Work Zone Traffic Control

2019 Utility Conference

Did You Know….

- There are 3.9 million miles of public roads in the U.S.
- In 2016 there were 7.3 million reported crashes nationwide
  - 34,439 traffic fatalities occurred
    - 781 of those occurred in work zones
    - 143 were workers

Source: www.nhtsa.dot.gov, www.fbi.gov

Why are Work Zones a Concern?

- Situations not familiar to the drivers
- Hazards present
- Exposed workers
- Speeding
- Distracted drivers
- Others?

Work Zone Discussion Topics

1. Permits and Traffic Control
2. Lane Closure System

TRAFFIC CONTROL

➢ Utility Permits

APPLICATION/PERMIT TO CONSTRUCT, OPERATE AND MAINTAIN UTILITY FACILITIES ON HIGHWAY RIGHT-OF-WAY
Wisconsin Department of Transportation
DT1553 7/2017 s. 66.0831, 84.08, 85.15, 86.07(2)(a), 86.16, 182.017 and other applicable Wis. Stats.

1. Applicant (Utility facility owner) Name and Address
Xcel Energy
PO Box 8
Eau Claire, WI 54702

2. Work Start Date: 10/15/2018
3. Work Finish Date: 1/15/2019
4. Is the work due to a WisDOT highway project? ☐ Yes ☒ No
5. Applicant Work Order (If any): 100035193346

6. Location Description (¼ section, section, town, range; provide plat and/or location maps)
NESE 5-27-10

7. Work Location (List all that apply)
Town: Union
Village:
City:
County: Eau Claire

8. Highway (List all that apply)
WIS:
US: 12
Interstate:

9. Facility Type (Check all that apply) and Description (Size, material, voltage, pressure, # fibers, etc.)
☐ Comm:
☒ Electric: 69kV
☐ Gas/Oil:
☐ Water:
☐ Sewer:
☐ Casing:
☐ Conduit:
☐ :
☒ Transmission ☐ Service
☐ Distribution ☐ Service (ESCP)

10. Facility Orientation (Check all that apply)
☐ Underground ☒ Overhead
☒ Crossing ☒ Parallel

12. Proposed Work Methods (Check all that apply)
☐ Trench ☐ Plow
☐ Place fill ☐ Rock blasting
☐ Place cable in conduit ☐ Open cut pavement
☐ Hand/mechanical excavation

Bore:
☐ Hydraulic (Auger/Jack/Tunnel)
☐ Pneumatic (Mole)
☐ Directional 1 (Manually tracked)
☐ Directional 2 (Computer tracked)
☐ Unknown (At this time)

Install or attach to poles/towers:
☒ New ☒ Existing ☐ Guys
39"&17" Xcel Energy

13. Work Zone Description (Check all that apply). (Provide relevant diagram(s) with application.)
☐ Not applicable
☐ Full road closure: detour
☐ Full road closure: temporary
☐ Lane closure: without flagging
☒ Lane closure: with flagging
☐ Lane encroachment (2 feet or less)
☐ Intersection/roundabout
☐ Shoulder/parking lane closure
☐ Railroad crossing

14. Is the facility near a survey monument? HMM 09-15-35
If yes, call (866) 568-2852 or email geodetic@dot.wi.gov.
☐ Yes ☒ No

15. Will appurtenances be installed with the facility? If yes, provide a description and/or specification for each item.
☐ Yes ☒ No

16. Trans 401 project designation? If Major, provide a formal erosion

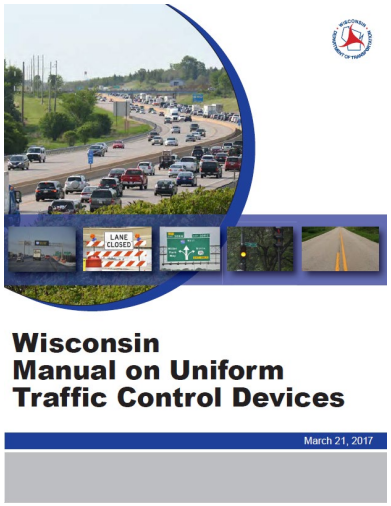
TRAFFIC CONTROL

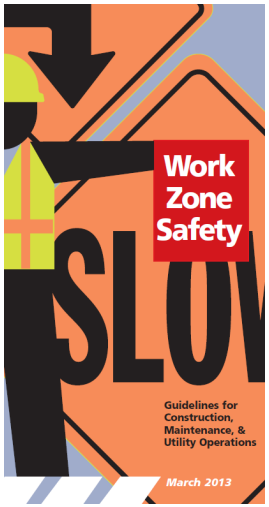
➢ Utility Permits page 2

Supplemental Permit Provisions

Permit to Construct & Operate Utility Facilities
On Highway Right-Of-Way

1. **Traffic Control** - All work zone traffic control will be in accordance with the Wisconsin Manual on Uniform Traffic Control Devices. Additional guidance is available from WisDOT through a booklet entitled, *Work Zone Safety, Guidelines for Construction, Maintenance, and Utility Operations*.

