



August 21, 2025

Bruce Hunchard Chair Franklin Zoning Board of Appeals 355 East Central Street Franklin, MA 02038	TOWN OF FRANKLIN TOWN CLERK 2025 AUG 26 RECEIVED Re: 3:161	A&M Project #: 3317-01 Peer Review Comprehensive Permit 444 East Central Street Franklin, MA
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Dear Mr. Hunchard,
 On behalf of our client, TAG Central LLC, Allen & Major Associates, Inc. (A&M) is providing the following responses to a letter prepared by Hancock Associates dated 08/07/2025.

The response to comments is shown below in **bold** preceded by the original comment shown in *italics*.

Zoning Compliance:

Comment Z1: The site is located in the Commercial 2 Zoning District with Single-Family III and Rural Residential I Districts abutting the property to the west and south, respectively. The site is located within a Zone II Water Resource District, Commercial and Business Corridor Sign District, Senior Village Overlay District, and Flood Hazard Overlay District. Section 185-13, Schedule of Lot, Area, Frontage, Yard and Height Regulations limit building to 3 stories and 40 feet in height. The applicant asks for a waiver for this regulation to construct 4 story / 57-foot high buildings.

Response Z1: The Applicant acknowledges the site’s location within multiple overlay districts and the Commercial II zoning district. A waiver was initially requested from Section 185-13 to allow buildings of four stories and a maximum height of 57 feet, in lieu of the 3-story/40-foot standard. However, since the design modification was made for a flat-roof system in lieu of the initially proposed sloped-roofs, this waiver will be adjusted to reflect a lower maximum height of 48 feet. A revised waivers list based on the modified plans will be submitted based on the final plans.

The additional height is necessary to achieve the project’s density and architectural design goals. Comparable multifamily projects in Franklin, including adjacent buildings along the E. Central Street corridor, feature similar or taller heights.

Comment Z2: The proposal requests a waiver from Section 185-21.B.3.A.1 Parking Loading and Driveway Requirements for two spaces per unit, proposing 1.62 per unit. Given the project is ~1 mile from the Dean College/Franklin Station MBTA Station, we feel this parking ratio is a bit low. Suburban multi-family projects should provide 1.75 spaces per unit.

Response Z2: Initial plans have already been revised to increase the parking ratio from 1.35 parking spaces per dwelling-unit (PS/DU) to 1.62 PS/DU in response to the ZBA’s comment. Multiple factors were carefully considered to determine the appropriate

parking ratio for this project, specifically the unit mix, the anticipated number of onsite staff, proximity to public transportation, visitor parking and market data. The proposed parking ratio is further verified by a Parking Demand Analysis prepared by the Project's Traffic Engineer, VAI, which is a study of the actual parking demand at existing comparable communities in similar New England suburban settings. Per the attached Parking Demand Analysis, the average peak parking demand ratio of these comparable communities is 1.34 PS/DU, with a range of 1.23 PS/DU to 1.49 PS/DU across the data set.

The Project's proposed 1.62 PS/DU exceeds the actual demand ratio for all the communities observed by a significant margin. Furthermore, the Board's transportation peer review engineer, Howard Stein Hudson (HSH), agreed that even the lower initially proposed parking ratio of 1.35 PS/DU was adequate, stating in their letter dated 5/30/25: "...referring to the ITE Parking Generation, where the proposed parking ratio falls within the range of observed parking demands of similar residential developments, HSH generally agrees with the Applicant's proposed parking plan and waiver's request." Based on all these factors, the Applicant is confident the proposed parking ratio of 1.62 PS/DU will exceed the demand for parking at the Project.

Comment Z3: Please provide unit counts per building to confirm adequate parking proximate to each building given the proposed dispersion of one-, two- and three- bedroom units.

Response Z3: Unit counts per building are shown on the Layout and Materials plan. The unit types (1-, 2- and 3-bedroom units) are more or less evenly distributed across the four buildings as per the Building Type 1 and Type 2 floor plans on the Architectural Plans sheet A-100 and A-101. As the Civil sheets relate to the Architectural sheets, Buildings #1, #2 and #3 with 64 units shown are Building Type 1's, and Building #4 with 72 units is a Building Type 2.

As illustrated on the Architectural plans, Building Type 1 has 28 x 1-bedroom, 28 x 2-bedroom and 8 x 3-bedroom units and Building Type 2 has 36 x 1-bedroom, 33 x 2-bedroom and 3 x 3-bedroom units.

Based on this, parking has been designed to be evenly dispersed amongst the buildings to the maximum extent possible to ensure appropriate proximity and accessibility of parking to each building.

Comment Z4: The proposal requests waivers from setback from structures (Garages) to side lot lines. We question the necessity of a separate garage to be placed 8.9 feet from a lot line given that the garage can be placed elsewhere on the property outside of the site setbacks. The nearest multifamily building to a side lot line is 20 feet. Provide a context plan showing neighboring lots and structures. The Board may ask the applicant to be more sensitive to the proximity of structures to residential neighbors to the east in deliberating waiver requests and considering the appropriateness of the overall layout with four story buildings. The Board may

request cross sections from the Applicant through the site and easterly residential neighbors to better understand the visual impacts of the proposal on the neighbors.

Response Z4: The site plan and recent modifications have been thoughtfully designed to minimize impacts to abutting properties, in direct response to feedback from the Board and neighboring residents. A cross-section illustrating the relationship between the Project and the Easterly abutting properties was presented at the 7/31/25 Hearing and subsequently submitted to the Board on 8/19/25.

As demonstrated in the submitted materials, the abutting properties to the east are situated approximately 19 feet above the Project site's proposed finished grade. To address concerns about screening and privacy, the Applicant has proposed the addition of a new vegetation buffer, which will supplement the existing vegetation buffer, and be accompanied by a new six-foot-high stockade fence near the eastern property line. These elements were presented in detail at the 7/31/25 Hearing. In further response to community and Board input, the Applicant also modified the building design by replacing the original sloped roof with a flat roof to reduce the overall building height and increased the residential building's east setback from 62 feet to 74 feet.

There are two (2) structures requiring waivers for property line setbacks on this project. The first is a residential building, adjacent to the westerly property line, which abuts vacant commercial land. The Applicant coordinated with the owner of this property and, at their request, incorporated a fence along the westerly property line. No concerns were raised regarding the side lot line of the building.

