

DESIGN FACTORS FOR A DESIGN SPEED OF 60 MPH (RURAL) USING E= 8% MAX.

| DESIGN VELOCITY<br>=60 | DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH) |    |         |             |         |     |             |     |         |             |         |     | INTERCHANGE RAMPS |     |       |             |     |     |       |    |     |    |     |
|------------------------|---|----|---------|-------------|---------|-----|-------------|-----|---------|-------------|---------|-----|-------------------|-----|-------|-------------|-----|-----|-------|----|-----|----|-----|
|                        | WIDTH= 18 FT  |    |         | WIDTH=20 FT |         |     | WIDTH=22 FT |     |         | WIDTH=24 FT |         |     | WIDTH=48 FT       |     |       | WIDTH=72 FT |     |     | WIDTH |    |     |    |     |
|                        | 1 @ 9'  |    | 1 @ 10' |             | 1 @ 11' |     | 1 @ 12'     |     | 2 @ 12' |             | 3 @ 12' |     | 16 FT             |     | 18 FT |             |     |     |       |    |     |    |     |
| RADIUS(FT)             | E(%)  | Lt | Lr      | w           | Lt      | Lr  | w           | Lt  | Lr      | w           | Lt      | Lr  | w                 | Lt  | Lr    | w           | Lt  | Lr  | w     | Lt | Lr  | w  |     |
| 12000                  | NC  | 0  | 0       | 0.0         | 0       | 0.0 | 0           | 0.0 | 0       | 0.0         | 0       | 0.0 | 0                 | 0.0 | 0     | 0.0         | 0   | 0   | 0     | 0  | 0   | 0  | 0   |
| 8480                   | 2.0   | 40 | 40      | 0.0         | 45      | 45  | 0.0         | 49  | 49      | 0.0         | 54      | 54  | 0.0               | 80  | 80    | 0.0         | 107 | 107 | 0.0   | 63 | 63  | 67 | 67  |
| 8048                   | 2.1   | 40 | 42      | 0.0         | 45      | 47  | 0.0         | 49  | 52      | 0.0         | 54      | 56  | 0.0               | 80  | 84    | 0.0         | 107 | 112 | 0.0   | 63 | 66  | 67 | 70  |
| 7654                   | 2.2   | 40 | 44      | 0.0         | 45      | 49  | 0.0         | 49  | 54      | 0.0         | 54      | 59  | 0.0               | 80  | 88    | 0.0         | 107 | 118 | 0.0   | 63 | 70  | 67 | 74  |
| 7294                   | 2.3   | 40 | 46      | 0.0         | 45      | 52  | 0.0         | 49  | 57      | 0.0         | 54      | 62  | 0.0               | 80  | 92    | 0.0         | 107 | 123 | 0.0   | 63 | 73  | 67 | 77  |
| 6965                   | 2.4   | 40 | 48      | 0.0         | 45      | 54  | 0.0         | 49  | 59      | 0.0         | 54      | 64  | 0.0               | 80  | 96    | 0.0         | 107 | 128 | 0.0   | 63 | 76  | 67 | 80  |
| 6661                   | 2.5   | 40 | 50      | 0.0         | 45      | 56  | 0.0         | 49  | 62      | 0.0         | 54      | 67  | 0.0               | 80  | 100   | 0.0         | 107 | 134 | 0.0   | 63 | 79  | 67 | 84  |
| 6381                   | 2.6   | 40 | 52      | 0.0         | 45      | 58  | 0.0         | 49  | 64      | 0.0         | 54      | 70  | 0.0               | 80  | 104   | 0.0         | 107 | 139 | 0.0   | 63 | 82  | 67 | 87  |
