

STORMWATER SUBMITTAL REQUIREMENTS
LOW DENSITY
Subdivisions, Curb Outlet System, Non-subdivision

I. Objectives

- A. Limit amount of built-upon surfaces per the most current rules.
- B. No collection systems (limited piping-only enough to get under a road, no inverted crown streets)
- C. Sheet flow
- D. No area of the project of such high density that runoff threatens water quality. (i.e., pocket of high density).

II. What makes up a complete low-density application package?

- A. Two sets of layout & grading plans with road details and a swale drainage area map for curb outlet systems. Unrelated plan sheets such as water/sewer profiles or details are not necessary. (Additional sets of plans may be requested for projects in certain counties)
- B. Completed application with supplement(s), SWU-101, SW401-Low Density, SW401-Curb Outlet, SW401-Grassed Swale .
- C. Deed restrictions, if applicable.
- D. Curb outlet swale calculations if applicable.
- E. Chlorides test results must be provided if the project is within ½ mile of SR waters (Phase II). (This is only required to test out of SR water treatment requirements)

III. BIMS entry (for DWQ use only)

Enter & track submittal dates, add info requested/received dates, permit issue dates, and drainage area info. Best done after the add info letter is written and before sending permit up for signature.

IV. Shell documents (for DWQ use only)

Permit shells: s:\wqs\stormwater\shells\lowother (for non-subdivisions)
s:\wqs\stormwater\shells\lowsub (for subdivisions with no C&G)
s:\wqs\stormwater\shells\lowsubcg (for subdivisions w/C&G)

Calculations: s:\wqs\stormwater\excel spreadsheets\curb&gutter

V. Review Procedure- look for consistency between the various elements of the package- application, plan and calculations.

A. APPLICATION

1. Original signature required. Photocopied signatures cannot be accepted.
2. If an agent signs the application, a signed letter of authorization from the applicant must be provided which includes the name, title, mailing address and phone number of the person signing the letter.
3. Correct supplements are provided – low density and/or curb outlet supplement and grassed swale supplement (no low density supplement needed for projects that do not propose to subdivide and sell lots.)
4. Built-upon areas must be reported in square feet in Section III.6 of the application.
5. Within Phase II counties, BUA limits are 12% within ½ mile and draining to SR waters, and 24% for all others.
6. Receiving stream name and classification. This is important because of the various density limits.
7. Section III.6 is filled in-cannot be left blank. For low density, only one column is filled in unless either a pocket of high density is formed, or the project drains to different classifications of water bodies, which result in different BUA limits.
8. If the applicant is a corporation, partnership or LLC, look it up on the Secretary of State Corporations Database. Make sure corporation is spelled correctly (capitalization and punctuation matter) and that the person signing the application is at least a vice-president in the corporation, a General Partner in the partnership, a member in a member-managed LLC, or the manager of a manager-managed LLC. Need documentation to support if the Articles of Incorporation do not list the members or managers of the LLC. If an agent signs, then a letter of authorization is needed from the president, vice president, general partner, member or manager.
9. For subdivided projects, a signed and notarized deed restriction statement must be provided.

B. CALCULATIONS

1. Found at the top of page 2 of the low density supplement. Follow the formula to get the allowable BUA per lot. For non-subdivision projects, a supplement form is not required and the calculations in Section III.6 of the application will suffice. For subdivision projects with varying lot sizes and BUA's per lot, the calculation would only be done to the point that the total BUA available for the lots is determined. Do not divide by the number of lots.
2. If wetlands are present, the applicant must calculate the site area to be used in the BUA per lot calculation by following the calculation methods outlined in the wetlands policy.
3. For curb outlet systems, swale velocity calculations are required, to include the individual swale drainage area, the built-upon area within each drainage area, and the Rational C-value calculated for each DA.
4. If a pocket of high density is formed, the application must include an engineered control suitable for the classification of the receiving waters.

