FIRSTCARBONSOLUTIONS™

DRAFT SUPPLEMENTAL
Environmental Impact Report No. 534
San Gorgonio Crossing
Riverside County, California

State Clearinghouse Number: 2014011009

APPENDICES

Prepared for:

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Date: December 16, 2019

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List of Appendices

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Appendix A:
Estimated Energy Use

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A.1 - Estimated Energy Use-Building 1

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Raymond K. Phua, P.E., Principal
Maurice Yee, P.E., Senior Associates
Lan V Nguyen, P.E., Senior Associates

RPM ***ENGINEERS, INC.***

Shopoff Building '1'
Estimated Annual Energy Use

Load Schedule	KVA	DUTY CYCLE	ADJ. KVA	POWER FACTOR	KW	HRS USED/WK	KWH/WK
Office Ltg	20.0	80%	16.0	90%	14.4	40	576
Site Ltg	50.0	100%	50.0	90%	45.0	84	3780
Warehouse lighting	432	50%	216	90%	194.4	40	7776
Office Power	60	25%	15	80%	12	40	480
Computer servers	15	100%	15	80%	7.5	168	1260
Break room equipment	5	10%	0.5	80%	0.4	40	16
Office HVAC	40	50%	20	80%	16	40	640
Warehouse Ventilation	40	50%	20	80%	16	40	640
Forklift Chargers	36	25%	9	80%	7.2	40	288
Estimated Weekly Use (kwh)							15456
week/year							52
Estimated Annual Use (kwh)							**803712**

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A.2 - Estimated Energy Use-Building 2

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Raymond K. Phua, P.E., Principal
Maurice Yee, P.E., Senior Associates
Lan V Nguyen, P.E., Senior Associates

RPM ENGINEERS, INC.

Shopoff Building '2'
Estimated Annual Energy Use

Load Schedule	KVA	DUTY CYCLE	ADJ. KVA	POWER FACTOR	KW	HRS USED/WK	KWH/WK
Office Ltg	40.0	80%	32.0	90%	28.8	40	1152
Site Ltg	50.0	100%	50.0	90%	45.0	84	3780
Warehouse lighting	720	50%	360	90%	324	40	12960
Office Power	120	25%	30	80%	24	40	960
Computer servers	30	100%	30	80%	24	168	4032
Break room equipment	10	10%	1	80%	0.8	40	32
Office HVAC	80	50%	40	80%	32	40	1280
Warehouse Ventilation	80	50%	40	80%	32	40	1280
Forklift Chargers	36	25%	9	80%	7.2	40	288
Estimated Weekly Use (kwh)							22764
week/year							52
Estimated Annual Use (kwh)							**1183728**

102 Discovery, Irvine, CA, 92618 • Tel: 949-450-1229 Fax: 949-450-1454

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Appendix B:
Solar Area Building Design

