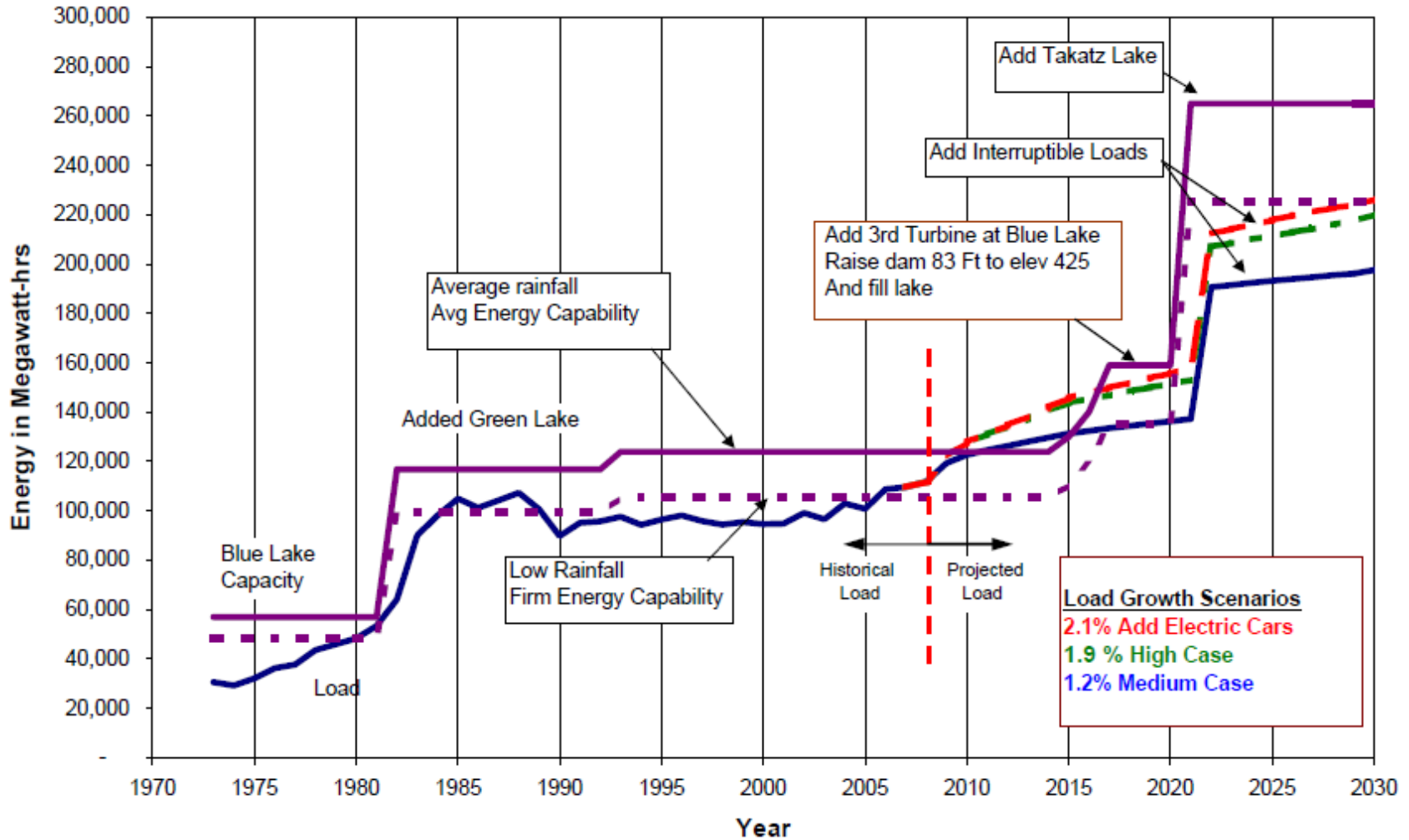


BLUE LAKE EXPANSION

Incremental Hydro



SITKA'S ELECTRIC ENERGY REQUIREMENTS & RESOURCES



