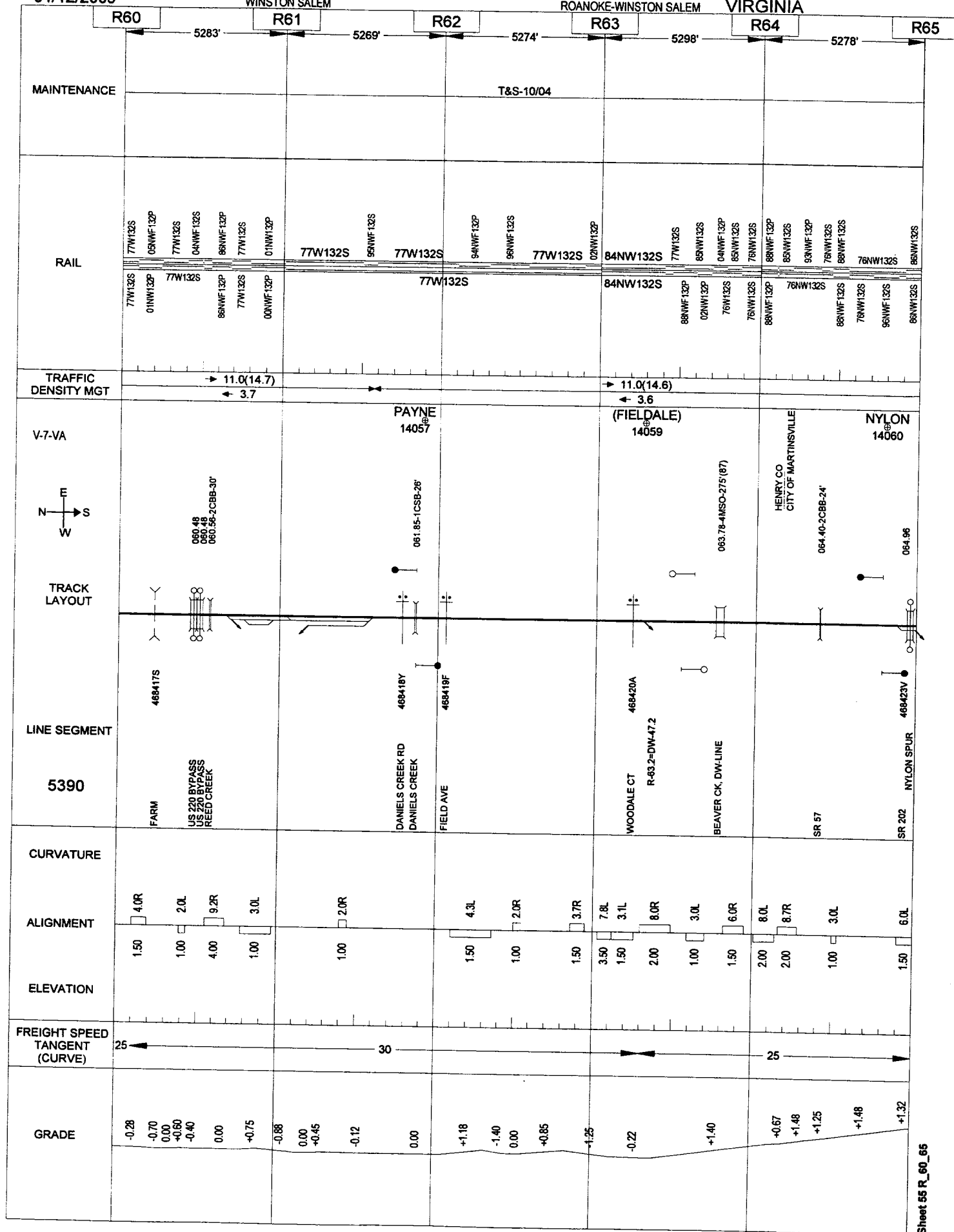
04/12/2006

WINSTON SALEM

222

ROANOKE-WINSTON SALEM

VIRGINIA



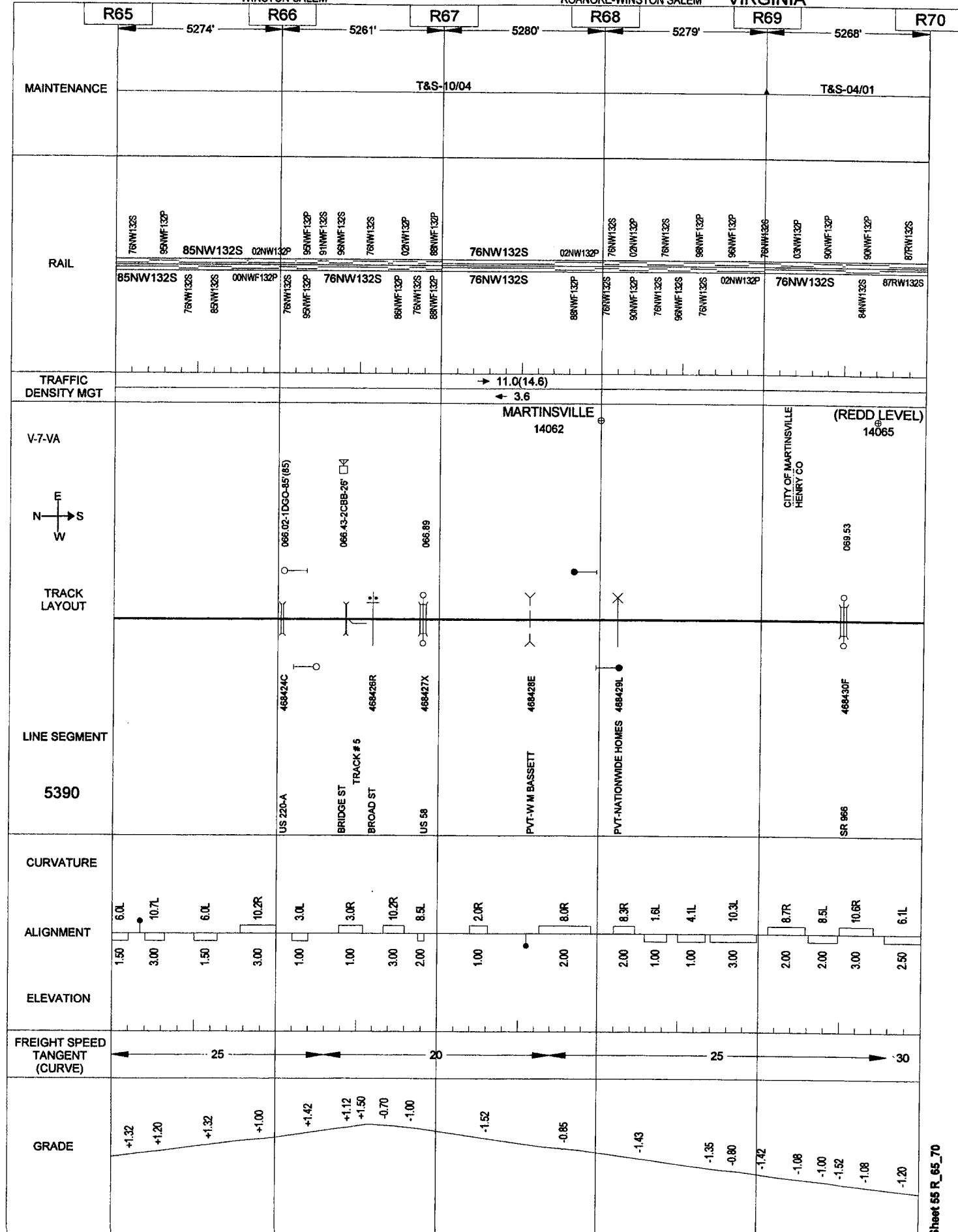
04/12/2006

WINSTON SALEM

223

ROANOKE-WINSTON SALEM

VIRGINIA



D35

50751

MAINTENANCE

T&S-04/01

RAIL

TRAFFIC
DENSITY MGT

V-7-VA



TRACK LAYOUT

LINE SEGMENT

5390

CURVATURE

ALIGNMENT

ELEVATION

**FREIGHT SPEED
TANGENT
(CURVE)**

GRADE

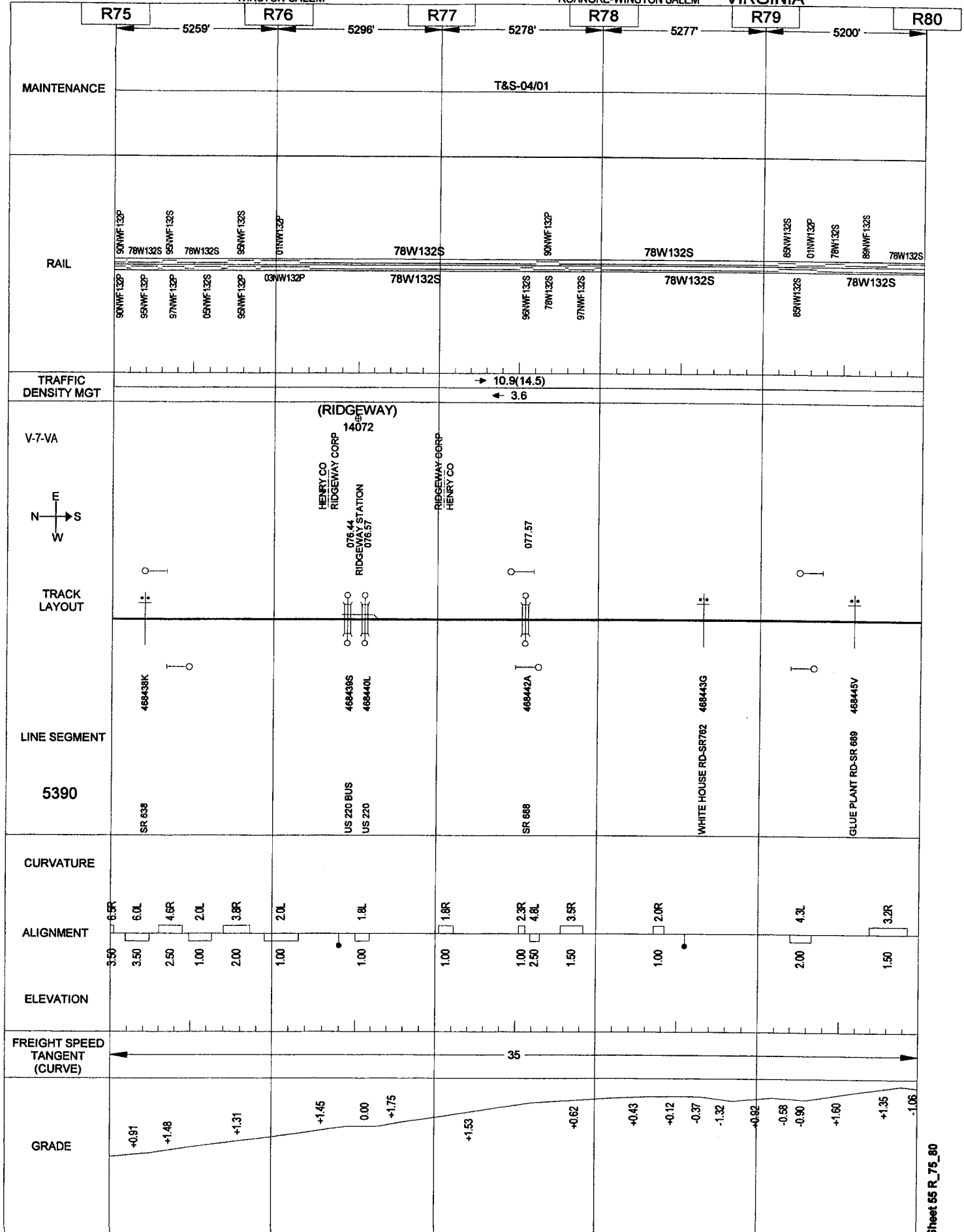
04/12/2006

WINSTON SALEM

225

ROANOKE-WINSTON SALEM

VIRGINIA



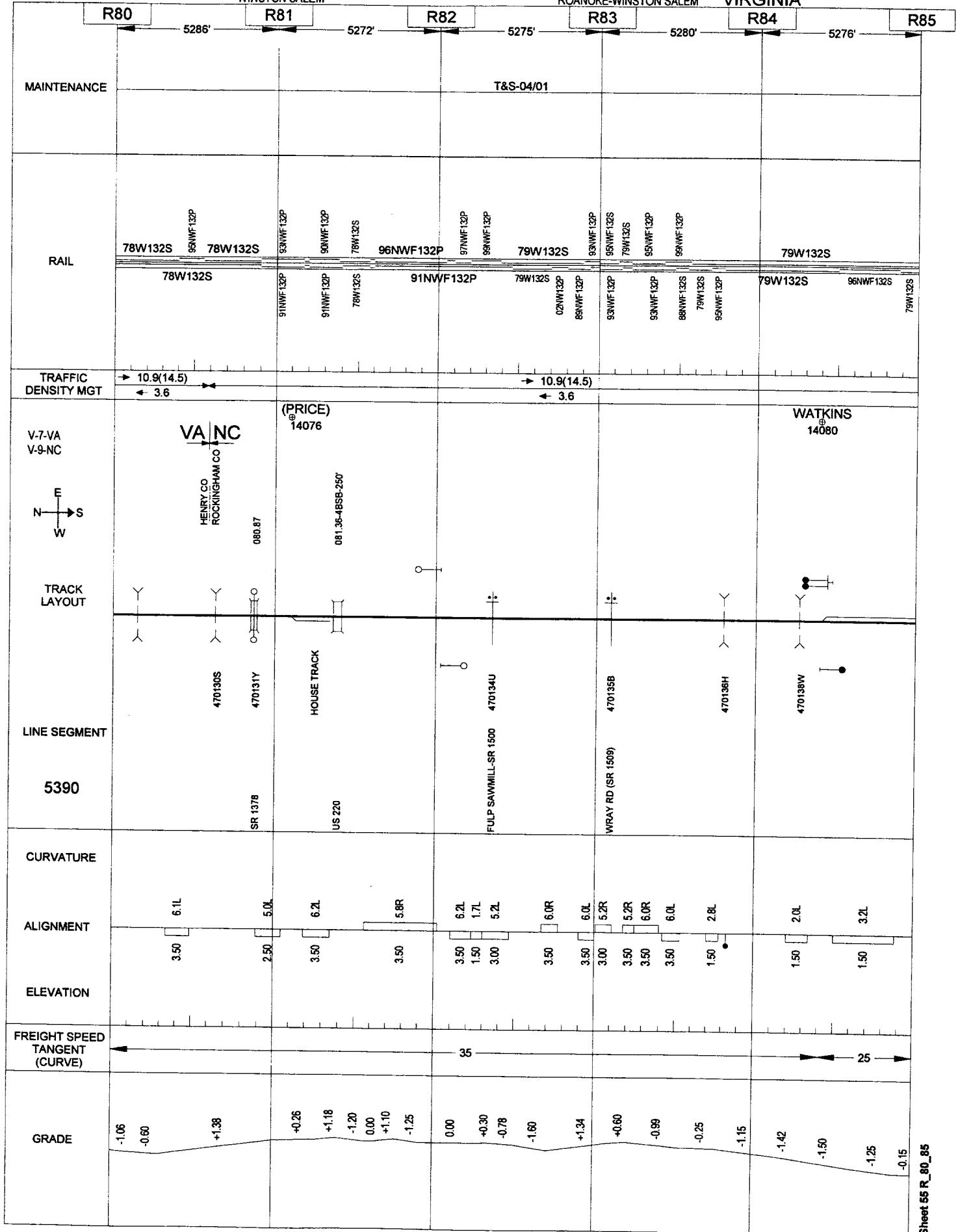
04/12/2006

WINSTON SALEM

226

ROANOKE-WINSTON SALEM

VIRGINIA



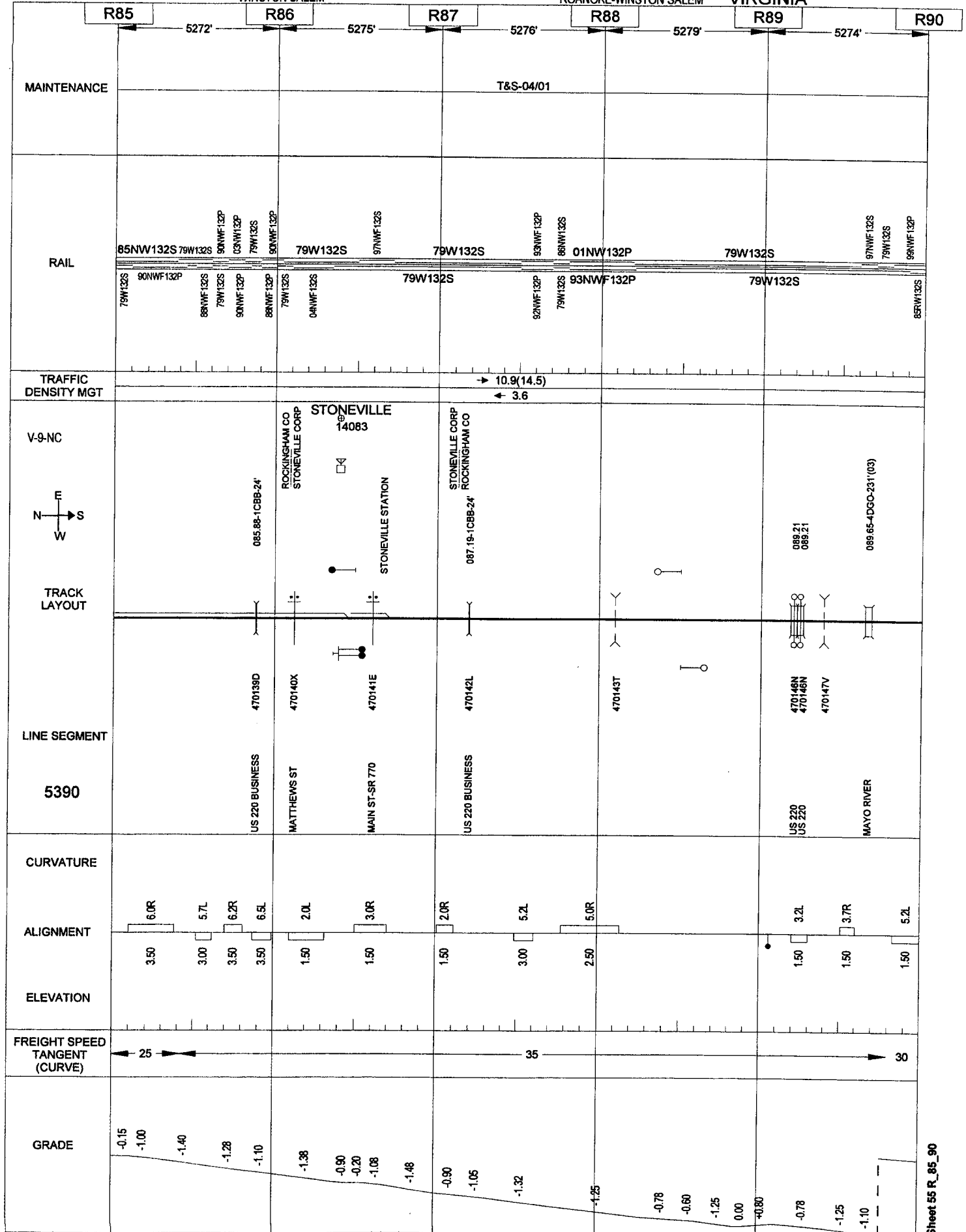
04/12/2006

WINSTON SALEM

227

ROANOKE-WINSTON SALEM

VIRGINIA



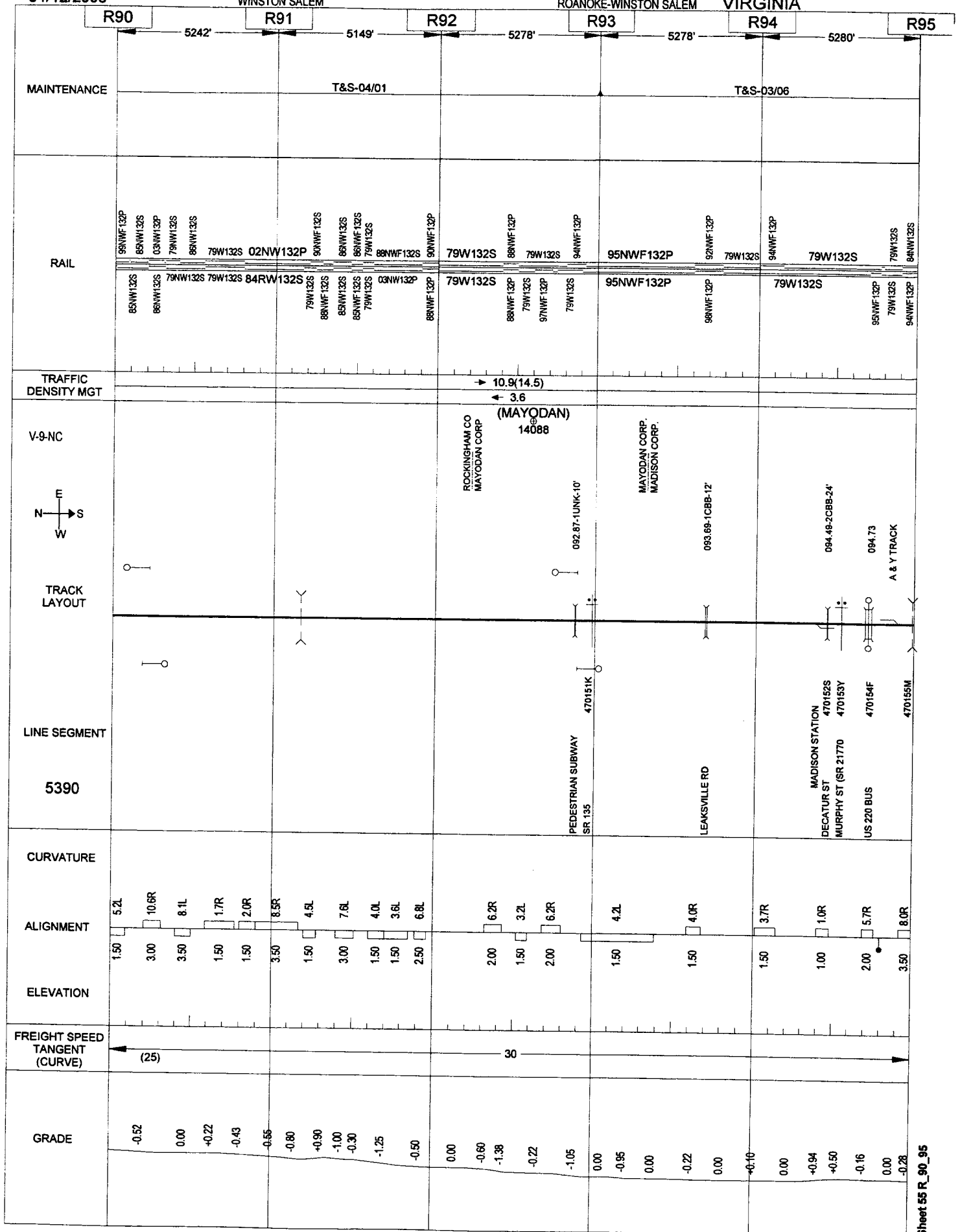
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WINSTON SALEM

228

ROANOKE-WINSTON SALEM

VIRGINIA



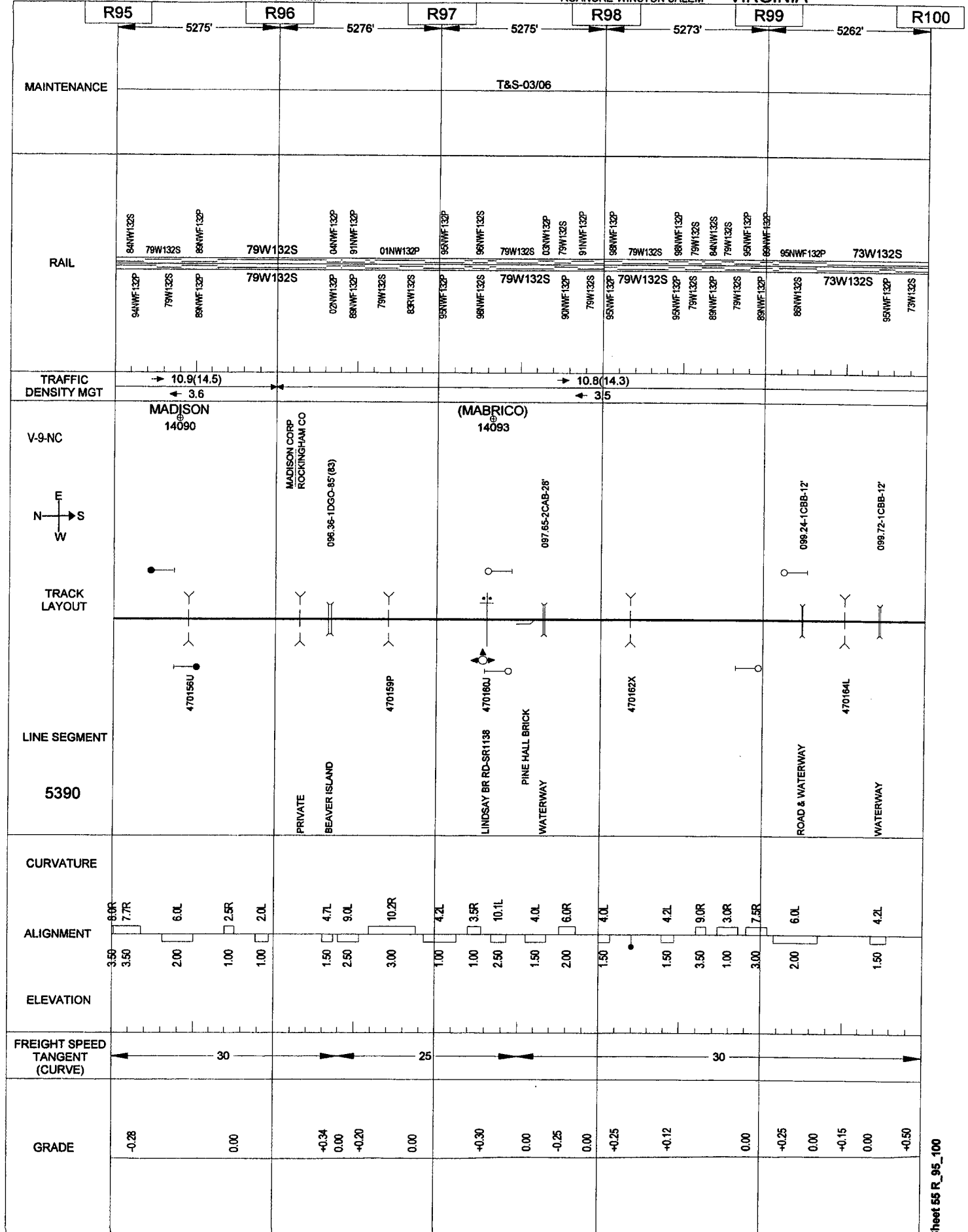
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WINSTON SALEM

229

ROANOKE-WINSTON SALEM

VIRGINIA



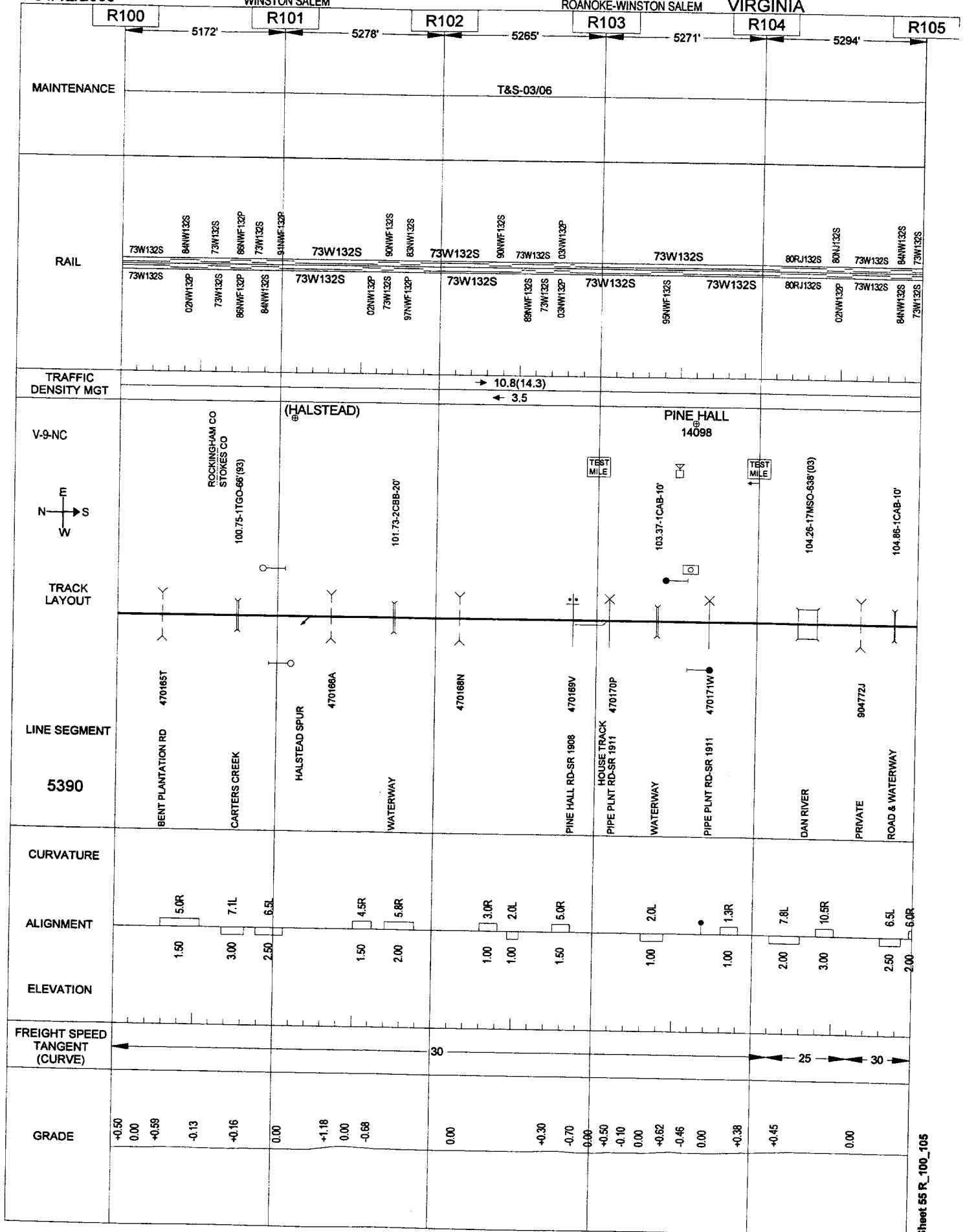
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230

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VIRGINIA



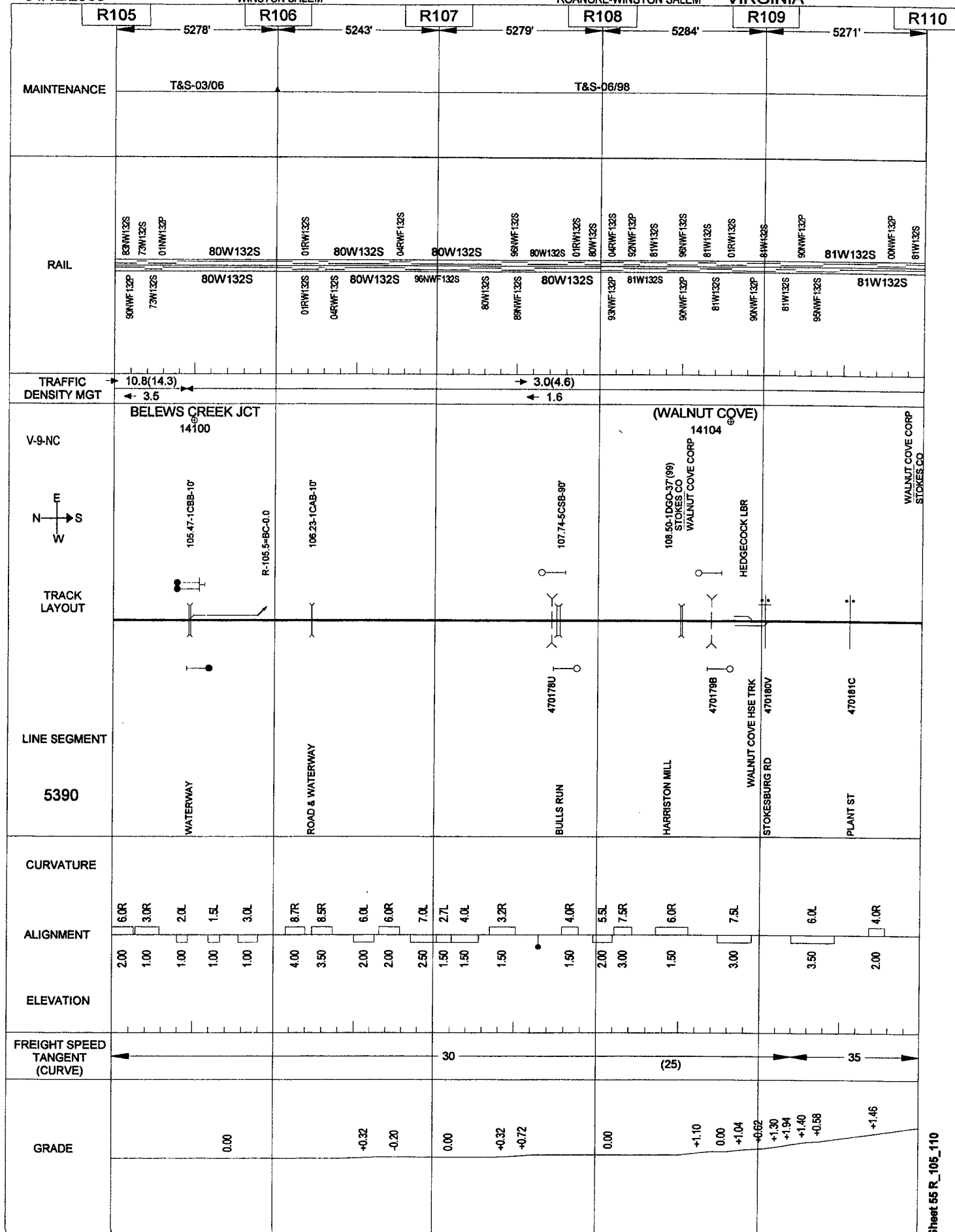
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231

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VIRGINIA



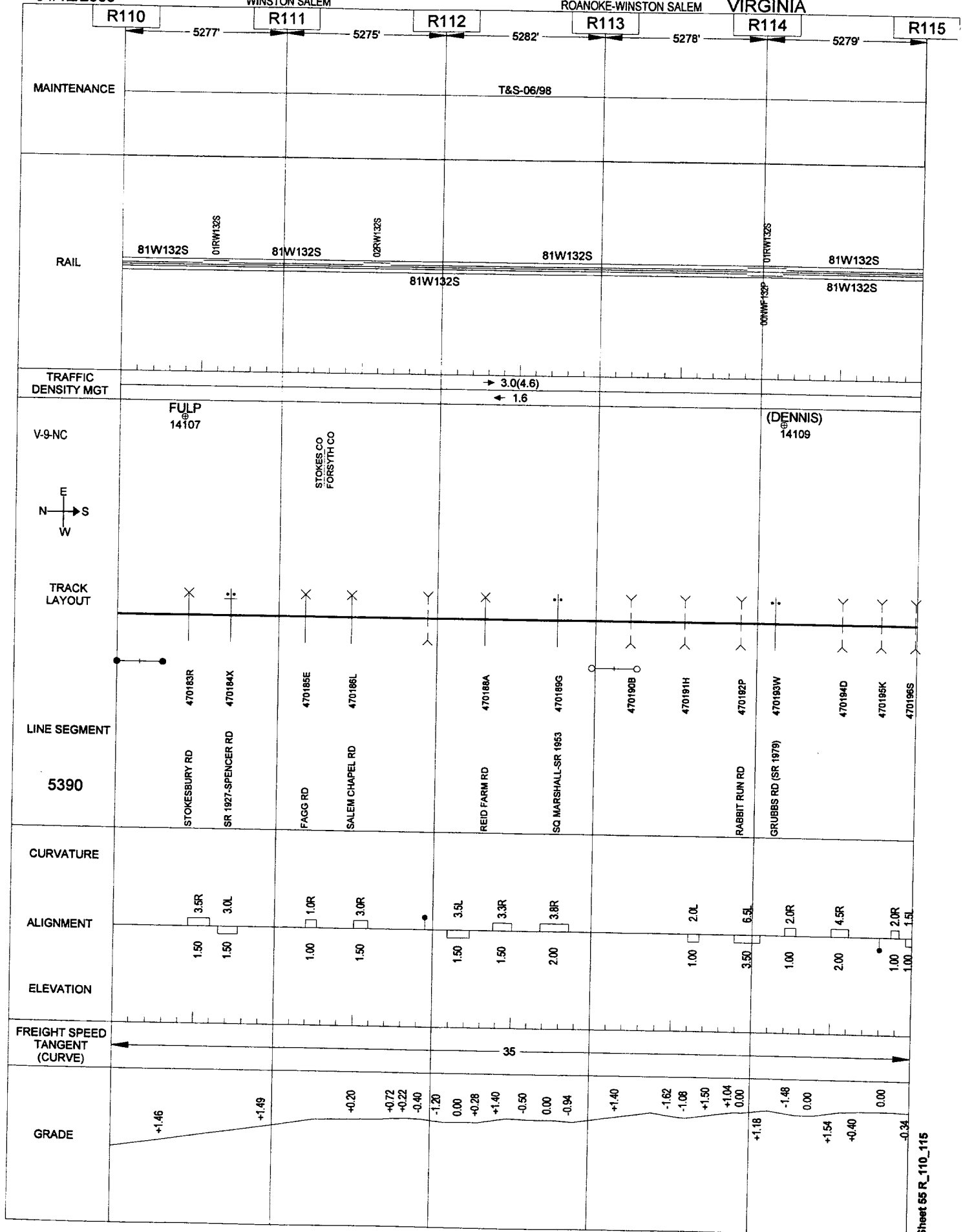
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232

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VIRGINIA



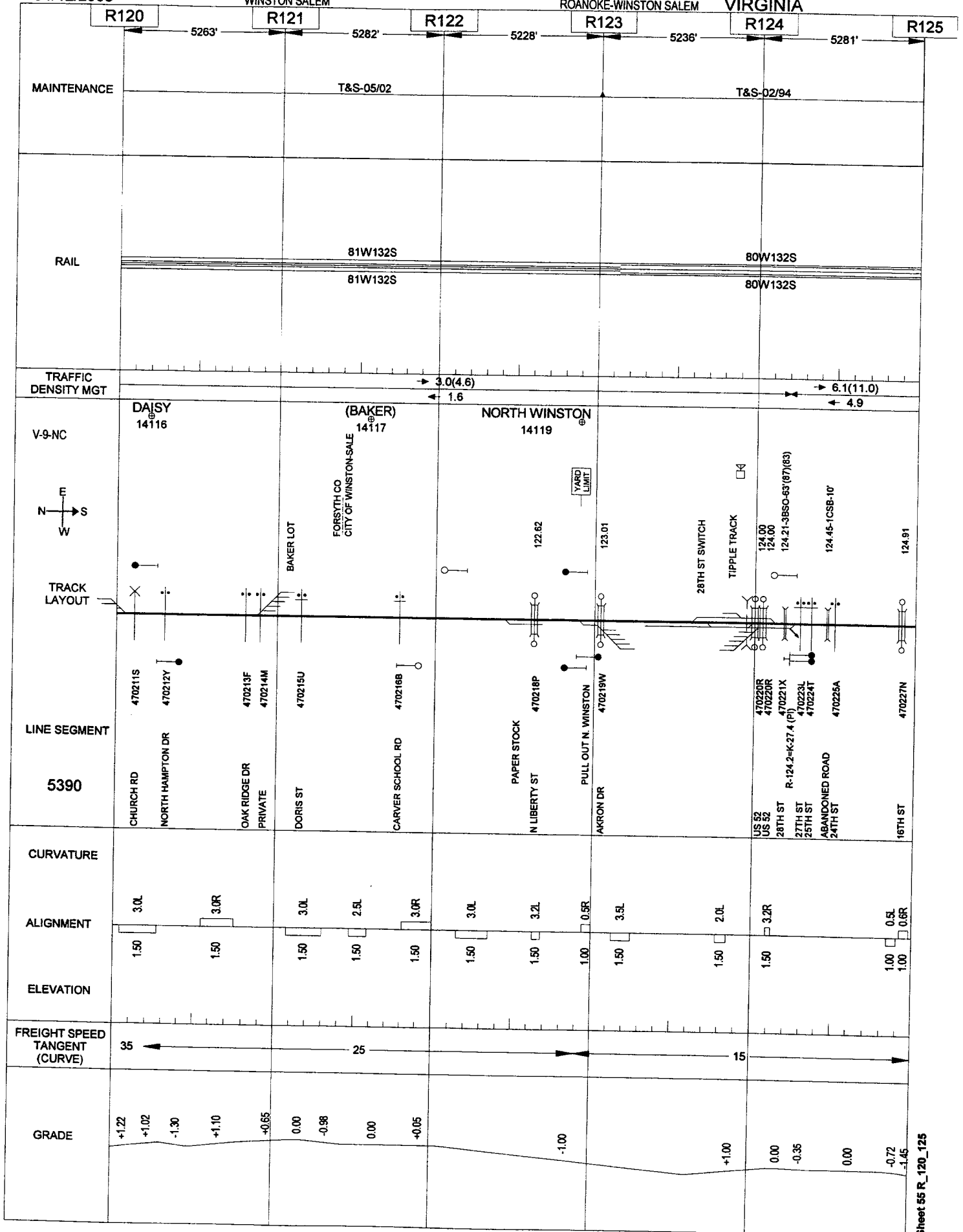
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234

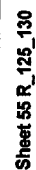
WINSTON SALEM

ROANOKE-WINSTON SALEM

VIRGINIA



VIRGINIA



04/12/2006

236

WINSTON SALEM

W SALEM SOUTHBOUND

W SALEM-SOUTH W SALEM

VIRGINIA

WS1

WS2

WS3

WS4

3346'

5272'

5274'

5282'

5280'

MAINTENANCE

T&S-06/92

RAIL

73RW132S

73RW132S

TRAFFIC DENSITY MGT

0.0(0.0)

0.0

WINSTON-SALEM



TRACK LAYOUT

WS-0.58-R-126.58

001.08-1DGO-59'

001.28-15DGO-693'

001.75-8BSB-384'

NISSEN SPUR

002.43

002.58

003.20-7BSB-336'

YARD LIMIT

LINE SEGMENT

5400

NS MI 38
IDABELL ST

SALEM CREEK

EXPRESSWAY

WAUGHTOWN TOWN

SPRAGUE RD

ST ROUTE 150

STARLIGHT DR

CASSELL ST

CURVATURE

ALIGNMENT

10.0R

7.0R

1.6R

6.1R

6.0L

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

2.0R

ELEVATION

FREIGHT SPEED TANGENT (CURVE)

10

GRADE

0.00

04/12/2006

WINSTON SALEM

237
HILL TOP BRANCH
DW42

MARTINSVILLE-FIELDALE

VIRGINIA

DW43

DW44

DW45

5280'

4973'

2'

5129'

MAINTENANCE

T&S-09/90

RAIL

44RJ075S

6RJ085S

52RJ075S

53RJ075S

**RJ075S

30RJ075S

44RJ075S

6RJ085S

52RJ075S

53RJ075S

**RJ075S

30RJ075S

TRAFFIC
DENSITY MGT

V-7-VA

TRACK
LAYOUTMARTINSVILLE
DW41JONES CREEK
DW44TIPPLE TRACK
PRILLAMAN TANK TRACK
041.74

042.01

042.80

044.40-7MSO-158'(NA)

PRILLAMAN CHEMICAL

714160H

714162B

714163H

714167K

714168S

LINE SEGMENT

5410

CHURCH ST

FAIRY ST

COMMONWEALTH BLVD

JONES CRK (SR 108)

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

7.5L

6.0R

11.0L

7.0R

6.0R

3.0R

10.0R

4.7R

1.5R

1.5R

7.0L

7.0R

6.0R

10

+2.65

-1.95

-2.88

-2.70

-2.63

-2.71

-2.49

-0.36

-0.39

04/12/2006

WINSTON SALEM

238

HILL TOP BRANCH

MARTINSVILLE-FIELDALE

VIRGINIA

DW45

DW46

DW47

5129'

5335'

5018'

MAINTENANCE

T&S-09/90

RAIL

30RJ075S

56R.066S

53R.075S

97RWF132S

30RJ075S

56R.066S

53R.075S

97RWF132S

TRAFFIC
DENSITY MGT

V-7-VA

TRACK
LAYOUT

HILL TOP JCT

DW-47.2-R-83.2

045.54

045.80

046.10-10WTO-136' (86)

