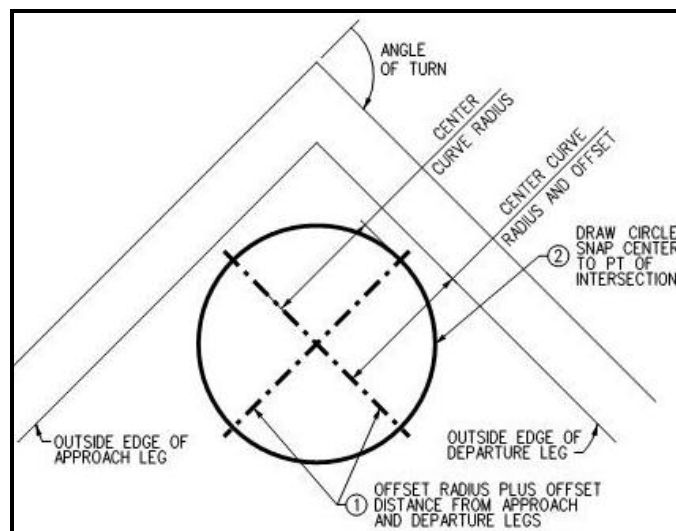


**1. Simple Curve Radius with Taper**

Laying out a simple curve radius with taper may be done in a few easy steps as outlined below:

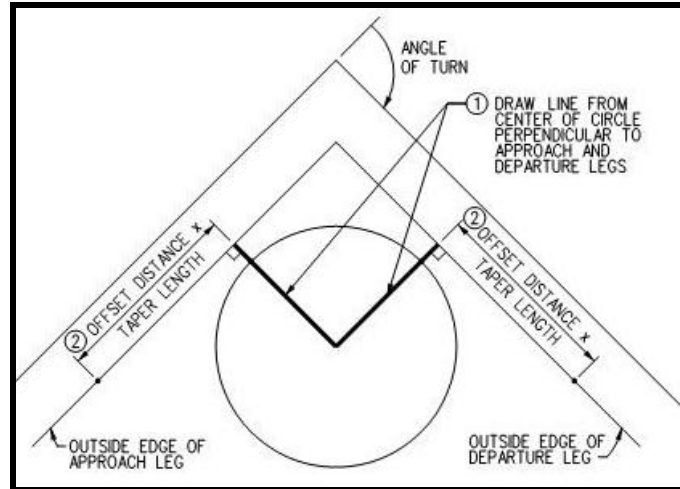
- A. Based on the angle of turn and design vehicle, select the appropriate radius, offset and taper length (length to offset ratio) from Figure 5.2.5.2-a.
- B. To find the center of the radius, offset the radius plus the offset distance from the outside edge of the approach and departure legs. Draw a circle equal to the radius and snap the center to the point of intersection as shown in Figure 1-a.

*Figure 1-a Simple Curve Radius and Taper Design*



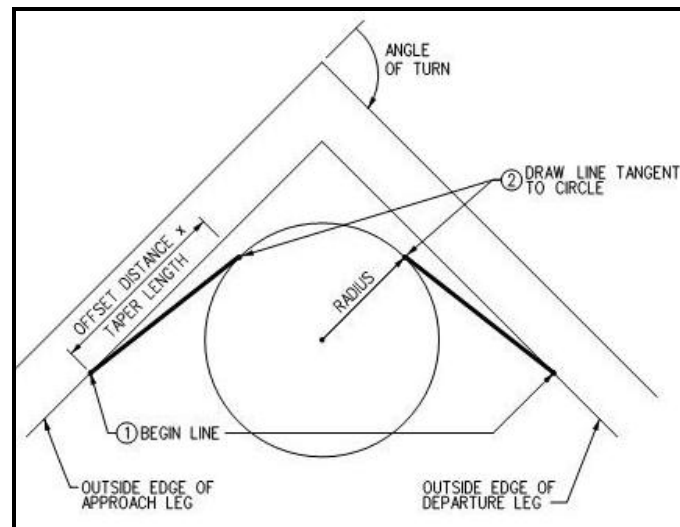
- C. Draw a line from the center of the circle perpendicular to the approach and departure legs. Multiply the offset distance by the taper length. For example, if L:T is 20:1 and the offset is 4 feet, then the taper length equals  $4' \times 20 = 80'$ . Offset the distance calculated (i.e. 80') from the perpendicular lines as shown in Figure 1-b.

