SQUAW VALLEY ELECTRIC DEMAND STUDY

ESTIMATED NEW ELECTRIC DEMAND -- AT BUILDOUT					
Phase	Squaw Valley Land Use	Estimated Units	Sq Ft Estimated	Avg Peak KVA/Unit or Watts/ Sq Ft	Demand MVA
I	Condo Hotel (Core)	96	162000	3.5000	0.34
	Condo Hotel	78	131625	3.5000	0.27
	Condo Hotel	78	131625	3.5000	0.27
	Squaw Kids Condo Hotel	52	87750	3.5000	0.18
	Ski Services Condo Hotel	17	28688	3.5000	0.06
	Condo Hotel	15	25313	3.5000	0.05
	Fractional Cabins	17	51000	4.2000	0.07
	Fractional Cabins	14	42000	4.2000	0.06
	Lot 4 (Employee Housing)	15		3.0000	0.05
	Mountain Adventure Camp		90000	0.0102	0.92
	Transit Facilities		3000	0.0039	0.01
	Retail		17370	0.0053	0.09
	Restaurant		18870	0.0102	0.19
	Hotel Common Area		27238	0.0038	0.10
	Hotel Amenities		2500	0.0038	0.01
	Meeting Space		12000	0.0038	0.05
	Ski Services		72640	0.0025	0.18
Phase I Subtotals		**382**			**2.91**
Net Demand Removed (Demo Existing Phase 1 Buildings)					-0.22
Phase 1 Net Increased Demand					**2.68**

II	West Wing Condo Hotel	6	10125	3.5000	0.02
	Condo Hotel	89	150188	3.5000	0.31
	Condo Hotel	161	252875	3.5000	0.56
	Condo Hotel	46	62438	3.5000	0.16
	Condo Hotel	81	117825	3.5000	0.28
	Lot 4 (Employee Housing)	6		3.0000	0.02
	Retail		11250	0.0053	0.06
	Restaurant		11250	0.0102	0.11
	Hotel Common Area		22254	0.0038	0.08
Phase II Subtotals		**389**			**1.62**
Net Demand Removed (Demo Existing Phase 2 Buildings)					-0.04
Phase 2 Net Increased Demand					**1.58**

Total Estimated NET New Peak Demand (MVA) At Buildout	**4.26**

SQUAW VALLEY ELECTRIC DEMAND STUDY
ELECTRIC LOAD REMOVED

ESTIMATED ELECTRIC DEMAND REMOVED (DEMO) AT BUILDOUT					
Phase	Squaw Valley Land Use	Estimated Units	Sq Ft Estimated	Avg Peak KVA/Unit or Watts/ Sq Ft	Demand MVA
I	Retail		5928	0.0053	0.03
	F&B (Restaurant)		1595	0.0102	0.02
	Meeting Space		15120	0.0038	0.06
	Ski Services		47414	0.0025	0.12
Phase I Subtotals			70,057		**0.22**
II	Employee Housing	8		3.0000	0.02
	Office		7593	0.0053	0.04
Phase II Subtotals			7593		**0.04**
Total Estimated Peak Demand (MVA) REMOVED At Buildout					**0.26**

Propane Planning Study for Squaw Valley

Nancy Gilmore, Pete Daniels, and Josh Mahoney
Gas Transmission Systems (GTS)
Version 2
2/20/2014

APPENDIX G

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Planning Study For Squaw Valley

Project Overview

The Planning and Operations Department was asked to assist the Project Engineering Department with the Planning Study for Squaw Valley. The project consists of 750 residential units and 288,372 square feet of non-residential buildings. The objective for the Planning Department was to estimate the gas consumption rates and totals for each phase of the project. In addition, seasonal influences of occupancy rates and temperature conditions needed to be considered.

Project Team Members

Pete Daniels – Project Lead Engineer (GTS)
Nancy Gilmore – Planning and Operations Manager (GTS)
Joshua Mahoney – Engineer (GTS)

Assumptions

The following assumptions were used to develop the demand estimates for the Squaw Valley Planning Study:

1. Hours of operation for all non-living areas was considered to be 12 hours.
2. Since planning estimation values are derived for natural gas, a reduction factor of 2 was used for all propane estimates.
3. A Non-Winter Reduction Factor of 20% was used for April thru October.
4. Residential demand was 0.035 MCFH (natural gas).
5. Residential Peak Hour Factor was 0.063.
6. Diversity Factor was 0.8.
7. Cubic Feet to Gallon Conversion Factor for Propane was 35.79 CF/Gal

Guidelines For Demand Estimates

Using the assumptions described above, the following explains the method for estimating the demands.

Residential Demands:

The Hourly Demand used for the project was 0.0175 and 0.035 MCFH (propane) for low and medium density residential units. Using the Hourly Demand, Diversity Factor (0.8), and Peak Hour Factor (0.063), the Daily Demand Diversified is calculated using the equation provided below:

$$\frac{Hourly\ Demand\ x\ Diversity\ Factor}{Peak\ Hour\ Factor} = Daily\ Demand\ Diversified$$

As seen in the table below, the Daily Demand Diversified is calculated for both residential densities provided in the project and for both fuel types.

Hourly Demand	Residential Density	Fuel	Diversity Factor	Peak Hour Factor	Daily Demand Diversified
(MCFH)					(MCFD)
0.0350	Low	Natural Gas	0.8	0.063	0.444
0.0700	Medium	Natural Gas	0.8	0.063	0.889
0.0175	Low	Propane	0.8	0.063	0.222
0.0350	Medium	Propane	0.8	0.063	0.444

Table 1 – Residential Demand Summary

Non-Residential Demands:

Using the information provided by the Project Engineering Department, the Daily Demand Diversified was calculated as seen below:

$$\textit{Demand Per Sq.Ft.} \times \textit{Building Size} \times \textit{Hours of Operation} \times \textit{Diversity Factor} = \textit{Daily Demand Diversified}$$

Using the equation provided above, the Daily Demand was calculated for three buildings provided below:

Demand Per Square Foot	Building Size	Fuel	Hours of Operation	Diversity Factor	Daily Demand Diversified
(CFH/ft^2)	(ft^2)		(Hour)		(MCFD)
0.10	90,000	Propane	12	0.8	86.4
0.04	20,000	Propane	12	0.8	9.6
0.12	6,150	Propane	12	0.8	8.9

Table 2 – Non-Residential Demand Summary

After each Daily Demand Diversified was calculated for non-residential buildings, Nancy Gilmore reviewed the results to verify values were acceptable. All demands were found to be acceptable for the size of the building.

Final Deliverables

The final deliverables are included in the Appendix and consist of the Daily Demands, Daily Demands Diversified, and Monthly Demands. As seen in the equations below, the monthly demand consists of the occupancy rates (provided by the client), seasonal reductions, and the days for each month:

Residential Monthly Demand (MCFH) - Propane

$$\frac{Daily\ Demand\ x\ Occupancy\ Rate\ x\ Days\ in\ the\ Month\ x\ Seasonal\ Reductions}{Peak\ Hour\ Factor}$$

Non-Residential Monthly Demand (MCFH) - Propane

$$Daily\ Demand\ x\ Occupancy\ Rate\ x\ Days\ in\ the\ Month\ x\ Seasonal\ Reductions$$

Conversion of MCFH to Gallons - Propane

$$\frac{Residential\ Monthly\ Demand\ (MCFH)\ x\ 1{,}000\ \left(\frac{CF}{MCF}\right)}{35.79\ \left(\frac{CF}{Gallon}\right)}$$

Where:

Daily Demand = Provided in Appendix A
Occupancy Rate = Red text in Appendix B
Seasonal Reductions:
- Winter = 100%
- Summer = 80%

Peak Hour Factor = Provided in the 'Assumptions' section of this report (0.063)

Also provided in the final deliverables is the total demand estimate for each phase of the project. As requested by the Project Engineering Department, the phase subtotals were maintained to track the gas usage in each area.

CONCLUSION

The Planning and Operations Department was responsible for generating the demand estimates for the Squaw Valley project, in which the following items were considered: residential size, usage per building, usage diversification, operating hours, occupancy rates, and summer reduction factors. The deliverables consisted of an individual analysis of each Phase, along with a breakdown for each month of the gas usage. In July 2013, Appendix A and B were provided to Pete Daniels as the final estimate for the project. In February 2014, the Planning and Operations Department was consulted to review the gas usage of several buildings about to be demolished (found in Appendix C). In addition to reviewing the new information, Appendix A and B were updated to show the gas demands in gallons propane per hour.

