

DESIGN CRITERIA FOR
PARKING LOT CONSTRUCTION

A. GENERAL. Proposed parking lot construction in the City of Liberty shall, in all respects, be designed to conform to applicable codes, regulations, and ordinances as established by the City of Liberty. Any person, firm, or corporation proposing to construct any parking lot improvement within the City shall apply to the City Engineer for approval of the location, dimensions, design, construction methods, and materials of such parking lot construction. Plans shall be submitted to the office of the City Engineer for approval and shall include all information as may be required or described hereinafter.

B. MATERIALS FOR CONSTRUCTION. The following materials and related information are acceptable for parking lot construction in the City of Liberty:

Pavement - Full depth asphaltic concrete (minimum five (5) inches) or equal over subgrade (minimum six (6) inches), compacted to ninety-five (95) percent of maximum density as determined by standard proctor.

Driveway Entrances and Curbing Within Public Right-of-Way - Concrete (4000 psi minimum acceptable 28-day compressive strength with 6%, \pm 1%, entrained air).

Curbing (interior) - Concrete (3000 psi minimum acceptable 28-day compressive strength with 6%, \pm 1%, entrained air).

C. CURB AND GUTTER. Concrete curbing shall be provided on perimeter of parking areas and along drives connecting parking areas with public streets. Curbing shall have a vertical face and shall be securely connected to the pavement to prevent movement. Curbs may be constructed as poured-in-place or may be precast concrete. In all cases, the type and construction of curbing to be used shall be approved by the City Engineer prior to construction. Curb cuts, ribbon curb, or perimeter permeable pavements may be used in conjunction with stormwater BMPs in lieu of standard curbing.

All work within public right-of-way shall conform to applicable City Standards. Driveway approaches shall be constructed with integral curb and gutter conforming to City of Liberty type C-1 specifications. Transition to existing curb or curb and gutter shall be made at saw joints in existing curb or at existing expansion joints. Construction and expansion joints, dimensions, elevations, and surface finish shall match as closely as possible that of existing adjacent curb and gutter. Expansion joints shall be placed where new curbing abuts existing curbing.

D. DRAINAGE FACILITIES. All parking areas shall be provided with adequate drainage facilities as approved by the City Engineer. Natural filtration of stormwater runoff through Stormwater Best Management Practices (BMPs) which incorporate natural infiltration of stormwater (such as bio-swales, rain gardens, etc.) is the preferred method of managing stormwater. Enclosed storm sewers may be used to collect and convey drainage on, across, and through public right-of-ways. Runoff will not be permitted to exit directly onto streets or adjacent property through curb cuts or open channels. In the event storm sewer facilities do not exist within a reasonable distance, exceptions to this may be made where approved by the City Engineer.

Up to 10%, but not more than 1 acre, of a site's total driving surfaces may discharge in a sheet flow condition through existing established vegetation such as may exist in a stream buffer without otherwise being treated. However, this quantity should still be considered in the overall stormwater quantity management.

Runoff calculations shall be in accordance with the Design Criteria for Storm Drainage Facilities of the City of Liberty and comply with the regulations and requirements set forth in the Stormwater Management Ordinance. All calculations shall be submitted to the City Engineer for review and approval. Drainage structures located in public right-of-way used and constructed as a portion of the storm drainage facilities for parking lots shall be in accordance with the Technical Specifications of the City of Liberty.

- E. DRIVEWAY ENTRANCES. Driveway entrances constructed within the public right-of-way shall be constructed of concrete with minimum thickness of six (6) inches. Each commercial or industrial property shall be allowed at least one driveway approach but may have more as long as the total maximum summation of the widths of all driveway approaches upon the property does not exceed twenty (20) percent of the length of the real property that fronts the abutting City street. Should more than one driveway approach be desired, there shall be not less than ninety (90) feet between the center lines of each driveway approach. In addition to the above, the following dimensions shall govern construction of driveway approaches:

1. Width of Driveway Approach.

a. Commercial Driveway Approach. The width of commercial driveway approaches shall not exceed thirty-five (35) feet or be less than twenty-five (25) feet measured parallel to the center line of the street at the property lines for two-way driveway approaches; provided, however, that commercial property may be allowed to have a driveway approach not exceeding fifty-two (52) feet, if said driveway approach does not exceed twenty (20) percent of the length of the length of the real property abutting the adjacent City street and a four (4) foot raised median is placed within such driveway approach to divide the entrance and exit lane(s). The minimum width of a one-way driveway shall be sixteen (16) feet.

b. Industrial Driveway Approach. The width of industrial driveway approaches shall not exceed sixty-five (65) feet or be less than twenty-five (25) feet measured parallel to the center line of the street at the property lines for two-way driveway approaches; provided that the minimum width for one-way driveway shall be sixteen (16) feet.

2. Corner of Adjacent Property Line Offset.

a. Commercial or Industrial Driveway Approaches. When commercial or industrial driveway approaches are located at or near a street intersection, in no case shall the distance from the intersection property corner be less than fifty (50) feet to the near line of the nearest driveway approach, as extended to the street curb or pavement edge.

No commercial or industrial driveway approach shall be constructed having a

tangent length, between the curb return and the property line extended, of less than twelve and one-half (12 1/2) feet.

3. Safety Islands. The minimum lengths of safety islands between entrances shall be twenty-five (25) feet. Lengths of safety islands is the tangent distance between the turning radii as measured along the surface edge or curb line, measured parallel to the center line of the street.

4. Turning Radii.

a. Commercial and Industrial Driveway Approaches.

1. Safety islands shall have a minimum radii of fifteen (15) feet.
2. Driveway approaches shall have a minimum radii of fifteen (15) feet.

5. Curb Openings.

a. Commercial Driveway Approach. Curb openings for commercial driveway approaches shall not exceed sixty-five (65) feet at the end of the radius unless otherwise approved by the City Engineer.

6. Dimensions of Parking and Other Paved Areas. Parking stall dimensions shall be not less than nine (9) by eighteen (18) feet plus the necessary space for maneuvering into and out of the space. In cases where the front end of the parking stall is abutting a landscape area with a minimum width of five (5) feet or a walkway with a minimum width of six (6) feet, the parking stall dimension shall be not less than nine (9) by sixteen (16) feet. For parking lots the minimum cross dimensions shall be as follows:

901 pattern	Single loaded aisle - 42 feet	Wheel stop to opposite curb
901 pattern	Double loaded aisle - 60 feet	Wheel stop to wheel stop
601 pattern	Single loaded aisle - 40 feet	Wheel stop to opposite curb
601 pattern	Double loaded aisle - 56 feet	Wheel stop to wheel stop
451 pattern	Single loaded aisle - 34 feet	Wheel stop to opposite curb
451 pattern	Double loaded aisle - 47 feet	Wheel stop to wheel stop
Parallel spaces	9 feet x 23 feet each space	

Drives to parking area, service areas, loading docks and other on site facilities served by or serving motor vehicles shall not exceed forty (40) feet in width measured at a point where drive curbs are generally parallel. Head-in parking, where vehicles use a part of a public street right-of-way for entering or backing from a parking space, or where any part of the parked vehicle occupies street right-of-way, shall not be permitted.

- F. CONSTRUCTION ON PUBLIC RIGHT-OF-WAY UNDER STATE JURISDICTION OR CONTROL. All construction within right-of-way under the control or jurisdiction of the State of Missouri shall be reviewed and approved by the appropriate state agency prior to submittal of the plans to the City of Liberty. Plans submitted to the City of Liberty for review shall reflect all changes or corrections as required by that state agency and also outlined on the approved state permit.