- C. PLANS-** Plan sheets should be kept to a minimum. In general, depending on the size of the project, the plan set should consist of 1-4 sheets with the following information provided:
1. Development/Project Name
 2. Engineer name and firm.
 3. Legend containing all of the symbols used on the plans.
 4. North Arrow
 5. Location Map with nearest intersection of two major roads shown. Major road is any 1, 2, or 3 digit NC, US or interstate highway.
 6. Scale- standard engineering scale, no off-the-wall stuff.
 7. Date
 8. Revision number and date, if applicable.
 9. Original contours, proposed contours, spot elevations, finished floor elevations, pipe inverts, swale inverts, etc.
 10. Existing drainage (piping, swales, ditches, ponds, etc.), including off-site. Include a map delineating the offsite drainage areas.
 11. Property/Project boundary lines, bearing & distances.
 12. Mean High Water Line, or Normal High Water line if applicable.
 13. Drainage easement location and width.
 14. Wetlands, whether they are disturbed or not, are delineated, or provide a note on the plans that none exist. Provide a copy of the wetlands delineation map signed by the Corps of Engineers, or include a copy of the unsigned delineation map that was submitted to the Corps.
 15. Details for the roads, parking area, cul-de-sac radii, sidewalk widths, curb and gutter, all dimensions & slopes. Note if dimensions are face of curb to face of curb (FC-FC) or back of curb to back of curb (BC-BC).
 16. Apartment / Condo development- Provide a typical building footprint with dimensions and note all concrete and wood deck areas.
 17. The drainage area for each curb outlet swale is clearly delineated and numbered to match up to the calculations and supplement. Only swales that actually receive road runoff have to be curb outlet swales with 5:1 side slopes. Delineation is best done as a separate plan sheet.
 18. A curb outlet swale detail noting the 5:1 or flatter side slopes, the 100' minimum length and the type of grass to be planted on the side slopes.
 19. A level spreader is provided at the end of all swales that will drain into wetlands or surface waters. Level spreader O & M is provided.
 20. For those low density projects within ½ mile of and draining to SA or SR waters, additional BMP's are required to be shown on the stormwater plans such that no discharge from the site occurs. This is done on behalf of the Division of Marine Fisheries.
 21. For Phase II low density projects draining to SR waters make sure that the project complies with the following:
 - a. No new points of stormwater discharge. Diffuse flow of stormwater at a non-erosive velocity to a vegetated buffer capable of providing effective infiltration of the runoff from the 1 year 24 hour storm shall not be considered a direct discharge.
 - b. No increase in the volume of stormwater flow or the capacity of an existing stormwater conveyance system that drains to SR waters.
 - c. Modifications to existing stormwater conveyance systems within the contributing drainage basin do not increase the net amount or rate of stormwater discharge through existing outfalls to SR waters.

STORMWATER SUBMITTAL REQUIREMENTS WET DETENTION POND

I. Objective

- A. Collect all runoff from all BUA (proposed and/or existing and/or offsite) as the case may be, by any means including piping or swales, and direct it to the pond.
- B. Check the proposed pond design to make sure it meets or exceeds the minimum design criteria for surface area, volume and drawdown.

II. What makes up a complete wet detention pond application package?

- A. Two sets of sealed, signed & dated layout & grading plans with appropriate details. (Additional sets of plans may be requested for projects in certain counties)
- B. Completed application with supplement(s), SWU-101, SW401-Wet Pond, and inspection and maintenance agreements.
- C. Deed restriction document, if applicable (for subdivisions & projects with out parcels)
- D. Sealed, signed & dated calculations.
- E. Estimated seasonal high water table elevation at all pond locations.
- F. Chlorides test results must be provided if the project is within ½ mile of SR waters (Phase II). (This is only required to test out of SR water treatment requirements)

III. BIMS entry (for DWQ use only)

Enter & track application acknowledged date, review date, add info requested/received dates, permit issue dates, and drainage area info. Best done after the add info letter is written and before sending permit up for signature.

