

**TOWN OF HILTON HEAD ISLAND  
STORMWATER PLAN REVIEW CHECKLIST**

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.

<b>CONSTRUCTION PLANS – GENERAL INFORMATION</b>			
Requirement	Yes	No	N/A
<b>PROFESSIONAL SEAL AND SIGNATURE</b> required on final and complete approved plans, drawings, technical reports and specifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>DESIGNER INFORMATION</b> - 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"/>
<b>APPLICANT INFORMATION</b> - The owner's and/or developers name, address, telephone number, and e-mail address	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>PLAN DATE</b> and all revision dates with a brief description of the items revised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>TITLES AND NUMBERING</b> for all plan sheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>VICINITY MAP</b> with street names and the site location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>SCALE</b> at 1" = 30' minimum - Provide a graphic scale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>NORTH ARROW</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>PLAN LEGEND</b> with line types and symbols	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>BOUNDARY SURVEY</b> of project site (Metes and Bounds, computed acreage, benchmarks, control points, property corners, reference plats)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>PROPERTY INFORMATION</b> 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"/>
<b>OFF-SITE CONSTRUCTION</b> requires a recorded easement or notarized right of entry from the affected property owner(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>PROJECT OR CONSTRUCTION PHASE LINES</b> (where applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>TOPOGRAPHY</b> 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"/>
<b>VERTICAL DATUM</b> - NAVD88 required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>EXISTING AND PROPOSED SITE FEATURES</b> - buildings, parking lots, patios, pools, water bodies, driveways, sidewalks, and bike paths.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>PERVIOUS MATERIAL</b> - 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"/>
<b>FINISH FLOOR ELEVATIONS</b> of proposed buildings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>EXISTING AND PROPOSED UTILITIES</b> - Show and label all existing and proposed utilities (above ground and underground).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>EXISTING AND PROPOSED RIGHTS-OF-WAY</b> – Location, width, and ownership information for existing and proposed rights-of-way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>EXISTING AND PROPOSED DRAINAGE EASEMENTS</b> - Location, width, and recordation information for all existing and proposed drainage easements per Section 16-5-109.G. of the LMO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>EXISTING AND PROPOSED DRAINAGE STRUCTURES AND FACILITIES</b> – Location of natural and manmade drainage infrastructure including pipes, swales, ditches, channels, curb and gutter, roof drains per Section 16-5-109 of the LMO.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>DRAINAGE PATTERNS</b> with flow direction arrows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>OCRM CRITICAL LINE</b> delineated and shown on plan (where applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>ENVIRONMENTALLY SENSITIVE AREAS</b> such as wetlands, floodplains, critical soils, buffers, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>FLOODPLAIN LIMITS and FEMA FIRM PANEL</b> 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"/>
<b>AREA OF DISTURBANCE</b> – 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"/>
<b>IMPERVIOUS SURFACE COVERAGE</b> - Tabulation of impervious cover applicable to the zoning district in which development is located	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>CONSTRUCTION PLANS - PLAN INFORMATION</b>			
<b>DRAINAGE INFORMATION</b>			
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"/>
<b>PROFILES</b> 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"/>
<b>EROSION AND SEDIMENT CONTROL PLAN</b> per Section XX-X-XXX of the LMO 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"/>
<b>CONSTRUCTION DETAILS</b>			
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. Step detail or applicable reference note (if depth 4 ft. or more)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Open channel details: shape, bottom width, top width, side slopes, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Outlet protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. All special design structures (flumes, basin outlets, energy dissipators, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. 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"/>
9. Construction Details of standard structures (Drop Inlets, Curb/Gutter, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Catch basins provide for a bottom sediment trap of 1' below the inlet or outlet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>STORM WATER FACILITY – GENERAL INFORMATION</b>			
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; 10' Minimum width	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<ul style="list-style-type: none"> <li>4. Embankment or excavation side slopes labeled (slope varies per BMP type).</li> <li>5. Material with watertight joints.</li> <li>6. Support and bedding requirements for barrel – concrete cradles, etc. or as recommended by the Geotechnical Report</li> <li>7. End treatment (Flared end section, headwall, wingwall) at barrel outlet</li> <li>8. Anti-seep collar(s)</li> </ul>	<table border="0"> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
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<p><b>STORM WATER FACILITY - ELEVATION AND DIMENSIONAL DATA</b></p> <ul style="list-style-type: none"> <li>1. All pertinent dimensions and elevations shown</li> <li>2. Riser diameter</li> <li>3. Control orifice or weir dimensions and elevations shown</li> <li>4. Pipe inverts, length, size, class and slope shown</li> <li>5. Top of facility – elevation and width labeled (15' Minimum)</li> <li>6. Crest elevation of principal control structure spillway</li> <li>7. Minimum freeboard of one (1) foot above the 100-year design high water elevation for facilities with an emergency spillway</li> <li>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)</li> <li>9. Basin Sediment Clean-Out elevation</li> </ul>	<table border="0"> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<p><b>STORM WATER FACILITY - CROSS SECTION</b></p> <ul style="list-style-type: none"> <li>1. Existing Ground</li> <li>2. Proposed grade</li> <li>3. Top of facility - constructed and settled</li> <li>4. Emergency spillway with side slopes labeled (emergency spillway in cut)</li> <li>5. Barrel location</li> </ul>	<table border="0"> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
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<p><b>STORMWATER FACILITY - EMERGENCY SPILLWAY PROFILE</b></p> <ul style="list-style-type: none"> <li>1. Existing ground</li> <li>2. Inlet, level (control) and outlet sections</li> <li>3. Spillway and crest elevations</li> </ul>	<table border="0"> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																					
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<p><b>PRETREATMENT DEVICES</b> of adequate depth and properly designed using required pretreatment volumes for the selected County BMP facility type</p>	<table border="0"> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																											
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<p><b>OUTLET PROTECTION</b></p> <ul style="list-style-type: none"> <li>1. Sized for maximum design release</li> <li>2. Flared end section or endwall</li> <li>3. Dimensions</li> <li>4. Rock or riprap size, quantity and placement thickness</li> <li>5. Slope at 0 percent (Level Grade)</li> <li>6. Geotextiles (nonwoven)</li> </ul>	<table border="0"> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
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<b>STORM WATER MANAGEMENT PLAN – Storm Water Management plan and calculations in accordance with Section 16-5-109 of the LMO.</b>			
<b>Requirement</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>STORM WATER MANAGEMENT and DRAINAGE DESIGN REPORT</b> 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"/>
<b>STORMWATER MANAGEMENT NARRATIVE</b> 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"/>
<b>DRAINAGE AREA MAP</b> 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"/>
<b>SOILS MAP</b> 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"/>
<b>GEOTECHNICAL REQUIREMENTS</b> 1. Groundwater Elevations – Seasonal high to be used for design purposes; Test boring locations with reference surface elevations (if known). 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"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
<b>METHODOLOGY</b> for surface runoff calculations in accordance with Section 16-5-109 of the LMO 1. Rational Method; drainage area of 20 acres or less 2. USDA NRCS TR-55 Method; sites of any size 3. The Savannah Intensity—Duration Curve shall be used in computations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>DESIGN STORM</b> 25-year Frequency/24 Hour/8.4 Inch Rainfall, Antecedent Condition II. Type III distribution curve.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>HYDROLOGY CALCULATIONS</b> - 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 2. Runoff Curve Number or Coefficient determinations: pre-developed and ultimate development land use scenarios. Shall be in all cases acceptable to Town Engineer. 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. 4. Site inflow and outflow Hydrograph generation (tabular or graphical) for the 25-year design storm event 5. Site inflows C.F.S. (Hydrograph); 6. Site outflows C.F.S. (Hydrograph); 7. Tidal backwater effects; 8. Soil characteristics; 9. Static water levels;	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