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B.1 - Building 1 Solar Area

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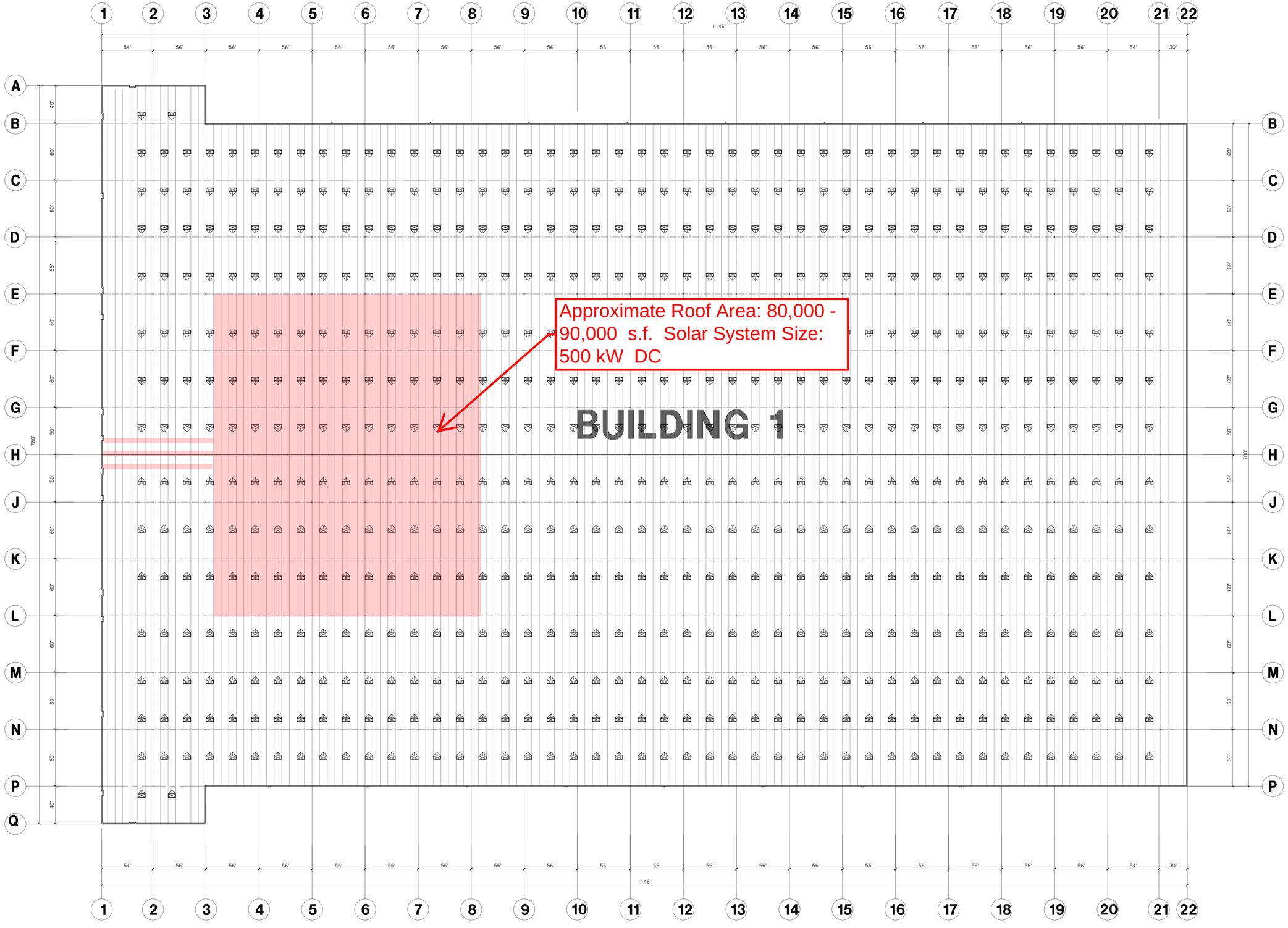

OVERALL ROOF PLAN

scale: 1" = 60'-0"

A

NORTH

SKYLIGHT CALCULATION

ROOF AREA ABOVE WAREHOUSE AREA:	811,000 S.F.
REQUIRED CURB-MOUNTED SKYLIGHT	
NUMBER OF CURB-MOUNTED SKYLIGHT REQUIRED	2.5% = 20,275 S.F. (634 REQUIRED)
NUMBER OF CURB-MOUNTED SKYLIGHT PROVIDED	(634 PROVIDED)

HPA architecture

hpa, inc.
18831 bardeen avenue - ste. #100
irvine, ca
92612
tel: 949-863-1770
fax: 949-863-0851
email: hpa@hparchs.com

LICENSED ARCHITECT YONG S. NAM C-29451 3-31-15 RENEWAL DATE STATE OF CALIFORNIA

Owner:

TSG
CHERRY VALLEY, L.P.

The Shopoff Group

Project:

I-10 GATEWAY JOB CENTER

COUNTY OF RIVERSIDE, CA

Consultants:

Civil:	WEBB
Structural:	-
Mechanical:	-
Plumbing:	-
Electrical:	RPM
Landscape:	Hunter Landscape
Fire Protection:	-
Soils Engineer:	Hunsaker & Assoc.

