TUSD Phase 3
Solar Installations
System Size – 10,914.68 MW

- Double Parking – 5,534.52 kW
- Double Parking 50 – 1,884.96 kW
- 8 Panel Parking – 236.64 kW
- 5 Panel Parking – 214.20 kW
- 4 Panel Parking – 590.24 kW
- 3 Panel Parking – 140.76 kW
- Playground Structures – 2,313.36 kW

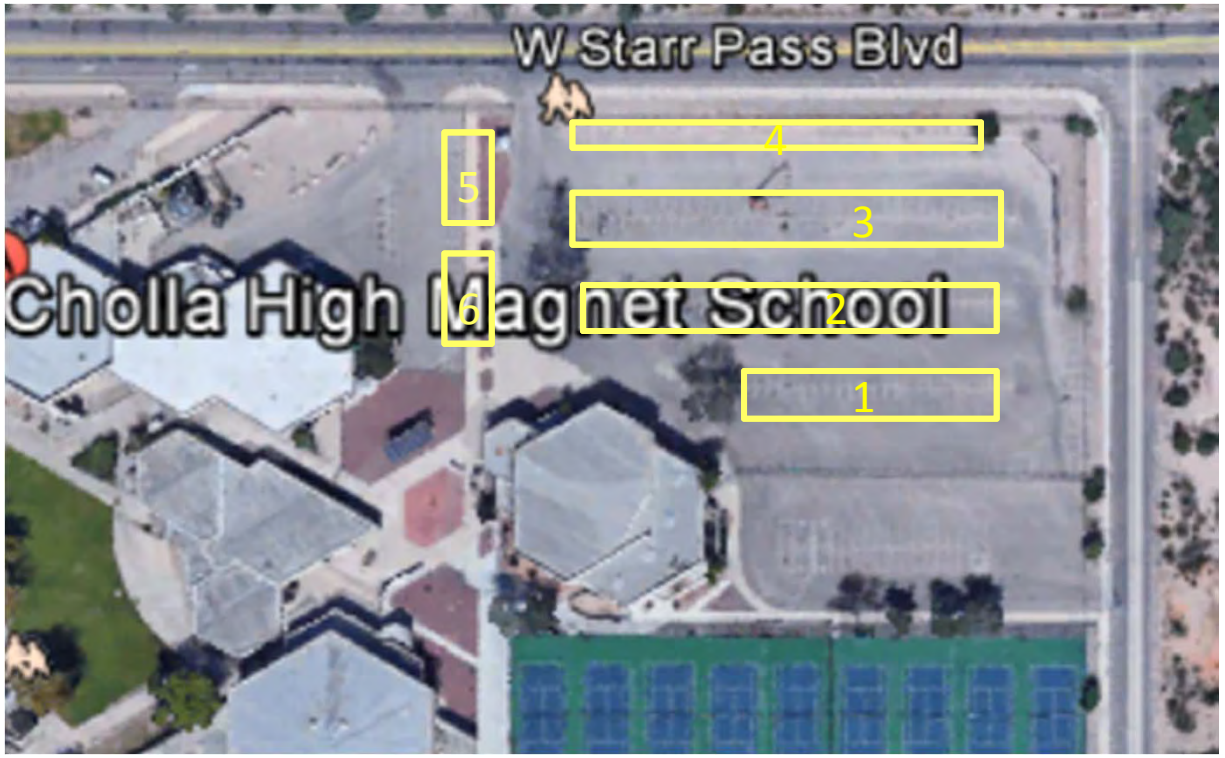
TUSD Phase 3 Solar Project Layouts – Project Summary (as of 9/18/2017)

TUSD Solar Sites	Address	System Size (kW DC)
Bloom	8310 E Pima St, Tucson, AZ 85715	110.16
Booth / Fickett	450 East Montego Drive, Tucson, AZ, 85710	373.32
Borton Primary	700 E 22nd St, Tucson, AZ 85713	0.00
Carpenter's Hall	602 S Plumer Ave, Tucson, Arizona 85719	0.00
Catalina Magnet HS - 38713 29017	3645 E Pima St, Tucson, AZ 85716	485.52
Catalina Magnet HS - 42489 48017	3645 E Pima St, Tucson, AZ 85716	0.00
Cholla 21908 22007 HS	2001 W Starr Pass Blvd, Tucson, AZ 85713	733.04
Cholla 25684 22007 HS	2001 W Starr Pass Blvd, Tucson, AZ 85713	0.00
Davis Bilingual	500 W St Mary's Rd, Tucson, AZ 85701	0.00
Dietz	7575 E Palma St, Tucson, AZ 85710	163.20
Dodge Magnet	5831 E Pima St, Tucson, AZ 85712	153.00
Doolen - 42979 87020	2400 N Country Club Rd, Tucson, AZ 85716	0.00
Doolen - 28001 72268	2400 N Country Club Rd, Tucson, AZ 85716	0.00
Dunham	9850 E 29th St, Tucson, AZ 85748	142.80
Food Service	2150 E 15th St, Tucson, AZ 85719	420.24
Ford	8001 E Stella Rd, Tucson, AZ 85730	138.04
Gridley MS	350 S Harrison Rd, Tucson, AZ 85748	275.40
Holladay	1110 E 33rd St, Tucson, AZ 85713	126.48
Hollinger	150 W Ajo Way, Tucson, AZ 85713	99.28
Hudlow	502 N Caribe Ave, Tucson, AZ 85710	0.00
Lynn Urquides	1573 W Ajo Way, Tucson, AZ 85713	220.32
Magee MS	8300 E Speedway Blvd, Tucson, AZ 85710	257.04
Mansfeld	1300 E 6th St, Tucson, AZ 85719	216.24
Maxwell	2802 W Anklam Rd, Tucson, AZ 85745	277.44
Mission View	2600 S 8th Ave, Tucson, AZ 85713	0.00
Morrow Bldg A	1010 E 10th St, Tucson, AZ 85719	0.00
Morrow Bldg	1010 E 10th St, Tucson, AZ 85719	359.04
Palo Verde HS	1302 S Avenida Vega, Tucson, AZ 85710	887.40
Pistor	5455 S Cardinal Ave, Tucson, AZ 85746	334.56
Project More	440 S Park Ave, Tucson, AZ 85719	71.40
Pueblo Magnet HS- 06984 15008	3500 S 12th Ave, Tucson, AZ 85713	0.00
Pueblo Magnet HS - 63500 27008	3500 S 12th Ave, Tucson, AZ 85713	385.56
Rincon University	421 N Arcadia Ave, Tucson, AZ 85711	827.90
Roberts Naylor	1701 S Columbus Blvd, Tucson, AZ 85711	236.64
Rose	710 W Michigan Dr, Tucson, AZ 85714	212.16
Roskruge	501 E 6th St, Tucson, AZ 85705	0.00
Sabino	5000 N Bowes Rd, Tucson, AZ 85749	824.16
Safford - 55803 87007	200 E 13th St, Tucson, AZ 85701	0.00
Safford - 59638 77007	200 E 13th St, Tucson, AZ 85701	0.00
Sahuaro	545 N Camino Seco, Tucson, AZ 85710	1,132.20
Santa Rita	3951 S Pantano Rd, Tucson, AZ 85730	744.60
Steele	700 S Sarnoff Dr, Tucson, AZ 85710	104.04
Tapp Starr	102 N Plumer Ave, Tucson, AZ 85705	67.32
Tucson Magnet HS - 1	400 N 2nd Ave, Tucson, AZ 85705	0.00
Tucson Magnet HS - 2	400 N 2nd Ave, Tucson, AZ 85705	0.00
Tucson Magnet HS - 3	400 N 2nd Ave, Tucson, AZ 85705	142.80
Utterback	3233 S Pinal Vista, Tucson, AZ 85713	250.92
Vail - 1	5350 E. 16th Street, Tucson, AZ 85711	226.44
Vail - 2	5350 E. 16th Street, Tucson, AZ 85711	128.52
Wakefield	101 W 44th St, Tucson, AZ 85713	0.00
Total TUSD Solar Project		**11,127.18**

TUSD Phase 3 Solar Project Layouts – Catalina Magnet HS

Catalina Magnet HS - 38713 29017	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
SE Parking	Parking Double	1	6	64	8,481	214	384	130,560	12	180	235,008	1.800
S Central Parking	Parking Double	2	6	70	9,276	234	420	142,800	12	180	257,040	1.800
South Parking	Parking Double	3	6	60	7,951	201	360	122,400	12	180	220,320	1.800
Tennis Parking	Parking Single	4	3	88	5,831	294	264	89,760	12	180	161,568	1.800
TOTAL					**31,538**		**1,428**	**485,520**		**Energy Offset 30.71%**	**873,936**	

TUSD Phase 3 Solar Project Layouts – Cholla Magnet HS



Cholla 21908 22007 HS	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Parking Structure	Parking Double	1	6	68	8,820	227	408	138,720	12	180	249,696	1.800
Parking Structure	Parking Double	2	6	98	12,712	326	588	199,920	12	180	359,856	1.800
Parking Structure	Parking Double	3	6	98	12,712	326	588	199,920	12	180	359,856	1.800
Parking Structure	Parking 4	4	4	98	8,657	328	392	133,280	12	180	239,904	1.800
Parking Structure	Parking Double 50	5	6	15	1,946	50	90	30,600	12	180	55,080	1.800
Parking Structure	Parking Double 50	6	6	15	1,946	50	90	30,600	12	180	55,080	1.800
TOTAL					**46,792**	**1,307**	**2,156**	**733,040**		**Energy Offset 49.01%**	**1,319,472**	

