

Residential **TINY HOUSES** Checklist & Guide

(Abridged Summary of 2015 IRC Requirements as Amended by St. Louis County Ordinances)



SAINT LOUIS COUNTY
Transportation and Public Works

This **Tiny Houses Checklist** is based on St. Louis County's (SLCO) policies, construction codes amended and adopted by ordinance. See list below. It is not a substitute for those codes and ordinances, but serves as a guide to reading them. More information and explanation is provided in commentaries and interpretations published by St. Louis County and acknowledged code organizations.



List of Applicable Codes and Ordinances:

2015 International Residential Code (IRC) & Ordinance #27,654-Ch.1116 ("R" "G", "N", and "M" references and Appendix K - Sound Transmission).

2015 International Building Code (IBC) & Ordinance #27,654-Ch.1116\5 ("B" references).

2015 International Property Maintenance Code (IPMC) & Ord. #27,617-Ch.1110 ("PM" refs.)

2014 National Electrical Code (NEC) aka NFPA 70 & Ordinance #27,430-Ch.1102 ("E" refs.)

2015 Uniform Plumbing Code (UPC) & Ordinance #27,424-Ch.1103 ("P" references).

2015 Land Disturbance Code of St. Louis County, Missouri, Ordinances #21,578; 22,468; 24,084; 25,494 -Ch.1114 ("LD" references).

For inquiries regarding the information provided in this guide, please contact:

St. Louis County Permit Processing _____ (314) 615-5184

St. Louis County Zoning Review _____ (314) 615-3763

St. Louis County Building Plan Review _____ (314) 615-5485

Right-of-Way Owner

State _____ (888) 275-6636

County _____ (314) 615-8517

Municipality _____ Call the project site's Municipality

St. Louis County's Municipal Contracts Matrix shows those municipalities that currently contract for its Code Enforcement services. The Matrix is on our web site at

<https://stlouiscountymo.gov/st-louis-county-departments/transportation-and-public-works/residential-building/>

For the electronic plan review, scan QR code or visit us online at

<https://stlouiscountymo.gov/st-louis-county-departments/transportation-and-public-works/electronic-plan-review/>



Sections from the Codes, their Referenced Standards, and St. Louis County Ordinances, are shown at ends of statements and are *italicized* in parentheses ().

NOTICES Regarding Permits



This **Checklist** highlights some of the requirements of St. Louis County's zoning, building, and property maintenance (housing) codes and ordinances for a permit to provide a 'Tiny House' in its jurisdiction. It also points out some of the licensing regulations in place for contractors.

The Missouri registered Architect or Engineer is to reference both this Tiny Houses Checklist and St. Louis County's "Single-Family Dwelling Checklist" for the minimum requirements to be addressed in sealed construction-ready drawings submitted for a building permit.

- The applicant (property owner or the Contractor) is responsible for contacting those agencies that may be affected by the new work, or that may have legal oversight of the new work along with but separate from St. Louis County. Where requirements among the agencies conflict, the most restrictive shall govern the new work. Contact these agencies before beginning work approved under a permit issued by St. Louis County. Such agencies may include:
 1. The project site's Municipality;
 2. The Local Fire Protection District;
 3. The Transportation Department;
 4. The Sewer District; and
 5. Subdivision Trustees.
- A "Tiny House" dwelling constructed on-site must be on a foundation to be allowed within a residential area of Unincorporated St. Louis County.
- Electrical, plumbing, and mechanical work required for houses built on-site be must be provided by contractors who are licensed in their respective trades and have registered with St. Louis County Code Enforcement through its Permits Processing office.
- A manufactured (prefabricated/modular type) Tiny House may be permitted, as long as it shall have affixed to it the seal of the Missouri Public Service Commission (Mo-PSC) as an approved prefabricated/modular home.
- On-site utility hookups shall be provided by licensed contractors registered with St. Louis County Code Enforcement through its Permits Processing office.
- The following are the conditions and limits of a manufactured Tiny House permitted within St. Louis County's Code Enforcement jurisdiction:
 1. A manufactured house is typically transported on a flatbed truck or on a wheeled temporary axle. Once delivered to the project site, the wheels must be removed, and the Tiny House must be set on and permanently fixed to a foundation. See information under 'Submittal Requirements' heading for more information.
 2. A manufactured house with a permanent chassis and wheels – whether by a manufacturer or the owner - **shall not be permitted** within residential areas of Unincorporated St. Louis County, as noted in its Zoning Ordinance.
 3. A manufactured "Tiny House" on wheels that has an affixed HUD or FHA certification tag is allowed in a designated "House-Trailer Park" for mobile homes.
 4. Other "Tiny Houses" on wheels - whether by a manufacturer or by the owner, is considered a recreational vehicle meant for occasional use. It is not allowed as a dwelling unit or as a house trailer/mobile home for permanent living. within Unincorporated County
- Permit issuance does not automatically authorize construction access to the project site. If a project site does not have a driveway entrance or it is unavailable for construction access, the property owner or authorized Contractor must apply for a permit with the Owner of the Right-of-Way (which may be the County's Highway Dept. or the Municipality) to construct a temporary entrance.