APPENDIX A (ORIGINAL)

Squaw Valley -- Gas Planning Study

6/20/2013

Revised Data - June 26, 2013

	PROPANE	Residential Units	Bldg Sq Ft	Space CFH	Space CFH	Water CFH	Cooking CFH	Fireplace CFH	PeakConnected Load/Unit	PeakConnected Total Load	Demand/ SF or Unit	Peak Demand	Load Per Unit (CFH) (Footnote 1&2)	Load Per Square Foot (CFH)	Total Hourly Demand (MCFH)	Daily Demand (MCF) (Footnote 3&4)	Peak Hourly Demand Diversified (MCFH)	Daily Demand Diversified (MCF)
																	0.8	0.8
I	Condo Hotel	120			35	30	30	30	125	15.00	70.00	8.40	17.50		2.1	33.3	1.7	26.7
	Condo Hotel	164			35	30	30	30	125	20.50	70.00	11.48	17.50		2.9	45.6	2.3	36.4
	Condo Hotel	76			35	30	30	30	125	9.50	70.00	5.32	17.50		1.3	21.1	1.1	16.9
	Mountain Adventure Center		132000	5,280	0.3	1.6	0.2			15.83	0.10	13.20		0.10	13.2	158.4	10.6	126.7
	Maintenance Center		56456	2,258	1.1	1.4	-			2.71	0.04	2.26		0.04	2.3	27.1	1.8	21.7
	Dining		5870	352	0.3	0.4	1.0			0.84	0.12	0.70		0.12	0.7	8.5	0.6	6.8
	Dining		5104	306	0.3	0.4	1.0			0.73	0.12	0.61		0.12	0.6	7.3	0.5	5.9
	Dining		3050	183	0.3	0.4	1.0			0.44	0.12	0.37		0.12	0.4	4.4	0.3	3.5
	Ski Services		36092	1,444	1.1	1.4	-			1.73	0.04	1.44		0.04	1.4	17.3	1.2	13.9
	Hotel Common Area		19048	762	1.8	-	-			0.91	0.04	0.76		0.04	0.8	9.1	0.6	7.3
	Retail		4980	199	1.8	2.3	-			0.30	0.05	0.25		0.05	0.2	3.0	0.2	2.4
	Club		26860	1,074	1.8	2.3	1.0			3.22	0.10	2.69		0.10	2.7	32.2	2.1	25.8
	Phase I Subtotals	**360**	289460							**71.72**		**47.48**			**28.6**	**367.4**	**22.9**	**293.9**
II	Lodge and fractional cabins	17			35	30	30	30	125	2.13	70.00	1.19	17.50		0.3	4.7	0.2	3.8
	Fractional Cabins	10			35	30	30	30	125	1.25	70.00	0.70	17.50		0.2	2.8	0.1	2.2
	Med Density Residential	36			125	100	65	30	320	11.52	179.20	6.45	35.00		1.3	20.0	1.0	16.0
	Condo Hotel	80			35	30	30	30	125	10.00	70.00	5.60	17.50		1.4	22.2	1.1	17.8
	Med Density Residential	150			125	100	65	30	320	48	179.20	26.88	35.00		5.3	83.3	4.2	66.7
	Condo Hotel	80			35	30	30	30	125	10.00	70.00	5.60	17.50		1.4	22.2	1.1	17.8
	Village Commercial		5000	200	1.8	2.3	-			0.24	0.04	0.20		0.04	0.2	2.4	0.2	1.9
	Retail		1000	40	1.8	2.3	-			0.06	0.05	0.05		0.05	0.1	0.6	0.0	0.5
	Dining		6044	242	0.3	0.4	1			0.87	0.12	0.73		0.12	0.7	8.7	0.6	7.0
	Hotel Common Area		7260	290	1.8	-	-			0.35	0.04	0.29		0.04	0.3	3.5	0.2	2.8
	Amenities		6800	272	1.8	2.3	-			0.41	0.05	0.34		0.05	0.3	4.1	0.3	3.3
	Parking/ Meeting Room		16000	640	1.8	-	-			0.77	0.04	0.64		0.04	0.6	7.7	0.5	6.1
	Phase II Subtotals	**373**	**42104**							**85.59**		**48.67**			**12.0**	**182.2**	**9.6**	**145.8**
III	Condo Hotel	175			35	30	30	30	125	21.88	70.00	12.25	17.50		3.1	48.6	2.5	38.9
	Condo Hotel	125			35	30	30	30	125	15.625	70.00	8.75	17.50		2.2	34.7	1.8	27.8
	Retail Commercial		6000	240	1.8	2.3	-			0.36	0.05	0.30		0.05	0.3	3.6	0.2	2.9
	Dining		4000	160	0.3	0.4	1			0.58	0.12	0.48		0.12	0.5	5.8	0.4	4.6
	Hotel Common Area		20250	810	1.8	-	-			0.97	0.04	0.81		0.04	0.8	9.7	0.6	7.8
	Transit Facilities		10000	400	1.8	-	-			0.48	0.04	0.40		0.04	0.4	4.8	0.3	3.8
	Phase III Subtotals	**300**	**40250**							**39.89**		**22.99**			**7.2**	**107.2**	**5.8**	**85.8**
IV	Condo Hotel	60			35	30	30	30	125	7.50	70.00	4.20	17.50		1.1	16.7	0.8	13.3
	Retail Commercial		8000	320	1.8	2.3	-			0.48	0.05	0.40		0.05	0.4	4.8	0.3	3.8
	Dining		3000	120	0.3	0.4	1			0.43	0.12	0.36		0.12	0.4	4.3	0.3	3.5
	Hotel Common Area		4050	162	1.8	-	-			0.19	0.04	0.16		0.04	0.2	1.9	0.1	1.6
	Ski Services		10000	400	1.1	1.4	-			0.48	0.04	0.40		0.04	0.4	4.8	0.3	3.8
	Phase IV Subtotals	**60**	**25050**							**9.1**		**5.5**			**2.4**	**32.5**	**1.9**	**26.0**
	Totals	**1093**	**396864**							**206.3**		**124.7**			**50.2**	**689.4**	**40.2**	**551.5**

Supply Total (Individual Total * 80% Diversity Factor) MCFH — Peak Demand MCFH **99.7**

1. Residential demands normally 0.035 MCFH (natural gas) per household.
2. Propane has a higher BTU per volume (approx 2.4 times), subsequently a reduction factor of 2 was used.
3. Residential peak hour factor = .063 (i.e. peak hour demand/.063 = daily)
4. Commercial = 12 hr/day (i.e. peak hour demand * 12 = daily)

APPENDIX A (REVISED)