TUSD Phase 3 Solar Project Layouts – Food Service

Food Service	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
North Parking	Parking Double	1	6	90	11,674	300	540	183,600	10	180	326,808	1.780
South Parking	Parking 8	2	8	87	15,046	290	696	236,640	10	180	421,219	1.780
TOTAL					**26,720**	**590**	**1,236**	**420,240**		**Energy Offset 60.02%**	**748,027**	

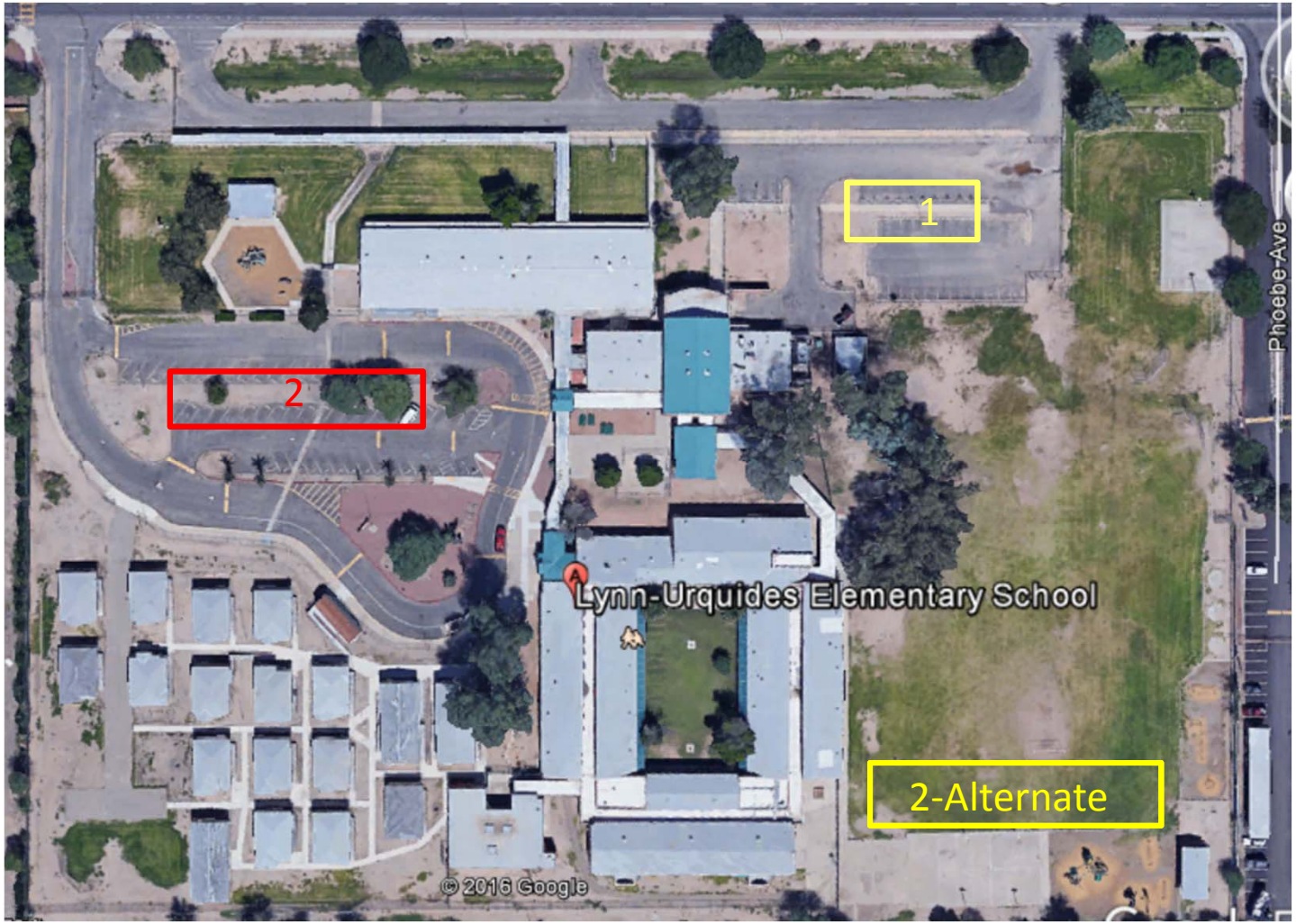
TUSD Phase 3 Solar Project Layouts – Gridley MS #2

Gridley MS	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
East Parking	Parking Double 50	1	6	15	1,946	50	90	30,600	12	175	55,080	1.800
East Parking	Parking Double 50	2	6	15	1,946	50	90	30,600	12	175	55,080	1.800
SW Parking	Parking Double	3	6	45	5,837	150	270	91,800	12	180	165,240	1.800
West Parking	Parking Double 50	4	6	15	1,946	50	90	30,600	12	160	54,468	1.780
West Parking	Parking Double 50	5	6	15	1,946	50	90	30,600	12	160	54,468	1.780
TOTAL					**13,620**	**350**	**630**	**214,200**		**Energy Offset 43.82%**	**384,336**	

TUSD Phase 3 Solar Project Layouts – Hollinger K-8

Hollinger	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Parking Lot	Parking 5	1	5	32	3,459	107	160	54,400	3	90	90,848	1.670
Parking Lot	Parking 4	2	4	33	2,854	110	132	44,880	12	180	80,784	1.800
TOTAL					**6,313**	**217**	**292**	**99,280**		**Energy Offset 60.12%**	**171,632**	

TUSD Phase 3 Solar Project Layouts – Lynn Urquides ES

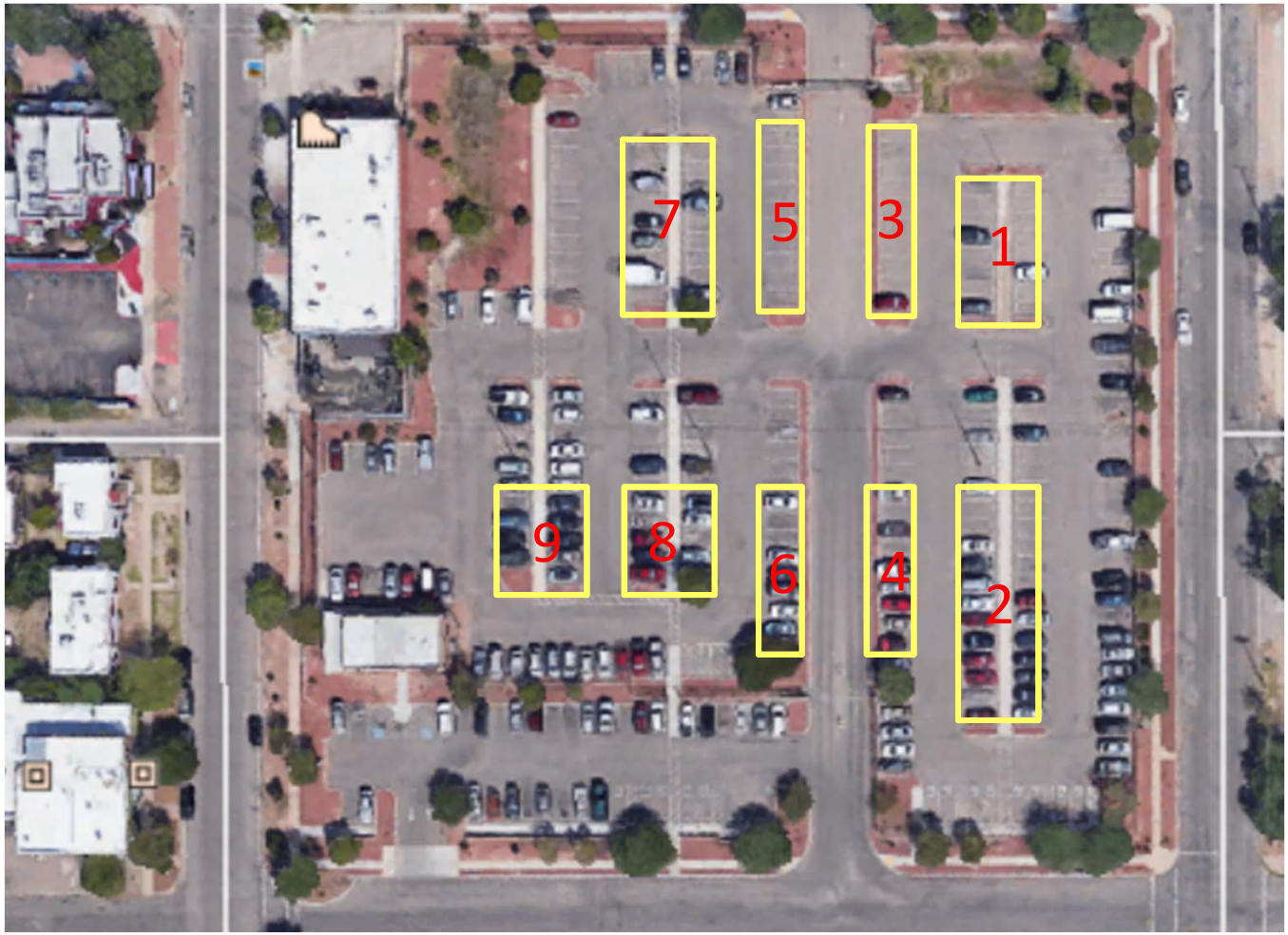


Lynn Urquides	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
NE Parking	Parking Double	1	6	32	4,240	107	192	65,280	12	180	117,504	1.800
NW Parking	Parking Double	2	6	75	9,938	251	450	153,000	12	180	275,400	1.800
TOTAL					**14,179**	**358**	**642**	**218,280**		**Energy Offset 60.08%**	**392,904**	

