

Proposal for utility and service supply locations

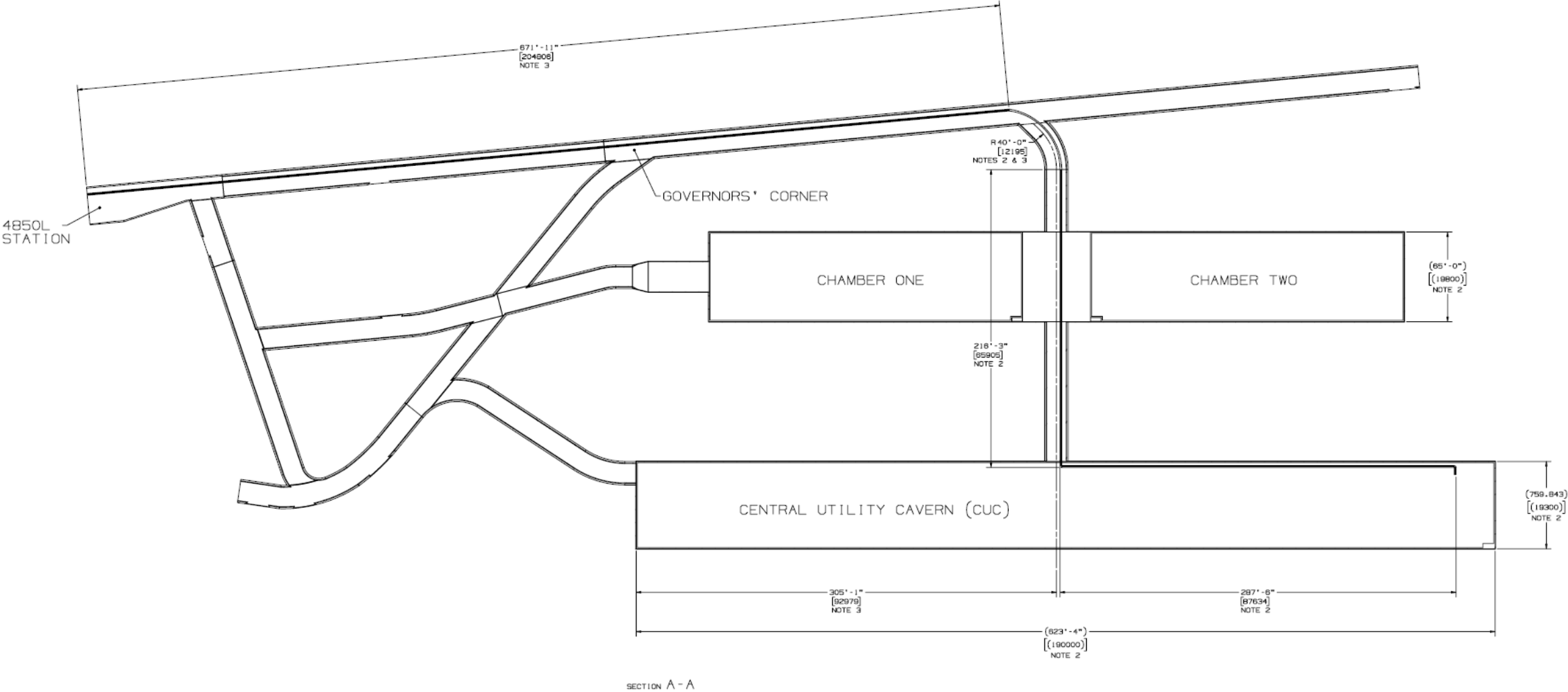
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