

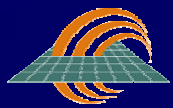
Internationally Recognized Roundabout Signs

Phil Weber, Ourston Roundabout Engineering

Scott Ritchie, Roundabouts & Traffic Engineering

Mark Lenters and Leif Ourston,
Ourston Roundabout Engineering

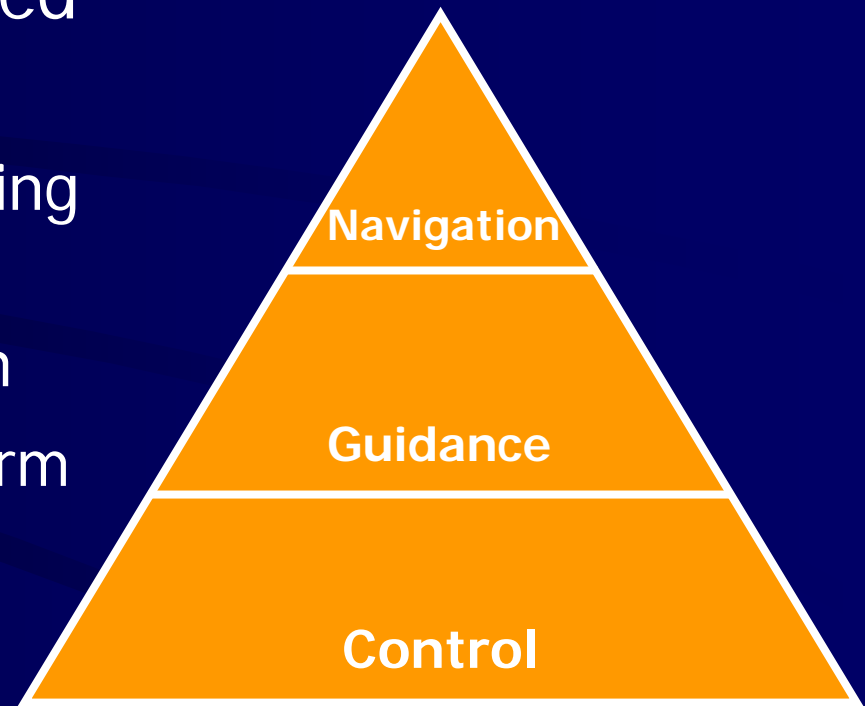
TRB NATIONAL ROUNDABOUT CONFERENCE
Vail, Colorado, May 24, 2005



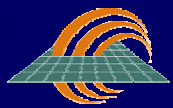
All Signs

All signs should be designed and located to:

- Minimize detection, reading and processing time
- Maximize comprehension
- Maximize ability to perform tasks of navigation, guidance, and vehicle control



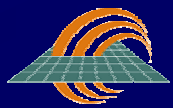
Source: "A User's Guide to Positive Guidance"



Roundabout Signs

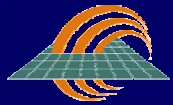
Signs at roundabouts should aid in:

- Detecting the presence of a roundabout ahead
- Deciding on a destination or exit leg
- Deciding on the correct entry lane (multi-lane roundabouts)
- Slowing to an appropriate speed to enter the roundabout

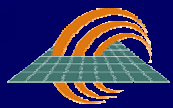


Background and Purpose

- The MUTCD regulates sign use in the U.S.
- It does not yet provide much guidance on use of specific signs for roundabouts
- It is proposed that the principles used in designing and locating guide signs in the U.K. be used where the MUTCD does not apply
- The U.K. roundabout signing system has been developed through extensive research and decades of experience



Roundabout Signs



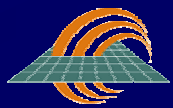
A Roundabout Sign Sequence

- ROUNDABOUT AHEAD signs
- Map-Type Roundabout signs
- YIELD AHEAD signs
- Lane Assignment signs (multi-lane roundabouts)
- KEEP RIGHT signs or Illuminated Bollards
- YIELD signs
- ONE-WAY/Chevron signs
- Flag-Type Exit signs

ROUNABOUT AHEAD Sign

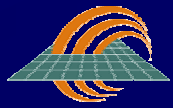
- An intersection warning sign that may be used to indicate the presence of an intersection
- Maybe use on high-speed approaches only?
- What advisory tabs are appropriate?