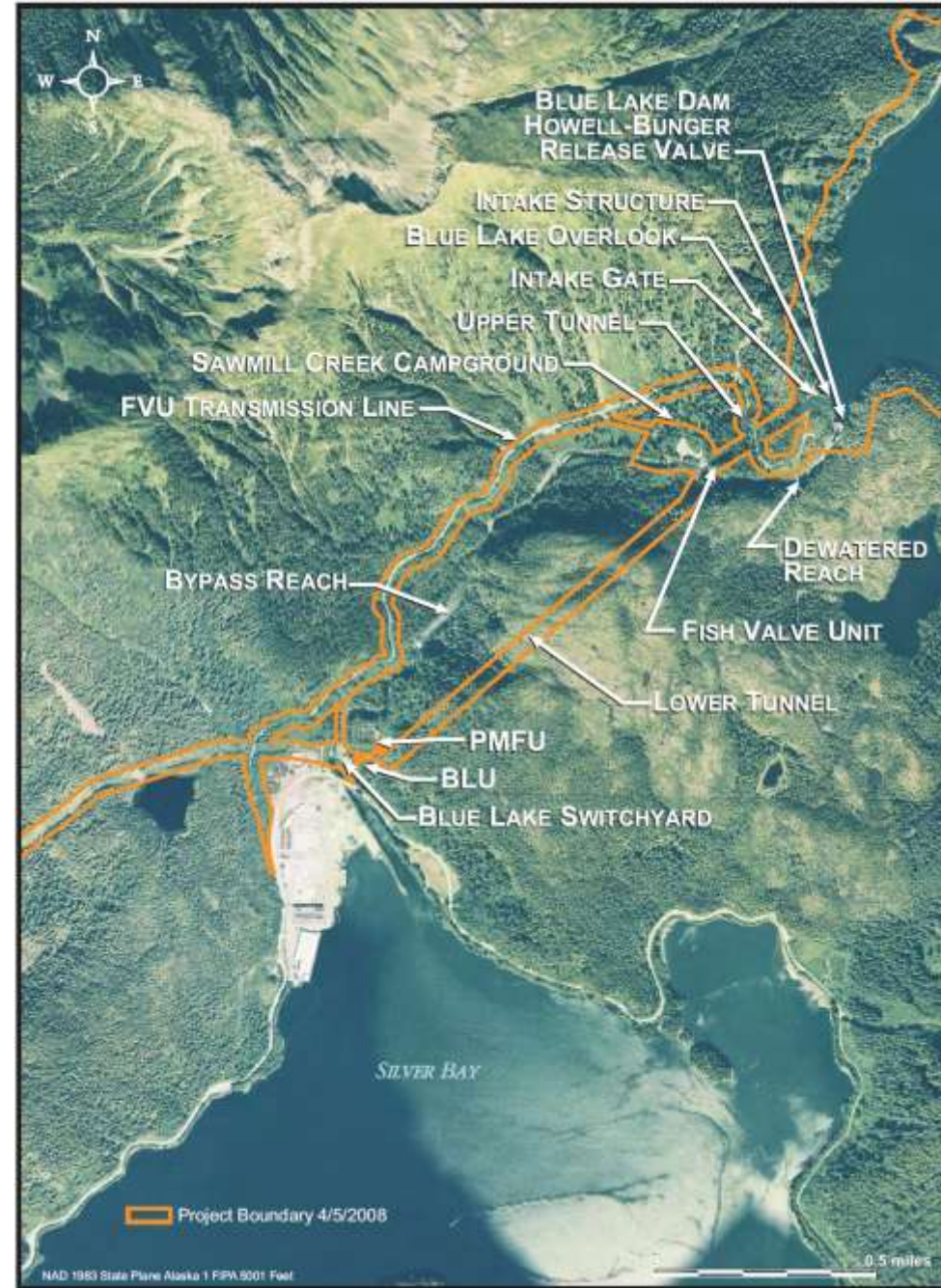
BLUE LAKE DAM SPILLING



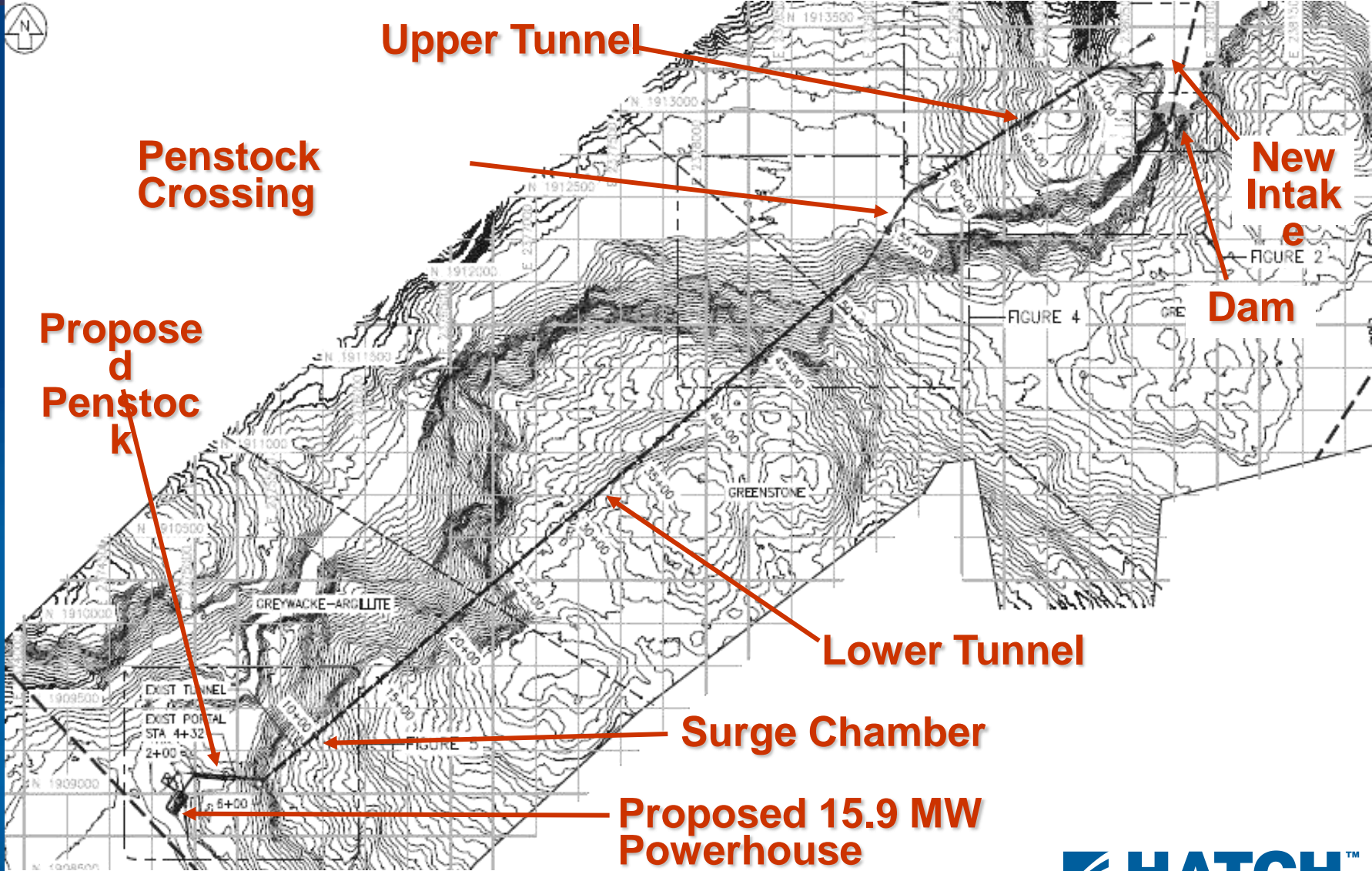
PROPOSED INCREASED RESERVOIR LEVEL FROM EL. 342 TO EL. 425



