



Aeronautical Obstruction Evaluation Study Saddlehorn Ranch Project Final Report

Prepared By:

Allen Aviation Consulting Services LLC

Presented to:

The City of Jurupa Valley





PROJECT SUMMARY: In Reference to **CODE of FEDERAL REGULATION (CFR) TITLE 14 CFR PART 77, 7460-1 NOTICE OF PROPOSED CONSTRUCTION:** Proposed construction of (31) 21ft AGL Residential Homes located in Jurupa Valley, California.

The Federal Aviation Administration Obstruction Evaluation Group has issued “No Hazard to Air Navigation” Determination Letters for Lots/Homes 1 - 31.

CONSTRUCTION EQUIPMENT: (1) 15ft AGL excavator will be temporarily used during construction.

This Predictive Aeronautical Obstruction Evaluation was analyzed using the process established in PROVISIONS 49 U.S.C., SECTION 44718.



Coordinates:

ASN	Corners	Latitude	Longitude	SE (ft.)	AGL (ft.)	AMSL (ft.)
2022-AWP-21825-OE	Lot_1_SE_Corner	33°58'59.22"N	117°25'33.83"W	787	21	808
2022-AWP-21826-OE	Lot_1_SW_Corner	33°58'59.42"N	117°25'34.53"W	788	21	809
2022-AWP-21827-OE	Lot_1_NE_Corner	33°58'59.80"N	117°25'33.53"W	785	21	806



2022-AWP-21828-OE	Lot_1_NW_Corner	33°59'0.04"N	117°25'34.20"W	788	21	809
2022-AWP-21829-OE	Lot_2_SE_Corner	33°58'59.67"N	117°25'35.10"W	795	21	816
2022-AWP-21830-OE	Lot_2_SW_Corner	33°58'59.88"N	117°25'35.80"W	797	21	818
2022-AWP-21831-OE	Lot_2_NE_Corner	33°59'0.19"N	117°25'34.85"W	793	21	814
2022-AWP-21832-OE	Lot_2_NW_Corner	33°59'0.41"N	117°25'35.52"W	797	21	818
2022-AWP-21833-OE	Lot_3_SE_Corner	33°58'59.95"N	117°25'36.43"W	798	21	819
2022-AWP-21834-OE	Lot_3_SW_Corner	33°59'0.14"N	117°25'37.14"W	805	21	826
2022-AWP-21835-OE	Lot_3_NE_Corner	33°59'0.54"N	117°25'36.14"W	800	21	821
2022-AWP-21836-OE	Lot_3_NW_Corner	33°59'0.77"N	117°25'36.81"W	805	21	826
2022-AWP-21837-OE	Lot_4_SE_Corner	33°59'0.29"N	117°25'37.73"W	808	21	829
2022-AWP-21838-OE	Lot_4_SW_Corner	33°59'0.48"N	117°25'38.39"W	813	21	834
2022-AWP-21839-OE	Lot_4_NE_Corner	33°59'0.87"N	117°25'37.40"W	806	21	827
2022-AWP-21840-OE	Lot_4_NW_Corner	33°59'1.21"N	117°25'38.03"W	811	21	832
2022-AWP-21841-OE	Lot_5_SE_Corner	33°59'0.74"N	117°25'39.00"W	812	21	833
2022-AWP-21842-OE	Lot_5_SW_Corner	33°59'0.95"N	117°25'39.68"W	815	21	836
2022-AWP-21843-OE	Lot_5_NE_Corner	33°59'1.36"N	117°25'38.68"W	813	21	834
2022-AWP-21844-OE	Lot_5_NW_Corner	33°59'1.57"N	117°25'39.36"W	816	21	837
2022-AWP-21845-OE	Lot_6_SE_Corner	33°59'1.05"N	117°25'40.42"W	820	21	841
2022-AWP-21846-OE	Lot_6_SW_Corner	33°59'1.24"N	117°25'41.10"W	825	21	846
2022-AWP-21847-OE	Lot_6_NE_Corner	33°59'1.56"N	117°25'40.16"W	819	21	840
2022-AWP-21848-OE	Lot_6_NW_Corner	33°59'1.77"N	117°25'40.82"W	824	21	845
2022-AWP-21849-OE	Lot_7_SE_Corner	33°59'1.39"N	117°25'41.67"W	827	21	848



