



## Department of Fire Services Commonwealth of Massachusetts

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### Guidelines for Self-Service Motor Fuel Facility Applications

**Revised: January 1, 2018**

**Effective: January 1, 2018**

In accordance with the provisions of 527 CMR 1.00, Section 42.7.4.5, the dispensing of motor fuel by means of self-service mode automated fuel dispensing systems shall be permitted provided that the applicant for such system has submitted complete plans and specifications of the proposed installation to the Marshal and has received approval of same. A fee of \$200 in the form of a check made payable to the "Commonwealth of Massachusetts" must accompany each application. Applications shall be addressed to: Massachusetts Department of Fire Services, Division of Fire Safety, PO Box 1025-State Road, Stow, MA 01775 ATTN: SELF-SERVE PLAN REVIEW.

#### **General Requirements**

*(For installations submitted for approval on or after the effective date of this document)*

1. All dispensing areas shall be equipped with a listed UL 1254 compliant pre-engineered dry chemical extinguishing system, including end of island protection. The system shall be designed and installed to protect the entire spill and hazard area.
2. All fire suppression systems shall be installed, and maintained by companies and persons holding the required certificates of competency and registration issued by the Marshal.
3. All fire suppression systems shall be installed and maintained in accordance with the provisions of NFPA 17(see Chapter 2 of 527 CMR 1.00 for the current edition), and the manufacturer's installation and maintenance manual.
4. Closed Circuit Television (CC TV) coverage is required on all fueling positions. CCTV monitors shall display all camera angles simultaneously on the screen with a minimum picture frame of 5 inches by 6.5 inches per camera. CCTV shall be display images in color.
5. An intercom system is required between the control console and dispensing island.
6. The control console will be located in direct line of sight and within 200' of the most remote dispenser. Distances greater than 200' maybe approved at the sole discretion of the Marshal.
7. On partial (split service) self-serve facilities an additional switch, which will disconnect power to the self-serve island and activate the suppression system shall be installed on the full serve island.
8. Warning signs shall be conspicuously posted on both ends of the dispenser and shall incorporate the following language:

#### **WARNING**

**NO SMOKING – STOP MOTOR**

**It is unlawful and dangerous to dispense gasoline into unapproved containers.**

**No filling of portable containers in or on a motor vehicle or trailer.**

**Place container on ground before filling.**



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The words “Warning” and “No Smoking – Stop Motor” shall consist of block letters not less than one inch in height, white letters on a red background. The remaining sentences shall consist of block letters not less than ½ inch in height, red letters on a white background.

9. The concrete pad surrounding the dispensing island shall be installed as level as possible. The positive limit barrier shall be installed in this pad with the outer groove located no further than the protected hazard area as defined by each suppression system design.
10. A means to instantly disconnect the power to all dispensers and activate the suppression system shall be conspicuously marked and located at the control console.
11. The use of automatic credit reading devices are permitted provided that they are indicated on the plans and comply with the requirements of 527 CMR 1.00 Section 42.7.4.5(1)(k).
12. 225°F (maximum) electric thermostat detectors shall be installed on 15-foot (maximum) centers in a single line over the center of the island, for islands up to 6 feet wide. For wider islands two rows of detectors shall be located one foot in from each curb. If a canopy is provided, detectors shall be located on the underside (15 foot maximum height) of the canopy. If there is no canopy, the detector(s) shall be mounted to the underside of an 18” by 18” by 2” heat collector, which shall be located no higher than the nozzles.
13. Fire extinguishers shall be a minimum 40BC high flow.

Plans, specifications, and documentation shall consist of the following.

#### **Documentation**

1. Copy of the **LICENSE** to store flammables (Form FP-2) issued under MGL Chapter 148 § 13. Or a letter from the city or town clerk bearing their seal indicating that the land is licensed and listing storage capacity and restrictions if any.
2. Copy of a current **Registration** (Form FP-5) issued by the city or town clerk showing that the license is being exercised.
3. Copy of the current **Permit to Store Flammable/Combustible Liquids**.
4. A letter containing the following information:
  - a. Exact name and address where facility will operate
  - b. Type of work to be performed. (New, upgrade, conversion etc.)
  - c. Type of facility. (Complete self-serve, partial self-serve)
  - d. Description of any unrelated business (car wash, convenience store etc.)



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#### **Plans**

1. Plans (4 copies) shall be 24" x 36" single page non-reproducible blueprints. Copies shall be marked in bold type in the lower right hand corner with the following. STATE FIRE MARSHAL COPY, FIRE DEPARTMENT COPY, SUPPRESSION SYSTEM INSTALLER COPY, PETROLEUM MARKETING COMPANY COPY.
2. Plans shall contain the name and address of the proposed facility, the name and address of the person or firm preparing the plans and the name and address of the licensed company installing the suppression system (if known).
3. Plans shall contain as a minimum the following details, views and notes:
  - a. Site Plan: Showing all buildings, lot lines, designated parking areas, fueling islands, entrances, exits, windows, pavement makings, visibility obstructions, dimensions, fences, signs, tanks and pavement slope.
  - b. Extinguishing System Plan View: System name and type, nozzle placement, spacing, piping & cylinder count and configuration, lighting, island width and length and location of heat actuation devices (maximum 225° F).
  - c. Elevation and End Views: Nozzle placement, spacing, piping configuration, aiming points, lighting, island width and length and height (minimum 6") location of heat actuation devices (maximum 225°F), potential spill area for each pump, positive limit barrier, dispensers and length of dispenser hoses. A detail shall be provided showing the design of the positive limit barrier. (See Appendix A for Specifications)
  - d. Legend: The legend shall provide a key to include but not limited to all proposed and or required systems, system components, lights, signs, dispensers, intercoms, CCTV cameras, control points, extinguishers.
  - e. Notes: Plans shall contain a section for the signature and notes of the head of the local fire department or designee and shall bear said signature. Plans shall also contain a space with minimum dimensions of 7" long by 3" high for use by this office.