- Project-specific site plans submitted with the permit application should include the following:
 1. Draw an arrow over the property's existing driveway, and point it into the lot. Label the arrow as "Construction Entrance";
OR
 2. Draw an arrow over a proposed alternate access location, and point it into the lot. Label the arrow as "Construction Entrance". Note on the site plan: *"A separate special use permit for a construction entrance will be obtained from the street right-of-way owner before the start of construction access to the project site"*.
- **Properly sealed drawings** means the first sheet of the **electronic** set is **electronically** sealed, signed, dated by the Missouri registered architect or professional engineer, and subsequent sheets of set bear the registered design professional's **electronic** seal. The design professional notes in the title block on each sheet his/her contact number and business address, as well as the project's description of work, the project address and the property owner name.
- The **Plan Reviewer** may determine the proposed work, construction, or conditions require additional drawings and information be submitted to Code Enforcement-Plan Review for review, beyond the minimum submittal requirements noted in this Checklist.

Submittal Requirements



Submit with a completed **electronic Building Permit application** and the following **electronic** set properly sealed or as noted for a 'Tiny House' on a residential property in St. Louis County's jurisdiction. Items *italicized in parentheses* refer to applicable St. Louis County Codes and Ordinances.

For a manufactured/prefabricated/modular Tiny House that has been stamped and numbered approved by the Missouri Public Service Commission (Mo-PSC), also submit the following:

- **Site Plans**. See the Zoning approval requirements below, and the Single-Family Dwelling Design Checklist for a full list of requirements.
- The **serial number on the Mo-PSC seal** affixed to the specific model constructed and assembled in the factory to be delivered to the project site. The serial number on the seal verifies the constructed model is a prefabricated/modular home approved by the Mo-PSC.
- **Electronic** set of the Tiny House model construction drawings that are:
 1. Sealed, signed, dated by a Missouri registered design professional listed on the Mo-PSC website as a 3rd party approved to provide the Mo-PSC with single-family residential structures and;
 2. Stamped, signed, dated approved by the Mo-PSC.
- **Electronic** set of **footings-&foundations** construction-ready drawings properly sealed by a Missouri registered architect or professional engineer, to which the manufactured home shall be permanently fixed. Drawings shall include plants, elevations, sections and connection details (*R403; R404*).
- Where a **crawl space** is proposed, the **electronic** set of sealed drawings shall also provide the natural or mechanical ventilation requirements and access requirements to the crawl space (*R408*).
- Where **other on-site construction is proposed** as attached to the manufactured home – such as a wood deck or porch – provide included in **electronic** set of sealed drawings the plans, elevations, sections, and structural connection details required for each site-built, attached structure.

For a site-built Tiny House, submit the following in the **electronic** set properly sealed by a Missouri registered design professional, or as noted. See the Single-Family Dwelling Design Checklist for all requirements:

- **Electronic Site Plan(s)**. Also see the Zoning Approval requirements below.
- **Electronic Architectural/Structural Plans** (*B107.1 & SLCO Policy*):