046.48
046.50-9MSO-178' (NA)

714169Y

714170T

MARTINSVILLE IRON &

714171A

LINE SEGMENT

5410

SR 667

US 220

JONES CREEK

R LINE TO W-SALEM
BEAVER CREEK
SR 667

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

10

GRADE

-0.98

-0.02

-0.09

-0.23

-0.30

-0.21

-0.02

-0.07

+1.03

-0.19

-0.14

-0.03

+0.02

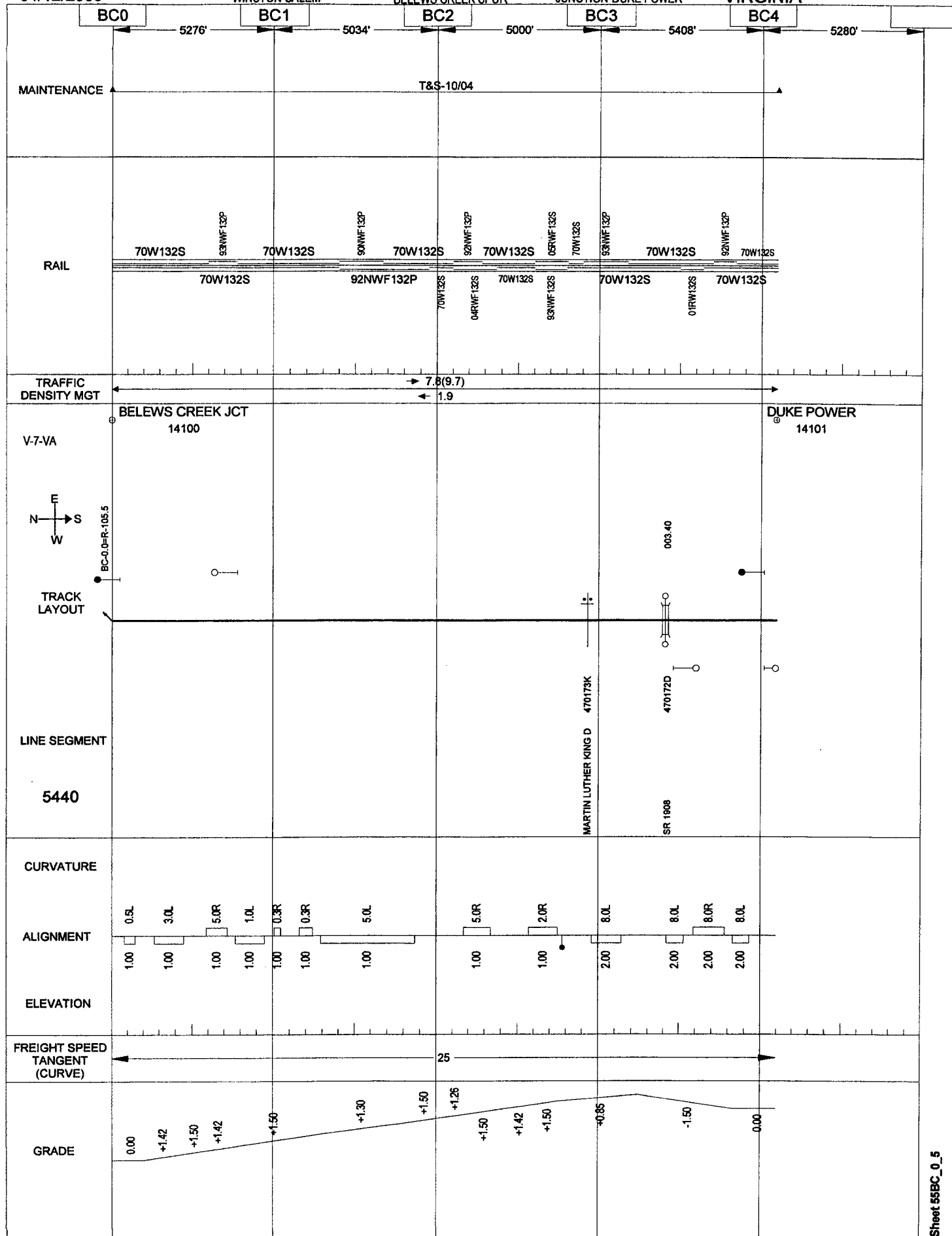
04/12/2006

WINSTON SALEM

239
BELEWS CREEK SPUR

JUNCTION-DUKE POWER

VIRGINIA



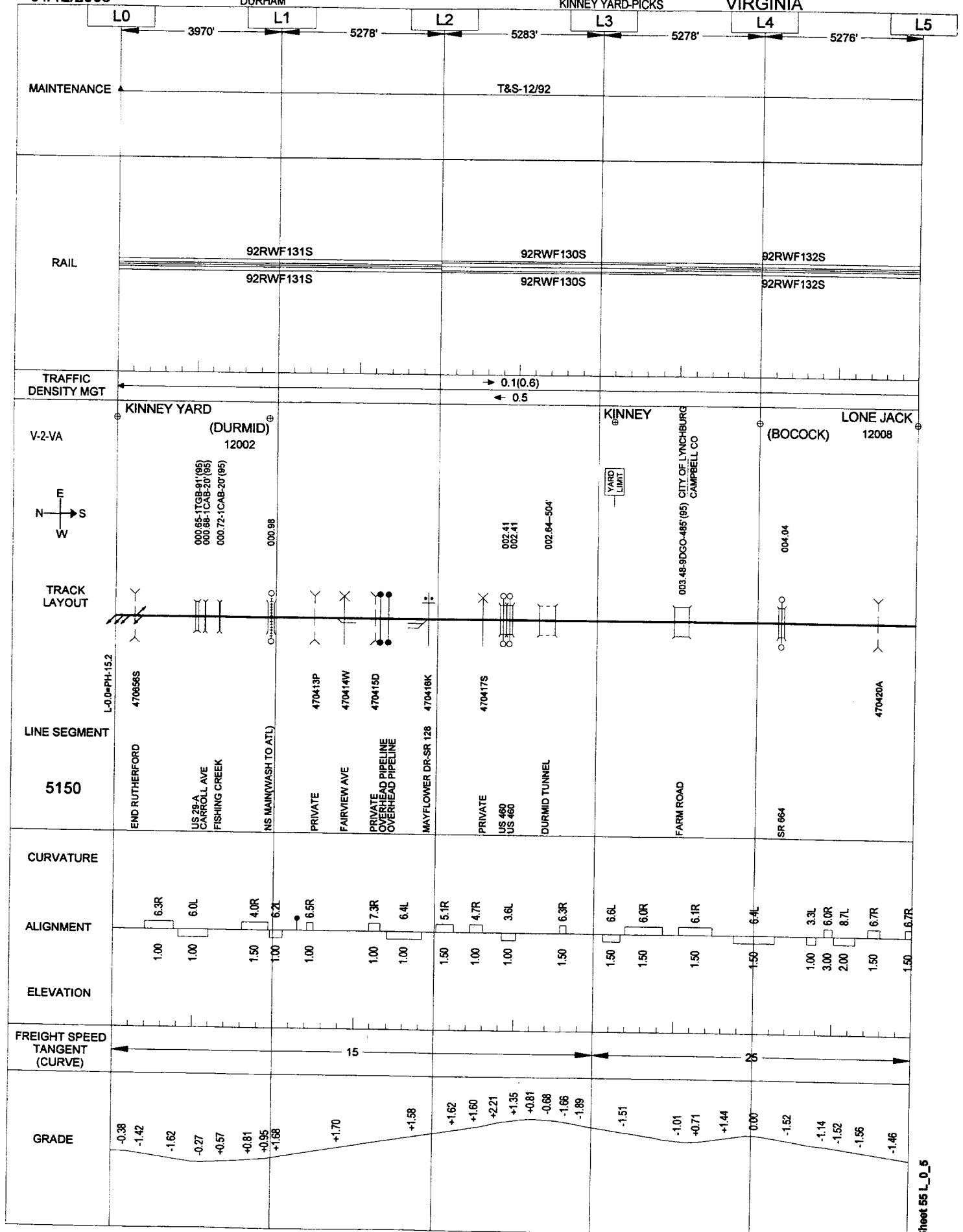
04/12/2006

DURHAM

240

KINNEY YARD-PICKS

VIRGINIA



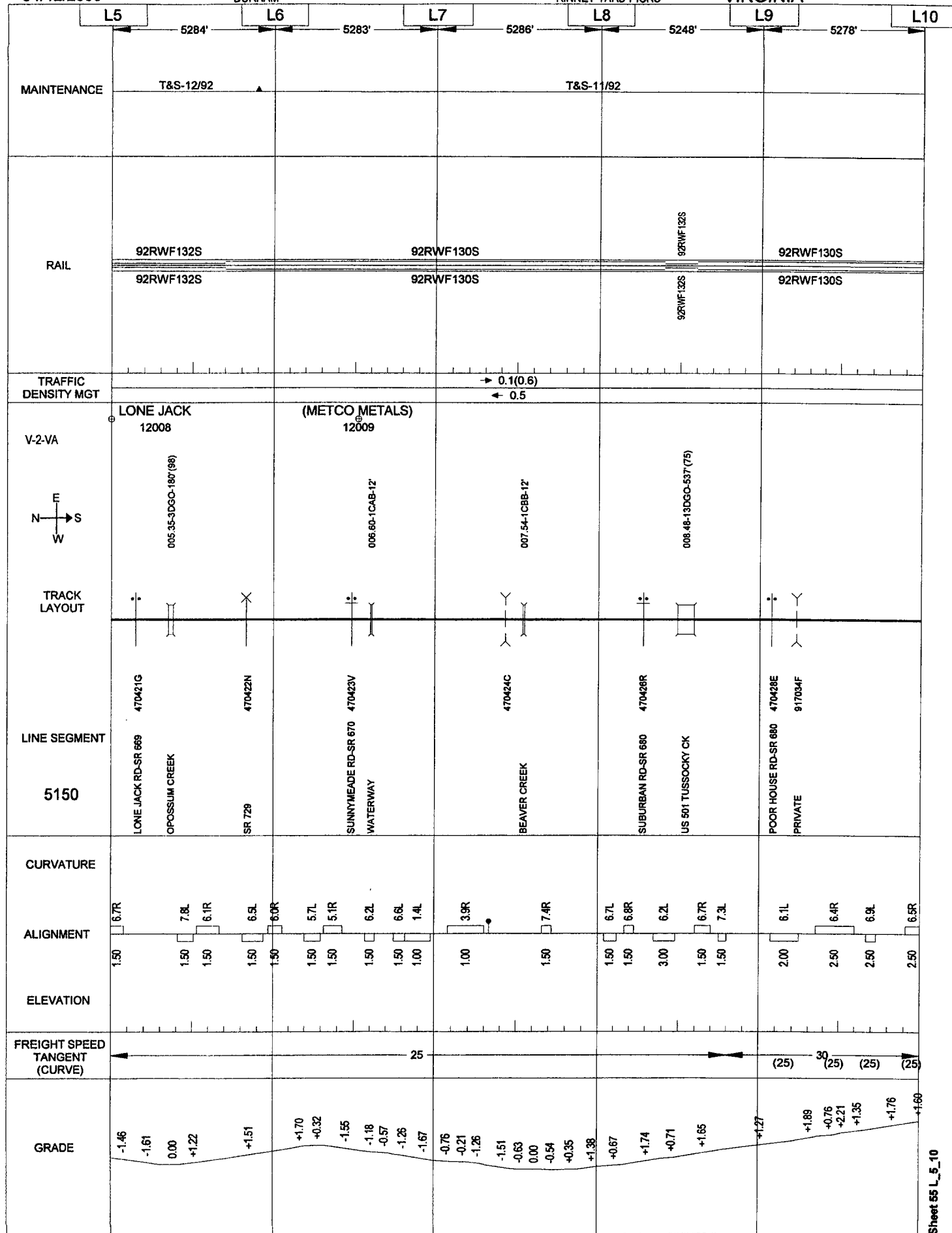
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DURHAM

241

KINNEY YARD-PICKS

VIRGINIA



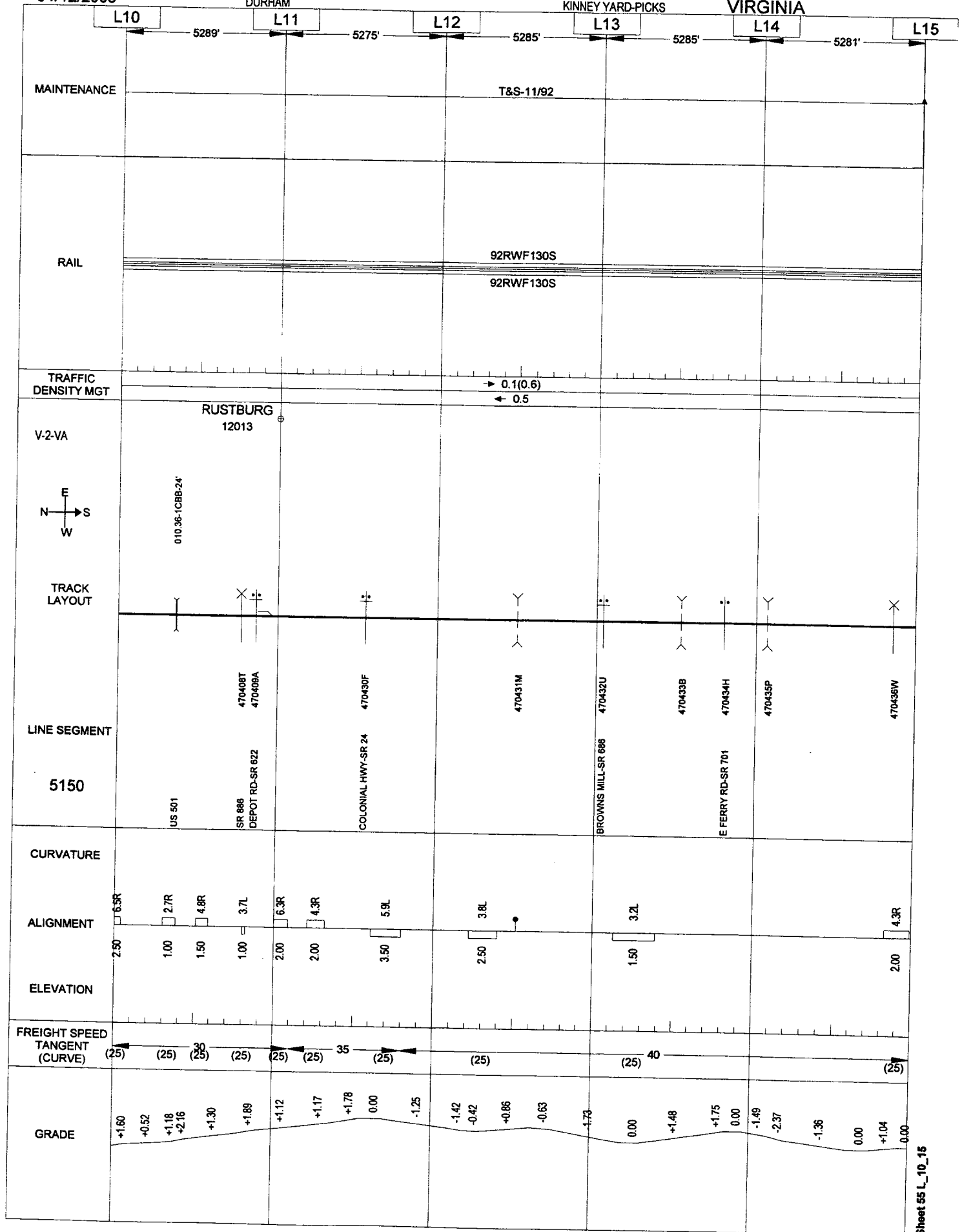
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242

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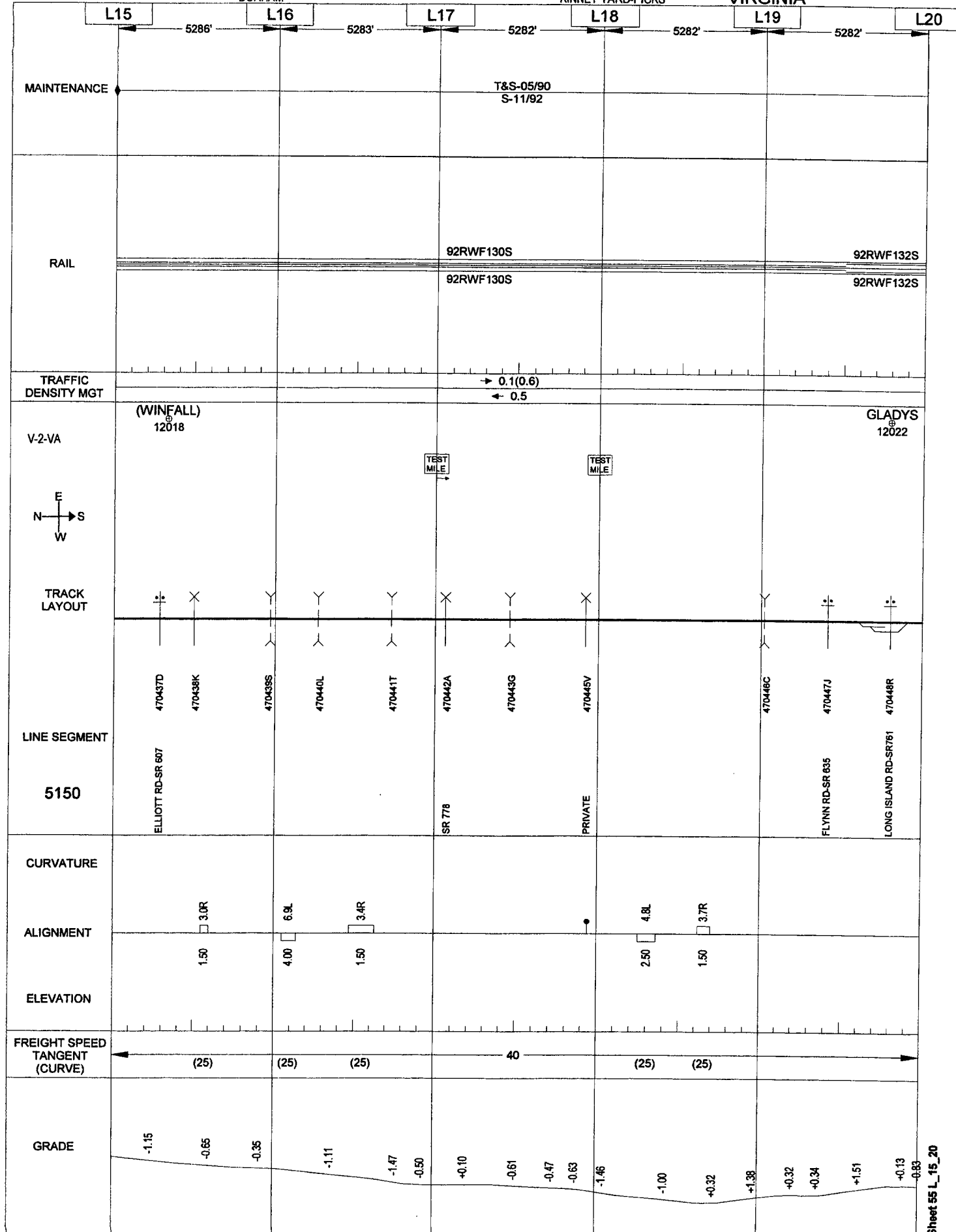
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243

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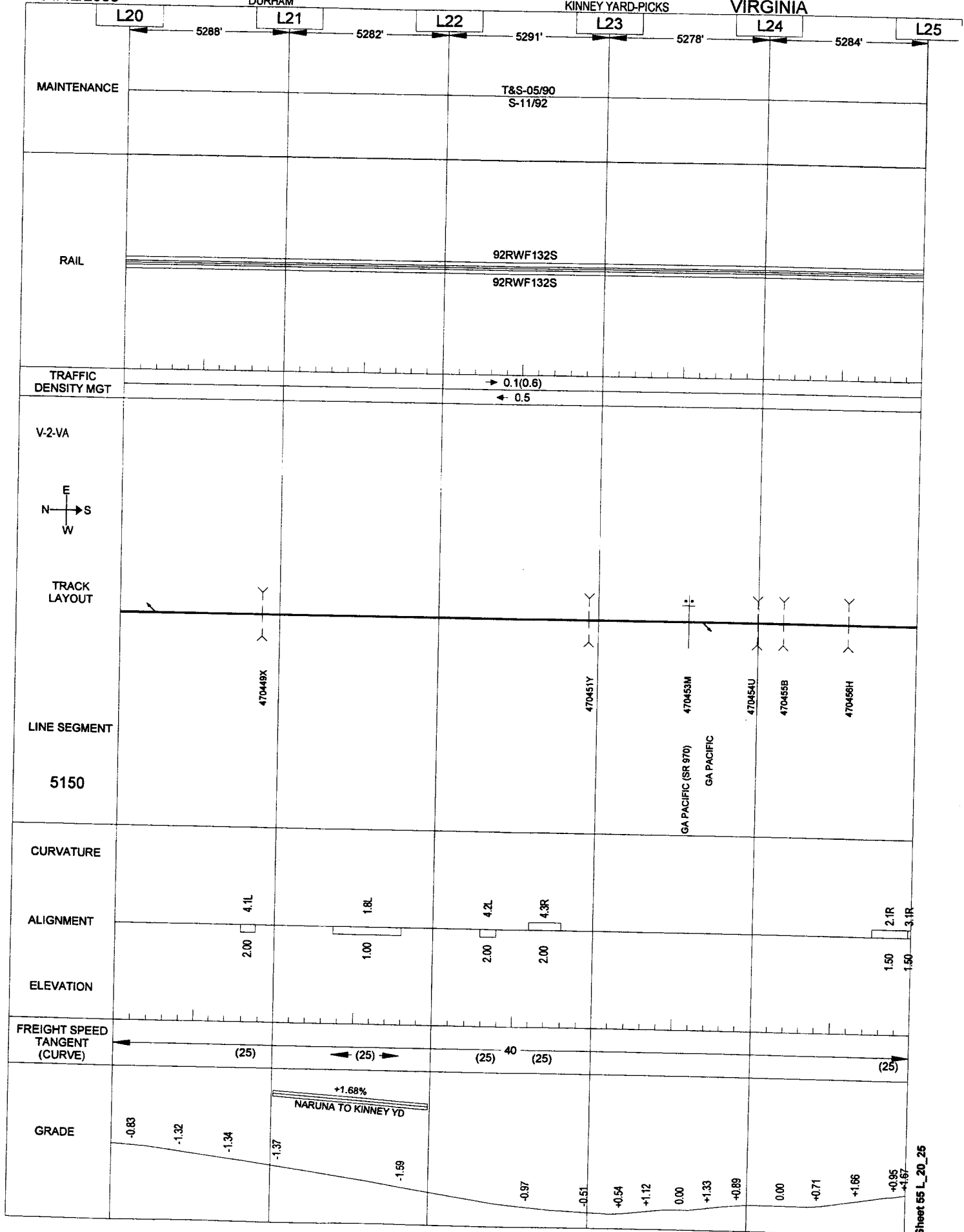
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244

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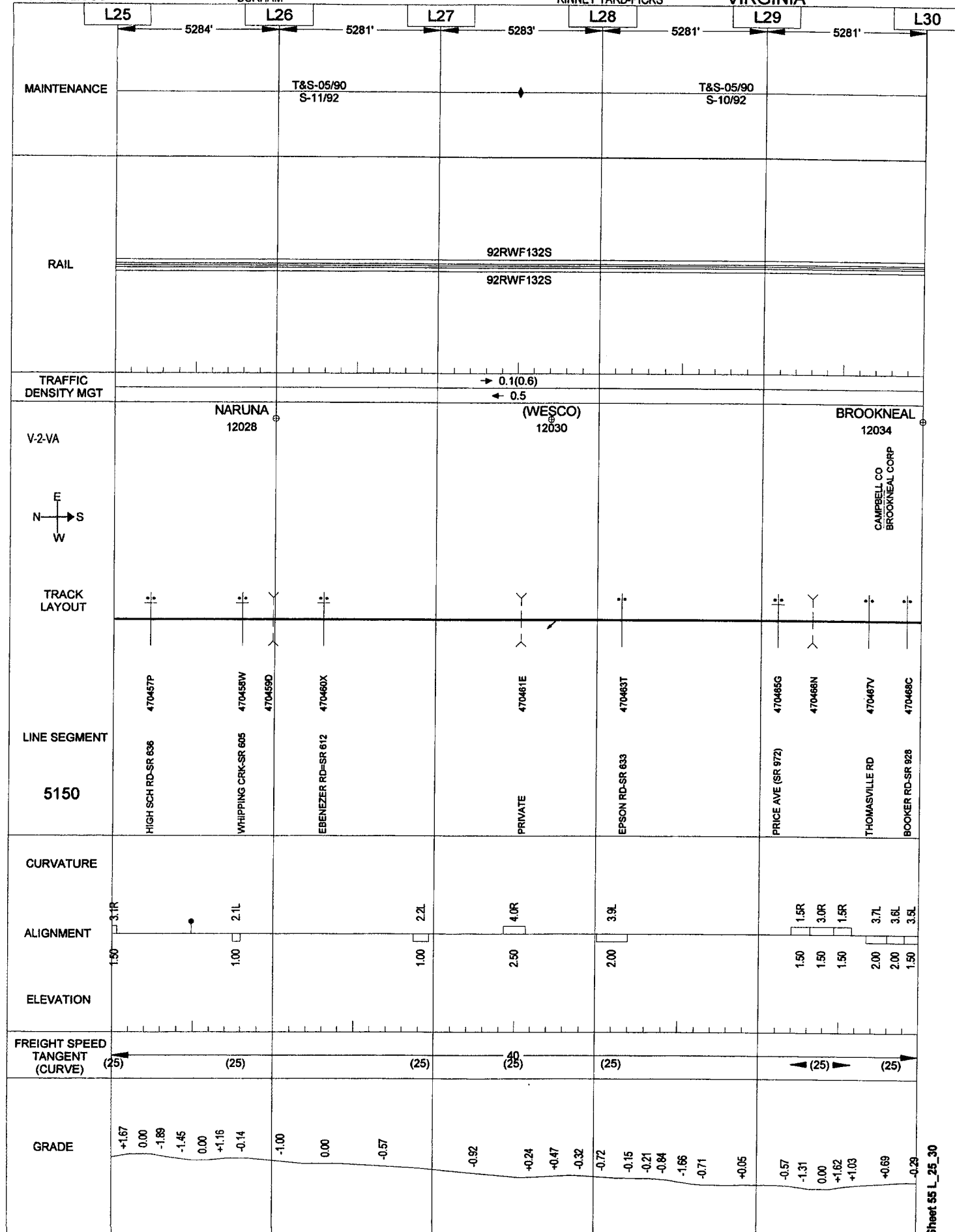
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245

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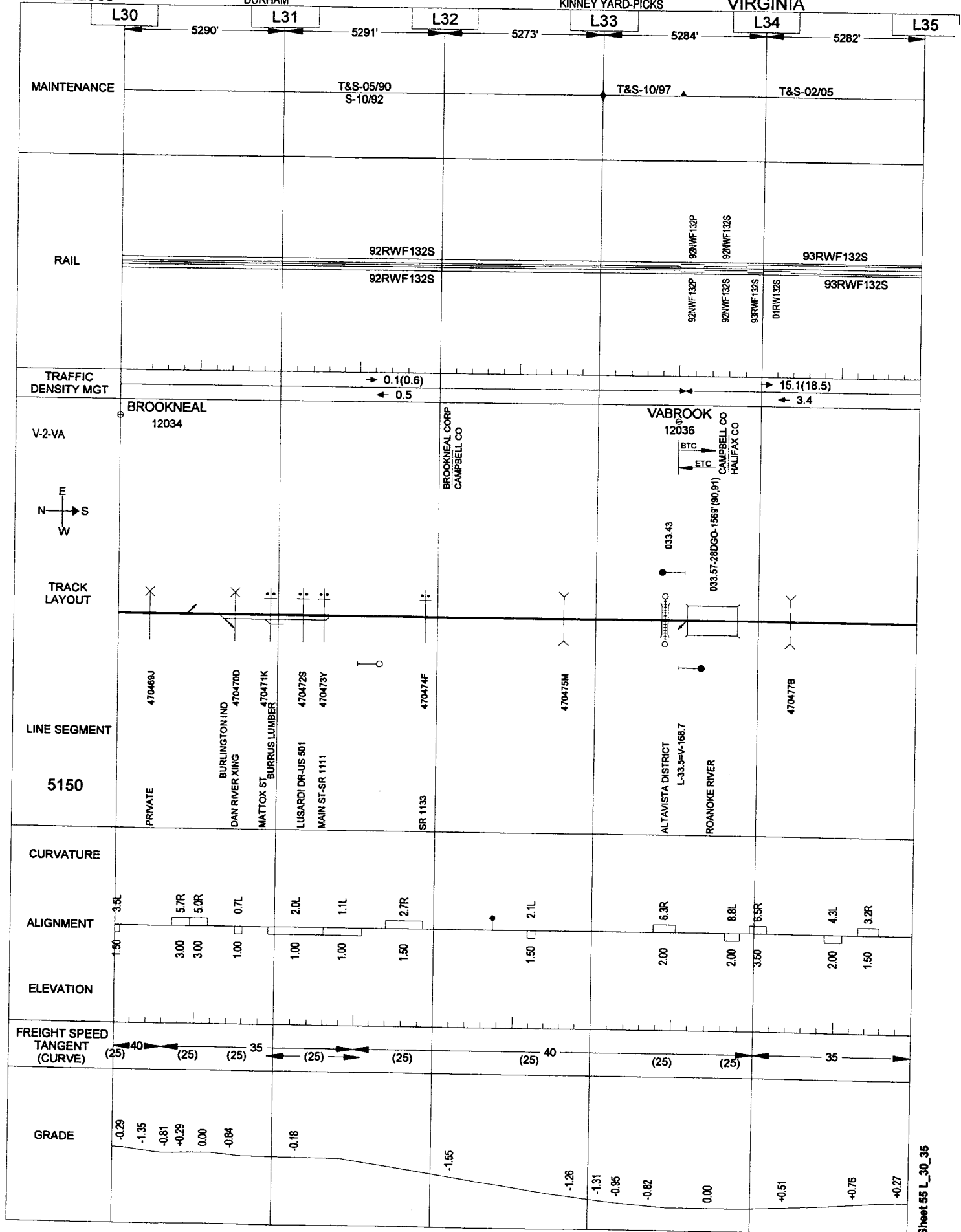
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DURHAM

246

KINNEY YARD-PICKS

VIRGINIA



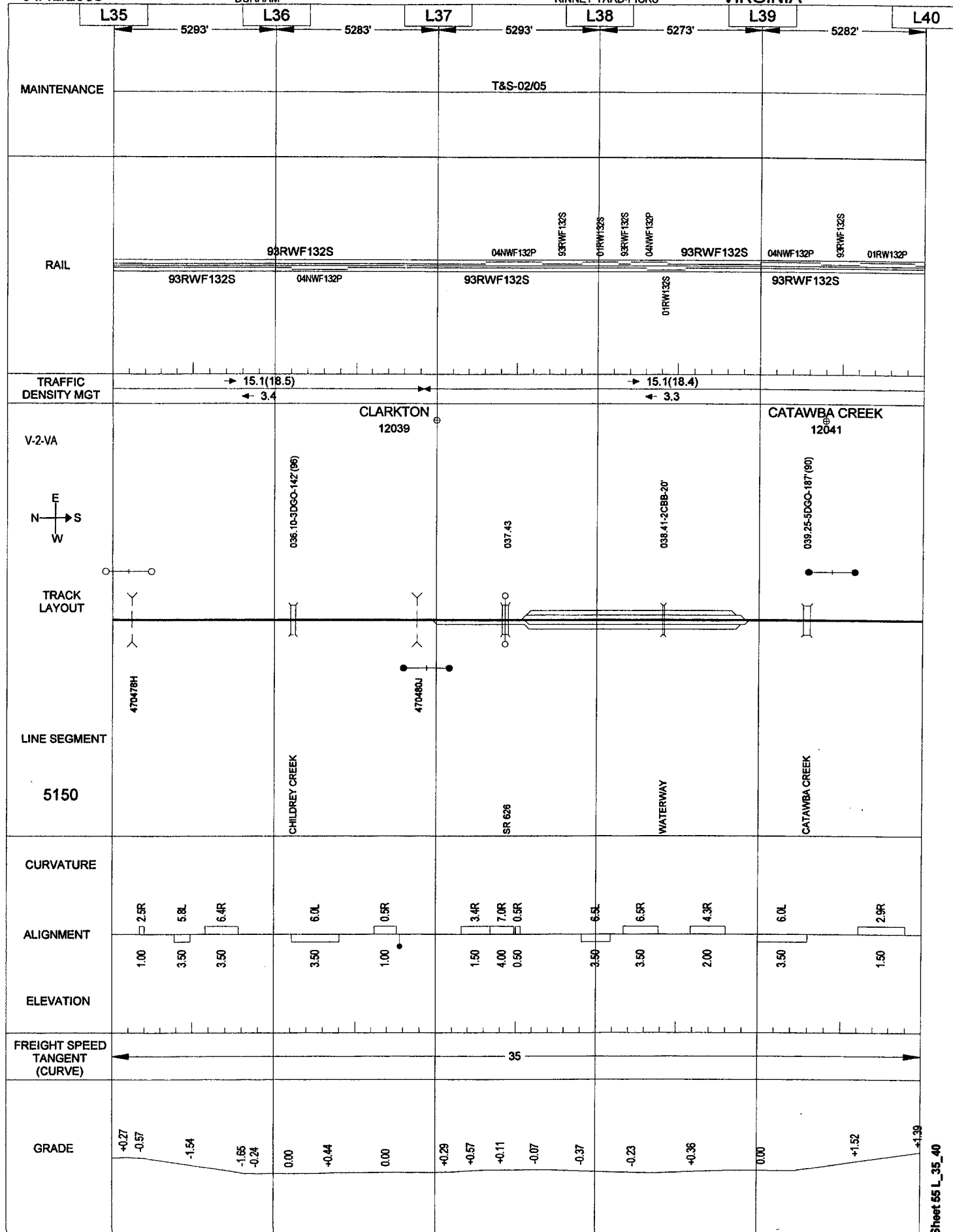
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247

DURHAM

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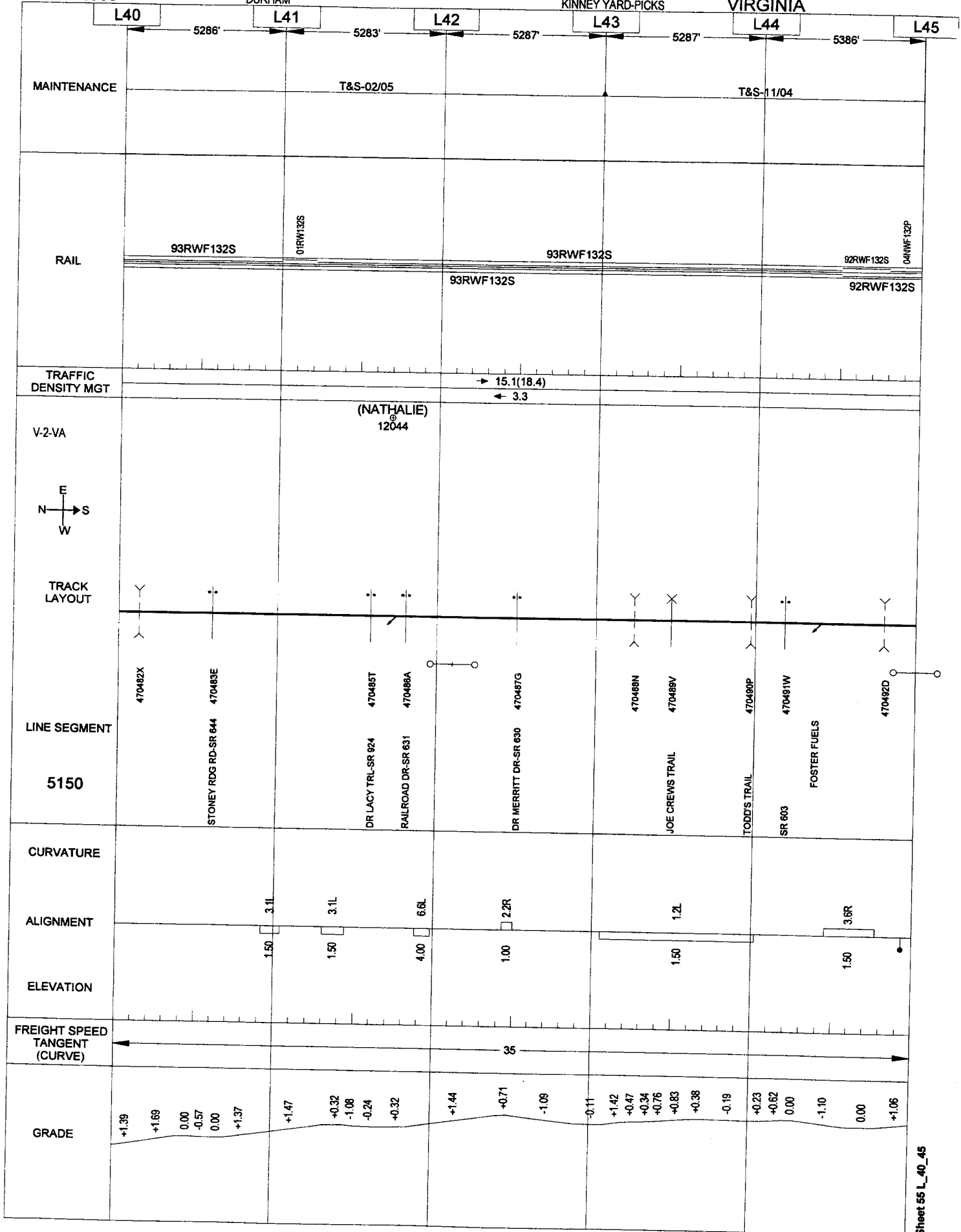
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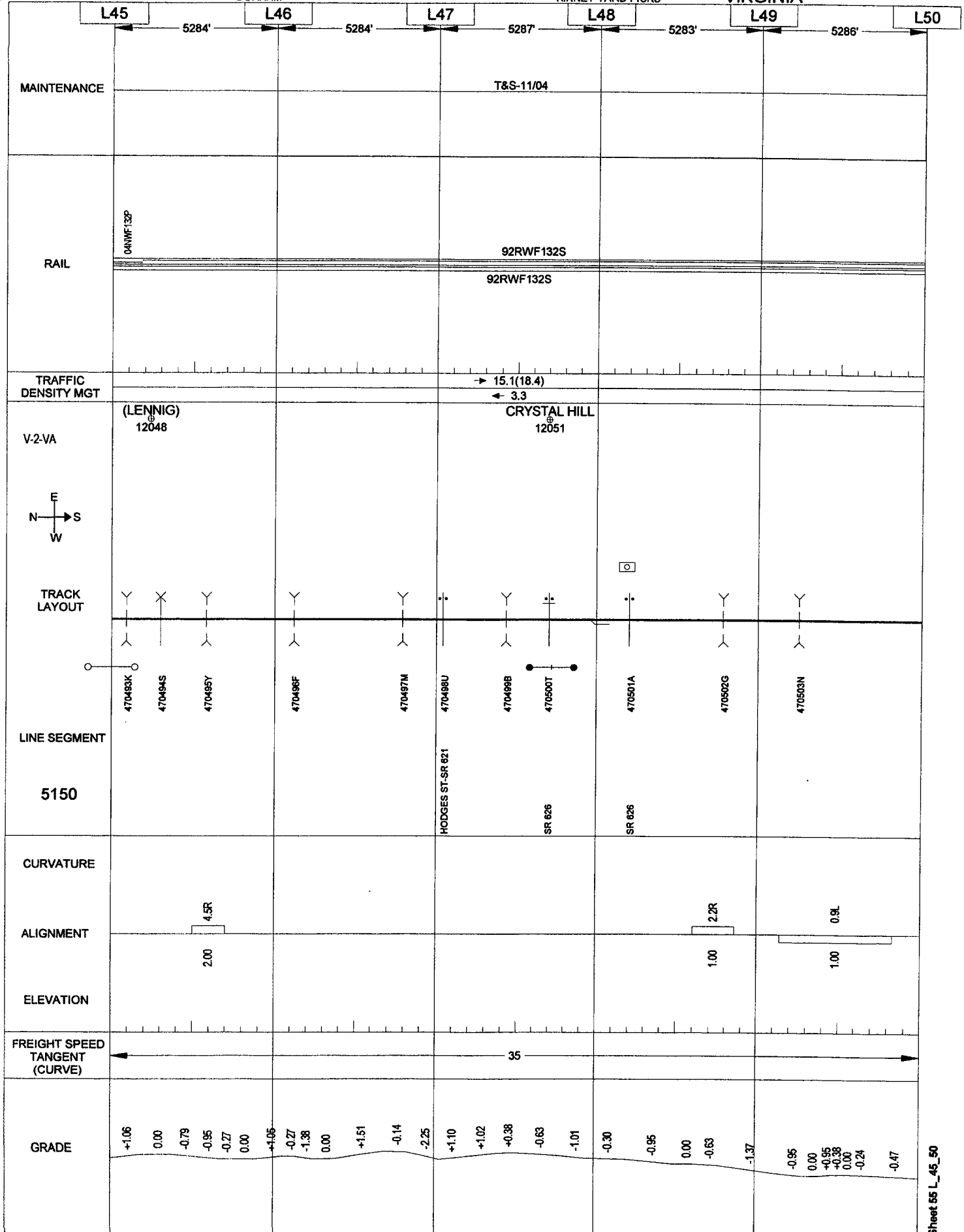
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249

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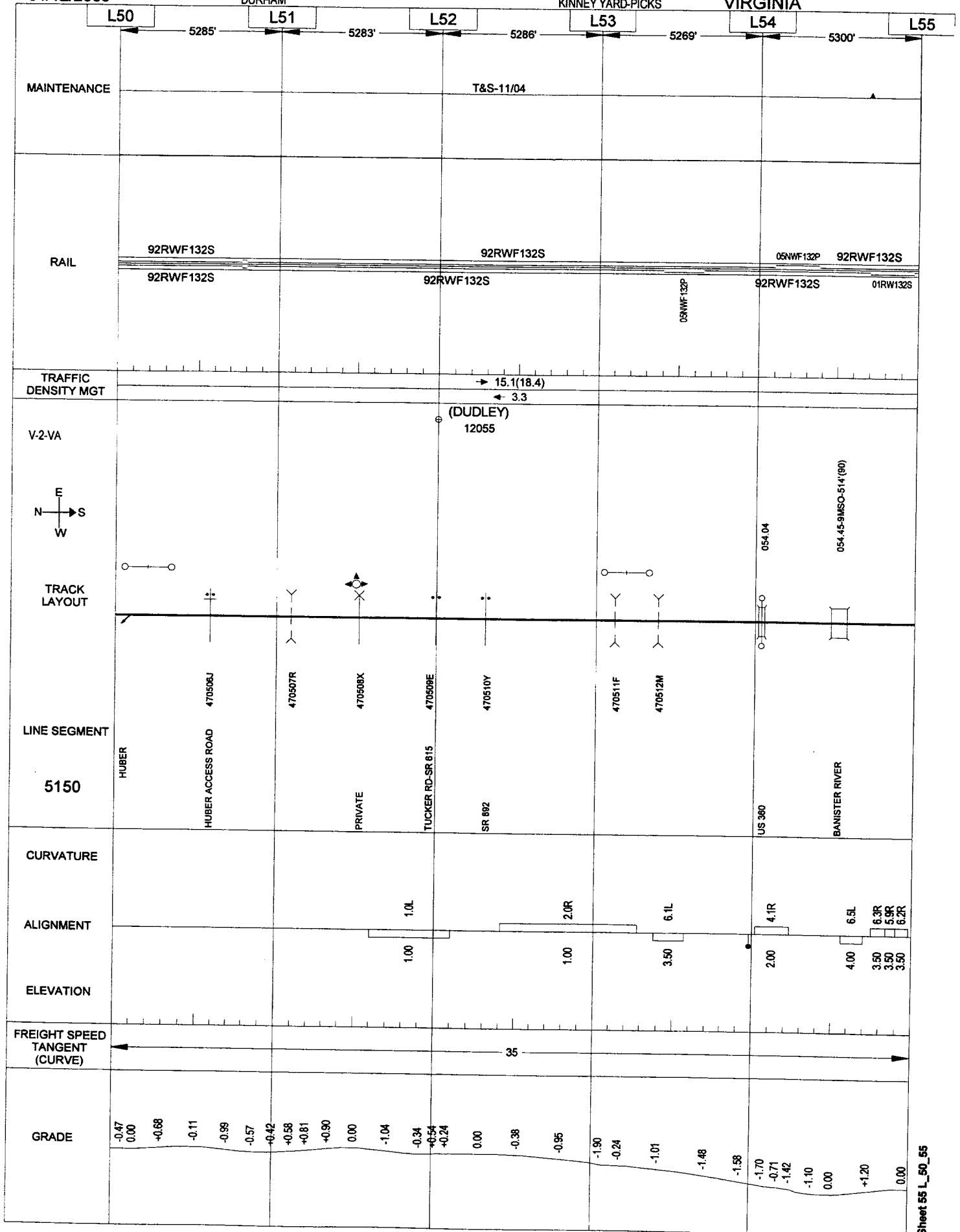
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DURHAM