**Figure 1-b Simple Curve Radius and Taper Design**



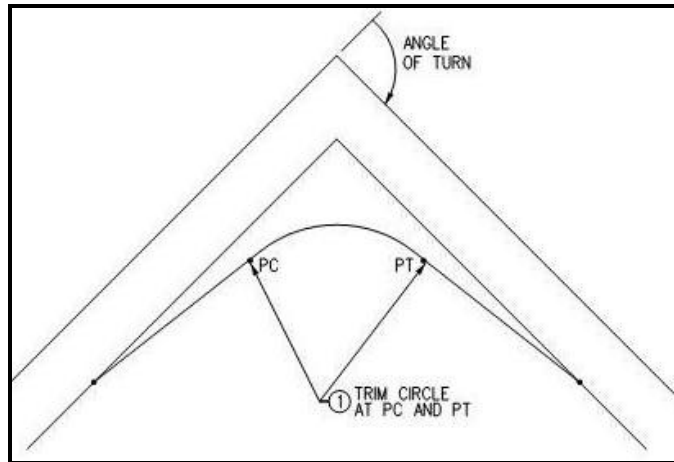
- D. From the point where the offset intersects the outside edge of the approach and departure legs, draw a line back tangent to the circle as shown in Figure 1-c.

**Figure 1-c Simple Curve Radius and Taper Design**



- E. Trim the circle at the PC and PT as shown in Figure 1-d.

**Figure 1-d Simple Curve Radius and Taper Design**

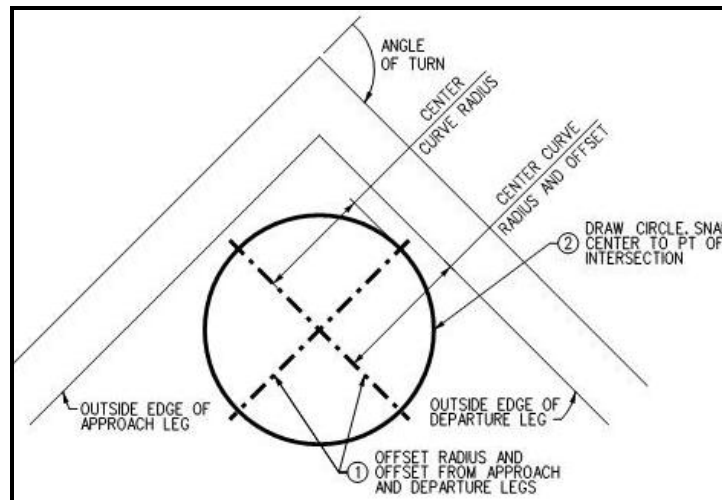


## 2. Three Centered Compound Curves

Laying out a three centered compound curve may be accomplished in a few steps as outlined below:

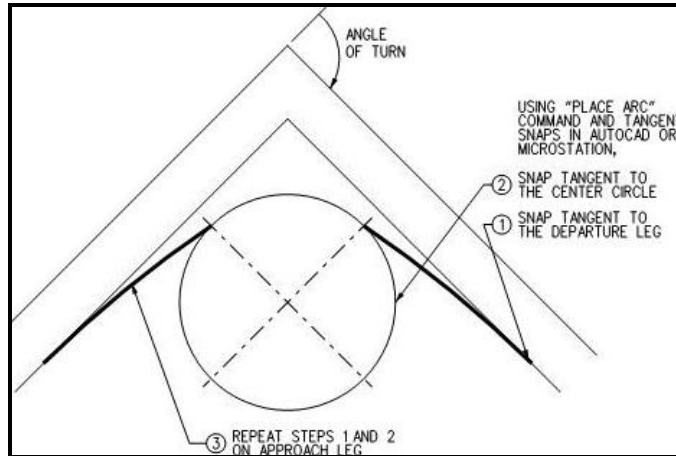
- A. Based on the angle of turn and design vehicle, select the appropriate radii and offset from Figure 5.2.5.3-a.
- B. To find the center of the center curve radius, offset the radius plus the offset distance from the outside edge of the approach and departure legs. Draw a circle equal to the radius and snap the center to the point of intersection as shown in Figure 2-a.

