

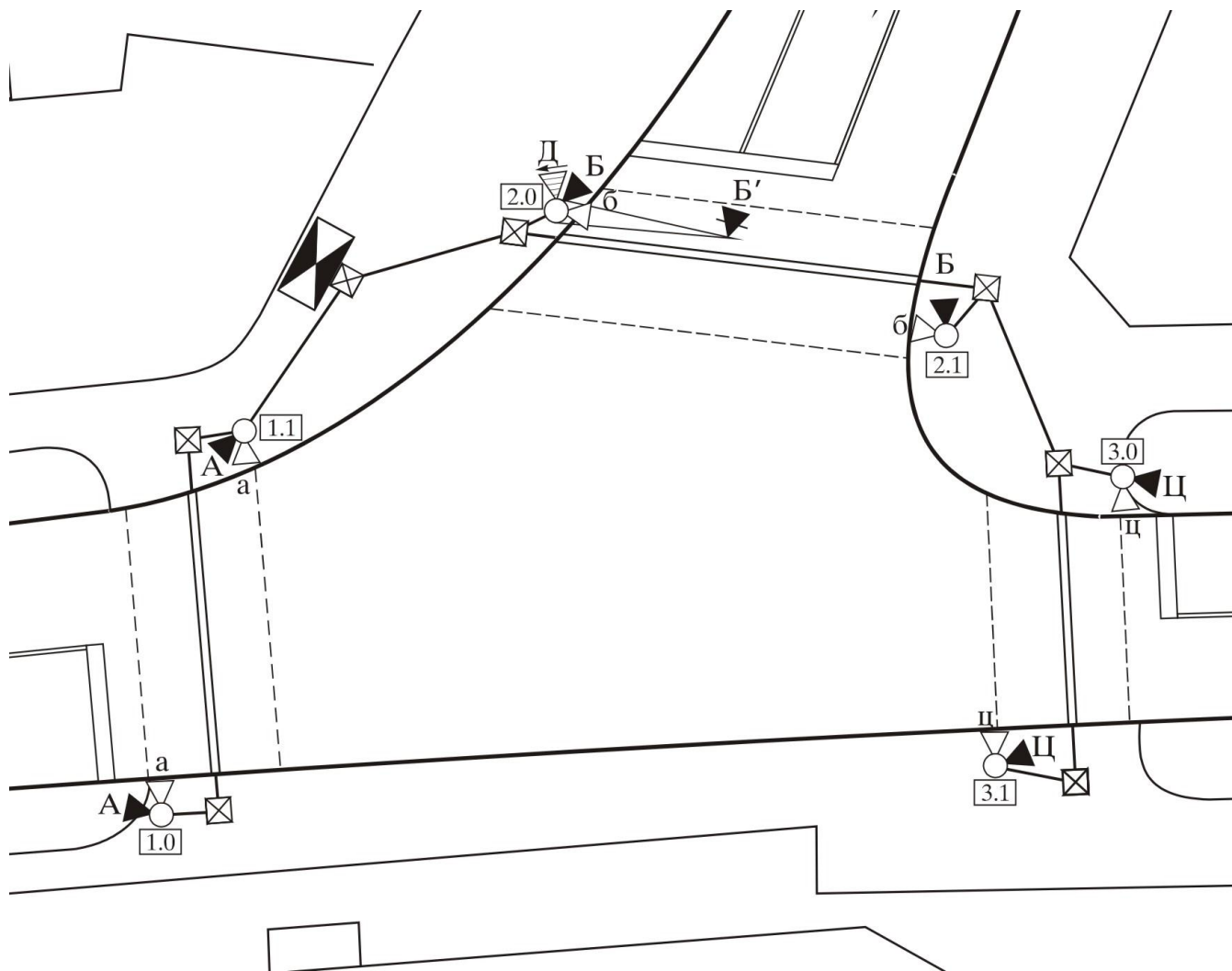
KAPACITET SIGNALISANIH RASKRSNICA

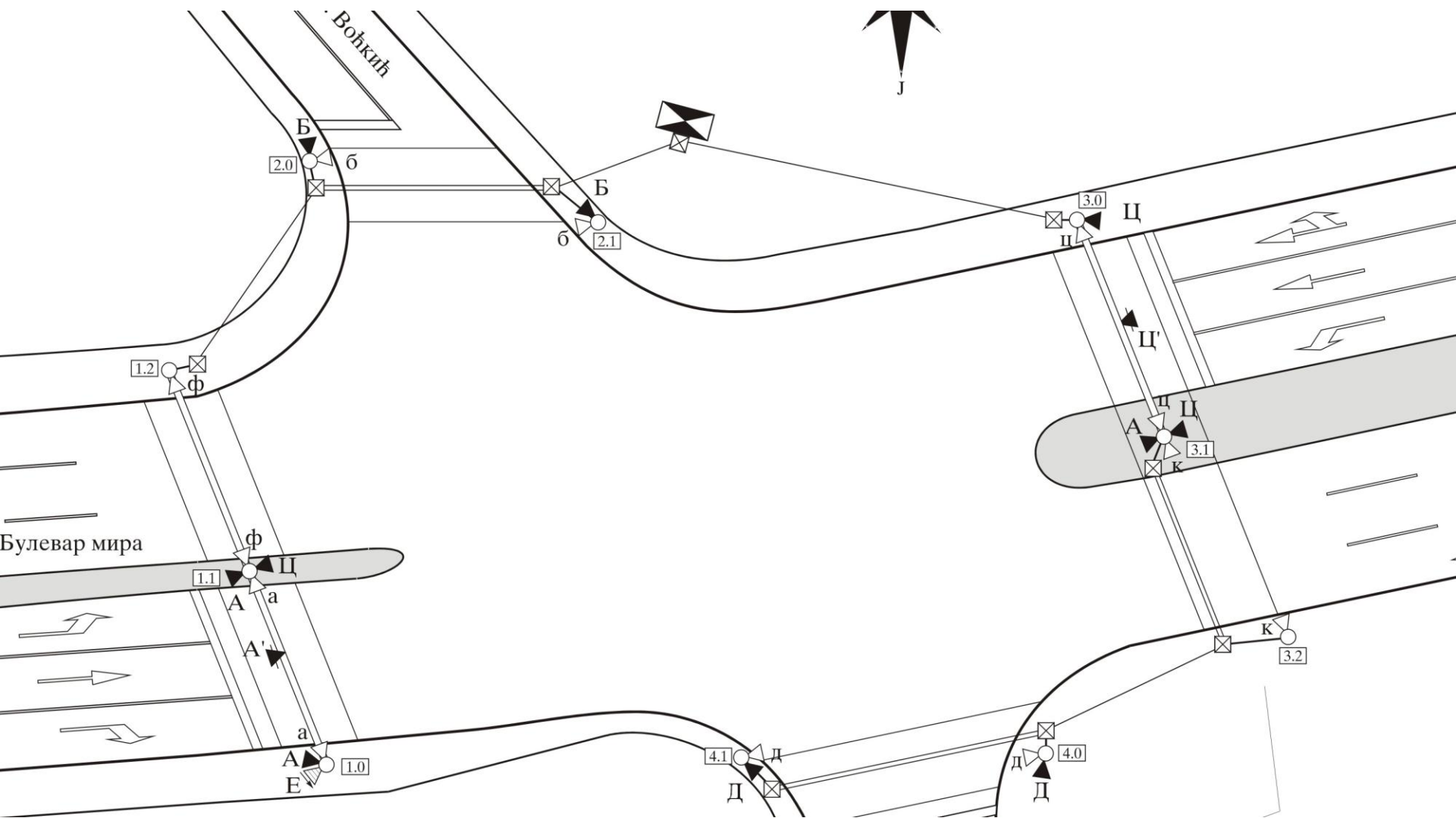
PRORAČUN ZASIĆENOG TOKA

$$S = S_0 N f_W f_{HV} f_g f_p f_{bb} f_a f_{LU} f_{LT} f_{RT} f_{Lpb} f_{Rpb}$$

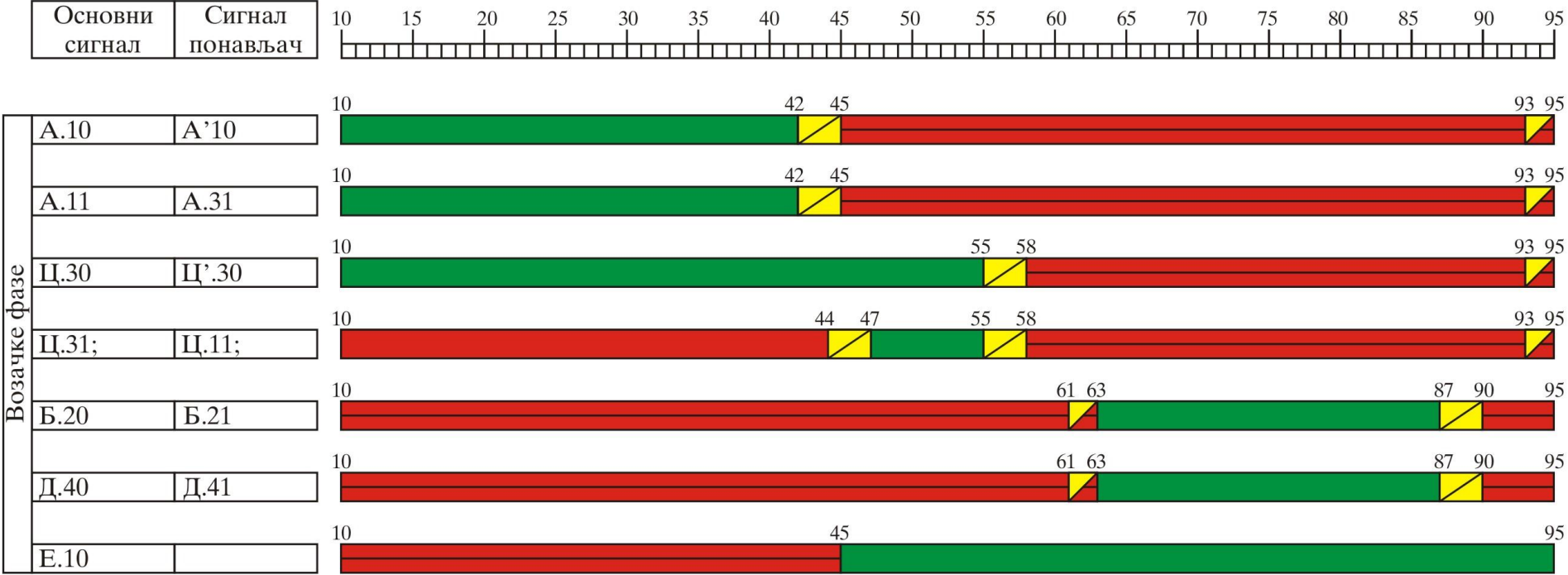
| | | |
|-----------|---|--|
| s | = | saturation flow rate for subject lane group, expressed as a total for all lanes in lane group (veh/h); |
| s_o | = | base saturation flow rate per lane (pc/h/ln); |
| N | = | number of lanes in lane group; |
| f_w | = | adjustment factor for lane width; |
| f_{HV} | = | adjustment factor for heavy vehicles in traffic stream; |
| f_g | = | adjustment factor for approach grade; |
| f_p | = | adjustment factor for existence of a parking lane and parking activity adjacent to lane group; |
| f_{bb} | = | adjustment factor for blocking effect of local buses that stop within intersection area; |
| f_a | = | adjustment factor for area type; |
| f_{LU} | = | adjustment factor for lane utilization; |
| f_{LT} | = | adjustment factor for left turns in lane group; |
| f_{RT} | = | adjustment factor for right turns in lane group; |
| f_{Lpb} | = | pedestrian adjustment factor for left-turn movements; and |
| f_{Rpb} | = | pedestrian-bicycle adjustment factor for right-turn movements. |

