



CONSULTANT'S CHECKLIST FOR PRELIMINARY SUBDIVISION AND SITE CONDOMINIUM SUBMITTAL

The Environmental Health Staff have created this checklist to assist consultants in preparing a submittal for a preliminary plat or site condominium. This checklist is intended to be a guide and is not inclusive of all items that may be necessary for a specific site. Additional information can be obtained from the Kalamazoo County Sanitary Code by visiting our website at www.kalcounty.com/eh.

All documents must be submitted in TRIPLICATE with the appropriate fee. See current fee schedule online at www.kalcounty.com/eh.

The submittal shall include (ALL ITEMS MUST BE SUBMITTED IN TRIPLICATE):

1. Subdivisions and Site Condominium Site Report, available online at www.kalcounty.com/eh
2. Blueprint plans
3. Site Narrative
4. Soil Logs (if plans include onsite sewage treatment systems)
5. Wells logs and water quality data (if plans include onsite water supply wells)
 - If a test well is drilled, include test well logs, water quality data and performance test data; suggested test well instructions can be found at www.kalcounty.com/eh.
6. Other supporting data such as Soil Survey data, drainage plans, or other information you feel is necessary

Site Narrative shall include:

1. General description of project, include location consideration for these topics:
 - Past land uses that may have had an impact on soil conditions or groundwater resources (row crops, livestock, dumps/refuse disposal, temporary construction storage, sand/gravel excavations, industrial facilities)
 - Other known or potential contamination sources (gasoline, fuel oil, used oil, etc.; fertilizer or manure storage)
2. Overall onsite soil conditions in comparison to the Kalamazoo County Soil Survey
3. Overview of existing drainage features and the proposed storm water drainage system
4. Restrictions that may be necessary for sewage treatment systems (STS) such as cutting and filling, grading, etc.
5. Hydrogeologic conditions including:
 - Groundwater flow direction
 - Aquifer conditions
 - Depth to bedrock
 - Impact of from past land uses, or nearby land uses
6. Any necessary well restrictions including:
 - Depth, submergence, clay barrier, additional sampling, etc.

Preliminary plat drawing shall show/include:

1. Location of all soil evaluations.
2. Location of all proposed water wells.
3. Contours

- Existing and proposed 5 foot contours.
 - For waterfront property or sites having groundwater within 6 feet of the surface; 2-foot contours are required
 - o On proposed lots where high groundwater or a sign of high groundwater is found to be within 6 feet of the surface, a backhoe cut will be required to better determine the depth to high water. High groundwater shall be determined by the presence of redoximorphic features (mottling).
4. Cutting and Filling
 - Extensive cutting and filling must be shown on the plan; type of fill to be used must be stated
 5. Physical Features - Existing or Proposed
 - River, stream, creek, lake, county drain, subsurface drain, lagoon, slip, waterway, bay canal and/or artificial impoundments
 - Floodplain, established 100 year floodplain area and elevation
 - Normal high water level for waterfront property
 6. Existing Facilities and Structures
 - Buildings, sewage systems, high tension lines, utility easements, excavations, bridges, culverts, water wells (includes test wells/known abandoned wells), underground storage tanks, drainage easements, etc.
 7. Roadways and Lot/Unit Layout
 - General layout with roadways, lots/units, and if necessary: storm sewer, sanitary sewer or water main layout, open space areas, and/or general and limited common element areas
 - Setbacks to front, side and rear lot/unit lines, setbacks to normal high water level for waterfront lots/units or setbacks from limited and general common elements
 - Lot/Unit number and lot dimensions

Onsite Sewage Treatment System (STS)

1. Minimum of 1 soil boring per unit/lot in the proposed STS location to a minimum depth of 8 feet; additionally, provide at least 2 soil borings to a depth of 15 feet on the subject property (could be in the roadway or proposed detention area). Also, on proposed lots where high groundwater is found to be within 6 feet of the surface, a backhoe cut will be required to better determine the depth to high groundwater (as evidenced by redoximorphic features or mottling).
2. Soil logs must follow the **U.S.D.A. Soil Classification System** and include texture, structure and signs of high groundwater (redoximorphic features or mottling). Additional borings may be warranted depending upon soil material, depth to high groundwater and soil profile consistencies.
3. **If** proposed lot/unit sizes are less than 30,000 square feet and/or slopes greater than 12% are on the property, a development plan which identifies the proposed home, water well, driveway and STS locations will be required to be submitted on the plans and shall include:
 - A minimum of 6000 square feet must be identified for an initial and replacement STS; area may be increased dependent upon soil materials encountered
 - Ensure access to the STS and water well location can be maintained after lot/unit final grading is completed.
 - Grading plan for pre-leveling or filling. If filling is necessary, only 2NS sand or equivalent as approved by the Department can be utilized. ***Pre-leveling and/or filling will need to be completed prior to our office granting preliminary approval.***
4. Proposed STS locations need to meet the following isolation requirements:
 - Bottom of absorption system must be 4 feet above high groundwater
 - Filling over parent soils is not acceptable if high groundwater conditions are within 2 feet of the surface
 - At least 50 feet from a private residential water well (*horizontal distance may need to be*

increased)

- Septic tank 10 feet from a basement wall, 15 feet from an absorption system
- 20 feet from a slope exceeding 12%
- 10 feet from a property/unit boundary
- 25 feet from a closed storm drain or footing drains not connected to surface water
- 50 feet from an open storm drain or footing drains with a direction connection to surface water
- 100 feet from a storm water basin, creek, stream, lake, river and/or other water body

25 feet from a retention/detention storm water area where water will be collected intermittently only (proposed retention/detention basins must be shown on the plans with existing and proposed contours and proposed high water elevation; soil boring logs done in the area of the retention/detention basin must be submitted)

Onsite Water Supply System

1. Show the locations of all existing wells, water mains and services and/or pumping systems; this includes test wells, irrigation wells and abandoned wells.
2. Information required to determine if an acceptable water supply system can be approved shall include existing water information and/or the drilling of a test well(s). The data submitted should include the following information:
 - Water well records identifying the depth to static water table, the material the screen is set in and the presence of significant clay layers
 - Well record data need to support the following:
 - o Penetration through an impervious clay layer of 10 feet or more **and/or**
 - o Submergence of the screen 50 feet below the static water table **and/or**
 - o An increase in horizontal isolation between the well and source of groundwater contamination
 - Water quality data correlating to the well records submitted must include the following testing parameters: Chloride, fluoride, hardness, iron, nitrate, nitrite, sodium, sulfate and arsenic
3. If a test well is drilled, the data submitted shall include
 - Test well record(s)
 - A performance test demonstrating that water can be obtained at a pumping rate not less than 10 gallons per minute for not less than a 4 hour period of time (an example worksheet to be used for this purpose is enclosed for your use)
 - Water quality data for the test well (including chloride, fluoride, hardness, iron, nitrate, nitrite, sodium, sulfate, arsenic and coliform bacteria)

NOTE: If a contaminant level is reported to be greater than 50% of the State's maximum contaminant levels for nitrate, nitrite, fluoride or arsenic the water supply system will not be approved. If secondary contaminant levels are exceeded for chloride, hardness, iron, sodium or sulfate this information will be noted in the deed restrictions.

Questions concerning developments with onsite STS should be directed to Lucus Pols at 269-373-5356 or ldpols@kalcounty.com and with onsite water supplies to Jeff Reicherts at 269-373-5336 or jdreic@kalcounty.com.