**Figure 2-a Three Centered Compound Curves Design**



- C. Using the 'Place Arc' command and 'Tangent' snaps in AutoCad® or Microstation®, snap tangent to the departure leg and then snap tangent to the center circle as shown in Figure 2-b. Repeat steps to draw the arc on the approach leg.

**Figure 2-b Three Centered Compound Curves Design**



- D. Trim the center circle to the arcs as shown in Figure 2-c.

**Figure 2-c Three Centered Compound Curves Design**

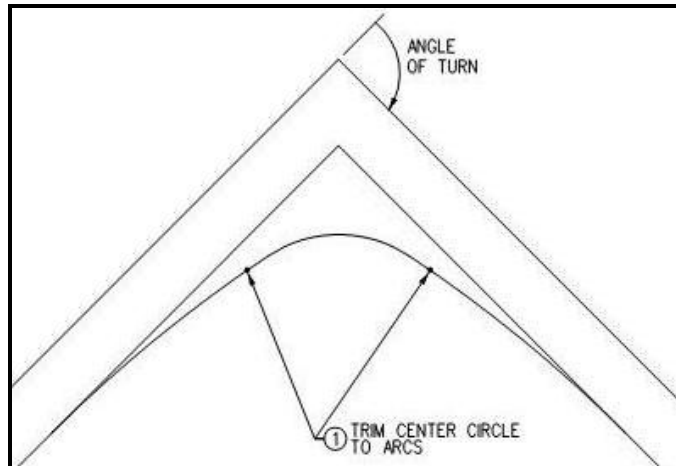


Figure 3-a Intersection Corner Design – Example 1