The second is the garage in question, which is located behind the single-family home of the same owner as the Project site and this garage location has been mutually agreed upon with the Applicant and the property owner.

Additionally, the Applicant will be requesting the attached Approval Not Required (aka ANR) subdivision plan to be endorsed as part of the Comprehensive Permit by the Zoning Board of Appeals. The purpose of the ANR plan is to convey two separate portions of the subject site to the Town as per the Conservation Commission's request and to the Seller, respectively. While the project's design and waiver list already incorporated the proposed property boundaries per the ANR plan, the waiver request list will be updated with an additional waiver allowing the ZBA to endorse the ANR plan as the Planning Board is typically the authority that endorses ANR plans per Franklin by-laws.

Comment Z5: The applicant asks for a waiver for Section 185-21.C.5 – Parking Lot Tree Schedule. The applicant should enumerate how many trees per parking space will be provided.

Response Z5: The Applicant is proposing one tree for every 18 parking stalls, or 24 trees total that comply with the zoning tree sizing standard. The waiver list will be updated to reflect

this specifically.

Comment Z6: The Applicant should show the minimum lot width circle diameter on the layout plan and request a waiver if required.

Response Z6: The minimum lot width circle diameter will be added to the site layout plan. A waiver will not be required.

Erosion Control:

Comment EC1: The site development involves a significant amount of earthwork on land with marginal soils that drains into a Bordering Vegetated Wetland centrally located on the lot. The applicant should provide temporary construction period sedimentation basins onsite. Sediment basin sizing calculations should be performed for each pre-development subcatchment area and a suitably sized temporary sediment basin provided at the lower end of the area with appropriate outlet control.

Response EC1: Temporary sedimentation basins sized for each pre-development subcatchment will be included in the erosion control plan. Sizing calculations and locations will be shown on updated grading and drainage plans with appropriate outlet control measures.

Comment EC2: A construction sequencing schedule should be added to the Erosion and Sedimentation Control Notes.

Response EC2: An estimated construction sequencing plan is provided on Sheet C-002 specifying key phases of site preparation, grading, utility installation, and stabilization.

Comment EC3: Per the EPA's construction general permit, east central street should be swept daily during construction. The Erosion Control Notes should be revised.

Response EC3: The Erosion Control Notes will be revised to require daily street sweeping during construction along East Central Street in accordance with EPA CGP standards.

Site Layout:

Comment L1: The project proposes five distinct building areas accessed from a single main entrance. The National Fire Protection Association recommends two points of access for housing projects exceeding 100 units. The Board should seek input from Franklin Fire Department regarding the site layout and fire truck swept path analysis plans.

Response L1: The Applicant has coordinated with the Franklin Fire Department on site plan layout and access during both the LIP Review and Comprehensive Permit processes, and revisions were previously made to respond to the Fire Department's comments during the LIP Review Process. The Franklin Fire Department confirmed they have no further comments as per their letter, which was submitted to the Board by the

Applicant on 3/28/25 (attached). The Applicant is happy to provide the swept path analysis plans to the Fire Department for review.

Comment L2: On the fire truck turning plans, the East Central Street center line is shown on only one of the two plans. Massachusetts Fire Access Regulations prohibits vehicle swept paths crossing centerlines of oncoming traffic.

Response L2: The fire truck turning plans will be updated to show the East Central Street centerline consistently. Revised paths will demonstrate compliance with MA Fire Code, including restrictions on crossing the centerline.

Comment L3: What is the intent of the dead-end drive on the north side of the site? Why does it extend beyond the fire truck access path? Also, under existing conditions, there appears to be access to 440 East Central Street through this path. Are there any existing easements associated with this access point? How long has this access point been in use?

Response L3: There is an access easement in place with the neighboring property (440 E Central St) which necessitates keeping this drive-way connection in place although it is the Applicant's understanding that this access point is not currently in use nor has it been in use in many years.

Comment L4: The project proposes one pedestrian dock through wetland areas. The Applicant should provide preliminary details of the dock and how wetland impact and ADA accessibility will be addressed. Also, there is some inconsistency between the civil and landscape plans regarding this amenity area. We understand that approval for this dock is subject to local and state permitting outside the jurisdiction of the Zoning Board, however, the Applicant is presenting this as a critical part of the sites' amenity and open space package.

Response L4: Preliminary dock details are attached and have already been submitted to the Conservation Commission and their peer reviewer under separate cover. The landscape and civil plans will be reconciled to ensure consistency. The Applicant acknowledges that dock permitting will be subject to Conservation Commission review.

Comment L5: Applicant should review the distribution of accessible parking spaces throughout the site. While the site meets the required number of accessible spaces, no accessible spaces are proposed at Building 2 or the pergola/dock amenity area. Also, confirm slope, signage, and dimensions of the accessible parking spaces including access aisles.

Response L5: Accessible parking space locations will be redistributed to ensure coverage at Building 2 and the dock amenity area. Revised plans will confirm compliance with ADA slope, signage, and dimensional standards.

Site Grading:

Comment G1: The project includes a great deal of earthwork. According to the Geotechnical report, 5-6 feet

of fill across the site is required. The Applicant should provide the Board with an estimated quantity of total earthwork as well as import and/or export anticipated with number of daily/weekly trucks anticipated and duration of fill operations.

Response G1: The requested information will be prepared by the general contractor in coordination with the geotechnical and civil engineers once the general contractor has been engaged and selected. The Applicant is amenable to a condition of approval requiring this information be provided to the Building Department as a part of the site work/grading and/or building permit application(s).

Comment G2: Retaining walls with fall protection are proposed abutting the Bordering Vegetated Wetland range in height from a few feet to 10 feet. The Applicant should provide preliminary details including heights, materials, and safety features (guardrails).

Response G2: See Sheet D-507 Detail #6 for proposed retaining walls, including typical sections, heights, materials, and safety features such as guardrails (freestanding wall section acts as vehicular guard rail).

Utilities

The project proposes connections to the municipal sewer and water systems in East Central Street.

Comment U1: The Applicant should provide sewer design flow and water demand and comment on the capacities of the municipal systems to service the project.

