

M3 Eagle Potable Water Facility Planning

Progress Update Meeting #3

November 25, 2008

Water Demands

Potable Water Use

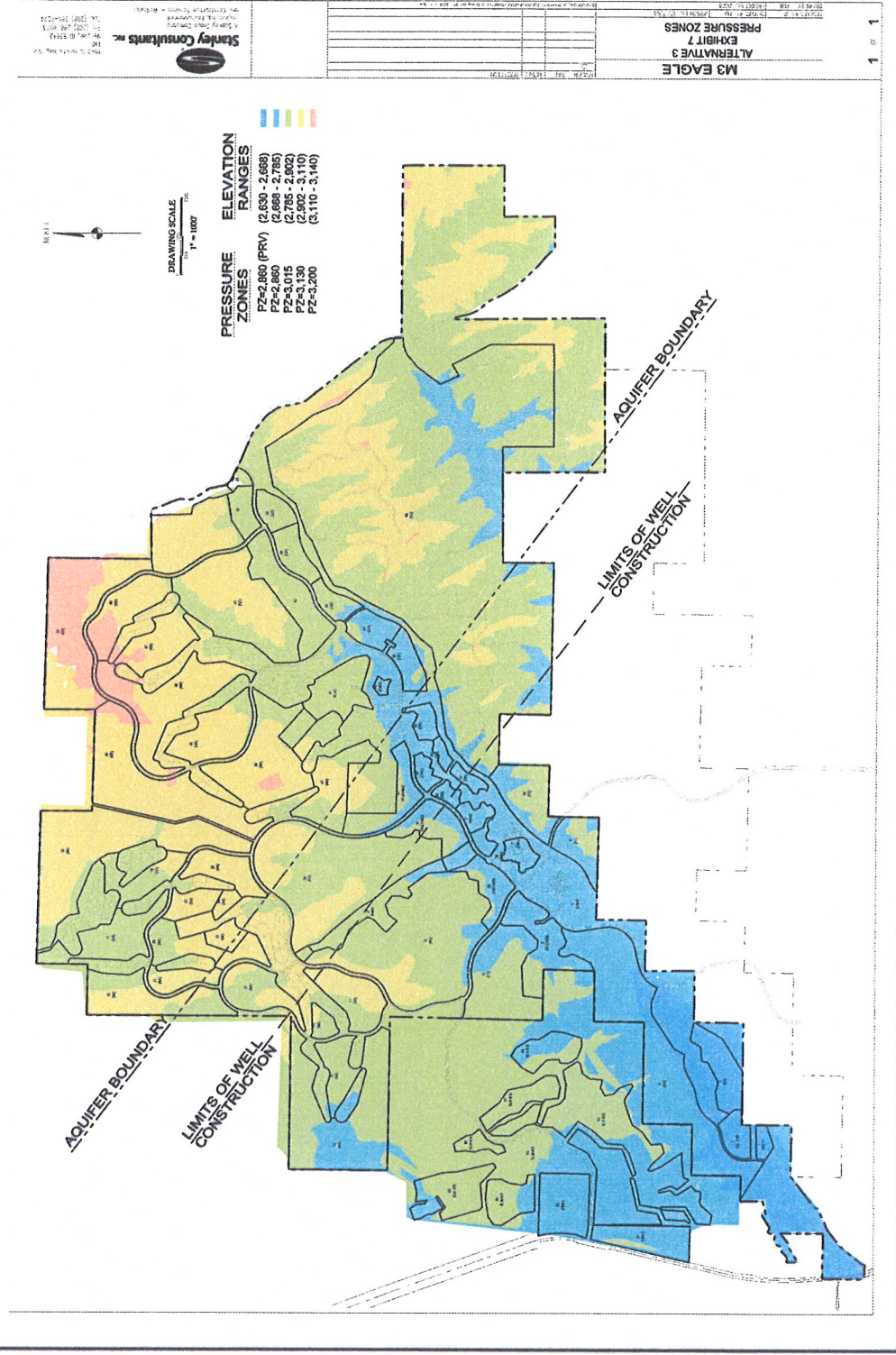
	Average Day (gpm)	Maximum Day (gpm)	Peak Hour (gpm)
Indoor	1,820	2,730	5,315
Irrigation	1,200	4,375	5,790
Total	3,020	7,105	11,105