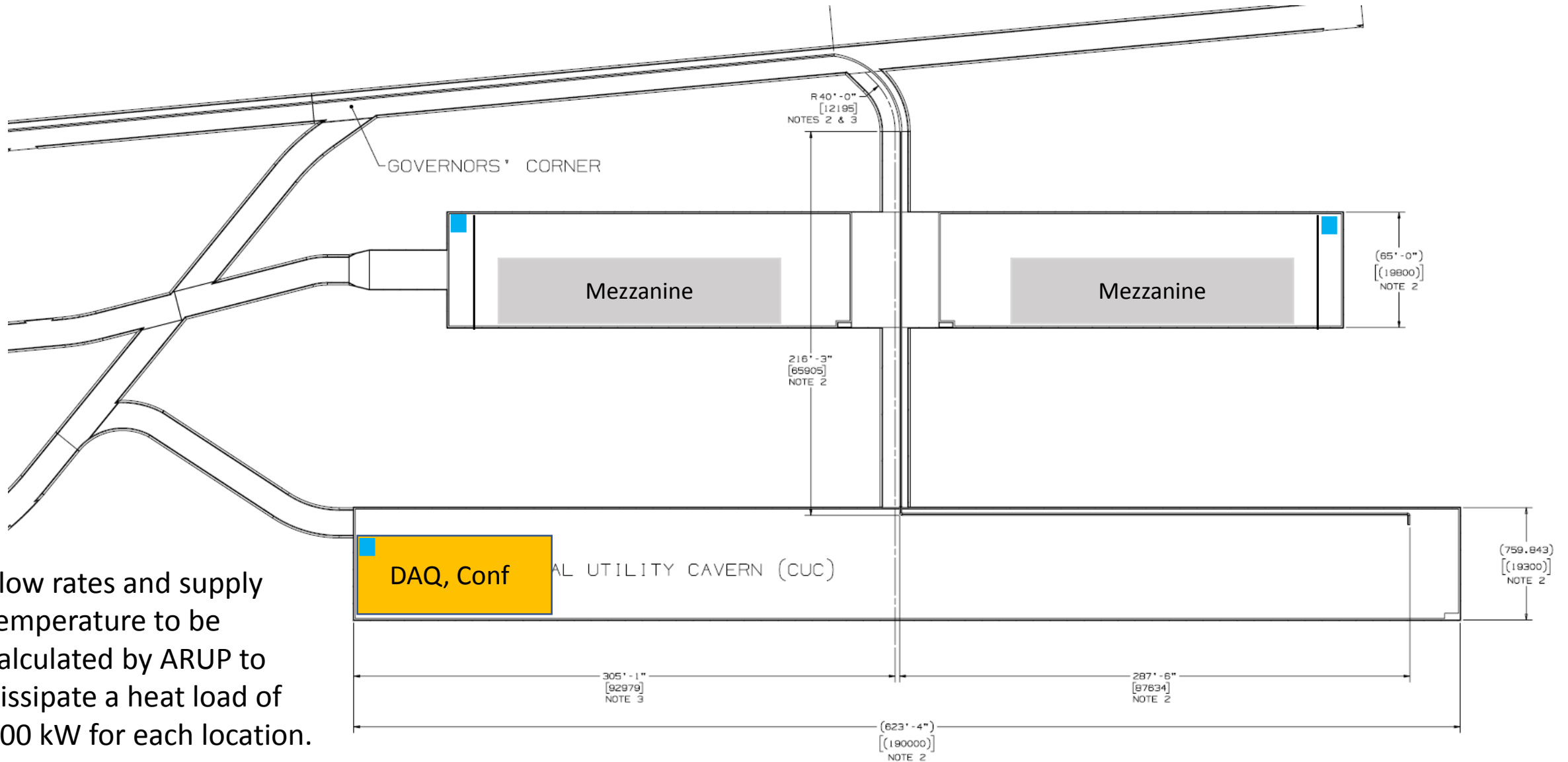
Current plans for local services and utilities underground

