

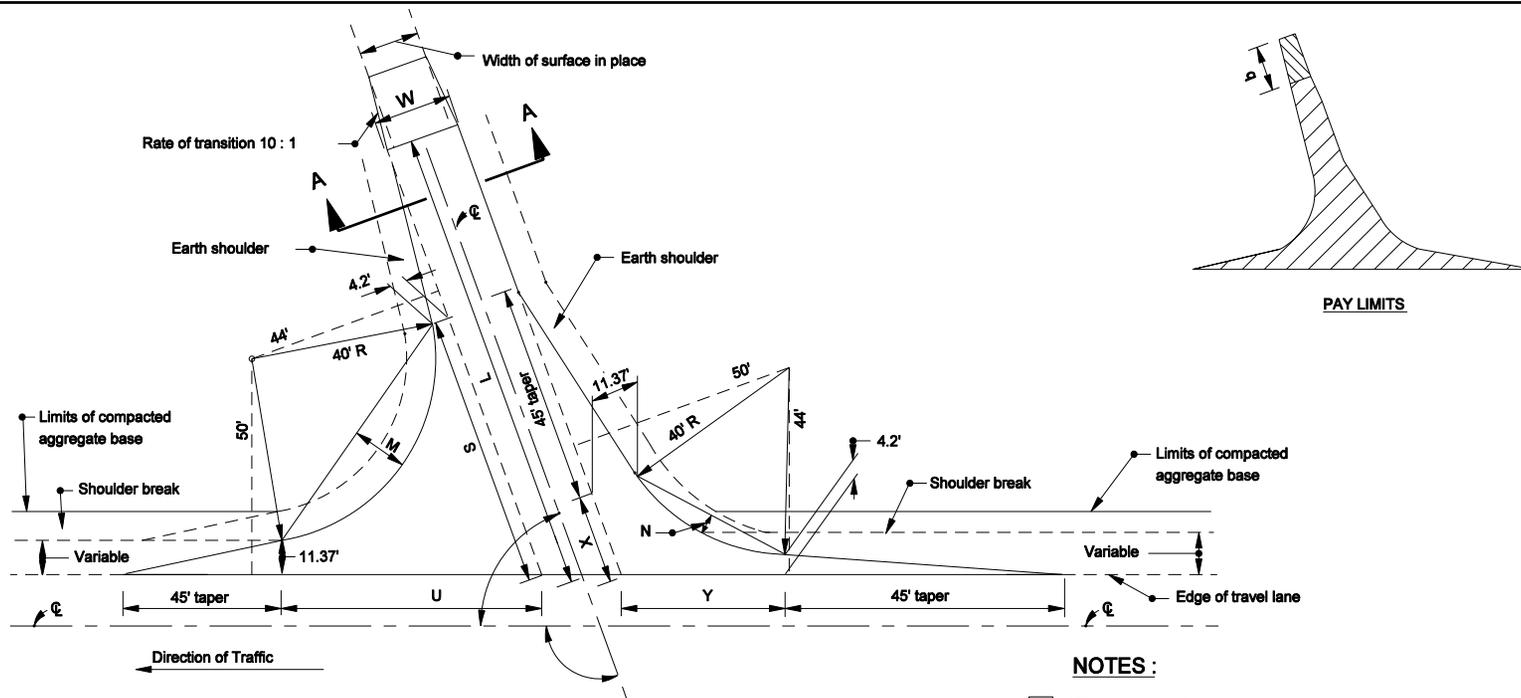
SECTION A-A

LEGEND

- (A) Typical HMA overlay, mainline
- (B) Typical HMA overlay, shoulder
- (C) HMA for approaches
- (D) Surface milling, asphalt

PUBLIC ROAD APPROACH PAVING

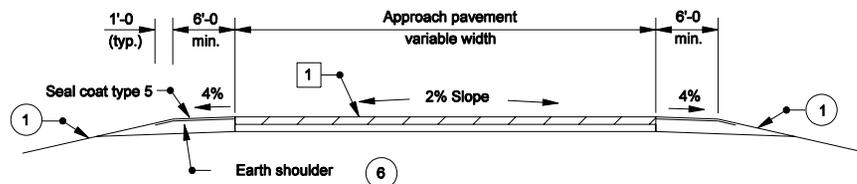
INDIANA DEPARTMENT OF TRANSPORTATION	
PUBLIC ROAD APPROACH PAVING	
MARCH 2004	
STANDARD DRAWING NO. E 610-PRAP-01	
	/s/ Richard L. VarCleave 3-01-04 DESIGN STANDARDS ENGINEER DATE
	/s/ Richard K. Smutzer 3-01-04 CHIEF HIGHWAY ENGINEER DATE
DESIGN STANDARDS ENGINEER	



PUBLIC ROAD APPROACH TYPE A

NOTES :

- 1 165 #/syd. HMA Surface Type A on
275 #/syd. HMA Intermediate Type A on
8" compacted aggregate base #53
2. See General Notes on Standard
Drawing E 610-PRAP-04.
3. See Table on Standard Drawing
E 610-PRAP-05 for computed values.
4. See Standard Drawing E 610 - PRAP - 07
for pay limit details.



SECTION A-A MINIMUM PAVEMENT SECTION

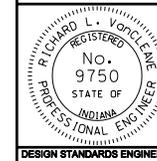
For ADT ≤ 1000 7

INDIANA DEPARTMENT OF TRANSPORTATION

**PUBLIC ROAD APPROACH
TYPE A**

MARCH 2006

STANDARD DRAWING NO. E 610-PRAP-02



/s/ Richard L. VanCleave 3-01-06
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K. Smutzer 3-01-06
CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

GENERAL NOTES

These notes are for Standard Drawings E 610-PRAP-02, -03, and -05.

- 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 YEAR		High, \geq 50 mph		Low, \leq 45 mph
		\geq 6000	$<$ 6000	All
Multi-Lane Divided, All Functional Class.	Incoming Slope	10:1	10:1	10:1
	Outgoing Slope	4:1	4:1	4:1
Multi-Lane Undivided, All Functional Class.	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.
- 4 The cross hatched  shoulder area indicates the limits where the shoulder is the same as the approach pavement.
5. If the approach is to be constructed of PCCP, the details shall be as shown elsewhere in the plans for thickness, joint type, and location.
- 6 Earth shoulder shall be used with the Type A public road approach. The Type B public road approach shall have 6 in. compacted aggregate and full approach pavement section shoulders as shown on the Type A approach detail.
- 7 If the ADT for the public road is greater than 1000, the required pavement section shall be as shown elsewhere in the plans.

