

# CE 474 – Class 26

October 22, 2015

9

**Class 24 (10.19)**

Mini-lecture/CTQ: A52

Field prep: A55

**Class 25 (10.21)**

[Field work; no class meeting]

Do: A55 (field) (due 10.22)

Homework (due 10.22):

- Prepare: A54, A56

**Class 26 (11.22)**

Preview: A62

Preview: Exam #1

Discuss: A55

Do/Discuss: A54, A56 (due 10.26)

Homework (due 10.26):

- Read: Chapter 10 overview
- Read: A58
- Preview: A59

Bring all past spreadsheet data from design activities to class on Monday

10

**Class 27 (10.26)**

Mini-lecture: A58

Do: A59

Do: A62

Homework (due 10.29):

- Complete: A62

**Class 28 (10.28)**

Exam #1

**Class 29 (10.29)**

Do: Report, presentation, oral examination

Activity	Design Elements
28	Base network conditions
36	Maximum allowable headway
37	Passage time
43	Maximum green time
50	Left turn treatment
56	Yellow and red clearance times

- Performance data for each step in design process
  - Average delay
  - Queue length

- Phasing plan in RBD format
- Timing parameters, detector location and type (justification for each selection)
- Evaluation of your plan using data and visual observations; comparison with base conditions
- All options considered for various parts of design, including elements not part of final design
- Comparison of your results with recommended practice from Signal Timing Manual

- Title page
- Table of contents
- Executive summary
- Introduction
- Description of intersection
- Description and evaluation of phasing and timing plans with justifications
- Appendices including calculations and supporting data (Excel)

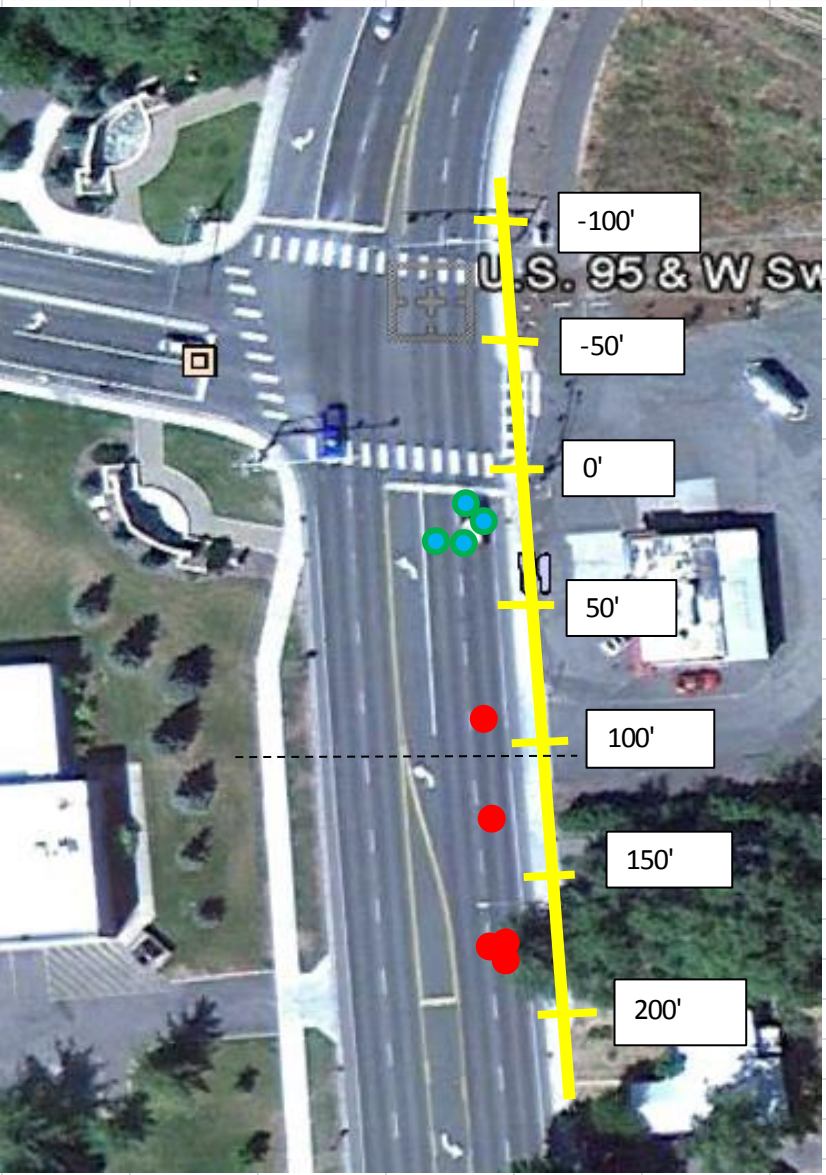
- Prepare set of tables that include data generated in A59
- Prepare summary of points that justify selection of each element of timing plan; construct exhibits that support your key points
- Prepare set of slides that address
  - Problem you were assigned
  - Analysis supporting design choices
  - Description of data analyzed and visual observations
  - Elements of final design
- Visualizations from VISSIM (static and/or dynamic) that demonstrate operation and performance of intersection
- How results compare with STM2

