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**GENERAL NOTES:**

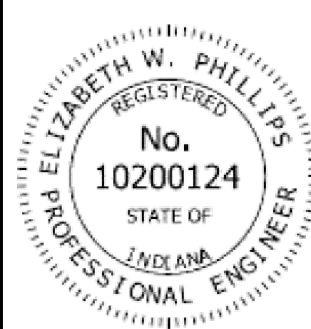


1. Embankment slopes on either side of an approach or drive within the mainline clear zone for new construction/reconstruction projects or the obstruction free zone on 3R projects should conform to the following table:

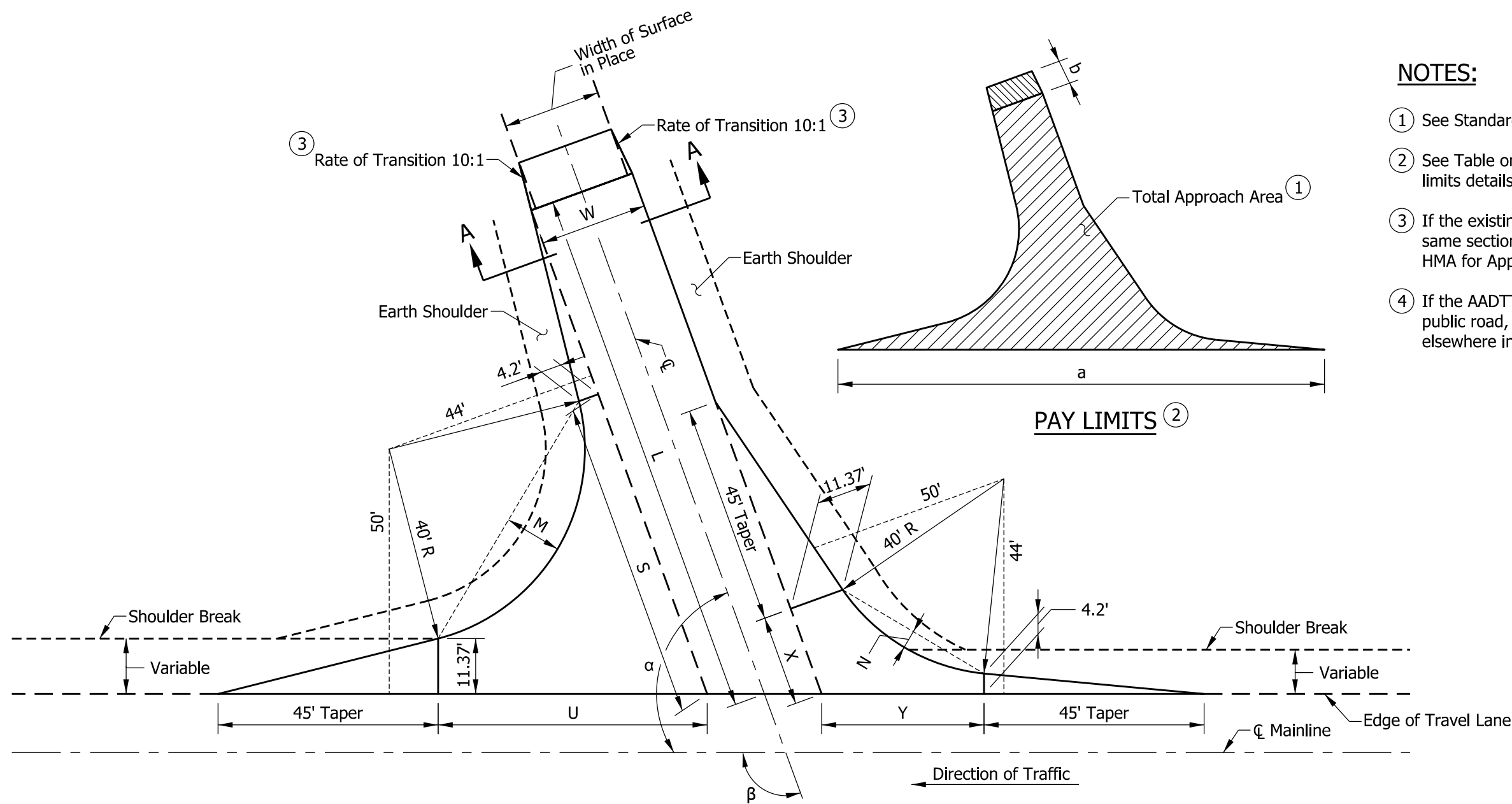
DESIGN SPEED		High, $\geq$ 50 mph		Low, $\leq$ 45 mph
Design Year AADT		$\geq$ 6000	$<$ 6000	All
Multi-Lane Divided, All Functional Classes.	Incoming Slope	10:1	10:1	10:1
	Outgoing Slope	4:1	4:1	4:1
Multi-Lane Undivided, All Functional Classes.	Incoming Slope	10:1	6:1	6:1
	Outgoing Slope	4:1	4:1	4:1
2-Lane Arterial or Collector		6:1	6:1	4:1
2-Lane Local Road		4:1	4:1	4:1

Outside the clear zone or the obstruction free zone, the embankment slopes should desirably be 4:1 but not steeper than 3:1.

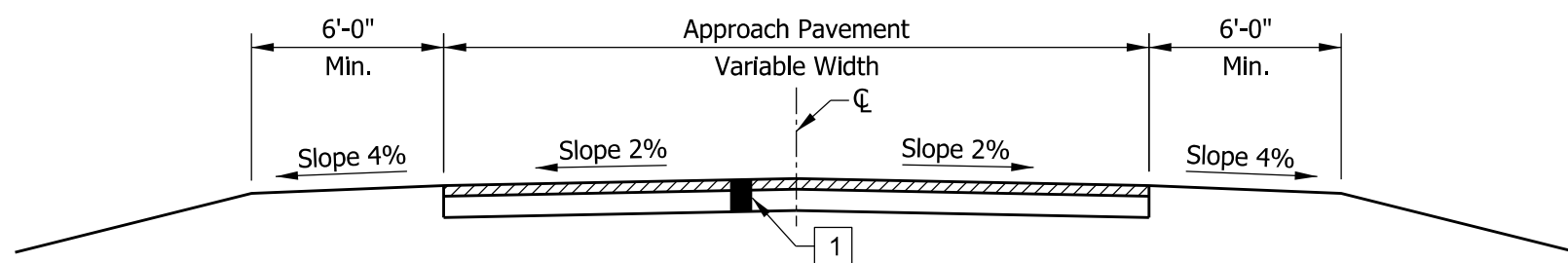
2. Cross culverts under the public road approach which cannot be located outside the mainline clear zone will require appropriate end treatments at each end as shown on the plans.
3. If the approach is to be constructed of PCCP, the details shall be as shown elsewhere in the plan for thickness, joint type, and location.

TABLE A								
Design Speed (mph)	MINIMUM LENGTH OF RIGHT TURN LANE (excluding taper) , ft							
	Downgrade Slope in %				Upgrade Slope in %			
	6 to 5	4.99 to 4	3.99 to 3	2.99 to 0	0 to 2.99	3 to 3.99	4 to 4.99	5 to 6
40	435	410	385	320	320	290	275	260
45	520	495	465	385	385	350	330	310
50	590	560	525	435	435	395	370	350
55	650	615	580	480	480	435	410	385
60	720	680	640	530	530	480	455	425

INDIANA DEPARTMENT OF TRANSPORTATION	
PUBLIC ROAD APPROACH INDEX AND GENERAL NOTES	
SEPTEMBER 2019	
STANDARD DRAWING NO.	E 610-PRAP-01
	 DESIGN STANDARDS ENGINEER      5/2/2019 DATE
	 CHIEF ENGINEER      6/5/2019 DATE



