

We
Offer
Our
Best
Center
View

١٥
ثالثة مدنى MANSOURA

2018

نقل وحرور

Part 2



CENTER VIEW

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اول شارع الترمعة / امام مطعم اهل الشام / اعلى مطعم حضر مونت / الدور الرابع

WWWFACEBOOK.COM/CENTERVIEW

⊗ exponential Distribution

احتمالی زمان

نفس کا، 8
[حالتی = 5.14]

$$P(T \geq t) = e^{-\lambda t}$$

$$\lambda = \frac{1}{\lambda}$$

head way
way

head way
head way
(1 sec)

$$\text{mean} = \frac{1}{\lambda}$$

$$\text{variance} = \frac{1}{\lambda^2}$$

⊗ shifted exponential Distribution

بالتی بنسٹرم

$$P(T \geq t) = \begin{cases} e^{-\lambda(t-\alpha)} & t > \alpha \\ 0 & t < \alpha \end{cases}$$

$$t > \alpha$$

$$t < \alpha$$

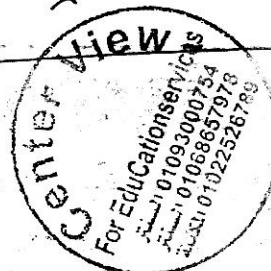
Time
headway

α :- minimum headway between vehicles

$$\text{mean} = \frac{1}{\lambda}$$

$$\text{variance} = \frac{1}{\lambda^2}$$

$$t = \frac{1}{\lambda}$$



Consider a traffic stream with a mean arrival rate of 300 vph. If the time headway distribution can be modeled using a shifted exponential distribution with $\alpha = 2$ seconds, then determine

- the probability of a time headway being greater than or equal to 2 seconds; and
- the probability of a time headway being greater than or equal to 3 seconds.

* shifted exponential Distribution

$$P(T \geq t) = e^{-\frac{(t-\alpha)}{(T-\alpha)}}$$

$$\alpha = 2$$

$$T = \frac{1}{\lambda} = \frac{60 \times 60}{300} = 12 \text{ s}$$

$$\textcircled{a} P(T \geq 2) = e^{-\frac{(2-2)}{(12-2)}} = e^0 = 1$$

$$\textcircled{b} P(T \geq 3) = e^{-\frac{(3-2)}{(12-2)}} = 0.905$$

just value

$$P(T=2) = \underline{\underline{??}}$$

التحكم في التقاطعات

Intersection Control

Types of intersection

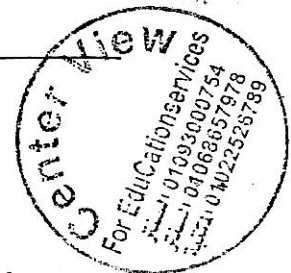
- ① at-grade intersection تقاطع من نفس المستوى
- ② interchange تقاطع من مستويات مختلفة

at grade intersection

① T-intersection (Three leg)

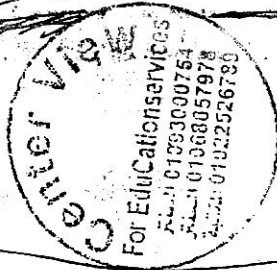
② Four-leg intersection

③ Rotary



يوجد ٣ طرق للتحكم في التقاطعات

① level I Basic rules



التي (تكون) بسيطة
في حالة تواجد مساحة الرؤية

② level II

YIELD or STOP signs

استخدام

① * في حالة مساحة الرؤية لقليلة (متر متبقية)
② engineering center

What is the main difference between the stop-controlled and the yield controlled intersections?

intersections?

