

| TOWN OF RIDGELAND STORMWATER PLAN REVIEW CHECKLIST | | | |
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| Use this checklist to prepare the required Development Plan Review submittals. Please note that the following checklist is not all-inclusive. This checklist is intended to guide the preparation of the construction plans and calculations and is subject to change as necessary for clarification and updated according to current code and agency requirements. | | | |
| CONSTRUCTION PLANS - GENERAL INFORMATION | | | |
| Requirement | Yes | No | N/A |
| PROFESSIONAL SEAL AND SIGNATURE required on final and complete approved plans, drawings, technical reports and specifications | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| DESIGNER INFORMATION - The engineer, surveyor, and/or landscape architect's name, address, telephone number, and e-mail address | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLAN DATE and all revision dates with a brief description of the items revised | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| TITLES AND NUMBERING for all plan sheets | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| VICINITY MAP with street names and the site location | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SCALE at 1" = 30' minimum - Provide a graphic scale | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NORTH ARROW | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PLAN LEGEND with line types and symbols | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| BOUNDARY SURVEY of project site (Metes and Bounds, computed acreage, benchmarks, control points, property corners, reference plats) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PROPERTY INFORMATION for all parcels and adjacent parcels (tax map and parcel number, owner's name and address) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| OFF-SITE CONSTRUCTION requires a recorded easement or notarized right of entry from the affected property owner(s) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PROJECT OR CONSTRUCTION PHASE LINES (where applicable) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| TOPOGRAPHY of the site and surrounding vicinity, showing existing and proposed contours with intervals of one (1) foot (max) and spot elevations as necessary. Reference source and date of all topography. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| VERTICAL DATUM - NAVD88 required | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EXISTING AND PROPOSED SITE FEATURES - buildings, parking lots, patios, pools, water bodies, driveways, sidewalks, and bike paths. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PERVIOUS MATERIAL - Location of existing and proposed pervious surface materials including pavers, granite stone #57 or CR-14 (stone choked with sand, not Crusher run) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| FINISH FLOOR ELEVATIONS of proposed buildings | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EXISTING AND PROPOSED UTILITIES - Show and label all existing and proposed utilities (above ground and underground). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EXISTING AND PROPOSED RIGHTS-OF-WAY - Location, width, and ownership information for existing and proposed rights-of-way. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EXISTING AND PROPOSED DRAINAGE EASEMENTS - Location, width, and recordation information for all existing and proposed drainage easements per Jasper County Stormwater Management Design Manual. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EXISTING AND PROPOSED DRAINAGE STRUCTURES AND FACILITIES - Location of natural and manmade drainage infrastructure including pipes, swales, ditches, channels, curb and gutter, roof drains per Jasper County Stormwater Management Design Manual. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



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| DRAINAGE PATTERNS with flow direction arrows | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ENVIRONMENTALLY SENSITIVE AREAS such as wetlands, floodplains, critical soils, buffers, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| FLOODPLAIN LIMITS and FEMA FIRM PANEL referenced with designated special flood hazard areas or zone designations associated with the site (where applicable) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| AREA OF DISTURBANCE – Tabulation of disturbed area and limits of disturbance delineated on plans. Includes area required for implementation of erosion and sediment controls, stockpile areas and utilities. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| IMPERVIOUS SURFACE COVERAGE - Tabulation of impervious cover applicable to the zoning district in which development is located | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CONSTRUCTION PLANS – PLAN INFORMATION | | | |
| DRAINAGE INFORMATION | | | |
| 1. Storm sewer – invert elevations, lengths, size (15” min. diameter or equivalent), material types, pipe class and slopes for all segments labeled on plan and correspond to calculations. Reinforced Concrete Pipe AASHTO M170 or ASTM Spec C-76, Class II and III, and corrugated High Density Polyethylene ASTM F2648 are permitted for drainage systems within the Town. Such other pipe as is approved in writing by the Town Engineer may be used. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Drainage structures (inlets, manholes, junctions, etc.) - rim elevations, invert elevations, inlet type and required grate or top unit and lengths labeled on plan and correspond to calculations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Pipes and structures numbered or labeled and correspond to calculations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Adequate horizontal clearance from other site utilities or structures | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Delineation of ponding, headwater, surcharge or backwater areas which may affect adjacent existing or proposed buildings, structures or upstream adjacent properties. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PROFILES are encouraged to expedite review. If not provided, ensure all pipe segments have adequate minimum cover, do not exceed maximum depths of cover for the type/class of pipe specified, and do not conflict with other site utilities or excavation areas. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| EROSION AND SEDIMENT CONTROL PLAN per Jasper County Stormwater Management Design Manual and in accordance with SCDHEC Stormwater Management and Sediment and Erosion Control Plan Review Checklist For Design Professionals. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| CONSTRUCTION DETAILS | | | |
| 1. Typical bedding details for all proposed storm pipe | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Standard details or reference note for all proposed access structure types (inlets, manholes, junctions, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Catch basins shall provide for a bottom sand trap of 1.0 feet below the inlet or outlet, i.e. basins may be required to provide baffles for oil and grease trap operation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Open channel details: shape, bottom width, top width, side slopes, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Outlet protection | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. All special design structures (flumes, basin outlets, energy dissipators, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Storm water management details for embankment, principal spillway, trash rack, anti-vortex device, anti-seep collars, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Construction Details of standard structures (Drop Inlets, Curb/Gutter, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



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| 9. Catch basins provide for a bottom sediment trap of 1' below the inlet or outlet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| STORM WATER FACILITY – GENERAL INFORMATION | | | |
| 1. Basic considerations for safety and unauthorized entry | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Proper length/width ratio | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Safety bench around permanent pool per Jasper County Stormwater Management Design Manual. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Embankment or excavation side slopes labeled (slope varies per BMP type). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Material with watertight joints. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Support and bedding requirements for barrel – concrete cradles, etc. or as recommended by the Geotechnical Report | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. End treatment (Flared end section, headwall, wingwall) at barrel outlet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Anti-seep collar(s) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| STORM WATER FACILITY - ELEVATION AND DIMENSIONAL DATA | | | |
| 1. All pertinent dimensions and elevations shown | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Riser diameter | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Control orifice or weir dimensions and elevations shown | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Pipe inverts, length, size, class and slope shown | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Top of facility – elevation and width labeled | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Crest elevation of principal control structure spillway | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Minimum freeboard of one (1) foot above the 100-year design high water elevation for facilities with an emergency spillway | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Minimum freeboard of two (2) feet above the 100-year design high water elevation for facilities without an emergency spillway or in accordance with the SCS National Engineering Handbook (prior approval required) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Basin Sediment Clean-Out elevation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| STORM WATER FACILITY - CROSS SECTION | | | |
| 1. Existing Ground | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Proposed grade | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Top of facility - constructed and settled | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Emergency spillway with side slopes labeled (emergency spillway in cut) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Barrel location | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| STORMWATER FACILITY - EMERGENCY SPILLWAY PROFILE | | | |
| 1. Existing ground | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Inlet, level (control) and outlet sections | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Spillway and crest elevations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PRETREATMENT DEVICES of adequate depth and properly designed using required pretreatment volumes for the selected County BMP facility type | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| OUTLET PROTECTION | | | |
| 1. Sized for maximum design release | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Flared end section or endwall | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Dimensions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Rock or riprap size, quantity and placement thickness | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Slope at 0 percent (Level Grade) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Geotextiles (nonwoven) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