Title:

BLDG. 1 - ROOF PLAN

Project Number:	8232
Drawn by:	S.Y.
Date:	10-21-2014

Revision:

Sheet:

A2.10

COUNTY OF RIVERSIDE, CA
PARCEL MAP NO. 36093

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B.2 - Building 2 Solar Area

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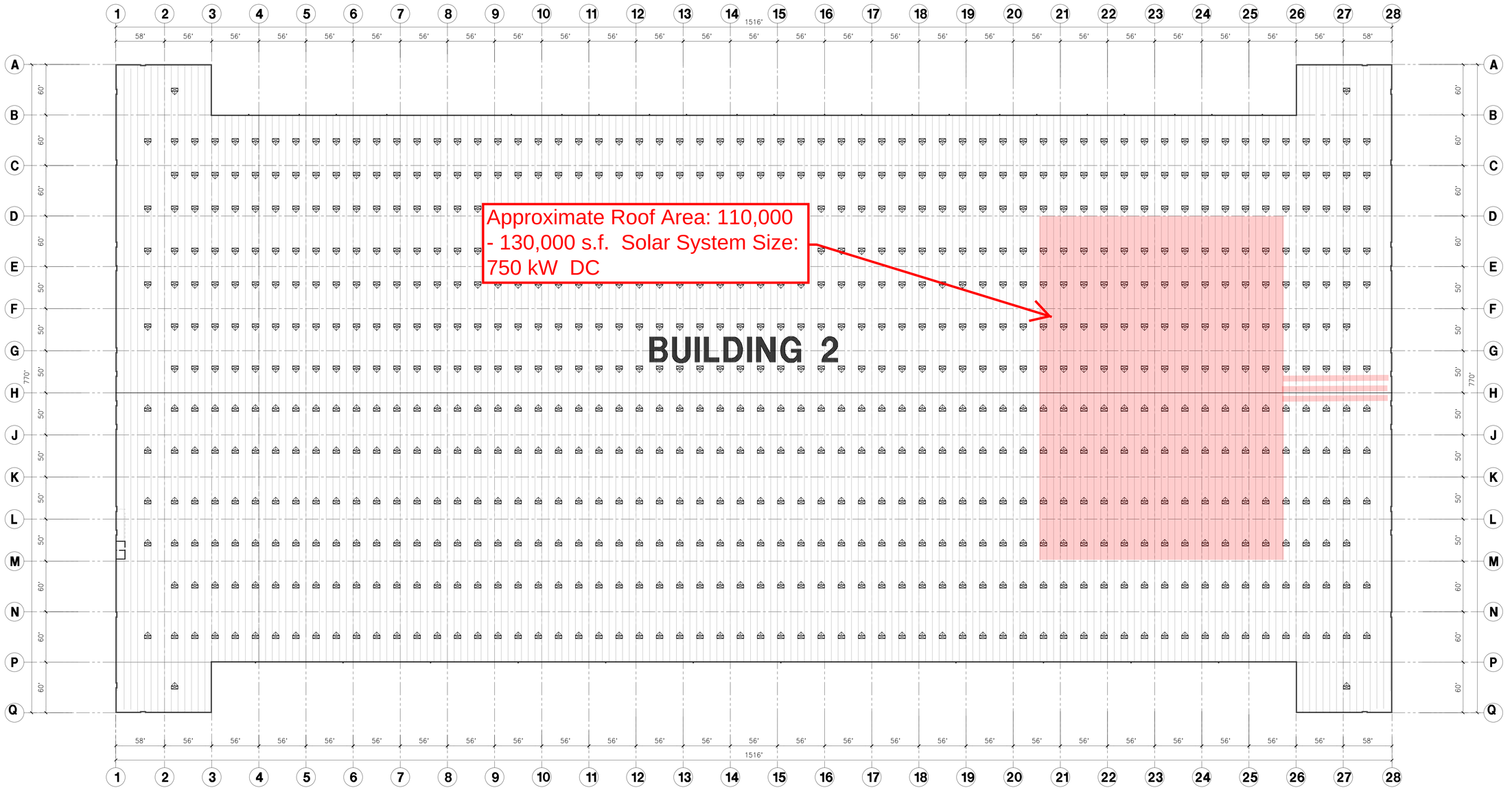

OVERALL ROOF PLAN

scale: 1" = 60'-0"

A

NORTH

SKYLIGHT CALCULATION

ROOF AREA ABOVE WAREHOUSE AREA:	1,012,760 S.F.
REQUIRED CURB-MOUNTED SKYLIGHT	
NUMBER OF CURB-MOUNTED SKYLIGHT REQUIRED	2.5% = 25,319 S.F. (792 REQUIRED)
NUMBER OF CURB-MOOUNTED SKYLIGHT PROVIDED	(792 PROVIDED)

HPA architecture

hpa, inc.
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tel: 949-863-1770
fax: 949-863-0851
email: hpa@hparchs.com

LICENSED ARCHITECT YONG NAM C-29451 3-31-15 RENEWAL DATE STATE OF CALIFORNIA

Owner:

TSG
CHERRY VALLEY, L.P.

