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Section 2B.04 Right-of-Way at Intersections

Support:

The *Uniform Vehicle Code* establishes the right-of-way rule at intersections having no regulatory traffic control signs such that the driver of a vehicle approaching an intersection shall yield the right-of-way to any vehicle or pedestrian already in the intersection. When two vehicles approach an intersection from different streets or highways at approximately the same time, the driver of the vehicle on the left shall yield the right-of-way to the vehicle on the right. The right-of-way can be modified at through streets or highways by placing STOP (R1-1) signs (See Sections 2B.05 through 2B.07) or YIELD (R1-2) signs (See Sections 2B.08 and 2B.09) on one or more approaches.

Guidance:

Engineering judgment should be used to establish intersection control. The following factors should be considered:

- A. Vehicular, bicycle and pedestrian traffic volumes on all approaches;
- B. Number and angle of approaches;
- C. Approach speeds;
- D. Sight distance available on each approach;
- E. Reported crash experience ~~if the intersection is existing~~.

STOP or YIELD signs should be used at an intersection if one or more of the following conditions exist:

- A. Intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;
- B. A street entering a designated through highway or street;
- C. Unsignalized intersection in a signalized area.

In addition, STOP or YIELD signs should be considered at the intersection of two minor streets or local roads having more than three approaches, ~~and~~ where one or more of the following conditions exist:

- 41 A. ~~Posted, statutory or 85th percentile~~ Speeds above 30 mph on any approach;
- 42 B. The combined vehicular, bicycle, and pedestrian volume entering the
- 43 intersection from all approaches averages more than 2000 units per day;
- 44 C. Where the ability to see ~~all potentially~~ conflicting traffic on an approach is
- 45 not sufficient to allow a road user ~~traveling at the posted speed, the 85th-~~
- 46 ~~percentile speed, or the statutory speed~~ to ~~reasonably~~ safely pass through the
- 47 intersection or to yield or stop in compliance with the normal right-of-way
- 48 rule;
- 49 D. Crash records indicate 5 or more crashes in 3 years, or 3 or more crashes in
- 50 2 years, which involve failure to yield the right-of-way at the intersection
- 51 under the normal right-of-way rule.

52
53 STOP or YIELD signs should not be used for speed control.

54 Once the decision has been made to control an intersection, the decision
55 regarding the appropriate roadway to control should be based on engineering
56 judgment. In most cases, the roadway carrying the lowest volume of traffic should
57 be controlled.

58 A STOP or YIELD sign should not be installed on the higher volume roadway
59 unless justified by ~~an~~ ~~traffic~~ engineering study.

60
61 Support:

62 The following are considerations that might influence the decision regarding the
63 appropriate roadway upon which to install a STOP or YIELD sign where two
64 roadways with relatively equal volumes and/or characteristics intersect:

- 65 A. Controlling the direction that conflicts the most with established pedestrian
- 66 crossing activity or school walking routes;
- 67 B. Controlling the direction that has obscured vision, dips, or bumps that
- 68 already require drivers to use lower operating speeds;
- 69 C. Controlling the direction that has the best sight distance from a controlled
- 70 position to observe conflicting traffic.

71
72
73 Standard:

74 Because the potential for conflicting commands could create driver
75 confusion, STOP or YIELD signs ~~shall not be installed at intersections where~~
76 ~~traffic control signals are installed and operating, except as noted in the option~~
77 ~~below. shall not be used in conjunction with any traffic control signal~~
78 operation, except in the following cases:

- 79 A. If the signal indication for an approach is a flashing red at all times; or
- 80 B. If a minor street or driveway is located within or adjacent to the area

81 controlled by the traffic control signal, but does not require separate
82 traffic signal control because an extremely low potential for conflict
83 exists.

84 C. If a channelized turn lane is separated from the adjacent travel lanes by
85 an island and the channelized turn lane is not controlled by a traffic
86 signal.

87 Except as noted in Section 2B.09, STOP and YIELD signs shall not be
88 installed on conflicting or opposing approaches to an unsignalized intersection.

89 Portable or part-time STOP or YIELD signs shall not be used except for
90 emergency and temporary traffic control zone purposes.

