

3.10

1.

$$FFS = BFFS - f_{LW} - f_{LC} - f_N - f_{ID} = 63.0$$

70mph
0
0
4.5
2.5

Limit
Between
LOS C & LOS D

$$V_p = 1630 \text{ pcph} = 1630 \text{ pc/h}$$

2.

$$V_p = \frac{V}{(PHF)(N)(f_{HV})(f_p)}$$

$$PHF = \frac{1800}{500 \times 4} = 0.90$$

1800 vph
 ↓
 V
 ↓
 2
 ↓
 1
 ↓
 $1 + P_T(E_T - 1) + P_R(E_R - 1)$

Rolling
 $\frac{1}{1 + P_T(2.5 - 1) + 0}$

$$1630 = \frac{1800}{(1.8) \left(\frac{1}{1 + p_T(1.5)} \right)} = \frac{1000(1 + 1.5 p_T)}{1}$$

$$1.63 = 1 + 1.5 p_T$$

$$0.63 = 1.5 p_T$$

$$p_T = 0.42 \longrightarrow \underline{42\%} \text{ Trucks (Maximum Allowed to Maintain LOS C)}$$