**PUBLIC ROAD APPROACH TYPE A**






**SECTION A-A MINIMUM PAVEMENT SECTION** ④

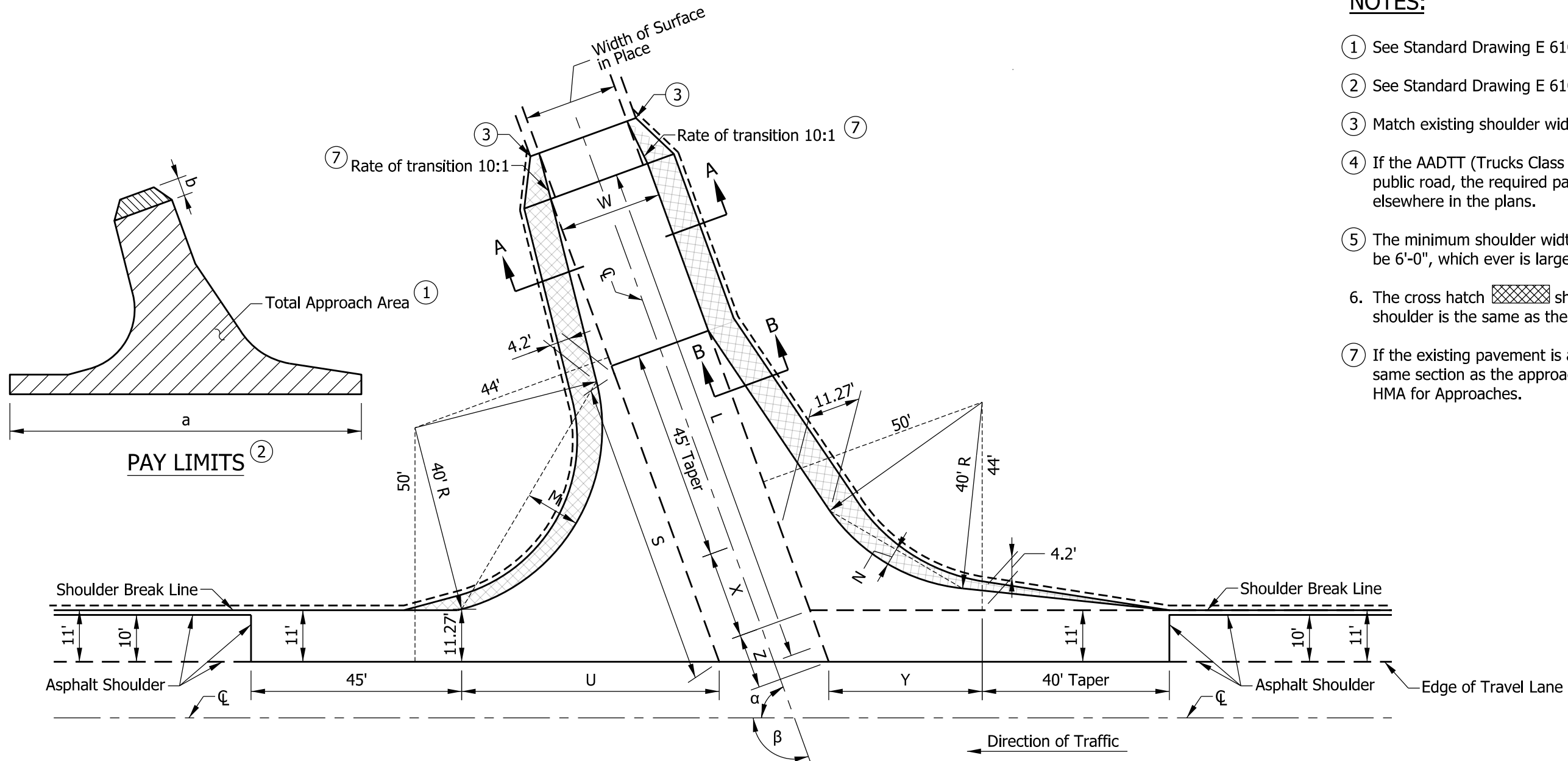
**NOTES:**

- ① See Standard Drawing E 610-PRAP-04 for Table of Values.
- ② See Table on Standard Drawing E 610-PRAP-09 for additional pay limits details.
- ③ If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches.
- ④ If the AADTT (Trucks Class IV and above) is greater than 50 on the public road, the required pavement section shall be as shown elsewhere in the plans.

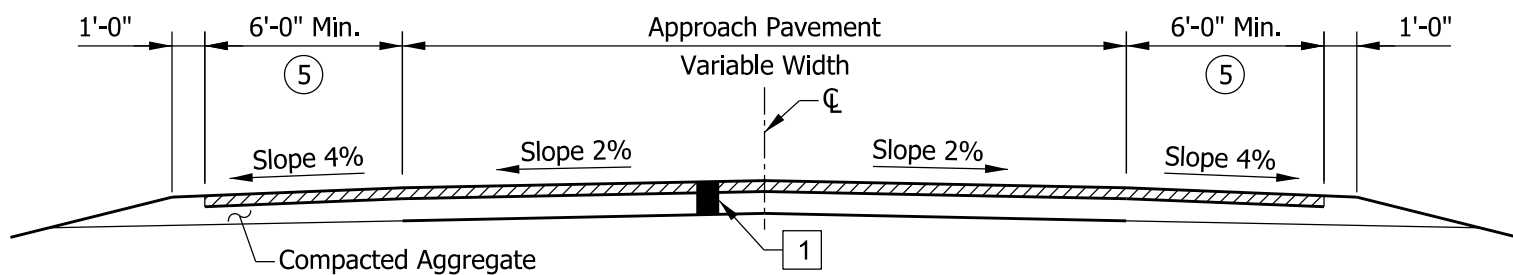
**LEGEND**

- 1 HMA for Approaches, Type B, consisting of:  
165 lbs/syd HMA Surface, Type B, on  
275 lbs/syd HMA Intermediate, Type B, on  
6" Compacted Aggregate No. 53, on  
Subgrade Treatment Type II (6" Coarse  
Aggregate No. 53)

<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>	
<b>PUBLIC ROAD APPROACH TYPE A</b>	
<b>SEPTEMBER 2019</b>	
<b>STANDARD DRAWING NO.</b>	<b>E 610-PRAP-02</b>
	 DESIGN STANDARDS ENGINEER DATE <b>5/2/2019</b>
 CHIEF ENGINEER	DATE <b>6/5/2019</b>

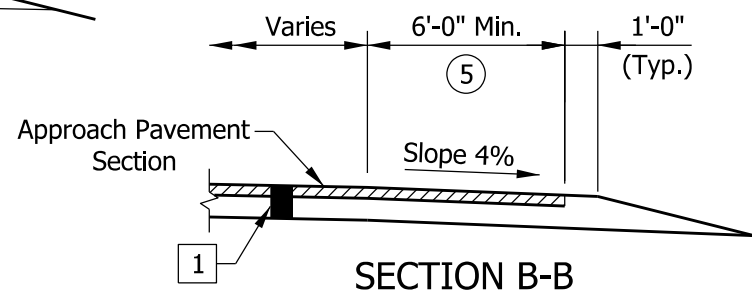


**PUBLIC ROAD APPROACH TYPE B**



**SECTION A-A MINIMUM PAVEMENT SECTION**

**LEGEND**  
 1 HMA for Approaches, Type B, consisting of:  
 165 lbs/syd HMA Surface, Type B, on  
 275 lbs/syd HMA Intermediate, Type B, on  
 6" Compacted Aggregate No. 53, on  
 Subgrade Treatment, Type II (6" Coarse  
 Aggregate No. 53)



**SECTION B-B**

**NOTES:**

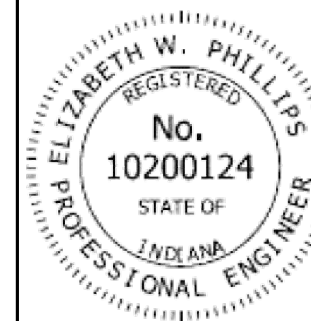
- 1 See Standard Drawing E 610-PRAP-04 for Table of Values.
- 2 See Standard Drawing E 610-PRAP-09 for pay limits details.
- 3 Match existing shoulder width. Minimum width is 2'-0".
- 4 If the AADTT (Trucks Class IV and above) is greater than 50 on the public road, the required pavement section shall be as shown elsewhere in the plans.
- 5 The minimum shoulder width should match the existing public road or be 6'-0", which ever is larger.
- 6 The cross hatch shoulder area indicates the limits where the shoulder is the same as the approach pavement.
- 7 If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches.

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH  
TYPE B

SEPTEMBER 2019

STANDARD DRAWING NO. E 610-PRAP-03



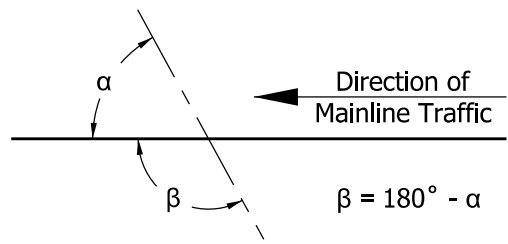
*Elizabeth W. Phillips*  
 REGISTERED  
 No. 10200124  
 STATE OF INDIANA  
 PROFESSIONAL ENGINEER  
 DESIGN STANDARDS ENGINEER  
 DATE 5/2/2019  
 CHIEF ENGINEER  
 DATE 6/5/2019

