

Straight Line Diagrams

WVDOH

Spring 2020

TW

Telework Training

What is a Straight Line Diagram?

- Straight Line Diagrams (SLD) are a linear, graphical representation of features and characteristics along roadways on the State Highway System
- There are separate Books for Primary Routes and Individual Counties
- Some Districts have digital versions, which does your organization use?
- A digital master copy is kept in Charleston and updated through the use of PJ-101 forms as road changes are submitted.

Why are Straight Lines Important to you?

- Used for the planning of highway projects and maintenance
- Helps to make more accurate material estimates for daily work
- Can assist with scheduling work
- Helps with maintaining an accurate inventory of all roads and features
- Road Miles and Surface Types have an effect on funding. Roads with incorrect surface types may not be receiving adequate funding for their maintenance.

What's Under the Green Cover?

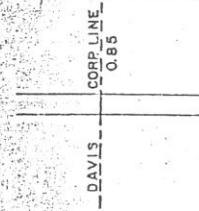
- Legend of Geometry Types
- Legend of Surface Types
- Roadway Diagrams listed by Route

Straight Line Diagram Legend – This shows how typical intersections will appear on the SLD.
Note that Interstate ramps and Wyes are not depicted here.

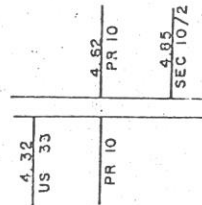
STRAIGHT LINE DIAGRAM LEGEND

I Interstate Route
 US United States Route
 PR West Virginia Route
 SEC Secondary Route

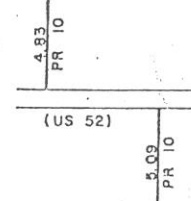
URBAN AND CORPORATION BOUNDARIES



INTERSECTIONS

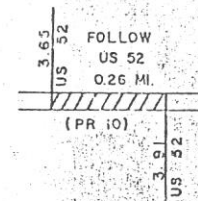


Preferred Routes

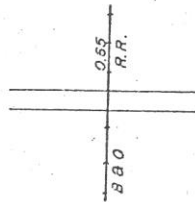


OVERLAPS

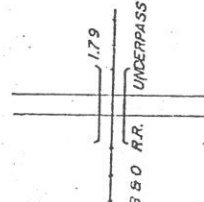
Non Preferred Routes



Grade Crossing

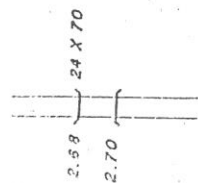


RAILROADS
Over Highway

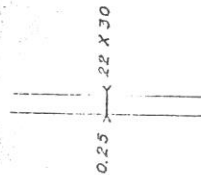


BRIDGES

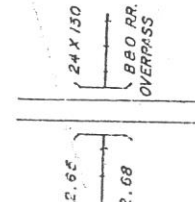
50' or more in length



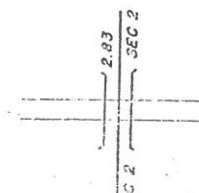
20' to 50' in length



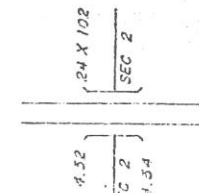
Under Highway



Underpass



Overpass



Legend of Surface Types – This shows the types of roadway surfaces and the base under a given surface. The 4 digit surface type code will be seen throughout the SLD. Note that sometimes other abbreviations are used to denote surface type, such as HLBC for Hot Laid Bituminus Concrete or Asphalt.

000	A PRIMITIVE ROAD
0002	B UNIMPROVED ROAD
0010	C GRADED AND DRAINED ROAD
D SOIL SURFACE ROAD	
1000	Without admixture, on earth road not graded and drained
1010	Without stabilizing admixture, on graded and drained earth road
	With stabilizing admixture, on graded and drained earth road:
	Stabilizing admixture:
1013	Bituminous
1014	Portland cement
1015	Chemical
E GRAVEL OR STONE ROAD	
2000	Without admixture, on earth road not graded and drained
2010	Without stabilizing admixture, on graded and drained earth road
	With stabilizing admixture, on graded and drained earth road:
	Stabilizing admixture:
2012	Sand-clay
2013	Bituminous
2014	Portland cement
2015	Chemical
F BIT. SURFACE TREATED ROAD	
	Bituminous surface-treated road:
	(mat. less than 1" in compacted thickness)
3210	Gravel or stone road without admixture
	Gravel or stone road with admixture
	Sand-clay
3212	Bituminous
3213	Portland cement
3214	
3215	Chemical
G-I MIXED BITUMINOUS ROAD	
	Mixed bituminous road

