

Figure 1:
CASE A - UNCONTROLLED OR YIELD CONTROLLED INTERSECTION (SEE NOTES 1 & 9)

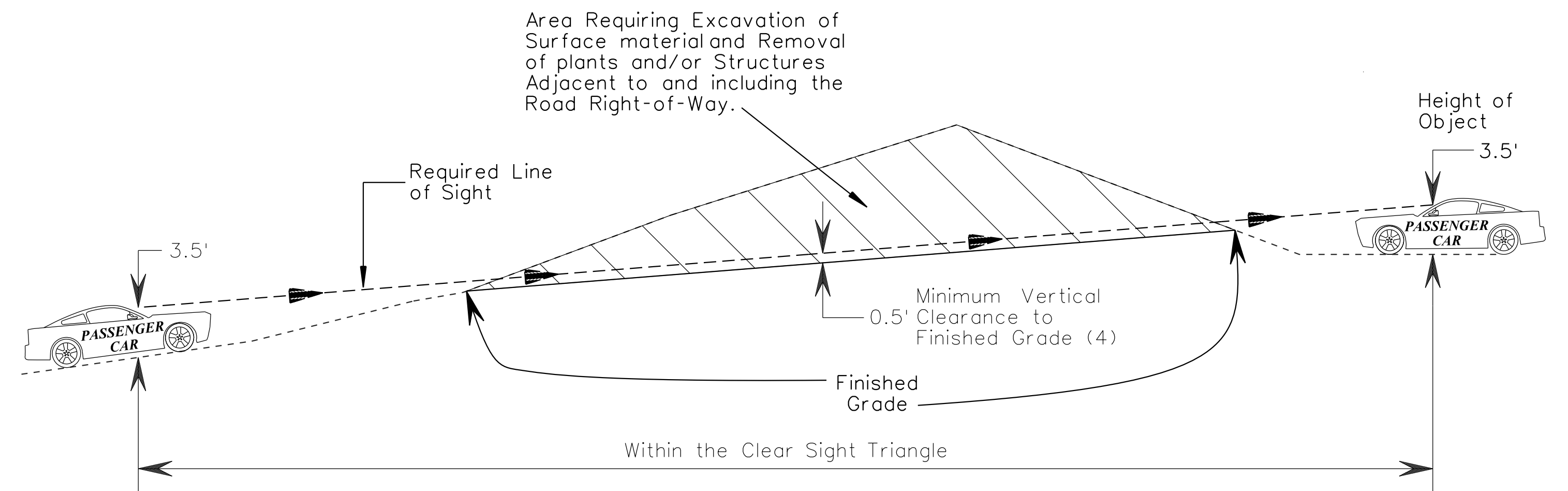


Figure 2:
TYPICAL PROFILE ALONG LINE OF SIGHT (SEE NOTES 1, 2, 3 & 4)

GENERAL NOTES

1. Do not scale drawings, follow dimensions provided.
2. Height of motorist eye in a vehicle = 3.5 feet. Height of the object = 3.5 feet.
3. The determination of whether an object constitutes a sight obstruction shall consider both the horizontal and vertical alignment of both intersection roadways, as well as the height, position and location of the object.
4. Within the sight triangle, any object at a height above the elevation of the adjacent roadways that would obstruct the driver's view shall be removed or lowered to a minimum of 0.5 feet below the required line of sight. Such objects may include, but are not limited to, berms, buildings, parked vehicles, highway structures, hedges, trees, bushes, unmowed grass, tall crops, walls, fences, and the terrain itself.
5. This table shows the distance traveled by an approaching passenger car during perception-reaction and braking time as a function of the design speed of the roadway on which the intersection approach is located. Refer to Figure 1 to determine the appropriate leg "a", "b", "c", or "d" of the sight triangle. Sight triangle legs for the different approaches will vary based on design speed. Intersection sight distance for intersections not controlled by yield signs, stop signs, or traffic signals, is based on the stopping sight distance.
6. On existing roadways the design speed shall be the 85th percentile speed of motorists on the roadway as established by radar studies, or 5 m.p.h. greater than the posted speed limit, whichever is greater. On new roadways the design speed shall be 5 m.p.h. greater than the anticipated posted speed limit.
7. The lengths of the sight triangle legs are based on approach grades of -3% to +3%. The adjustment factors for sight distance based on approach grades shall be used when approach grades exceed -3% or +3% by multiplying the triangle leg length with the ratio for the appropriate design speed. The resulting length should be used for that leg of the clear sight triangle. GRADES SHOULD BE ROUNDED UP. DO NOT INTERPOLATE THE RATIOS.
8. Permanent sight distance easements shall be provided at a minimum of 5 feet beyond the sight triangle measured perpendicular from the sight line for all four legs of the intersection.
9. This methodology is based on AASHTO, A Policy on Geometric Design of Highways and Streets, 2018, 7th Edition. For intersections where there is anticipated to be a large volume of single unit trucks or combination trucks, or when two roadways intersect at an angle less than 60 degrees, see "AASHTO, A Policy on the Geometric Design of Highways and Streets, 2018, 7th Edition" for adjustments to the departure sight triangle leg lengths.