- The current plan is for DUNE and LBNF to provide the required locations for service locations throughout the underground spaces. Along with location, the quantities and specifications for these services should be included.
- The local distribution for these services will be decided and performed at a later date when planning is more mature.
- Also it is possible that there will be several configurations needed over time in some locations. How to implement this will be decided later.
- This does not include any specific services that listed in the current requirements. Eg. Power for detector and DAQ, power for cryogenic equipment

Underground layout for cavern 1 and the CUC

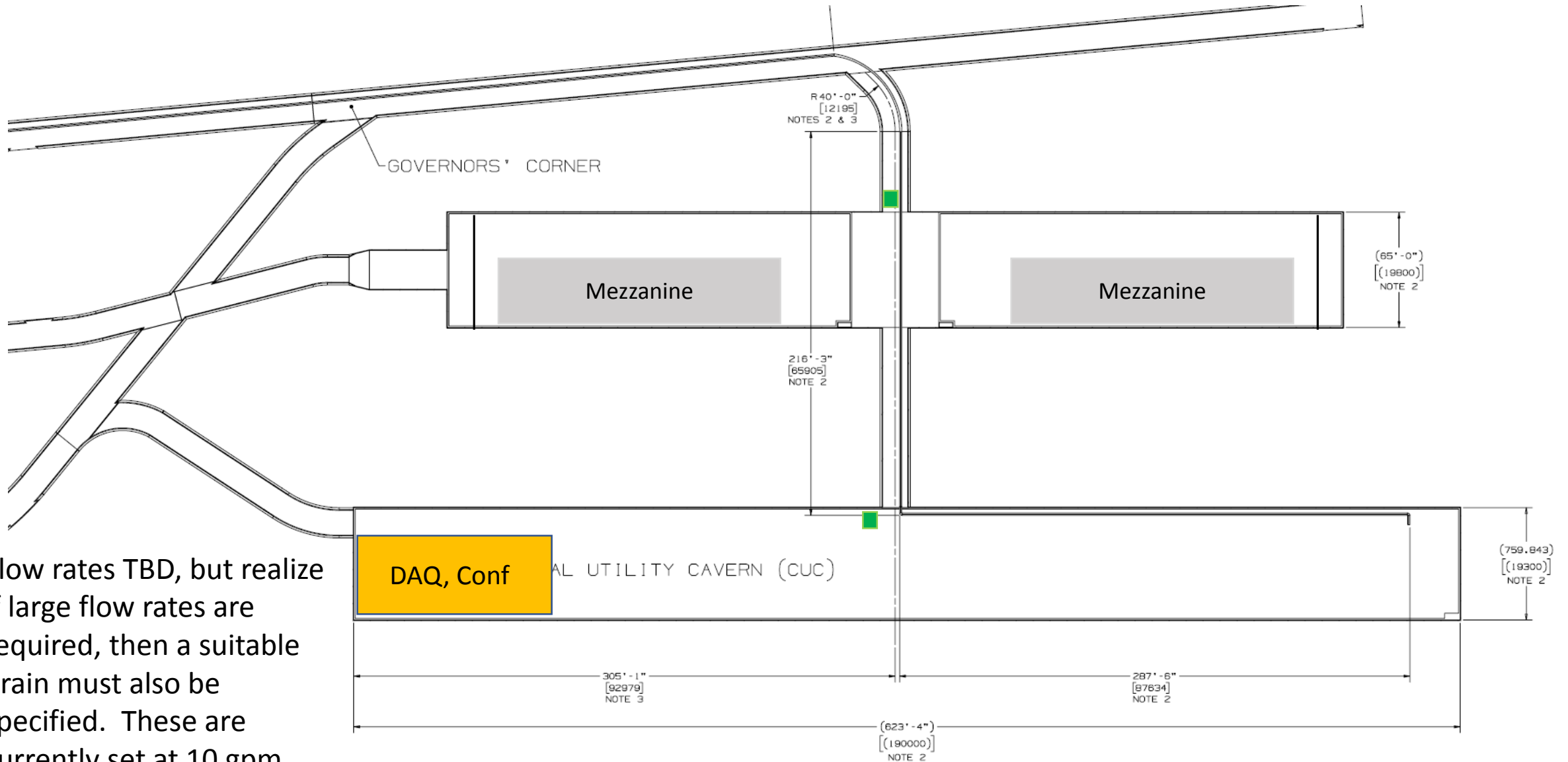


Plans for chilled water



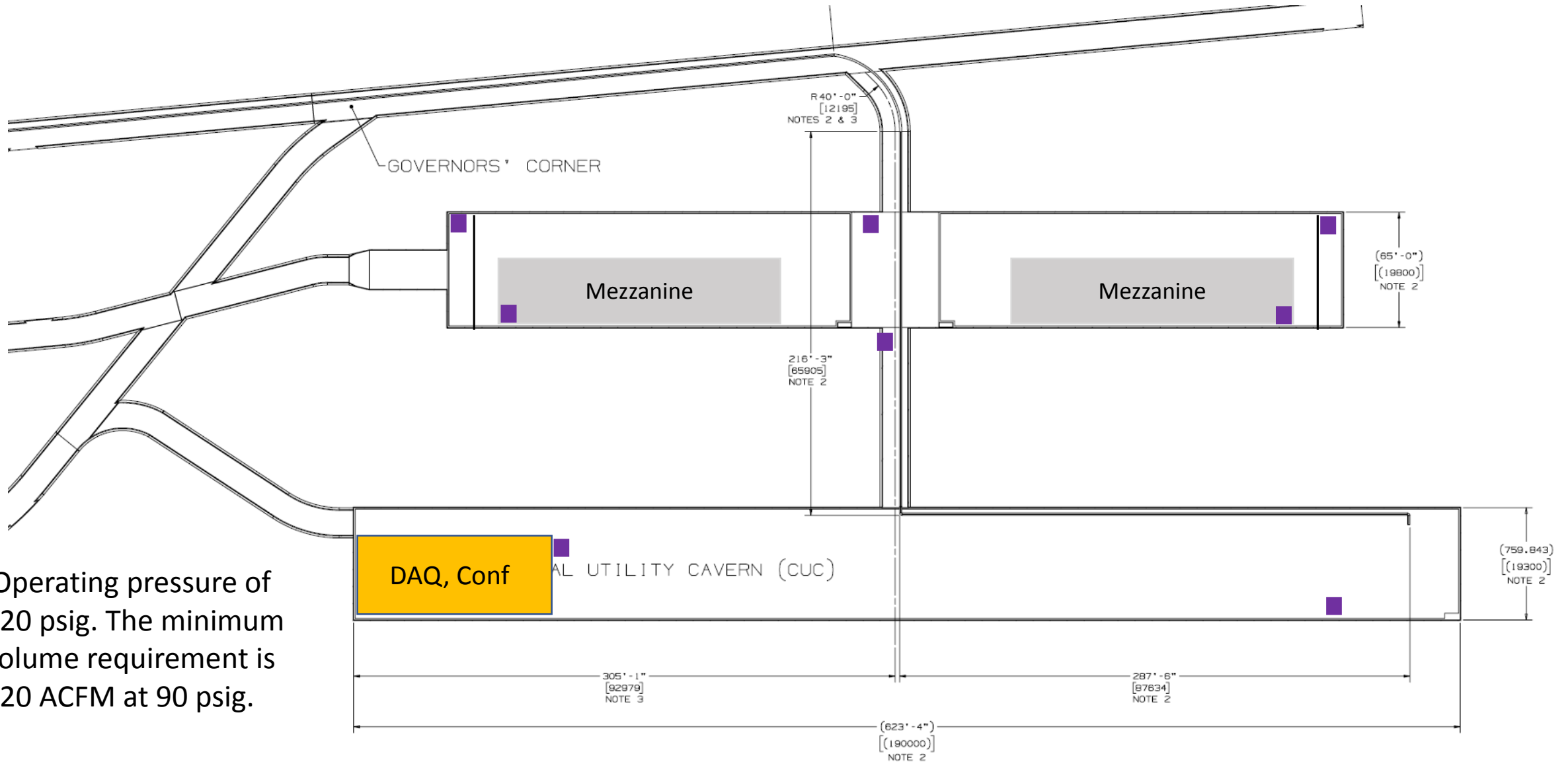
Flow rates and supply temperature to be calculated by ARUP to dissipate a heat load of 500 kW for each location.