IV. Shell documents (for DWQ use only)

Permit shells: s:\wqs\stormwater\shells\highcompond
 s:\wqs\stormwater\shells\highsubpond
 s:\wqs\stormwater\shells\HDhybrid

Spreadsheet: s:\wqs\stormwater\excel spreadsheets\pond

VI. Review Procedure

A. APPLICATION

1. An original signature is required. Photocopied signatures cannot be accepted.
2. A completed wet detention pond supplement and a signed, dated and notarized wet detention pond Inspection and Maintenance Agreement with an original signature.
3. The numbers on the supplement match up to the numbers used in the calculations and shown on the plan details.
4. Built-upon areas are reported in square feet in Section III.6.
5. Receiving stream name and classification. This is important because in the non-Phase II counties, a wet pond cannot be used on a project that is within ½ mile of and draining to SA waters. For Phase II, a wet pond is allowed within ½ mile of SA waters.
6. Section III.6 is filled in-cannot be left blank. One column must be filled in for each proposed wet pond.
7. If the applicant is a corporation, partnership or LLC, look it up on the Secretary of State Corporations Database. Make sure corporation is spelled correctly (capitalization and punctuation matter) and that the person signing the application is at least a vice-president in the corporation, a General Partner in the partnership, a member in a member-managed LLC, or the manager of a manager-managed LLC. Need documentation to support if the Articles of Incorporation do not list the members or managers of the LLC. If an agent signs, then a letter of authorization is needed from the president, vice president, general partner, member or manager.
8. For subdivided projects, a signed and notarized deed restriction statement must be provided.

B. CALCULATIONS

1. The orifice is sized based on drawing down the calculated minimum volume in 2-5 days. The average head to use in the orifice equation is approximately one-third of the distance between the permanent pool elevation (PPE) and the elevation of the next available outlet above the permanent pool. The elevation of the next available outlet must be either the elevation where the minimum volume is provided, or it can be higher. The temporary pool elevation (TPE) to report on the supplement will be the elevation of the next available outlet above the PPE. The temporary pool volume (TPV) to report on the supplement is the volume between the specified PPE and the TPE.
2. For Phase II projects that are within $\frac{1}{2}$ mile of and draining to SR waters, the difference in runoff from the predevelopment and post-development conditions for the 1 year 24 hour storm must be controlled and treated.
3. For Phase II projects, the discharge rate leaving the pond can be no more than the pre-development discharge rate for the 1 year 24 hour storm.
4. For Phase II projects draining to SA water, no discharge to surface waters may occur from wet ponds. The discharge leaving the orifice must be effectively infiltrated prior to reaching surface waters.
5. The average pond depth is the permanent pool volume divided by the permanent pool surface area. The result must be between 3 ft. and 7.5 ft. Parts of the pond can be deeper than 7.5 ft., but in no case can any part of the pond be less than 3 ft deep.
6. If the 85% TSS chart is used a 30' vegetated filter must be provided at the outlet of the pond. If the 90% TSS chart is used, no filter is required.
7. Use the correct SA/DA TSS chart from the BMP Manual noting that there are different charts for different areas of the State.
8. Required surface area at permanent pool.
9. Provided surface area at permanent pool (Based on pond dimensions)
10. Required volume calculation based on 1.5" storm for Phase II projects* and 1" storm for all others projects. *unless the project is Phase II and within $\frac{1}{2}$ mile of and draining to SR waters then the volume calculation must be based on difference between the pre and post development conditions for the 1-yr 24-hr storm.
11. Table of elevations, areas, incremental volumes and accumulated volumes for overall pond and for forebay, to verify volumes provided.
12. Forebay designed to hold 20% of the permanent pool volume. (Range of 18%-22% OK.)
13. Non-erosive flow for 10 yr. storm in the vegetated filter, if using 85% TSS.
14. The seasonal high water table must be at or below the proposed permanent pool elevation to assure that the necessary volume will be available above the permanent pool.
15. Rounding numbers off during the calculation process can result in deficiencies. Do not round the numbers until you get to the final result.
16. An additional one foot must be excavated below the bottom elevation of the pond. The 1 foot sediment accumulation depth is not included in the average depth calculation.

Wet Detention Pond, cont.