FAKTOR LEVIH SKRETANJA



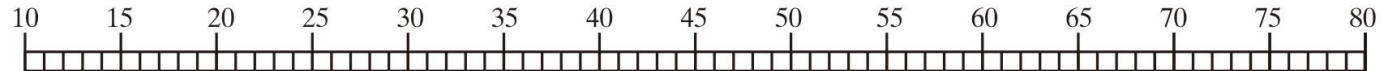


ZAŠTIĆENA



DOPUŠTENA

| Основни сигнал | Сигнал понављач |
|-------------------|--------------------|
|-------------------|--------------------|

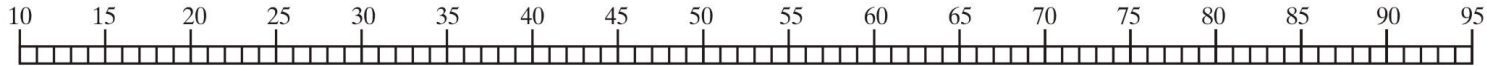


Возачке фазе



DOPUŠTENA + ZAŠTIĆENA

| Основни сигнал | Сигнал понављач |
|-------------------|--------------------|
|-------------------|--------------------|



Возачке фазе



Kapacitet

$$c_i = s_i \frac{g_i}{C}$$

where

- c_i = capacity of lane group i (veh/h),
- s_i = saturation flow rate for lane group i (veh/h), and
- g_i/C = effective green ratio for lane group i.

v/c Ratio

$$X_i = \left(\frac{v}{c} \right)_i = \frac{v_i}{s_i \left(\frac{g_i}{C} \right)} = \frac{v_i C}{s_i g_i}$$

Nivo usluge

EXHIBIT 16-2. LOS CRITERIA FOR SIGNALIZED INTERSECTIONS

| LOS | Control Delay per Vehicle (s/veh) |
|-----|-----------------------------------|
| A | ≤ 10 |
| B | > 10–20 |
| C | > 20–35 |
| D | > 35–55 |
| E | > 55–80 |
| F | > 80 |

$$d_1 = \frac{0.5C \left(1 - \frac{g}{C}\right)^2}{1 - \left[\min(1, X) \frac{g}{C}\right]}$$

- d_1 = uniform control delay assuming uniform arrivals (s/veh);
- C = cycle length (s); cycle length used in pretimed signal control, or average cycle length for actuated control (see Appendix B for signal timing estimation of actuated control parameters);
- g = effective green time for lane group (s); green time used in pretimed signal control, or average lane group effective green time for actuated control (see Appendix B for signal timing estimation of actuated control parameters); and
- X = v/c ratio or degree of saturation for lane group.

$$d_2 = 900T \left[(X - 1) + \sqrt{(X - 1)^2 + \frac{8kIX}{cT}} \right]$$

- d_2 = incremental delay to account for effect of random and oversaturation queues, adjusted for duration of analysis period and type of signal control (s/veh); this delay component assumes that there is no initial queue for lane group at start of analysis period;
- T = duration of analysis period (h);
- k = incremental delay factor that is dependent on controller settings;
- I = upstream filtering/metering adjustment factor;
- c = lane group capacity (veh/h); and
- X = lane group v/c ratio or degree of saturation.

$$d_3 = \frac{1800Q_b(1 + u)t}{cT}$$

- Q_b = initial queue at the start of period T (veh),
- c = adjusted lane group capacity (veh/h),
- T = duration of analysis period (h),
- t = duration of unmet demand in T (h), and
- u = delay parameter.

$$d_A = \frac{\sum d_i v_i}{\sum v_i}$$

- d_A = delay for Approach A (s/veh),
 d_i = delay for lane group i (on Approach A) (s/veh), and
 v_i = adjusted flow for lane group i (veh/h).

$$d_I = \frac{\sum d_A v_A}{\sum v_A}$$

- d_I = delay per vehicle for intersection (s/veh),
 d_A = delay for Approach A (s/veh), and
 v_A = adjusted flow for Approach A (veh/h).