The Shopoff Group

Project:

I-10 GATEWAY JOB CENTER

COUNTY OF RIVERSIDE, CA

Consultants:

Civil:	WEBB
Structural:	-
Mechanical:	-
Plumbing:	-
Electrical:	RPM
Landscape:	Hunter Landscape
Fire Protection:	-
Soils Engineer:	Hunsaker & Assoc.

Title:
BLDG. 2 - ROOF PLAN

Project Number:	8232
Drawn by:	S.Y.
Date:	10-21-2014

Revision:

Sheet:

A2.10

COUNTY OF RIVERSIDE, CA
PARCEL MAP NO. 36093

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Appendix C:
Transportation Energy

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Table 2-2: Daily Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips	Daily Vehicle Miles Traveled	Average Fuel Economy (mpg)	Total Daily Fuel Consumption (gallons)
Passenger Vehicles	35	11,022	33.5	329
Light trucks	27	8,502	25.7	331
Heavy trucks	38	46,680	7.9	5,909
Total	**100**	**66,204**	**—**	**6,569**

Passenger Vehicles	Percent Reduction (min)	Percent Reduction (max)	Reduction in Fuel Consumption (min)	Reduction in Fuel Consumption (max)
Rideshare	1%	15%	3.29	49.35

Light Trucks	Percent Reduction (min)	Percent Reduction (max)	Reduction in Fuel Consumption (min)	Reduction in Fuel Consumption (max)
Rideshare	1%	15%	3.31	49.65

Heavy trucks	2021 Fleet Mix (EMFAC gallons)	2010 Engines (EMFAC gallons)	Percent Reduction	Reduction in Fuel Consumption
Mitigation Measure AQ-1g(c) - 2010 Engines	7,709	7,491	2.83%	167
Smartway Aerodynamics		5%		295
Smartway - LRR Tires		1.5%		89
Total Heavy Trucks				551

Table 2-3: Daily Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips	Baseline Daily Fuel Consumption (gallons)	Daily Fuel Consumption with Energy Saving measures (gallons)
Passenger Vehicles	35	329	279.65
Light trucks	27	331	281.35
Heavy trucks	38	5,909	5,358
Total	**100**	**6,569**	**5,919**