250

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VIRGINIA



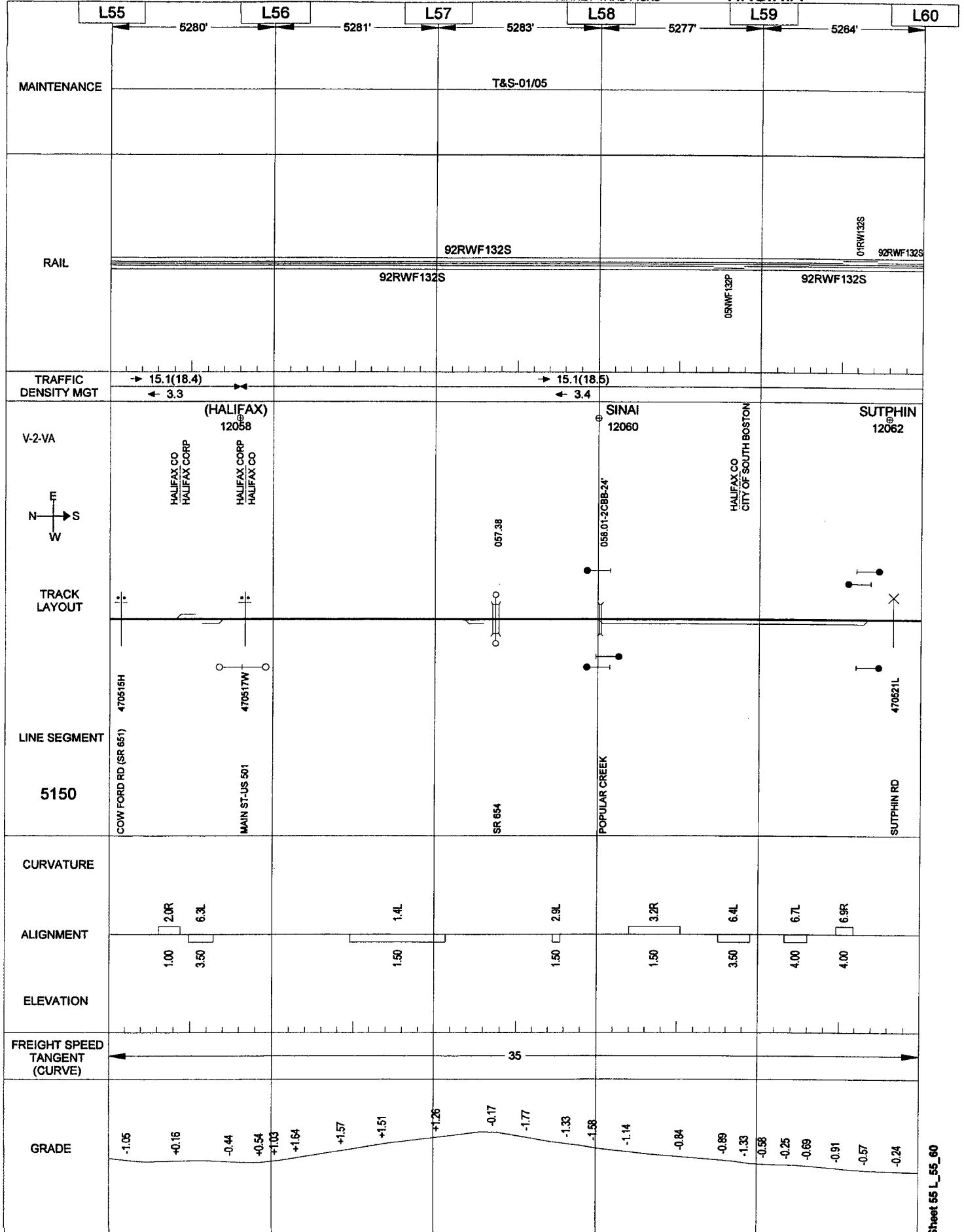
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251

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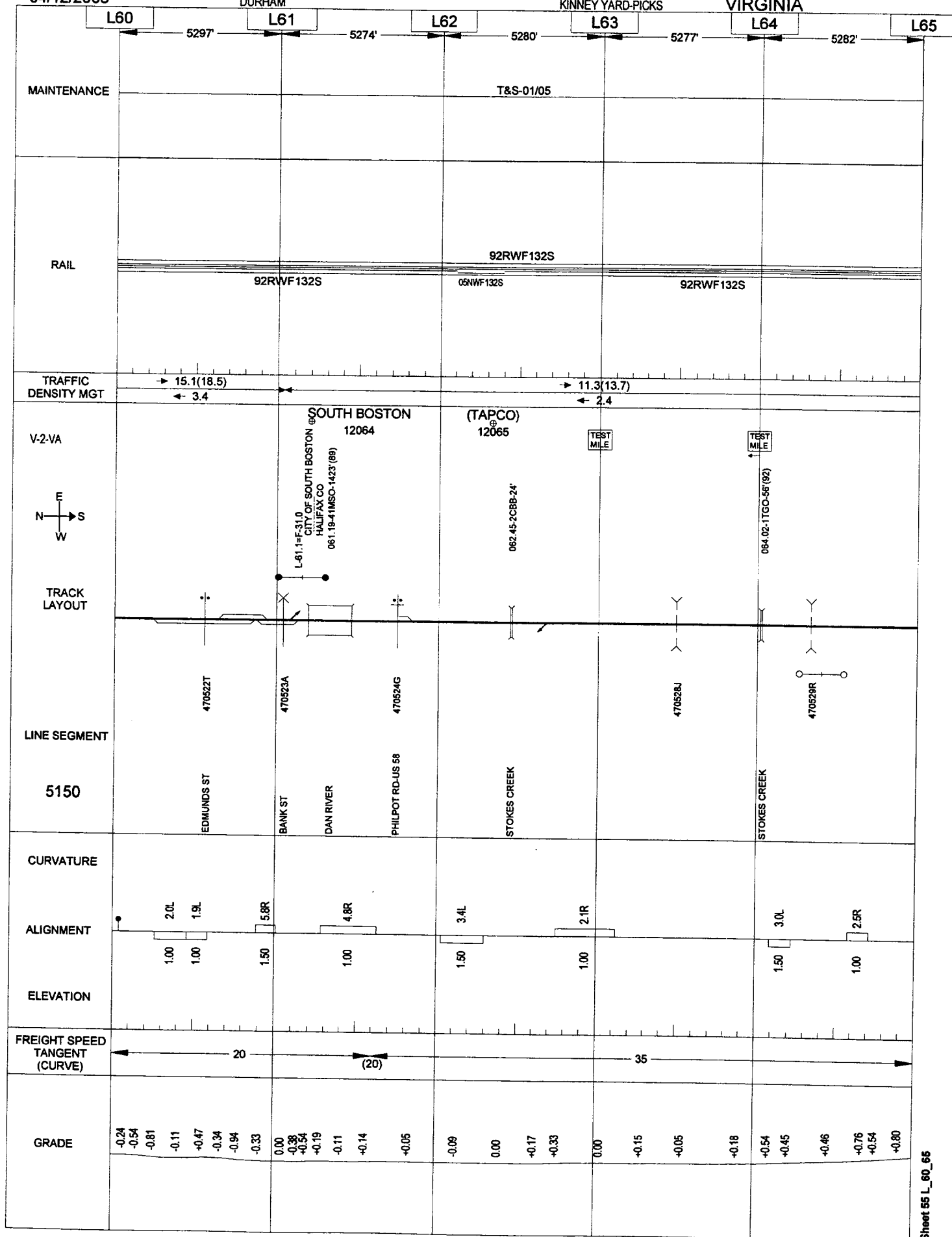
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252

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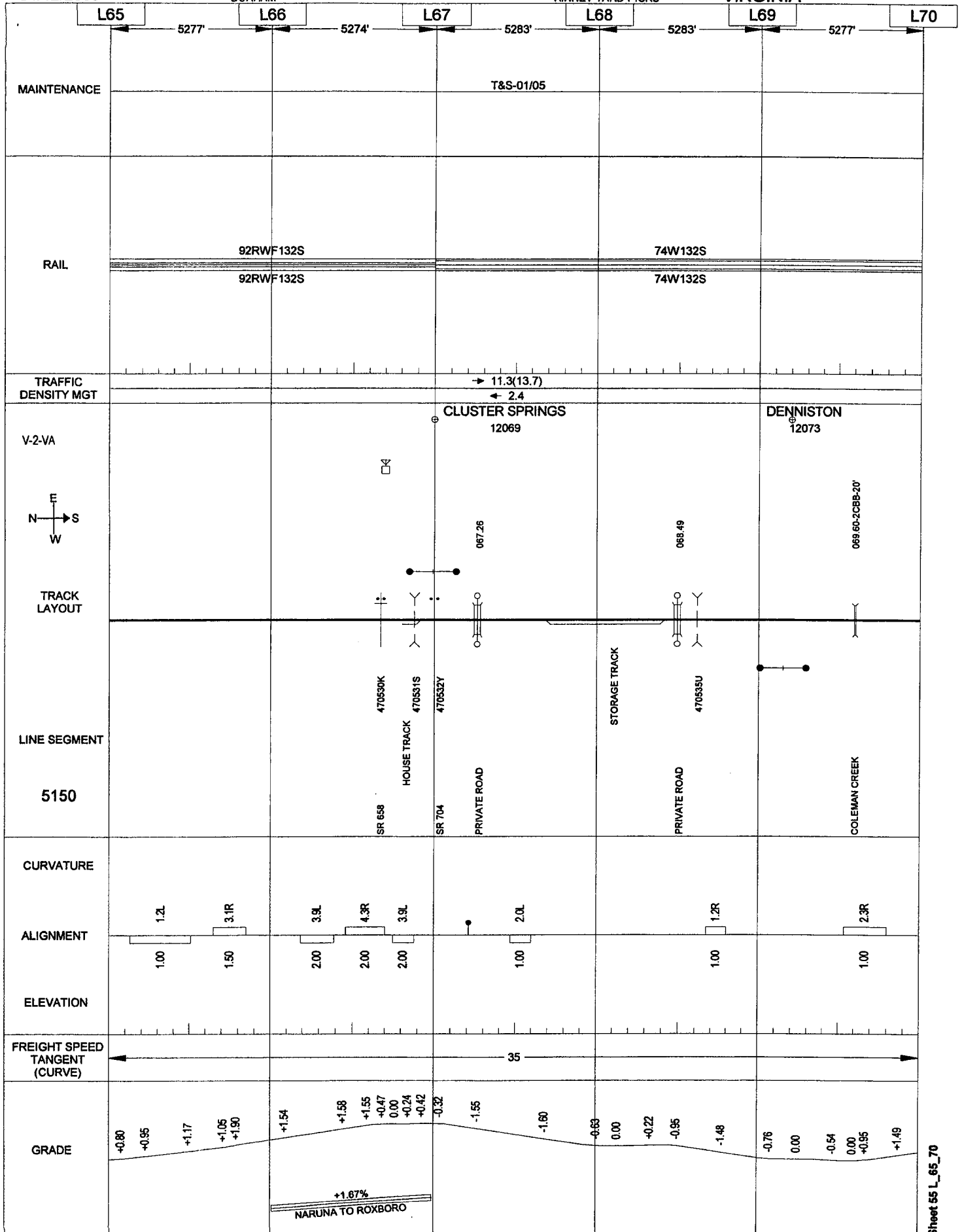
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253

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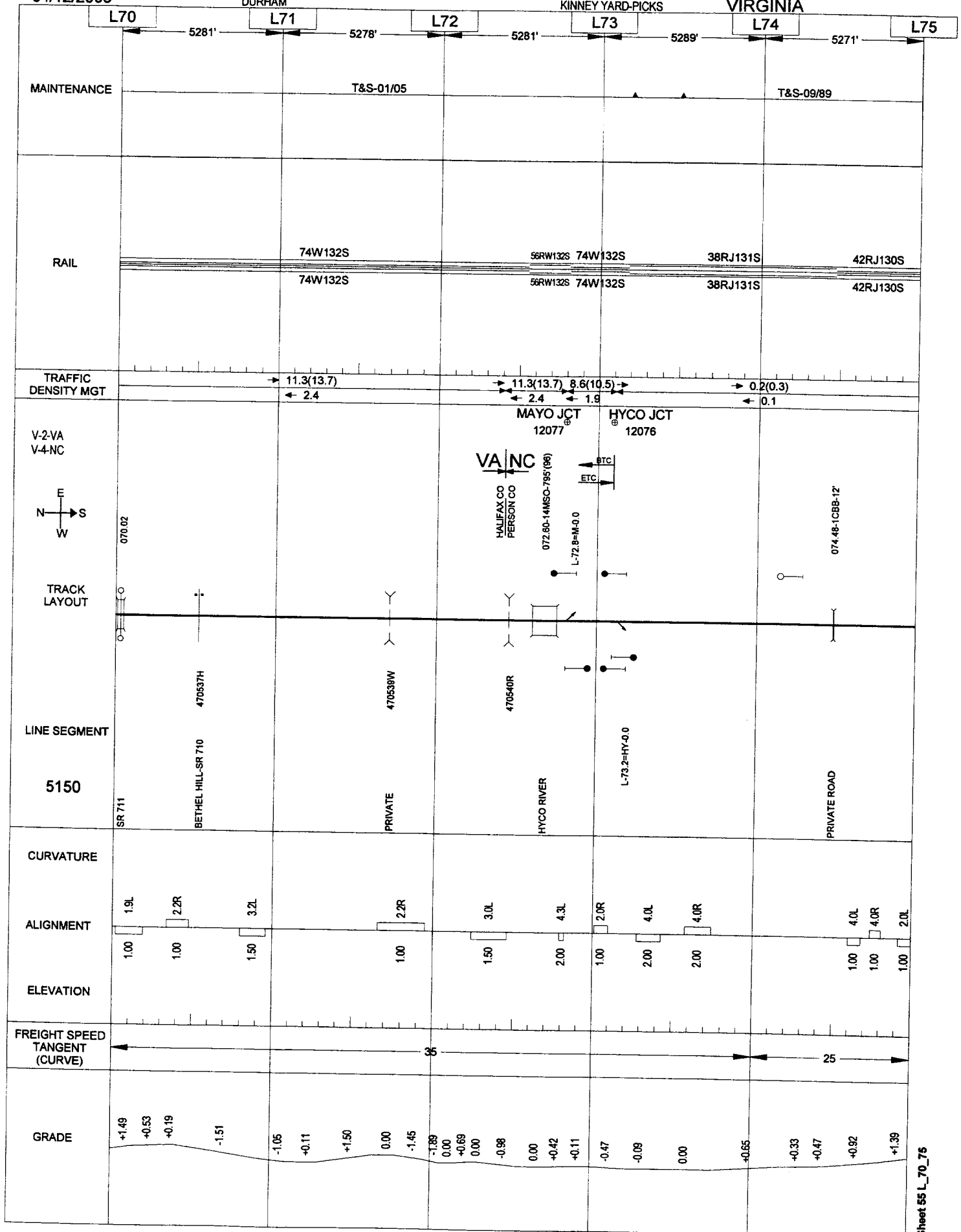
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254

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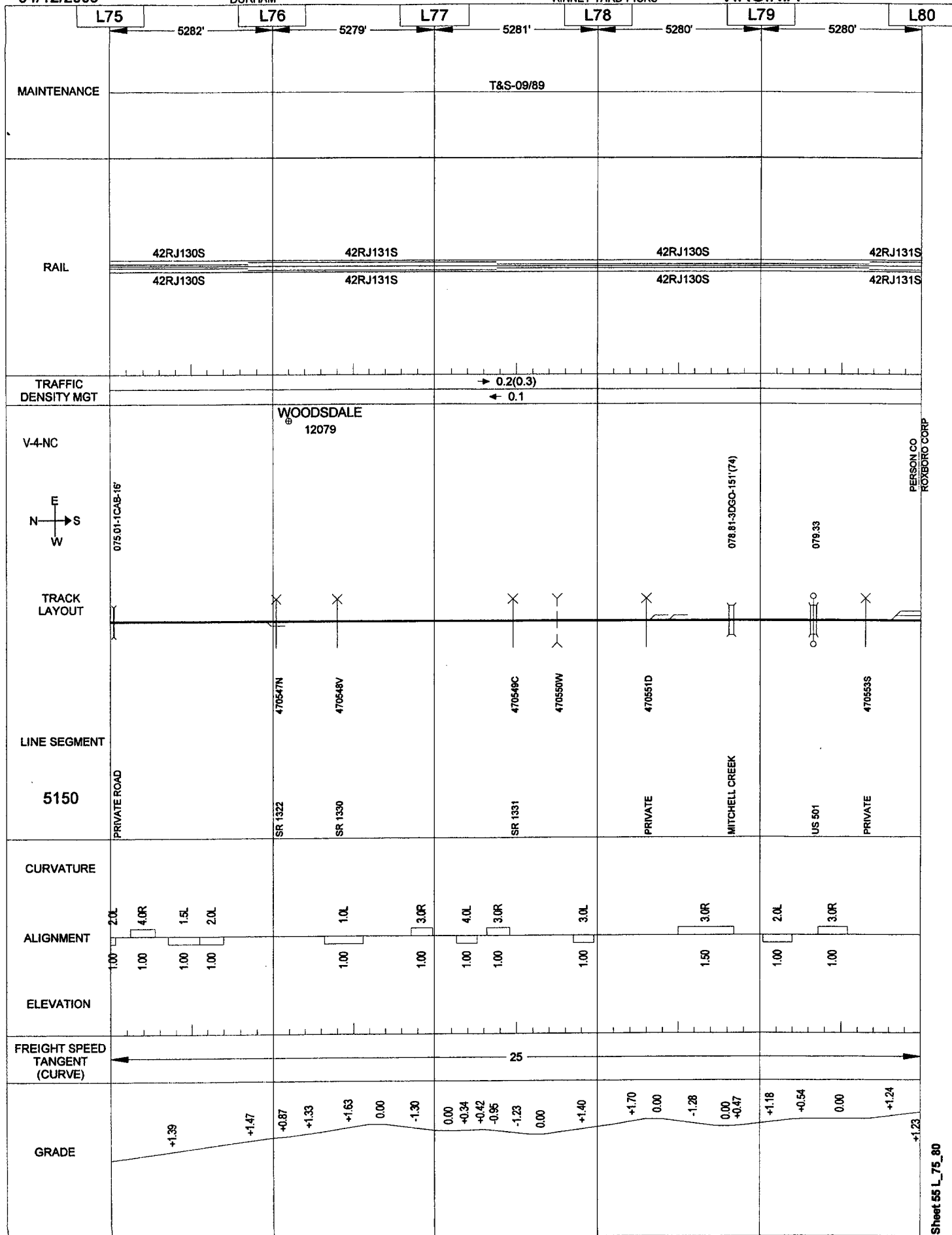
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KINNEY YARD-PICKS

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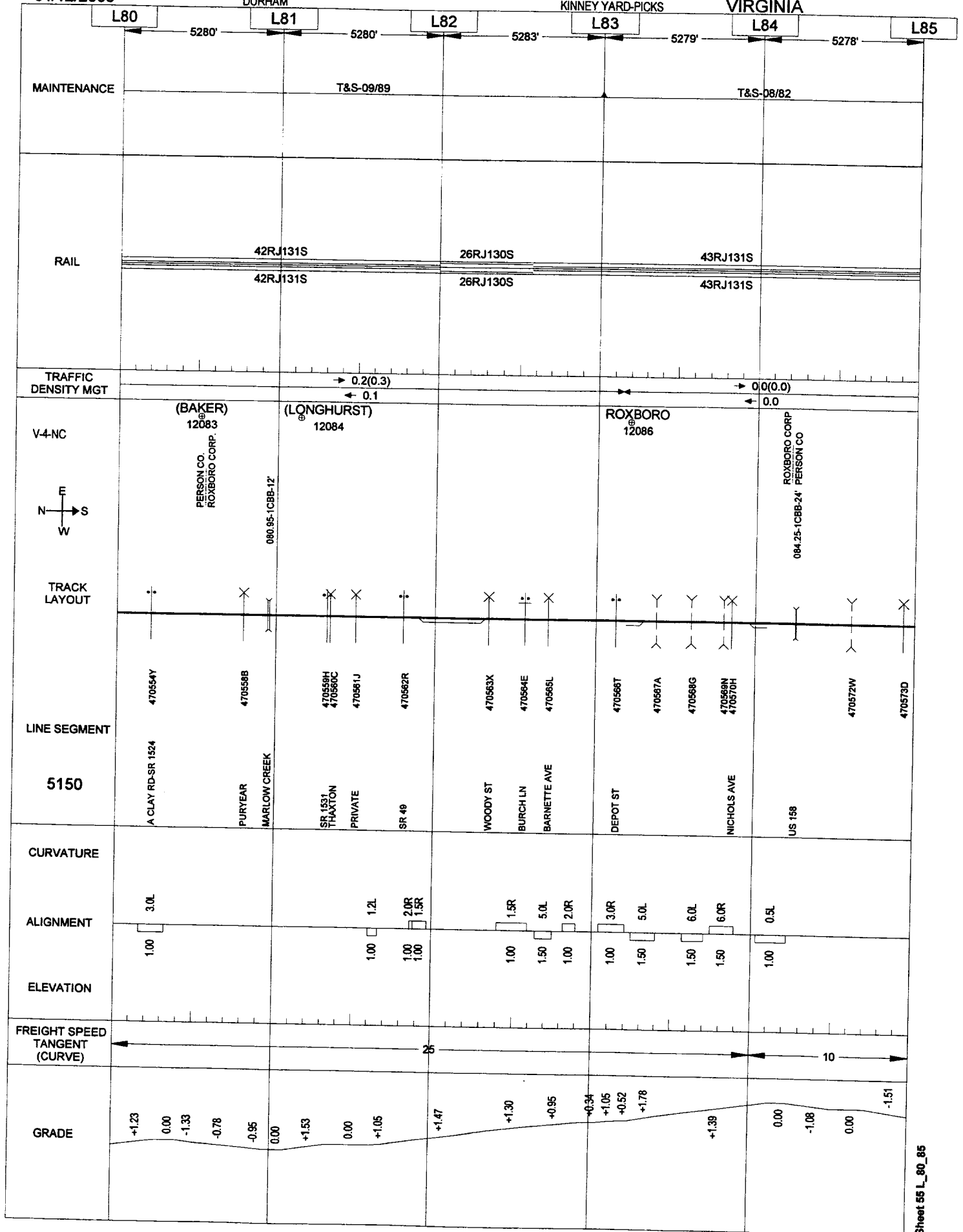
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256

DURHAM

KINNEY YARD-PICKS

VIRGINIA



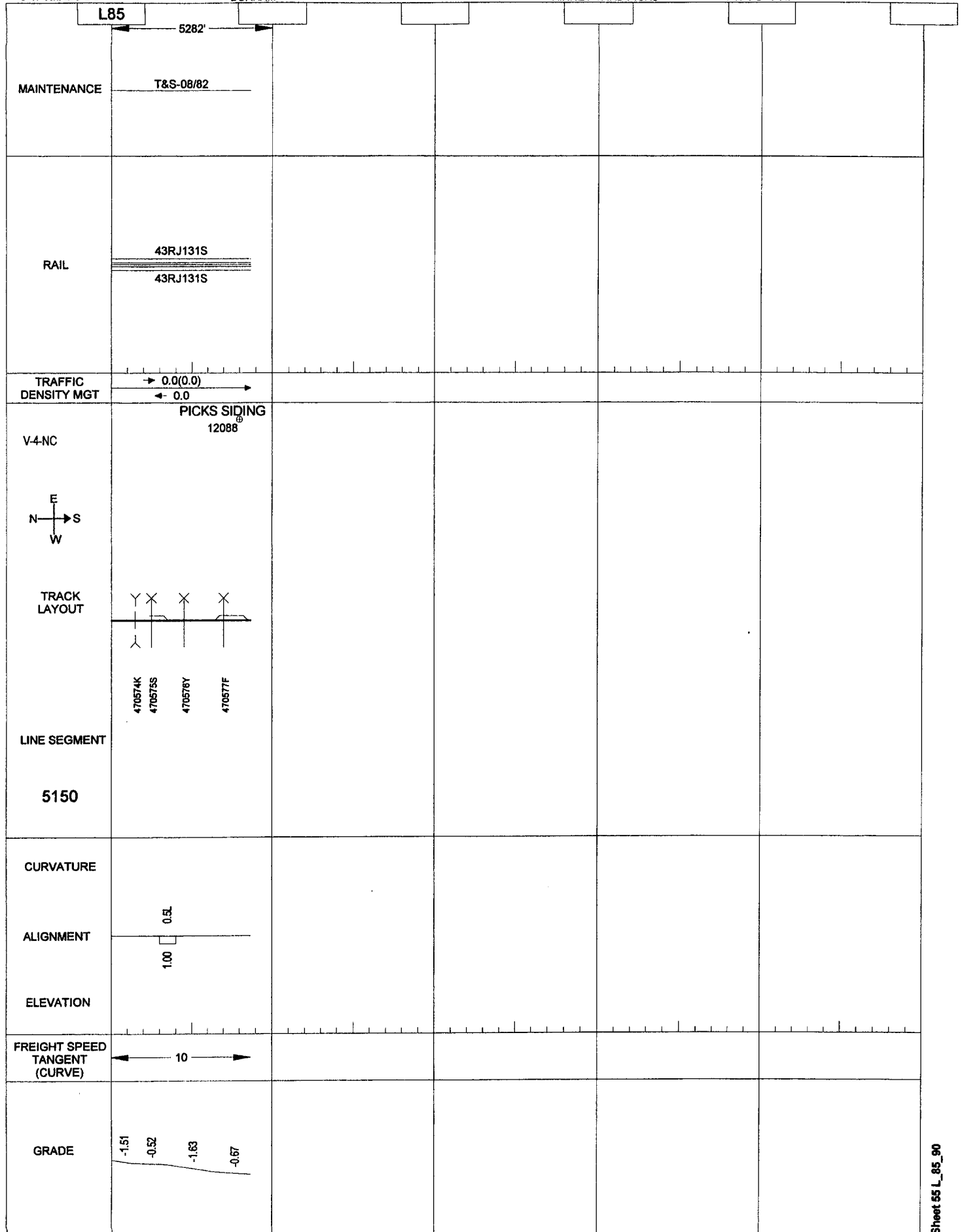
04/12/2006

DURHAM

257

KINNEY YARD-PICKS

VIRGINIA



04/12/2006

DURHAM

258
CLOVER SPUR

SOUTH BOSTON-CLOVER

VIRGINIA

F31

F32

F33

F34

F35

5280'

5280'

5280'

5280'

MAINTENANCE

T&S-03/96

RAIL

94RWF132S

94RWF132S

TRAFFIC
DENSITY MGT

3.6(4.4)

0.8

SOUTH BOSTON
12064

WOLF TRAP
F33



TRACK
LAYOUT

F31.0=L-61.1

031.90

032.50-1MAB-12

WILBORN AVE
714029W

714031X

714032E

714033L

LINE SEGMENT

0025

WATERWAY

PRIVATE

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

GRADE

15.2L
3.9L
1.5L
2.50
1.00
1.00

0.9R
0.5R
1.00
1.00

1.6R
1.5R
1.6R
1.00
1.00
1.00

3.2L
3.4L
1.00
1.00

2.5R
1.00

2.1L
1.00

2.5L
1.00

10

40

-0.04
0.00
-0.15
0.00
-0.18
-0.06
0.00

-0.17
-0.13
-0.05
-0.01

-0.10
-0.02
+0.08
+0.40

+0.66
-0.01
-0.17
0.00
+0.27
+0.78

04/12/2006

DURHAM

259
CLOVER SPUR

SOUTH BOSTON-CLOVER

VIRGINIA

F35

F36

F37

F38

F39

F40

5280'

5280'

5280'

5280'

5280'

MAINTENANCE

T&S-03/96

RAIL

94RWF132S

94RWF132S

TRAFFIC
DENSITY MGT

→ 3.6(4.4)
← 0.8

SCOTTSBURG
F40

N
W — E
S

036 70-2 T/O-284' (00)

TEST
MILE

TEST
MILE

039 70-1 WTB-15'

TRACK
LAYOUT

714034T

714035A

714037N

LINE SEGMENT

0025

SR 716

BANNISTER RIVER

RT 344

WATERWAY

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

40

GRADE

+0.63
+0.91
+0.34
-0.50
-0.71
-0.26
-0.05
+0.04
+0.30
+0.22
+0.08
0.00
+0.03
+0.10
+0.13
+0.17
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+0.27
+0.19
+0.28
+0.47
+0.56
+0.66
+0.87
+0.98

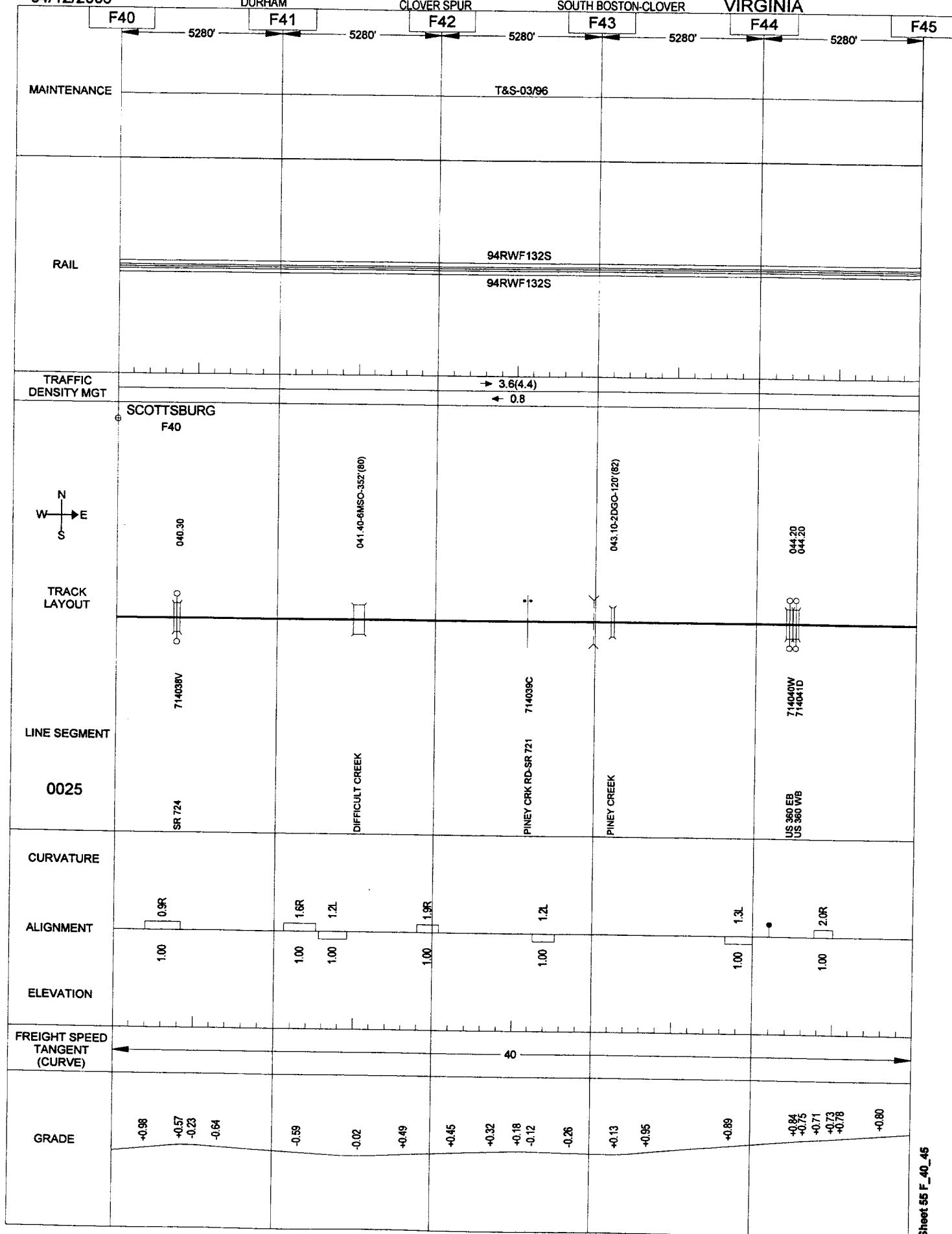
04/12/2006

DURHAM

260
CLOVER SPUR

SOUTH BOSTON-CLOVER

VIRGINIA



04/12/2006

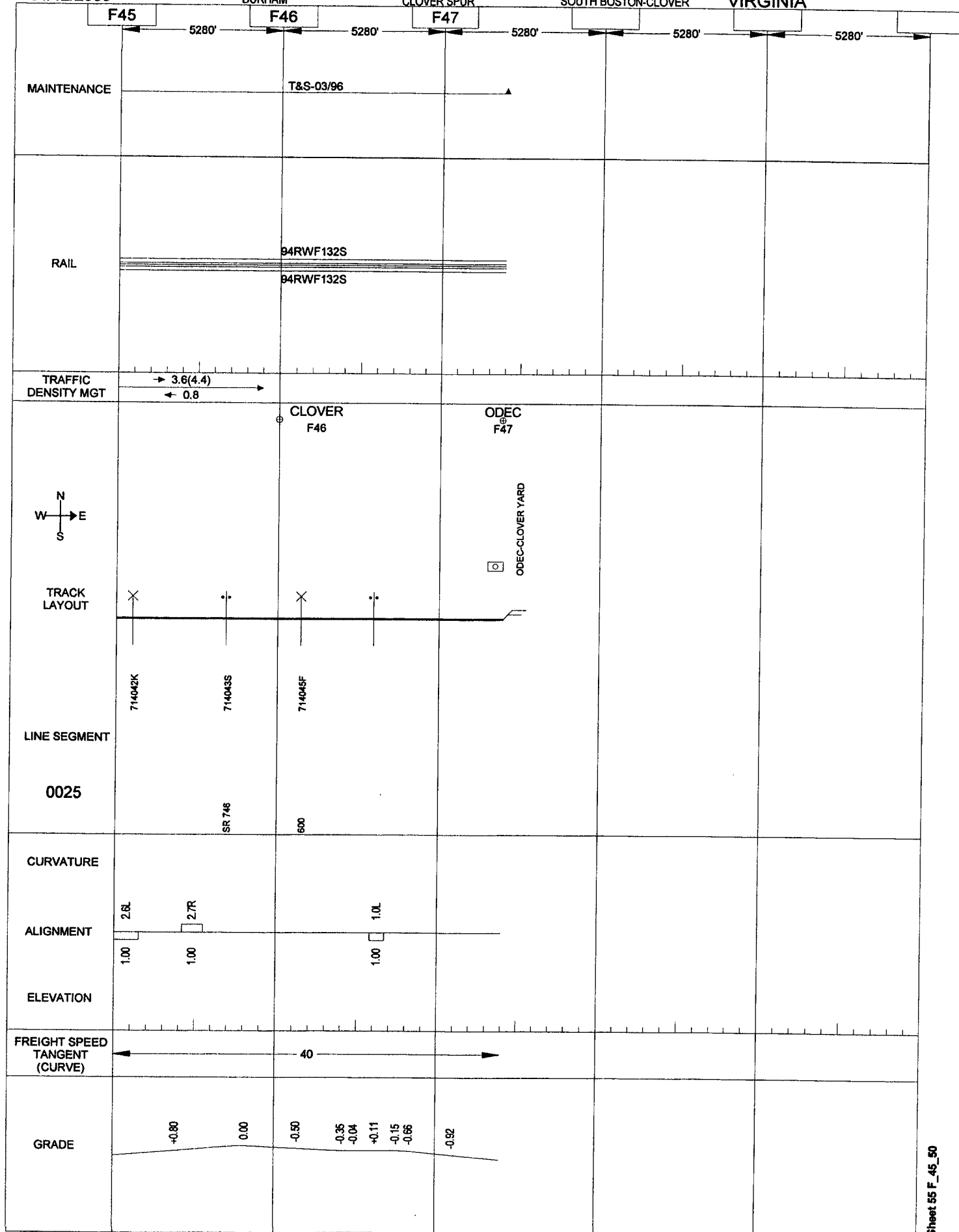
261

DURHAM

CLOVER SPUR

SOUTH BOSTON-CLOVER

VIRGINIA



04/12/2006

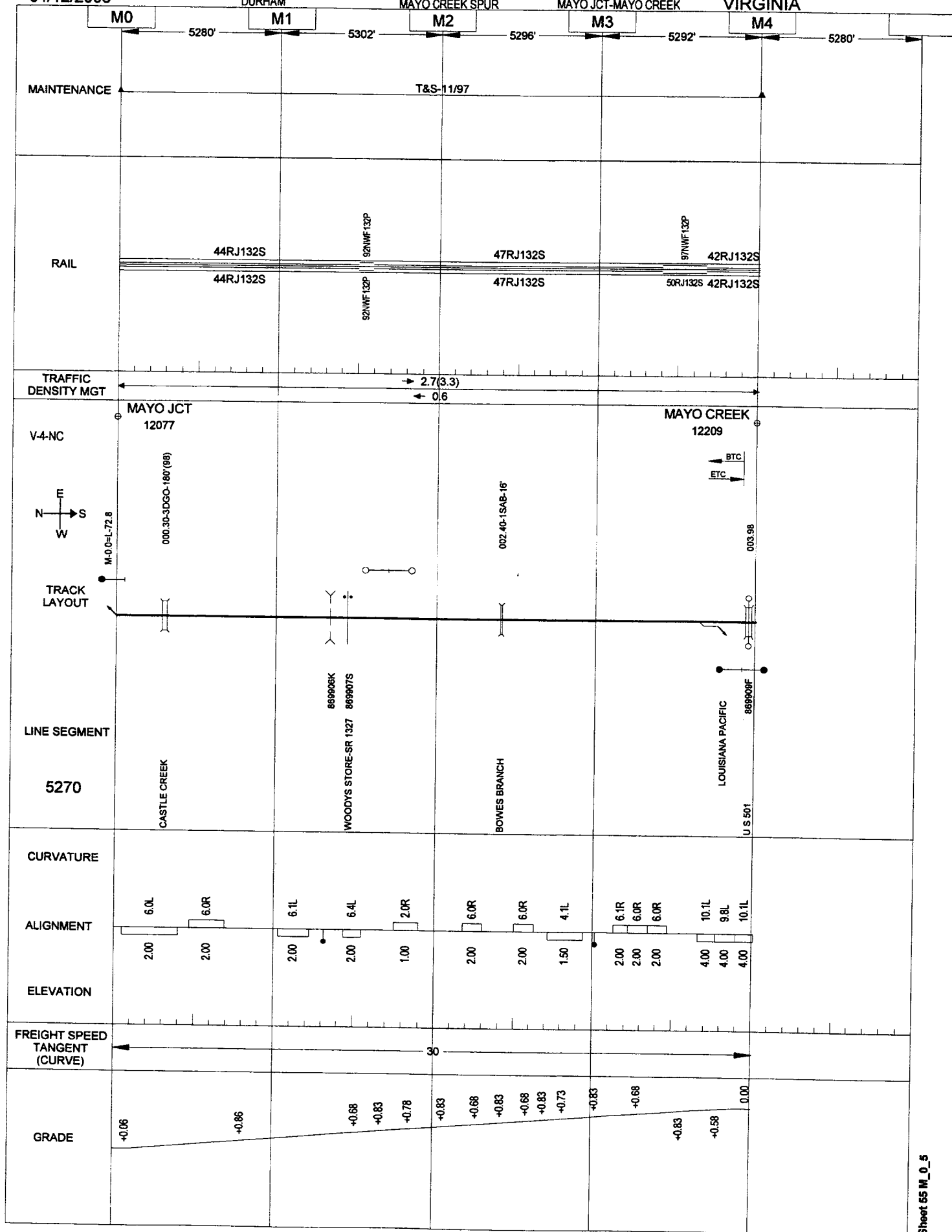
262

DURHAM

MAYO CREEK SPUR

MAYO JCT-MAYO CREEK

VIRGINIA



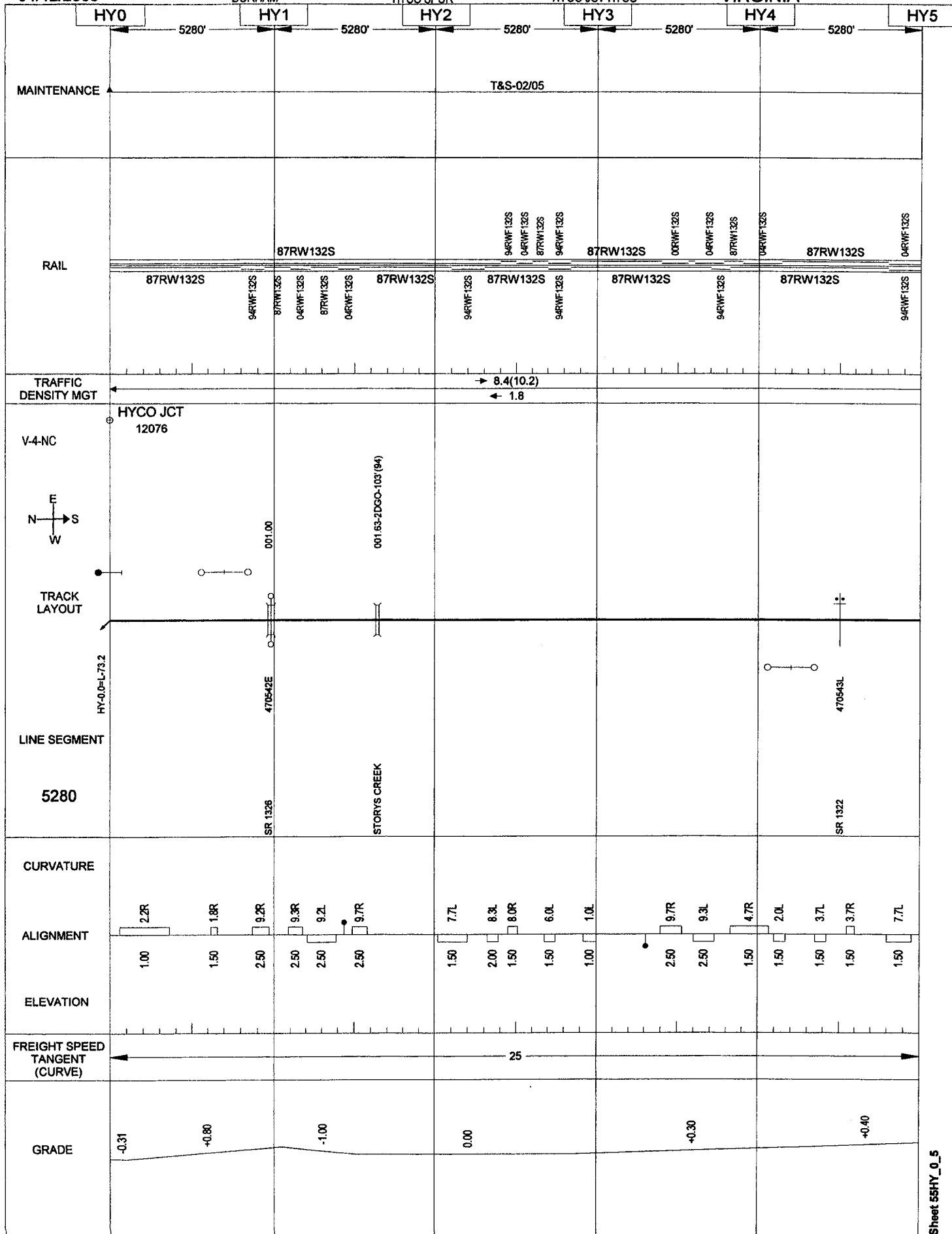
04/12/2006

DURHAM

263
HYCO SPUR

HYCO JCT-HYCO

VIRGINIA



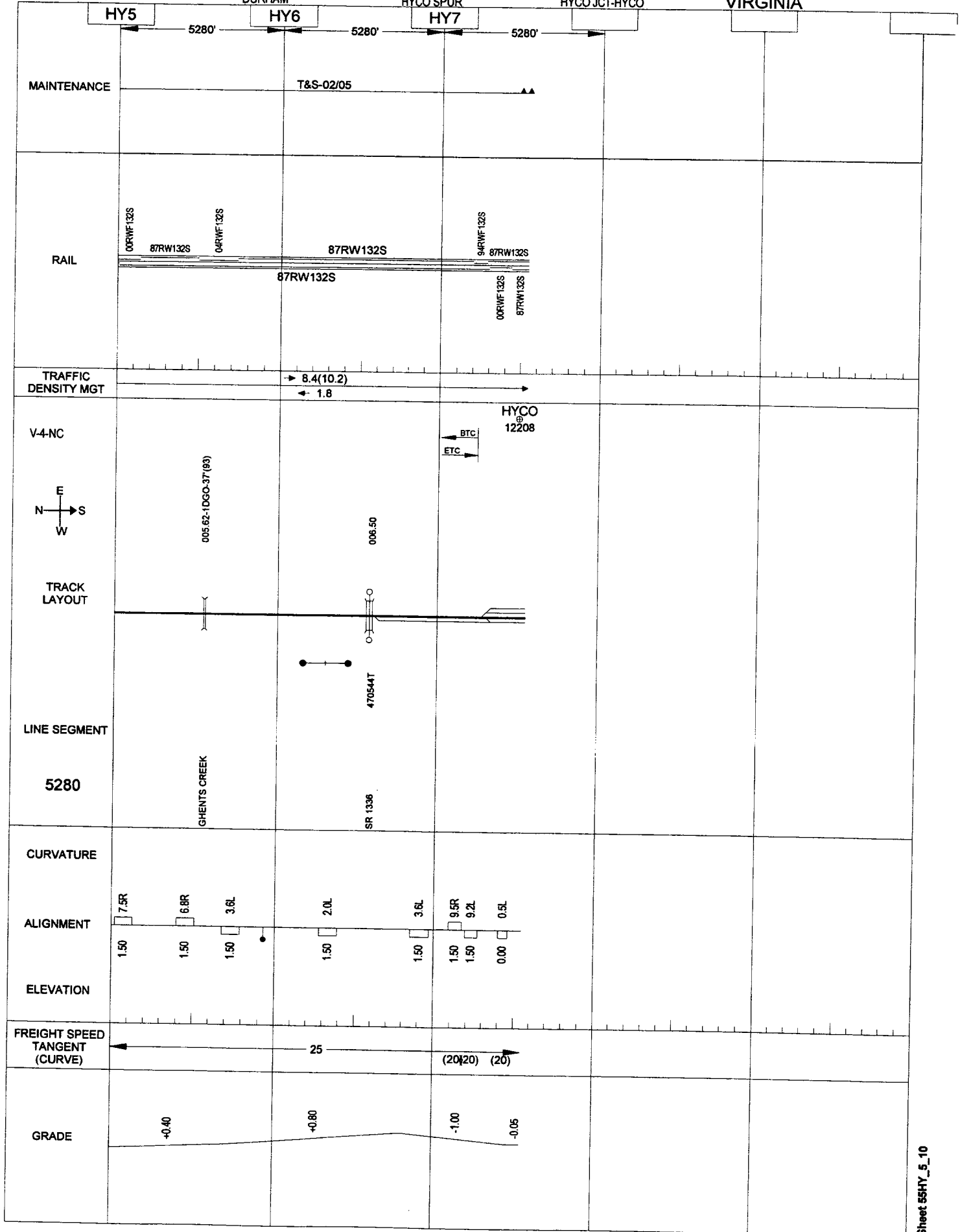
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DURHAM

