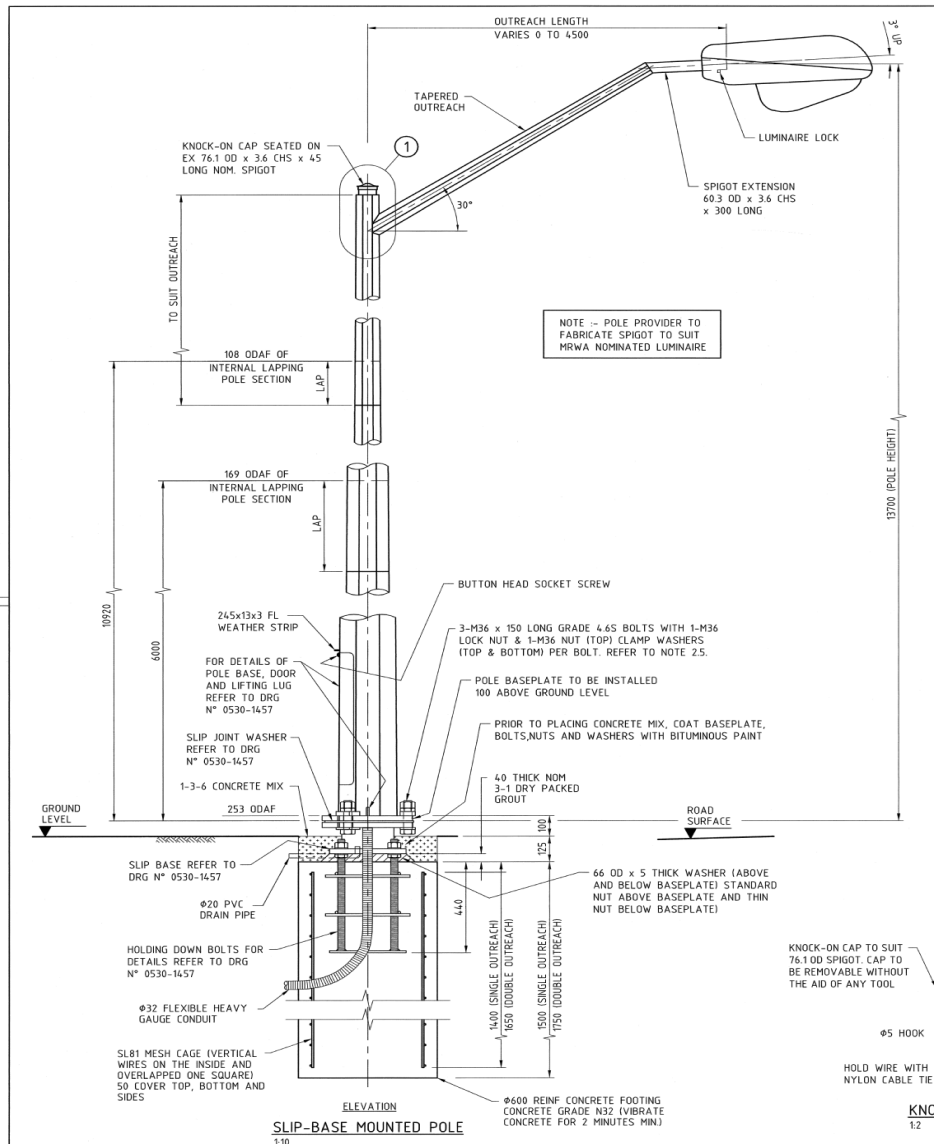


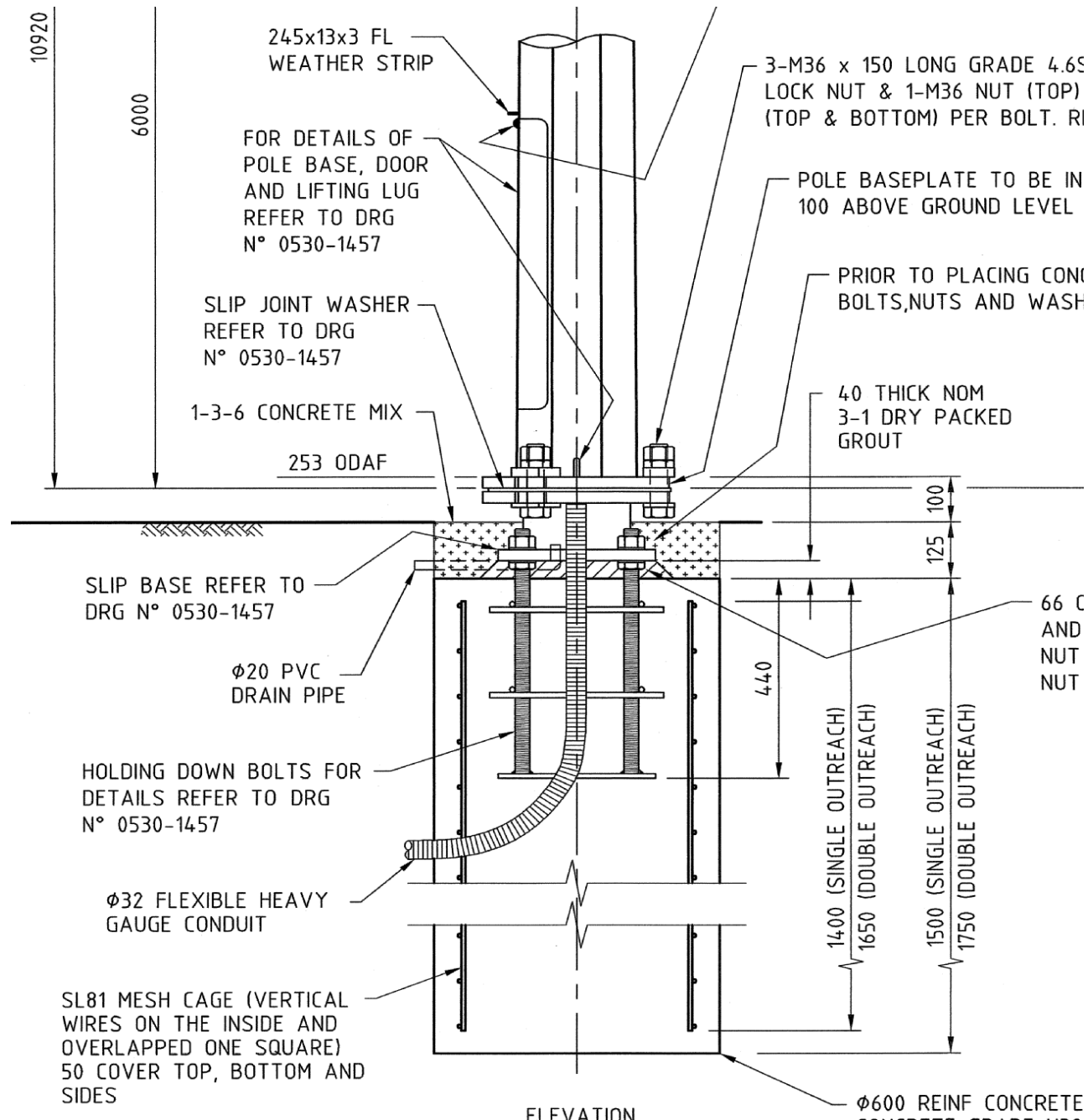
Lights and Signs (Poles)