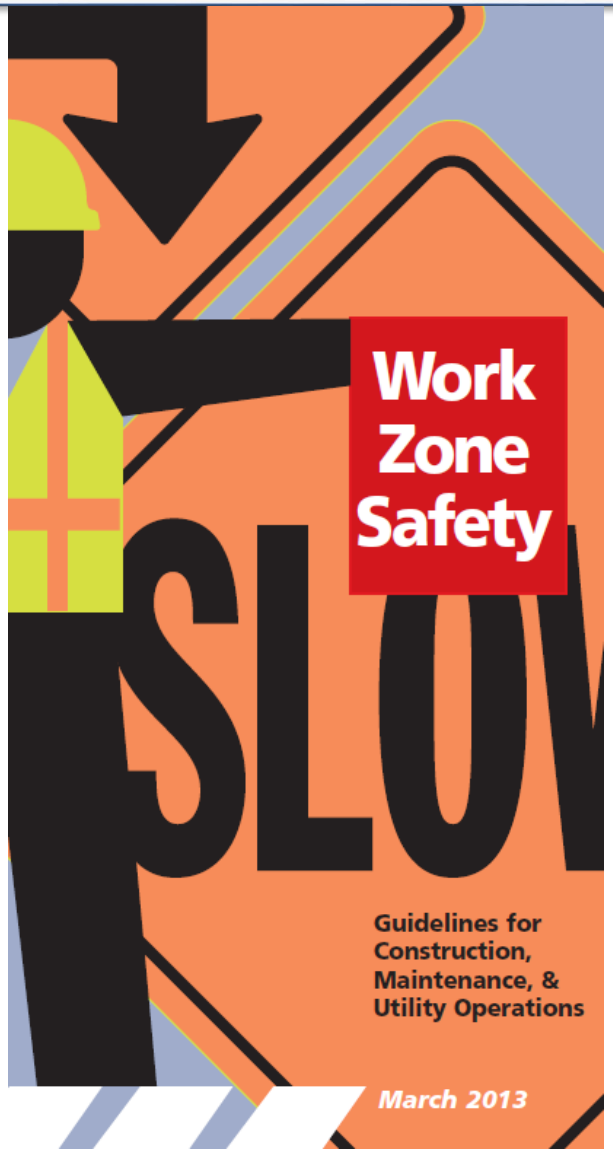




Guidelines and Materials

- **Wisconsin Manual on Uniform Traffic Control Devices (WMUTCD)**
  - Minimum standards
    - States and local agencies can have more restrictive standards, Wisconsin does and is published
  - Applies to all streets and highways open to public travel

"Flip Book"


Work Zone Safety
SLOW
Guidelines for Construction, Maintenance, & Utility Operations
March 2013

