AIRPORT LAND USE COMMISSION
RIVERSIDE COUNTY

September 19, 2019

Mr. Tim Wheeler, Project Planner
Riverside County Planning Department
4080 Lemon Street, 12th Floor
Riverside CA 92501
(VIA HAND DELIVERY)

County Administrative Center
4080 Lemon St., 14th Floor
Riverside, CA 92501
(951) 955-5132

www.rcaluc.org

RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW

File No.:	ZAP1371MA19
Related File No.:	PPT190011 (Plot Plan)
APNs:	295-310-012 through 295-310-015
Compatibility Zone:	C2 High Terrain Zone

Dear Mr. Wheeler:

On September 12, 2019, the Riverside County Airport Land Use Commission (ALUC) found Riverside County Case No. PPT190011 (Plot Plan), a proposal to construct two industrial manufacturing buildings with a combined total floor area (including mezzanines) of 710,736 square feet (with 30,000 square feet of rooftop solar panels on each building) on 35.76 acres located northerly of Oleander Avenue, westerly of Decker Road, southerly of Nandina Avenue, and easterly of Day Street in the unincorporated community of Mead Valley, **CONSISTENT** with the 2014 March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, subject to the following conditions.

CONDITIONS:

1. Any outdoor lighting installed shall be hooded or shielded so as to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.

2. The following uses/activities are not included in the proposed project and shall be prohibited at this site, in accordance with Note A on Table 4 of the Mead Valley Area Plan.

   (a) Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA-approved navigational signal light or visual approach slope indicator.

   (b) Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.

   (c) Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area.

   (d) Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.

3. The following uses/activities are specifically prohibited at this location: trash transfer stations that are open on one or more sides; recycling centers containing putrescible wastes; construction and demolition debris facilities; wastewater management facilities; incinerators; noise-sensitive outdoor nonresidential uses; and hazards to flight. Children's schools are discouraged.

4. The following uses/activities are not included in the proposed project, but, if they were to be proposed through a subsequent use permit or plot plan, would require subsequent Airport Land Use Commission review:

   Restaurants and other eating establishments; day care centers; health and exercise centers; churches, temples, or other uses primarily for religious worship; theaters.

5. Prior to issuance of any building permits, the landowner shall convey and have recorded an avigation easement to the March Inland Port Airport Authority. Contact March Joint Powers Authority at (951) 656-7000 for additional information.

6. The attached notice shall be given to all prospective purchasers of the property and lessees/tenants of the building.

7. Any detention basins on the site (including water quality management basins) shall be designed so as to provide for a maximum 48-hour detention period following the conclusion of the storm event for the design storm (may be less, but not more), and to remain totally dry between rainfalls. Vegetation in and around the detention basins that would provide food or cover for bird species that would be incompatible with airport operations shall not be utilized in project landscaping.

8. March Air Reserve Base must be notified of any land use having an electromagnetic radiation component to assess whether a potential conflict with Air Base radio communications could result. Sources of electromagnetic radiation include radio wave transmission in conjunction with remote equipment inclusive of irrigation controllers, access gates, etc.

9. Noise attenuation measures shall be incorporated into the design of the office areas of the structures, to the extent such measures are necessary to ensure that interior noise levels from aircraft operations are at or below 45 CNEL.

10. This project has been evaluated for a total of 710,736 square feet of manufacturing area, including 30,000 square feet of office area. Any increase in building area or change in use other than for warehouse, office and manufacturing uses will require an amended review by the Airport Land Use Commission.

11. Solar panels shall incorporate anti-reflective coating and shall be fixed with no rotation. Panels shall have a tilt of 10 degrees and orientation of 160 degrees. Solar panel areas shall be limited to 30,000 square feet per building.

12. Any revisions to the solar panels will require a new solar glare analysis to ensure that the project does not create "yellow" level glare, and require ALUC review.

13. In the event that any incidence of glint, glare, or flash affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an incidence, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such glint, glare, or flash. An "incidence" includes any situation

that results in an accident, incident, "near-miss," or specific safety complaint regarding an in-flight experience to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. Suggested measures may include, but are not limited to, reprogramming the alignment of the panels, covering them at the time of day when incidences of glare occur, or wholly removing panels to diminish or eliminate the source of the glint, glare, or flash. For each such incidence made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator's satisfaction.

14. In the event that any incidence of electrical interference affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an incidence, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such interference. An "incidence" includes any situation that results in an accident, incident, "near-miss," report by airport personnel, or specific safety complaint to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. For each such incidence made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator's satisfaction.

15. The Federal Aviation Administration has conducted aeronautical studies of the proposed buildings (Aeronautical Study Nos. 2019-AWP-8541-OE through 2019-AWP-8548-OE) and has determined that neither marking nor lighting of the structures is necessary for aviation safety. However, if marking and/or lighting for aviation safety are accomplished on a voluntary basis, such marking and/or lighting (if any) shall be installed in accordance with FAA Advisory Circular 70/7460-1 L Change 2 and shall be maintained in accordance therewith for the life of the project.

16. The proposed buildings shall not exceed a height of 62 feet above ground level and a maximum elevation at top point of 1,669 feet above mean sea level.

17. The maximum height and top point elevation specified above shall not be amended without further review by the Airport Land Use Commission and the Federal Aviation Administration; provided, however, that reduction in structure height or elevation shall not require further review by the Airport Land Use Commission.

18. Temporary construction equipment used during actual construction of the buildings shall not exceed 62 feet in height and a maximum elevation of 1,669 feet above mean sea level, unless separate notice is provided to the Federal Aviation Administration through the Form 7460-1 process.

19. Within five (5) days after construction of each proposed structure reaches its greatest height, FAA Form 7460-2 (Part II), Notice of Actual Construction or Alteration, shall be completed by the project proponent or his/her designee and e-filed with the Federal Aviation Administration. (Go to https://oeaaa.faa.gov for instructions.) This requirement is also applicable in the event the project is abandoned or a decision is made not to construct the applicable structure(s).

If you have any questions, please contact Paul Rull, ALUC Principal Planner, at (951) 955-6893.

Sincerely,
RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

Simon A. Housman, ALUC Director

Attachments: Notice of Airport in Vicinity
Aeronautical Study Numbers 2019-AWP-8541-OE thru 2019-AWP-8548-OE

cc: Patrick Russell or Brad Nielsen, SRG Perris, LP/Sares-Regis Group (applicant/owner)
Norah Jaffan, EPD Solutions (representative)
Nick Johnson, Johnson Aviation (representative)
Gary Gosliga, March Inland Port Airport Authority
Base Civil Engineer, March Air Reserve Base
ALUC Case File

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NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances [can vary from person to person. You may wish to consider what airport annoyances], if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you. Business & Professions Code Section 11010 (b)(13)(A)

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-AWP-8541-OE

Issued Date: 08/15/2019

Patrick Russell
SRG Perris, L.P.
18802 Bardeen Avenue
Irvine, CA 92612-1521

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building MV-A-1
Location:	Perris, CA
Latitude:	33-51-42.70N NAD 83
Longitude:	117-16-19.21W
Heights:	1630 feet site elevation (SE)
	34 feet above ground level (AGL)
	1664 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 02/15/2021 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSI . OF THE EFFECTIVE PERIOD OF TI . DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

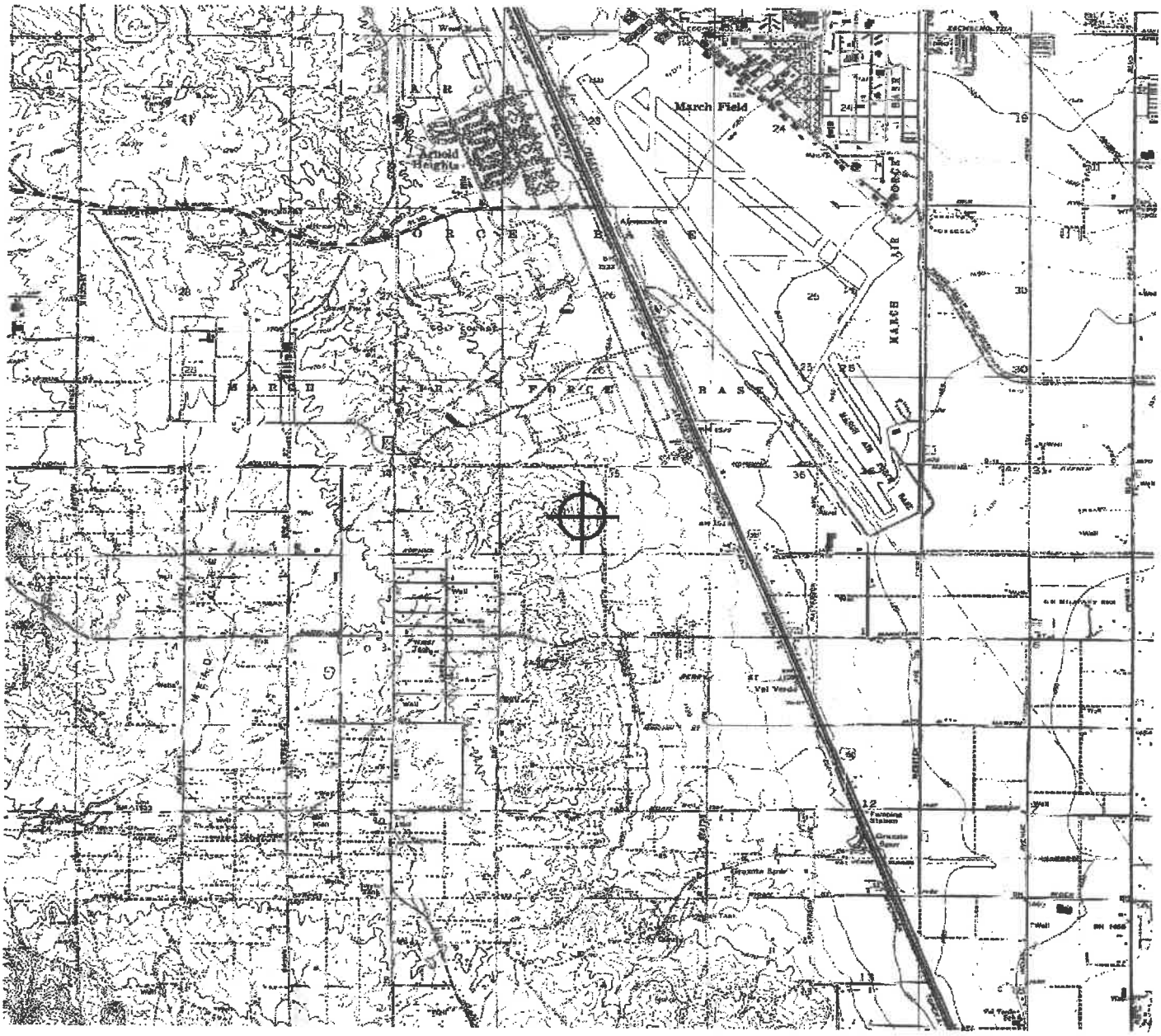
This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (424) 405-7643, or karen.mcdonald@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AWP-8541-OE.

Signature Control No: 411360903-414489808 (DNE)
Karen McDonald
Specialist

Attachment(s)
Map(s)


March Field
Arnold Heights
MARCH AIR FORCE BASE
MARCH AIR FORCE BASE
MARCH AIR FORCE BASE
Val Verde

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10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-AWP-8542-OE

Issued Date: 08/15/2019

Patrick Russell
SRG Perris, L.P.
18802 Bardeen Avenue
Irvine, CA 92612-1521

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building MV-A-2
Location:	Perris, CA
Latitude:	33-51-42.31N NAD 83
Longitude:	117-16-14.33W
Heights:	1600 feet site elevation (SE) 65 feet above ground level (AGL) 1665 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 02/15/2021 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

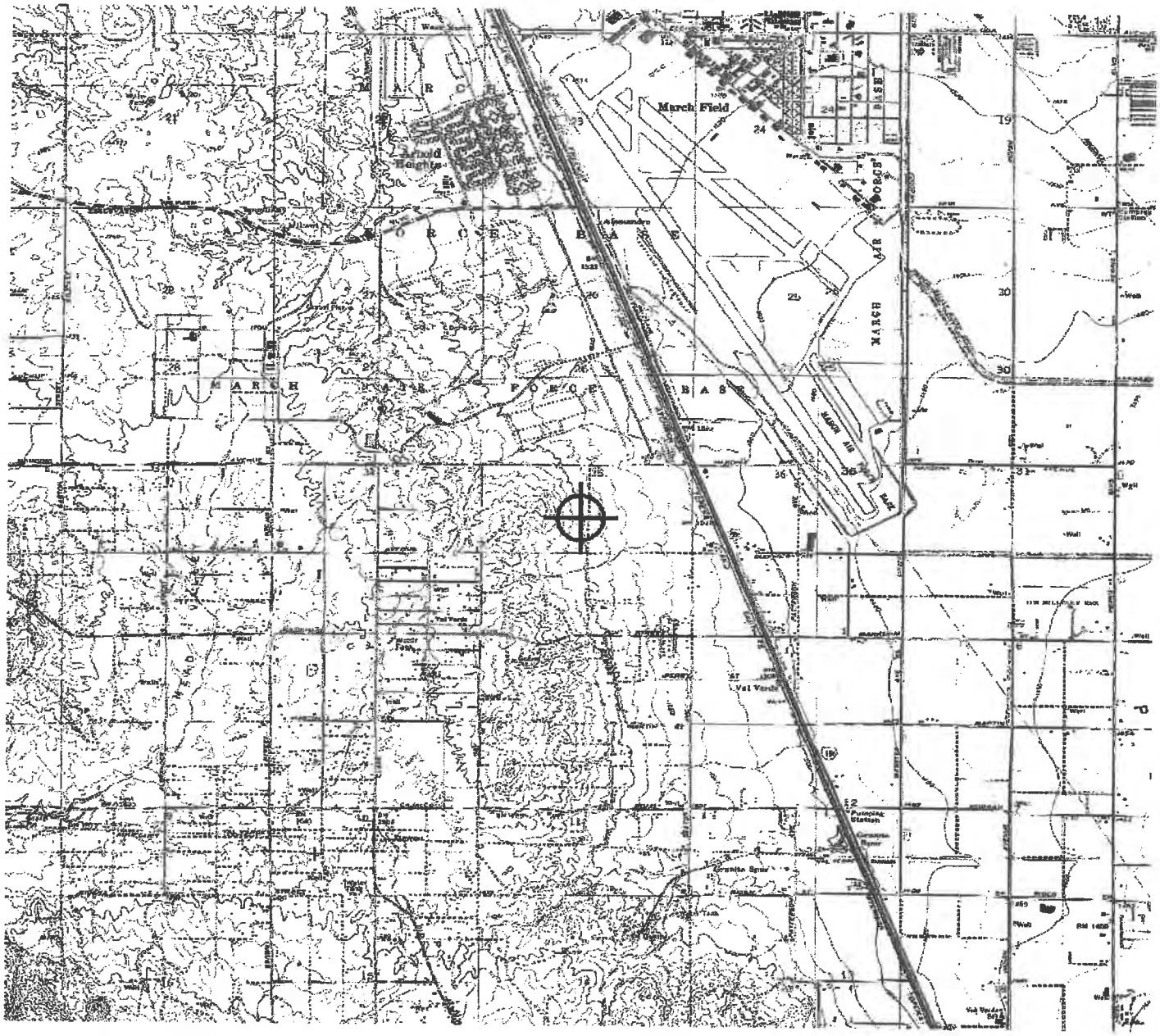
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (424) 405-7643, or karen.mcdonald@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AWP-8542-OE.

Signature Control No: 411360904-414489802 (DNE)
Karen McDonald
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2019-AWP-8542-OE



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Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-AWP-8543-OE

Issued Date: 08/15/2019

Patrick Russell
SRG Perris, L.P.
18802 Bardeen Avenue
Irvine, CA 92612-1521

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building MV-A-3
Location:	Perris, CA
Latitude:	33-51-33.38N NAD 83
Longitude:	117-16-14.45W
Heights:	1607 feet site elevation (SE)
	62 feet above ground level (AGL)
	1669 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 02/15/2021 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

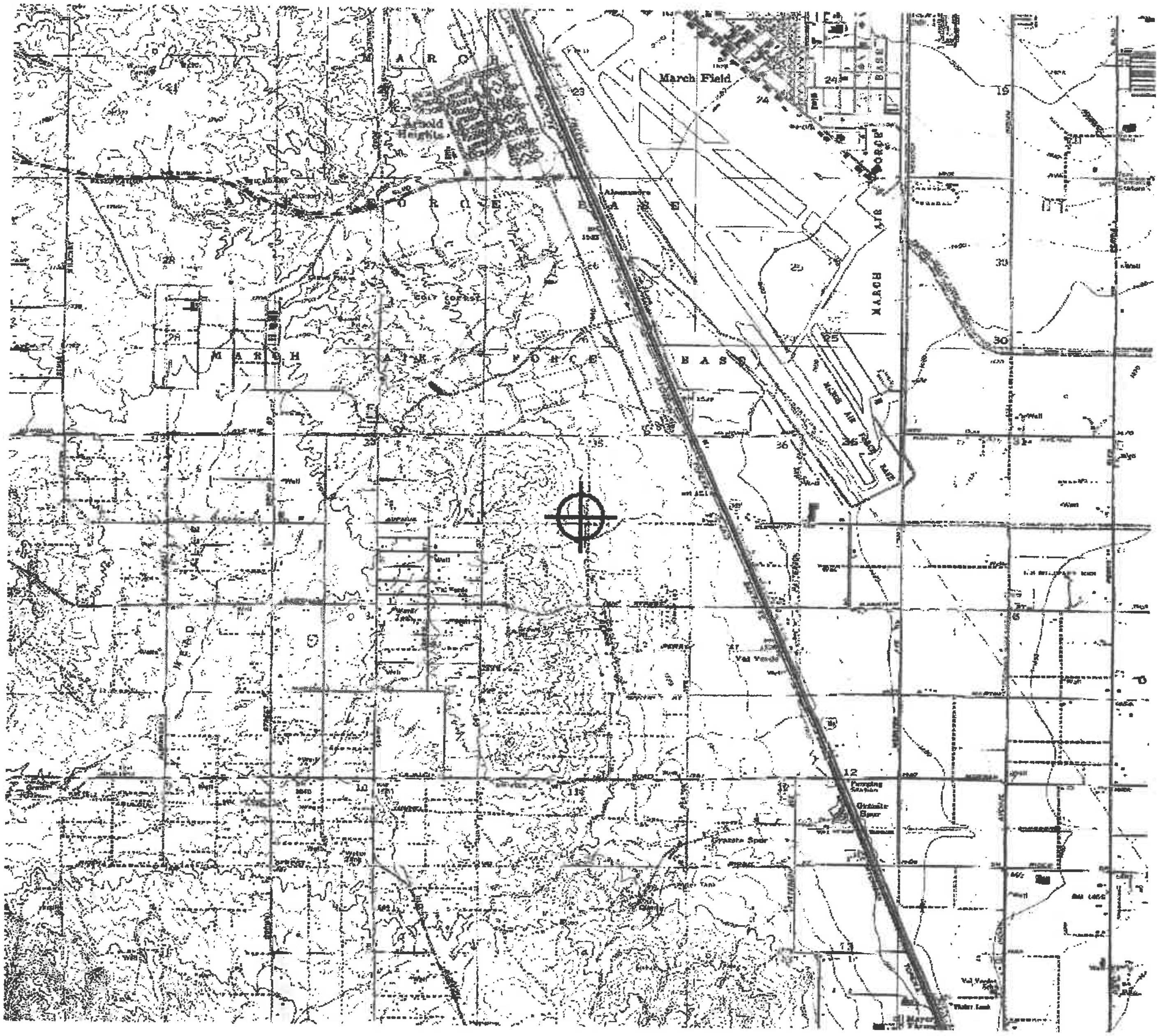
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (424) 405-7643, or karen.mcdonald@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AWP-8543-OE.

Signature Control No: 411360905-414489807 (DNE)
Karen McDonald
Specialist

Attachment(s)
Map(s)

T[illegible]O Map for ASN 2019-AWP-8543-OE



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Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-AWP-8544-OE

Issued Date: 08/15/2019

Patrick Russell
SRG Perris, L.P.
18802 Bardeen Avenue
Irvine, CA 92612-1521

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building MV-A-4
Location:	Perris, CA
Latitude:	33-51-33.05N NAD 83
Longitude:	117-16-19.31W
Heights:	1620 feet site elevation (SE) 48 feet above ground level (AGL) 1668 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 02/15/2021 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSI(OF THE EFFECTIVE PERIOD OF TH DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

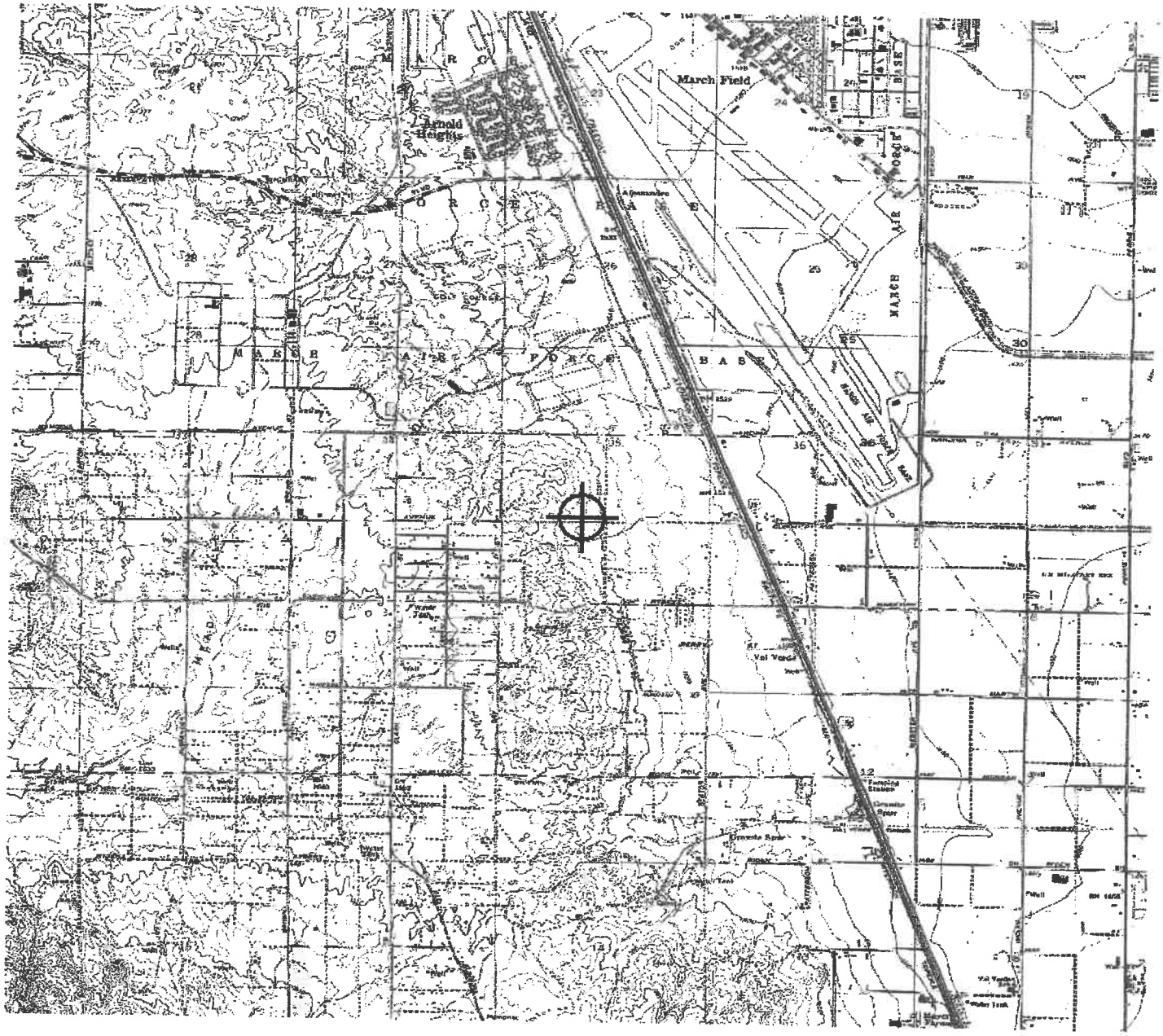
This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (424) 405-7643, or karen.mcdonald@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AWP-8544-OE.