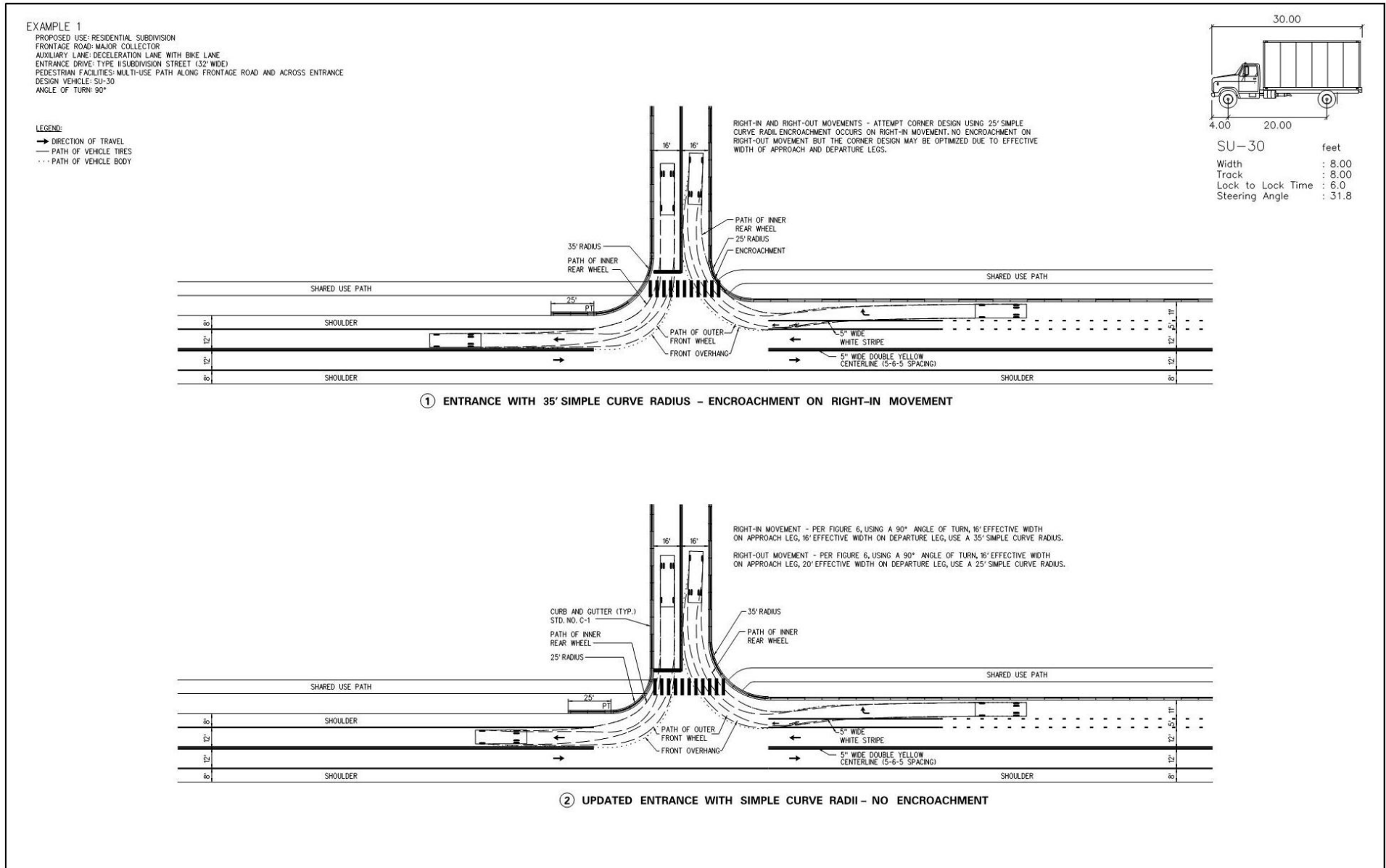


Figure 3-b Intersection Corner Design – Example 2

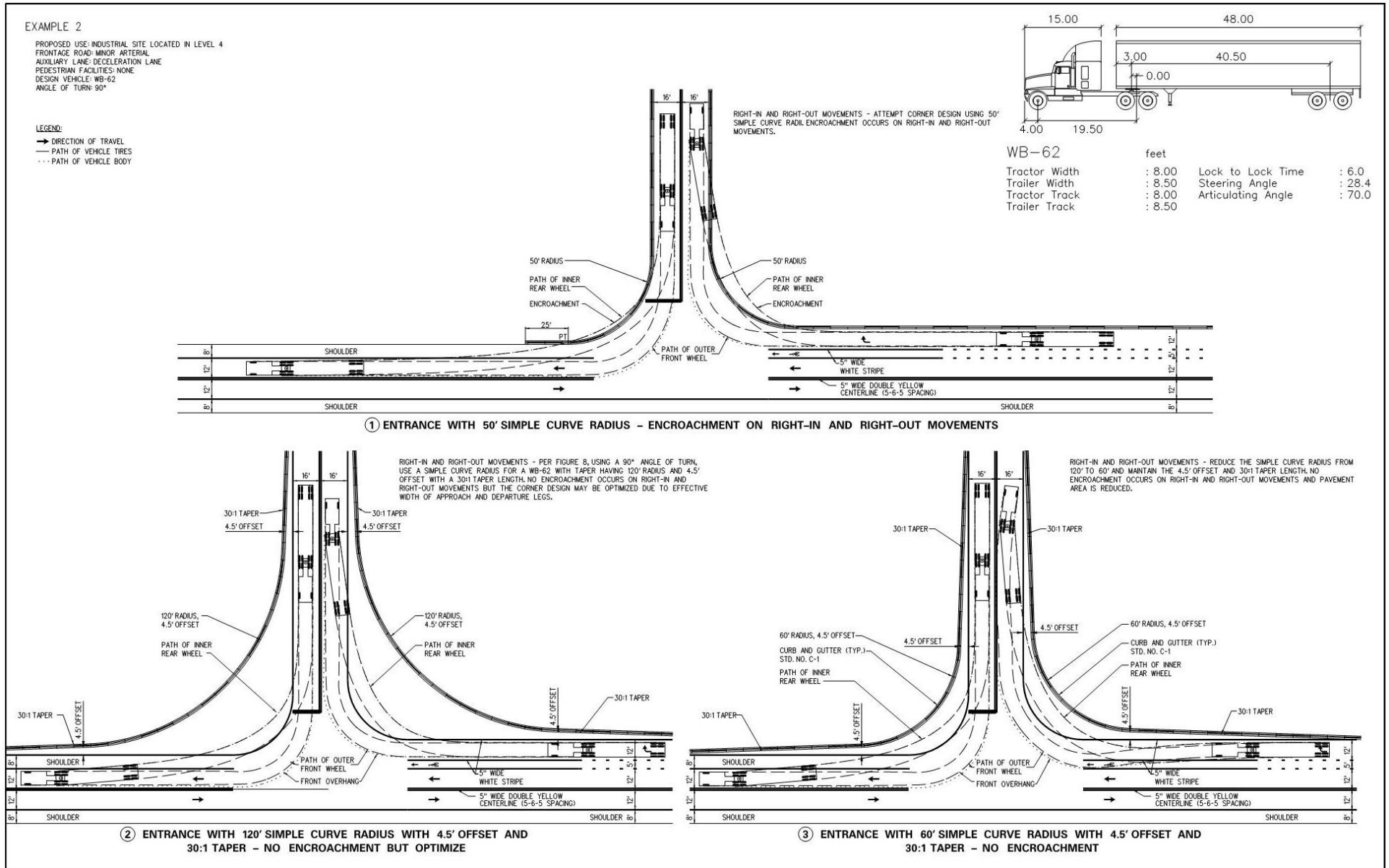


Figure 3-c Intersection Corner Design – Example 3

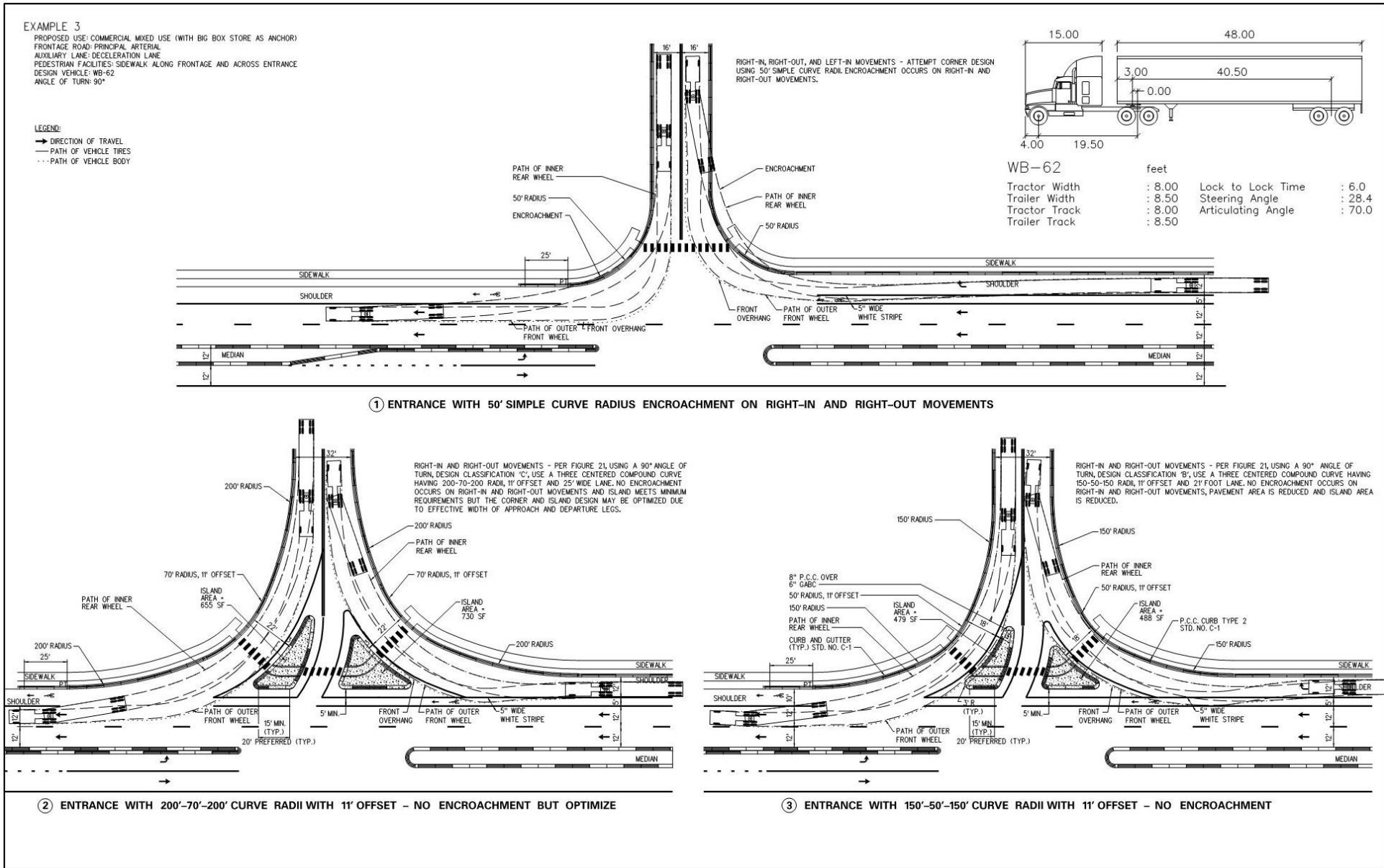


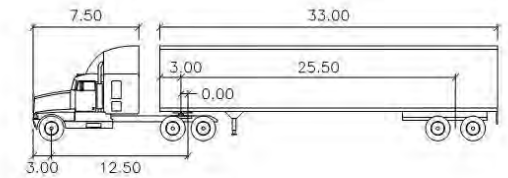
Figure 3-d Intersection Corner Design – Example 4

EXAMPLE 4

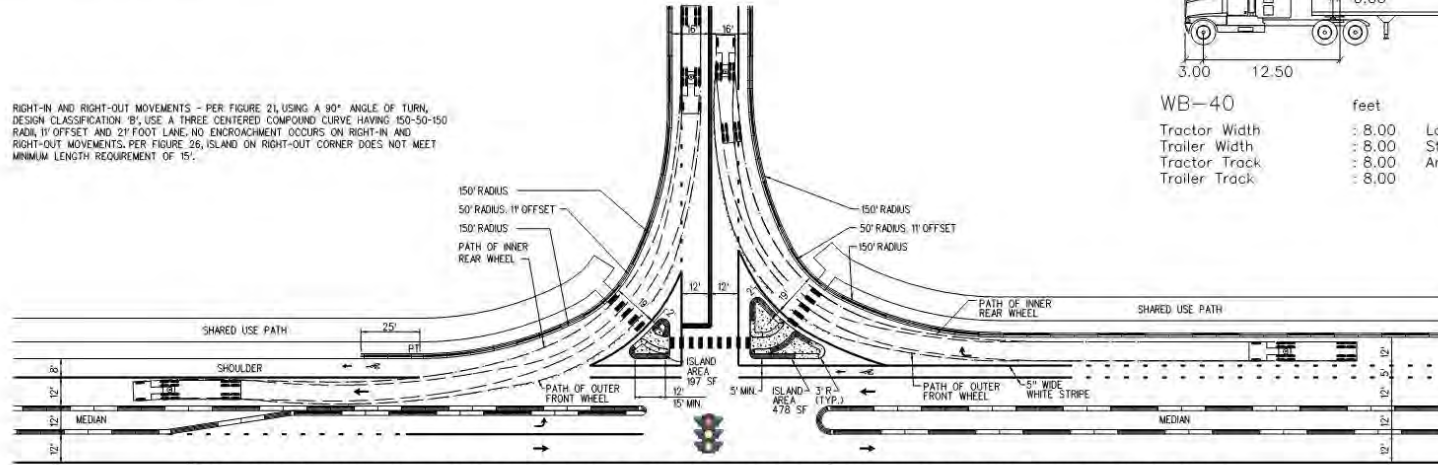
PROPOSED USE: CONVENIENCE STORE WITH GAS PUMPS  
 FRONTAGE ROAD: MAJOR COLLECTOR  
 AUXILIARY LANE: DECELERATION LANE  
 PEDESTRIAN FACILITIES: MULTI-USE PATH ALONG FRONTAGE AND ACROSS ENTRANCE