* Build-out demands based on M3 Eagle, LLC, Second Amended Application for Water Right Permit (Feb. 2008)

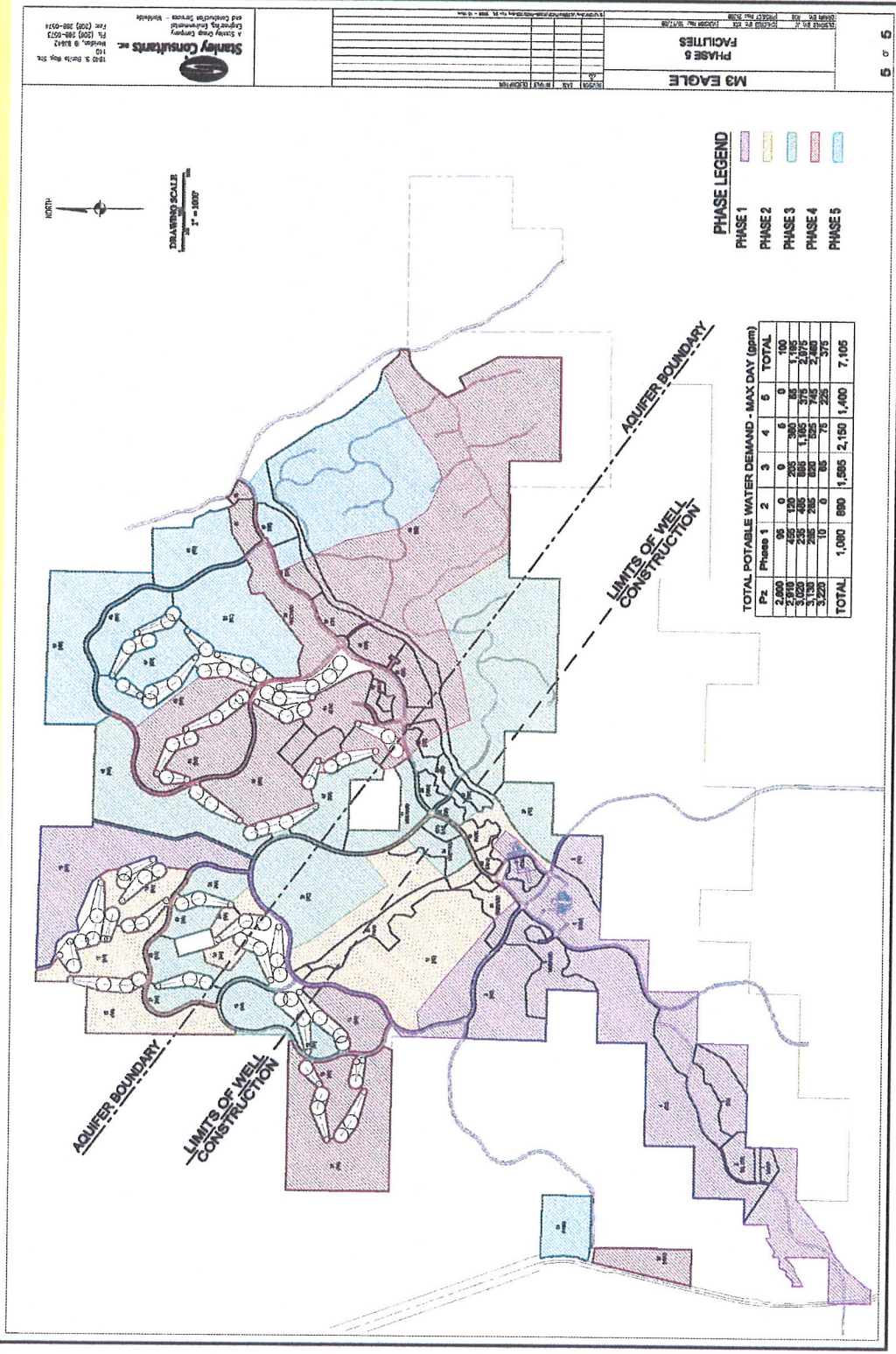
- Indoor demands based on average days of 276 gpd per residence (7,153 residence), 12 gpd per student (5,480 students), 120 gpd per hotel room (500 rooms), and 1,200 gpd per commercial acre (245 acres).
- Average day & peak hour irrigation demands are based on monthly evapo-transpiration values from Allen & Brockway (1983).
- Maximum day irrigation demand based on diversion rate of 0.02 cfs/acre.

* Values rounded to nearest 5 gpm.

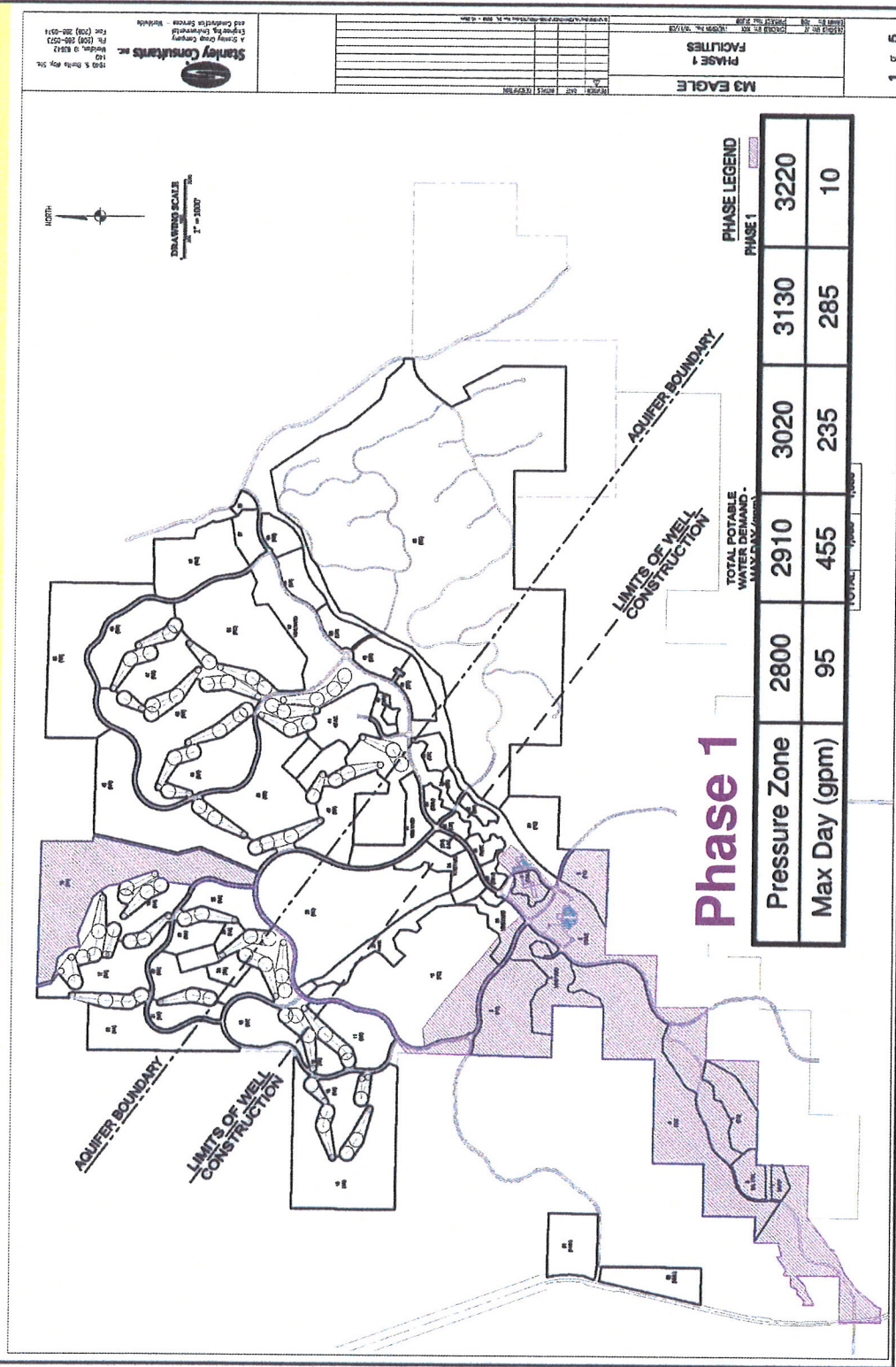
Pressure Zones



Project Phasing



Phase 1



IDAHO ADMINISTRATIVE CODE

Department of Environmental Quality

552.FACILITY AND DESIGN STANDARDS - OPERATING CRITERIA FOR PUBLIC WATER SYSTEMS.

