



PARKING LOT DESIGN

- ❑ A **parking space** is a location that is designated for parking, either paved or unpaved.
- ❑ Parking spaces can be in a parking garage, in a parking lot (off-street parking) or on a city street (on-street parking). It is usually designated by a white-paint-on-tar rectangle indicated by three lines at the top, left and right of the designated area.
- ❑ The automobile fits inside the space, either by parallel parking, perpendicular parking or angled parking.



Off-Street Parking Requirements

Required off-street parking

Use	Requirement
Residential unit: one-family up to four family	1 to 4 spaces per dwelling unit (see individual districts for details)
Multifamily residential (Unified Residential Development)	1 space per bedroom plus 1 space per 250 square feet of common areas, offices and recreation (less laundry rooms and storage). Two spaces may be tandem if assigned to the same unit and restricted from use for storage.
Place of worship	1 space per 4 seats in sanctuary or worship area in residential districts 1 space per 5 seats in sanctuary or worship area in non-residential and mixed-use districts

Required off-street parking (2)

Hospital	1 space per bed for patients/visitors/doctors plus 1 space per 4 nurses/other employees
Medical clinic, health services facility, assisted living facility	1 space per doctor plus 1 space per 4 employees plus 4 spaces per 1,000 square feet of gross floor area
Nursing home or medical care facility	1 space per 4 beds for visitors/doctors plus 1 space per 4 nurses/other employees
College or University	1 space per 2 teachers and administrative staff plus 1 space per 4 additional employees plus 1 space per 3 students residing on campus plus 1 space per 5 students not residing on campus
School, elementary and junior high (public or private)	1 space per 12 students plus one space for each employee
School, high school (public or private)	1 space per 2 students plus 1 space per 5 stadium seats (may be double counted)
Day care, kindergarten	1 space per faculty plus 1 space per 10 children (as licensed by the state) in back of front yard building line

Required off-street parking ⁽³⁾

Hotel	1 space per bedroom unit plus 1 space per 4 patron seats in rooms open to public plus 5 spaces per 1,000 square feet of display/ballroom area
Model home	2 spaces per unit behind front property line
Office, professional building	2.5 spaces per 1,000 square feet of gross floor area
Commercial business, retail sales and service	4 spaces per 1,000 square feet (25% reduction for conversion from a more restricted use)
Boarding or lodging house	1 space for proprietor plus 1 space per 2 boarding/lodging sleeping rooms plus 1 space per each 4 employees
Banks	4 spaces per 1,000 square feet
Private club, cocktail lounge	1 space per guest room or suite plus 1 space per 4 seats plus 5 spaces per 1,000 square feet of ballroom available to nonresidents plus 1 space per 4 employees



Parking lots design requirement

1. Parking size

Type	Width	Length
Standard parking space	9 feet	18 feet *
Parallel parking space	8 feet	22 feet *

Maintain two-way movement if at all possible.

Avoid dead end parking lots in all situations.

Provide more than one entrance and exit in parking lots with more than 100 parking spaces.

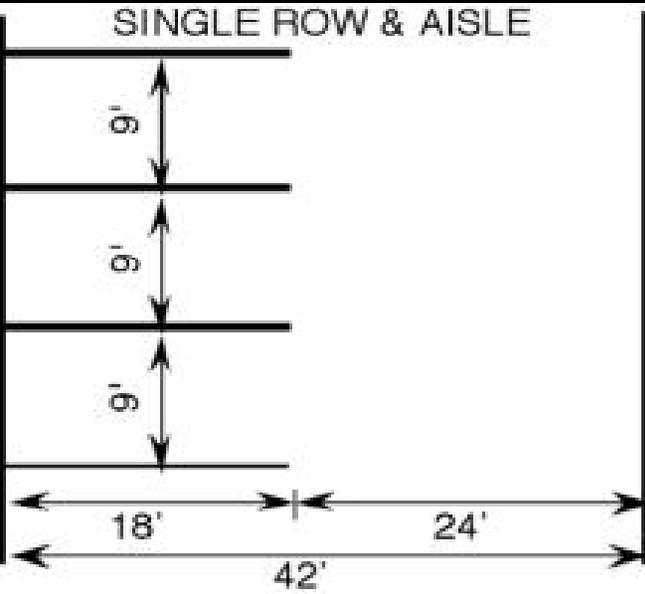
Provide traffic breaks in parking aisles longer than 350'.