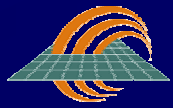
Map-Type Roundabout Sign

- Aids motorists in deciding on destination or exit leg
- Quicker to read than stack-type signs
- Shows the configuration of the intersection, unlike ROUNDABOUT AHEAD signs



U.K. Primary Map-Type Roundabout Sign

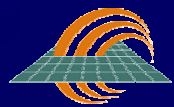




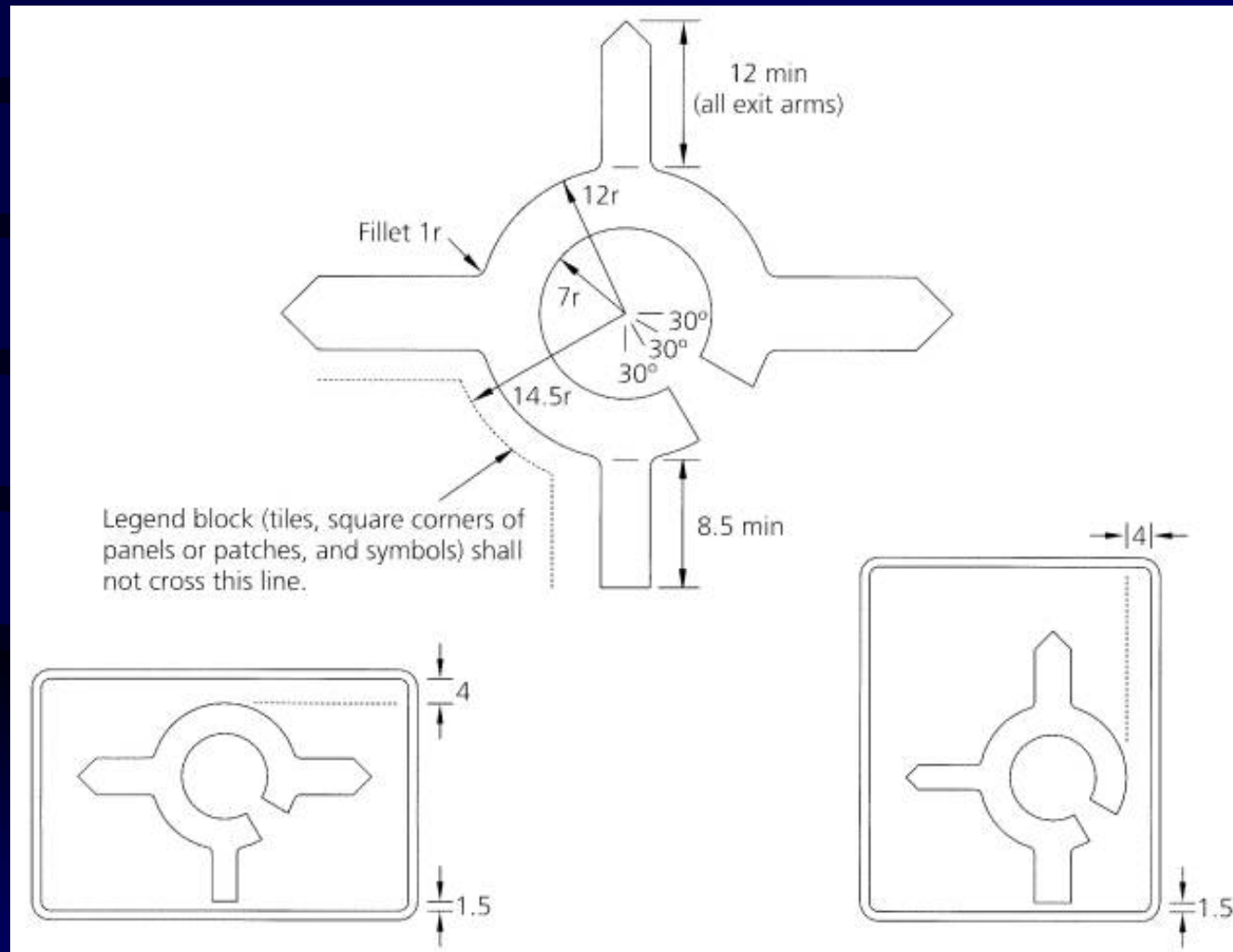