THIS DRAWING IS AN AMENDMENT OF THE

NOTES

Lights and Signs (Poles)



At-Grade Intersection



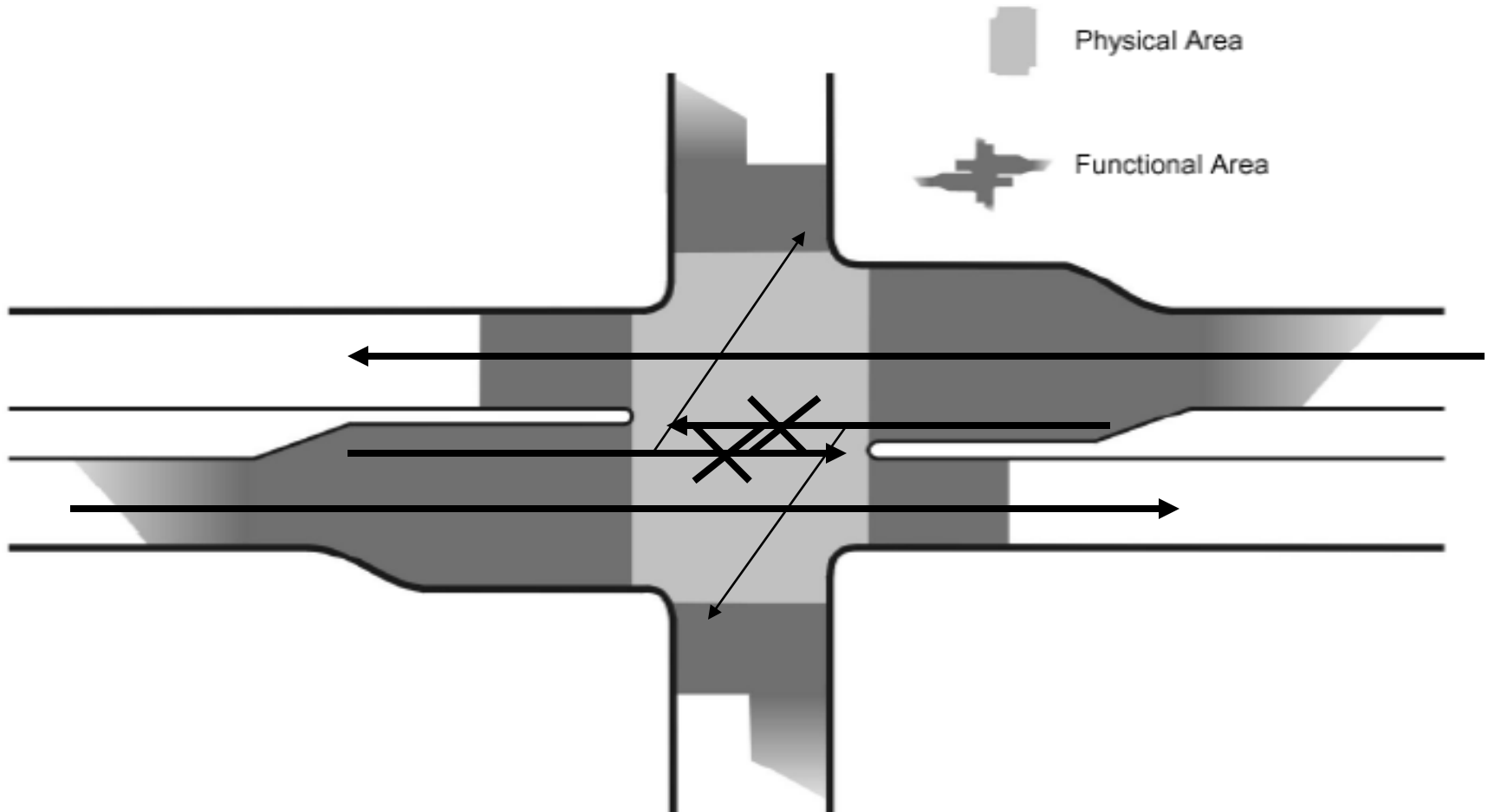
At-Grade Intersection



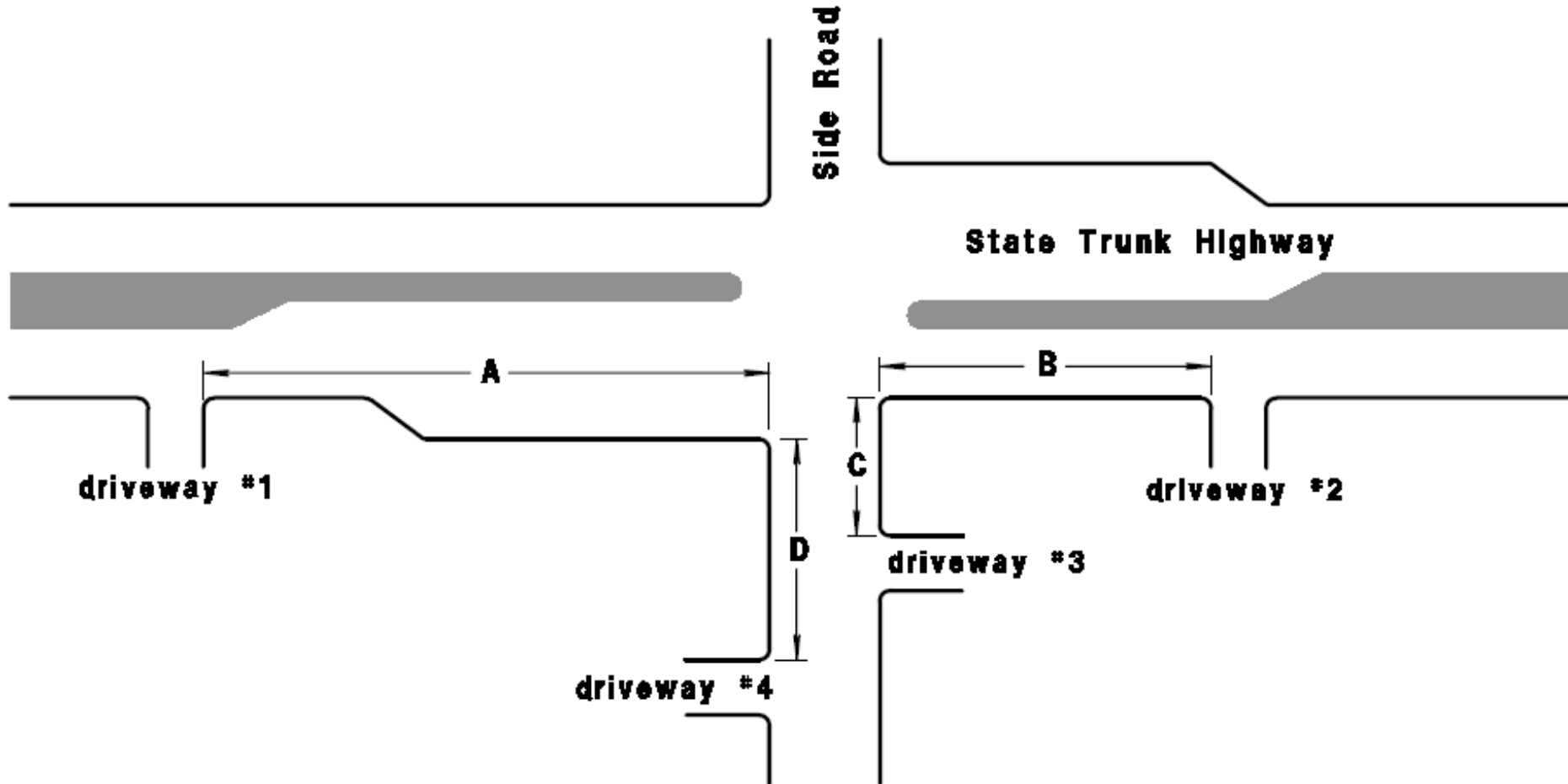
Visual adaptation to brighter areas can mask objects or design features that appear in shadowed areas