لابد من توقف
we must stop
(جزي من الثانية اولية مع حاسب لوضع)

stop sign
Controlled

yield sign
Controlled
- مشر متبقي اقل من ١٢ متر

③ level III

Traffic signals

استخدام المرونة

→ Stopping sight Distance



$$SSD = 1.47 * S * t + \frac{S^2}{30(f \pm 0.01G)}$$

S^2

← مسافت
لظہار
الباقی
و حوالہ

← مسرور
m/hr

$$30(f \pm 0.01G)$$

gradient

$$G = 0$$

اندر

reaction
Time

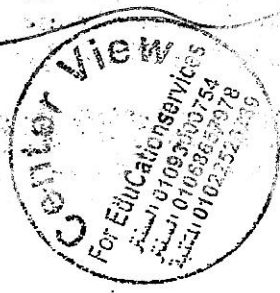
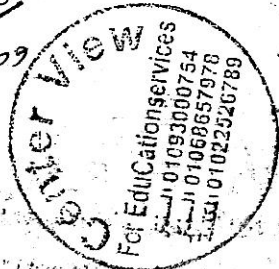
$$t = 2.5 \text{ sec}$$

اندر

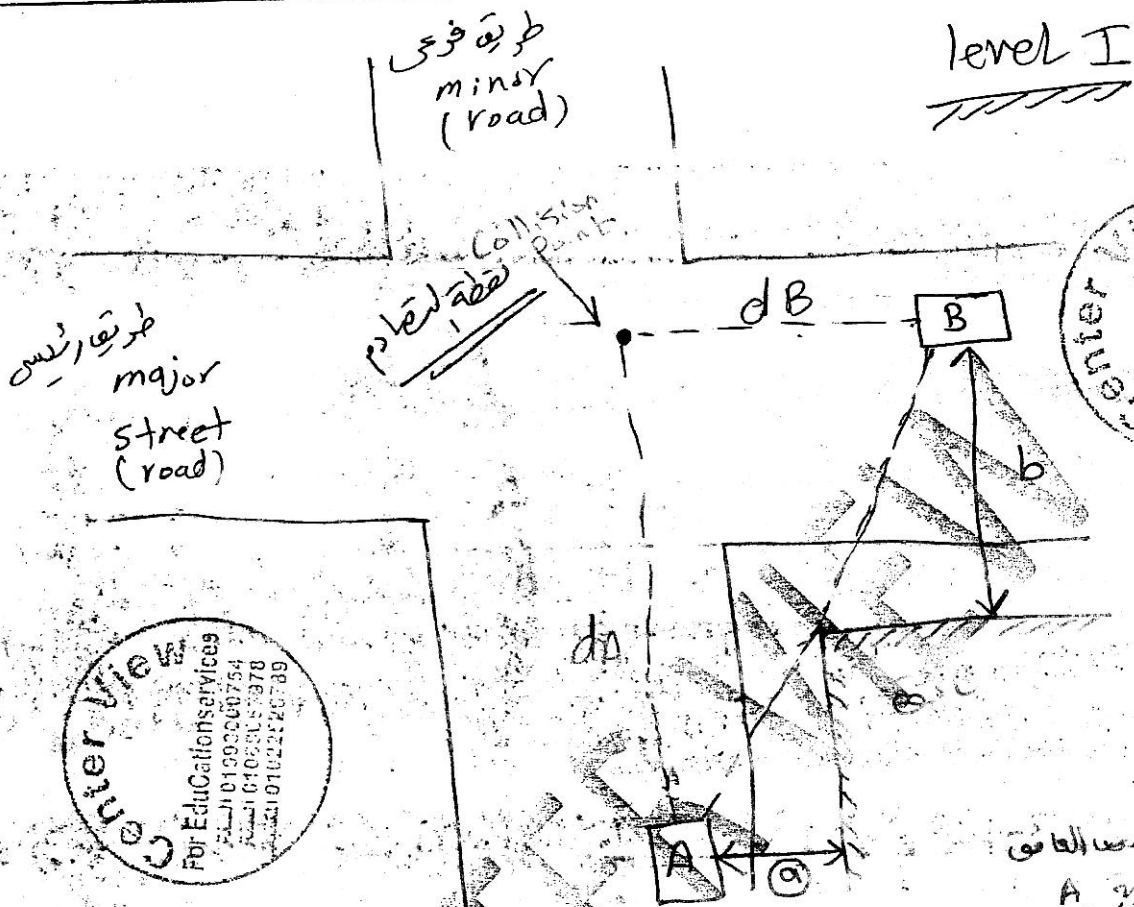
Side
Friction

$$0.348$$

اندر



CENTER VIEW