264
HYCO SPUR

HYCO JCT-HYCO

VIRGINIA



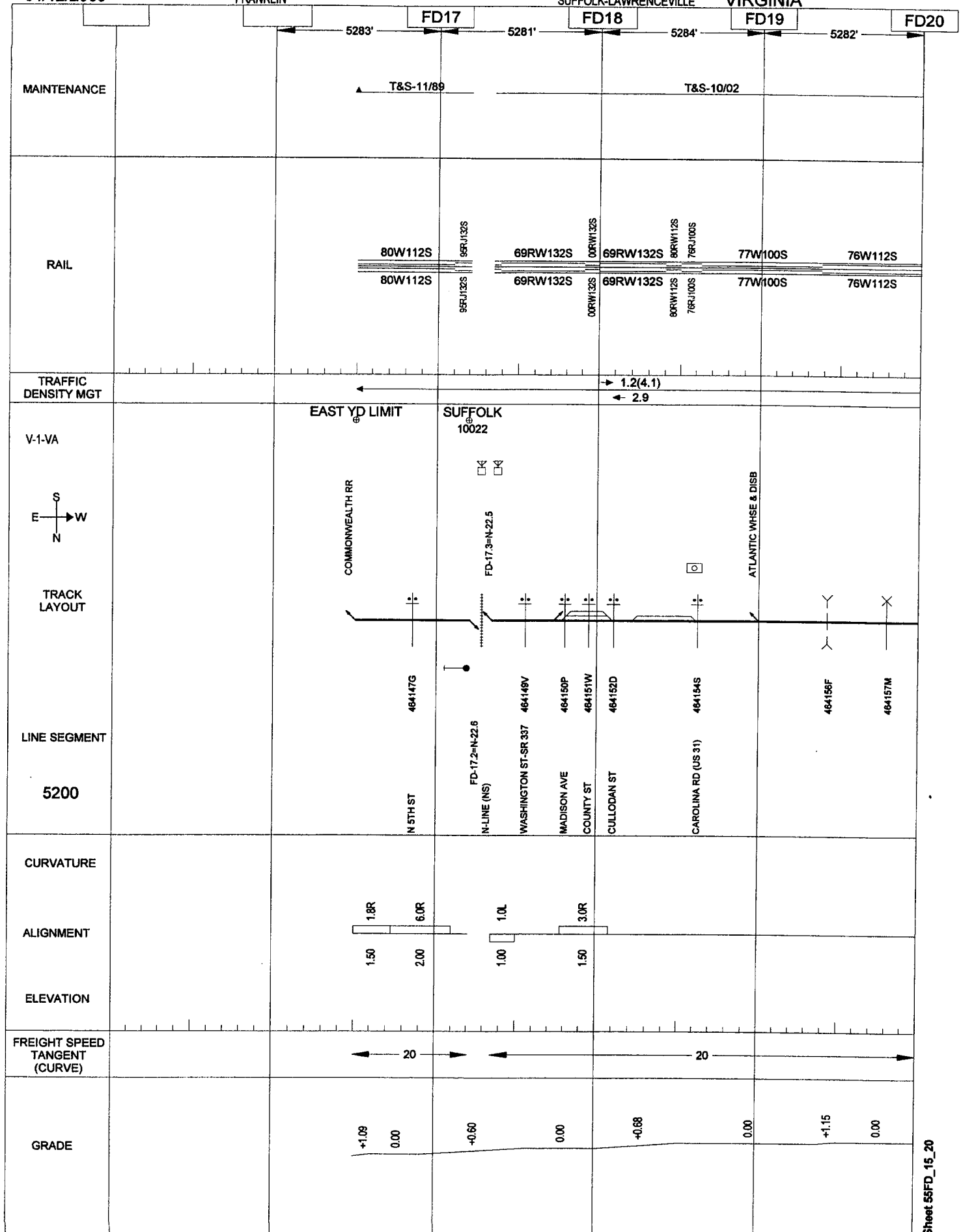
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FRANKLIN

265

SUFFOLK-LAWRENCEVILLE

VIRGINIA



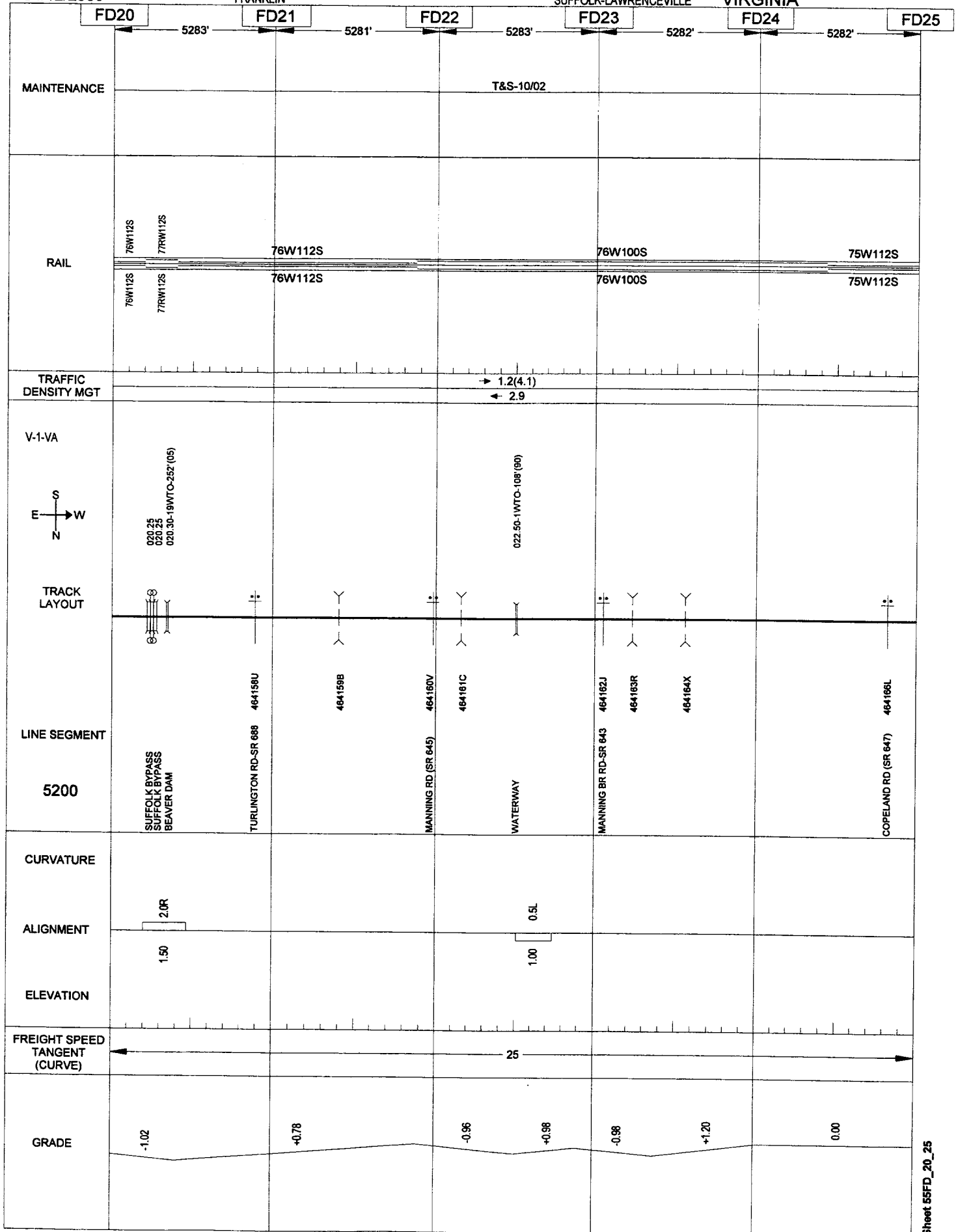
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FRANKLIN

266

SUFFOLK-LAWRENCEVILLE

VIRGINIA



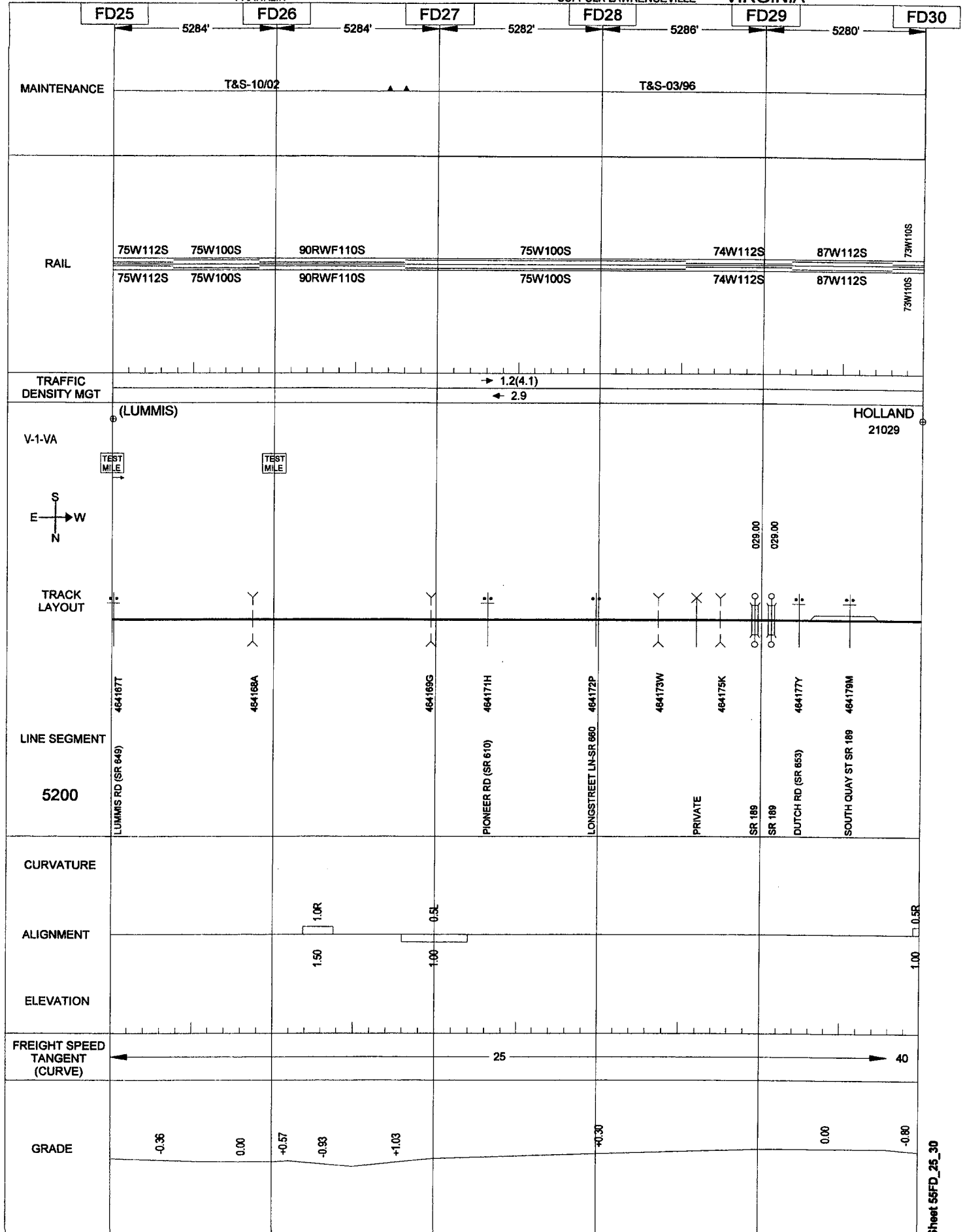
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267

FRANKLIN

SUFFOLK-LAWRENCEVILLE

VIRGINIA



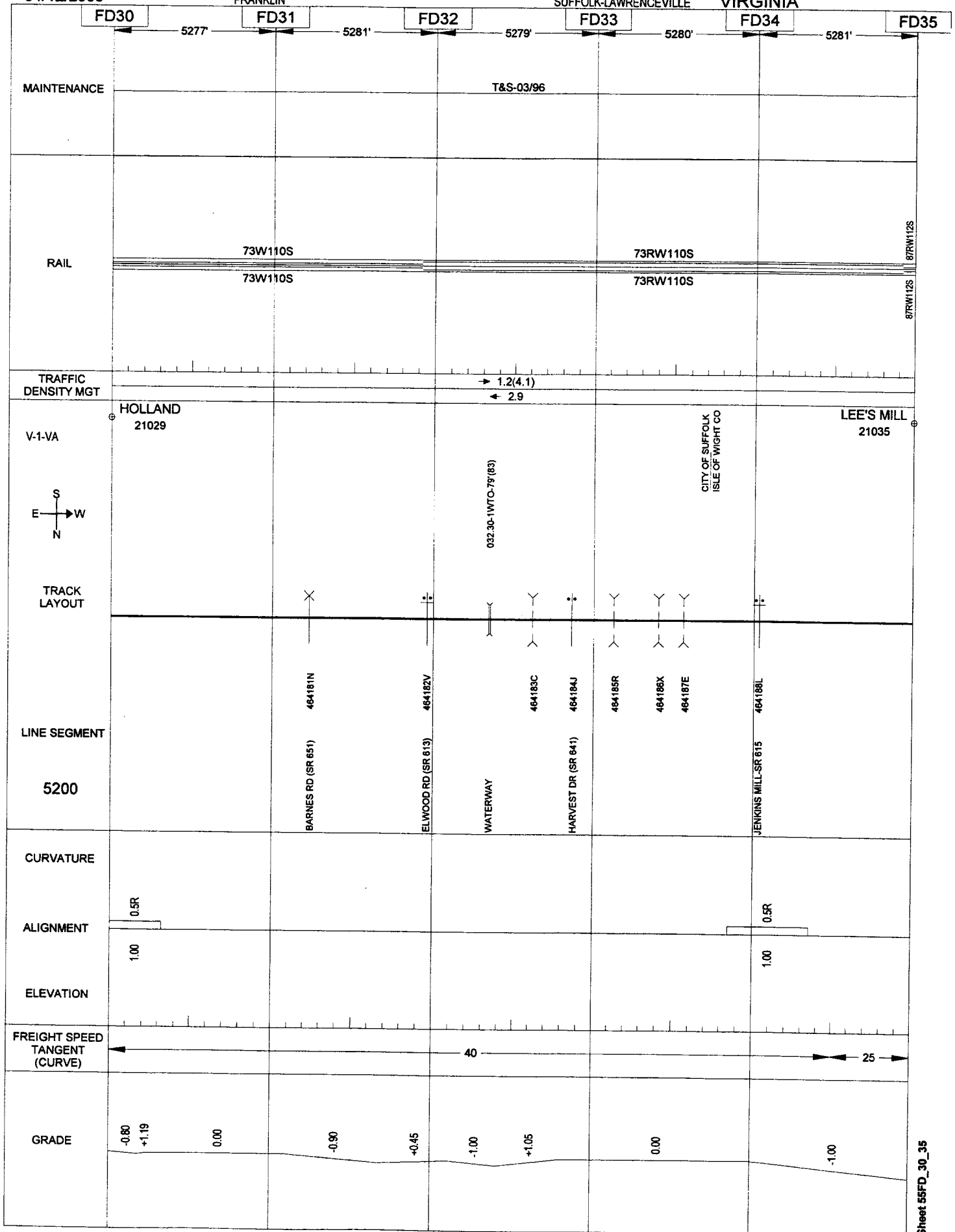
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FRANKLIN

268

SUFFOLK-LAWRENCEVILLE

VIRGINIA



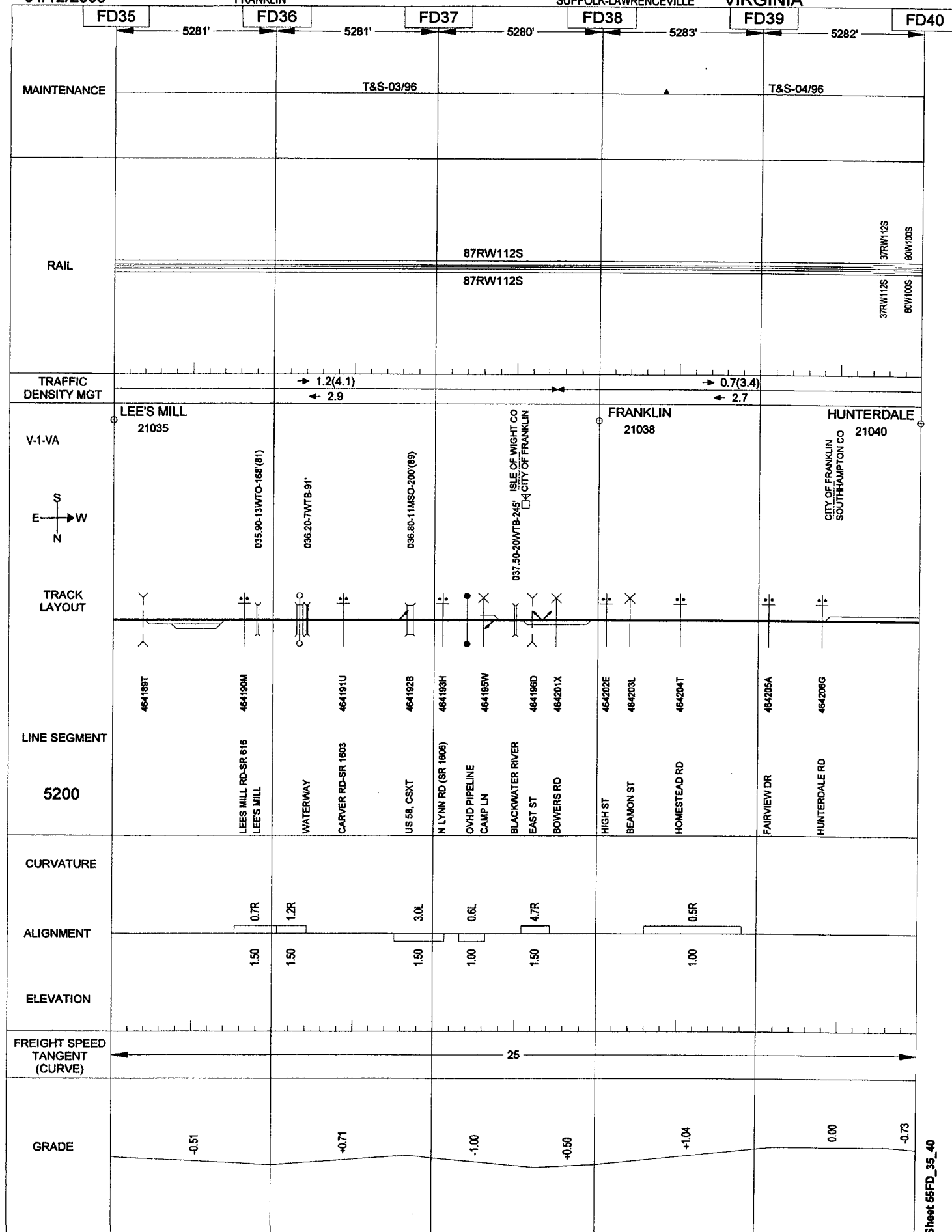
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269

FRANKLIN

SUFFOLK-LAWRENCEVILLE

VIRGINIA



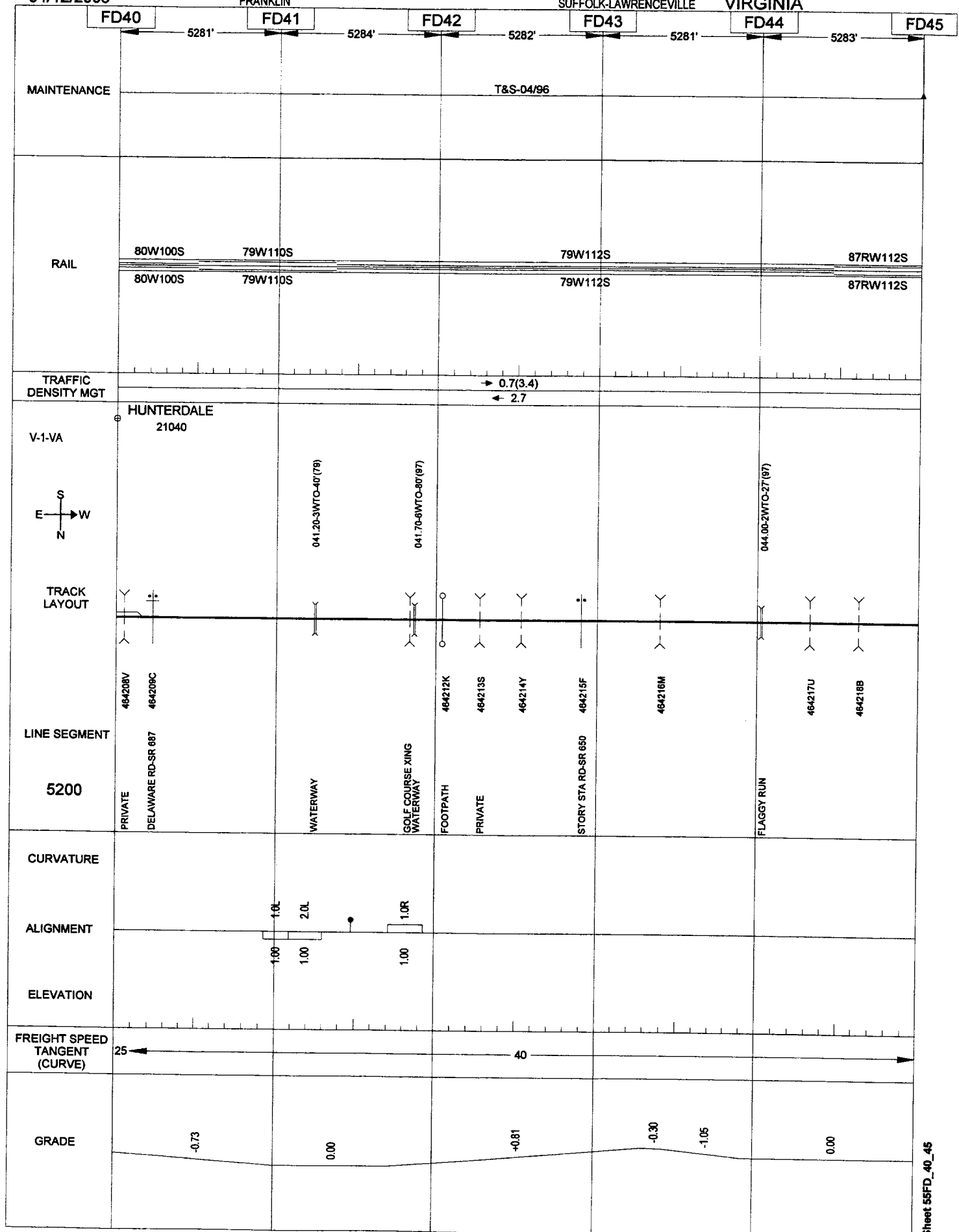
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FRANKLIN

270

SUFFOLK-LAWRENCEVILLE

VIRGINIA



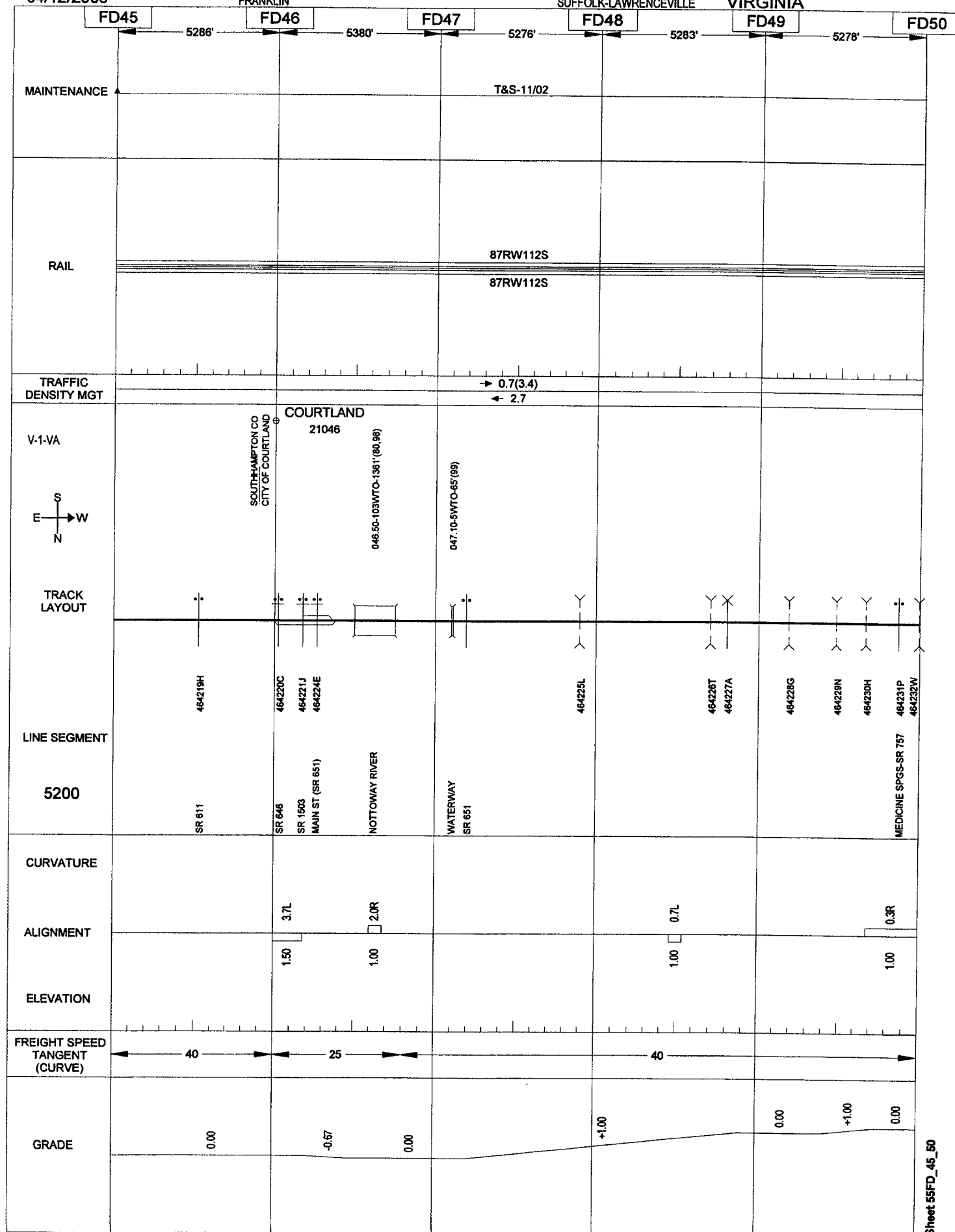
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271

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SUFFOLK-LAWRENCEVILLE

VIRGINIA



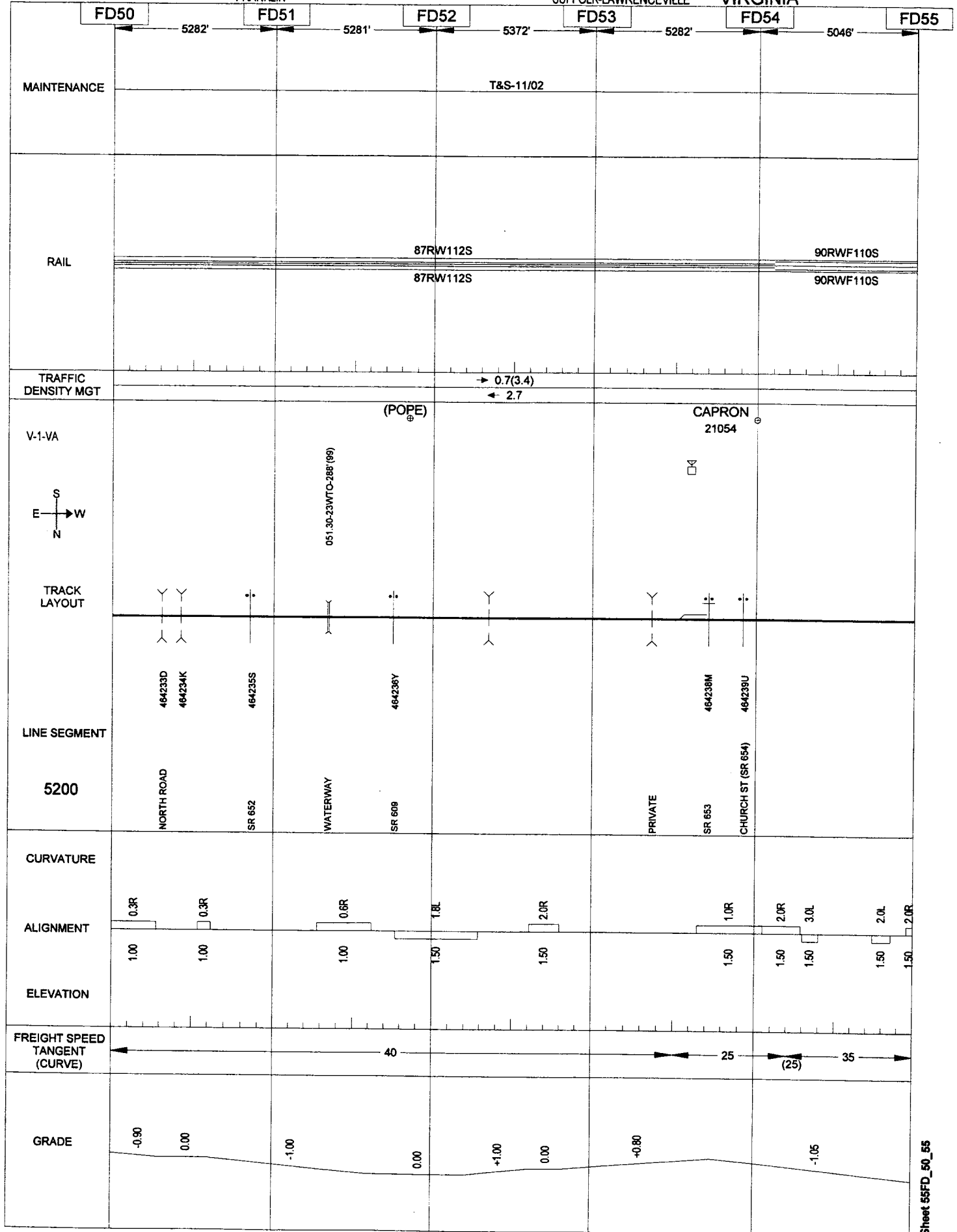
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FRANKLIN

272

SUFFOLK-LAWRENCEVILLE

VIRGINIA



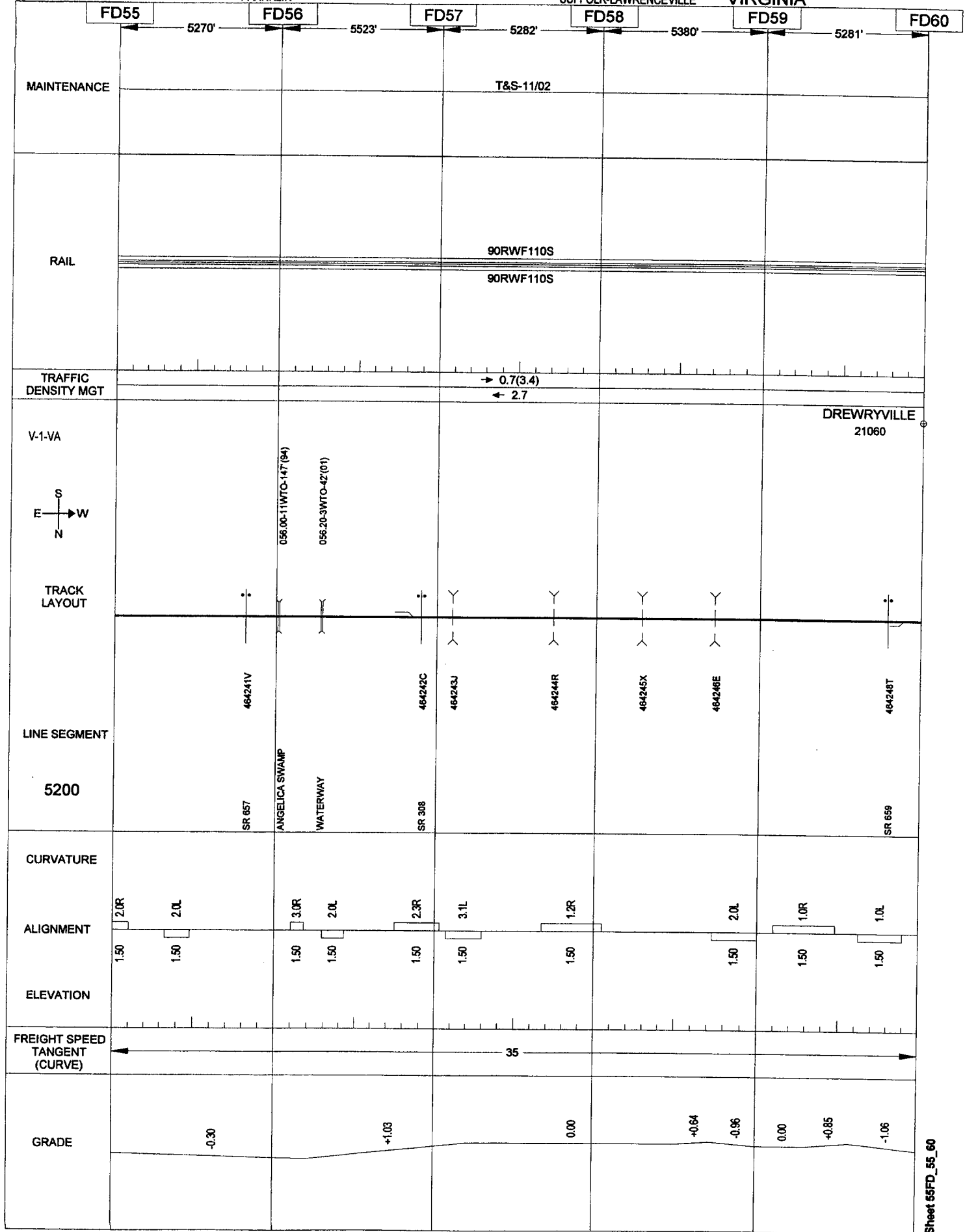
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FRANKLIN

273

SUFFOLK-LAWRENCEVILLE

VIRGINIA



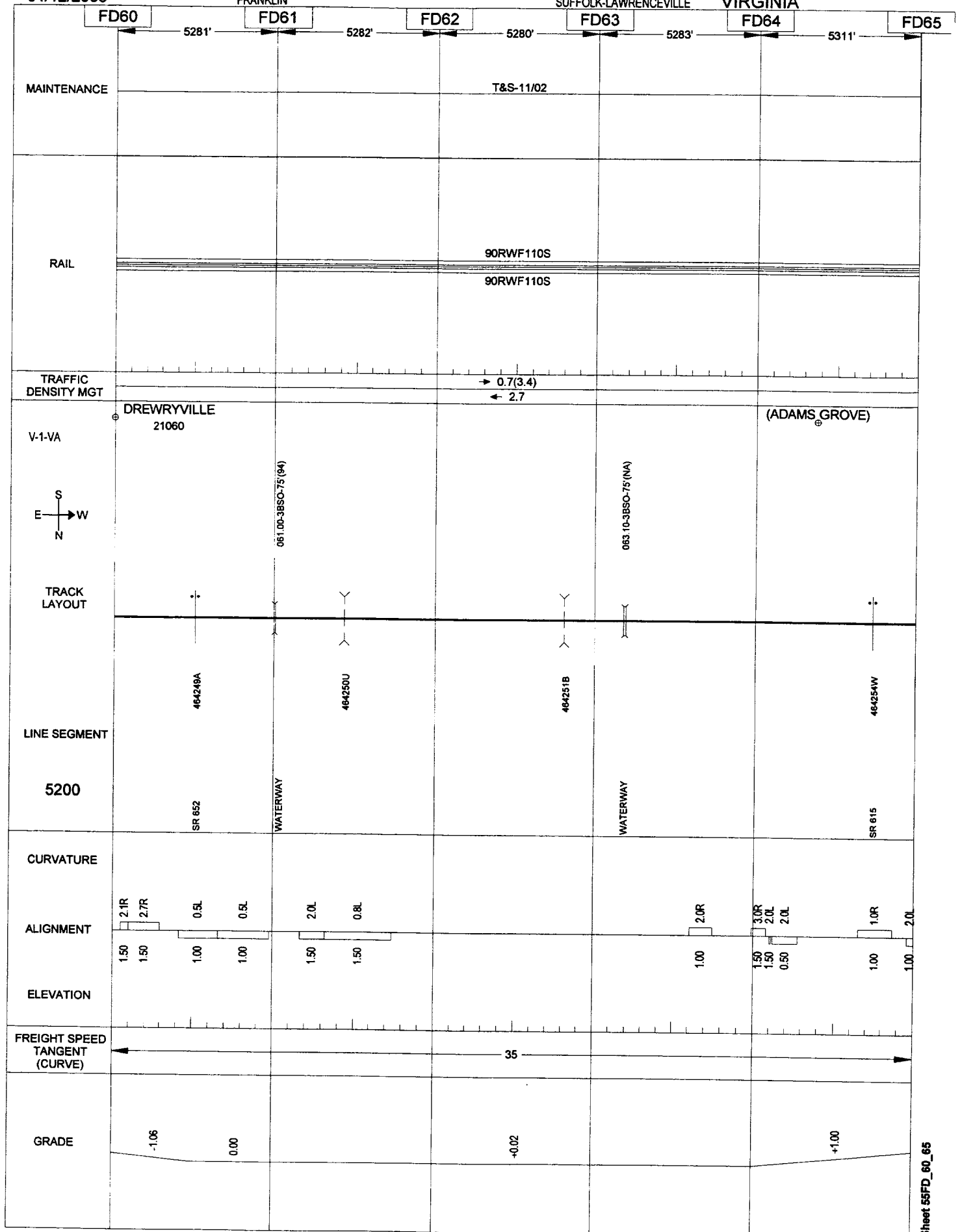
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FRANKLIN

274

SUFFOLK-LAWRENCEVILLE

VIRGINIA



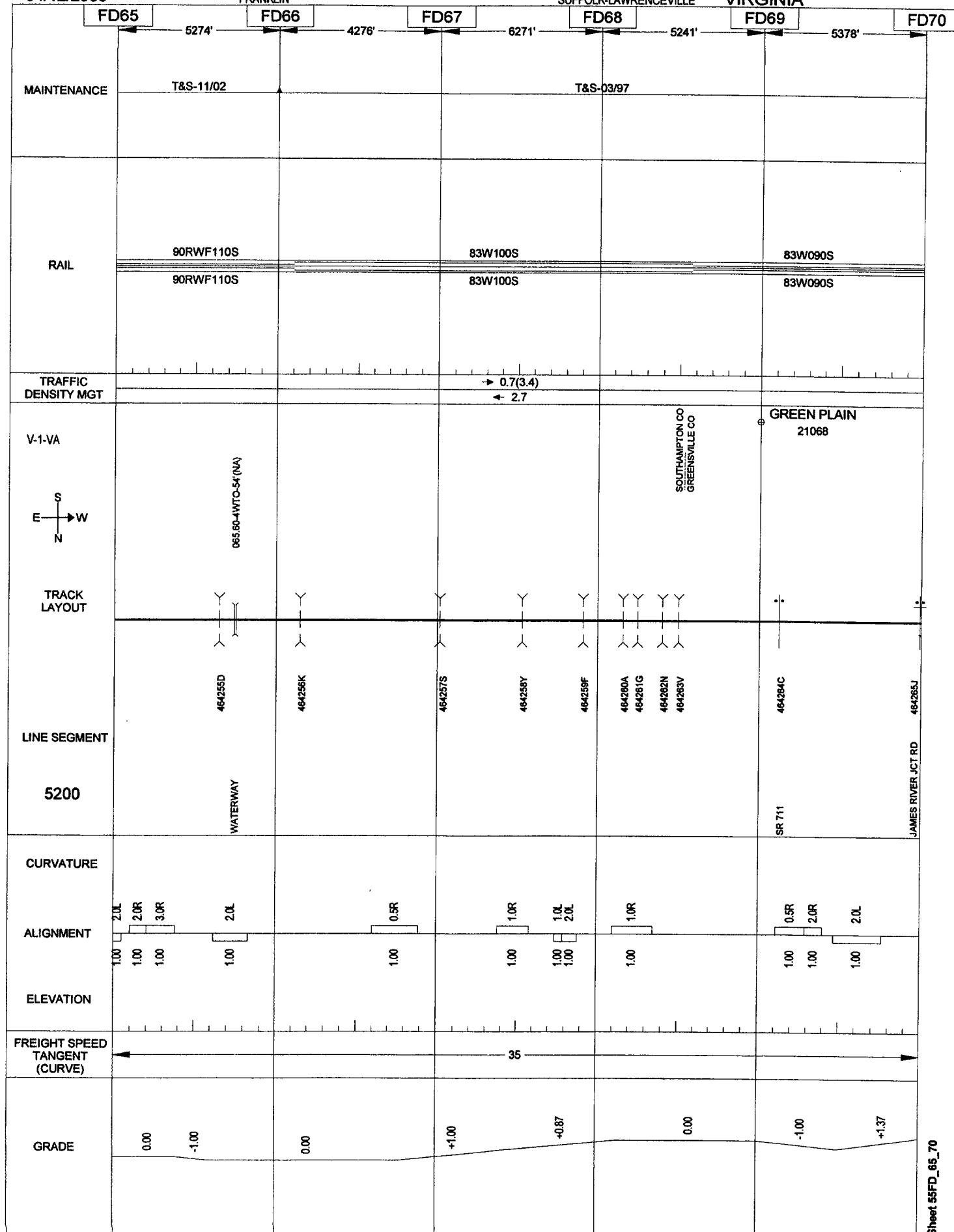
04/12/2006

FRANKLIN

275

SUFFOLK-LAWRENCEVILLE

VIRGINIA



VIRGINIA

FD-35

References

T&S-11/02

90RWF110S

90RWF110S

→ 0.6(3 2)

