



LEE'S SUMMIT MISSOURI

Residential Swimming Pools and Hot Tubs

November 1, 2017

The following are general requirements pertaining to the construction of swimming pools and hot tubs accessory to one and two family dwellings. This does not represent all the provisions regulating swimming pool construction and is not intended to replace the adopted codes and ordinances of the City of Lee's Summit, MO. For all requirements pertaining to swimming pool construction refer to the 2012 International Residential Code and Chapter 7 of the Lee's Summit Code of Ordinances.

GENERAL:

1. Definition - A swimming pool is defined as a receptacle for water or an artificial pool of water, with bottom and sides formed of material other than soil and rock, having a capacity of more than 5000 gallons of water or having a depth of more than 24 inches at its deepest level, intended for the purpose of immersion or partial immersion therein of human beings, and including all appurtenant equipment.
1. Fees- Building permit fees for pools are based upon the valuation of the pool.
2. Contractor Licenses – All contractors/builders are required to have a business license. Certification of at least one employee of the company as a master electrician, master plumber or master mechanical shall be a requisite for licensing an electrical, plumbing or mechanical contractor. The certification of the master and the business license must remain current throughout the period of construction. The right of a company to do work as an electrical, plumbing or mechanical contractor depends upon the retention of the person holding the master certification as an employee, member or officer of the company. Except for persons doing work on their own residence, no person, other than a licensed contractor or employee of a licensed contractor shall engage in electrical, plumbing or mechanical business, construction or installations. (LSCO 7-130)
3. Required Setback from Property Lines – Currently 10 feet from side and rear property lines to the concrete deck or any deck. (See Unified Development Ordinance, available in the Development Services Department). The pool cannot be located within any easements on the property.

Development Services

4. Disconnecting means – One or more means to disconnect all ungrounded conductors for equipment, other than lighting, shall be provided. Each means of disconnect shall be readily accessible and within sight from the equipment it serves and shall be located at least 5 feet horizontally from the inside walls of the pool, spa or hot tub unless separated from the open water by a permanently installed barrier that provides a 5-foot or greater reach path. This horizontal distance shall be measured from the water's edge along the shortest path required to reach the disconnect. (IRC E4203.3)
5. Luminaires and ceiling fans – Luminaires, lighting outlets and ceiling-suspended paddle fans shall not be installed over the pool or over the area extending 5 feet horizontally from the inside walls of the pool, except where no part of the luminaire or ceiling-suspended paddle fan is less than 12 feet above the maximum water level. (IRC E4203.4.1)
6. Overhead clearances – See IRC section E4203.6 and table E4203.5
7. Underground wiring – Underground wiring shall not be installed under or within the area extending 5 feet horizontally from the inside walls of pools and outdoor hot tub and spas except where the wiring is installed to supply the pool, spa or hot tub equipment or where space limitations prevent the wire from being routed 5 feet or more horizontally from the inside walls. Where installed within 5 feet of the inside walls, the wiring method shall be a complete raceway system of rigid metal conduit, intermediate metal conduit or a nonmetallic raceway system. Metal conduit shall be corrosion resistant and suitable for the location. See Table E4203.7 for minimum raceway depths. (IRC E4203.7)
8. Bonding – All metallic parts of the pool shall be bonded in accordance with Section E4204 of the IRC.
9. Grounding – Grounding shall be done in accordance with Section E4205 of the IRC.

The above references are made for outdoor locations. For regulations regarding indoor locations, see Chapter 42 of the IRC.

PLUMBING:

1. Backflow Prevention - Pools shall be equipped with suitable facilities for adding makeup water as needed. There shall be no physical connection between the water supply line and the pool system. If the makeup water supply is added directly to the pool, the outlet shall be at least six inches above the rim of the tank. If a hose connection from a sill cock or other plumbing fixture is to be used for supplying makeup water, then an approved backflow prevention device shall be installed between the sill cock or control valve at the fixture and the hose connection. The backflow prevention device shall be installed in accordance with its listing, chapter 32, Article III of the Lee's Summit Code of Ordinances and the current adopted Plumbing Code. The maximum size of the fill pipe to be two inches.