U.K. Secondary Map-Type Roundabout Sign

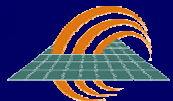


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U.K. Map-Type Sign Layout

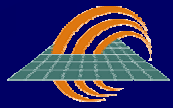




North American Map-Type Sign

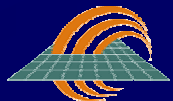


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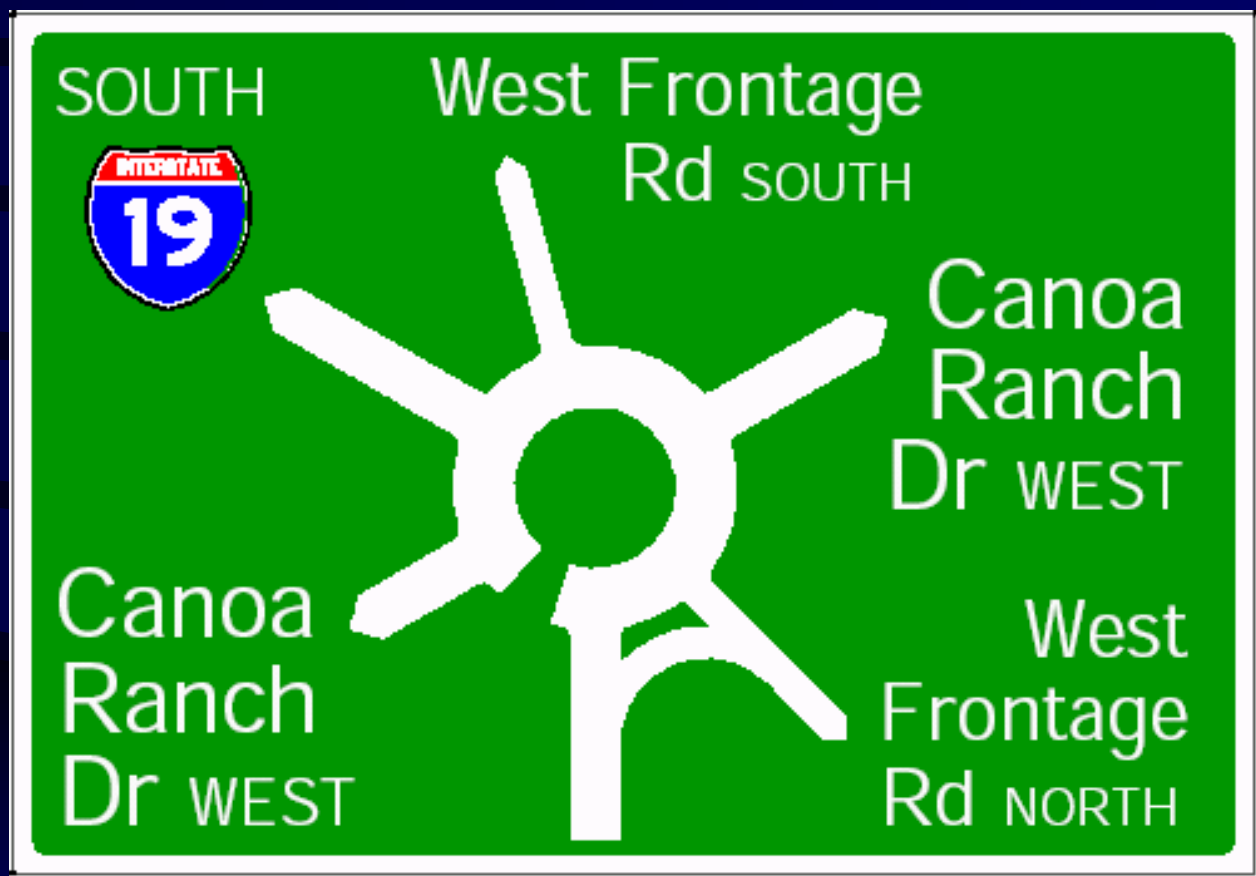