EMPORIA
21073

CITY OF EMPORIA

TRACK LAYOUT

LINE SEGMENT

5200

CURVATURE

ALIGNMENT

ELEVATION

**FREIGHT SPEED
TANGENT
(CURVE)**

GRADE

.37

05

1.71

40

0.00

70

0.00

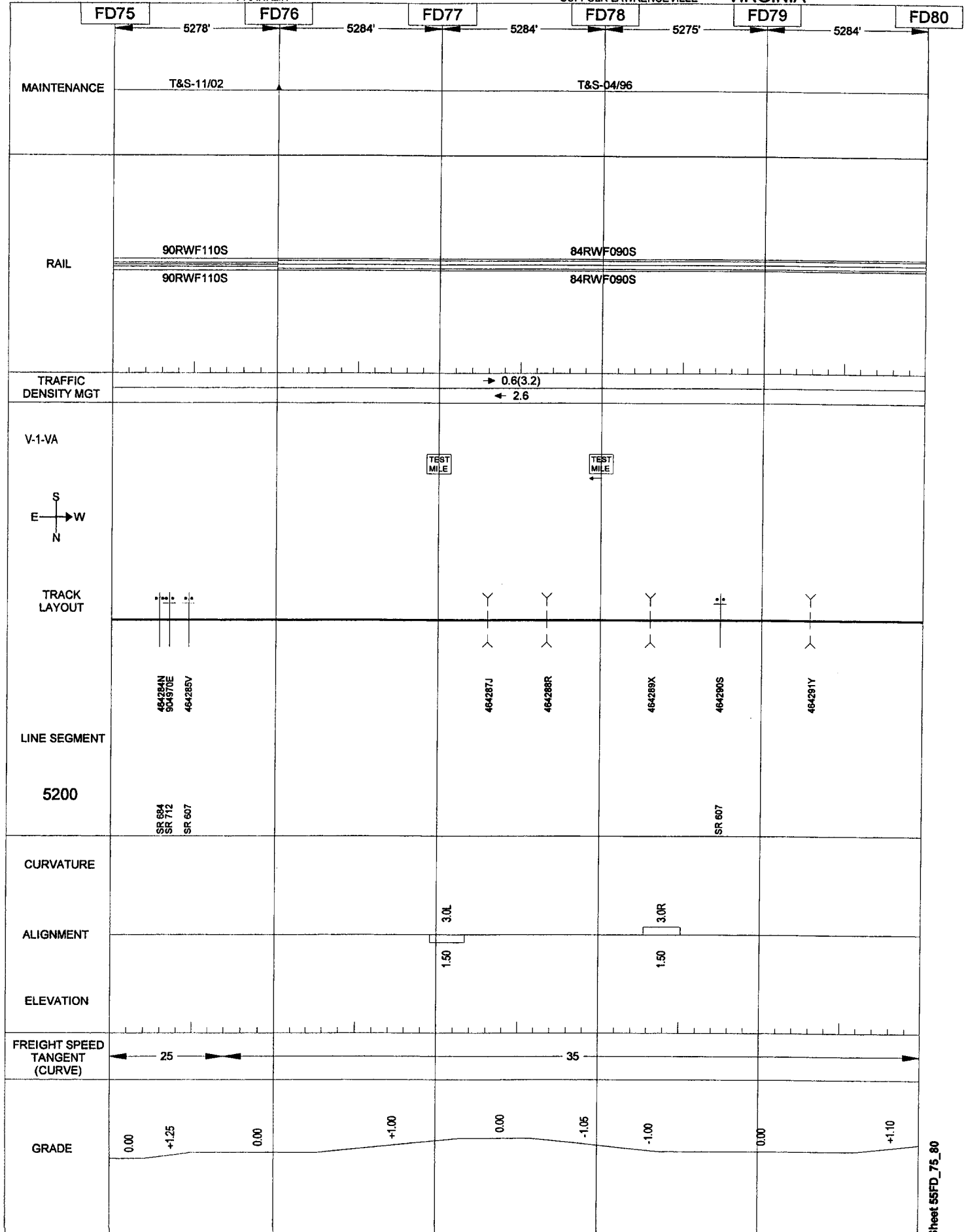
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FRANKLIN

277

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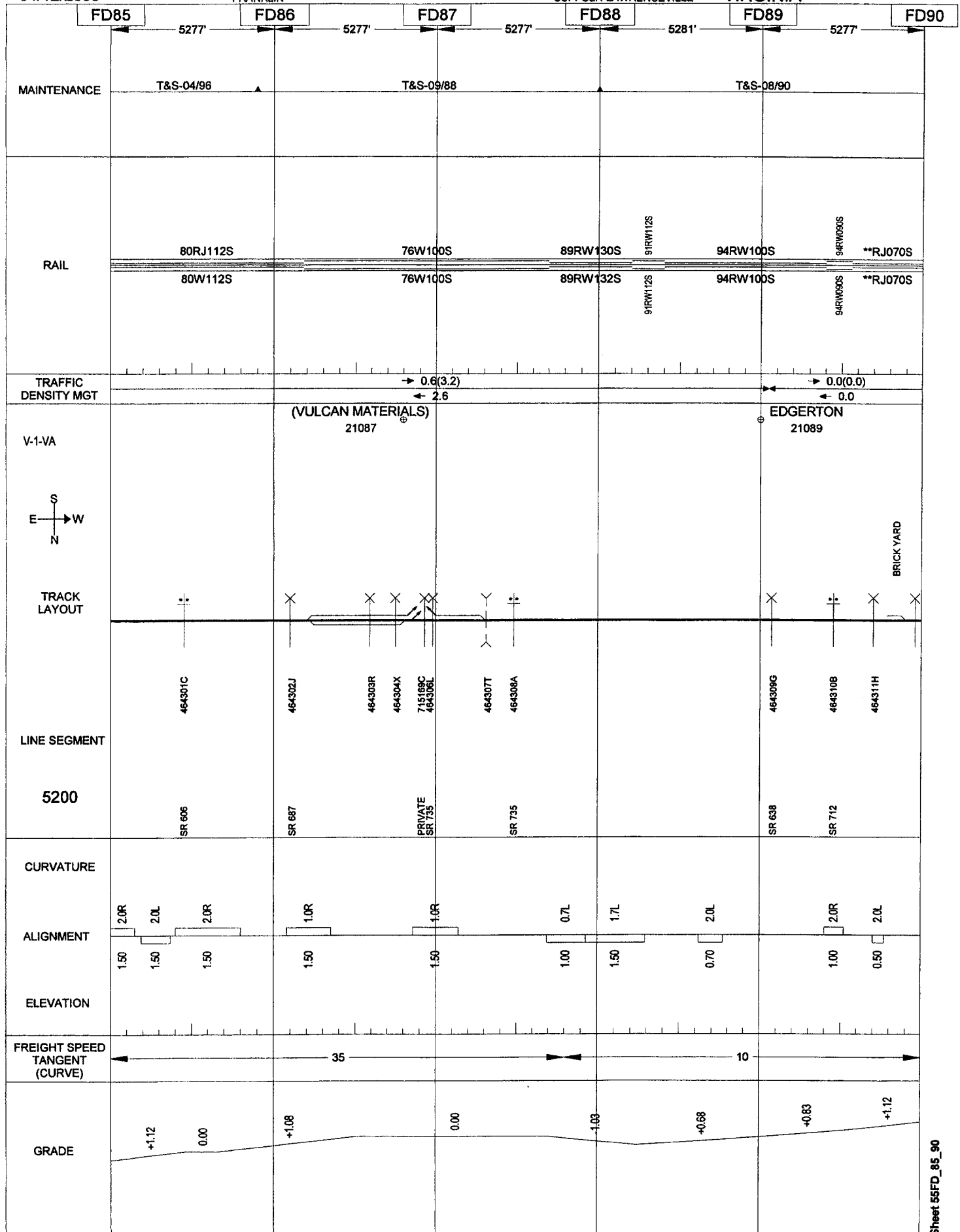
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FRANKLIN

279

SUFFOLK-LAWRENCEVILLE

VIRGINIA



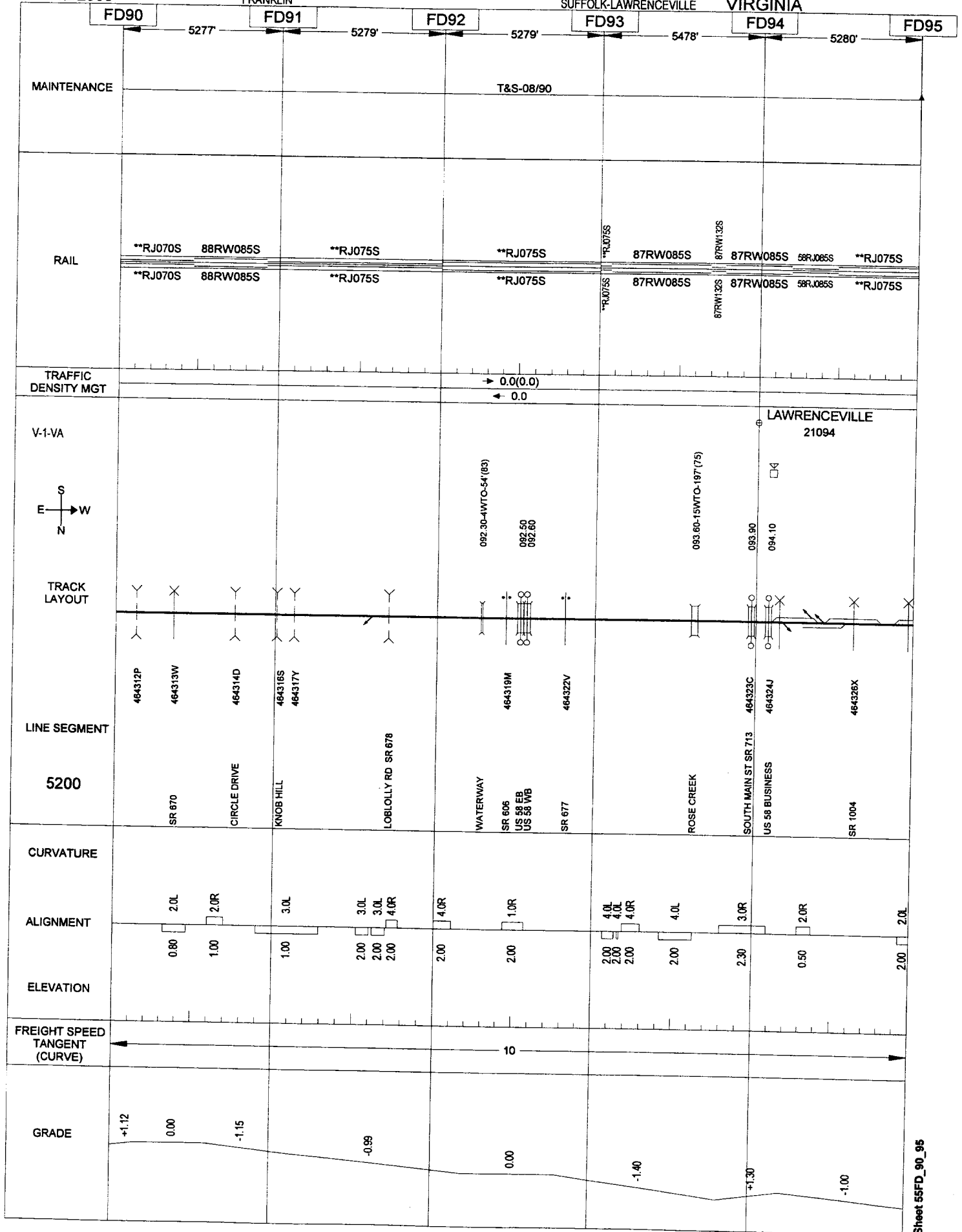
04/12/2006

FRANKLIN

280

SUFFOLK-LAWRENCEVILLE

VIRGINIA



04/12/2006

FRANKLIN

281

SUFFOLK-LAWRENCEVILLE

VIRGINIA

	FD95					
MAINTENANCE	5282'					
RAIL	RAIL					
TRAFFIC DENSITY MGT						
V-1-VA	END OF TRACK 21095					
TRACK LAYOUT						
LINE SEGMENT						
5200						
CURVATURE						
ALIGNMENT	200					
ELEVATION						
FREIGHT SPEED TANGENT (CURVE)	10					
GRADE	0.00					

04/12/2006

282

RICHMOND

BURKEVILLE-RICHMOND

VIRGINIA

F85

5280'

5280'

5280'

5280'

5288'

MAINTENANCE

RAIL

28J085S
28J085S

TRAFFIC
DENSITY MGT

(END OF TRACK)

W
S —+ N
E

TRACK
LAYOUT

LINE SEGMENT

0018

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

1.0L
1.00

10

GRADE

-1.05

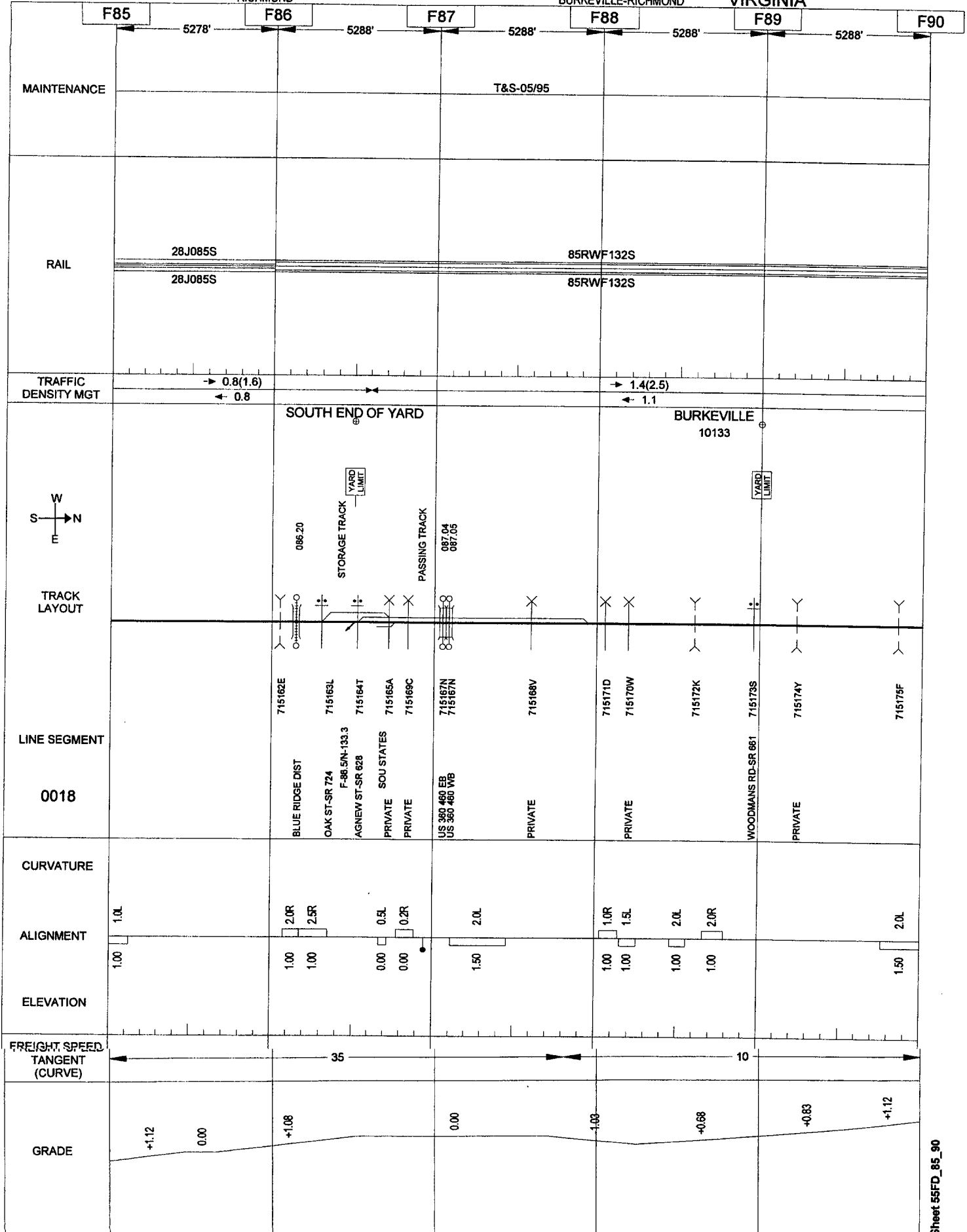
04/12/2006

RICHMOND

283

BURKEVILLE-RICHMOND

VIRGINIA



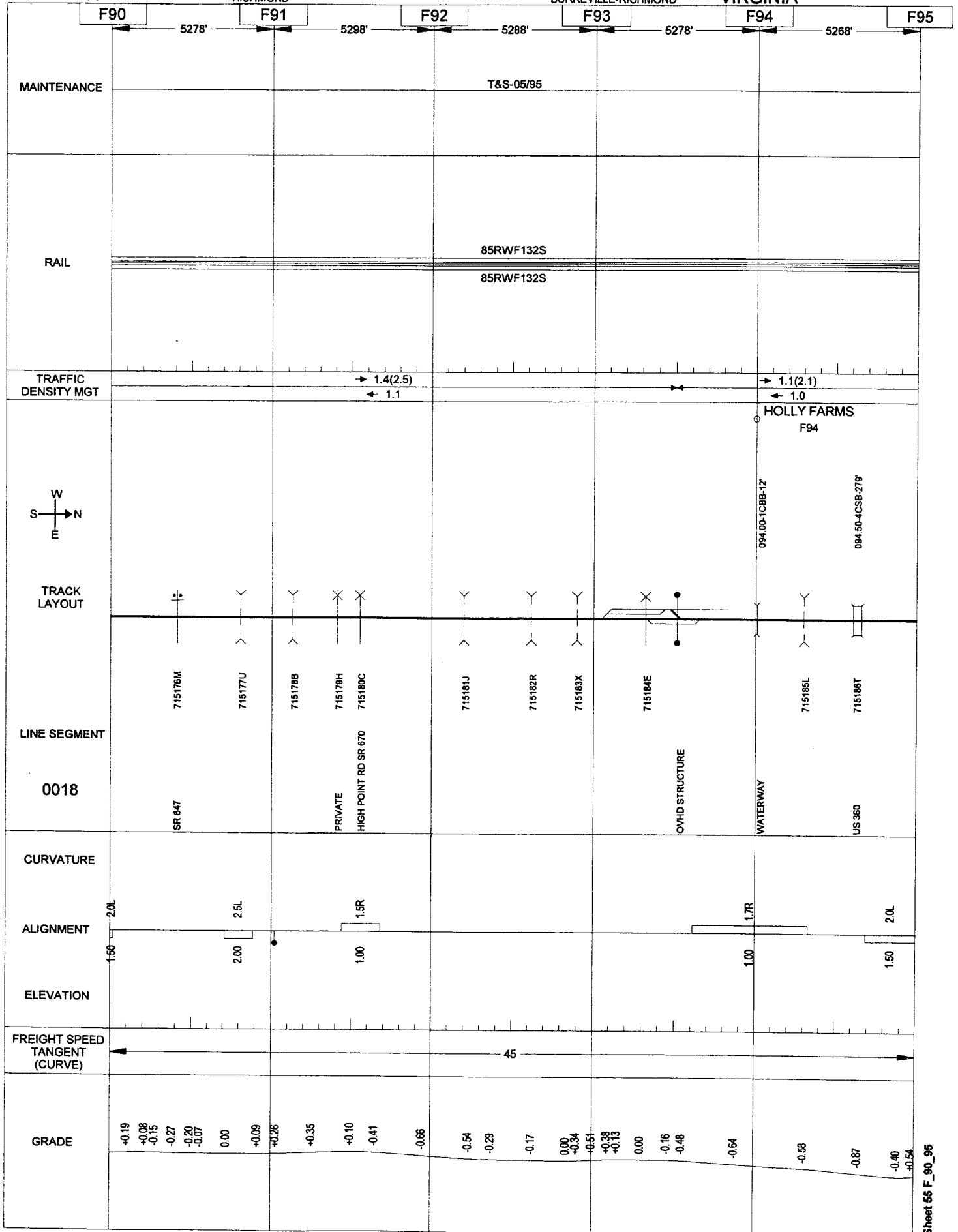
04/12/2006

284

RICHMOND

BURKEVILLE-RICHMOND

VIRGINIA



04/12/2006

FRANKLIN

281

SUFFOLK-LAWRENCEVILLE

VIRGINIA

	FD95					
MAINTENANCE	5282'					
RAIL	RAIL					
TRAFFIC DENSITY MGT						
V-1-VA	END OF TRACK 21095					
TRACK LAYOUT						
LINE SEGMENT						
5200						
CURVATURE						
ALIGNMENT	200					
ELEVATION						
FREIGHT SPEED TANGENT (CURVE)	10					
GRADE	0.00					