① $dA =$ SSD \rightarrow للغرة A

② $\underline{dB_{min}}$ \rightarrow SSD \rightarrow للغرة B

$\underline{dB_{min}} = (dA + 18) \frac{S_B}{S_A} + 12$

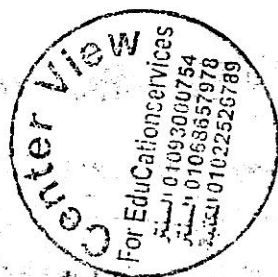
← السرعة العربية B

← السرعة العربية A

③ $\underline{dB_{actual}} = \frac{a \cdot dA}{dA - b}$

⇒ dBact > dB min ⇒ safe level I
 عند (قانون)

⇒ dBact < dB min ⇒ unsafe level



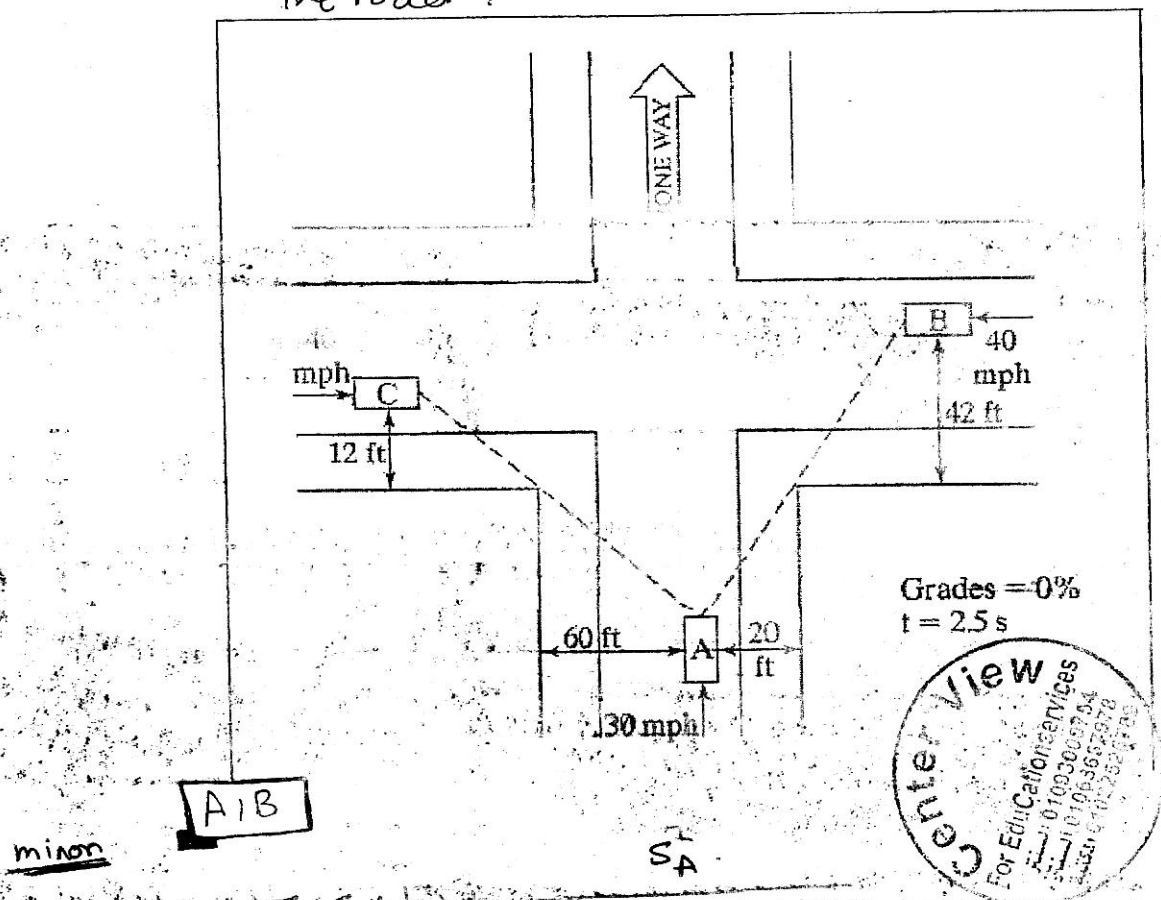
① نقل و مسرور ثالثی مدنی

② الزامات الفائق

③ استخدام

STOP, YIELD sign

→ Determine whether the intersection shown in Figure
Can be safely operated under basic rules of
the road?