H-1 BITUMINOUS PENET. ROAD		
Bitum. pen. surf. treat. layers, 1" or more	Pen. macad. wear surf. 2" or more 1 operation	Bituminous penetration road (mat. 1" or more in compacted thickness)
Combined thickness of surface and base		
Under 7"	Under 7"	
5221	5241	
5222	5242	
5223	5243	Gravel or stone base without admixture
5224	5244	Gravel or stone base with admixture
5225	5245	Sand-clay
		Bituminous
		Portland cement
		Chemical
H-2 BITUMINOUS PENET. ROAD		
Bitum. pen. surf. treat. layers, 1" or more	Pen. macad. wear surf. 2" or more 1 operation	Bituminous penetration road: (mat. 1" or more in compacted thickness)
7" or more	7" or more	
5231	5251	Gravel or stone base without admixture
5232	5252	Gravel or stone base with admixture
5233	5253	Sand-clay
5234	5254	Bituminous
5235	5255	Portland cement
		Chemical
5706	5716	Or equivalent
5707	5717	Portland cement concrete base (old)
5708	5718	Portland cement concrete base (new)
5805	5815	Non-reinforced
5806	5816	Reinforced
5807	5817	Brick base; old brick road on non-rigid subbase
		Block base; old block road on non-rigid subbase
		Brick base; old brick road on Port. cem. conc. subbase
I ASPHALTIC CONCRETE ROAD		
6201	Bituminous concrete, sheet asphalt, and rock asphalt road (mat. 1" or more in compacted thickness)	
6202	Gravel or stone base without admixture	
6706	Gravel or stone base with admixture	
	Portland cement concrete base (old)	
	Portland cement concrete base (new)	

Roadway Information found on SLD

- District
- County
- Route #
- Date of Revision
- Total length of Road
- Local Name
- Direction of Survey
- Length of Segment
- Surface Type
- Surface Width
- Location of Features
- Updates to Segments

Typical Straight line Diagram – These will be listed by Route Number for each County. They contain many types of information. The upper block shows a drawing of all features and lists the lengths, widths and surface type of each segment. The two lower blocks are intended to be used when updates to a section of roadway happen.