| STORM WATER MANAGEMENT PLAN – Storm Water Management plan and calculations per Jasper County Stormwater Management Design Manual. | | | |
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| Requirement | Yes | No | N/A |
| STORM WATER MANAGEMENT and DRAINAGE DESIGN REPORT signed and sealed by Professional Engineer registered in South Carolina. Shall generally include a title sheet, date, project identification, owner and preparer information, table of contents, narrative, summaries and computations as required. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| STORMWATER MANAGEMENT NARRATIVE describing the project, location, site and drainage basin soil characteristics, receiving water or drainage facility, existing site and drainage basin conditions (topography, land use, cover, slopes, etc.), proposed site development, proposed stormwater management Best Management Practices, summary of hydrology and hydraulics, maintenance program, and any special assumptions utilized for development of the stormwater management and drainage design plan or computations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| DRAINAGE AREA MAP depicting drainage area boundaries for pre- and post-development conditions. Maps shall include drainage area size, runoff coefficient or curve number and time of concentration flow paths for each sub-area. Include off-site drainage where applicable. Clearly show roof drainage flow directions on buildings. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SOILS MAP with soil symbols, Hydrologic Soil Group, soil boundaries and legend in accordance with the current Soil Survey of Beaufort County, South Carolina with approximate locations of the project site, BMPs and applicable drainage basins | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| GEOTECHNICAL REQUIREMENTS | | | |
| 1. Groundwater Elevations – Seasonal high to be used for design purposes; Test boring locations with reference surface elevations (if known). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Geotechnical report prepared by a registered professional engineer with recommendations specific to BMP facility type selected. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Infiltration testing and recommended design infiltration rates to be used. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| METHODOLOGY for surface runoff calculations per Jasper County Stormwater Management Design Manual. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| DESIGN STORM Per Jasper County Stormwater Management Design Manual. Include a summary table of the pre-development stormwater runoff and post-development stormwater runoff for the 2 year - 24 hour, 10 year - 24 hour, and 25 year - 24 hour storm events showing the pre-development stormwater runoff less than the post-development stormwater runoff. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| HYDROLOGY CALCULATIONS - Provide supporting calculations for the hydrologic analysis of both pre-developed and post-developed conditions at <u>each</u> outfall point on the project site. | | | |
| 1. Calculations to include runoff Curve Number or Coefficient and Time of Concentration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Runoff Curve Number or Coefficient determinations: pre-developed and ultimate development land use scenarios. Shall be in all cases acceptable to Town Engineer. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Curve Numbers shall not be less than the minimums established in the latest edition of the National Engineering Handbook, Part 630 (Hydrology), and shall be in all cases acceptable to the Town Engineer. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Site inflow and outflow Hydrograph generation (tabular or graphical) for the 25-year design storm event | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Site inflows C.F.S. (Hydrograph); | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Site outflows C.F.S. (Hydrograph); | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Soil characteristics; | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



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| 8. Static water levels; | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Peak water levels—25-year storm; Peak water levels shall be checked relative to a 100 year storm frequency in setting first flow elevations; and | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Pre-development conditions shall be carefully evaluated as to adequacy of drainage design (if any), and removed, replaced, or reworked if found unsatisfactory | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| HYDRAULIC CALCULATIONS | | | |
| 1. Elevation- or Stage-Storage curve and/or tabular data | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Weir / Orifice Control calculations that match construction detail | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Inlet / Outlet (barrel) control calculations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Emergency spillway capacity and depth of flow | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Elevation - Discharge (Outlet Rating) curve and/or table. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Adequate channel computations for receiving channel | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Permanent pool, 25-Year, 100-Year water surface elevations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Tidal backwater effects taken into consideration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Pipe calculations - Capacity, Flow Rate, Velocity, and Flow Depth; 25-year storm event. All storm sewer pipe shall be designed and constructed to produce a minimum velocity of two (2) feet per second (ft/s) when flowing full, unless site conditions do not allow. No storm sewer system or portion thereof will be designed to produce velocities in excess of ten (10) ft/s. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Hydraulic Grade Line computations; 25-year storm event | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Open Channel computations; Capacity, Flow Rate, Velocity, and Flow Depth; 25-year storm event, 2-year storm event for velocity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Culvert computations - Capacity, Headwater depth, Velocity; 25-year storm event, 100-year storm event check | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Pipe thickness design computations, as required, for selected pipe type (live load, minimum cover, maximum height of cover, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Downstream receiving channel check (based on field measured channel section data); 25-year storm event | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Outlet velocity and outlet protection calculations; Discharge velocities shall be reduced to provide a non-erosive velocity flow from a structure, channel, or other control measure or the velocity of the 10-year, 24-hour storm runoff in the receiving waterway prior to the land disturbance activity, whichever is greater. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Curb and Gutter calculations -Spread and Ponding depth; 2-year storm event | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Storage-Indication Routing of post-developed inflow hydrographs; 25-year design storm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Downstream hydrographs at established study points, if conditions warrant (i.e. facility discharge combined with uncontrolled bypass) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Water quality calculations per Jasper County Stormwater Management Design Manual (maintain the pre-development hydrology of the site for the 85 th percentile storm event) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Pre- vs. Post-development peak discharge calculations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Provisions for treatment of First Flush runoff | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| MISCELLANEOUS | | | |
| 1. OCRM Permit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Stormwater Management Agreement (submitted for OCRM NOI Permit) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. SCDOT Permit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. USACE Jurisdiction Determination and Delineation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. USACE Permit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. 100-year floodplain impacts (if conditions warrant) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