SIGHT DISTANCE FOR VEHICLE ENTERING UNCONTROLLED INTERSECTION ASSOCIATED WITH NEW DEVELOPMENT (SEE NOTES 5 & 9)											
DESIGN SPEED (M.P.H.) (6)	LENGTH OF SIGHT TRIANGLE LEG (5)				SIGHT DISTANCE ADJUSTMENT FACTOR BASED ON APPROACH GRADE (7)						
	a	b	c	d	-6%	-5%	-4%	±3%	+4%	+5%	+6%
15	70'	70'	70'	70'	1.1	1.0	1.0	1.0	1.0	1.0	1.0
20	90'	90'	90'	90'	1.1	1.0	1.0	1.0	1.0	1.0	1.0
25	115'	115'	115'	115'	1.1	1.1	1.0	1.0	1.0	1.0	0.9
30	140'	140'	140'	140'	1.1	1.1	1.1	1.0	1.0	0.9	0.9
35	165'	165'	165'	165'	1.1	1.1	1.1	1.0	0.9	0.9	0.9
40	195'	195'	195'	195'	1.1	1.1	1.1	1.0	0.9	0.9	0.9
45	220'	220'	220'	220'	1.1	1.1	1.1	1.0	0.9	0.9	0.9
50	245'	245'	245'	245'	1.2	1.1	1.1	1.0	0.9	0.9	0.9
55	285'	285'	285'	285'	1.2	1.1	1.1	1.0	0.9	0.9	0.9

ISSUE DATE 03/09/2020	THIS IS NOT A CERTIFIED DOCUMENT	Saint Louis COUNTY TRANSPORTATION PUBLIC WORKS <small>1050 NORTH LINDBERGH BLVD. ST. LOUIS, MISSOURI 63132</small>	DESIGN CRITERIA MANUAL INTERSECTION SIGHT DISTANCE PASSENGER CARS		
REVISIONS			EFFECTIVE 05/01/2020	SHEET 1 OF 3	DRAWING 5.2

