AGENDA
REGULAR MEETING
SAN BENITO COUNTY AIRPORT LAND USE COMMISSION

DATE: Thursday, November 19, 2020
6:00 P.M.

LOCATION: Via- Zoom

Attendance at the ALUC meeting is closed to the public per Executive Order N-29-30. The public may join meeting by Zoom: https://zoom.us/join per the instructions provided at the end of the agenda:

Meeting ID: 829-9433-0466

COMMISSIONERS: Chair Ignacio Velazquez, Vice Chair Peter Hernandez, Jaime De La Cruz, Mary Vazquez Edge, and Rolan Resendiz
Alternates: San Benito County: Mark Medina;
City of San Juan Bautista: César E. Flores

Persons who wish to address the Board of Directors must complete a Speaker Card and give it to the Clerk prior to addressing the Board. Those who wish to address the Board on an agenda item will be heard when the Chairperson calls for comments from the audience. Following recognition, persons desiring to speak are requested to advance to the podium and state their name and address. After hearing audience comments, the Public Comment portion of the agenda item will be closed. ***The opportunity to address the Board of Director's on items of interest not appearing on the agenda will be provided during Section C. Public Comment.***

6:00 P.M. CALL TO ORDER:

A. ACKNOWLEDGE Certificate of Posting

B. NOTICE OF TEMPORARY PROCEDURES FOR AIRPORT LAND USE COMMISSION MEETINGS
(Please see Zoom instructions at the end of the agenda)

Pursuant to California Governor Gavin Newsom's Executive Order N-29-20 issued on March 17, 2020, relating to the convening of public meetings in response to the COVID-19 pandemic. Additionally, members of the Airport Land Use Commission can attend the meeting via teleconference and to participate in the meeting to the same extent as if they were present.

C. PUBLIC COMMENT: (Opportunity to address the Board on items of interest not appearing on the agenda. No action may be taken unless provided by Govt. Code Sec. 54954.2. Speakers are limited to 3 minutes.)

CONSENT AGENDA:

(These matters shall be considered as a whole and without discussion unless a particular item is removed from the Consent Agenda. Members of the public who wish to speak on a Consent Agenda item must submit a Speaker Card to the Clerk and wait for recognition from the Chairperson. Approval of a consent item means approval as recommended on the Staff Report.)

1. APPROVE Airport Land Use Commission Draft Meeting Minutes Dated October 15, 2020 – Gomez

2. FIND Project No. 2018-23, Associated with Assessor Parcel No. 053-350-005 on the corner of Wright Road and San Felipe Road in the City of Hollister, CONSISTENT with the 2012 Hollister Municipal Airport Land Use Compatibility Plan - Lezama

3. **FIND** Project No. 2018-6, Associated with Assessor Parcel Nos. 019-090-026 and 053-350-0030 located on 1100 San Felipe Road in the City of Hollister, **CONSISTENT** with the 2012 Hollister Municipal Airport Land Use Compatibility Plan – Lezama

4. **FIND** Project No. 2016-04, Associated with Assessor Parcel No. 051-170-003, Located at 335 Apollo Court in the City of Hollister, **CONSISTENT** with the 2012 Hollister Municipal Airport Land Use Compatibility Plan with Special Conditions – Lezama

Adjourn to ALUC Meeting on Thursday, December 17, 2020. Agenda Deadline is Tuesday, December 01, 2020 at 12:00 P.M

In compliance with the Americans with Disabilities Act (ADA), if requested, the Agenda can be made available in appropriate alternative formats to persons with a disability. If an individual wishes to request an alternative agenda format, please contact the Clerk of the Council four (4) days prior to the meeting at (831) 637-7665. The Council of Governments Board of Directors meeting facility is accessible to persons with disabilities. If you need special assistance to participate in this meeting, please contact the Clerk of the Council's office at (831) 637-7665 at least 48 ours before the meeting to enable the Council of Governments to make reasonable arrangements to ensure accessibility.

