

APPENDIX C

Site or Subdivision Construction Plans

****Not all items apply to all projects****

Project Title: _____

Project Location: _____

Applicant/Owner: _____

Design Engineer: _____

First Sheet or Cover Sheet

- ()1 Name of Project (Phase if applies), Tax Map and Parcel, Zoning
- ()2 Design Engineer & Legal Owner's name, address, phone, fax and email
- ()3 Location Map, Index and Legend
- ()4 Total number of lots(subdivision) or Impervious Area (site plan)
- ()5 Engineers signed seal, Date, and Revision Dates (all sheets)

General Plan Information

- ()1 North Arrow and Scale (all sheets)
- ()2 Existing topography sheet (**30' beyond property line**) with all existing drainage features, easements, utilities, structures, any sewage disposal system, and the onsite reference permanent benchmark. (NAVD – 88)
- ()3 Proposed grading (with spot elevations at critical locations), drainage and erosion control plans in accordance with latest State CGP requirements. (Initial and final erosion control sheets with additional interim sheet for sites with disturbed area over 5 acres.)
- ()4 Sinkhole/depressions, wetlands, streams, floodplain or other critical environmental features must be identified on these plans with construction or silt fence protection.
- ()5 Proposed utility locations without details must be shown on above plans.

Detailed Plan Information

- ()1 Show all outfalls at boundary of site or at waters of state with total drainage area (DA), disturbed area, any diverted area.
- ()2 Show limits of construction disturbance vs undisturbed areas.
- ()3 Areas to be left undisturbed must be shown on plan with the field marking measure surrounding undisturbed areas noted. (orange fence, silt fence painted Do Not Disturb, ect)
- ()4 Show utility and drainage easements (20 ft wide minimum with at least 5' beyond top of bank of any channel). If the site drains to or through adjacent property(ies), drainage easements will be required to Outfall locations.
- ()5 All drainage pipes shall have a min 0.5% slope unless special approval is given.

- ()6 Show all erosion/sediment control measures and pollution prevention practices. (Concrete washout, chemical storage, fuel tank containment, vehicle maintenance as applicable).
- ()7 Silt fence where needed must follow contours with wire backing at stream buffers or other critical locations. Wattles (eels) should be used in rocky areas.
- ()8 Show inlet protection at all catch basins, area drains, inlet headwalls, etc.
- ()9 Show how all ditches, ponds, slopes at or steeper than 3:1 etc. are to be stabilized.
- ()10 Show construction exit or note existing drive to serve as construction exit.
- ()11 Provide a drainage schedule or pipe profiles, showing all pipe sizes, material, length, inverts, slope; structure type and number (to match plans).
- ()12 Provide ditch schedule, with ditch letter (to match plans), slope, design flow (25yr or 100yr), minimum depth, minimum bottom width, side slopes, stabilization (sod, seed and straw, erosion control blanket type, or other) Concrete not desired. Typical ditch section can be used for small flows.
- ()13 State on grading plan the name(s) of receiving stream and whether the stream is fully supporting, non-supporting, or exceptional.
- ()14 Design storm for EPSC measures (2 yr, 24-hr for fully supporting or 5-yr, 24-hr for non-supporting or exceptional).
- () 15 Sediment basin requirements and calculations. Basin required if C.D.A. is 10 acres or more for fully supporting and 5 acres or more for non-supporting or exceptional.

Special Detailed Plan Information

- ()1 Show any sinkholes on the site or offsite. If the site drains to them, provide proposed treatment or buffers. A development plan (by a licensed engineer) is required if there are any sinkholes/depressions proposed to be disturbed with notes and a detail on plan.
- ()2 Temporary construction stream buffers per state CGP (30' avg. 15' min. with impaired or Exceptional TN Water 60' avg. 30' min) shall be shown with silt fencing for protection. If less than permanent buffers justify variance and consider mitigation.
- ()3 Show and label floodplain and floodway lines. Label 100-year flood elevation. Set minimum pad and floor elevations.
- ()4 Show minimum FFE in or adjacent to floodplain, next to detention ponds, sinkholes or streams, on lots upstream of road low points and other locations where needed.
- ()5 Show sediment pond with standing water per TDEC details (required for over 10 ac watershed size or 5 ac if outfall leads to impaired or high quality water). Can divert offsite flow around disturbed site to reduce watershed size. Provide calculations, routing information and construction phase flows vs. pre-developed flows. Note that construction phase CN to assume completely disturbed C.D.A.
- ()6 Identify steep slopes (>35%) and identify the method of stabilization if they are disturbed.