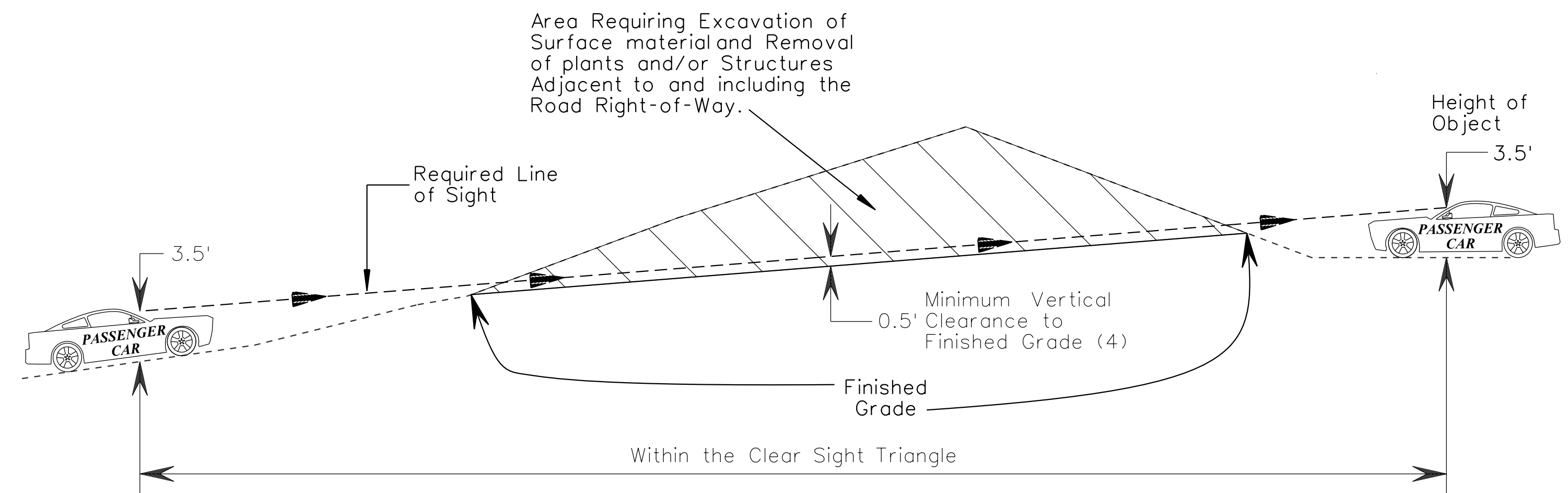
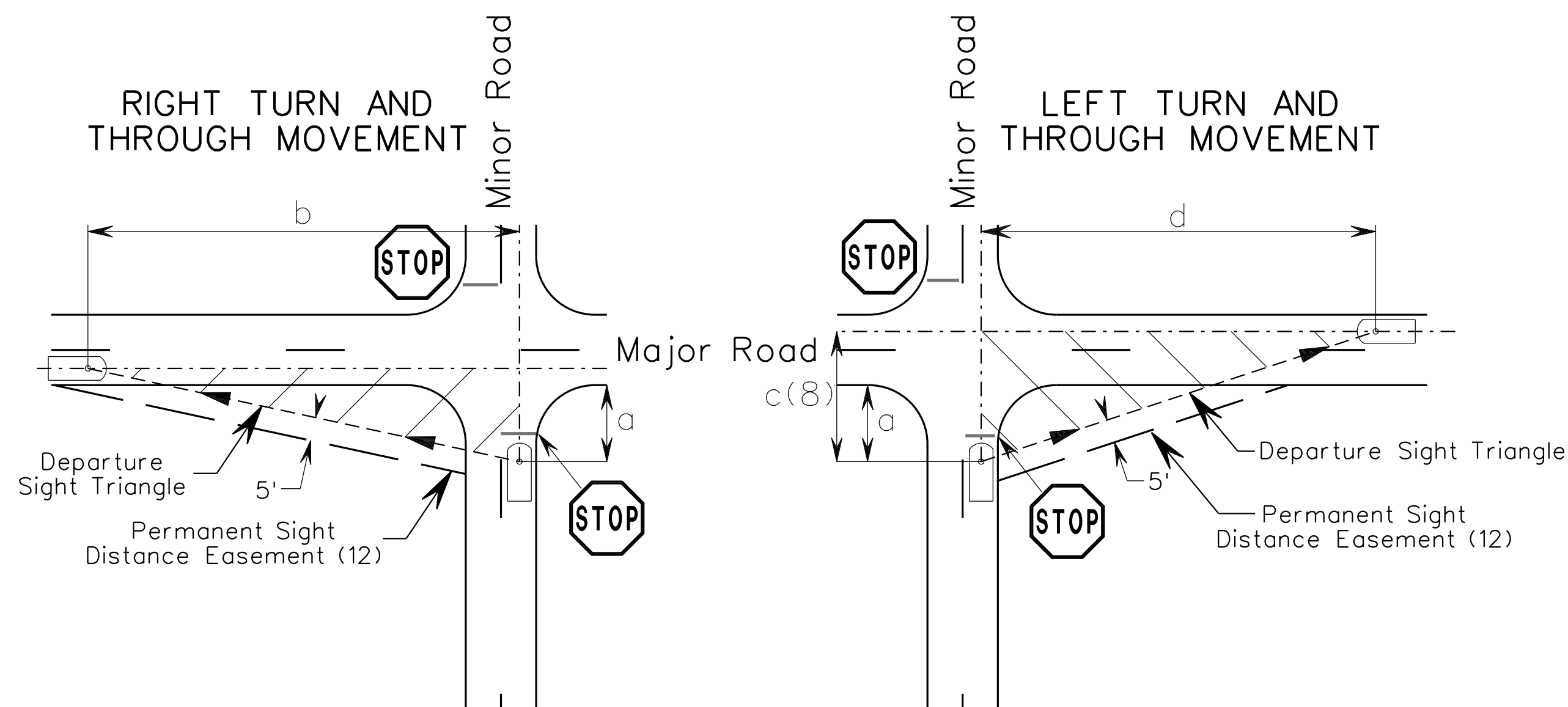