| 6121                   | 2.7   | 40 | 54      | 0.0         | 45      | 60  | 0.0         | 49  | 66      | 0.0         | 54      | 72  | 0.0               | 80  | 108   | 0.0         | 107 | 144 | 0.0   | 63 | 85  | 67 | 90  |
| 5879                   | 2.8   | 40 | 56      | 0.0         | 45      | 63  | 0.0         | 49  | 69      | 0.0         | 54      | 75  | 0.0               | 80  | 112   | 0.0         | 107 | 150 | 0.0   | 63 | 88  | 67 | 94  |
| 5654                   | 2.9   | 40 | 58      | 0.0         | 45      | 65  | 0.0         | 49  | 71      | 0.0         | 54      | 78  | 0.0               | 80  | 116   | 0.0         | 107 | 155 | 0.0   | 63 | 91  | 67 | 97  |
| 5444                   | 3.0   | 40 | 60      | 0.0         | 45      | 67  | 0.0         | 49  | 74      | 0.0         | 54      | 80  | 0.0               | 80  | 120   | 0.0         | 107 | 160 | 0.0   | 63 | 95  | 67 | 100 |
| 5247                   | 3.1   | 40 | 62      | 0.0         | 45      | 69  | 0.0         | 49  | 76      | 0.0         | 54      | 83  | 0.0               | 80  | 124   | 0.0         | 107 | 166 | 0.0   | 63 | 98  | 67 | 104 |
| 5063                   | 3.2   | 40 | 64      | 0.0         | 45      | 72  | 0.0         | 49  | 79      | 0.0         | 54      | 86  | 0.0               | 80  | 128   | 0.0         | 107 | 171 | 0.0   | 63 | 101 | 67 | 107 |
| 4889                   | 3.3   | 40 | 66      | 0.0         | 45      | 74  | 0.0         | 49  | 81      | 0.0         | 54      | 88  | 0.0               | 80  | 132   | 0.0         | 107 | 176 | 0.0   | 63 | 104 | 67 | 110 |
| 4725                   | 3.4   | 40 | 68      | 0.0         | 45      | 76  | 0.0         | 49  | 84      | 0.0         | 54      | 91  | 0.0               | 80  | 136   | 0.0         | 107 | 182 | 0.0   | 63 | 107 | 67 | 114 |
| 4571                   | 3.5   | 40 | 70      | 0.0         | 45      | 78  | 0.0         | 49  | 86      | 0.0         | 54      | 94  | 0.0               | 80  | 140   | 0.0         | 107 | 187 | 0.0   | 63 | 110 | 67 | 117 |
| 4424                   | 3.6   | 40 | 72      | 0.0         | 45      | 80  | 0.0         | 49  | 88      | 0.0         | 54      | 96  | 0.0               | 80  | 144   | 0.0         | 107 | 192 | 0.0   | 63 | 113 | 67 | 120 |
| 4286                   | 3.7   | 40 | 74      | 0.0         | 45      | 83  | 0.0         | 49  | 91      | 0.0         | 54      | 99  | 0.0               | 80  | 148   | 0.0         | 107 | 198 | 0.0   | 63 | 117 | 67 | 124 |
| 4155                   | 3.8   | 40 | 76      | 0.0         | 45      | 85  | 0.0         | 49  | 93      | 0.0         | 54      | 102 | 0.0               | 80  | 152   | 0.0         | 107 | 203 | 0.0   | 63 | 120 | 67 | 127 |
| 4030                   | 3.9   | 40 | 78      | 0.0         | 45      | 87  | 0.0         | 49  | 96      | 0.0         | 54      | 104 | 0.0               | 80  | 156   | 0.0         | 107 | 208 | 0.0   | 63 | 123 | 67 | 130 |
| 3911                   | 4.0   | 40 | 80      | 0.0         | 45      | 89  | 0.0         | 49  | 98      | 0.0         | 54      | 107 | 0.0               | 80  | 160   | 0.0         | 107 | 214 | 0.0   | 63 | 126 | 67 | 134 |