2. Parking lay out

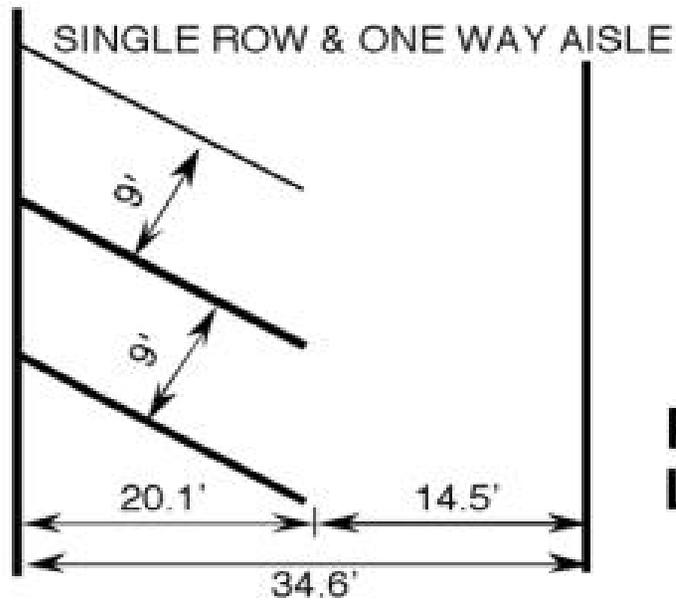
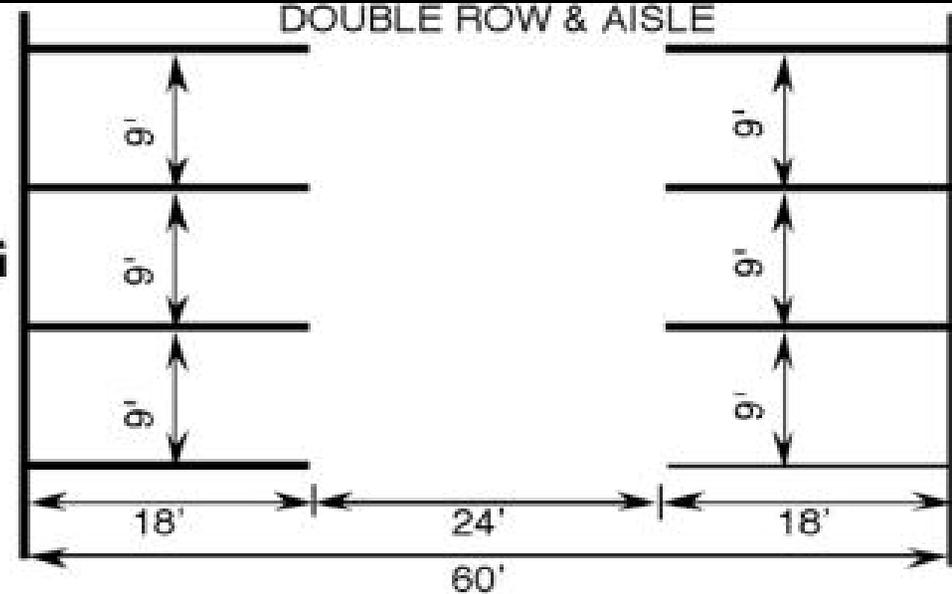
The standards for the minimum width of parking spaces plus the aisle are shown in the following table. These standards apply to a single row of head-in parking or two rows of head-in parking sharing an aisle.

Angle	Width: 1 Row Sharing Aisle	Width: 2 Rows Sharing Aisle
90 degree angle parking	42.0 feet	60.0 feet
60 degree angle parking	34.6 feet	54.7 feet
45 degree angle parking	31.1 feet	50.0 feet
30 degree angle parking	28.8 feet	45.6 feet

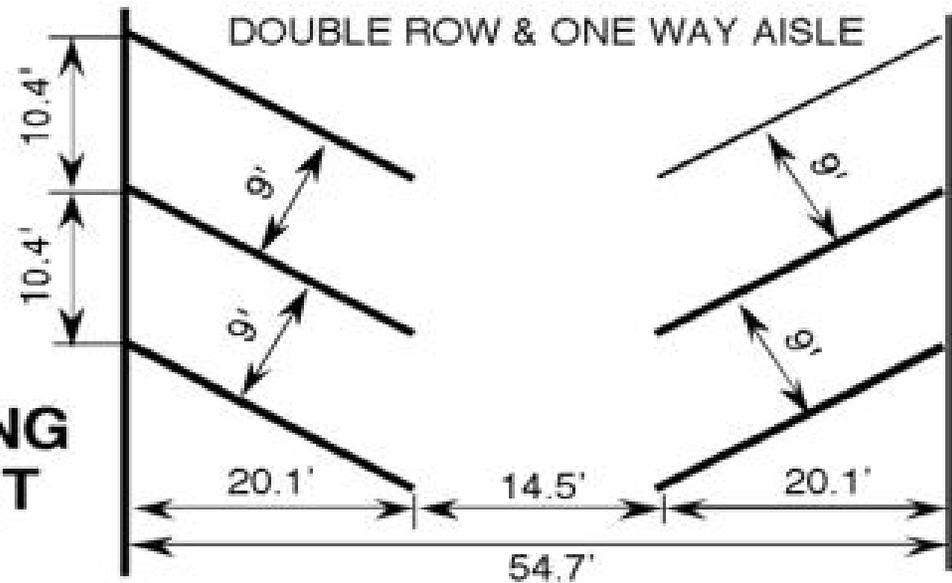
2. Parking lay out (2)