Plans for industrial water



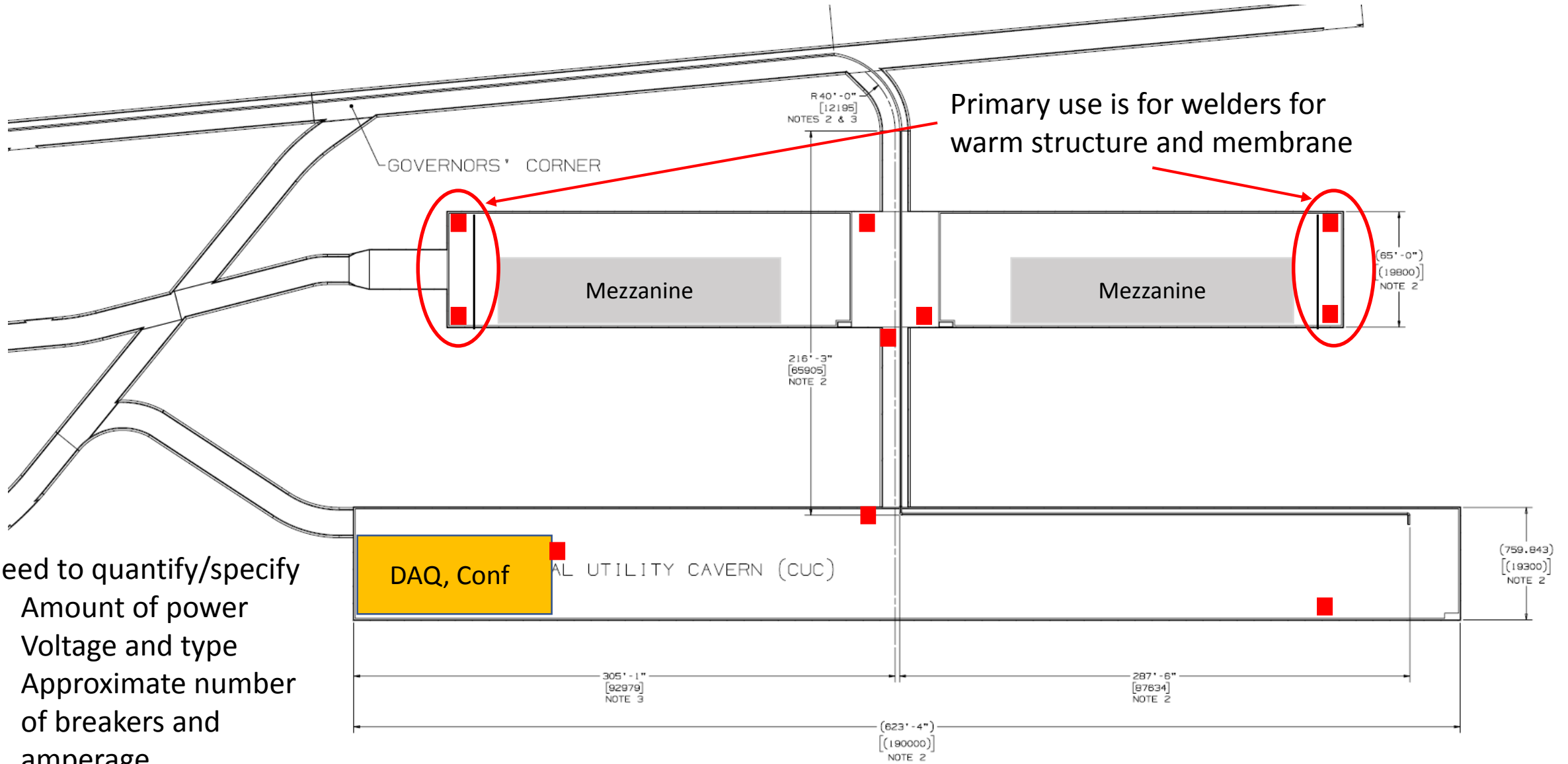
Flow rates TBD, but realize if large flow rates are required, then a suitable drain must also be specified. These are currently set at 10 gpm.

Plans for compressed air



Operating pressure of 120 psig. The minimum volume requirement is 220 ACFM at 90 psig.

Plans for electrical service panels



Need to quantify/specify

- Amount of power
- Voltage and type
- Approximate number of breakers and amperage