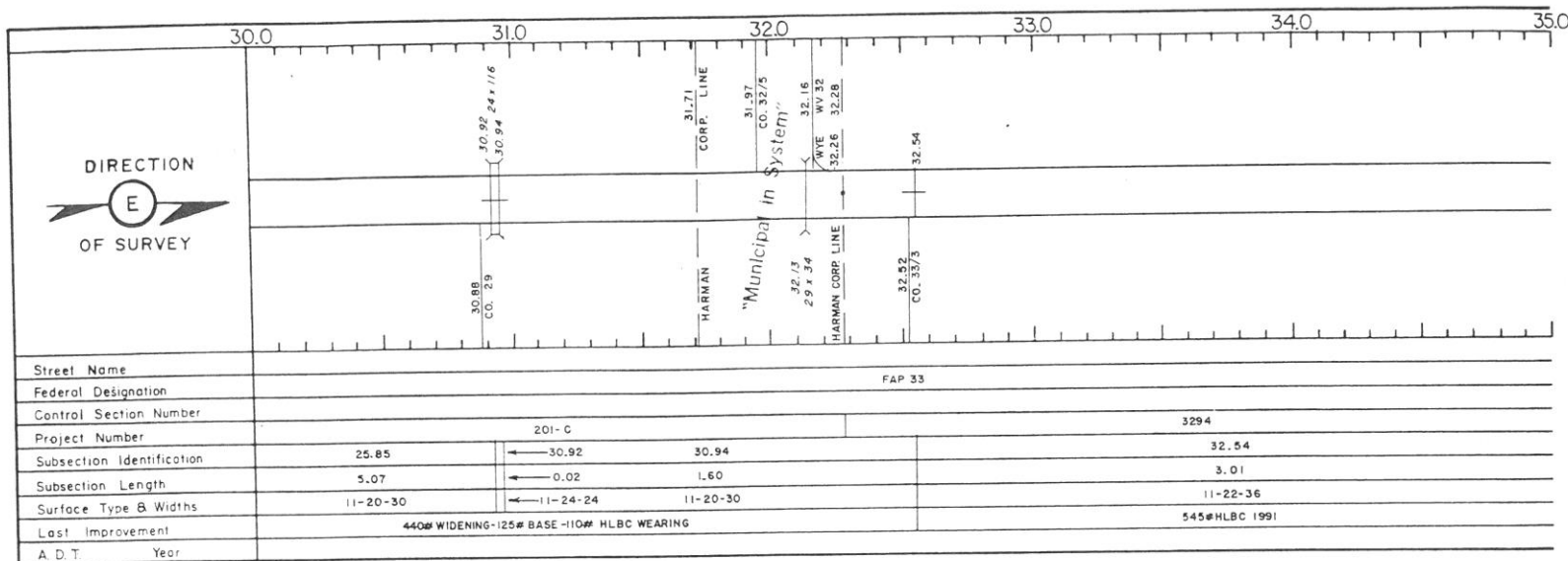
FORM PJ-116

DISTRICT 8
DATE 1996
TOTAL MILES 3605

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
PLANNING DIVISION
STATE ROUTE STRAIGHT LINE DIAGRAM

COUNTY RANDOLPH
ROUTE NO US 33
SHEET NO. 7 OF 8

ORIGINAL



19 <u>99</u>	55# Scratch 110# Wearing		Base Widening, 110# Scratch, 110# Wearing
Subsection Identification	25.72		32.26
Subsection Length	5.18		4.49
Surface Type & Widths	23'		22'
19 <u> </u>			
Subsection Identification			
Subsection Length			
Surface Type & Widths			

Let's use these things!

Q: What happens at MP 98 and MP 99 on I-79?

A:

FORM PJ-118

"DATE REVISED MILEPOINTS

WEST VIRGINIA DEPARTMENT OF HIGHWAYS

ADVANCED PLANNING DIVISION

DATE 1976

APPROVED BY DIRECTOR *MB*

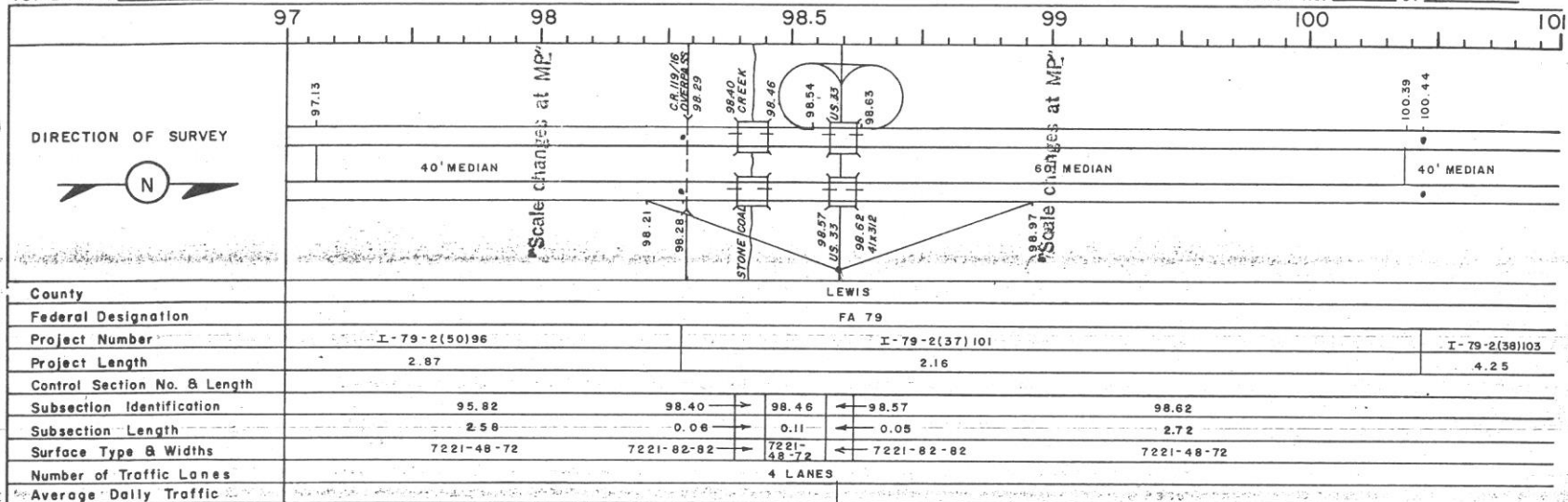
INTERSTATE STRAIGHT LINE DIAGRAM

ROUTE NO. I-79

SHEET NO. 25 OF 44

TOTAL MILES

JAN 4 1977



PERPETUATION DATA

19	
Subsection Identification	
Subsection Length	
Surface Type & Width	
19	
Subsection Identification	
Subsection Length	
Surface Type & Width	

Q: At what MP does Elkins Corporate line begin on US 33?