TUSD Phase 3 Solar Project Layouts – Mansfeld MS

Mansfeld	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Center Parking	Parking Double	1	6	53	6,875	177	318	108,120	12	180	194,616	1.800
South Parking	Parking Double	2	6	53	6,875	177	318	108,120	12	180	194,616	1.800
TOTAL					**13,749**	**353**	**636**	**216,240**		**Energy Offset 45.47%**	**389,232**	

TUSD Phase 3 Solar Project Layouts – Morrow ED Center

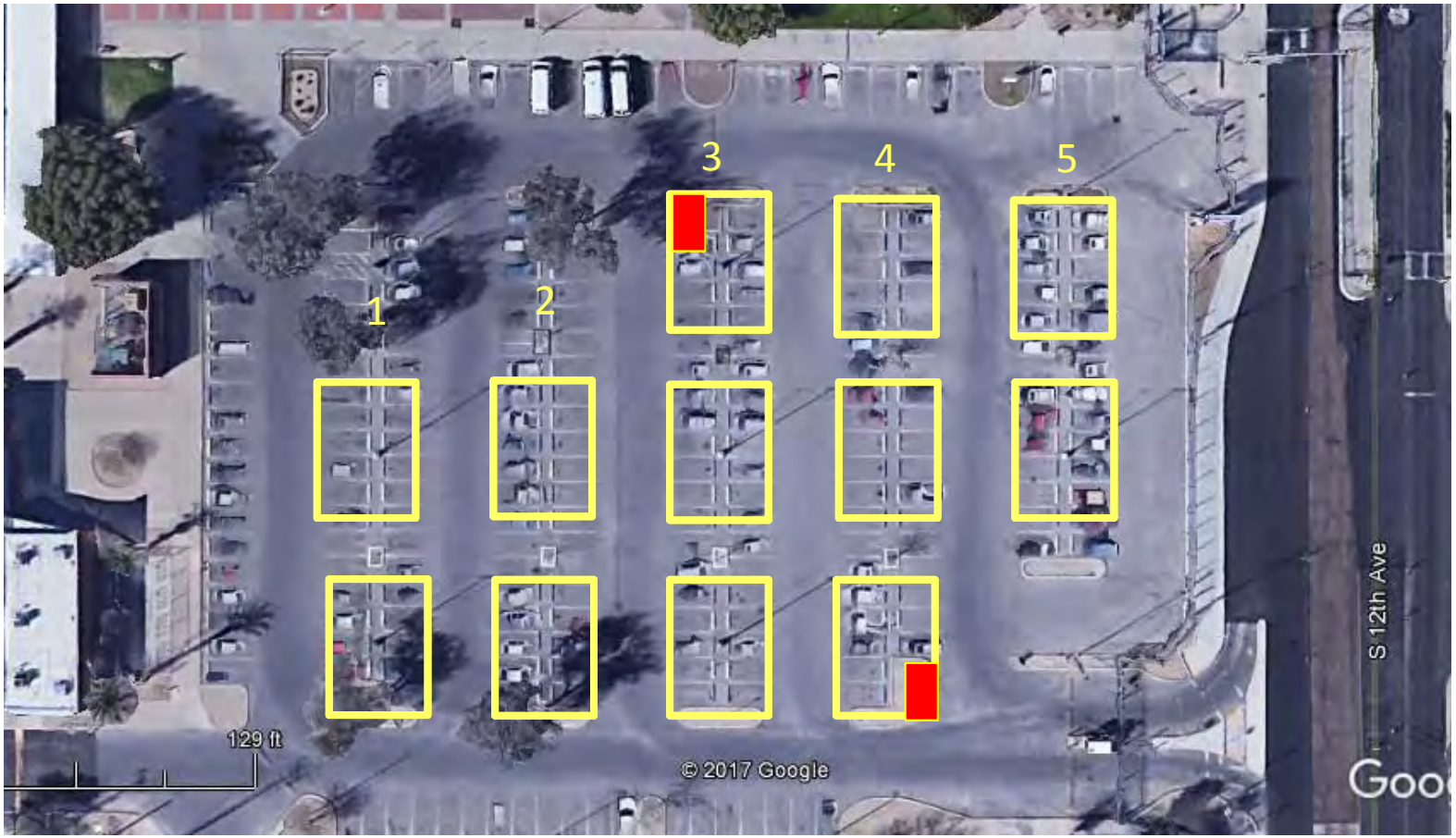


Morrow Bldg	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
NE Parking	Parking Double	1	6	22	2,915	74	132	44,880	3	90	74,950	1.670
SE Parking	Parking Double	2	6	34	4,505	114	204	69,360	3	90	115,831	1.670
Center Parking	Parking 4	3	4	28	2,474	94	112	38,080	3	90	63,594	1.670
Center Parking	Parking 4	4	4	25	2,209	84	100	34,000	3	90	56,780	1.670
West Parking	Parking 4	5	4	28	2,474	94	112	38,080	3	90	63,594	1.670
West Parking	Parking 4	6	4	25	2,209	84	100	34,000	3	90	56,780	1.670
NW Parking	Parking Double	7	6	25	3,313	84	150	51,000	3	90	85,170	1.670
NE Parking	Parking Double	8	6	12	1,590	40	72	24,480	3	90	40,882	1.670
SE Parking	Parking Double	9	6	12	1,590	40	72	24,480	3	90	40,882	1.670
TOTAL					**23,278**		**1,054**	**358,360**		**Energy Offset 51.31%**	**598,461**	

TUSD Phase 3 Solar Project Layouts – Palo Verde HS

Palo Verde HS	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Center Parking	Parking Double	1	6	60	7,951	201	360	122,400	12	180	220,320	1.800
Center Parking	Parking Double	2	6	60	7,951	201	360	122,400	12	180	220,320	1.800
Center Parking	Parking Double	3	6	60	7,951	201	360	122,400	12	180	220,320	1.800
Center Parking	Parking Double	4	6	45	5,963	151	270	91,800	12	180	165,240	1.800
Center Parking	Parking Double	5	6	45	5,963	151	270	91,800	12	180	165,240	1.800
Center Parking	Parking Double	6	6	45	5,963	151	270	91,800	12	180	165,240	1.800
Center Parking	Parking Double	7	6	30	3,975	100	180	61,200	12	180	110,160	1.800
Center Parking	Parking Double	8	6	30	3,975	100	180	61,200	12	180	110,160	1.800
Center Parking	Parking Double	9	6	30	3,975	100	180	61,200	12	180	110,160	1.800
Center Parking	Parking Double	10	6	15	1,988	50	90	30,600	12	180	55,080	1.800
Center Parking	Parking Double	11	6	15	1,988	50	90	30,600	12	180	55,080	1.800
TOTAL					**57,643**		**2,610**	**887,400**		**Energy Offset 47.53%**	**1,597,320**	