552-01-a. Minimum Quantity. The capacity of a public drinking water system shall in no instance be less than eight hundred (800) gallons per day per residence, plus irrigation flows. (5-3-03), Presented in IAC 2008, April 17, 2008 Document Creation Date.

411 gpd/unit MAXIMUM DAY

552-01-i The minimum capacity of eight hundred (800) gallons per day per represents the maximum day demand rate exclusive of irrigation and fire flow requirements. (), Proposed Rulemaking for Docket No. 58-0108-0801, Vol. 08-8, dated August 6, 2008. April 17, 2008.

800 gpd/unit MAXIMUM DAY

MAXIMUM DAY - WATER APP DOMESTIC UNIT DEMAND (411 gpd/unit)

Pressure		Total Potable Water Demand - Maximum Day (gpm)				
Zone	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
2800	95	0	0	5	0	100
2910	455	120	205	360	55	1195
3020	235	485	695	1185	375	2975
3130	285	285	620	525	745	2460
3220	10	0	65	75	225	375
Total	1,080	890	1,585	2,150	1,400	7,105

* Demands based Parcel-Pressure Zone Distribution and 2nd Amended Application for Water Right Permit (Feb. 2008)

* Values rounded to nearest 5gpm

* Units are in Residence

MAXIMUM DAY - IDEQ DOMESTIC UNIT DEMAND (800 gpd/unit)

Pressure						
Total Potable Water Demand - Maximum Day (gpm)						
Zone	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
2800	115	0	0	5	0	120
2910	570	150	255	445	65	1485
3020	290	600	865	1470	465	3690
3130	355	350	770	655	925	3055
3220	15	0	80	90	285	470
Total	1,345	1,100	1,970	2,665	1,740	8,820

*Demand based on a IDEQ 800 gpm Maximum Indoor Demand, Parcel-Pressure Zone Distribution, and calculations from 2nd Amended Application for Water Right Permit (Feb. 2008)

* Values rounded to nearest 5gpm

* Units are in Residence

PEAK HOUR - WATER APP DOMESTIC UNIT DEMAND (411 gpd/unit)

Pressure		Total Potable Water Demand - Maximum Day (gpm)				
Zone	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL
2800	150	0	0	10	0	160
2910	715	190	325	560	85	1875
3020	365	760	1085	1850	585	4645
3130	450	440	965	820	1165	3840
3220	15	0	100	115	355	585
Total	1,695	1,390	2,475	3,355	2,190	11,105

* Demands based Parcel-Pressure Zone Distribution and 2nd Amended Application for Water Right Permit (Feb. 2008)