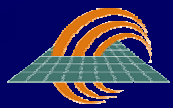
Another North American Map-Type Sign





The Case for Good Map-Type Signs





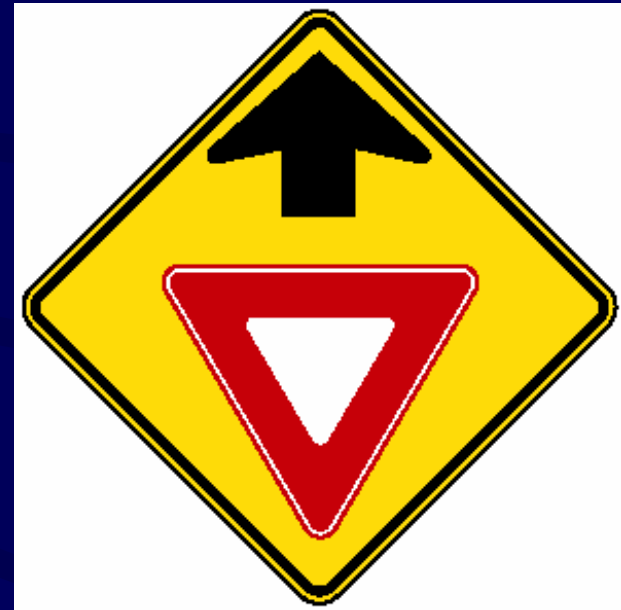
Map-Type Roundabout Signs

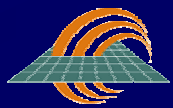
Map-Type signs conforming to U.K. principles are planned or in place in:

- California
- Arizona
- Colorado
- Wisconsin
- Ohio
- Ontario
- British Columbia

YIELD AHEAD Sign

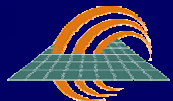
- Normally required where the YIELD sign is not sufficiently visible
- Maybe just use with poor sightlines, or as a temporary sign?





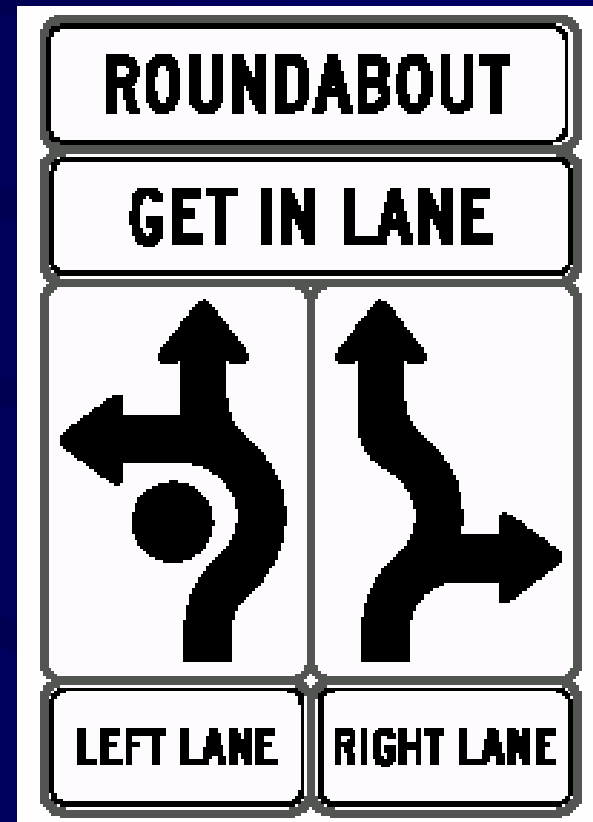
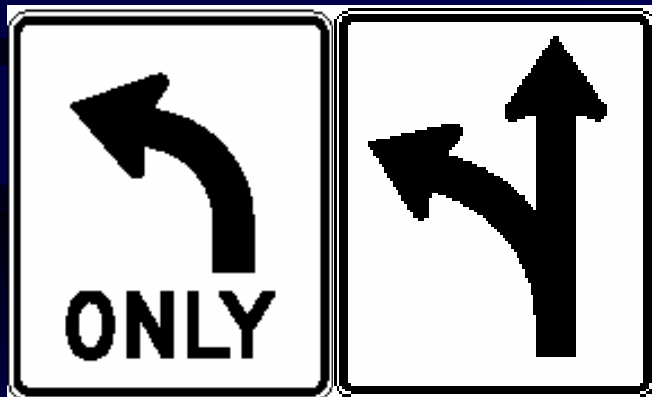
Lane Assignment Sign

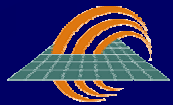
- Aids motorists in deciding on the correct entry lane (multi-lane roundabouts)
- Can be North American regulatory signs, or U.K. guide-type signs



North American Lane Assignment Signs

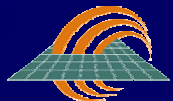
Standard, or
“fishhook”?