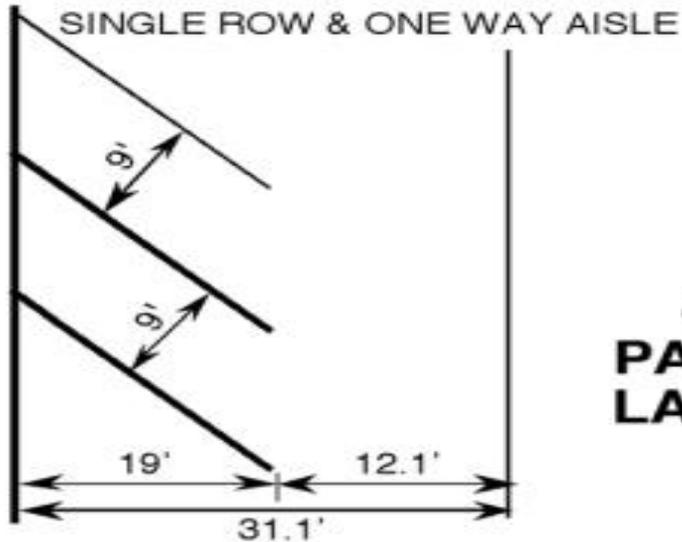
90°
PARKING
LAYOUT



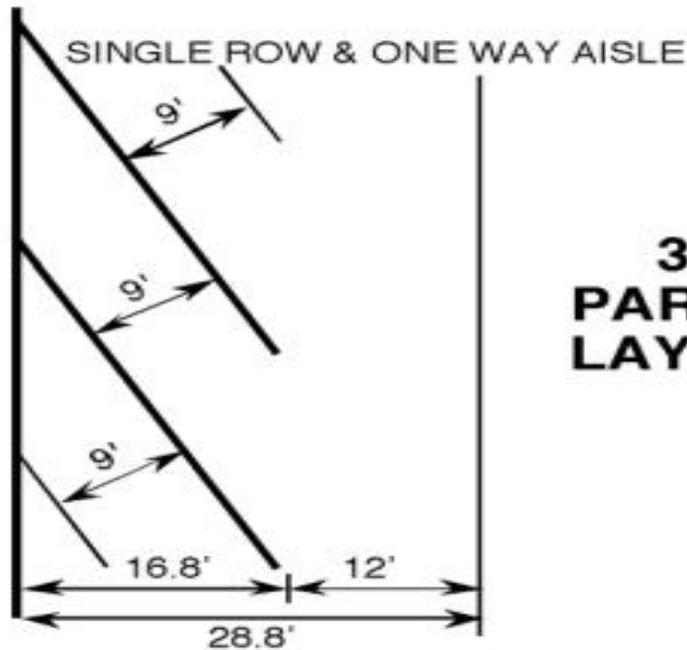
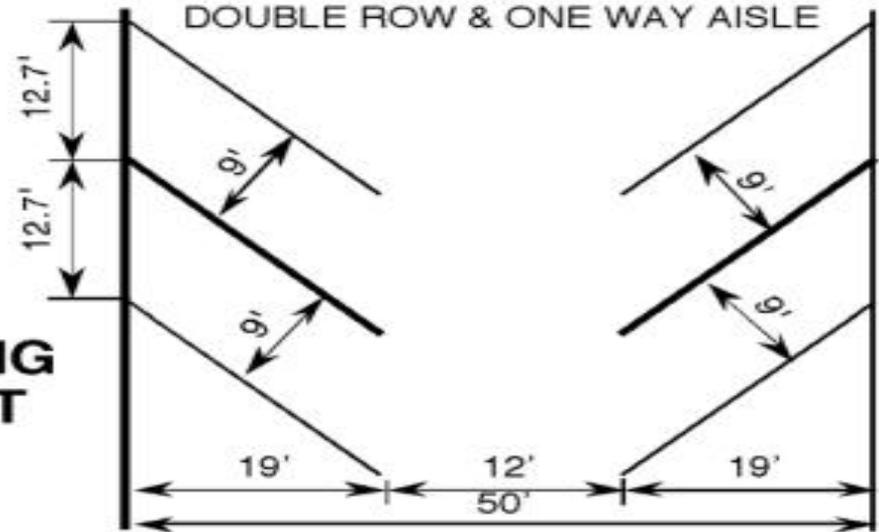
60°
PARKING
LAYOUT



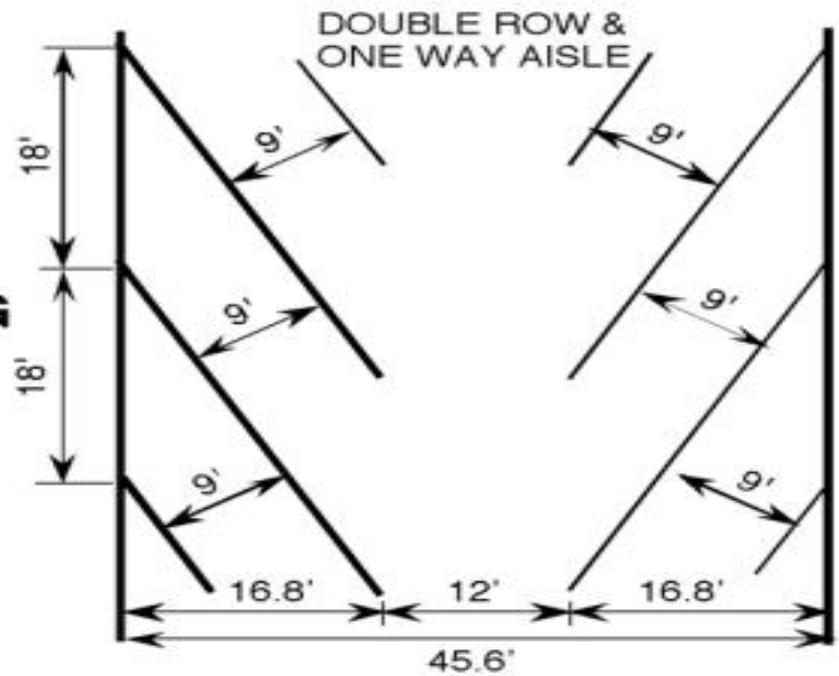
2. Parking lay out (3)