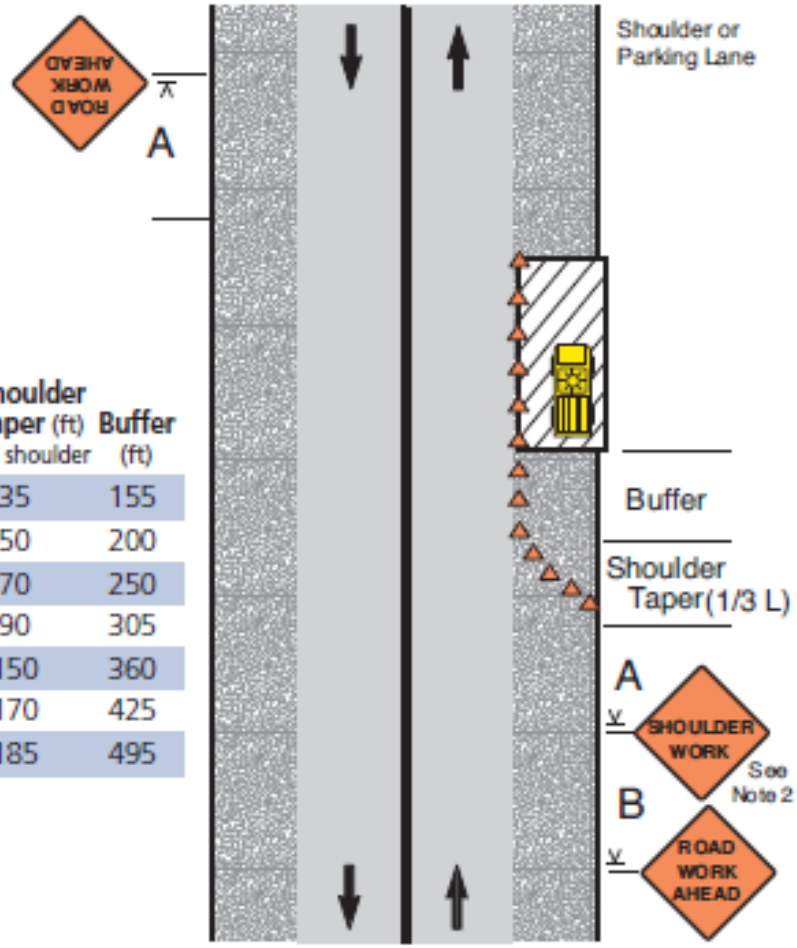
Work Zone Layouts

- Utility permit will include a traffic control plan
  - Can be designed based off
    - WMUTCD drawing
    - “Flip Book”
    - WisDOT Standard Detail Drawings (Preferred)
    - CADD drawings

TYPICAL LAYOUTS

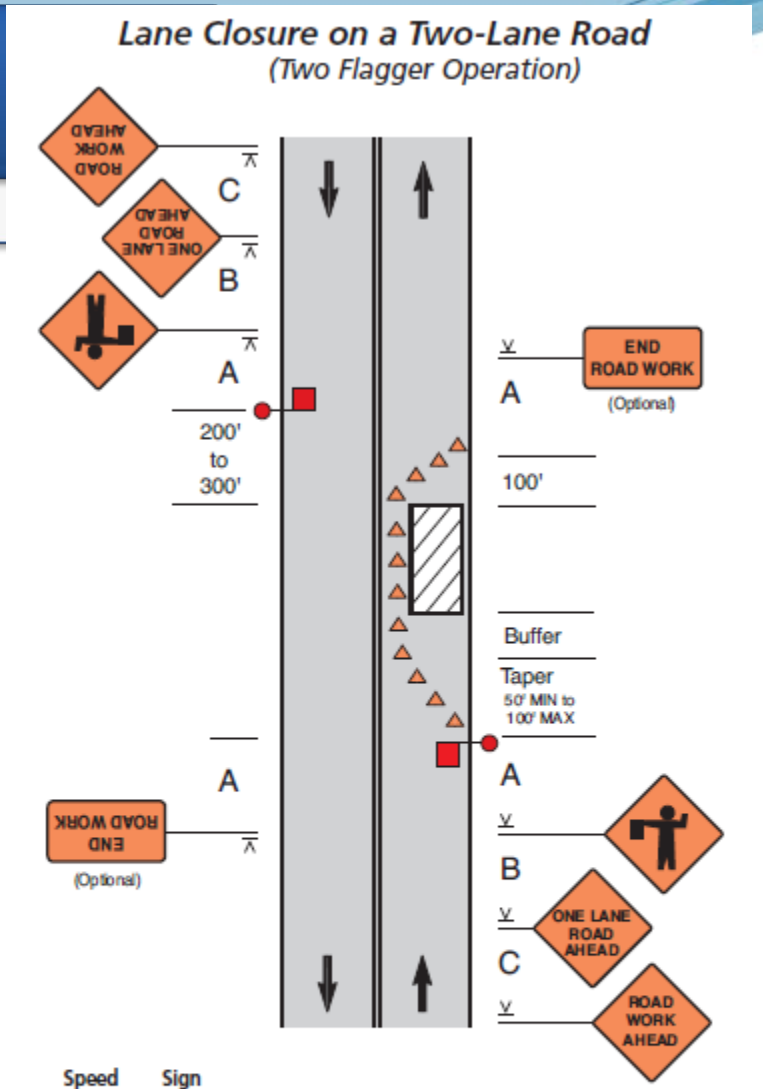
➢ Work On the Shoulder

Speed Limit (mph)	Sign Spacing A, B (ft)	Shoulder Taper (ft) 10' shoulder	Buffer (ft)
25	200	35	155
30	200	50	200
35	350	70	250
40	350	90	305
45	500	150	360
50	500	170	425
55	500	185	495