EXHIBIT 16-14. SENSITIVITY OF DELAY TO DEMAND TO CAPACITY RATIO
(SEE FOOTNOTE FOR ASSUMED VALUES)

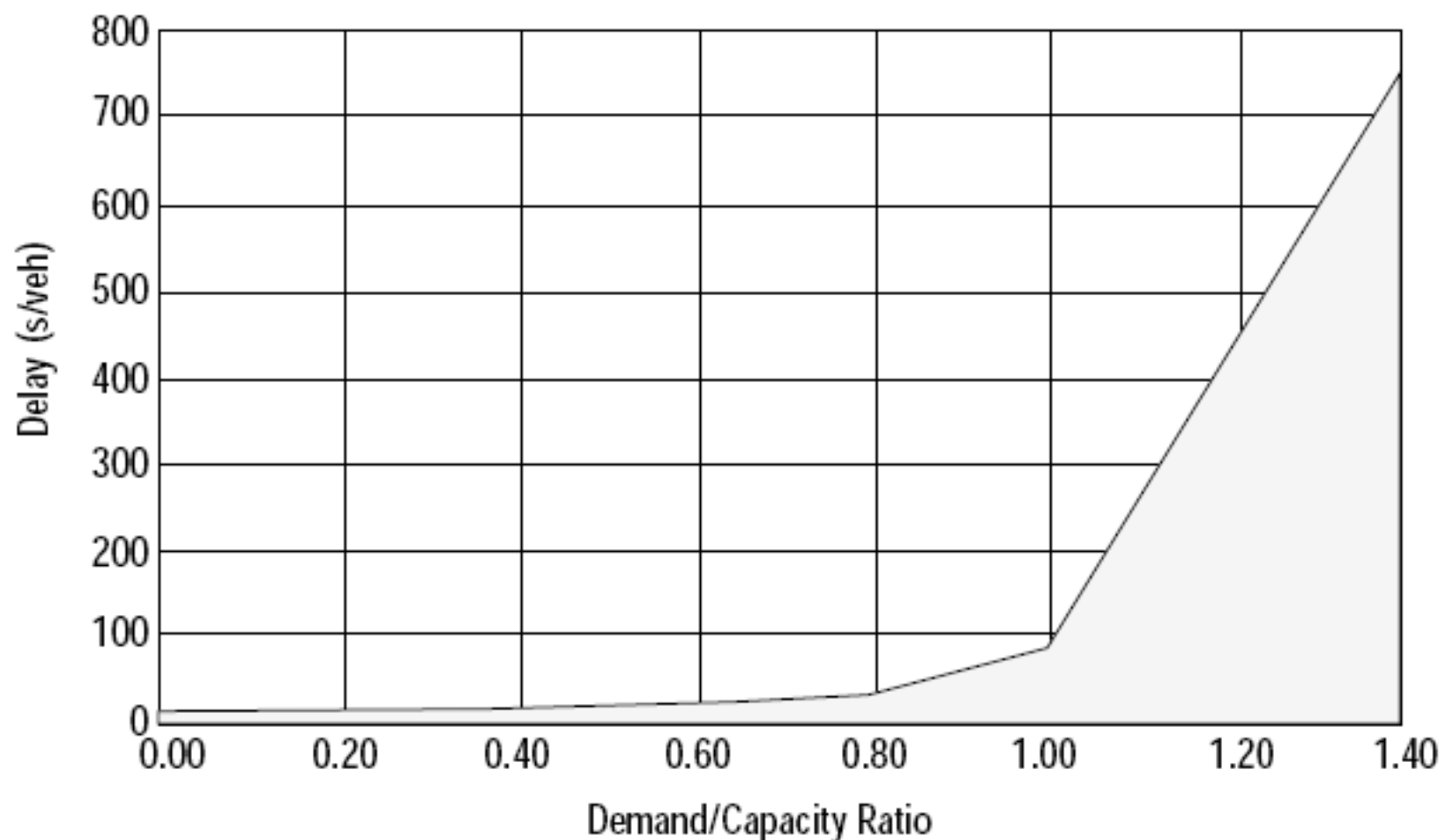


EXHIBIT 16-15. SENSITIVITY OF DELAY TO g/C
(SEE FOOTNOTE FOR ASSUMED VALUES)