- C. PLANS-** Due to storage space constraints, plan sheets should be kept to a minimum. For small commercial single wet pond projects, the plan set could consist of only 2 or 3 sheets, layout, grading and details. For larger projects, show as much information as possible on as few sheets as possible, without cluttering them up.
1. Development/Project Name
 2. Engineer name and firm.
 3. Legend
 4. North Arrow
 5. Location Map with nearest intersection of two major roads shown. Major road is any 1, 2, or 3 digit NC, US or interstate highway.
 6. Scale- standard engineering scale, no off-the-wall stuff.
 7. Date
 8. Revision number and date, if applicable.
 9. Original contours, proposed contours, spot elevations, finished floor elevations, pipe inverts, swale inverts, etc.
 10. Existing drainage (piping, swales, ditches, ponds, etc.), including off-site. Include a map delineating the offsite drainage areas.
 11. Property/Project boundary lines, bearing & distances.
 12. Mean High Water Line or Normal High Water Line, if applicable.
 13. The permanent pool elevation must be above the SHWT and above the lowest elevation of adjacent wetlands. Evaluate the need for a liner and/or berm/slurry wall to prevent dewatering the wetland.
 14. Drainage easement widths, pipe sizes and swale inverts are provided.
 15. Wetlands delineated, or a note on the plans that none exist. Get a copy of the wetlands delineation map signed by the Corps of Engineers, or have the applicant include a copy of the unsigned delineation map submitted to the Corps. Wet ponds may not be located in wetlands unless a permit to fill those wetlands has been obtained.
 16. Details for the roads, parking, cul-de-sacs, including sidewalk width, radii, dimensions & slopes.
 17. Apartment / Condo development- Provide a typical building footprint with dimensions and note all concrete and wood deck areas.
 18. The drainage area for each wet pond is clearly delineated and numbered to match up to the calculations and supplement. Drainage area delineation is best done as a separate plan sheet.
 19. A pond section detail to include the forebay, a 10 foot wide vegetated shelf, pertinent elevations for the bottom, permanent pool, temporary pool, and SHWT, 3:1 slopes above the permanent pool, and the weir elevation between the main pond and the forebay.
 20. The 10 vegetated shelf extends 6" below and 6" above the permanent pool elevation.
 21. An outlet structure detail showing a trash rack with $\leq 6"$ square openings, the necessary orifice invert elevation (i.e., the permanent pool), orifice size and temporary pool elevation.
 22. Dimensions for each line and arc formed by the permanent pool contour.
 23. Where the 85% TSS chart was used, a 30 ft. vegetated filter strip is required to be shown on the plans & detailed (elevations, inverts, slopes, and flow spreader mechanism). Please note that the filter strip is not a ditch.
 24. A forebay is provided for each inlet and located so as to prevent short-circuiting.
 25. The pond must have a minimum 1.5:1 length to width ratio and a minimum 3:1 flow path length. Artificial "baffles" of timber, vinyl, or earth can be used to create a longer flow path. The top elevation of the baffle should be set at the temporary pool elevation or higher.
 26. A Vegetation plan is specified for the pond, including slopes. Wetlands species are listed for planting on the 10:1 shelf. Weeping Love Grass is not suitable as a permanent vegetated cover for pond slopes.
 27. All roof drainage must be directed to the pond. Show the roof drain collection lines on the plan. This is necessary for projects where the buildings back up the property lines where roof drainage may leave the site prior to going through the pond.

STORMWATER SUBMITTAL REQUIREMENTS
INFILTRATION/EXFILTRATION SYSTEMS
Basins and Trench

I. Objective

- A. Collect all runoff from all BUA (proposed and/or existing and/or offsite) as the case may be, by any means including piping or swales, and direct it to the infiltration system.
- B. Check the proposed basin/ trench design to make sure it meets or exceeds the minimum design criteria for design storm, volume and drawdown.

II. What makes up a complete infiltration basin / trench application package?

- A. Two sets of sealed, signed & dated layout & grading plans with appropriate details.
- B. Completed application with supplement(s), SWU-101, SW401-Infiltration Trench, SW401-Infiltration Basin, and inspection and maintenance agreements.
- C. Deed restriction document, if applicable. (subdivisions & projects with out parcels)
- D. Sealed, signed & dated calculations.
- E. A soils report containing information in regard to the soil type, boring locations, seasonal high water table elevation and expected infiltration rate.
- F. Chlorides test results must be provided if the project is within ½ mile of SR waters (Phase II). (This is only required to test out of SR water treatment requirements)

III. BIMS entry (for DWQ use only)

Enter & track application acknowledged date, review date, add info requested/received dates, permit issue dates, and drainage area info. Best done after the add info letter is written and before sending permit up for signature.