ZOOM INSTRUCTIONS:

Members of the public are encouraged to participate in Board meetings in the following ways:

1. Remote Viewing
   Members of the public who wish to watch the meeting can view the meeting online through Zoom. Instructions for participating via Zoom are included below.
2. Written Comments & Email Public Comment
   Members of the public may submit comments via email by 5:00 PM. on the Wednesday prior to the Board meeting to the Clerk of the Board at monica@sanbenitocog.org. Regardless of whether the matter is on the agenda. Every effort will be made to provide Board Members with your comments before the agenda item is heard.
3. Airport Land Use Commission meeting - Zoom Instructions for remote Participants:
   Each meeting will have a meeting ID, which is a unique number associated with an instant or scheduled meeting. Three ways to attend zoom meetings:
   1. Over the phone (Audio only):
      - (669) 900-6833 or (408) 638-0968.
   2. Open the Web-browser:
      - https://zoom.us/join
   3. Smart device Application:
      - Apple App store: https://apps.apple.com/us/app/id546505307
      - Android App store: https://play.google.com/store/apps/detailsZid=u.s.zoom.videomeetings

Zoom Audio Only (phone)

If you are **calling in as audio-only**, please dial **(669) 900-6833 or (408) 638-0968**.

1. It will ask you to enter the **Meeting ID,** 829-9433-0466, followed by the **"#" key**, which can be found at the top page of the agenda. The meeting agenda can be found at: http://www.sanbenitocog.org/wp-content/uploads/2020/11/ALUC_Packet_111920.pdf
2. It will then ask for a **Participant ID**, press the **"#" key** to continue.
3. Once you enter the zoom meeting, you will automatically be placed on mute.
4. Public Comment: If you are using a phone, please press the "*9" to raise your hand, zoom facilitator will unmute you when your turn arrives.

Zoom on Web-browser or Zoom app on Tablet or Smartphone

If joining through web-browser launch: https://zoom.us/join or launch the Zoom app on your Tablet or Smartphone

1. Select **"JOIN A MEETING"**

2. The participant will be prompted to enter **Meeting ID,** 829-9433-0466 and name to join the meeting. Which can be found at the top page of the agenda. The meeting agenda can be found at: http://www.sanbenitocog.org/wp-content/uploads/2020/11/ALUC_Packet_111920.pdf
3. You can launch audio through your computer or set it up through the phone. Follow instructions provided by Zoom.
4. Public Comment: Click **"Raise hand"** icon, the zoom facilitator will unmute you when your turn arrives.

Public Comment Guidelines

- If participating on zoom Once you are selected, you will hear that you have been unmuted: State your first name, last name, and county you reside in for the record.
- The Local Transportation Authority welcomes your comments.
- Each individual speaker will be limited to a presentation total of three (3) minutes.
- Please keep your comments, brief, to the point, and do not repeat prior testimony, so that as many people as possible can be heard. Your cooperation is appreciated.

CERTIFICATE OF POSTING

Pursuant to Government Code Section #54954.2(a) the Meeting Agenda for the Airport Land Use Commission on **November 19, 2020** at **6:00 P.M.** was posted at the following locations freely accessible to the public:

The front entrance of the Old San Benito County Courthouse, Monterey Street, Hollister, CA 95023, and the Council of Governments Office, 330 Tres Pinos Rd., Ste. C7, Hollister, CA 95023 at the following date and time:

On the **13th day of November 2020,** on or before **6:00 P.M.**

The meeting agenda was also posted on the Council of San Benito County Governments website, www.sanbenitocog.org, under Meetings, ALUC, Meeting Schedule

I, Monica Gomez, swear under penalty of perjury that the foregoing is true and correct.

BY: [signature]

Monica Gomez, Secretary II
Council of San Benito County Governments

Agenda Item: 1

San Benito County
AIRPORT LAND USE COMMISSION
REGULAR MEETING
(Zoom Platform)

October 15, 2020 6:00 P.M.

MINUTES

MEMBERS PRESENT:
Chair Ignacio Velazquez, Vice-Chair Peter Hernandez, Jaime De La Cruz, and Mary Vazquez Edge, Rolan Resendiz

STAFF PRESENT:
Executive Director, Mary Gilbert; Transportation Planner, Regina Valentine, Transportation Planner, Veronica Lezama; Administrative Services Specialist, Kathy Postigo; Secretary, Monica Gomez; Office Assistant, Griselda Arevalo; Deputy County Counsel, Shirley Murphy

CALL TO ORDER:
Chair Velazquez called the meeting to order at 6:29 P.M.

