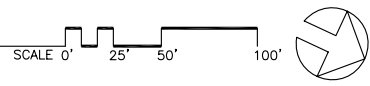
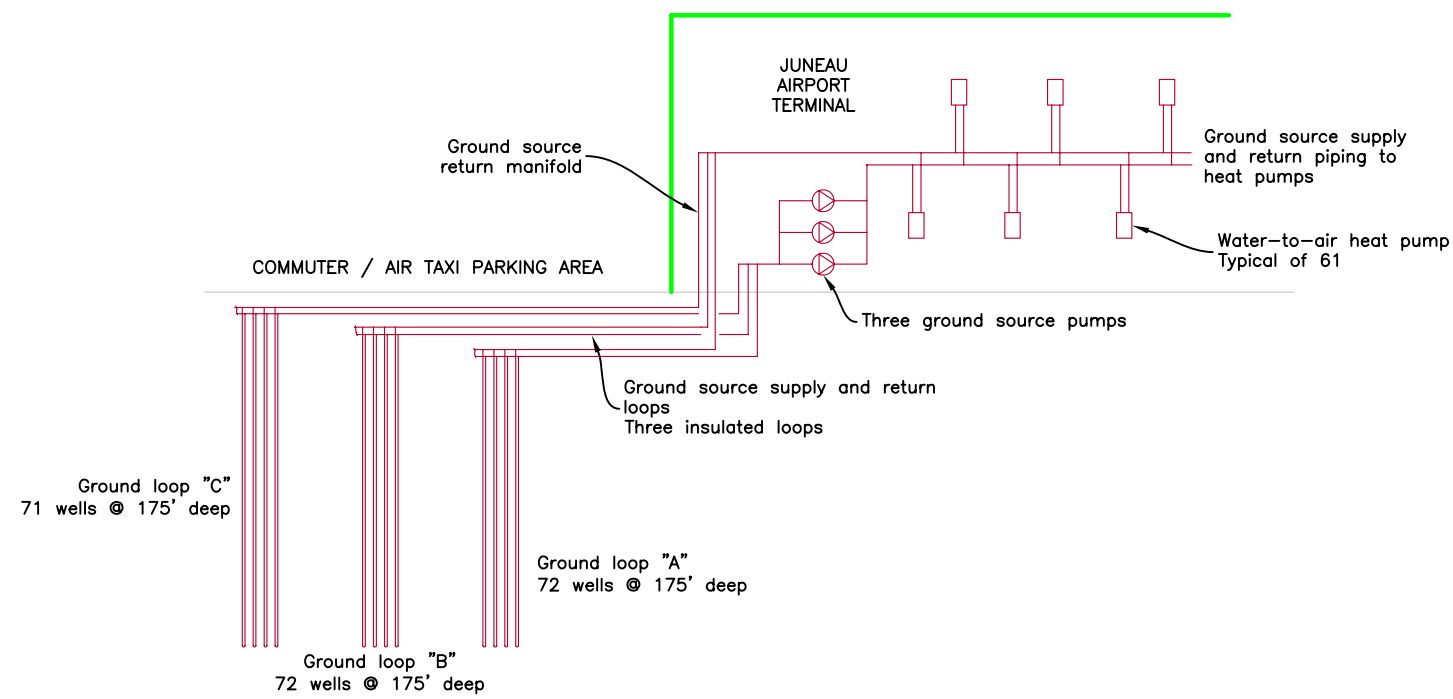


1 GROUND SOURCE HEAT PUMP SYSTEM PLAN



3 WELL FIELD LOCATION - COMMUTER / AIR TAXI PARKING



2 GROUND SOURCE HEAT PUMP SYSTEM SCHEMATIC

NO SCALE

### DESCRIPTION OF SYSTEM

The JNU Airport Terminal will be heated, ventilated, and air-conditioned by a ground source heat pump system. The system will extract geothermal energy from the ground to significantly reduce building energy use. The system will consist of:

- A closed-loop well field of 215 wells @ 175' feet deep that will extract heat from the ground. The wells will be manifolded into three separate piping loops to provide redundancy. Commuter / Air Taxi parking area will be restored over the well field after construction is complete.
- Three variable speed pumps, operating in a lead/lag/standby configuration, that circulate an antifreeze solution between the heat pumps and a ground well field.
- Sixty-one water-to-air heat pumps that will transfer heat with the ground source water to provide heating, ventilating and air-conditioning for the building.
- Heat recovery units that will reclaim heat from the building exhaust air and transfer it to the ventilation air supplied to the water-to-air heat pumps.
- Two water-to-water heat pumps will supply radiant in-floor heating and a snowmelt system.
- Three water to water domestic hot water heat pumps.

#### REVISIONS



#### SHEET TITLE

DATE: FEBRUARY 5, 2008  
FILE: .....

## City & Borough of Juneau Juneau International Airport Ground Source Heat Pump System Juneau, Alaska

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