

December 8, 2023

Mr. Eric Erickson
Erickson Builders, Inc
2002 Arthur Lane
Austin, Texas 78704

**RE: Water Quality and Sustainability Memo
Resubdivision of Lots 18, 19, A.D. Stenger Add.
Austin, TX (TDI# 1148-103.1)**

Mr. Erickson:

The existing 2 lots, 18 and 19 (1908 and 1905 Airole Way), can currently both be developed to 45% impervious cover without any water quality features. In order to avoid demolition of the existing home it is desired to add to the rear of the home on lot 18 onto "tract 2" which is not platted. By city of Austin rules, this requires a re-subdivision, the rules for which treat the land as if it has no current rights and applies all current requirements to all portions of the land. Therefore, adding this tract triggers water quality provisions across all lots as well as limits the allowable impervious cover to 15% of the Net Site Area. Practically this would require water quality pond and would limit the allowable development to less than the area already taken by the single house that exists on the 2 lots.

It is proposed that a site-specific amendment be made to the Land Development Code that allows for the development of the 2 lots, while adding in "tract 2". The proposal is to bring in the additional tract without increasing the current allowable impervious cover and also provide some Water Quality mitigation above that which is currently required on the 2 existing lots. This will provide an increase in environmental protection over building on the 2 existing lots while also allowing the current house to be reused rather than demolished.

In order to provide water quality while enabling development that maintains the existing structure, it is proposed to:

- 1) Direct site runoff to the flatter portion of the site and away from the steep hillside to reduce erosion and sedimentation of waterways
- 2) Utilize native plants and trees to reduce watering demand and fertilizer usage which will limit runoff and pollution
- 3) Reduce allowable Impervious Cover from current values by 500 sf.
- 4) Provide on-site controls capturing roof runoff sized to capture the first half-inch of runoff from portions of new the roof area of lot 18A and 19A. Provide maintenance and inspections of the water quality facilities in accordance with the standards and schedules in the ECM.

Impervious Cover

The 2 lots (18 and 19) and “tract 2” total 0.5515 acres and the current (pre re-subdivision) allowable impervious cover (IC) is 0.1933 acres. The proposed (post subdivision) IC via amendment is **0.1818** acres, resulting in **500** sf less IC, see Table 1.

Table 1 – Allowable Impervious Cover (IC)							
Areas in acres	Without Re-subdivision				By Rule		
Lot	Lot 18	Tract 2	Lot 19	Total	Lot 18A	Lot 19A	Total
Gross Area	0.1943	0.1603	0.1969	0.5515	0.3959	0.1556	0.5515
NSA	NA	0.1153	NA		0.2684	0.0909	
Allowable IC	45% GSA	15% NSA	45% GSA		15% NSA	15% NSA	
	0.0874	0.0173	0.0886	0.1933	0.0403	0.0136	0.0539
IC percentage without Re-Subdivision				35.1%			
					Amendment (Proposed)		
Lot					Lot 18A	Lot 19A	Total
Allowable IC					Amend-ment	Amend-ment	
					0.1250	0.0568	0.1818
IC percentage of Amendment					31.57%	36.50%	32.96%

The existing and proposed IC on lots 18A and 19A (post subdivision) are presented in Table 2.

Table 2 – Existing and Proposed IC						
Areas in sf	Existing			Proposed		
Lot	Lot 18	Tract 2	Lot 19	Lot 18A	Lot 19A	Total
Existing Roof	1,314	0	0	1,314		1,314
New Roof				3,065	1,586	4,651
Existing Drive	476			423		423
New Drive					517	517
Existing Other	883			340		340
New Other				302	373	675
Contingency				0	0	0
Total	2,673			5,444	2,476	7,920
Total (acres)	0.0614			0.1250	0.0568	0.1818

Water Quality

The 2 lots (18 and 19) don't currently (pre re-subdivision) require any Water Quality Controls. The proposed new Water Quality Controls are for lot 18A and would capture the first ½ inch of rainfall runoff from the new roof area on lot 18A. The proposed new Water Quality Controls are for lot 19A and would capture the first ½ inch of rainfall runoff from 90% of the new roof area on lot 19A

On lot 18A, In order to capture the first ½ inch of new roof runoff, a cistern of 1,000 gallons will be provided (3,206 sf of new roof x 0.5 inches / 12 in per foot x 7.48052 gallons per cf). It is proposed to hold the runoff for 12 hours and then pumped out over 108 hours for a total of 120 hours after a rain event. The captured runoff will be irrigated into areas that are less than 15% slope and that total 1,500 sf or less, based on the infiltration rate of the soil.

On lot 19A, In order to capture the first ½ inch runoff from 90% of new roof, a cistern of 500 gallons will be provided (1,586 sf of new roof x 0.5 inches / 12 in per foot x 7.48052 gallons per cf). It is proposed to hold the runoff for 12 hours and then pumped out over 108 hours for a total of 120 hours after a rain event. The captured runoff will be irrigated into areas that are less than 15% slope and that total 750 sf or less, based on the infiltration rate of the soil.

Based on the City of Austin Watershed Protection Departments, "Stormwater Load Analysis Tool (SLAT)" the pollutant load leaving the site is presented in Table 3. The SLAT calculations are attached to this Memo. The proposed pollutant loads are shown to be reduced by 39% to 50% of the maximum loads that could be experienced from the site without a re-subdivision.

Table 3 – Pollutant Load (per SLAT 2.1.)					
Areas in acres	(A) Existing	(B) Without Re-subdivision	(C) By Rule	(D) Amendment (Proposed)	Reduction 100% -D/B
IC base	0	0	0	0	
	0%	0%	0%	0%	
IC developed	0.0614	0.1933	0.0539	0.1818	
	11.126%	35.055%	9.771%	32.963%	
WQ controls	None	None	Per ECM	½" new roof runoff Lot 18A & 90% 19A	
COD	2.36E+01	6.93E+01	4.90E-01	3.88E+01	44%
E. coli	4.88E+04	1.18E+05	1.02E+03	7.24E+04	39%
Pb	3.45E-03	1.25E-02	5.87E-05	6.22E-03	50%
TN	9.58E-01	2.32E+00	2.40E-02	1.51E+00	35%
TP	1.71E-01	4.13E-01	4.27E-03	2.69E-01	35%
TSS	7.16E+01	1.73E+02	1.34E+00	1.03E+02	41%
Zn	1.78E-02	6.18E-02	3.15E-04	3.45E-02	44%

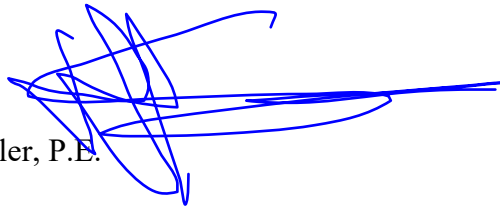
Sustainability

Allowing this project to proceed as proposed will increase sustainability in the following ways:

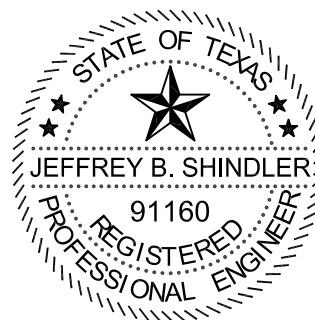
- 1) Provide for revitalization of the old home while avoiding the majority of demolition otherwise required by the limited site area, thus reducing waste to landfills

Please contact me at with any questions.

Sincerely,



Jeff Shindler, P.E.
Principal



FIRM REG. # F-8601