A. Acknowledge Certificate of Posting

A motion was made by Director Vazquez Edge, and seconded by Director De La Cruz, the Directors acknowledged the Certificate of Posting. Vote: 5/0 motion passes.

B. NOTICE OF TEMPORARY PROCEDURES FOR AIRPORT LAND USE COMMISSION MEETINGS

Pursuant to California Governor Gavin Newsom's Executive Order N-29-20 issued on March 17, 2020, relating to the convening of public meetings in response to the COVID-19 pandemic. Additionally, members of the COG Board are allowed to attend the meeting via teleconference and to participate in the meeting to the same extent as if they were present.

Chair Velazquez reminded members of the public that an overview of temporary procedures (Zoom etiquette) for ALUC meetings was attached to the agenda.

C. PUBLIC COMMENT: None

CONSENT AGENDA:

1. **Approve** Airport Land Use Commission Draft Meeting Minutes dated September 17, 2020 – Gomez

2. **Find** Project No. 2020-14, Associated with Assessor Parcel No. 051-100-031, Located at 773 San Felipe Road in the City of Hollister, **Consistent** with the 2012 Hollister Municipal Airport Land Use Compatibility Plan – Lezama

There was no public comment on the Consent Agenda.

A motion was made by Director De La Cruz, and seconded by Director Hernandez, the Directors approved Consent Agenda Items 1&2. Vote: 5/0 motion passes.

A motion was made by Director Hernandez, and seconded by Director Vazquez Edge, the Directors adjourned the ALUC Meeting at 6:30 p.m. Vote: 5/0 motion passes.

ADJOURN TO ALUC MEETING THURSDAY NOVEMBER 19, 2020.

Airport Land Use Commission
San Benito County

Agenda Item 2

Staff Report

To:	Airport Land Use Commission
From:	Veronica Lezama, Transportation Planner Telephone: (831) 637-7665
Date:	November 19, 2020
Subject:	Land Use Consistency Determination

Recommendation:

FIND Project No. 2018-23, Associated with Assessor Parcel No. 053-350-005 on the corner of Wright Road and San Felipe Road in the City of Hollister, CONSISTENT with the 2012 Hollister Municipal Airport Land Use Compatibility Plan.

Summary:

The ALUC application associated with assessor parcel number 053-350-005 was reviewed in accordance with the adopted 2012 Hollister Municipal Airport Land Use Compatibility Plan.

Financial Considerations:

The Airport Land Use Commission (ALUC) has an adopted application fee structure. The fee consists of a minimum $300 non-refundable payment that is submitted at the time the application is provided to ALUC.

Background:

Land use actions proposed within the Hollister Municipal Airport Influence Area (Attachment 1) are subject to ALUC review to determine consistency with the Hollister Municipal Airport Land Use Compatibility Plan. The purpose of the Compatibility Plan is to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards.

Staff Analysis:

ALUC staff received an application for a Consistency Determination with the adopted 2012 Hollister Municipal Airport Land Use Compatibility Plan.

Project Description:

The Wright 13 Project is proposed north end of the City of Hollister in San Benito County, approximately 1.25 miles south of the Hollister Municipal Airport (Attachment 2). The applicant is proposing to create four lots from the existing 13-acre parcel. Three parcels would contain a new cannabis cultivation, distribution, and manufacturing facility, with access provided by a private easement shared by all parcels. The remaining parcel is a stormwater detention basin. The applicant is specifically proposing to include three greenhouses totaling 341,062 square feet (Attachment 3).

During a project review, the Airport Land Use Commission considers several Compatibility Plan policies including: ***Noise, Safety, Airspace Protection***, and ***Overflight***. An analysis of each of the four compatibility factors is discussed below.

Noise Policy 3.2.

The Noise Policy objective is to avoid establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise. The magnitude noise impacts are depicted by four contours, which show the greatest annualized noise impacts anticipated to be generated by the airport over the next 20 years.

The project is proposed outside of the Noise Contours (Attachment 4). As such, the project does not require additional noise attenuation measures beyond what is required by the California Building Code. As a result, the proposed project is consistent with the Hollister Municipal Airport Land Use Compatibility Plan's Noise Policy.