| 3798                   | 4.1   | 40 | 82      | 0.0         | 45      | 92  | 0.0         | 49  | 101     | 0.0         | 54      | 110 | 0.0               | 80  | 164   | 0.0         | 107 | 219 | 0.0   | 63 | 129 | 67 | 137 |
| 3690                   | 4.2   | 40 | 84      | 0.0         | 45      | 94  | 0.0         | 49  | 103     | 0.0         | 54      | 112 | 0.0               | 80  | 168   | 0.0         | 107 | 224 | 0.0   | 63 | 132 | 67 | 140 |
| 3587                   | 4.3   | 40 | 86      | 0.0         | 45      | 96  | 0.0         | 49  | 106     | 0.0         | 54      | 115 | 0.0               | 80  | 172   | 0.0         | 107 | 230 | 0.0   | 63 | 135 | 67 | 144 |
| 3488                   | 4.4   | 40 | 88      | 0.0         | 45      | 98  | 0.0         | 49  | 108     | 0.0         | 54      | 118 | 0.0               | 80  | 176   | 0.0         | 107 | 235 | 0.0   | 63 | 139 | 67 | 147 |
| 3394                   | 4.5   | 40 | 90      | 0.0         | 45      | 100 | 0.0         | 49  | 110     | 0.0         | 54      | 120 | 0.0               | 80  | 180   | 0.0         | 107 | 240 | 0.0   | 63 | 142 | 67 | 150 |
| 3303                   | 4.6   | 40 | 92      | 0.0         | 45      | 103 | 0.0         | 49  | 113     | 0.0         | 54      | 123 | 0.0               | 80  | 184   | 0.0         | 107 | 246 | 0.0   | 63 | 145 | 67 | 154 |
| 3216                   | 4.7   | 40 | 94      | 0.0         | 45      | 105 | 0.0         | 49  | 115     | 0.0         | 54      | 126 | 0.0               | 80  | 188   | 0.0         | 107 | 251 | 0.0   | 63 | 148 | 67 | 157 |
| 3133                   | 4.8   | 40 | 96      | 0.0         | 45      | 107 | 0.0         | 49  | 118     | 0.0         | 54      | 128 | 0.0               | 80  | 192   | 0.0         | 107 | 256 | 0.0   | 63 | 151 | 67 | 160 |
| 3053                   | 4.9   | 40 | 98      | 0.0         | 45      | 109 | 0.0         | 49  | 120     | 0.0         | 54      | 131 | 0.0               | 80  | 196   | 0.0         | 107 | 262 | 0.0   | 63 | 154 | 67 | 164 |
| 2975                   | 5.0   | 40 | 100     | 0.0         | 45      | 112 | 0.0         | 49  | 123     | 0.0         | 54      | 134 | 0.0               | 80  | 200   | 0.0         | 107 | 267 | 0.0   | 63 | 157 | 67 | 167 |
| 2901                   | 5.1   | 40 | 102     | 0.0         | 45      | 114 | 0.0         | 49  | 125     | 0.0         | 54      | 136 | 0.0               | 80  | 204   | 0.0         | 107 | 272 | 0.0   | 63 | 160 | 67 | 170 |
| 2866                   | 5.2   | 40 | 104     | 0.0         | 45      | 116 | 0.0         | 49  | 128     | 0.0         | 54      | 139 | 0.0               | 80  | 208   | 0.0         | 107 | 278 | 0.0   | 63 | 164 | 67 | 174 |
| 2865                   | 5.2   | 68 | 176     | 2.3         | 45      | 116 | 0.0         | 49  | 128     | 0.0         | 54      | 139 | 0.0               | 80  | 208   | 0.0         | 107 | 278 | 0.0   | 63 | 164 | 67 | 174 |
| 2829                   | 5.2   | 68 | 176     | 2.4         | 45      | 116 | 0.0         | 49  | 128     | 0.0         | 54      | 139 | 0.0               | 80  | 208   | 0.0         | 107 | 278 | 0.0   | 63 | 164 | 67 | 174 |