Figure 1 (SEE NOTES 1 & 12):
CASE B - INTERSECTIONS WITH STOP CONTROL ON THE MINOR ROAD VEHICLES EXITING THE MINOR ROAD
CASE D - SIGNALIZED INTERSECTIONS
CASE E - INTERSECTIONS WITH ALL-WAY STOP CONTROL
CASE F - LEFT TURNS FROM THE MAJOR ROAD

Figure 2:
TYPICAL PROFILE ALONG LINE OF SIGHT (SEE NOTES 1, 2, 3 & 4)

GENERAL NOTES

- Do not scale drawings, follow dimensions provided.
- Height of motorist eye in a vehicle = 3.5 feet. Height of the object = 3.5 feet.
- The determination of whether an object constitutes a sight obstruction shall consider both the horizontal and vertical alignment of both intersection roadways, as well as the height, position and location of the object.
- Within the sight triangle, any object at a height above the elevation of the adjacent roadways that would obstruct the driver's view shall be removed or lowered to a minimum of 0.5 feet below the required line of sight. Such objects may include, but are not limited to, berms, buildings, parked vehicles, highway structures, hedges, trees, bushes, unmowed grass, tall crops, walls, fences, and the terrain itself.
- At intersections with signals or all-way stop control, the first stopped vehicle on one approach should be visible to the drivers of the first stopped vehicles on each of the other approaches. At signalized intersections, left-turning vehicles should have sufficient sight distance to select gaps in oncoming traffic and complete left turns. Intersection sight distance for intersections with signalization is based on the departure sight triangle for left and right turns if the signal is to be placed on two-way flashing operation (i.e. flashing yellow on the major-road approaches and flashing red on the minor-road approaches) under off-peak or nighttime conditions.
- This table shows the intersection sight distance for a stopped passenger car to turn or pass through an intersection from the minor road where the cross traffic on the major road does not stop. Refer to Figure 1 to determine the appropriate leg "a", "b", "c", or "d" of the departure sight triangle for passenger cars. Sight triangle legs for the different approaches will vary based on design speed. Intersection sight distance for intersections with stop control on the minor road is based on the departure sight triangle for left and right turns exiting the minor road. For right turns and through movements exiting the minor road, departure sight triangle leg lengths "a" and "b" are required. For left turns exiting the minor road, departure sight triangle leg lengths "c" and "d" are required. The lengths of the sight triangle legs are based on approach grades of -3% to +3%. Adjustment factor required for approach grades which exceed 3%.
- On existing roadways the design speed shall be the 85th percentile speed of motorists on the roadway as established by radar studies, or 5 m.p.h. greater than the posted speed limit, whichever is greater. On new roadways the design speed shall be 5 m.p.h. greater than the anticipated posted speed limit.
- Departure sight triangle leg length "a" is measured from the edge of shoulder to the passenger car driver and is assumed to be 14.5 feet minimum, 18 feet desirable. Departure sight triangle leg length "c" is measured from the center of the farthestmost crossed lane to the passenger car driver and includes all shoulders, medians and lanes crossed plus departure sight triangle leg length "a".
- For left turns from the major road, sufficient sight distance should be provided to accommodate the maneuver. The Intersection Sight Distance (ISD) is dependent on the major road design speed. The ISD provided assumes making a left turn across one opposing lane with no median. Add W to ISD for each additional lane or median crossed.
- The departure triangle leg "d" shown in the table is based on a passenger car crossing one lane of traffic. For crossing multiple lanes, add "W" to the length "d" for the corresponding design speed for each additional lane and/or median crossed.
- The adjustment for departure triangle leg length "b" and "d" based on approach grade shall be used when the minor road approach grade exceeds 3%. Round the minor road approach grade up to the next whole percent and add the length to the departure sight triangle leg length for the appropriate design speed. DO NOT INTERPOLATE THE TABLE.
- Permanent sight distance easements shall be provided at a minimum of 5 feet beyond the sight triangle measured perpendicular from the sight line for all four legs of the intersection.
- This methodology is based on AASHTO, A Policy on Geometric Design of Highways and Streets, 2018, 7th Edition. For intersections where there is anticipated to be a large volume of single unit trucks or combination trucks, or when two roadways intersect at an angle less than 60 degrees, see "AASHTO, A Policy on the Geometric Design of Highways and Streets, 2018, 7th Edition" for adjustments to the departure sight triangle leg lengths.