Squaw Valley -- Propane Planning Study

2/18/2014

Revised Data - February 2014

	PROPANE	Parcel	Residential Units	Bldg Sq Ft	Load Per Unit (CFH) (Footnote 1 & 2)	Load Per Square Foot (CFH)	Total Hourly Demand (MCFH)	Daily Demand (MCF) (Footnote 3 & 4)	Peak Hourly Demand Diversified (MCFH) 0.8	Daily Demand Diversified (MCF) 0.8	Total Hourly Demand (Gal/H)	Daily Deamnd (Gal/Day)
I	Condo Hotel	B	96		17.50		1.7	26.7	1.3	21.3	46.9	1,126.6
	Condo Hotel	C	78		17.50		1.4	21.7	1.1	17.3	38.1	915.3
	Condo Hotel	E	78		17.50		1.4	21.7	1.1	17.3	38.1	915.3
	Condo Hotel	H,G	32		17.50		0.6	8.9	0.4	7.1	15.6	375.5
	Squaw Kids	SK	52		17.50		0.9	14.4	0.7	11.6	25.4	610.2
	Fractional Cabins	L,M,N	31		17.50		0.5	8.6	0.4	6.9	15.2	363.8
	Employee Housing		15		17.50		0.3	4.2	0.2	3.3	7.3	176.0
	Grand Camp	GC		90,000		0.10	9.0	108.0	7.2	86.4	251.5	6,035.2
	Maintenance Center	P		10,000		0.04	0.4	4.8	0.3	3.8	11.2	268.2
	Dining	B,C,E,SK,G,H,M		18,870		0.12	2.3	27.2	1.8	21.7	63.3	1,518.5
	Retail	B,C,E,SK,G,H,M		17,370		0.12	2.1	25.0	1.7	20.0	58.2	1,397.8
	Amenities	C,M		14,500		0.12	1.7	20.9	1.4	16.7	48.6	1,166.8
	Ski Services	F		62,640		0.04	2.5	30.1	2.0	24.1	70.0	1,680.2
	Hotel Common Area	B,C,E,SK,G,H,M		27,238		0.04	1.1	13.1	0.9	10.5	30.4	730.6
	Transit Facilities			3,000		0.05	0.2	1.8	0.1	1.4	4.2	100.6
	Phase I Subtotals		**382**	**243,618**			**25.9**	**336.9**	**20.7**	**269.5**	**724.2**	**17,380.7**
II	Condo Hotel	B,D,I,K	337		17.50		5.9	93.6	4.7	74.9	164.8	3,954.7
	EXTENDED STAY Condo Hotel	J	46		17.50		0.8	12.8	0.6	10.2	22.5	539.8
	Employee Housing		6		17.50		0.1	1.7	0.1	1.3	2.9	70.4
	Retail			11,250		0.05	0.6	6.8	0.5	5.4	15.7	377.2
	Dining			11,250		0.12	1.4	16.2	1.1	13.0	37.7	905.3
	Hotel Common Area			22,254		0.04	0.9	10.7	0.7	8.5	24.9	596.9
	Phase II Subtotals		**389**	**44754**			**9.6**	**141.7**	**7.7**	**113.3**	**268.5**	**6,444.4**
Totals			**771**	**288372**			**35.5**	**478.6**	**28.4**	**382.9**	**992.7**	**23,825.0**

Existing 3rd Party Usage

Squaw Valley Lodge Condos												
I	Condo Hotel		150		17.50		2.6	41.7	2.1	33.3	72.6	1,743.5
	Hotel Common Area			4000		0.04	0.2	1.9	0.1	1.5	5.6	134.1
	5 Spas		5	0	300		1.5	23.8	1.2	19	41.9	1,005.9
	Swimming pool		1	0	400		0.4	6.3	0.3	5.1	11.2	268.2
	Squaw Valley Lodge Sub Totals		**150**	**4000**			**4.7**	**73.7**	**3.7**	**58.9**	**131.3**	**3151.7**
Cushing House												
I	Residence		1		17.50		0.0	0.3	0.0	0.2	0.5	11.7
Buckman House												
I	Residence		1		17.50		0.0	0.3	0.0	0.2	0.5	11.7
Red Wolf												
I	Residence		32		17.50		0.6	8.9	0.4	7.1	16.8	402.3
I	Clubhouse		1		17.50		0.0	0.3	0	0.2	0.5	11.7
	Red Wolf Sub Totals		**32**	**4000**			**0.6175**	**9.2**	**0.4**	**7.3**	**17.3**	**414.1**
Totals			**184**				**5.4**	**83.5**	**4.1**	**66.6**	**149.6**	**3,589.3**

Supply Total (Individual Total * 80% Diversity Factor) MCFH

1. Residential demands normally 0.035 MCFH (natural gas) per household.
2. Propane has a higher BTU per volume (approx 2.4 times), subsequently a reduction factor of 2 was used.
3. Residential peak hour factor = .063 (i.e. peak hour demand/.063 = daily)
4. Commercial = 12 hr/day (i.e. peak hour demand * 12 = daily)
5. Used actual gallons of propane consumption for Squaw Valley Resort and Old Village at Squaw Valley - See monthly consumptions table

Squaw Valley -- Gas Planning Study
7/21/2013

Hours of operation for non-living areas (hr) 12
Summer Reduction 20%

Winter Demands
Summer Demands (includes summer reduction factor)

	PROPANE	Residential Units	Bldg Sq Ft	January 58% MCF	February 72% MCF	March 70% MCF	April 51% MCF	May 37% MCF	June 42% MCF	July 85% MCF	August 68% MCF	September 45% MCF	October 42% MCF	November 25% MCF	December 63% MCF	Total MCF
I	Condo Hotel	120		603	669	721	406	302	335	701	562	362	350	254	647	**5,913**
	Condo Hotel	164		824	914	986	555	413	458	959	768	495	478	348	884	**8,081**
	Condo Hotel	76		382	423	457	257	191	212	444	356	229	221	161	410	**3,745**
	Mountain Adventure Center		132,000	4,910	4,435	4,910	3,802	3,928	3,802	3,928	3,928	3,802	3,928	4,752	4,910	**51,036**
	Maintenance Center		56,456	840	759	840	650	672	650	672	672	650	672	813	840	**8,731**
	Dining		5,870	262	237	262	203	210	203	210	210	203	210	254	262	**2,723**
	Dining		5,104	228	206	228	176	182	176	182	182	176	182	220	228	**2,368**
	Dining		3,050	136	123	136	105	109	105	109	109	105	109	132	136	**1,415**
	Ski Services		36,092	537	485	537	416	430	416	430	430	416	430	520	537	**5,582**
	Hotel Common Area		19,048	283	256	283	219	227	219	227	227	219	227	274	283	**2,946**
	Retail		4,980	93	84	93	72	74	72	74	74	72	74	90	93	**963**
	Club		26,860	999	902	999	774	799	774	799	799	774	799	967	999	**10,385**
	Phase I Subtotals	**360**	**289,460**	**10,098**	**9,492**	**10,453**	**7,636**	**7,537**	**7,422**	**8,735**	**8,317**	**7,503**	**7,680**	**8,785**	**10,230**	**103,888**
II	Lodge and fractional cabins	17		85	95	102	58	43	47	99	80	51	50	36	92	**838**
	Fractional Cabins	10		50	56	60	34	25	28	58	47	30	29	21	54	**493**
	Med Density Residential	36		362	401	433	244	181	201	421	337	217	210	153	388	**3,548**
	Condo Hotel	80		402	446	481	271	201	223	468	375	241	233	170	431	**3,942**
	Med Density Residential	150		1,507	1,671	1,804	1,015	755	837	1,753	1,405	905	874	636	1,618	**14,782**
	Condo Hotel	80		402	446	481	271	201	223	468	375	241	233	170	431	**3,942**
	Village Commercial		5,000	74	67	74	58	60	58	60	60	58	60	72	74	**773**
	Retail		1,000	19	17	19	14	15	14	15	15	14	15	18	19	**193**
	Dining		6,044	270	244	270	209	216	209	216	216	209	216	261	270	**2,804**
	Hotel Common Area		7,260	108	98	108	84	86	84	86	86	84	86	105	108	**1,123**
	Amenities		6,800	126	114	126	98	101	98	101	101	98	101	122	126	**1,315**
	Parking/ Meeting Room		16,000	238	215	238	184	190	184	190	190	184	190	230	238	**2,474**
	Phase II Subtotals	**373**	**42,104**	**3,644**	**3,869**	**4,196**	**2,539**	**2,075**	**2,207**	**3,935**	**3,287**	**2,333**	**2,297**	**1,994**	**3,850**	**36,226**
III	Condo Hotel	175		879	975	1,052	592	441	488	1,023	820	528	510	371	944	**8,623**
	Condo Hotel	125		628	696	752	423	315	349	731	585	377	364	265	674	**6,159**
	Retail Commercial		6,000	112	101	112	86	89	86	89	89	86	89	108	112	**1,160**
	Dining		4,000	179	161	179	138	143	138	143	143	138	143	173	179	**1,856**
	Hotel Common Area		20,250	301	272	301	233	241	233	241	241	233	241	292	301	**3,132**
	Transit Facilities		10,000	149	134	149	115	119	115	119	119	115	119	144	149	**1,547**
	Phase III Subtotals	**300**	**40,250**	**2,248**	**2,340**	**2,544**	**1,589**	**1,347**	**1,411**	**2,346**	**1,997**	**1,478**	**1,466**	**1,352**	**2,358**	**22,476**
IV	Condo Hotel	60		301	334	361	203	151	167	351	281	181	175	127	324	**2,956**
	Retail Commercial		8,000	149	134	149	115	119	115	119	119	115	119	144	149	**1,547**
	Dining		3,000	134	121	134	104	107	104	107	107	104	107	130	134	**1,392**
	Hotel Common Area		4,050	60	54	60	47	48	47	48	48	47	48	58	60	**626**
	Ski Services		10,000	149	134	149	115	119	115	119	119	115	119	144	149	**1,547**
	Phase IV Subtotals	**60**	**25,050**	**793**	**778**	**853**	**584**	**544**	**548**	**744**	**674**	**562**	**568**	**603**	**815**	**8,068**
Totals		**1,093**	**396,864**	**16,783**	**16,480**	**18,046**	**12,347**	**11,505**	**11,588**	**15,760**	**14,276**	**11,875**	**12,012**	**12,734**	**17,254**	**170,658**