EXISTING BLUE LAKE PROJECT FEATURES



BLUE LAKE PROJECT SITE MAP



GENERATION UNIT SIZE AND SELECTION

Turbine Sizing

<i>Average Reservoir Inflow Available</i>	382 CFS (191 CFS/unit)
<i>Average Net head</i>	356 TDH
<i>Nominal Operating Point</i>	75% Gate (Isoch operation)

- The turbine design point is based on 2 units operating under the average conditions above, which is 5.3 MW.
- The third unit will provide redundancy and additional capacity during wet years and low reservoir conditions.

GENERATION UNIT SIZE AND SELECTION

Turbine Sizing

- After sizing the units as outlined above, the units were modeled in conjunction with the Green Lake units including seasonal reservoir levels and system loads to determine that all units could be operated efficiently year round and still permit balancing of the reservoirs.
- All units will be capable of cavitation free operation at 401 TDH, 270 CFS. (full gate)

GENERATOR SIZING

Maximum Plant Flow

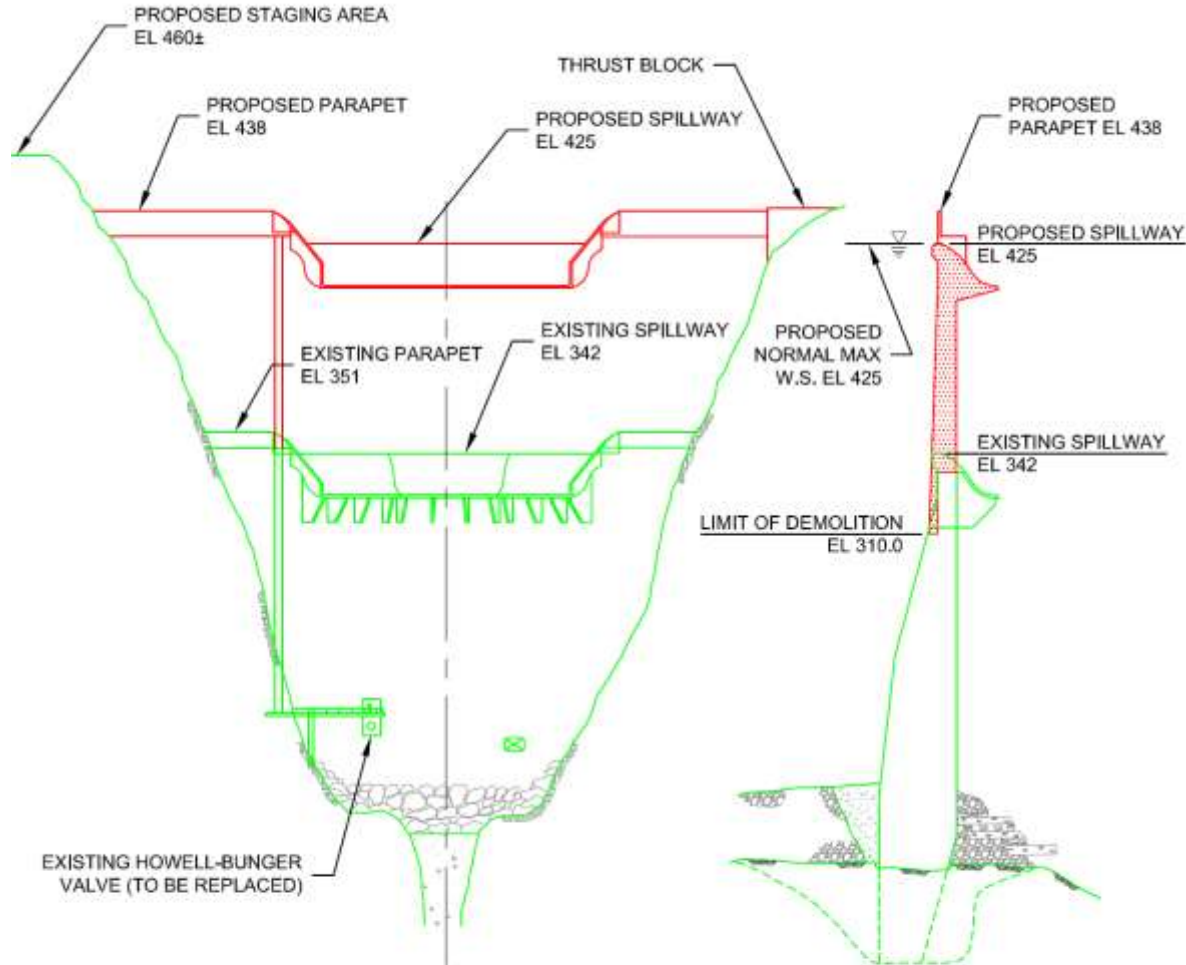
650 CFS (270 CFS/unit)

Max Net Head

401 TDH

- The generators were sized based on the maximum plant flow and maximum net head at 100% gate, which is 9.1 MW at .9 pf.