<p>10. 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</p> <p>11. Pre-development conditions shall be carefully evaluated as to adequacy of drainage design (if any), and removed, replaced, or reworked if found unsatisfactory</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p><b>HYDRAULIC CALCULATIONS</b></p> <ol style="list-style-type: none"> <li>1. Elevation- or Stage-Storage curve and/or tabular data</li> <li>2. Weir / Orifice Control calculations</li> <li>3. Inlet / Outlet (barrel) control calculations</li> <li>4. Emergency spillway capacity and depth of flow</li> <li>5. Elevation - Discharge (Outlet Rating) curve and/or table.</li> <li>6. Adequate channel computations for receiving channel</li> <li>7. Permanent pool, 25-Year, 100-Year water surface elevations</li> <li>8. Tidal backwater effects taken into consideration</li> <li>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.</li> <li>10. Hydraulic Grade Line computations; 25-year storm event</li> <li>11. Open Channel computations; Capacity, Flow Rate, Velocity, and Flow Depth; 25-year storm event, 2-year storm event for velocity</li> <li>12. Culvert computations – Capacity, Headwater depth, Velocity; 25-year storm event, 100-year storm event check</li> <li>13. Pipe thickness design computations, as required, for selected pipe type (live load, minimum cover, maximum height of cover, etc.)</li> <li>14. Downstream receiving channel check (based on field measured channel section data); 25-year storm event</li> <li>15. Inlet / Catch Basin computations - Throat length, grate size, and inlet placement; 2-year storm event</li> <li>16. 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.</li> <li>17. Curb and Gutter calculations -Spread and Ponding depth; 2-year storm event</li> <li>18. Storage-Indication Routing of post-developed inflow hydrographs; 25-year design storm</li> <li>19. Downstream hydrographs at established study points, if conditions warrant (i.e. facility discharge combined with uncontrolled bypass)</li> <li>20. Provisions for retention of “First Inch” runoff from on-site impervious surfaces</li> <li>21. Pre- vs. Post-development peak discharge calculations</li> <li>22. Provisions for treatment of First Flush runoff</li> <li>23. Design for 10-year sediment load storage</li> </ol>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p><b>MISCELLANEOUS</b></p> <ol style="list-style-type: none"> <li>1. Riser / base structure flotation analyses (if warranted)</li> <li>2. Downstream danger reach study and/or emergency action plan (if conditions warrant)</li> <li>3. Upstream backwater analyses onto offsite adjacent property (if conditions warrant)</li> <li>4. 100-year floodplain impacts (if conditions warrant)</li> </ol>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>