Response U1: See the attached will-serve letter provided by the Town Engineer. The letter notes adequate water available and potential need for on-site temporary storage for sewer impacts. The applicant has provided a place holder on the plans for this potential on site sewer holding tank. The Applicant has coordinated with the Town Engineer and DPW and has determined that a condition of approval will be incorporated into the Decision, similar to the condition included in the Grove Street 40B Decision, which dictates a study will be performed and funded by the Applicant to evaluate the sewer pump station in question (directly across the street from the subject site) and options for mitigation by the Applicant including either through a sewer holding tank or funding pump station upgrades, if necessary, to be determined by the study. The Applicant will coordinate with the Town Engineer and DPW to determine the exact language of this condition during the process of drafting a Decision.

Comment U2: Existing condition information on the site utility plan appears to be missing from the survey provided such as existing sewer line information.

Response U2: Existing utilities will be fully depicted on an updated survey and site utility plan, including locations and inverts of existing sewer infrastructure.

Comment U3: The applicant should provide information on the next downstream sewer manhole (easterly) in East Central Street.

Response U3: Information on the next downstream sewer manhole in East Central Street will be added to the plans.

Comment U4: Sewer services exiting the proposed building are sloped at 0.5%, less than the 2% required by plumbing code.

Response U4: As is the regional standard civil engineering practice, the civil sewer design uses "TR-16 Guides for the Design of Wastewater Treatment Works" as guideline for sewer pipe design. "TR-16" recommends a minimum velocity (when flowing full) of not less than 2.0 feet per second based on Mannings formula using an "n" value of 0.013. This minimum velocity equates to a minimum slope of 0.5% for 6" PVC piping. Plumbing code does not dictate sewer designs outside of the building's plumbing.

Comment U5: The onsite sewer system leads into a proposed 35,000-gallon sewage storage tank. The Sewer Storage tank then connects to the public sewer manhole in South Main Street. The public sewer manhole invert is elevation 270.08. The grade differential between the final onsite manhole and street manhole inverts is 1.32 feet.

The storage tank intends to pump sewage off peak times to reduce impact on the municipal system including a downgradient municipal pump station. The Applicant should provide a detailed description of the system's intent and operation. This should include emergency power provisions, maintenance plans, and emergency response protocols. The Board and Conservation Commission may have concern given the proximity to the wetlands downhill from this tank.

Response U5: See response to U1. Depending on the sewer pump station study and permit condition, the sewage holding tank may not be required; it has been shown as a placeholder on the plans to enable preliminary review by the Conservation Commission and Board. That said, Applicant requests the additional information requested including maintenance plans, etc. be provided at a later date as a part of the condition of approval.

Comment U6: The proposed development features elevation changes from 276.0 at the intersection of the site drive with East Central Street and the elevation of the fourth floor of Building 4 at 310.75 (34.75 feet). The Applicant should perform hydrant flow testing proximate to the site and determine the sufficiency of the existing municipal system to supply adequate volume and pressure for fire suppression systems. The Applicant should consult with the Franklin Water Department in this preliminary review.

The Applicant proposes to connect an 8" water connection to the town's 6" line. Hancock is concerned that the lateral exceeds the main size. The applicant is requesting a waiver from 263-4, pertaining to the town's ability to deny a project given the available water supply. The municipality is under no obligation to bear the costs of additional utility infrastructure. The Applicant should consult with the Franklin Water Department to review the adequacy of the existing 6" water main.

Response U6: See attached hydrant flow test that was performed on May 21, 2025, illustrating adequate volume and pressure for this project. The plans will be updated to illustrate the existing 12" water main the project is proposing to tie into.

Comment U7: The separation of water and sewer lines is less than 10 feet in some areas. In these areas, the sewer line should be concrete encased, and pressure tested for water tightness. Also, the Applicant should confirm that the vertical separation between the invert of the water pipe and the crown of the sewer line is at least 18 inches and provide a detail of water-sewer crossings. Hancock recommends maintaining a 10-foot separation where feasible.

Response U7: The plans will be revised to provide a minimum 10-foot separation between sewer and water lines where feasible. In constrained areas, sewer pipes will be concrete encased and pressure-tested per DEP and local standards. Cross-sectional details will be added.

Comment U8: The Applicant should coordinate utility line and tree location conflicts.

Response U8: Utility and tree layout conflicts are under review. Updated plans will be submitted to address all conflicts.

Stormwater and Wetlands

The proposed stormwater system includes five underground infiltration systems, eleven water quality devices and associated outlet control structures, flared end outlets, catch basins and a trench drain. The Applicant is requesting extensive waivers from the Franklin Wetlands Bylaws and Regulations. The Board should seek comprehensive input from the Conservation Commission regarding the waiver requests.

Comment SW1: We defer to BETA Group, Inc., who have been engaged by the board to review stormwater and resource area aspects of this project.

Response SW1: The Applicant acknowledges BETA Group's role in reviewing stormwater and wetlands issues and will coordinate closely to address their findings. Detailed responses will be provided as BETA's review progresses.

Traffic Assessment

The Applicant has provided a Traffic Impact Assessment in accordance with the Massachusetts Department of Transportation (MassDOT) Guidelines for traffic impact assessments and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports. The report presents information regarding anticipated trip generation, historic crash data and some evaluation of intersection safety with regard to safe sight distances.

Comment T1: We defer to the Traffic Engineering firm Howard Stein Hudson who has been engaged to review the project by the board from a transportation engineering perspective.

Response T1: The Applicant defers to Howard Stein Hudson for peer review on traffic-related matters.

Comprehensive Permit
444 East Central Street
Franklin, MA

August 21, 2025

A&M believes these responses will provide sufficient information for the continued review of this application.

If you require additional information, please feel free to contact me.

Very Truly Yours,

ALLEN & MAJOR ASSOCIATES, INC.



Carlton M. Quinn, PE
Principal

Copy: TAG Central, LLC (by email)

Enclosure: Parking Demand Analysis, by Vanesse Associates, Inc.
ANR Plan, dated July 31, 2025
Fire Department Letter submitted to ZBA on March 28, 2025
Will Serve Letter, February 9, 2024 from Town Engineer
Hydrant Flow Test Results, performed May 21, 2025

PARKING DEMAND ANALYSIS

In order to assess the adequacy of the proposed parking supply to support the anticipated parking demands of the Project, a review of parking demand data obtained for multifamily residential communities located in a similar setting to the Project and parking demand data published by the ITE¹ for conventional multifamily residential communities were reviewed.

