AREA

Town of Mansfield
Engineering Checklist for Site Plan Review
(Based on Zoning By-law of May, 2004)

August, 2004

General:

___ Locus Plan at 1" = 1000'
___ Site plan scale should be 1"= 40'
___ Vertical Datum to reference North American Vertical Datum of 1988 (NAVD88)
___ Horizontal orientation to reference the North American Datum of 1983 (NAD83)
___ Plan shall contain a minimum of 2 benchmarks
___ Property lines shown with metes and bounds and abutting property owners
___ Assessor's Map and Lot Number, and Zoning District
___ Wetlands delineation, streams, ponds and water supply protection districts within 200 ft.
___ Existing and proposed contours at 2' intervals
___ Existing and proposed utilities, especially water, gas and electric are to be addressed
___ Borings or test holes provided
___ Stamp of P.E. and R.L.S.
___ Size and dimension of existing and proposed structures/buildings
___ Location of existing driveways and driveway openings within 100 ft.
___ Name and location of any abutting public or private ways
___ Percentage of lot covered by structures, parking, wetlands and remaining open space
___ Dimensioned parking and designated traffic circulation plan
___ Detailed landscaping and lighting plan
___ Utility plan
___ Methods of screening refuse and service facilities
___ Name and address of applicant, owners and designers
___ Plan date and North arrow
___ Retaining walls greater than 4 ft high need to be designed by a Licensed Mass Structural Engineer. A note is to be added to the drawings that the stamped structural design and calculations need to be submitted to the town engineer prior to the start of construction
___ Note provided for final stamped As-Built Plan, in both hard copy and digital format, to be submitted and approved prior to occupancy as per section 5.3.11 of the zoning bylaw

Sewers:

___ The minimum slope is to be 0.004
___ The maximum slope for 8" PVC is to be 0.055
___ The drop across SMH's is to be a minimum of 0.1' with a maximum of 0.5'
___ Minimum 8" diameter of main sewer lines
___ Minimum cover 3', but deeper recommended to avoid lateral interferences with water lines
___ Details of manholes, chimneys, drop manholes with outside drop, service laterals, water crossings, trench section, and clay dams are to be provided
___ Maximum manhole separation is 300'
___ Drop MH's, 8' maximum drop, 2' minimum, but prefer 6' drops
___ MH with inside drop is to be 5' minimum

___ More than 20' deep MH is to have a intermediate platform and a caged ladder, and manholes to a minimum of 5' diameter
___ Can basement elevation be served by gravity? Is slope adequate or is a grinder pump needed?
___ Water supply piping: 10' horizontal distance to sewer. At crossings, the water is to be 18" over sewer
___ Watertight manhole covers in easements, within Zone 2 of well, or within 100' of BVW (per DEP)
___ Clay dams to be provided every 300' and/or between each MH on main sewer lines
When within 100' of wetlands, clay dams to be provided every 150' and/or between each MH. Dams are to be shown on profile, and detail provided
___ Angles between inlet and outlet pipes at MH's to be $\geq 90°$.

Force Mains:

___ Minimum diameter 3", unless otherwise justified by applicant
___ Air relief at high point
___ Drain valve manholes at low points
___ Velocity 3-6 fps
___ Thrust block details to be provided
___ Termination at separate manhole, and gravity feed into sewer line

Paving/Site Improvements:

___ Has access roadway been paved within the last 5 years? (If so, DPW waiver required.)
___ Guardrail: Applicant's engineer to justify guardrail need per AASHTO requirements, including limits. Guardrail to be within 2' of curb unless otherwise approved
___ Monuments for cross-country easements are to be shown
___ Temporary construction entrance detail is to be provided
___ 50 ft. minimum from driveway edge to curb line of intersecting street
___ Minimize cuts and fills, and avoid retaining walls at abutting properties
___ Maximum driveway width at R.O.W. line of 24 ft. (residential) or 40 ft. (other districts), unless otherwise authorized by the Planning Board
___ Pavement width to be shown
___ If separate entrance and exit: 60 ft. total maximum width, unless otherwise authorized by the Planning Board
___ Provide lines of sight and show sight distance in both directions at driveway intersections
___ Are improvements to adjacent streets required?
___ Easements: 20' wide minimum, access, utility or stormwater easement, if waterway
___ Pavement cross-section: 12" gravel, 1.5" binder, 1.0" top
___ Curbing to be 4" high minimum
___ Handicap ramps on sidewalks and handicap parking, as required
___ Parking spaces 9'x 18.5'
___ If subcompact spaces, only 30% allowed by right, 8'x 17'
___ Substantial bumper of concrete, steel, timber, or concrete curb or berm at edge of surfaced areas
___ Loading spaces 14'x 60' with 14' vertical clearance (none required under 5,000 SF)

Drainage:

___ Minimum depth is to be 3', except 2 ½' is allowed at CB
___ Site drainage pipes to be designed for 25-year storm event
___ Cross culverts to be designed for the 100-year storm event
___ Detailed grading, drainage and erosion control plans. Hydrology design and calculations for the 100-year storm for areas within 100 ft. of a wetland, 200 ft. of a stream, or in an Industrial District
___ Overall hydrology for stormwater shall show 2(3.4"), 10(4.8"), 25(5.6"), and 100(7.0") year storm events, using Type III, TR-55-24 Hour Storm
___ Pipe to be class III RCP, 12" minimum, minimum V = 3 fps.
___ Lot to be graded to protect streets and other abutting property
___ Drainage ditches and swales are to be analyzed for capacity, and be and within easements
___ Maximum distance between DMH's is 300', and CB's is 360'
___ CB's to connect to MH's, not CB's
___ CB's to have a minimum 4' sump
___ Pipe from CB is to have a minimum slope of 1% and a minimum size of 12"
___ Drainpipe is not to be at the same elevation as sewer or water
___ Outlets to have adequate size and area of rip-rap
___ Rip rap outlets to have filter fabric beneath stone
___ Actual existing spot grades to be provided at outlets to verify elevation
___ Angles between inlet and outlet pipes at MH is to be ≥ 90°
___ No. of pipes vs. MH diameter is to be analyzed to ensure structurally sound MH, for >3 pipes
___ Pipe crowns: inlet equal or higher than outlet
___ Details: DMH's, CB's, headwalls, rip-rap areas, trench sections, drop inlets, wetlands crossing
___ Check first flush sizing of drainage structures

Detention Basins/Infiltration:

___ Retention basins shall only be allowed in the water supply protection areas
___ Design storm events: 2, 10, 25 and 100 years
___ Site drainage network to be capable of discharging, 100 year event flow to basin, under surcharged conditions
___ Provide note on plan for the 100-year storm elevation in basin(s)
___ Program for future stormwater system operation and maintenance to be provided
___ Comply with DEP's Stormwater Management Policy
___ Test pit logs and location, with estimated high groundwater (24-hour notice for witnessing).
___ Permeability tests locations and results for infiltration (24-hour notice for witnessing) (use F.O.S. of 2.0 on field permeability rate for design)
___ Rip rap emergency overflow
___ Access for maintenance
___ Inspection port at center of infiltrator rows, w/ metal, water gate type, covers
___ Note provided to keep all sediment out of proposed infiltration area, and not used until CB's and drainage system is installed and functional
___ Infiltration structures, leaching pits, etc,. are to have filter fabric (4oz) over top and down sides of stone

General Utilities:

___ All utilities are to be installed at time of initial construction
___ Minimum cover per Subdivision Rules and Regulations