Signature Control No: 411360906-414489803 (DNE)
Karen McDonald
Specialist

Attachment(s)
Map(s)


March Field
Arnold Heights
MARCH AIR FORCE BASE
MARCH AIR FORCE BASE
MARCH AIR RESERVE BASE
Val Verde

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Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-AWP-8545-OE

Issued Date: 08/15/2019

Patrick Russell
SRG Perris, L.P.
18802 Bardeen Avenue
Irvine, CA 92612-1521

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building MV-B-1
Location:	Perris, CA
Latitude:	33-51-56.21N NAD 83
Longitude:	117-16-19.06W
Heights:	1597 feet site elevation (SE) 47 feet above ground level (AGL) 1644 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 02/15/2021 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

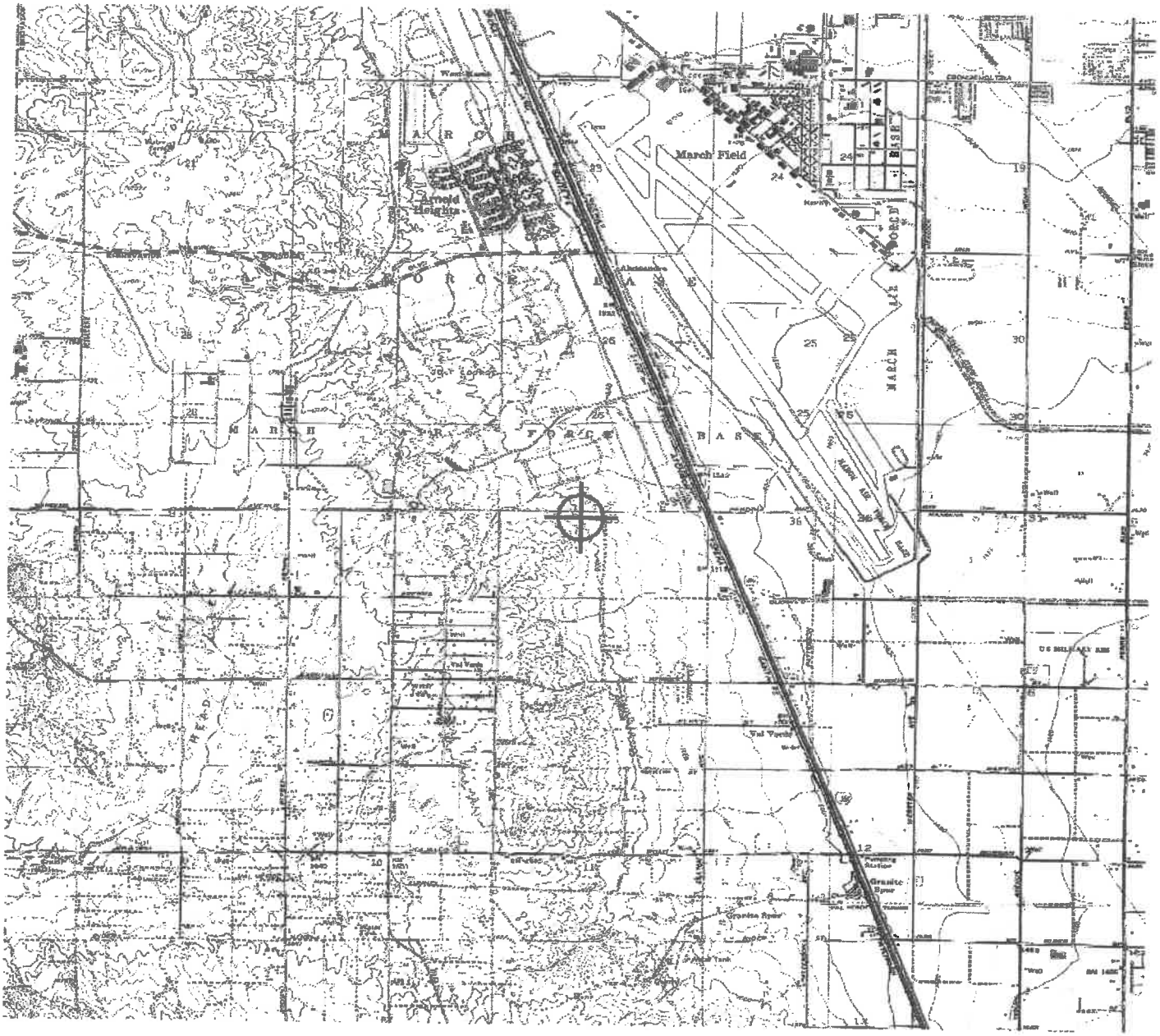
This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (424) 405-7643, or karen.mcdonald@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AWP-8545-OE.

Signature Control No: 411360907-414489809 (DNE)
Karen McDonald
Specialist

Attachment(s)
Map(s)


March Field
Arnold Heights
MARCH AIR FORCE BASE
MARCH AIR FORCE BASE
Val Verde
Granite Spur

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-AWP-8546-OE

Issued Date: 08/15/2019

Patrick Russell
SRG Perris, L.P.
18802 Bardeen Avenue
Irvine, CA 92612-1521

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building MV-B-2
Location:	Perris, CA
Latitude:	33-51-55.75N NAD 83
Longitude:	117-16-14.22W
Heights:	1576 feet site elevation (SE) 69 feet above ground level (AGL) 1645 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 02/15/2021 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

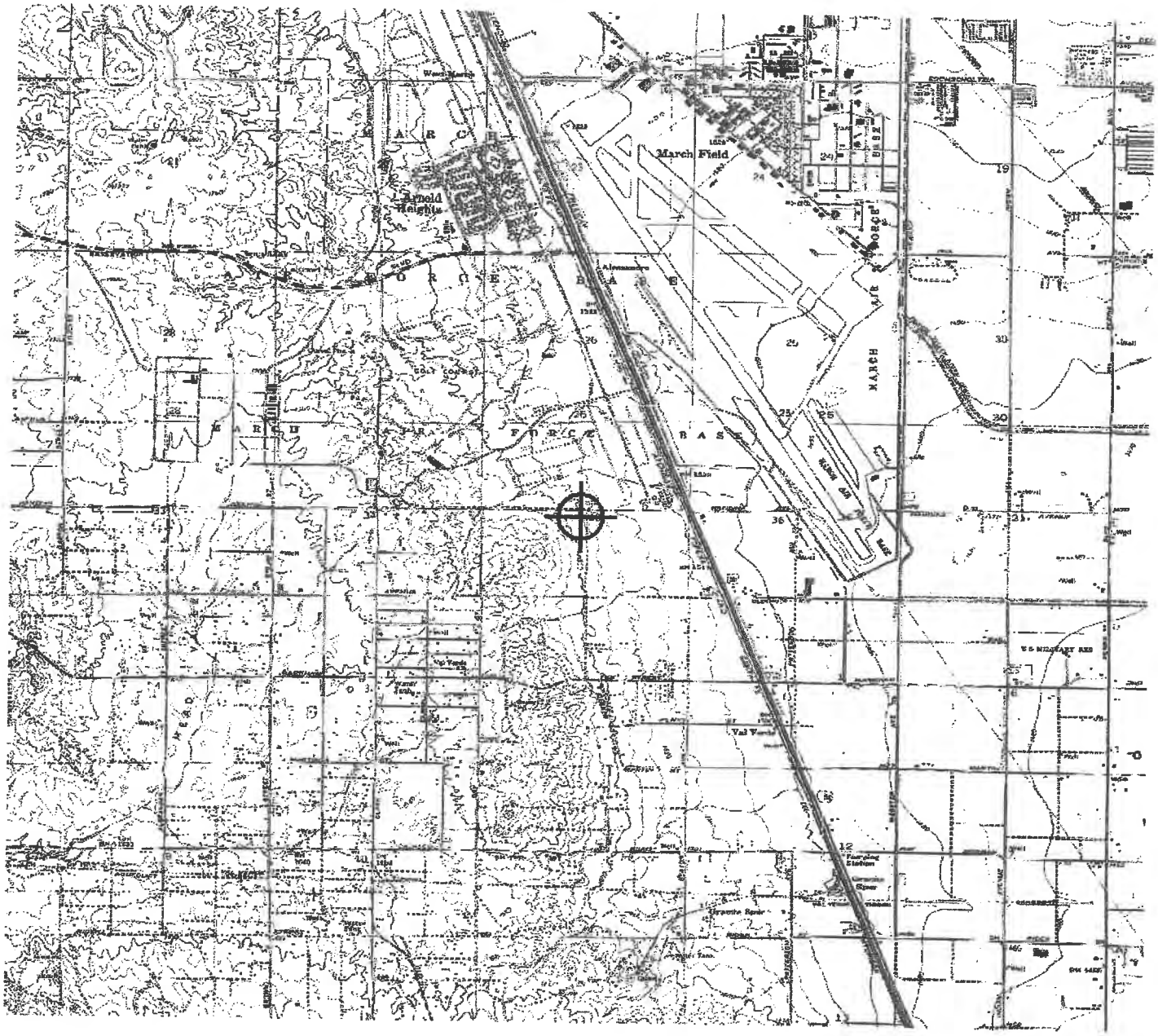
This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (424) 405-7643, or karen.mcdonald@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AWP-8546-OE.

Signature Control No: 411360908-414489805 (DNE)
Karen McDonald
Specialist

Attachment(s)
Map(s)


March Field
Arnold Heights
MARCH AIR FORCE BASE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-AWP-8547-OE

Issued Date: 08/15/2019

Patrick Russell
SRG Perris, L.P.
18802 Bardeen Avenue
Irvine, CA 92612-1521

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building MV-B-3
Location:	Perris, CA
Latitude:	33-51-47.43N NAD 83
Longitude:	117-16-14.31W
Heights:	1597 feet site elevation (SE)
	53 feet above ground level (AGL)
	1650 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 02/15/2021 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

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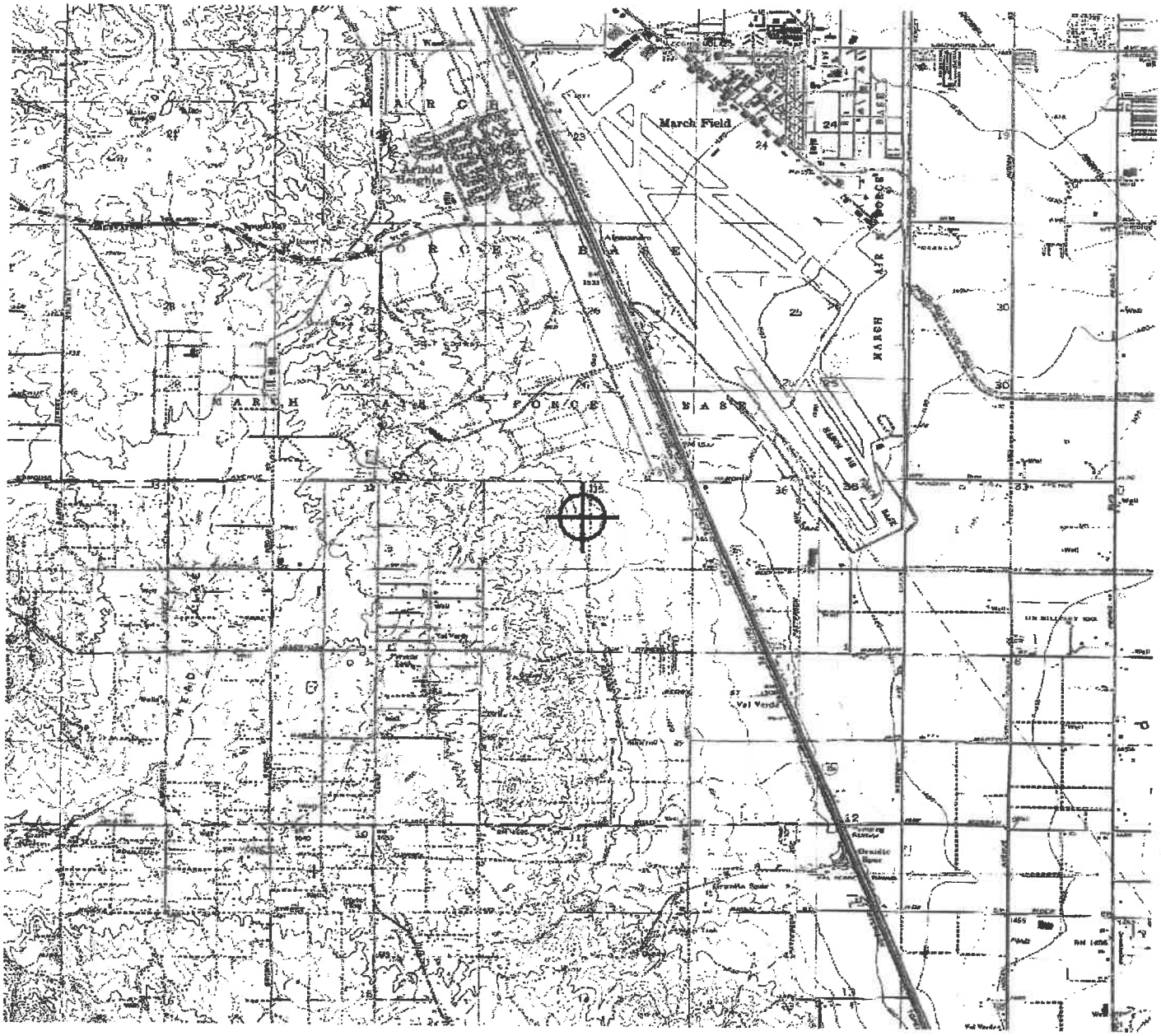
This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (424) 405-7643, or karen.mcdonald@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AWP-8547-OE.

Signature Control No: 411360909-414489806 (DNE)
Karen McDonald
Specialist

Attachment(s)
Map(s)


March Field
Arnold Heights
MARCH AIR FORCE BASE
MARCH
Val Verde

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-AWP-8548-OE

Issued Date: 08/15/2019

Patrick Russell
SRG Perris, L.P.
18802 Bardeen Avenue
Irvine, CA 92612-1521

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building MV-B-4
Location:	Perris, CA
Latitude:	33-51-47.06N NAD 83
Longitude:	117-16-19.16W
Heights:	1625 feet site elevation (SE)
	24 feet above ground level (AGL)
	1649 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 02/15/2021 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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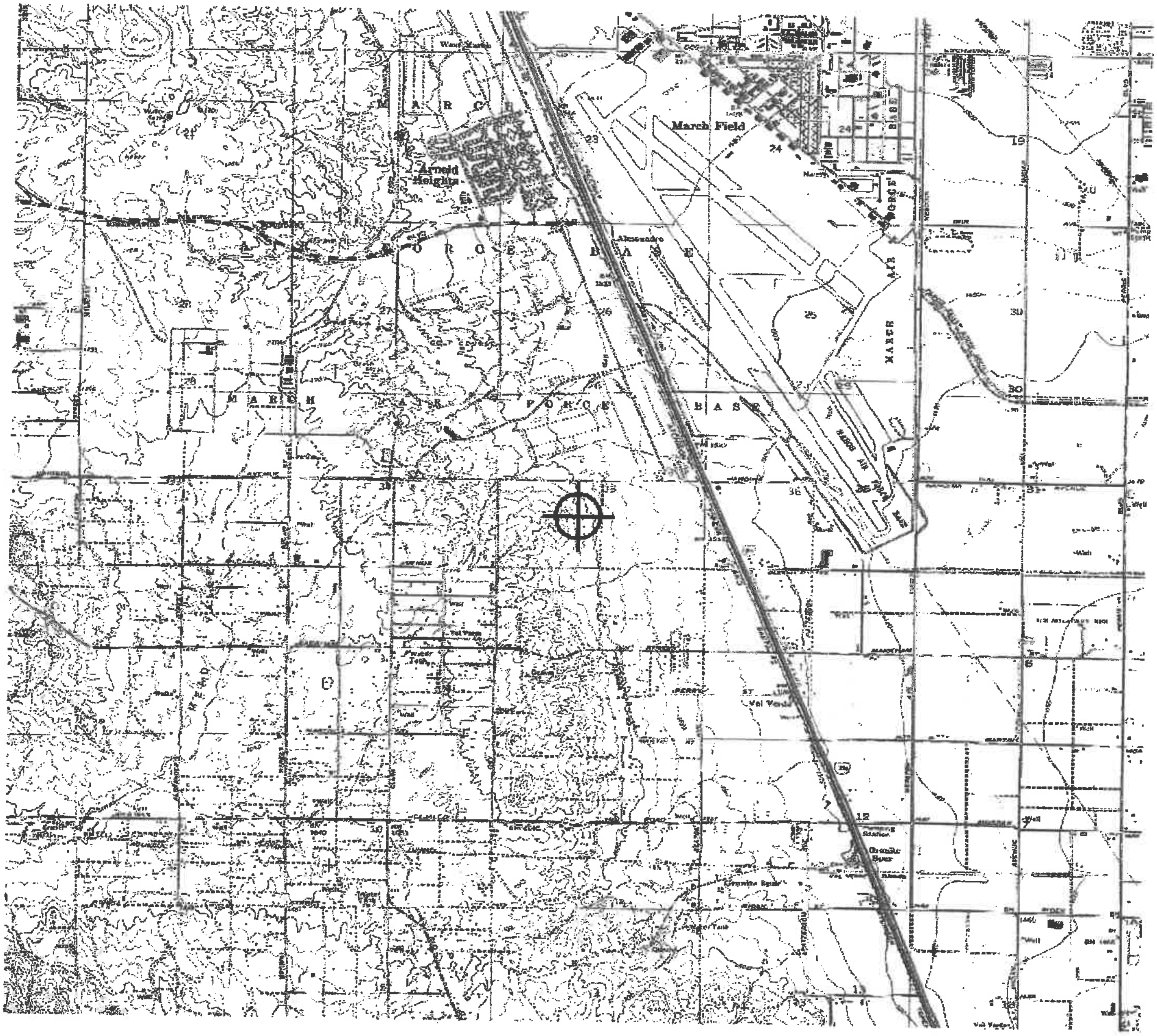
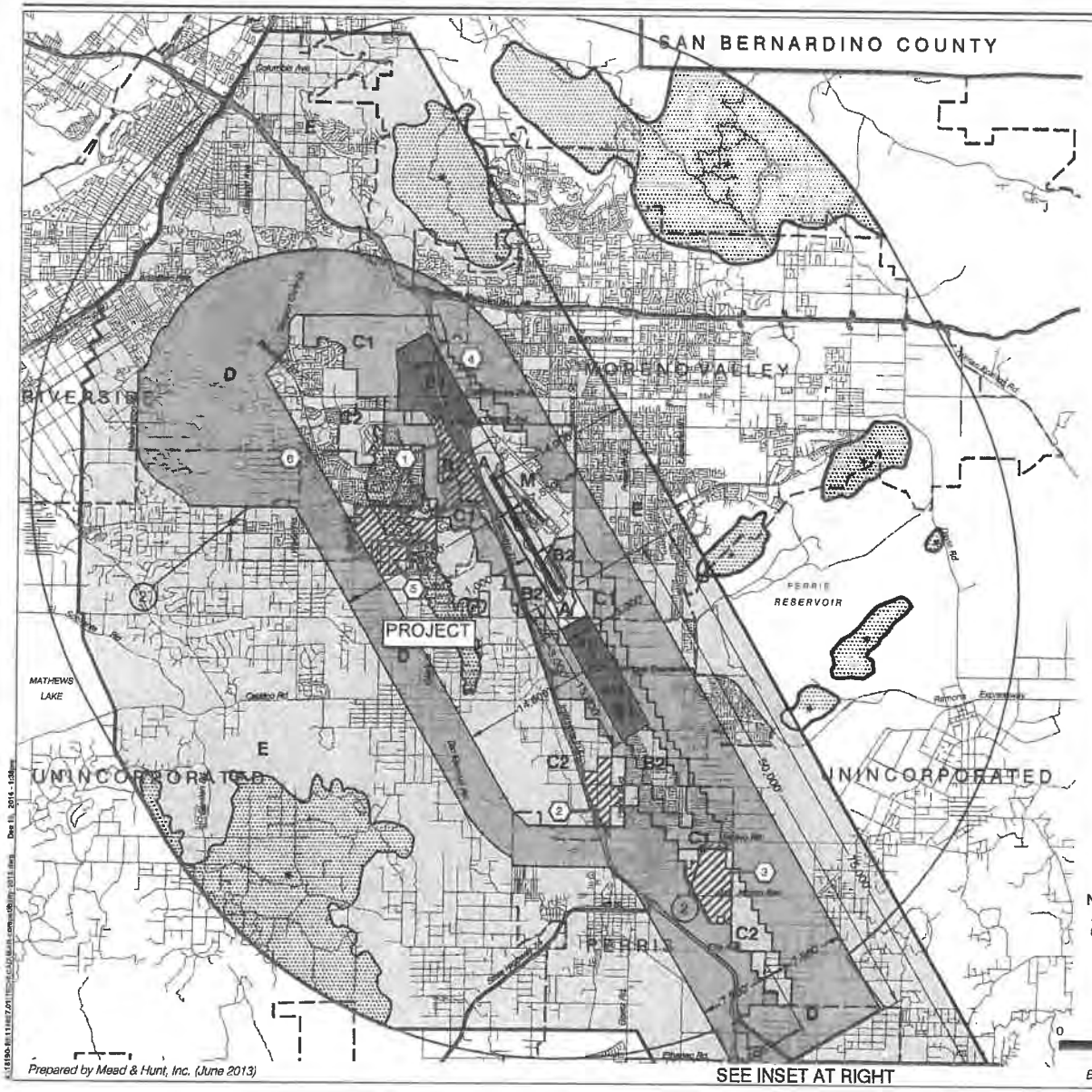
If we can be of further assistance, please contact our office at (424) 405-7643, or karen.mcdonald@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AWP-8548-OE.

Signature Control No: 411360910-414489804 (DNE)
Karen McDonald
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2019-AWP-8548-OE





LEGEND

Compatibility Zones

- Airport Influence Area Boundary
- Zone A
- Zone B1
- Zone B2
- Zone C1
- Zone C2
- Zone D
- Zone E
- Zone M
- High Terrain Zone
- FAR Part 77 Military Outer Horizontal Surface Limits
- FAR Part 77 Notification Area

(1) Point at which aircraft on Runway 32 ILS approach descend below 3,000 feet above runway end. Airport Elevation is 1,535 feet MSL.

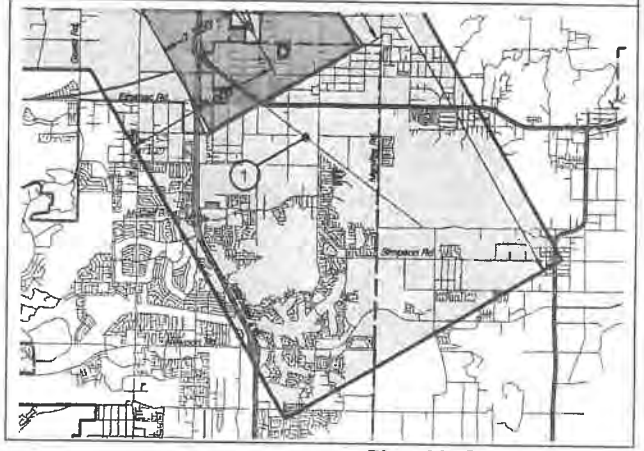
(2) Point at which departing aircraft typically reach 3,000 feet above runway end.