β	L						Z	U	S	M	X	Y	N	TOTAL APPROACH AREA						β
	TYPE A			TYPE B										TYPE A			TYPE B			
	W=20	W=22	W=24	W=20	W=22	W=24								W=20	W=22	W=24	W=20	W=22	W=24	
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	(sys)	(sys)	(°)
110	108.87	109.23	109.60	108.87	109.23	109.60	11.71	55.02	65.23	11.66	18.63	33.20	3.72	531.19	556.20	584.87	645.05	670.14	695.38	110
109	107.48	107.82	108.17	107.48	107.82	108.17	11.63	53.75	64.04	11.42	19.32	33.74	3.86	524.90	549.63	574.51	639.55	664.28	689.15	109
108	106.12	106.45	106.77	106.12	106.45	106.77	11.57	52.51	62.88	11.19	20.02	34.28	4.02	518.88	543.25	567.78	634.32	658.70	683.22	108
107	104.80	105.10	105.41	104.80	105.10	105.41	11.50	51.30	61.74	10.94	20.72	34.84	4.17	513.11	537.15	561.32	629.37	653.40	677.37	107
106	103.50	103.79	104.48	103.50	103.79	104.08	11.44	50.11	60.64	10.70	21.44	35.40	4.33	507.60	531.30	555.13	624.67	648.37	672.20	106
105	102.24	102.51	102.77	102.24	102.51	102.77	11.39	48.95	59.56	10.46	22.16	35.98	4.49	502.33	525.70	549.20	620.23	643.61	667.10	105
104	101.00	101.25	101.50	101.00	102.25	101.50	11.34	47.81	58.51	10.23	22.88	36.56	4.65	497.30	520.35	543.52	616.04	639.10	662.26	104
103	99.79	100.02	100.25	99.79	100.02	100.25	11.29	46.70	57.48	9.99	23.62	37.16	4.81	492.50	515.24	538.06	612.10	634.83	657.68	103
102	98.60	98.81	99.02	98.60	98.81	99.02	11.25	45.81	56.48	9.76	24.36	37.77	4.98	487.92	510.35	532.88	608.39	630.82	653.34	102
101	97.44	97.63	97.83	97.44	97.63	97.83	11.21	44.54	55.49	9.54	25.10	38.39	5.15	483.57	505.69	527.91	604.91	627.04	649.25	101
100	96.30	96.47	96.65	96.30	96.47	96.65	11.17	43.50	54.54	9.31	25.86	39.02	5.35	479.42	501.26	523.16	601.66	623.49	645.40	100
99	95.18	95.34	95.50	95.18	95.34	95.50	11.14	42.47	53.60	9.09	26.63	39.66	5.50	475.49	497.03	518.64	598.63	620.17	641.78	99
98	94.09	94.23	94.37	94.09	94.23	94.37	11.11	41.46	52.68	8.87	27.41	40.31	5.68	471.77	493.02	514.34	595.83	617.08	638.39	98
97	93.10	93.13	93.26	93.01	93.13	93.26	11.08	40.47	51.78	8.65	28.19	40.98	5.86	468.25	489.22	510.24	593.24	614.21	635.23	97
96	91.96	92.06	92.17	91.96	92.06	92.17	11.06	39.50	50.90	8.44	28.99	41.66	6.04	464.93	485.62	506.36	590.86	611.56	632.29	96
95	90.92	91.01	91.10	90.92	91.01	91.10	11.04	38.64	50.04	8.22	29.79	42.35	6.22	461.80	482.21	502.68	588.70	609.12	629.58	95
94	89.90	89.97	90.04	89.90	89.97	90.04	11.03	37.60	49.20	8.01	30.61	43.05	6.41	458.87	479.02	499.20	586.74	606.89	627.07	94
93	88.90	88.96	89.01	88.90	88.96	89.01	11.02	36.68	48.38	7.80	31.44	43.77	6.60	456.12	476.01	495.91	584.99	604.88	624.79	93
92	87.92	87.96	87.99	87.92	87.96	87.99	11.01	35.77	47.57	7.60	32.28	44.50	6.80	453.57	473.19	492.83	583.45	603.07	622.71	92
91	86.96	86.97	86.99	88.96	88.94	88.93	11.00	34.88	46.78	7.39	33.14	45.24	6.99	451.20	470.56	489.94	586.57	606.29	626.01	91
90	86.00	86.00	86.00	90.00	90.00	90.00	11.00	34.00	46.00	7.19	34.00	46.00	7.19	449.01	468.12	487.23	589.85	609.85	629.85	90
89	85.07	85.05	85.04	91.06	91.07	91.09	11.00	33.14	45.24	6.99	34.88	46.78	7.39	447.01	465.87	484.72	593.33	613.61	633.90	89
88	84.15	84.12	84.08	92.13	92.16	92.20	11.01	32.28	44.50	6.80	35.77	47.57	7.60	445.18	463.80	482.40	597.03	617.58	638.16	88
87	83.24	83.19	83.14	93.22	93.27	93.33	11.02	31.44	43.77	6.60	36.68	48.38	7.80	443.54	461.91	480.26	600.93	621.77	642.64	87
86	83.30	83.37	83.44	94.33	94.40	94.47	11.03	30.61	43.05	6.41	37.60	49.20	8.01	444.20	462.79	481.60	605.04	626.18	647.34	86
85	84.42	84.51	84.59	95.46	95.55	95.64	11.04	29.79	42.35	6.22	38.64	50.04	8.22	447.35	466.32	485.34	609.37	630.80	652.27	85
84	85.55	85.65	85.76	96.61	96.72	96.82	11.06	28.99	41.66	6.04	39.50	50.90	8.44	450.69	469.96	489.27	613.92	635.65	657.42	84
83	86.70	86.82	86.94	97.78	97.90	98.03	11.08	28.19	40.98	5.86	40.47	51.78	8.65	454.22	473.79	493.41	618.70	640.72	662.81	83
82	87.87	88.01	88.15	98.97	99.11	99.26	11.11	27.41	40.31	5.68	41.46	52.68	8.87	457.95	477.82	497.75	623.70	646.03	668.43	82
81	89.05	89.21	89.37	100.19	100.35	100.51	11.14	26.63	39.66	5.50	42.47	53.60	9.09	461.88	482.05	502.30	628.93	651.58	674.30	81
80	90.26	90.44	90.61	101.43	101.61	101.78	11.17	25.86	39.02	5.35	43.50	54.54	9.31	466.00	486.49	507.06	634.40	657.37	680.42	80
79	91.49	91.68	91.88	102.69	102.89	103.08	11.21	25.10	38.39	5.15	44.54	55.49	9.54	470.34	491.15	512.04	640.11	663.40	686.78	79
78	92.74	92.95	93.16	103.96	104.20	104.41	11.25	24.36	37.77	4.98	45.61	56.48	9.76	474.89	496.02	517.24	646.07	669.69	693.41	78
77	94.01	94.24	94.47	105.30	105.53	105.76	11.29	23.62	37.16	4.81	46.70	57.48	9.99	479.66	501.11	522.67	652.78	676.24	700.31	77
76	95.31	95.56	95.81	106.64	106.89	107.14	11.34	22.88	36.56	4.65	47.81	58.51	10.23	484.65	506.44	528.34	658.75	683.06	707.48	76
75	96.63	96.90	97.17	108.02	108.29	108.55	11.39	22.16	35.98	4.49	48.95	59.56	10.46	489.87	511.99	534.24	665.50	690.16	714.94	75
74	97.98	98.26	98.55	109.42	109.71	110.00	11.44	21.44	35.40	4.33	50.11	60.64	10.70	495.32	517.79	540.39	672.52	697.54	722.68	74
73	99.36	99.66	99.97	110.86	111.16	111.47	11.50	20.72	34.84	4.17	51.30	61.74	10.94	501.01	523.84	546.80	679.82	705.21	730.72	73
72	100.76	101.08	101.41	112.33	112.65	112.98	11.57	20.02	34.28	4.02	52.51	62.88	11.18	506.96	530.14	553.47	687.42	713.18	739.08	72
71	102.20	102.54	102.88	113.83	114.17	114.52	11.63	19.32	33.74	3.86	53.75	64.04	11.42	513.16	536.71	560.42	695.32	721.46	747.75	71
70	103.66	104.03	104.39	115.37	115.73	116.10	11.71	18.63	33.20	3.72	55.02	65.23	11.66	519.62	543.55	567.64	703.54	730.07	756.76	70

**LEGEND:**

α = ANGLE OF TURN  
 The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

β = INTERSECTION CONTROL ANGLE

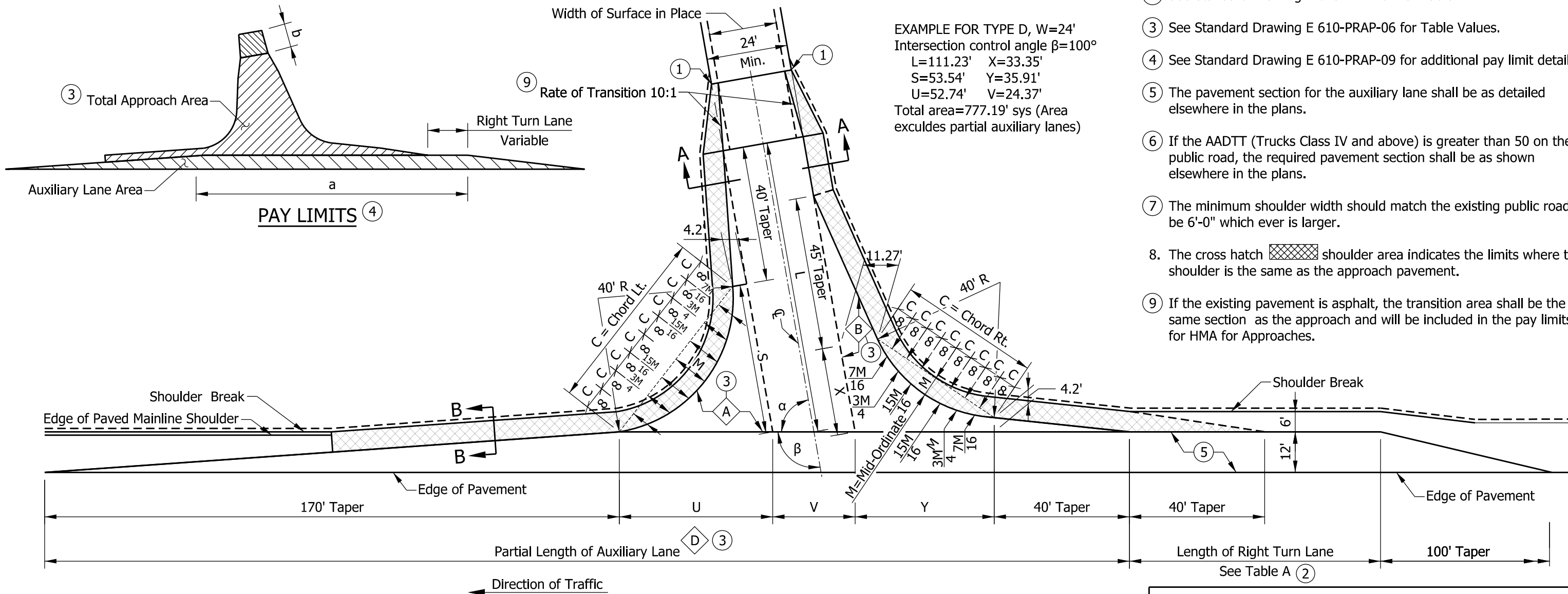


**NOTES:**

1. See Standard Drawing E 610-PRAP-02 for Public Road Approach Type A.
2. See Standard Drawing E 610-PRAP-03 for Public Road Approach Type B.
3. If intersection control angle is less than 70° or greater than 110° a special design will be required.