IV. Shell documents (for DWQ use only)

Permit shells: s:\wqs\stormwater\shell\shighcominbasin
S:\wqs\stormwater\shells\highcomintrench
s:\wqs\stormwater\shells\highsubinbasin
s:\wqs\stormwater\shells\highsubintrench
Calculations: s:\wqs\stormwater\excel spreadsheets\inbasin
s:\wqs\stormwater\excel spreadsheets\intrench

V. Review Procedure- look for consistency between the various elements of the package- application, plan and calculations.

A. APPLICATION

- 1. Original signatures are required. Photocopied signatures cannot be accepted.
- 2. A completed infiltration basin or infiltration trench supplement, one for each proposed system. A signed, dated and notarized Inspection and Maintenance Agreement for each proposed system with an original signature.
- 3. The elevations, areas and volumes reported on the supplement match up to the numbers used in the calculations and shown on the plan details.
- 4. Built-upon areas are reported in square feet in Section III.6.
- 5. Receiving stream name and classification.
- 6. Section III.6 is filled in-cannot be left blank. One column must be filled in for each proposed infiltration basin or trench.
- 7. If the applicant is a corporation, partnership or LLC, look it up on the Secretary of State Corporations Database. Make sure corporation is spelled correctly (capitalization and punctuation matter) and that the person signing the application is at least a vice-president in the corporation, a General Partner in the partnership, a member in a member-managed LLC, or the manager of a manager-managed LLC. Need documentation to support if the Articles of Incorporation do not list the members or managers of the LLC. If an agent signs, then a letter of authorization is needed from the president, vice president, general partner, member or manager.
- 8. For subdivided projects, a signed and notarized deed restriction statement must be provided.
- 9. Soils report with the SHWT, Soil type and expected infiltration rate.

B. CALCULATIONS

1. The basin or trench must draw down within 5 days. Spray irrigation is not acceptable as the sole means of drawdown.
2. The design storm is 1.5" if the project is subject to Phase II or is sited within ½ mile of and draining to SA waters. The design storm for projects subject to Phase II sited within ½ mile of and draining to SR waters must treat the difference between the pre and post development conditions for the 1-yr 24-hr storm. Otherwise, use 1" design storm.
3. Report the bottom surface area.
4. Report the surface area at the overflow elevation.
5. Show the calculation for the minimum required volume.
6. Provide a table of elevations, areas, incremental volumes and accumulated volumes to demonstrate that the minimum required volume has been provided.
7. Calculations are signed, sealed & dated.
8. Report the Drainage Area and Built-upon area for each basin or trench.
9. The seasonal high water table must be at least 24" below the proposed bottom elevation of the system. For Phase II projects, at least 12" of this must be in naturally occurring soils.
10. All runoff in excess of the design storm must bypass to a vegetated filter prior to entering the basin or trench. If the system is designed to store a larger design storm (generally 2-3 times the minimum), the requirement for an offline bypass can be waived. Please contact the Division to determine what design storm is appropriate for the project.

Infiltration Basin & Trench, cont.

