

## CONCEPTUAL REVIEW CHECKLIST

Prior to the permit application, the Owner/Developer shall submit to the Drain Commissioner or his designee the conceptual design and layout of the proposed development. The Developer/Owner shall also submit copies of the conceptual design and layout to the Township where the development is proposed for preliminary review and comment. This conceptual design and layout, at a minimum, shall include:

Each of the following items shall be included:

\_\_\_\_\_ Small location map showing the section and part of the section in which the site is situated.

\_\_\_\_\_ Location and description of all activities that may impact or be impacted by the proposed development or redevelopment both on and off the site.

\_\_\_\_\_ Acreage of the total site and acreage of the area being affected by the development.

\_\_\_\_\_ If known, a conceptual layout of the proposed drainage system for the development or redevelopment.

## DRAINAGE PLAN CHECKLIST

No site plan or building shall be approved or any other permit issued unless the Owner has provided that the storm water runoff is within the capacities as provided for within the Administrative Guidelines for Storm Water Management, Shiawassee County, Michigan.

In order for the Owner, Developer, or Builder to be in compliance with the guidelines he/she shall submit to the Shiawassee County Drain Commissioner for review by the Drain Commissioner's designee, two complete sets of the site drainage and grading plan and two copies of the calculations for allowable discharge and on-site storage requirements, as prepared by a Registered Professional Engineer or Architect.

Each of the following items shall be included on the plan:

- \_\_\_\_\_ Total acres of site.
- \_\_\_\_\_ Total acres of watershed draining through the site outlet.
- \_\_\_\_\_ Drainage district lines including sub-district lines contributing to individual storm sewers and rear lot drainage systems.
- \_\_\_\_\_ Location of site including dimension to nearest intersection road or section line.
- \_\_\_\_\_ Existing ground elevations at maximum 50 foot centers, including shots on perimeter of site and 50 foot beyond (suggested, may not be required on all sites).
- \_\_\_\_\_ Elevations of ground, edge of pavement, and buildings within 50 foot of site.
- \_\_\_\_\_ Top of curb, gutter, ditch line, and centerline of road elevation at maximum 50 foot intervals.
- \_\_\_\_\_ Existing storm catch basins, manholes, sewers, and culverts showing rim and invert elevation(s).
- \_\_\_\_\_ Proposed elevations showing parking lot grades and control and building elevations.
- \_\_\_\_\_ Lawn/landscape areas.
- \_\_\_\_\_ Location, size, length, slope, and type of proposed storm sewer and rear lot drains.
- \_\_\_\_\_ Rim and invert elevation(s) of proposed manholes and catch basins, including rear lot drainage.
- \_\_\_\_\_ Location of on-site storage showing contour line for top of storage elevation.
- \_\_\_\_\_ Cross Sections, dimensions, and/or details defining the shape of proposed detention or retention basins in non-paved areas.
- \_\_\_\_\_ Existing and proposed contours at 1' intervals

**DRAINAGE PLAN - CHECKLIST (Continued)**

- \_\_\_\_\_ Name of and distance to nearest lake, river, drain, or stream
- \_\_\_\_\_ Printout of the NRCS Web Soil Survey for the site
- \_\_\_\_\_ Soil Borings (if retention proposed)
- \_\_\_\_\_ Drawing to be at 100 scale or better

Each of the following items shall be included in the submitted calculations:

- \_\_\_\_\_ Drainage District size in acres and impervious factor.
- \_\_\_\_\_ Calculation of maximum allowable discharge (using Design Pond Design Calculation spreadsheet).
- \_\_\_\_\_ Calculation of on-site storage required.
- \_\_\_\_\_ Calculation of storage volume provided.
- \_\_\_\_\_ Calculation of size of restrictor.
- \_\_\_\_\_ Hydrologic & Hydraulic Calculations for sizing storm sewer systems which will be maintained by a public agency.
- \_\_\_\_\_ Hydrologic and Hydraulic calculations showing there will be no adverse impacts upstream or downstream of the proposed development.
- \_\_\_\_\_ The sizes and locations of immediately upstream and immediately downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map.
- \_\_\_\_\_ A maintenance agreement, in form and substance acceptable to the County, for ensuring maintenance of any privately owned storm water runoff facilities. The maintenance agreement shall include the developer's written commitment to provide routine, emergency, and long-term maintenance of the facilities and, in the event that the facilities are not maintained in accordance with the approved drainage plan, the agreement shall authorize the County to maintain any on-site storm water run-off facility as reasonably necessary, at the developer's expense.
- \_\_\_\_\_ The name of the engineering firm and the registered professional engineer that designed the drainage plan and that will inspect final construction of the storm water run-off facilities.

Beyond the Shiawassee County requirements, the Developer must submit applications for permit with all agencies that regulate storm water within the area of development. These may include Michigan Department of Transportation, Michigan Department of Environmental Quality, Shiawassee County Road Commission, local agencies with zoning ordinances and Shiawassee County Permits Office.