TYPICAL LAYOUTS

- Lane Closure on 2-lane Road
  - Flagging



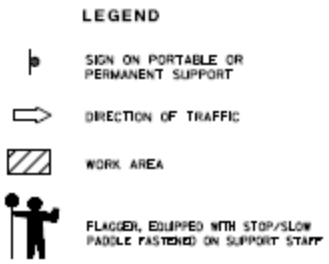
Speed Limit (mph)	Sign Spacing A, B, C (ft)	Buffer (ft)
25	200	155
30	200	200
35	350	250
40	350	305
45	500	360
50	500	425
55	500	495

Notes

1. The flaggers shall use approved flagging procedures according to the MUTCD and as shown on page 56.
2. For short duration work (60 minutes or less), the ROAD WORK AHEAD sign may be omitted.

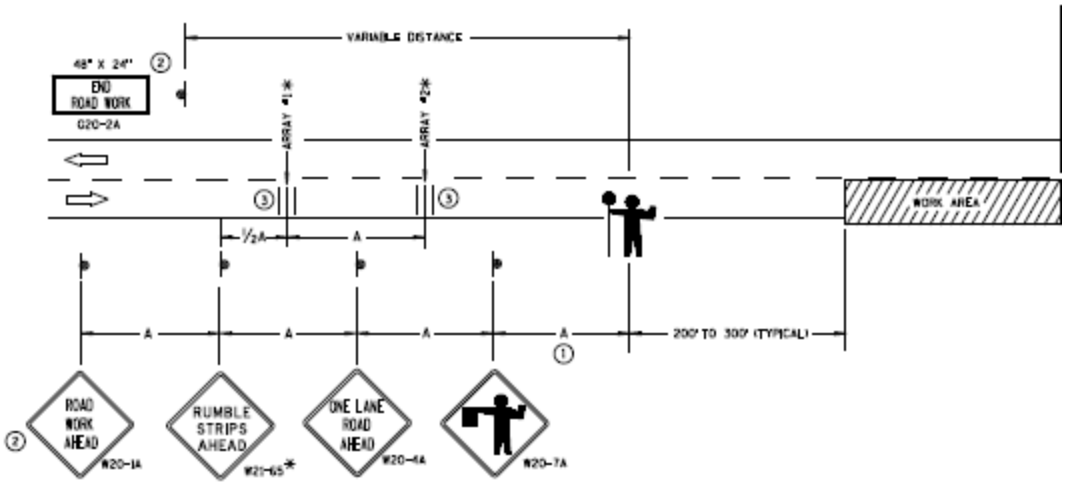
TYPICAL LAYOUTS

- Lane Closure on 2-lane Road
  - suitable for moving operation(WisDOT SDD)

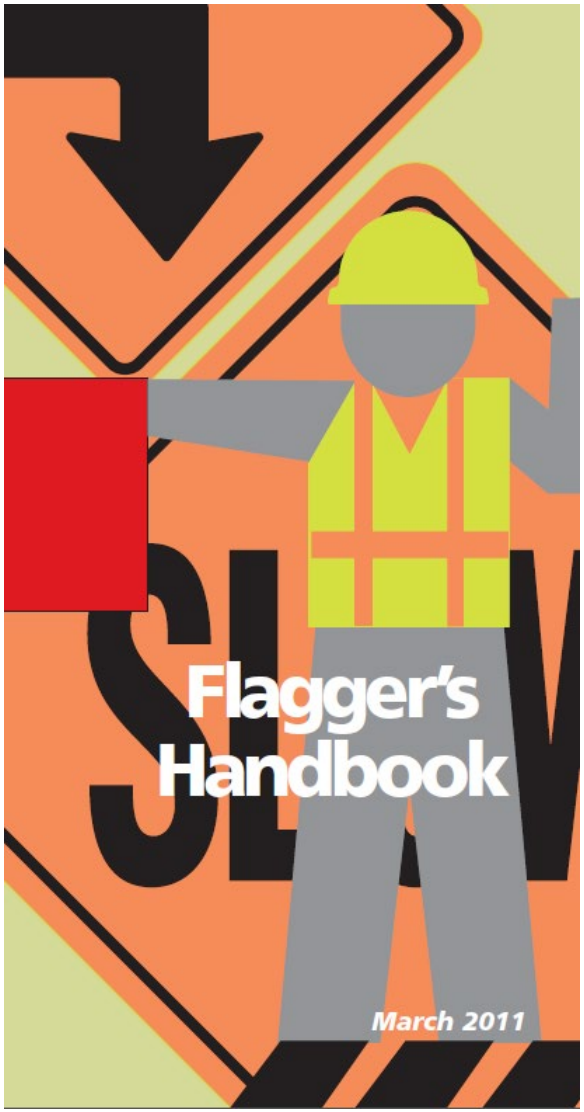


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

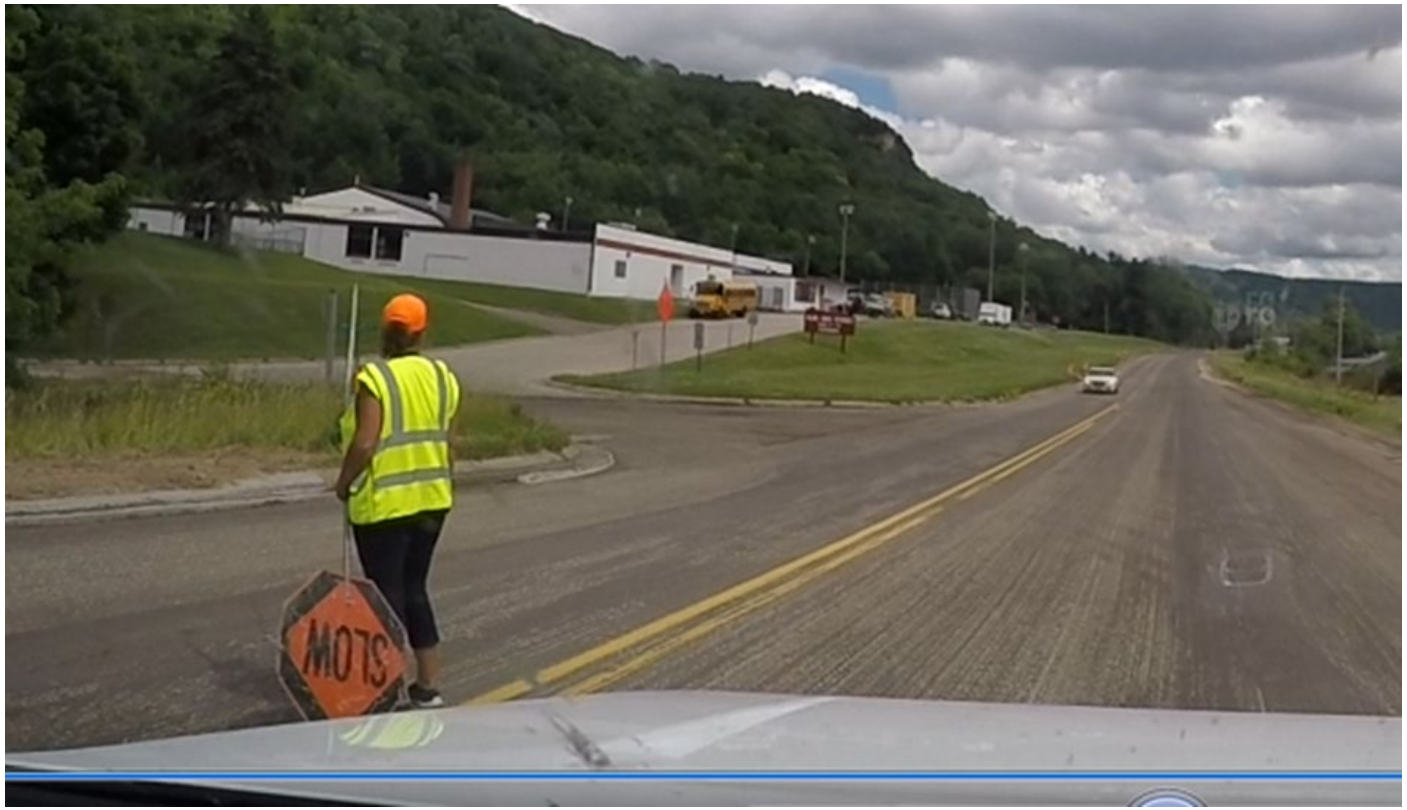
SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



FLAGGING

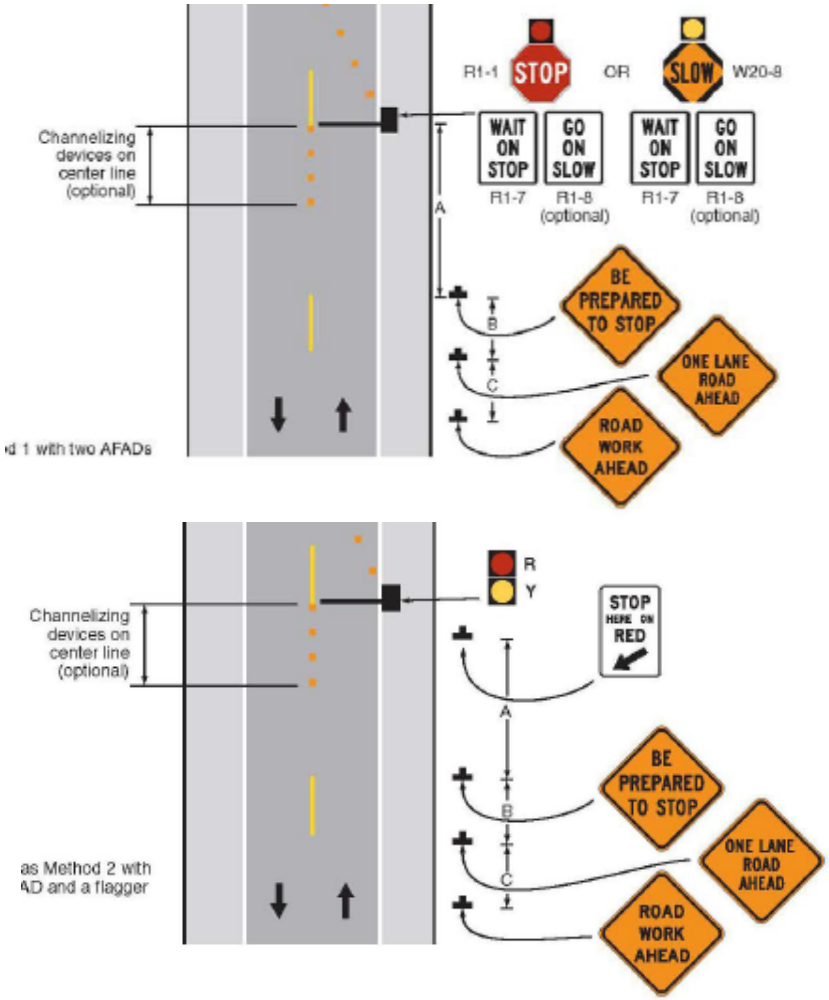


FLAGGING



TYPICAL LAYOUTS

- Automated Flagger Assistance Device (AFAD)



TYPICAL LAYOUTS

- Automated Flagger Assistance Device (AFAD)

Typical Layouts

- AFAD use in Wisconsin?
  - AFADs are OK, need to be included in the permit.
  - Cannot be used in place of a flagger.
  - If 2 flaggers are needed, 2 AFADs are required
  - Must have arm with flag
  - Delineate with cones leading up to device
  - Recommend using TPRS