2. **Fencing** - The area in which a swimming pool, sauna, hot tub, or Jacuzzi is located shall be entirely enclosed and separated from adjoining property by a protective fence or other permanent structure not less than four (4) feet in height, measured from grade. The enclosure shall be so constructed that a sphere six (6) inches in diameter cannot pass through. Fence posts shall be decay or corrosion resistant and shall be set in concrete bases. Such protective enclosure shall be provided with gates equipped with self-closing and self-latching devices placed at the top of the gate; provided, however, that above-grade structures of four (4) feet or greater in height that are equipped with a ladder that can be manually lifted and locked shall not be required to have a protective enclosure. Said ladder shall be locked when the swimming pool, hot tub, sauna, or Jacuzzi is not attended.
 - At the option of the property owner, a hot tub or Jacuzzi may be covered with a latching, protective cover instead of the fencing or protective enclosure described above. The cover on the hot tub or Jacuzzi shall be closed and latched at all times that the hot tub or Jacuzzi is not in use. If a covered hot tub or Jacuzzi is located in the same area as a swimming pool or sauna, the swimming pool or sauna must still be fenced or enclosed with a permanent structure in the manner described above.

ELECTRICAL:

1. **Receptacle Location** – Receptacles that provide power for water-pump motors or other loads related to the circulation and sanitation system are permitted to be located between 6 and 10 feet from the inside walls of pools and outdoor spas and hot tubs, where the receptacle is single and of the locking and grounding type and protected by ground-fault circuit interrupters.

Other receptacles on the property shall be located not less than 6 feet from the inside walls of pools and outdoor spas and hot tubs. (IRC E4203.1.1)

2. **Required receptacles** – At least one 125-volt 15- or 20-amp receptacle, supplied by a general-purpose branch circuit shall be located a minimum of 6 feet from and not more than 20 feet from the inside wall of pools and outdoor spas and hot tubs. This receptacle cannot be located more than 6 feet 6 inches above the floor, platform or grade level serving the pool, spa or hot tub. (IRC E4203.1.2)
3. **GFCI protection** – All 15- and 20-amp, single phase, 125-volt receptacles located within 20 feet of the inside walls of pools and outdoor spas and hot tubs shall be protected by a ground-fault circuit-interrupter. Outlets supplying pool pump motors from branch circuits with short-circuit and ground-fault protection rated 15 or 20 amps, 125 volts through 250 volts, single phase, whether by receptacle or direct connection, shall be provided with GFCI protection for personnel. (IRC E4203.1.3)

4. Permits – A permit is required for any swimming pool meeting the definition given above. Plot plans are required when submitting application for a pool permit. The following must be indicated on the plot plan, which shall be drawn to scale: (LSCO 7-127 and 7-128)
 - A. Property address and legal description.
 - B. Lot dimensions.
 - C. All easements located on the property.
 - D. Location of all permanent structures.
 - E. The location of the pool and any decking, including the distance from all property lines and the house (or any deck attached to the house).
5. Permit Expiration - Permits for pools accessory to one and two family dwellings shall become invalid unless the work is completed within 180 days from the date of issuance. Time extensions may be granted when substantial progress (50% complete) has been made and the applicant documents the capability of finishing the work within one time extension. (LSCO7-134)
6. Placement of Permit – Permits for pools shall be posted on site and visible from the street or the property address clearly identified and visible from the street. Failure to clearly identify the property or post the permit may result in inspections not being performed. (LSCO 7-136)
7. Erosion Control – Erosion control devices shall be installed and maintained throughout the construction process in accordance with the City of Lee’s Summit Design and Construction manual. Failure to install or maintain erosion control devices may result in inspections not being performed, stop work orders being issued or court charges filed against the permit applicant.
8. Required Inspections – Inspections for pools will vary depending on the type of pool and the scope of work being performed. This information will be reviewed with the applicant when the permit is issued. One day advance notice is required for all inspections.