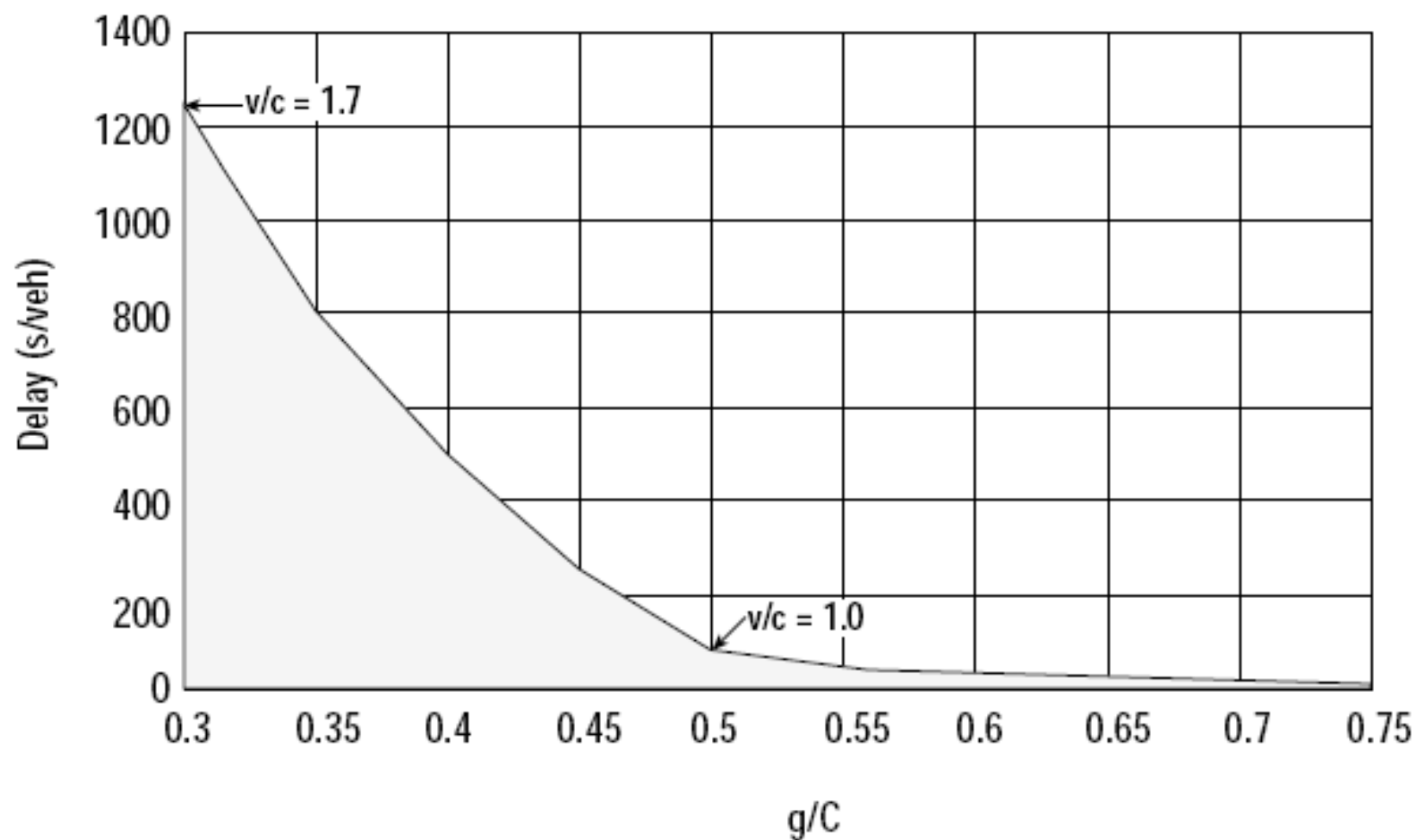


EXHIBIT 16-16. SENSITIVITY OF DELAY TO CYCLE LENGTH