At-Grade Intersection

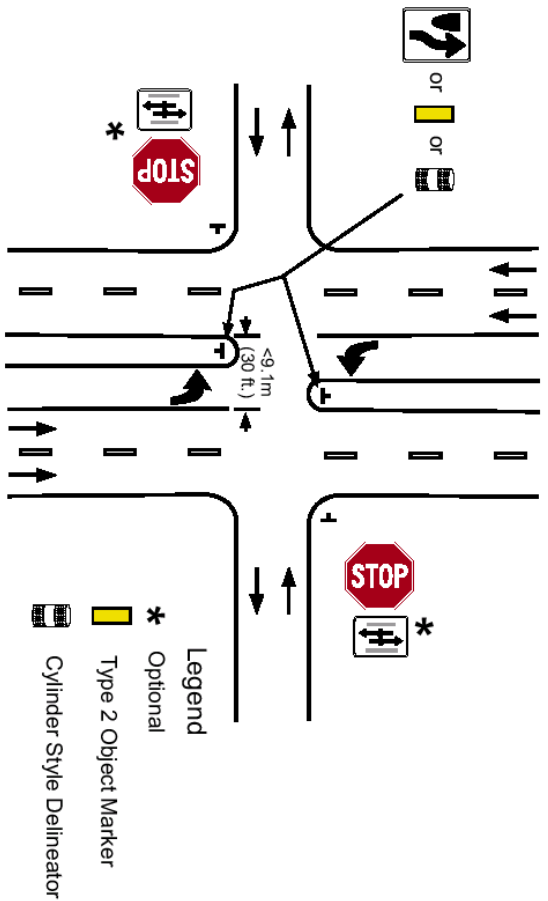
Physical and Functional Areas of an Intersection [1]



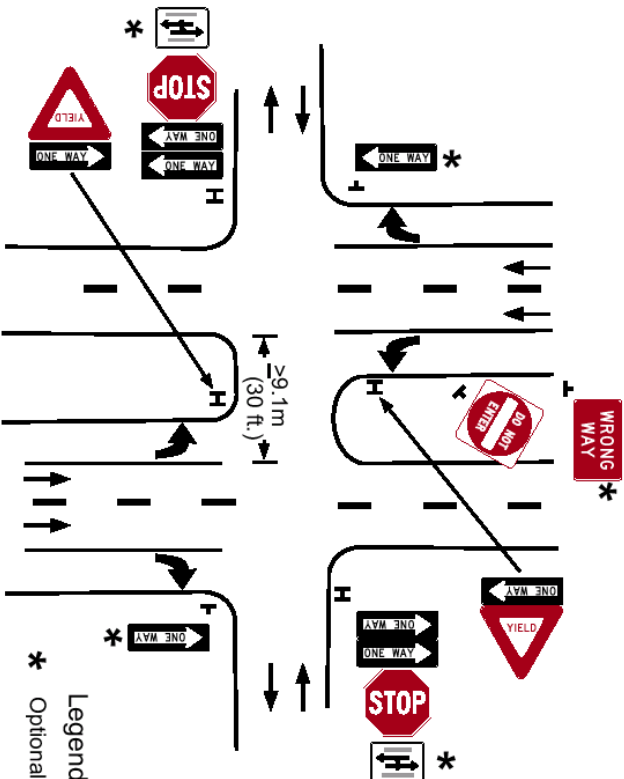
At-Grade Intersection



At-Grade Intersection



Median Less Than 9.1 m (30 ft.)