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: Statewide
Region: California
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	Calculations FE (mi/gallon)	VMT*FE
Statewide	2021	HHDT	1977	Aggregated	GAS	5.447716	83.40527	0.029343	2.842392	237.0704812
Statewide	2021	HHDT	1977	Aggregated	DSL	1075.258	6605.282	1.563233	4.225398	27909.94198
Statewide	2021	HHDT	1978	Aggregated	GAS	6.057986	93.14748	0.032306	2.88326	268.5684233
Statewide	2021	HHDT	1978	Aggregated	DSL	267.3428	4493.336	1.379362	3.257548	14637.25491
Statewide	2021	HHDT	1979	Aggregated	GAS	7.911346	131.9299	0.044751	2.948109	388.9437284
Statewide	2021	HHDT	1979	Aggregated	DSL	351.287	5697.533	1.741053	3.272464	18644.97364
Statewide	2021	HHDT	1980	Aggregated	GAS	7.055987	116.6388	0.039984	2.917128	340.2502158
Statewide	2021	HHDT	1980	Aggregated	DSL	361.2904	7022.168	2.2397	3.135317	22016.72082
Statewide	2021	HHDT	1981	Aggregated	GAS	6.239266	95.17561	0.033194	2.867283	272.8953981
Statewide	2021	HHDT	1981	Aggregated	DSL	378.3054	8085.768	2.43304	3.323319	26871.58681
Statewide	2021	HHDT	1982	Aggregated	GAS	6.118656	93.97266	0.032859	2.859833	268.7461086
Statewide	2021	HHDT	1982	Aggregated	DSL	294.8701	6237.301	1.776579	3.510849	21898.22491
Statewide	2021	HHDT	1983	Aggregated	GAS	3.592588	54.8688	0.018901	2.902977	159.2828765
Statewide	2021	HHDT	1983	Aggregated	DSL	245.703	4948.735	1.299298	3.808776	18848.62205
Statewide	2021	HHDT	1984	Aggregated	GAS	6.504372	109.3026	0.03764	2.903889	317.4026397
Statewide	2021	HHDT	1984	Aggregated	DSL	459.0911	9818.639	3.046656	3.222759	31643.11112
Statewide	2021	HHDT	1985	Aggregated	GAS	7.274339	99.75268	0.029659	3.363303	335.4984881
Statewide	2021	HHDT	1985	Aggregated	DSL	513.0587	10750.03	2.966714	3.623548	38953.24162
Statewide	2021	HHDT	1986	Aggregated	GAS	10.36689	149.9524	0.04266	3.515024	527.0863205
Statewide	2021	HHDT	1986	Aggregated	DSL	481.1292	10474.6	2.879692	3.637402	38100.33048
Statewide	2021	HHDT	1987	Aggregated	GAS	7.56715	116.0857	0.030738	3.776649	438.4148237
Statewide	2021	HHDT	1987	Aggregated	DSL	539.3726	12257.87	3.289847	3.725969	45672.43545
Statewide	2021	HHDT	1988	Aggregated	GAS	10.14348	151.4515	0.040141	3.772997	571.4261799
Statewide	2021	HHDT	1988	Aggregated	DSL	600.6164	13368.69	3.459783	3.864025	51656.95786
Statewide	2021	HHDT	1989	Aggregated	GAS	7.832214	114.1155	0.030522	3.738781	426.6527915
Statewide	2021	HHDT	1989	Aggregated	DSL	698.9766	17490.63	5.066001	3.452552	60387.31217
Statewide	2021	HHDT	1990	Aggregated	GAS	5.068823	89.75006	0.023548	3.811421	342.0753191
Statewide	2021	HHDT	1990	Aggregated	DSL	731.3395	17531.34	4.586282	3.82256	67014.59221
Statewide	2021	HHDT	1991	Aggregated	GAS	7.021227	153.1432	0.03897	3.9298	601.8221183
Statewide	2021	HHDT	1991	Aggregated	DSL	591.1392	14362.3	3.954498	3.631889	52162.27258
Statewide	2021	HHDT	1992	Aggregated	GAS	6.452705	161.0884	0.040155	4.011712	646.2402346
Statewide	2021	HHDT	1992	Aggregated	DSL	473.7872	12008.9	3.181921	3.774102	45322.80738
Statewide	2021	HHDT	1993	Aggregated	GAS	4.406481	121.0139	0.030076	4.023593	486.91082
Statewide	2021	HHDT	1993	Aggregated	DSL	569.7431	15763.75	4.619146	3.412698	53796.93078
Statewide	2021	HHDT	1994	Aggregated	GAS	7.174917	233.9876	0.0569	4.112287	962.2243709
Statewide	2021	HHDT	1994	Aggregated	DSL	660.1728	19242.89	5.060032	3.802918	73179.12616
Statewide	2021	HHDT	1995	Aggregated	GAS	6.512813	244.5079	0.059185	4.131229	1010.118339
Statewide	2021	HHDT	1995	Aggregated	DSL	899.6774	27886.5	7.593221	3.672552	102414.6102
Statewide	2021	HHDT	1996	Aggregated	GAS	5.494551	217.5723	0.052487	4.145258	901.8933306
Statewide	2021	HHDT	1996	Aggregated	DSL	946.7933	36388.3	9.203202	3.953874	143874.772
Statewide	2021	HHDT	1997	Aggregated	GAS	7.904649	320.9576	0.076962	4.170335	1338.500794
Statewide	2021	HHDT	1997	Aggregated	DSL	844.0306	32252.47	6.990729	4.613606	148800.1566
Statewide	2021	HHDT	1998	Aggregated	GAS	7.85448	375.2667	0.089968	4.17109	1565.27099
Statewide	2021	HHDT	1998	Aggregated	DSL	909.2887	38492.37	8.924171	4.313272	166028.0647