| 2759                   | 5.3   | 67 | 176     | 2.4         | 45      | 118 | 0.0         | 49  | 130     | 0.0         | 54      | 142 | 0.0               | 80  | 212   | 0.0         | 107 | 283 | 0.0   | 63 | 167 | 67 | 177 |
| 2692                   | 5.4   | 66 | 176     | 2.4         | 45      | 120 | 0.0         | 49  | 132     | 0.0         | 54      | 144 | 0.0               | 80  | 216   | 0.0         | 107 | 288 | 0.0   | 63 | 170 | 67 | 180 |
| 2627                   | 5.5   | 64 | 176     | 2.4         | 45      | 123 | 0.0         | 49  | 135     | 0.0         | 54      | 147 | 0.0               | 80  | 220   | 0.0         | 107 | 294 | 0.0   | 63 | 173 | 67 | 184 |
| 2565                   | 5.6   | 63 | 176     | 2.4         | 45      | 125 | 0.0         | 49  | 137     | 0.0         | 54      | 150 | 0.0               | 80  | 224   | 0.0         | 107 | 299 | 0.0   | 63 | 176 | 67 | 187 |
| 2504                   | 5.7   | 62 | 176     | 2.4         | 45      | 127 | 0.0         | 49  | 140     | 0.0         | 54      | 152 | 0.0               | 80  | 228   | 0.0         | 107 | 304 | 0.0   | 63 | 179 | 67 | 190 |
| 2445                   | 5.8   | 61 | 176     | 2.5         | 45      | 129 | 0.0         | 49  | 142     | 0.0         | 54      | 155 | 0.0               | 80  | 232   | 0.0         | 107 | 310 | 0.0   | 63 | 182 | 67 | 194 |
| 2387                   | 5.9   | 60 | 176     | 2.5         | 45      | 132 | 0.0         | 49  | 145     | 0.0         | 54      | 158 | 0.0               | 80  | 236   | 0.0         | 107 | 315 | 0.0   | 63 | 186 | 67 | 197 |
| 2332                   | 6.0   | 59 | 176     | 2.5         | 45      | 134 | 0.0         | 49  | 147     | 0.0         | 54      | 160 | 0.0               | 80  | 240   | 0.0         | 107 | 320 | 0.0   | 63 | 189 | 67 | 200 |
| 2277                   | 6.1   | 58 | 176     | 2.5         | 45      | 136 | 0.0         | 49  | 150     | 0.0         | 54      | 163 | 0.0               | 80  | 244   | 0.0         | 107 | 326 | 0.0   | 63 | 192 | 67 | 204 |
| 2225                   | 6.2   | 57 | 176     | 2.5         | 45      | 138 | 0.0         | 49  | 152     | 0.0         | 54      | 166 | 0.0               | 80  | 248   | 0.0         | 107 | 331 | 0.0   | 63 | 195 | 67 | 207 |
| 2173                   | 6.3   | 56 | 176     | 2.6         | 45      | 140 | 0.0         | 49  | 154     | 0.0         | 54      | 168 | 0.0               | 80  | 252   | 0.0         | 107 | 336 | 0.0   | 63 | 198 | 67 | 210 |
| 2122                   | 6.4   | 55 | 176     | 2.6         | 45      | 143 | 0.0         | 49  | 157     | 0.0         | 54      | 171 | 0.0               | 80  | 256   | 0.0         | 107 | 342 | 0.0   | 63 | 201 | 67 | 214 |
| 2072                   | 6.5   | 55 | 176     | 2.6         | 45      | 145 | 0.0         | 49  | 159     | 0.0         | 54      | 174 | 0.0               | 80  | 260   | 0.0         | 107 | 347 | 0.0   | 63 | 204 | 67 | 217 |
