

## **Residential Lot Inspection Procedures**

Planning and Development Services Department

[www.opkansas.org](http://www.opkansas.org)

### **ES Policy 1-01**

This document describes the City's procedures and Contractor's responsibilities with regard to **SITE GRADE INSPECTIONS** of residential homes which have been identified as requiring an engineered plot plan.

**Key issues that are evaluated during the inspection process include verification that:**

- Site grading is in general conformance with the approved plot plan for that lot and matches the intent of the overall development's as-built grading plan.
- Piped and above-ground storm drainage system which carries stormwater through a subdivision conforms with the approved As-Built Grading plan submitted by the developer's engineer.
- Site grading required by the approved plot plan matches grades of existing adjacent lots and shall minimally impact adjacent lots and property.
- Site grading which does not meet the above requirements will not be approved. Other conditions on the lot related to constructed improvements (grading, drainage, obstructions, etc.) which are deemed inadequate as they relate to City and industry standards may also be the basis for an inspector's non-approval.
- Slope checks and verification that adjacent public infrastructure in ROW has not been damaged during the homebuilding process.

**Site grading inspections are requested through the Planning and Development Services Inspection line at (913) 895-6220.** Inspections are scheduled to be completed by the end of the next business day following the request. Results will be posted on the City's web site at e-Place found at:  
<https://energov.opkansas.org/CSS/SelfService#/home>

Any significant change to the approved plot plan must be designed and sealed by a Professional Engineer/Registered Land Surveyor licensed in Kansas. Any changes cannot negatively impact adjacent lots by causing water to pond or reducing engineered swale conveyance below the City's current design Standards.

**The builder's role** in site grading inspections is as follows:

- The entire site shall be graded per the approved plot plan and be ready for sod placement. It shall be free of large dirt clods and ruts when the site inspection is requested.
- Property corners shall be clearly staked. If the property corners are marked by "curb chips", then these marks must be clearly visible.
- Stakes must be set for the flowline elevations along the centerline of each swale present. The purpose of the stakes is to identify the locations where grade checks have been verified by the grading contractor and confirmed by the inspector. At a minimum, stakes shall be placed at

the following locations (see Attachment A and B for an illustration of locations where stakes are required):

- Upstream and downstream flowline of the swale where it crosses property lines.
  - On the swale flowline, perpendicular to the upstream corner of the house.
  - On the swale flowline, perpendicular to any breaks in foundation grade (example - transition from daylight wall to walkout basement, etc.
  - High points needed to meet necessary minimum slopes and where high points are required on the side yard between houses.
- Previously constructed and inspected berms, if present, must still be in conformance with the development's approved as-built grading plan.
  - Area inlets, if present, shall be clean and the area surrounding them shall be graded so that when sod is laid it will match the top of the structure and edge of the concrete flume.
  - Storm or sanitary manholes, if present, shall be exposed and the ring and lid must be clean. The area surrounding them shall be graded so that when sod is laid it will match the edge of the manhole ring.

**The inspector's role** in site grading inspections is:

- Visual inspection of the overall drainage of the lot for conformance with the plot plan. The inspection will verify that the direction of flow conforms with the plot plan and that there are no poorly draining areas.
  - ✓ The minimum slope allowed is 2.5% in the direction of drainage (per O.P.M.C. 7.54.250 Surface Drainage). Additionally, a 5% minimum slope for a distance of 10 feet away from the building is required for earthen areas. The inspector will make a visual determination if the lot conforms with this requirement and may perform spot checks of actual slopes, however a comprehensive inspection of slope requirements is beyond the scope of the lot grading inspection process.
  - ✓ No graded slope shall exceed 3:1 (3 ft horizontal to 1 ft vertical) See OPMC 7.54.130 and 7.54.180 for additional information on exceptions to this requirement.
- Inspection of elevations.
  - ✓ Elevations of foundation walls, low openings, window wells, garage floors, or walkouts cannot be lower than those minimum allowable elevations shown on the approved plot plan.
  - ✓ If a lot slopes both to the front and to the back, it must have a mid yard high point that matches the location and elevation shown on the approved plot plan. The horizontal location must be within 5 feet and the elevation must be within 0.3 feet of the approved location and elevation.
- Inspection of a swale, if present.