TUSD Phase 3 Solar Project Layouts – Pueblo Magnet HS

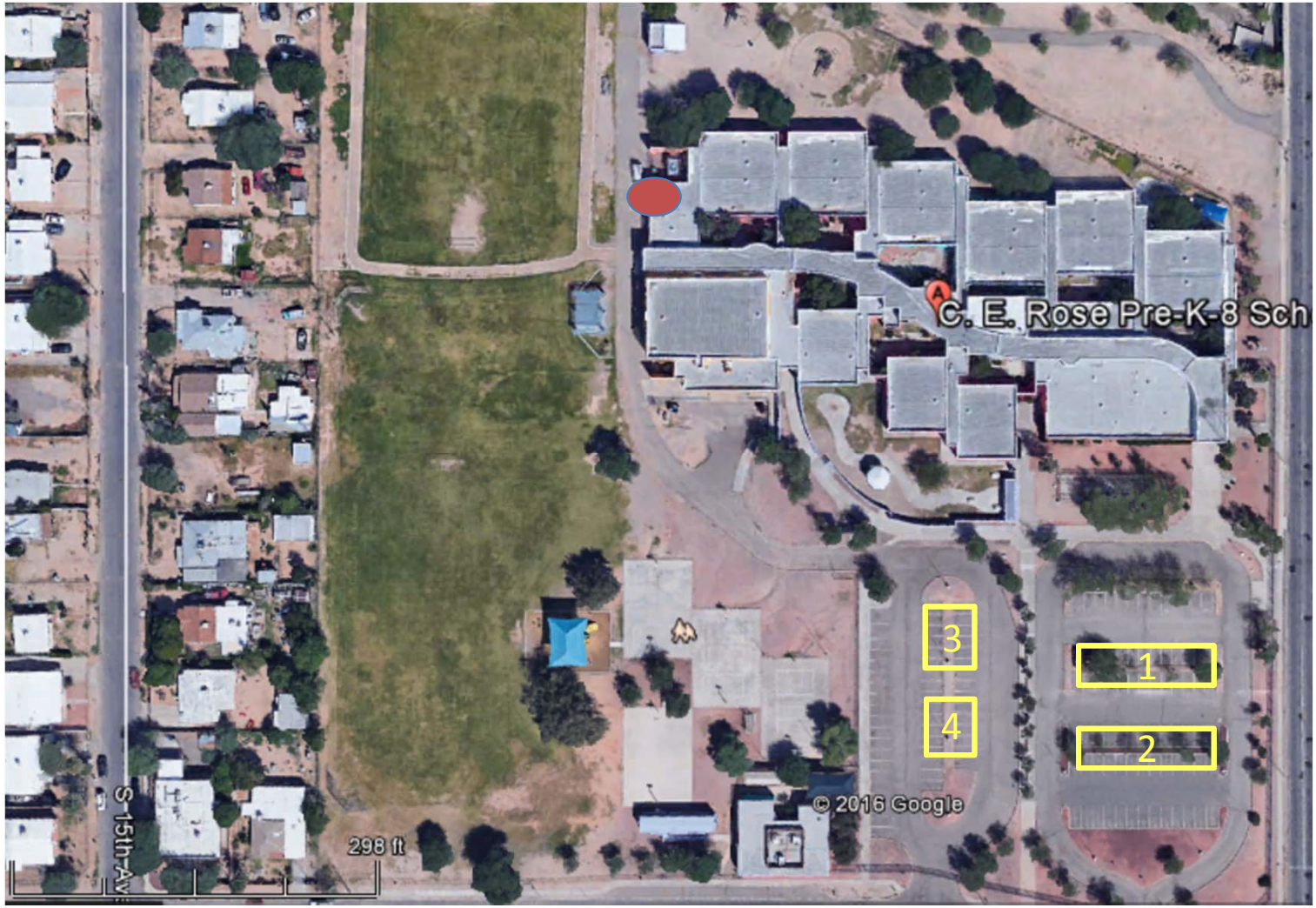


Pueblo Magnet HS - 63500 27008	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Center Parking	Parking Double 50	1	6	30	3,975	100	180	61,200	12	180	110,160	1.800
Center Parking	Parking Double 50	2	6	45	5,963	151	270	91,800	12	180	165,240	1.800
Center Parking	Parking Double 50	3	6	42	5,565	141	252	85,680	12	180	154,224	1.800
Center Parking	Parking Double 50	4	6	42	5,565	141	252	85,680	12	180	154,224	1.800
Center Parking	Parking Double 50	5	6	30	3,975	100	180	61,200	12	180	110,160	1.800
TOTAL					**25,045**	**970**	**1,134**	**385,560**		**Energy Offset 46.33%**	**694,008**	

TUSD Phase 3 Solar Project Layouts – Rincon University

Rincon University	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Northwest Parking	Parking 5	1	5	38	4,108	127	190	64,600	12	150	114,988	1.780
Northwest Parking	Parking Double	2	6	52	6,745	173	312	106,080	12	150	188,822	1.780
Northwest Parking	Parking Double	3	6	89	11,544	296	534	181,560	12	150	323,177	1.780
South Parking	Parking Double	4	6	43	5,578	143	258	87,720	12	180	157,896	1.800
South Parking	Parking Double	5	6	43	5,578	143	258	87,720	12	180	157,896	1.800
South Parking	Parking Double	6	6	53	6,875	177	318	108,120	12	180	194,616	1.800
East Parking-S	Parking 4	7	4	70	6,053	233	280	95,200	3	90	158,984	1.670
East Parking-N	Parking 4	8	4	125	10,809	416	500	170,000	3	90	283,900	1.670
TOTAL					**57,289**		**2,650**	**901,000**		**Energy Offset 46.10%**	**1,580,279**	

TUSD Phase 3 Solar Project Layouts – Rose K-8

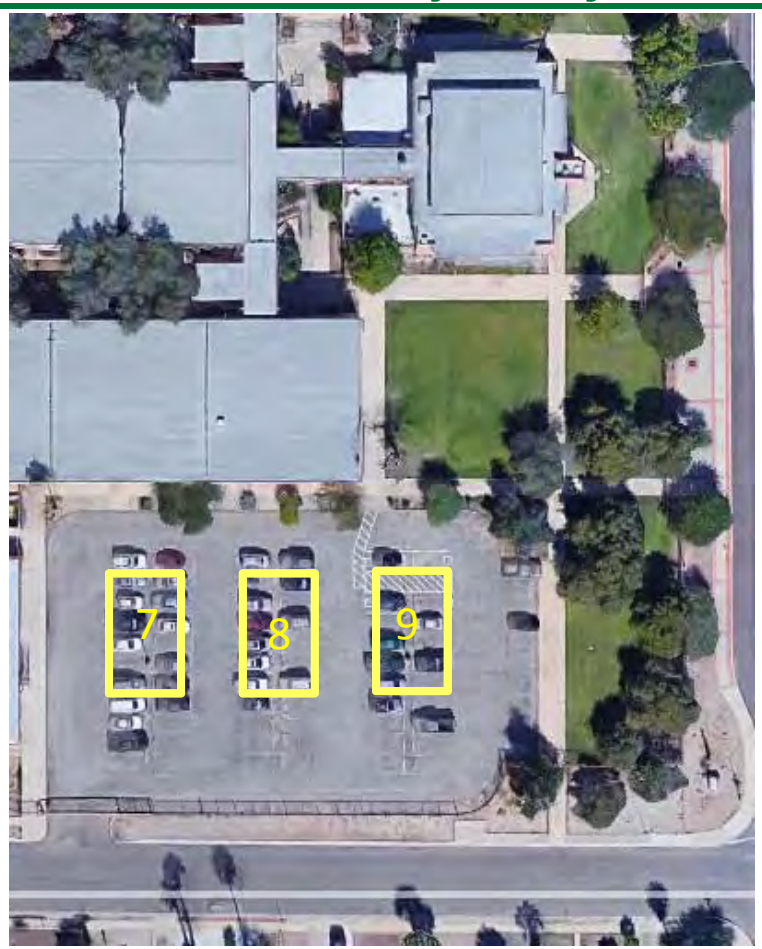


Rose	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
North Parking	Parking Double	1	6	36	4,770	120	216	73,440	12	180	132,192	1.800
South Parking	Parking Double	2	6	38	5,035	127	228	77,520	12	180	139,536	1.800
West Parking	Parking Double 50	3	6	15	1,988	50	90	30,600	3	90	55,080	1.800
West Parking	Parking Double 50	4	6	15	1,988	50	90	30,600	3	90	55,080	1.800
TOTAL					**13,781**	**348**	**624**	**212,160**		**Energy Offset 60.12%**	**381,888**	

TUSD Phase 3 Solar Project Layouts – Sabino HS

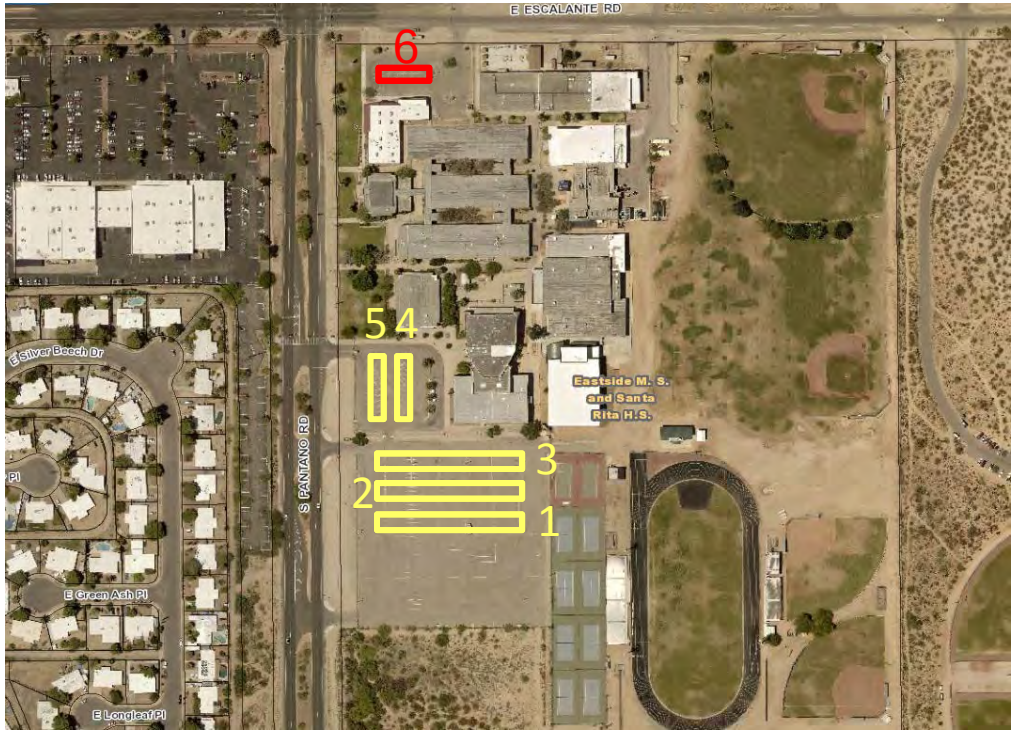
Sabino	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Parking Double	Shade Structure	1	6	50	6,486	167	300	102,000	12	180	183,600	1.800
Parking Double	Parking Double	2	6	60	7,783	200	360	122,400	12	180	220,320	1.800
Parking Double	Parking Double	3	6	60	7,783	200	360	122,400	12	180	220,320	1.800
Parking Double	Parking Double	4	6	60	7,783	200	360	122,400	12	180	220,320	1.800
Parking Double	Parking Double	5	6	60	7,783	200	360	122,400	12	180	220,320	1.800
Parking Double	Parking Double	6	6	18	2,335	60	108	36,720	12	180	66,096	1.800
Parking Double	Parking Double	7	6	51	6,615	170	306	104,040	12	180	187,272	1.800
Parking Double	Parking Double 50	8	6	45	5,837	150	270	91,800	12	180	165,240	1.800
TOTAL					**52,403**	**1,346**	**2,424**	**824,160**		**Energy Offset 58.02%**	**1,483,488**	