Boundary Lines

- March Air Reserve Base / Air Force Property
- March Joint Powers Authority Property Line
- County Boundary
- City Limits
- Site-Specific Exceptions (existing local agency commitments to development projects)

(1) March JPA: March Business Center/Meridian
(2) Perris: Harvest Landing
(3) Perris: Park West
(4) Moreno Valley: Affordable Housing
(5) March JPA: Ben Clark Training Center
(6) Riverside: Ridge Crest Subdivision

INSET



Note:
All dimensions are measured from runway ends and centerlines.

N

0 2 4 MILES

Base map source: County of Riverside 2013

Riverside County Airport Land Use Commission

March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan

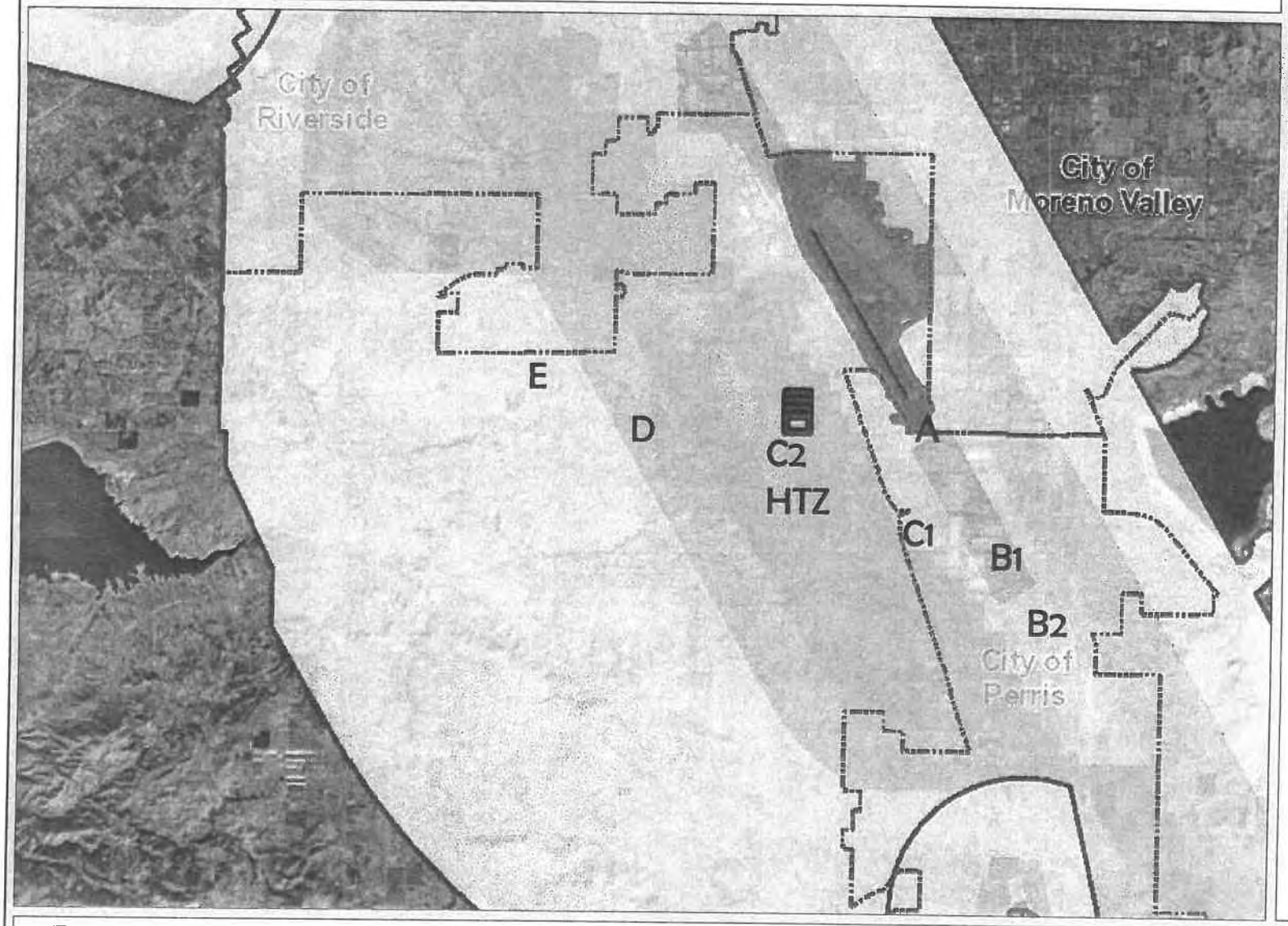
(Adopted November 13, 2014)

Map MA-1

Compatibility Map

March Air Reserve Base / Inland Port Airport

Map My County Map



Legend

- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones
  - OTHER COMPATIBILITY ZONE
  - A
  - A-EXC1
  - B1
  - B1-APZ I
  - B1-APZ I-EXC1
  - B1-APZ II
  - B1-APZ II-EXC1
  - B1-EXC1
  - B2
  - B2-EXC1
  - C
  - C1
  - C1-EXC1
  - C1-EXC3
  - C1-EXC4
  - C1-HIGHT
  - C2
  - C2-EXC1
  - C2-EXC2
  - C2-EXC3
  - C2-EXC5
  - C2-EXC6

0 12 24,254 Feet

IMPORTANT Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

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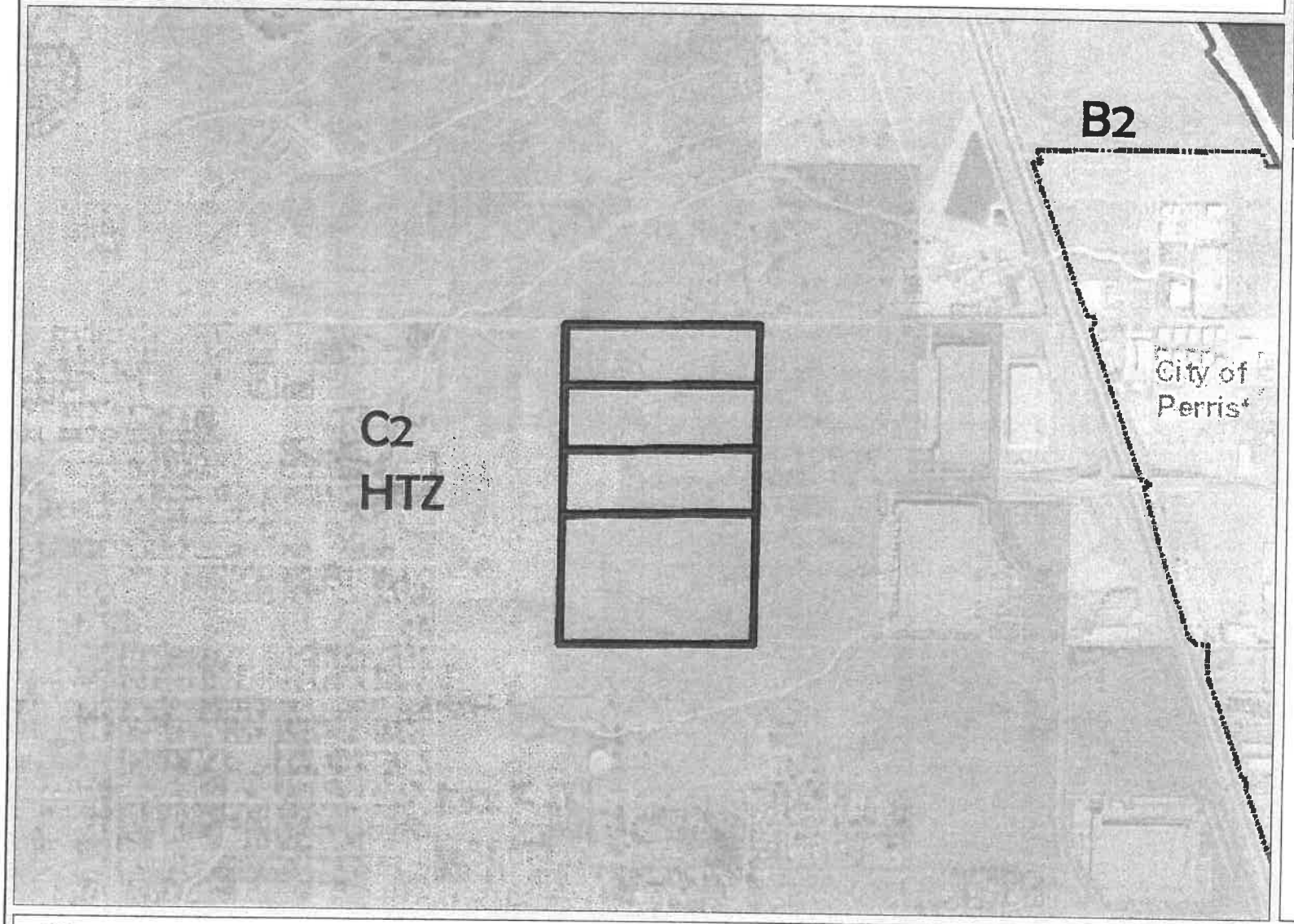
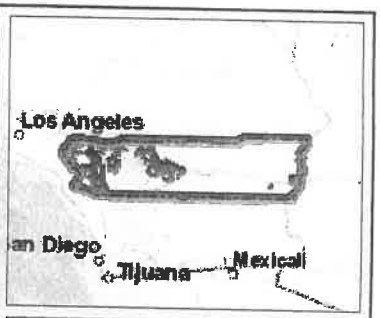
Notes

Map My County Map





Legend

- Runways
- Airports
- Airport Influence Areas
- Airport Compatibility Zones
  - OTHER COMPATIBILITY ZONE
  - A
  - A-EXC1
  - B1
  - B1-APZ I
  - B1-APZ I-EXC1
  - B1-APZ II
  - B1-APZ II-EXC1
  - B1-EXC1
  - B2
  - B2-EXC1
  - C
  - C1
  - C1-EXC1
  - C1-EXC3
  - C1-EXC4
  - C1-HIGHT
  - C2
  - C2-EXC1
  - C2-EXC2
  - C2-EXC3
  - C2-EXC5
  - C2-EXC6

0 1,516 3,032 Feet

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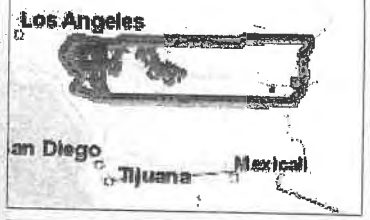
REPORT PRINTED ON... 6/6/2019 7:54:41 AM

Notes

Map My County Map



Legend

City Areas

World Street Map

0 12,127 24,254 Feet

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Notes

Map My County Map

Legend

- Blueline Streams
- City Areas
- World Street Map

Notes

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0 6,064 12,127 Feet

REPORT PRINTED ON... 6/6/2019 7:56:51 AM

Map My County Map

Legend

- Blueline Streams
- City Areas
- World Street Map

0 3, 6,064 Feet

032

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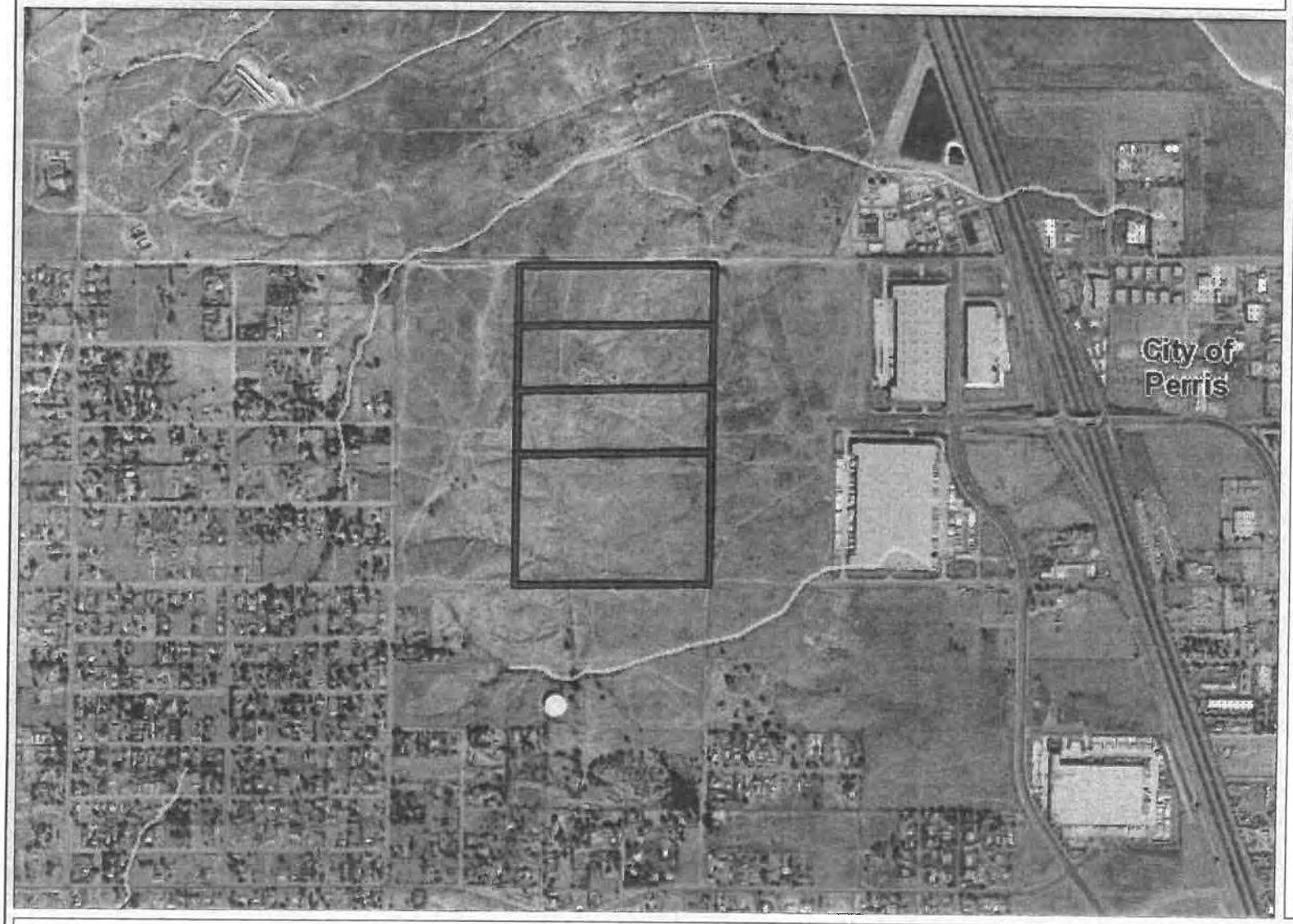
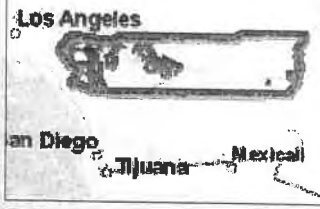
REPORT PRINTED ON... 6/6/2019 7:57:12 AM

Notes

Map My County Map





Legend

- Blueline Streams
- City Areas
- World Street Map

0 1,516 3,032 Feet

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REPORT PRINTED ON... 6/6/2019 7:57:31 AM

Notes

IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA
MEAD VALLEY BUSINESS PARK - PLOT PLAN NO. ______

OWNER:
SARES REGIS GROUP
18802 BARDEEN AVE.
IRVINE, CA 92612
PHONE: (949) 756-5959
FAX: (949) 756-5955
PRUSSELL@SARES-REGIS.COM

APPLICANT:
SARES REGIS GROUP
18802 BARDEEN AVE.
IRVINE, CA 92612
PHONE: (949) 756-5959
FAX: (949) 756-5955
PRUSSELL@SARES-REGIS.COM

ENGINEER:
MICHAEL BAKER INTERNATIONAL
CESAR MOTA
5 HUTTON CENTRE DRIVE, SUITE 500
SANTA ANA, CA 92707
PHONE: (949) 855-7051
CESAR.MOTA@MBAKERINTL.COM

ARCHITECT:
RGA OFFICE OF ARCHITECTURAL DESIGN
15231 ALTON PARKWAY, SUITE 100
IRVINE, CA 92618
PHONE: (949) 341-0920
FAX: (949) 341-0922

ASSESSOR'S PARCEL NUMBER(S):
295-310-012
295-310-013
295-310-014
295-310-015

LAND USE/ZONING:

PROPOSED LAND USE:	BUSINESS PARK
PROPOSED ZONING:	I-P
RIVERSIDE COUNTY SPECIFIC PLAN:	MEAD VALLEY AREA PLAN

UTILITY COMPANIES:

WATER:	EASTERN MUNICIPAL WATER DISTRICT
SEWER:	EASTERN MUNICIPAL WATER DISTRICT
ELECTRIC:	SOUTHER CALIFORNIA EDISON
TELEPHONE:	VERIZON
GAS:	SOUTHERN CALIFORNIA GAS COMPANY

SCHOOL DISTRICT:
VAL VERDE UNIFIED SCHOOL DISTRICT

SITE ADDRESS:
WEST SIDE OF DECKER ROAD BETWEEN NANDINA AVENUE & OLEANDER AVENUE, UNINCORPORATED RIVERSIDE COUNTY, CALIFORNIA

EARTHWORK ESTIMATE:

CUT:	380,000 CY
FILL:	311,000 CY
NET:	69,000 CY EXPORT
PLACEMENT OF EXPORT:	TBD

ACREAGE:

LEGAL DESCRIPTION (FEE)= GROSS=	4,087,989 S.F (GROSS) 93.847 ACRES (GROSS)
PROPOSED DEDICATION OF STREET	135,087 S.F. 3.101 ACRES (DED)
PROPOSED ACQUISITION OF STREET	6,856 S.F. 0.157 ACRES (ACQUIRE)
NET= GROSS - DEDICATION + ACQUISITION=	3,959,758 S.F. (NET) 90.904 ACRES (NET)

TOPOGRAPHY
AEROTECH MAPPING, INC
25970 TECHNOLOGY DRIVE,
SUITE 220-C
MURRIETA, CA 92563
PHONE: (818) 809-5020

SITE TABULATION	BUILDING AREA A
PROPOSED PARCEL GROSS AREA	805,849 SF (18.50 AC
BUILDING AREA:	
-FOOTPRINT	348,367
-MEZZANINE	15,000
-TOTAL	363,367
[illegible]	45.09
TOTAL PARKING REQUIRED:	217 ST[illegible]
PARKING PROVIDED:	
-ST[illegible]	229 ST[illegible]
-ADA	6 ST[illegible]
-EV	12 [illegible]
-TOTAL	247 ST[illegible]
TRAILER STALLS:	60 ST[illegible]
LANDSCAPE REQUIRED:	120,887 SF/ 15.[illegible]
LANDSCAPE PROVIDED:	182,323 SF/ 22.5[illegible]

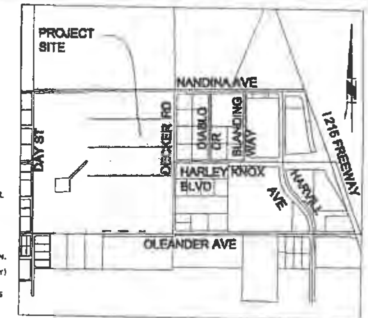
SITE TABULATION	BUILDING AREA B
PROPOSED PARCEL GROSS AREA	[illegible] (17.26 AC
BUILDING AREA:	
-FOOTPRINT	332,369
-MEZZANINE	15,000
-TOTAL	347,369
LOT COVERAGE:	45.19
TOTAL PARKING REQUIRED:	209 STALL
PARKING PROVIDED:	
-STANDARD	206 STALL
-ADA	6 STALL
-EV	12 ST[illegible]
-TOTAL	224 ST[illegible]
TRAILER STALLS:	[illegible] ST[illegible]
LANDSCAPE REQUIRED:	[illegible] 15.[illegible]
LANDSCAPE PROVIDED:	[illegible] 22.[illegible]

PROJECT DESCRIPTION:
PROPOSED SITE TO BE DEVELOPED FOR INDUSTRIAL/COMMERCIAL WAREHOUSE USE. IMPROVEMENT WILL INCLUDE (2) NEW BUILDINGS, PAVED DRIVE AISLES, TRUCK DOCKS, GRADED LAND TO JOIN EXISTING SURROUNDING VICINITY, AND UTILITIES TO SUPPORT PROPOSED CONSTRUCTION. BUILDING A IS 363,000± SF CONSTRUCTED ON PARCEL 1 (18.5± ACRES) AND BUILDING B IS 347,000± SF CONSTRUCTED ON PARCEL 2 (17.3± ACRES.)