* Values rounded to nearest 5gpm

* Units are in Residence

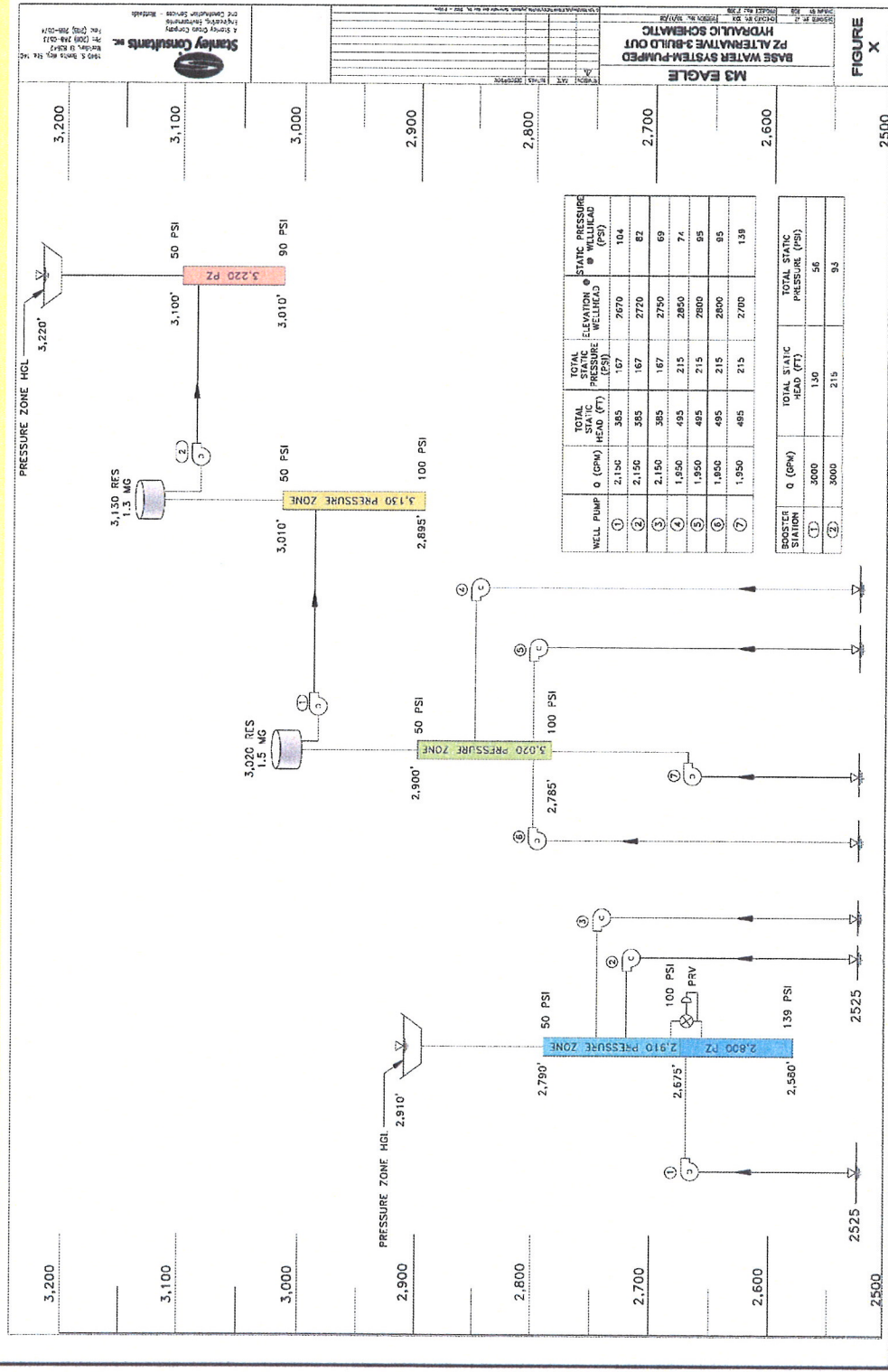
Storage Calculations per Pressure Zone

	Combined Storage	Build-Out Storage by Pressure Zone (Million Gallons)					
		2800	2910	3020	3130	3220	Total
Indoor - Peak Hour (MG)	0.88	0.012	0.149	0.370	0.306	0.047	0.883
Irrigation (MG)	1.02	0.016	0.193	0.478	0.395	0.060	1.142
Fire Flow (MG)	0.54	0	0	0.540	0.540	0	1.080
Pumping Cycle (MG)	0.17	0.002	0.029	0.071	0.059	0.009	0.170
Totals (MG)	2.62	0.03	0.035	1.41	1.26	0.11	3.16
Difference	0%	WA Application Storage Volume (MG) = 2.62					24.8%