DESIGN VEHICLE: WB-40  
 SIGNALIZED ENTRANCE  
 ANGLE OF TURN: 90°

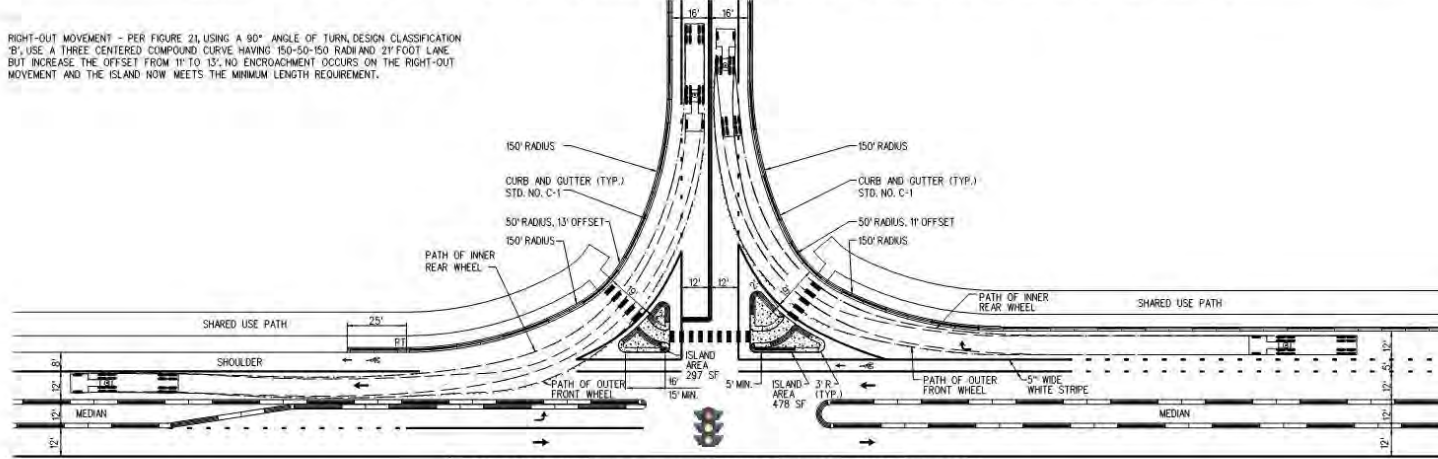
RIGHT-IN AND RIGHT-OUT MOVEMENTS – PER FIGURE 21, USING A 90° ANGLE OF TURN, DESIGN CLASSIFICATION 'B', USE A THREE-CENTERED COMPOUND CURVE HAVING 150'-50'-150' RADII, 11' OFFSET AND 21' FOOT LANE. NO ENCRoACHMENT OCCURS ON RIGHT-IN AND RIGHT-OUT MOVEMENTS, PER FIGURE 26, ISLAND ON RIGHT-OUT CORNER DOES NOT MEET MINIMUM LENGTH REQUIREMENT OF 15'.



WB-40	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 20.3
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		



① ENTRANCE WITH 150'-50'-150' CURVE RADII – NO ENCRoACHMENT, RIGHT-OUT ISLAND DOES NOT MEET MINIMUM REQUIREMENTS



② ENTRANCE WITH 150'-50'-150' CURVE RADII – NO ENCRoACHMENT