Drainage/Supporting Calculations:

- ()1 Drainage calculations Sealed by Professional Design Engineer containing the items listed below.:
- ()2 Drainage Network including storm piping and ditching designed for 25 yr storm event.
- ()3 Detention design and calculations to control 2-100 year storms with zero increase in peak discharge (Critical watersheds may require reductions) and safely pass the 100 year. Have summary table for entire site with each outfall.

() 4 Water Quality calculations to remove 80% TSS from all new development sites and redevelopment. (The design storm is a 1-year, 24-hour storm event.) The Water Quality Treatment Volume (WQTV) is a portion of the runoff generated from impervious surfaces at the proposed project by the design storm, as set forth below. Stormwater Control Measures (SCMs) must be designed, at a minimum, to achieve an overall treatment efficiency of 80% TSS removal from the WQTV. The quantity of the WQTV depends on the type of treatment provided, and the table below establishes the WQTV for four (4) treatment types:

Water Quality Treatment Volume and Corresponding SCM Treatment Type (for 1-year 24-hr design storm)		
WQTV	SCM Treatment Type	Clarification
First 1 inch Design Storm	Infiltration, Evaporation, Transpiration, Reuse	
First 1.25 inches Design Storm	Biologically Active Filtration, with an Underdrain	Biologically Active Filtration must provide minimum of 12 inches of internal water storage
First 2.5 inches Design Storm	Sand or Gravel Filtration, Settling Ponds, Extended Detention Ponds, Wet Detention Ponds	Ponds must provide forebays comprising a minimum of 10% of the total design volume. Existing Regional Detention Ponds are not subject to the forebay requirement.
Maximum Flowrate of the Design Storm	Flow-Through Manufactured Treatment Devices	Hydrodynamic separators with NJCAT verification

- a. Refer to Metro Storm Water Management Manual (LID- Volume 5) for guidance on Low Impact Development (LID). If LID is selected, the use of Metro's LID Site Design Tool is strongly encouraged. The tool can be found at the following [link:\(https://www.nashville.gov/Water-Services/Developers/Low-Impact-Development.aspx\)](https://www.nashville.gov/Water-Services/Developers/Low-Impact-Development.aspx)

() 5 Detailed water quality pre-developed, post developed, and construction phase when applicable as determined by the City Engineer. Drainage Maps which describe water shed patterns, drainage areas, ground cover (Curve Number or Coefficient) which match the proposed site plans.

()6 Gutter Spread Calculations 25 yr. minimum design storm for curb inlets. Double Inlets (Minimum) required at sag locations. Maximum 6-ft spread allowed in roadways.

()7 Velocity dissipation design and calculations. Any outfall where peak flows exceed predevelopment flows must show no significant change in hydrologic regime for the stream.

()8 Floodplain fill requires cut and fill calculations for balancing volumes in the floodplain.

Other Information:

- ()1 Reports: SWPPP, Geotechnical (sinkhole filling), Wetland/Stream Determination, Site Assessment/Environmentally Sensitive Area/Feature inventory.
- ()2 Storm Water Maintenance and Inspection Agreement.
- ()3 Long Term Storm Water Maintenance Plan.
- ()4 Total site acreage, disturbed acreage (include any offsite borrow or disposal areas). Offsite areas must be included in SWPP and NOC when applicable.
- ()5 Engineer's Storm Water Letter of Credit Estimate. The Estimate should include but not be limited to: Temporary and Permanent Erosion Control Measures, Construction and Grading of Detention Basin(s), Installation of Detention Outlet Control Structure(s), and Site Stabilization (seed/straw, erosion matting, sod). City Engineer will review and approve.
- ()6 Upon completion of construction, Stormwater Record Drawings shall be submitted to the City Engineer with calculations. The City Engineer may request more information on the Stormwater Record Drawing requirements if needed. Acceptance of the Stormwater Record Drawing must be granted by the City Engineer to release of the Letter of Credit.