PARKING DEMAND OBSERVATIONS

Parking demand observations were obtained from four (4) multifamily residential communities located in Massachusetts and New Hampshire, that included parking occupancy data collected at each community on a weekday between 4:00 and 6:00 AM, or between 5:00 and 8:00 AM. These time periods represent the peak parking demand periods for a residential community.² Table 12 summarizes the parking demand observations for each community along with the parking occupancy and corresponding parking ratio.

As can be seen in Table 1, the peak-parking demands observed at the four (4) multifamily residential communities were found to range from 1.23 parking spaces per unit to 1.49 parking spaces per unit, or an average peak parking demand of 1.34 parking spaces per unit. The average peak occupancy rate found to be approximately 77 percent of the available parking spaces.

¹*Parking Generation*, 6th Edition; Institute of Transportation Engineers; Washington, D.C.; October 2023.

²The peak-parking demand for a residential community generally occurs on a weekday after 11:00 PM and before 6:00 AM.

ITE PARKING DEMAND DATA

Table 2 summarizes the ITE peak parking demand data that is derived from parking demand observations performed at multifamily residential communities situated in a general urban/suburban setting.

Table 2
ITE PEAK PARKING DEMAND DATA

Land Use Code/Time Period	Peak Parking Demand per Dwelling Unit	
	Average Rate	85 th Percentile
Multifamily Housing (Mid-Rise) ^a		
<i>Weekday</i>	1.23	1.45
<i>Saturday</i>	1.04	--

^aITE Land Use Code 221, *Multifamily Housing (Mid-Rise)*.

As can be seen in Table 2, the ITE parking demand data for a multifamily residential community indicates that the average peak parking demand on a weekday is 1.23 parking spaces per unit, with an observed 85th percentile peak parking demand³ of 1.45 parking spaces per unit. On a Saturday, the average observed peak parking demand was observed to be 1.04 parking spaces per unit; an 85th percentile peak parking demand was not available due the limited number of data points. Given that the weekday peak parking demands are higher than those on a Saturday, the weekday data was used for design purposes.

The ITE data for a multifamily residential community is generally consistent with the parking demand observations that were obtained for the four (4) residential communities, with an average weekday peak parking demand of 1.31 to 1.34 parking spaces per unit, and a design value (typically the 85th percentile peak parking demand) of between 1.47 and 1.49 parking spaces per unit.

PARKING DEMAND COMPARISON

On-site parking for the Project will be provided for 428 vehicles or a parking ratio of 1.62 parking spaces per unit. The provided parking ratio is greater than the parking ratios at the observed multifamily residential communities and those located in a similar setting as documented by the ITE. As such, it can be concluded that the parking supply that will be provided is sufficient to support the anticipated parking demands of the Project.

³The 85th percentile peak parking demand is defined as the parking demand at which 85 percent of the observed peak parking demands fall below and 15 percent are above.

**Table 1
MULTIFAMILY PARKING DEMAND OBSERVATIONS**

Time	Domain Foxborough, MA			Hanover at Andover, Andover, MA			Hanover Tuscan Village, Salem, NH			Bell Westford, Westford, MA		
	No. of Occupied Spaces	Occupancy ^a	Parking Demand Ratio ^b	No. of Occupied Spaces	Occupancy ^c	Parking Demand Ratio ^d	No. of Occupied Spaces ^e	Occupancy ^f	Parking Demand Ratio ^e	No. of Occupied Spaces ^h	Occupancy ⁱ	Parking Demand Ratio ^j
4:00 AM	298	76.4%	1.27	282	78.3%	1.23	--	--	--	--	--	--
4:30	296	75.9%	1.26	281	78.1%	1.23	--	--	--	--	--	--
5:00	295	75.6%	1.26	280	77.8%	1.22	350	77.6%	1.35	548	75.8%	1.49
5:30	286	73.3%	1.22	277	76.9%	1.21	340	75.4%	1.31	543	75.1%	1.48
6:00	282	72.3%	1.21	273	75.8%	1.19	333	73.8%	1.28	532	73.6%	1.45
6:30	--	--	--	--	--	--	327	72.5%	1.26	517	71.5%	1.41
7:00	--	--	--	--	--	--	307	68.1%	1.18	501	69.3%	1.37
7:30	--	--	--	--	--	--	292	64.7%	1.12	473	65.4%	1.29
8:00	--	--	--	--	--	--	283	62.7%	1.09	435	60.2%	1.19

^aThe available parking supply consists of 390 parking spaces.

^bBased on 234 occupied units at the time of the parking demand observations.

^cThe available parking supply consists of 360 parking spaces

^dBased on 229 occupied units at the time of the parking demand observations.

^eAssumes full occupancy of the 41 individual garages located throughout the property.

^fThe available parking supply consists of 451 parking spaces, including the 41 garage spaces.

^gBased on approximately 260 occupied units at the time of the parking demand observations.

^hAssumes full occupancy of the 90 individual garages located throughout the property

ⁱThe available parking supply consists of 723 parking spaces, including the 90 garage spaces.

^jBased on approximately 367 occupied units at the time of the parking demand observations.

From: [Alexander Alevizos](#)
To: [Carlton Quinn](#)
Subject: FW: 444 E Central St - Fire Department Letter
Date: Thursday, August 21, 2025 12:08:00 PM
Attachments: [LTR - FFD - 444 East Central 3.25.24.pdf](#)

A.J. Alevizos
[The Alevizos Group](#)
C: 561.685.5336
E: aj@tagdevco.com

From: Alexander Alevizos
Sent: Friday, March 28, 2025 11:50 AM
To: Casey Thayer <cthayer@franklinma.gov>
Subject: 444 E Central St - Fire Department Letter

Good Morning Casey,

Given there were some questions regarding fire truck access at the hearing last night, we wanted to forward along the attached letter from the Fire Department for distribution to the Board and for the record indicating the site plan meets their requirements. The site plan has not changed regarding the fire department's comments related to access since this letter was issued, and the Applicant has recently corresponded with the Fire Department as of 3/12/25 to confirm they have no further comments on the current site plan submitted to the ZBA.

