



**Thomas L. Knight, P.E.
Professional Association**

Planning, Design, Permitting, Inspection

March 15, 2016

Kenneth Comia
City of Groveland
156 S. Lake Avenue
Groveland, Florida 34736

Subject: Southgate Construction Plan Review
Application #2016-12
2nd Review

Dear Ken:

We are in receipt of the construction plan review comments from the 1st review of the Construction Plans for Southgate, also known as the engineering drawings, and supporting information. We have reiterated each comment below followed by our response in italics.

Engineering

General:

1. Provide signed and sealed engineering drawings for final approval.

Refer to the signed and sealed engineering drawings included with this submittal.

2. Provide one copy of a certified boundary survey.

Refer to the attached certified boundary survey.

3. Valve spacing in the potable water system shall not exceed 500 – foot intervals.

Refer to sheets 8, 9 & 10 of the revised engineering drawings. Valves have been moved such that the maximum valve spacing is less than 500 feet. Note #7 on sheet 8 states that all isolation valves shall be no greater than 500 feet apart.

4. Fire hydrant spacing shall not exceed 500 – foot intervals in a residential development.

Refer to sheets 8, 9 & 10 of the revised engineering drawings. Fire hydrants have been moved such that the maximum spacing between hydrants is less than 500 feet. Note #6 on sheet 8 states that all fire hydrants shall be no greater than 500 feet apart.

5. Provide approval of the street name from Lake County Emergency Services.

The street name approval will be provided under separate cover.

6. Include a street lighting plan in the plan set.

Refer to sheet 11 of the revised engineering drawings. The street lights are illustrated by the sun symbol.

7. Provide a letter from Lake County Public Works approving the design of the modifications to CR 33.

CR 33 is located north of SR 50. This section of the roadway is SR 33. A driveway connection permit and a right-of-way utilization permit from FDOT will be provided to you upon receipt.

8. Provide a sketch and description of the easement provided along the church property for utilities.

Refer to the attached Sketch of Description "Force Main Easement" by Optimum Land Services, LLC.

Sheet 5

9. Include a dedication for the conservation buffer to the St. Johns River Water Management District and the City of Groveland.

Refer to sheet 5 of the engineering drawings. Note #3 in the bottom right corner of that sheet has been revised to include the City of Groveland in the conservation easement dedication.

10. Include the following information in the Project Characteristics Table:
 - Total pervious / impervious area
 - Length of streets in feet
 - Total length of water lines
 - Total length sewer lines
 - Total length of reclaimed lines

Refer to sheet 5 of the engineering drawings. The requested information has been included in the project characteristics.

11. The lift station site shall be dedicated as a tract to be owned by the City of Groveland.

Refer to sheet 5 of the engineering drawings. Note #2 in the bottom right corner of that sheet states that Tract C will be dedicated to and maintained by the City of Groveland.

Sheet 6 and 7

12. Indicate how the drainage of the Type A lots will be collected to prevent runoff to adjacent parcels.

Refer to sheets 6 and 7 of the revised engineering drawings. The spot elevations, flow arrows and lot grading type details indicate how the runoff from all Type A lots will be collected to prevent runoff to

adjacent parcels. There is a 1.0% minimum slope along each side lot line where the runoff will flow between the lots.

13. Include a note that the retaining wall will require a separate permit from the building department.

Refer to sheets 6 & 7 of the revised engineering drawings. A note has been added on each sheet stating that "Retaining wall will require a separate permit from the City of Groveland Building Dept."

14. Indicate where the cross sections shown on the grading plans are included in the plan set.

Refer to sheets 15, 16 & 17 of the revised engineering drawings. Cross-sections A1, A2, B1 & B2 are shown on sheet 15. Cross-sections D, E & F are shown on sheet 16. The typical right-of-way cross-section is shown on sheet 17.

Sheet 8

15. Determine the ownership of the 4-inch force main from the adjacent property to the lift station site.

The 4" force main from the lift station to the connection point at the existing sanitary sewer manhole will be owned by the City of Groveland.

16. Changes in direction of pressure pipes shall be accomplished using fittings. Pipe deflection is not permitted.

Refer to sheets 8, 9 & 10 of the revised engineering drawings. Fittings have been added at all changes in direction. Note #8 on sheet 8 states that all pressure pipe bends shall be accomplished with fittings, no deflections will be permitted.

Sheet 9 and 10

17. Specify that the reclaimed water pipe shall be purple.

Refer to sheets 9 & 10 of the revised engineering drawings. A note has been added to each sheet stating that all reclaimed water mains shall be purple in color.

18. Specify that pressure pipe crossing beneath or around storm sewer pipe shall be not be deflected, but shall use fittings to accomplish the change in direction.

Refer to sheets 9 & 10 of the revised engineering drawings. A note has been added to each sheet stating that all pressure pipe crossing beneath or around storm sewer pipe shall use fittings to accomplish changes in direction.

19. Provide a detail for the ARV's for the water and reclaimed mains.

Refer to sheet 29 of the engineering drawings. The City of Groveland standard details for Air Release Valve (W13-A) and Air Release Valve Assembly – Offset (W13-B) are located in the top row of details.

Geotechnical Report

20. The geotech report states that dewatering may be required during construction. Include a note in the plans of this possibility.

Refer to sheet 2 of the revised engineering drawings. Note #20 states that dewatering may be required during construction.

Wastewater Report

21. Provide the diameter of the pipe receiving the flow from the proposed lift station in the existing system. Include current flows in the existing system and the effect the additional flows will have.

Refer to sheet #13 of the engineering drawings. The force main to manhole connection detail at the top of the page shows the diameter of the pipe receiving the flow from the proposed lift station. The pipe diameter has also been called-out in the plan view. All gravity sewer lines receiving the flow from the proposed lift station are 8" in diameter. The existing manhole at the connection point is at the beginning of the sanitary sewer network. The existing flows at this point are only a small fraction of the capacity of the existing sewer pipe. The public works department has provided assurance that the downstream sanitary sewer system has the capacity to receive the flows from the proposed lift station

Stormwater Report

22. The report is dated 2006. Has the permit been issued by the St. Johns River Water Management District? If so, is it still concurrent?

Please be advised that a permit was issued by SJRWMD however that permit has expired and we have resubmitted for a new permit. A copy of that permit will be provided to you upon receipt.

Water Report

23. Consider irrigation demand at ADF to evaluate the system performance. Assume half of the lots irrigating during the analysis. Include fire flows during the analysis at the highest point in the system.

Please refer to the revised Average Day Demands and Fire Flow with Irrigation @ Max Day Demands. These results demonstrate that the proposed system has the capacity to provide minimum fire flow and pressure at the maximum day demands with irrigation of one-half of the lots.

Landscape Plans

24. It appears that a street tree is proposed at the same location as the force main from the church property. Verify there is not conflict.

The landscape plans will be red-lined and the tree in conflict with the proposed force main will be removed.

Community Development

Landscape:

1. Street trees will need to have root barriers installed, because of the utilities. It is not noted on the plans that I can find.
2. All street trees need to be 3 inches in diameter 12 inches above grade: The plans show DBH. I'm not sure how to calculate down to 12 inches above grade. I think the sizes are very close. Maybe you could educate me on that.
3. The North side will need and (A) Buffer. Lots 1 – 13.

The landscape plans will be red-lined. Notes will be added to the landscape and irrigation plans to address the comments above.

Irrigation:

Everything looks good for the irrigation. We are trying to make all Irrigation Water Conservation friendly. The plans are not showing which heads will be on which zones. Please make sure rotors and sprays are on separate zone. Irrigation needs to have head to head spacing, etc.

The irrigation plans will be red-lined. Notes will be added to the irrigation plans to address the comments above.

Lake County Public Works

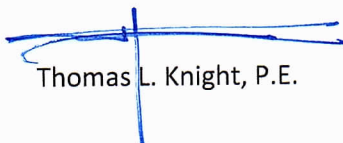
1. The residential property on the north side of Southgate Ave has a separate existing driveway access off of SR 33 which is not shown on the plans. The turn lane improvements that Southgate will build on SR 33 will impact this driveway. It is recommended that the driveway be reconstructed off of SR 33 or work with the property owner to provide access from Southgate Ave.

Refer to sheet 12 of the engineering drawings. Note #8 states that the site contractor shall reconstruct the existing driveway from SR 33 to the existing home site at the northwest corner of the Southgate property.

Should you have any questions or need additional information, please don't hesitate to call me at (352) 394-8514 or e-mail me at tknight@knighteng.com.

Sincerely,

Thomas L. Knight, P.E., Professional Association


Thomas L. Knight, P.E.