<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>	
<b>PUBLIC ROAD APPROACH TYPE A &amp; TYPE B TABLE OF VALUES SEPTEMBER 2019</b>	
<b>STANDARD DRAWING NO. E 610-PRAP-04</b>	
	 DESIGN STANDARDS ENGINEER DATE 5/2/2019
	 CHIEF ENGINEER DATE 6/5/2019





EXAMPLE FOR TYPE D, W=24'  
 Intersection control angle  $\beta=100^\circ$   
 $L=111.23'$   $X=33.35'$   
 $S=53.54'$   $Y=35.91'$   
 $U=52.74'$   $V=24.37'$   
 Total area=777.19' sys (Area  
 excludes partial auxiliary lanes)

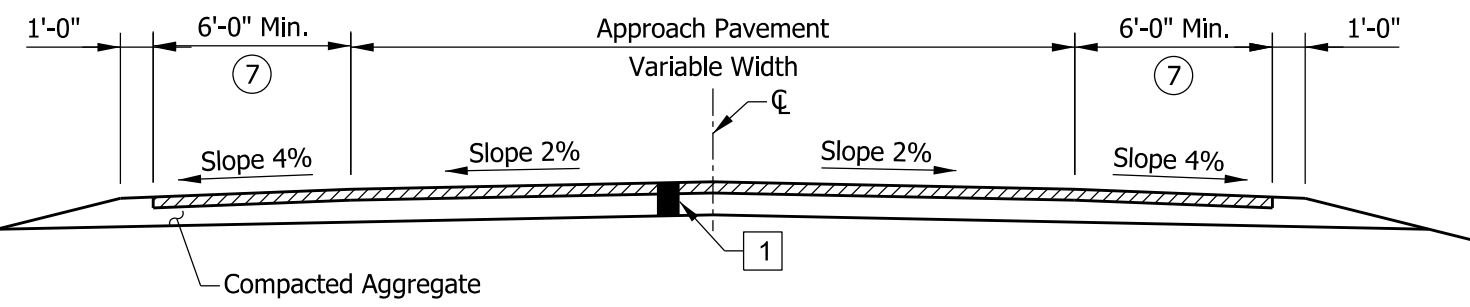
**NOTES:**

- ① Match existing shoulder width. Minimum width is 2'-0".
- ② See Standard Drawing E 610-PRAP-01 for Table A.
- ③ See Standard Drawing E 610-PRAP-06 for Table Values.
- ④ See Standard Drawing E 610-PRAP-09 for additional pay limit details.
- ⑤ The pavement section for the auxiliary lane shall be as detailed elsewhere in the plans.
- ⑥ If the AADTT (Trucks Class IV and above) is greater than 50 on the public road, the required pavement section shall be as shown elsewhere in the plans.
- ⑦ The minimum shoulder width should match the existing public road or be 6'-0" which ever is larger.
- ⑧ The cross hatch shoulder area indicates the limits where the shoulder is the same as the approach pavement.
- ⑨ If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches.

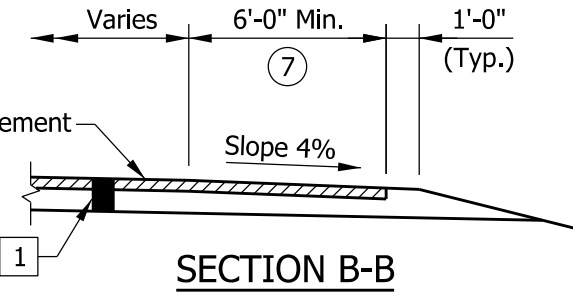
**PUBLIC ROAD APPROACH TYPE C**

**LEGEND**




- ① HMA for Approaches, Type B, consisting of: 165 lbs/syd HMA Surface, Type B, on 275 lbs/syd HMA Intermediate, Type B, on 6" Compacted Aggregate No. 53, on Subgrade Treatment, Type II (6" Coarse Aggregate No. 53)



**SECTION A-A MINIMUM PAVEMENT SECTION ⑥**



**SECTION B-B**

<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>	
<b>PUBLIC ROAD APPROACH TYPE C</b>	
<b>SEPTEMBER 2019</b>	
<b>STANDARD DRAWING NO. E 610-PRAP-05</b>	
	 DESIGN STANDARDS ENGINEER DATE 5/2/2019
	 CHIEF ENGINEER DATE 6/5/2019

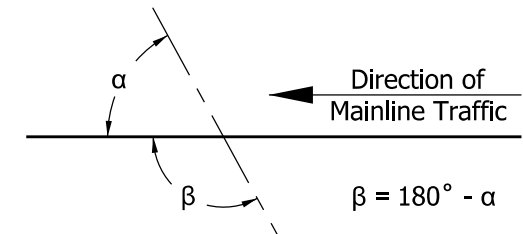
$\beta$	L	S	U	X	Y	V	Shoulder Gap	Chord		M		Approach Areas			Auxiliary Lane Part. Area	$\beta$
								Lt.	Rt.	Lt.	Rt.	A	B	Total	D	
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	(°)
110	99.29	54.29	58.51	18.86	33.10	25.54	327.15	61.27	33.78	14.28	3.74	115.63	86.31	466.70	322.87	110
109	99.74	53.17	57.44	19.56	33.64	25.38	326.46	60.82	34.41	14.01	3.89	112.05	88.00	465.28	321.94	109
108	95.97	52.07	56.39	20.26	34.18	25.24	325.81	60.36	35.04	13.75	4.04	108.60	89.73	454.24	321.08	108
107	94.66	50.99	55.37	20.96	34.74	25.10	325.21	59.90	35.66	13.49	4.19	105.27	91.50	449.20	320.27	107
106	93.38	49.94	54.38	21.68	35.30	24.97	324.65	59.44	36.29	13.23	4.35	102.05	93.32	444.39	319.53	106
105	92.13	48.92	53.41	22.40	35.88	24.85	324.13	58.97	36.91	12.97	4.51	98.94	95.17	439.79	318.84	105
104	90.90	47.91	52.46	23.31	36.46	24.73	323.66	58.49	37.52	12.71	4.67	95.89	97.11	435.44	318.21	104
103	89.70	46.93	51.53	23.86	37.06	24.63	323.22	58.01	38.14	12.46	4.84	93.00	99.00	431.22	317.63	103
102	88.51	45.96	50.63	24.60	37.66	24.54	322.83	57.53	38.75	12.21	5.01	91.44	101.00	427.22	317.11	102
101	87.35	45.02	49.74	25.35	38.28	24.45	322.48	57.04	39.36	11.96	5.18	87.44	103.11	423.56	316.63	101
100	86.21	44.09	48.88	26.11	38.91	24.37	322.16	56.55	39.97	11.71	5.35	84.89	105.22	419.89	316.21	100
99	85.09	43.19	48.03	26.88	39.55	24.30	321.88	56.06	40.57	11.46	5.53	82.33	107.33	416.56	315.85	99
98	83.98	42.30	47.20	27.66	40.21	24.24	321.65	55.56	41.17	11.22	5.70	79.89	109.56	413.33	315.53	98
97	82.90	41.42	46.39	28.45	40.87	24.18	321.44	55.05	41.77	10.98	5.88	77.44	111.78	410.33	315.26	97
96	81.83	40.57	45.60	29.24	41.55	24.13	321.28	54.54	42.36	10.74	6.07	75.22	114.11	407.56	315.04	96
95	80.77	39.72	44.82	30.05	42.24	24.09	321.15	54.03	42.95	10.50	6.25	73.00	116.44	404.89	314.87	95
94	79.74	38.90	44.06	30.87	42.94	24.06	321.06	53.51	43.54	10.27	6.44	70.78	118.89	402.33	314.75	94
93	78.71	38.08	43.32	31.70	43.66	24.03	321.01	52.99	44.12	10.03	6.63	68.67	121.44	400.11	314.68	93
92	77.12	37.28	42.58	32.54	44.39	24.01	320.99	52.47	44.70	9.80	6.83	66.67	124.00	396.33	314.65	92
91	78.19	36.50	41.87	33.40	45.13	24.00	321.01	51.94	45.28	9.58	7.02	64.78	126.67	399.89	314.67	91
90	79.26	35.72	41.16	34.26	45.89	24.00	321.06	51.41	45.86	9.35	7.22	62.89	129.44	403.56	314.75	90
89	80.35	34.96	40.48	35.14	46.67	24.00	321.15	50.87	46.43	9.13	7.42	61.00	132.22	407.44	314.86	89
88	81.46	34.21	39.80	36.04	47.46	24.01	321.27	50.33	46.99	8.91	7.63	59.22	135.11	411.56	315.03	88
87	82.58	33.47	39.13	36.95	48.27	24.03	321.44	49.78	47.56	8.69	7.83	57.44	138.00	415.67	315.25	87
86	83.71	32.75	38.48	37.87	49.09	24.06	321.63	49.24	48.11	8.47	8.04	55.78	141.00	420.11	315.51	86
85	84.86	32.03	37.84	38.81	49.93	24.09	321.87	48.68	48.67	8.26	8.25	54.22	144.11	424.67	315.82	85
84	86.03	31.32	37.21	39.77	50.79	24.13	322.14	48.13	49.22	8.05	8.47	52.67	147.44	429.44	316.18	84
83	87.22	30.62	36.60	40.74	51.67	24.18	322.45	47.57	49.77	7.84	8.68	51.11	150.67	434.44	316.60	83
82	88.42	29.93	35.99	41.73	53.48	24.30	322.79	47.00	50.32	7.63	8.90	49.67	154.11	439.47	317.06	82
81	89.64	29.26	35.39	42.74	53.48	24.30	323.18	46.44	50.86	7.43	9.12	48.22	157.56	444.78	317.57	81
80	90.89	28.58	34.81	43.77	54.42	24.37	323.60	45.87	51.39	7.23	9.35	46.78	161.22	450.33	318.13	80
79	92.15	27.92	34.23	44.82	55.38	24.45	324.06	45.29	51.93	7.03	9.57	45.56	164.89	456.11	318.75	79
78	93.44	27.27	33.67	45.89	56.36	24.54	324.56	44.72	52.46	6.83	9.80	44.22	168.67	462.11	319.42	78
77	94.75	26.62	33.11	46.98	57.37	24.63	325.11	44.14	52.98	6.64	10.03	42.89	172.67	468.22	320.14	77
76	96.09	25.98	32.56	48.09	58.39	24.73	325.69	43.55	53.50	6.45	10.26	41.78	176.78	474.67	320.92	76
75	97.45	25.35	32.02	49.23	59.45	24.85	326.32	42.97	54.02	6.26	10.50	40.56	180.89	481.22	321.76	75
74	98.83	24.72	31.50	50.39	60.52	24.97	326.99	42.37	54.53	6.07	10.73	39.44	185.22	488.11	322.65	74
73	100.25	24.10	30.98	51.58	61.63	25.10	327.70	41.78	55.04	5.89	10.97	38.22	189.67	495.22	323.60	73
72	101.70	23.49	30.46	52.80	62.76	25.24	328.46	41.18	55.55	5.71	11.21	37.11	194.22	502.56	324.61	72
71	103.17	22.88	29.96	54.04	63.92	25.38	329.27	40.58	56.05	5.53	11.46	36.11	199.00	510.18	325.69	71
70	104.68	22.28	29.46	55.31	65.12	25.54	330.12	39.98	56.54	5.35	11.70	35.11	203.89	518.11	326.83	70