- ✓ Each flowline elevation shown on the approved plot plan will be verified. The elevations must be within 0.3 ft of those shown on the plot plan. Even if the constructed grade varies from the approved plot plan grade by less than 0.3 feet, it will not be accepted if the grade does not meet minimum slope requirements.
- ✓ The cross sectional shape will be carefully checked for compliance with the information shown on the approved plot plan. The bottom width must be at least **as wide as shown**. The side slopes cannot be steeper than shown but may be flattened. Generally, rounding or softening of the shape of the swale is acceptable as long as the swale's cross-sectional area is increased by the rounding rather than decreased. If the cross sectional shape of the swale is significantly different from what is shown on the plot plan, the inspector may fail the inspection and require confirmation from the designer and/or an updated plot plan verifying that the modified geometry has sufficient capacity.
- Inspection of berms, if present.
  - ✓ Verify that previously constructed and inspected berms that provide flood protection to existing/future buildings, if present, conform with the approved as-built grading plan.
- Inspection of structures, if present.
  - ✓ Retaining walls that support buildings, driveways, or provide flood protection must be constructed as shown on the approved plot plan. Small retaining walls that are only for landscaping purposes are not part of the inspection process.
  - ✓ Area inlets, if present, will be inspected to verify that the grading surrounding them is according to plan, including any berms on the downgradient side of the inlet that direct water into the inlet.
  - ✓ Storm or sanitary manholes, if present, will be inspected. The elevation must be compatible with the swale, if one is present, and must be within the elevation tolerances for a swale (0.3 ft). Any manholes which protrude in this situation must be adjusted or the plot plan revised. The grading surrounding the manholes not associated with a swale will be inspected to verify that it is according to plan.
  - ✓ Utility Structures in overflow swales - At utility structures that are designed to be constructed "at grade" must be adjusted as necessary to be flush with the surrounding grades.
  - ✓ Inspection of infrastructure in public street right of way include verification that;
    - As-built grade within the unpaved portion of the right of way is sloped between  $\frac{1}{4}$  and  $\frac{1}{2}$  inch per foot towards the street.
    - Sidewalk slope and driveway approaches is towards the street and does not exceed 2%
    - ADA ramp slopes are compliant.
    - Utilities that are in the sidewalk are flush ( $\frac{1}{4}$  inch or less vertical offset) and don't create tripping hazards.

- The public sidewalk and drive approaches within the ROW are not broken or otherwise damaged. Any hairline cracks that have vertical offsets, separation, visible settlement will be rejected and require replacement. Any spider cracking or excessive surface defects due to improper finishing or poor materials will result in rejection.
- That the required concrete mix was used for driveways and sidewalks in the right of way.
- There is not excessive curb chipping or other curb damage attributable to the adjacent home construction.
- Streetlights and streetlight junction boxes have not been damaged during the construction process.

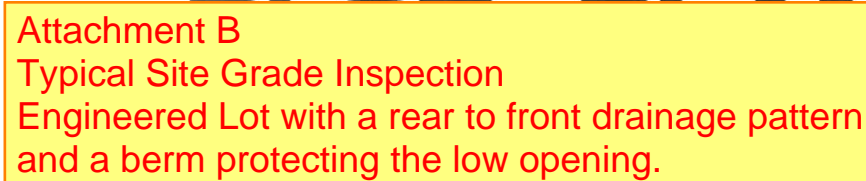
Attachments:

Attachment A - Typical Site Grade Inspection Example #1 - Home with a rear yard engineered drainage swale

Attachment B - Typical Site Grade Inspection Example #2 - Home with a rear to front drainage pattern and flood protection berm.







- Verify spot elevations as shown.
- Visual inspection of the entire lot for conformance minimum & maximum slope requirement.
- any retaining walls (excluding landscape walls) conform with the plot plan.
- Any utilities in the swale or sidewalks/driveways in ROW set flush with grade.
- Visual inspection of ROW/drive approach/sidewalk for conformance with ROW slope requirements, Noncompliance verified with 4 foot level.
- Check condition of curb/sidewalk/drive approach for damage and verify correct concrete mix used.
- Check any streetlight poles and junction boxes for damage.

- ☐ Stake required and Elevation Verified by ES Inspector.
- ☒ Elevation of Top of Foundation Checked for MLO

