



March 25, 2025

Wake County Environmental Services
336 Fayetteville Street
Raleigh, North Carolina 27602

Re: CID-23-06 Revision Parker Ridge - Plan revisions
Updated impervious area

To Whom it May Concern:

On behalf of Lennar, this letter is to explain the changes in proposed impervious area between the approved Parker Ridge subdivision plans and the proposed changes to the amenity area. The Parker Ridge amenity area drains to SCM 2, and the approved impervious area for SCM 2 is 10.42 acres. With the changes to the amenity area and through rechecking the proposed impervious areas in this drainage area, the new impervious total is 10.31 which includes a maximum impervious per single family lot of 2,095 sf and townhome of 2,500 sf respectively. Please see the updated impervious calculations for your use as well as the SCM2 sizing calculations for reference.

Please let me know if you have any questions regarding the attached submittal.

Sincerely,

A handwritten signature in black ink, appearing to read "Debra Ferm", is located below the "Sincerely," text.

Debra Ferm, P.E.

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PARKER RIDGE UPDATED IMPERVIOUS AREAS FOR SCM 2

3/12/2025

PHASE 1B								
SCM 2								
LOT (SFH)	137,500	SF	3.16	AC	55	LOTS	2,500	MAX PER LOT (SF)
LOT (TH)	123,605	SF	2.84	AC	59	LOTS	2,095	MAX PER LOT (SF)
SIDEWALK	32,946	SF	0.76	AC				
ROAD / PARKING	133,519	SF	3.07	AC				
D/W IN ROW	11,142	SF	0.26	AC				
AMENITY	10,379	SF	0.24	AC				
TOTAL	437,949	SF	10.31	AC				



Project Name: Parker Ridge

Project #: 8430-03

City/State: Rolesville, NC

Date: 3/25/25

SCM 2

Table 1 Surface Area to Drainage Area Ratio for Permanent Pool Sizing
Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

% Impervious	Permanent Pool Depth (feet)					
	3.0	4.0	5.0	6.0	7.0	8.0
10	0.51	0.43	0.37	0.30	0.27	0.25
20	0.84	0.69	0.61	0.51	0.44	0.40
30	1.17	0.94	0.84	0.72	0.61	0.56
40	1.51	1.24	1.09	0.91	0.78	0.71
50	1.79	1.51	1.31	1.13	0.95	0.87
60	2.09	1.77	1.49	1.31	1.12	1.03
70	2.51	2.09	1.80	1.56	1.34	1.17
80	2.92	2.41	2.07	1.82	1.62	1.40
90	3.25	2.64	2.31	2.04	1.84	1.59
100	3.55	2.79	2.52	2.34	2.04	1.75

Source: NCDEQ Stormwater Design Manual Minimum Design Criteria C-3 Wet Pond (4.18.2017)

Drainage Area Information

Total Drainage Area = 21.79 acres

Total Impervious Area = 10.42 acres

% Impervious Surface Area = 47.82 %

Normal Pool Information

Minimum Required Permanent Pool Surface Area	Provided Permanent Pool Surface Area
Avg Depth = 3.50 ft SA/DA ratio = 2.07 From Table 1 <div>Minimum pond surface area (SA) = $\frac{DA \times SA \div DA \text{ ratio}}{100}$ SA = 19643 sq. ft. 0.451 acres</div>	Normal Pool Elevation = 351.5 Main Pool SA Provided = 20384 sq. ft. 0.468 acres

Water Quality Information

1-Inch Runoff Volume Calculation (Water Quality Volume)	Provided Water Quality Volume
Using "Simple Method" Runoff Volume Calculations As described by Schueler (1987) <div>$Rv = 0.05 + 0.9 \times I$ Where: Rv = Runoff coefficient (in./in.) I = Percent impervious Rv = 0.48 in/in Total runoff volume from 1-inch precipitation: <div>Runoff Volume (S) = Design Rainfall \times Rv \times Drainage Area S = 37997 cu. ft. 0.872 acre-ft</div></div>	Water Quality Pool Elev = 352.88 ft Overflow Elev = 355.50 ft Storage Volume Provided = 138278 cu. ft. 3.174 acre-ft

Interpolation from table 10.1:

Impervious	Permanent Pool Depth		
	3.0	3.5	4.0
	40.0	1.51	1.24
	47.8	1.73	2.07