**LEGEND:**

$\alpha$  = ANGLE OF TURN

The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

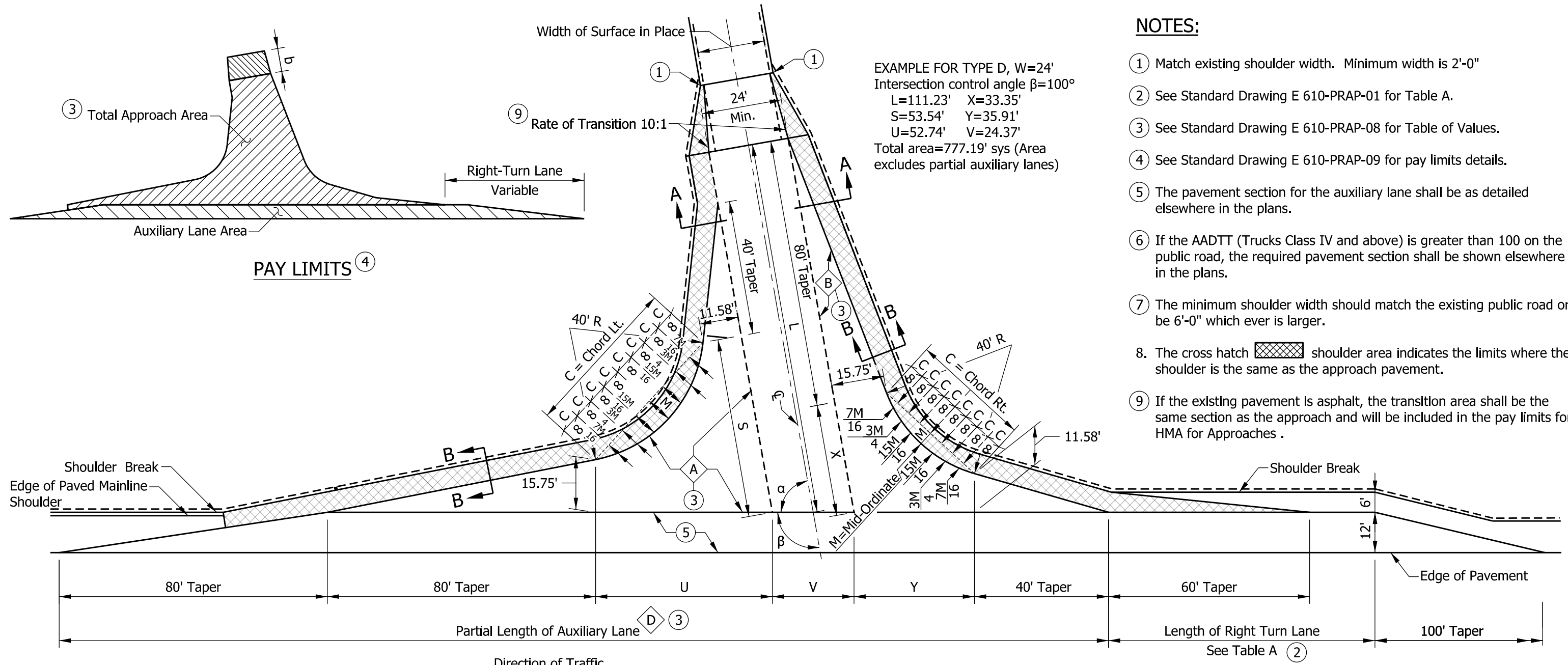
$\beta$  = INTERSECTION CONTROL ANGLE



**NOTES:**

1. See Standard Drawing E 610-PRAP-05 for Public Road Approach Type C.
2. If intersection control angle is less than 70° or greater than 110° a special design will be required.

INDIANA DEPARTMENT OF TRANSPORTATION	
PUBLIC ROAD APPROACH TYPE C TABLE OF VALUES SEPTEMBER 2019	
STANDARD DRAWING NO.	E 610-PRAP-06
	 DESIGN STANDARDS ENGINEER      5/2/2019 DATE
	CHIEF ENGINEER      6/5/2019 DATE



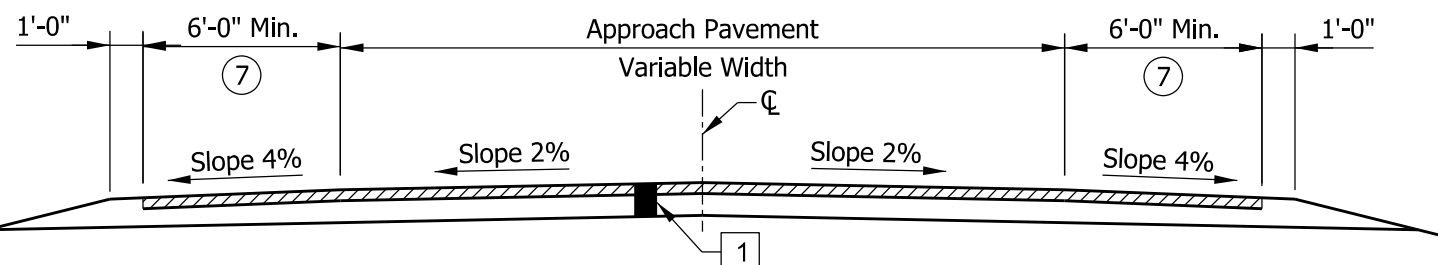
**NOTES:**

- ① Match existing shoulder width. Minimum width is 2'-0"
- ② See Standard Drawing E 610-PRAP-01 for Table A.
- ③ See Standard Drawing E 610-PRAP-08 for Table of Values.
- ④ See Standard Drawing E 610-PRAP-09 for pay limits details.
- ⑤ The pavement section for the auxiliary lane shall be as detailed elsewhere in the plans.
- ⑥ If the AADTT (Trucks Class IV and above) is greater than 100 on the public road, the required pavement section shall be shown elsewhere in the plans.
- ⑦ The minimum shoulder width should match the existing public road or be 6'-0" which ever is larger.
- ⑧ The cross hatch shoulder area indicates the limits where the shoulder is the same as the approach pavement.
- ⑨ If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches .

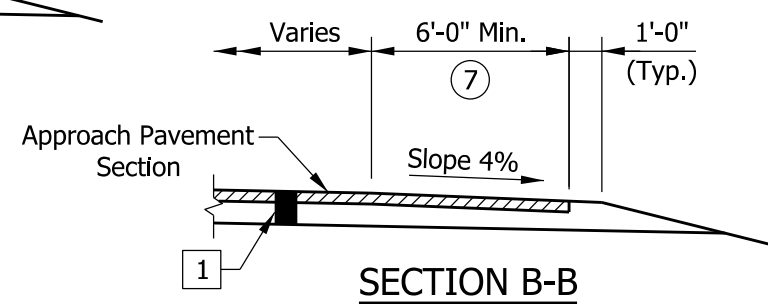
**PUBLIC ROAD APPROACH TYPE D**

**LEGEND**

- ① HMA for Approaches, Type B, consisting of:  
165 lbs/syd HMA Surface, Type B, on  
495 lbs/syd HMA Intermediate, Type B, on  
4" Compacted Aggregate No. 53, on  
Subgrade Treatment, Type II (6" Coarse Aggregate No. 53)



**SECTION A-A MINIMUM PAVEMENT SECTION**



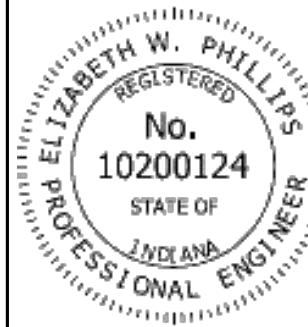
**SECTION B-B**

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH  
TYPE D

SEPTEMBER 2019

STANDARD DRAWING NO. E 610-PRAP-07



*Elizabeth W. Phillips*  
DESIGN STANDARDS ENGINEER 5/29/2019  
DATE  
*[Signature]*  
CHIEF ENGINEER 6/5/2019  
DATE



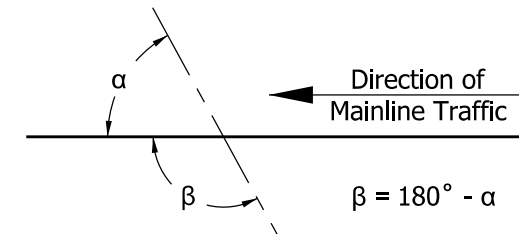
$\beta$	L	S	U	X	Y	V	Shoulder Gap	Chord		M		Approach Areas			Auxiliary Lane Part. Area	$\beta$
								Lt.	Rt.	Lt.	Rt.	$\diamond A$	$\diamond B$	Total	$\diamond D$	
( $^{\circ}$ )	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	( $^{\circ}$ )
110	109.97	65.61	65.50	25.46	29.21	25.54	320.25	52.66	29.14	9.98	2.75	335.88	174.50	803.64	373.67	110
109	108.40	64.26	64.09	26.22	29.83	25.38	319.31	52.34	29.79	9.75	2.88	329.40	176.97	795.42	372.41	109
108	106.85	62.98	62.72	26.97	30.46	25.24	318.41	51.81	30.43	9.52	3.01	323.11	179.49	787.55	371.22	108
107	105.35	61.68	61.37	27.74	31.11	25.10	317.57	51.27	31.08	9.30	3.14	317.01	182.07	780.00	370.10	107
106	105.08	60.43	60.06	28.52	31.76	24.97	316.78	50.73	31.72	9.07	3.28	311.08	184.70	775.99	369.04	106
105	106.08	59.22	58.77	29.30	32.42	24.85	316.04	50.19	32.36	8.85	3.42	305.33	187.38	775.60	368.06	105
104	107.10	58.03	57.52	30.09	33.10	24.73	315.35	49.65	33.00	8.63	3.56	299.74	190.12	775.45	367.13	104
103	108.12	56.87	56.28	30.89	33.78	24.63	314.70	49.10	33.63	8.42	3.71	294.31	192.92	775.54	366.26	103
102	109.15	55.74	55.08	31.70	34.48	24.54	314.10	48.54	34.26	8.21	3.85	289.03	195.78	775.87	365.46	102
101	110.18	54.63	53.90	32.52	35.19	24.45	313.54	47.99	34.89	8.00	4.01	283.89	198.70	776.42	364.72	101
100	111.23	53.54	52.74	33.35	35.91	24.37	313.02	47.43	35.52	7.79	4.16	278.90	201.68	777.19	364.03	100
99	112.28	52.48	51.61	34.18	36.65	24.30	312.55	46.86	36.14	7.58	4.32	274.04	204.73	778.19	363.40	99
98	113.35	51.45	50.49	35.03	37.39	24.24	312.12	46.30	36.77	7.38	4.47	269.31	207.85	779.42	362.83	98
97	114.42	50.43	49.40	35.89	38.15	24.18	311.73	45.72	37.38	7.18	4.64	264.70	211.04	780.86	362.31	97
96	115.51	49.44	48.33	36.77	38.93	24.13	311.39	45.15	38.00	6.98	4.80	260.21	214.31	782.53	361.85	96
95	116.60	48.46	47.27	37.65	39.71	24.09	311.08	44.57	38.61	6.78	4.97	255.84	217.65	784.42	361.44	95
94	117.71	47.51	46.24	38.55	40.52	24.06	310.82	43.99	39.22	6.59	5.14	251.58	221.01	786.54	361.09	94
93	118.83	46.57	45.22	39.46	41.33	24.03	310.59	43.41	39.83	6.40	5.31	247.43	224.56	788.87	360.79	93
92	119.96	45.66	44.22	40.38	42.17	24.01	310.40	42.82	40.43	6.21	5.48	243.38	228.15	791.43	360.54	92
91	121.11	44.76	43.24	41.32	43.01	24.00	310.26	42.23	41.03	6.03	5.66	239.43	231.82	794.21	360.34	91
90	122.27	43.88	42.27	42.27	43.88	24.00	310.15	41.63	41.63	5.84	5.84	235.58	235.58	797.21	360.20	90
89	123.45	43.01	41.32	43.24	44.76	24.00	310.08	41.03	42.23	5.66	6.03	231.82	239.43	800.44	360.11	89
88	124.64	42.17	40.38	44.22	45.66	24.01	310.06	40.43	42.82	5.48	6.21	228.15	243.38	803.90	360.07	88
87	125.85	41.33	39.46	45.22	46.57	24.03	310.07	39.83	43.41	5.31	6.40	224.56	247.38	807.60	360.09	87
86	127.08	40.52	38.55	46.24	47.51	24.06	310.12	39.22	43.99	5.14	6.59	221.06	251.56	811.52	360.16	86
85	128.32	39.71	37.65	47.27	48.46	24.09	310.21	38.61	44.57	4.97	6.78	217.65	255.84	815.69	360.28	85
84	129.59	38.93	36.77	48.33	49.44	24.13	310.34	38.00	45.15	4.80	6.98	214.31	260.21	820.09	360.45	84
83	130.87	38.15	35.89	49.40	50.43	24.18	310.51	37.38	45.72	4.64	7.18	211.04	264.70	824.74	360.67	83
82	132.18	37.39	35.03	50.49	51.45	24.24	310.72	36.77	46.30	4.47	7.38	207.85	269.31	829.64	360.95	82
81	133.51	36.65	34.18	51.61	52.48	24.30	310.97	36.14	46.86	4.32	7.58	204.73	274.04	834.79	361.29	81
80	134.86	35.91	33.35	52.74	53.54	24.37	311.26	35.52	47.43	4.16	7.79	201.68	278.90	840.20	361.68	80
79	136.23	35.19	32.52	53.90	54.63	24.45	311.59	34.89	47.99	4.01	8.00	198.70	283.89	845.87	362.12	79
78	137.63	34.48	31.70	55.08	55.74	24.54	311.97	34.26	48.54	3.85	8.21	195.78	289.03	851.82	362.63	78
77	139.06	33.78	30.89	56.28	56.87	24.63	312.39	33.63	49.10	3.71	8.42	192.92	294.31	858.04	363.19	77
76	140.51	33.10	30.09	57.52	58.03	24.73	312.85	33.00	49.65	3.56	8.63	190.12	299.74	864.55	363.80	76
75	141.99	32.42	29.30	58.77	59.22	24.85	313.36	32.36	50.19	3.42	8.85	187.38	305.33	871.35	364.48	75
74	143.50	31.76	28.52	60.06	60.43	24.97	313.92	31.72	50.73	3.28	9.07	184.70	311.08	878.44	365.22	74
73	145.04	31.11	27.74	61.37	61.68	25.10	313.92	31.08	51.27	3.14	9.30	182.07	317.01	885.85	366.02	73
72	146.61	30.46	26.97	62.72	62.96	25.24	315.17	30.43	51.81	3.01	9.52	179.49	323.11	893.57	366.89	72
71	148.22	29.83	26.22	64.09	64.26	25.38	315.86	29.79	52.34	2.88	9.75	176.97	329.40	901.63	367.82	71
70	149.87	29.21	25.46	65.50	65.61	25.54	316.61	29.14	52.86	2.75	9.99	174.50	335.88	910.02	368.81	70

**LEGEND:**

$\alpha$  = ANGLE OF TURN

The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

$\beta$  = INTERSECTION CONTROL ANGLE



**NOTES:**

1. See Standard Drawing E 610-PRAP-07 for Public Road Approach Type D.
2. If intersection control angle is less than 70° or greater than 110° a special design will be required.

INDIANA DEPARTMENT OF TRANSPORTATION	
PUBLIC ROAD APPROACH TYPE D TABLE OF VALUES SEPTEMBER 2019	
STANDARD DRAWING NO. E 610-PRAP-08	
	 DESIGN STANDARDS ENGINEER DATE 5/2/2019
 CHIEF ENGINEER DATE 6/5/2019	



**NOTES:**

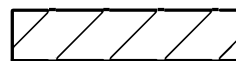
1. The pay limits shown hereon generally apply to Types A, B, C and D Public Road Approaches as shown on Standard Drawings E 610-PRAP-02, - 03, -05 and -07 respectively.

② See Tables of Values on Standard Drawings E 610 PRAP-04, -06, and -08.