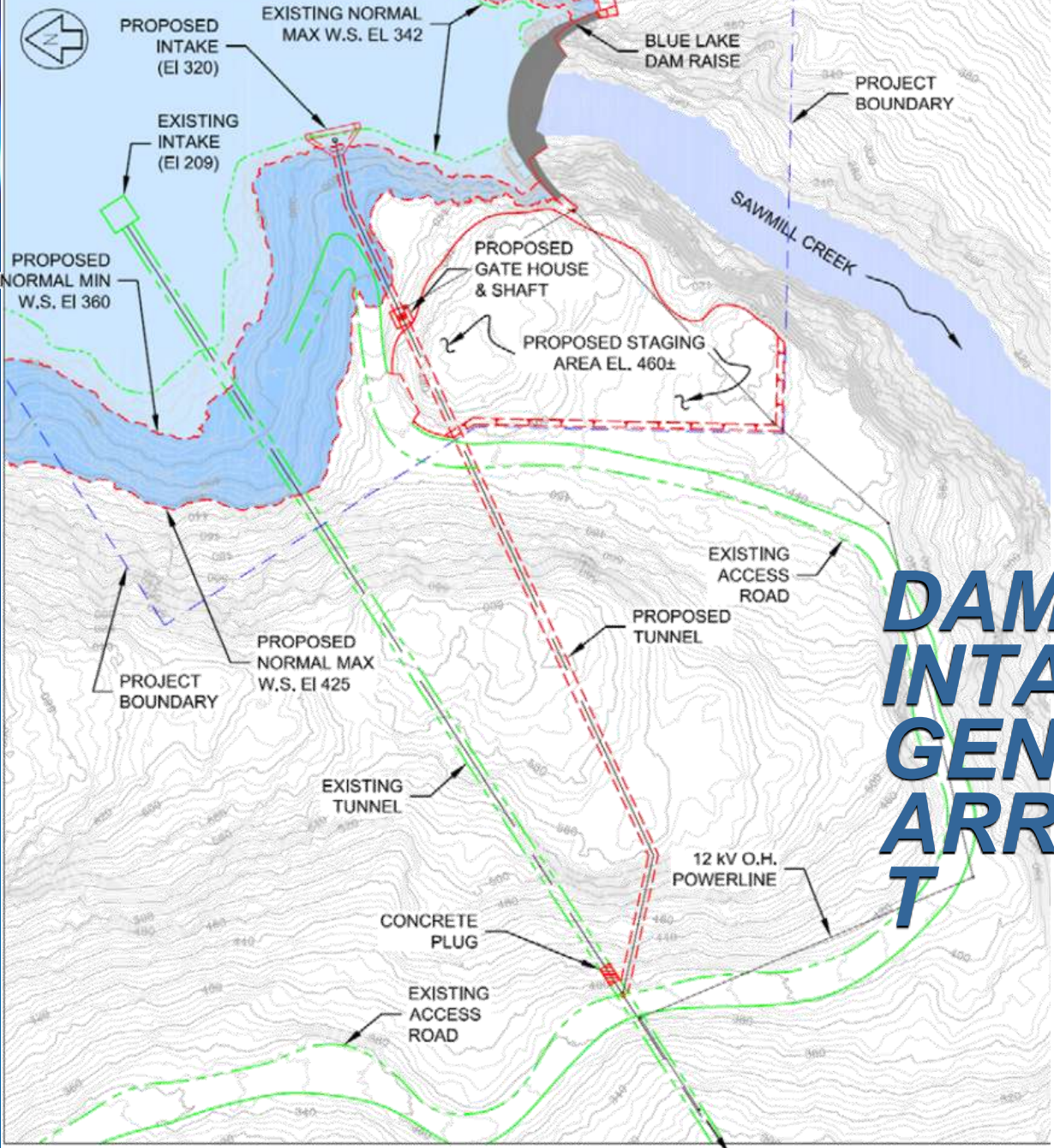
DAM RAISE SPILLWAY ELEVATION AND SECTION



ELEVATION VIEW

SCALE: 1" = 60'