Occupancy Rates

Supply Total (Individual Total * 80% Diversity Factor) MCFH

1. Residential demands normally 0.035 MCFH (natural gas) per household.
2. Propane has a higher BTU per volume (approx 2.4 times), subsequently a reduction factor of 2 was used.
3. Residential peak hour factor = 0.063 (i.e. peak hour demand/.063 = daily)
4. Commercial = 12 hr/day (i.e. peak hour demand * 12 = daily)

Squaw Valley -- Gas Planning Study

2/18/2014

Hours of operation for non-living areas (hr)	12
Summer Reduction	20%
Occupancy Rates	

Winter Demands

Summer Demands (includes summer reduction factor)

	PROPANE		Residential Units	Bldg Sq Ft	January 58% MCF	February 72% MCF	March 70% MCF	April 51% MCF	May 37% MCF	June 42% MCF	July 85% MCF	August 68% MCF	September 45% MCF	October 42% MCF	November 25% MCF	December 63% MCF	Total (Yearly) MCF	Total (Yearly) Gallons
I	Condo Hotel	B	96		482	535	577	325	242	268	561	450	290	280	204	518	4,730	132,165
	Condo Hotel	C	78		392	435	469	264	196	218	456	365	235	227	165	421	3,843	107,357
	Condo Hotel	E	78		392	435	469	264	196	218	456	365	235	227	165	421	3,843	107,357
	Condo Hotel	H,G	32		161	178	192	108	81	89	187	150	97	93	68	173	1,577	44,044
	Squaw Kids	SK	52		261	290	313	176	131	145	304	244	157	152	110	280	2,562	71,571
	Fractional Cabins	L,M,N	31		156	173	186	105	78	87	181	145	93	90	66	167	1,527	42,668
	Grand Camp	GC		90,000	3,348	3,024	3,348	2,592	2,678	2,592	2,678	2,678	2,592	2,678	3,240	3,348	34,798	972,027
	Maintenance Center	P		10,000	149	134	149	115	119	115	119	119	115	119	144	149	1,547	43,201
	Dining	B,C,E,SK,G,H,M		18,870	842	761	842	652	674	652	674	674	652	674	815	842	8,755	244,562
	Retail	B,C,E,SK,G,H,M		17,370	775	700	775	600	620	600	620	620	600	620	750	775	8,059	225,121
	Amenities	C,M		14,500	647	585	647	501	518	501	518	518	501	518	626	647	6,728	187,925
	Ski Services	F		62,640	932	842	932	722	746	722	746	746	722	746	902	932	9,688	270,612
	Hotel Common Area	B,C,E,SK,G,H,M		27,238	405	366	405	314	324	314	324	324	314	324	392	405	4,213	117,671
	Transit Facilities			3,000	56	50	56	43	45	43	45	45	43	45	54	56	580	16,200
	Phase I Subtotals		**367**	**243,618**	**9,074**	**8,591**	**9,452**	**6,832**	**6,686**	**6,606**	**7,957**	**7,513**	**6,691**	**6,837**	**7,734**	**9,215**	**93,188**	**2,603,128**
II	Condo Hotel	B,D,I,K	337		1,693	1,878	2,026	1,141	848	941	1,970	1,578	1,016	982	714	1,817	16,605	463,954
	EXTENDED STAY Condo Hotel	J	46		231	256	277	156	116	128	269	215	139	134	98	248	2,267	63,329
	Retail			11,250	209	189	209	162	167	162	167	167	162	167	203	209	2,175	60,767
	Dining			11,250	502	454	502	389	402	389	402	402	389	402	486	502	5,220	145,841
	Hotel Common Area			22,254	331	299	331	256	265	256	265	265	256	265	320	331	3,442	96,164
	Phase II Subtotals		**383**	**44,754**	**2,997**	**3,109**	**3,381**	**2,124**	**1,813**	**1,893**	**3,108**	**2,656**	**1,980**	**1,968**	**1,834**	**3,141**	**30,003**	**838,315**
	Squaw Valley Resort		**2011 Load**		**2,211**	**2,185**	**2,418**	**1,601**	**756**	**720**	**808**	**762**	**550**	**933**	**1,468**	**2,045**	**16,457**	**459,829**
Totals			**1,128**	**353,672**	**14,282**	**13,885**	**15,251**	**10,557**	**9,255**	**9,218**	**11,872**	**10,931**	**9,222**	**9,738**	**11,036**	**14,401**	**123,191**	**3,901,272**
	Existing 3rd Loads																	
	Squaw Valley Lodge		150	4000	1,349	1,496	1,615	1,136	845	937	1,962	1,572	1,013	978	569	1,448	14,922	416,932
	Cushing House		1		5	6	6	4	3	3	7	6	4	4	2	5	56	1,552
	Buckman house		1		5	6	6	4	3	3	7	6	4	4	2	5	56	1,552
	Red Wolf		32		177	197	212	149	111	123	258	207	133	129	75	190	1,960	54,778
	Old Village at Squaw Valley		2011 Load		1,912	2,067	2,053	1,334	669	662	668	669	571	771	1,486	1,707	14,568	407,032
	Existing Subtotals				**3,449**	**3,771**	**3,891**	**2,628**	**1,631**	**1,729**	**2,902**	**2,459**	**1,724**	**1,885**	**2,134**	**3,357**	**31,561**	**881,846**

1. Residential demands normally 0.035 MCFH (natural gas) per household.
2. Propane has a higher BTU per volume (approx 2.4 times), subsequently a reduction factor of 2 was used.
3. Residential peak hour factor = 0.063 (i.e. peak hour demand/.063 = daily)
4. Commercial = 12 hr/day (i.e. peak hour demand * 12 = daily)
5. Conversion Factor for CF/Gal: 35.79 CF = 1 gallon (Propane)
6. Supply Total (Individual Total * 80% Diversity Factor) MCFH

APPENDIX C

Squaw Valley -- Propane Load Removed

2/10/2014

Revised Data - February 2014

PROPANE	Parcel	Residential Units	Bldg Sq Ft	Total Hourly Demand Propane (MCFH)	Daily Demand Propane (MCF) (Footnote 3 & 4)	Peak Hourly Demand Diversified Propane (MCFH)	Daily Demand Diversified Propane (MCF)	Total Hourly Demand Propane (Gal/H)	Daily Demand Propane (Gal/Day)
						0.8	0.8		
Clinic			1,519	0.061	0.73	0.05	0.58	1.70	20.4
Race team			2,050	0.103	1.23	0.08	0.98	2.86	34.4
Snoventures			2,360	0.094	1.13	0.08	0.91	2.64	31.7
Maintenance/Operations			38,485	1.539	18.47	1.23	14.78	43.01	516.1
Far East - Cantina			1,595	0.191	2.30	0.15	1.84	5.35	64.2
Far East - Retail Warehouse			5,928	0.237	2.85	0.19	2.28	6.63	79.5
Far East - Central reservations			3,000	0.120	1.44	0.10	1.15	3.35	40.2
Clock Tower			2,593	0.104	1.24	0.08	1.00	2.90	34.8
OVL			20,120	0.805	9.66	0.64	7.73	22.49	269.8
Employee Housing			13,872	0.555	6.66	0.44	5.33	15.50	186.0
Phase I Subtotals		**0**	91,522	**3.8**	**45.7**	**3.0**	**36.6**	**106.4**	**1,277.1**

Supply Total (Individual Total * 80% Diversity Factor) MCFH

1. Residential demands normally 0.035 MCFH (natural gas) per household.
2. Converted NG MCF to Propane Gallons by the factor of 11.5 gal of propane/1 MCF of NG
3. Residential peak hour factor = .063 (i.e. peak hour demand/.063 = daily)
4. Commercial = 12 hr/day (i.e. peak hour demand * 12 = daily)
5. Used actual gallons of propane consumption for Squaw Valley Resort and Old Village at Squaw Valley - See monthly consumptions table
6. Used 35.79 CF/Gal to convert CF Propane to gal Propane