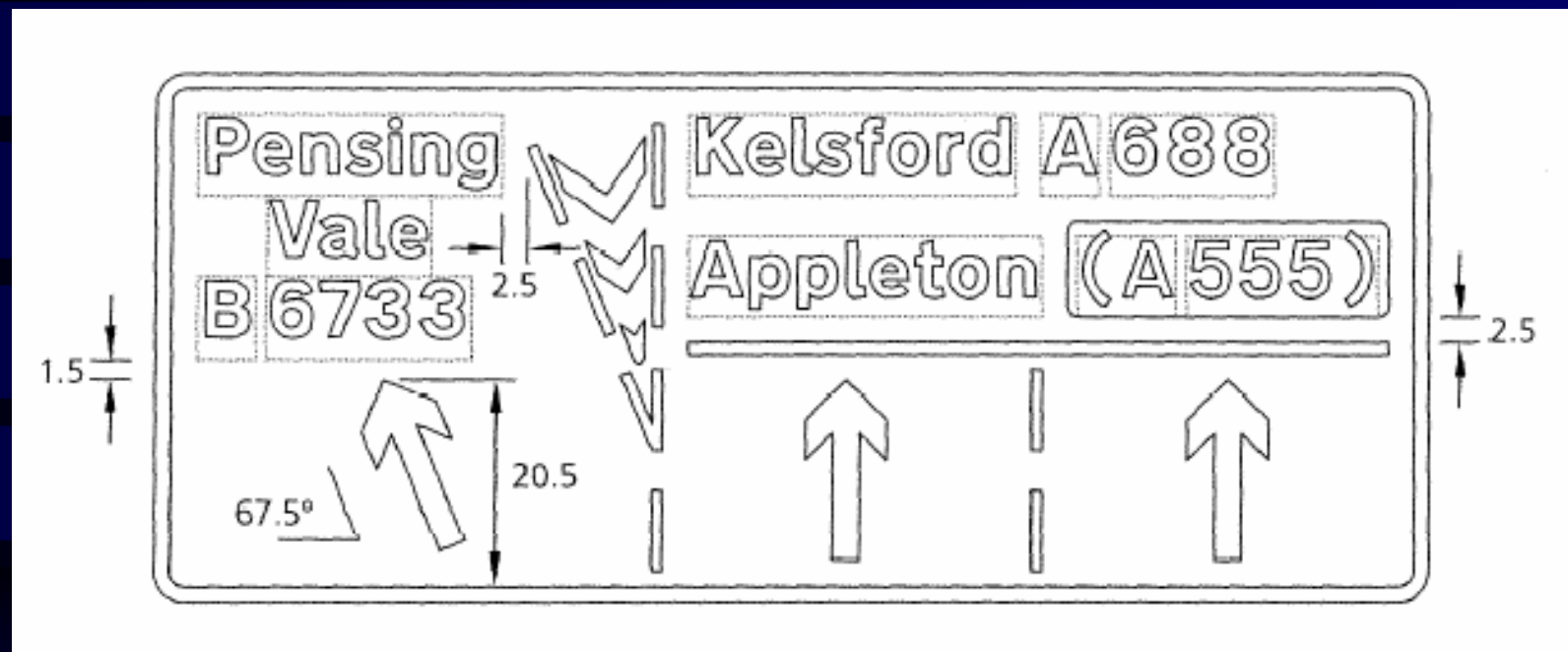
U.K. Lane Assignment Sign

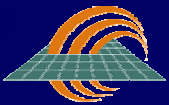




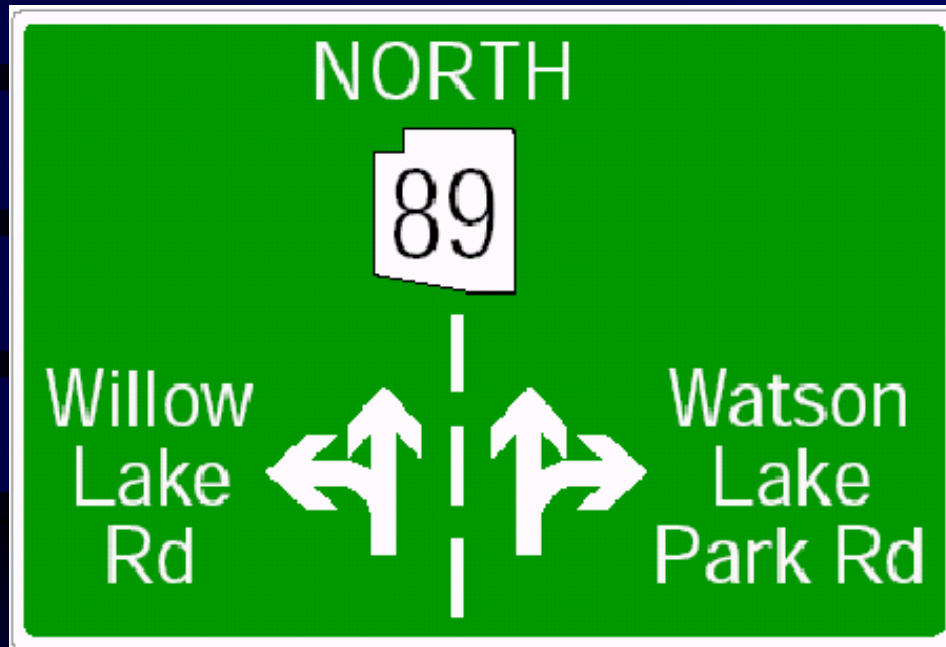
U.K. Lane Assignment Sign Layout

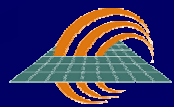
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Diagrammatic Lane Assignment Signs





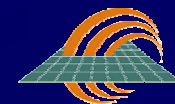
Lane Assignment Signs

- U.K. guide-type Lane Assignment signs may be used at freeway interchanges or at other complex locations
- Otherwise, standard or “fishhook” signs may be adequate
- U.K. guide-type and fishhook Lane Assignment signs are not in the MUTCD

Splitter Island Signs

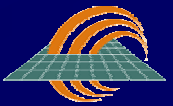
KEEP RIGHT signs,
or.....





U.K. Illuminated Bollard





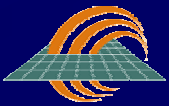
North American Illuminated Bollard



YIELD Sign

- Should have 2 per entry, as the left-hand sign is usually more visible





U.K. Central Island Signs



North American Central Island Signs

ONE-WAY signs and chevrons ...

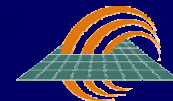


... the more the better

Flag-Type Exit Sign

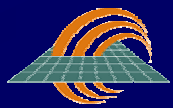
- Confirms exit leg choice
