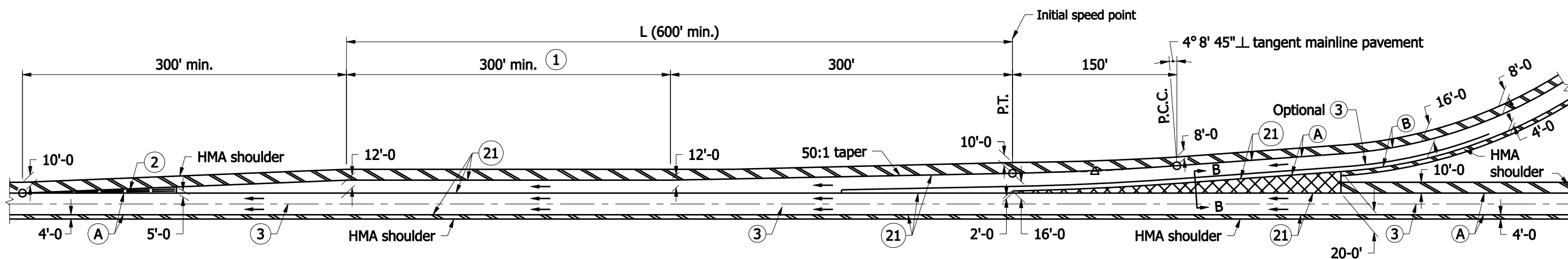


GENERAL NOTES

- ① Required additional length of L above the 600' minimum shall be added to the length of this parallel lane segment. (Example: If required L = 720', then this parallel lane segment length = 420'). See tables on Standard Drawing E 401-REBS-04.
- ② Ear construction type A: 2 lines of #5 bars required (Est. weight = 255 lb). Transverse sawed and sealed joint, in line with pavement contraction joint, shall extend through ear construction. The #5 bars shall be discontinued at such joints. See Detail B-B.
3. See Standard Drawing E 401-REBS-03 for Section B-B.

CURVE DATA

$\Delta = 3^{\circ}00'00''$
 $R = 2864.79'$
 $T = 75.02'$
 $L = 150.0'$
 $E = 0.98'$

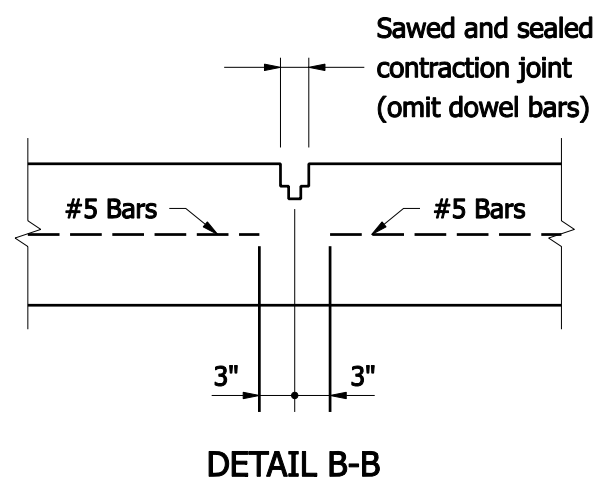


NOTES :

ENTRANCE

LEGEND

- Ⓐ Pavement type and thickness as specified for the mainline.
- Ⓑ Pavement type and thickness as specified for ramps.
- ③ Longitudinal joint
- 21 Longitudinal construction joint
- ▨ HMA shoulder (Thickness of mainline pavement)
- ▩ HMA shoulder (Thickness as specified on Typical Sections)

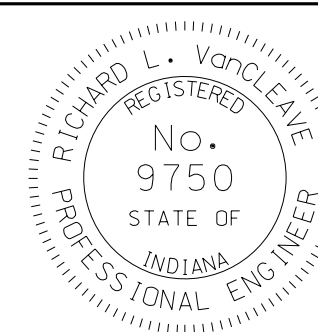


INDIANA DEPARTMENT OF TRANSPORTATION

**RAMP ENTRANCE TERMINAL
HMA SHOULDER**

SEPTEMBER 2008

STANDARD DRAWING NO. E 401- REBS-01



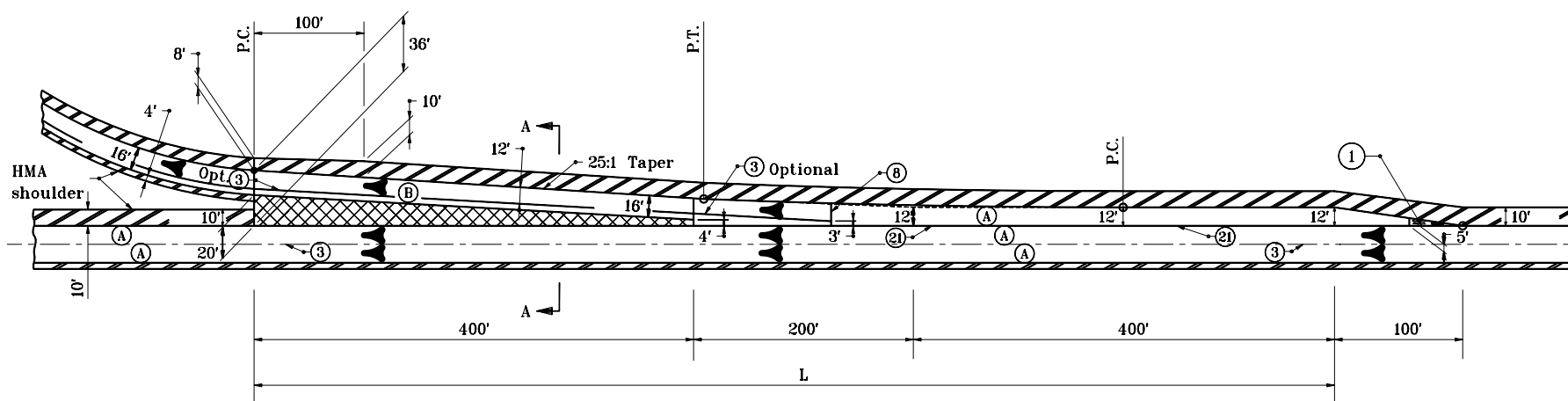
DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave 09/02/08
 DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 09/02/08
 CHIEF HIGHWAY ENGINEER DATE

GENERAL NOTES

- ① Ear construction type A:
2 lines of #5 bars required (Est. wt. = 86 lb).
Transverse sawed and sealed joint, in line with pavement contraction joint, shall extend through ear construction. The #5 bars shall be discontinued at such joints. See Detail B-B on Standard Drawing E 401-REBS-01.
2. See Standard Drawing E 401-REBS-03 for Section A-A.



EXIT

LEGEND

- Ⓐ Pavement type and thickness as specified for the mainline.
- Ⓑ Pavement type and thickness as specified for ramps.
- ③ Longitudinal Joint (Optional where indicated)
- ② Longitudinal Construction Joint
- ▨ HMA Shoulder (Thickness of mainline pavement)
- ▩ HMA Shoulder (Thickness as specified on Typical Sections)

CURVE DATA

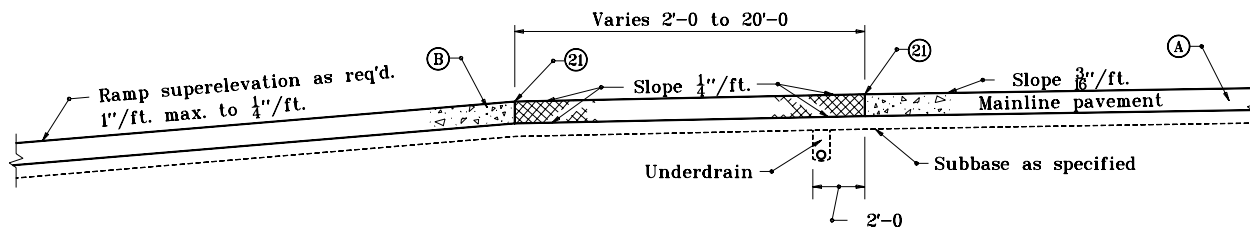
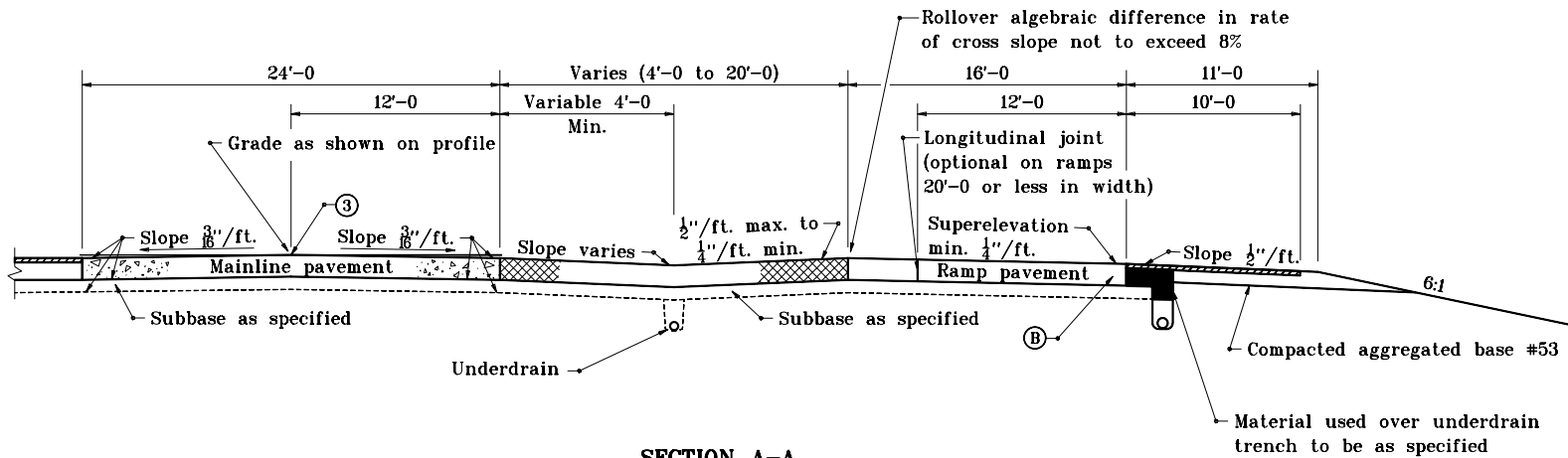
$\Delta = 2^\circ 17' 26''$
 $T = 190.91'$
 $L = 381.76'$
 $E = 1.91'$
 $R = 9549.30'$

INDIANA DEPARTMENT OF TRANSPORTATION

RAMP EXIT TERMINAL HMA SHOULDER JANUARY 1999

STANDARD DRAWING NO. E 401-REBS-02

	DETAILS PLACED IN THIS FORMAT	11-15-99
	/s/ Anthony L. Uremovich	11-15-99
	DESIGN STANDARDS ENGINEER	DATE
/s/ Firooz Zandi	11-15-99	
DESIGN STANDARDS ENGINEER	CHIEF HIGHWAY ENGINEER	DATE
	ORIGINALLY APPROVED	1-04-99



LEGEND

- (A) Pavement type and thickness as specified for the mainline.
- (B) Pavement type and thickness as specified for ramps.
- (3) Longitudinal joint
- (21) Longitudinal construction joint
- HMA shoulder (Thickness of mainline pavement)

INDIANA DEPARTMENT OF TRANSPORTATION	
RAMP CROSS SECTIONS	
HMA SHOULDER	
SEPTEMBER 2000	
STANDARD DRAWING NO. E 401-REBS-03	
	/s/ Anthony L. Uremovich 9-01-00 <small>DESIGN STANDARDS ENGINEER DATE</small>
	/s/ Firooz Zandi 9-01-00 <small>CHIEF HIGHWAY ENGINEER DATE</small>
<small>DESIGN STANDARDS ENGINEER</small>	

		ACCELERATION LENGTH, L (ft)								
		ENTRANCE CURVE DESIGN SPEED (mph)								
HIGHWAY	STOP CONDITION	15	20	25	30	35	40	45	50	
		INITIAL SPEED (mph)								
DESIGN SPEED (mph)	SPEED REACHED (mph)	0	14	18	22	25	30	36	40	44
30	23	190	—	—	—	—	—	—	—	—
40	31	380	320	250	220	140	—	—	—	—
50	39	760	700	630	580	500	380	160	—	—
60	47	1170	1120	1070	1000	910	800	590	400	170
70	53	1590	1540	1500	1410	1330	1230	1010	830	580

MINIMUM ACCELERATION LENGTHS FOR ENTRANCE TERMINALS
(Flat grades of 2 percent or less)

TABLE A

DESIGN SPEED (mph)	ACCELERATION LANE				
	Ratio of length of grade to length of level for ①				
	Design speed of turning roadway curve (mph)				
	20	30	40	50	ALL SPEEDS
	2.01 to 4 percent upgrade				2.01 to 4 percent downgrade
40	1.3	1.3	—	—	0.7
50	1.3	1.4	1.4	—	0.65
60	1.4	1.5	1.5	1.6	0.6
70	1.5	1.6	1.7	1.8	0.6
	4.01 to 6 percent upgrade				4.01 to 6 percent downgrade
40	1.5	1.5	—	—	0.6
50	1.5	1.7	2.2	—	0.55
60	1.7	1.9	2.2	2.2	0.5
70	2.0	2.2	2.6	3.0	0.5

① Ratio from this table multiplied by length in Table A gives length of speed change lane on grade.

RATIO OF LENGTH OF SPEED-CHANGE LANE ON GRADE TO LENGTH OF LEVEL ACCELERATION LANE

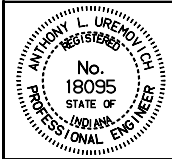
TABLE B

INDIANA DEPARTMENT OF TRANSPORTATION

RAMP TERMINAL TABLES

JUNE 1996

STANDARD DRAWING NO. **E 401-REBS-04**

	DETAILS PLACED IN THIS FORMAT	11-15-99
	/s/ Anthony L. Uremovich	11-15-99
	DESIGN STANDARDS ENGINEER	DATE
/s/ Firooz Zandi	11-15-99	
CHIEF HIGHWAY ENGINEER	DATE	
DESIGN STANDARDS ENGINEER	ORIGINALLY APPROVED	6-03-96