Safety Policy 3.3.

The Safety Policy objective is to minimize the risks associated with an off-airport aircraft accident or emergency landing. The policy focuses on reducing the potential consequences of such events by limiting sensitive land uses (i.e. residential) and intensities of non-residential uses (i.e. commercial, industrial, etc.). This policy is defined in terms of the geographic distribution of where accidents are most likely to occur based on the six safety zones.

The project is proposed within the Safety Zone 6 (Attachment 5)- the least restrictive of the Safety Zones. According to Table 2: Safety Compatibility Criteria, the *Indoor Storage* use is *Normally Compatible* and allowed within Safety Zone 6 (Attachment 6). As an additional condition of compatibility, the project must also comply with the indicated usage intensity limits and other listed conditions identified in Table 2: Safety Compatibility Criteria (Attachment 6). The applicant identifies 56 parking sports and has noted that the project's usage intensities is proposed between 24-30 employees/guest. The applicant's proposed intensity limits will not exceed those allowed in Safety Zone 6. As such, the project is consistent with the Compatibility Plan's Safety Policy.

Airspace Protection Policy 3.4.

The Airspace Protection Policy seeks to prevent creation of land use features that can be hazards to the airspace required by aircraft in flight and have the potential for causing an aircraft accident to occur.

In evaluating the airspace protection compatibility of the proposed development, three categories of hazards to airspace shall be considered: physical, visual, and electronic. The categories of hazard applicable to the project are outlined in bold below.

a. **The height of structures and other objects situated near the airport are a primary determinant of physical hazards to the airport airspace.**

   ALUC Staff Analysis: The project is proposed outside of the Critical Airspace Protection Zone and any object in this zone is allowed to have a height of up to 35 feet above the ground. The project structures will not exceed 20 feet in height and therefore consistent with the Federal Regulation 49 CFR Part 77, which establishes standards and notification requirements for objects affecting navigable airspace.

b. **Land use features that have the potential to attract birds and certain other wildlife to the airport area are also to be evaluated as a form of physical hazards (FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*).**

   ALUC Staff Analysis: The applicant is proposing a detention basin designed not hold standing water after storm events so as to not attract birds, basin pumps shall be sized and programmed accordingly to drain within 24 hours. The detention basin design is consistent with the Compatibility Plan.

c. **Visual hazards of concern include certain types of lights, sources of glare, and sources of dust, steam, or smoke.**

   ALUC Staff Analysis: The applicant is proposing the construction of 341,062 square feet of indoor glass greenhouse buildings for a cannabis cultivation facility. San Benito Airport Land Use Commission staff requested that the applicant provide a glare study as greenhouses may have the potential to pose hazard to pilots in the form of glare. The applicant provided a Solar Glare Analysis Study to evaluate the potential for solar glare from the project for airplanes on the final approach to the airport (Attachment 7).

   The impact of glare depends on the interaction between the position of the sun, the angle and orientation of the reflective surface, the reflectivity of the surface, the size of the project, and the relative location of the observer. "Green" rated glare indicates a low potential for after-image, "yellow" rated glare indicates the potential for after-image exists, and "red" rated glare indicates the potential for retinal damage.

The report concluded that the preparer of the study "Solas does not expect the Wright 13 greenhouses to produce red-grade glare or yellow-grade glare at the evaluated flight paths. The model predicts green-grade glare at all flight paths evaluated. Results assume there are clear skies year-round and there is no screening between the greenhouses and the flight paths. The results of the Glare Gauge analysis identified four locations will experience green-grade glare as described in detail in the report, page 16. Green rated glare indicates a low potential for after-image.

a. Electronic hazards are ones that may cause interference with aircraft communications or navigation.

   Staff Analysis: None

The proposed project is consistent with the Compatibility Plan's Airspace Protection Policy.

Overflight Policy 3.5.