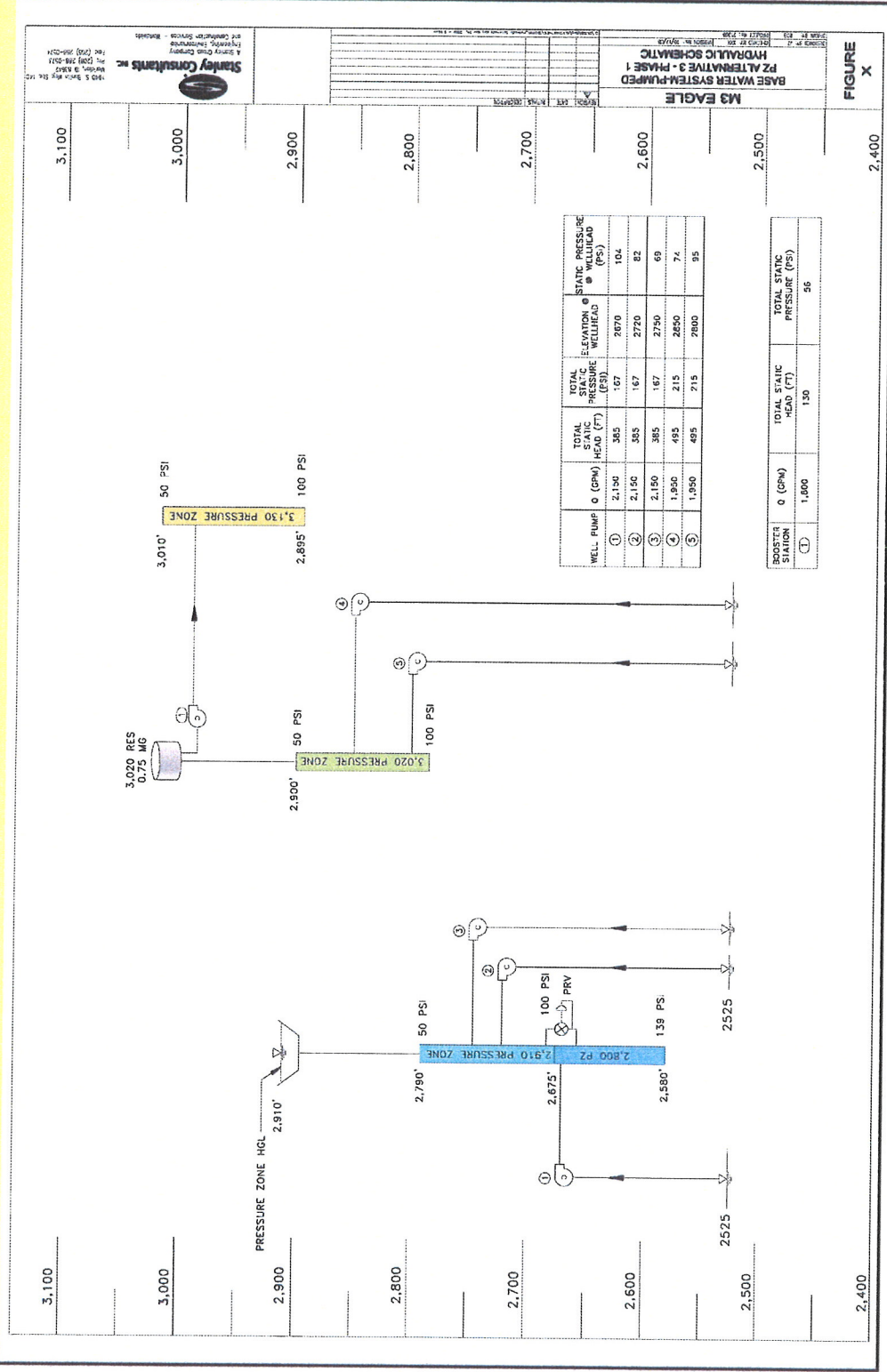
Phase 1 Storage Comparison

Pressure Zone	3020	3130-3220
Build-out (MG)	1.5	1.3
Phase 1 - 411 gpm/unit (MG)	0.69	0
Phase 1 - 800 gpm/unit (MG)	0.71	0
Recommendation (MG)	0.75	0