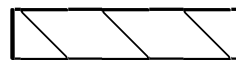
**LEGEND**



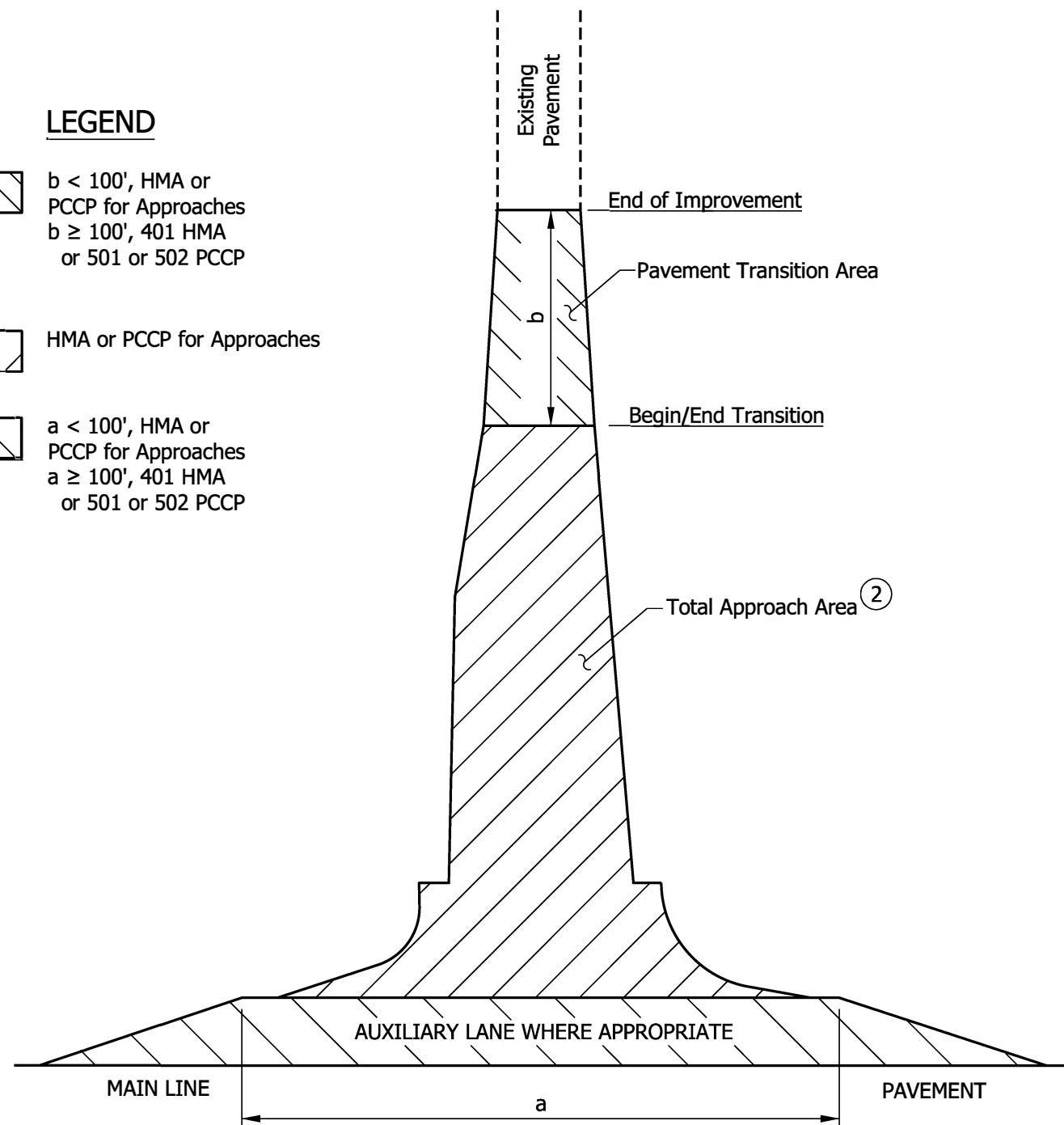
b < 100', HMA or PCCP for Approaches  
b ≥ 100', 401 HMA or 501 or 502 PCCP