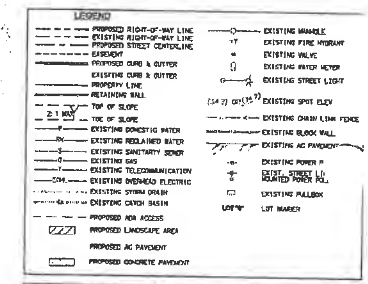
LEGAL DESCRIPTION:
THE LAND REFERRED TO HEREIN IS SITUATED IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCELS 1, 2, 3, AND 4 OF PARCEL MAP NO. 5128, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 8 PAGE 54 OF PARCELS MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

NOTES:
1. 2008 THOMAS BROS. MAP-PAGE 747, GRID C6
2. FEMA COMMUNITY PANEL NO. 06065C1410G, ZONE X (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), COUNTY OF RIVERSIDE.
3. SUBSURFACE SEPTIC SEWAGE IS NOT INTENDED FOR THIS SITE.
4. THERE ARE NO EXISTING BUILDINGS ON THIS SITE.
5. THERE ARE NO MOBILEHOMES OR RECREATIONAL VEHICLES ON THIS SITE.
6. UNIFORM BUILDING CODE OCCUPANCY GROUP: B/S-1
7. CONSTRUCTION TYPE: III-B
8. PARCEL MAP SHALL BE SUBDIVIDED THROUGH A LOT-LINE ADJUSTMENT
9. ALL MODIFIED STREET SECTIONS ARE PER AN ALTERNATE TRAFFIC CIRCULATION.
10. THIS AREA IS NOT SUBJECT TO LIQUEFACTION OR OTHER GEOLOGIC HAZARDS NOTED WITHIN ANY SPECIAL STUDIES ZONES. (TO BE VERIFIED BY SOIL STUDY)
11. EXISTING AND PROPOSED EASEMENTS ARE AS SHOWN ON THIS SITE.
12. THERE ARE NO OPEN CHANNELS PROPOSED ON THIS SITE.
13. REFER TO APPROVED ARCHITECTURAL ELEVATIONS FOR WALL & FENCING DETAILS
14. ALL EXISTING UTILITIES ON THIS PLAN ARE APPROXIMATE IN LOCATION AND SIZE.
15. PARKING STALLS ARE: STANDARD: 9'X18'
16. END AISLE PARKING STALLS ARE 11' WIDE PER COUNTY ORD. 348, SECTION 18.12



VICINITY MAP
NOT TO SCALE

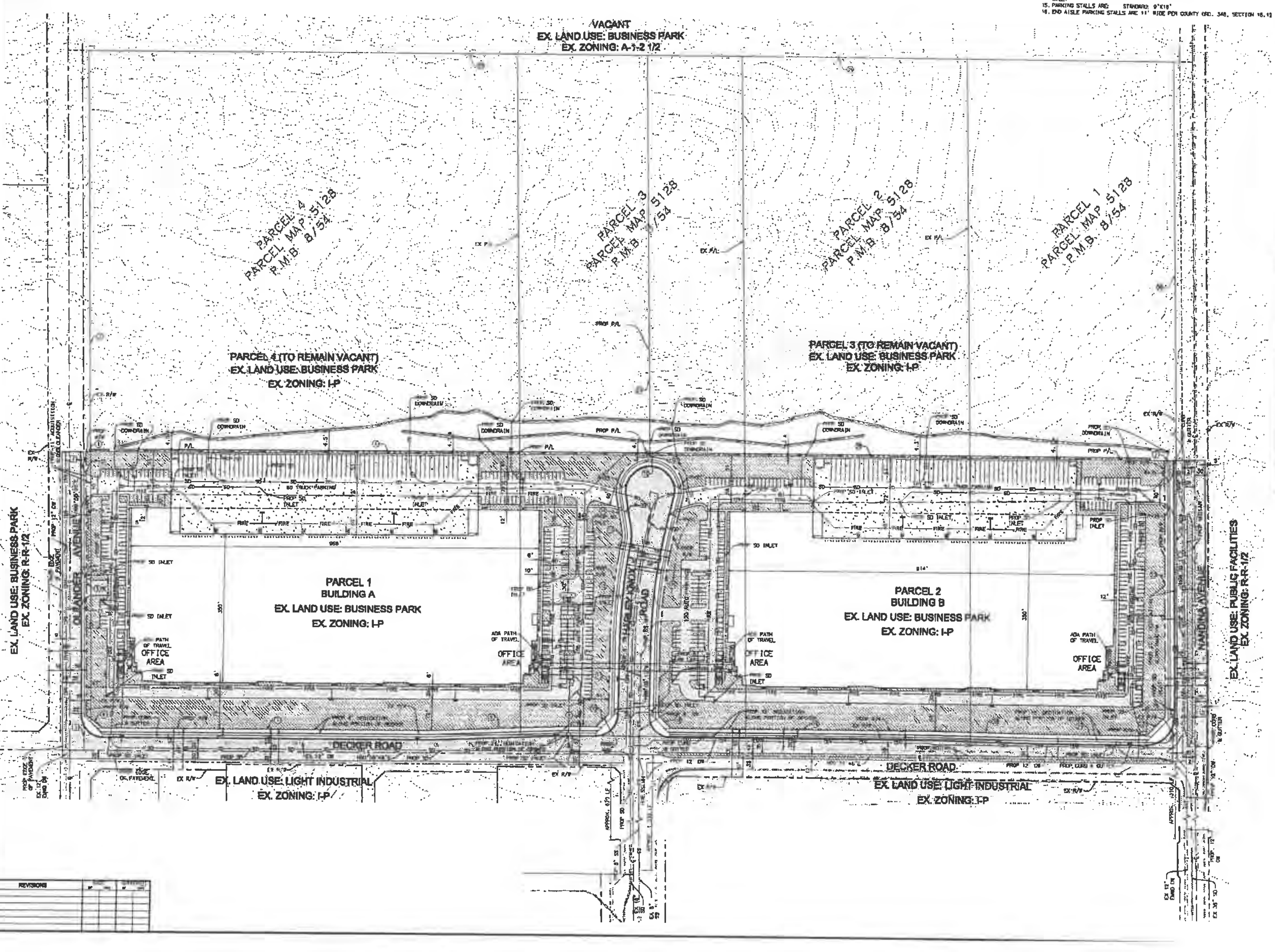


ABBREVIATION

BC	BEGIN CURVE
BO	BLOW OFF
BCR	BEGIN CURB RETURN
C&G	CURB AND GUTTER
CF	CURB FACE
CL	CENTERLINE
DW	DOMESTIC WATER
ESMT	EASEMENT
EC	END CURVE
ECR	END CURB RETURN
EG	EXISTING GRADE
EX	EXISTING
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FS	FINISH SURFACE
GB	GRADE BREAK
GF	GARAGE FLOOR
INV	INVERT
LAT	LATERAL
MH	MANHOLE
PE	PAD ELEVATION
PL	PROPERTY/LOT LINE
PROP	PROPOSED
R/W	RIGHT OF WAY
SD	STORM DRAIN
SS	SEWER
SW	SIDEWALK
TC	TOP OF CURB
TF	TOP OF FOOTING
TG	TOP OF GRATE
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE

LINE/CURVE DATA TABLE

#	BEARING/DELTA	RADIUS	LENGTH	TANGENT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



EASEMENTS
*[1] AN EASEMENT FOR PIPES AND AQUEDUCTS AND INCIDENTAL PURPOSES RECORDED JULY 14, 1909 IN BOOK 289 OF DEEDS, PAGE 225 IN FAVOR OF SOUTHERN PACIFIC RAILROAD COMPANY.
[2] AN EASEMENT FOR PUBLIC HIGHWAY AND PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED MARCH 03, 1942 AS BOOK 534, PAGE 218 OF OFFICIAL RECORDS IN FAVOR OF THE COUNTY OF RIVERSIDE.
[3] AN EASEMENT FOR UTILITIES AND INCIDENTAL PURPOSES, RECORDED DECEMBER 20, 1963 AS INSTRUMENT NO. 134753 OF OFFICIAL RECORDS IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY. (EASEMENT C/L ONLY PLOTTED HEREON, EASEMENT WIDTH NOT GIVEN)

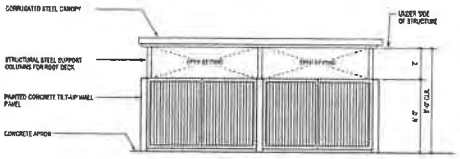
*EASEMENT NOT PLOTTABLE

REVISIONS

COUNTY OF RIVERSIDE

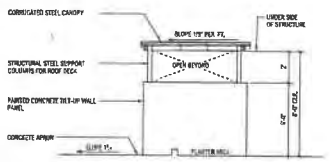
MEAD VALLEY BUSINESS PARK
PLOT PLAN NO. ______

SHEET 1 OF 1 SHEETS



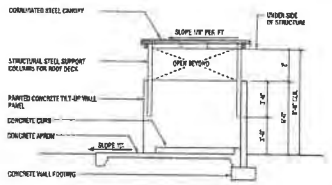
TRASH ENCLOSURE FRONT ELEVATIONS

SCALE: 1/4" = 1'-0"



TRASH ENCLOSURE SIDE ELEVATIONS

SCALE: 1/4" = 1'-0"

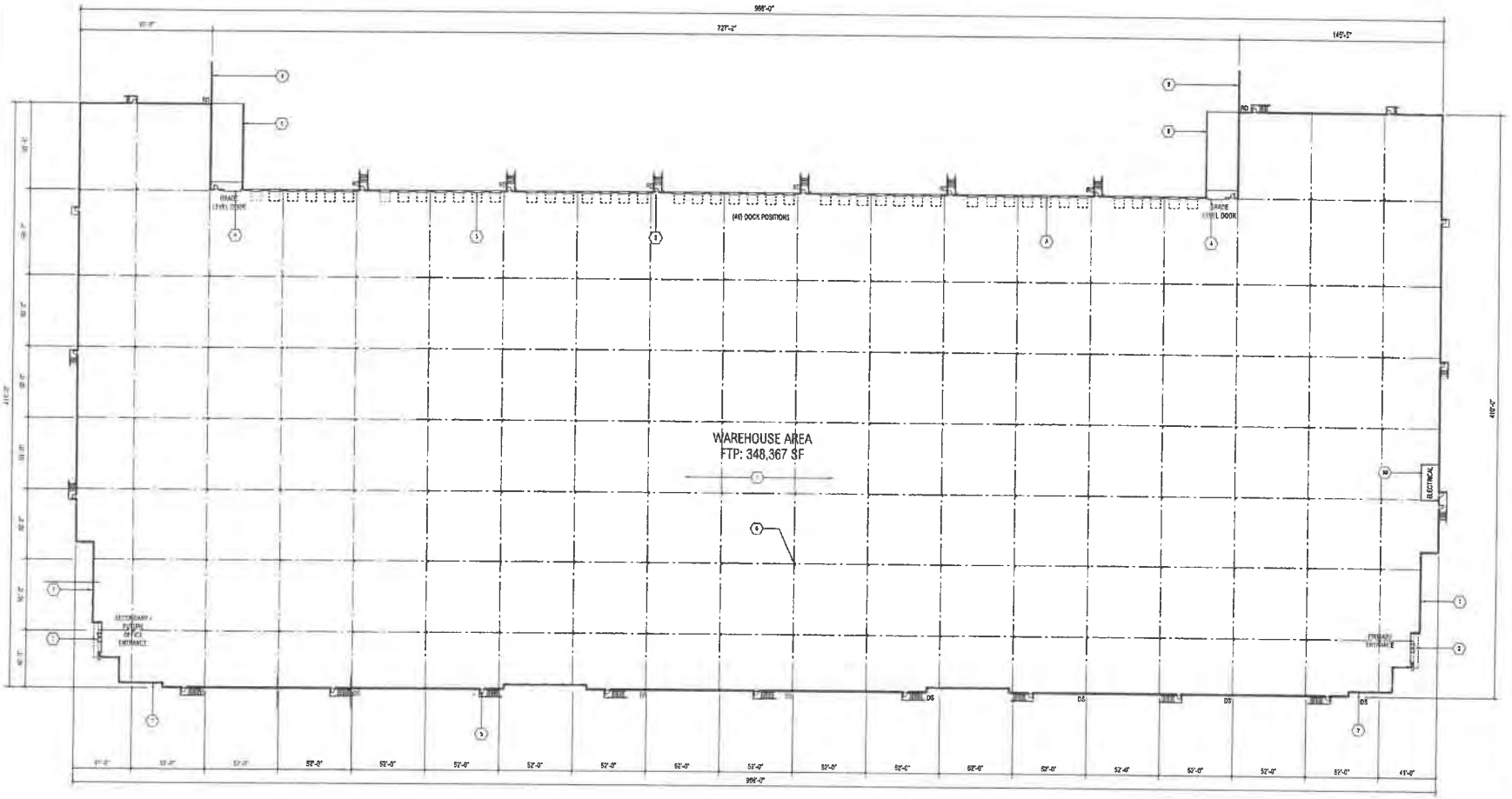


TYPICAL TRASH ENCLOSURE SECTION

SCALE: 1/4" = 1'-0"

KEYNOTES

1. PROPOSED CONCRETE TILT-UP WAREHOUSE/OFFICE / MANUFACTURING FACILITY. PROJECT IS CURRENTLY BEING PROPOSED AS A SPECULATIVE BUILDING WITH NO TENANT.
2. PRIMARY ENTRANCE.
3. PAINTED 8'-0" X 10'-0" DOCK HIGH METAL TRUCK DOORS.
4. PAINTED 12' X 14' GRADE LEVEL METAL TRUCK DOORS.
5. PAINTED 3' X 7' METAL ACCESS MAN DOORS.
6. STRUCTURAL BUILDING OVERHANG.
7. STOREFRONT GREEN GLAZING SET IN CLEAR ANODIZED ALUMINUM 1.5" X 4" MIN. OFF-SET GLAZING SYSTEM. GLAZING PROPOSED WILL BE VISION AND SPANDREL.
8. GRADE LEVEL ACCESS RAMP.
9. TRUCK/RS SCREEN WALL. SEE ELEVATIONS FOR ADDITIONAL INFO.
10. PROPOSED ELECTRICAL/ TELEPHONE ROOM LOCATION.



FLOOR PLAN

SCALE: 1" = 30'-0"

0' 10' 20' 50' 100'

RGA

PROFESSIONAL SEALS

MEAD VALLEY INDUSTRIAL PARK

00000 HARLEY KNOX ROAD
COUNTY OF RIVERSIDE, CA

APPLICANT:
RGA OFFICE OF ARCHITECTURAL DESIGN
18251 ALTON PARKWAY SUITE 100
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DEVELOPER:
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TEL: 949-809-2414
CONTACT: PATRICK RUSSELL
prussell@sares-regis.com

MARK	DATE	DESCRIPTION
SD		
SD		
SD	5/26/19	SCHEMATIC DESIGN

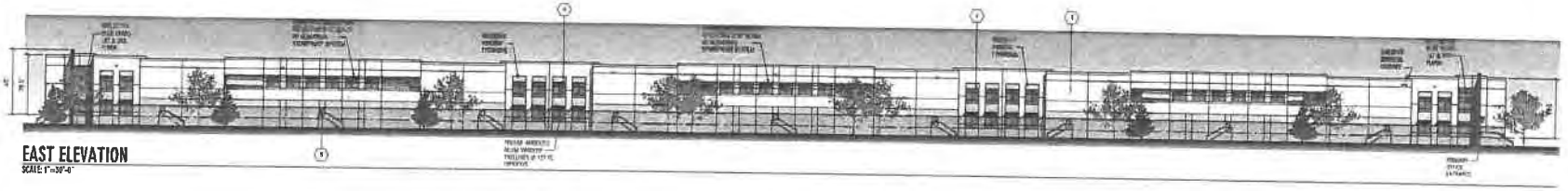
PROJECT NO: 18179.00
PROJECT NO: 00x20.00
FILE NAME: 18173-00-A-A2-1P
DRAWN BY: MG
CHECKED BY: GS

SHEET TITLE
BUILDING A FLOOR PLAN

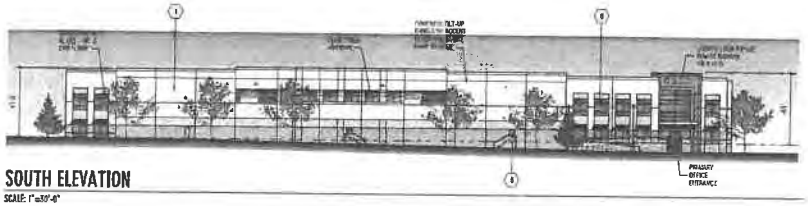
SHEET: A-A2-1P

KEYNOTES

1. PAINTED CONCRETE TILT-UP PANELS
3. PAINTED CONCRETE TILT-UP SCREEN WALL
4. PAINTED 9' X 10' DOOR HIGH METAL TRUCK DOORS
4. PAINTED 12' X 14' GRADE LEVEL METAL TRUCK DOORS
5. PAINTED METAL ACCESS MAN DOORS
6. STOREFRONT BLUE GLAZING SET IN CLEAR ANODIZED ALUMINUM 2" X 4 1/2" LEG OFF-SET GLAZING SYSTEM



EAST ELEVATION
SCALE: 1"=30'-0"



SOUTH ELEVATION
SCALE: 1"=30'-0"

FINISH SCHEDULE

P-1

P-2

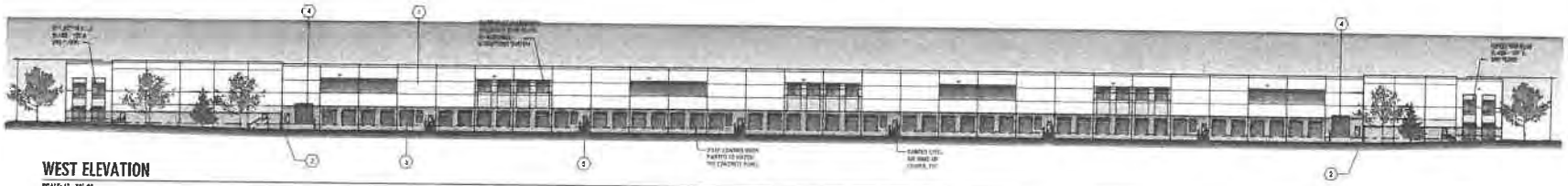
P-3

P-4

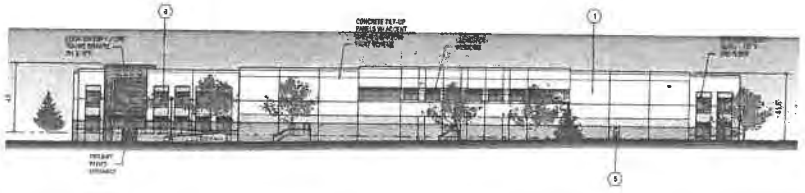
MCC-1

M-1

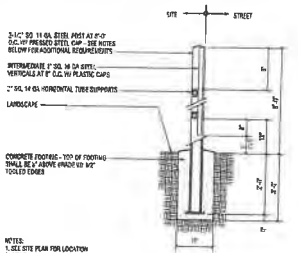
FINISH SCHEDULE	
P-1	
P-2	
P-3	
P-4	
MCC-1	
M-1	



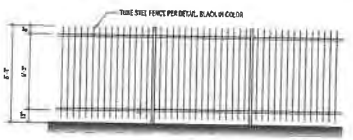
WEST ELEVATION
SCALE: 1"=30'-0"



NORTH ELEVATION
SCALE: 1"=30'-0"



STEEL PICKET FENCE
SCALE: 1/2" = 1'-0"



TYPICAL TUBE STEEL FENCE ELEVATION
SCALE: 1/2" = 1'-0"

RGA

CONSULTANT

SEAL

MEAD VALLEY
INDUSTRIAL PARK

00000 HARLEY KNOX ROAD
COUNTY OF RIVERSIDE, CA

APPLICANT:
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SAMPLE DEVELOPER
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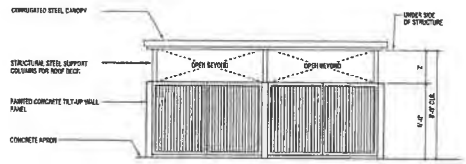
TEL: 949-809-5414
CONTACT: PATRICK RUSSELL
prussell@sares-regis.com

MARK	DATE	DESCRIPTION
	10/15/19	SCHEMATIC DESIGN

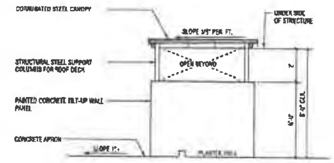
PROJECT NO:	18173-00
EXPRESS PROJECT NO:	00000-00
CAD FILE NAME:	18173-00-A-A3-1P
DRAWN BY:	MG
CHKD BY:	CG

SHEET TITLE
BUILDING A
EXTERIOR ELEVATION

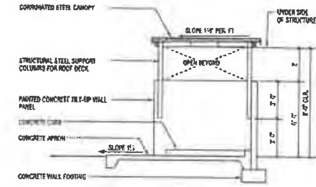
SHEET: A-A3-1P



TRASH ENCLOSURE FRONT ELEVATIONS
SCALE: 1/4" = 1'-0"



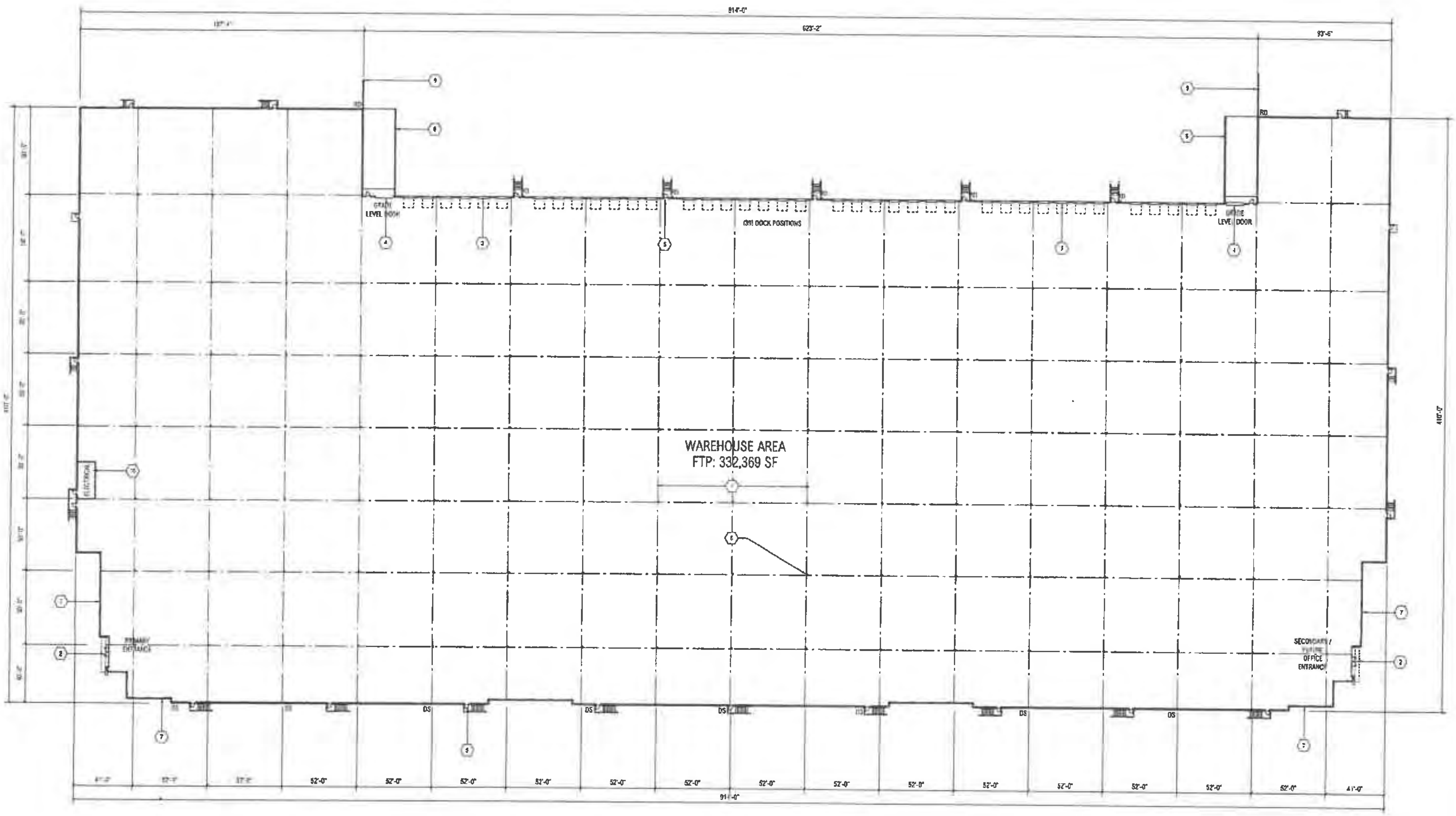
TRASH ENCLOSURE SIDE ELEVATIONS
SCALE: 1/4" = 1'-0"



TYPICAL TRASH ENCLOSURE SECTION
SCALE: 1/4" = 1'-0"

KEYNOTES

1. PROPOSED CONCRETE TILT-UP WAREHOUSE/OFFICE / MANUFACTURING FACILITY PROJECT IS CURRENTLY BEING PROPOSED AS A SPECULATIVE BUILDING WITH NO TENANT.
2. PRIMARY ENTRANCE.
3. PAINTED 9'-0" X 10' DOCK HIGH METAL TRUCK DOORS.
4. PAINTED 12' X 14' GRADE LEVEL METAL TRUCK DOORS.
5. PAINTED 3' X 7' METAL ACCESS MAN DOORS.
6. STRUCTURAL BUILDING COLUMN.
7. STOREFRONT: GREEN GLAZING SET IN CLEAR ANODIZED ALUMINUM 2" X 4 1/2" MIN. OFF-SET GLAZING SYSTEM. GLAZING PROPOSED WILL BE VISION AND SPANDREL.
8. GRADE LEVEL ACCESS RAMP.
9. TRUCKING SCREEN WALL. SEE ELEVATIONS FOR ADDITIONAL INFO.
10. PROPOSED ELECTRICAL/ TELEPHONE ROOM LOCATION.