CONSTRUCTION DETAILS:

1. Re-circulation – All pools shall be of the re-circulation type in which circulation of the water is maintained through the pool by pumps; the water drawn from the pool being clarified and disinfected before being returned to the pool. (LSCO 7-1009)
 - The re-circulation system shall consist of pumping equipment, hair and lint catcher, filters, together with the necessary pipe connections to the pool inlets and outlets, facilities and pipe connections necessary for backwashing filters and facilities and equipment for disinfecting the pool water.
 - Every pool shall have a re-circulating system with an hourly capacity equal to the pool volume divided by eight (8).

Compliance Checklist

BEST MANAGEMENT PRACTICES (BMPs)	✓
Perimeter Controls - BMPs are installed & maintained downgradient, along back of curb and/or sidewalk and lot line of adjacent properties. Sediment build up is removed, as needed.	
Intermediate Controls - BMPs are installed & maintained in areas of long or steep drainage paths, particularly when perimeter controls fail. Sediment build up is removed, as needed.	
Lot Access - Specific lot entrance is designated and maintained with suitable surface for parking & unloading that prevents tracking of mud & materials onto street. Required for each lot.	
Inlet Protection - BMPs are installed & maintained around all types of inlets to allow water to flow but impede sediment. Sediment build up is removed, as needed.	
Stockpiles - Located away from street, storm inlets, lot access, or adjacent property lines. BMPs are properly installed and maintained.	
Other Pollutants - Trash properly disposed; materials/chemicals properly stored; concrete washout performed in designated area; dewatering does not deposit sediment off-site or cause erosion.	

City Inspections

- City inspectors will inspect ESC BMPs in conjunction with routine inspections. City inspections will ensure proper placement and installation of ESC BMPs as well as continued maintenance.
- The first ESC BMP re-inspection will occur at the time of the footing inspection. If ESC BMPs are not installed correctly or in proper location, the requested inspection will be denied.
- The City expects foundation backfilling and installation of additional ESC BMPs, as needed, will be complete by the time plumbing rough-in inspection is requested. The requested inspection will be denied if the appropriate ESC BMPs are not installed and properly functioning.
- City inspectors are available to discuss ESC BMPs for lots and the proper sequencing for BMP installation.

Questions concerning the City's ESC standards, permits, and/or SWPPPs can be addressed to the Lee's Summit Development Services Department at 816.969.1200.

Erosion & Sediment Control Standards

Single Family Residential



LEE'S SUMMIT
MISSOURI

Development Services

220 SE Green Street, Lee's Summit, MO 64063
cityofLS.net/development | 816.969.1200

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This brochure contains standard plans and procedures for typical residential building construction within the City of Lee's Summit. The primary objective of standards for erosion and sediment control (ESC) is utilization of best management practices (BMPs) at construction site perimeters to minimize erosion, thereby preventing sediment from leaving the construction site and entering the City's storm drainage system.



Permit Holder Responsibilities

The building permit holder is responsible for ensuring that adequate ESC measures and BMPs are in place and functioning prior to and during all construction activities, until construction is complete. This includes:

- Installation of designated perimeter controls, lot access, and inlet protection BMPs prior to any land disturbance.
- Installation of additional perimeter, intermediate, and stockpile protection immediately following wall inspection and backfilling.
- Restriction and maintenance of lot access. Maintenance of designated lot access is required until a permanent driveway is installed.
- Maintenance of all lot-specific ESC and BMPs to prevent sediment, mud, dirt, rock, and other debris from reaching or being tracked to streets, sidewalks, or storm inlets.
- Cleanup of any sediment, mud, dirt, rock, and other debris from the construction site that has reached streets, sidewalks, or inlets.
- Maintenance of waste and pollutant BMPs, including trash, washout areas, portable toilets, chemical storage, and dewatering efforts.
- BMP inspection frequency shall be established to ensure BMPs are functioning as designed. City ordinance requires ESC and BMP inspections to be conducted within 24 hours of a rain event of 1/2 inch or more. Problems noted during any inspection shall be corrected within 7 days unless otherwise noted by a City inspector.