Thanks,
AJ

A.J. Alevizos
[The Alevizos Group](#)
C: 561.685.5336
E: aj@tagdevco.com



James G. McLaughlin, Fire Chief

Town of Franklin
Fire Department
40 West Central St.
Franklin, Massachusetts 02038

Tel. (508) 528-2323
Fax. (508) 520-4912

Joseph S. Barbieri, III, Deputy Fire Chief
James P. Klich, Deputy Fire Chief

March 25, 2024

Franklin Town Council
Attn: Chairman Tom Mercer
355 East Central St.
Franklin, MA 02038

Dear Chairman Mercer,

The Franklin Fire Department has reviewed the latest site plan for the proposed development at 444 East Central St. The developer has provided access roads to make sure that we are able to place our apparatus on at least three sides of each apartment building. The roads around the apartment buildings will be asphalt and are at least 20 feet wide to accommodate our trucks. They have also added a secondary designated fire access road to the project to ensure that we have more than one way into the development. By providing us proper access they have met our requirements.

Please feel free to contact me if you have any questions.

Respectfully,

Joseph S. Barbieri III, Deputy Fire Chief

The Franklin Fire Department is committed to providing the highest level of public safety services for our community. We safely protect lives and property through fire suppression, training, emergency medical and transportation services, disaster and crisis management, fire prevention and public education.



TOWN OF FRANKLIN

DEPARTMENT OF PUBLIC WORKS

257 Fisher Street
Franklin, MA 02038-3026

February 9, 2024

Mr. Carlton Quinn, P.E.
Civil Engineer
Allen & Major Associates, Inc.

VIA email: cquinn@allenmajor.com

Subject: Water and Sewer Service for Central Street Residences at 444 East Central Street

Dear Mr. Quinn:

As requested, the Town of Franklin Department of Public Works has reviewed the availability of water and sewer service for the proposed 265 unit residential housing complex to be located at 444 East Central Street in Franklin, MA. Quinn provided an estimated average water usage of 48,180 gallons per day (gpd) based on 438 bedrooms and the Title V criteria.

Based on the estimated flows, the Town's water system has the capacity to serve the proposed development via an existing 12-inch diameter water main in East Central Street. A full evaluation of domestic pressure and available fire flow at this location is the responsibility of the proponent.

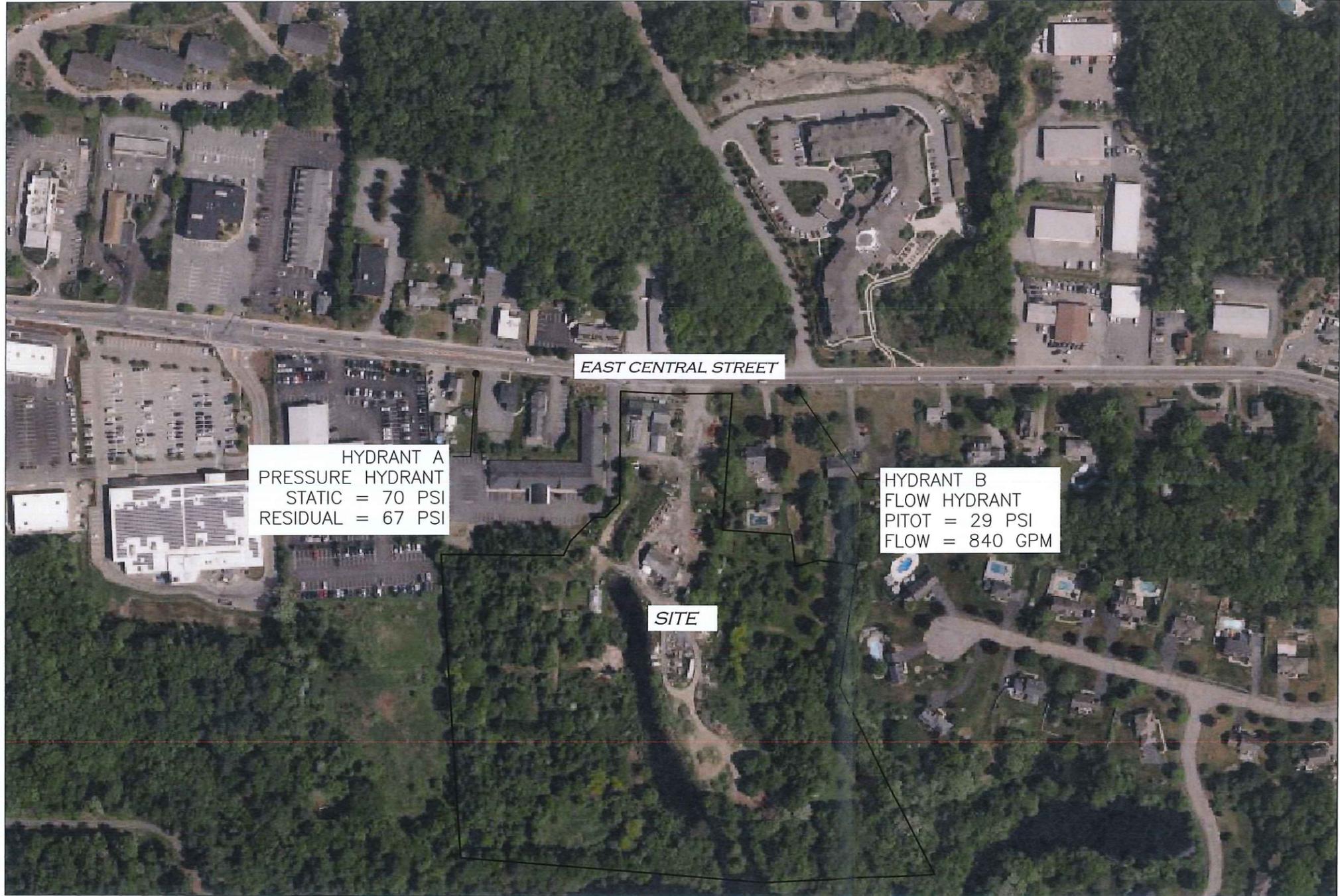
The Town's sewer system is also located at this location on East Central Street, however, due to the proximity of a downstream sewer lift station and force main, the sewer system will need to be evaluated for capacity and the potential need for on-site temporary storage.