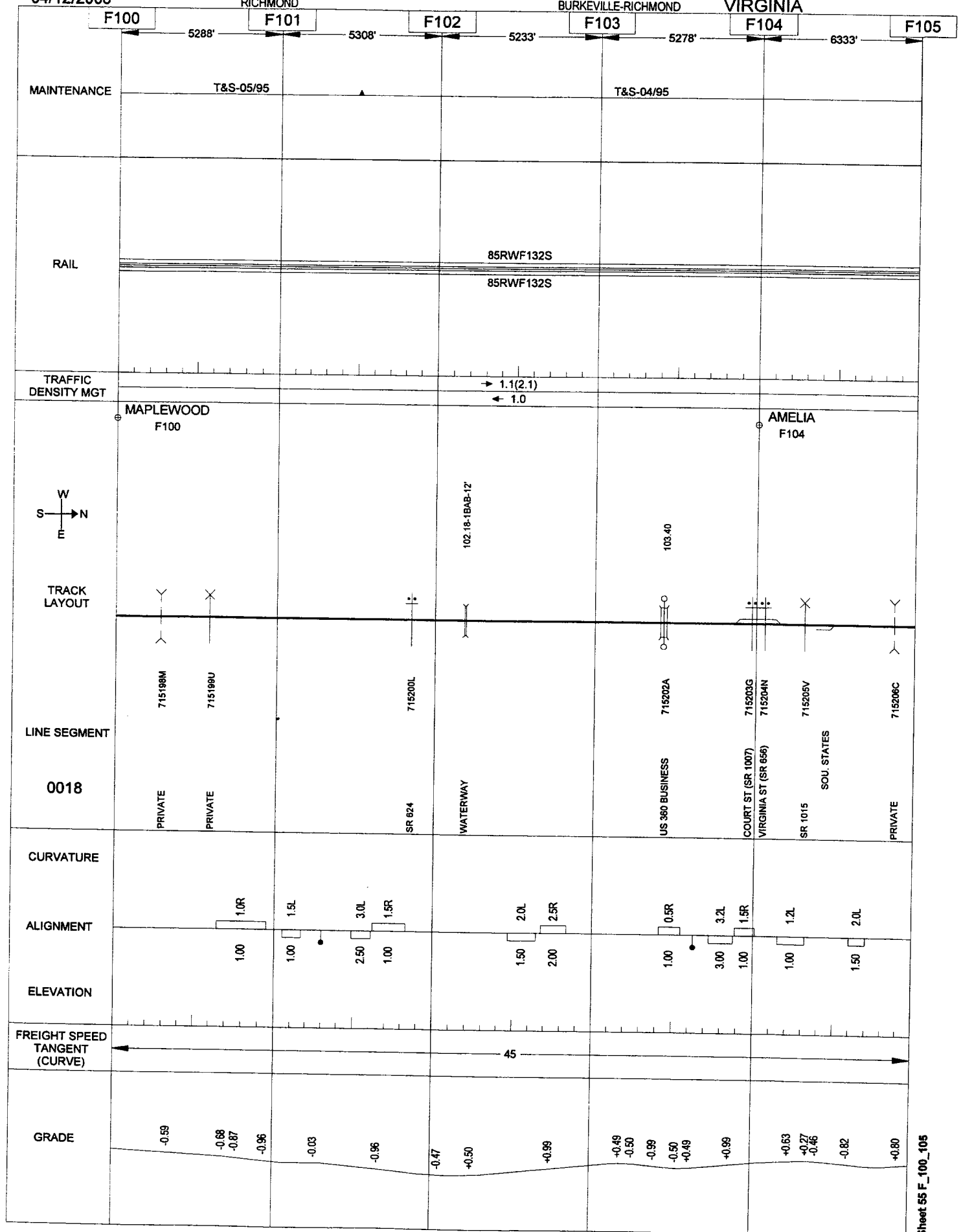
04/12/2006

RICHMOND

286

BURKEVILLE-RICHMOND

VIRGINIA



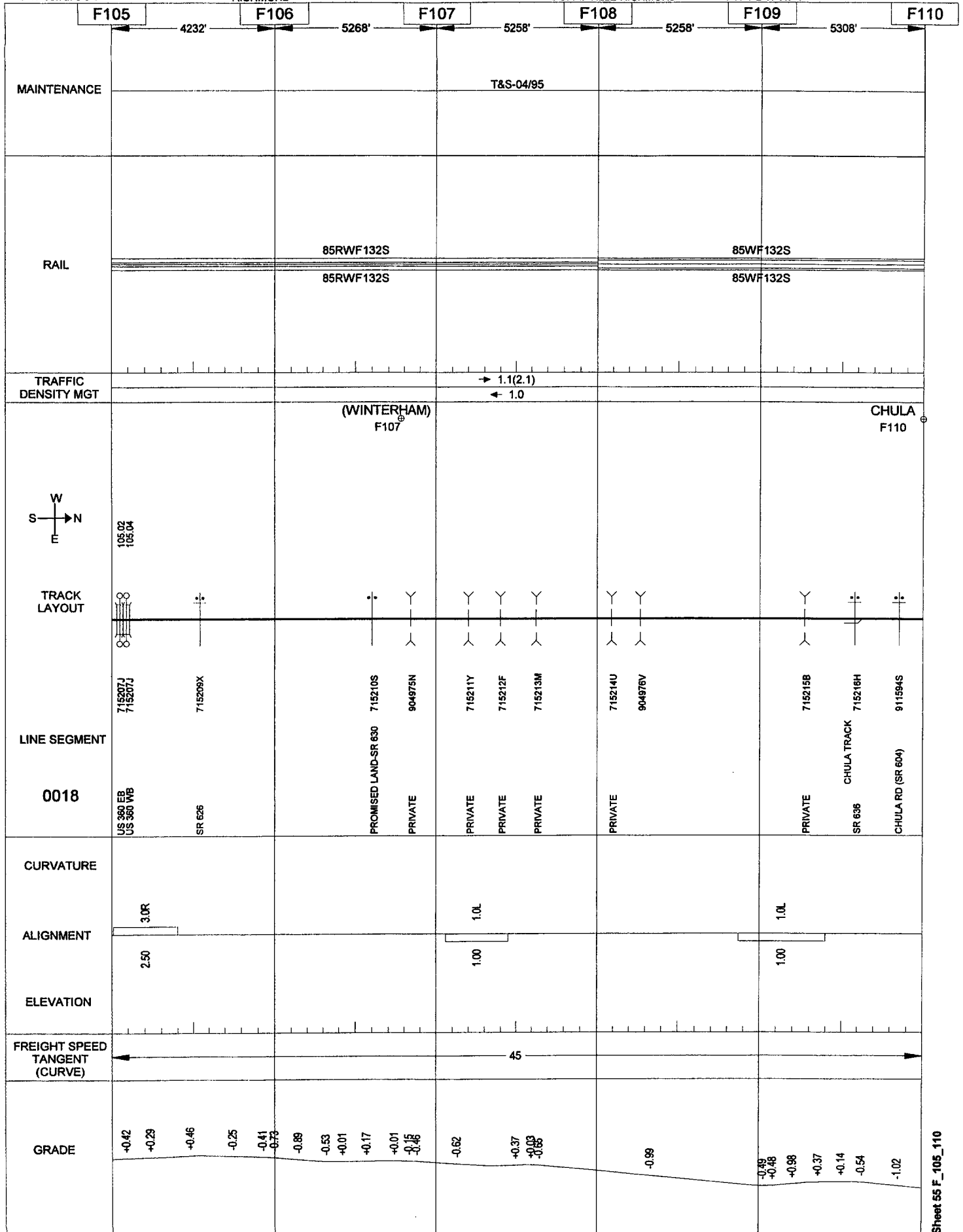
04/12/2006

RICHMOND

287

BURKEVILLE-RICHMOND

VIRGINIA



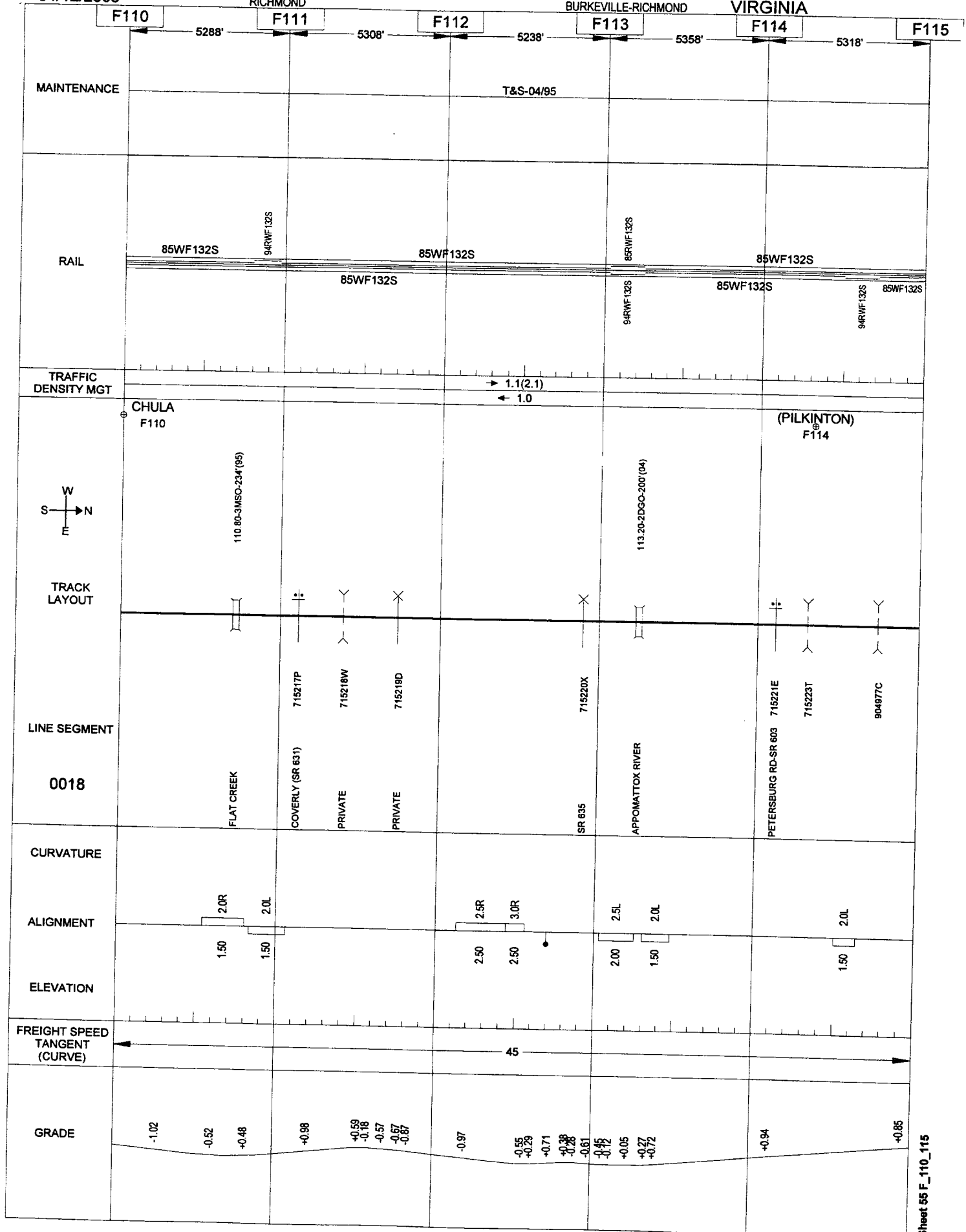
04/12/2006

RICHMOND

288

BURKEVILLE-RICHMOND

VIRGINIA



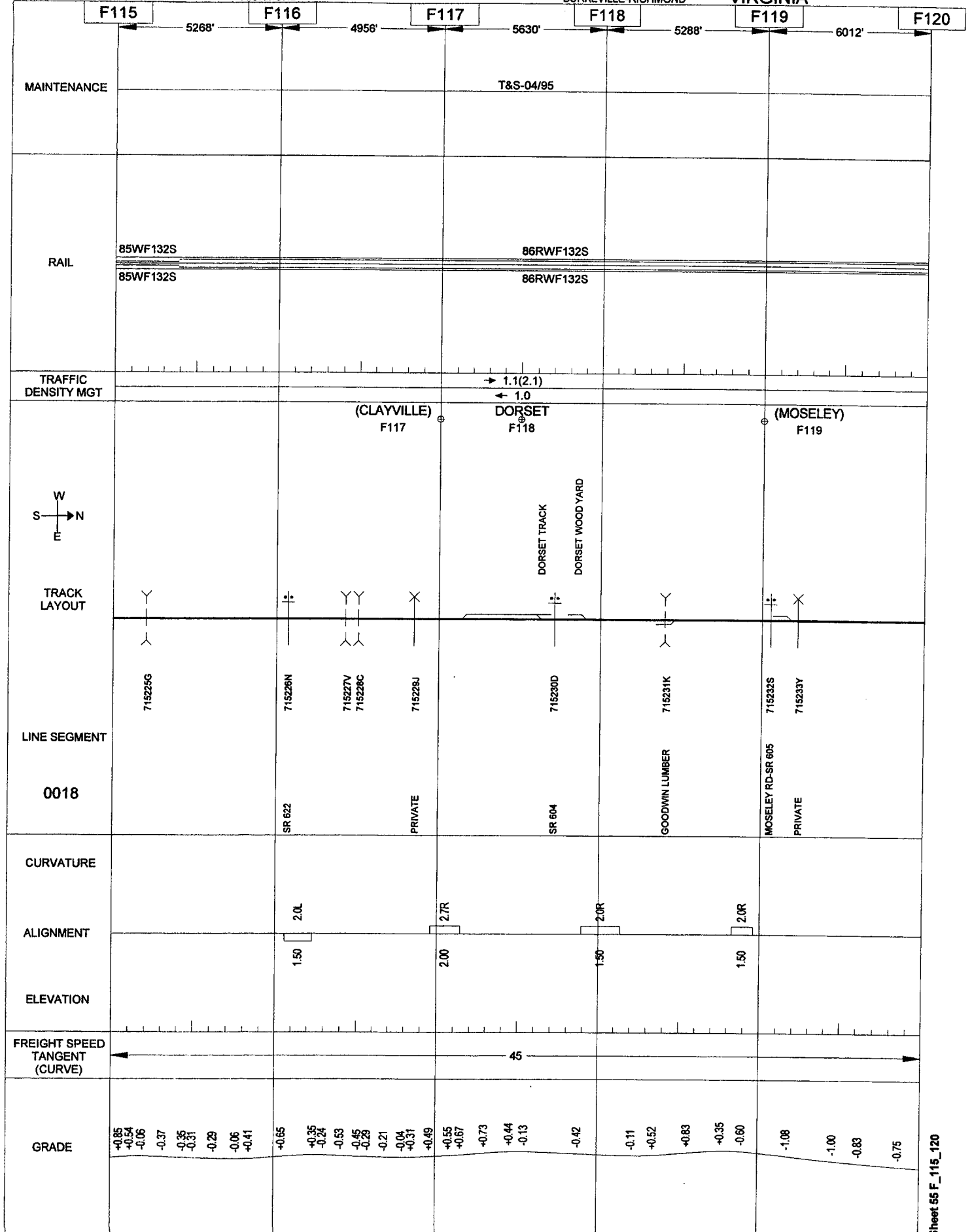
04/12/2006

289

RICHMOND

BURKEVILLE-RICHMOND

VIRGINIA



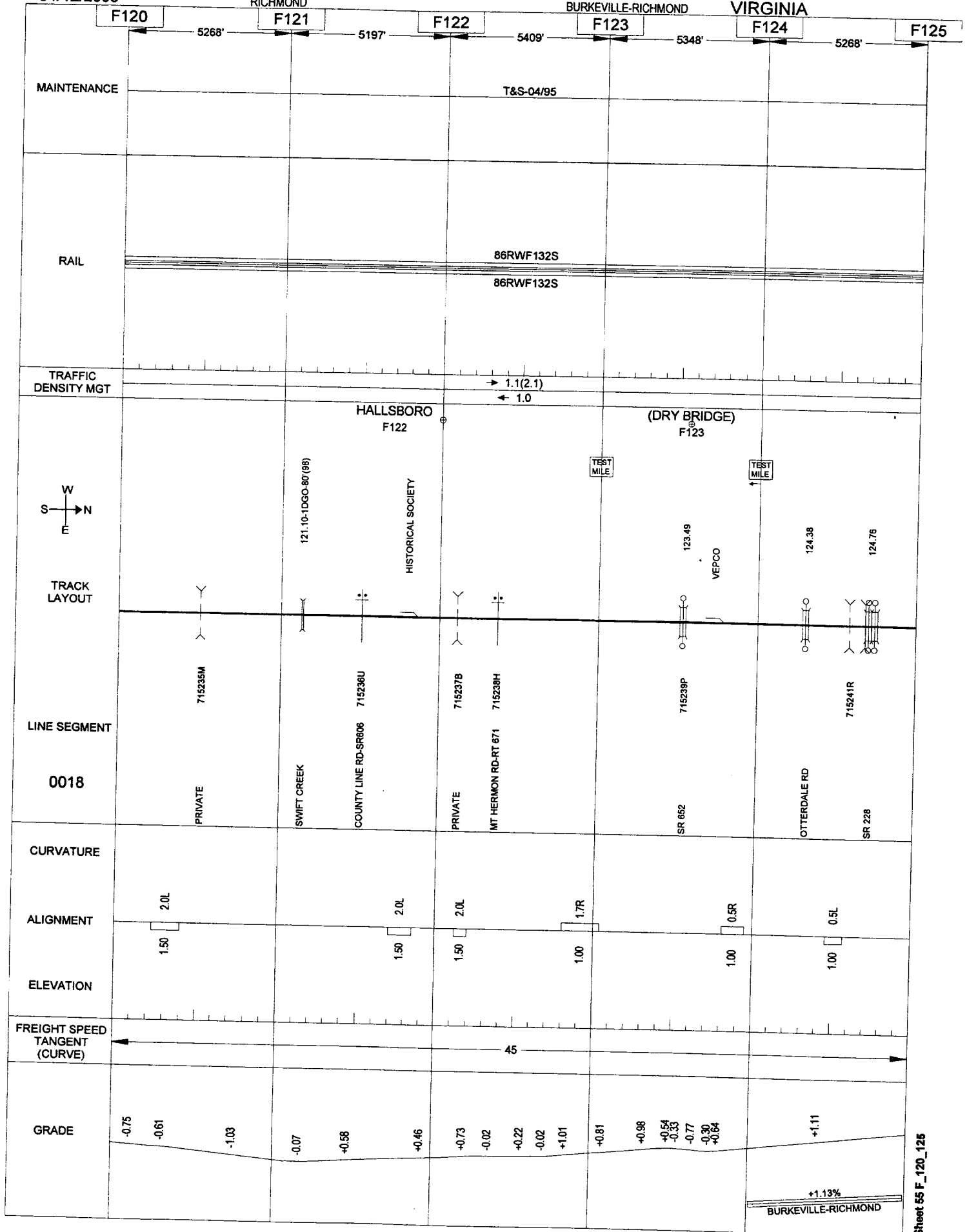
04/12/2006

290

RICHMOND

BURKEVILLE-RICHMOND

VIRGINIA



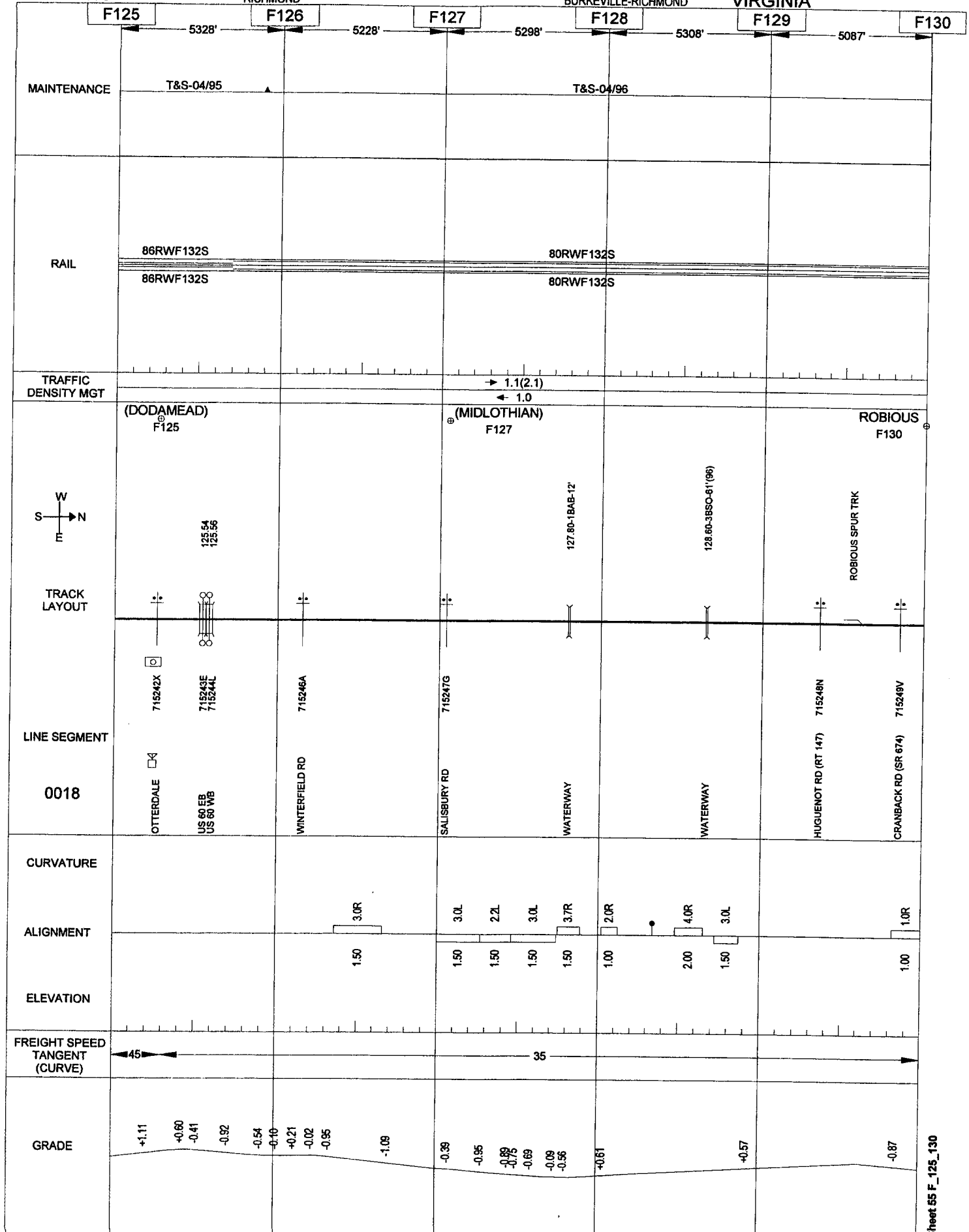
04/12/2006

291

RICHMOND

BURKEVILLE-RICHMOND

VIRGINIA



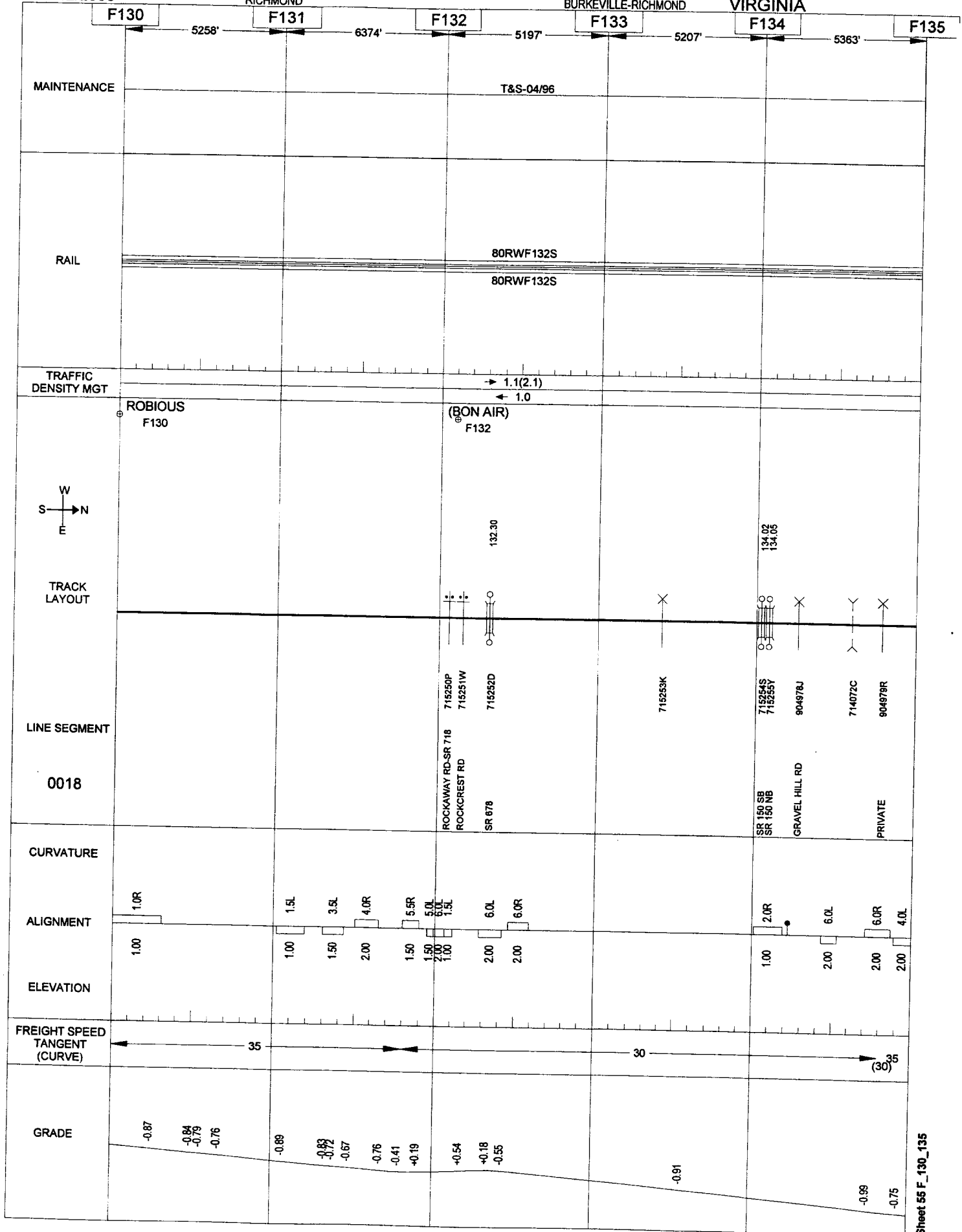
04/12/2006

292

RICHMOND

BURKEVILLE-RICHMOND

VIRGINIA



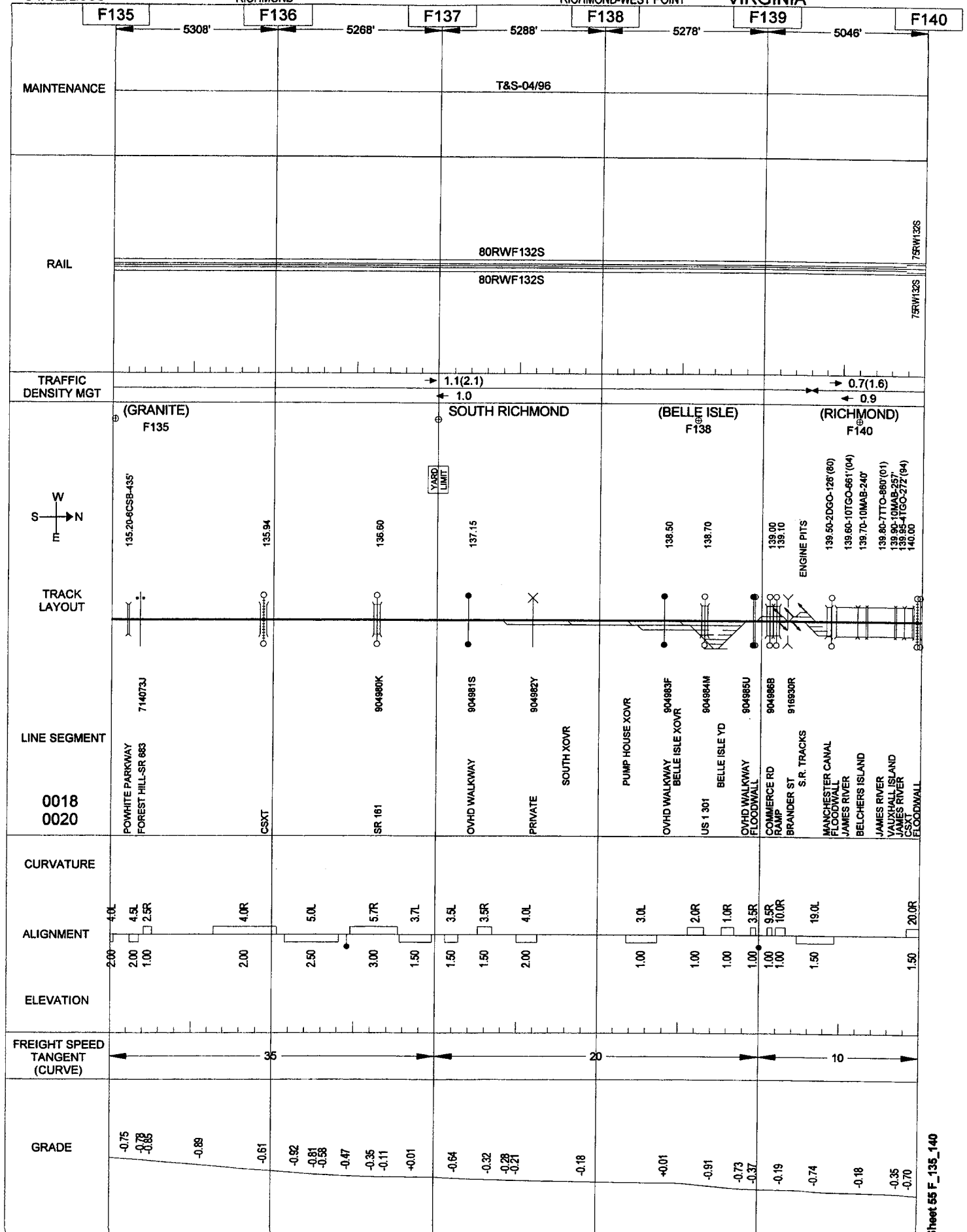
04/12/2006

293

RICHMOND

RICHMOND-WEST POINT

VIRGINIA



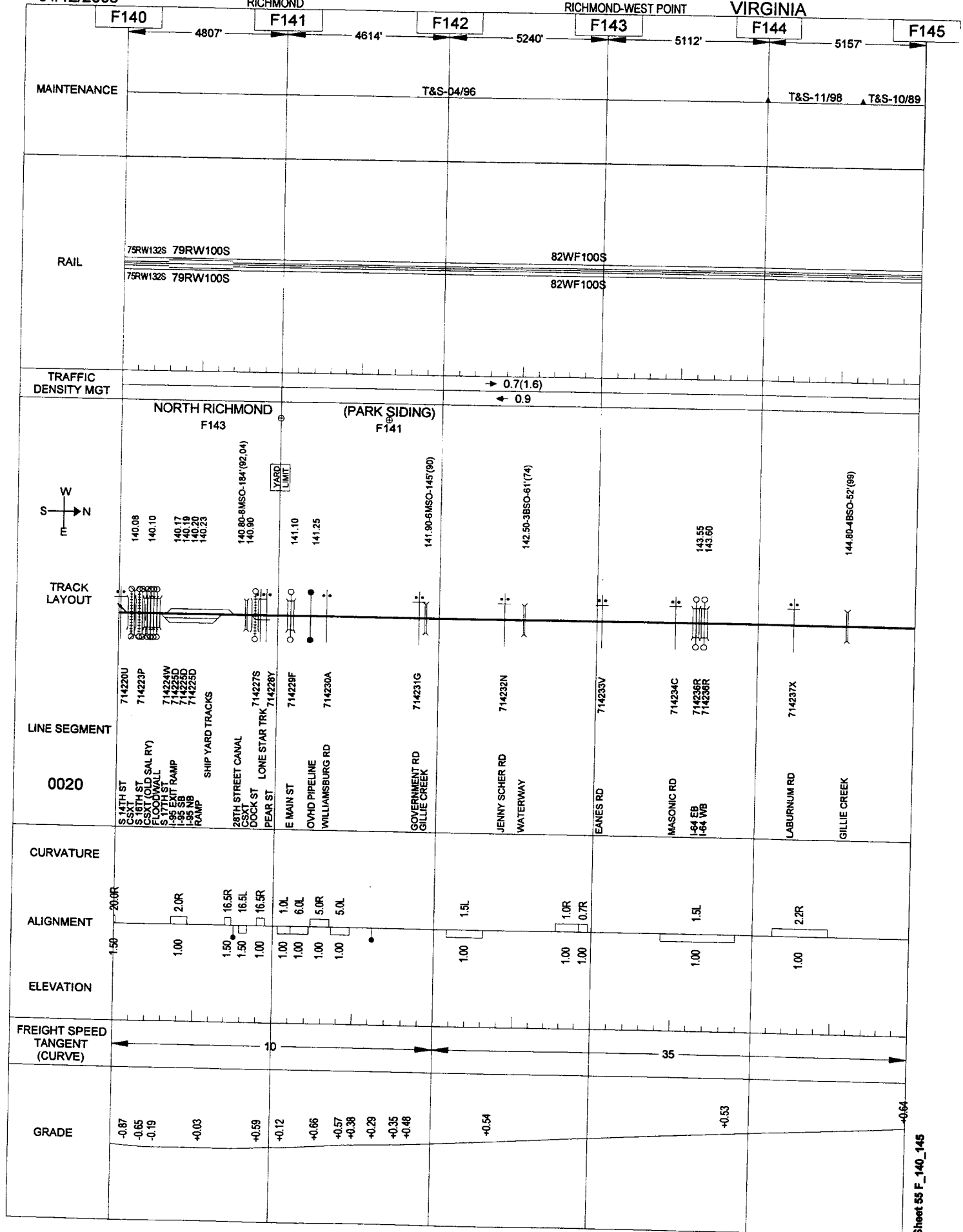
04/12/2006

RICHMOND

294

RICHMOND-WEST POINT

VIRGINIA



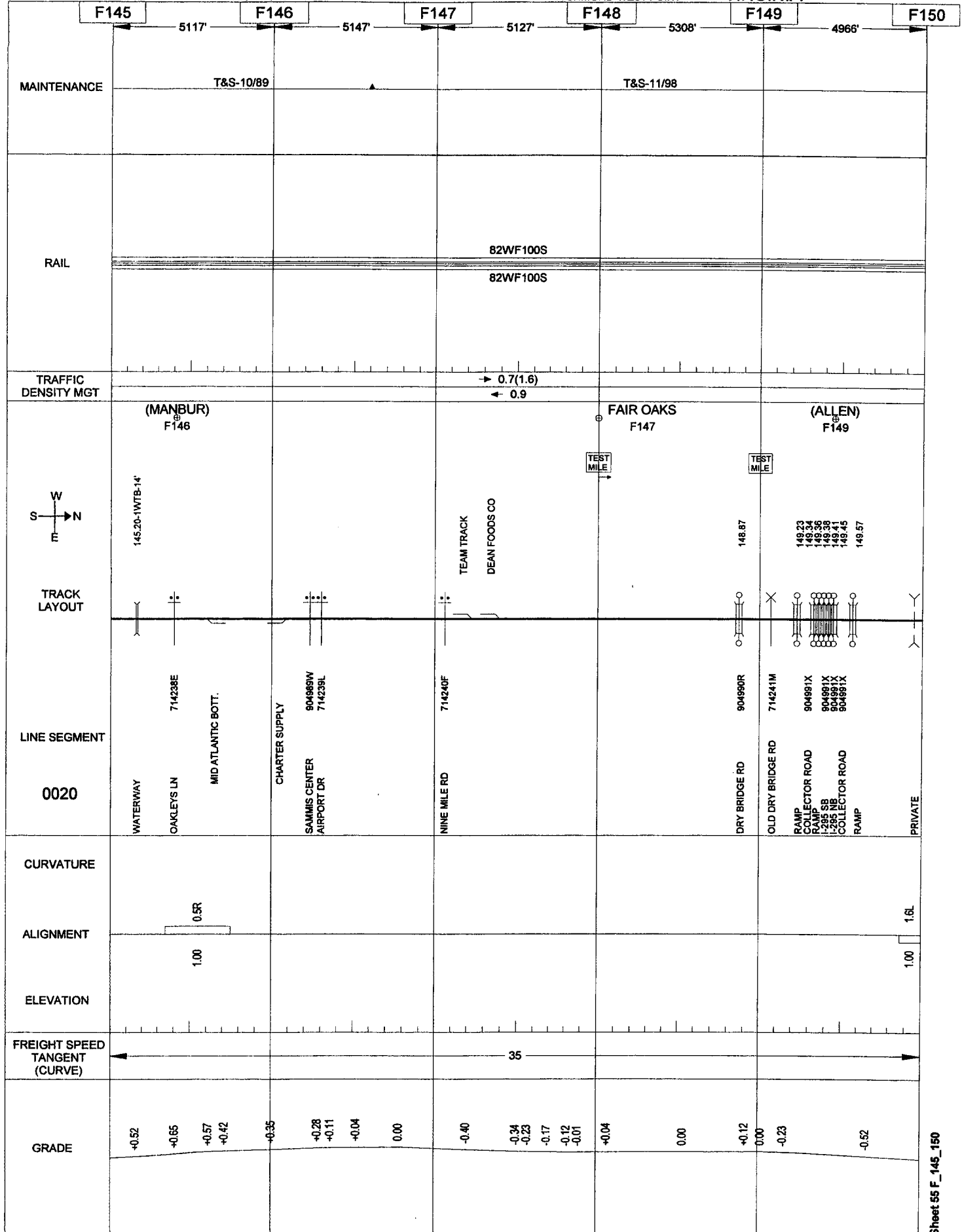
04/12/2006

RICHMOND

295

RICHMOND-WEST POINT

VIRGINIA



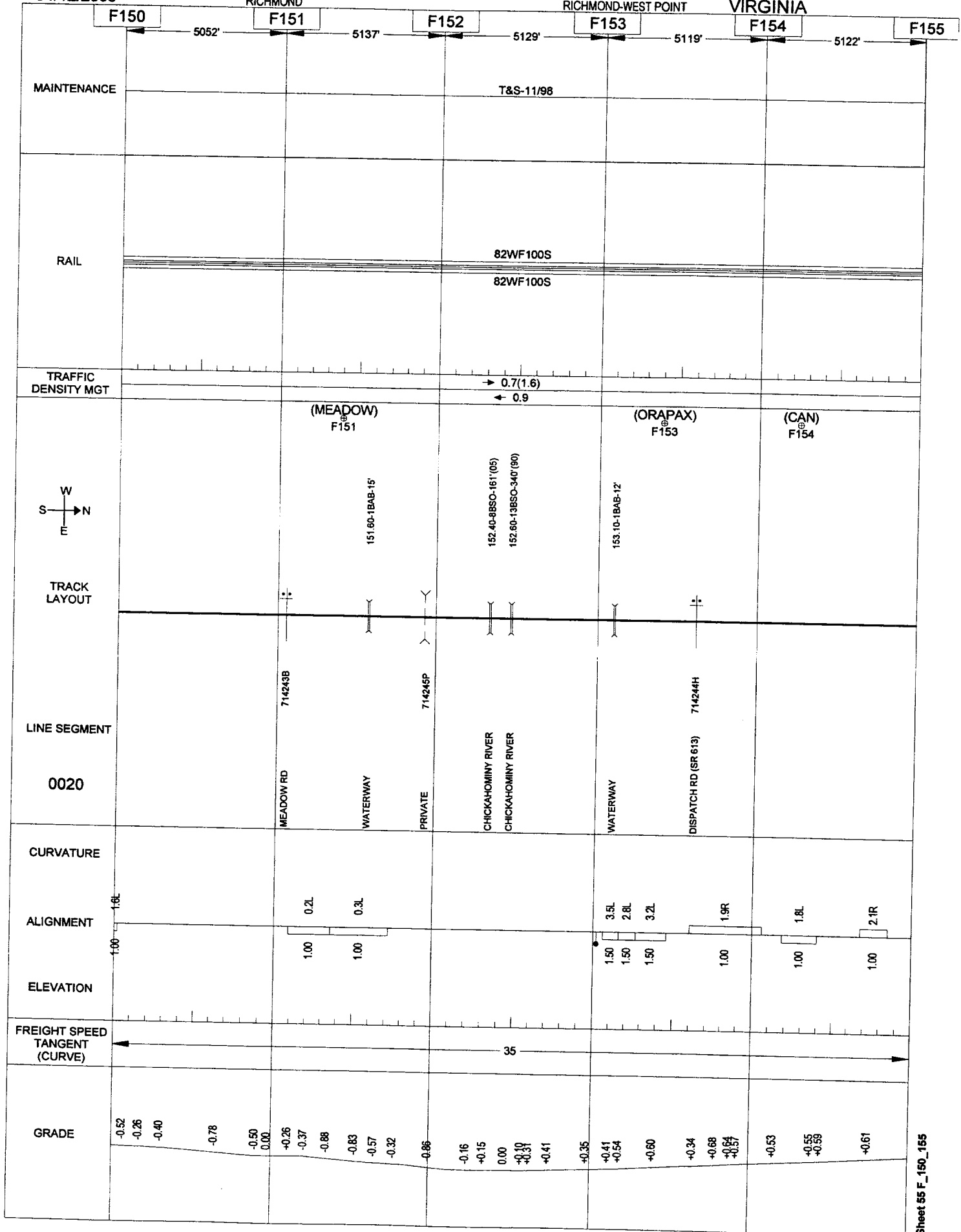
04/12/2006

RICHMOND

296

RICHMOND-WEST POINT

VIRGINIA



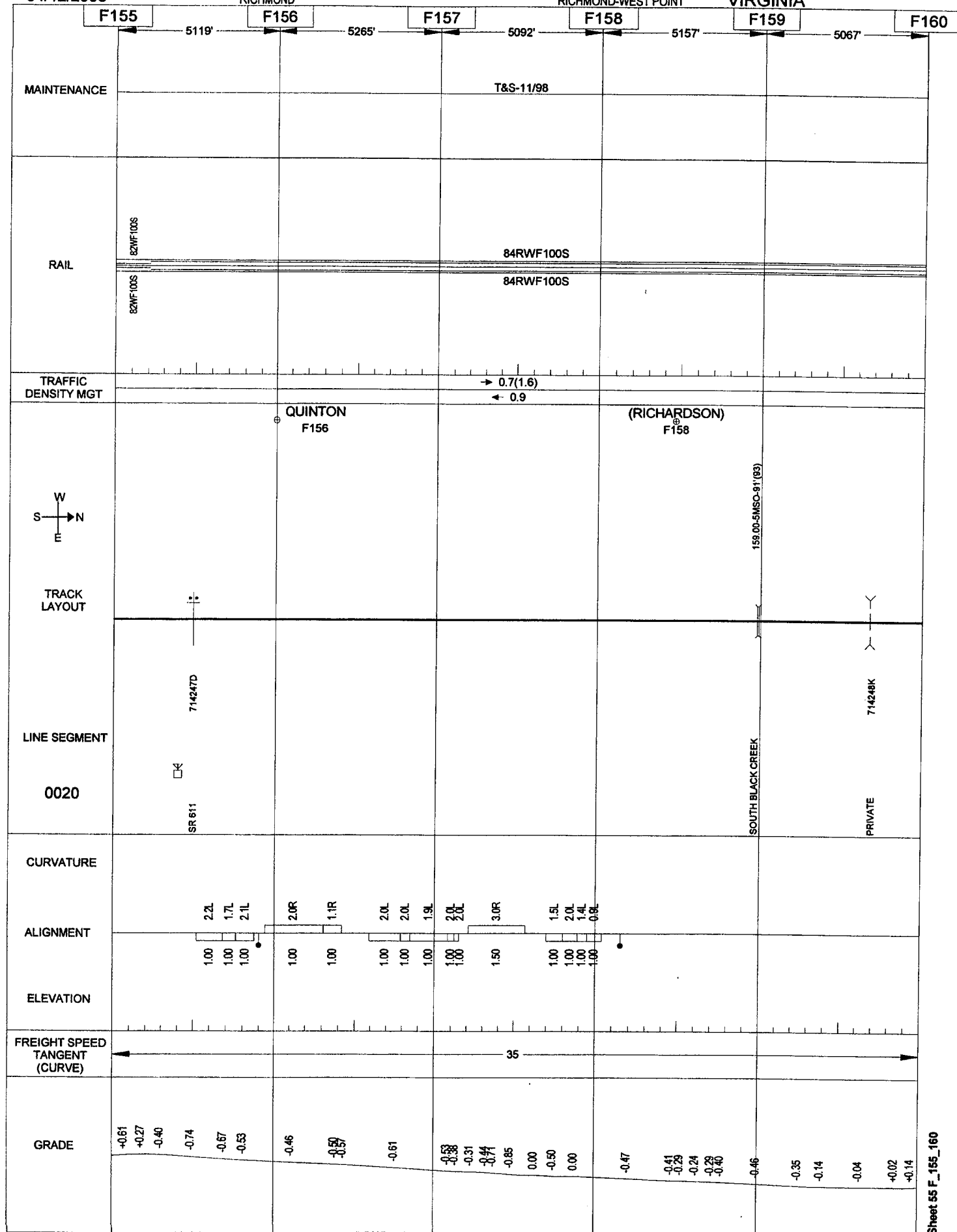
04/12/2006

RICHMOND

297

RICHMOND-WEST POINT

VIRGINIA



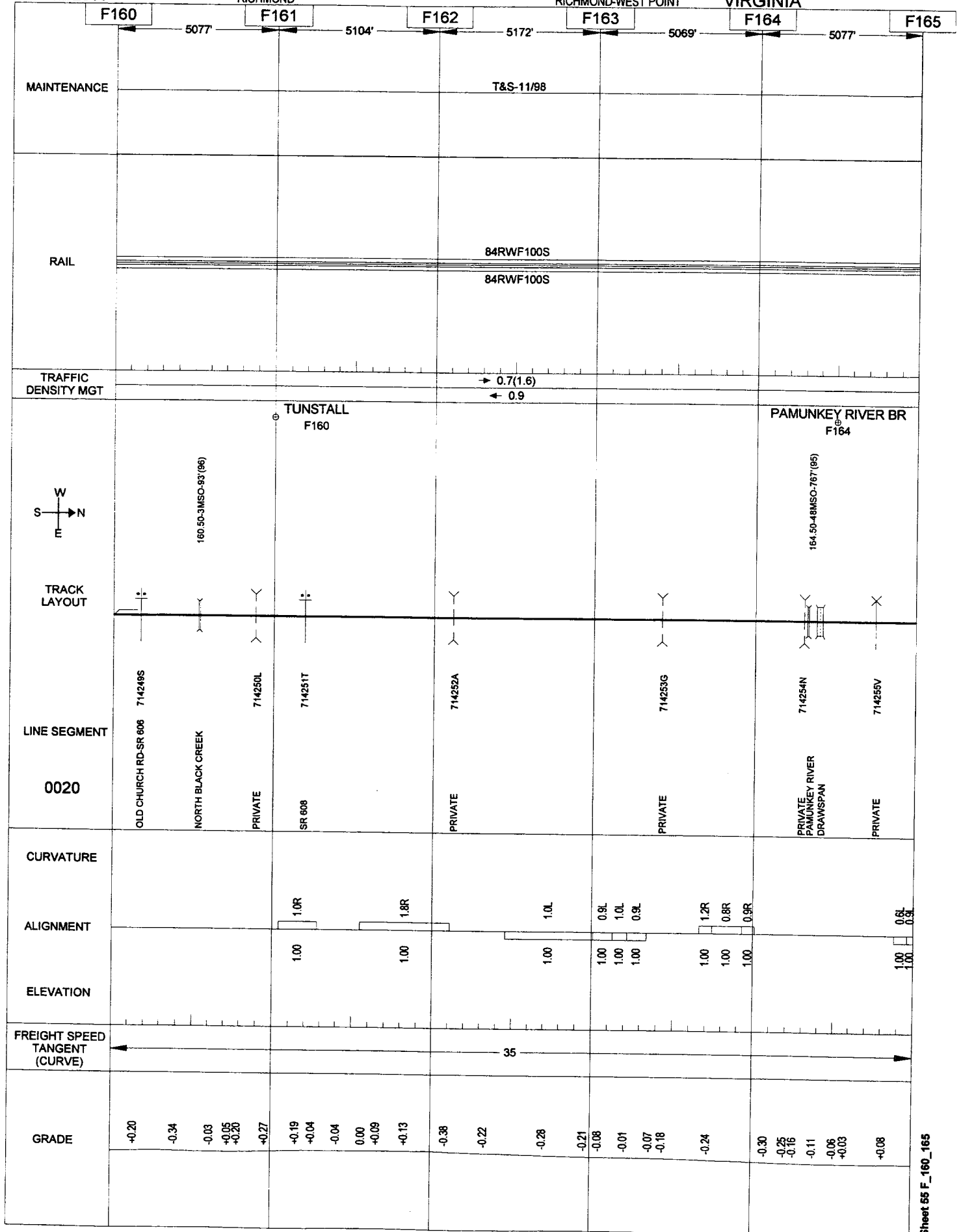
04/12/2006

RICHMOND

298

RICHMOND-WEST POINT

VIRGINIA



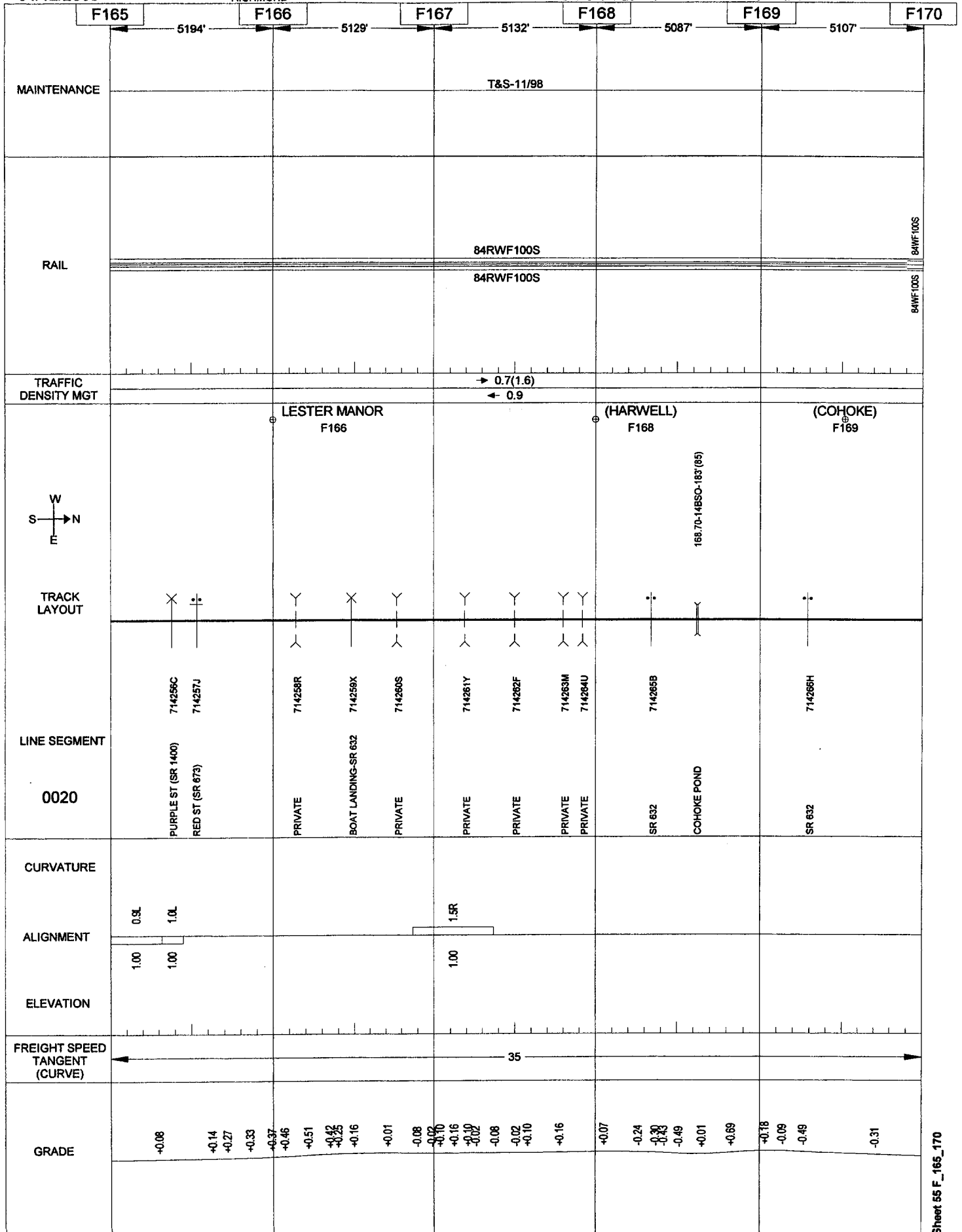
04/12/2006

RICHMOND

299

RICHMOND-WEST POINT

VIRGINIA



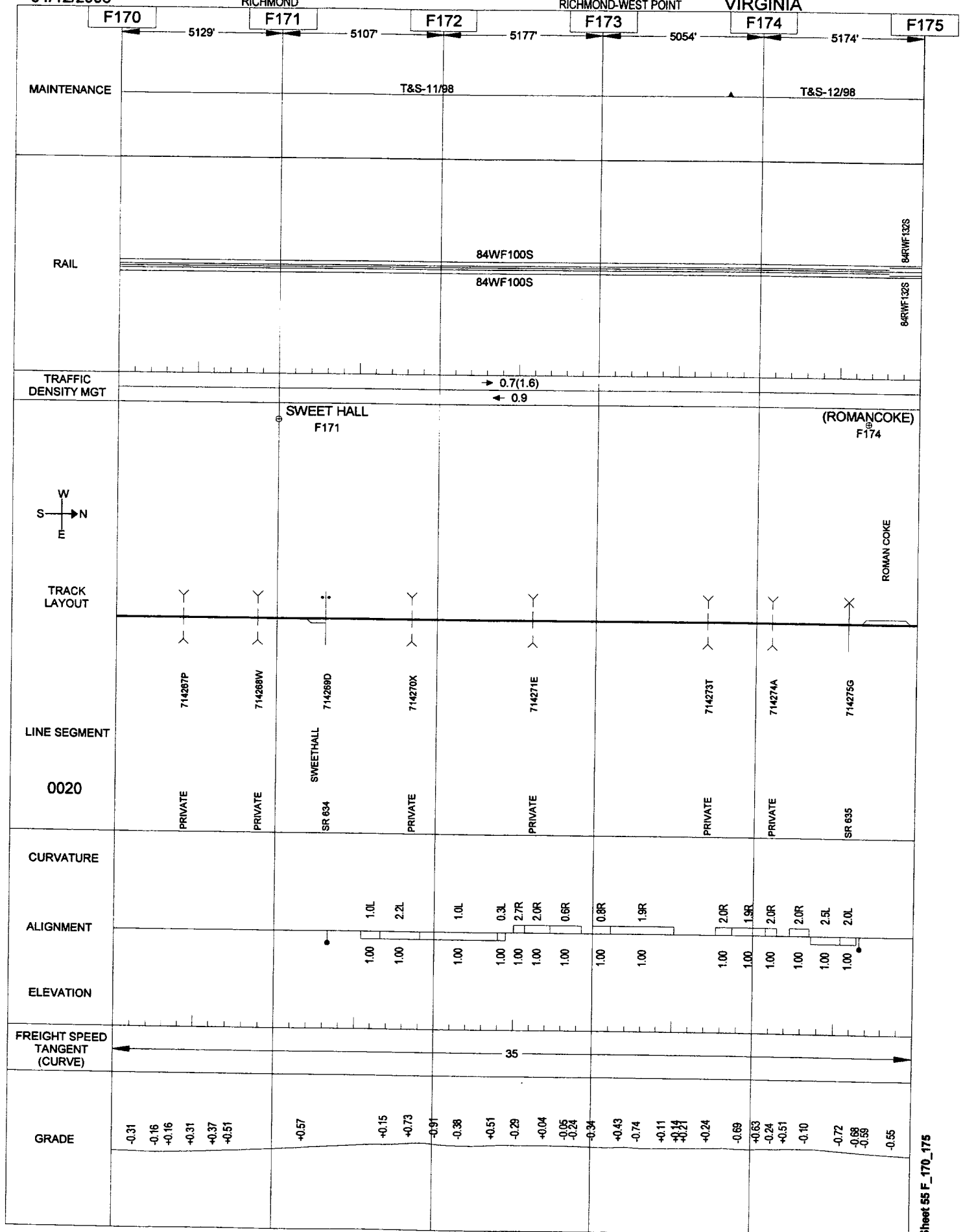
04/12/2006

RICHMOND

300

RICHMOND-WEST POINT

VIRGINIA



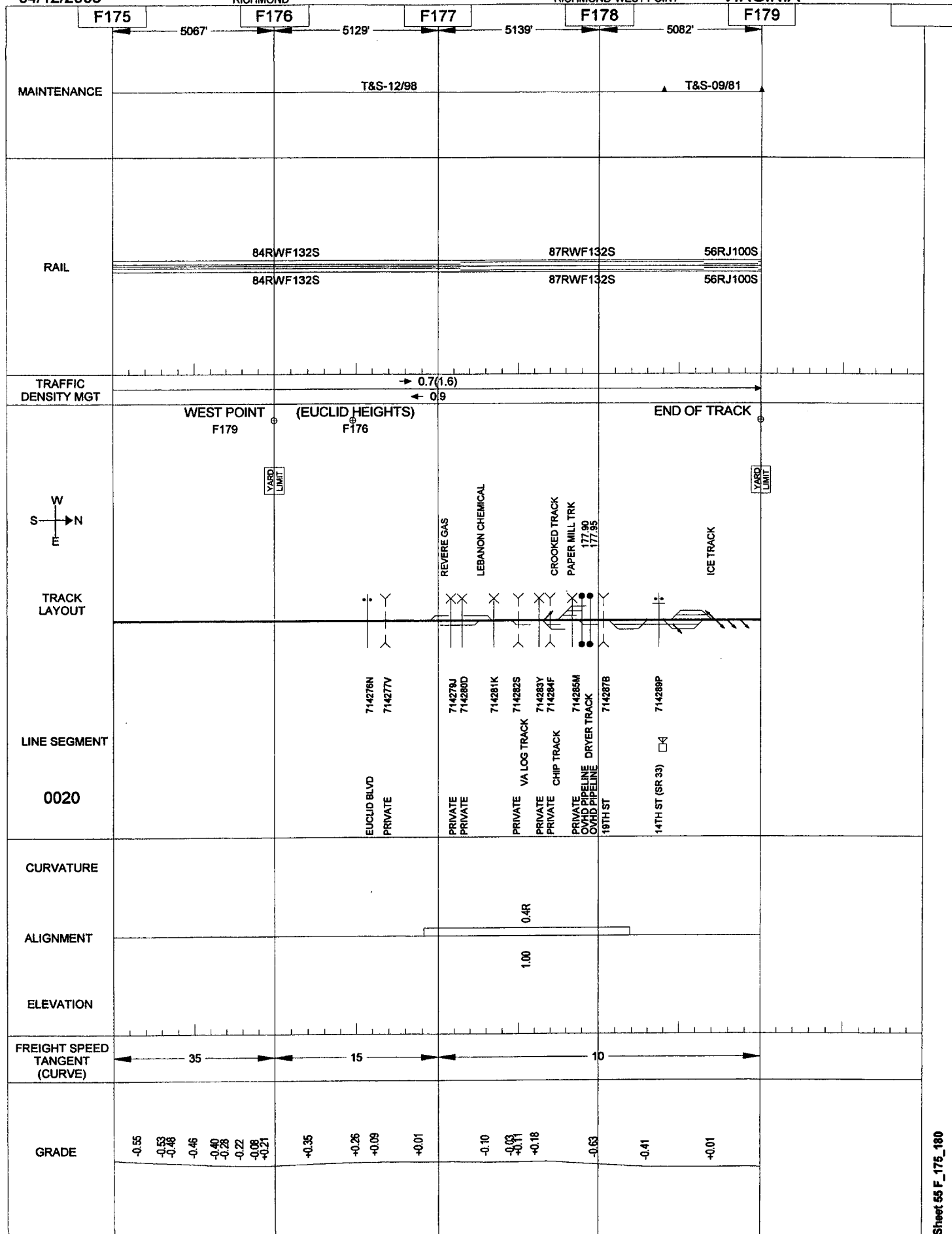
04/12/2006

RICHMOND

301

RICHMOND-WEST POINT

VIRGINIA



EB0

EB1

EB2

EB3

FR4

ER6

- 5269' -

- 5590' -

- 5254' -

- 5280' -

— 6380'

35

MAINTENANCE

T&S-11/93
S-10/97

T&S-11/93
S-11/97

RAIL

88RWF112S

88RWF112S

TRAFFIC
DENSITY MGT

→ 1.6(2.1)

(INGLEWOOD)

V-1-VA

ELKTON
23000

000.25-17MSO-825'(87)

YARD	LIMIT
-------------	--------------

002.84-1 BSO-26' (99)

TRACK LAYOUT

EB-0.0=H-112.65

1.0=H-1

1

2163J

184R

185X

168E

1687

H24

3p

LINE SEGMENT

5420

CURVATURE

ALIGNMENT

ELEVATION

**FREIGHT SPEED
TANGENT
(CURVE)**

GRADE

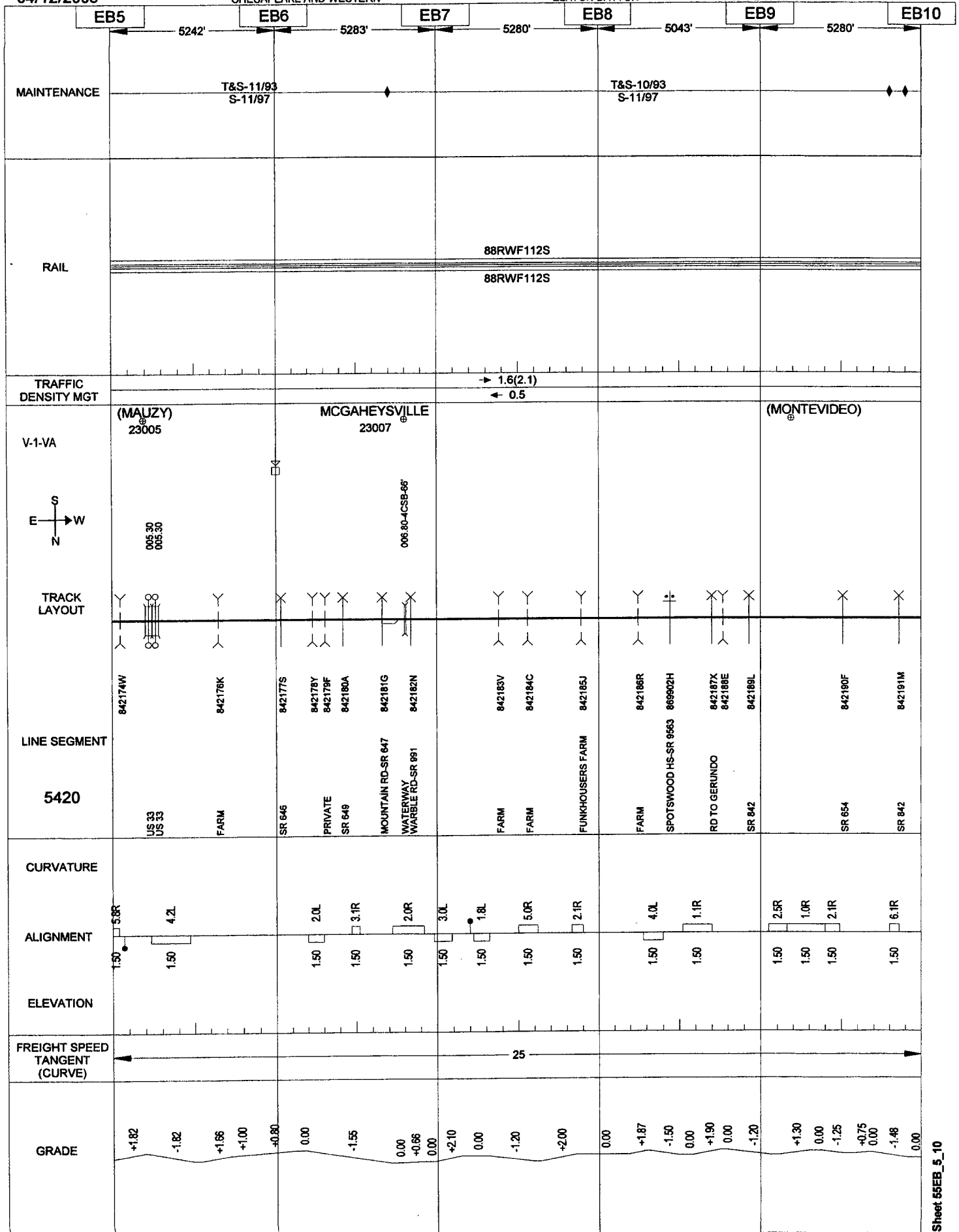
04/12/2006

CHESAPEAKE AND WESTERN

303

ELKTON-DAYTON

VIRGINIA



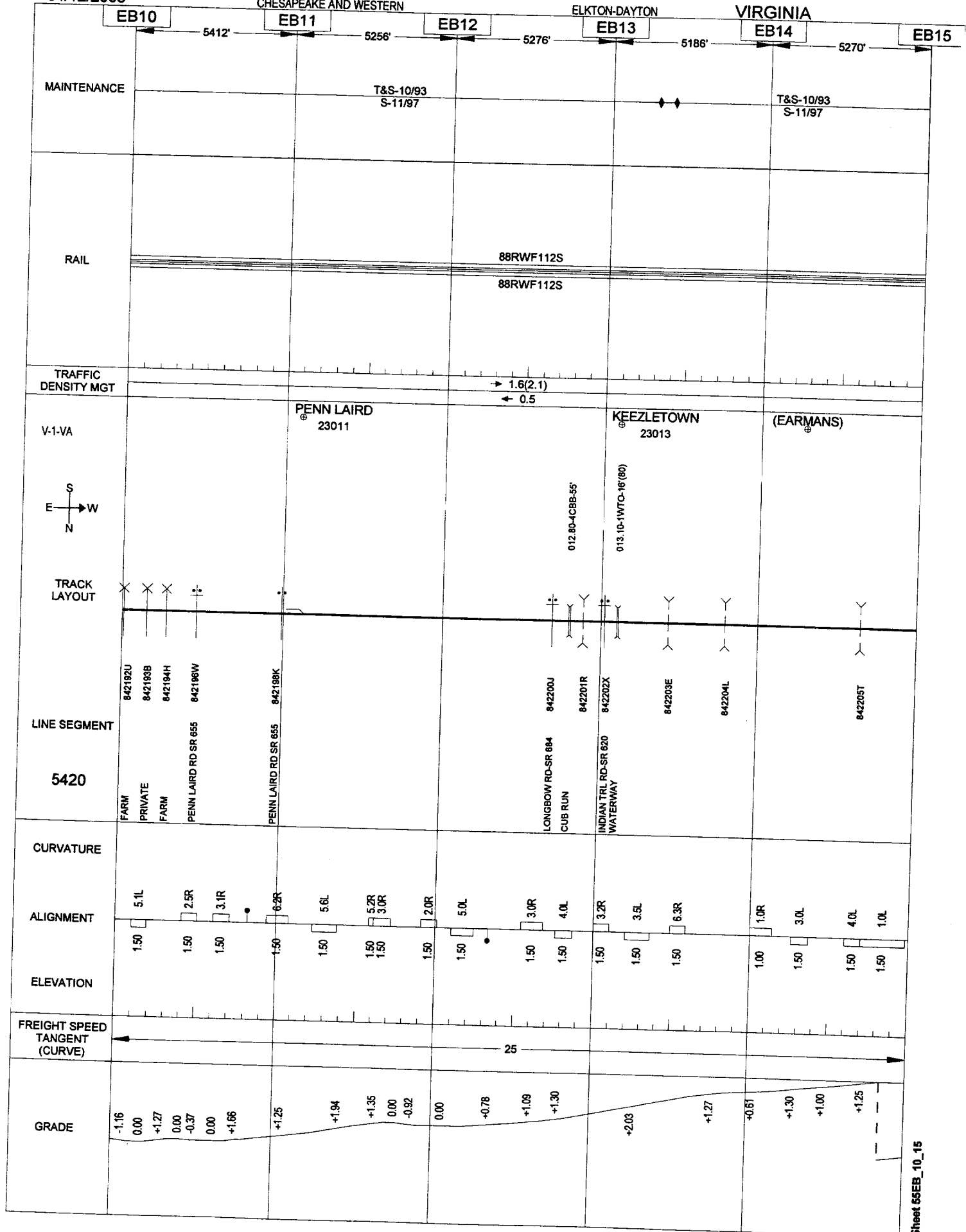
04/12/2006

304

CHESAPEAKE AND WESTERN

ELKTON-DAYTON

VIRGINIA



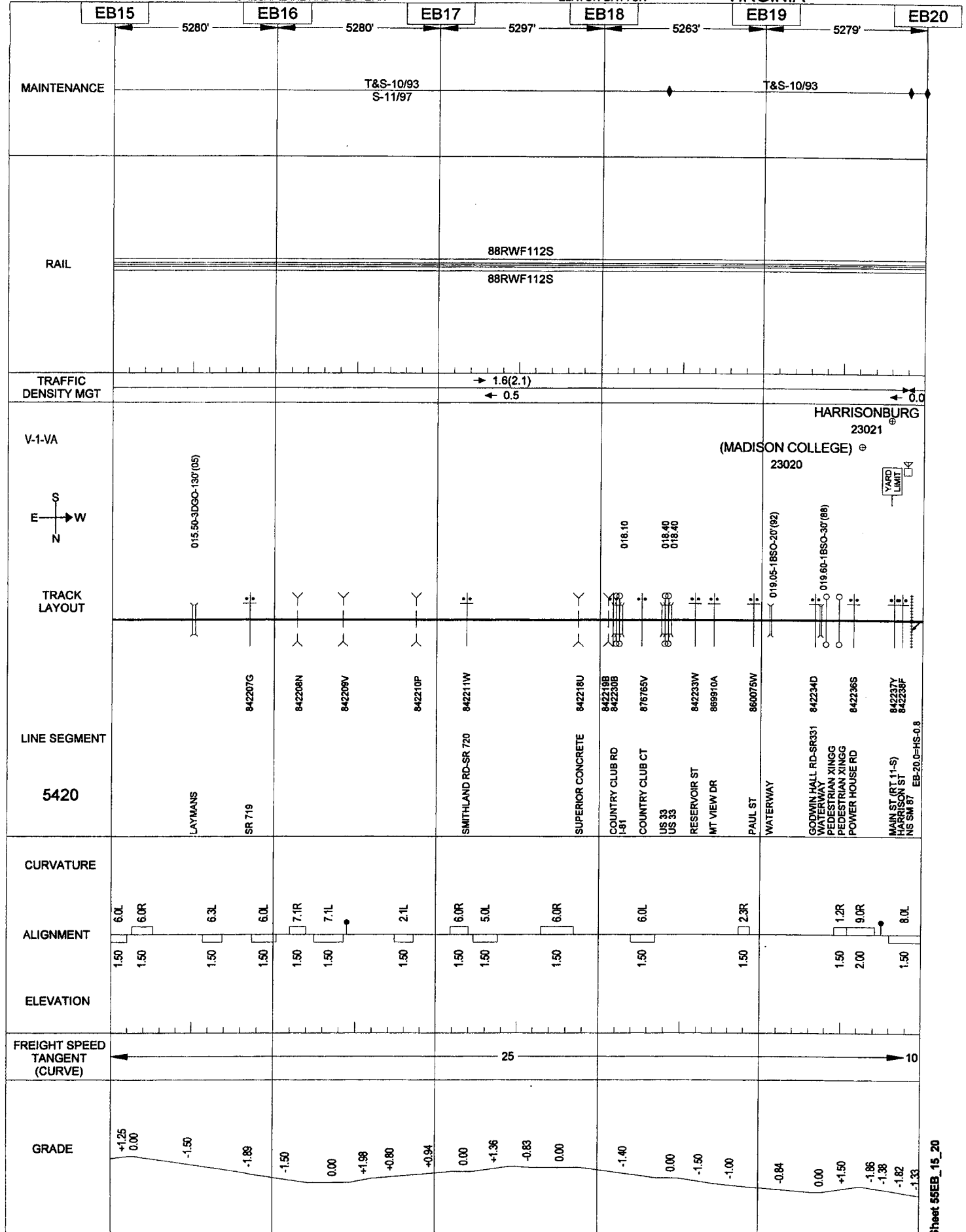
04/12/2006

CHESAPEAKE AND WESTERN

305

ELKTON-DAYTON

VIRGINIA



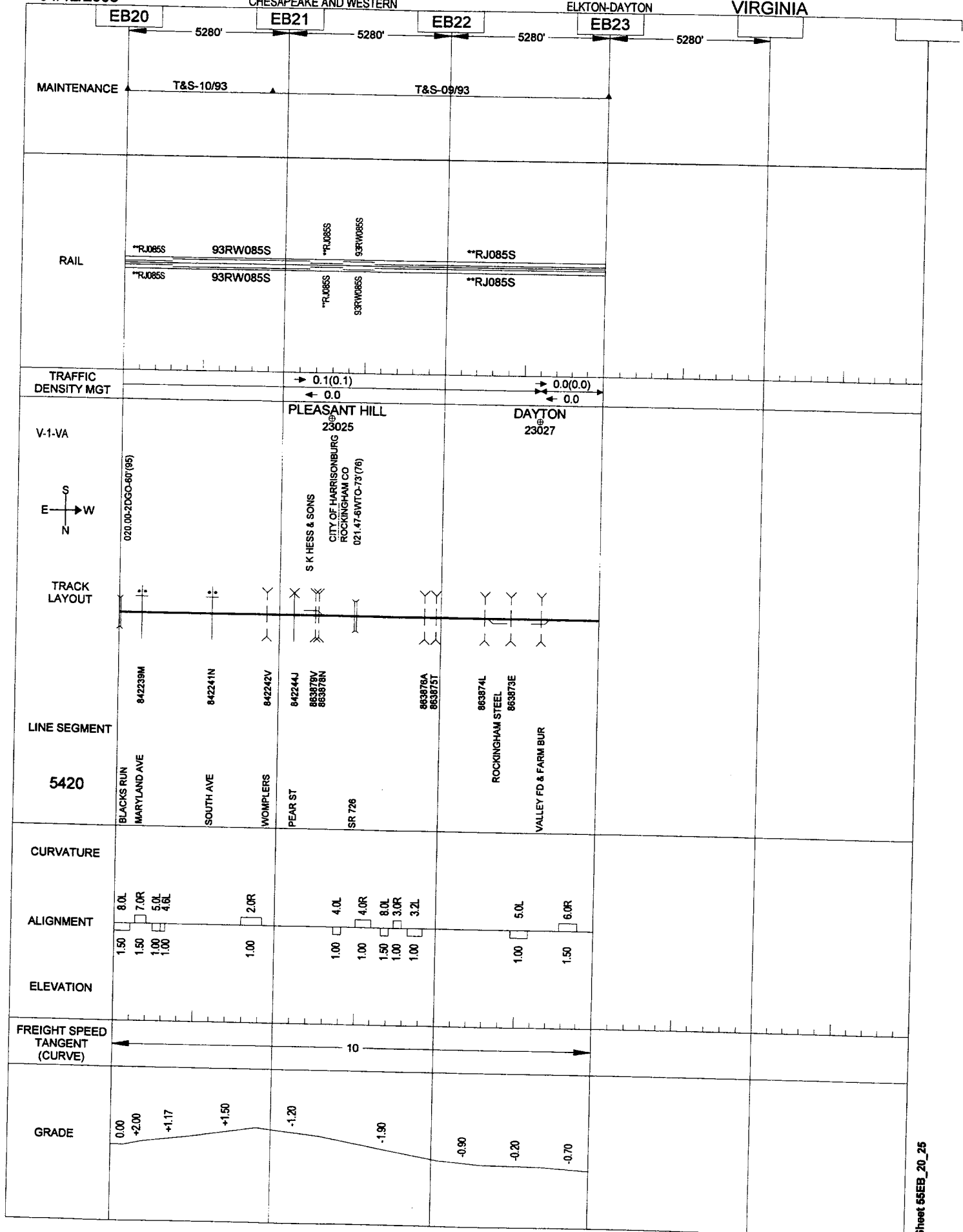
04/12/2006

CHESAPEAKE AND WESTERN

306

ELKTON-DAYTON

VIRGINIA



04/12/2006

CHESAPEAKE AND WESTERN

307

BOWMAN-HARRISONBURG

VIRGINIA

CW84

CW85

5358'

T&S-07/88

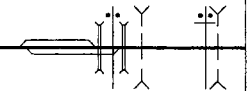
**RJ085S

**RJ085S

→ 0.0(0.0)
← 0.0

BOWMAN
23039

084.40-1WTB-13'
084.50-1WTB-13'



714537L
714538T
714539A
714540U

WATERWAY
BOWMAN APPLE RD
WATERWAY
SR 703 / 292

MAINTENANCE

RAIL

TRAFFIC
DENSITY MGT



TRACK
LAYOUT

LINE SEGMENT

5003

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

25

GRADE

-0.16
-0.30
+0.22
+0.08
0.00

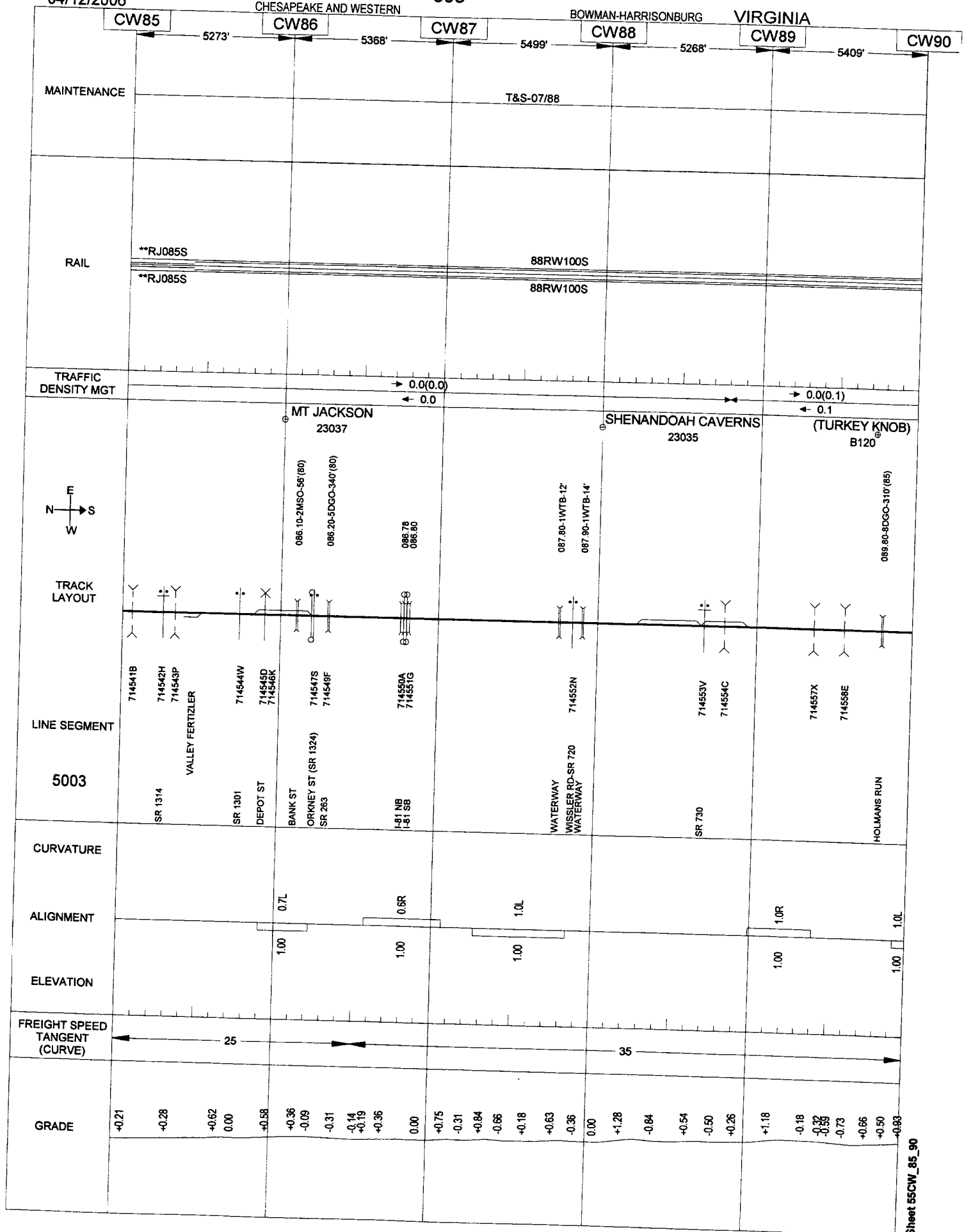
04/12/2006

308

CHESAPEAKE AND WESTERN

BOWMAN-HARRISONBURG

VIRGINIA



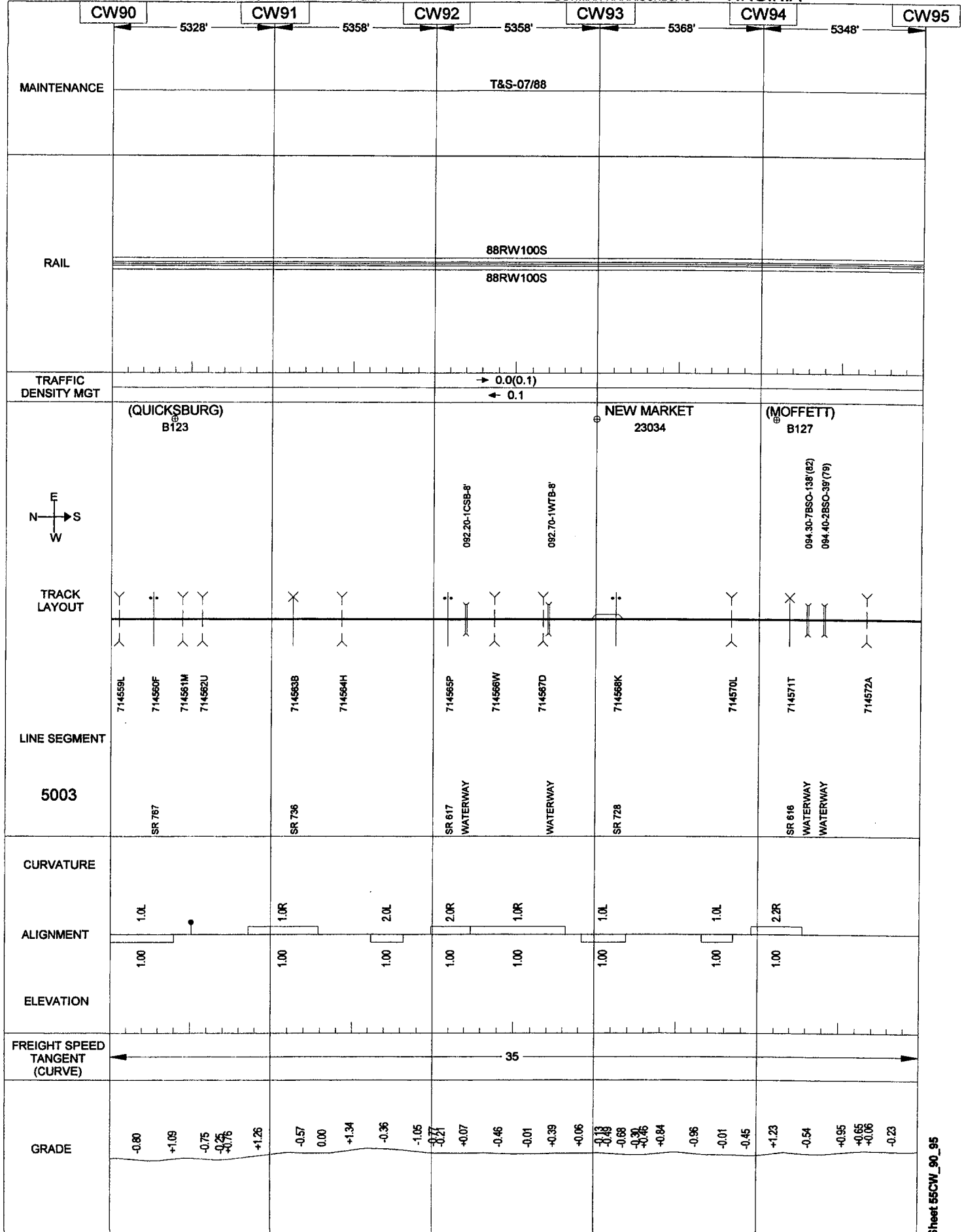
04/12/2006

CHESAPEAKE AND WESTERN

309

BOWMAN-HARRISONBURG

VIRGINIA



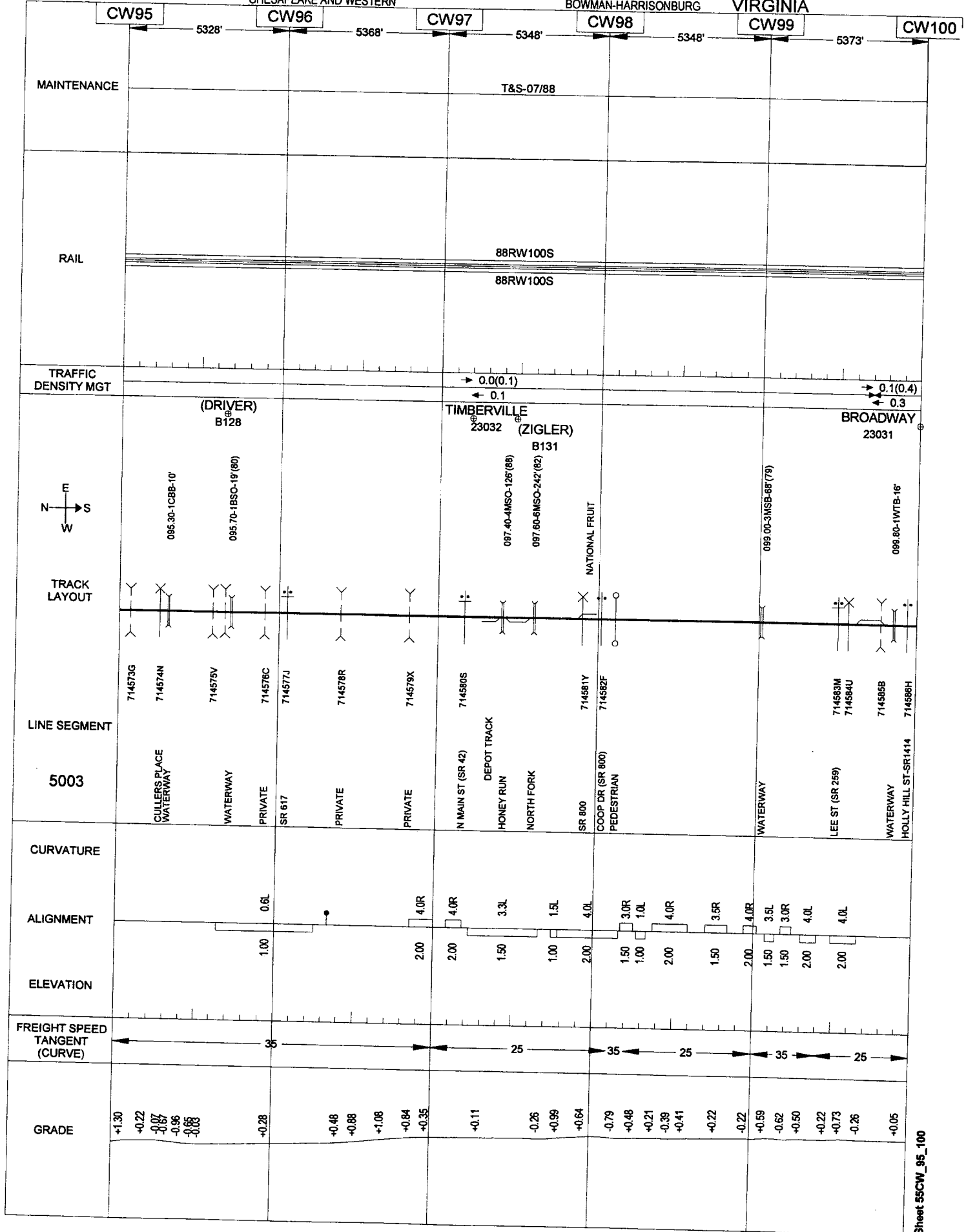
04/12/2006

CHESAPEAKE AND WESTERN

310

BOWMAN-HARRISONBURG

VIRGINIA



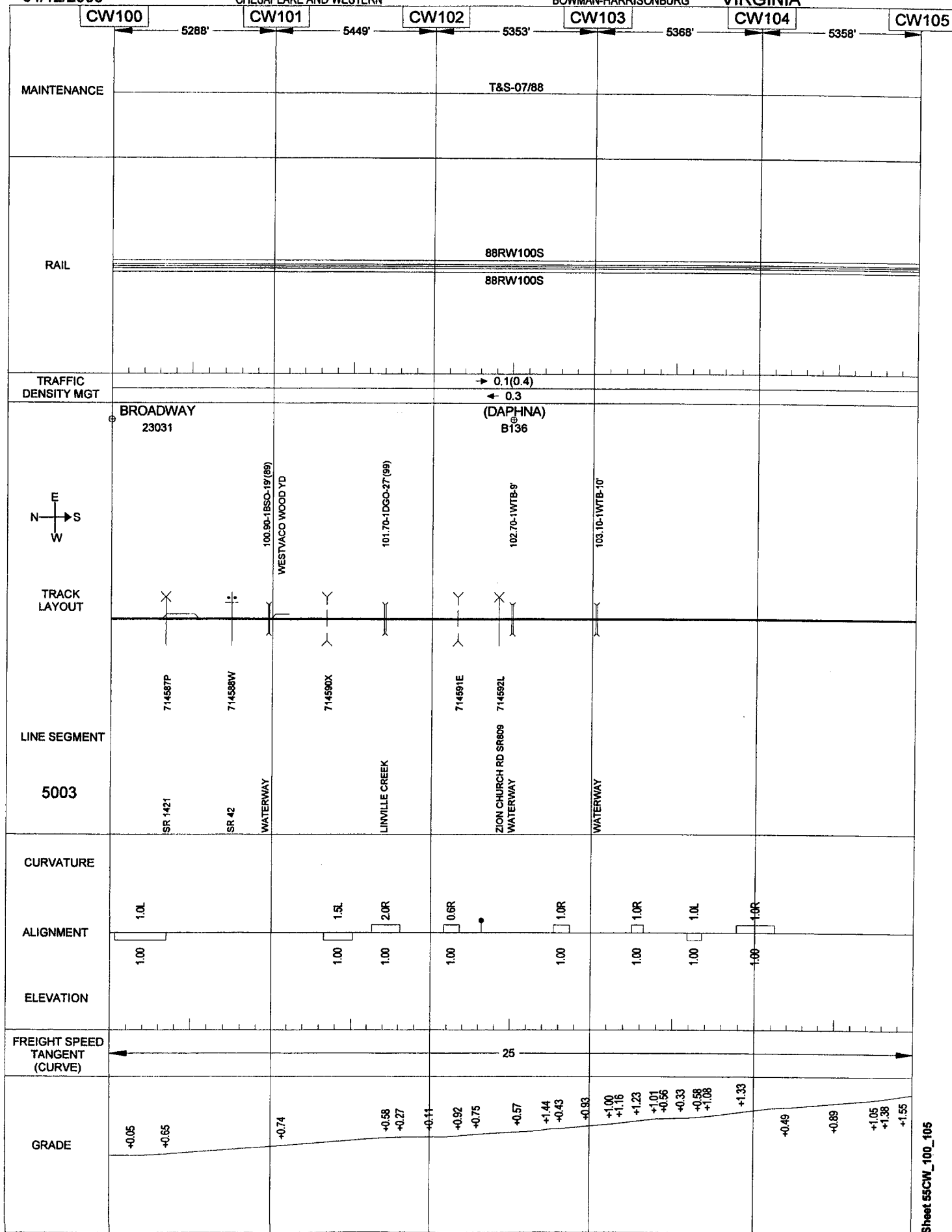
04/12/2006

CHESAPEAKE AND WESTERN

311

BOWMAN-HARRISONBURG

VIRGINIA



VIRGINIA

CW110

5402

T&S-07/88

88RW100S

→ 0.1(0.4)
← 0.3

ZIRKLE
23024

06.40-3MSB-41'(99)

14600B

5003

ELEVATION

- 25

Q.

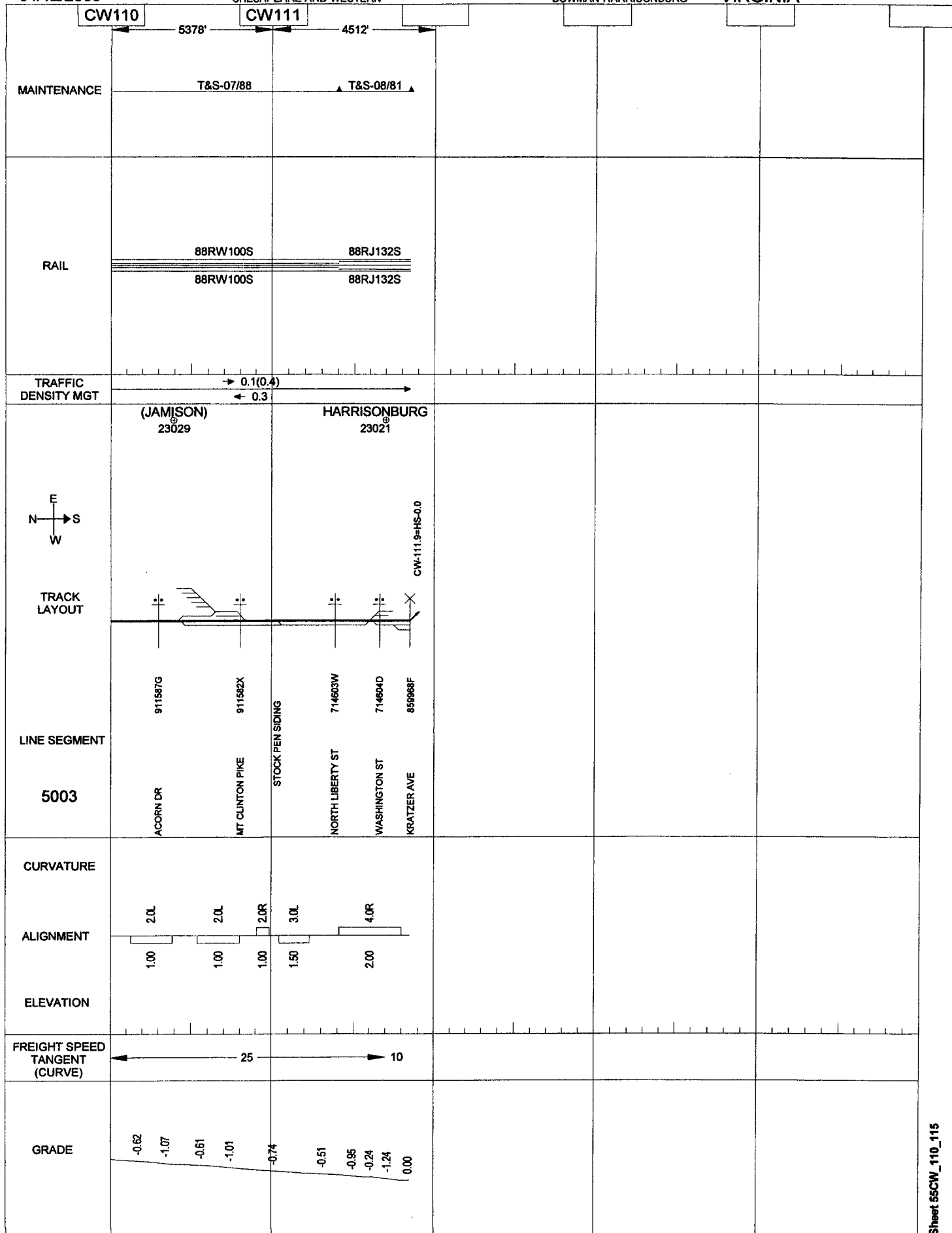
04/12/2006

CHESAPEAKE AND WESTERN

313

BOWMAN-HARRISONBURG

VIRGINIA

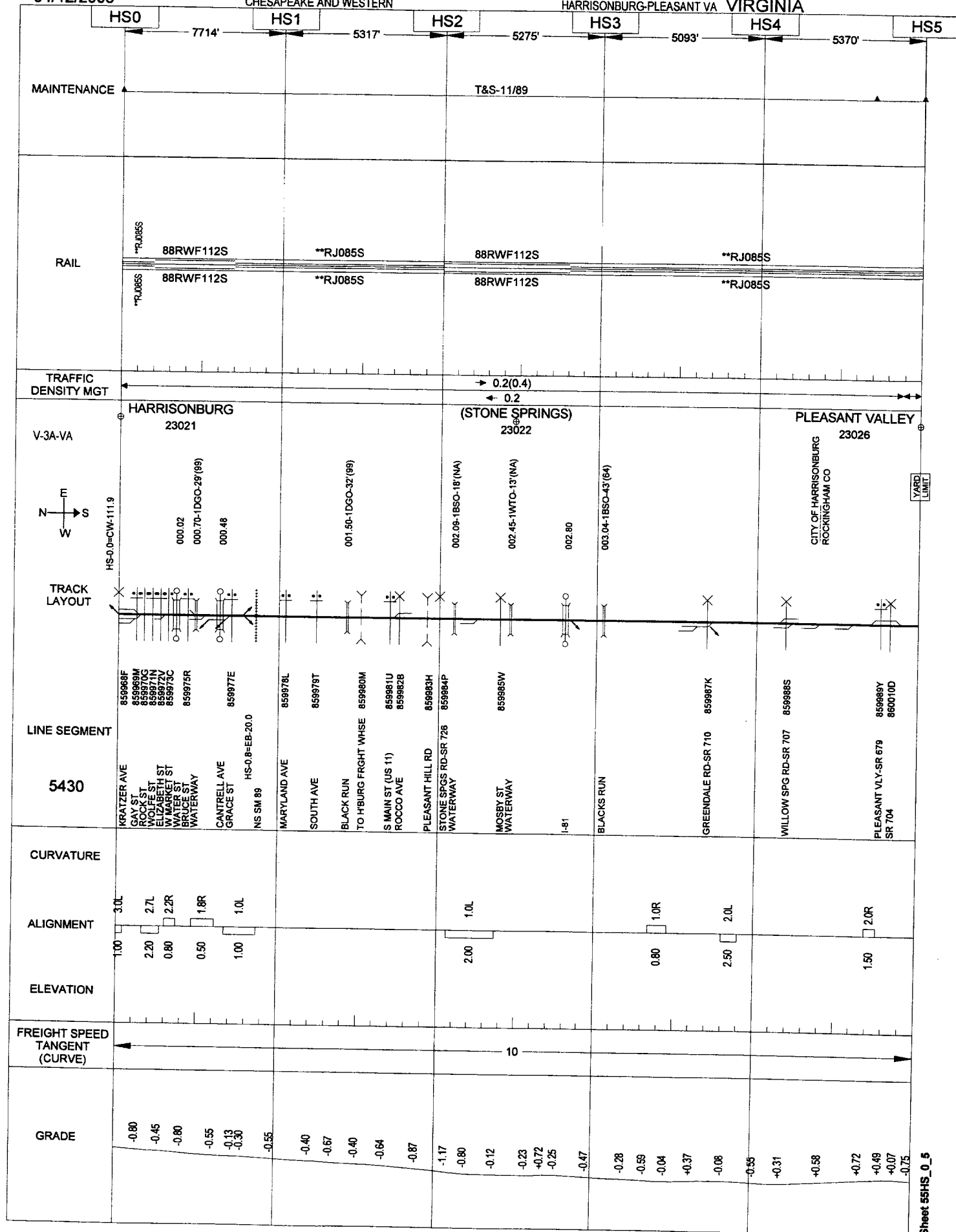


04/12/2006

314

CHESAPEAKE AND WESTERN

HARRISONBURG-PLEASANT VA VIRGINIA



04/12/2006

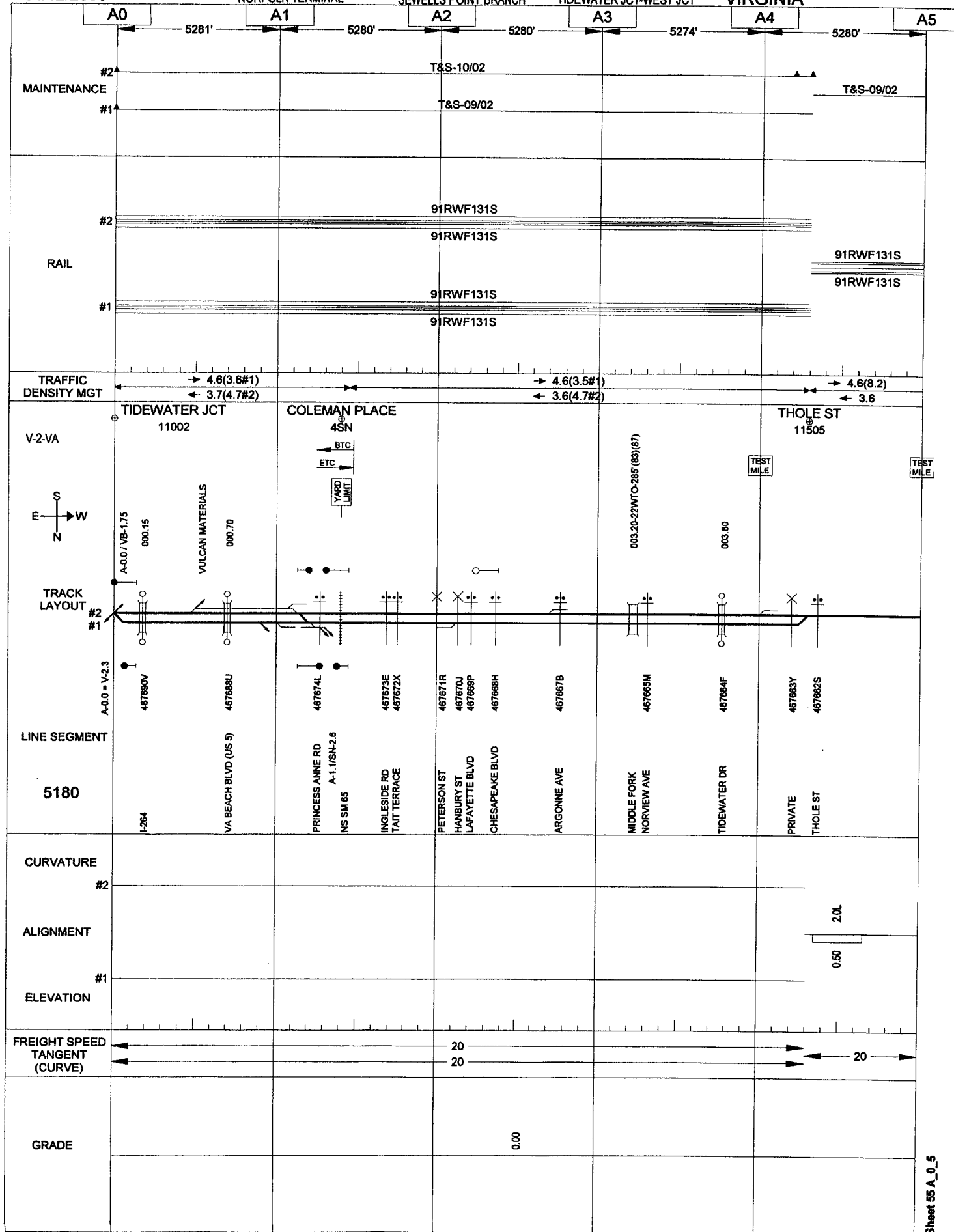
315

NORFOLK TERMINAL

SEWELLS POINT BRANCH

TIDEWATER JCT-WEST JCT

VIRGINIA



04/12/2006

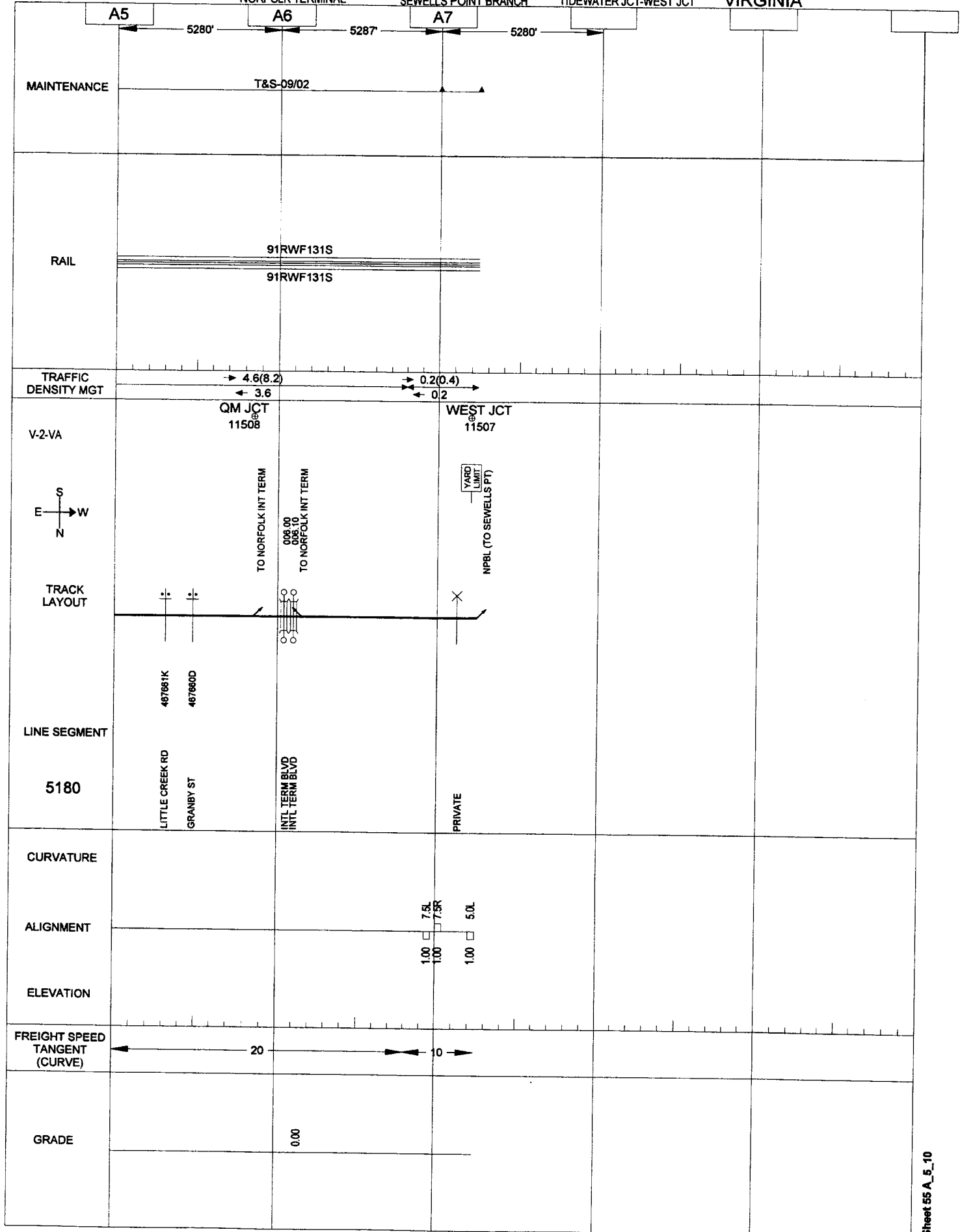
316

NORFOLK TERMINAL

SEWELLS POINT BRANCH

TIDEWATER JCT-WEST JCT

VIRGINIA



04/12/2006

JARRATT

317
SOUTH BRANCH

TIDEWATER JCT-ALGREN

VIRGINIA

V3

V4

V5

5280'

5282'

5277'

MAINTENANCE

T&S-01/99

RAIL

91RWF131S

91RWF131S

TRAFFIC
DENSITY MGT

→ 4.2(9.3)

← 5.1

→ 5.2(11.0)

← 5.8

V-2-VA



TRACK
LAYOUT

E BRANCH BRIDGE
TIDEWATER JCT 11002
11003

CAROLINA JCT
11004

CITY OF NORFOLK
CITY OF CHESAPEAKE
002.80-90MSC-1784'(87)

TEST
MILE

TEST
MILE

BTC
ETC

LINE SEGMENT

5170

V-2.3=A-0.0

WESTMINSTER AVE 467692J

ELIZABETH RIVER EAST
DRAWSPAN

FORD MOTOR CO

INDIAN RIVER RD 467693R

BERKLEY AVE 467694X

CAMPOTELLA RD-SR188
RAMP 467695E

V-4.4/NS-2.1

LIBERTY ST 467696L

ATLANTIC AVE 467697T

HOOVER AVE V-4.9/NS-3.2 467698A

CURVATURE

ALIGNMENT

ELEVATION

2.0R
1.00

2.0R
1.00

FREIGHT SPEED
TANGENT
(CURVE)

20

GRADE

0.00

+0.08

0.00

+0.20

+0.12

+0.20

-0.20

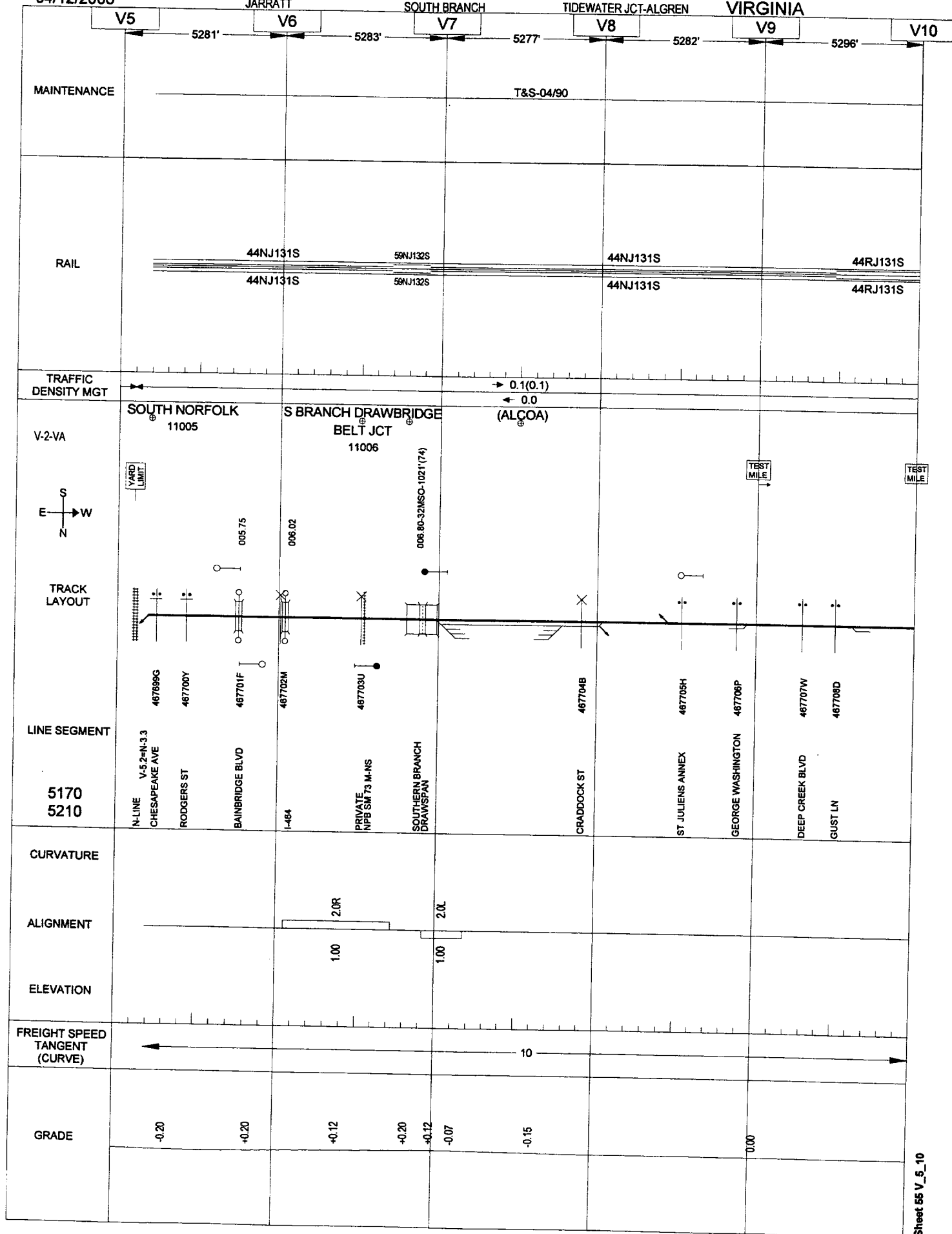
04/12/2006

JARRATT

318
SOUTH BRANCH

TIDEWATER JCT-ALGREN

VIRGINIA



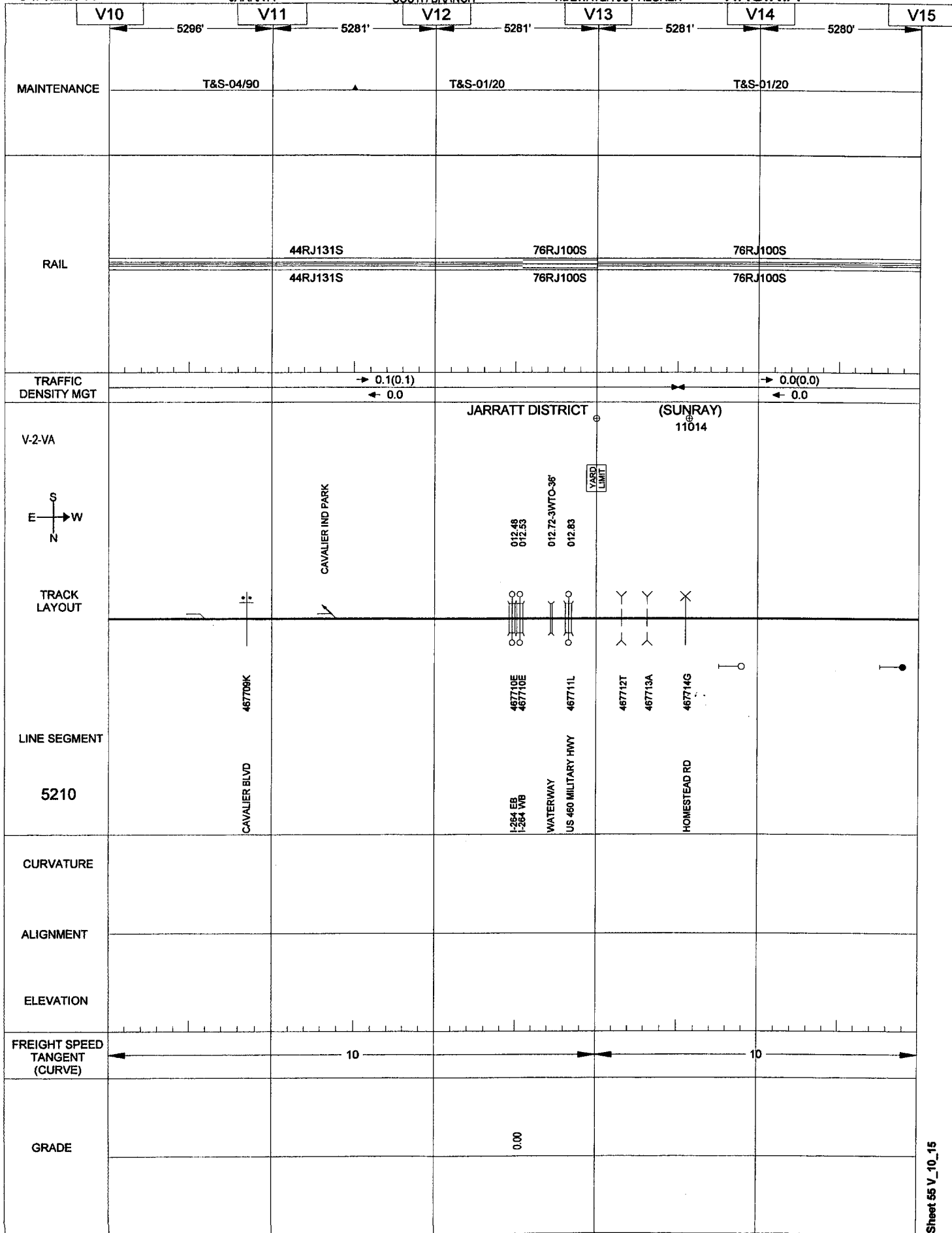
04/12/2006

JARRATT

319
SOUTH BRANCH

TIDEWATER JCT-ALGREN

VIRGINIA



04/12/2006

JARRATT

320
SOUTH BRANCH

TIDEWATER JCT-ALGREN

VIRGINIA

V15

5288'

5280'

5280'

5280'

5280'

MAINTENANCE

T&S-01/20▲

RAIL

76RJ100S

76RJ100S

TRAFFIC
DENSITY MGT→ 0.0(0.0)
← 0.0

V-2-VA

(ALGREN)
11515S
E → W
NTRACK
LAYOUT

46715N

LINE SEGMENT

5210

SNOWDEN ST

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

← 10 →

GRADE

0.00

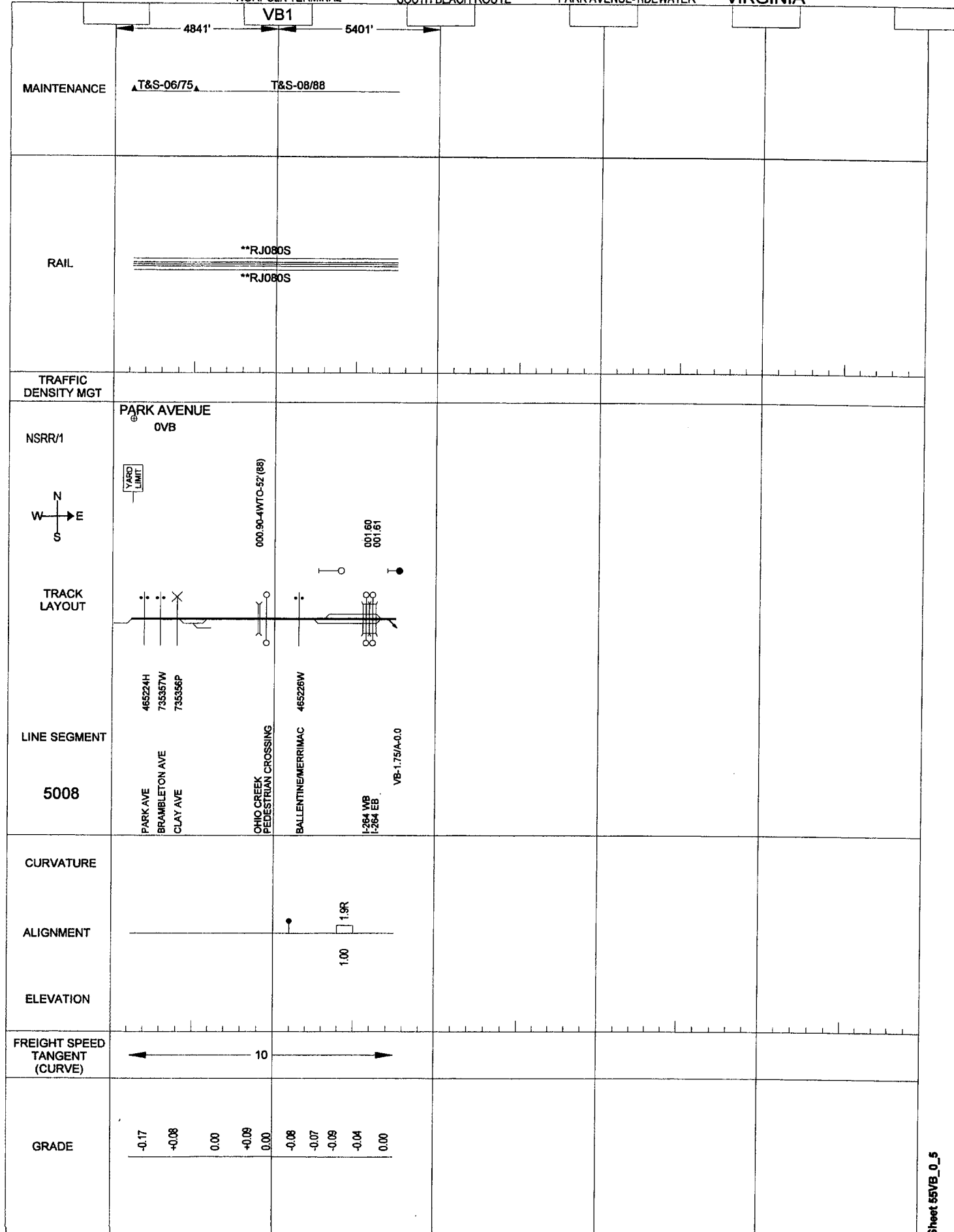
04/12/2006

NORFOLK TERMINAL

321
SOUTH BEACH ROUTE

PARK AVENUE-TIDEWATER

VIRGINIA



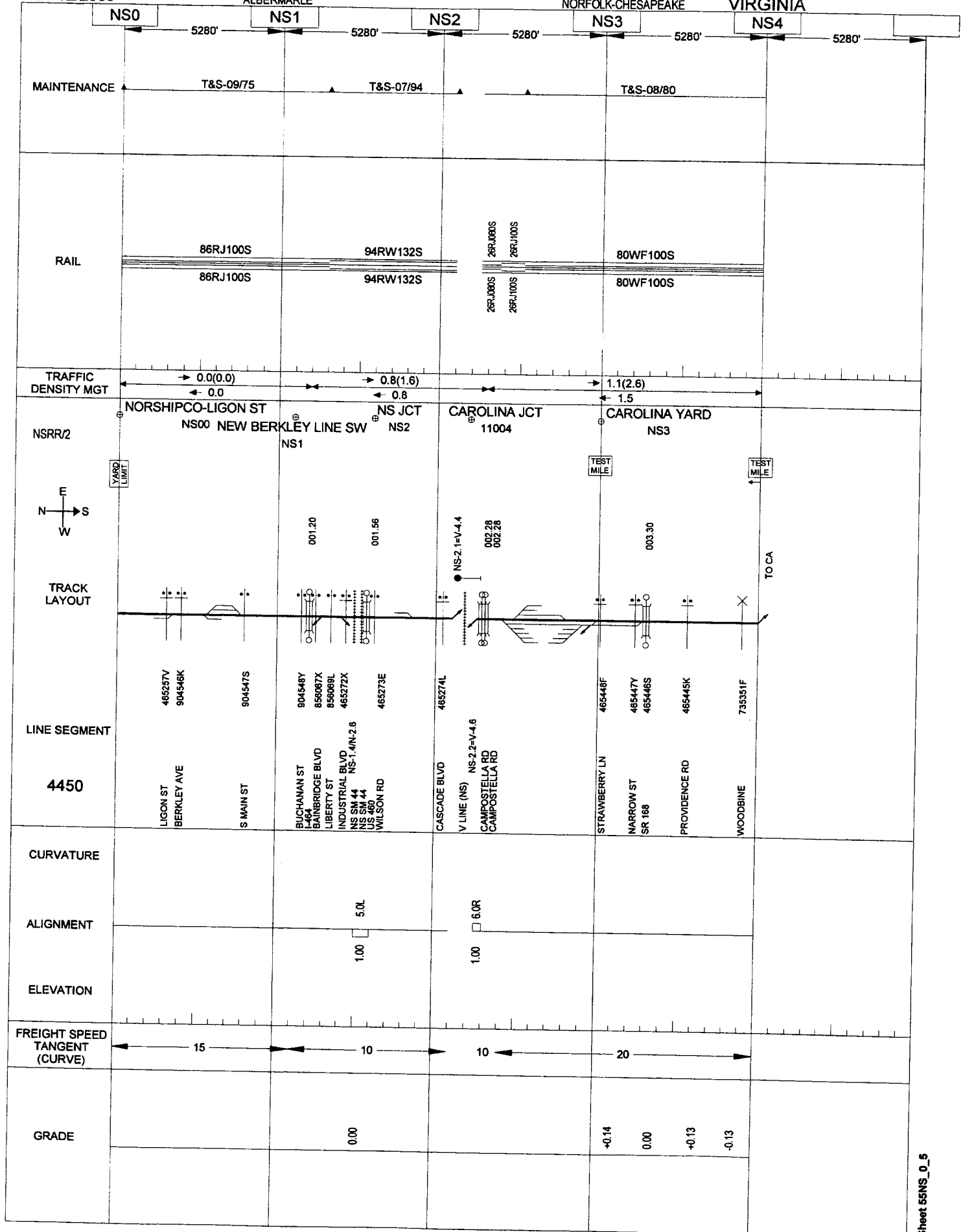
04/12/2006

ALBERMARLE

322

NORFOLK-CHESAPEAKE

VIRGINIA



03/14/2006

DANVILLE

323
HURT CONNECTION
AC197

ALTAVISTA-HURT

PIEDMONT

AC198

5280'

5280'

MAINTENANCE

T&S-09/03

RAIL

82NWF132S

82NWF132S 04NWF132P

82NWF132S

TRAFFIC
DENSITY MGT→ 21.6(28.4)
← 6.8

V-2-VA

TRACK
LAYOUTHURT CONN
91200HURT
197

197.35-3850-300'(00)

197.65

AC-197.0 = V-200.3

713924A

AC-198.83 = 197.3

LINE SEGMENT

0709

SYCAMORE CREEK

OLD US 29

CURVATURE

ALIGNMENT

ELEVATION

4.2R

8.1R

3.6L

3.0R

1.50

3.50

1.00

1.00

FREIGHT SPEED
TANGENT
(CURVE)

30

GRADE

+1.20

+1.40

+0.71

0.00

03/14/2006

324

WASHINGTON

KINNEY-MONTVIEW CONNECTION

MONTVIEW YD-KINNEY YD

PIEDMONT

0KM

1KM

5280'

5280'

MAINTENANCE

RAIL

TRAFFIC
DENSITY MGT

MONTVIEW

KINNEY

S
E
N
W

TRACK
LAYOUT

S WYE TO MONTVIEW YD

W WYE TO ML (PH 16.5)

000.87

N WYE TO ML (174.5)

LINE SEGMENT

0711

E WYE TO KINNEY YD
US 28A

CURVATURE

ALIGNMENT

ELEVATION

FREIGHT SPEED
TANGENT
(CURVE)

20

GRADE

0.00

1. The first step in the process of creating a new product is to identify a market need. This involves conducting market research to understand what consumers want and what gaps exist in the current market.

2. Once a market need is identified, the next step is to develop a concept. This involves brainstorming ideas and creating a rough sketch of the product.

3. The third step is to create a prototype. This is a physical model of the product that allows you to test its functionality and appearance.

4. After creating a prototype, you need to test it. This involves giving the prototype to a group of people and asking them to provide feedback on their experience using it.

5. Based on the feedback, you may need to make adjustments to the product. This could involve changing the design, improving the functionality, or addressing any issues that were identified during testing.

6. Once you have made the necessary adjustments, you can move forward with creating a final version of the product. This involves refining the design and ensuring that all components are working properly.

7. The final step is to launch the product. This involves marketing the product to your target audience and making it available for purchase.

8. After launching the product, you should continue to monitor its performance and gather feedback from customers. This will help you identify any areas for improvement and make necessary adjustments to the product.

9. Finally, you should consider ways to expand the product line. This could involve creating new variations of the product or developing entirely new products that build on the success of the first one.

1. The first step in the process of creating a new product is to identify a market need. This involves conducting market research to understand what consumers want and what problems they are trying to solve. Once a need is identified, the next step is to develop a concept that addresses this need. This is often done through brainstorming sessions and the creation of a prototype. The concept is then refined through further research and development, leading to the creation of a final product. The final product is then tested in the market to see if it meets the needs of the target audience. If it does, it can be launched as a new product. If not, the process may be repeated with a different concept.

1. The first step in the process of creating a new product is to identify a market need. This involves conducting market research to understand what consumers want and what problems they are facing. Once a need is identified, the next step is to develop a concept that addresses this need. This is often done through brainstorming sessions with a team of designers and engineers. The concept is then refined through prototyping and testing, ensuring that it meets the requirements of the market. Finally, the product is launched and its performance is monitored to ensure it continues to meet the needs of the market.

[illegible]

- [illegible]

1. *Chlorophyll a* (Chl a) is the primary photosynthetic pigment in most plants and algae. It is a green pigment that absorbs light energy in the blue and red regions of the visible spectrum. Chl a is essential for the light-dependent reactions of photosynthesis, where it converts light energy into chemical energy in the form of ATP and NADPH.

2. *Chlorophyll b* (Chl b) is an accessory pigment that absorbs light energy in the blue and orange-red regions of the visible spectrum. It transfers the absorbed energy to Chl a, which then uses it for photosynthesis. Chl b is found in higher plants and green algae.

3. *Carotenoids* are a group of pigments that absorb light energy in the blue and green regions of the visible spectrum. They transfer the absorbed energy to Chl a. Carotenoids also play a role in protecting the photosynthetic apparatus from damage by reactive oxygen species. They are found in higher plants, green algae, and some bacteria.

4. *Xanthophylls* are a group of carotenoids that absorb light energy in the blue and green regions of the visible spectrum. They transfer the absorbed energy to Chl a. Xanthophylls also play a role in protecting the photosynthetic apparatus from damage by reactive oxygen species. They are found in higher plants, green algae, and some bacteria.

5. *Phycobilins* are a group of pigments that absorb light energy in the blue and red regions of the visible spectrum. They transfer the absorbed energy to Chl a. Phycobilins are found in cyanobacteria and red algae.

6. *Anthocyanins* are a group of pigments that absorb light energy in the blue and green regions of the visible spectrum. They are responsible for the red, purple, and blue colors of many flowers and fruits. Anthocyanins are found in higher plants.

7. *Flavonoids* are a group of pigments that absorb light energy in the blue and green regions of the visible spectrum. They are responsible for the yellow and orange colors of many flowers and fruits. Flavonoids are found in higher plants.

8. *Chlorophyll c* (Chl c) is an accessory pigment that absorbs light energy in the blue and orange-red regions of the visible spectrum. It transfers the absorbed energy to Chl a. Chl c is found in brown algae and some cyanobacteria.

9. *Chlorophyll d* (Chl d) is an accessory pigment that absorbs light energy in the blue and orange-red regions of the visible spectrum. It transfers the absorbed energy to Chl a. Chl d is found in some cyanobacteria.

10. *Chlorophyll e* (Chl e) is an accessory pigment that absorbs light energy in the blue and orange-red regions of the visible spectrum. It transfers the absorbed energy to Chl a. Chl e is found in some cyanobacteria.

1. *Chlorophyll a* (Chl a) is the primary photosynthetic pigment in most plants and algae. It is a green pigment that absorbs light energy in the blue and red regions of the visible spectrum. Chl a is essential for the light-dependent reactions of photosynthesis, where it converts light energy into chemical energy in the form of ATP and NADPH.

2. *Chlorophyll b* (Chl b) is an accessory pigment that absorbs light energy in the blue and orange-red regions of the visible spectrum. It transfers the absorbed energy to Chl a, which then uses it for photosynthesis. Chl b is found in higher plants and green algae.

3. *Carotenoids* are a group of pigments that absorb light energy in the blue and green regions of the visible spectrum. They transfer the absorbed energy to Chl a. Carotenoids also play a role in protecting the photosynthetic apparatus from damage by reactive oxygen species. They are found in higher plants, green algae, and some bacteria.

4. *Xanthophylls* are a group of carotenoids that absorb light energy in the blue and green regions of the visible spectrum. They transfer the absorbed energy to Chl a. Xanthophylls also play a role in protecting the photosynthetic apparatus from damage by reactive oxygen species. They are found in higher plants, green algae, and some bacteria.

5. *Phycobilins* are a group of pigments that absorb light energy in the blue and green regions of the visible spectrum. They transfer the absorbed energy to Chl a. Phycobilins are found in cyanobacteria and red algae.

6. *Anthocyanins* are a group of pigments that absorb light energy in the blue and green regions of the visible spectrum. They transfer the absorbed energy to Chl a. Anthocyanins are found in higher plants and some algae.

7. *Flavonoids* are a group of pigments that absorb light energy in the blue and green regions of the visible spectrum. They transfer the absorbed energy to Chl a. Flavonoids are found in higher plants and some algae.

8. *Chlorophyll c* (Chl c) is an accessory pigment that absorbs light energy in the blue and orange-red regions of the visible spectrum. It transfers the absorbed energy to Chl a, which then uses it for photosynthesis. Chl c is found in some algae and cyanobacteria.

9. *Chlorophyll d* (Chl d) is an accessory pigment that absorbs light energy in the blue and orange-red regions of the visible spectrum. It transfers the absorbed energy to Chl a, which then uses it for photosynthesis. Chl d is found in some cyanobacteria.

10. *Chlorophyll e* (Chl e) is an accessory pigment that absorbs light energy in the blue and orange-red regions of the visible spectrum. It transfers the absorbed energy to Chl a, which then uses it for photosynthesis. Chl e is found in some algae.

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3. "Literature Review"

4. "Methodology"

5. "Results"

6. "Discussion"

7. "Conclusion"

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162. "List of Nanobiotechnology"

163. "List of Nanoelectronics"

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165. "List of Nanomechanics"

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168. "List of Nanosensors"

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Track Layout Section -

- 1) Left hand margin gives valuation map I.D., track timetable direction (compass rose), and line segment reporting number.
- 2) Station names and locations are displayed at topmost position in the track layout section (immediately below the traffic density section). Those stations shown in bold print only are timetable stations and those station names which are enclosed in parentheses are non-timetable (reporting) stations. The number shown below the station name is the station code.
- 3) Territory markers (traffic control, test miles, yard limits, state lines, county/incorporated lines) are generally displayed in the area just below the station names. However, on occasion, test miles are displayed below the track line in order to alleviate print congestion problems on some pages.
- 4) Bridge technical specifications are displayed in the top center area between the station names and the track layout. This specification is Bridge number (in milepost format), number of spans, structure construction, and length of structure. See Table 2 for explanation of structure construction codes. For open deck bridges, tie replacement dates (year) are provided in parentheses following the bridge technical specifications. Single main track with one redecking date is displayed as (XX). If two dates are available they are displayed as (XX,XX). If three or more dates are available they are displayed as a range (XX-XX) with the first year being the earliest date and the second year being the latest date. This same convention applies to multiple main tracks with the first set of () containing track 1 data, the second set of () containing track 2 data, the third set of () etc.. If page space limitations do not allow the dates to be displayed after the bridge specifications these dates are displayed in any space available adjacent to the specifications. More detailed information for all open deck bridges is provided in Table 3 which follows this Explanation of Graphic Display section.
- 5) Signals, signal structures, AEI scanners, microwave towers, radio base stations, telephones, and the various types of wayside detectors are displayed on the appropriate side of the track and in the area just above or just below the track diagram.
- 6) The track diagram for main line, side tracks, crossovers, leads, and yard track, including types of turnouts between single main and double main territory is displayed in the center of the track layout section. The heavy lines represent main tracks and their crossovers and switches. The lighter weight lines represent side and other tracks. The heavy arrows indicate junctions with branch lines and connections with other railroads (see item 8). Details of this display are limited to switches on main track and adjacent track. Also shown in this area are the graphic symbols for the various grade crossing types, clearance detectors, overpasses, underpasses, bridges, tunnels, and other overhead structures. The common names (street, highway, river) associated with these graphic symbols are displayed at the bottom of the track layout section. Note: For railroad crossings at grade, the display convention, when available, is: Owning Road, Crossing Type, Angle, and Maintaining Road. Crossing types are:

SM	-	Solid Manganese
MI	-	Manganese Insert
RB	-	Rail Bolted
XO	-	Double Crossover
MP	-	Movable Point

- 7) The AAR number (DOT number) for each road crossing is displayed in the band which runs just below the track layout display and just above the common name display at the bottom of the track section. This DOT number consists of seven characters (six numbers and a letter) and lines up with the graphic symbol on the track line and its common name at the bottom.
- 8) Other information which may be displayed in the track layout section includes:
 - Industry names associated with various switches and sidings.
 - Milepost equations show where two (or more) different lines connect with each other. The format for this display is milepost Junction Point (on the line being displayed) = milepost Junction Point (on the line which is connecting at this point).
Note: An = symbol means the lines connect directly and a / symbol means the lines connect indirectly through a yard or side track.

Alignment Section -

- 1) Graphic representation is given for curve direction, length, and superelevation for each main.
Note: Representation is now provided for both tracks 1 and 2. In prior volumes representation was provided for track 1 only. In double track sections track 2 was only a copy of track 1 and did not necessarily represent actual conditions.
- 2) Curvature is specified to tenths of a degree above each main along with left/right indication. Superelevation is specified in inches.
- 3) Location of wheel flange and top of rail lubricators is given along mains.

Freight Speed Section -

Curve and tangent speed limits are taken from the timetables. The curve speed limit (shown within parentheses) is shown under the specific curve to which it applies.

Grade Section -

Grade shown is based on ascending milepost direction.

Ruling grades are based upon determination made by Operations Research and are stated in the uphill direction, e.g. "Bluefield to Roanoke", regardless of whether the uphill direction is ascending milepost or descending milepost.

TABLE 1
RAIL TYPE CODES

N	New jointed rail
R	Relay jointed rail
W	Welded rail
J	Jointed rail
F	Field welded rail
P	Premium Rail (head hardened)
S	Standard Rail (non hardened)

TABLE 2
BRIDGE TYPE CODES

Type of Bridge Structure

BS = Beam Span
BA = Brick Arch
CA = Concrete Arch
CB = Concrete Box
CS = Concrete Span
DG = Deck Plate Girder
DT = Deck Truss
MA = Masonry Arch
MS = Mixed Span
SA = Structural Plate Arch
TG = Through Plate Girder
TT = Through Truss
WT = Timber (Wood) Trestle

Deck Construction

O = Open Deck
B = Ballast Deck
C = Combination

TABLE 3
OPEN DECK BRIDGE INFORMATION

<u>PAGE</u>	<u>MILE POST</u>	<u>BRIDGE NUMBER</u>	<u>TRACK</u>	<u>YEAR REDECKED</u>
315	A-003.20	003.20	01	1983
315	A-003.20	003.20	02	1987
207	C-000.60	000.60	01	1976
207	C-001.30	001.30	01	1987
207	C-001.47	001.47	01	1985
207	C-002.85	002.85	01	1985
207	C-004.63	004.63	01	1987
208	C-005.16	005.16	01	1988
208	C-005.90	005.90	01	1987
208	C-008.48	008.48	01	1985
259	F-036.72	036.70	01	2000
260	F-041.48	041.40	01	1980
260	F-043.10	043.10	01	1982
288	F-110.70	110.80	01	1995
288	F-113.23	113.20	01	2004
290	F-121.13	121.10	01	1998
291	F-128.65	128.60	01	1996
293	F-139.41	139.50	01	1980
293	F-139.47	139.60	01	2004
293	F-139.66	139.80	01	2001
293	F-139.89	139.95	01	1994
294	F-140.80	140.80	01	2004
			01	1992
294	F-141.91	141.90	01	1990
294	F-142.53	142.50	01	1974
294	F-144.56	144.80	01	1999
296	F-152.33	152.40	01	2005
296	F-152.46	152.60	01	1990
297	F-158.98	159.00	01	1993
298	F-160.53	160.50	01	1996
298	F-164.32	164.50	01	1995
299	F-168.62	168.70	01	1985
157	H-005.31	005.28	01	2002
157	H-006.32	006.32	01	1990
157	H-006.62	006.62	01	1990
157	H-007.65	007.66	01	1992
157	H-007.97	007.97	01	2003
157	H-009.21	009.23	01	1992
158	H-011.19	011.19	01	1993
158	H-013.41	013.43	01	2002
159	H-016.01	016.01	01	2002
			01	2001
			01	2000
			01	1980
159	H-016.95	016.98	01	1995
159	H-017.35	017.35	01	1990
160	H-022.27	022.28	01	2003
160	H-022.32	022.31	01	1983
162	H-030.74	030.74	01	1987
162	H-032.05	032.05	01	1987
162	H-032.28	032.28	01	1987
164	H-043.45	043.45	01	1994
166	H-051.39	051.39	01	1986
167	H-057.84	057.86	01	1991
167	H-058.79	058.79	01	1991
168	H-060.47	060.47	01	2003

<u>PAGE</u>	<u>MILE POST</u>	<u>BRIDGE NUMBER</u>	<u>TRACK</u>	<u>YEAR REDECKED</u>
168	H-061.98	061.99	01	1999
168	H-062.59	062.59	01	1991
169	H-066.29	066.32	01	1987
169	H-068.13	068.13	01	1994
169	H-068.53	068.53	01	2002
171	H-075.37	075.37	01	1997
171	H-076.28	076.30	01	1985
171	H-076.98	076.98	01	1986
171	H-077.35	077.35	01	1984
172	H-080.01	080.01	01	1986
173	H-085.20	085.20	01	1991
173	H-086.86	086.86	01	1981
173	H-088.86	088.88	01	2004
174	H-090.07	090.10	01	1992
175	H-096.66	096.66	01	1983
175	H-097.64	097.64	01	2002
175	H-098.63	098.63	01	1996
176	H-102.56	102.56	01	1993
176	H-103.01	103.01	01	1993
176	H-104.20	104.22	01	1995
176	H-104.43	104.44	01	1977
177	H-108.22	108.22	01	1997
178	H-112.48	112.55	01	1996
178	H-114.07	114.07	01	1993
178	H-114.94	114.94	01	1980
179	H-116.63	116.63	01	1995
179	H-118.30	118.32	01	1993
179	H-119.30	119.33	01	1985
180	H-120.13	120.17	01	1980
180	H-123.76	123.76	01	1985
181	H-125.48	125.47	01	1983
181	H-126.73	126.73	01	1982
181	H-128.99	128.99	01	1990
181	H-129.56	129.56	01	1983
182	H-130.82	130.82	01	1979
182	H-132.31	132.32	01	1982
182	H-132.86	132.86	01	1980
182	H-133.41	133.41	01	1985
182	H-134.66	134.68	01	1994
183	H-138.73	138.74	01	1985
183	H-139.94	139.93	01	1983
184	H-141.01	141.01	01	1985
184	H-142.56	142.56	01	2004
184	H-143.53	143.55	01	1987
185	H-147.07	147.07	01	1981
185	H-147.32	147.32	01	1993
186	H-150.19	150.19	01	1980
186	H-154.70	154.70	01	1987
187	H-156.40	156.41	01	1985
187	H-157.61	157.61	01	2005
188	H-164.97	164.98	01	1986
189	H-167.27	167.27	01	1986
189	H-167.27	167.27	02	1980
190	H-170.09	170.09	01	1995
190	H-170.27	170.29	01	1994
190	H-172.25	172.27	01	1983
190	H-173.61	173.59	01	1993
190	H-173.83	173.81	01	1993
191	H-177.72	177.74	01	1992
192	H-184.40	184.41	01	1998
192	H-184.44	184.44	01	2004

<u>PAGE</u>	<u>MILE POST</u>	<u>BRIDGE NUMBER</u>	<u>TRACK</u>	<u>YEAR REDECKED</u>
193	H-185.54	185.55	01	1982
193	H-186.65	186.65	01	1992
			01	1985
194	H-191.29	191.31	01	1981
194	H-191.44	191.46	01	1988
194	H-192.18	192.20	01	1979
194	H-192.54	192.55	01	1997
195	H-198.62	198.62	01	1982
197	H-208.73	208.74	01	1987
198	H-213.13	213.11	01	1982
199	H-217.91	217.91	01	1985
200	H-221.05	221.05	01	1992
200	H-222.23	222.23	01	1987
201	H-225.06	225.06	01	1985
201	H-225.74	225.74	01	1994
201	H-229.88	229.88	01	2001
203	H-236.30	236.30	01	1987
240	L-003.48	003.48	01	1995
241	L-005.35	005.35	01	1998
241	L-008.49	008.48	01	1975
246	L-033.57	033.57	01	1991
			01	1990
247	L-036.10	036.10	01	1996
247	L-039.27	039.25	01	1990
250	L-054.48	054.45	01	1990
252	L-061.19	061.19	01	1989
252	L-064.02	064.02	01	1992
254	L-072.60	072.60	01	1996
255	L-078.81	078.81	01	1974
262	M-000.29	000.30	01	1998
3	N-001.27	001.27	01	1985
3	N-001.27	001.27	02	1999
4	N-005.80	005.80	01	1985
4	N-005.80	005.80	02	1985
4	N-006.66	006.66	01	1984
4	N-006.66	006.66	02	2002
8	N-025.52	025.52	01	1990
8	N-025.52	025.52	02	1998
8	N-025.70	025.70	01	1997
8	N-025.70	025.70	02	1999
8	N-025.74	025.74	01	1997
8	N-025.74	025.74	02	2004
11	N-040.62	040.69	01	1986
11	N-040.62	040.69	02	2005
15	N-064.85	064.80	01	1998
15	N-064.85	064.80	02	1992
22	N-080.50	080.52	01	1980
23	N-085.67	085.63	01	2005
33	N-124.38	124.38	01	1995
33	N-124.38	124.38	02	2002
35	N-133.37	133.41	01	2000
35	N-133.37	133.41	02	1987
48	N-187.55	187.47	01	1990
58	N-222.05	222.05	01	1983
59	N-228.95	228.95	01	1997
60	N-234.04	234.03	01	1993
62	N-241.11	241.11	02	2001
63	N-249.38	249.39	01	1987
63	N-249.38	249.39	02	1992
64	N-250.11	250.11	BOTH	1985
64	N-250.44	250.44	01	1992

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64	N-250.44	250.44	02	1992
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64	N-250.94	250.94	01	2000
64	N-250.94	250.94	02	1994
64	N-251.90	251.94	01	1996
64	N-251.90	251.94	02	1995
64	N-252.42	252.41	01	1995
64	N-252.42	252.41	02	1993
64	N-253.77	253.77	01	1988
64	N-253.77	253.77	02	1993
64	N-254.87	254.86	01	1994
64	N-254.87	254.86	02	1986
65	N-255.53	255.56	01	1982
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65	N-256.12	256.12	01	1978
65	N-256.12	256.12	02	2002
66	N-262.76	262.76	01	1984
66	N-262.76	262.76	02	2004
66	N-264.45	264.43	01	1988
66	N-264.45	264.43	02	1983
67	N-266.70	266.70	01	1980
67	N-266.70	266.70	02	1980
68	N-270.45	270.45	01	1981
68	N-270.45	270.45	02	2002
68	N-271.35	271.35	01	1990
68	N-271.35	271.35	02	1994
68	N-271.68	271.68	01	1996
68	N-271.68	271.68	02	1992
68	N-272.61	272.61	01	2002
68	N-272.61	272.61	02	2002
69	N-275.69	275.71	01	2005
69	N-275.69	275.71	02	1985
69	N-276.91	276.93	01	1983
69	N-276.91	276.93	02	1981
69	N-277.35	277.36	01	1990
69	N-277.35	277.36	02	1980
69	N-277.77	277.77	01	1982
69	N-277.77	277.77	02	1993
71	N-285.09	285.09	01	1989
71	N-285.09	285.09	02	1990
72	N-290.74	290.74	01	1991
72	N-290.74	290.74	02	2001
72	N-291.90	291.89	01	1987
72	N-291.90	291.89	02	1985
73	N-295.93	295.93	01	2005
73	N-295.93	295.93	02	1998
73	N-296.21	296.21	01	1997
73	N-296.21	296.21	02	2000
77	N-305.23	305.27	01	1993
77	N-308.75	308.76	01	1995
78	N-310.66	310.66	01	1993
80	N-321.87	321.87	01	2005
80	N-321.87	321.87	02	1988
82	N-333.80	333.82	01	2004
82	N-333.80	333.82	02	1997
84	N-340.68	340.68	01	1996
84	N-340.68	340.68	02	1996
84	N-340.79	340.79	01	1996
84	N-340.79	340.79	02	1990
84	N-341.60	341.60	02	2001

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84	N-343.04	343.02	01	1985
84	N-343.04	343.02	02	1989
85	N-346.43	346.44	01	1997
85	N-346.43	346.44	02	1997
85	N-346.62	346.62	01	1989
85	N-346.62	346.62	02	1983
85	N-349.11	349.13	01	1997
85	N-349.11	349.13	02	1990
86	N-351.20	351.21	01	1995
86	N-351.20	351.21	02	1989
86	N-352.01	352.00	01	1991
86	N-352.01	352.00	02	1997
86	N-352.14	352.15	01	1992
86	N-352.14	352.15	02	2005
86	N-352.82	352.83	01	1992
86	N-352.82	352.83	02	1997
86	N-354.13	354.13	01	1990
86	N-354.13	354.13	02	2005
87	N-359.76	359.74	01	1993
87	N-359.76	359.74	02	2001
19	P-004.57	004.60	01	1995
20	P-005.55	005.55	01	1999
210	R-003.51	003.51	01	1998
211	R-006.54	006.54	01	1979
212	R-010.25	010.25	01	1993
212	R-014.93	014.93	01	1997
213	R-016.12	016.15	01	1991
213	R-016.75	016.77	01	1979
214	R-022.13	022.15	01	1986
214	R-022.90	022.89	01	1986
215	R-028.35	028.35	01	1990
216	R-030.49	030.49	01	1992
217	R-035.14	035.14	01	1998
217	R-039.57	039.55	01	1981
218	R-040.05	040.02	01	1982
218	R-040.51	040.51	01	1981
218	R-040.78	040.78	01	1987
218	R-041.18	041.20	01	1978
219	R-045.14	045.16	01	1979
219	R-045.30	045.33	01	1995
219	R-049.44	049.48	01	1994
219	R-049.58	049.62	01	1997
220	R-052.78	052.72	01	1991
220	R-053.65	053.48	01	2001
222	R-063.75	063.78	01	1987
223	R-066.02	066.02	01	1985
224	R-070.53	070.55	01	1986
224	R-074.12	074.04	01	1994
			01	1983
227	R-089.65	089.65	01	2003
229	R-096.33	096.36	01	1983
230	R-100.75	100.75	01	1993
230	R-104.26	104.26	01	2003
231	R-108.50	108.50	01	1999
234	R-124.18	124.21	01	1987
234	R-124.18	124.21	02	1983
235	R-125.14	125.16	01	1987
235	R-125.75	125.75	01	1999
235	R-125.91	125.91	01	1987
235	R-126.02	126.01	01	1987
235	R-126.06	126.05	01	1988

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74	S-002.54	002.54	01	1975
317	V-002.63	002.80	01	1987
318	V-006.80	006.80	01	1974
90	V-149.73	149.90	01	1988
91	V-151.49	151.60	01	2004
92	V-156.25	156.40	01	1999
92	V-157.86	158.00	01	2001
94	V-165.80	165.80	01	2000
94	V-168.00	168.00	01	2004
95	V-173.70	173.70	01	1985
96	V-176.30	176.30	01	1997
96	V-179.58	179.60	01	2002
97	V-182.57	182.50	01	1994
98	V-186.12	186.10	01	1997
99	V-190.10	190.10	01	1997
99	V-194.95	195.00	01	1992
100	V-195.96	196.00	01	1992
101	V-200.00	200.00	01	1986
101	V-204.84	204.90	01	1996
102	V-205.15	205.22	01	1984
102	V-207.10	207.10	01	2005
102	V-208.20	208.20	01	2005
102	V-208.40	208.40	01	1983
103	V-213.68	213.70	01	1988
103	V-214.60	214.60	01	1988
104	V-216.55	216.60	01	2000
106	V-227.50	227.50	01	1993
106	V-229.25	229.40	01	1998
107	V-230.64	230.70	01	2003
107	V-232.00	232.00	01	1986
107	V-232.92	233.00	01	2005
107	V-233.80	233.80	01	1987
109	V-240.30	240.30	01	1998
109	V-241.01	241.00	01	1996
114	V-246.43	246.50	01	1984
114	V-248.90	248.90	01	1990
115	V-250.70	250.70	01	2004
116	V-255.25	255.30	01	2004
116	V-257.43	257.50	01	1991
116	V-257.62	257.70	01	1990
116	V-259.00	259.00	01	1985
116	V-259.82	259.80	01	2002
117	V-262.36	262.40	01	1982
117	V-263.45	263.50	01	1988
117	V-263.75	263.80	01	1988
117	V-263.93	264.00	01	1989
117	V-264.63	264.70	01	1984
118	V-265.10	265.10	01	1993
118	V-265.37	265.40	01	1989
118	V-268.26	268.30	01	1998
119	V-270.62	270.60	01	1987
119	V-271.18	271.20	01	1998
120	V-278.33	278.30	01	1989
120	V-278.47	278.50	01	1989
120	V-278.65	278.70	01	2000
120	V-279.90	279.90	01	1989
121	V-280.05	280.00	01	1999
121	V-281.45	281.50	01	2002
122	V-287.60	287.60	01	1988
124	V-295.97	296.00	01	1986
124	V-299.46	299.50	01	1995

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126	V-309.22	309.20	01	1991
128	V-316.35	316.30	01	1987
209	W-001.50	001.50	01	1985
75	CA-001.38	001.38	01	1976
308	CW-086.10	086.10	01	1980
308	CW-086.30	086.20	01	1980
308	CW-089.80	089.80	01	1985
309	CW-094.30	094.30	01	1982
309	CW-094.40	094.40	01	1979
310	CW-095.70	095.70	01	1980
310	CW-097.40	097.40	01	1988
310	CW-097.60	097.60	01	1982
310	CW-099.01	099.00	01	1979
311	CW-100.97	100.90	01	1989
311	CW-101.70	101.70	01	1999
312	CW-105.20	105.20	01	1976
312	CW-106.40	106.40	01	1999
237	DW-044.38	044.40	01	NA
238	DW-046.10	046.10	01	1986
238	DW-046.50	046.50	01	NA
302	EB-000.25	000.25	01	1987
302	EB-002.84	002.84	01	1999
304	EB-013.10	013.10	01	1980
305	EB-015.50	015.50	01	2005
305	EB-019.05	019.05	01	1992
305	EB-019.36	019.60	01	1988
306	EB-020.00	020.00	01	1995
306	EB-021.46	021.47	01	1976
266	FD-020.34	020.30	01	2005
266	FD-022.50	022.50	01	1990
268	FD-032.34	032.30	01	1983
269	FD-035.90	035.90	01	1981
269	FD-036.83	036.80	01	1989
270	FD-041.24	041.20	01	1979
270	FD-041.86	041.70	01	1997
270	FD-044.02	044.00	01	1997
271	FD-046.50	046.50	01	1998
			01	1980
271	FD-047.10	047.10	01	1999
272	FD-051.34	051.30	01	1999
273	FD-056.01	056.00	01	1994
273	FD-056.27	056.20	01	2001
274	FD-061.00	061.00	01	1994
274	FD-063.18	063.10	01	NA
275	FD-065.74	065.60	01	NA
276	FD-072.60	072.60	01	1994
278	FD-084.49	084.50	01	2001
280	FD-092.28	092.30	01	1983
280	FD-093.60	093.60	01	1975
314	HS-000.47	000.70	01	1999
314	HS-001.42	001.50	01	1999
314	HS-002.09	002.09	01	NA
314	HS-002.45	002.45	01	NA
314	HS-003.04	003.04	01	1964
263	HY-001.63	001.63	01	1994
264	HY-005.55	005.62	01	1993
132	NB-302.22	302.22	01	1982
132	NB-302.77	302.77	01	1978
135	NB-316.64	316.64	01	2003
135	NB-316.84	316.85	01	1993
135	NB-316.96	316.95	01	1994

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135	NB-317.03	317.03	01	1984
135	NB-317.21	317.21	01	1984
135	NB-317.42	317.42	01	1987
135	NB-317.58	317.57	01	1975
135	NB-317.66	317.66	01	1994
135	NB-318.09	318.05	01	1993
135	NB-318.23	318.23	01	1995
135	NB-318.44	318.44	01	1994
135	NB-319.47	319.47	01	1995
136	NB-320.50	320.50	01	1974
136	NB-321.19	321.19	01	1984
136	NB-321.38	321.38	01	1999
136	NB-321.49	321.49	01	1994
137	NB-327.46	327.46	01	1986
137	NB-328.02	328.02	01	1995
137	NB-328.25	328.24	01	1976
138	NB-331.24	331.24	01	1998
139	NB-339.62	339.62	01	1985
140	NB-341.41	341.41	01	2000
140	NB-341.49	341.49	01	1999
140	NB-342.30	342.26	01	1999
140	NB-342.84	342.75	01	1995
143	NB-355.21	355.21	01	1986
143	NB-359.01	359.01	01	1993
144	NB-361.58	361.59	01	1997
144	NB-362.34	362.34	01	1978
144	NB-362.58	362.59	01	1986
144	NB-364.66	364.66	01	2003
146	NB-370.82	370.84	01	2003
146	NB-372.50	372.49	01	1974
146	NB-373.82	373.82	01	1987
150	NB-394.40	394.40	01	1982
152	NB-401.37	401.37	01	1993
152	NB-403.63	403.63	01	1983
152	NB-403.90	403.90	01	1991
152	NB-404.86	404.86	01	1987
152	NB-404.98	404.97	01	1973
153	NB-405.08	405.08	01	1999
153	NB-405.56	405.56	01	1991
153	NB-406.10	406.10	01	1993
153	NB-406.14	406.12	01	1993
52	PH-008.39	008.39	01	1992
52	PH-009.42	009.42	01	2002
53	PH-014.42	014.42	01	1988
53	PH-014.75	014.73	01	1990
130	PV-000.09	000.00	01	1989
			01	1985
			01	1981
130	PV-003.00	003.00	01	1992
130	PV-004.37	004.37	01	NA
321	VB-000.90	000.90	01	1988
110	VC-000.34	000.35	01	1989
110	VC-001.21	001.21	01	2001