SIGHT DISTANCE FOR VEHICLE EXITING MINOR ROAD ASSOCIATED WITH NEW DEVELOPMENT (SEE NOTES 5, 6 & 13)

MAJOR ROAD DESIGN SPEED (M.P.H.) (7)	LENGTH OF DEPARTURE SIGHT TRIANGLE LEG (6)			CASE F	CROSSING NUMBER OF LANES ADJUSTMENT W(10)	SIGHT DISTANCE ADJUSTMENT FOR APPROACH GRADE (11)		
	a(8)	b	d			ISD(9)	+4%	+5%
15	14.5'	145'	170'	125'	15'	15'	20'	25'
20	14.5'	195'	225'	165'	15'	20'	25'	35'
25	14.5'	240'	280'	205'	20'	30'	35'	40'
30	14.5'	290'	335'	245'	25'	35'	40'	50'
35	14.5'	335'	390'	285'	30'	40'	50'	60'
40	14.5'	385'	445'	325'	30'	45'	55'	70'
45	14.5'	430'	500'	365'	35'	50'	65'	80'
50	14.5'	480'	555'	405'	40'	60'	70'	85'
55	14.5'	530'	610'	445'	45'	65'	80'	95'

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REVISIONS			EFFECTIVE 05/01/2020	SHEET 2 OF 3	DRAWING 5.2