INDIANA DEPARTMENT OF TRANSPORTATION	
PUBLIC ROAD APPROACH TYPE A & B - GENERAL NOTES	
SEPTEMBER 2007	
STANDARD DRAWING NO. E 610-PRAP-04	
	<p><i>/s/ Richard L. VanCleave</i> 09/04/07 DESIGN STANDARDS ENGINEER DATE</p> <p><i>/s/ Mark A. Miller</i> 09/04/07 CHIEF HIGHWAY ENGINEER DATE</p>
DESIGN STANDARDS ENGINEER	

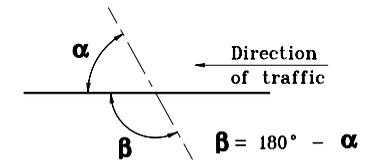
β	U	S	M	X	Y	N	L							TOTAL APPROACH AREA A						Hatched shoulder area	C.A.B. shoulder area	β
							TYPE A			TYPE B				TYPE A			TYPE B					
							W=20	W=22	W=24	W=20	W=22	W=24	Z	W=20	W=22	W=24	W=20	W=22	W=24			
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(SYS)	(SYS)	(SYS)	(SYS)	(SYS)	(SYS)	(SYS)	(SYS)	(°)						
110	55.02	65.23	11.66	18.63	33.20	3.72	108.87	109.23	109.60	108.87	109.23	109.60	11.71	531.19	556.20	501.52	645.05	670.14	695.38	112.40	52.60	110
109	53.75	64.04	11.42	19.32	33.74	3.86	107.48	107.82	108.17	107.48	107.48	108.17	11.63	524.90	549.63	574.51	639.55	664.28	689.15	112.50	51.00	109
108	52.51	62.88	11.19	20.02	34.28	4.02	106.12	106.45	106.77	106.12	106.45	106.77	11.57	518.88	543.25	567.78	634.32	658.70	683.22	112.60	49.50	108
107	51.30	61.74	10.94	20.72	34.84	4.17	104.80	105.10	105.41	104.80	105.10	105.41	11.50	513.11	537.15	561.32	629.37	653.40	677.37	112.60	48.00	107
106	50.11	60.64	10.70	21.44	35.40	4.33	103.50	103.79	104.48	103.50	103.79	104.08	11.44	507.60	531.30	555.13	624.67	648.37	672.20	112.80	46.40	106
105	48.95	59.56	10.46	22.16	35.98	4.49	102.24	102.51	102.77	102.24	102.51	102.77	11.39	502.33	525.70	549.20	620.23	643.61	667.10	112.90	45.10	105
104	47.81	58.51	10.23	22.88	36.56	4.65	101.00	101.25	101.50	101.00	101.25	101.50	11.34	497.30	520.35	543.52	616.04	639.10	662.26	112.90	43.60	104
103	46.70	57.48	9.99	23.62	37.16	4.81	99.79	100.02	100.25	99.79	100.02	100.25	11.29	492.50	515.24	538.06	612.10	634.83	657.68	113.00	42.20	103
102	45.61	56.48	9.76	24.36	37.77	4.98	98.60	98.81	99.02	98.60	98.81	99.02	11.25	487.92	510.35	532.88	608.39	630.82	653.34	113.10	40.80	102
101	44.54	55.49	9.54	25.10	38.39	5.15	97.44	97.63	97.83	97.44	97.63	97.83	11.21	483.57	505.69	527.91	604.91	627.04	649.25	113.10	39.40	101
100	43.50	54.54	9.31	25.86	39.02	5.35	96.30	96.47	96.65	96.30	96.47	96.65	11.17	479.42	501.26	523.16	601.66	623.49	645.40	113.10	37.90	100
99	42.47	53.60	9.09	26.63	39.66	5.50	95.18	95.34	95.50	95.18	95.34	95.50	11.14	475.49	497.03	518.64	598.63	620.17	641.78	113.20	36.30	99
98	41.46	52.68	8.87	27.41	40.31	5.68	94.09	94.23	94.37	94.09	94.23	94.37	11.11	471.77	493.02	514.34	595.83	617.08	638.39	113.20	34.90	98
97	40.47	51.78	8.65	28.19	40.98	5.86	93.10	93.13	93.26	93.01	93.13	93.26	11.08	468.25	489.22	510.24	593.24	614.21	635.23	113.20	33.50	97
96	39.50	50.90	8.44	28.99	41.66	6.04	91.96	92.06	92.17	91.96	92.06	92.17	11.06	464.93	485.62	506.36	590.86	611.56	632.29	113.30	32.40	96
95	38.64	50.04	8.22	29.79	42.35	6.22	90.92	91.01	91.10	90.92	91.01	91.10	11.04	461.80	482.21	502.68	588.70	609.12	629.58	113.30	31.00	95
94	37.60	49.20	8.01	30.61	43.05	6.41	89.90	89.97	90.04	89.90	89.97	90.04	11.03	458.87	479.02	499.20	586.74	606.89	627.07	113.30	29.40	94
93	36.68	48.38	7.80	31.44	43.77	6.60	88.90	88.96	89.01	88.90	88.96	89.01	11.02	456.12	476.01	495.91	584.99	604.88	624.79	113.40	28.00	93
92	35.77	47.57	7.60	32.28	44.50	6.80	87.92	87.96	87.99	87.92	87.96	87.99	11.01	453.57	473.19	492.83	583.45	603.07	622.71	113.40	26.80	92
91	34.88	46.78	7.39	33.14	45.24	6.99	86.96	86.97	86.99	86.96	86.97	86.99	11.00	451.20	470.56	489.94	586.57	606.29	626.01	113.40	27.90	91
90	34.00	46.00	7.19	34.00	46.00	7.19	86.00	86.00	86.00	90.00	90.00	90.00	11.00	449.01	468.12	487.23	589.85	609.85	629.85	113.40	29.30	90
89	33.14	45.24	6.99	34.88	46.78	7.39	85.07	85.05	85.04	91.06	91.07	91.09	11.00	447.01	465.87	484.72	593.33	613.61	633.90	113.40	30.60	89
88	32.28	44.50	6.80	35.77	47.57	7.60	84.15	84.12	84.08	92.13	92.16	92.20	11.01	445.18	463.80	482.40	597.03	617.58	638.16	113.30	32.00	88
87	31.44	43.77	6.60	36.68	48.38	7.80	83.24	83.19	83.14	93.22	93.27	93.33	11.02	443.54	461.91	480.26	600.93	621.77	642.64	113.30	33.40	87
86	30.61	43.05	6.41	37.60	49.20	8.01	83.30	83.37	83.44	94.33	94.40	94.47	11.03	444.20	462.79	481.60	605.04	626.18	647.34	113.30	34.80	86
85	29.79	42.35	6.22	38.64	50.04	8.22	84.42	84.51	84.59	95.46	95.55	95.64	11.04	447.35	466.32	485.34	609.37	630.80	652.27	113.30	36.20	85
84	28.99	41.66	6.04	39.50	50.90	8.44	85.55	85.65	85.76	96.61	96.72	96.82	11.06	450.69	469.96	489.27	613.92	635.65	657.42	113.30	37.60	84
83	28.19	40.98	5.86	40.47	51.78	8.65	86.70	86.82	86.94	97.78	97.90	98.03	11.08	454.22	473.79	493.41	618.70	640.72	662.81	113.30	39.00	83
82	27.41	40.31	5.68	41.46	52.68	8.87	87.87	88.01	88.15	98.97	99.11	99.26	11.11	457.95	477.82	497.75	623.70	646.03	668.43	113.30	40.40	82
81	26.63	39.66	5.50	42.47	53.60	9.09	89.05	89.21	89.37	100.19	100.35	100.51	11.14	461.88	482.05	502.30	628.93	651.58	674.30	113.20	41.80	81
80	25.86	39.02	5.35	43.50	54.54	9.31	90.26	90.44	90.61	101.43	101.61	101.78	11.17	466.00	486.49	507.06	634.40	657.37	680.42	113.20	43.20	80
79	25.10	38.39	5.15	44.54	55.49	9.54	91.49	91.68	91.88	102.69	102.89	103.08	11.21	470.34	491.15	512.04	640.11	663.40	686.78	113.10	44.60	79
78	24.36	37.77	4.98	45.61	56.48	9.76	92.74	92.95	93.16	103.96	104.20	104.41	11.25	474.89	496.02	517.24	646.07	669.69	693.41	113.00	46.10	78
77	23.62	37.16	4.81	46.70	57.48	9.99	94.01	94.24	94.47	105.30	105.53	105.76	11.29	479.66	501.11	522.67	652.78	676.24	700.31	113.00	47.50	77
76	22.88	36.56	4.65	47.81	58.51	10.23	95.31	95.56	95.81	106.64	106.89	107.14	11.34	484.65	506.44	528.34	658.75	683.06	707.48	113.00	49.00	76
75	22.16	35.98	4.49	48.95	59.56	10.46	96.63	96.90	97.17	108.02	108.29	108.55	11.39	489.87	511.99	534.24	665.50	690.16	714.94	112.90	50.50	75
74	21.44	35.40	4.33	50.11	60.64	10.70	97.98	98.26	98.55	109.42	109.71	110.00	11.44	495.32	517.79	540.39	672.52	697.54	722.68	112.80	52.00	74
73	20.72	34.84	4.17	51.30	61.74	10.94	99.36	99.66	99.97	110.86	111.16	111.47	11.50	501.01	523.84	546.80	679.82	705.21	730.72	112.80	53.50	73
72	20.02	34.28	4.02	52.51	62.88	11.18	100.76	101.08	101.41	112.33	112.65	112.98	11.57	506.96	530.14	553.47	687.42	713.18	739.08	112.70	55.00	72
71	19.32	33.74	3.86	53.75	64.04	11.42	102.20	102.54	102.88	113.83	114.17	114.52	11.63	513.16	536.71	560.42	695.32	721.46	747.75	112.60	56.60	71
70	18.63	33.20	3.72	55.02	65.23	11.66	103.66	104.03	104.39	115.37	115.73	116.10	11.71	519.62	543.55	567.64	703.54	730.07	756.76	112.50	58.10	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 extension of 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. See Standard Drawing E 610-PRAP-04 for General Notes.