Adjacent Lots

Building permit holders who disturb land adjacent to their permitted building site(s) must:

- Install ESC on and between both lots.
- Remove any construction materials and re-stabilize the disturbed areas with sod or permanent seeding and mulch.

Land disturbance of adjacent lots will be noted as a condition for the Final Certificate of Occupancy for the permitted lot. This condition will need to be resolved before a Certificate of Occupancy is issued for the permitted lot.



Pollutants

The following waste and pollutant BMPs must be addressed on all construction sites:

- Trash and Debris: to be contained so as not to blow or wash into the storm drainage system.
- Portable Toilets: to be provided for sanitary waste; however, should not be located on/near storm inlets.
- Concrete Washout: to be disposed of in a designated washout area.
- Paint, Fuel, and Other Chemicals: to be stored properly. All spills must be cleaned up immediately and disposed of properly.
- "Waste" Water: from construction activities or dewatering of trenches, foundations, and other excavated areas should not cause erosion or deposit sediment off-site. A filter bag, sediment basin, or vegetated area must be used to filter sediment before discharge off-site. Areas of standing water shall not be allowed.



Inactive Sites

Permitted building sites found to be inactive will be required to maintain ESC BMPs and may be required to stabilize all disturbed areas with permanent vegetation.



Inlet Protection

- Curb Inlets:** Manufactured products (Gutter buddy, Filter Sox, etc.) are to be properly installed at the opening of curb inlets, as **secondary** ESC BMPs, with primary BMPs installed upstream on-site. Proper installation requires the filter to fully extend beyond each end of the inlet opening, with clearance at the top for water overflow and no gaps between filters or against the curb. Installation is limited to locations where temporary ponding and sediment do not create a safety hazard or cause property damage. Regular inspection and maintenance of filters shall be performed and sediment build up should be removed. Any torn or damaged filters shall be replaced. If using cinder blocks, they must be installed as shown in this picture, to prevent clogging. Any damage to property due to clogged inlets shall be the responsibility of the permit holder.



- Field Inlets:** Before construction begins on a lot that drains to a field inlet, regardless if the inlet is located on or off-site, the permit holder will ensure proper inlet protection and perimeter control. Inlet protection shall include a minimum 10' buffer around the entire inlet consisting of grass, sod, or RECP. As an alternative to a stabilized buffer, the inlet can be wrapped with wire-reinforced silt fence or silt fence attached to a wood frame for extra support. The silt fence should completely enclose the inlet and an inlet filter (Gutter Buddy, Filter Sox, etc.) should be properly installed at the inlet opening.



OTHER BMPs

Aside from perimeter controls, building permit holders are required to ensure the following ESC BMPs are properly addressed at each building site:

Stockpiles

Soil stockpiles should not be located near the street, storm inlets, lot access, or adjacent property lines. All stockpiles must either be stabilized, covered, or have ESC and BMPs installed around the base of the pile.



Land Disturbance Permits

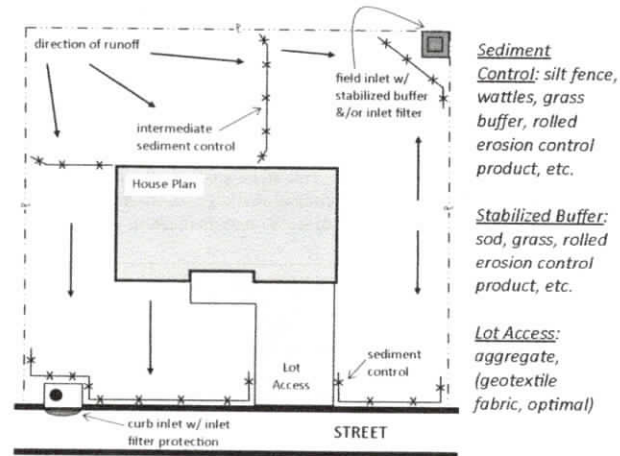
If a construction project disturbs at least 1 acre of land, a land disturbance permit will be required from the Missouri Department of Natural Resources (MDNR) prior to project start up. If a construction project disturbs at least 2,000 square feet of land and a building permit has not been issued, a land disturbance permit will be required from the City prior to project start up.