$$\textcircled{1} d_A = 1.47 \times S_A \times t + \frac{S_A^2}{30(f \pm 0.01G)}$$

$$= 1.47 \times 30 \times 2.5 + \frac{(30)^2}{30(0.348 + 0)} = 196.5 \text{ ft}$$

$$\textcircled{2} d_{B \min} = 1.47 \times 40 \times 2.5 + \frac{(40)^2}{30(0.348 + 0)} = 300.3 \text{ ft}$$

$$d_{B \min} = (196.5 + 18) \times \frac{40}{30} + 12 = 298 \text{ ft}$$

$$\textcircled{3} d_{B \text{ actual}} = \frac{20 \times 196.5}{196.5 - 42} = 25.4 \text{ ft}$$

$$d_{B \text{ act}} < d_{B \min} \quad \text{unsafe}$$

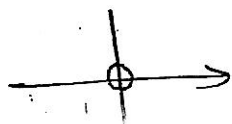
[A, C] → Not necessary to check

intersections

نقاط التقاطع

Conflict points

① crossing point (conflict)



نقطة التقاطع التي لا تباين اتجاهات الحركة

② diverging point (conflict)



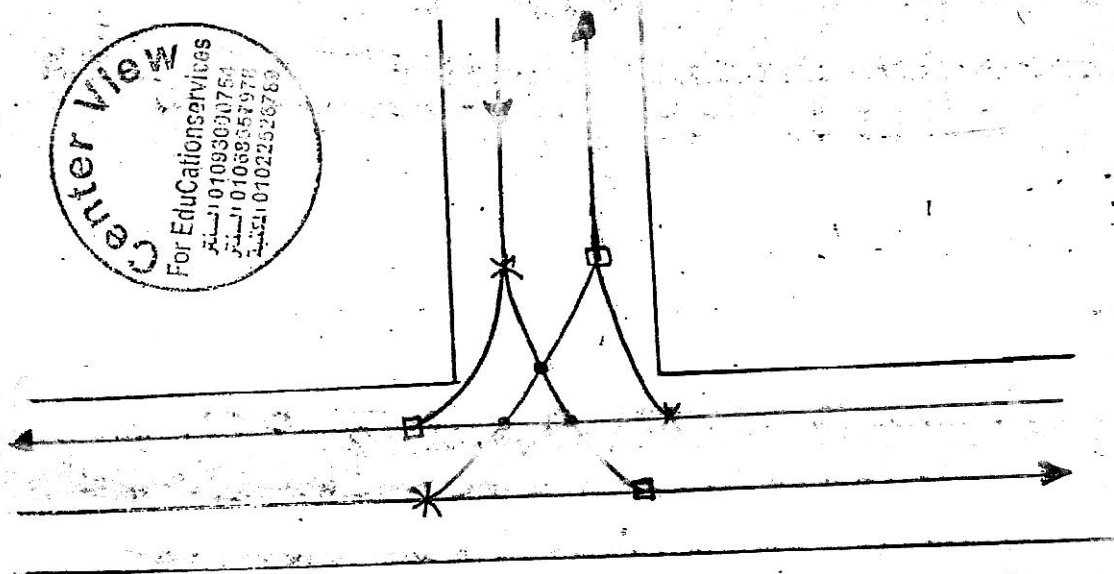
نقطة انقسام الاتجاهات الحركة

③ merging point (conflict)