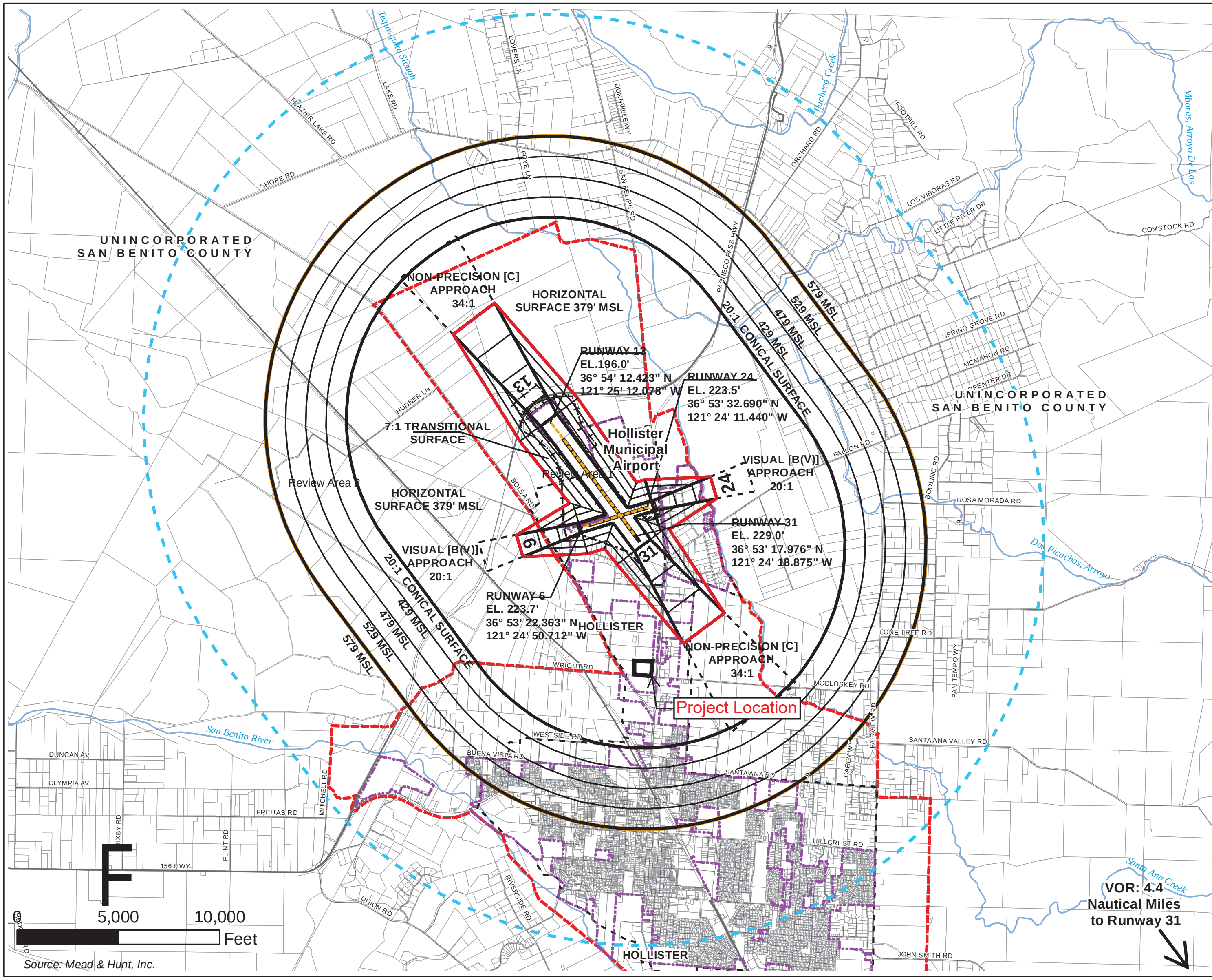
The Overflight Compatibility Policy is intended to help notify people, through real estate disclosures, about the presence of aircraft overflight near airports so that they can make informed decisions regarding acquisition or lease of property in the affected areas. Overflight policies do not apply to non-residential development. The applicant is proposing a non-residential use and is therefore consistent with the Overflight Compatibility Policy.

Executive Director Review:___MG____ Counsel Review: N/A

Supporting Attachment(s):

1. Compatibility Policy Map: Airport Influence Area
2. Project Location Map
3. Project Site Plan
4. Noise Contour Map
5. Safety Zones Map
6. Table 2: Safety Compatibility Criteria
7. Glare Analysis Report

ATTACHMENT 1



Legend

- Existing Airport Property
- Future Property Acquisition
- