



**PLAN CHECK CORRECTION SHEET
FOR PUMP SYSTEMS (DOMESTIC OR FIRE)
2014 LAPC & 2013 NFPA-20**

This is intended to provide uniform application of the codes by the plan check staff and to help the public apply the codes correctly.

Section: Mechanical Plan Check

Plan Check/PCIS Application No.: _____ **Date:** _____

Job Address: _____

Applicant Name: _____

Address: _____ **Phone:** _____

City/State/Zip: _____ **E-mail:** _____

Plan Check Engineer: _____

Telephone: _____ **E-mail:** *firstname.lastname@lacity.org*

Your feedback is important; please visit our website to complete a Customer Survey at www.ladbs.org/LADBSWeb/customer-survey.jsf.

Your plans have been examined and the issuance of a permit is withheld for the reasons set forth. The approval of plans and specifications does not permit the violation of any section of the Code, or other local ordinance or state law.

INSTRUCTIONS:

- Corrections with circled item numbers apply to this plan check.
- Additional corrections are at the end of the list.
- Incomplete or non-legible drawings or calculations will not be accepted.
- Incorporate all comments as marked on the checked set of plans and calculations and this correction sheet.
- For each correction indicate the sheet number and detail or note number on the plans where the corrections are made.
- **WHEN YOU HAVE COMPLIED WITH ALL CORRECTIONS, CALL OR EMAIL THE PLAN CHECK ENGINEER TO MAKE AN APPOINTMENT FOR VERIFICATION**
- **PLEASE BRING THE MARKED UP PLANS AND THE CORRECTIONS SHEET TO THE VERIFICATION APPOINTMENT**

SEE MARKED UP PLANS FOR CLARIFICATIONS OF CORRECTIONS.

PLAN DETAILS

1. Show the location of the pump (floor plan and/or isometric). (LAPC 101.5.1)
2. Show all piping connections to the pump (i.e. suction, discharge, Fire Department connection, pump bypass, etc.). (LAPC 2020.7; NFPA-20 4.2.3.1(7); NFPA-20 4.2.3.1(11); NFPA-20 4.14; NFPA-20 4.15)
3. Show all elements and devices (i.e. Valves, PRV's, backflow prevention devices and controls), components and instrumentations associated with the pump and its driver. (NFPA-20 4.2.3.1(7), NFPA-20 4.2.3.1(11))
4. Show an elevation of the piping system in accordance with the building height. A reference point or a datum must be indicated. (LAPC 101.5.1; NFPA-14 8.1)
5. Show any other machinery or equipment related, associated and or used in conjunction with the pump and the system (i.e. tank, jockey pump, controllers, pump driver, etc.). (NFPA-20 4.2.3)
6. Show the highest and the most remote outlet in reference to the pump. (NFPA-14 8.1)

CALCULATIONS

1. Provide hydraulic calculations to show the total head (psi or feet) required to meet the total required flow (gpm). Total head versus total gpm must be calculated from the pump performance curve information. These calculations are used to size the pump and the tank (when required). (NFPA-20 4.27.4.5; NFPA-20 5.2.3; NFPA-20 5.6.2.3)
2. Submit calculations showing that the NPSHA (Net Positive Suction Head Available) exceeds the NPSHR (Net Positive Suction Head Required). Use the pump manufacturer's certified data in order to justify that. (NFPA-20 4.27.4.5; NFPA-20 5.2.3; NFPA-20 5.6.2.3)
3. Show all pressure and friction losses thru the system. These losses shall be obtained and calculated from the related piping, fittings, valves and devices used in the system. (NFPA-20 4.27.4.5; NFPA-20 5.2.3; NFPA-20 5.6.2.3)
4. The rated flow capacity of the pump selected shall not be less than the system flow demand. (NFPA-20 14.2.5)