- The pointed end gives more advance recognition than rectangular signs





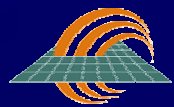
U.K. Flag-Type Exit Sign





North American Flag-Type Exit Sign

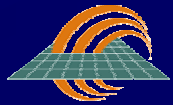




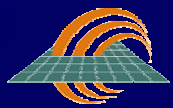
Flag-Type Exit Signs

Flag-Type signs conforming to U.K. principles are planned or in place in:

- California
- Arizona
- Colorado
- Wisconsin
- Ohio
- New York
- Kansas
- Ontario
- Quebec



Advance Sign Locations



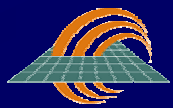
Advance Sign Locations

ROUNDABOUT AHEAD signs:

- Should be considered discretionary
- If used, locate in advance of other signs on high-speed approaches

Map-Type signs:

- Used to determine destination or exit leg
- Locate as per U.K. guidelines (covers primary and secondary signs)



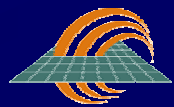
Advance Sign Locations

YIELD AHEAD signs:

- Should be considered discretionary
- If used, locate as per the MUTCD or in accordance with engineering judgement

Lane Assignment signs:

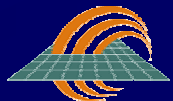
- Used to determine correct entry lane
- Provide more than one set, and duplicate on center medians, where space permits