FLOOR PLAN
SCALE: 1" = 30'-0"

RGA

CONSULTANT

PROFESSIONAL SEALS

MEAD VALLEY
INDUSTRIAL PARK

00000 HARLEY KNOX ROAD
COUNTY OF RIVERSIDE, CA

APPLICANT:
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CONTACT: PATRICK RUSSELL
prussell@sares-regis.com

MARK	DATE	DESCRIPTION
3D		
3D		
3D	1/26/11	SCHEMATIC DESIGN

RGA PROJECT NO:	10179-00
OWNER PROJECT NO:	00000-00
CAD FILE NAME:	10179-00-B-A2-1P
DRAWN BY:	MG
CHECKED BY:	CS

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RGA, OFFICE OF ARCHITECTURAL DESIGN

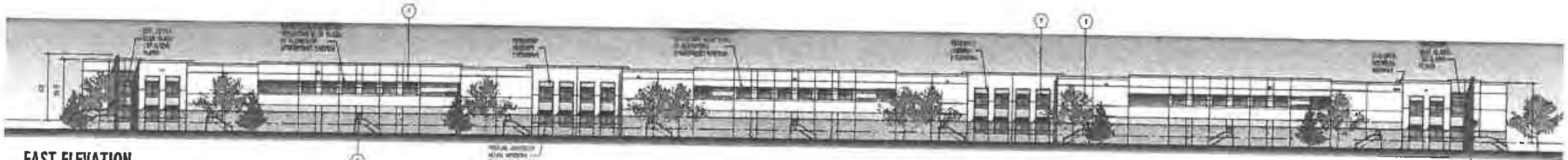
SHEET TITLE

BUILDING B
FLOOR PLAN

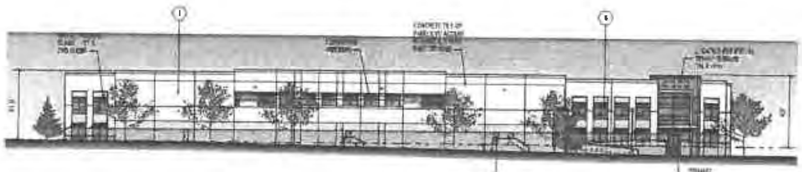
SHEET: B-A2-1P

KEYNOTES

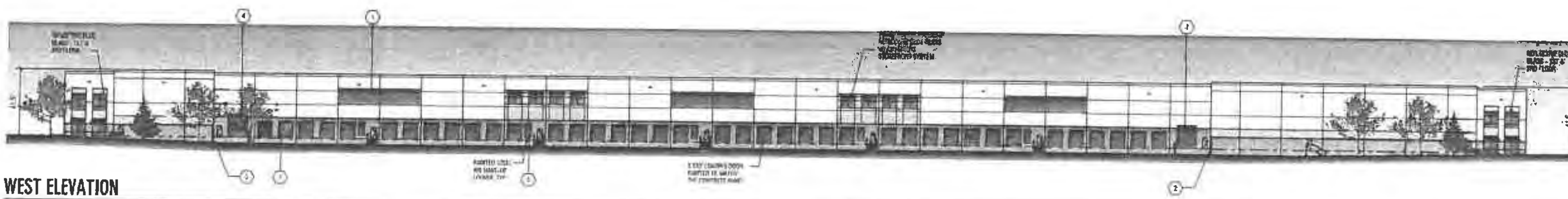
1. PAINTED CONCRETE TILT-UP PANELS.
2. PAINTED CONCRETE TILT-UP SCREEN WALL
3. PAINTED 9' X 10' DOCK HIGH METAL TRUCK DOORS
4. PAINTED 12' X 14' GRADE LEVEL METAL TRUCK DOORS.
5. PAINTED METAL ACCESS MAN DOORS
6. STOREFRONT BLUE GLAZING SET IN CLEAR ANODIZED ALUMINUM 2" X 4 1/4" MIN. OFF-SET GLAZING SYSTEM



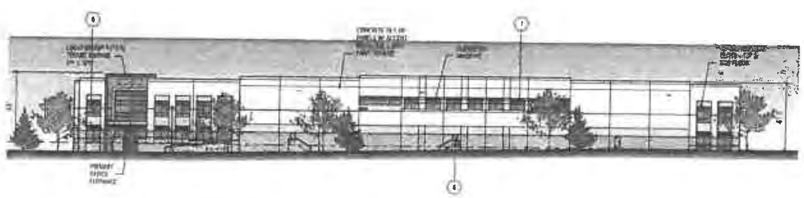
EAST ELEVATION
SCALE: 1"=30'-0"



SOUTH ELEVATION
SCALE: 1"=30'-0"



WEST ELEVATION
SCALE: 1"=30'-0"

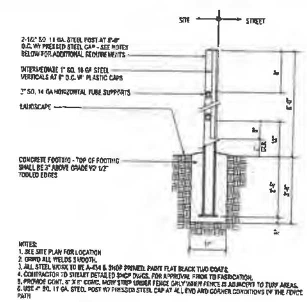


NORTH ELEVATION
SCALE: 1"=30'-0"

FINISH SCHEDULE

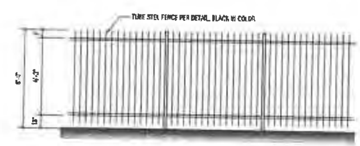
P-1
P-2
MCC-1
M-1
GL-1
P-3
P-4

FINISH SCHEDULE		
[illegible]	[illegible]	[illegible]
P-1	[illegible] COLOR	COLOR: SHERWIN WILLIAMS - [illegible]
P-2	[illegible] COLOR	COLOR: SHERWIN WILLIAMS - [illegible]
P-3	[illegible] COLOR	COLOR: SHERWIN WILLIAMS - [illegible]
P-4	[illegible] COLOR	COLOR: SHERWIN WILLIAMS - [illegible]
GL-1	[illegible]	[illegible]
M-1	[illegible]	[illegible]
MC-1	[illegible] CANOPY	ALUCOBOND [illegible]



NOTES:
1. SEE SITE PLAN FOR LOCATION
2. GRIND ALL WELDS SMOOTH.
3. ALL STEEL WORK TO BE A-36 & SHOP PRIMED, PAINT FLAT BLACK TWO COATS.
4. CONTRACTOR TO SUBMIT DETAILED SHOP DWGS. FOR APPROVAL PRIOR TO FABRICATION.

STEEL PICKET FENCE
SCALE: 1/2" = 1'-0"



TYPICAL TUBE STEEL FENCE ELEVATION

RGA

MEAD VALLEY INDUSTRIAL PARK

00000 HARLEY KNOX ROAD
COUNTY OF RIVERSIDE, CA

APPLICANT:
RGA OFFICE OF ARCHITECTURAL DESIGN
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CONTACT : MIKE GILL
mike@rga-architects.com

DEVELOPER:
SARES REGIS GROUP
18802 BARDEEN AVENUE
IRVINE, CA 92612
TEL: 949-809-2414
CONTACT: PATRICK RUSSELL
prussell@sares-regis.com

SD		
SD		
SD	[illegible]/19	SCHEMATIC DESIGN
MARK	DATE	DESCRIPTION

RGA PROJECT NO.	18172-00
[illegible] PROJECT NO.	00000-00
CAD FILE NAME	18172-00-B-A3-1P
DRAWN BY:	MG
CHK'D BY:	CS

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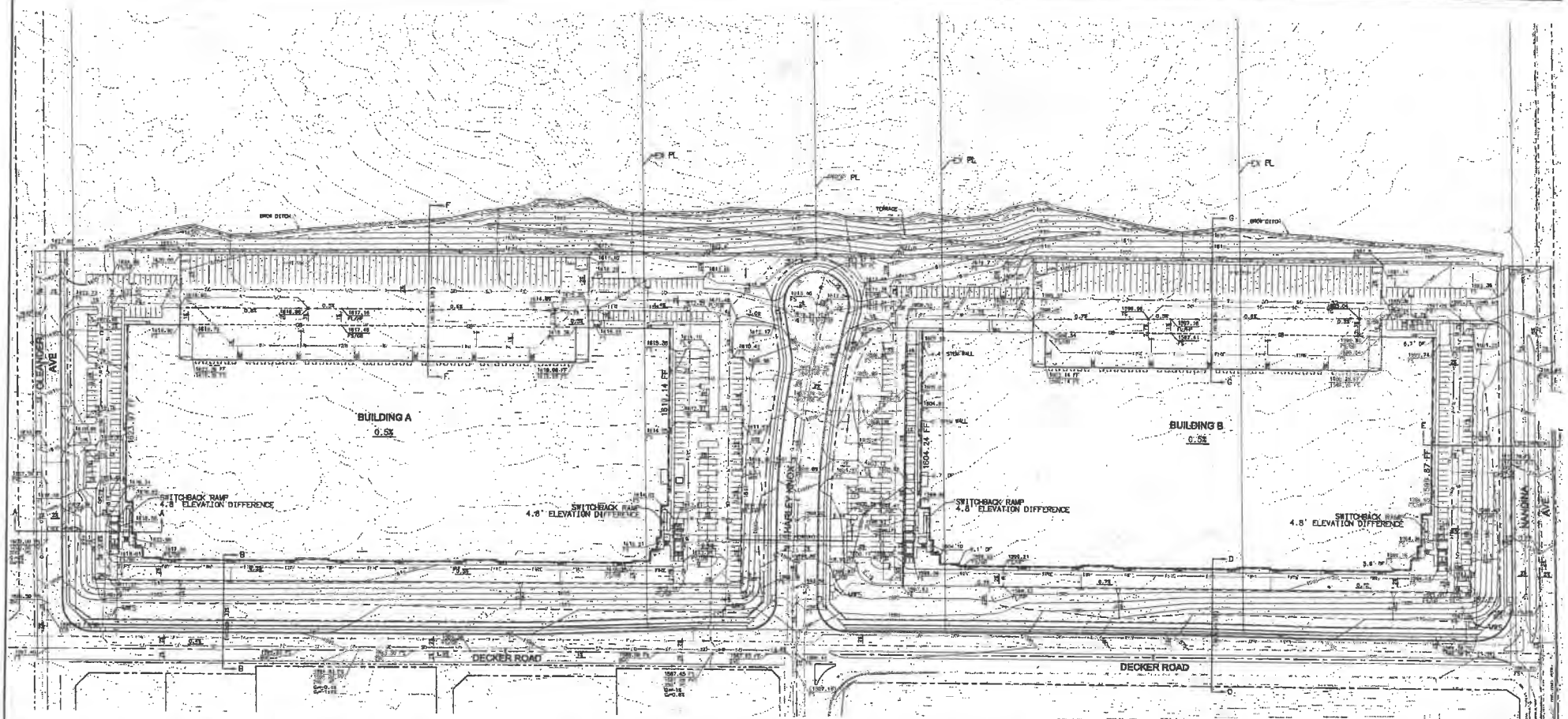
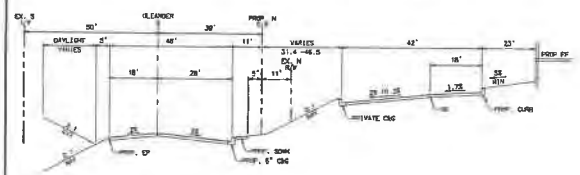
RGA, OFFICE OF ARCHITECTURAL DESIGN

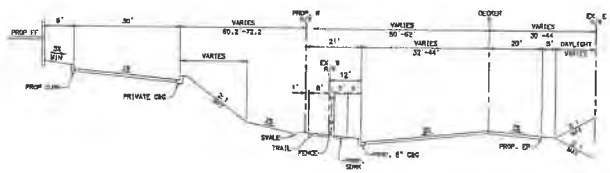
SHEET TITLE
BUILDING B
EXTERIOR ELEVATION

SHEET: B-A3-1P

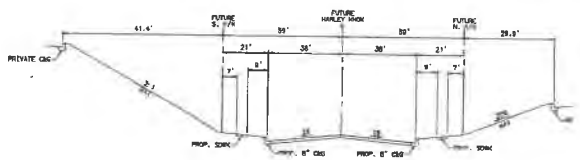




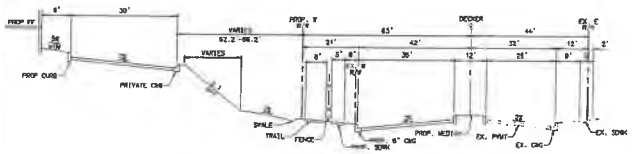
SECTION A-A
NOT TO SCALE
(PER MODIFIED COUNTY STD. 111)



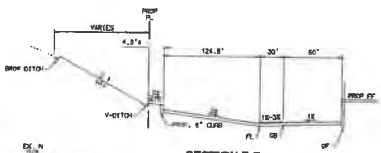
SECTION B-B
NOT TO SCALE
(PER MODIFIED COUNTY STD. 94)



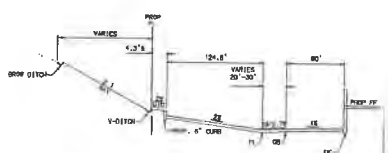
SECTION C-C
NOT TO SCALE
(PER MODIFIED COUNTY STD. 93)



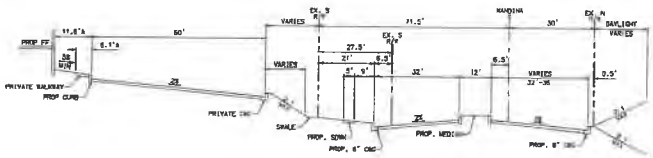
SECTION D-D
NOT TO SCALE
(PER MODIFIED COUNTY STD. 94)



SECTION F-F
NOT TO SCALE



SECTION G-G
NOT TO SCALE



SECTION E-E
NOT TO SCALE
(PER MODIFIED COUNTY STD. 94)

REVISIONS	BY	APPROVED

SCALE: 1"=60'

COUNTY OF RIVERSIDE

MEAD VALLEY BUSINESS PARK
CONCEPTUAL GRADING PLAN

TRG NATIONAL

SHEET 1 OF 1 SHEETS

Technical Memorandum

To: Janine Padia, SRG Perris, L.P.
From: Nick Johnson, Johnson Aviation, Inc.
Date: August 13, 2019

Subject: Solar Glare Analysis – Solar Photovoltaic (PV) Installation, Mead Valley Development Project

Findings

The findings of this Solar Glare Analysis are that the Proposed Project **PASSES** the FAA's recommended solar glare tests and **PASSES** these same tests for four critical flight paths required by the March Air Reserve Base. This Technical Memorandum outlines the study of the proposed solar PV project and substantiates these findings.

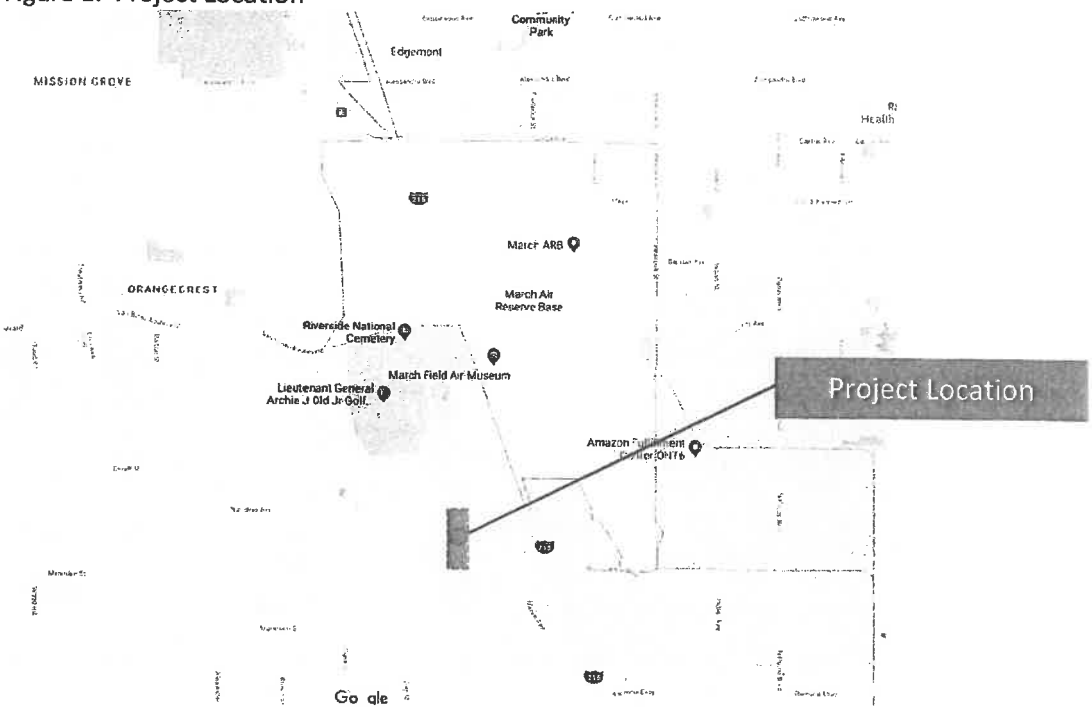
Introduction

The purpose of this technical memorandum is to assess the airport compatibility of two proposed solar (PV) installations on a portion of the roof of each of two buildings that comprise the Mead Valley Development Project. The Project is to be located at the southwest corner of Nandina Avenue and Decker Road in the County of Riverside and within the March Air Reserve Base (March ARB) airport influence area (AIA) (See Figure 1). The analysis and findings of this memo are intended for review and acceptance by Riverside County, Riverside County Airport Land Use Commission (ALUC) and the March ARB.

Project Description

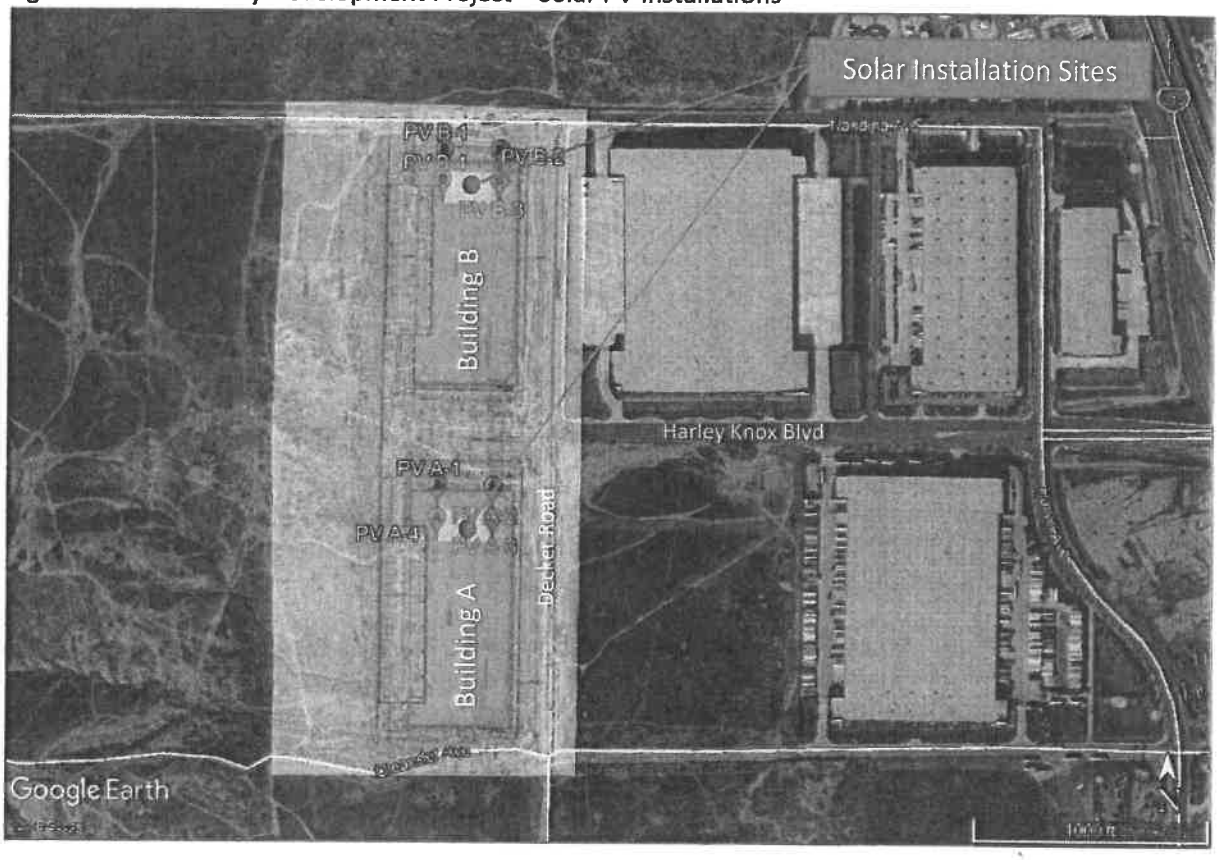
SRG Perris, L.P., the Project Owner, proposes to develop two roof-top solar PV installations on the Mead Valley Development Project. The Project site is located south of Nandina Avenue, west of Decker Road, North of Oleander Avenue and bisected by Harley Knox Boulevard, west of I-215. This site is southwest of March ARB (See Figure 1).

Figure 1: Project Location



The proposed solar PV installations are located on the northern portion of Building A and Building B (See Figure 2) in a total site area of approximately 30,000 square feet for each installation.

Figure 2: Mead Valley Development Project – Solar PV Installations



Standard of Review

This study and its findings have been prepared consistent with the Federal Aviation Administration's (FAA) policy to eliminate hazards to air navigation that may arise as the result of implementing solar energy facilities on and near airports. The FAA adopted an Interim Policy[1] for Solar PV project review in 2013. The FAA was finding that solar PV reflections of sunlight glint and glare were affecting pilots' vision, particularly on final approach to runways, and was also impacting some air traffic controllers' vision when controlling aircraft near airports. In conjunction with Sandia National Laboratories, the FAA developed a computer analysis tool to measure the potential impact of reflected glint and glare from Solar PV installations. The analysis of this impact is achieved through use of the Solar Glare Hazard Assessment Tool (SGHAT). At the time of the Interim Policy, Sandia Labs produced the tool to meet the analysis requirement. Since then, Sandia Labs has licensed the tool to other providers to sell commercially for solar glare analysis. ForgeSolar licensed the SGHAT tool and incorporated its software into their Glare Analysis tool. Johnson Aviation, Inc. uses the ForgeSolar Glare Analysis tool under subscription license from Sims Industries d/b/a ForgeSolar.

[1] Background on the Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports, Federal Register, October 23, 2013.

The FAA Interim Policy is for federally-obligated airports for development on those airports to be included on the Airport Layout Plan (ALP). Solar energy systems located on an airport that is not federally-obligated or located outside the property of a federally-obligated airport are not subject to this policy because the FAA (and in this case, the US Department of Defense (DOD) does not control land use off of airport property. According to the FAA's Interim Policy, ***"Proponents of solar energy systems located off-airport property or on non-federally-obligated airports are strongly encouraged to consider the requirements of this policy when siting such systems [emphasis added]."*** The following is the Standard for Measuring Ocular Impact from the FAA's Interim Policy:

> Standard for Measuring Ocular Impact
> FAA adopts the Solar Glare Hazard Analysis Plot as the standard for measuring the ocular impact of any proposed solar energy system on a federally-obligated airport. To obtain FAA approval to revise an airport layout plan to depict a solar installation and/or a "no objection" to a Notice of Proposed Construction Form 7460-1, the airport sponsor will be required to demonstrate that the proposed solar energy system meets the following standards:
>
> 1. No potential for glint or glare in the existing or planned Airport Traffic Control Tower (ATCT) cab; and
> 2. No potential for glare or "low potential for after-image" along the final approach path for any existing landing threshold or future landing thresholds (including any planned interim phases of the landing thresholds) as shown on the current FAA-approved Airport Layout Plan (ALP). The final approach path is defined as two (2) miles from fifty (50) feet above the landing threshold using a standard three (3) degree glidepath.
> 3. Ocular impact must be analyzed over the entire calendar year in one (1) minute intervals from when the sun rises above the horizon until the sun sets below the horizon.