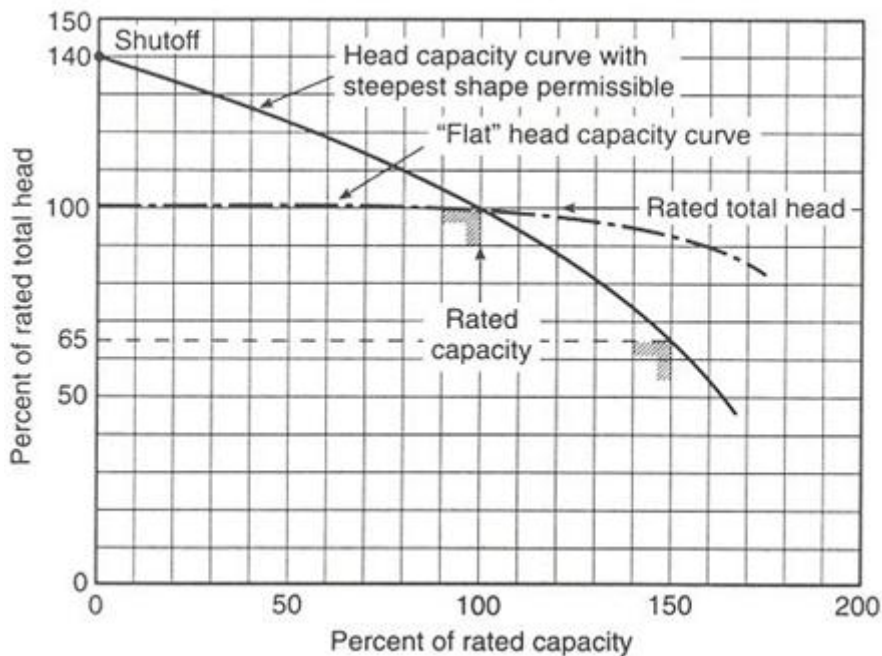
NOTES ON PLANS

1. Show make and model of the pump and the pump driver. (NFPA-20 4.2.3.1(5); NFPA-20 4.2.3.1(9))
2. Show information on the tank if required. The tank lining material shall also be indicated on the plans. Tank lining is required to be listed. (NFPA-22 4.6.1)
3. Show any listings that are available for the pump and its driver, including its components. Fire pumps are required to be UL listed. (NFPA-20 4.7.1)
4. Show the pump curve to accompany with the plans and to include the following; Head vs. GPM, BHP, NPSHR and Efficiency. (NFPA-20 4.5.1; NFPA-20 4.5.2)

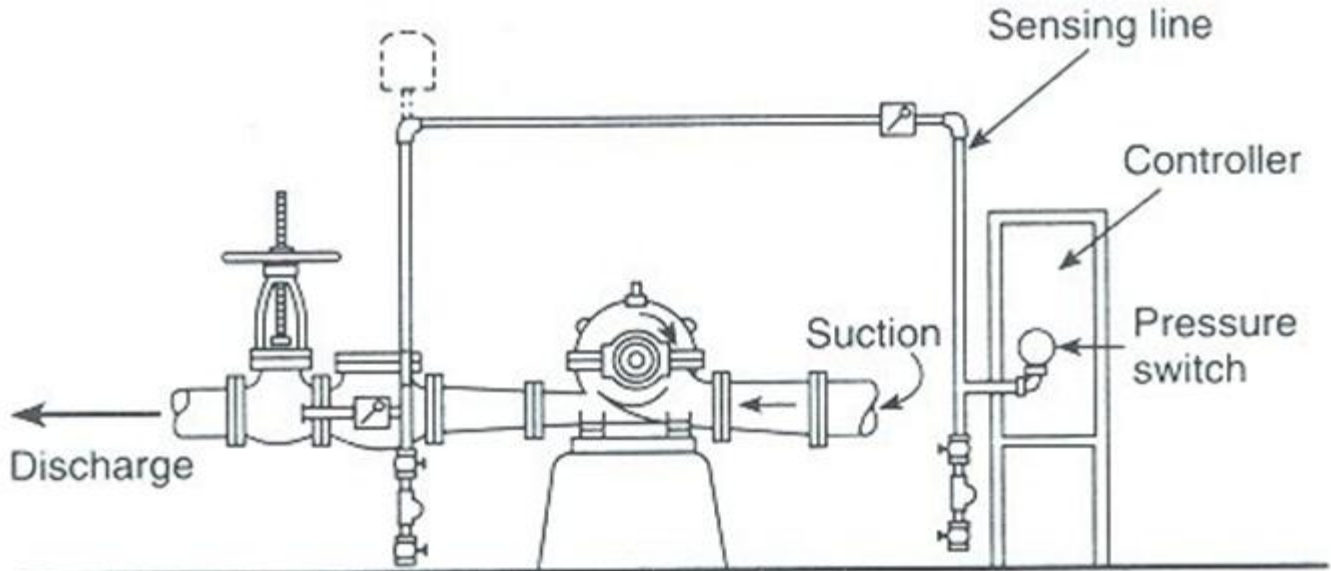
5. Show pump driver information (i.e. HP, RPM, etc.) and whether electric or diesel. (NFPA-20 4.2.3.1(9))