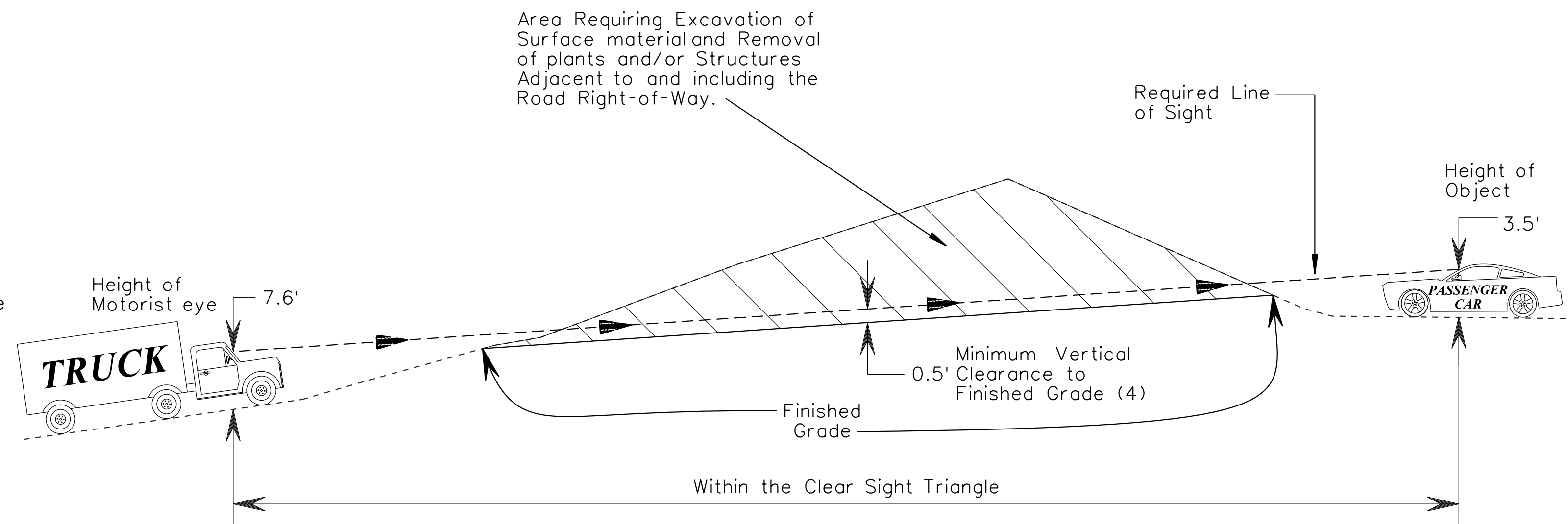
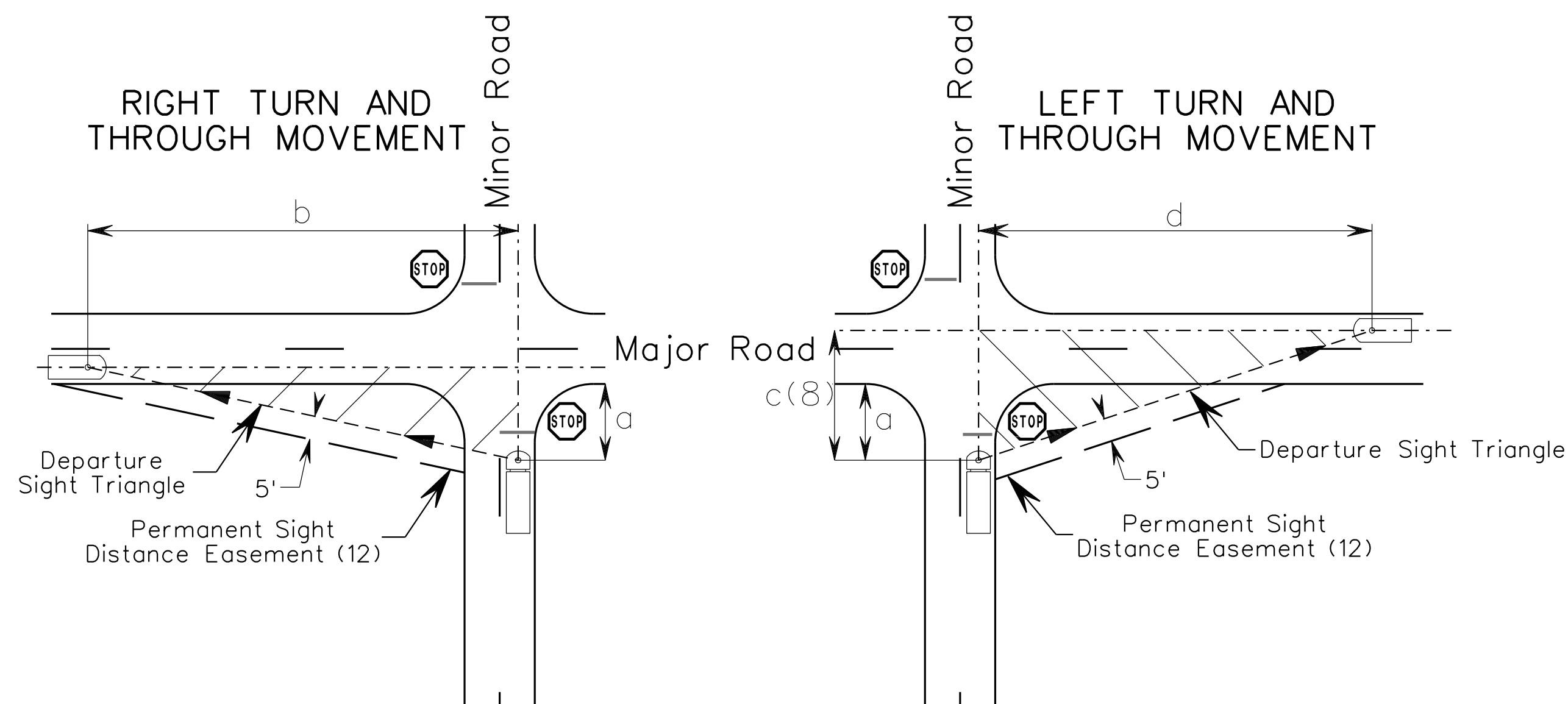


Figure 1 (SEE NOTES 1 & 12):
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Figure 2:
TYPICAL PROFILE ALONG LINE OF SIGHT (SEE NOTES 1, 2, 3 & 4)

GENERAL NOTES

SIGHT DISTANCE FOR VEHICLE EXITING MINOR ROAD ASSOCIATED WITH NEW DEVELOPMENT (SEE NOTES 5, 6 & 13)

MAJOR ROAD DESIGN SPEED (M.P.H.) (7)	LENGTH OF DEPARTURE SIGHT TRIANGLE LEG (6)			CASE F	CROSSING NUMBER OF LANES ADJUSTMENT (per Lane) (10)	SIGHT DISTANCE ADJUSTMENT FOR APPROACH GRADE (11)		
	a(8)	b	d			ISD(9)	+4%	+5%
15	14.5'	235'	255'	170'	20'	20'	25'	30'
20	14.5'	310'	340'	225'	25'	25'	30'	35'
25	14.5'	390'	425'	280'	30'	30'	35'	45'
30	14.5'	465'	510'	335'	35'	35'	45'	55'
35	14.5'	545'	595'	390'	40'	40'	50'	60'
40	14.5'	620'	680'	445'	45'	45'	55'	70'
45	14.5'	695'	765'	500'	50'	50'	65'	80'
50	14.5'	775'	850'	555'	55'	55'	70'	85'
55	14.5'	850'	930'	610'	60'	65'	85'	100'