This letter confirms that water and sewer service is available at the street at the proposed development. It does not constitute an approval of the project from the Franklin DPW or any other Town department. The proponent must obtain and pay for all required permits and approvals from the Town of Franklin prior to construction. If you have any questions, feel free to contact me at 508-553-5500.

Sincerely,

Michael Maglio, P.E.
Town Engineer

cc: Mr. Jamie Hellen, Town Administrator
Mr. Robert Cantoreggi, DPW Director
Mr. Doug Martin, Water & Sewer Superintendent



HYDRANT A
PRESSURE HYDRANT
STATIC = 70 PSI
RESIDUAL = 67 PSI

HYDRANT B
FLOW HYDRANT
PITOT = 29 PSI
FLOW = 840 GPM

EAST CENTRAL STREET

SITE

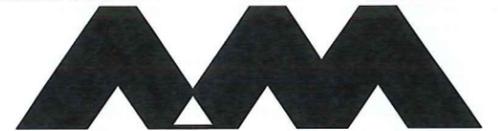
APPLICANT/OWNER:

TAG CENTRAL LLC
275 REGATTA DRIVE
JUPITER, FL 33477

PROJECT: 40B MULTIFAMILY
444 EAST CENTRAL
STREET
FRANKLIN, MA

PROJECT NO.	3317-01	DATE:	05-27-2025
SCALE:	NOT TO SCALE	DWG. NAME:	SKETCH
DESIGNED BY:	SMF	CHECKED BY:	CMQ

PREPARED BY:



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Title: **Hydrant Flow Test Summary**
 Project: **Multifamily Project**
 Date: May 21, 2025
 Start Time: 8:00 AM
 End Time: 8:30 AM
 A&M#: 3317-01
 Location: 444 East Central Street, Franklin, MA
 Performed By: Sean Farland
 Witnessed By: Franklin DPW
 Purpose of test: Determine static & residual pressure for water main in East Central Street
 Pitot Gauge: 2" Pitotless Nozzle + Little Hose Monster
 Pressure Gauge: 2-1/2" Static/Residual Pressure Gauge

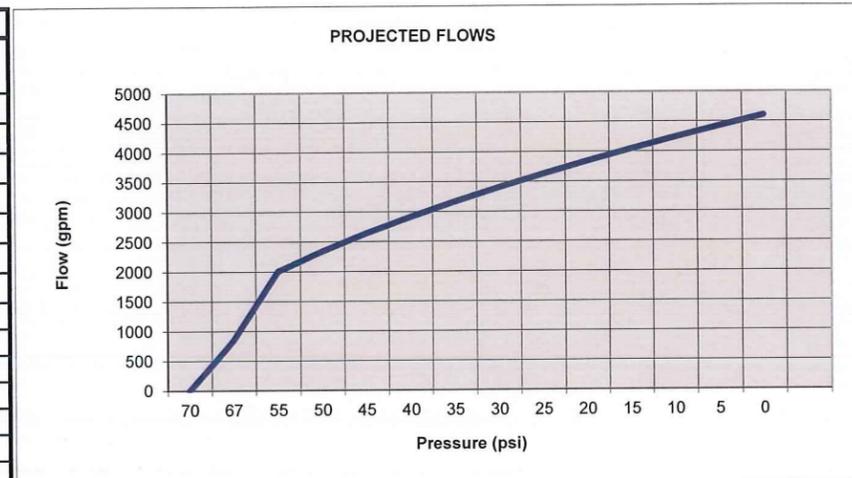


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HYDRANT A (PRESSURE)	Observed Pressure (psi)	Pressure Drop (psi)	Gauge No.	Elevation (feet)*
STATIC	70	0		277.0
RESIDUAL	67	3.00		277.0

HYDRANT B (FLOW)	Orrifice Diameter	Pitot Reading (psi)	Hose Monster K Factor	Flow Rate (gpm)	Corrected Flow Rate (gpm)	Elevation (feet)*
OUTLET	2.0	29	156.00	840		280.0

PROJECTED RESULTS**	
Flow (gpm)	Residual (psi)
0	70
840	67
2003	55
2340	50
2640	45
2913	40
3166	35
3402	30
3626	25
3838	20
4041	15
4235	10
4422	5
4603	0



SEE ATTACHED SHEET FOR FLOW RATE FACTORS AND FORMULA

Equation:

$$Q_2 = Q_1 \cdot (S - R_2)^{0.54} / (S - R_1)^{0.54}$$

Where:
 S=Static Pressure R₂=Projected Pressure Q₂=Projected Flow Rate Q₁=Measured Flow Rate
 R₁=Residual Pressure Q₁=Measured Flow Rate

Represent values obtained during the field investigation on May 21, 2025.

*Hydrant Elevations taken from Digital Coast Data, LIDAR.

**Hydrant flow results represent the pressure and flow values obtained on the date and time indicated and are not representative of other factors that may affect the municipal water system outside of the test window. Adequacy and consistency of flow availability shall be determined by a fire protection engineer. Fire protection engineer should also consult with the municipal water officials as part of the due diligence/design process.

Calculating Flow-rates

The flow charts we provide with the Pitotless Nozzle™, Hose Monster® and Nozzle Inserts are correct and should be referred to first. Our flow charts are calculated using K-Factors derived from testing performed at FM Approvals. It is common for third-party software to use the pitot formula to compute flow-rate. The 2½" Hose Monster uses a pitot to measure velocity pressure. The Pitotless Nozzle and 4" and 4½" Hose Monsters do not use a pitot, and the pitot formula has to be tricked into calculating correct flow-rates. Entering the coefficients into a program that uses orifice diameter, coefficient and velocity pressure should give relatively accurate flow-rates. Check results against our flow charts.

Here are the equations used for calculating flow-rates and predicting flow-rates. Use the orifice diameter, coefficient or K-factor found on the next page.

K-factor Formula

Computes a flow-rate in GPM given a psi and a K-factor of the flow device.

$$Q = \sqrt{P} \times K$$

Q = flow-rate in GPM, P = velocity pressure in psi, K = K-factor of flow device

Pitot Formula

Computes a flow-rate in GPM given a psi and coefficient of the flow device.

$$Q = 29.84 \times \sqrt{P} \times D^2 \times C$$

Q = flow-rate in GPM, P = velocity pressure in psi, D = orifice diameter in inches
C = coefficient of flow device

Equation for Determining Rated Capacity

Computes the flow-rate available at a specified residual pressure (a.k.a. Rated Capacity).