# Exam #1 - Preview

- Closed book
- Covers all material through chapter 9
  - Terms and concepts
  - Explain models
  - Apply models to specific conditions
- Will not require memorizing equations but possibly applying them and the concepts they represent

# Exam #1 - Preview

Chapter/Activity	Skills/Abilities
2/A8	<ul style="list-style-type: none"> <li>• Represent traffic flow on one approach using flow profile diagram, cumulative vehicle diagram, and queue accumulation. Construct and interpret diagrams based on theory and field data.</li> <li>• Define terms: arrival flow, departure flow, saturation flow</li> </ul>
3/A13	<ul style="list-style-type: none"> <li>• Define terms: phase and movement, concurrency group, conflict matrix, ring</li> <li>• Construct and interpret ring barrier diagrams for various conditions</li> </ul>
4/A17	<ul style="list-style-type: none"> <li>• Define process: gap out, max out</li> <li>• Describe timing process: minimum green timer, maximum green timer, passage timer</li> <li>• Construct and interpret traffic control process diagram</li> </ul>
6/A30 6/A36	<ul style="list-style-type: none"> <li>• Define terms: maximum allowable headway, occupancy time, unoccupancy time</li> <li>• Interpret relationships:               <math display="block">h = t_o + t_u</math> <math display="block">t_u = h - \frac{L_d + L_v}{v}</math> </li> <li>• Concept: choosing passage time from given data</li> <li>• Concept: relationship between passage time and detection zone length</li> <li>• Describe phase termination analysis</li> <li>• Set passage time based on phase termination analysis</li> </ul>
7/A39	<ul style="list-style-type: none"> <li>• Interpret and apply relationship between maximum green time, cycle length, and delay (figures 139-143)</li> </ul>
8/A45	<ul style="list-style-type: none"> <li>• Describe various left turn phasing options</li> <li>• Construct and interpret flow profile diagram and queue accumulation polygon for left turn options</li> <li>• Construct and interpret ring barrier diagrams for various left turn options</li> </ul>
9/A52 9/A54 9/A55	<ul style="list-style-type: none"> <li>• Define terms: change interval, clearance interval</li> <li>• Interpret choice point diagrams</li> <li>• Interpret field data – stopping and not stopping on yellow display</li> </ul>