- C. PLANS** - Plan sheets should be kept to a minimum. For small commercial single basin projects, the plan set could consist of only 2 or 3 sheets, layout, grading and details. For larger projects, show as much information as possible on as few sheets as possible, without cluttering them up.
1. Development/Project Name
 2. Engineer name and firm.
 3. Legend
 4. North Arrow
 5. Location Map with nearest intersection of two major roads shown. Major road is any 1, 2, or 3 digit NC, US or interstate highway.
 6. Scale- standard engineering scale, no off-the-wall stuff.
 7. Date
 8. Revision number and date, if applicable.
 9. Original contours, proposed contours, spot elevations, finished floor elevations, pipe inverts, swale inverts, etc.
 10. Existing drainage (piping, swales, ditches, ponds, etc.), including off-site. Include a map delineating the offsite drainage areas.
 11. Property/Project boundary lines, bearing & distances.
 12. Mean High Water Line or Normal High Water Line, if applicable.
 13. Drainage easement locations shown on the plans along with their width.
 14. Wetlands delineated, or a note on the plans that none exist. Provide a copy of the wetlands delineation map signed by the Corps of Engineers, or have the applicant include a copy of the unsigned delineation map submitted to the Corps. Infiltration systems may not be located in wetlands unless a permit to fill those wetlands has been obtained and the soils meet the SHWT and hydraulic conductivity requirements.
 15. Details for the roads, parking, cul-de-sacs, including sidewalk width, radii, dimensions & slopes.
 16. Apartment / Condo development- provide a typical building footprint with dimensions, and note all concrete and wood deck areas.
 17. The drainage area for each basin or trench is clearly delineated and numbered to match up to the calculations and supplement. Drainage area delineation is best done as a separate plan sheet.
 18. A basin section detail showing bottom and storage elevations, 3:1 side slopes. The side slopes of an infiltration basin are not restricted to vegetation. They may be hardened with rock, timber, concrete, decorative brick, etc.
 19. A trench section detail with the perforated pipe diameter, filter fabric wrapped around the pipe and around the trench, trench height and width, rock fill type.
 20. If using a pre-fab chamber structure, provide details of the chamber, including model #, length, width, chamber volume and number of chambers being used.
 21. A bypass structure detail is provided showing a trash rack with ≤ 6 " square openings, and the necessary bypass weir or pipe elevation. Several types of bypass structure designs are acceptable.
 22. Dimensions for each line and arc formed by the bottom contour of an infiltration basin.
 23. All runoff in excess of the design storm must pass through a vegetated filter prior to being discharged into the receiving stream. The filter must be 50' long for SA waters and 30' long for non-SA waters.
 24. All infiltration systems must be located at least 50' from the MHW line of surface waters.
 25. Vegetation is specified for basin slopes not being hardened. Weeping Love Grass is not suitable as a permanent vegetated cover for side slopes.
 26. All roof drainage must be directed to the system. Show the roof drain collection piping on the plans. This is especially necessary for projects where the buildings back up the property lines where roof drainage may leave the site prior to going through the system.
 27. Monitoring wells may be required on a case-by-case basis.

**STORMWATER SUBMITTAL REQUIREMENTS
OFFSITE SYSTEMS**

I. Objective

These projects are out parcels or individual commercial subdivision lots sold to other entities, which were permitted to drain into a stormwater system under another permit. The runoff from all BUA on the lot must be collected by any means including piping and swales, and directed into the previously permitted stormwater system. Lots whose ownership is retained by the original permittee should be permitted as plan revisions to the original permit. However, if the lot may be sold in the future, it is best to write a separate offsite permit to the original permittee to help the transfer process go much smoother and faster.

II. What makes up a complete offsite application package?

- A. Two sets of sealed, signed & dated layout & grading plans with appropriate details.
- B. Completed application SWU-101 with the offsite supplement SW401-OffSite.
- C. A copy of the recorded Deed Restrictions must be on file.
- D. The pond must be functional and the Designer's Certification must be on file.
- E. The permitted system must be in compliance with its permit.

III. BIMS entry (for DWQ use only)

Enter & track application acknowledged date, review date, add info requested/received dates, permit issue dates, and drainage area info. Best done after the add info letter is written and before sending permit up for signature.

IV. Shell documents (for DWQ use only)

- A. Requesting additional information: s:\wqs\stormwater\shells\addinfo
- B. Permit shells: s:\wqs\stormwater\shells\offsite

V. Review Procedure- look for a proposed built-upon area that is equivalent to or below what was previously permitted, and that all the BUA is graded such that it will be directed to the permitted system.