SUPERSEDED

SEE APPENDIX G-1

Squaw Valley -- Propane Load Removed

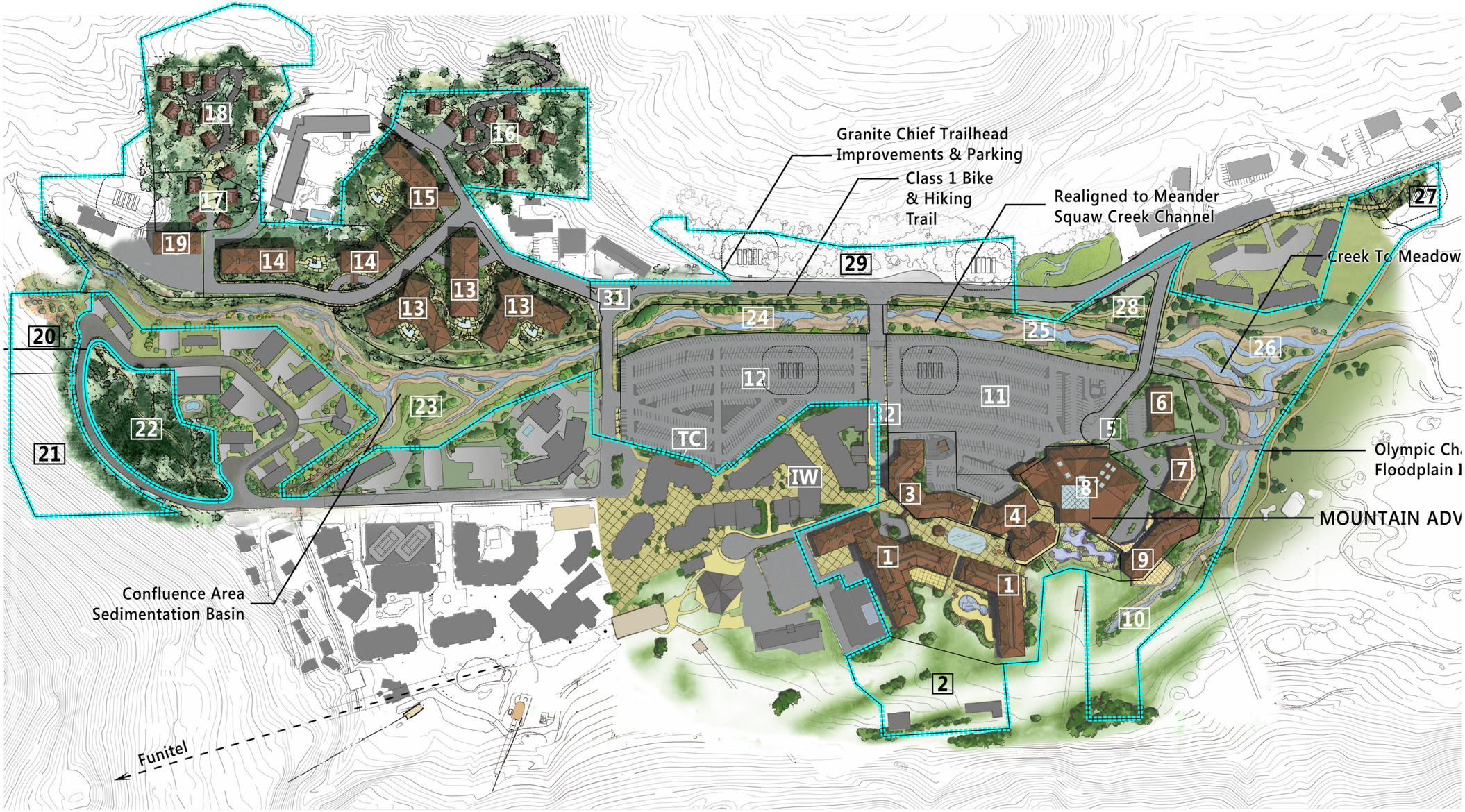
2/10/2014

Revised Data - February 2014

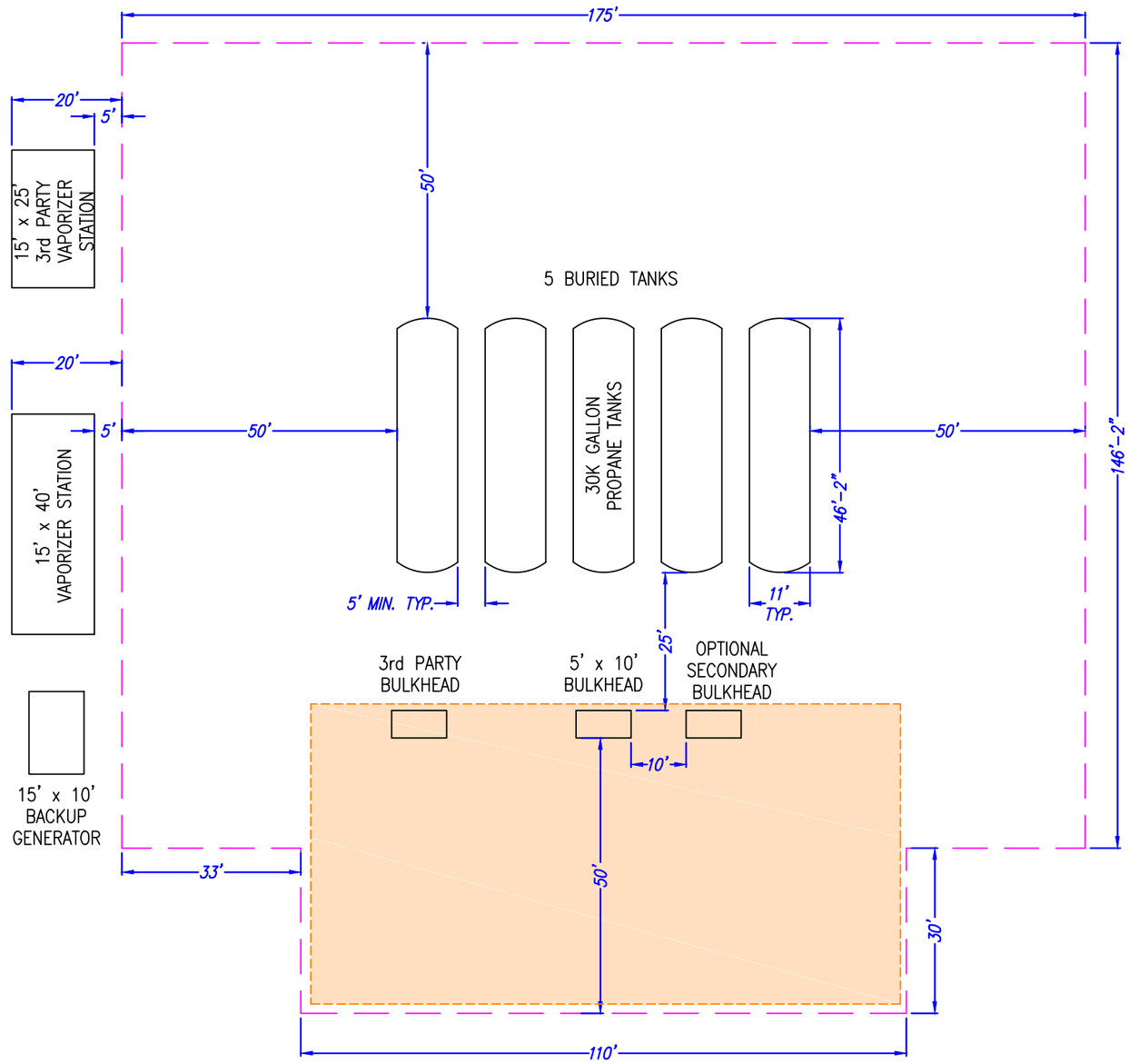
PROPANE	Parcel	Residential Units	Bldg Sq Ft	Load Per Unit (CFH) (Footnote 1 & 2)	Load Per Square Foot (CFH)	Total Hourly Demand Propane (MCFH)	Daily Demand Propane (MCF) (Footnote 3 & 4)	Peak Hourly Demand Diversified Propane (MCFH)	Daily Demand Diversified Propane (MCF)	Total Hourly Demand Propane (Gal/H)	Daily Demand Propane (Gal/Day)
								0.8	0.8		
PHASE 1											
Retail			5,928		0.04	0.237	2.85	0.19	2.28	6.63	79.5
F&B			1,595		0.12	0.191	2.30	0.15	1.84	5.35	64.2
Meeting Space			15,120		0.04	0.605	7.26	0.48	5.81	16.90	202.8
Ski Services			47,414		0.04	1.897	22.76	1.52	18.21	52.99	635.9
Phase 1 Total			70,057							81.86	982.36
PHASE 2											
Offices			7,593		0.04	0.304	3.64	0.24	2.92	8.49	101.8
Employee Housing			13,872		0.05	0.694	8.32	0.55	6.66	19.38	465.1
Phase 2 Total			21,465							27.87	566.95
Combinedd Total											
Total			91,522							109.73	1,549.3