**INDIANA DEPARTMENT OF TRANSPORTATION
PUBLIC ROAD APPROACH TYPE A
& TYPE B - TABLE OF VALUE**

SEPTEMBER 2001

STANDARD DRAWING NO. E 610-PRAP-05

	/s/ Anthony L. Uremovich 9-04-01 DESIGN STANDARDS ENGINEER DATE
	/s/ Firooz Zandi 9-04-01 CHIEF HIGHWAY ENGINEER DATE

EXAMPLE FOR TYPE C, W = 24 ft

Intersection control angle $\theta = 100^\circ$

L = 86.50'

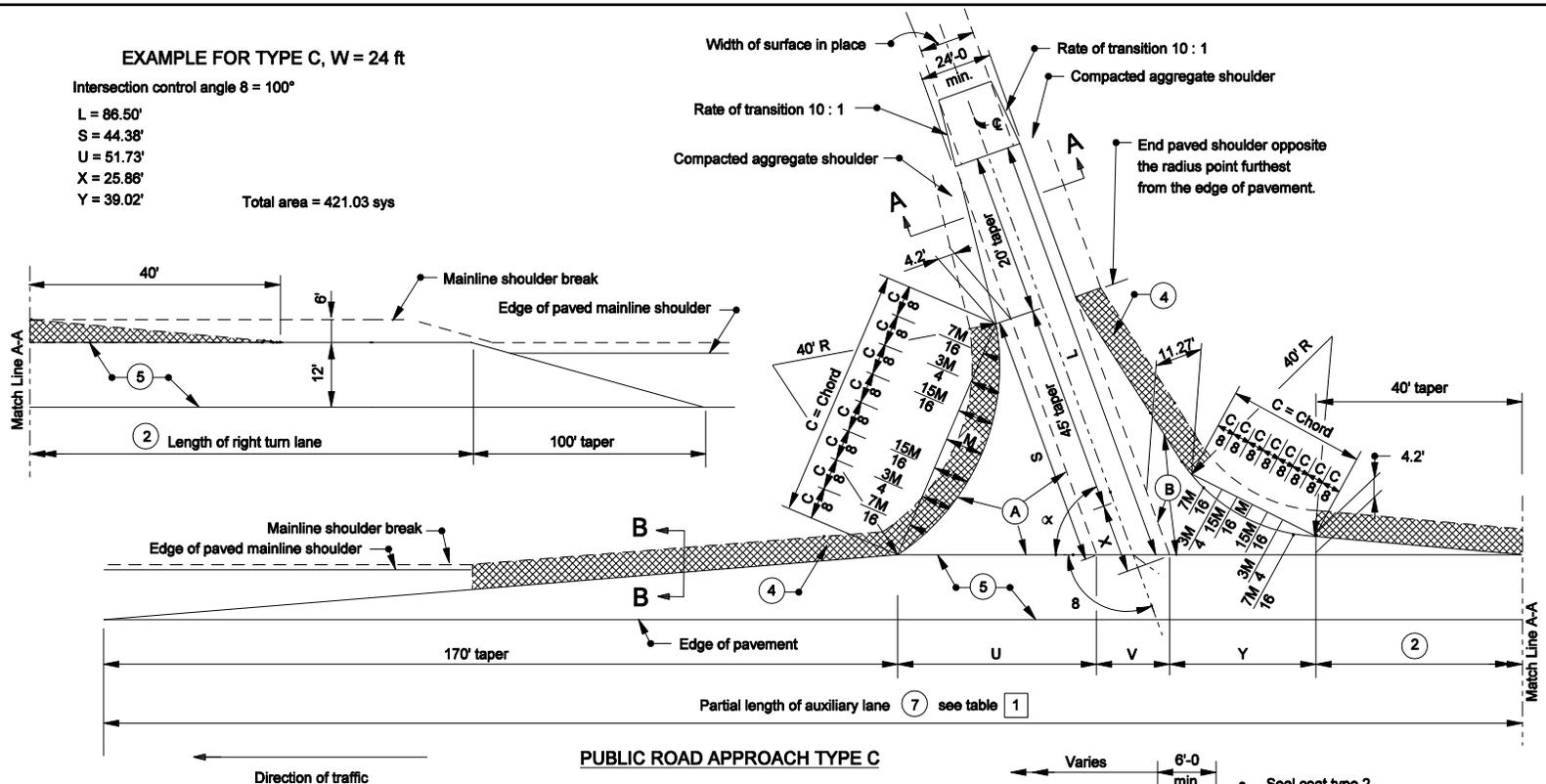
S = 44.38'

U = 51.73'

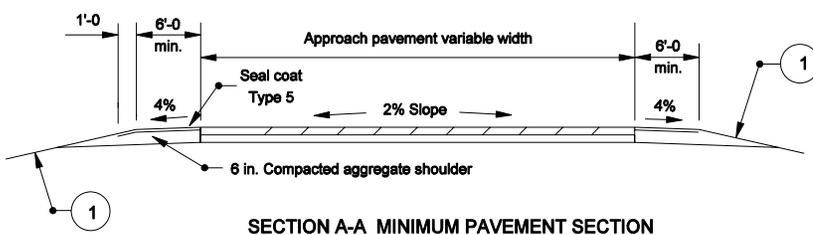
X = 25.86'

Y = 39.02'

Total area = 421.03 sys

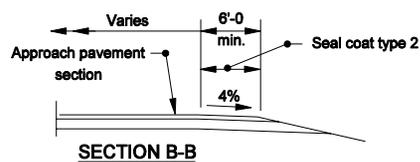


PUBLIC ROAD APPROACH TYPE C



SECTION A-A MINIMUM PAVEMENT SECTION

For ADT < 1000
 165#/syd HMA Surface Type A on
 275#/syd HMA Intermediate Type A on
 8" compacted aggregate base #53



SECTION B-B

NOTES :

- 1 See Standard Drawing E 610-PRAP-09 for table with computed values.
- 2 See Standard Drawing E 610-PRAP-11 for Table A.
- 3 See Standard Drawing E-610-PRAP-08 for General Notes and pay limits.

INDIANA DEPARTMENT OF TRANSPORTATION	
PUBLIC ROAD APPROACH TYPE C	
MARCH 2006	
STANDARD DRAWING NO. E 610-PRAP-06	
	/s/ Richard L. VanCleave 3-01-06 DESIGN STANDARDS ENGINEER DATE
	/s/ Richard K. Smutzer 3-01-06 CHIEF HIGHWAY ENGINEER DATE
DESIGN STANDARDS ENGINEER	

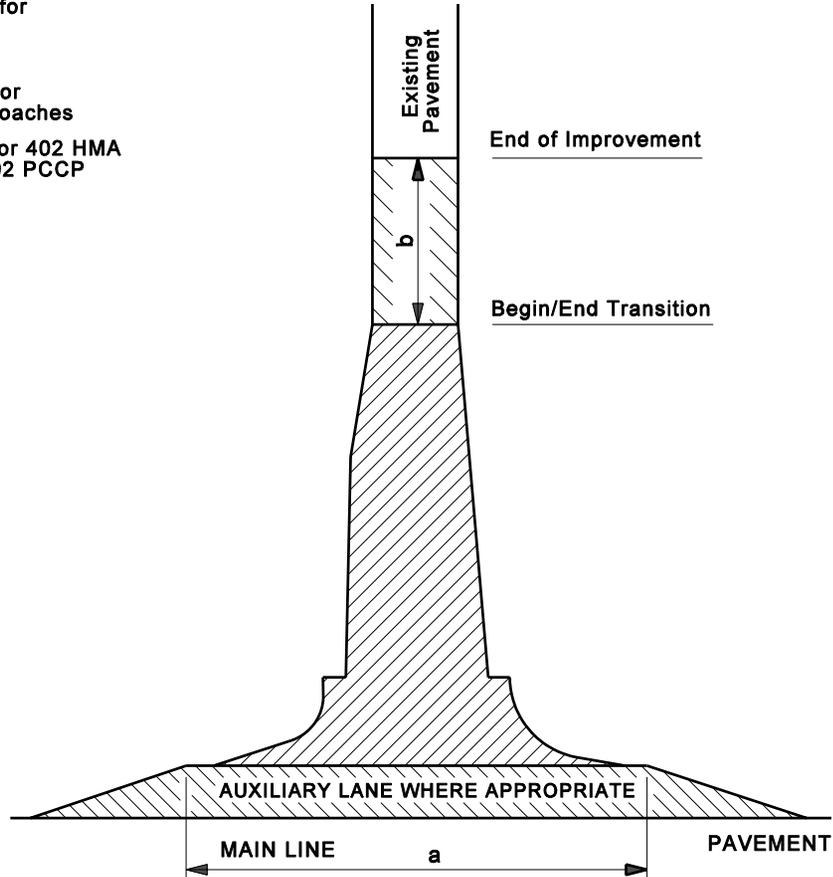
 a < 100', HMA or PCCP for Approaches

a > 100', 401 or 402 HMA or 501 or 502 PCCP

 HMA or PCCP for Approaches

 b < 100', HMA or PCCP for Approaches

b > 100', 401 or 402 HMA or 501 or 502 PCCP



NOTES:

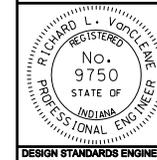
1. The pay limits shown hereon generally apply to Types A, B, C, and D Public Road Approaches as shown on Standard Drawings E 610-PRAP-02, -03, -06, and -10 respectively.

INDIANA DEPARTMENT OF TRANSPORTATION

**PUBLIC ROAD APPROACH
PAY LIMITS**

MARCH 2006

STANDARD DRAWING NO. E 610-PRAP-07



/s/ Richard L. VanCleave 3-01-06
DESIGN STANDARDS ENGINEER DATE

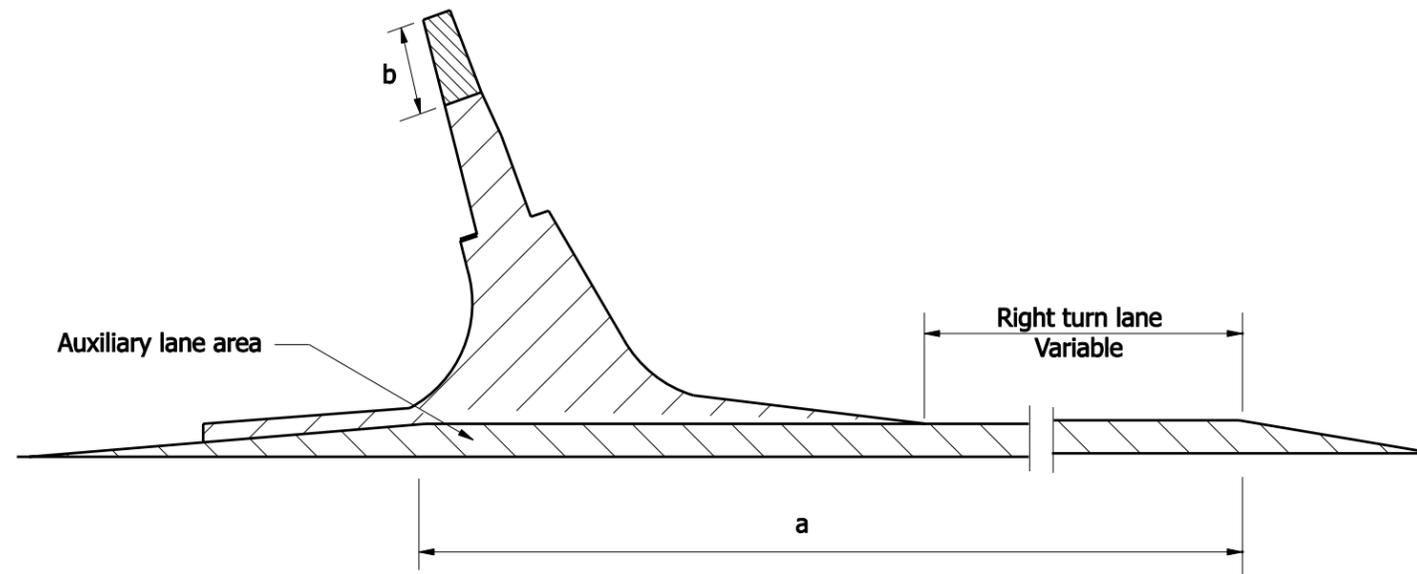
/s/ Richard K. Smutzer 3-01-06
CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

GENERAL NOTES

These notes are for Standard Drawings
E 610-PRAP-06 and E 610-PRAP-09.

- ① See table on Standard Drawing E 610-PRAP-04 for embankment slopes to be built on either side of the approach.
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 concrete, the details shall be as shown elsewhere in the plans for pavement thickness, joint type, and location.
- ④ The cross hatched  shoulder area indicates the limits where the shoulder is the same section as the approach pavement.
- ⑤ The pavement section for the auxiliary lane shall be as detailed elsewhere in the plans.
- ⑥ If the ADT for the public road is greater than 1000, the required pavement section shall be as shown elsewhere in the plans.
7. See Standard Drawing E 610 - PRAP - 07 for pay limit details.



PAY LIMITS

INDIANA DEPARTMENT OF TRANSPORTATION											
PUBLIC ROAD APPROACH TYPE C - GENERAL NOTES											
SEPTEMBER 2007											
STANDARD DRAWING NO. E 610-PRAP-08											
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"><i>/s/ Richard L. VanCleave</i></td> <td style="text-align: center;"><i>09/04/07</i></td> </tr> <tr> <td style="text-align: center;">DESIGN STANDARDS ENGINEER</td> <td style="text-align: center;">DATE</td> </tr> <tr> <td colspan="2"> </td> </tr> <tr> <td style="text-align: center;"><i>/s/ Mark A. Miller</i></td> <td style="text-align: center;"><i>09/04/07</i></td> </tr> <tr> <td style="text-align: center;">CHIEF HIGHWAY ENGINEER</td> <td style="text-align: center;">DATE</td> </tr> </table>	<i>/s/ Richard L. VanCleave</i>	<i>09/04/07</i>	DESIGN STANDARDS ENGINEER	DATE			<i>/s/ Mark A. Miller</i>	<i>09/04/07</i>	CHIEF HIGHWAY ENGINEER	DATE
<i>/s/ Richard L. VanCleave</i>	<i>09/04/07</i>										
DESIGN STANDARDS ENGINEER	DATE										
<i>/s/ Mark A. Miller</i>	<i>09/04/07</i>										
CHIEF HIGHWAY ENGINEER	DATE										
DESIGN STANDARDS ENGINEER											