A:

FORM PJ-116

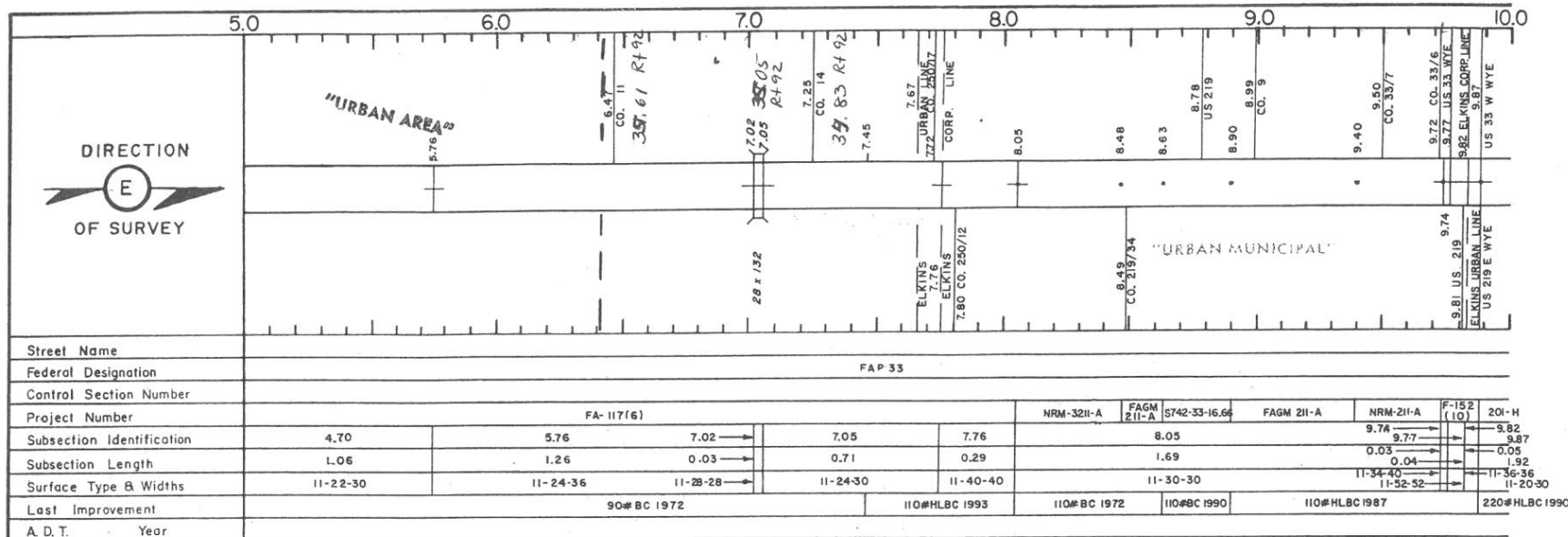
DISTRICT 8
DATE 1996
TOTAL MILES 36.05

ORIGINAL

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
PLANNING DIVISION
STATE ROUTE STRAIGHT LINE DIAGRAM

COUNTY RANDOLPH
ROUTE NO. US 33
SHEET NO. 2 OF 8

PDU: 8-26-96



19	
Subsection Identification	
Subsection Length	
Surface Type & Widths	
19	
Subsection Identification	
Subsection Length	
Surface Type & Widths	

Q: What is the total length of US 33 in Randolph County?