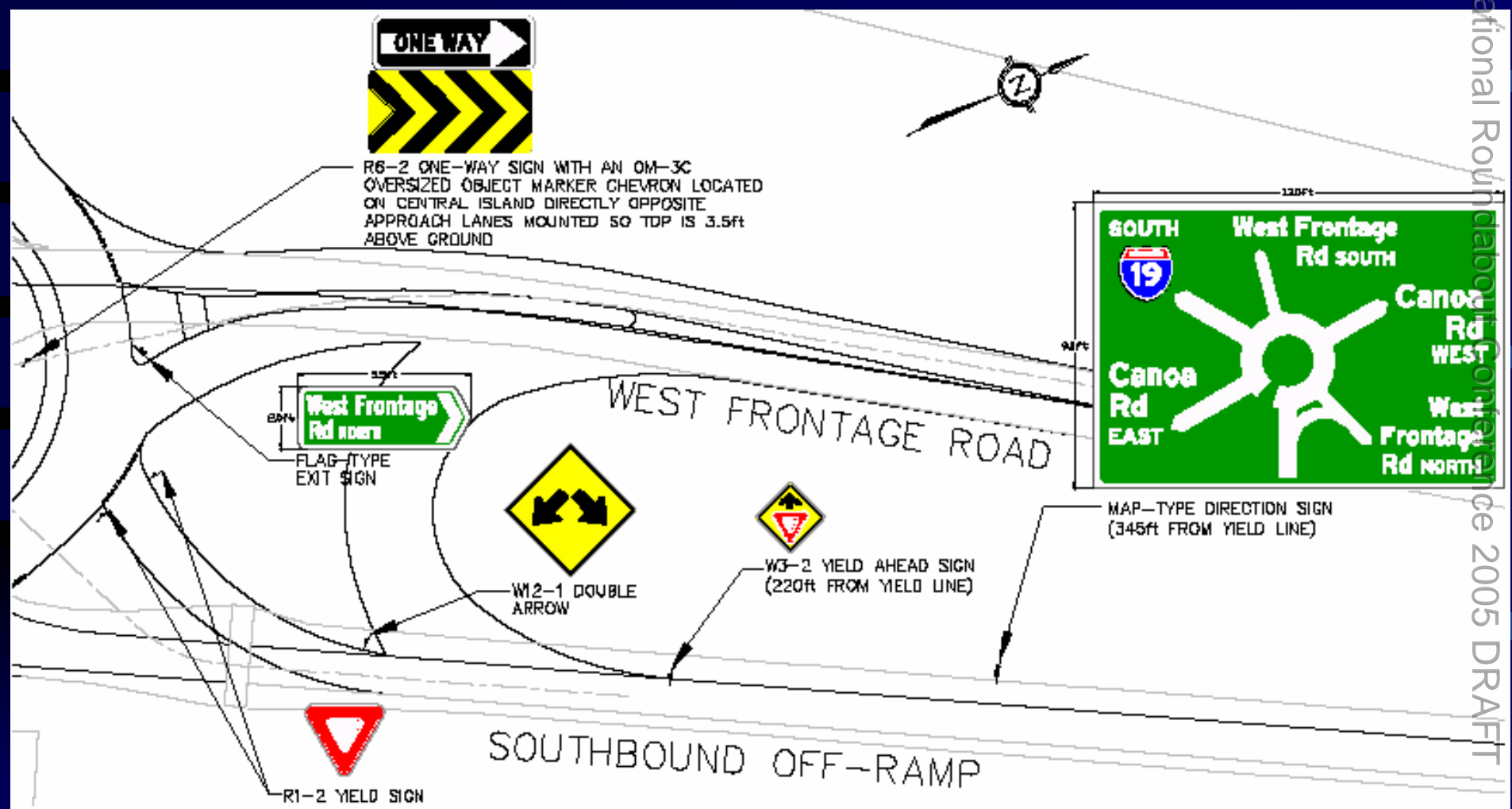
Locations for Single-Lane Approaches

Operating Speed	Min. Distance from Yield Line (ft.)		
	Yield Ahead	Primary Map-Type	Rbt. Ahead
Up to 30 mph	N/A	150	250*
35 mph	N/A	245	365*
45 mph	175*	345	510*
55 mph	325*	490	690
65 mph	475*	640	900
70 mph and over	550*	850	1,150

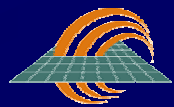
- "*" means sign is discretionary
- Shaded boxes represent suggested locations