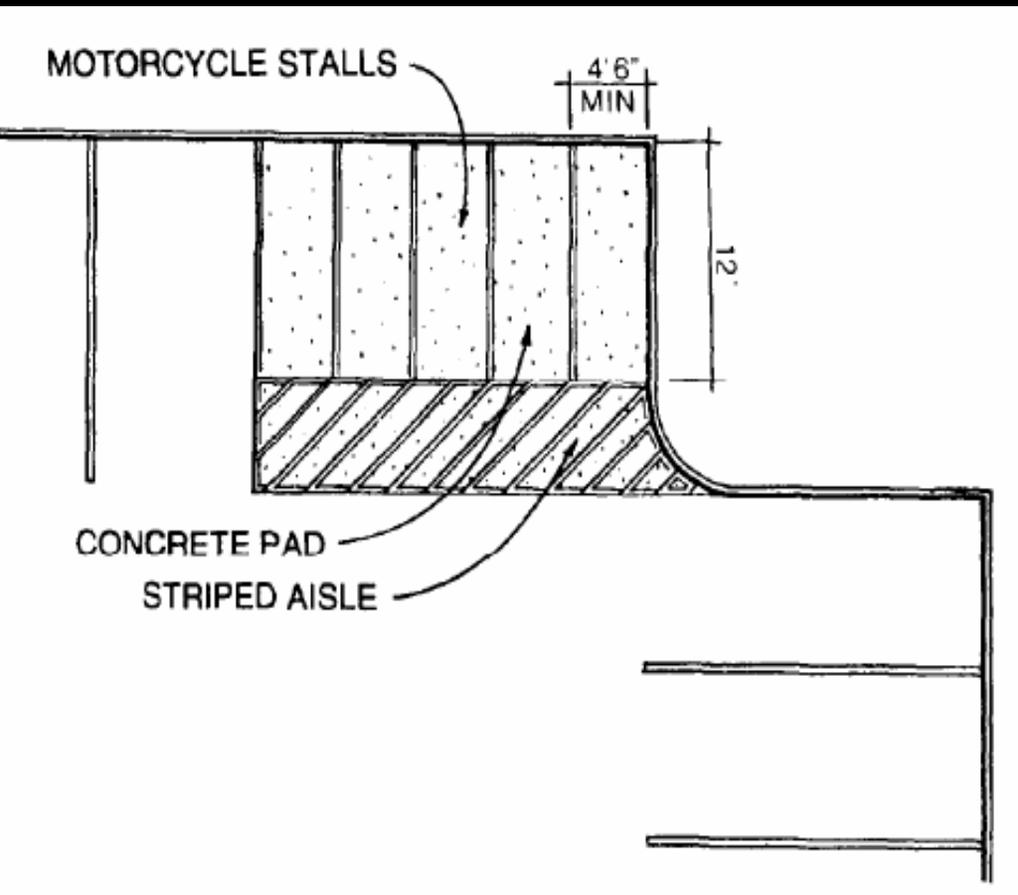
**45°
PARKING
LAYOUT**



**30°
PARKING
LAYOUT**



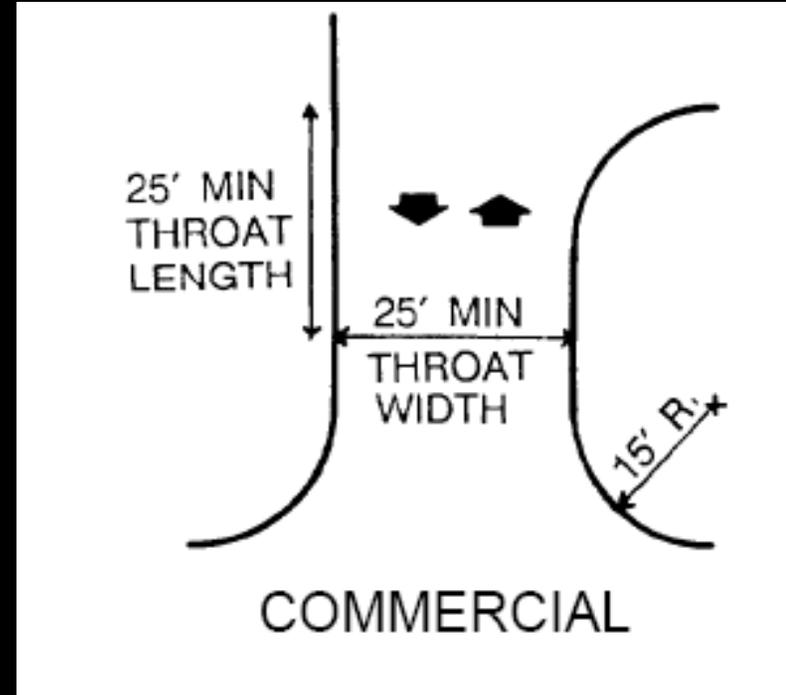