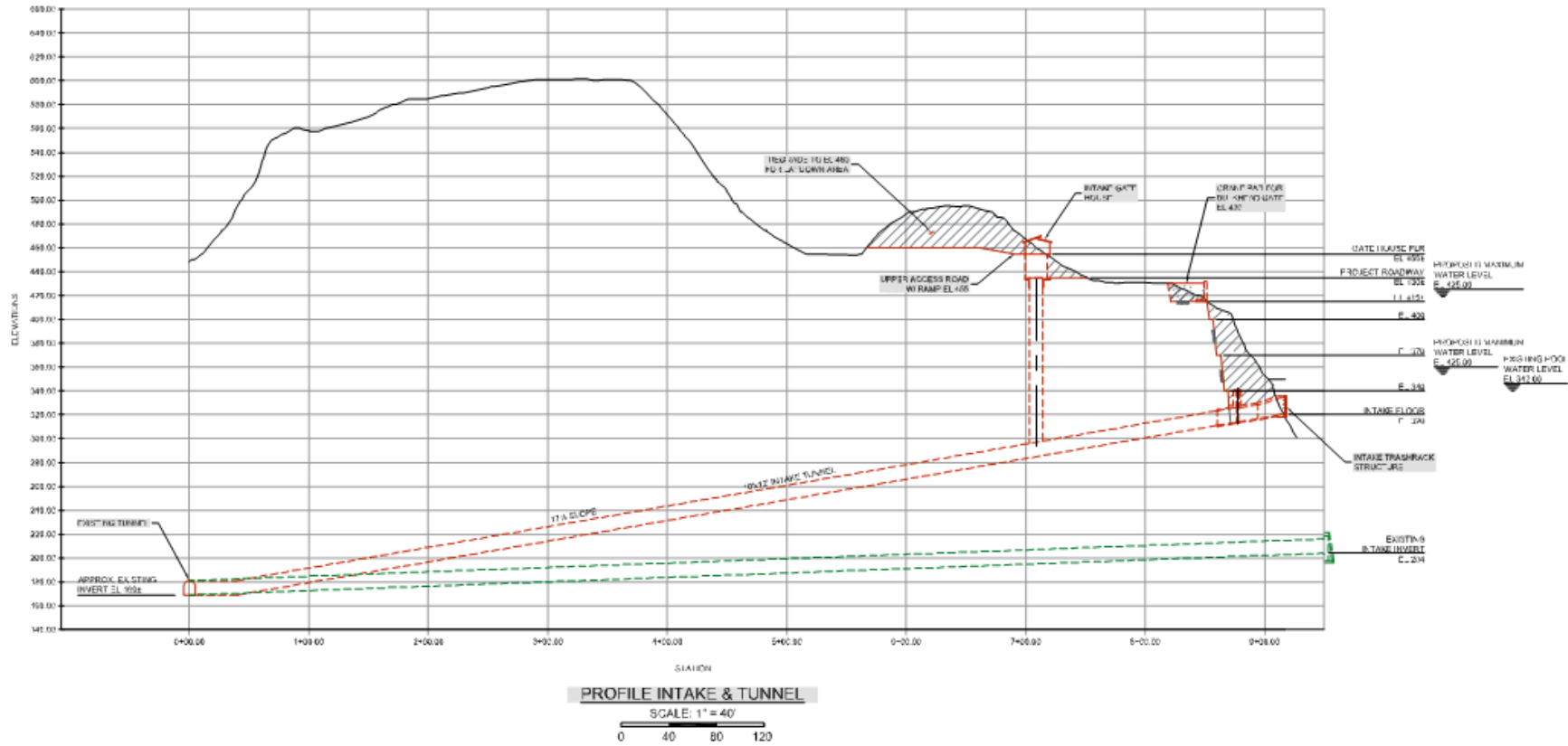




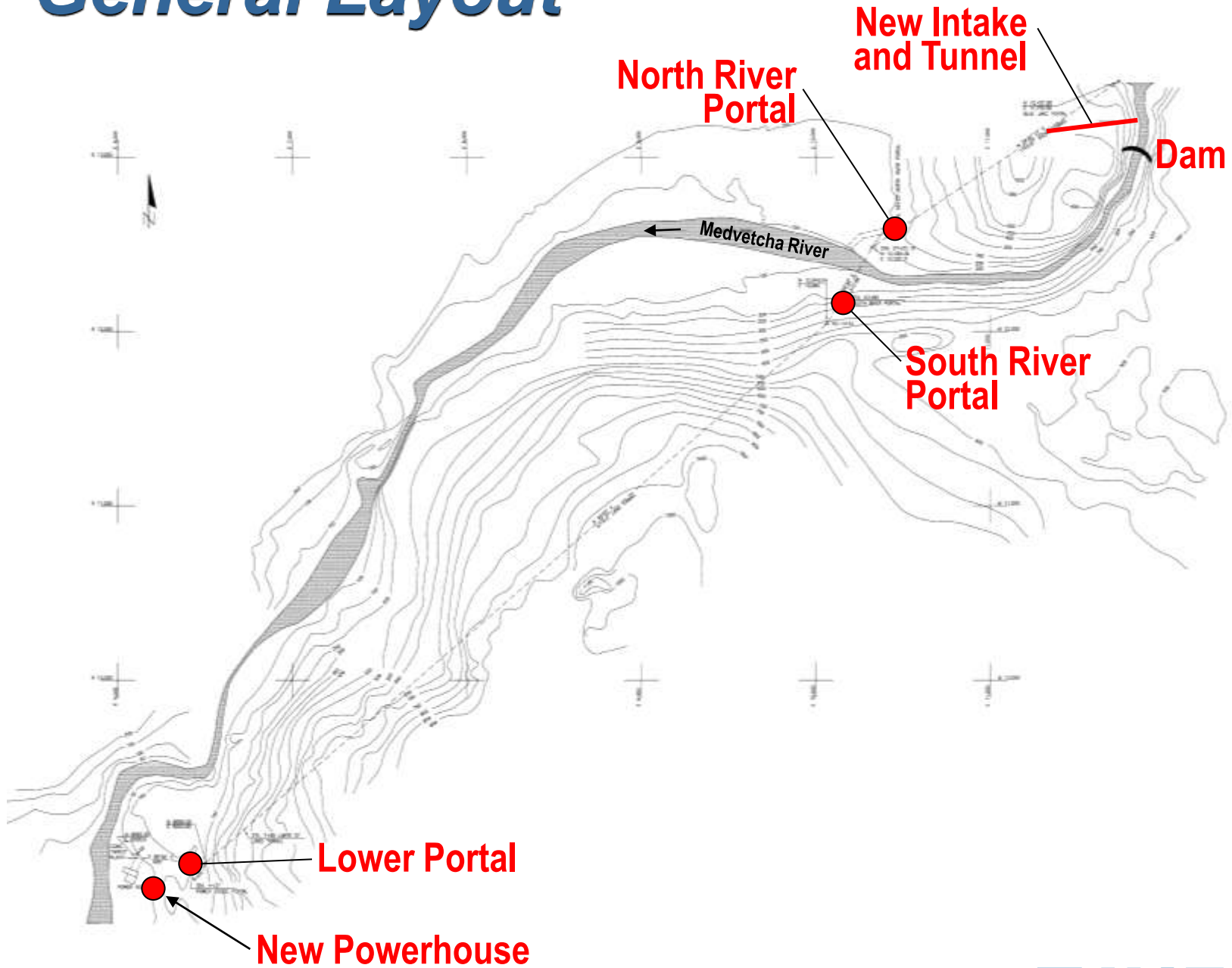
DAM AND INTAKE GENERAL ARRANGEMENT

