Engineering has reviewed the plans for the Circle K on Market Street project submitted August 29, 2018 and have the following comments:

**Stormwater Management Permit Application Form**

1. See Attachment for revisions.

**Stormwater Report**

2. *Previous Comment: What tailwater condition was used for the 10-year and 50-year storm analyses?* The use of the Tideflex Check Valve at the flared end section does not eliminate the effects of tailwater on the pipe system. The check valve will not allow water to re-enter the pipe system, but the water entering the basin will work against the check valve and the water already in the basin. Provide a tailwater condition for the 10 and 50-year storm event. The tailwater at a minimum must be set at the design storage volume elevation of 38.80'.
3. *Previous Comment: Please provide a fully executed Supplement and Operation and Maintenance Agreement for the Infiltration Basin.* Just a placeholder for the submittal of the O&M Agreement until the week of 9/4/18. However, a Supplement (Supplement EZ form) for the Infiltration Basin has not been submitted. The form can be found at: https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permit-guidance/stormwater-bmp-manual

**Site Development Plans**

4. C-3.0:
    a. The minimum pipe size for storm drain pipe is 12 inches. The outlet pipe from the basin outlet structure is 10 inches. Please upsize the pipe.
    b. With the addition of the outlet structure and associated piping that outfalls to the existing system in the Market Street ROW, is NCDOT aware of your intention to drain the basin into their ROW? Just make sure this is allowable by NCDOT.
    c. The new pipe entering the basin from the east must have a flared end section.

Please submit the revised plan sheet (I do not need a full set of plans), storm drain pipe calculations and supplement **electronically** for quick review. I will need the original Supplement sent to me once I have reviewed it and determined that changes are not needed. Please call or email if there are any questions. Thank you.

RECEIVED
AUG 29 2018
ENGINEERING



CITY OF WILMINGTON ENGINEERING

a. Contact information for person listed in item 3 above:

Street Address: 1100 Situs Court Suite 100

City: Raleigh State: nc Zip: 27606

Phone: 919.995.0843 Fax: _____ Email: wwilliams@circlek.com

Mailing Address (if different than physical address): _____

City: _____ State: _____ Zip: _____

## IV. PROJECT INFORMATION

1. In the space provided below, briefly summarize how the stormwater runoff will be treated.
   Storm water will flow into the proposed pipe system into a filter basin. The water quality flow will be treated and infiltrated into the ground. All other storm water flows shall be handle by infiltration and the emergency spillway
   All storm water flows will be release at pre develp conditions as per city standards
2. Total Property Area: 123,885 square feet
3. Total Coastal Wetlands Area: 0 square feet
4. Total Surface Water Area: 0 square feet
5. Total Property Area (2) – Total Coastal Wetlands Area (3) – Total Surface Water Area (4) = Total Project Area: 123,855 square feet.
6. Existing Impervious Surface within Property Area: 100,624 square feet
7. Existing Impervious Surface to be Removed/Demolished: 100,624 square feet
8. Existing Impervious Surface to Remain: 0 square feet
9. Total Onsite (within property boundary) Newly Constructed Impervious Surface (*in square feet*):

| | |
|---|---|
| Buildings/Lots | 5,174 |
| Impervious Pavement | 44,144 |
| Pervious Pavement (adj. total, with % credit applied) | 0 |
| Impervious Sidewalks | 4055 |
| Pervious Sidewalks (adj. total, with % credit applied) | 0 |
| Other (describe) (Canopy Area) | 5304 |
| Future Development | 0 |
| **Total Onsite Newly Constructed Impervious Surface** | ~~59,677~~ 58,677 |

10. Total Onsite Impervious Surface
    (Existing Impervious Surface to remain + Onsite Newly Constructed Impervious Surface) = ~~59,677~~ 58,677 square feet
11. Project percent of impervious area: (Total Onsite Impervious Surface / Total Project Area) x100 = ~~48.0~~ 47.4%

8/29/18 RAC

12. Total Offsite Newly Constructed Impervious Area (improvements made outside of property boundary, *in square feet*):

| | |
|---|---|
| Impervious Pavement | 2,094 |
| Pervious Pavement (adj. total, with % credit applied) | 0 |
| Impervious Sidewalks | 3,241 |
| Pervious Sidewalks (adj. total, with % credit applied) | 0 |
| Other (describe) | 0 |
| **Total Offsite Newly Constructed Impervious Surface** | 5,335 |

13. Total Newly Constructed Impervious Surface
(Total Onsite + Offsite Newly Constructed Impervious Surface) = ~~65,012~~ 64,012 8/29/18 RAC square feet

14. Complete the following information for each Stormwater BMP drainage area. If there are more than three drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below. Low Density projects may omit this section and skip to Section V.

| Basin Information | BMP # | BMP # | BMP # |
|---|---|---|---|
| Receiving Stream Name | Spring Branch | | |
| Receiving Stream Index Number | 18-74-63-1 | | |
| Stream Classification | SW:C | | |
| Total Drainage Area (sf) | 123,885 | | |
| On-Site Drainage Area (sf) | 123,885 | | |
| Off-Site Drainage Area (sf) | 0 | | |
| **Total Impervious Area (sf)** | ~~65,012~~ | 64,012 8/29/18 RAC | |
| Buildings/Lots (sf) | 5,174 | | |
| Impervious Pavement (sf) | 44,144 | | |
| Pervious Pavement (sf) | 0 | | |
| Impervious Sidewalks (sf) | 4,055 | | |
| Pervious Sidewalks (sf) | 0 | | |
| Other (sf) (Canopy Area) | 5,304 | | |
| Future Development (sf) | 0 | | |
| Existing Impervious to remain (sf) | 0 | | |
| Offsite (sf) | 5,335 | | |
| Percent Impervious Area (%) | ~~52.5~~ 51.7 | 8/29/18 RAC | |

15. How was the off-site impervious area listed above determined? Provide documentation:

All offsite areas are located within the roadway right of ways that surround the site. These areas include part of the driveways and sidewalks located adjacent to this site.