2022-AWP-21850-OE	Lot_7_SW_Corner	33°59'1.58"N	117°25'42.38"W	830	21	851
2022-AWP-21851-OE	Lot_7_NE_Corner	33°59'2.01"N	117°25'41.34"W	825	21	846
2022-AWP-21852-OE	Lot_7_NW_Corner	33°59'2.28"N	117°25'41.99"W	829	21	850
2022-AWP-21853-OE	Lot_8_SE_Corner	33°59'1.78"N	117°25'42.87"W	834	21	855
2022-AWP-21854-OE	Lot_8_SW_Corner	33°59'1.97"N	117°25'43.55"W	839	21	860
2022-AWP-21855-OE	Lot_8_NE_Corner	33°59'2.39"N	117°25'42.57"W	834	21	855
2022-AWP-21856-OE	Lot_8_NW_Corner	33°59'2.57"N	117°25'43.24"W	838	21	859
2022-AWP-21857-OE	Lot_9_SE_Corner	33°59'2.07"N	117°25'44.18"W	841	21	862
2022-AWP-21858-OE	Lot_9_SW_Corner	33°59'2.27"N	117°25'44.87"W	845	21	866
2022-AWP-21859-OE	Lot_9_NE_Corner	33°59'2.67"N	117°25'43.88"W	842	21	863
2022-AWP-21860-OE	Lot_9_NW_Corner	33°59'2.97"N	117°25'44.50"W	847	21	868
2022-AWP-21861-OE	Lot_10_SE_Corner	33°59'2.48"N	117°25'45.45"W	848	21	869
2022-AWP-21862-OE	Lot_10_SW_Corner	33°59'2.69"N	117°25'46.09"W	851	21	872
2022-AWP-21863-OE	Lot_10_NE_Corner	33°59'3.10"N	117°25'45.16"W	850	21	871
2022-AWP-21864-OE	Lot_10_NW_Corner	33°59'3.31"N	117°25'45.81"W	854	21	875
2022-AWP-21865-OE	Lot_11_SE_Corner	33°59'2.85"N	117°25'46.36"W	853	21	874
2022-AWP-21866-OE	Lot_11_SW_Corner	33°59'3.07"N	117°25'47.01"W	857	21	878
2022-AWP-21867-OE	Lot_11_NE_Corner	33°59'3.51"N	117°25'46.07"W	856	21	877
2022-AWP-21868-OE	Lot_11_NW_Corner	33°59'3.86"N	117°25'46.64"W	858	21	879
2022-AWP-21869-OE	Lot_12_SE_Corner	33°59'3.54"N	117°25'47.43"W	863	21	884
2022-AWP-22315-OE	Lot_12_SW_Corner	33°59'3.75"N	117°25'48.07"W	865	21	886
2022-AWP-21871-OE	Lot_12_NE_Corner	33°59'4.12"N	117°25'47.17"W	865	21	886



2022-AWP-21872-OE	Lot_12_NW_Corner	33°59'4.32"N	117°25'47.82"W	868	21	889
2022-AWP-21873-OE	Lot_13_SE_Corner	33°59'3.87"N	117°25'48.61"W	868	21	889
2022-AWP-21874-OE	Lot_13_SW_Corner	33°59'4.07"N	117°25'49.23"W	871	21	892
2022-AWP-21875-OE	Lot_13_NE_Corner	33°59'4.50"N	117°25'48.31"W	869	21	890
2022-AWP-21876-OE	Lot_13_NW_Corner	33°59'4.86"N	117°25'48.89"W	877	21	898
2022-AWP-21877-OE	Lot_14_SE_Corner	33°59'4.50"N	117°25'49.61"W	877	21	898
2022-AWP-21878-OE	Lot_14_SW_Corner	33°59'4.73"N	117°25'50.26"W	881	21	902
2022-AWP-21879-OE	Lot_14_NE_Corner	33°59'5.16"N	117°25'49.33"W	880	21	901
2022-AWP-21880-OE	Lot_14_NW_Corner	33°59'5.41"N	117°25'49.96"W	886	21	907
2022-AWP-21881-OE	Lot_15_SE_Corner	33°59'4.72"N	117°25'50.77"W	883	21	904
2022-AWP-21882-OE	Lot_15_SW_Corner	33°59'4.91"N	117°25'51.41"W	887	21	908
2022-AWP-21883-OE	Lot_15_NE_Corner	33°59'5.49"N	117°25'50.43"W	889	21	910
2022-AWP-21884-OE	Lot_15_NW_Corner	33°59'5.59"N	117°25'51.12"W	893	21	914
2023-AWP-1408-OE	Lot_16_SE_Corner	33°59'6.75"N	117°25'49.81"W	893	21	914
2023-AWP-1407-OE	Lot_16_SW_Corner	33°59'6.78"N	117°25'50.49"W	893	21	914
2023-AWP-1406-OE	Lot_16_NE_Corner	33°59'7.29"N	117°25'49.51"W	893	21	914
2023-AWP-1405-OE	Lot_16_NW_Corner	33°59'7.51"N	117°25'50.18"W	893	21	914
2022-AWP-21885-OE	Lot_17_SE_Corner	33°59'6.84"N	117°25'48.49"W	890	21	911
2022-AWP-21886-OE	Lot_17_SW_Corner	33°59'6.85"N	117°25'49.53"W	891	21	912
2022-AWP-21887-OE	Lot_17_NE_Corner	33°59'7.45"N	117°25'48.51"W	890	21	911
2023-AWP-1409-OE	Lot_17_NW_Corner	33°59'7.64"N	117°25'49.18"W	893	21	914
2022-AWP-21889-OE	Lot_18_SE_Corner	33°59'5.84"N	117°25'47.81"W	876	21	897



2022-AWP-21890-OE	Lot_18_SW_Corner	33°59'6.03"N	117°25'48.47"W	882	21	903
2022-AWP-21891-OE	Lot_18_NE_Corner	33°59'6.51"N	117°25'47.51"W	877	21	898
2022-AWP-21892-OE	Lot_18_NW_Corner	33°59'6.72"N	117°25'48.16"W	882	21	903
2022-AWP-21893-OE	Lot_19_SE_Corner	33°59'5.39"N	117°25'46.74"W	869	21	890
2022-AWP-21894-OE	Lot_19_SW_Corner	33°59'5.46"N	117°25'47.47"W	867	21	888
2022-AWP-21895-OE	Lot_19_NE_Corner	33°59'6.05"N	117°25'46.46"W	870	21	891
2022-AWP-21896-OE	Lot_19_NW_Corner	33°59'6.26"N	117°25'47.10"W	874	21	895
2022-AWP-21897-OE	Lot_20_SE_Corner	33°59'4.79"N	117°25'45.78"W	860	21	881
2022-AWP-21898-OE	Lot_20_SW_Corner	33°59'4.99"N	117°25'46.43"W	867	21	888
2022-AWP-21899-OE	Lot_20_NE_Corner	33°59'5.36"N	117°25'45.51"W	863	21	884
2022-AWP-21900-OE	Lot_20_NW_Corner	33°59'5.57"N	117°25'46.16"W	866	21	887
2022-AWP-21901-OE	Lot_21_SE_Corner	33°59'4.53"N	117°25'44.59"W	852	21	873
2022-AWP-21902-OE	Lot_21_SW_Corner	33°59'4.60"N	117°25'45.28"W	856	21	877
2022-AWP-21903-OE	Lot_21_NE_Corner	33°59'5.19"N	117°25'44.29"W	852	21	873
2022-AWP-21904-OE	Lot_21_NW_Corner	33°59'5.41"N	117°25'44.92"W	858	21	879
2022-AWP-21905-OE	Lot_22_SE_Corner	33°59'3.90"N	117°25'43.12"W	841	21	862
2022-AWP-21906-OE	Lot_22_SW_Corner	33°59'4.10"N	117°25'43.79"W	845	21	866
2022-AWP-21907-OE	Lot_22_NE_Corner	33°59'4.48"N	117°25'42.88"W	841	21	862
2022-AWP-21908-OE	Lot_22_NW_Corner	33°59'4.70"N	117°25'43.49"W	846	21	867
2022-AWP-21909-OE	Lot_23_SE_Corner	33°59'3.32"N	117°25'41.84"W	832	21	853
2022-AWP-21910-OE	Lot_23_SW_Corner	33°59'3.52"N	117°25'42.51"W	836	21	857
2022-AWP-21911-OE	Lot_23_NE_Corner	33°59'4.03"N	117°25'41.47"W	833	21	854