A:

FORM PJ-116

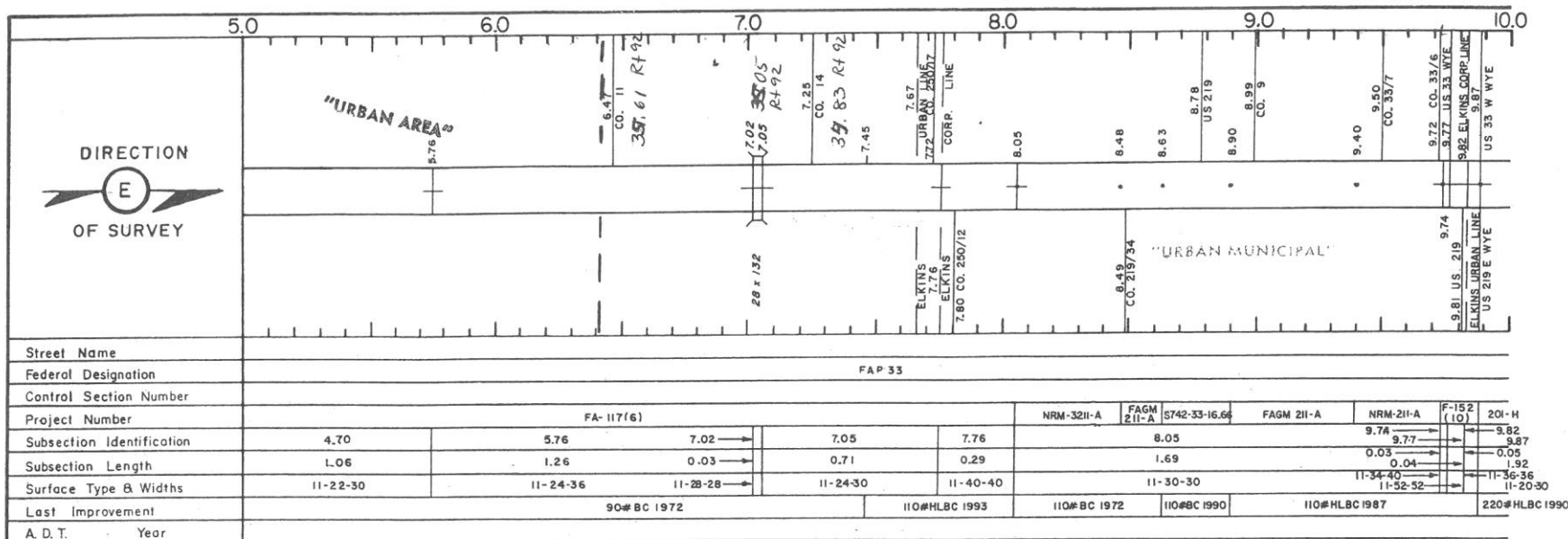
DISTRICT 8
DATE 1996
TOTAL MILES 36.05

ORIGINAL

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
PLANNING DIVISION
STATE ROUTE STRAIGHT LINE DIAGRAM

COUNTY RANDOLPH
ROUTE NO. US 33
SHEET NO. 2 OF 8

PDU. 8-26-96



19	
Subsection Identification	
Subsection Length	
Surface Type & Widths	
19	
Subsection Identification	
Subsection Length	
Surface Type & Widths	

Q: What happens at MP 11.95 on US 33?

A:

FORM PJ-116

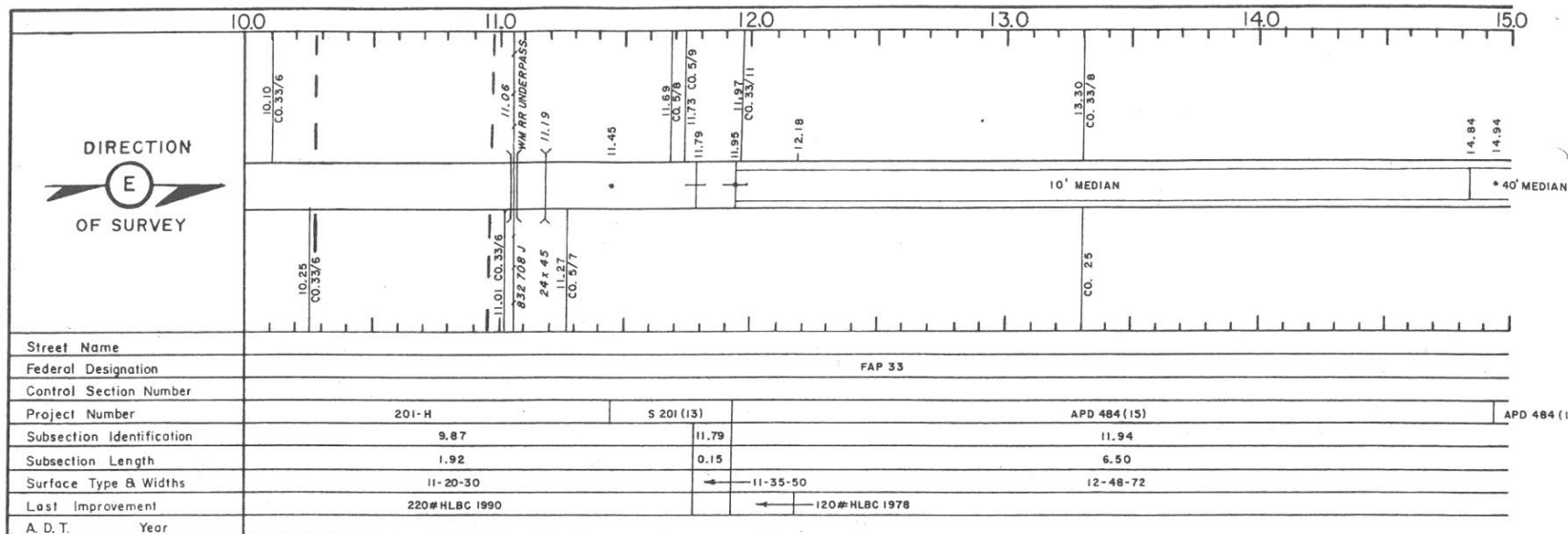
DISTRICT 8
DATE 1996
TOTAL MILES 36.05

ELKINS URBAN AREA
10.99-11.06

ORIGINAL

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
PLANNING DIVISION
STATE ROUTE STRAIGHT LINE DIAGRAM

COUNTY RANDOLPH
ROUTE NO. US 33
SHEET NO. 3 OF 8



19	
Subsection Identification	
Subsection Length	
Surface Type & Widths	
19	
Subsection Identification	
Subsection Length	
Surface Type & Widths	

Q: When was MP 9.87 to MP 11.79 on US 33 last resurfaced?

A:

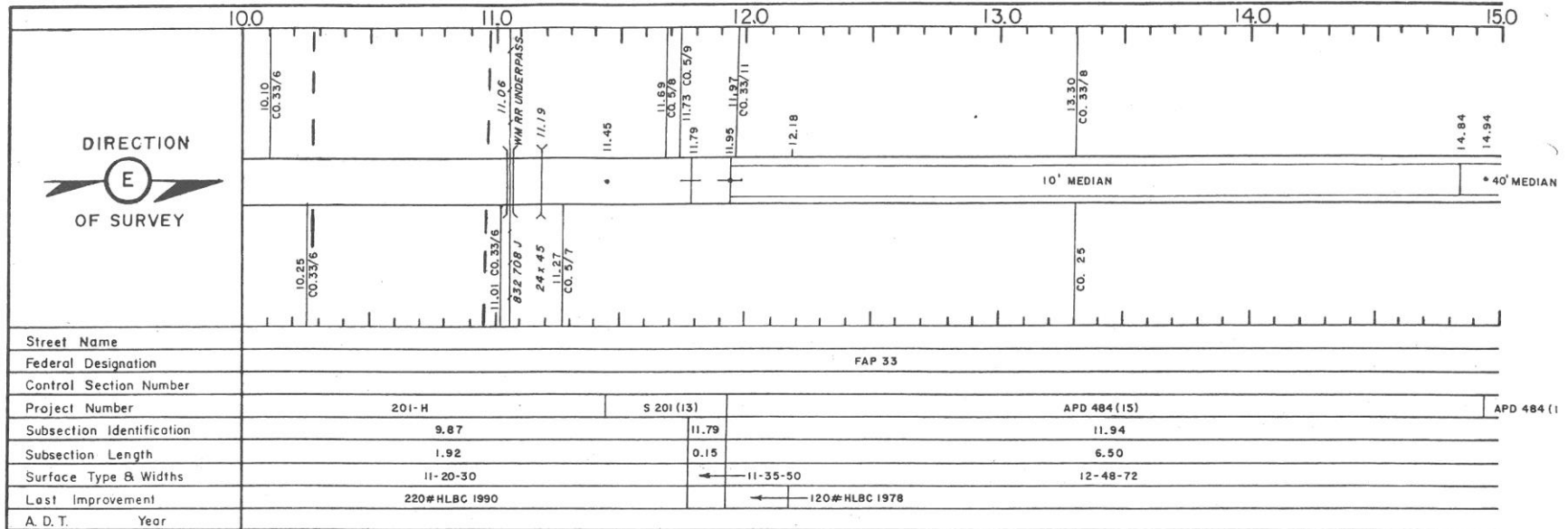
FORM PJ-116

DISTRICT 8
DATE 1996
TOTAL MILES 36.05

ELKINS URBAN AREA
10.99-11.06
ORIGINAL

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
PLANNING DIVISION
STATE ROUTE STRAIGHT LINE DIAGRAM

COUNTY RANDOLPH
ROUTE NO. US 33
SHEET NO. 3 OF 8



19	
Subsection Identification	
Subsection Length	
Surface Type & Widths	
19	
Subsection Identification	
Subsection Length	
Surface Type & Widths	

Q: What direction do the MP on Pocahontas CR 3 run?

