summit
Engineering Consultants, Inc.

June 6, 2018

Mr. Scott Stokes
City of Smyrna Public Works
2190 Atlanta Road
Smyrna, Georgia 30080

RE: Downstream Sewer Capacity for JLB Sports Avenue

Dear Mr. Stokes:

This letter is meant to recap the conditions, configuration, and capacity of the downstream sanitary sewer system that would serve the proposed project. JLB proposes to develop a mixed-use project on Sports Avenue in Smyrna, Georgia. The project is currently proposed to consist of 325 residential units and approximately 10,000 sf of retail and flex office space.

Existing Conditions:

An 8" diameter sewer line exists in the public right-of-way of Sports Avenue. This sewer leaves the road and is contained in private easements around the subject property, through a neighboring property, under a railroad and through an apartment complex until it reaches a Cobb County Trunk sewer line near Spring Hill Road. Research of the easements indicates that the subject property has the right to utilize the downstream sewer lines.

The drainage basin in the Smyrna Sewer Service Area (north of the railroad) consists of uses including a hotel, a fast food restaurant, a small townhome community, an apartment complex, and the existing structure that currently serves as a church. This building will be removed as part of the development. South of the railroad is an apartment complex in the Cobb County Sewer Service Area.

An as-built survey of the sewer was performed by Hardy Surveying Group, LLC. This survey was performed prior to the cleaning of the sewers, but shows the sewer diameter to be 8 inches with slopes ranging from 0.6% (one short length two manholes above trunk sewer) to 2.5%. Manholes all have at least 0.1 ft drops from invert in to invert out.

The as-built indicated some blockage in the sewer. A jetting/cleaning of debris effort was successfully completed so that flow characteristics could be determined.

A visual inspection via camera as well as in person along the line was recently completed. The sewer lines are generally in good condition with very few exceptions. There are a few locations where the line has a "sag" which increases the depth of flow for short distances. These locations should be evaluated and repaired if they are found to impede the flow significantly. Just downstream (south) of the railroad, a storm sewer pipe and flows have eroded the stream bank over time exposing a 25-30 foot section of 8" DIP sewer. A joint in this section has deflected downward. There is evidence of a very small leak at this joint. This section should be

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repaired by replacing/repairing the line, supporting it either by reburial or by the addition of piers and future erosion should be prevented by placement of rip-rap.

Flow/Capacity Analysis:

Uses currently flowing into the sewer main vary by type and age. It was determined that a census or study of number of dwellings would not be likely to yield an accurate analysis of existing flows. A flow monitor was installed at the point where the subject sewer ties in to the Cobb County trunk sewer. This monitor captures all flows no matter where they enter the system. The data analysis is not complete at this date but the raw data indicates that the monitor functions correctly and will provide accurate depth and flow parameters once the report is complete. The raw data shows the sewer flowing at a depth ranging from 1 inch to 3 inches (during peaks). This corresponds to a flow of 243 GPM. Several rainfall events occurred during the flow monitoring period. While inflow and infiltration are shown to increase flows slightly after events, there were no indications that surcharges occur or that there are any direct paths for stormwater to enter the system.

The proposed development will consist of 325 multi-family dwellings and some retail/office space. JLB has collected data from recently constructed and stabilized projects with a similar mix of one, two, and three bedroom units (65-70% 1BR, 27-30% 2BR and 4-7% 3BR). The actual usage data shows that average daily uses are between 70 and 80 GPD. For the purposes of this study, we have assumed a flow of 100 GPD per unit to be conservative. This yields a new flow of +/- 32,500 GPD. The retail flows will be small, and expected peak usage times will not correspond to those associated with the residential units. A peaking factor of 2.5 times the average daily flow would yield a peak additional flow of +/- 3,385 GPH = 56.4 GPM. No reduction in existing flows due to demolition has been assumed.

Conclusion:

The existing sanitary sewer needs a few minor repairs due to its age. These locations are being further analyzed, but repairs should be made to insure that no discharges continue into creeks and in locations that would compromise capacity.

The sewer at its flattest, most critical slope (0.6%) is capable of carrying +/- 413 GPM at ¾ full. Existing flows as measured at peak times (243 GPM) added to estimated peak flows from the development (56.4 GPM) would be on the order of 299 GPM which indicates the existing sewer has the capacity to transmit the proposed flows.

If you have further questions, please let me know.

Respectfully Submitted,

Christopher K. Harrell, P.E.

encl.: As-built survey
Raw data graph
Site Concept-Zoning Plan

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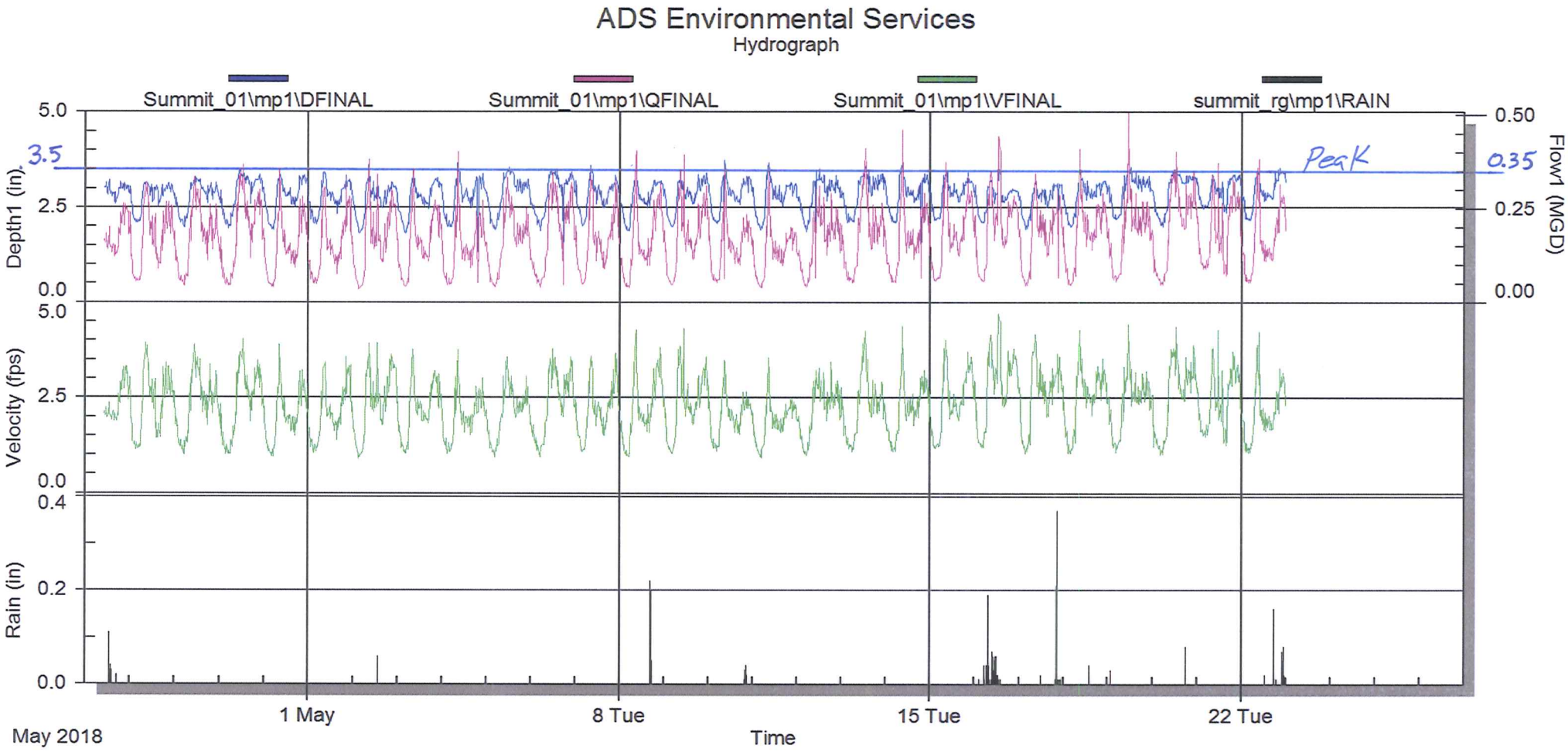
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Rain (in)
Flow1 (MGD)
3.5
Peak
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5.0
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1 May
8 Tue
15 Tue
22 Tue
May 2018
Time

Site Concept - Zoning Plan

Cumberland - Smyrna, Georgia

DEVELOPMENT DATA

Total Units:	325 Units
Total Beds:	446 Beds
Bldgs 300, 400, 700 and 600 = 3 Stories	
Bldgs 100, 200, and 500 = 3/4 Splits	
Total Retail:	3,040 sf
Total Live/Work:	6,960 sf*
Total Ret./Comm:	10,000 sf

**total area is commercial sf only*

OPEN SPACE CALCULATIONS:

Total Gross Lot Area: 500,908.86 sf
Total Open Space Area: 183,616.37 sf
Percentage of Open Space: 36.66%
Note: Open space includes buffers, landscape areas, easements, and outdoor amenity spaces. The existing detention pond and protective corridor ROW is removed from all calculations

PARKING

421 Surface Spaces
(10 Handicap, 2 Van Accessible)
25 Tandem Spaces
40 Integrated Garages (1 Van Accessible)
Total Parking: 486 Spaces
(1.50 Spaces/Unit)
(1.09 Spaces/Bed)

UNIT MIX

UNIT TYPE	AVERAGE SF	UNITS	% OF UNITS
1 Bedroom	780 sf	214	66%
2 Bedroom	1,245 sf	92	28%
3 Bedroom	1,367 sf	13	4%
Live/Work	2,521 sf*	6	2%

**area is commercial and residential combined*

STREAM BUFFER PRESERVATION AND ENCROACHMENT

50' STREAM BUFFER

TOTAL BUFFER AREA:	15,460.45 SF
AREA PRESERVED:	14,233.59 SF
AREA IMPACTED:	1,226.86 SF
% IMPACTED:	7.9%

25' IMPERVIOUS BUFFER

TOTAL BUFFER AREA:	7,245.31 SF
AREA PRESERVED:	4,729.06 SF
AREA IMPACTED:	2,516.25 SF
% IMPACTED:	34.7%

- 25' IMPERVIOUS BUFFER (PRESERVED)
- 25' IMPERVIOUS BUFFER (IMPACTED)
- 50' STREAM BUFFER (PRESERVED)
- 50' STREAM BUFFER (IMPACTED)

JLB PARTNERS | 06.01.18 | Scale : 1" = 100' |

NILES BOLTON ASSOCIATES