Supply Total (Individual Total * 80% Diversity Factor) MCFH

1. Residential demands normally 0.035 MCFH (natural gas) per household.
2. Converted NG MCF to Propane Gallons by the factor of 11.5 gal of propane/1 MCF of NG
3. Residential peak hour factor = .063 (i.e. peak hour demand/.063 = daily)
4. Commercial = 12 hr/day (i.e. peak hour demand * 12 = daily)
5. Used actual gallons of propane consumption for Squaw Valley Resort and Old Village at Squaw Valley - See monthly consumptions table
6. Used 35.79 CF/Gal to convert CF Propane to gal Propane



PROPANE SITING OPTIONS
APPENDIX H-1



A SAFETY ANALYSIS WILL HAVE TO BE COMPLETED OF THE FINAL DESIGN AND LAYOUT

NOTE:
MINIMUM 50' SEPARATION FROM ANY STRUCTURE OR PROPERTY LINE

APPENDIX H-2

PAVED AREA

THIS DRAWING IS FOR VISUAL REFERENCE ONLY. SCALE IS APPROXIMATE. LOCATION OF EXISTING AND PROPOSED STRUCTURES IS APPROXIMATE. ANY AND ALL DIMENSIONS ARE APPROXIMATE. ORIGINAL DRAWING SIZE 11"x17". IMAGE SOURCE: GOOGLE EARTH

GTS
ENGINEERING & CONSULTING
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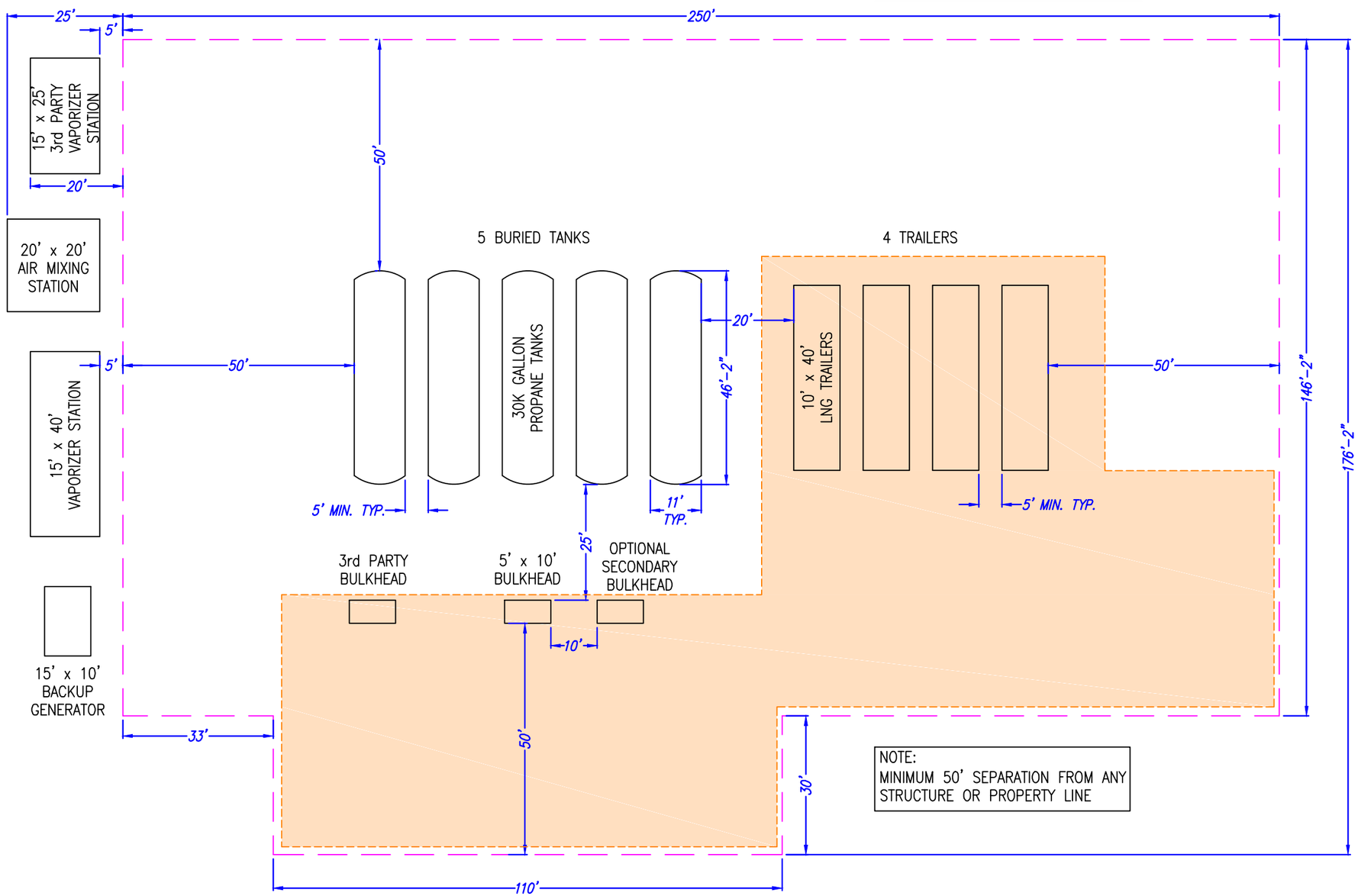
www.gtsinc.us

SQUAW VALLEY EXPANSION
PROPOSED PROPANE TANK/LNG TRAILER LAYOUT

SQUAW VALLEY, CALIFORNIA

DATE LAST WORKED ON	SCALE	DRAWING NUMBER	SHEET
02/20/2014	1" = 25'	GTS-13164-01	2 OF 2

A SAFETY ANALYSIS WILL HAVE TO BE COMPLETED OF THE FINAL DESIGN AND LAYOUT



NOTE:
MINIMUM 50' SEPARATION FROM ANY STRUCTURE OR PROPERTY LINE

APPENDIX H-3

PAVED AREA

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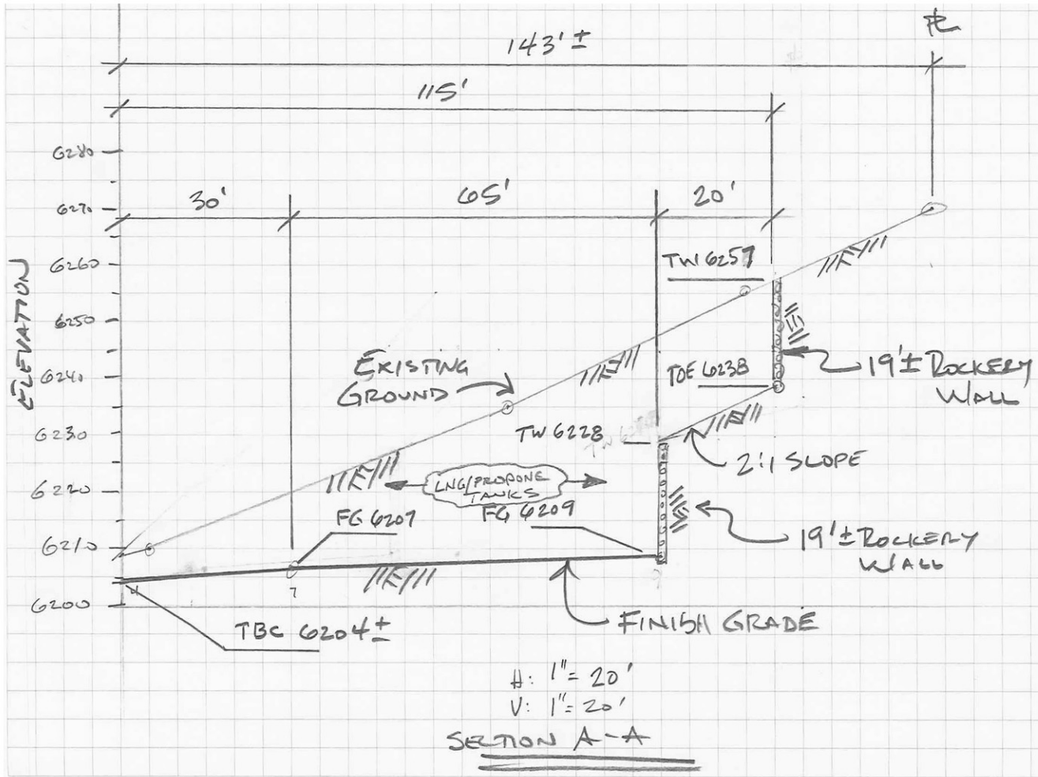
DATE LAST WORKED ON 02/20/2014