2022-AWP-21912-OE	Lot_23_NW_Corner	33°59'4.24"N	117°25'42.09"W	837	21	858
2022-AWP-21913-OE	Lot_24_SE_Corner	33°59'3.01"N	117°25'40.40"W	824	21	845
2022-AWP-21914-OE	Lot_24_SW_Corner	33°59'3.21"N	117°25'41.09"W	827	21	848
2022-AWP-21915-OE	Lot_24_NE_Corner	33°59'3.52"N	117°25'40.12"W	823	21	844
2022-AWP-21916-OE	Lot_24_NW_Corner	33°59'3.72"N	117°25'40.81"W	826	21	847
2022-AWP-21917-OE	Lot_25_SE_Corner	33°59'2.61"N	117°25'38.82"W	815	21	836
2022-AWP-21918-OE	Lot_25_SW_Corner	33°59'2.81"N	117°25'39.49"W	818	21	839
2022-AWP-21919-OE	Lot_25_NE_Corner	33°59'3.24"N	117°25'38.51"W	814	21	835
2022-AWP-21920-OE	Lot_25_NW_Corner	33°59'3.41"N	117°25'39.19"W	818	21	839
2022-AWP-21921-OE	Lot_26_SE_Corner	33°59'2.19"N	117°25'37.40"W	809	21	830
2022-AWP-21922-OE	Lot_26_SW_Corner	33°59'2.29"N	117°25'38.12"W	812	21	833
2022-AWP-21923-OE	Lot_26_NE_Corner	33°59'2.82"N	117°25'37.06"W	809	21	830
2022-AWP-21924-OE	Lot_26_NW_Corner	33°59'3.01"N	117°25'37.75"W	812	21	833
2022-AWP-21925-OE	Lot_27_SE_Corner	33°59'1.71"N	117°25'36.04"W	800	21	821
2022-AWP-21926-OE	Lot_27_SW_Corner	33°59'1.90"N	117°25'36.73"W	806	21	827
2022-AWP-21927-OE	Lot_27_NE_Corner	33°59'2.31"N	117°25'35.73"W	801	21	822
2022-AWP-21928-OE	Lot_27_NW_Corner	33°59'2.50"N	117°25'36.41"W	805	21	826
2022-AWP-21929-OE	Lot_28_SE_Corner	33°59'1.44"N	117°25'34.61"W	794	21	815
2022-AWP-21930-OE	Lot_28_SW_Corner	33°59'1.50"N	117°25'35.36"W	799	21	820
2022-AWP-21931-OE	Lot_28_NE_Corner	33°59'2.05"N	117°25'34.28"W	793	21	814
2022-AWP-21932-OE	Lot_28_NW_Corner	33°59'2.22"N	117°25'34.99"W	798	21	819



2022-AWP-21933-OE	Lot_29_SE_Corner	33°59'0.95"N	117°25'33.33"W	784	21	805
2022-AWP-21934-OE	Lot_29_SW_Corner	33°59'1.12"N	117°25'34.02"W	791	21	812
2022-AWP-21935-OE	Lot_29_NE_Corner	33°59'1.47"N	117°25'33.06"W	785	21	806
2022-AWP-21936-OE	Lot_29_NW_Corner	33°59'1.66"N	117°25'33.73"W	791	21	812
2022-AWP-21937-OE	Lot_30_SE_Corner	33°59'0.70"N	117°25'31.92"W	782	21	803
2022-AWP-21938-OE	Lot_30_SW_Corner	33°59'0.76"N	117°25'32.67"W	782	21	803
2022-AWP-21939-OE	Lot_30_NE_Corner	33°59'1.30"N	117°25'31.60"W	782	21	803
2022-AWP-21940-OE	Lot_30_NW_Corner	33°59'1.49"N	117°25'32.29"W	786	21	807
2022-AWP-21941-OE	Lot_31_SE_Corner	33°59'0.22"N	117°25'30.76"W	776	21	797
2022-AWP-21942-OE	Lot_31_SW_Corner	33°59'0.39"N	117°25'31.46"W	777	21	798
2022-AWP-21943-OE	Lot_31_NE_Corner	33°59'0.83"N	117°25'30.45"W	779	21	800
2022-AWP-21944-OE	Lot_31_NW_Corner	33°59'1.03"N	117°25'31.14"W	780	21	801
2022-AWP-22260-OE	Excavator	33°59'7.29"N	117°25'49.36"W	902	15	917