TYPICAL LAYOUTS

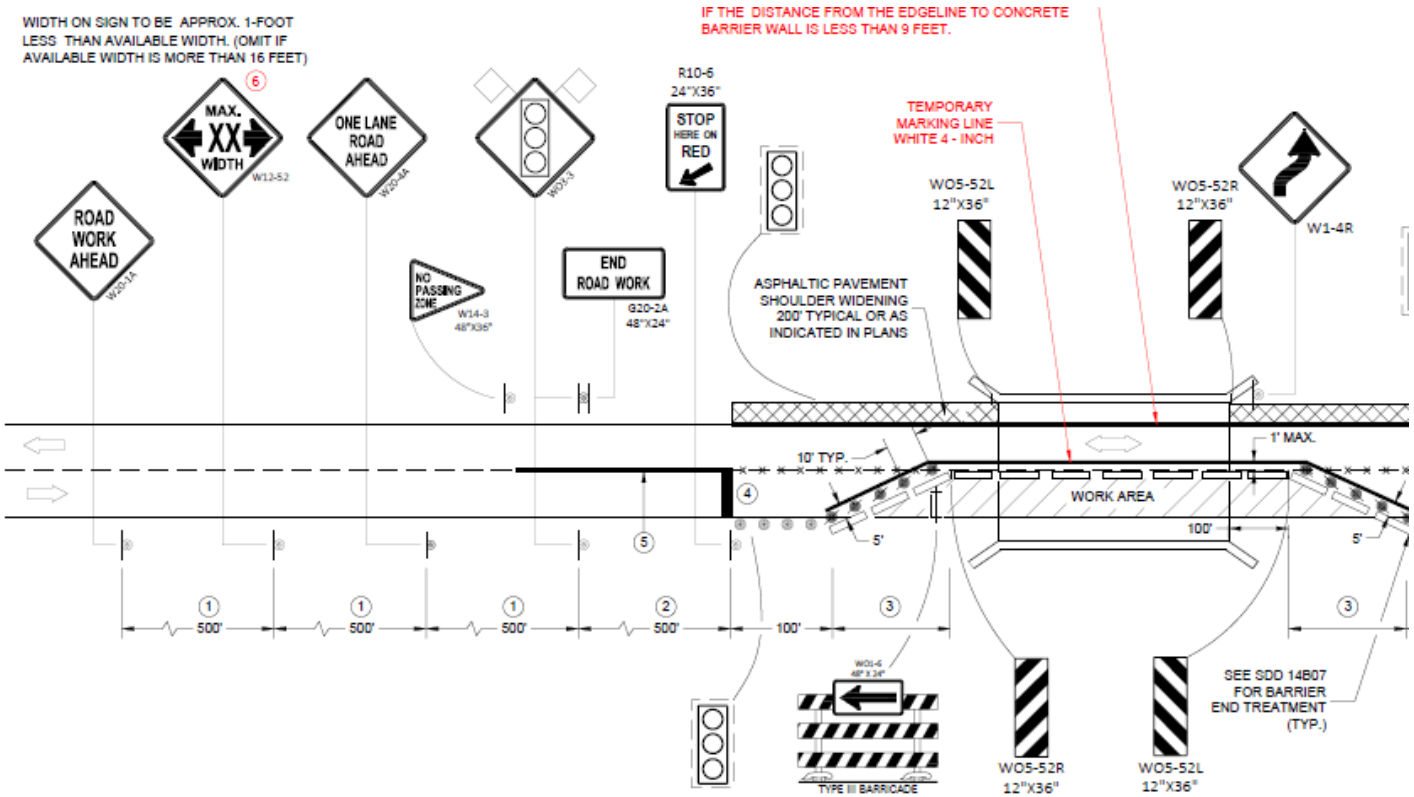
- Temporary Signals

Typical Layouts

- Temporary Signals
  - Need to have 2 signal heads per direction
  - Timings need to be calculated based on geometrics
  - Signs and channelizing are required when using signals
    - May not need concrete barrier

TYPICAL LAYOUTS

- **Temporary Signals**



LANE CLOSURE SYSTEM (LCS)

➢ Utility Permits page 2

WISCONSIN DEPARTMENT OF TRANSPORTATION	**Supplemental Permit Provisions** Permit to Construct & Operate Utility Facilities On Highway Right-Of-Way

5. **WisDOT Lane Closure System, (LCS) –** If the approved permit requires a detour or lane closure the Permittee shall contact Rick Tumaniec, WisDOT Traffic Engineer, at least **14 days** prior to any work being started for coordination and updates to LCS required during construction activities. (715) 833-9815 or Richard.Tumaniec@dot.wi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION

Lane Closure System

- Why the Lane Closure System?
  - 511
    - Populates GPS
  - Over Sized Over Weight Vehicles (OSOW)
    - Any closures with road width less than 16 feet need 1 week notice
  - Allows WisDOT to track when work is happening
  - A requirement of your permit!
    - No entry is a violation of permit and may be asked to vacate right-of-way

Lane Closure System

- Who can make the LCS entries?
  - WisDOT
    - Contact Rick Tumaniec 14 days prior to work starting
    - Can also contact Chad Hines
  - Utility
    - Utility personnel
    - Consultants
    - Contractors