A:

FORM PJ-100

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
ADVANCED PLANNING DIVISION

ORIGINAL


DISTRICT 5
COUNTY POCAHONTAS
ROUTE NO. CR 3
SHEET NO. 1 OF 3

TOTAL MILES 13.43

LOCAL NAME OLD PIKE RD.

DATE 1973

M. O. DATE _____

VISIBLE FIXED POINTS DIRECTION OF SURVEY 	0	1	2	3	4	5
	CR 260/2 0.00			CR 260/2 2.88 SR 26		3.65
Federal Designation						
Project Number	7535					
Project Length						
Control Section No. & Length						
Subsection Identification	0.00	2.88		3.65		
Subsection Length	2.88	0.77		9.78		
Surface Type & Widths	6201-10-16	2010-12-16		0002-00-14		
Year Built	70# ST 1972					

PERPETUATION DATA

19 <u>83</u>	<u>CR 260/2</u>		
Subsection Identification		3.49	3.65
Subsection Length		0.16	9.78
Surface Type & Widths		1000-12-16	1000-14-16
19 <u>87</u>	<u>40# 15-Y.</u> <u>surf. Treat.</u>		
Subsection Identification	0.00		
Subsection Length	1.50		
Surface Type & Widths	6201-10-16		
19 <u>95</u>	<u>110# 15-Y. wear Crse</u>		
Subsection Identification	0.00		
Subsection Length	2.82		
Surface Type & Widths	6201-10-16		

Q: How many surface types does Pocahontas CR 3 have currently? Use all 3 Sheets for Pocahontas CR 3.

A:

FORM PJ-100

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
ADVANCED PLANNING DIVISION

ORIGINAL


DISTRICT 5
COUNTY POCAHONTAS
ROUTE NO. CR 3
SHEET NO. 2 OF 3

TOTAL MILES _____

LOCAL NAME _____

DATE _____

M. O. DATE _____

	5	6	7	8	9	10
VISIBLE FIXED POINTS DIRECTION OF SURVEY						
						
Federal Designation						
Project Number	7535					
Project Length						
Control Section No. & Length						
Subsection Identification	3.65					
Subsection Length	9.78					
Surface Type & Widths	0002-00-14					
Year Built						

PERPETUATION DATA

1922	<i>Reinventory</i>
Subsection Identification	3.65
Subsection Length	9.78
Surface Type & Widths	1000-14-14
19____	
Subsection Identification	
Subsection Length	
Surface Type & Widths	
19____	
Subsection Identification	
Subsection Length	
Surface Type & Widths	

Q: How far is it from the end of the paved surface to the Virginia State Line on Pocahontas CR 3?
Use all 3 sheets for Pocahontas CR 3

FORM PJ-100

WEST VIRGINIA DEPARTMENT OF HIGHWAYS
ADVANCED PLANNING DIVISION

ORIGINAL


DISTRICT 5
COUNTY POCAHONTAS
ROUTE NO. CR 3
SHEET NO. 3 OF 3

TOTAL MILES _____

LOCAL NAME _____

DATE _____

M. O. DATE _____

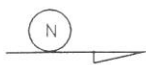
	10	11	12	13	14
VISIBLE FIXED POINTS DIRECTION OF SURVEY					
	10.63 CR 4	10.84 CR 6	13.43 VA. STATE LINE		
Federal Designation					
Project Number	7535				
Project Length					
Control Section No. & Length					
Subsection Identification	3.65				
Subsection Length	9.78				
Surface Type & Widths	0002-00-14				
Year Built					

PERPETUATION DATA

19 <u>83</u>	<i>Resurfaced</i>	
Subsection Identification	3.65	
Subsection Length	9.78	
Surface Type & Widths	1000 - 14 - 14	
19 _____		
Subsection Identification		
Subsection Length		
Surface Type & Widths		
19 _____		
Subsection Identification		
Subsection Length		
Surface Type & Widths		


Q: What are the dimensions of the bridge at MP 13.63 on WV 32?