Statewide	2021	HHDT	1999	Aggregated	GAS	13.06422	666.0591	0.159768	4.16892	2776.747211
Statewide	2021	HHDT	1999	Aggregated	DSL	1329.583	59516.69	15.45284	3.851506	229228.8673
Statewide	2021	HHDT	2000	Aggregated	GAS	19.10786	1070.095	0.252741	4.233964	4530.744579
Statewide	2021	HHDT	2000	Aggregated	DSL	1534.883	67595.8	16.27254	4.15398	280791.5954
Statewide	2021	HHDT	2001	Aggregated	GAS	30.32134	1688.759	0.401719	4.203827	7099.250406
Statewide	2021	HHDT	2001	Aggregated	DSL	1520.247	64762.77	17.35475	3.731703	241675.4114
Statewide	2021	HHDT	2002	Aggregated	GAS	55.32682	3542.38	0.837806	4.228161	14977.75305
Statewide	2021	HHDT	2002	Aggregated	DSL	1494.318	57669.92	16.28903	3.540414	204175.4021
Statewide	2021	HHDT	2003	Aggregated	GAS	59.30415	3930.559	0.922671	4.259979	16744.09882
Statewide	2021	HHDT	2003	Aggregated	DSL	1440.395	61074.3	16.23117	3.76278	229809.1284
Statewide	2021	HHDT	2004	Aggregated	GAS	95.04684	6757.252	1.58105	4.273901	28879.83008
Statewide	2021	HHDT	2004	Aggregated	DSL	1373.179	58204.55	14.82513	3.926073	228515.3185
Statewide	2021	HHDT	2005	Aggregated	GAS	78.40054	6032.234	1.41377	4.266773	25738.17497
Statewide	2021	HHDT	2005	Aggregated	DSL	2961.249	200079.6	42.4846	4.709461	942266.8864
Statewide	2021	HHDT	2006	Aggregated	GAS	79.84265	6520.831	1.523021	4.28151	27919.00121
Statewide	2021	HHDT	2006	Aggregated	DSL	3802.004	276434.4	56.88883	4.859204	1343251.415
Statewide	2021	HHDT	2007	Aggregated	GAS	131.6047	11956.19	2.781829	4.297959	51387.20369
Statewide	2021	HHDT	2007	Aggregated	DSL	5245.179	438556.7	85.99708	5.09967	2236494.629
Statewide	2021	HHDT	2008	Aggregated	GAS	85.37105	8367.698	1.937212	4.319455	36143.895
Statewide	2021	HHDT	2008	Aggregated	DSL	32861.69	3522095	664.2471	5.302386	18675503.97
Statewide	2021	HHDT	2009	Aggregated	GAS	60.84815	6211.832	1.445252	4.298095	26699.04543
Statewide	2021	HHDT	2009	Aggregated	DSL	11781.18	1348370	260.1745	5.182561	6988010.089
Statewide	2021	HHDT	2010	Aggregated	GAS	80.66281	9527.016	2.209834	4.311191	41072.78139
Statewide	2021	HHDT	2010	Aggregated	DSL	8516.398	1077802	207.6923	5.189416	5593161.188
Statewide	2021	HHDT	2011	Aggregated	GAS	119.9434	15686.51	3.614205	4.340239	68083.20735
Statewide	2021	HHDT	2011	Aggregated	DSL	9523.373	1273628	231.7683	5.495262	6998917.585
Statewide	2021	HHDT	2012	Aggregated	GAS	42.75694	5881.537	1.353713	4.344745	25553.77949
Statewide	2021	HHDT	2012	Aggregated	DSL	72724.71	9983866	1729.874	5.771441	57621296.07
Statewide	2021	HHDT	2013	Aggregated	GAS	103.8802	15036.78	3.447917	4.361121	65577.23691
Statewide	2021	HHDT	2013	Aggregated	DSL	13968.93	1949617	347.6202	5.60847	10934368.5
Statewide	2021	HHDT	2014	Aggregated	GAS	103.7879	16301.14	3.288353	4.957236	80808.60806
Statewide	2021	HHDT	2014	Aggregated	DSL	13781.41	2229340	349.5754	6.377279	14217122.95
Statewide	2021	HHDT	2015	Aggregated	GAS	103.1972	17576.45	3.535137	4.971929	87388.8748
Statewide	2021	HHDT	2015	Aggregated	DSL	13798.82	2451595	381.7601	6.421821	15743705.83
Statewide	2021	HHDT	2016	Aggregated	GAS	97.17636	17940.85	3.598865	4.98514	89437.64643
Statewide	2021	HHDT	2016	Aggregated	DSL	14773.23	2899860	447.2924	6.483141	18800198.94
Statewide	2021	HHDT	2017	Aggregated	GAS	87.49578	17496.99	3.402396	5.142548	89979.09522
Statewide	2021	HHDT	2017	Aggregated	DSL	12706.06	2646007	397.3957	6.658369	17618092.34
Statewide	2021	HHDT	2018	Aggregated	GAS	81.56403	17666.9	3.423689	5.160195	91164.64839
Statewide	2021	HHDT	2018	Aggregated	DSL	12695.06	2820500	422.0893	6.682236	18847244.79
Statewide	2021	HHDT	2019	Aggregated	GAS	76.90396	18023.75	3.496167	5.15529	92917.67744
Statewide	2021	HHDT	2019	Aggregated	DSL	12920.86	2993827	447.2071	6.694498	20042168.65
Statewide	2021	HHDT	2020	Aggregated	GAS	76.31278	19332.16	3.735038	5.175893	100061.1825
Statewide	2021	HHDT	2020	Aggregated	DSL	13977.42	3393533	505.448	6.713912	22783886.29
Statewide	2021	HHDT	2021	Aggregated	GAS	72.10382	19735.64	3.792987	5.203194	102688.376
Statewide	2021	HHDT	2021	Aggregated	DSL	10715.02	2515372	376.4779	6.681326	16806019.65
Statewide	2021	HHDT	2022	Aggregated	DSL	4394.048	524025.1	83.06394	6.308696	3305914.663

