

Liminal Labs Fire Chandelier

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Flame Effect Scenario:

Liminal Labs will have a fire chandelier suspended under the 12' steel moon gate entrance to the camp. The fire chandelier will be Open Fire / Level Two. It will have a large stainless steel wool "wick"/pilot light/flame, but no accumulators. The fire will be lit by hand.

The chandelier will be suspended with the bottom of the chandelier 7' above ground level. There is no need for a burn platform due to the height of the flame.

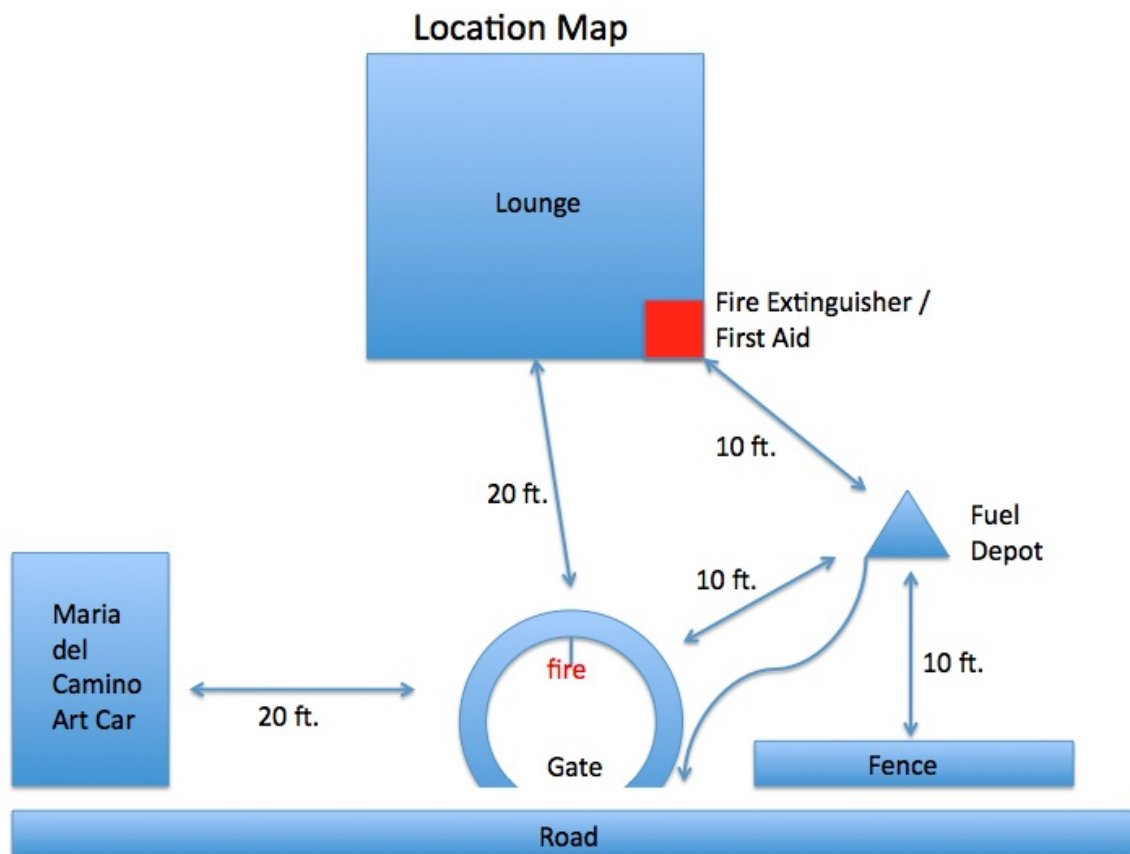
The gate is secured against the wind with 10' angle iron outriggers staked to the playa. Wind resistance has been tested successfully.

The gate is constructed of non-flammable materials (i.e. steel mesh and square stock) so there are no concerns about the chandelier catching the gate on fire. The gate is the entrance to the camp and the nearest structures will be over 20' away.