β degree	L ft.	S ft.	U ft.	X ft.	Y ft.	V ft.	Shoulder gap ft.	Chord		M		Approach Areas			Auxiliary lane part.area ⑦ sys.	β degree
								Lt. ft.	Rt. ft.	Lt. ft.	Rt. ft.	Ⓐ sys.	Ⓑ [Ⓟ] sys.	Total sys.		
110	98.95	54.59	61.38	18.63	33.20	25.54	330.12	63.16	33.68	15.45	3.72	116.48	85.95	466.32	326.83	110
109	97.59	53.46	60.31	19.32	33.74	25.38	329.43	62.72	34.31	15.17	3.86	112.89	87.65	460.78	325.90	109
108	96.26	52.36	59.26	20.02	34.28	25.24	328.78	62.29	34.94	14.90	4.02	109.42	89.37	455.49	325.04	108
107	94.95	51.28	58.24	20.72	34.84	25.10	328.18	61.85	35.56	14.63	4.17	106.08	91.14	450.43	324.23	107
106	93.68	50.23	57.24	21.44	35.40	24.97	327.61	61.40	36.19	14.36	4.33	102.85	92.95	445.59	323.48	106
105	92.42	49.21	56.27	22.16	35.98	24.85	327.10	60.95	36.81	14.09	4.49	99.72	94.80	440.98	322.79	105
104	91.19	48.20	55.32	22.88	36.56	24.74	326.62	60.50	37.43	13.83	4.65	96.70	96.70	436.58	322.16	104
103	89.99	47.22	54.39	23.62	37.16	24.63	326.18	60.04	38.04	13.56	4.81	93.79	98.65	432.39	321.58	103
102	88.60	46.25	53.48	24.36	37.77	24.54	325.79	60.58	38.66	13.30	4.98	90.96	100.64	428.41	321.05	102
101	87.64	45.31	52.60	25.10	38.39	24.45	325.44	59.11	39.27	13.04	5.15	88.24	102.68	424.62	320.58	101
100	86.50	44.38	51.73	25.86	39.02	24.37	325.12	58.64	39.87	12.79	5.32	85.60	104.77	421.03	320.16	100
99	85.37	43.47	50.88	26.63	39.66	24.30	324.84	58.16	40.48	12.53	5.50	83.05	108.92	417.63	319.79	99
98	84.27	42.58	50.05	27.41	40.31	24.24	324.60	57.68	41.08	12.28	5.68	80.58	109.12	414.41	319.47	98
97	83.18	41.71	49.24	28.19	40.98	24.18	324.40	57.19	41.68	12.03	5.86	78.19	111.38	411.38	319.20	97
96	82.11	40.85	48.45	28.99	41.66	24.13	324.24	56.70	42.27	11.78	6.04	76.87	113.70	408.53	318.98	96
95	81.06	40.01	47.67	29.79	42.35	24.09	324.11	56.21	42.86	11.54	6.22	73.63	116.07	405.86	318.81	95
94	80.02	39.16	46.90	30.61	43.05	24.06	324.01	55.71	43.45	11.29	6.41	71.47	118.51	403.36	318.68	94
93	79.00	38.37	46.16	31.44	43.77	24.03	323.96	55.20	44.03	11.05	6.60	69.37	121.02	401.04	318.61	93
92	77.98	37.57	45.42	32.28	44.50	24.02	323.94	54.70	44.62	10.81	6.80	67.33	123.59	398.88	318.58	92
91	77.92	36.79	44.70	33.14	45.24	24.00	323.94	54.18	45.19	10.57	6.99	65.36	126.23	399.40	318.60	91
90	79.00	36.00	44.00	34.00	46.00	24.00	324.00	53.67	48.77	10.34	7.19	63.48	128.84	403.07	318.67	90
89	80.09	35.24	43.31	34.88	46.78	24.00	324.09	53.15	46.34	10.10	7.39	61.61	131.73	406.91	318.79	89
88	81.19	34.49	42.63	35.77	47.57	24.02	324.22	52.63	46.90	9.87	7.60	59.82	134.60	410.93	318.96	88
87	82.31	33.75	41.96	36.68	48.38	24.03	324.37	52.10	47.47	9.64	7.80	58.08	137.54	415.12	319.17	87
86	83.44	33.03	41.31	37.60	49.20	24.06	324.57	51.57	48.03	9.42	8.01	58.40	140.57	419.49	319.43	86
85	84.59	32.31	40.67	38.54	50.04	24.09	324.80	51.03	48.58	9.20	8.22	54.77	143.68	424.04	319.74	85
84	85.76	31.60	40.04	39.50	50.09	24.13	325.07	50.49	49.14	8.97	8.44	53.20	146.88	428.77	320.10	84
83	86.94	30.94	39.42	40.47	51.78	24.18	325.38	49.95	49.69	8.75	8.65	51.67	150.18	433.69	320.51	83
82	88.15	30.21	38.81	41.46	52.68	24.24	325.73	49.40	50.23	8.54	8.87	50.18	153.57	438.81	320.97	82
81	89.37	29.54	38.21	42.47	53.60	24.30	326.11	48.85	50.77	8.32	9.09	48.74	157.06	444.12	321.48	81
80	90.61	28.86	37.63	43.50	54.54	24.37	326.54	48.30	51.31	8.11	9.31	47.35	160.66	449.04	322.04	80
79	91.88	28.20	37.05	44.54	55.49	24.45	326.99	47.74	51.84	7.90	9.54	46.00	164.36	455.36	322.65	79
78	93.16	27.55	36.48	45.61	58.48	24.54	327.50	47.17	52.38	7.69	9.76	44.69	168.17	461.29	323.32	78
77	94.47	26.90	35.92	46.70	57.48	24.63	328.30	46.61	52.90	7.49	9.99	43.42	172.10	467.44	324.04	77
76	95.81	26.26	35.37	47.81	58.51	24.74	328.82	46.04	53.42	7.29	10.23	42.18	176.15	473.82	324.82	76
75	97.17	25.63	35.83	48.95	59.56	24.85	328.24	45.47	53.94	7.09	10.46	40.99	180.33	480.43	325.65	75
74	98.55	25.00	34.30	50.11	60.64	24.97	329.91	44.89	54.45	6.89	10.70	39.83	184.64	487.28	326.54	74
73	99.97	24.38	33.78	51.30	61.74	25.10	330.62	44.31	54.96	6.70	10.94	38.71	189.08	494.37	327.49	73
72	101.41	23.77	33.27	52.51	62.88	25.24	331.39	43.73	55.47	6.50	11.18	37.62	193.67	501.72	328.50	72
71	102.88	23.16	32.76	53.75	64.04	25.38	332.18	43.14	55.97	6.32	11.42	36.56	198.41	509.33	329.58	71
70	104.39	22.56	32.26	55.06	65.23	25.54	333.03	42.55	56.47	6.13	11.66	35.54	203.30	517.21	330.71	70

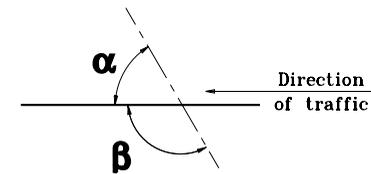
LEGEND

α = ANGLE OF TURN

It is the angle which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the extension of 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

β = 180° - α



NOTES :

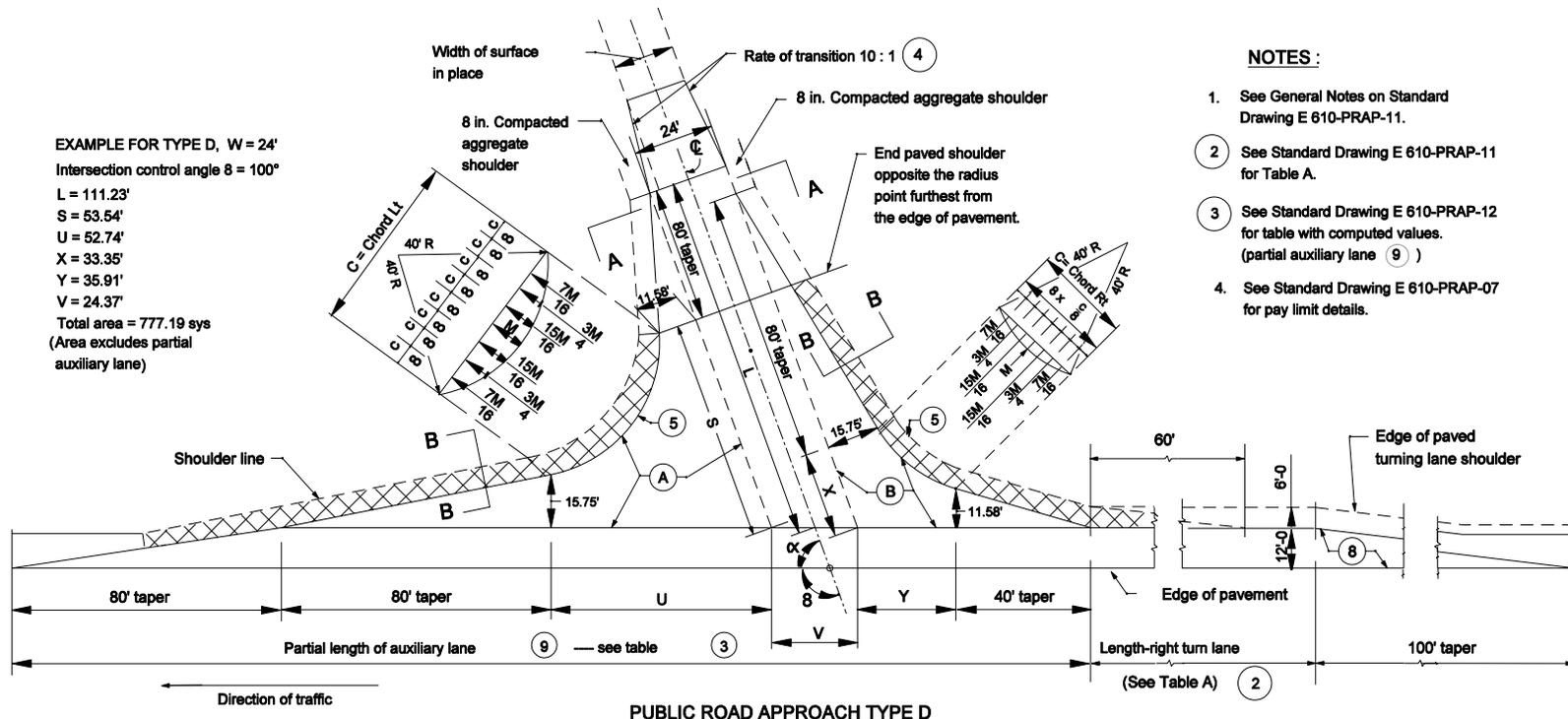
1. See Standard Drawing E 610-PRAP-06 for public road approach type C.
2. See Standard Drawing E 610-PRAP-08 for General Notes.