PLAN VIEW TO FVU

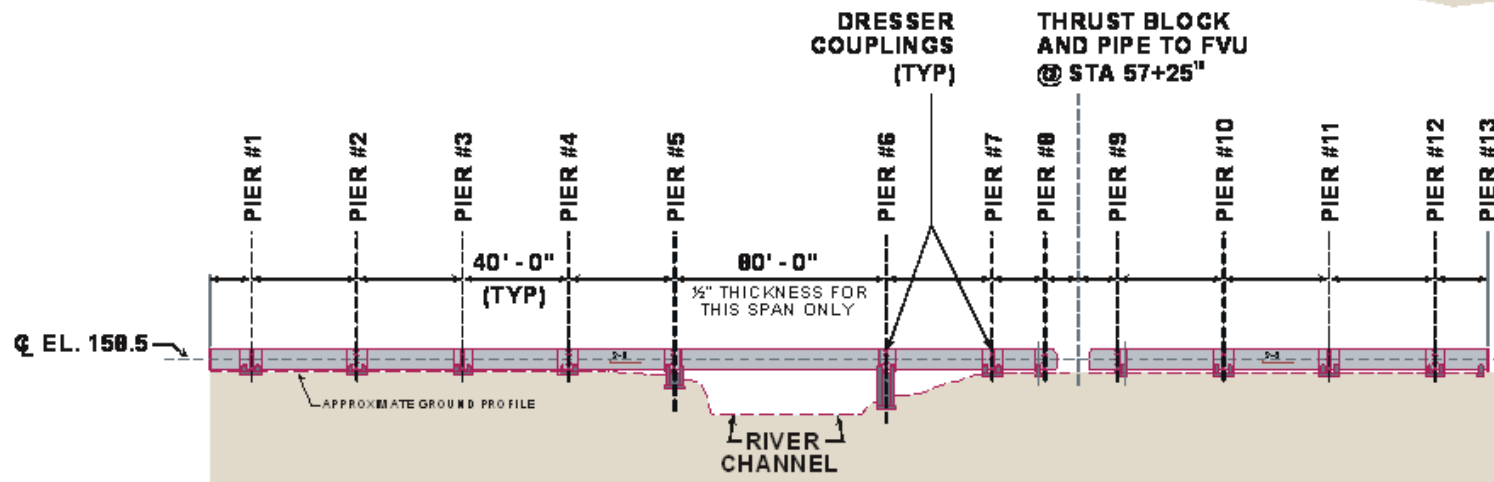
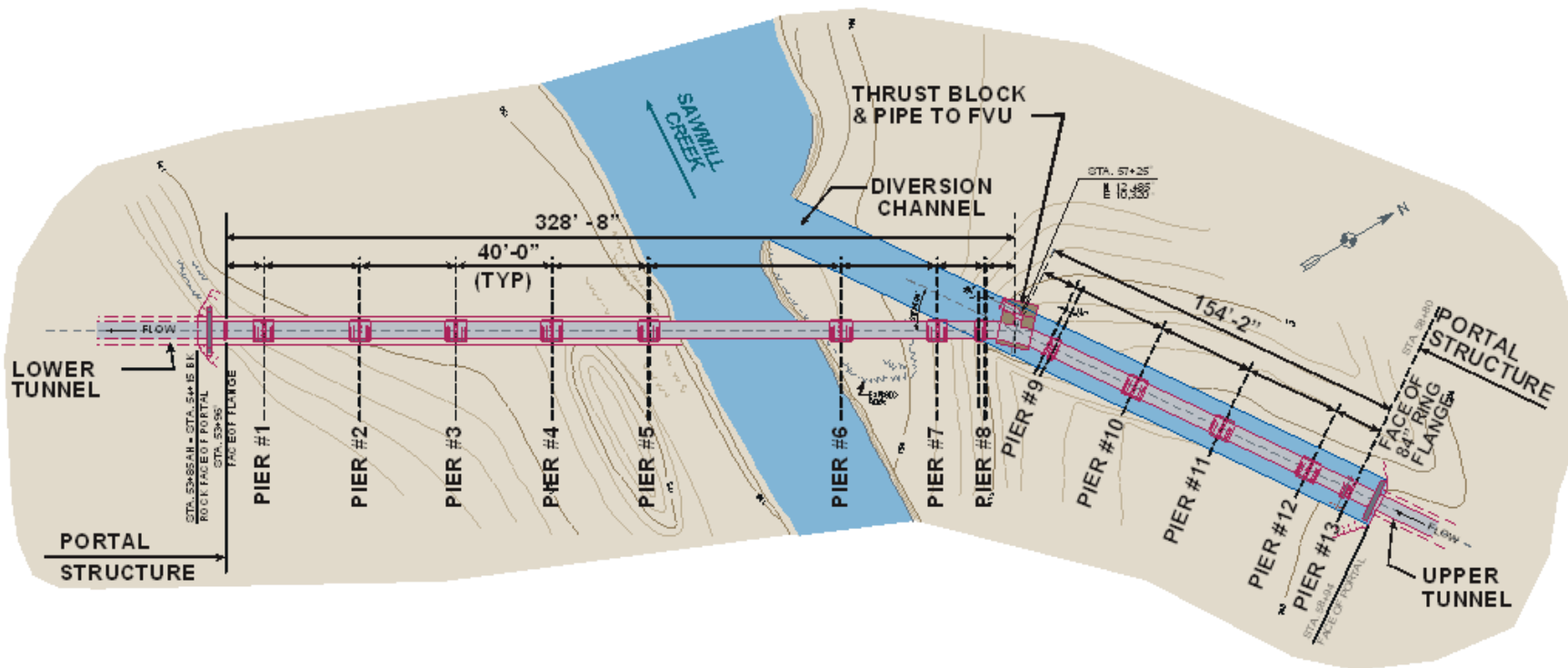
PROPOSED INTAKE STRUCTURE PROFILE