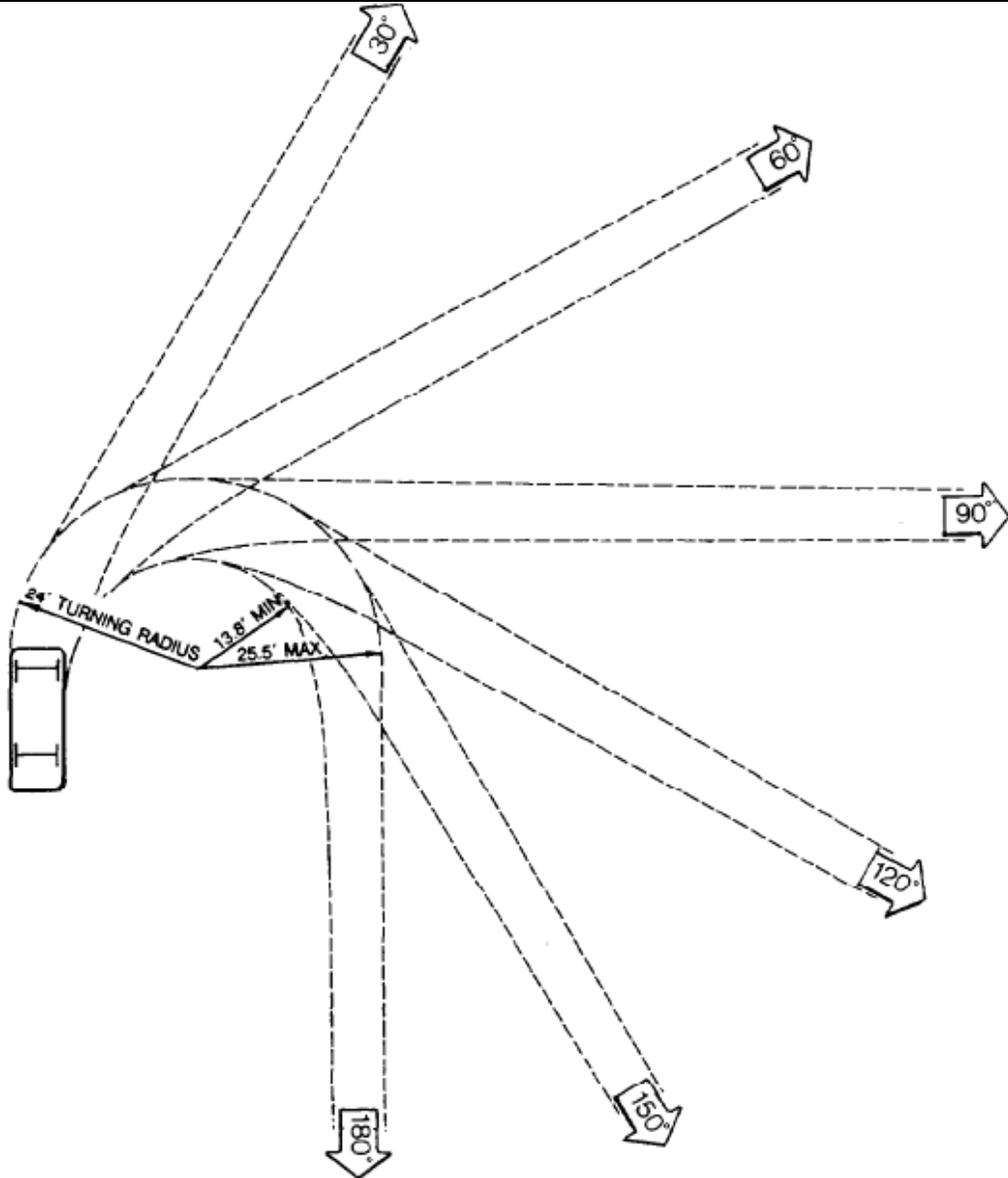
2. Parking lay out (4)



Design for motorcycle parking should:

