

ENGINEERING DEPARTMENT SITE PLAN REVIEW CHECKLIST

DATE:

TO: Laurel Christensen, Acting Building Official

FROM: Doug Hinken, City Engineer

DEVELOPMENT NAME:

General:

- One benchmark shall be shown and noted on the plan. A description and an elevation for each benchmark shall be included also. The benchmark datum shall also be noted.
- A north arrow must be shown on each plan sheet.
- The scale shall be noted on all sheets.
- The project title shall be indicated on all sheets.
- The name, address, and phone number of the firm who prepared the plans must be indicated on all sheets.
- The plans must be dated, including all revision dates.
- A legal description of the parcel shall be noted on the plan.
- A legend shall be provided unless all symbols and linetypes are clearly noted individually.
- Other jurisdictional requirements shall be considered and noted on the plans. (MDOT permits, Soil Erosion and Sedimentation Control, NPDES, Wetlands, etc.)
- All existing private and public utilities shall be shown on the plans.
- Plans shall be sealed by a Professional Engineer.

Site Grading:

- ❑ A sufficient amount of existing elevations shall be provided along the property lines of the site, curb and gutter, existing buildings (finish floor), existing walks, existing swales, and other existing topographical features to clearly define existing drainage patterns. Elevations on adjacent properties shall also be included so that it can easily be determined how the site affects them.
- ❑ A sufficient amount of proposed elevations shall be provided to clearly show the intended drainage patterns. These elevations shall be distinguished from existing elevations. Contour lines are helpful and speed up reviews, however point elevations are still desired in corners, high points, low points, along swales, and other distinguishing features are required.
- ❑ If the existing and proposed elevations indicate a significant change of the ground at the property lines a typical cross section should be provided showing how the change is to be handled.
- ❑ The minimum grade in paved areas is 0.6%, and 1% in unpaved areas. The maximum grade is 3% in parking areas. Drives can be steeper with justification.
- ❑ Existing and proposed rim elevations shall be shown for all utility structures.
- ❑ The proposed finish floor elevation of all buildings shall be shown on the plans.
- ❑ Arrows indicating the direction of overland drainage will speed up reviews.
- ❑ Details of specialty items unique to the site, which are not standard in most sites should be included on the plans.

Paving:

- ❑ A typical cross-section of all paved areas, including curb and gutter, shall be included on the plans. Material type and thicknesses shall conform with the current Zoning and/or Subdivision Control Ordinance requirements.
- ❑ Concrete sidewalks shall be a minimum of 4" in depth except when crossing areas intended for vehicles. The minimum depth shall be 6" in these areas.
- ❑ Drive approaches shall be adequately sized for the expected future vehicles and conform to Zoning and/or Subdivision Control Ordinance requirements.

- ❑ Commercial and industrial driveways on curbed streets shall conform with MDOT Detail "M", which has a gutter pan across the frontage of the driveway.
- ❑ Driveway radii shall be sized to accommodate expected future vehicles. Most commercial and industrial applications should be able to handle a WB-50 truck without requiring an entering truck to swing into opposing traffic in the public street or rear wheels leaving the paved area. Radii shall be sized to accommodate larger vehicles if they are expected.

Storm Sewers:

- ❑ Site drainage is to be reviewed by the Montcalm County Drain Commissioner. The Montcalm County Drain Commission Design Standards are available through the Drain Commissioner's office, (989) 831-7322 or on their website, which is: <http://www.montcalm.org/downloads/montcalmdrain.pdf>. The site plan will also be subject to their reviews and fees.

Sanitary Sewer:

- ❑ The size, length, type of pipe material, and pipe grade shall be indicated on each run of sanitary sewer or service lateral on the plan sheet.
- ❑ The size of the pipe required shall be determined from the expected use, with the minimum being 4".
- ❑ The minimum grade for service laterals shall be 1%.
- ❑ The invert of the connection point shall be shown on the plan.
- ❑ The rim and invert elevation shall be shown for all sanitary sewer structures.
- ❑ A minimum separation of 10-feet shall be maintained between parallel utilities and 18-inches at all crossings.
- ❑ If the site requires extension of the public system to serve the site, a permit will be required from MDEQ. The developer shall provide the City with four sets of sealed extension plan and profile sheets. No construction may proceed until this permit is obtained.
- ❑ In addition, if the above is true, the developer shall provide the City with a filled in Part 41 permit, including basis of design, for the City's signature. The developer will be responsible for all testing and as-built drawings.
- ❑ Manhole structures shall be located at all turns and intersections. Maximum distance between structures is 400 feet.

- ❑ The minimum flow velocity is 2½ feet/second.
- ❑ Sewers intended for public use will require an easement to be prepared and executed by the developer.

Water Main:

- ❑ The size, length, and type of pipe material shall be indicated on each run of water main or water service pipe on the plan sheet.
- ❑ The minimum depth of water utilities is 5.5'.
- ❑ The size of the pipe required shall be determined from the expected use.
- ❑ All live taps, through 2", are to be performed by the City of Greenville Water Department.
- ❑ A minimum separation of 10-feet shall be maintained between parallel utilities and 18-inches at all crossings.
- ❑ If the site requires extension of the public system to serve the site, a permit will be required from MDEQ. The developer shall provide the City with four sets of sealed extension plan and profile sheets. No construction may proceed until this permit is obtained.
- ❑ In addition, if the above is true, the developer shall provide the City with a filled in Act 399 permit form, including basis of design, for the City's signature. The developer will be responsible for all testing and as-built drawings.
- ❑ Water mains shall be looped wherever possible.
- ❑ Valves shall be located at all intersecting pipes at a maximum distance of 350 feet. The Water Department Superintendent shall approve the layout.
- ❑ Fire hydrants shall be located so that all buildings are located within 300 feet of a fire hydrant.
- ❑ All water mains and fire hydrant leads, except building fire sprinkler lines, are required to be public.
- ❑ An easement shall be provided, by the developer, for any public mains not in the road right of way. The developer shall prepare and execute the easement.