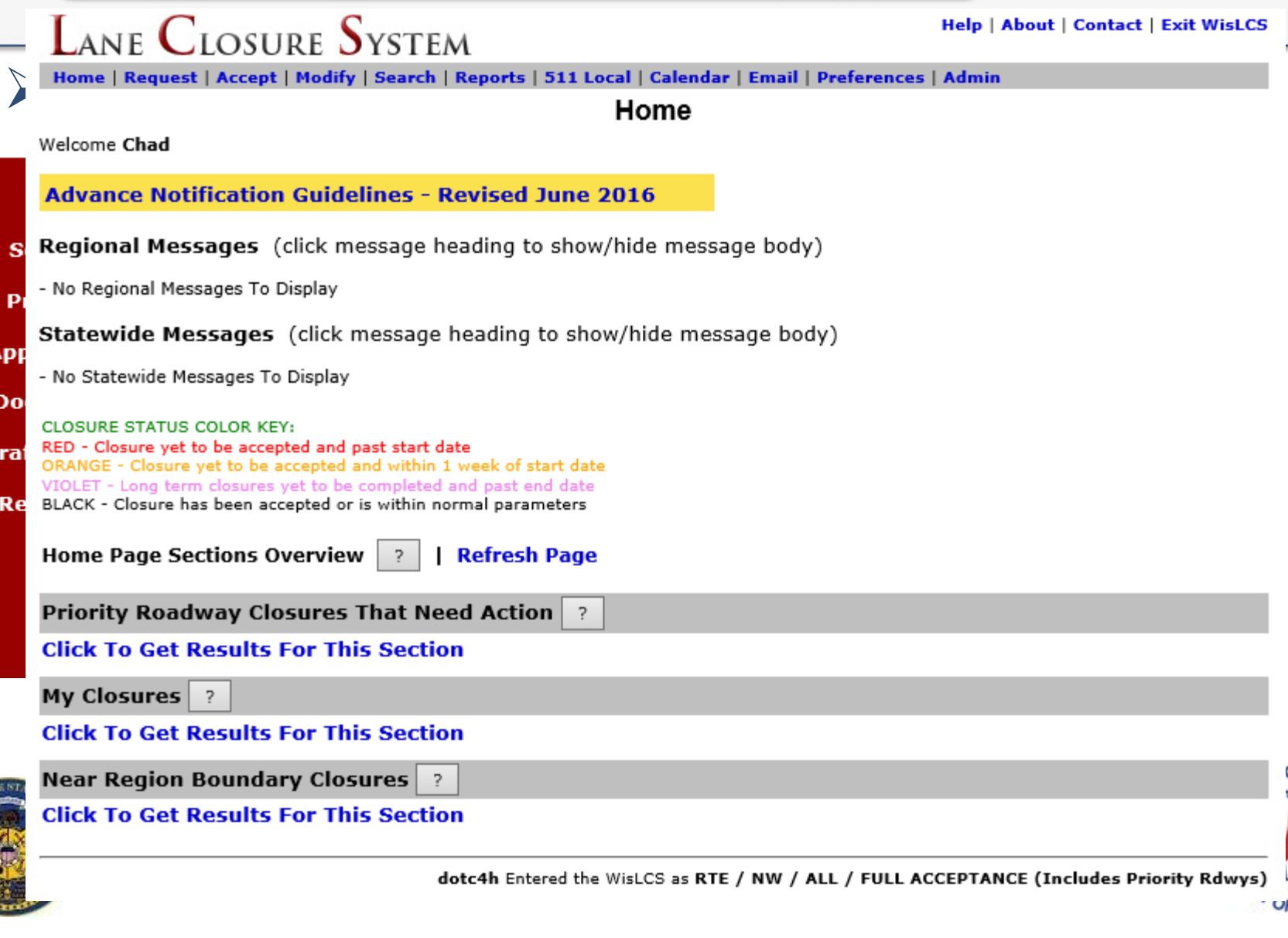
Lane Closure System

- Why should Utilities do own entries
  - Relatively easy to do
  - Saves a phone call(s)
  - Schedules are always changing
    - Can easily make updates instead of contacting WisDOT
    - You are the ones knowing what is going on

Lane Closure System

- Making entries
  - http://transportal.cee.wisc.edu/
    - Web Applications
      - Lane Closure System (LCS)
  - Training and manuals on site
  - Contact Rick Tumaniec or Chad Hines
    - Can assist with learning the system
    - Complicated entries
    - New user setup

Lane Closure System



What's Wrong With This Picture?

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CONTACTS

- WisDOT Work Zone Engineer:
  - Chad Hines 715-836-7276 or chad.hines@dot.wi.gov
- WisDOT Traffic Engineer:
  - Rick Tumaniec 715-833-9815 or richard.tumaniec@dot.wi.gov

Important Information

- WMUTCD
  - https://wisconsindot.gov/Pages/doing-bus/local-gov/traffic-ops/manuals-and-standards/wmutcd/wmutcd.aspx
- Work Zone Safety Flip Book
  - http://epdfiles.engr.wisc.edu/pdf_web_files/tic/handbooks/WorkZoneSafety.pdf
- Flagger Handbook
  - http://epdfiles.engr.wisc.edu/pdf_web_files/tic/handbooks/FlaggersHandbook.pdf
- Quality Guidelines for Temporary Traffic Control Devices
  - www.atssa.com
- Flagger Training (MnDOT)
  - https://www.youtube.com/watch?v=eyyKef91jiQ

QUESTIONS?