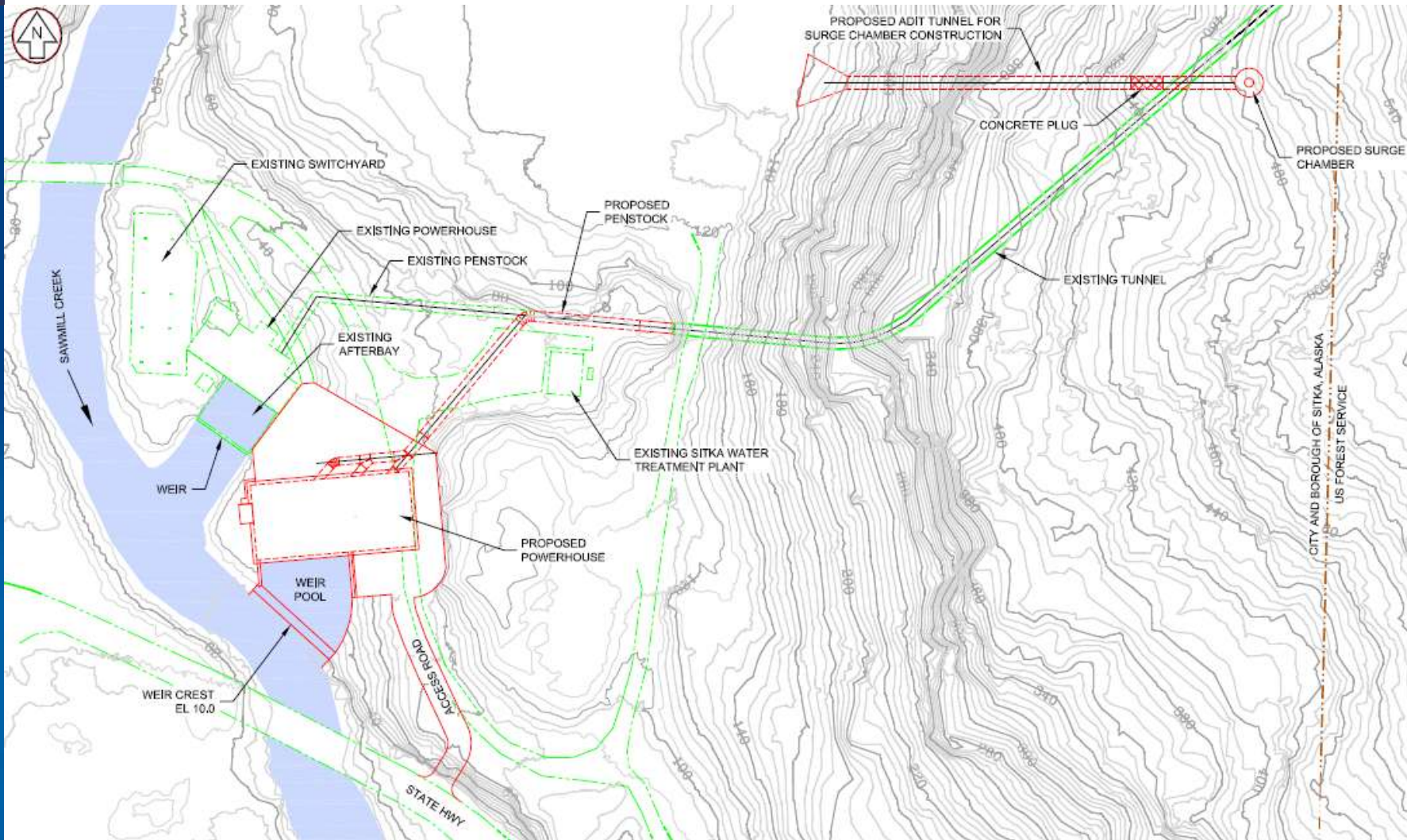
General Layout



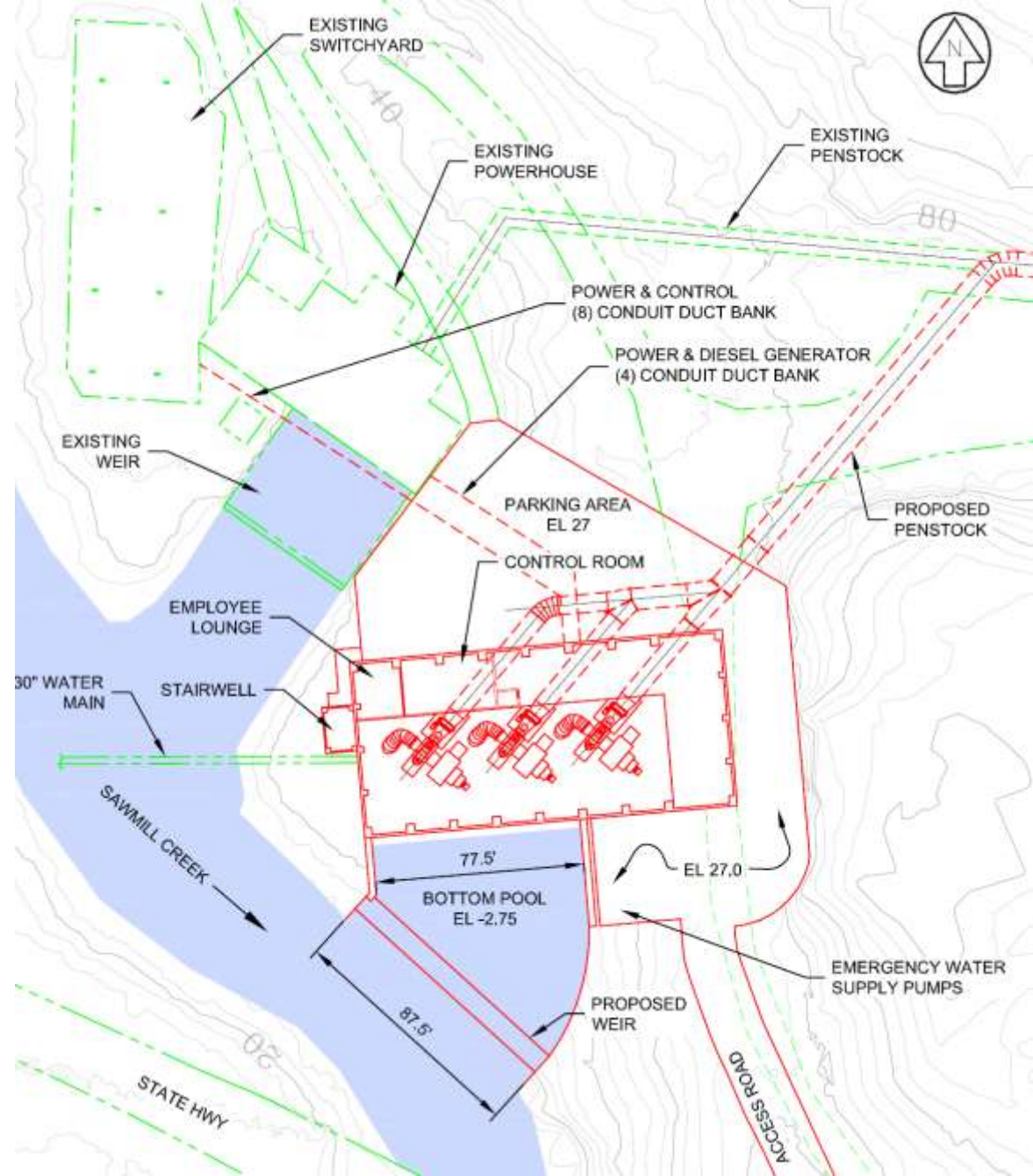
UPPER PENSTOCK Plan and Elevation