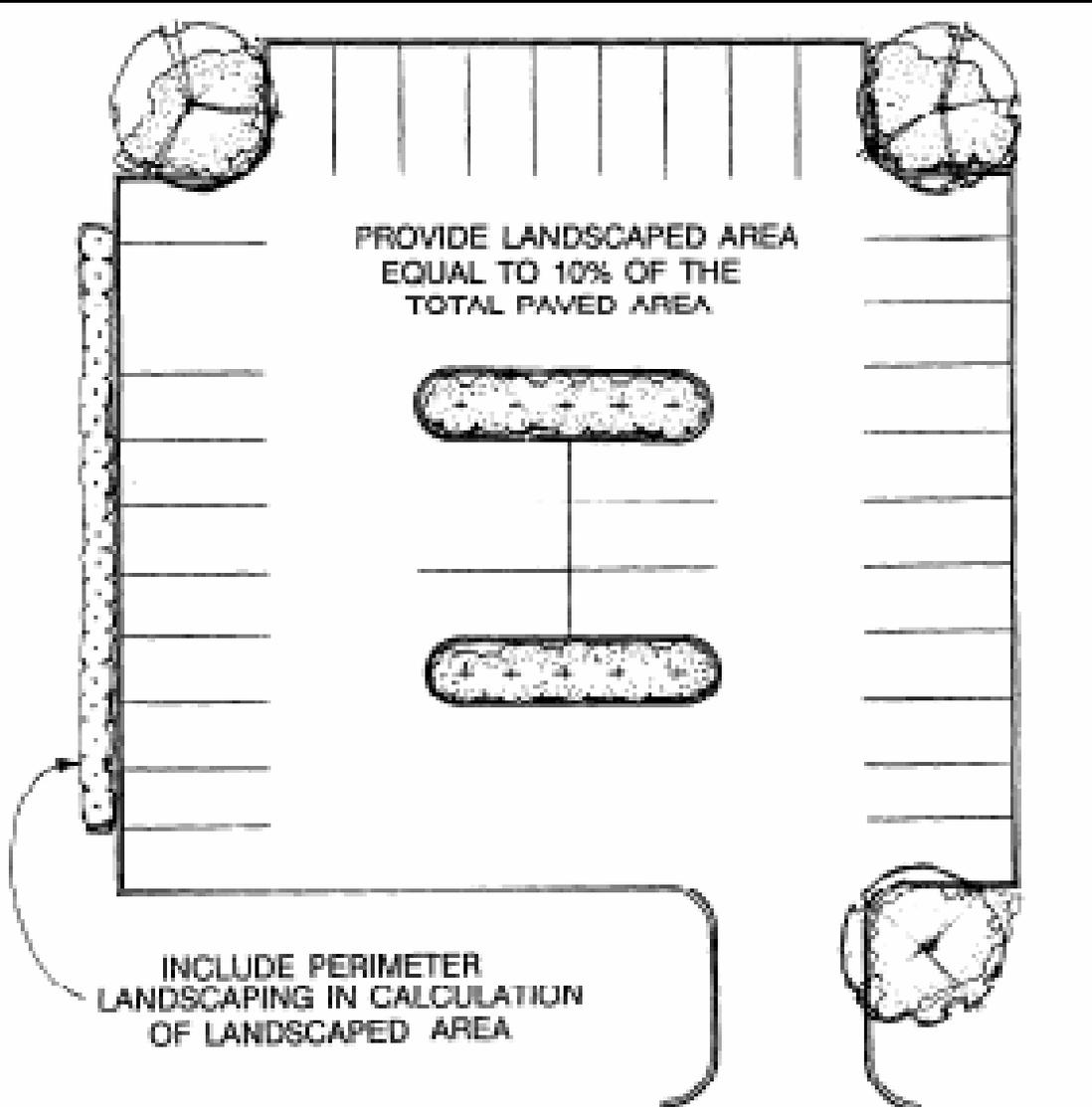
- (1) Locate parking close to building entrances in parking lot corners.
- (2) Locate parking away from low areas which catch drainage.
- (3) Place parking on a concrete pad which is resistant to kick stands in warm weather.
- (4) Provide adequate signage and pavement striping.

3. Turning radii



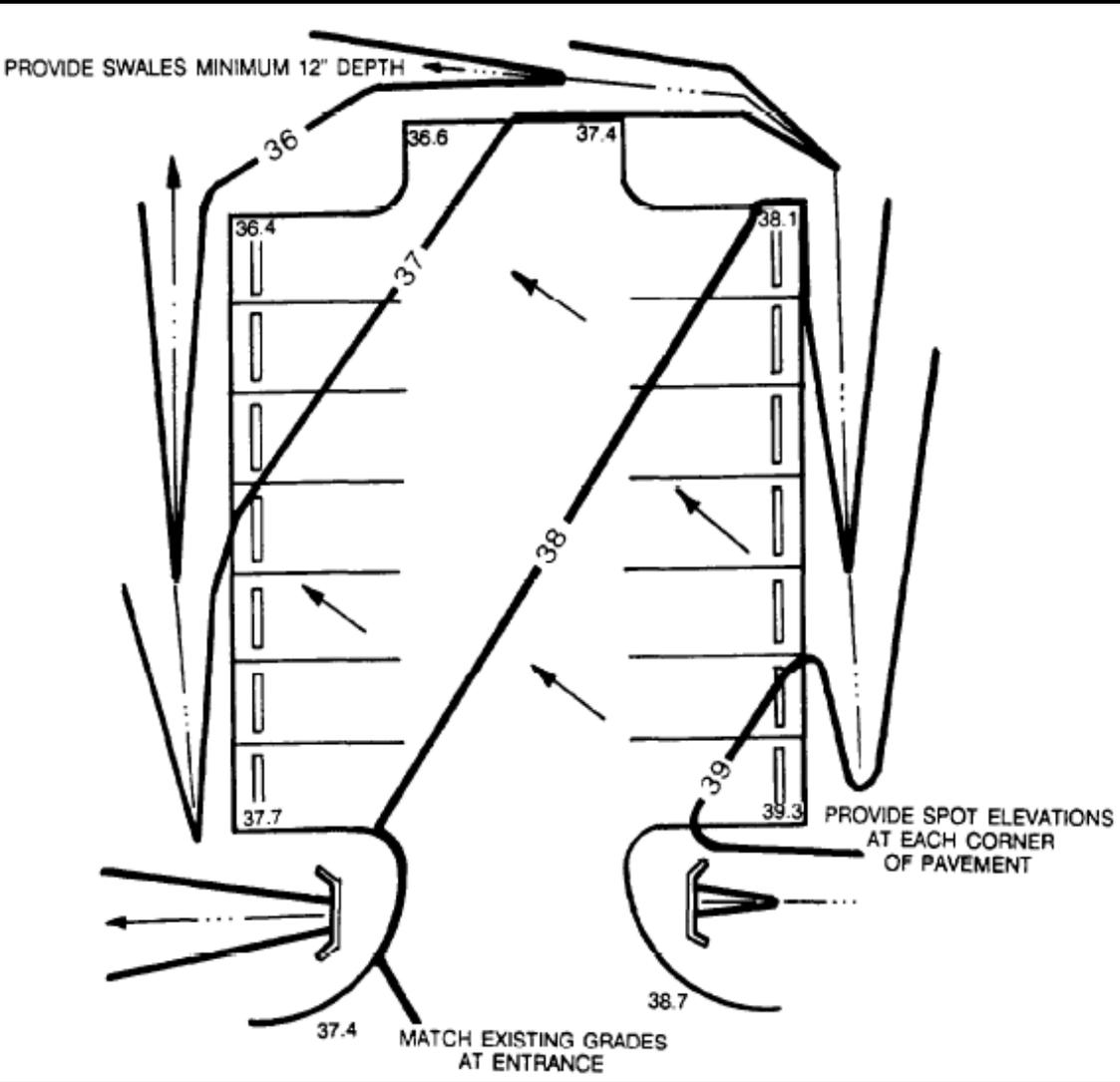
minimum access and turning radii for more commonly found vehicles.