TUSD Phase 3 Solar Project Layouts – Sahuaro HS



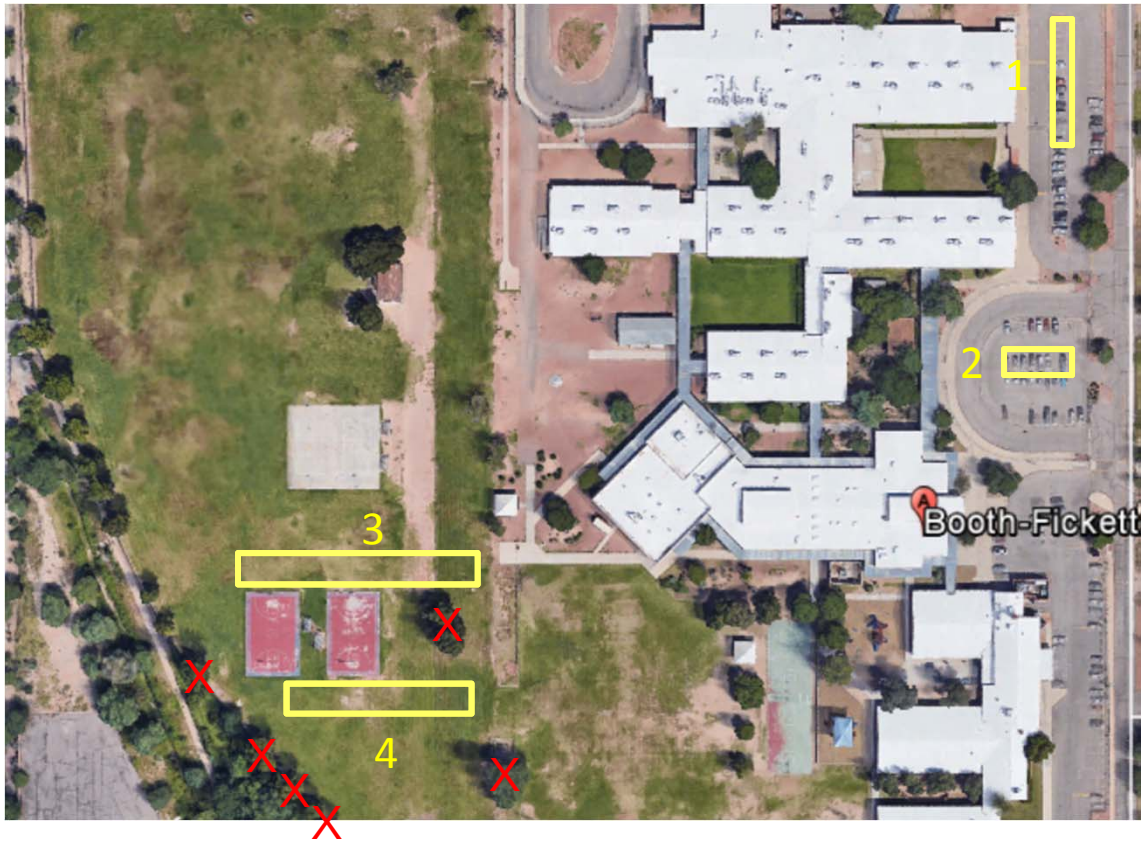
Sahuaro	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Parking Double	Parking Double	1	6	99	13,119	331	594	201,960	3	90	337,273	1.670
Parking Double	Parking Double	2	6	99	13,119	331	594	201,960	3	90	337,273	1.670
Parking Double	Parking Double	3	6	99	13,119	331	594	201,960	3	90	337,273	1.670
Parking Double	Parking Double	4	6	99	13,119	331	594	201,960	3	90	337,273	1.670
Parking Double	Parking Double	5	6	75	9,938	251	450	153,000	3	90	255,510	1.670
Parking Double	Parking Double	6	6	75	9,938	251	450	153,000	3	90	255,510	1.670
Parking Double	Parking Double 50	7	6	15	1,988	50	90	30,600	12	180	55,080	1.800
Parking Double	Parking Double 50	8	6	15	1,988	50	90	30,600	12	180	55,080	1.800
Parking Double	Parking Double 50	9	6	15	1,988	50	90	30,600	12	180	55,080	1.800
TOTAL					**78,314**	**1,977**	**3,546**	**1,205,640**		**Energy Offset 60.61%**	**2,025,353**	

TUSD Phase 3 Solar Project Layouts – Santa Rita HS



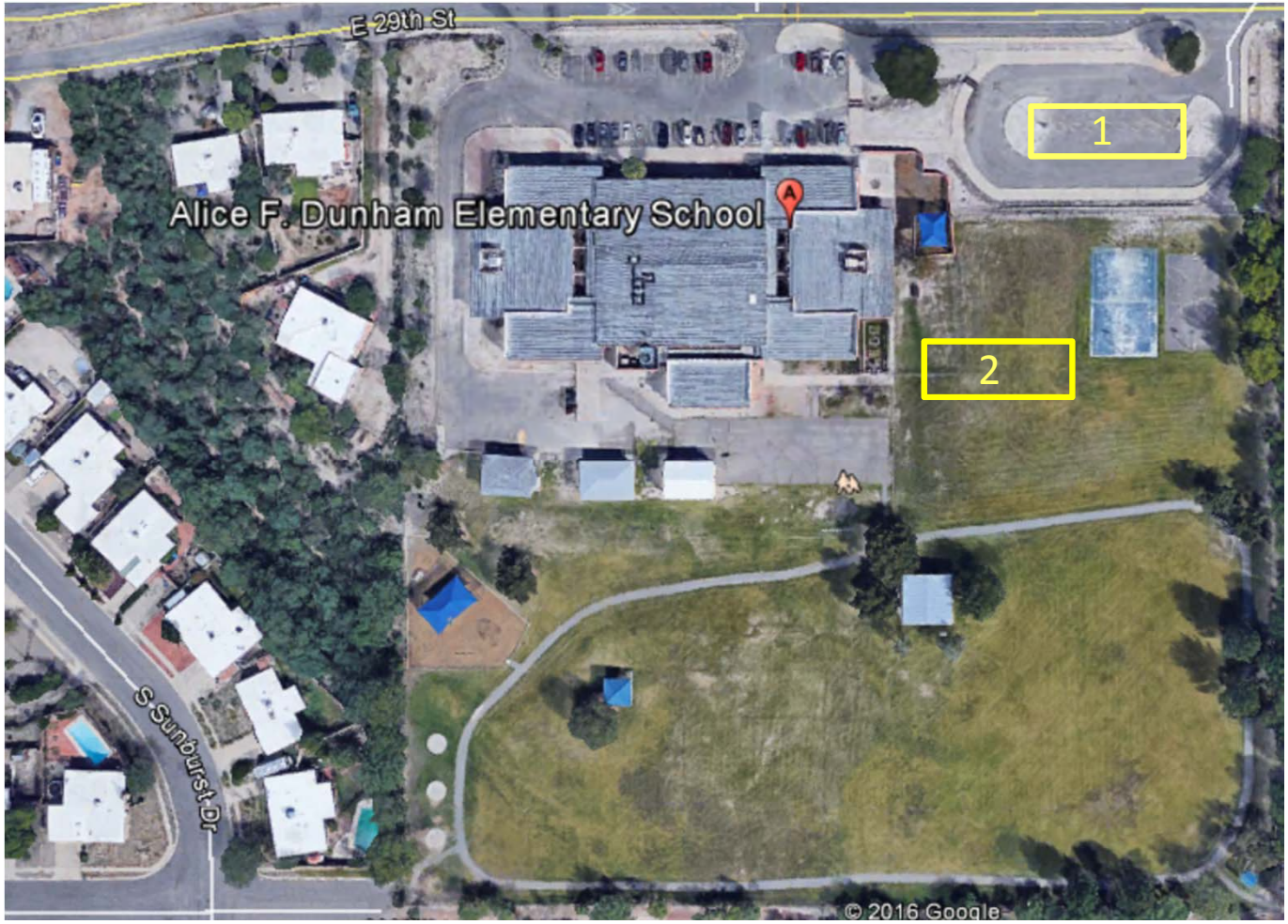
Santa Rita	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
SW Parking Double	Parking Double	1	6	90	11,674	300	540	183,600	12	180	330,480	1.800
SW Parking Double	Parking Double	2	6	90	11,674	300	540	183,600	12	180	330,480	1.800
SW Parking Double	Parking Double	3	6	90	11,674	300	540	183,600	12	180	330,480	1.800
SW North Double	Parking Double	4	6	30	3,891	100	180	61,200	3	90	102,204	1.670
SW North Double	Parking Double	5	6	30	3,891	100	180	61,200	3	90	102,204	1.670
TOTAL					**42,804**		**1,980**	**673,200**		**Energy Offset 25.59%**	**1,195,848**	

