

Ramp G6, Curve 1

$$V = 20 \text{ mph}$$

$$R = 115.00'$$

$$e_d = 0.057 \text{ (from AASHTO Fig. 3-26)}$$

PC →

Rotating from 0.0588

$$W = 12'$$

Design speed = 25 mph

$$G = 143$$

$$L_r = (143)(12)(1)(0.0588 - 0.057) = 3.09 \text{ ft}$$

PC STA 900+82.19

achieve 100% rotation at PC

$$\text{STA. } 900+79.10 \quad - \quad 0.0588$$

$$\text{STA. } 900+82.19 \quad - \quad 0.057$$

} this rotation will be achieved prior to PC, as part of Municipal lot Road super.

PT →

Rotate to 0.055

$$W = 16'$$

Design speed = 20 mph

$$G = 135$$

$$L_r = (16)(135)(1)(0.057 - 0.055) = 4.32$$

achieve by PT - $0.055/0.057 \rightarrow 96.49\%$

$$\text{STA. } 902+58.55 \quad 0.057$$

$$\text{STA. } 902+62.87 \quad 0.055$$

BURGESS & NIPLE COMPUTATION SHEET

JOB NO. A05060 JOB NAME Cleveland Innerbelt CCG4 SHEET 1 OF 2 SHEETS
SUBJECT Superelevation Ramp G6 PREPARED BY ALR DATE 1-26-10
SCALE _____ CHECKED BY DCL DATE 02-03-10

Ramp G6, Curve, 2

$V = 20 \text{ mph}$

$R = 124'$

$e_d = 0.055$

PC \rightarrow see previous sheet

PT \rightarrow

rotate to 1.6%

$W = 16'$

design speed = 35 mph

$G = 16\%$

$L_r = \frac{(16)(16)(1)(0.055 - 0.016)}{1} = 100.46$

Spiral @ PT -

length: $L_s = 200' > 100.46$ transition over spiral

BURGESS & NIPLE COMPUTATION SHEET

JOB NO. 40506 JOB NAME Cleveland Invertekt CCSA SHEET 1 OF 2 SHEETS

SUBJECT Superelevation Ramp G6 PREPARED BY ALR DATE 1-26-10

SCALE _____ CHECKED BY DCL DATE 02-03-2010

Gore of Ramp 66 @ SR2 WB -

From Spiral to Tangent tie in ~~SR2~~ WB

Transition from 5.5% to 1.6%

$$G(116)(0.055 - 0.016) = 200'$$

$$G = 320.5 \text{ - 70 mph design}$$

Use same rate to transition from 1.6% \rightarrow to 2% \rightarrow

$$Lr = (320.5)(116)(0.036) = 184.6'$$

SR2 WB Baseline

STA 66+92.96 \rightarrow 2% \downarrow

STA 68+77.55 \rightarrow 1.6% \uparrow

Location of 0% -

$$Lr = (320.5)(116)(0.016) = 82' \rightarrow \text{Sta. } 67+95.99 \text{ (SR2 WB Baseline)}$$

BURGESS & NIPLE COMPUTATION SHEET

JOB NO. 4DS66 JOB NAME CG4 SHEET 1 OF 1 SHEETS
SUBJECT RAMP 66 / SR2 GORE PREPARED BY ALR DATE 1-14-2010
SCALE _____ CHECKED BY DCL DATE 02-03-2010