Stormwater Pollution Prevention Plan (SWPPP)

If a land disturbance permit is required from the City and/or the MDNR, a SWPPP will also be required to be submitted to the City with a copy present on the construction site at all times.

Compliance

Failure to comply with the City's ESC standards, including requirements for land disturbance permits and SWPPPs, is a violation of City ordinances and can result in a substantial fine. Compliance with the City's ESC standards requires developers, builders, and/or contractors to make their own assessment (or seek professional advice) of the conditions and drainage patterns at individual sites. The site conditions should determine the selection and location of appropriate BMPs for each lot.



Sediment Control: silt fence, wattles, grass buffer, rolled erosion control product, etc.

Stabilized Buffer: sod, grass, rolled erosion control product, etc.

Lot Access: aggregate, (geotextile fabric, optimal)

Representative ESC plan for typical single family lot.

NOTE: Intermediate sediment controls may be needed for steep or long drainage paths. Additionally, once sidewalks are installed, BMPs are to be moved to the back of the sidewalk to prevent sediment from reaching the sidewalk.

PERIMETER CONTROL BMPs

Perimeter controls are required to prevent sediment from leaving construction sites and reaching sidewalks, streets, storm inlets, and existing vegetation on adjacent lots. The following are examples of ESC and BMPs for construction site perimeters:

Straw Wattles and Logs

Straw wattles and logs are designed to allow low flows of surface water to pass through, which filters sediment and reduces the risk of under or end cutting. They should be installed per the manufacturer's instructions with care taken to tightly adjoin the ends of each section such that there is no overlap. Ends are to be angled uphill to pond surface water runoff. Regular inspection and maintenance should be performed and sediment build up should be removed. Any torn or damaged sections should be replaced.



Rolled Erosion Control Products

Rolled erosion control products (RECP), also referred to as mats or blankets, can be used to stabilize exposed soil and filter runoff. RECP do not require special equipment for installation and can be installed in all weather conditions. However, RECP should be installed according to manufacturer's specifications with special attention paid to proper anchoring. Grass seed placed under RECP is recommended as it will grow up through the RECP, which will establish a more permanent buffer for ESC.



Silt/Sediment Fence

Silt fence is designed to slow and pond low-flowing surface water runoff to allow sediment to settle. Silt fencing should be machine installed, pulled tightly between each post, and overlapped when joining two sections of fence. Ends of fence are to be angled uphill to pond surface water runoff. Regular inspection and maintenance of fencing should be performed and sediment build up should be removed. Any torn, damaged, or collapsed sections should be replaced.



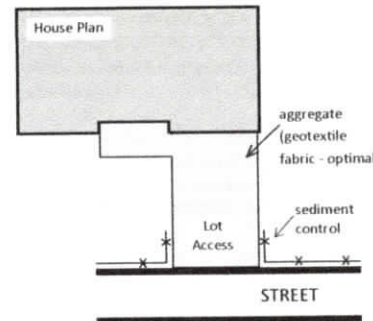
Grass Buffers and Mulch Berms

Utilizing a strip of maintained vegetation as a buffer can be a good BMP for ESC. A mulch buffer can also be used for ESC, particularly when weather prohibits the installation of other BMPs; however, mulch tends to float and wash away in heavy rains. These types of buffers work well with other perimeter controls or in small areas such as the City right-of-way between a sidewalk and curb line.



Lot Access

The intent of designated lot access is to provide a location for off-street material unloading and vehicle parking so mud and other debris are not likely to be tracked onto the street. Lot access must be comprised of aggregate sufficient to prevent tracking (geotextile fabric, optimal) and maintained until a permanent driveway is installed. Silt fence should be angled at the edges of the lot access to prevent sediment from washing over the designated access area. Lot access width shall be minimum of 12 feet and aggregate shall be minimum of 6 inches of 3/4 inch diameter or larger.



NOTE: Lot access must be in accordance with City code and comprised of aggregate sufficient to prevent tracking. Geotextile fabric is an option that can be used under aggregate to provide stability on wet soils.

Representative Lot Access plan for typical single family lot.