A:

FORM PJ-100		WVDOH		COUNTY		TUCKER	
TOTAL MILES		16.92		ROUTE		WV 32	
NAME		DATE		M.O. DATE		SHEET	
		2001				3 OF 4	
VISIBLE FIXED POINTS		<div style="display: flex; justify-content: space-between;"> 10 11 12 13 13.50 14 </div>					
DIRECTION OF SURVEY		<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>10.06 CO 35</p> <p>10.62 CO 32/14</p> <p>10.79 CO 32/15</p> <p>11.39 CO 32/14</p> </div> <div style="text-align: center;"> <p>10.61 USFS 13</p> <p>13.49 DAVIS CORP LINE</p> <p>13.62 USFS 13</p> <p>13.63 20 X 244</p> <p>13.68 DELTA 1</p> <p>14.36 CO 29</p> <p>14.46 DAVIS CORP LINE</p> </div> </div>					
FEDERAL DESIGNATION		FAS 32					
PROJECT NUMBER							
PROJECT LENGTH							
CONTROL SECTION							
SUBSECTION IDENTIFICATION							
SUBSECTION LENGTH							
SURFACE TYPE & WIDTHS							
YEAR BUILT							
		PERPETUATION DATA					
DATE		1999					
SUBSECTION IDENTIFICATION		82 # Scratch, 110 # Wearing					
SUBSECTION LENGTH		10.41					
SURFACE TYPE & WIDTHS		5.60					
DATE		23'					
SUBSECTION IDENTIFICATION							
SUBSECTION LENGTH							
SURFACE TYPE & WIDTHS							
DATE							
SUBSECTION IDENTIFICATION							
SUBSECTION LENGTH							
SURFACE TYPE & WIDTHS							

Q: What happens at MP 16.50 and MP 16.84 on WV 32?

A:

FORM PJ-100		WVDOH		COUNTY <u>TUCKER</u>	
TOTAL MILES <u>16.92</u>		DATE <u>2001</u> M.O. DATE _____		ROUTE <u>WV 32</u>	
NAME _____		SHEET <u>4 OF 4</u>			
15		16		17	
VISIBLE FIXED POINTS		14.99 WM RR		15.41	
DIRECTION OF SURVEY		THOMAS CO 32/1		15.99 THOMAS CORP LINE	
		14.79 WV 93		16.45 CO 27	
FEDERAL DESIGNATION		FAS 32		16.50 WV 32	
PROJECT NUMBER		16.84 WV 32		16.92 US 219	
PROJECT LENGTH		29 X 29			
CONTROL SECTION					
SUBSECTION IDENTIFICATION					
SUBSECTION LENGTH					
SURFACE TYPE & WIDTHS					
YEAR BUILT					
PERPETUATION DATA					
DATE <u>1999</u>		82 # Scratch			
SUBSECTION IDENTIFICATION		110 # Wearing			
SUBSECTION LENGTH		10.41			
SURFACE TYPE & WIDTHS		5.60			
DATE <u>2000</u>		23'			
SUBSECTION IDENTIFICATION				55 # Scratch	
SUBSECTION LENGTH				110 # Wearing	
SURFACE TYPE & WIDTHS				15.53 - 15.99	
DATE _____				2.0 Miles	
SUBSECTION IDENTIFICATION					
SUBSECTION LENGTH					
SURFACE TYPE & WIDTHS					

Which Road am I on?



- When two or more routes overlap on the same physical section of roadway a system of route dominance dictates which Route you are on.
- Route Dominance – Highest to lowest
 - Interstate
 - US Route
 - WV Route
 - County Route
 - HARP Route
 - Forest/Park Route
- Example – US 33 is dominant over WV 92
 - Example – WV 92 is dominant over CR 151

Where two routes of the same level above overlap the following rules apply to determine dominance

- Lower Numbered Routes Are Dominant
 - Example – US 33 is dominant over US 48 and US 250
 - Whole Numbered Routes are Dominant over Sub Routes (32/2)
- Important for proper reporting on DOT - 12

Moving Forward

- Use the SLD to help plan your work
- Use the SLD to help make your DOT-12's more accurate
- Look for inconsistencies when you are in the field
- Report issues to your supervisor so SLD and RFIL can be updated

Signature: _____

Date: _____

Supervisor Signature: _____

Date: _____