91 Option:

92 ~~—On an approach to a highway traffic signal controlled intersection, if a~~
93 ~~channelized turn lane is separated from the adjacent travel lanes by an island, the~~
94 ~~turn lane may be controlled by a STOP or YIELD sign.~~

95
96
97 **Section 2B.045 STOP Sign (R1-1) and Supplemental Plaque (R1-3, R1-4)**

98
99 **Standard:**

100 **When it is determined that a stop is always required on an approach to an**
101 **intersection a sign is used to indicate that traffic is always required to stop, a**
102 **STOP (R1-1) sign (see Figure 2B-1) shall be used.**

103 **The STOP sign shall be an octagon with a white legend and border on a red**
104 **background.**

105 **Secondary legends shall not be used on STOP sign faces. If appropriate, a**
106 **supplemental plaque (R1-3 or R1-4) shall be used to display a secondary**
107 **legend. Such plaques (see Figure 2B-1) shall have a white legend and border**
108 **on a red background. If the number of approach legs controlled by STOP**
109 **signs at an intersection is three or more, the numeral on the supplemental**
110 **plaque, if used, shall correspond to the actual number**
111 **of legs controlled by STOP signs.**

112 **At intersections where all approaches are controlled by STOP signs (see**
113 **Section 2B.07), a supplemental plaque (R1-3 or R1-4) shall be mounted below**
114 **each STOP sign. Such plaques (see Figure 2B-1) shall have a white legend and**
115 **border on a red background.**

116 **The R1-3 or R1-4 plaques shall only be used if all intersection approaches**
117 **are controlled by STOP signs. The numeral on the R1-3 plaque shall**
118 **correspond to the actual number of legs controlled by STOP signs.**

119
120 **Option:**

121 The ALL WAY (R1-4) supplemental plaque may be used instead of the 4-WAY
122 (R1-3) supplemental plaque.

123
124 Support:

125 The design and application of Stop Beacons are described in Section 4K.05.

126 127 **Section 2B.056 STOP Sign Applications**

128 Guidance:

129 At intersections where a full stop is not necessary at all times, consideration
130 should first be given to using less restrictive measures such as YIELD signs (see
131 Sections 2B.08 and 2B.09).

132 STOP signs should be considered used if engineering judgment indicates that a
133 stop is always required due to one or more of the following conditions-exist:

134
135 A. Vehicular traffic volumes on the through street or highway exceed 6000
136 vehicles per day Intersection of a less important road with a main road where
137 application of the normal right-of-way rule would not be expected to provide
138 reasonable compliance with the law;

139 B. Restricted view that requires road users on the minor approach to stop in
140 order to adequately observe conflicting traffic on the through street or
141 highway Street entering a through highway or street and/or;

142 C. Crash records indicate a crash problem, as indicated by 3 or more reported
143 crashes in a 12-month period, or 5 or more reported crashes in a 2-year
144 period, that are susceptible to correction by the installation of a STOP sign.
145 Such crashes include right-angle collisions involving road users on the minor
146 approach failing to yield the right-of-way to traffic on the main road.

147 Unsignalized intersection in a signalized area; and/or

148 ~~—D. High speeds, restricted view, or crash records indicate a need for control by~~
149 ~~the STOP sign.~~

150
151 **Standard:**

152 ~~—Because the potential for conflicting commands could create driver~~
153 ~~confusion, STOP signs shall not be installed at intersections where traffic~~
154 ~~control signals are installed and operating except as noted in Section 4D.01.~~

155 ~~—Portable or part-time STOP signs shall not be used except for emergency~~
156 ~~and temporary traffic control zone purposes.~~

157
158 Guidance:

159 ~~—STOP signs should not be used for speed control.~~

160 ~~—STOP signs should be installed in a manner that minimizes the numbers of~~

161 vehicles having to stop. At intersections where a full stop is not necessary at all
162 times, consideration should be given to using less restrictive measures such as
163 YIELD signs (see Section 2B.08).

164 —Once the decision has been made to install two-way stop control, the decision
165 regarding the appropriate street to stop should be based on engineering judgment.
166 In most cases, the street carrying the lowest volume of traffic should be stopped.

167 —A STOP sign should not be installed on the major street unless justified by a
168 traffic engineering study.

169
170 Support:
171 —The following are considerations that might influence the decision regarding the
172 appropriate street upon which to install a STOP sign where two streets with
173 relatively equal volumes and/or characteristics intersect:

174 —A. Stopping the direction that conflicts the most with established pedestrian
175 crossing activity or school walking routes;

176 —B. Stopping the direction that has obscured vision, dips, or bumps that already
177 require drivers to use lower operating speeds;

178 —C. Stopping the direction that has the longest distance of uninterrupted flow
179 approaching the intersection; and

180 —D. Stopping the direction that has the best sight distance to conflicting traffic.

181 The use of the STOP sign at highway-railroad grade crossings is described in
182 Section 8B.08. The use of the STOP sign at highway-light rail transit grade
183 crossings is described in Section 10C.04.