Single-Lane Sign Sequence



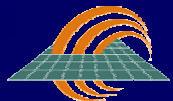
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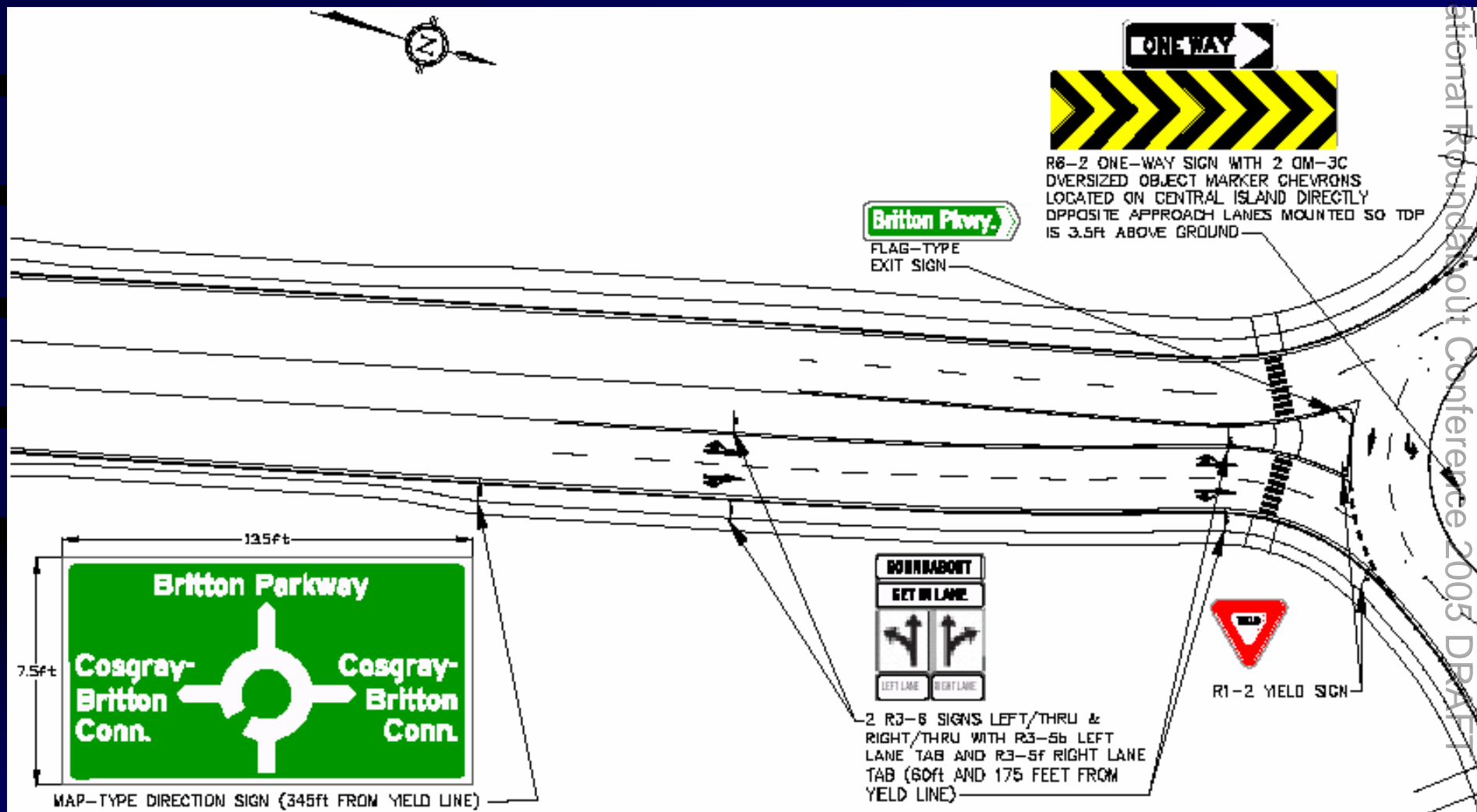
Locations for Multi-Lane Approaches

Operating Speed	Min. Distance from Yield Line (ft.)				
	Lane Assign.	Lane Assign.	Yield Ahead	Primary Map-Type	Rbt. Ahead
Up to 30 mph	N/A	60	N/A	150	250*
35 mph	N/A	100	N/A	245	365*
45 mph	60	175	175*	345	510*
55 mph	150	325	325*	490	690
65 mph	240	475	475*	640	900
70 mph and over	300	550	550*	850	1,150

- "*" means sign is discretionary
- Shaded boxes represent suggested locations



Multi-Lane Sign Sequence



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References

- Agg, Helen J, "Directional Sign Overload", TRL Project Report 77, 1994
- "The Design and Use of Directional Informatory Signs", Local Transport Note 1/94, U.K. Department for Transport, July 1994
- "The Design of Traffic Signs", Chapter 7, Traffic Signs Manual, U.K. Department for Transport, 2003 (www.tso.co.uk/bookshop/bookstore.asp)