Median Greater Than or Equal to 9.1 m (30 ft.)

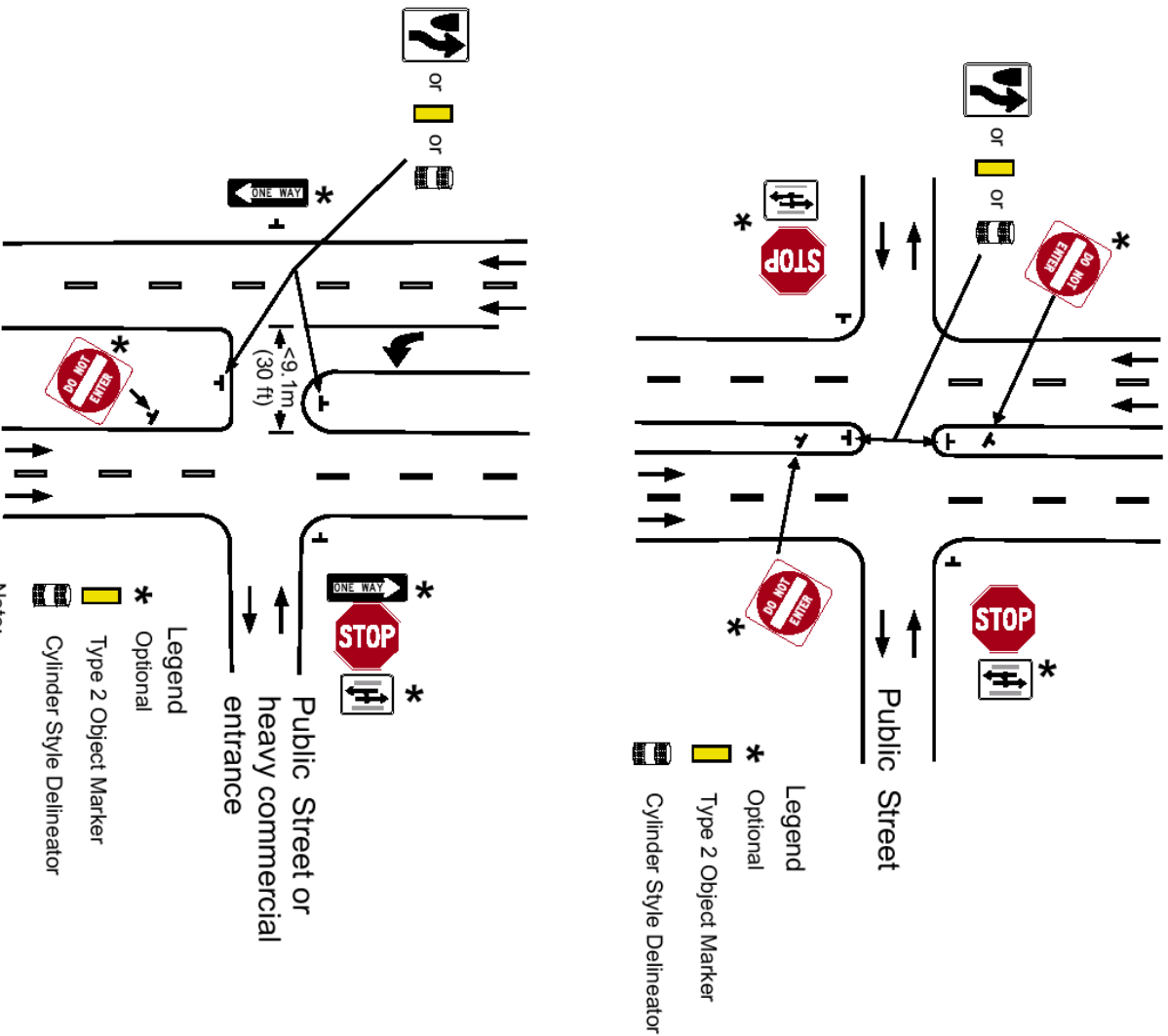
Text Ref.: 6-5.02

July 1, 1999

REGULATORY SIGNS FOR DIVIDED
HIGHWAY INTERSECTIONS WITH TURN LANES

FIGURE
6.7

At-Grade Intersection



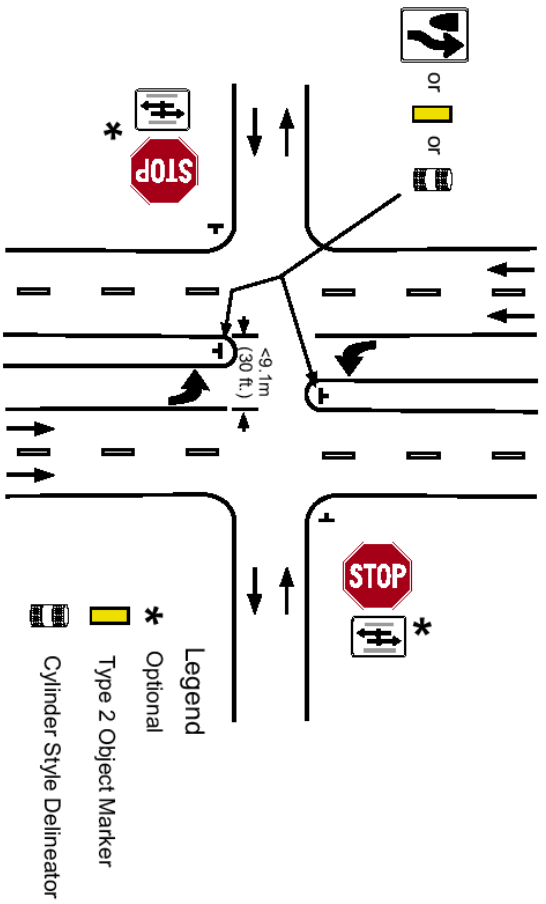
Text Ref.: 6-5.02

July 1, 1999

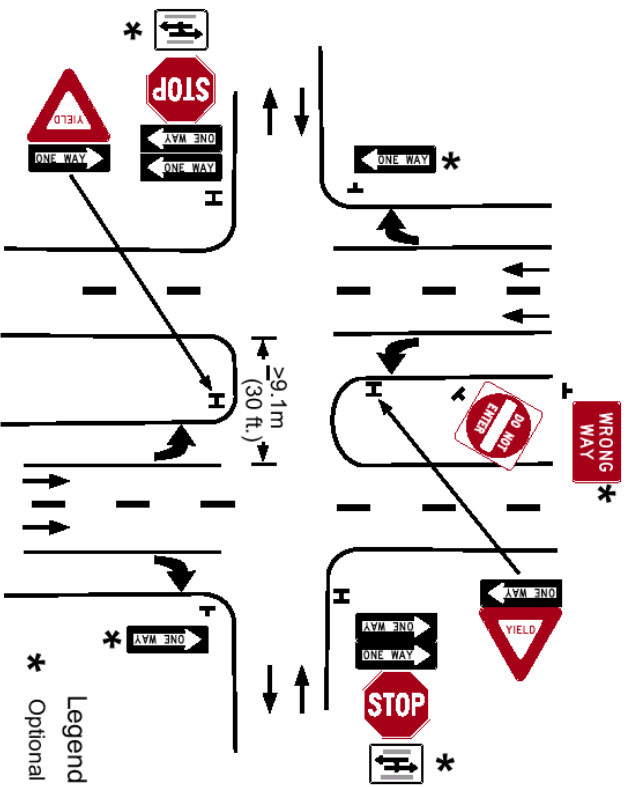
REGULATORY SIGNS FOR DIVIDED
HIGHWAY INTERSECTIONS - MEDIANS <30 FEET

FIGURE
6.6

At-Grade Intersection



Median Less Than 9.1 m (30 ft.)



Median Greater Than or Equal to 9.1 m (30 ft.)

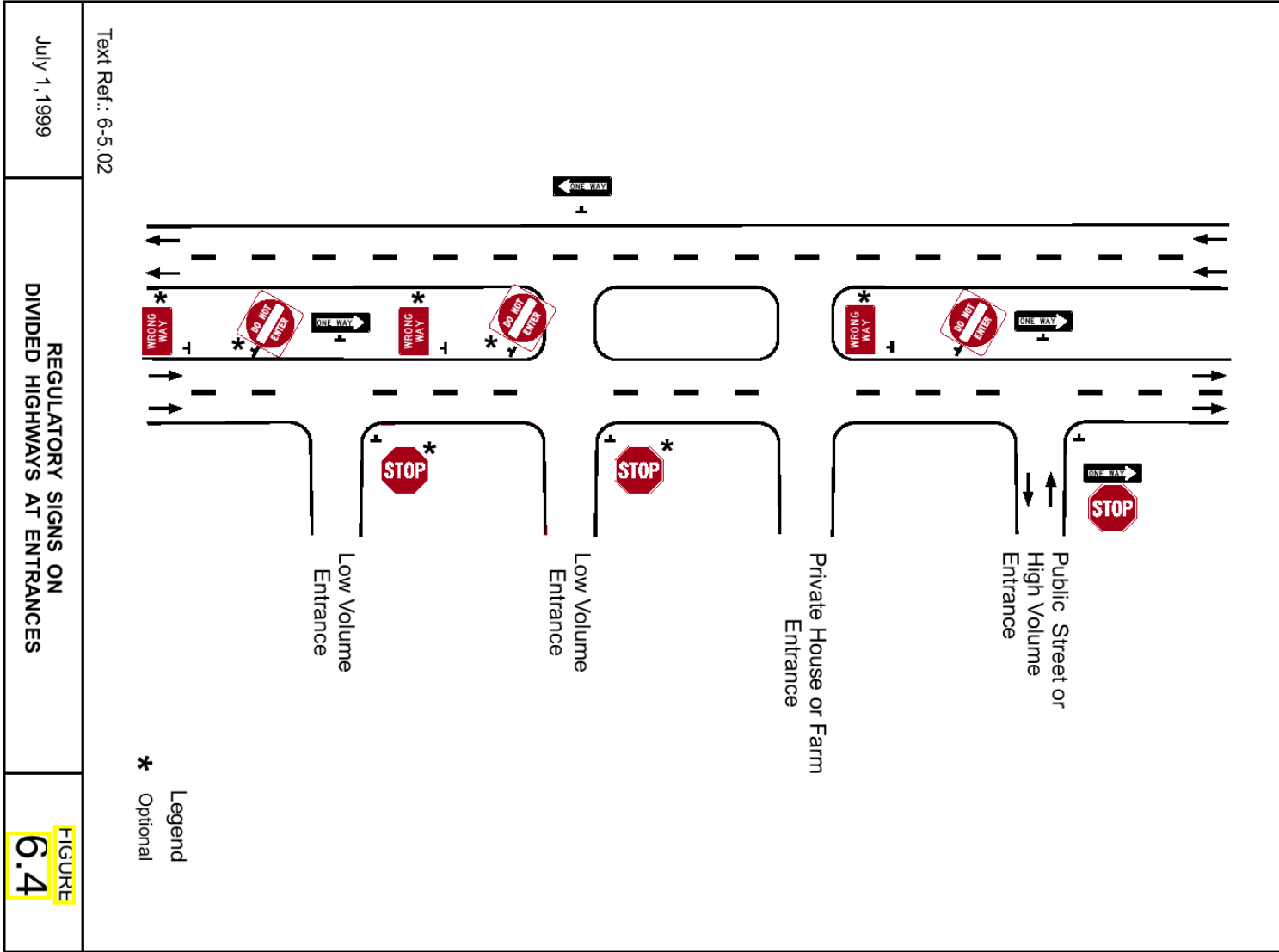
Text Ref.: 6-5.02

July 1, 1999

REGULATORY SIGNS FOR DIVIDED HIGHWAY INTERSECTIONS WITH TURN LANES

FIGURE 6.7

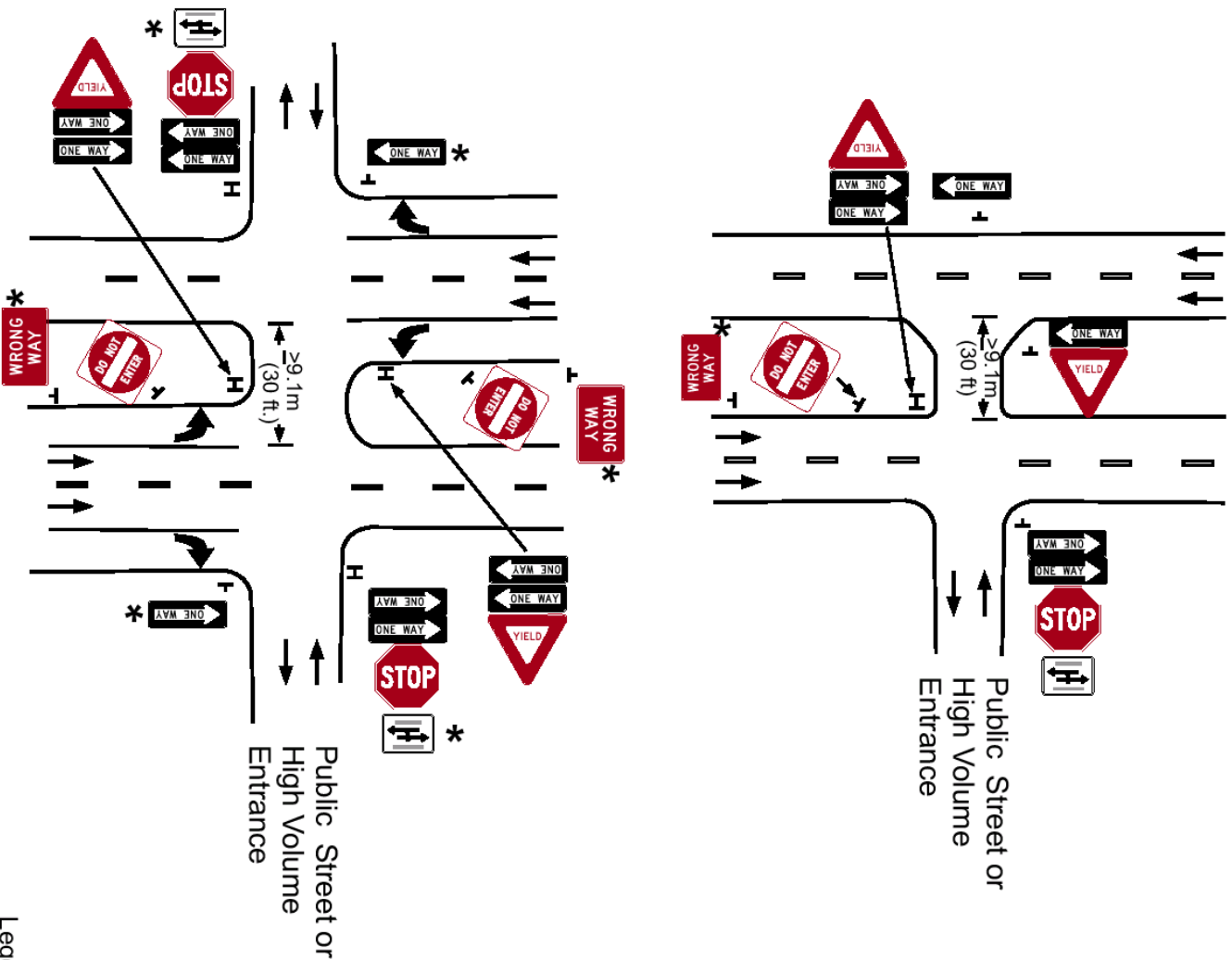
At-Grade Intersection



At-Grade Intersection

Text Ref.: 6-5.02

Legend
* Optional



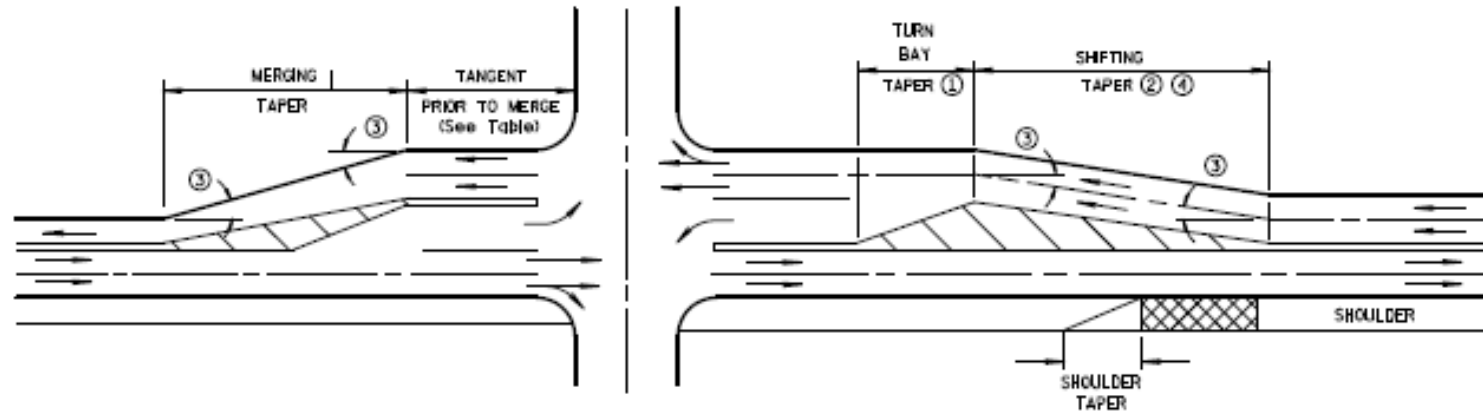
July 1, 1999

REGULATORY SIGNS FOR DIVIDED
HIGHWAY INTERSECTIONS - MEDIANS ≥ 30 FEET

FIGURE
6.5

At-Grade Intersection

FDM Procedure 11-25-1 Figure 2 Taper Length Criteria (MUTCD 2000, Section 3B)



Type of Taper	Taper Length	Formula for L	
		Posted Speed	Formula
Merging Taper	L Minimum	40 MPH or Less	$L = \frac{WS^2}{60}$
Shifting Taper	L Desirable ④		
Shifting Taper	½ L Minimum ④	45 MPH or Greater	$L = W \times S$
Shoulder Taper	½ L Minimum		
Urban turn bay taper	12.5:1 Desirable for posted speed 45 mph and greater 8:1 Minimum ③		
Rural turn bay taper	12.5:1 (or 150' for 12' lane) ②		

③ Turn bay taper may be shorter if conditions require it, down to 75-feet.

② Shifting taper for passing and climbing lanes are shown in SDD 15 C 8.

③ Maximum Deflection not to exceed values shown in FDM 11-10-5, Table 4. If it does then design a horizontal curve at the PI.

④ Use the greater of L or 100' for posted speed ≤ 40 mph; Use the greater of L or 200' for posted speed ≥ 45 mph

L = Taper Length in feet

W = See below

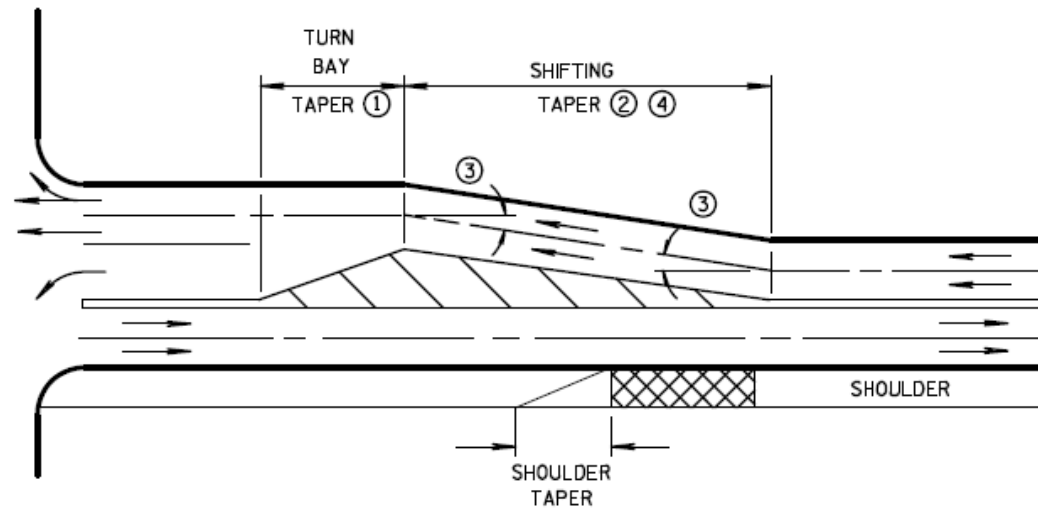
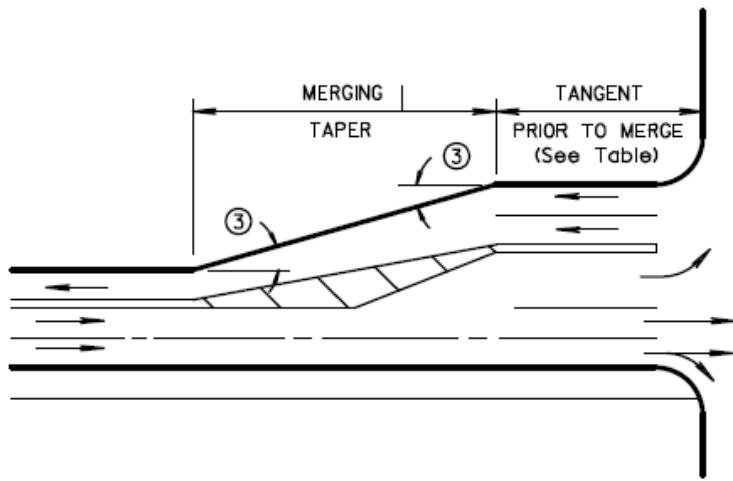
S = Posted speed or off-peak 85th percentile speed in MPH

