From: Rob Gordon
To: lmenius@stroudengineer.com
Cc: Jim Diepenbrock
Subject: Eng TRC Review - Echo West
Date: Thursday, April 23, 2015 12:25:00 AM
Attachments: Supplement Wet Basin Rev.7.xls
image003.png

Engineering has reviewed the plans for Echo West and have the following comments:

1. Supplements for each pond are required. Please complete and submit with the next submittal.
2. The deed restrictions provided reference the (NCDENR) Division of Water Quality and will have to be replaced with City Standard deed restrictions. I will forward at a later date as standard conservation resource language will have to be incorporated into the document. No additional signature will be required. Section 18-760 (j) of the City code requires a primary allocation of impervious (house/garage/driveway) and a secondary allocation (everything else – what is usually available to the homeowner after construction).
3. Several of the drainage area and BUA figures in the application do not match the calcs. Please clarify.
4. There appear to be drainage areas drawn on sheet 3.0. Please make sure to clearly delineate, label and quantify the inlet and BMP drainage areas for the project.
5. The invert of the bypass ditch (carrying runoff from the 48" pipe) is 5 ft lower than the adjacent wetlands between lots 30 & 31. The City will not permit this configuration without express consent from USACE/NCDENR because of concerns of draining the adjacent wetlands.
6. Please provide the MB & Page reference for the recorded utility easement on the North side of the property. That utility easement will also have to have a public drainage easement component.
7. The outfalls for two of the ponds are very low. Please address the following concerns:
    a. Please provide a soils report that specifies the SHWT of the ponds. The permanent pool may not be more than 6" below the SHWT unless it can be shown that the pond will not dewater the adjacent wetlands.
    b. There is no consideration for the tailwater from the outfall in the routing analysis.
    c. It does not appear the outfall pipes extend to daylight.
8. The forebays do not appear to be graded per the standard detail. Please revise.
9. There are no spillway details. Please also make sure they are graded to daylight.
10. Why is the pipe system from FES 24 to FES 23 proposed – wetland connectivity? There does not appear to be any public runoff flowing thorough this pipe. It should be proposed as a private drainage easement.
11. Please make sure all ponds have at least 6" between the top of the riser structure and the invert of the emergency spillway per City Technical Standards.
12. Please make sure the pond analysis meets the following overflow requirements per City technical standards:
    a. 6" of freeboard required on the 50-yr storm
    b. The pond must pass the 50-yr storm assuming the outlet structure is clogged.
    c. The pond must pass the 100-yr storm (no freeboard required).
13. Please specify aquatic shelf plantings and the pond landscaping.

14. There is no shoulder provided off the sidewalk around the wetland crossings. If no shoulder can be provided, a fence may be required for safety.

These comments will be uploaded to protrak. Please call or email if there are any questions after the TRC meeting. Thank you.

Robert Gordon, PE
Project Engineer

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