TUSD Phase 3 Solar Project Layouts – Booth/Fickett K-8



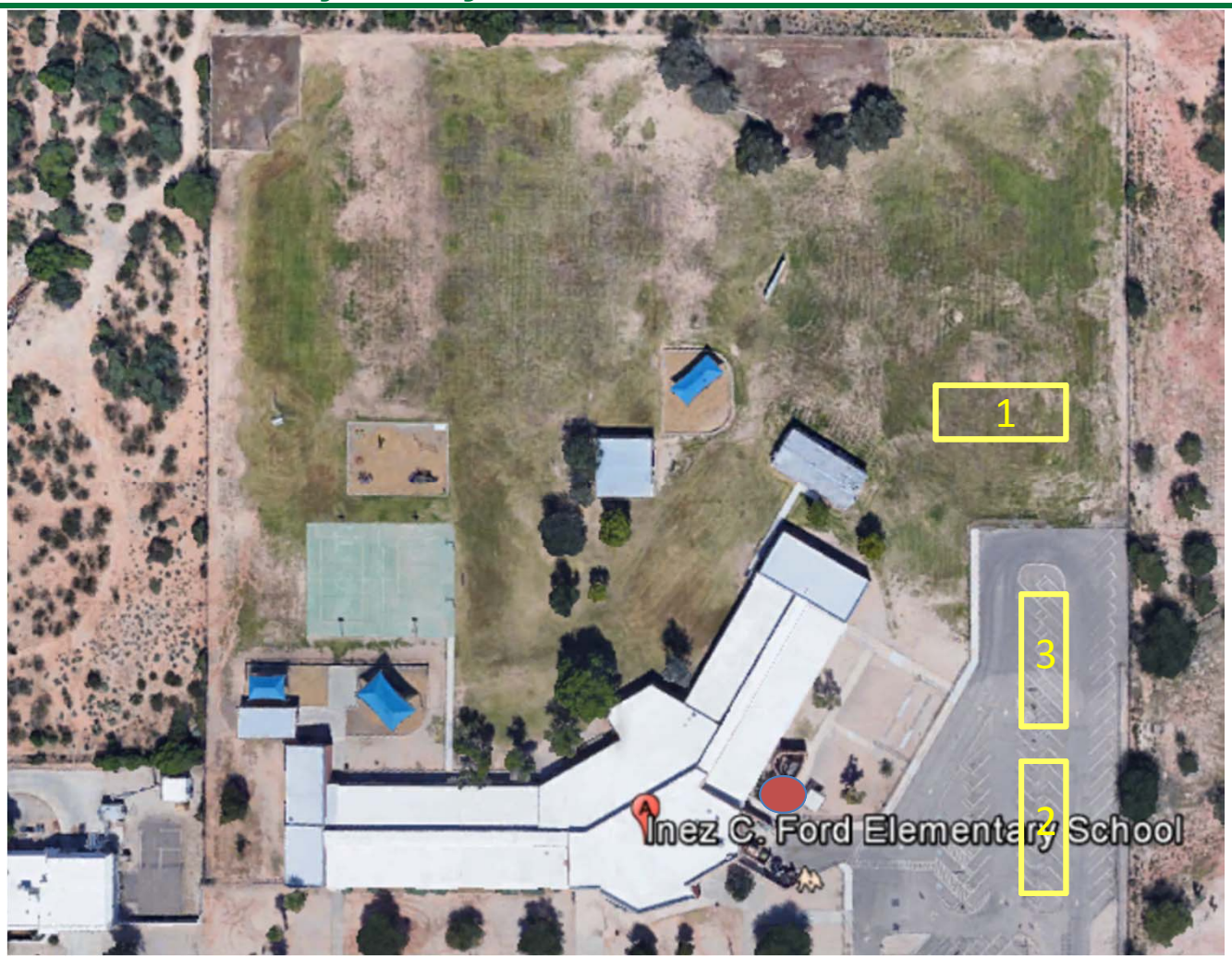
Booth / Fickett	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
North Parking	Parking Single	1	3	50	3,313	167	150	51,000	3	270	85,170	1.670
South Parking	Parking Double	2	6	20	2,650	67	120	40,800	12	180	73,440	1.800
N Shade Structure	Shade Structure	3	6	78	10,336	261	468	159,120	12	180	286,416	1.800
S Shade Structure	Shade Structure	4	6	60	7,951	201	360	122,400	12	180	220,320	1.800
TOTAL					**24,250**		**1,098**	**373,320**		**Energy Offset 58.48%**	**665,346**	

TUSD Phase 3 Solar Project Layouts – Dunham ES



Dunham	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
NE Parking	Parking Double	1	6	34	4,505	114	204	69,360	12	180	124,848	1.800
Shade Structure	Shade Structure	3	6	36	4,770	120	216	73,440	12	180	132,192	1.800
TOTAL					**9,276**	**234**	**420**	**142,800**		**Energy Offset 59.90%**	**257,040**	

TUSD Phase 3 Solar Project Layouts – Ford ES



Ford	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Shade Structure	Shade Structure	1	6	21	2,724	70	126	42,840	12	180	77,112	1.800
North Parking	Parking 5	2	5	28	3,027	93	140	47,600	3	90	79,492	1.670
South Parking	Parking 5	3	5	28	3,027	93	140	47,600	3	90	79,492	1.670
TOTAL					**8,777**	**257**	**406**	**138,040**		**Energy Offset 61.60%**	**236,096**	

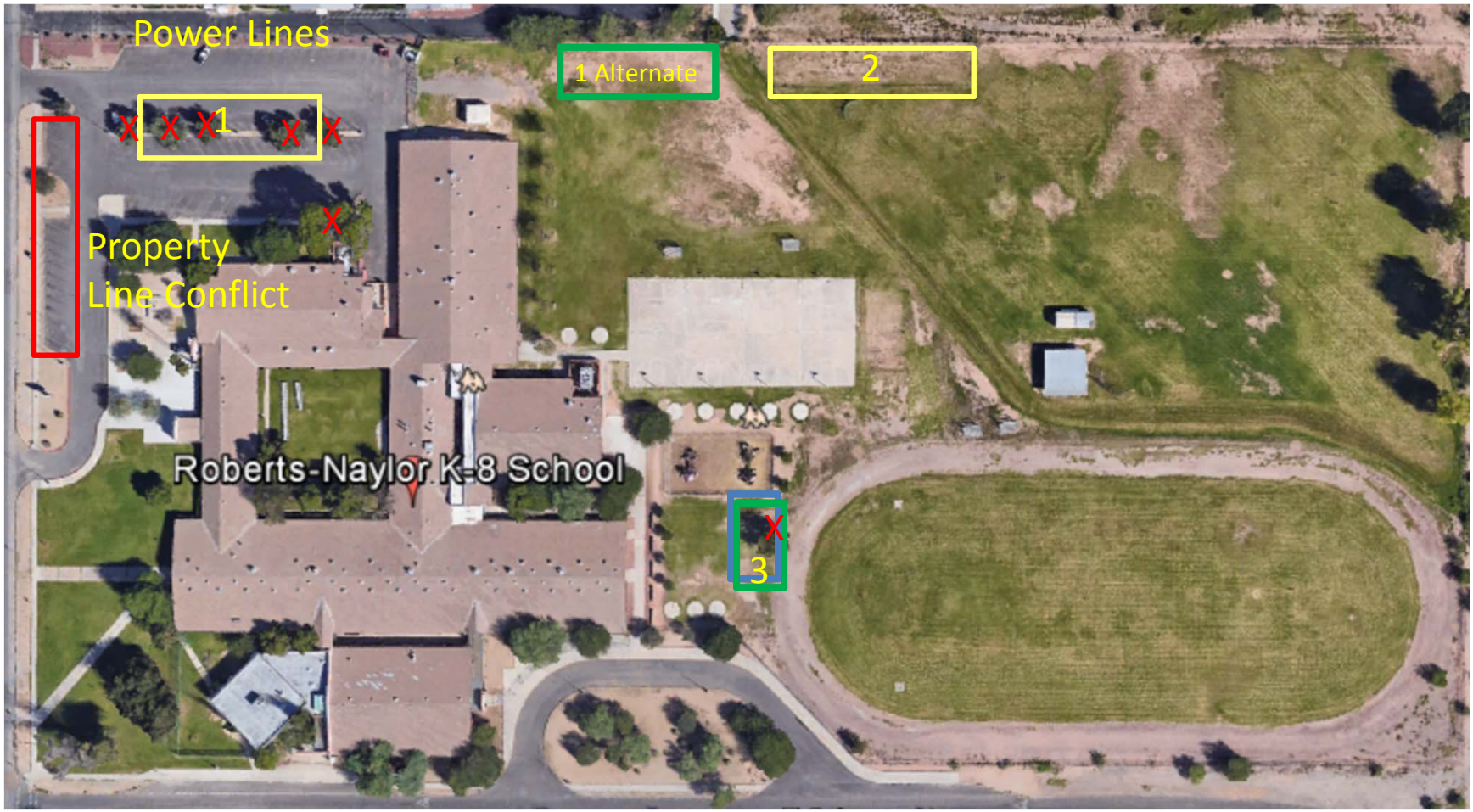
TUSD Phase 3 Solar Project Layouts – Pistor MS