In addition to the FAA's standards for runway final approach paths and air traffic control tower visibility, the March ARB staff in conjunction with the Riverside County ALUC staff have established a series of air traffic patterns for the two runways located at the Base. Their concern is to ensure that land uses around the base are compatible with its air operations and that solar PV installations will not create a hazard to air navigation as a result of reflected sunlight and the associated potential glare. March ARB staff have provided four sets of geographic coordinates to define the standard traffic patterns listed below:

- Runway 12/30 General Aviation Traffic Pattern (See Attachment A)
- Runway 14/32 General Aviation Traffic Pattern (See Attachment B)
- Runway 14/32 C-17/KC-135 Traffic Pattern (See Attachment C)
- Runway 14/32 Overhead Traffic Pattern (See Attachment D)

Solar Glare Analysis Reports

The following pages of this Technical Memorandum provide the solar glare analysis reports for each of the required studies. The FAA standard study of the final approach paths to the runway ends and the Air Traffic Control Tower analysis is included in each individual report. The four reports are grouped by the flight path studies required by the March ARB and ALUC staff using the SGHAT program.

Attachment A
March ARB Runway 12/30 General Aviation Traffic Pattern Analysis

FORGESOLAR GLARE ANALYSIS

Project: **SRG Perris - Mead Valley**
Proposed solar PV installation under the traffic pattern at March Air Reserve Base, Riverside, California

Site configuration: **Mead Valley-MARB Runway 12-30 GA Analysis**
Analysis conducted by Nick Johnson (nick.johnson@johnson-aviation.com) at 23:17 on 12 Aug, 2019.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	PASS	Receptor(s) marked as ATCT do not receive glare

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

ForgeSolar
PV planning & glare analysis

GlareGauge Glare Analysis Results

Site Configuration: Mead Valley-MARB Runway 12-30 GA Analysis

Project site configuration details and results.

Created **Aug. 12, 2019 5:36 p.m.**
Updated **Aug. 12, 2019 7:20 p.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-8**
Site Configuration ID: 30305.5333

Summary of Results

Glare with low potential for temporary after-image predicted

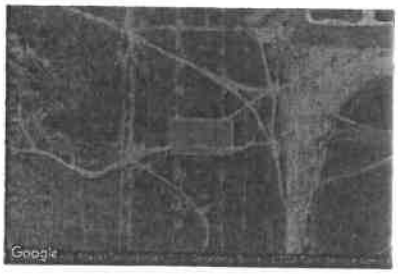
PV name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
Mead Valley Business Park-Bldg A	10.0	160.0	969	0	-
Mead Valley Business Park-Bldg B	10.0	160.0	1,869	0	-

Component Data

PV Array(s)

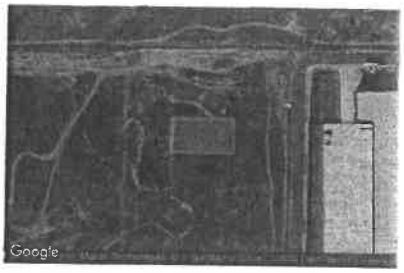
Name: Mead Valley Business Park-Bldg A
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 160.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.861655	-117.271672	1617.08	48.00	1665.08
2	33.861644	-117.270914	1617.08	48.00	1665.08
3	33.861294	-117.270909	1617.08	48.00	1665.08
4	33.861293	-117.271675	1617.08	48.00	1665.08



Name: Mead Valley Business Park-Bldg B
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 160.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

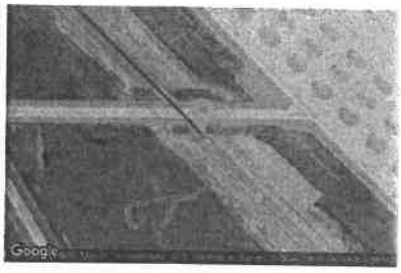
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.865497	-117.271631	1597.08	48.00	1645.08
2	33.865494	-117.270857	1597.08	48.00	1645.08
3	33.865144	-117.270858	1597.08	48.00	1645.08
4	33.865148	-117.271642	1597.08	48.00	1645.08



2-Mile Flight Path Receptor(s)

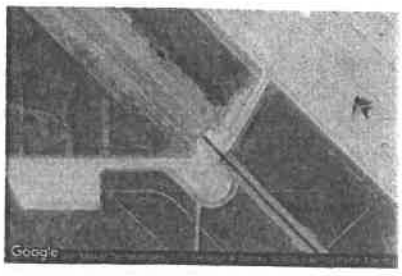
Name: RWY 12 Final
Description: None
Threshold height : 50 ft
Direction: 135.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	33.890258	-117.260681	1500.07	50.00	1550.08
2-mile point	33.898508	-117.270608	1500.07	1300.06	2800.14



Name: RWY 30 Final
Description: None
Threshold height : 50 ft
Direction: 315.0 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	33.884319	-117.253536	1500.07	50.00	1550.08
2-mile point	33.876069	-117.243611	1500.07	1300.06	2800.14



Route Receptor(s)

Name: RWY 12 GA Pattern Route
Route type One-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.884319	-117.253536	1500.07	50.00	1550.08
2	33.876069	-117.243611	1500.07	1300.06	2800.14
3	33.876081	-117.235119	1500.07	1300.06	2800.14
4	33.880814	-117.229467	1500.07	1300.06	2800.14
5	33.887897	-117.229483	1500.07	1300.06	2800.14
6	33.910333	-117.256469	1500.07	1300.06	2800.14
7	33.910322	-117.264967	1500.07	1300.06	2800.14
8	33.905592	-117.270622	1500.07	1300.06	2800.14
9	33.898508	-117.270608	1500.07	1300.06	2800.14
10	33.890258	-117.260681	1500.07	50.00	1550.08

Name: RWY 30 GA Pattern Route
Route type One-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.890258	-117.260681	1500.07	50.00	1550.08
2	33.898508	-117.270608	1500.07	1300.06	2800.14
3	33.905592	-117.270622	1500.07	1300.06	2800.14
4	33.910322	-117.264967	1500.07	1300.06	2800.14
5	33.910333	-117.256469	1500.07	1300.06	2800.14
6	33.887897	-117.229483	1500.07	1300.06	2800.14
7	33.880814	-117.229467	1500.07	1300.06	2800.14
8	33.876081	-117.235119	1500.07	1300.06	2800.14
9	33.876069	-117.243611	1500.07	1300.06	2800.14
10	33.884319	-117.253536	1500.07	50.00	1550.08

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
1-ATCT	33.891572	-117.251203	1511.07	118.01	1629.08

1-ATCT map image

PV Array Results

Mead Valley Business Park-Bldg A low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: RWY 12 Final	0	0
FP: RWY 30 Final	0	0
OP: 1-ATCT	0	0
Route: RWY 12 GA Pattern Route	0	0
Route: RWY 30 GA Pattern Route	969	0

Mead Valley Business Park-Bldg A - Receptor (RWY 12 Final)

No glare found

Mead Valley Business Park-Bldg A - Receptor (RWY 30 Final)

No glare found

Mead Valley Business Park-Bldg A - OP Receptor (1-ATCT)

No glare found

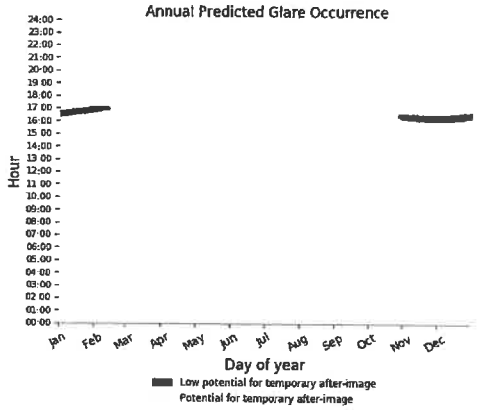
Mead Valley Business Park-Bldg A - Route Receptor (RWY 12 GA Pattern Route)

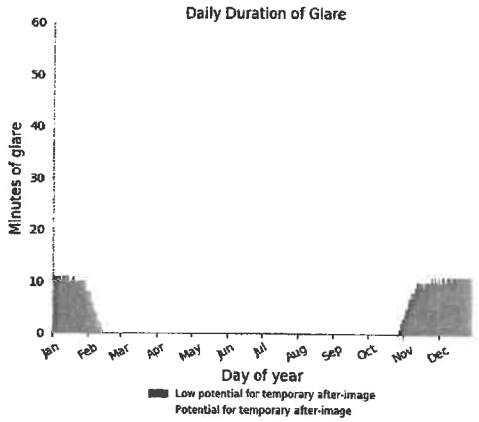
No glare found

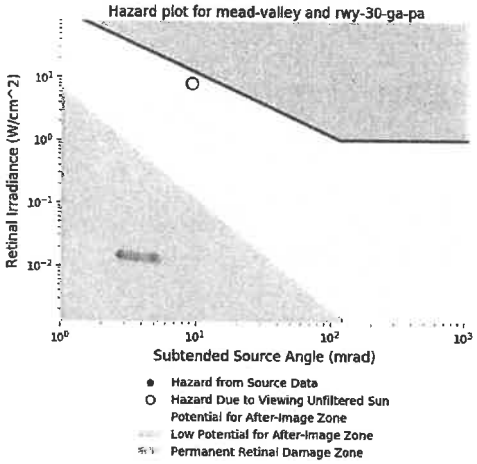
Mead Valley Business Park-Bldg A - Route Receptor (RWY 30 GA Pattern Route)

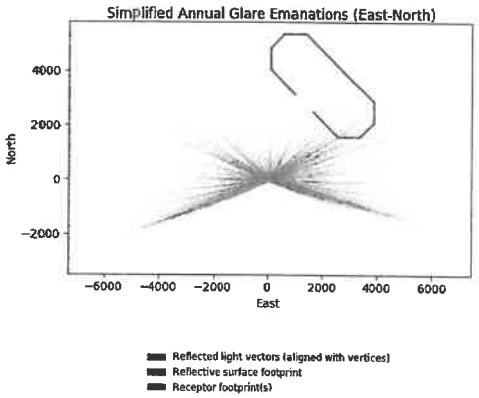
PV array is expected to produce the following glare for receptors at this location:

- 969 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

Mead Valley Business Park-Bldg B low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: RWY 12 Final	0	0
FP: RWY 30 Final	0	0
OP: 1-ATCT	0	0
Route: RWY 12 GA Pattern Route	0	0
Route: RWY 30 GA Pattern Route	1869	0

Mead Valley Business Park-Bldg B - Receptor (RWY 12 Final)

No glare found

Mead Valley Business Park-Bldg B - Receptor (RWY 30 Final)

No glare found

Mead Valley Business Park-Bldg B - OP Receptor (1-ATCT)

No glare found

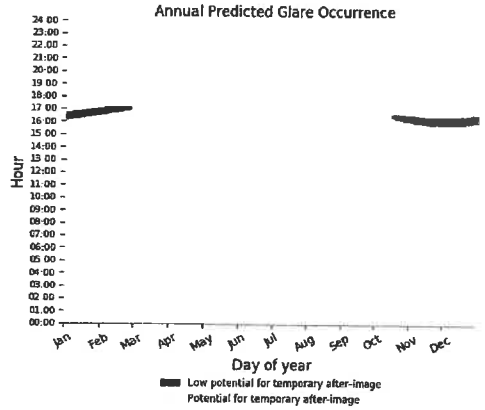
Mead Valley Business Park-Bldg B - Route Receptor (RWY 12 GA Pattern Route)

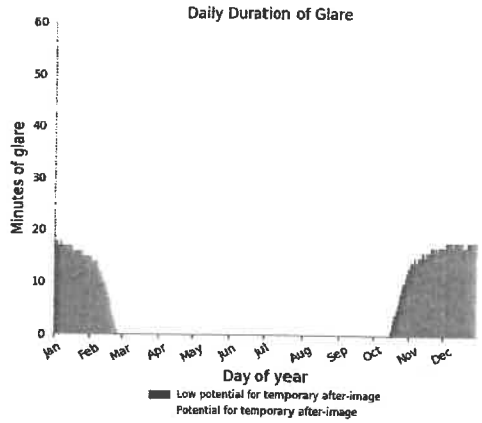
No glare found

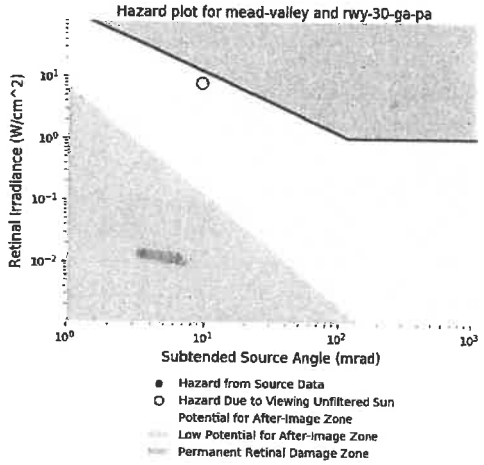
Mead Valley Business Park-Bldg B - Route Receptor (RWY 30 GA Pattern Route)

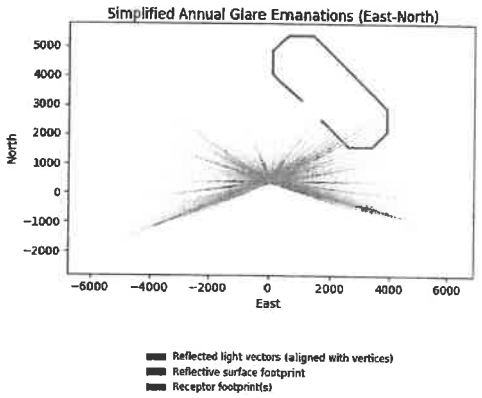
PV array is expected to produce the following glare for receptors at this location:

- 1,869 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time Actual values and results may vary.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of th combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for assumptions and limitations not listed here.

Attachment B
March ARB Runway 14/32 General Aviation Traffic Pattern Analysis

FORGESOLAR GLARE ANALYSIS

Project: **SRG Perris - Mead Valley**
Proposed solar PV installation under the traffic pattern at March Air Reserve Base, Riverside, California

Site configuration: **Mead Valley-MARB Runway 14-32 GA Analysis3**
Analysis conducted by Nick Johnson (nick.johnson@johnson-aviation.com) at 22:55 on 12 Aug, 2019.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	PASS	Receptor(s) marked as ATCT do not receive glare

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

ForgeSolar

GlareGauge Glare Analysis Results

Site Configuration: Mead Valley-MARB Runway 14-32 GA Analysis3

Project site configuration details and results.

Created **Aug. 12, 2019 5:42 p.m.**
Updated **Aug. 12, 2019 6:59 p.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-8**
Site Configuration ID: 30306.5333

Summary of Results

Glare with low potential for temporary after-image predicted

PV name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
Mead Valley Business Park-Bldg A	10.0	160.0	23,077	0	-
Mead Valley Business Park-Bldg B	10.0	160.0	38,024	0	-

Component Data

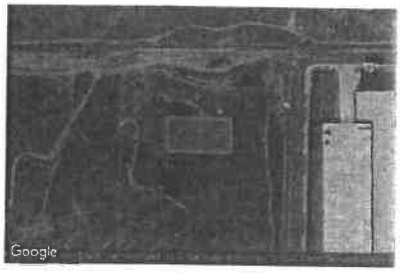
PV Array(s)

Name: Mead Valley Business Park-Bldg A
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 160.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.861655	-117.271672	1617.08	48.00	1665.08
2	33.861644	-117.270914	1617.08	48.00	1665.08
3	33.861294	-117.270909	1617.08	48.00	1665.08
4	33.861293	-117.271675	1617.08	48.00	1665.08

Name: Mead Valley Business Park-Bldg B
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 160.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.865497	-117.271631	1597.08	48.00	1645.08
2	33.865494	-117.270857	1597.08	48.00	1645.08
3	33.865144	-117.270858	1597.08	48.00	1645.08
4	33.865148	-117.271642	1597.08	48.00	1645.08



2-Mile Flight Path Receptor(s)

Name: RWY 14 Final
Description: None
Threshold height : 50 ft
Direction: 149.5 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	33.896431	-117.270636	1500.07	50.00	1550.08
2-mile point	33.906486	-117.277783	1500.07	1500.07	3000.15

Name: RWY 32 Final
Description: None
Threshold height : 50 ft
Direction: 329.5 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	33.864994	-117.248281	1500.07	50.00	1550.08
2-mile point	33.854942	-117.241136	1500.07	1500.07	3000.15

Route Receptor(s)

Name: RWY 14 GA Pattern Route
Route type One-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.864994	-117.248281	1500.07	50.00	1550.08
2	33.854942	-117.241136	1500.07	1500.07	3000.15
3	33.848078	-117.243236	1500.07	1500.07	3000.15
4	33.844669	-117.250119	1500.07	1500.07	3000.15
5	33.846422	-117.258344	1500.07	1500.07	3000.15
6	33.897972	-117.295011	1500.07	1500.07	3000.15
7	33.904833	-117.292903	1500.07	1500.07	3000.15
8	33.908242	-117.286017	1500.07	1500.07	3000.15
9	33.906486	-117.277783	1500.07	1500.07	3000.15
10	33.896431	-117.270636	1500.07	50.00	1550.08

Name: RWY 32 GA Pattern Route
Route type One-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.896431	-117.270636	1500.07	50.00	1550.08
2	33.906486	-117.277783	1500.07	1500.07	3000.15
3	33.908242	-117.286017	1500.07	1500.07	3000.15
4	33.904833	-117.292903	1500.07	1500.07	3000.15
5	33.897972	-117.295011	1500.07	1500.07	3000.15
6	33.846422	-117.258344	1500.07	1500.07	3000.15
7	33.844669	-117.250119	1500.07	1500.07	3000.15
8	33.848078	-117.243236	1500.07	1500.07	3000.15
9	33.854942	-117.241136	1500.07	1500.07	3000.15
10	33.864994	-117.248281	1500.07	50.00	1550.08

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
1-ATCT	33.891572	-117.251203	1511.07	118.01	1629.08

1-ATCT map image

PV Array Results

Mead Valley Business Park-Bldg A low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: RWY 14 Final	0	0
FP: RWY 32 Final	1047	0
OP: 1-ATCT	0	0
Route: RWY 14 GA Pattern Route	8973	0
Route: RWY 32 GA Pattern Route	13057	0

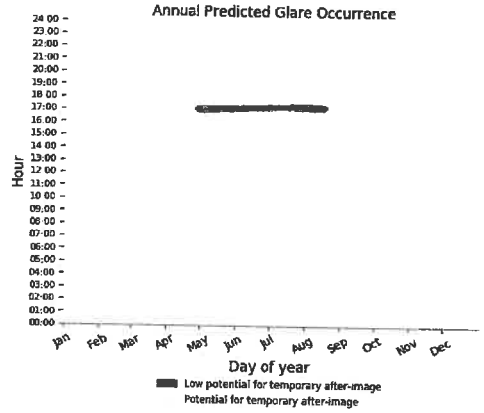
Mead Valley Business Park-Bldg A - Receptor (RWY 14 Final)

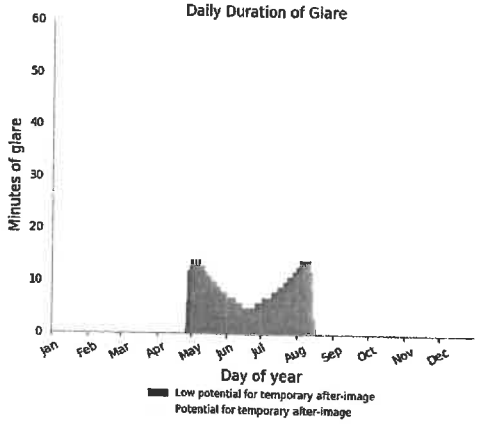
No glare found

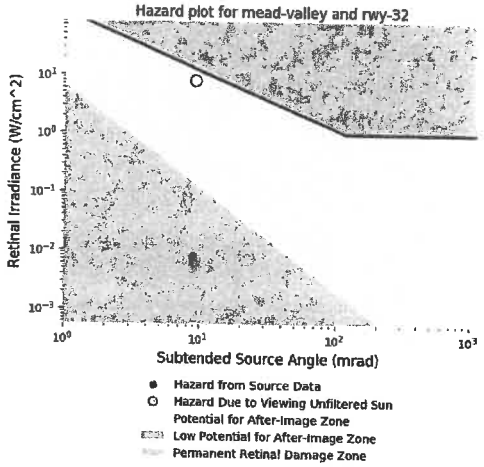
Mead Valley Business Park-Bldg A - Receptor (RWY 32 Final)

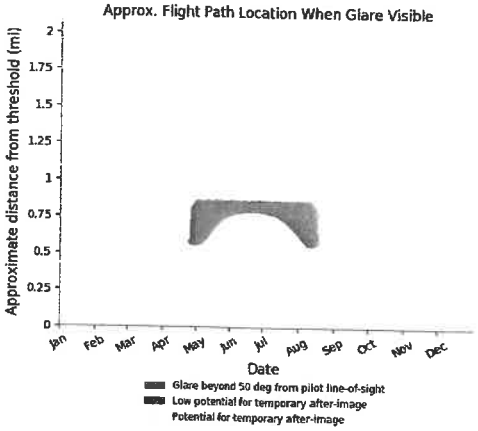
PV array is expected to produce the following glare for observers on this flight path:

- 1,047 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









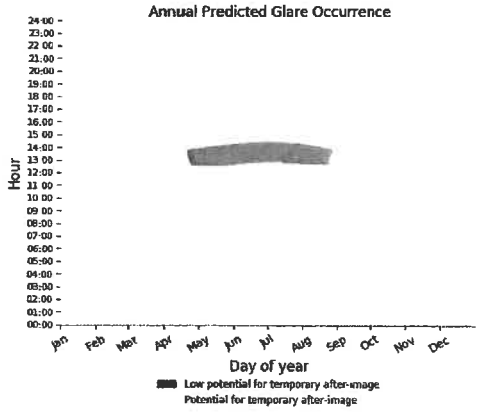
Mead Valley Business Park-Bldg A - OP Receptor (1-ATCT)

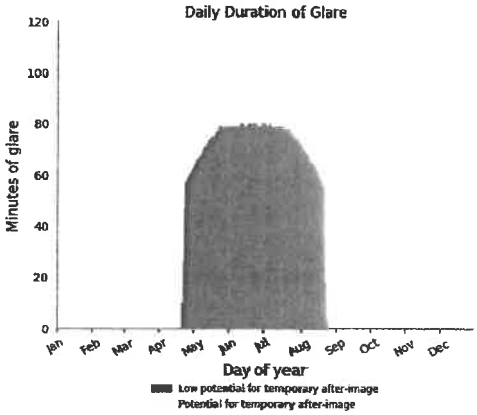
No glare found

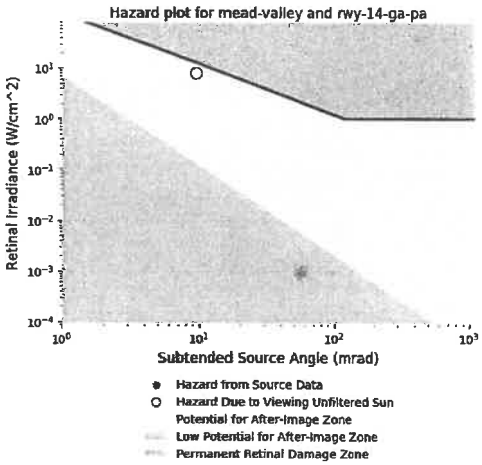
Mead Valley Business Park-Bldg A - Route Receptor (RWY 14 GA Pattern Route)

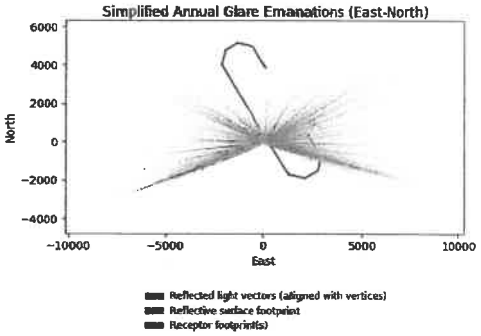
PV array is expected to produce the following glare for receptors at this location:

- 8,973 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







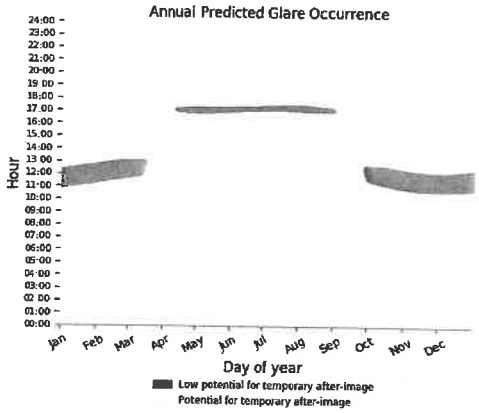


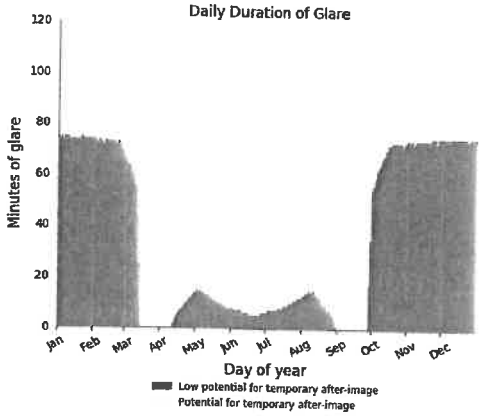
Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

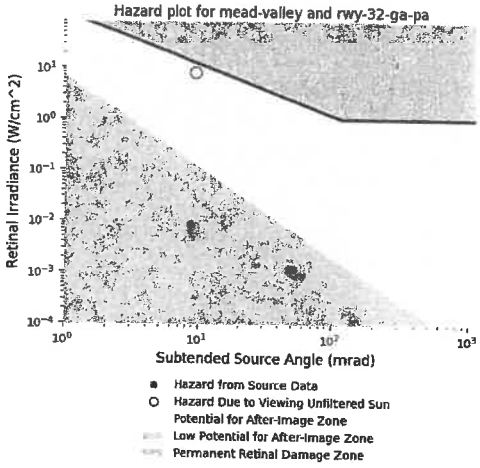
Mead Valley Business Park-Bldg A - Route Receptor (RWY 32 GA Pattern Route)

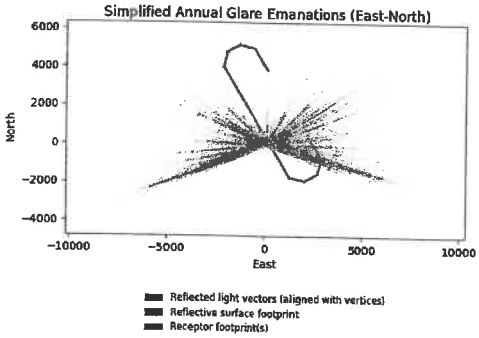
PV array is expected to produce the following glare for receptors at this location:

- 13,057 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

Mead Valley Business Park-Bldg B low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: RWY 14 Final	0	0
FP: RWY 32 Final	2382	0
OP: 1-ATCT	0	0
Route: RWY 14 GA Pattern Route	9913	0
Route: RWY 32 GA Pattern Route	25729	0

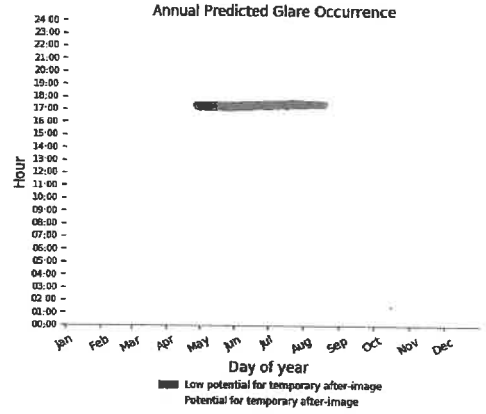
Mead Valley Business Park-Bldg B - Receptor (RWY 14 Final)

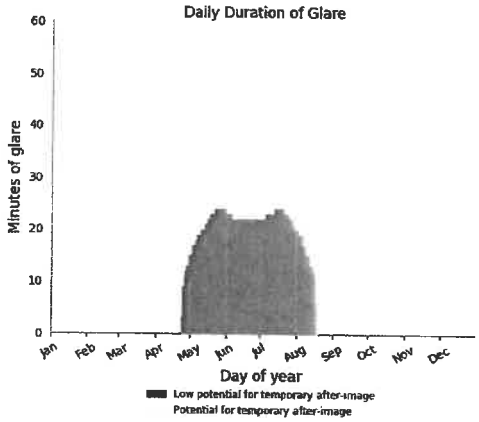
No glare found

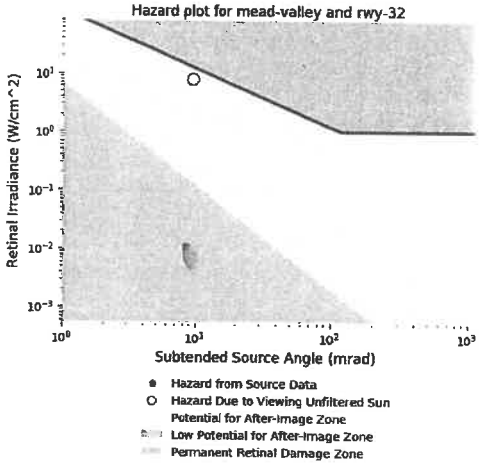
Mead Valley Business Park-Bldg B - Receptor (RWY 32 Final)

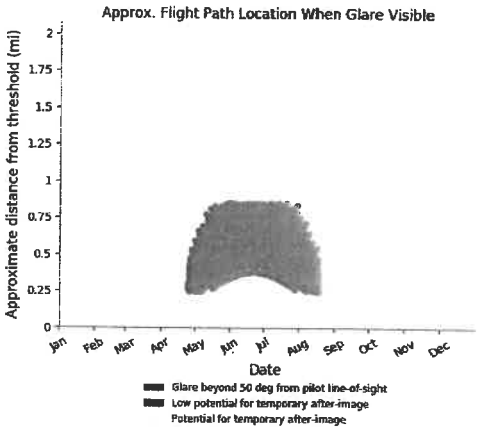
PV array is expected to produce the following glare for observers on this flight path:

- 2,382 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









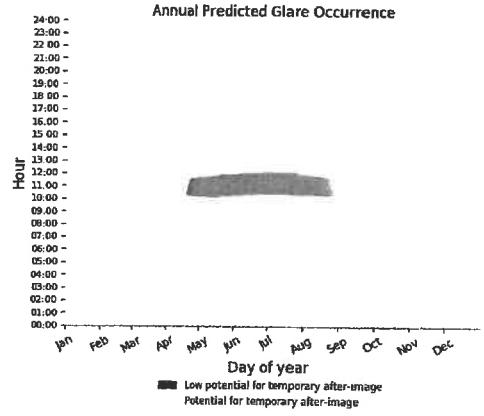
Mead Valley Business Park-Bldg B - OP Receptor (1-ATCT)

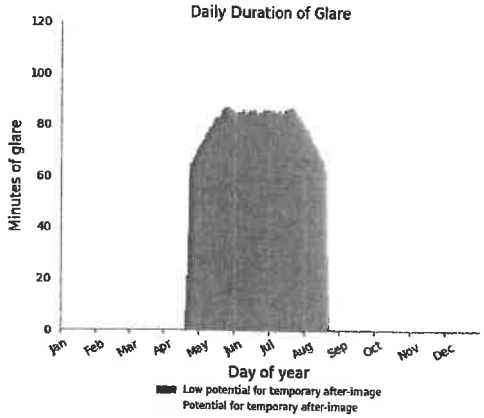
No glare found

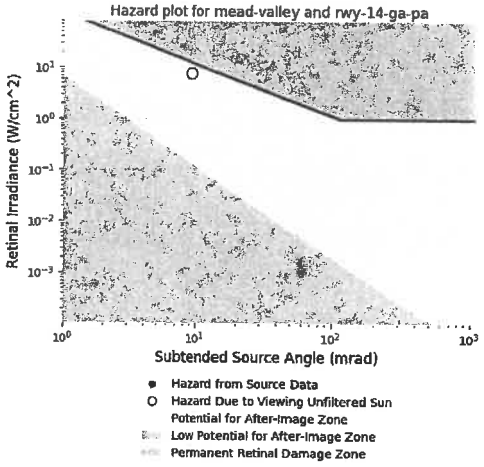
Mead Valley Business Park-Bldg B - Route Receptor (RWY 14 GA Pattern Route)

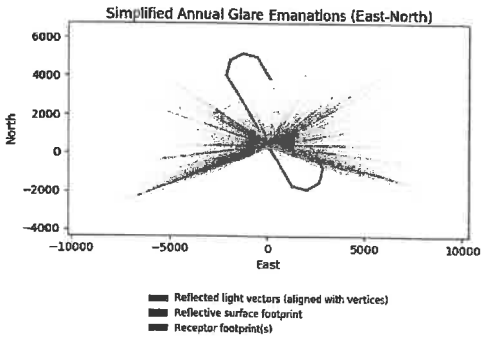
PV array is expected to produce the following glare for receptors at this location:

- 9,913 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.







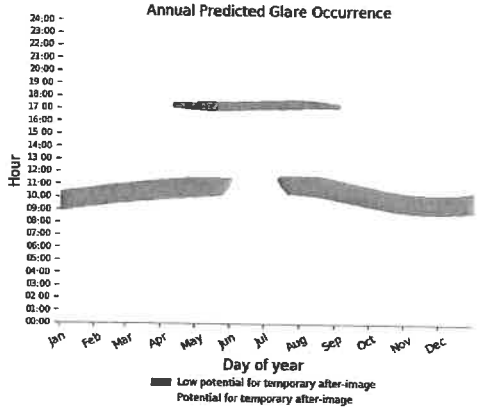


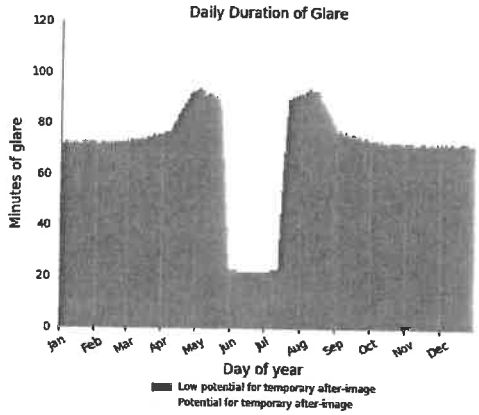
Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

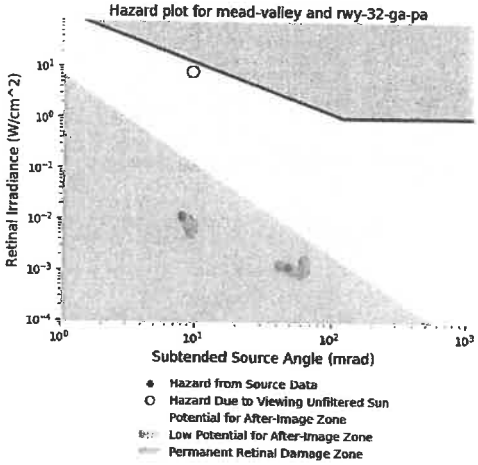
Mead Valley Business Park-Bldg B - Route Receptor (RWY 32 GA Pattern Route)

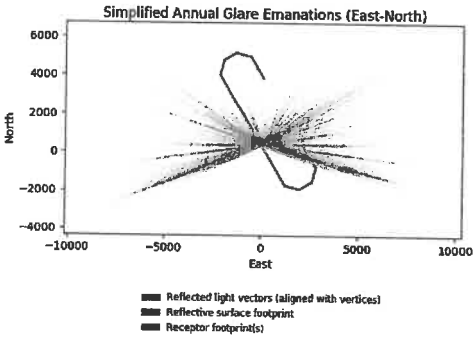
PV array is expected to produce the following glare for receptors at this location:

- 25,729 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time Actual values and results may vary.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of th combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for assumptions and limitations not listed here.

Attachment C
March ARB Runway 14/32 C-17/KC-135 Traffic Pattern Analysis

FORGESOLAR GLARE ANALYSIS

Project: **SRG Perris - Mead Valley**
Proposed solar PV installation under the traffic pattern at March Air Reserve Base, Riverside, California

Site configuration: **Mead Valley-MARB Runway 14-32 C-17 Analysis**
Analysis conducted by Nick Johnson (nick.johnson@johnson-aviation.com) at 23:10 on 12 Aug, 2019.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	PASS	Receptor(s) marked as ATCT do not receive glare

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

ForgeSolar
PV planning & glare analysis

GlareGauge Glare Analysis Results

Site Configuration: Mead Valley-MARB Runway 14-32 C-17 Analysis

Project site configuration details and results.

Created **Aug. 12, 2019 5:51 p.m.**
Updated **Aug. 12, 2019 7:14 p.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-8**
Site Configuration ID: 30307.5333

Summary of Results

Glare with low potential for temporary after-image predicted

PV name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
Mead Valley Business Park-Bldg A	10.0	160.0	2,528	0	-
Mead Valley Business Park-Bldg B	10.0	160.0	3,921	0	-

Component Data

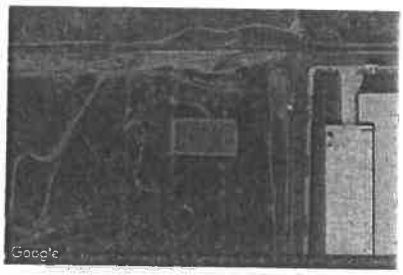
PV Array(s)

Name: Mead Valley Business Park-Bldg A
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 160.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.861655	-117.271672	1617.08	48.00	1665.08
2	33.861644	-117.270914	1617.08	48.00	1665.08
3	33.861294	-117.270909	1617.08	48.00	1665.08
4	33.861293	-117.271675	1617.08	48.00	1665.08

Name: Mead Valley Business Park-Bldg B
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 160.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

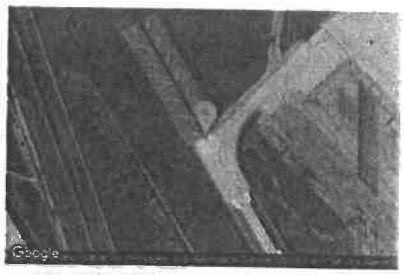
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.865497	-117.271631	1597.08	48.00	1645.08
2	33.865494	-117.270857	1597.08	48.00	1645.08
3	33.865144	-117.270858	1597.08	48.00	1645.08
4	33.865148	-117.271642	1597.08	48.00	1645.08



2-Mile Flight Path Receptor(s)

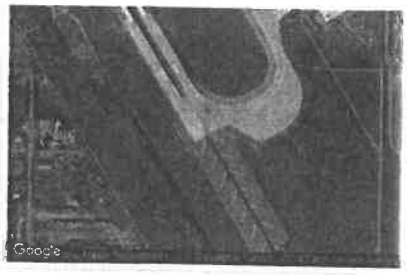
Name: RWY 14 Final
Description: None
Threshold height : 50 ft
Direction: 149.5 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	33.896431	-117.270636	1500.07	50.00	1550.08
2-mile point	33.906486	-117.277783	1500.07	1500.07	3000.15



Name: RWY 32 Final
Description: None
Threshold height : 50 ft
Direction: 329.5 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	33.864994	-117.248281	1500.07	50.00	1550.08
2-mile point	33.854942	-117.241136	1500.07	1500.07	3000.15



Route Receptor(s)

Name: RWY 14 C-17 - KC-135 Pattern Route
Route type One-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.864994	-117.248281	1500.07	50.00	1550.08
2	33.836269	-117.227869	1500.07	1500.07	3000.15
3	33.821961	-117.228367	1500.07	1500.07	3000.15
4	33.813147	-117.244350	1500.07	1500.07	3000.15
5	33.819225	-117.262269	1500.07	1500.07	3000.15
6	33.908131	-117.325528	1500.07	1500.07	3000.15
7	33.922394	-117.325047	1500.07	1500.07	3000.15
8	33.931244	-117.309014	1500.07	1500.07	3000.15
9	33.925156	-117.291061	1500.07	1500.07	3000.15
10	33.896431	-117.270636	1500.07	50.00	1550.08

Name: RWY 32 C-17 - KC-135 Pattern Route
Route type One-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.896431	-117.270636	1500.07	50.00	1550.08
2	33.925156	-117.291061	1500.07	1500.07	3000.15
3	33.931244	-117.309014	1500.07	1500.07	3000.15
4	33.922394	-117.325047	1500.07	1500.07	3000.15
5	33.908131	-117.325528	1500.07	1500.07	3000.15
6	33.819225	-117.262269	1500.07	1500.07	3000.15
7	33.813147	-117.244350	1500.07	1500.07	3000.15
8	33.821961	-117.228367	1500.07	1500.07	3000.15
9	33.836269	-117.227869	1500.07	1500.07	3000.15
10	33.864994	-117.248281	1500.07	50.00	1550.08

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
1-ATCT	33.891572	-117.251203	1511.07	118.01	1629.08

1-ATCT map image

PV Array Results

Mead Valley Business Park-Bldg A low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: RWY 14 Final	0	0
FP: RWY 32 Final	1047	0
OP: 1-ATCT	0	0
Route: RWY 14 C-17 - KC-135 Pattern Route	0	0
Route: RWY 32 C-17 - KC-135 Pattern Route	1481	0

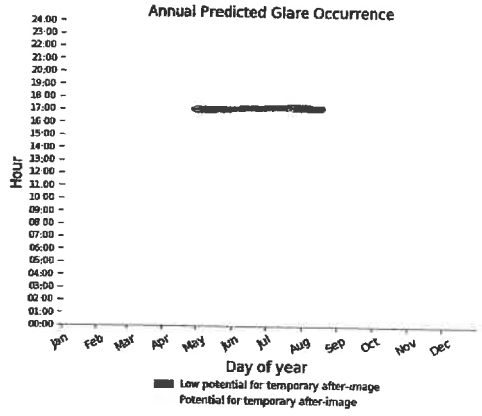
Mead Valley Business Park-Bldg A - Receptor (RWY 14 Final)

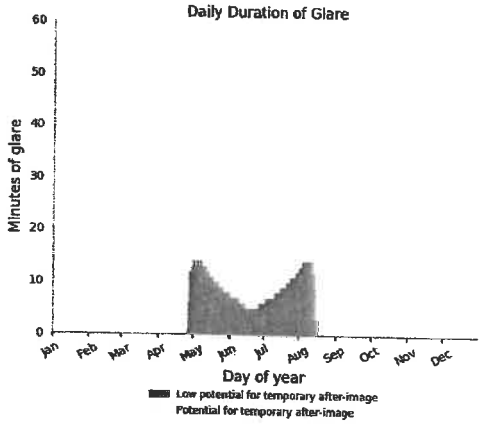
No glare found

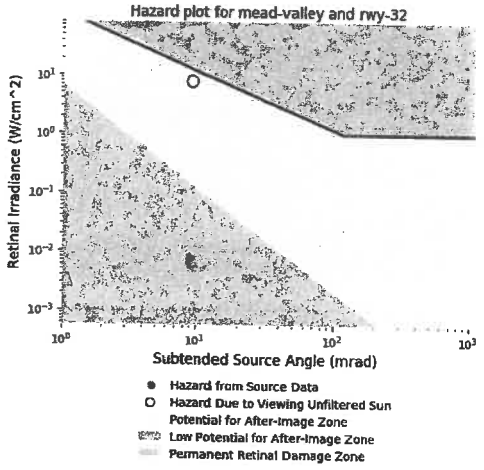
Mead Valley Business Park-Bldg A - Receptor (RWY 32 Final)

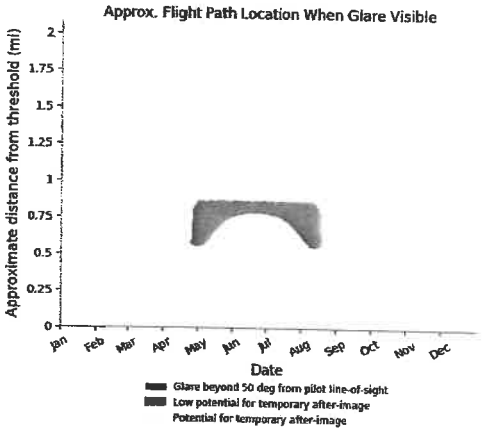
PV array is expected to produce the following glare for observers on this flight path:

- 1,047 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Mead Valley Business Park-Bldg A - OP Receptor (1-ATCT)

No glare found

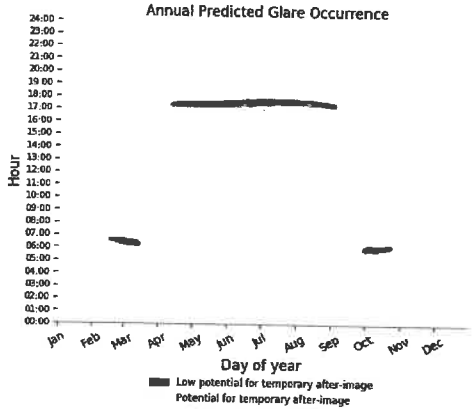
Mead Valley Business Park-Bldg A - Route Receptor (RWY 14 C-17 - KC-135 Pattern Route)

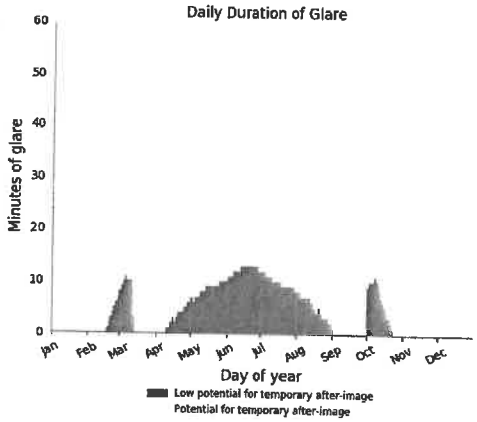
No glare found

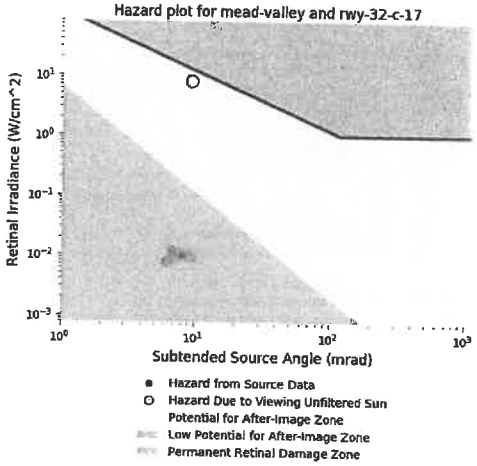
Mead Valley Business Park-Bldg A - Route Receptor (RWY 32 C-17 - KC-135 Pattern Route)

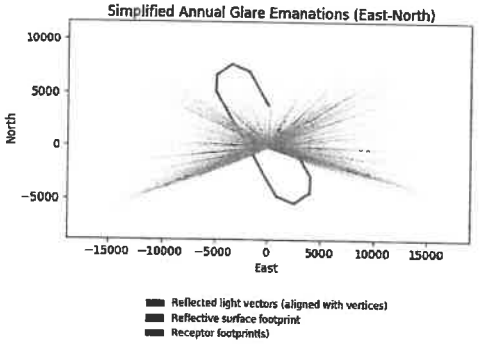
PV array is expected to produce the following glare for receptors at this location:

- 1,481 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

Mead Valley Business Park-Bldg B low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: RWY 14 Final	0	0
FP: RWY 32 Final	2382	0
OP: 1-ATCT	0	0
Route: RWY 14 C-17 - KC-135 Pattern Route	0	0
Route: RWY 32 C-17 - KC-135 Pattern Route	1539	0