5. Parking lot landscaping



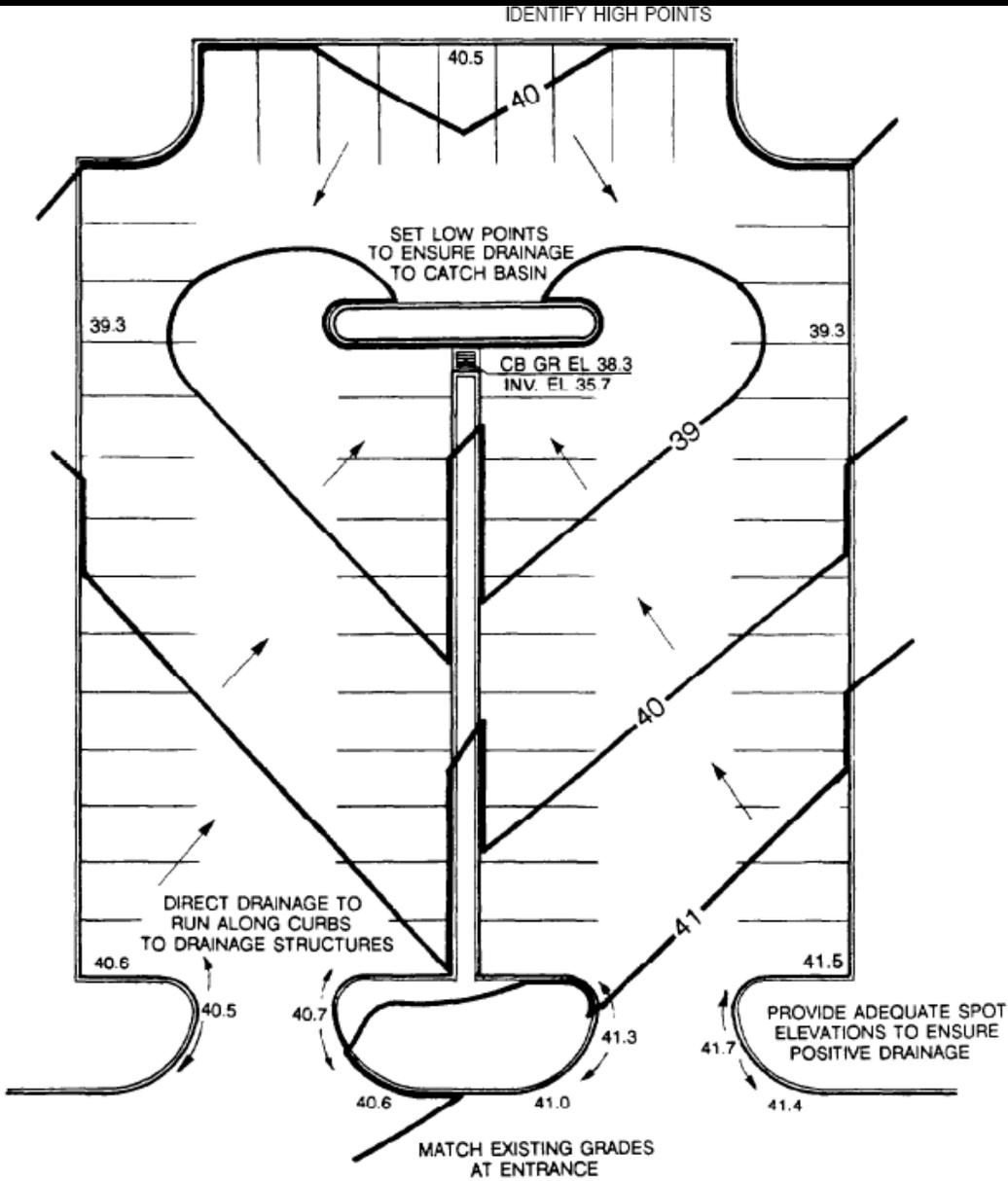
The landscaped area within and around a parking lot is usually based on proportional amount of 'green' space to paved area. A common minimum standard is 10% of the paved area, including planted islands, medians and perimeter areas.

6. Grading and drainage



- (a) Maintain a relatively constant grade across the lot while providing enough slope and adequate spot elevations to properly direct drainage off the lot or to drainage inlets.
- (b) Use islands and medians to accommodate topographic change between the access drive and parking areas or between different parking levels.
- (c) 'Sheet drainage across small, flat parking lots into swales in surrounding grassed areas.