Pistor	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
North Parking	Parking Double	1	6	27	3,502	90	162	55,080	12	223	96,390	1.750
Center Parking	Parking Double	2	6	35	4,540	117	210	71,400	12	223	124,950	1.750
South Parking	Parking Double	3	6	15	1,946	50	90	30,600	12	223	53,550	1.750
West Parking	Parking Double 50	4	6	15	1,946	50	90	30,600	12	180	55,080	1.800
NE Tennis Court	Shade Structure	5	5	18	1,946	60	90	30,600	12	180	55,080	1.800
NE Tennis Court	Shade Structure	6	5	18	1,946	60	90	30,600	12	180	55,080	1.800
SE Field	Shade Structure	7	6	21	2,724	70	126	42,840	12	180	77,112	1.800
SE Field	Shade Structure	8	6	21	2,724	70	126	42,840	12	180	77,112	1.800
TOTAL					**21,273**	**566**	**984**	**334,560**		**Energy Offset 62.40%**	**594,354**	

TUSD Phase 3 Solar Project Layouts – Tucson Magnet HS

Tucson Magnet HS - 3	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
South Parking	Parking Double	1	6	40	5,188	133	240	81,600	12	180	146,880	1.800
South Parking	Parking Double	1	6	30	3,891	100	180	61,200	12	180	110,160	1.800
TOTAL					**9,080**	**233**	**420**	**142,800**		**Energy Offset 35.64%**	**257,040**	

TUSD Phase 3 Solar Project Layouts – Robert Naylor K-8

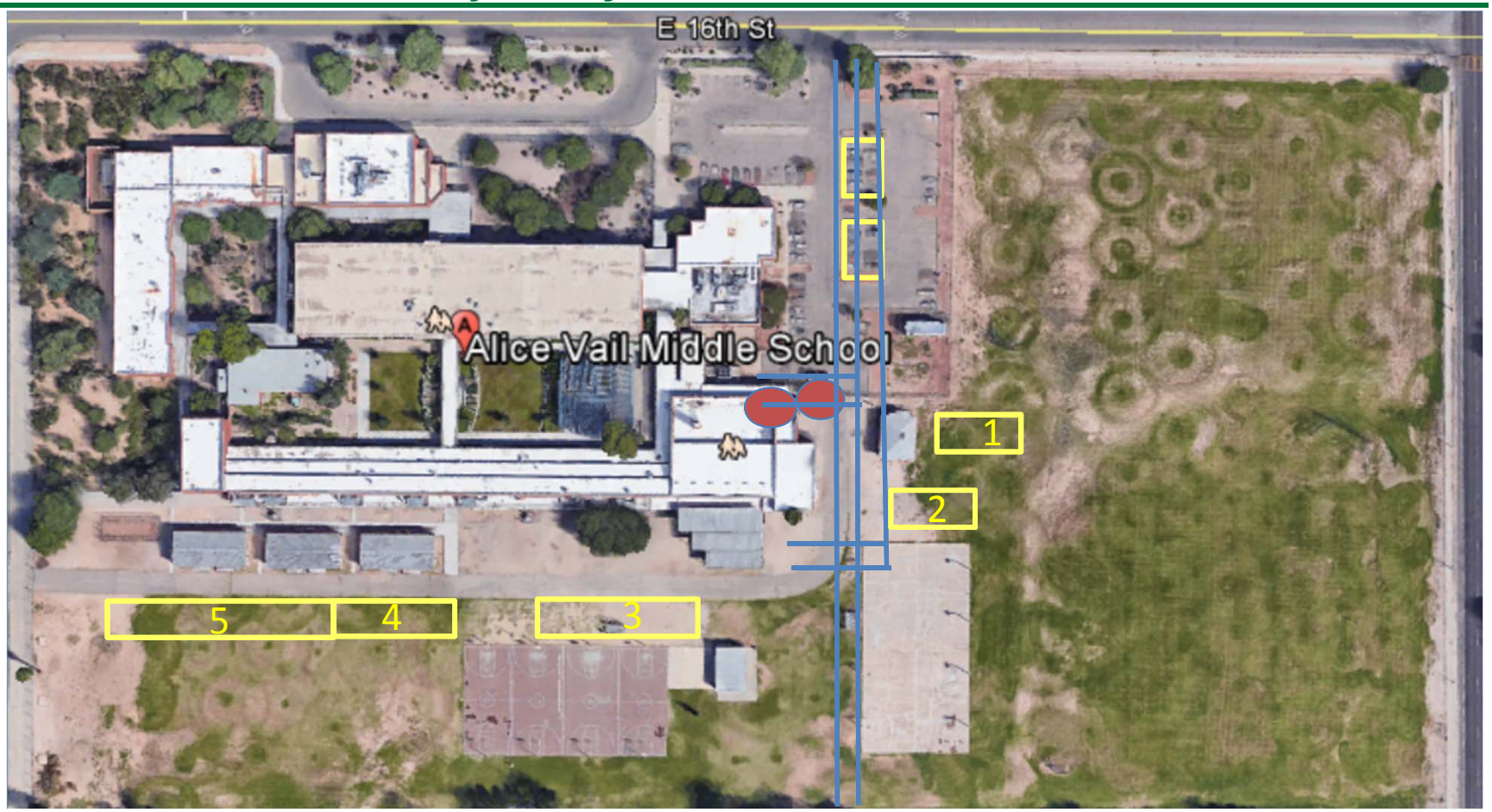


Roberts Naylor	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
North Parking or Play Grd	Parking Double	1	6	30	3,975	100	180	61,200	12	180	110,160	1.800
Shade Structure	Shade Structure	2	6	63	8,348	211	378	128,520	12	90	231,336	1.800
South Structure	Shade Structure	3	6	23	3,048	77	138	46,920	12	180	84,456	1.800
TOTAL					**15,371**	**388**	**696**	**236,640**		**Energy Offset 60.42%**	**425,952**	

TUSD Phase 3 Solar Project Layouts – Utterback MS (#2)

Utterback	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
SW Parking	Parking Double	1	6	50	6,486	167	300	102,000	12	180	183,600	1.800
SE Parking	Parking Double	2	6	15	1,946	50	90	30,600	12	180	55,080	1.800
East Parking	Shade Structure	3	6	58	7,523	193	348	118,320	12	180	212,976	1.800
TOTAL					**15,954**	**410**	**738**	**250,920**		**Energy Offset 34.77%**	**451,656**	

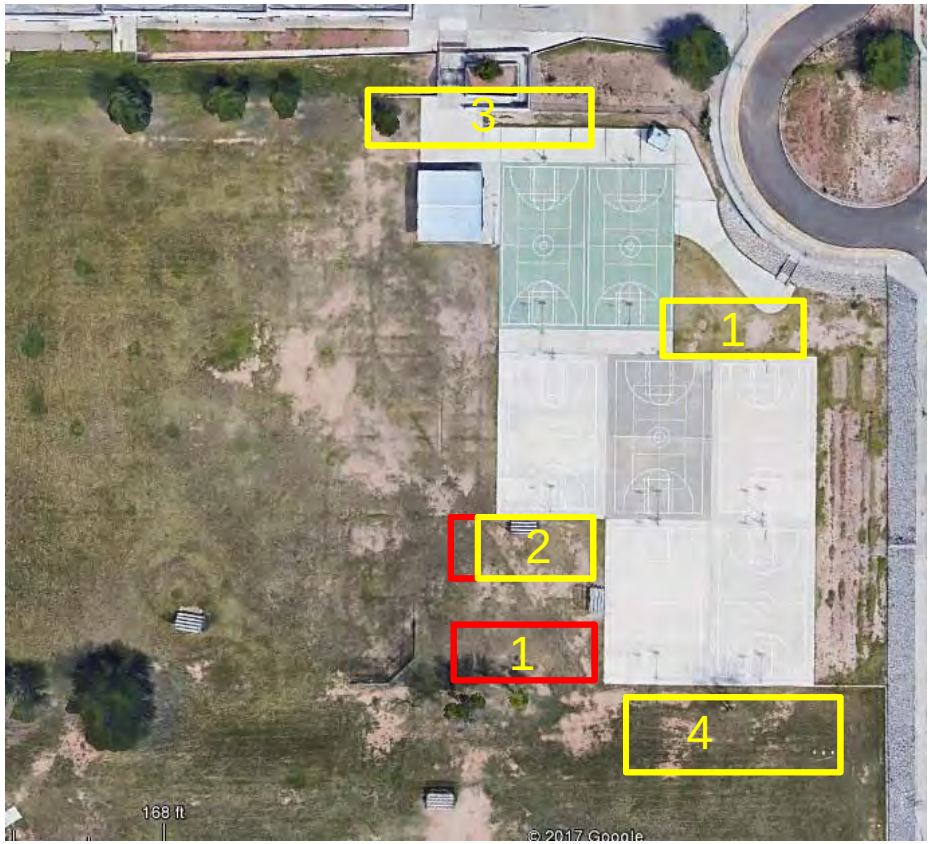
TUSD Phase 3 Solar Project Layouts – Alice Vail MS