Plans shall also contain the following statements:

Self-Serve extinguishing systems shall be installed in accordance with State Fire Marshal approved plans.

All extinguishing systems, dispensing systems and control equipment shall be Underwriters Laboratory (UL) listed.

Plans containing credit card reading devices shall include the language from 527 CMR 1.00 Section 42.7.4.5 (1)(k).



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Failure to construct install or maintain any equipment, devices, system or procedure indicated on the approved plans shall be cause for the revocation of this approval.

Plans approved by the Marshal are approved on the condition that they comply in all respects to 527 CMR 1.00. Any omissions or errors on the plans do not relieve the applicant of complying with all applicable requirements of 527 CMR 1.00.

STATE FIRE MARSHAL APPROVAL OF PLANS TO CONSTRUCT/RENOVATE A SELF-SERVICE FACILITY BECOME NULL AND VOID ONE YEAR FROM THE DATE OF APPROVAL.

### **EXISTING FACILITIES**

Facilities approved and constructed under prior guidelines may continue to operate in conformance with those guidelines and applicable regulations. (527 CMR 1.00 Section 10.3.2)

Failure to maintain an existing facility in accordance with the guidelines under which they were approved may require that the facility be upgraded to the current guidelines.

Raising or lowering of an existing suppression system or the temporary relocation of the control console may be completed only after written notification to the head of the fire department and this office. Written acknowledgement from this office will be required.

Changing heat detectors to those specified in the current guidelines, or replacing existing dispensing nozzles with "hold open" nozzles shall **not** require notice or approval by this office.

A complete resubmittal in accordance with these guidelines shall be required in the following cases.

1. Replacement of the fire suppression system.
2. A change in the method of dispensing fuel. i.e. changing from SPDs to MPDs.
3. Replacement or reconstruction of the dispensing island.
4. A material change in environmental conditions or hazard area.



# POSITIVE LIMITING BARRIER

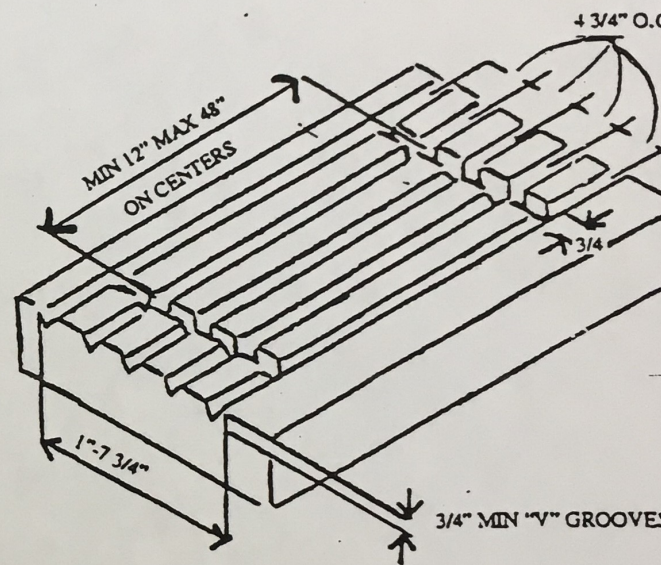
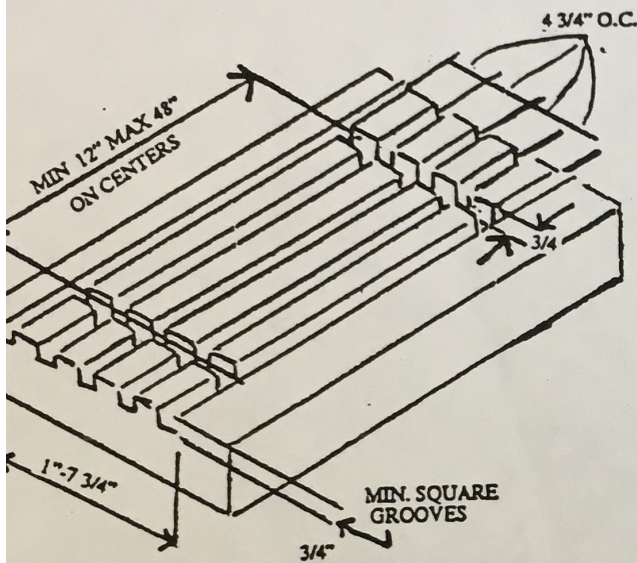
## SELF SERVICE FIRE PROTECTION SYSTEM

### PARTIAL SECTIONS OF CONCRETE MATS SHOWING

SQUARE GROOVES

OR

"V" GROOVES



NOTE: The positive limiting barrier to be 5 continuous square or "V" grooves 3/4"x3/4" deep, on 4 3/4" centers with cross interconnecting grooves, either square or "V", equally spaced on min. 12" max. 48" centers. The outside groove to be at limits of hazard protection area and the potential spill area to be within this protection area.

The positive limiting barrier to be shown on plan drawing (appendix A) showing relationship (to scale) of pump island, dispenser or pump locations, max. potential spill area and fire system hazard protected area.

Grooves may be saw cut or scored into concrete.

Grooves must be kept clean of dirt and debris.

Groove corner patterns to be shown on plan drawing.