6. Grading and drainage (2)



- (d) Control runoff with curbing and direct it to the sides and corners of larger (more than 100 spaces) and/or steeper lots.
- (e) Avoid channelling of sheet flow.
- (f) Avoid ponding water.
- (g) Avoid creation of an impoundment zone in the center lot.
- (h) Never trap water in corners.
- (i) Provide sufficient spot elevations to move water off the lot.
- (j) Provide adequate drainage inlets to move water off the lot.

6. Grading and drainage : detail

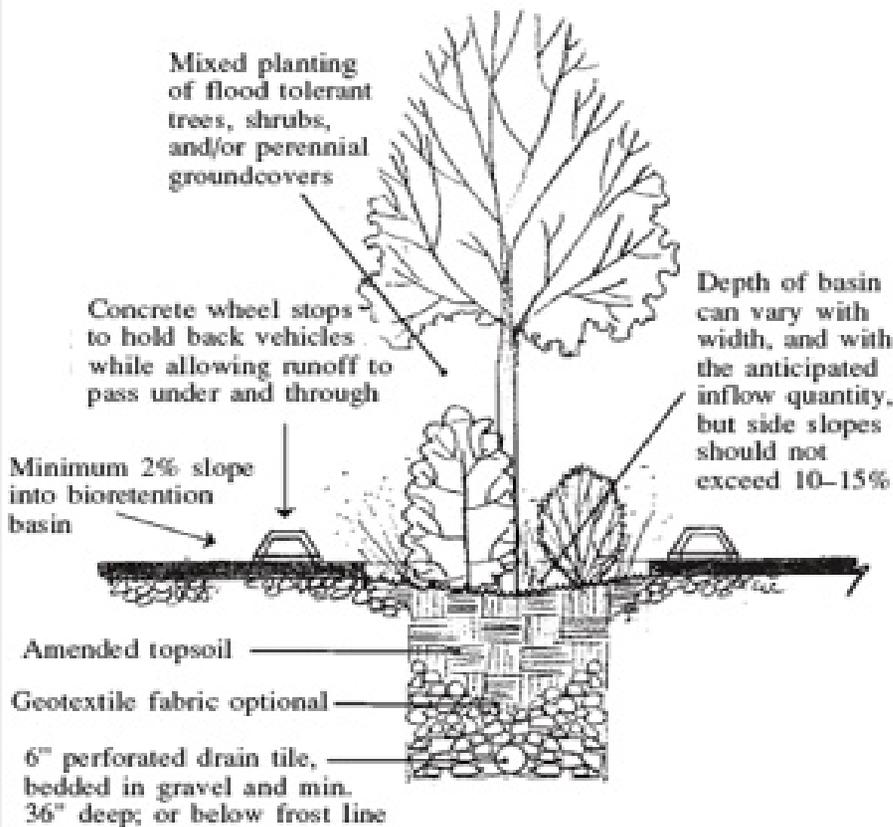


Figure 1. Cross section of a parking lot "wetland island" for bioretention, with an 8-foot width.

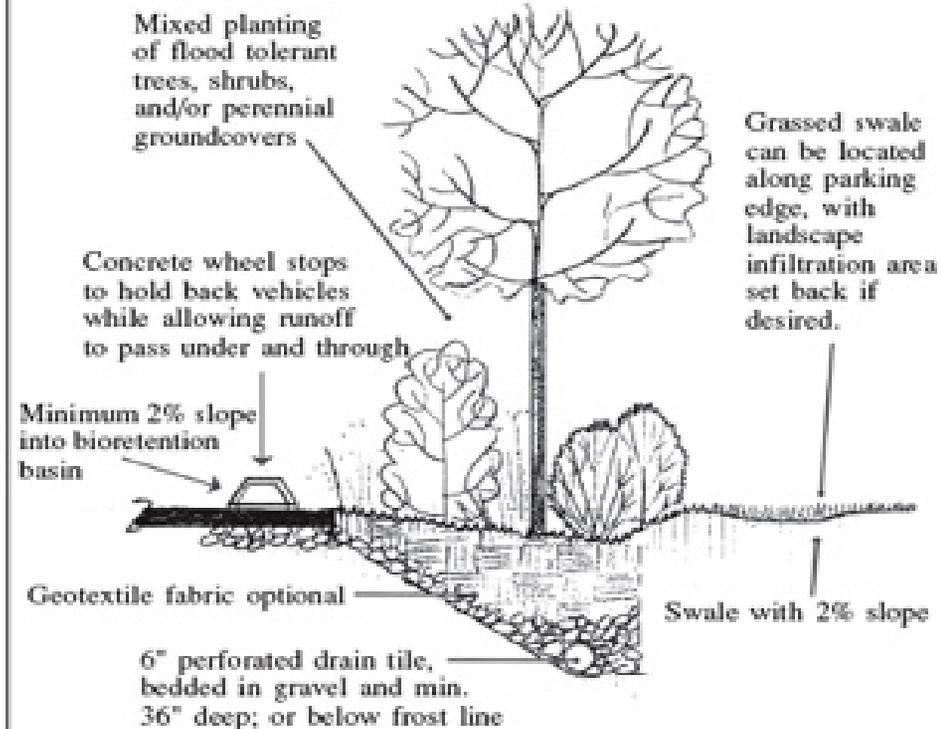


Figure 2. Cross section view of a parking lot edge, with a biofiltration strip and optional subsurface runoff collection.