نقطة تلاحم الاتجاهات الحركة

Draw and Count π different conflict point in Three leg at grade intersection

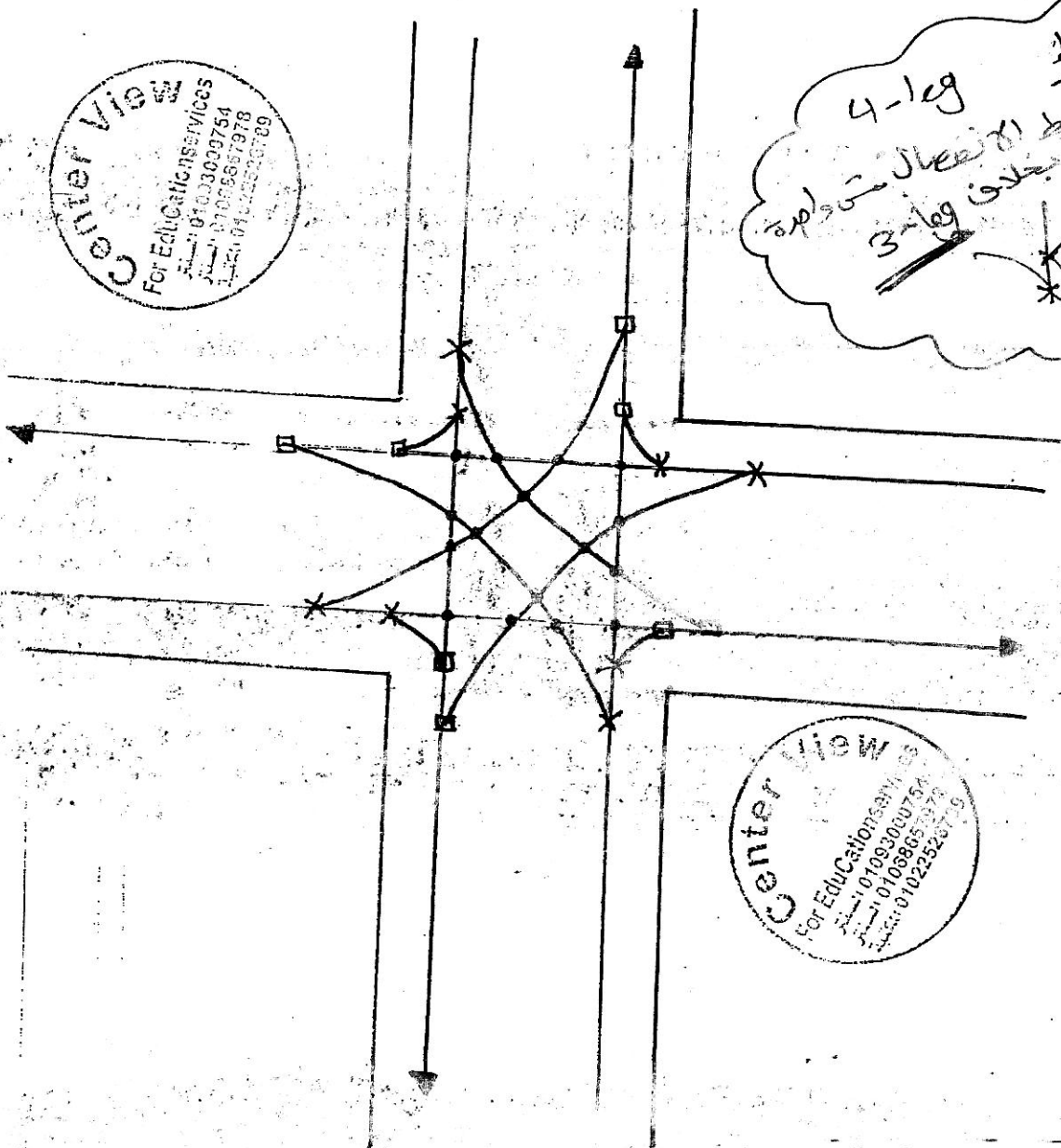


Center View
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- 3 Crossing Point
- 3 merging Point
- X 3 diverging Point

9 Conflict Points

→ Draw and Count The different Conflict points in a Four leg at grade intersection.



4-leg
نقطه التصادم
بجانبها 3
258

• 16 crossing points 16

□ 8 merging point

x 8 diverging point

32 Conflict Points