184 185 **Section 2B.06 STOP Sign Placement**

186 **Standard:**

187 —**The STOP sign shall be installed on the right side of the approach to which**
188 **it applies. When the STOP sign is installed at this required location and the**
189 **sign visibility is restricted, a Stop Ahead sign (see Section 2C.29) shall be**
190 **installed in advance of the STOP sign.**

191 —**The STOP sign shall be located as close as practical to the intersection it**
192 **regulates, while optimizing its visibility to the road user it is intended to**
193 **regulate.**

194 —**STOP signs and YIELD signs shall not be mounted on the same post.**

195 196 **Guidance:**

197 —Other than a DO NOT ENTER sign, no sign should be mounted back-to-back
198 with a STOP sign in a manner that obscures the shape of the STOP sign.

199
200 Support:

201 ~~—Section 2A.16 contains additional information about separate and combined~~
202 ~~mounting of other signs with STOP signs.~~

203

204 **Guidance:**

205 ~~—Stop lines, when used to supplement a STOP sign, should be located at the~~
206 ~~point where the road user should stop (see Section 3B.16).~~

207 ~~—If only one STOP sign is installed on an approach, the STOP sign should not be~~
208 ~~placed on the far side of the intersection.~~

209 ~~—Where two roads intersect at an acute angle, the STOP sign should be~~
210 ~~positioned at an angle, or shielded, so that the legend is out of view of traffic to~~
211 ~~which it does not apply.~~

212 ~~—Where there is a marked crosswalk at the intersection, the STOP sign should be~~
213 ~~installed in advance of the crosswalk line nearest to the approaching traffic.~~

214

215 **Option:**

216 ~~—At wide-throat intersections or where two or more approach lanes of traffic exist~~
217 ~~on the signed approach, observance of the stop control may be improved by the~~
218 ~~installation of an additional STOP sign on the left side of the road and/or the use of~~
219 ~~a stop line. At channelized intersections, the additional STOP sign may be~~
220 ~~effectively placed on a channelizing island.~~

221

222 **Support:**

223 ~~—Figure 2A-2 shows examples of some typical placements of STOP signs.~~

224

225 **Section 2B.07 Multiway Stop Applications**

226 **Support:**

227 Multiway stop control can be useful as a safety measure at intersections if
228 certain traffic conditions exist. Safety concerns associated with multiway stops
229 include pedestrians, bicyclists, and all road users expecting other road users to
230 stop. Multiway stop control is used where the volume of traffic on the intersecting
231 roads is approximately equal.

232 The restrictions on the use of STOP signs described in Section 2B.05 also apply
233 to multiway stop applications.

234

235 **Guidance:**

236 The decision to install multiway stop control should be based on an engineering
237 study.

238 The following criteria should be considered in the engineering study for a
239 multiway STOP sign installation:

240

- 241 A. Where traffic control signals are justified, the multiway stop is an interim
242 measure that can be installed quickly to control traffic while arrangements
243 are being made for the installation of the traffic control signal.
- 244 B. ~~A crash problem, as indicated by 5~~ Five or more reported crashes in a 12-
245 month period that are susceptible to correction by a multiway stop
246 installation. Such crashes include right- and left-turn collisions as well as
247 right-angle collisions.
- 248 C. Minimum volumes:
- 249 1. The vehicular volume entering the intersection from the major street
250 approaches (total of both approaches) averages at least 300 vehicles per
251 hour for any 8 hours of an average day, and
 - 252 2. The combined vehicular, pedestrian, and bicycle volume entering the
253 intersection from the minor street approaches (total of both approaches)
254 averages at least 200 units per hour for the same 8 hours, with an average
255 delay to minor-street vehicular traffic of at least 30 seconds per vehicle
256 during the highest hour, but
 - 257 3. If the 85th-percentile approach speed of the major-street traffic exceeds
258 65 km/h or exceeds 40 mph, the minimum vehicular volume warrants are
259 70 percent of the above values.
- 260 D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are
261 all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded
262 from this condition.

263
264 **Option:**

265 Other criteria that may be considered in an engineering study include:

- 266
- 267 A. The need to control left-turn conflicts;
 - 268 B. The need to control vehicle/pedestrian conflicts near locations that generate
269 high pedestrian volumes;
 - 270 C. Locations where a road user, after stopping, cannot see conflicting traffic
271 and is not able to reasonably safely negotiate the intersection unless
272 conflicting cross traffic is also required to stop; and
 - 273 D. An intersection of two residential neighborhood collector (through) streets of
274 similar design and operating characteristics where multiway stop control
275 would improve traffic operational characteristics of the intersection.
- 276

277 **Section 2B.08 YIELD Sign (R1-2)**

278 **Standard:**

279 **The YIELD (R1-2) sign (see Figure 2B-1) shall be a downward-pointing**
280 **equilateral triangle with a wide red border and the legend YIELD in red on a**

281 **white background.**

282

283 Support:

284 The YIELD sign assigns right-of-way to traffic on certain approaches to an
285 intersection. Vehicles controlled by a YIELD sign need to slow down to a speed
286 reasonable for the existing conditions or stop when necessary to avoid interfering
287 with conflicting traffic.