The flame effect will be run every night for an unspecified period of time between dusk and early morning, depending on the availability of a trained flame effects operator. A flame effects operator will perform a safety check to ensure that all hoses, connections, tanks, and flame effects appear to be in good working order before starting the flame effect. A flame effects operator will be present at all times the chandelier is running. This person will be 21 years or older, trained in fire extinguisher usage, and not under the influence of drugs or alcohol. The chandelier will be extinguished before this person leaves the area, or operation of the chandelier will be transferred to another trained flame effects operator.

Location Diagram:

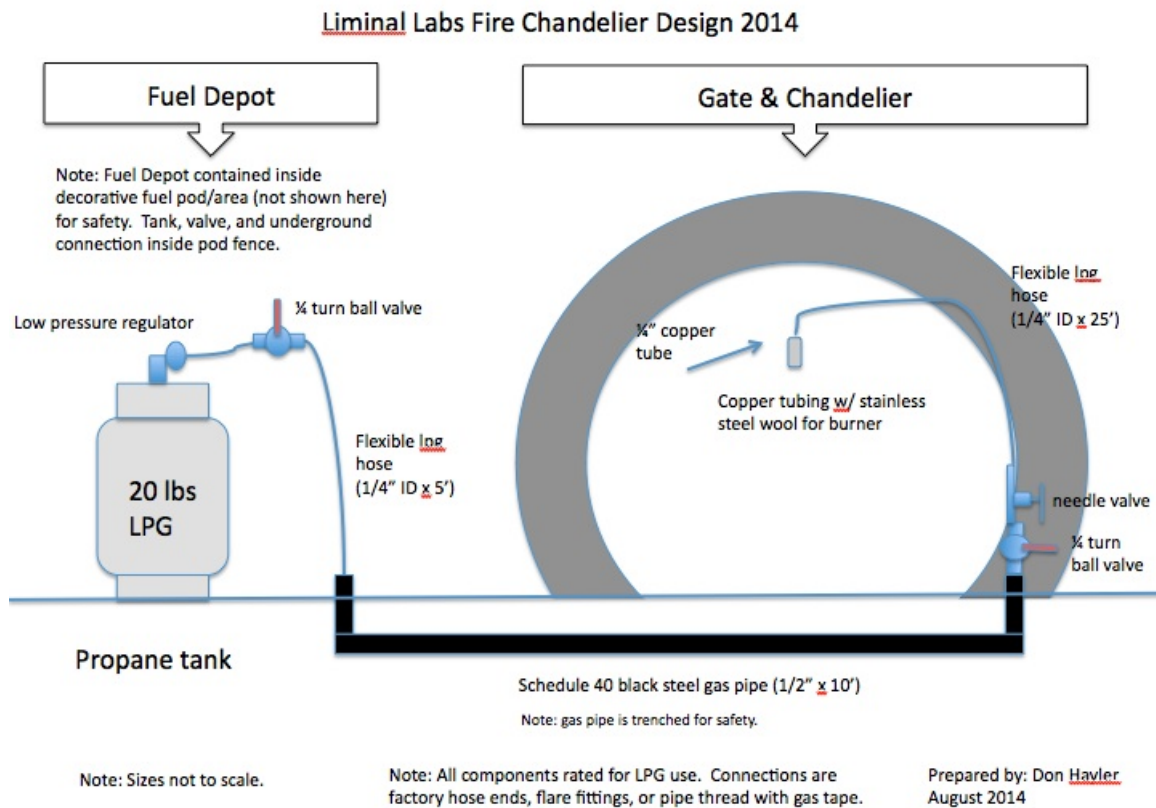
The fire chandelier will be fed from a standard 20lb LP canister (i.e. bbq tank) stored in a fuel depot/pod. The fuel depot is made of 1" steel square tube to protect the tank and connections from any damage. There will be no vehicle access from inside the camp and there will be fences between the depot and the exterior of the camp to protect the fuel depot. The depot will be near the camp fence on the main road, providing a fire lane / emergency access. The fuel depot will be marked "No Smoking ". A dry chemical ABC fire extinguisher will be located 8-10' away. The fuel depot will be 10' away from the gate and 10' away from the nearest tent/camp structure. There is no need for any fuel containment system because we are only working with LPG.



Technical Diagram:

The gas supply has a ¼ turn shutoff valve at the tank, and again where it enters the gate structure. The entire propane system uses a low pressure LPG regulator (i.e. 1 PSI), LPG hose with factory hose fittings, schedule 40 black steel gas pipe, and standard gas fittings (either pipe thread with gas tape or flare fittings). The propane tank has an unexpired certification date stamp and is in the protected fuel pod/depot, which will be in the open position when the flame effect is being run, exposing the ¼ turn shutoff valve.

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Fire Safety Plan:

The Fire Safety Liason is Don Hayler.

The gas supply has a ¼ turn shutoff valve at the tank, and again where it enters the gate sculpture. The entire propane system uses a low pressure LPG regulator (i.e. 1 PSI), LPG hose with factory hose fittings, schedule 40 black steel gas pipe, and standard gas fittings (either pipe thread with gas tape or flare fittings). The propane tank has an unexpired certification date stamp and is in the protected fuel pod/depot, which will be in the open position when the flame effect is being run, exposing the ¼ turn shutoff valve. The fire safety kit is kept at the edge of the shade structure in view of both the chandelier and the fuel pod, approximately 10' from the fuel depot/pod and 20' from the gate and chandelier. It contains a dry chemical ABC fire extinguisher, wet towel, burn creme, burn bandages, and the Safety Plan.

Emergency Plan of Action:

1. Available First-Aid:
 - a. First aid kit with burn creme, burn bandages, a wet towel, and a jug of water for rinsing or flushing fuel.
2. Required safety and fire training for all flame effect operators:
 - a. All flame effects operators will be trained in the proper use of fire extinguishers, the use of the fire first aid kit, and the fire safety plan.
3. Emergency shut off procedures:
 - a. In case of an emergency the flame effects operator will turn off the flame effect using the 1/4 turn shutoff valve at the propane tank and then turn off the tank valve itself. The flame effect can also be turned off using the 1/4 turn shutoff valve located where the propane hoses enter the gate sculpture itself
4. How to handle major or minor fires:
 - a. In the case of a fire the emergency shut off procedure will be followed to disable the flame effect. The fire extinguisher will then be used to extinguish the fire. If a person's clothing caught on fire the fire will be extinguished with a wet towel. A duvetyne fire blanket may also be used. If a large amount of clothing catches fire they will be instructed to stop, drop, and roll before having the flame extinguished with the wet towel. Water will be available to flush or wash fuel off of the person. Any burns will be treated using the burn kit and/or taken to Emergency Medical Services, which is close by at Center Camp.
- 5.

How to handle major or minor fuel leaks:

- a. In case of a fuel leak the emergency shut off procedures will be followed to disable the flame effect and people will be cleared from the area until the propane dissipates. The flame effect will not be turned on again until the fuel leak has been located, fixed, and tested for leaks using a soapy water spray.
6. How to handle an unplanned fire, uncontrolled fire or sudden windstorm:
- a. In case of an unplanned or uncontrolled fire or a sudden windstorm the flame effect will be disabled using the emergency shut off procedures. Any remaining fire will be extinguished using the fire extinguisher.

Leave No Trace Plan:

Since this is a propane effect (chandelier) that will not be in contact with the playa and will not leave residue, no cleanup will be necessary from normal operation. If a dry chemical extinguisher is used, any residue will be collected from the playa and taken off-playa to be disposed of. A shovel, rake, and metal garbage can will be available.

Appendix:

Propane MSDS:

<http://airgas.com/msds/001045.pdf>

http://www.worthingtoncylinders.com/Libraries/MSDS_Sheets/wc002_propane.sflb.ashx

Burn First Aid:

http://www.homeofpoi.com/lessons_all/teach/First-Aid-for-Burns-1_2_139

Fire Extinguisher Usage:

http://www.homeofpoi.com/lessons_all/teach/Fire-Extinguisher-1_2_212