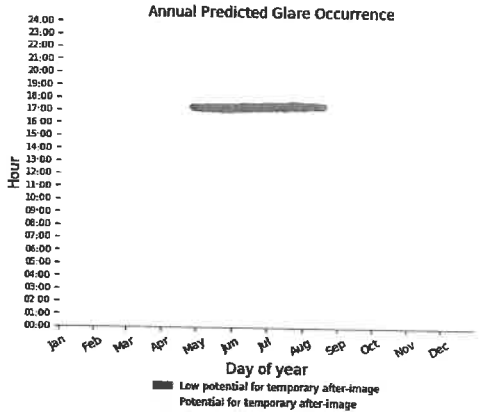
Mead Valley Business Park-Bldg B - Receptor (RWY 14 Final)

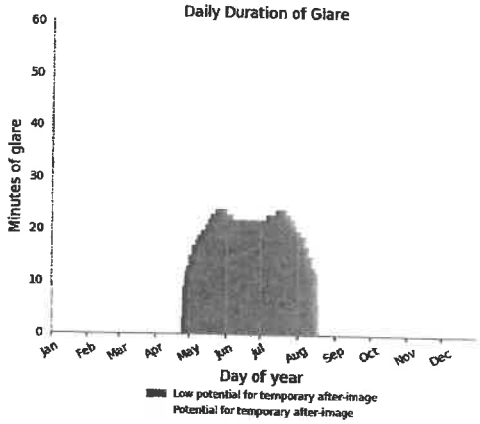
No glare found

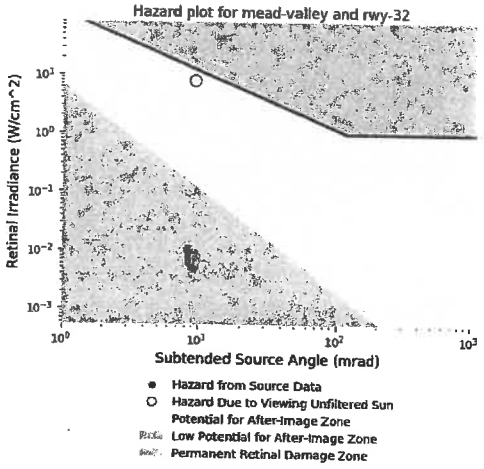
Mead Valley Business Park-Bldg B - Receptor (RWY 32 Final)

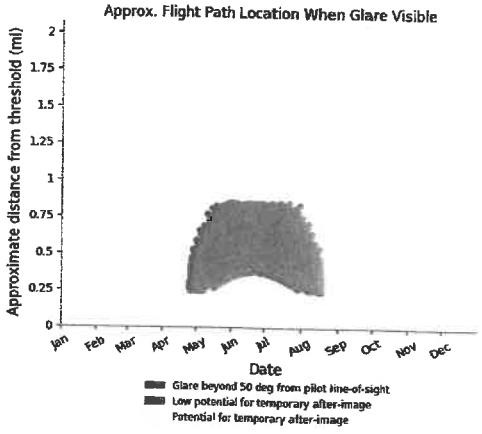
PV array is expected to produce the following glare for observers on this flight path:

- 2,382 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Mead Valley Business Park-Bldg B - OP Receptor (1-ATCT)

No glare found

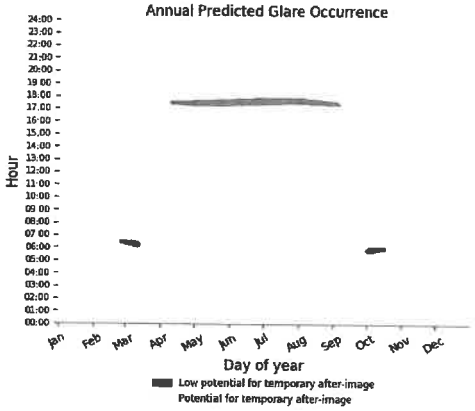
Mead Valley Business Park-Bldg B - Route Receptor (RWY 14 C-17 - KC-135 Pattern Route)

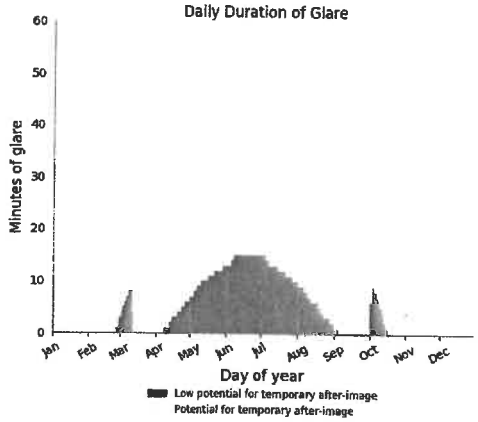
No glare found

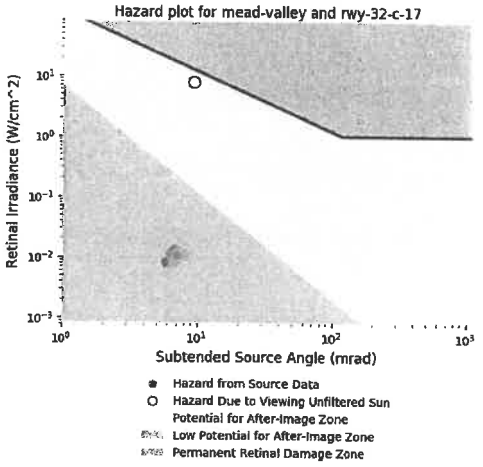
Mead Valley Business Park-Bldg B - Route Receptor (RWY 32 C-17 - KC-135 Pattern Route)

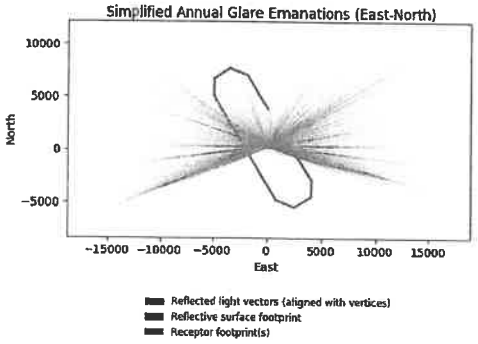
PV array is expected to produce the following glare for receptors at this location:

- 1,539 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time Actual values and results may vary.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of th combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for assumptions and limitations not listed here.

Attachment D
March ARB Runway 14/32 Overhead Traffic Pattern Analysis

FORGESOLAR GLARE ANALYSIS

Project: **SRG Perris - Mead Valley**
Proposed solar PV installation under the traffic pattern at March Air Reserve Base, Riverside, California

Site configuration: **Mead Valley-MARB Runway 14-32 Overhead Analysis**
Analysis conducted by Nick Johnson (nick.johnson@johnson-aviation.com) at 23:25 on 12 Aug, 2019.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	PASS	Receptor(s) marked as ATCT do not receive glare

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

ForgeSolar
PV planning & glare analysis

GlareGauge Glare Analysis Results

Site Configuration: Mead Valley-MARB Runway 14-32 Overhead Analysis

Project site configuration details and results.

Created **Aug. 12, 2019 5:16 p.m.**
Updated **Aug. 12, 2019 7:28 p.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-8**
Site Configuration ID: 30300.5333

Summary of Results

Glare with low potential for temporary after-image predicted

PV name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
Mead Valley Business Park-Bldg A	10.0	160.0	4,911	0	-
Mead Valley Business Park-Bldg B	10.0	160.0	7,011	0	-

Component Data

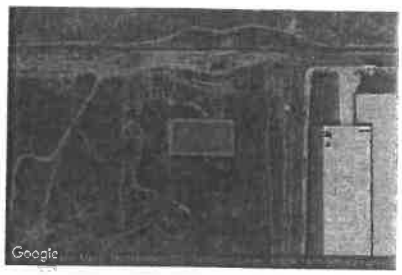
PV Array(s)

Name: Mead Valley Business Park-Bldg A
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 160.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.861655	-117.271672	1617.08	48.00	1665.08
2	33.861644	-117.270914	1617.08	48.00	1665.08
3	33.861294	-117.270909	1617.08	48.00	1665.08
4	33.861293	-117.271675	1617.08	48.00	1665.08

Name: Mead Valley Business Park-Bldg B
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 160.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad

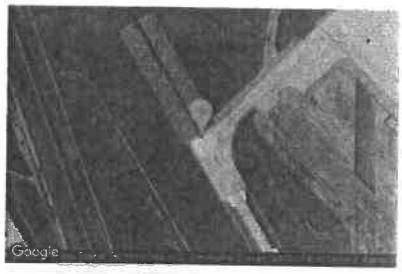
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.865497	-117.271631	1597.08	48.00	1645.08
2	33.865494	-117.270857	1597.08	48.00	1645.08
3	33.865144	-117.270858	1597.08	48.00	1645.08
4	33.865148	-117.271642	1597.08	48.00	1645.08



2-Mile Flight Path Receptor(s)

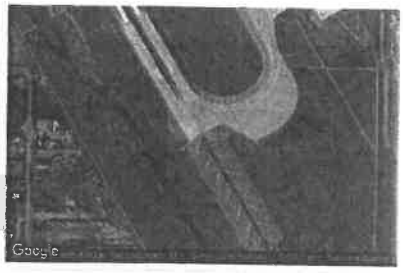
Name: RWY 14 Final
Description: None
Threshold height : 50 ft
Direction: 149.5 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	33.896431	-117.270636	1500.07	50.00	1550.08
2-mile point	33.906486	-117.277783	1500.07	2000.10	3500.17



Name: RWY 32 Final
Description: None
Threshold height : 50 ft
Direction: 329.5 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	33.864994	-117.248281	1500.07	50.00	1550.08
2-mile point	33.854942	-117.241136	1500.07	2000.10	3500.17



Route Receptor(s)

Name: RWY 14 Overhead Route
Route type One-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.968036	-117.322128	1500.07	2000.10	3500.17
2	33.880706	-117.259453	1500.07	2000.10	3500.17
3	33.863564	-117.293808	1500.07	2000.10	3500.17
4	33.908131	-117.325528	1500.07	2000.10	3500.17
5	33.925156	-117.291061	1500.07	2000.10	3500.17
6	33.896431	-117.270636	1500.07	50.00	1550.08

Name: RWY 32 Overhead Route
Route type One-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	33.793375	-117.196878	1500.07	2000.10	3500.17
2	33.880706	-117.259453	1500.07	2000.10	3500.17
3	33.863564	-117.293808	1500.07	2000.10	3500.17
4	33.819225	-117.262269	1500.07	2000.10	3500.17
5	33.836269	-117.227869	1500.07	2000.10	3500.17
6	33.864994	-117.248281	1500.07	50.00	1550.08

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
1-ATCT	33.891572	-117.251203	1511.07	118.01	1629.08

1-ATCT map image

PV Array Results

Mead Valley Business Park-Bldg A low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: RWY 14 Final	0	0
FP: RWY 32 Final	1336	0
OP: 1-ATCT	0	0
Route: RWY 14 Overhead Route	0	0
Route: RWY 32 Overhead Route	3575	0

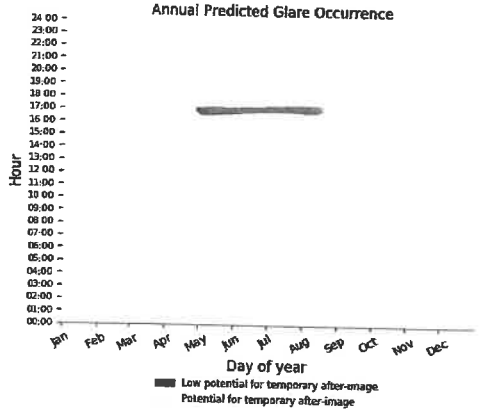
Mead Valley Business Park-Bldg A - Receptor (RWY 14 Final)

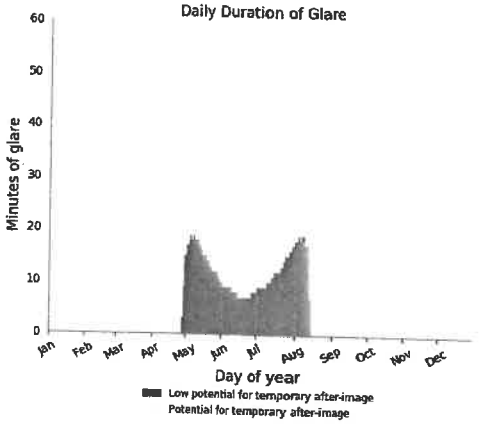
No glare found

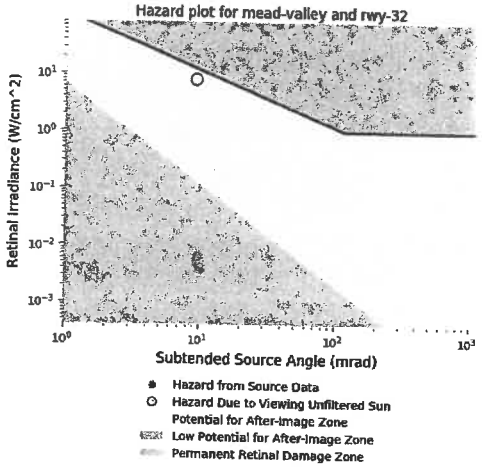
Mead Valley Business Park-Bldg A - Receptor (RWY 32 Final)

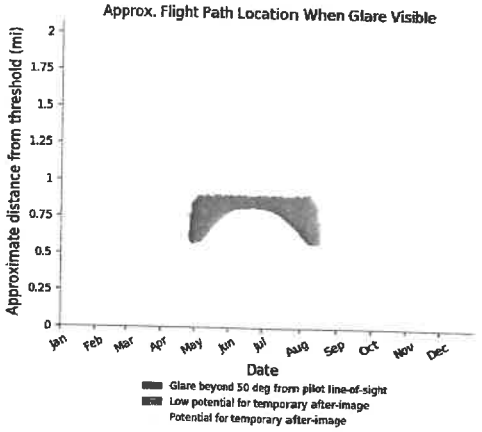
PV array is expected to produce the following glare for observers on this flight path:

- 1,336 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Mead Valley Business Park-Bldg A - OP Receptor (1-ATCT)

No glare found

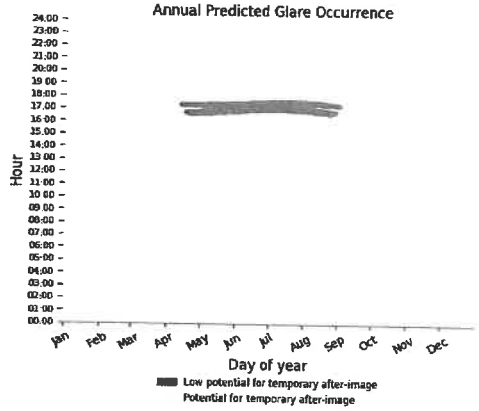
Mead Valley Business Park-Bldg A - Route Receptor (RWY 14 Overhead Route)

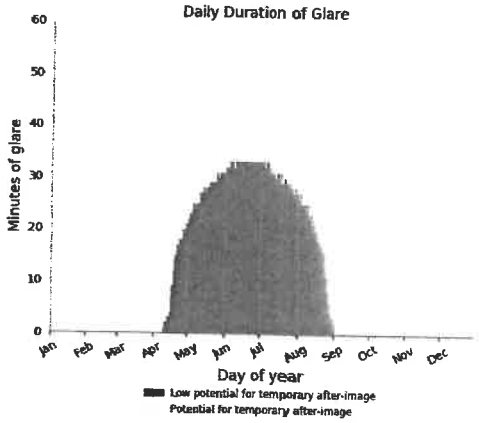
No glare found

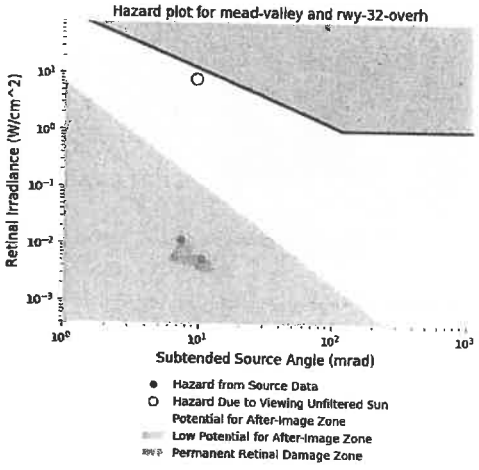
Mead Valley Business Park-Bldg A - Route Receptor (RWY 32 Overhead Route)

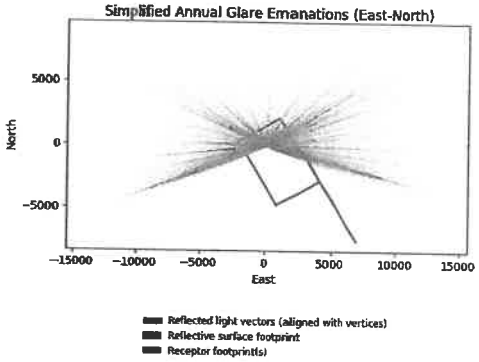
PV array is expected to produce the following glare for receptors at this location:

- 3,575 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

Mead Valley Business Park-Bldg B low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
FP: RWY 14 Final	0	0
FP: RWY 32 Final	2909	0
OP: 1-ATCT	0	0
Route: RWY 14 Overhead Route	0	0
Route: RWY 32 Overhead Route	4102	0

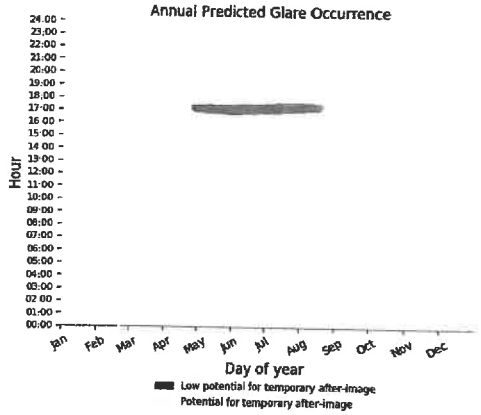
Mead Valley Business Park-Bldg B - Receptor (RWY 14 Final)

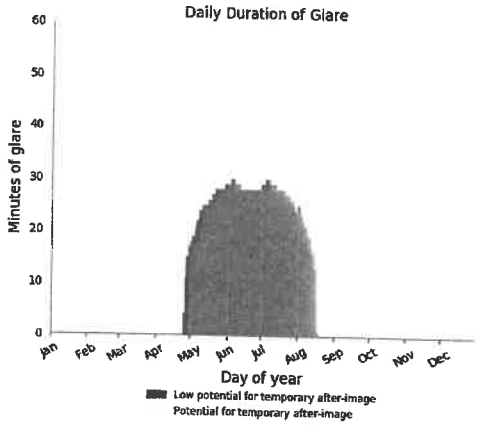
No glare found

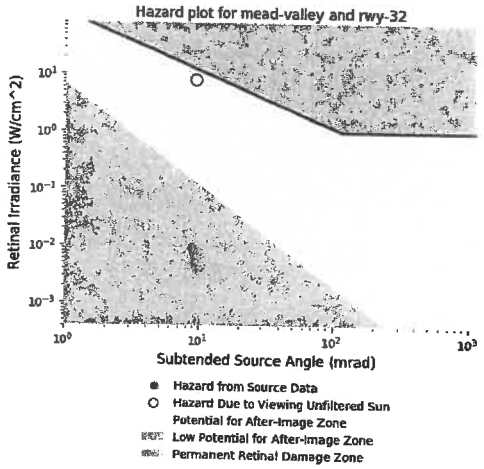
Mead Valley Business Park-Bldg B - Receptor (RWY 32 Final)

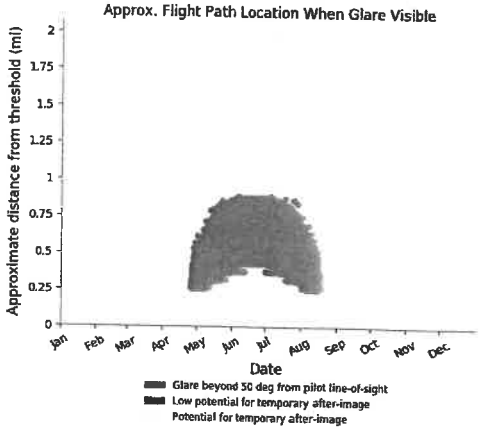
PV array is expected to produce the following glare for observers on this flight path:

- 2,909 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Mead Valley Business Park-Bldg B - OP Receptor (1-ATCT)

No glare found

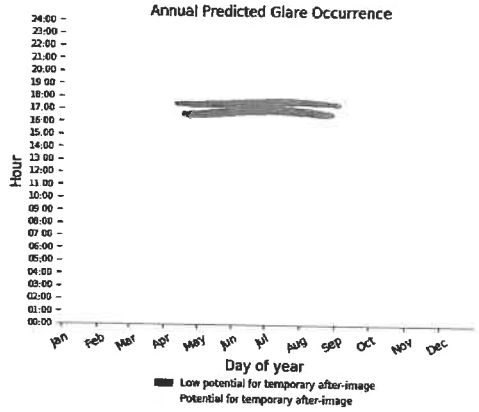
Mead Valley Business Park-Bldg B - Route Receptor (RWY 14 Overhead Route)

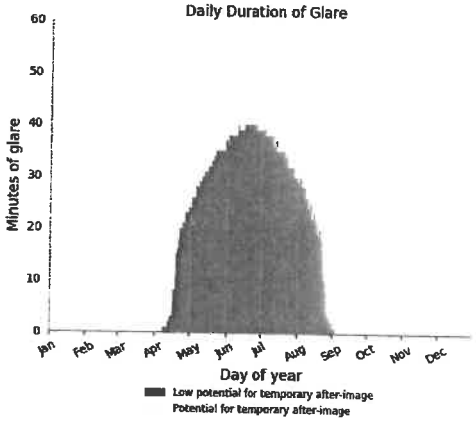
No glare found

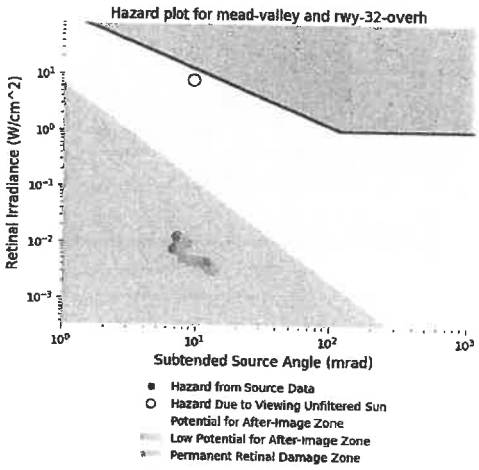
Mead Valley Business Park-Bldg B - Route Receptor (RWY 32 Overhead Route)

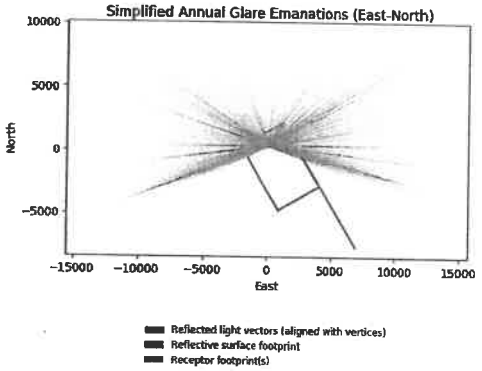
PV array is expected to produce the following glare for receptors at this location:

- 4,102 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









Glare vectors placed at PV centroid for clarity. Actual glare-spot locations vary.

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time Actual values and results may vary.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of th combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for assumptions and limitations not listed here.