288

289 **Section 2B.09 YIELD Sign Applications**

290 Option:

291 YIELD signs may be installed ~~used instead of STOP signs if engineering~~
292 ~~judgment indicates that one or more of the following conditions exist:~~

293

294 A. On the approaches to a through street or highway where conditions are such
295 that a stop is not always required. When the ability to see all potentially
296 conflicting traffic is sufficient to allow a road user traveling at the posted
297 speed, the 85th percentile speed, or the statutory speed to pass through the
298 intersection or to stop in a reasonably safe manner.

299 B. If controlling a merge-type movement on the entering roadway where
300 acceleration geometry and/or sight distance is not adequate for merging
301 traffic operation.

302 C. At the ~~The~~ second crossroad of a divided highway, where the median width
303 at the intersection is 9 m (30 ft) or greater. In this case, a STOP or YIELD
304 sign may be installed at the entrance to the first roadway of a divided
305 highway, and a YIELD sign may be installed at the entrance to the second
306 roadway.

307 D. On a channelized turn lane that is separated from the adjacent travel lanes by
308 an island, where the adjacent lanes at the intersection are controlled by a
309 highway traffic control signal or by a STOP sign.

310 E. At an ~~An~~ intersection where a special problem exists and where engineering
311 judgment indicates the problem to be susceptible to correction by the use of
312 the YIELD sign.

313

314 **Standard:**

315 **A YIELD (R1-2) sign shall be used to assign right-of-way at the entrance to**
316 **a roundabout intersection.**

317

318 **Section 2B.10 STOP Sign and or YIELD Sign Placement**

319 **Standard:**

320 **The STOP or YIELD sign shall be installed on the near side of the**

321 intersection and on the right side of the approach to which it applies. ~~YIELD~~
322 ~~signs shall be placed on both the left and right sides of approaches to~~
323 ~~roundabout intersections with more than one lane on the signed approach~~
324 ~~where raised splitter islands are available on the left side of the approach.~~
325 **When the STOP or YIELD sign is installed at this required location and the**
326 **sign visibility is restricted, a Stop Ahead sign shall be installed in advance of**
327 **the STOP sign, or a Yield Ahead sign (see Section 2C.29) shall be installed in**
328 **advance of the YIELD sign (see Section 2C.29).**

329 **YIELD signs shall be placed on both the left and right sides of approaches**
330 **to roundabout intersections with more than one lane on the signed approach**
331 **where raised splitter islands are available on the left side of the approach.**

332 **The STOP or YIELD sign shall be located as close as practical to the**
333 **intersection it regulates, while optimizing its visibility to the road user it is**
334 **intended to regulate.**

335 **YIELD signs and STOP signs shall not be mounted on the same post.**
336

337 Guidance:

338 Other than a DO NOT ENTER sign, no sign should be mounted back-to-back
339 with a STOP or YIELD sign in a manner that obscures the shape of the STOP or
340 YIELD sign.

341 Support:

342 Figure 2A-2 shows examples of some typical placements of STOP signs and
343 YIELD signs.

344 Section 2A.16 contains additional information about separate and combined
345 mounting of other signs with STOP or YIELD signs.
346

347 Guidance:

348 Stop lines, when used to supplement a STOP sign, should be located at the
349 point where the road user should stop. Yield lines, when used to supplement a
350 YIELD sign, should be located at a point where the road user should yield (see
351 Section 3B.16).

352 Where two roads intersect at an acute angle, the STOP or YIELD sign should
353 be positioned at an angle, or shielded, so that the legend is out of view of traffic to
354 which it does not apply.
355

356 Where there is a marked crosswalk at the intersection, the STOP sign should be
357 installed in advance of the crosswalk line nearest to the approaching traffic.

358 Except at roundabout intersections, where there is a marked crosswalk at the
359 intersection, the YIELD sign should be installed in advance of the crosswalk line
360 nearest to the approaching traffic.

361 At a roundabout intersection, to prevent circulating vehicles from yielding
362 unnecessarily, the face of the YIELD sign should not be visible from the
363 circulatory roadway.

364 Option:

365 At wide-throat intersections or where two or more approach lanes of traffic exist
366 on the signed approach, observance of the right-of-way yield control may be
367 improved by the installation of an additional STOP or YIELD sign on the left side
368 of the road and/or the use of a stop or yield line. At channelized intersections or at
369 divided roadways separated by a median, the additional STOP or YIELD sign may
370 be ~~effectively~~ placed on a channelizing island or in the median.