Sum of VMT*FE (Column BI) 263371690.4
Total VMT 43494787.55
Weighted Average FE 6.055 miles/gallon

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: Statewide
Region: California
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

									Calculations	
									FE	VMT*FE
Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fuel_Consumption	(mi/gallon)	
Statewide	2021	HHDT	2010	Aggregatec	GAS	80.66281	9527.016	2.209834	4.311191	41072.78139
Statewide	2021	HHDT	2010	Aggregatec	DSL	8516.398	1077802	207.6923	5.189416	5593161.188
Statewide	2021	HHDT	2011	Aggregatec	GAS	119.9434	15686.51	3.614205	4.340239	68083.20735
Statewide	2021	HHDT	2011	Aggregatec	DSL	9523.373	1273628	231.7683	5.495262	6998917.585
Statewide	2021	HHDT	2012	Aggregatec	GAS	42.75694	5881.537	1.353713	4.344745	25553.77949
Statewide	2021	HHDT	2012	Aggregatec	DSL	72724.71	9983866	1729.874	5.771441	57621296.07
Statewide	2021	HHDT	2013	Aggregatec	GAS	103.8802	15036.78	3.447917	4.361121	65577.23691
Statewide	2021	HHDT	2013	Aggregatec	DSL	13968.93	1949617	347.6202	5.60847	10934368.5
Statewide	2021	HHDT	2014	Aggregatec	GAS	103.7879	16301.14	3.288353	4.957236	80808.60806
Statewide	2021	HHDT	2014	Aggregatec	DSL	13781.41	2229340	349.5754	6.377279	14217122.95
Statewide	2021	HHDT	2015	Aggregatec	GAS	103.1972	17576.45	3.535137	4.971929	87388.8748
Statewide	2021	HHDT	2015	Aggregatec	DSL	13798.82	2451595	381.7601	6.421821	15743705.83
Statewide	2021	HHDT	2016	Aggregatec	GAS	97.17636	17940.85	3.598865	4.98514	89437.64643
Statewide	2021	HHDT	2016	Aggregatec	DSL	14773.23	2899860	447.2924	6.483141	18800198.94
Statewide	2021	HHDT	2017	Aggregatec	GAS	87.49578	17496.99	3.402396	5.142548	89979.09522
Statewide	2021	HHDT	2017	Aggregatec	DSL	12706.06	2646007	397.3957	6.658369	17618092.34
Statewide	2021	HHDT	2018	Aggregatec	GAS	81.56403	17666.9	3.423689	5.160195	91164.64839
Statewide	2021	HHDT	2018	Aggregatec	DSL	12695.06	2820500	422.0893	6.682236	18847244.79
Statewide	2021	HHDT	2019	Aggregatec	GAS	76.90396	18023.75	3.496167	5.15529	92917.67744
Statewide	2021	HHDT	2019	Aggregatec	DSL	12920.86	2993827	447.2071	6.694498	20042168.65
Statewide	2021	HHDT	2020	Aggregatec	GAS	76.31278	19332.16	3.735038	5.175893	100061.1825
Statewide	2021	HHDT	2020	Aggregatec	DSL	13977.42	3393533	505.448	6.713912	22783886.29
Statewide	2021	HHDT	2021	Aggregatec	GAS	72.10382	19735.64	3.792987	5.203194	102688.376
Statewide	2021	HHDT	2021	Aggregatec	DSL	10715.02	2515372	376.4779	6.681326	16806019.65
Statewide	2021	HHDT	2022	Aggregatec	DSL	4394.048	524025.1	83.06394	6.308696	3305914.663