Tangent prior to merge

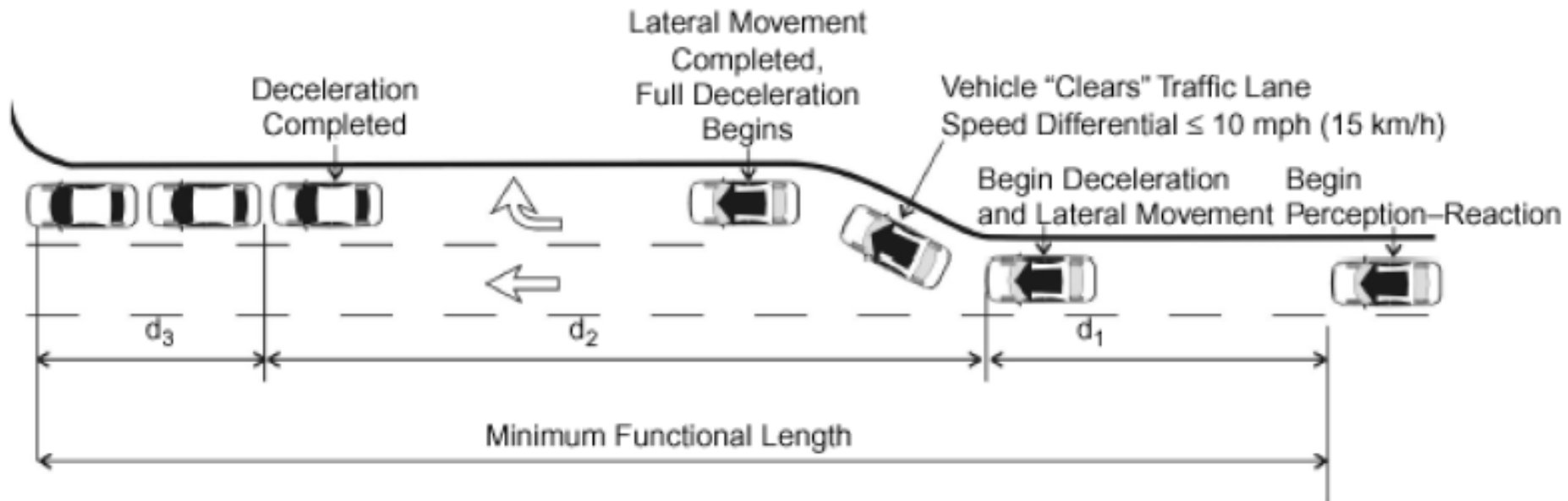
Posted Speed (mph)	Dist. Desirable (ft)	Dist. Min. (ft)
25	450	250
30	525	325
35	600	400
40	675	475
45	750	550
50	825	625
55	900	700

Situation	Definition of "W"
Merging Taper	The difference in travel way width from the beginning to the end of the taper
Shifting Taper	The distance (left or right) a vehicle path is shifted from the beginning to the end of the taper
Turn Bay Taper	The distance (left or right) a vehicle path is shifted from the beginning to the end of the taper
Shoulder Taper	Shoulder width

At-Grade Intersection



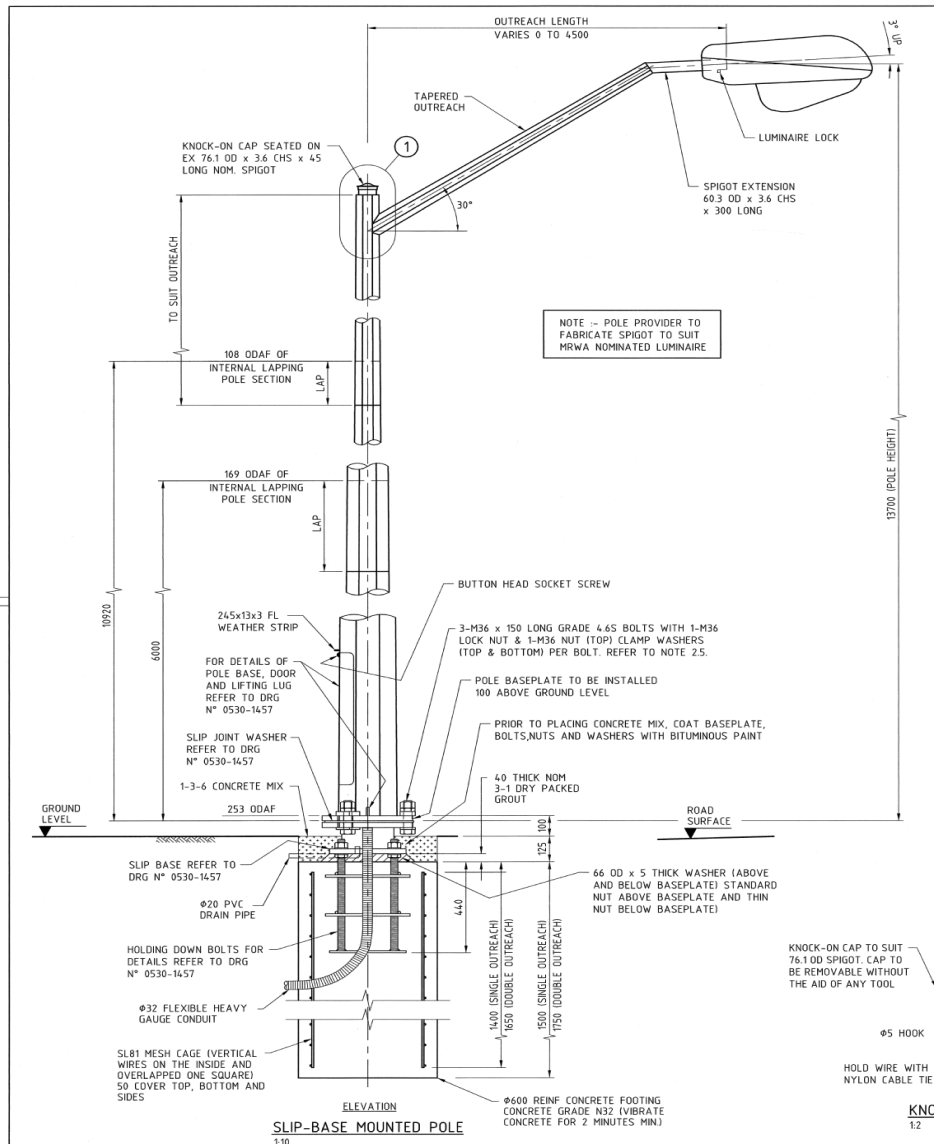
At-Grade Intersections



At-Grade Intersections

Design speed (mph)	Distance Traveled During Driver's Perception–Reaction (d1)		Desirable Maneuver Distances (d2)
	Rural (ft) (PRT = 2.5 sec)	Urban/Suburban (ft) (PRT = 1.5 sec)	Distance ^{A,B,C} (ft)
20	75	45	70
30	110	65	160
40	145	90	275
50	185	110	425
60	220	135	605
70	255	155	820

Lights and Signs (Poles)



THIS DRAWING IS AN AMENDMENT OF THE

NOTES

HOOK

HOLD WIRE WITH
NYLON CABLE TIE

$$\frac{\text{KNC}}{1:2}$$