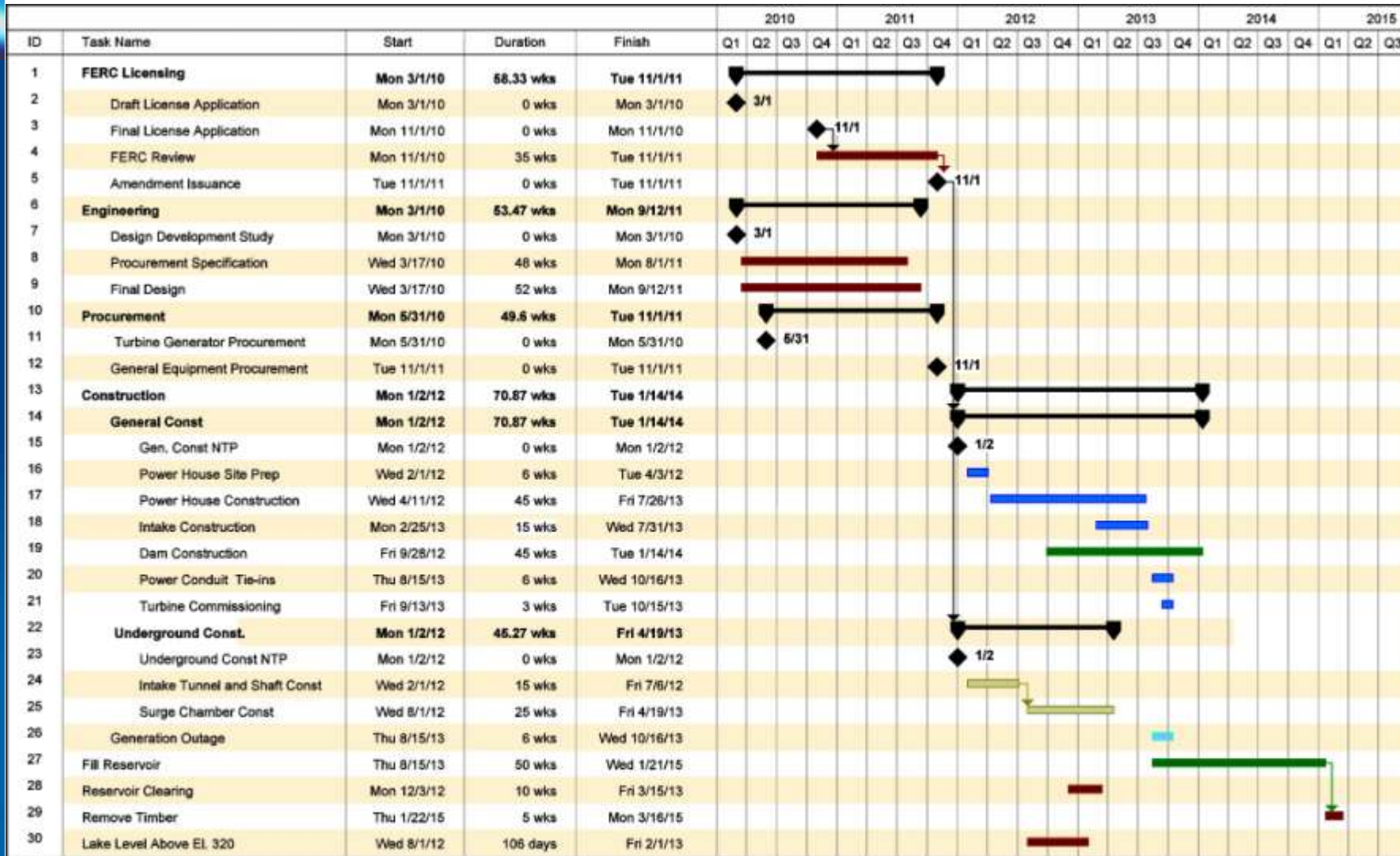
PROPOSED INTAKE STRUCTURE PROFILE



POWER PLANT SITE PLAN



SCHEDULE



2013-2014 RESERVOIR Operating Levels