| 2022                   | 6.6   | 54 | 176     | 2.6         | 45      | 147 | 0.0         | 49  | 162     | 0.0         | 54      | 176 | 0.0               | 80  | 264   | 0.0         | 107 | 352 | 0.0   | 63 | 208 | 67 | 220 |
| 1974                   | 6.7   | 53 | 176     | 2.6         | 45      | 149 | 0.0         | 49  | 164     | 0.0         | 54      | 179 | 0.0               | 80  | 268   | 0.0         | 107 | 358 | 0.0   | 63 | 211 | 67 | 224 |
| 1925                   | 6.8   | 52 | 176     | 2.7         | 45      | 152 | 0.0         | 49  | 167     | 0.0         | 54      | 182 | 0.0               | 80  | 272   | 0.0         | 107 | 363 | 0.0   | 63 | 214 | 67 | 227 |
| 1877                   | 6.9   | 52 | 176     | 2.7         | 45      | 154 | 0.0         | 49  | 169     | 0.0         | 54      | 184 | 0.0               | 80  | 276   | 0.0         | 107 | 368 | 0.0   | 63 | 217 | 67 | 230 |
| 1830                   | 7.0   | 51 | 176     | 2.7         | 45      | 156 | 0.0         | 49  | 172     | 0.0         | 54      | 187 | 0.0               | 80  | 280   | 0.0         | 107 | 374 | 0.0   | 63 | 220 | 67 | 234 |
| 1782                   | 7.1   | 50 | 176     | 2.7         | 45      | 158 | 0.0         | 49  | 174     | 0.0         | 54      | 190 | 0.0               | 80  | 284   | 0.0         | 107 | 379 | 0.0   | 63 | 223 | 67 | 237 |
| 1735                   | 7.2   | 49 | 176     | 2.8         | 45      | 160 | 0.0         | 49  | 176     | 0.0         | 54      | 192 | 0.0               | 80  | 288   | 0.0         | 107 | 384 | 0.0   | 63 | 226 | 67 | 240 |
| 1687                   | 7.3   | 49 | 176     | 2.8         | 45      | 163 | 0.0         | 49  | 179     | 0.0         | 54      | 195 | 0.0               | 80  | 292   | 0.0         | 107 | 390 | 0.0   | 63 | 230 | 67 | 244 |
| 1638                   | 7.4   | 48 | 176     | 2.8         | 45      | 165 | 0.0         | 49  | 181     | 0.0         | 54      | 198 | 0.0               | 80  | 296   | 0.0         | 107 | 395 | 0.0   | 63 | 233 | 67 | 247 |
| 1588                   | 7.5   | 47 | 176     | 2.9         | 45      | 167 | 0.0         | 49  | 184     | 0.0         | 54      | 200 | 0.0               | 80  | 300   | 0.0         | 107 | 400 | 0.0   | 63 | 236 | 67 | 250 |
| 1537                   | 7.6   | 47 | 177     | 2.9         | 45      | 169 | 0.0         | 49  | 186     | 0.0         | 54      | 203 | 0.0               | 80  | 304   | 0.0         | 107 | 406 | 0.0   | 63 | 239 | 67 | 254 |
| 1482                   | 7.7   | 47 | 179     | 2.9         | 45      | 172 | 0.0         | 49  | 189     | 0.0         | 54      | 206 | 0.0               | 80  | 308   | 0.0         | 107 | 411 | 0.0   | 63 | 242 | 67 | 257 |
| 1422                   | 7.8   | 47 | 182     | 3.0         | 49      | 191 | 2.0         | 49  | 191     | 0.0         | 54      | 208 | 0.0               | 80  | 312   | 0.0         | 107 | 416 | 0.0   | 63 | 245 | 67 | 260 |
| 1350                   | 7.9   | 47 | 185     | 3.0         | 49      | 194 | 2.0         | 49  | 194     | 0.0         | 54      |     |                   |     |       |             |     |     |       |    |     |    |     |