Sum of VMT*FE (Column BI)	**230246830.6**	
Total VMT	**36949177.84**	
Weighted Average FE	**6.2314**	**miles/gallo**

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Appendix D:
PVW Calculations

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D.1 - PVWatts Calculator—Shopoff Building 1

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NREL
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Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at https://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

823,385 kWh/Year*

System output may range from 784,933 to 833,677 kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Value
January	3.88	47,686	
February	4.56	50,942	
March	5.81	70,496	
April	6.46	74,531	
May	7.36	84,393	
June	8.24	90,269	
July	7.83	87,812	
August	7.54	83,925	
September	6.75	73,786	
October	5.46	64,287	
November	4.30	50,383	
December	3.58	44,874	
Annual	**5.98**	**823,384**	

Location and Station Identification

Requested Location	37225 goodie lanebeaumont, ca 92223
Weather Data Source	Lat, Lon: 33.97, -117.02 0.5 mi
Latitude	33.97° N
Longitude	117.02° W

PV System Specifications *(Commercial)*

DC System Size	500 kW
Module Type	Standard
Array Type	Fixed (roof mount)
Array Tilt	10°
Array Azimuth	180°
System Losses	10.50%
Inverter Efficiency	96%
DC to AC Size Ratio	1.2

Economics

Average Retail Electricity Rate	0.118 $/kWh

Performance Metrics

Capacity Factor	18.8%

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D.2 - PVWatts Calculator—Shopoff Building 2

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NREL
NATIONAL RENEWABLE ENERGY LABORATORY

RESULTS

1,235,077 kWh/Year*

*System output may range from 1,177,399 to 1,250,516 kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Value
January	3.88	71,528	
February	4.56	76,414	
March	5.81	105,744	
April	6.46	111,797	
May	7.36	126,589	
June	8.24	135,403	
July	7.83	131,719	
August	7.54	125,888	
September	6.75	110,679	
October	5.46	96,431	
November	4.30	75,575	
December	3.58	67,311	
Annual	**5.98**	**1,235,078**	

Location and Station Identification

Requested Location	37225 goodie lane beaumont, ca
Weather Data Source	Lat, Lon: 33.97, -117.02 0.5 mi
Latitude	33.97° N
Longitude	117.02° W

PV System Specifications *(Commercial)*

DC System Size	750 kW
Module Type	Standard
Array Type	Fixed (roof mount)
Array Tilt	10°
Array Azimuth	180°
System Losses	10.50%
Inverter Efficiency	96%
DC to AC Size Ratio	1.2

Economics

Average Retail Electricity Rate	0.118 $/kWh

Performance Metrics

Capacity Factor	18.8%

*Solar resource and system performance modeling included in PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at https://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

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