The example below enables you to find the predicted flow-rate at 20 psi residual pressure.

$$Q_R = Q_F \times (H_R^{0.54} / H_F^{0.54})$$

Q_R = Flow-rate predicted at the desired residual pressure in GPM

Q_F = Total test flow-rate measured during test in GPM
(GPM measured from Hose Monster or Pitotless Nozzle)

H_R = Pressure drop from static pressure to desired residual pressure
(Static – 20 psi [if 20 psi is the desired residual pressure])

H_F = Actual pressure drop measured during the test (Static – Actual Residual)

(Source: NFPA 291, 2010)

Conversion Factors

Here are some conversion factors for switching between US and metric units:

Flow-rate:

US Gallons per Minute x 3.785 = Liters per Minute
Liters per Minute x 0.264 = US Gallons per Minute

US Gallons per Minute x 0.1337 = Cubic Feet per Minute
Cubic Feet per Minute x 7.481 = US Gallons per Minute

Volume:

US Gallons x 3.785 = Liters
Liters x 0.264 = US Gallons

US Gallons x 0.8327 = Imperial Gallons
Imperial Gallons x 1.201 = US Gallons

Cubic Feet x 7.48051945 = US Gallons
US Gallons x 0.1337 = Cubic Feet

Pressure:

psi x 0.0689 = Bars
Bars x 14.5038 = psi

psi x 6894.757 = Pascals
Pascals x 0.000145 = psi

Bars x 100,000 = Pascals
Pascals x 0.00001 = Bars

Weight of Water:

US Gallons of Water x 8.3454 = Pounds
Cubic Feet of Water x 62.42796 = Pounds

Length:

Meters x 3.2808 = Feet
Feet x 0.3048 = Meters

Coefficient and K-Factor Table for Various Flow Devices

last update: 2/14/2012

Pitotless Nozzle™

Device	K-factor	Coefficient	Orifice Diameter	psi Range	Flow Range (GPM)
2" Pitotless Nozzle + Little Hose Monster™	156.0	1.31	2"	10-70	490-1300
2" Pitotless Nozzle + 2½" Hose Monster Steel	164.8	1.38	2"	10-80	520-1380
2" Pitotless Nozzle + Open Atmosphere	167.2	1.40	2"	10-70	530-1400
1¾" Pitotless Nozzle + Little Hose Monster	104.7	1.15	1.75"	10-90	330-1000
1¾" Pitotless Nozzle + 2½" Hose Monster Steel	106.6	1.17	1.75"	10-90	340-1010
1¾" Pitotless Nozzle + Open Atmosphere	109.7	1.20	1.75"	10-90	350-1040
1½" Pitotless Nozzle + Little Hose Monster	37.2	0.98	1.125"	5-90	80-350
1½" Pitotless Nozzle + 2½" Hose Monster Steel	37.4	0.99	1.125"	5-90	80-350
1½" Pitotless Nozzle + Open Atmosphere	37.0	0.98	1.125"	5-90	80-350
1" Pitotless Nozzle + Little Hose Monster	27.2	0.91	1"	3-90	50-260
1" Pitotless Nozzle + 2½" Hose Monster Steel	27.6	0.93	1"	3-90	50-260
1" Pitotless Nozzle + Open Atmosphere	27.7	0.93	1"	3-90	50-260

In-Line Pitotless Nozzle™

Device	K-factor	Coefficient	Orifice Diameter	psi Range	Flow Range (GPM)
2" In-line Pitotless Nozzle	165.3	1.38	2"	10-75	530-1430
1¾" In-line Pitotless Nozzle	109.9	1.20	1.75"	5-80	250-980
1½" In-line Pitotless Nozzle	38.4	1.02	1.125"	5-70	90-320

BigBoy Hose Monster™

Device	K-factor	Coefficient	Orifice Diameter	psi Range	Flow Range (GPM)
4 to 10 psi (BigBoy Hose Monster)	382.9	1.38	3.05"	4-10	766-1211
11 to 36 psi (BigBoy Hose Monster)	376.0	1.35	3.05"	11-36	1247-2256
37 to 53 psi (BigBoy Hose Monster)	372.0	1.34	3.05"	37-53	2263-2708

Note: Due to the shape and size of the BigBoy Pitotless Nozzle, the BigBoy Hose Monster uses three different k-factors over its operating range.

2½" Hose Monster®

Device	K-factor	Coefficient	Orifice Diameter	psi Range	Flow Range (GPM)
2½" Hose Monster	168.67	0.906	2.5"	10-75	530-1460
1¾" Nozzle Insert	89.04	0.975	1.75"	10-75	280-770
1½" Nozzle Insert	37.36	0.99	1.125"	10-75	120-320

4" and 4½" Hose Monster®

Device	K-factor	Coefficient	Orifice Diameter	psi Range	Flow Range (GPM)
4½" Hose Monster	331.07	0.548	4.5"	10-75	1050-2870
4" Hose Monster	339.65	0.712	4"	10-75	1070-2940

Using Software

Use the table below if you are using software that requires the coefficient input to be less than '1.0'. Notice that the orifice diameter must be changed from its true diameter in order to accommodate the lower coefficient. This is necessary only for the 2" Pitotless Nozzle and the ¾" Pitotless Nozzle.

Device	Coefficient	Orifice Diameter
2" Pitotless Nozzle + Little Hose Monster	0.99	2.30"
2" Pitotless Nozzle + 2½" Hose Monster Steel	0.99	2.36"
2" Pitotless Nozzle + Open Atmosphere	0.99	2.38"
1¾" Pitotless Nozzle + Little Hose Monster	0.99	1.88"
1¾" Pitotless Nozzle + 2½" Hose Monster Steel	0.99	1.90"
1¾" Pitotless Nozzle + Open Atmosphere	0.99	1.93"

Note: If your software uses the Theoretical Discharge Formula, found in NFPA 291, 4.7.3, the coefficient of discharge can be used to produce flow rates that will match our flow charts.