INDIANA DEPARTMENT OF TRANSPORTATION
PUBLIC ROAD APPROACH
TYPE C - TABLE OF VALUES
 SEPTEMBER 2001
 STANDARD DRAWING NO. E 610-PRAP-09

	/s/ Anthony L. Uremovich 9-04-01 <small>DESIGN STANDARDS ENGINEER DATE</small>
	/s/ Firooz Zandi 9-04-01 <small>CHIEF HIGHWAY ENGINEER DATE</small>

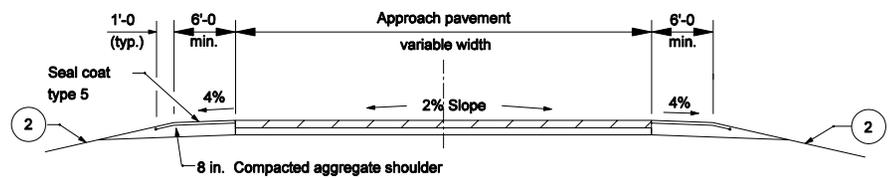
DESIGN STANDARDS ENGINEER

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



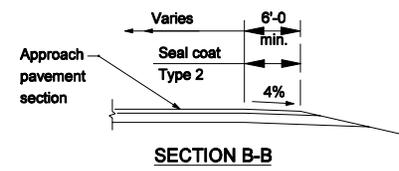
- NOTES :**
1. See General Notes on Standard Drawing E 610-PRAP-11.
 2. See Standard Drawing E 610-PRAP-11 for Table A.
 3. See Standard Drawing E 610-PRAP-12 for table with computed values. (partial auxiliary lane 9)
 4. See Standard Drawing E 610-PRAP-07 for pay limit details.

PUBLIC ROAD APPROACH TYPE D



SECTION A-A MINIMUM PAVEMENT SECTION
 FOR ≤ 50 : TRUCKS, CLASS V OR ABOVE PER DAY

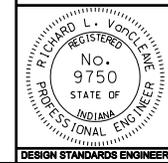
165#/syd HMA Surface 9.5mm Type A on
 495 #/syd HMA Intermediate 19.0 mm Type A on
 8" compacted aggregate base #53



INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH TYPE D
 MARCH 2006

STANDARD DRAWING NO. E 610-PRAP-10



/s/ Richard L. VanCleave 3-01-06
 DESIGN STANDARDS ENGINEER DATE
 /s/ Richard K. Smutzer 3-01-06
 CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

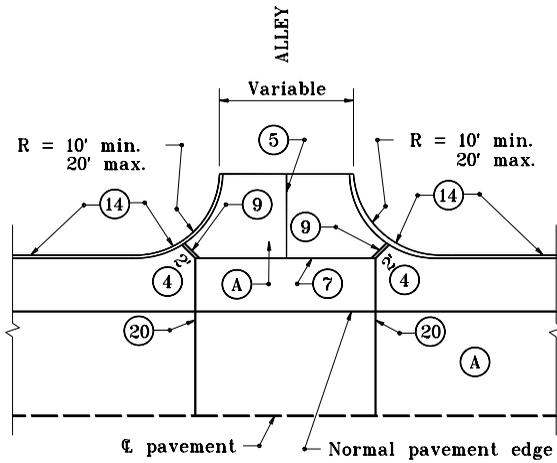
GENERAL NOTES

These notes are for Standard Drawings E 610-PRAP-10 and E 610-PRAP-12.

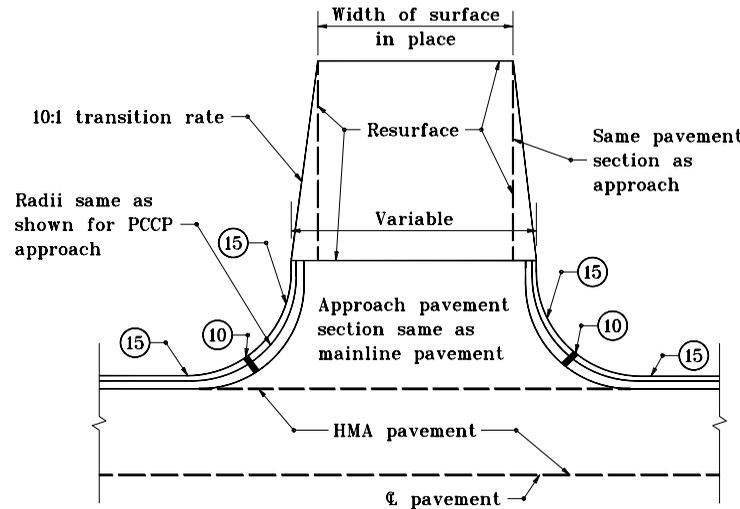
1. Standard Drawings E 610-PRAP-10 and -12 are for intersection control angle 70° to 110° .
If intersection control angle is less than 70° or greater than 110° a special design will be required.
- 2 See table on Standard Drawing E 610-PRAP-04 for embankment slopes to be built on either side of the approach
3. Cross culverts under the public road approach which cannot be located outside the mainline clear zone will require an appropriate end section at each end.
- 4 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.
- 5 The cross hatched  shoulder area indicates the limits where the shoulder is the same as the approach pavement.
6. If the approach is to be constructed of PCCP, the details shall be as shown elsewhere in the plans for pavement thickness, joint type, and location.
7. If the Class V or above truck count for the public road approach is greater than 50 per day, the required pavement section shall be as provided elsewhere in the plans
- 8 The pavement section for the turn lane shall be as shown elsewhere in the plans.