HMA or PCCP for Approaches



a < 100', HMA or PCCP for Approaches  
a ≥ 100', 401 HMA or 501 or 502 PCCP

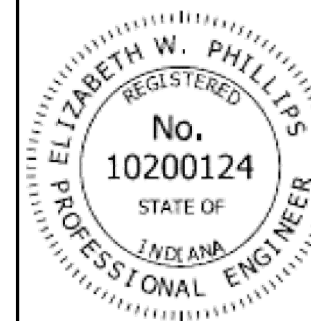


INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH  
PAY LIMIT DETAILS

SEPTEMBER 2019

STANDARD DRAWING NO. E 610-PRAP-09

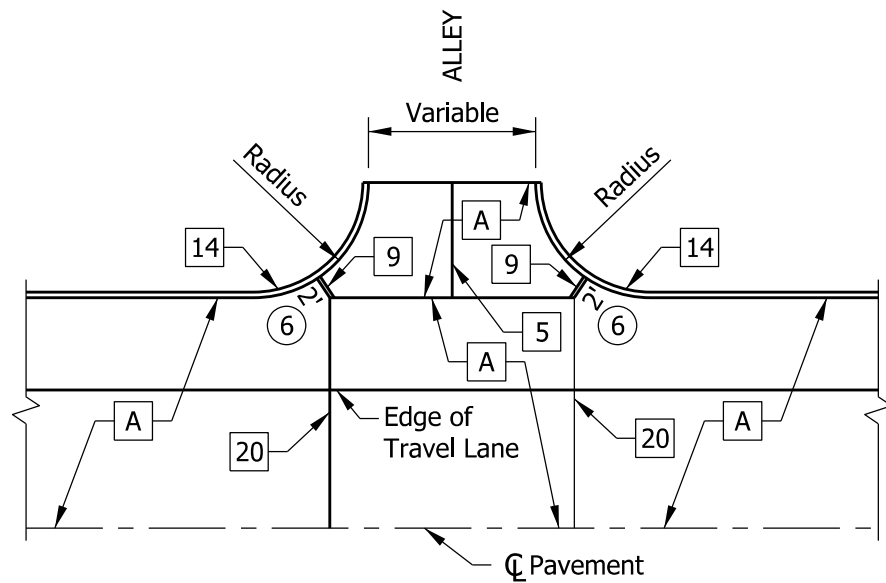


*[Signature]*  
DESIGN STANDARDS ENGINEER

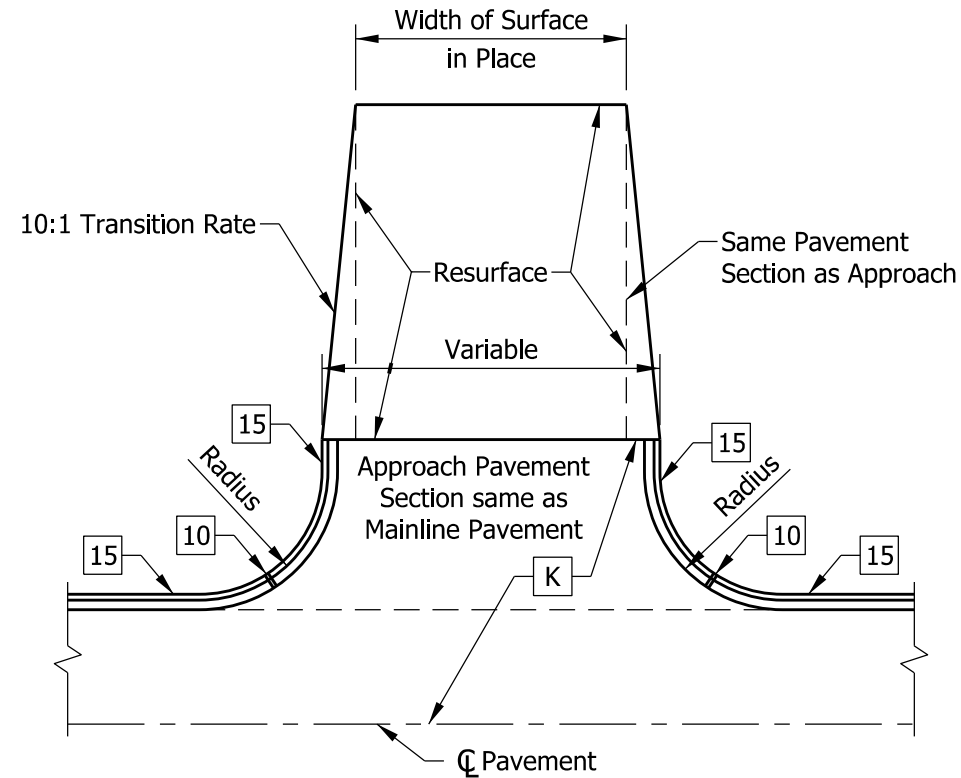
5/2/2019  
DATE

*[Signature]*  
CHIEF ENGINEER

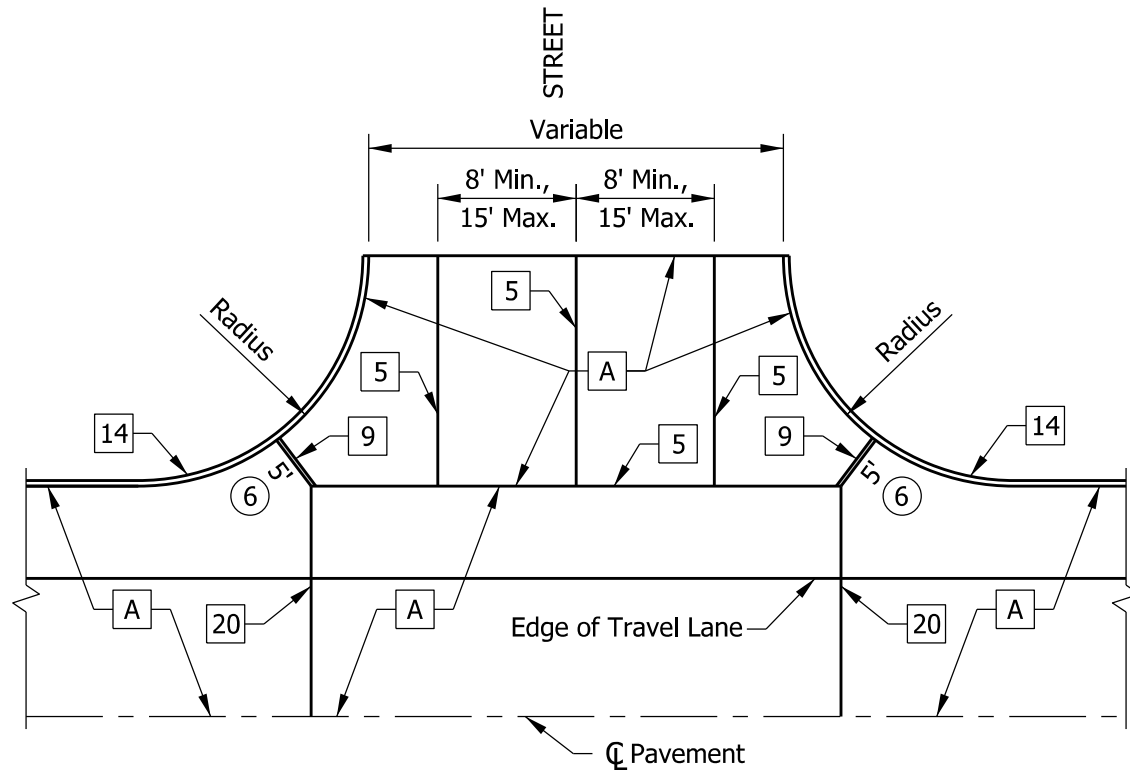
6/5/2019  
DATE



**ALLEY APPROACH  
WITH PCCP MAINLINE PAVEMENT**



**STREET OR ALLEY APPROACH  
WITH HMA MAINLINE PAVEMENT**



**STREET APPROACH  
WITH PCCP MAINLINE PAVEMENT**

**LEGEND**

- A PCCP
- K HMA Pavement
- 5 Longitudinal Joint
- 9 1" Preformed Joint Filler
- 10 1/2" Preformed Joint Filler
- 14 Integral Concrete Curb
- 15 Combined Curb and Gutter
- 20 Contraction Joint

**NOTES:**

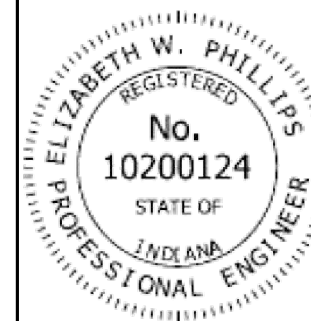
1. Radii of 25' at minor cross streets shall be provided where space permits.
2. Radii of 30' or more at major cross streets where WB-15 trucks and or buses turn repeatedly.
3. Radii of 40' or more at major cross streets shall be provided where WB-40 trucks and buses repeatedly turn.
4. Provide radii of 60' or more at the intersection of two State or U.S. highways and streets servicing heavy industrial areas requiring repeated turns by the Indiana Design Vehicle.
5. Radius of 10' min. to 20' min. for alley approaches shall be provided where space permits.
6. Ear Construction Type B. See Standard Drawing E 605-ERCN-02
7. For Approaches with PCCP Pavement, see Standard Drawing series E 503-CCPJ for joint details.
8. For PCCP Approaches, if length of approach is more than 15 Feet, then the D-1 Contraction Joints are required in the transverse direction. Spacing shall be 1/2 the length of the approach or 15 Feet max.

INDIANA DEPARTMENT OF TRANSPORTATION

STREET OR ALLEY APPROACH  
PCCP OR HMA MAINLINE PAVEMENT

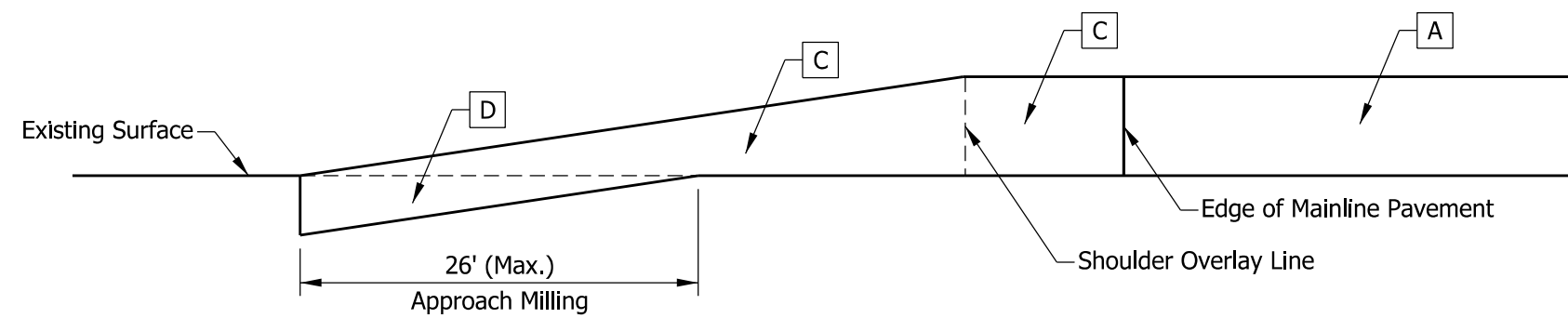
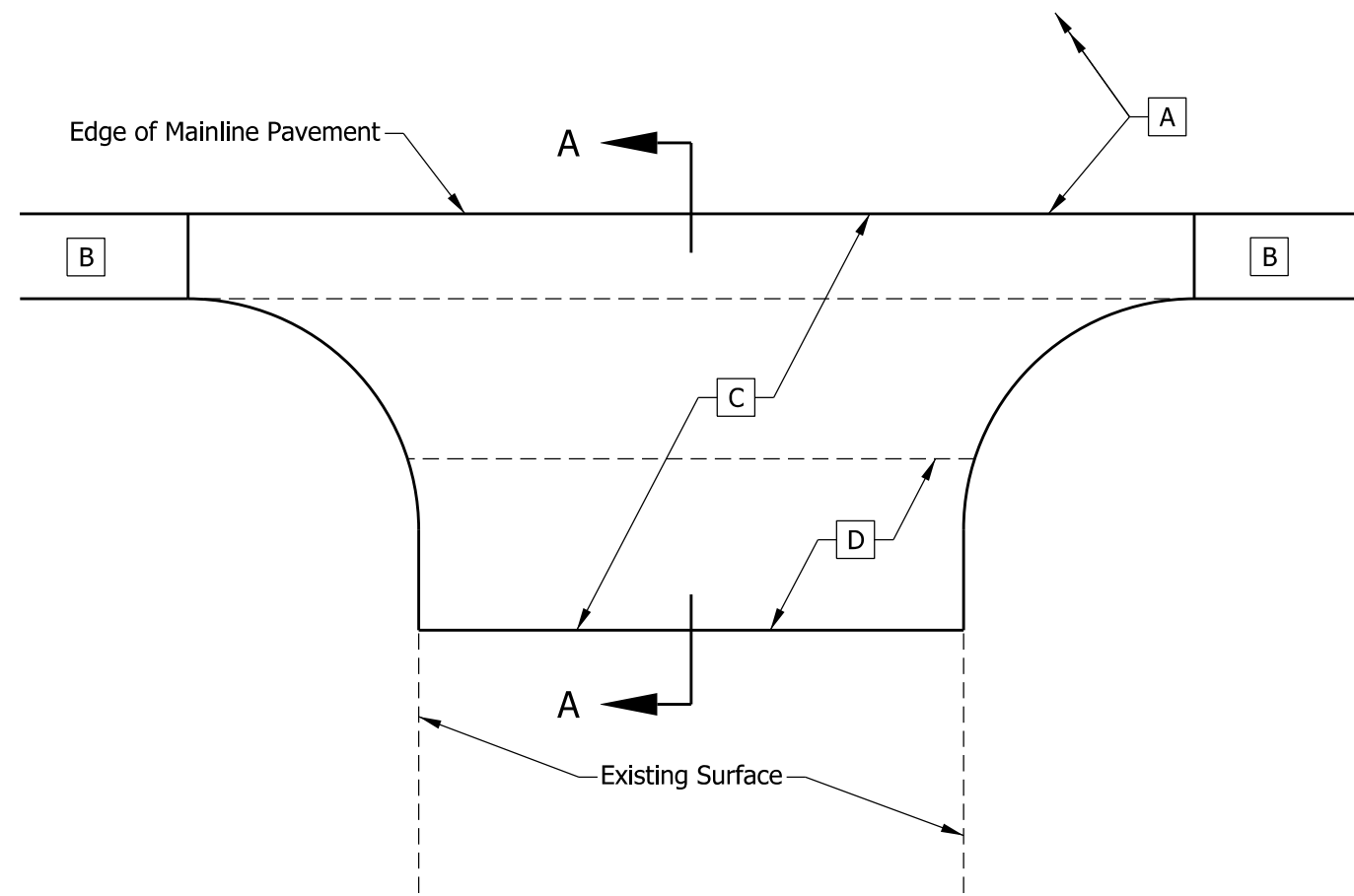
SEPTEMBER 2019

STANDARD DRAWING NO. E 610-PRAP-10



*Elizabeth W. Phillips* 5/2/2019  
DESIGN STANDARDS ENGINEER DATE




*[Signature]* 6/5/2019  
CHIEF ENGINEER DATE



**SECTION A-A**

**LEGEND**

- A Typical HMA Overlay, Mainline
- B Typical HMA Overlay, Shoulder
- C HMA for Approaches
- D Approach Milling

<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>	
<b>PUBLIC ROAD APPROACH OVERLAY PAVING TRANSITION</b>	
<b>SEPTEMBER 2019</b>	
<b>STANDARD DRAWING NO. E 610-PRAP-11</b>	
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