- **Electronic Truss Drawings & Layout Plan** (SLCO Rev. Ords. R502.11.1; R502.11.4; R802.10.1; R802.10.2).
- **Electronic Plumbing Plan/Layout** – Show and label kitchen sink(s), dishwasher, refrigerator, bar sink(s), lavatories, water closets (toilets), bathtubs, showers, hot water heater(s), floor drain(s), hose bibs, plumbing chases and all other plumbing fixtures in the architectural plans (B107.2.1; SLCO Rev. Ord. P1103.P-136; SLCO Policy).
- **Electronic Electrical Layout Plan(s)** - Show the locations of all receptacles, switches, lights, ceiling fans, and exhaust fans on floor plans. Identify all 220/240 volt receptacles/circuits. Provide/draw curved lines from wall switches to the lights and lighting receptacles they each control (B107.2.1; SLCO Policy).
- **Electronic Mechanical Plan(s)** - Show furnace location and label its type (such as fan-assisted induced draft or natural draft); the source of combustion air as applicable; the flue size; the locations and sizes of ducts, supply and return air grilles; a programmable thermostat; submit the heat gain/loss calculations; and provide the whole-house mechanical ventilation system (B107.4; G2426; G2427; M1507; M1601.1.2; N1103.1; SLCO Policy).
- **Zoning Approval**
 1. Site plans and building plans for new dwellings in unincorporated St. Louis County must comply with St. Louis County Zoning Ordinances. **Electronic** Plans for dwellings proposed within contracting municipalities shall be reviewed and approved by the municipality for compliance with zoning and other local ordinances prior to issuance of a permit (B107.2.5; SLCO Revised Ord. R107.1).
 2. Before occupancy is granted to a dwelling within a 100-year flood elevation, submit a Letter of Map Revision (LOMR) obtained from FEMA, in which is noted the removal of a building or structure from the special flood hazard area (SLCO Revised Ord. R110.1; B110.3.14.1).

Minimum Room Dimensions



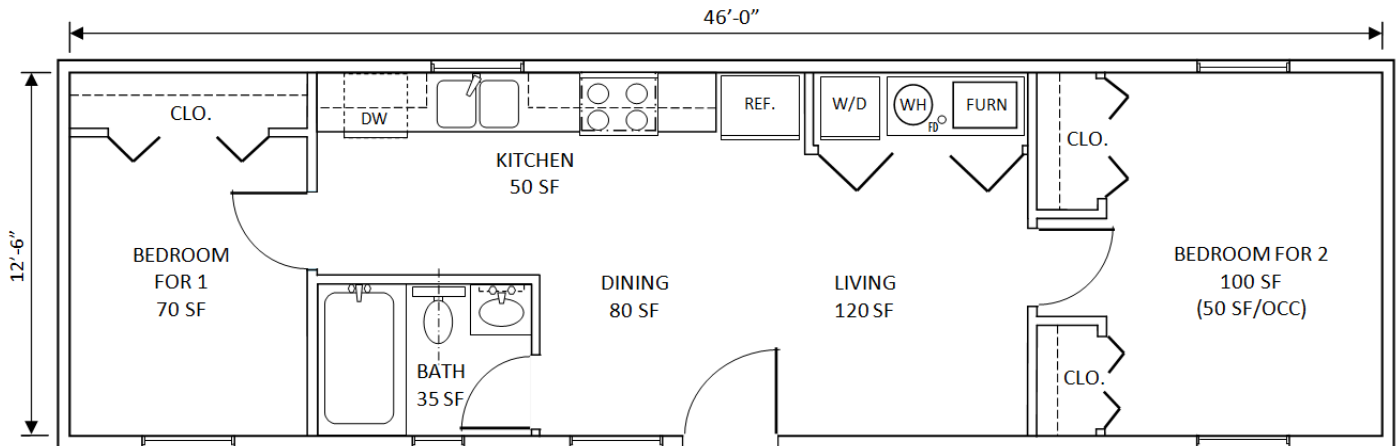
The following are the minimum required areas and ceiling heights for “Tiny Houses”, and are the basis for the number of occupants allowed to live in the dwelling, Compliance with them is required to construct and occupy, or to sell and re-occupy, a Tiny House as a dwelling.

Tiny House Dwellings shall not be occupied by more occupants than permitted by the minimum area requirements of Table PM 404.5, shown below (SLCO Rev. Ord. PM404.5).

Minimum Rooms & Spaces Required & Their Areas in Square Feet (sq. ft.)			
SPACE	1-2 Occupants	3-5 Occupants	6 or More Occupants
Living Room	No Minimum Area	120 sq. ft.	150 sq. ft.
Dining Room	No Minimum Area	80 sq. ft.	100 sq. ft.
Kitchen	50 sq. ft.	50 sq. ft.	60 sq. ft.
Bedroom(s)	Shall Comply with SLCO Rev. Ord. PM404.4 (see bulleted items with * below)		

The sum total of the rooms, spaces, and ceiling heights must meet the minimum Code requirements...