A. APPLICATION

- 1. Original signatures are required. Photocopied signatures cannot be accepted.
- 2. A completed offsite supplement SWU-106.
- 3. The BUA's reported on the application are only for the lot in question and are equal to or less than the BUA allowed under the Master permit.
- 4. Built-upon areas are reported in square feet in Section III.6.
- 5. Receiving stream name and classification.
- 6. If the applicant is a corporation, partnership or LLC, look it up on the Secretary of State Corporations Database. Make sure corporation is spelled correctly (capitalization and punctuation matter) and that the person signing the application is at least a vice-president in the corporation, a General Partner in the partnership, a member in a member-managed LLC, or the manager of a manager-managed LLC. Need documentation to support if the Articles of Incorporation do not list the members or managers of the LLC. If an agent signs, then a letter of authorization is needed from the president, vice president, general partner, member or manager.

B. CALCULATIONS The proposed BUA is broken down and listed on the plans and application.

Offsite, cont.

- C. PLANS** - Plan sheets should be kept to a minimum. For small commercial projects, the plan set could consist of only 1 to 3 sheets, layout, grading and details. For larger projects, show as much information as possible on as few sheets as possible, without cluttering them up.
1. Development/Project Name
 2. Engineer name and firm.
 3. Legend
 4. North Arrow
 5. Location Map with nearest intersection of two major roads shown. Major road is any 1, 2, or 3 digit NC, US or interstate highway.
 6. Scale- standard engineering scale, no off-the-wall stuff.
 7. Date
 8. Revision number and date, if applicable.
 9. Original contours, proposed contours, spot elevations, finished floor elevations, pipe inverts, swale inverts, etc.
 10. Existing drainage (piping, swales, ditches, ponds, etc.)
 11. Property/Project boundary lines, bearing & distances.
 12. Mean High Water Line, if applicable.
 13. Drainage easement locations & widths.
 14. Wetlands delineated, or a note on the plans that none exist. The original permit should have already delineated the wetlands. If not, provide a copy of the map signed by the Corps of Engineers, or have the applicant include a copy of the unsigned delineation map submitted to the Corps.
 15. Details for the roads, parking, cul-de-sacs, including sidewalk width, radii, dimensions & slopes.
 16. All roof drainage must be directed to the system. Show the roof drain collection piping on the plans. This is especially necessary for projects where the buildings back up the property lines where roof drainage may leave the site prior to going through the system.

STORMWATER SUBMITTAL REQUIREMENTS PLAN REVISIONS

I. Objective

This is a review for various changes to the approved plans that do not affect the permit. Approvable revisions include the layout of the previously permitted lots or BUA, reducing the amount of BUA, adding swales, etc. The revisions can be approved without rewriting the permit as long as the changes do not increase the amount of built-upon area or the drainage area or the number of lots that was permitted.

II. What makes up a complete plan revision package?

- A. Two sets of the new plans or affected plan sheets, sealed, signed & dated if applicable.
- B. A narrative statement outlining in detail the proposed changes.

III. Review Procedure- It's possible that what is submitted as a plan revision is actually a permit modification. Examples of where a permit modification would be required include expanding a drainage area, changing road details to increase the pavement width or cul-de-sac radius, increasing the number of lots, increasing the overall BUA, creating a pocket of high density or adding a collection system.

- A. **Application** - There is no application required. A cover letter or narrative explaining the changes in detail is needed.
- B. **Calculations** – Must demonstrate that the previously permitted amount of built-upon area has not been exceeded.
- C. **Plans** - should contain the same information as before. Only the plan sheets that are being revised need to be replaced. The original permit covered the entire project, so the new plans need to show the entire project as permitted with the new changes. If the plans only cover the revised part of the project, the new plan will be added to the previously approved plan set and stamped to create a new approved plan set. If the new plans show all of the previously permitted information, then the old plans will be replaced with the new ones.

IV. BIMS entry (for DWQ use only)

Enter & track application acknowledged date, review date, add info requested/received dates, permit issue dates, and drainage area info. Best done after the add info letter is written and before sending permit up for signature. Plan revision approval letters are usually signed by the reviewer.

V. Shell documents (for DENR use only)

- A. Requesting additional information: s:\wqs\stormwater\shells\addinfo
- B. Permit shells: s:\wqs\stormwater\shells\planrevision
- C. The file should be saved in the "PERMIT" folder as "permitnumberPR.date&year"