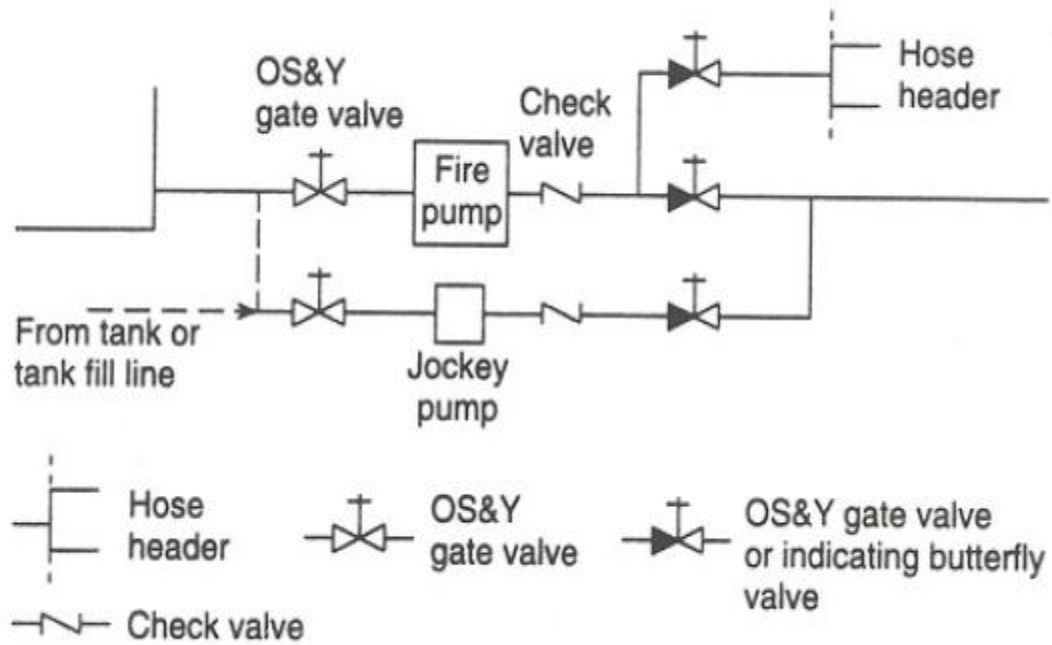
EXAMPLES

1. A typical pump performance curve:



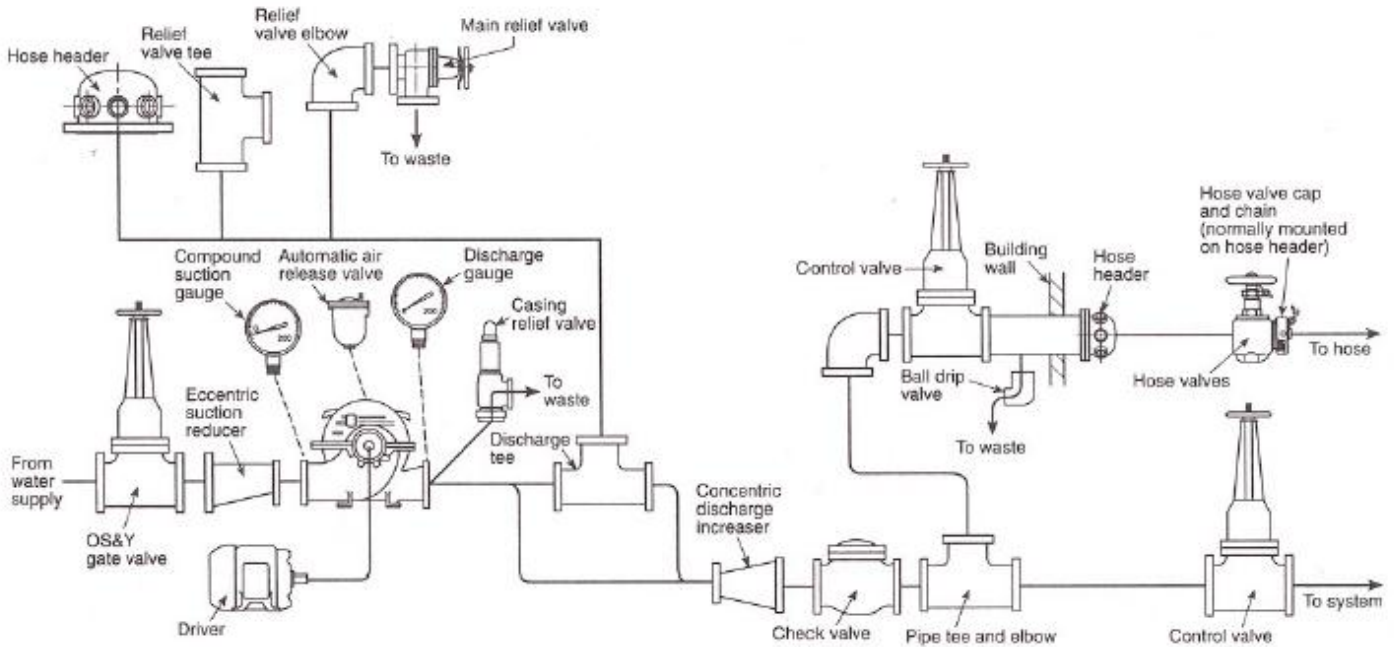
2. There may be more than one application (i.e. Domestic or Fire) and more than one configuration for each application. Depending on the situation and suitability of the building one may use a pump system with or without a tank:





3. And there may be a case when a horizontal or a vertical shaft pump is used.

A. Horizontal Shaft Pump:



B. Vertical Shaft Pump:

