



August 10, 2016

Nilsa Zacarias, AICP
Village of Tequesta

Regarding:
Pelican Square

As requested we have calculated the fire flow for the Pelican Square project as per the current Florida Fire Prevention and NFPA 1. The site fire water service would need to be sized to allow the hydraulically most remote fire hydrant on site to deliver the minimum allowed fire flow.

Using 21,688 square feet for the largest building on the property, Building A see below:

Per NFPA 1 Fire Code 2015 Edition:

18.4.1* Scope.

18.4.1.1* The procedure determining fire flow requirements for buildings hereafter constructed shall be in accordance with Section 18.4.

18.4.4. Fire Flow Area.

18.4.4.1 General. The fire flow area shall be the total floor area of all floor levels of a building except as modified in 18.4.4.2.

*Total floor area for the proposed building is **21,688 square feet** for the three (3) floors. The modification listed above does not apply to this project as the construction **Type is III (200) or Type III-B per FBC 6th Edition (2017)** which is not included in the modification exception list. The proposed building is a mixed-use occupancy classification including Residential Group R2 and Business.*

18.4.5 Fire Flow Requirements for Buildings.

18.4.5.3.1 Building Other Than One- and Two-Family Dwellings. The minimum fire flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in **Table 18.4.5.2.1.**

*For Construction type **III (200)** and a Fire Flow Area between **18,401 - 21,800 square feet**, **Table 18.4.5.1.2** requires **3,000 gpm** at 20 psi with a 3-hour duration.*

18.4.5.3.2 A reduction in required fire flow of 75 percent shall be permitted when the building is protected throughout by an approved automatic sprinkler system. The resulting fire flow shall not be less than 1000 gpm (3785 L/min).

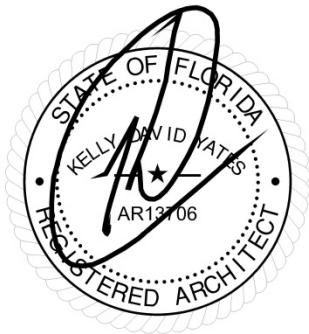
3,000 gpm - 75% (2,250gpm) = 1,000 gpm; as indicated by 18.4.5.3.2, the minimum fire flow shall not be less than 1,000 at 20 psi with a 3-hour duration. This flow and pressure should be used if standard response sprinklers are used throughout the building.



The calculated fire flow should be a minimum of **1,000 GPM at 20-psi for a minimum duration of 3-hours.** The local AHJ may allow for an additional reduction if quick response sprinklers are used throughout the buildings. It appears the estimated fire flow of 2,390-gpm at a residual pressure of 20-psi is available, based on the September 22, 2018 Hydrant Flow Data as performed by Tequesta Fire Rescue meets the minimum fire flow requirement for the building. The duration of fire flow may not be an issue as the water supply is a public utility but may still need to be reviewed and approved by the local AHJ.

Feel free to call or email me if you have any questions.

Respectfully submitted,



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