SQUAW VALLEY EXPANSION
PROPOSED PROPANE TANK/LNG TRAILER LAYOUT

SQUAW VALLEY, CALIFORNIA

SCALE	DRAWING NUMBER	SHEET
1" = 25'	GTS-13164-01	1 OF 2



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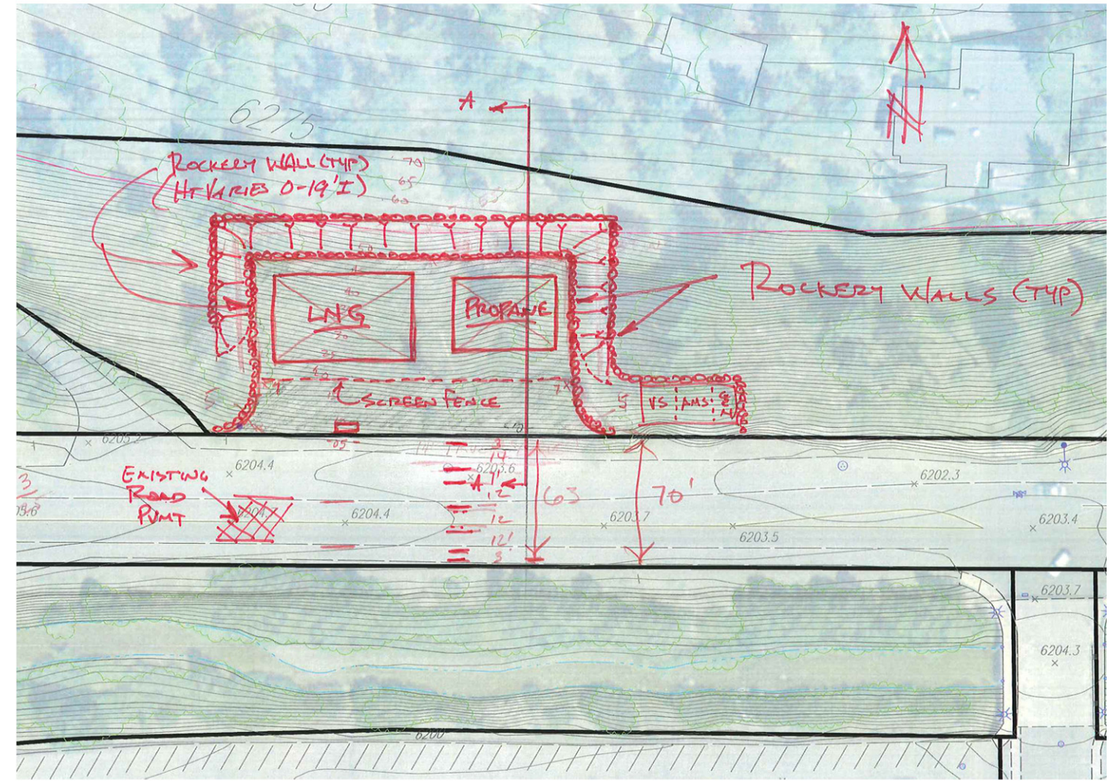


N.T.S.

PLAN

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
1552 Eureka Road, Suite 100, Roseville, CA 95661 (916) 773-1189