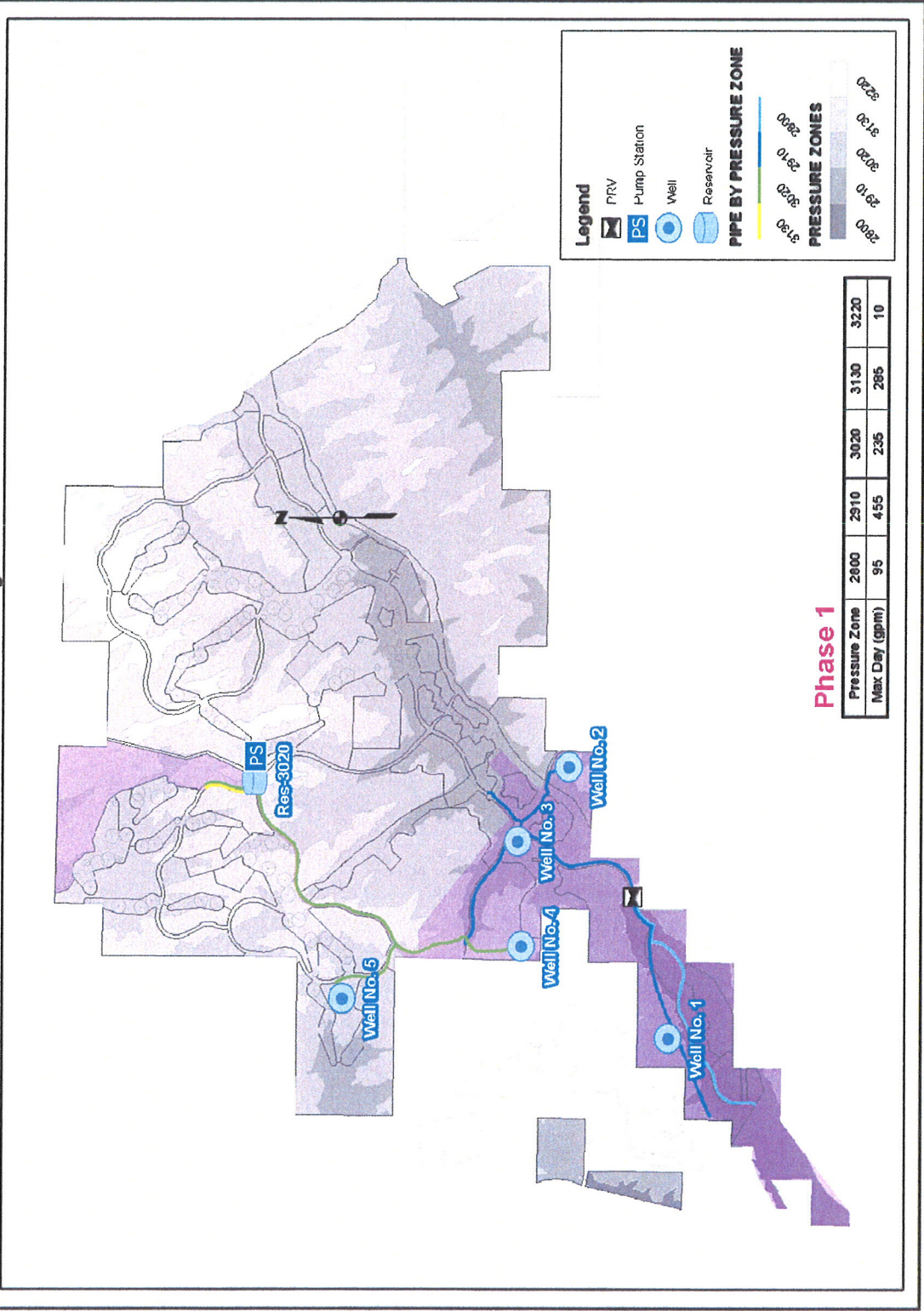
Base Water Plan Schematic



Base Water Plan Schematic – Phase 1



Base Water Plan Layout – Phase 1



Unit Costs

- Reservoirs
 - Steel
 - 0.75 MG = \$600,000
 - 1.50 MG = \$900,000
 - Pre-stressed Concrete
 - 0.75 MG = \$800,000
 - 1.50 MG = \$1,125,000
- PRV Station
 - \$140,000 per station
- Pumping Stations
 - 3,000 gpm = \$475,000
- Wells
 - Water Application Values
 - Ontario, California

Discussion / Questions