- Do not scale drawings, follow dimensions provided.
- Height of motorist eye in a truck = 7.6 feet. Height of the object = 3.5 feet.
- The determination of whether an object constitutes a sight obstruction shall consider both the horizontal and vertical alignment of both intersection roadways, as well as the height, position and location of the object.
- Within the sight triangle, any object at a height above the elevation of the adjacent roadways that would obstruct the driver's view shall be removed or lowered to a minimum of 0.5 feet below the required line of sight. Such objects may include, but are not limited to, berms, buildings, parked vehicles, highway structures, hedges, trees, bushes, unmowed grass, tall crops, walls, fences, and the terrain itself.
- At intersections with signals or all-way stop control, the first stopped vehicle on one approach should be visible to the drivers of the first stopped vehicles on each of the other approaches. At signalized intersections, left-turning vehicles should have sufficient sight distance to select gaps in oncoming traffic and complete left turns. Intersection sight distance for intersections with signalization is based on the departure sight triangle for left and right turns if the signal is to be placed on two-way flashing operation (i.e. flashing yellow on the major-road approaches and flashing red on the minor-road approaches) under off-peak or nighttime conditions. For right turns and through movements exiting the minor road, departure sight triangle leg lengths "a" and "b" are required. For left turns exiting the minor road, departure sight triangle leg lengths "c" and "d" are required.
- This table shows the intersection sight distance for a stopped single-unit or combination truck to turn or pass through an intersection from the minor road where the cross traffic on the major road does not stop and approach grades on the minor road are 3% or less. Refer to Figure 1 to determine the appropriate leg "a", "b", "c", or "d" of the departure sight triangle for trucks. Sight triangle legs for the different approaches will vary based on design speed. Intersection sight distance for intersections with stop control on the minor road is based on the departure sight triangle for left and right turns exiting the minor road. Adjustment factor required for approach grades greater than 3%.
- On existing roadways the design speed shall be the 85th percentile speed of motorists on the roadway as established by radar studies, or 5 m.p.h. greater than the posted speed limit, whichever is greater. On new roadways the design speed shall be 5 m.p.h. greater than the anticipated posted speed limit.
- Departure sight triangle leg length "a" is measured from the edge of shoulder to the truck driver and is assumed to be 14.5 feet minimum, 18 feet desirable. Departure sight triangle leg length "c" is measured from the center of the farthestmost crossed lane to the truck driver and includes all shoulders, medians and lanes crossed plus departure sight triangle leg length "a".
- For left turns from the major road, sufficient sight distance shall be provided to accommodate the maneuver. The Intersection Sight Distance (ISD) is dependent on the major road design speed. The ISD provided assumes making a left turn across one opposing lane with no median. Add W to ISD for each additional lane or median crossed.
- The departure triangle leg "d" shown in the table is based on single-unit or combination truck crossing one lane of traffic. For crossing multiple lanes, add "W" to the length "d" for the corresponding design speed for each additional lane and/or median crossed.
- The adjustment for departure triangle leg length "b" and "d" based on approach grade shall be used when the minor road approach grade exceeds 3%. Round the minor road approach grade up to the next whole percent and add the length to the departure sight triangle leg length for the appropriate design speed. DO NOT INTERPOLATE THE TABLE.
- Permanent sight distance easements shall be provided at a minimum of 5 feet beyond the sight triangle measured perpendicular from the sight line for all four legs of the intersection.
- This methodology is based on AASHTO, A Policy on Geometric Design of Highways and Streets, 2018, 7th Edition. For intersections where two roadways intersect at an angle less than 60 degrees, see "AASHTO, A Policy on the Geometric Design of Highways and Streets, 2018, 7th Edition" for adjustments to the departure sight triangle leg lengths.

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REVISIONS			INTERSECTION SIGHT DISTANCE TRUCKS		
			EFFECTIVE 05/01/2020	SHEET 3 OF 3	DRAWING 5.2