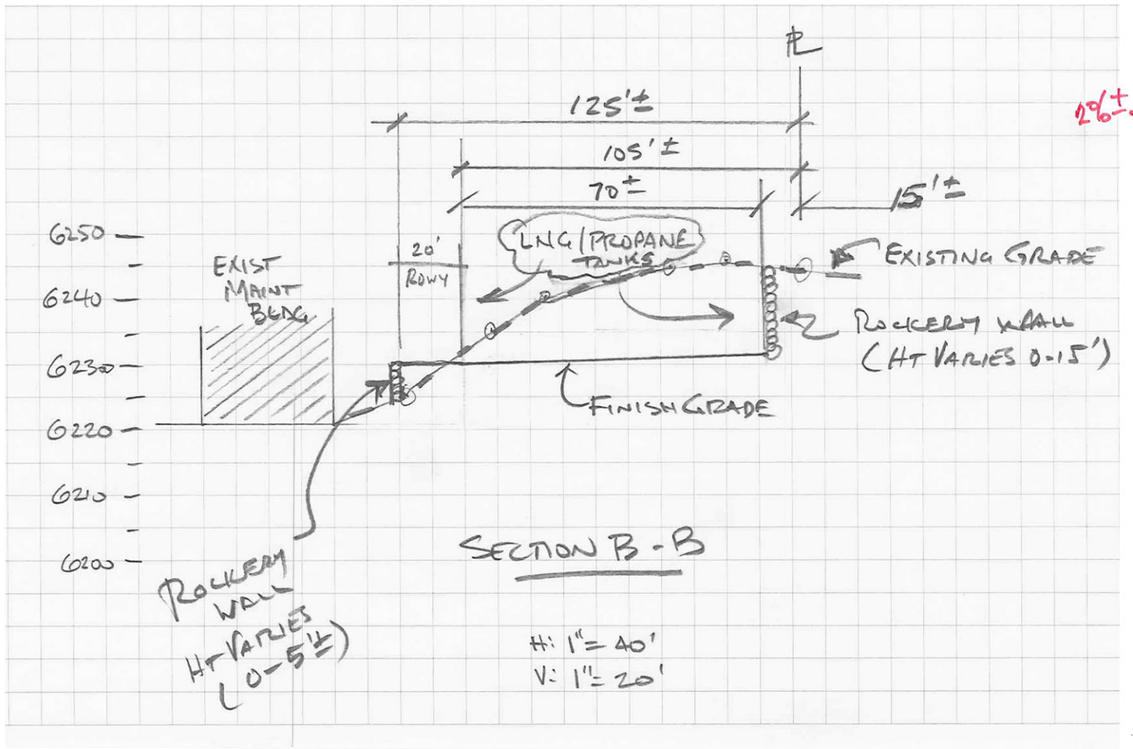
CONCEPTUAL PLAN
PROPANE / LNG SITE #1

Village @ Squaw Valley

February 25, 2014

18446.00

APPENDIX H-4



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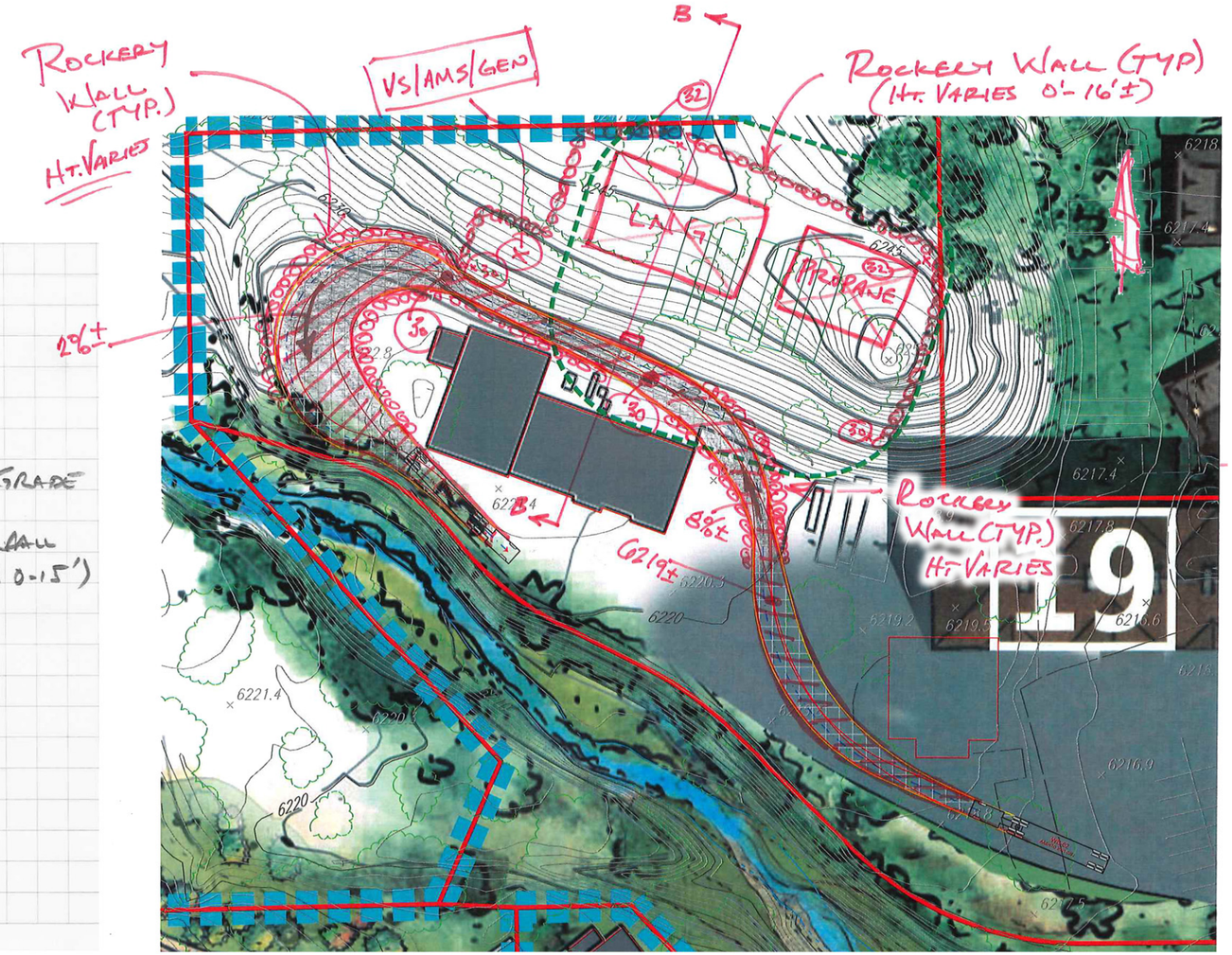

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PLAN

CONCEPTUAL PLAN
PROPANE / LNG SITE #2

Village @ Squaw Valley

February 25, 2014

18446.00

MACKAY & SOMPS
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APPENDIX H-4

Consumption of Propane Based off of March, 2011 Existing Loads

	Expected Load in March (MCF/Day)	Gallons used per Day	% of one 30K Tank Storage per Day*	Propoane Truck Deliveries per week**	30K tanks required to last seven days w/o a delivery	LNG Trailer Deliveries per Week***
Proposed Ph 1 + Resort	383	10,698	0.41	8.05	2.89	12.63
3rd Party	126	3,507	0.14	2.64	0.95	4.14
Existing Load Phased Out	(35)	(982)	(0.04)	-0.74	-0.26	(1.16)
Total	**473**	**13,223**	**0.51**	**10**	**4**	**15.6**
Proposed Ph 1 + 2 + Resort	492	13,746	0.53	10.35	3.71	16.22
3rd Party	126	3,507	0.14	2.64	0.95	4.14
Existing Load Phased Out	(55)	(1,549)	(0.06)	-1.17	-0.42	(1.82)
Total	**562**	**15,704**	**0.61**	**12**	**5**	**18.5**

* 30k tank max capacity is 25,950 gallons

** Trucks deliver approximately 9300 gallons of propane

*** 424,513 Cubic Feet of Natural Gas per trailer, need to double usage due to lower BTU of NG

Consumption of Propane Based off of June, 2011 Existing Loads

	Expected Load in March (MCF)	Gallons used per Day	% of one 30K Tank Storage per Day*	Propoane Truck Deliveries per week**	30K tanks required to last seven days w/o a delivery	LNG Trailer Deliveries per Week***
Proposed Ph 1 + Resort	236	6,603	0.25	5	1.8	7.79
3rd Party	56	1,559	0.06	1	0.4	1.84
Existing Load Phased Out	(28)	(786)	(0.03)	-0.6	-0.2	(0.93)
Total	**264**	**7,375**	**0.28**	**6**	**3**	**8.7**
Proposed Ph 1 + 2 + Resort	299	8,360	0.32	6	2.3	9.87
3rd Party	56	1,558	0.06	1	0.9	1.84
Existing Load Phased Out	(44)	(1,239)	(0.05)	-1	-0.3	(1.46)
Total	**311**	**8,679**	**0.33**	**7**	**3**	**10.2**

* 30k tank max capacity is 25,950 gallons

** Trucks deliver approximately 9300 gallons of propane

*** 424,513 Cubic Feet of Natural Gas per trailer, need to double usage due to lower BTU of NG

Utility Improvements Required By Phase

Construction Phase	Electric	Propane	AT&T	Suddenlink
Phase 1	1) Rearrange existing Liberty Utilities electric system in conflict with new Phase 1 improvements. Maintain service to existing customers as necessary. Tie to and reuse existing system where possible. Note: It could require an entire building season to design, build new utility infrastructure, cut systems over, then remove old infrastructure to make way for the new improvements.	1) Resort Propane System: Rearrange existing system in conflict with new Phase 1 improvements. Install tank farm or farms (4 new 30,000 gallon tanks, vaporizers, bulkhead (or bulkheads), etc.) on Lots 19 and /or 29. Maintain service to existing customers throughout. Coordinate and arrange for temp propane service if existing service is interruped. If necessary, install temporary tanks and lines. Note: It could require an entire building season to design, build new utility infrastructure, cut systems over, then remove old infrastructure to make way for the new improvements.	1) Rearrange existing AT&T facilities in conflict with new Phase 1 improvements. Tie to and reuse existing system where possible.	1) Rearrange existing Suddenlink facilities in conflict with new Phase 1 improvements. Tie to and reuse existing system where possible.
	2) Concurrent with rearrangement and relocation of existing facilites in conflict with new improvements, design & extend electric mainline system from the substation to the resort in existing conduit system.	2) Concurrent with rearrangement and relocation of Resort Propane System, relocate 3rd party system: Coordinate with AmeriGas. Relocate (or replace) existing 30,000 gallon tank, vaporizers & bulkhead (currently serving The Village at Squaw) to Lot 19 or 29. Rearrange and install distribution system to serve all 3rd party users. Tie to and reuse existing system where possible.	2) Extend the resort's private telecom system through new improvements	2) Extend the resort's private telecom system through new improvements
	3) Extend mainline and local distribution systems with associated equipment to serve new Phase 1 improvements.	3) Install new propane distribution system to serve Phase 1 Improvements	3) Install new telephone service to employee housing on Lot 4	3) Install new cable service to employee housing on Lot 4
	4) Install new electric service to employee housing on Lot 4			
Phase 2	1) Extend mainline and local distribution systems with associated equipment to serve new Phase 2 improvements.	1) Resort Propane System: Install additional 30,000 gallon propane tank, vaporizers and bulkhead on Lot 19 or 29.	1) Rearrange existing AT&T facilities in conflict with new Phase 2 improvements. Tie to and reuse existing system where possible.	1) Rearrange existing Suddenlink facilities in conflict with new Phase 2 improvements. Tie to and reuse existing system where possible.
	2) Rearrange existing electric system in conflict with new Phase 2 improvements.	Extend resort propane distribution system to and within Phase 2 to serve new improvements. Tie to existing Phase 1 system.	2) Extend the resort's private telecom system through new improvements	2) Extend the resort's private telecom system through new improvements