Vail - 1	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
North Shade Structure	Shade Structure	2	6	22	2,854	73	132	44,880	12	180	80,784	1.800
BBall Shade Structure	Shade Structure	3	6	22	2,854	73	132	44,880	12	180	80,784	1.800
West Shade Structure	Shade Structure	4	6	37	4,799	123	222	75,480	12	180	135,864	1.800
West Shade Structure	Shade Structure	5	6	30	3,891	100	180	61,200	12	180	110,160	1.800
TOTAL					**14,398**	**370**	**666**	**226,440**		**Energy Offset 59.67%**	**407,592**	

Vail - 2	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
West Shade Structure	Shade Structure	6	6	63	8,172	210	378	128,520	12	180	231,336	1.800
TOTAL					**8,172**		**378**	**128,520**		**Energy Offset 60.66%**	**231,336**	

TUSD Phase 3 Solar Project Layouts – Magee MS



Magee MS	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
South Shade Structure	Shade Structure	3	6	30	3,891	100	180	61,200	12	180	110,160	1.800
NE Basketball	Shade Structure	1	6	33	4,280	110	198	67,320	12	180	121,176	1.800
SW Basketball	Shade Structure	2	6	27	3,502	90	162	55,080	12	180	99,144	1.800
South Basketball	Shade Structure	4	6	36	4,670	120	216	73,440	12	180	132,192	1.800
TOTAL					**16,344**	**420**	**756**	**257,040**		**Energy Offset 60.90%**	**462,672**	

TUSD Phase 3 Solar Project Layouts – Maxwell K-8

Maxwell	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
East Shade Structure	Shade Structure	1	6	50	6,486	167	300	102,000	12	180	183,600	1.800
Center Shade Structure	Shade Structure	2	6	52	6,745	173	312	106,080	12	180	190,944	1.800
West Shade Structure	Shade Structure	3	6	34	4,410	113	204	69,360	12	180	124,848	1.800
TOTAL					**17,641**	**453**	**816**	**277,440**		**Energy Offset 60.43%**	**499,392**	

TUSD Phase 3 Solar Project Layouts – Steele ES

Steele	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Shade Structure	Shade Structure	1	6	50	6,626	167	300	102,000	12	180	183,600	1.800
TOTAL					**6,626**		**300**	**102,000**		**Energy Offset 60.77%**	**183,600**	

TUSD Phase 3 Solar Project Layouts – Star/TAPP

Tapp Starr	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Parking Double	Parking Double	1	6	20	2,594	67	120	40,800	12	180	73,440	1.800
Parking Double	Parking Double	1	6	13	1,686	43	78	26,520	12	180	47,736	1.800
TOTAL					**4,280**		**198**	**67,320**		**Energy Offset 30.00%**	**121,176**	

TUSD Phase 3 Solar Project Layouts – Project MORE

Project More	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Parking Across Street	Parking Double	1	6	35	4,638	117	210	71,400	12	180	128,520	1.800
TOTAL					**4,638**		**210**	**71,400**		**Energy Offset 54.97%**	**128,520**	**1.800**

TUSD Phase 3 Solar Project Layouts – Bloom Elementary

Bloom	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Parking Structure	Parking Double	1	6	27	3,502	90	162	55,080	12	120	95,839	1.740
East Field	Shade Structure	2	6	27	3,502	90	162	55,080	12	170	98,593	1.790
TOTAL					**7,004**		**324**	**110,160**		**Energy Offset 60.34%**	**194,432**	

TUSD Phase 3 Solar Project Layouts – Holladay Elementary

Holladay	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Shade Structure	Shade Structure	1	6	32	4,240	107	192	65,280	12	180	117,504	1.800
Shade Structure	Shade Structure	2	6	30	3,975	100	180	61,200	12	180	110,160	1.800
TOTAL					**8,216**	**207**	**372**	**126,480**		**Energy Offset 60.46%**	**227,664**	

TUSD Phase 3 Solar Project Layouts – Dietz Elementary

Dietz	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
NE Shade Structure	Shade Structure	1	6	50	6,626	167	300	102,000	12	170	183,600	1.800
SE Shade Structure	Shade Structure	2	6	30	3,975	100	180	61,200	12	180	110,160	1.800
TOTAL					**10,601**	**268**	**480**	**163,200**		**Energy Offset 60.51%**	**293,760**	

REMOVED Sites

TUSD Phase 3 Solar Project Layouts – Borton Primary ES

Borton Primary	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
	Shade Structure	4	6	45	5,963	151	270	91,800	12	180	165,240	1.800
DESCRIBE ARRAY	Shade Structure	1	6	0	0	0	0	0	12	180	0	1.800
TOTAL					**5,963**		**270**	**91,800**		**Energy Offset 39.55%**	**165,240**	**1.800**

TUSD Phase 3 Solar Project Layouts – Carpenter Hall

We should be able to have the center column on the South at 12’6”. That will make the North side around 16-17’ high. Enough for high profile vehicles.

Carpenter's Hall	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
S Parking	Parking 4	1	4	38	3,357	127	152	51,680	12	180	93,024	1.800
TOTAL					**3,357**		**152**	**51,680**		**Energy Offset 53.97%**	**93,024**	

TUSD Phase 3 Solar Project Layouts – Davis Bilingual

Davis Bilingual	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
	Shade Structure	1	6	7	928	23	42	14,280	12	180	25,704	1.800
	Shade Structure	1	6	20	2,650	67	120	40,800	12	180	73,440	1.800
TOTAL					**3,578**	**90**	**162**	**55,080**		**Energy Offset 23.98%**	**99,144**	

TUSD Phase 3 Solar Project Layouts – Doolen MS

Doolen - 42979 87020	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
West Parking Lot	Parking Single	2	4	27	2,335	90	108	36,720	12	180	66,096	1.800
TOTAL					**2,335**	**90**	**108**	**36,720**		**Energy Offset 12.30%**	**66,096**	

Doolen - 28001 72268	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
West Parking Lot	Shade Structure	1	4	66	5,707	220	264	89,760	12	180	161,568	1.800
TOTAL					**5,707**	**220**	**264**	**89,760**		**Energy Offset 29.02%**	**161,568**	

TUSD Phase 3 Solar Project Layouts – Hudlow ES

Hudlow	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
West Parking	Parking Double	1	6	16	2,120	54	96	32,640	12	180	58,752	1.800
TOTAL					**2,120**	**54**	**96**	**32,640**		**Energy Offset 13.21%**	**58,752**	

TUSD Phase 3 Solar Project Layouts – Mission View ES

Mission View	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
	Shade Structure	1	6	42	5,565	141	252	85,680	12	180	154,224	1.800
TOTAL					**5,565**		**252**	**85,680**		**Energy Offset 41.19%**	**154,224**	**1.800**

TUSD Phase 3 Solar Project Layouts – Roskruge Bilingual K-8

Roskruge	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
	Shade Structure	1	6	24	3,180	80	144	48,960	12	180	88,128	1.800
TOTAL					**3,180**		**144**	**48,960**		**Energy Offset 12.22%**	**88,128**	

TUSD Phase 3 Solar Project Layouts – Wakefield MS

Remove Site – too many Conflicts- If Conflict with #2 is removed we could re-consider just #1 & #2.

Wakefield	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
NE Parking Lot	Parking Double	3	6	34	4,410	113	204	69,360	12	180	124,848	1.800
N of Basketball Cts	Shade Structure	1	6	39	5,059	130	234	79,560	12	180	143,208	1.800
SW Parking Lot	Parking Double	2	6	27	3,502	90	162	55,080	12	180	99,144	1.800
TOTAL					**12,971**	**333**	**600**	**204,000**		**Energy Offset 41.62%**	**367,200**	

TUSD Phase 3 Solar Project Layouts – Dodge Magnet MS

Remove Site due to Conflicts

Dodge Magnet	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
North Parking	Parking 5	1	5	30	3,243	100	150	51,000	3	90	85,170	1.670
South Parking	Parking 5	2	5	60	6,486	200	300	102,000	3	90	170,340	1.670
TOTAL					**9,728**	**300**	**450**	**153,000**		**Energy Offset 45.80%**	**255,510**	

TUSD Phase 3 Solar Project Layouts – Safford K-8

Safford - 55803 87007	Structure Type	Array	# Panels Long	# Panels Wide	Sq ft	Structure Length (ft)	# Panels per Array	Array Power (W)	Tilt	Azimuth	Estimated Annual kWh	kWh/Wp/year
Parking Double	Parking Double	1	6	33	4,280	110	198	67,320	12	180	121,176	1.800
TOTAL					**4,280**	**110**	**198**	**67,320**		**Energy Offset 13.07%**	**121,176**	