Design speed (m.p.h.)	TABLE A									
	MINIMUM LENGTH OF TURNING LANES (excluding taper) , ft.									
	Downgrade slope in %					Upgrade slope in %				
	6 to 5	4.99 to 4	3.99 to 3	2.99 to 2.01	2 to 0	0 to 2	2.01 to 2.99	3 to 3.99	4 to 4.99	5 to 6
40	400	380	355	325	295	295	280	265	250	235
50	550	520	485	445	405	405	385	365	345	325
60	675	640	600	555	500	500	475	450	425	400
65	730	690	650	595	540	540	515	485	460	435
70	800	755	710	650	590	590	560	530	505	475

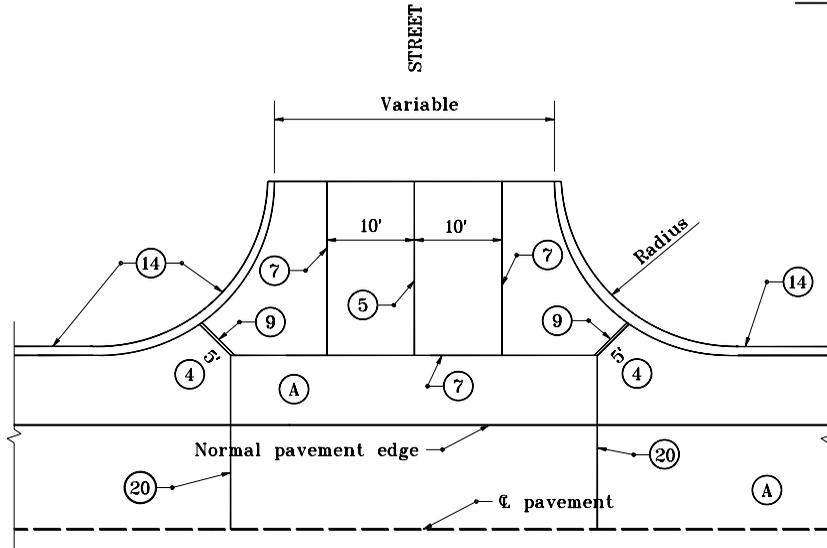
INDIANA DEPARTMENT OF TRANSPORTATION	
PUBLIC ROAD APPROACH TYPE D GENERAL NOTES AND TABLE A	
SEPTEMBER 2007	
STANDARD DRAWING NO. E 610-PRAP-11	
	<i>/s/ Richard L. VanCleave</i> <i>09/04/07</i> DESIGN STANDARDS ENGINEER DATE
DESIGN STANDARDS ENGINEER	<i>/s/ Mark A. Miller</i> <i>09/04/07</i> CHIEF HIGHWAY ENGINEER DATE



**ALLEY APPROACH
WITH PCCP MAINLINE PAVEMENT**



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



**STREET APPROACH
WITH PCCP MAINLINE PAVEMENT**

GENERAL NOTES

1. Radii of 25' at minor cross streets shall be provided on new construction and on reconstruction where space permits.
2. Radii of 30' or more at major cross streets shall be provided where feasible so that a truck may turn without encroachment.
3. Radii of 40' or more at major cross streets shall be provided where trucks and buses repeatedly turn.
- ④ Ear construction type B permitted as shown on Standard Drawing E 605-ERCN-02.

LEGEND

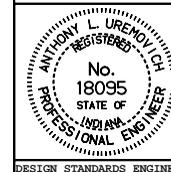
- Ⓐ PCCP
- ⑤ Longitudinal joint
- ⑦ Keyway joint
- ⑨ 1" preformed joint filler
- ⑩ ½" preformed joint filler
- ⑭ Integral concrete curb
- ⑮ Combined curb and gutter
- ⑳ Contraction joint

INDIANA DEPARTMENT OF TRANSPORTATION

**STREET or ALLEY APPROACH
HMA MAINLINE PAVEMENT**

JANUARY 2000

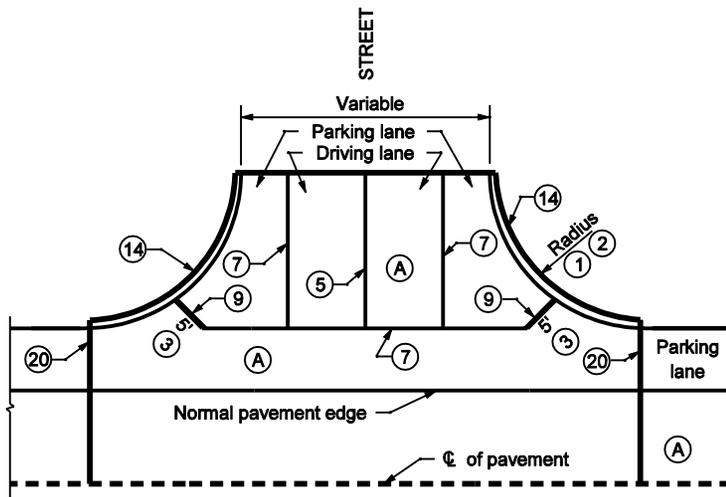
STANDARD DRAWING NO. **E 610-PRAP-13**



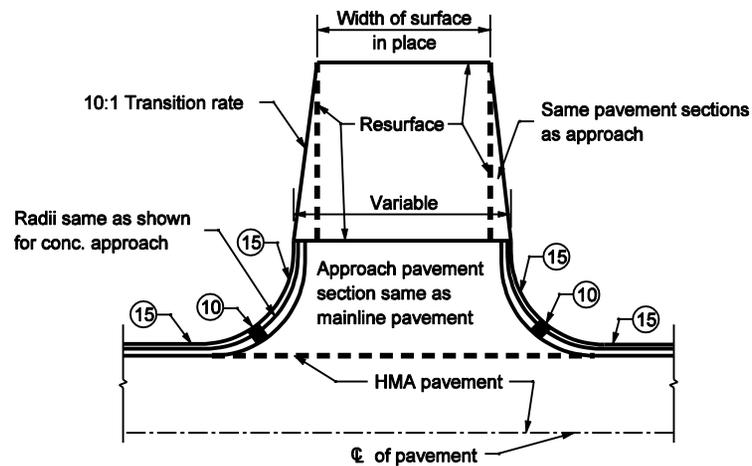
/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER



**STREET APPROACH
WITH PCCP MAINLINE APPROACH**



**STREET APPROACH
WITH HMA MAINLINE PAVEMENT**

GENERAL NOTES

- ① Provide radii of 30' or more at major cross streets where WB-15 trucks and or buses turn repeatedly.
- ② 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 Single Unit Vehicle.
- ③ Ear construction Type B as shown on Standard Drawing E 605-ERCN-02 will be permitted.
4. See General Notes on Standard Drawing E 610-PRAP-11.

LEGEND

- Ⓐ PCCP
- Ⓚ HMA pavement
- ⑤ Longitudinal joint
- ⑦ Keyway joint
- ⑨ 1" Preformed joint filler
- ⑩ ½" Preformed joint filler
- ⑭ Integral concrete curb
- ⑮ Combined curb and gutter
- ⑳ Contraction joint

INDIANA DEPARTMENT OF TRANSPORTATION	
STREET APPROACH WITH PCCP OR HMA MAINLINE PAVEMENT	
SEPTEMBER 2002	
STANDARD DRAWING NO. E 610-PRAP-14	
	/s/ Richard L. VanCleave 9-03-02 DESIGN STANDARDS ENGINEER DATE
	/s/ Richard K. Smutzer 9-03-02 CHIEF HIGHWAY ENGINEER DATE
DESIGN STANDARDS ENGINEER	