Aeronautical Obstruction Evaluation Study

Closest Airport: Flabob Airport (RIR)

NAS Facility: Precision Approach Path Indicator

Closest RWY: RWY-6/24 PAPI

PAPI - Precision Approach Path Indicator - a simple visual aid to assist pilots during their approach to landing. It enables pilots to acquire the correct glide slope and subsequently to maintain their position on it, thus ensuring an accurate approach and landing.

Runway Elevation = 749ft.

Bearing of RWY- 6/24 = 256.40°

Bearing of structure = 258.50°

Horizontal of Angle = 2.1°

Distance from RWY- 6/24 = 0.84 Nautical Miles

OCS Reference Angle = 1.75°

Vertical Angle RWY- 6/24 = 1.85°

Obstruction Height = 21ft AGL; 914ft AMSL

Analysis of RWY- 6/24 PAPI Facility

- a. Analyzed, and determined the proposed structure(s)/construction is not within the protection area of the existing PAPI as defined in Figure 4-7. The proposal is not within this protection area, therefore further review is not required.

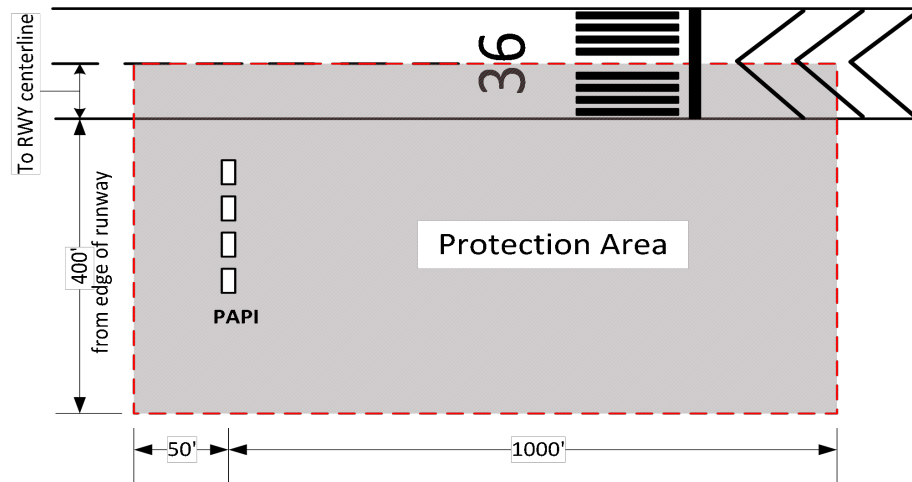
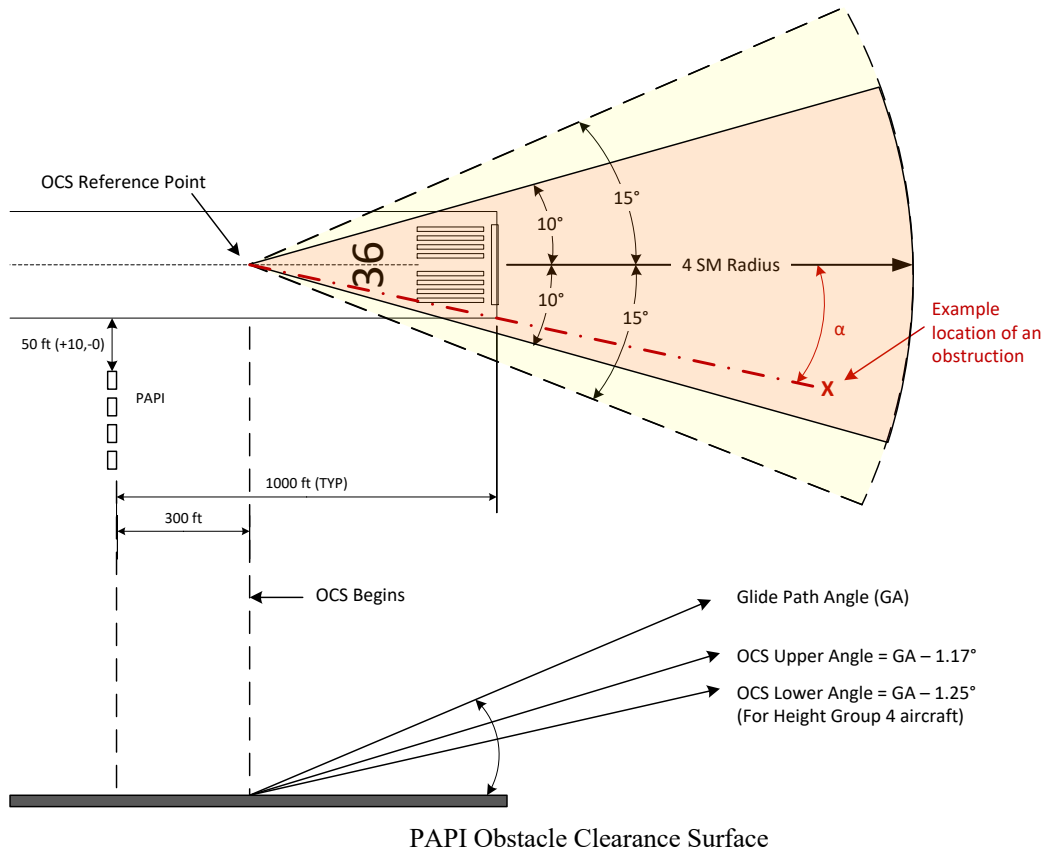