A hand-held pitot directly at a hydrant outlet

Outlet Type	Coefficient	Rated Capacity at 20 psi	Class	Marking Color of Hydrant Tops and Nozzles
Outlet smooth and rounded	0.9	≥1500 GPM	AA	Light Blue
Outlet square and sharp	0.8	1000-1499 GPM	A	Green
Outlet square and projecting into barrel	0.7	500-999 GPM	B	Orange
If a stream straightener is used	0.95	≤499 GPM	C	Red

The above are the NFPA hydrant classifications and color markings for various rated capacities. Source: NFPA 291, 5.1, 2010.



2" PITOTLESS NOZZLE™

PN2GRV FLOW CHART

10 - 50 PSI			51 - 70 PSI			Key Flow Test Points		
PSI	Little Hose Monster™ GPM	Open Atmosphere GPM	PSI	Little Hose Monster™ GPM	Open Atmosphere GPM	Little Hose Monster™ GPM	Open Atmosphere PSI	Open Atmosphere PSI
10	493	529	51	1114	1194	500	10.7	9.1
11	517	555	52	1125	1206	562.5	13.0	11.3
12	540	579	53	1136	1217	750	23.1	20.1
13	562	603	54	1146	1229	1000	41.1	35.8
14	584	626	55	1157	1240	1125	52.0	45.3
15	604	648	56	1167	1251	1500	92.5	80.5
16	624	669	57	1178	1262			
17	643	689	58	1188	1273			
18	662	709	59	1198	1284			
19	680	729	60	1208	1295			
20	698	748	61	1218	1306			
21	715	766	62	1228	1317			
22	732	784	63	1238	1327			
23	748	802	64	1248	1338			
24	764	819	65	1258	1348			
25	780	836	66	1267	1358			
26	795	853	67	1277	1369			
27	811	869	68	1286	1379			
28	825	885	69	1296	1389			
29	840	900	70	1305	1399			
30	854	916						
31	869	931						
32	882	946						
33	896	960						
34	910	975						
35	923	989						
36	936	1003						
37	949	1017						
38	962	1031						
39	974	1044						
40	987	1057						
41	999	1071						
42	1011	1084						
43	1023	1096						
44	1035	1109						
45	1046	1122						
46	1058	1134						
47	1069	1146						
48	1081	1158						
49	1092	1170						
50	1103	1182						

The readings on this chart are based on which device the Pitotless Nozzle is connected to. It is the user's responsibility to verify that the correct chart and column is being used.

- **Little Hose Monster™ (HML).** Use this column when the Pitotless Nozzle is connected to a Little Hose Monster.
- **Open Atmosphere.** Use this column when the Pitotless Nozzle is connected directly to a test header or hydrant flowing openly to atmosphere.

This chart is FM Approved for flow rate accuracy. Please call us or instruct the Authority Having Jurisdiction to call us if there are any questions. Additional copies of flow charts are available at: www.hosemonster.com



Pitotless Nozzle™ Grooved

INSTRUCTIONS

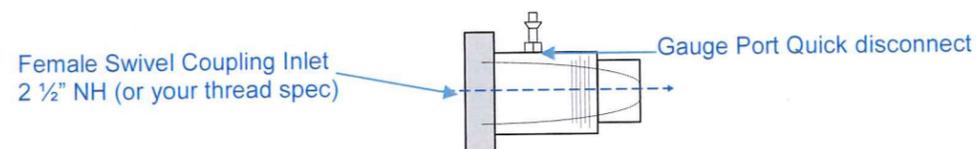
US Patent 6,874,375

The Pitotless Nozzle Grooved (PN#GRV) must be used with the Little Hose Monster (HML) or attached directly to a hydrant or test header valve discharging into open atmosphere. The flow chart has columns entitled Little Hose Monster™ and Open Atmosphere. Be sure to use the appropriate column to determine flow rates. *Call us if you are considering a configuration not listed here.*

SETUP

The gauge connection on the Pitotless Nozzle is a factory-installed male end of a quick disconnect coupling. One female counterpart is included and additional ones can be purchased separately. Attach the female end of the quick disconnect coupling directly to the gauge or remote reader adapter and use the quick disconnect feature to attach and remove. Do not remove the male quick disconnect from the Pitotless Nozzle as it will damage the threads on the Pitotless Nozzle.

We recommend a gauge with an accuracy rating of ½% or better and of a suitable range.



Using the Pitotless Nozzle with the Little Hose Monster™

Line up the Pitotless Nozzle outlet at the inlet of the Little Hose Monster with the gauge port rotated to 45° off either side of vertical. Push the Nozzle all the way in until the latch lever arms hook into the groove. Rotate the Nozzle right or left until the latch levers snap parallel to the body and the gauge port is in the desired position. The gauge port can be positioned so that a gauge can be viewed in a vertical position, or horizontal to the left or right side of the Little Hose Monster. Insert the locking pins all the way through the pinhole and latch-lever arm. When the Pitotless Nozzle is installed, securely attach a hose using a spanner wrench. Make sure the hose lays flat and is not twisted.

If using the Pitotless Nozzle on a Hydrant or Test Header Valve

The Pitotless Nozzle must be attached securely to a pump test header valve or hydrant. Secure the female swivel coupling of the Pitotless Nozzle directly to a hydrant nozzle or test header valve. The Pitotless Nozzle points in the direction the water will flow. Clear water discharge path.

Flow Charts

Pitotless Nozzle flow charts must be used to determine discharge flow rate. The use of flow charts of a different device or size will result in incorrect readings. Within the flow chart is a column for "Little Hose Monster" and for "Open Atmosphere". Use the "Little Hose Monster" flows if the Pitotless Nozzle is attached to a Little Hose Monster. Use the "Open Atmosphere" flows if the Pitotless Nozzle is attached directly on a hydrant or test header valve discharging out into the open. Flow charts are provided with the Pitotless Nozzle and additional copies are available on our website at www.HoseMonster.com/literature.html

WARNING:

- **Do not** attach the Pitotless Nozzle to the end of a hose unless the Hose Monster is attached to it or unless it is permanently secured.
- **Do not** attach a hose to the male outlet end of the Pitotless Nozzle under any circumstance. The resulting backpressure will distort flow rate measurement.
- **Do not** remove the quick disconnect gauge port fitting. The aluminum threads will be damaged. Contact The Hose Monster Company directly for any repairs.

MANUFACTURED BY:
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