- * **Bedroom** areas shall be used to determine the allowable occupant load of a Tiny House. A bedroom occupied by 1 person must be minimum 70 sq. ft. A bedroom occupied by more than 1 person shall have at least 50 sq. ft. in floor area for each person (R201.4; R304.1; R304.2; PM201.4; PM202; SLCO Rev. Ord. PM404.4.1).
- Each **habitable room and space**, including **bedrooms** and excluding kitchens, shall be at least 7'-0" in any plan dimension and at least 70 sq. ft. in area (R201.4; R202; R304.1; R304.2; PM201.4; PM202; PM404.2).



Example Tiny House Plan for 3 Occupants

- **Notice:** An area **under a sloped ceiling** shall not contribute to the minimum required habitable area where (R304.3):
 1. A sloped ceiling measures less than 5'-0" above the finished floor;
 2. A furred ceiling measures less than 7'-0" above the finished floor.
- Ceiling heights shall be minimum 7'-0" in habitable rooms, spaces, and hallways, and minimum 6'-8" ceiling height in bathrooms, laundry, and toilet rooms (R305.1).

Exceptions:

1. Ceiling heights of rooms with sloped ceilings shall be 7'-0" for at least 50% of the required floor area, and at least 5'-0" ceiling height for the remaining required area (R305.1-Exception 1).
Notice: Rooms for sleeping or study are each allowed to have a 7'-0" clear ceiling height over 1/3 of the required floor area, with a ceiling height of at least 5'-0" over the remaining required floor area (PM404.3-Exception 3).
 2. Provide at least 6'-8" ceiling height above the front-center clearance area at each bathroom fixture, including a 30"x30" clear area at the tub/showerhead (R305.1-Exception 2).
- A **kitchen** shall have a sink and a minimum 3'-0" clear passageway between counterfronts and appliances, or between counterfronts and walls (R202; R306.2; PM404.2; PM502.1).
 - **Hallways**, where provided, shall each be at least 36" wide (R311.6).
 - A **bathroom** shall be provided partitioned off from other spaces in the dwelling, and shall have at a minimum a water closet, a lavatory, and a bathtub or shower, and shall comply with the following (R306.1; R307.1; PM202; P401.1; SLCO Rev. Ords. PM502.1; P422.1):
 1. At least 15" clear from the toilet centerline to adjacent side wall, vanity, edge of tub or shower.
 2. At least 21" clearance in front of each lavatory, tub and water closet/toilet fixture;
 3. At least 24" clearance in front of the opening to a shower.
 4. Locate the lavatory in close proximity to the water closet/toilet.
 5. The kitchen sink as a substitute for a lavatory is prohibited.
 6. **Notice:** A bathroom typically requires at least a 30 sq. ft. floor area to accommodate the required fixtures, their spacing and clearance requirements (SLCO Policy).
 - A Tiny House may be designed as an **efficiency unit**, where the uses of the spaces are combined. However, the combined areas must be equal to that required by the Codes for separate rooms (PM404.6-Item 4; SLCO Policy):
 1. A Tiny House efficiency unit with a minimum 220-sq. ft. floor area is limited to 2 occupants;
 2. A Tiny House efficiency unit with a minimum 320-sq. ft. floor area is limited to 3 occupants;
 3. The kitchen area is not included in the minimum required areas noted above. The kitchen area shall provide a sink, cooking appliance, and refrigerator with at least 30" clear in front of each.

4. The bathroom is not included in the minimum required areas noted above.
5. **Notice:** About 80 sq. ft is needed to accommodate the kitchen and bathroom appliances, fixtures and their required spacing and clearances, meaning (SLCO Policy):
 - a. An efficiency unit for 2 occupants would then need about a 300-sq. ft clear floor area.
 - b. An efficiency unit for 3 occupants would then need about a 400-sq. ft clear floor area.
 - c. The required clear floor areas do not include the area needed for vertical egress from a loft.

Drawings & Their Content Requirements



Below are some of the St. Louis County (SLCO) Code and Ordinance requirements for Tiny House construction. See the St. Louis County SFD checklist for an expanded list of requirements that may be applicable to the **Tiny House** construction proposed.

Foundations & Footings

- Structures shall be permanently attached to approved concrete or masonry foundations with footings sized for the building structure loads exerted on them (*B104; R402; R403; SLCO Rev. Ords.*).
- Crawl spaces provided with foundation/footings construction shall be naturally or mechanically ventilated, shall have minimum height clearances, and shall have a minimum clear access wall opening of 16" x 24", or minimum clear access floor opening of 18" x 24" (*R317.1-Items 1 & 2; R408*).

Framing

- Structures shall be framed, sheathed and braced to resist lateral wind forces in compliance with the requirements of the 2015 IRC or in compliance with St. Louis County's Basic Bracing Method.

Smoke & Carbon Monoxide Alarms

- Smoke alarms shall be provided in dwellings, shall be AC powered and have battery backup, shall comply with NFPA 72, and shall be listed in accordance with UL 217 (*R314.1; R314.1.1*).
- Provide a carbon monoxide alarm outside of each separate sleeping area in the immediate vicinity of the bedrooms in a dwelling with a fuel-fired appliance (*R315.2; R315.3*).

Energy Conservation Compliance

- Submit sealed drawings and documents showing the dwelling's compliance with energy conservation requirements of the 2015-IRC using the Code's prescriptive requirements or using an approved national, state or local energy-efficiency program (*SLCO Rev. Ord. N1101.4*).

Primary Egress

- Label the Primary Egress/entry door on the drawings and note it is side-hinged with a door leaf width of at least 3'-0" and a minimum clear opening of 32" x 78" with the door open 90°. Double-leaf doors labeled as primary egress must have 1 of the 2 door leaves compliant with the primary egress door width and clear opening requirements (*R311.2; SLCO Policy*).
- The Primary Egress door shall open from inside without use of a key, special knowledge or effort. Inside key operation is permitted provided the key cannot be removed from the lock when locked from the inside. Locks with thumb turns on the inside are permitted (*R311.2; SLCO PM702.3*).

Emergency Escape

- Provide for each habitable attic, bedroom and sleeping room at least 1 emergency escape opening that complies with the following (*R310*):
 1. Maximum height to bottom of clear opening - 44"
 2. Minimum net clear opening width - 20"
 3. Minimum net clear opening height - 24"
 4. Minimum net clear opening of 5.7 sq. ft. Grade floor windows net clear opening of 5 sq. ft. min.
 5. The required net clear opening area shall be met by normal window operation from inside dwelling, and shall not require the use of keys, tools or special knowledge.

Vertical Egress

For vertical egress from habitable levels, provide a minimum 36" wide stairway with a maximum riser height of **7-3/4"**, a minimum tread depth of **10"**, and with headroom clearance of at least **6'-8"**. Code-compliant winder treads and spiral stairs are allowed. Ladders are prohibited (R311.4; R311.7).

HVAC (Heating, Ventilation, Air Conditioning) Mechanical Requirements



Below are some of the HVAC/Mechanical requirements for Tiny Houses. Be sure to read through St. Louis County's Single-Family Dwelling Design Checklist for more requirements of the 2015 International Residential Code and its amendments in the St. Louis County Ordinances. Show compliance with those requirements in the drawings submitted for a permit.

Mechanical

- A Tiny House shall be heated to maintain a temperature of at least 68°F in all habitable rooms, bathrooms, and toilet rooms. Installation and clearances from combustible materials shall be provided per the manufacturer's requirements. Provide minimum 30" clear at the front of appliance(s) for service access (M1306; M1307; M1308: PM602; PM603; SLCO Rev. Ord. PM602.3).
- Provide a whole-house mechanical ventilation system compliant with 2015-IRC Section M1507, or with the International Mechanical Code (IMC), or with other approved ventilation means. Provide outdoor air intakes and/or exhausts with automatic or gravity dampers that close when the ventilation system is off (N1103.6).
- Provide bathrooms and toilet rooms with a minimum 50 CFM fan exhausted to the exterior (M1507.2, M1507.3, & P303.3; SLCO Rev. Ord. R303.3; M1501.1-Exception 2).

Exception:

Bathrooms and toilet rooms provided with minimum 3.0 sq. ft. of natural light, of which 1/2 is openable, shall not require mechanical ventilation. Both natural light and natural ventilation requirements must be provided (SLCO Rev. Ord. R303.3).

- Provide kitchen range with a listed hood exhausted to the exterior with a 100 CFM fan (intermittent use), or a 25 CFM fan (continuous use); OR, install in accordance with manufacturer's installation instructions a listed and labeled recirculating ductless range hood with a required filtration system for grease removal and odor control (M1507.4; SLCO Rev. Ord. M1503.1; M1503.4; M1506.3).

Electrical Requirements



Below are some of the electrical requirements for Tiny Houses. Be sure to read through St. Louis County's Single-Family Dwelling Design Checklist for more requirements of the 2014 National Electric Code (aka NFPA 70) as amended in St. Louis County Ordinances. Show compliance with those requirements in the drawings submitted for a permit.

- Connect the electrical system to a public utility (PM604; PM605.1; E100; E230.2).
- Show and label the location and capacity in amps of the electrical panel. The panel shall not be concealed and is prohibited in bedrooms, bathrooms, and clothes closets. Provide a clear space 30" wide x 36" deep x 6'-6" tall that is centered on the panel face. Cabinets and counters are prohibited under the electrical panel (PM604; PM605.1; E110.26; E240.24).
- Provide an intersystem bonding terminal for grounding communication systems. Provide in the dwelling in an accessible area at least 1 communications outlet cabled to the service provider demarcation point (E800.100; E800.156).

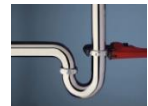
Receptacles

- Provide Arc-Fault Circuit Interrupter (AFCI) receptacles in bedrooms (*SLCO Rev. Ord. E210.12(A)*).
- Provide Ground-Fault Circuit Interrupter (GFCI) receptacles in bathrooms. At least 1 shall be within 36" of the lavatory basin rim (*SLCO Rev. Ord. PM605.2*).
- In habitable rooms, no wall space shall be more than 6'-0" from a receptacle. Each habitable room or space shall contain at least 2 separate, remote receptacles (*E210-52; SLCO Rev. Ord. PM605.2*).
- A laundry area shall contain at least one (1) 125V, 15A OR 20A receptacle GFCI-protected (*E210.52(F); E210.8(A)(10); SLCO Rev. Ord. PM605.2*).
- Provide GFCI wall receptacles above kitchen countertops so any point of the countertop is no more than 24" from a receptacle (*E210.52; SLCO Rev. Ord. PM605.2*).

Lighting

- Provide at entry 1 wall-switch that controls the lighting outlet in every habitable room, kitchen, bathroom, and hallway, and at exterior entryways and exterior doors (*E210.70; M1305.1.3.1; SLCO Rev. Ord. M1305.1.4.3*).

Plumbing Requirements



Below are some of the plumbing requirements for Tiny Houses. Read through St. Louis County's Single-Family Dwelling Design Checklist for more requirements of the 2015 Uniform Plumbing Code as amended by St. Louis County Ordinances. Drawings submitted are to comply with requirements.

- Provide potable, running hot and cold water. Provide hot water appliances with minimum clearances from combustible materials and for maintenance access. Provide a minimum 30" x 30" clear area to service gas-fired appliances, or as required by the manufacturer's installation (*M1303.1; M1305.1; R306.4; P501.1; P504.1; P601.2; PM505.3; PM505.4*).
- Provide gaskets on a self-closing passage door to a room or closet with a water heater (*P504.1*).
- Show or note plumbing fixtures shall connect to a public water system or to an approved private water system (well) and shall connect to a public sanitary sewer or to an approved private sewage disposal system, such as a septic system (*R306.3; R306.4; PM505.1; PM506*).
- Show and label all plumbing fixtures, including kitchen sink(s), dishwasher, refrigerator, lavatories, water closets (toilets), bathtubs, showers, hot water heater(s), floor drain(s), hose bib, plumbing chases (*B107.2.1; PM502.1; R306.1; R306.2; SLCO Rev. Ord. P1103.P-136*).
- Show and note in the architectural plans a floor drain within 15'-0" of, and in the same room as the water header and the heating/cooling system (*SLCO Rev. Ord. R306.7; P418.3-Item 7; P603.4.8*).
- Provide gutters and downspouts on roof overhangs projecting less than 36" (*P1103.2; P1103.3; SLCO Rev. Ord. P1101.12.1; SLCO Policy*).
- Drainage of roofs, paved areas, yards and courts, and other open areas on the project site property shall not discharge in a manner that creates a public nuisance (*SLCO Rev. Ord. PM507.1*).

Notice: While items in this **Tiny Houses** Checklist cover major points of compliance for plan preparation & review with the Building, Mechanical, Electrical, and Plumbing Codes, other items on the drawings that are not in compliance with code requirements, or those needing clarification, will be indicated by the Plan Reviewer. Compliance with this list does not necessarily meet all code requirements that a Plan Reviewer may expect to see on a set of plans. Be aware there are many code requirements that may not be shown in the approved permit drawings that are checked for and verified as met through Inspection of the field construction and/or installation.

The applicant is responsible for obtaining all permits and approvals required in relation to the proposed work. Besides the St. Louis County Department of Public Works, the applicant is to contact the St. Louis County Department of Transportation, the Sewer District, the project site's Local Fire Protection District and local Municipality for their requirements. These agencies may have more restrictive requirements to be met.