Figure 4-7. PAPI Protection Area

- b. Calculated the angular position (horizontal) of the proposed structure from the Obstacle Clearance Surface (OCS) reference point. The OCS horizontal angle is measured from a reference point along centerline, 300 feet toward threshold from abeam the PAPI, extending out towards the landing aircraft to four statute miles (refer to Figure



The proposed structure(s) is inside an area $\pm 15^\circ$ horizontally from the OCS reference point, with a horizontal angle of **2.10°**. The aeronautical hazard was successfully mitigated with the Federal Aviation Administration by lowering the structure(s) to NEH (No Effect Height).

- c. The PAPI facility is not sited to accommodate Height Group 4 (HG4) aircraft.

NOTE: PAPI facilities serving primary runways at major airports are often sited to accommodate Height Group 4 aircraft (e.g., B-747, A-300, etc.). These PAPIs are typically located approximately 300' further down from the runway threshold from a point abeam the Glide Slope (GS) antenna. If a PAPI is not suited for Height Group 4, the PAPI will typically be sited directly abeam the GS antenna.

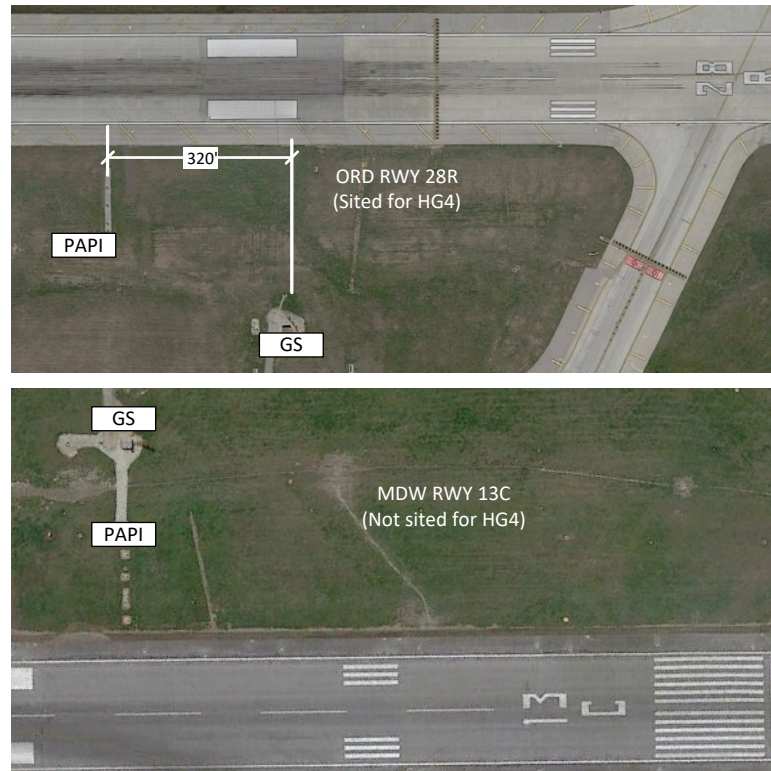


Figure 4-9. HG4 Siting Examples

- d. Calculated the OCS vertical angle, and determined the OCS vertical angle is not dependent upon the PAPI HG4

