

CONTROLS DISCUSSION – EASTERN SANITARY LANDFILL

The landfill gas (LFG) control system at Eastern Sanitary Landfill (ESL) consists of an existing enclosed flare (rated at 2,500 scfm) and existing utility flare (rated at 750 scfm). LFG is also directed to a separately-permitted third-party LFG-to-energy (LFGTE) plant owned and operated by Eastern Landfill Gas (ELG). LFG is collected into a central header from the collection system and directed through a knockout (KO) to the current blowers. Following the blowers, LFG is directed through a tee that directs LFG to the utility flare, followed by a tee that directs LFG to the LFGTE plant, and then to the existing enclosed flare.

The new blowers and enclosed flare will be installed next to the existing blowers and enclosed flare. The utility flare will be relocated to allow for the installation of the new enclosed flare. The pipe from the new blowers to the new enclosed flare shall have a tee to allow connection to the LFGTE plant. During construction, a separate contractor will install an additional tee for connection to the relocated pipe to the utility flare.

The attached figure shows the preliminary blower/flare station schematic following construction. The new enclosed flare and blower system will replace the existing enclosed flare and blower system. In addition to the new enclosed flare, LFG will continue to be directed to the utility flare and LFGTE plant. During typical operation, the existing enclosed flare and utility flare act as back-up control devices during full or partial downtime of the LFGTE plan, or control LFG collected above the LFGTE plant capacity. Accordingly, the program logic must be applied to maintain operation of the new enclosed flare, utility flare, and LFGTE plant.

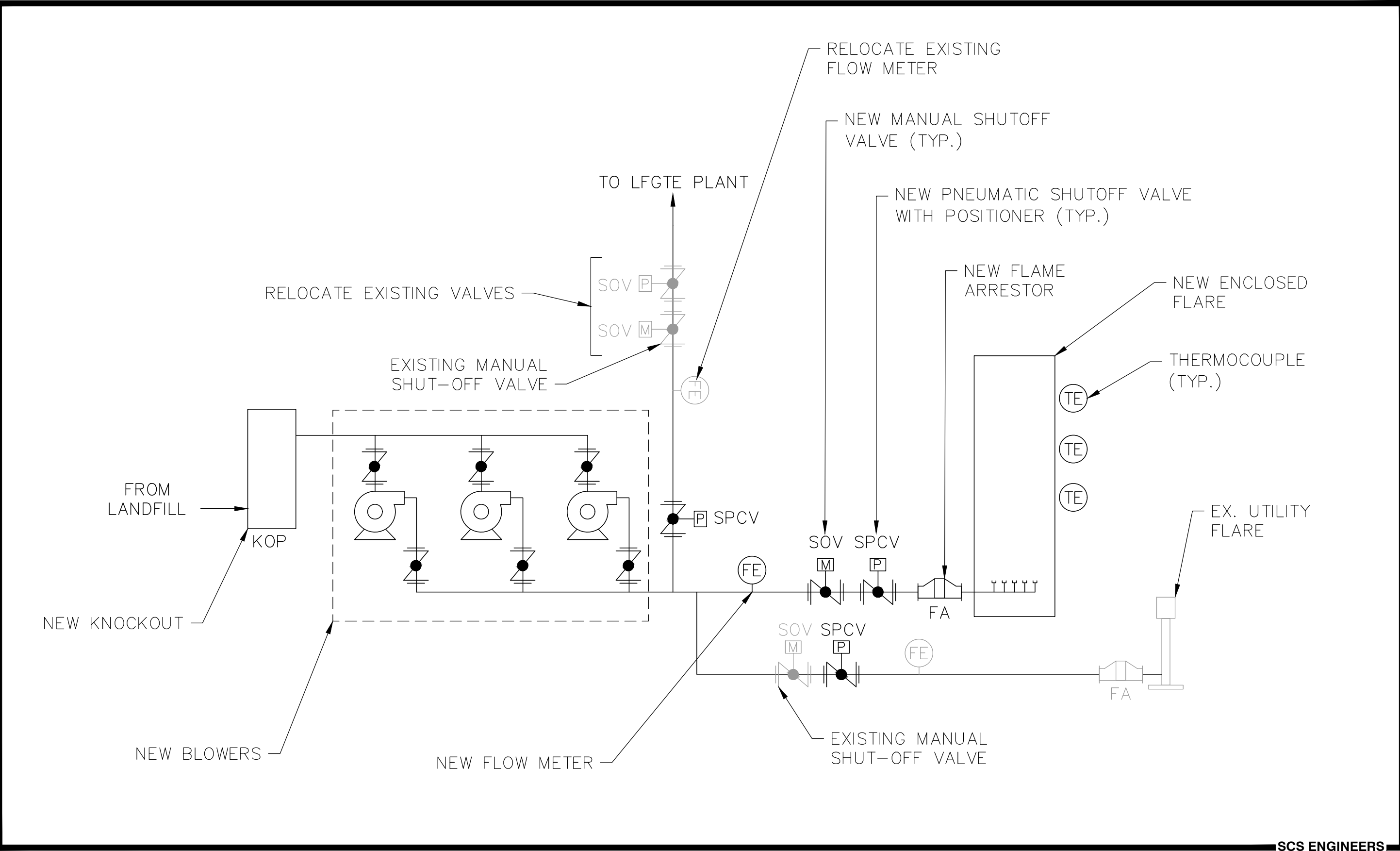
Pneumatic shut-off valves with positioners will be installed on the pipe to the enclosed flare, the pipe to the utility flare, and pipe to the LFGTE plant, for a total of three (3) valves, which will allow for operation as shut-off valves and also allow for valve position control. A manual shut-off valve will be installed on the pipe to the new enclosed flare immediately upstream of the pneumatic shut-off / positioner valve. Existing manual shut-off valves for the utility flare and LFGTE plant pipeline will be relocated and installed immediately upstream of the pneumatic shut-off/positioner valves. Pressure transmitters will be installed on the pipes to each control device after the shut-off/positioner valves.

The blowers will be equipped with VFDs to control motor speed, and will be capable of operating either based on inlet vacuum control or blower discharge pressure control. Under vacuum control, the valves will function to control the pressure in each pipe to the individual control devices. Under blower discharge pressure control, flow to each control device will be programmed to maintain vacuum on the collection system. The controls system will allow for control device start/stop sequencing and prioritization.

One new flow meter shall be installed on the enclosed flare supply pipe after the blowers and tees to the LFGTE plant and utility flare. Existing flow meters to the LFGTE plant and utility flare will be relocated onto new piping and integrated into the controls and monitoring system. Flow meters shall be located per manufacturer upstream and downstream minimum disturbance distances and in accordance with manufacturer recommendations.

To allow for operation of the new enclosed flare with the LFGTE plant, the new enclosed flare control panel will have two discrete operational status inputs: one (1) to indicate new enclosed flare operational status to the LFGTE plant and one (1) to indicate LFGTE plant operational status to the new enclosed flare. The control panel ethernet switch shall include additional ports for future integration with the LFGTE plant.

The VENDOR shall provide a controls narrative based on the information above and information supplied by the OWNER and ENGINEER.



PRELIMINARY LANDFILL GAS BLOWER/FLARE STATION SCHEMATIC - EASTERN SANITARY LANDFILL