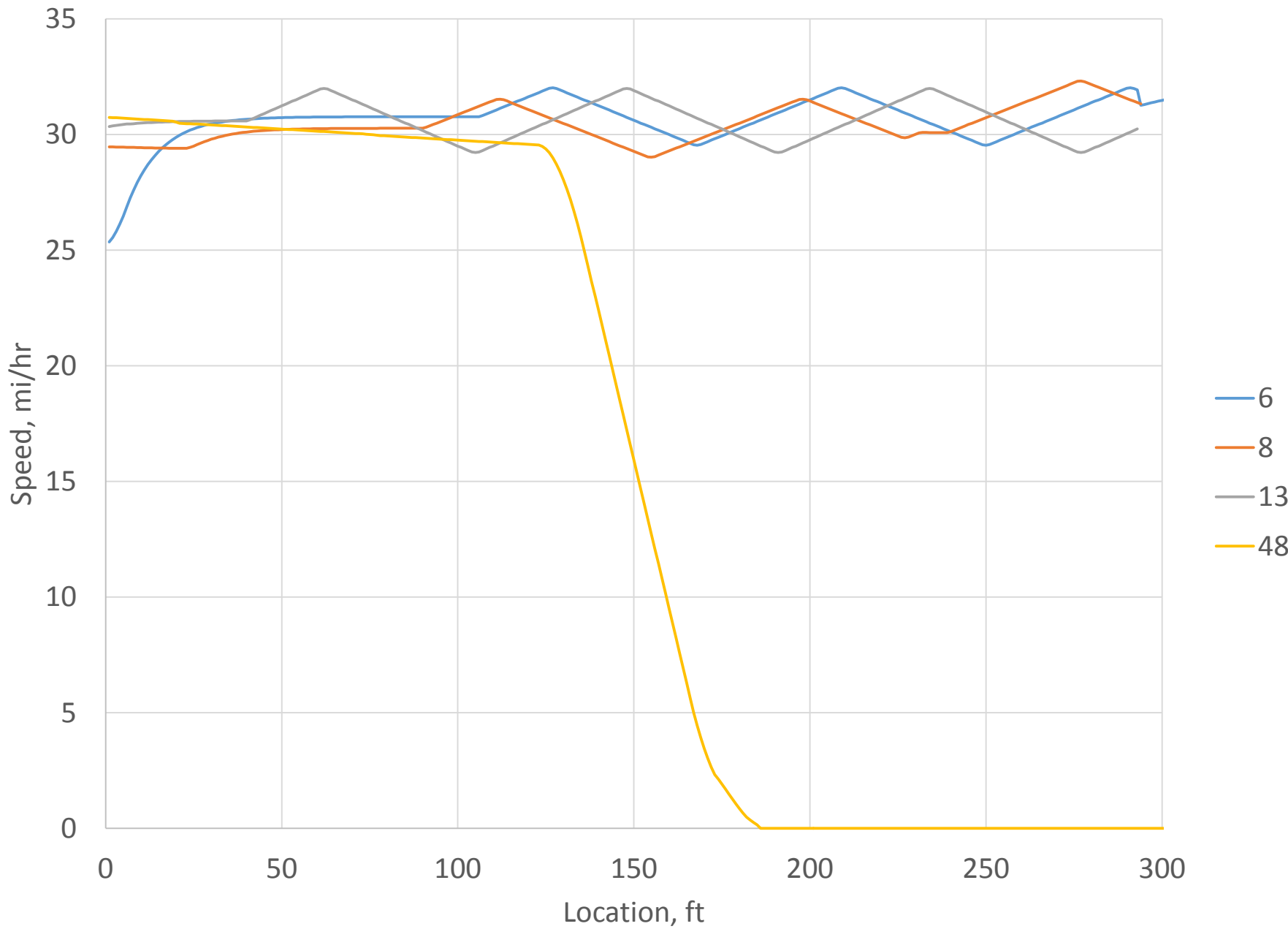
What did you find?



ACTIVITY  
**56**

# Determining Vehicle Change and Clearance Intervals





Group	Name	Presentation Time (29 October)
A	Morris Cornwell Keller	830 am
B	Hartzell LeCates Landa	1030 am
C	Larrea Cupps Saras Skinner	930 am
D	Scheel Kury Geibel	830 am
E	Bode Hale Dashti Maffey	930 am
F	Almakrab Crow Elmore	830 am
G	Ryu Alrashdi Bernauer Taylor-Stiffarm	1030 am