NOTE: If the PAPI is suited for Height Group 4 (or if height group cannot be determined), calculate the Obstacle Clearance Surface (OCS) lower vertical angle by using the following formula:

$$\text{OCS Lower Angle} = \text{Glide Path Angle} - 1.75^\circ$$

NOTE: If the PAPI is not suited for Height Group 4, calculate the Obstacle Clearance Surface (OCS) upper vertical angle by using the following formula:

$$\text{OCS Upper Angle} = \text{Glide Path Angle} - 1.17^\circ$$

RWY-6/24 Glide Path Angle is 3.0° .

- e. Calculated the vertical angle of the proposed structure(s) from the OCS reference point (refer to Figure 4-10). The elevation of the runway at the OCS reference point is **1.75°** .

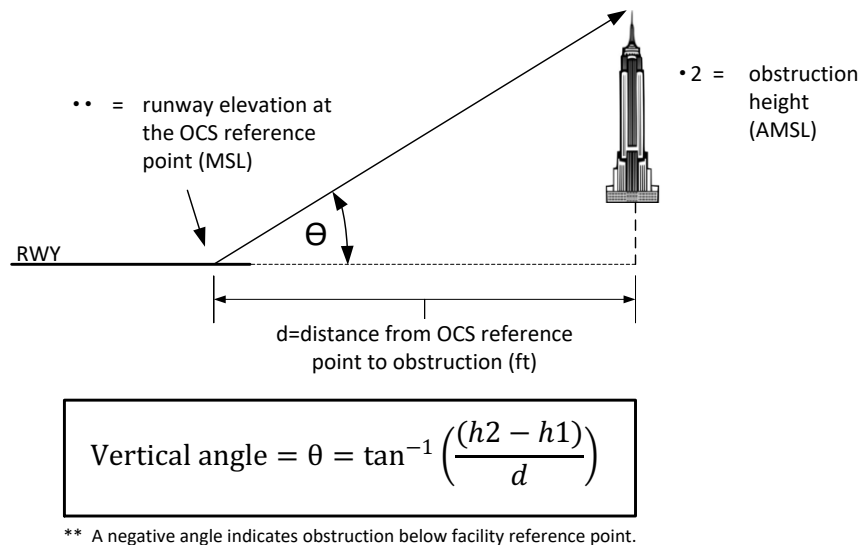


Figure 4-10. Proposed Structure Vertical Angle

- f. The proposed structure(s) vertical angle is 1.85° which penetrates the OCS reference surface (1.75°) associated with RWY-6/24, and its horizontal angle is 2.10°, which is inside the 15° imaginary surface associated with RWY-6/24. The aeronautical hazard was successfully mitigated with the Federal Aviation Administration by lowering the structure(s) to NEH (No Effect Height).

- g. Determined the lateral limits of the PAPI visible light beam.

NOTE: The PAPI flight inspection report states the lateral limits of the light beam for the PAPI serving RWY-6/24 Flabob Airport (RIR) are from 15° left to 13° right (right and left as seen by the pilot on approach to the runway). This PAPI is unrestricted i.e., it is usable within ±10° of runway centerline; however, the light can be seen by the pilot beyond the required coverage area.

NOTE: Many Flight Inspection reports contain only “SAT” for the PAPI angular coverage and do not contain the actual measured angle data. In these cases, the lateral limits of the light beam would be considered “unknown” unless other data is available.

CONCLUSION: Proposed construction of (31) 21ft AGL Homes on Lots 1 – 31 have all been issued “No Hazard to Air Navigation” Determination Letters by The Federal Aviation Administration. FAA Form 7460-2 shall be filed within 5 days of construction reaching its maximum height for each lot.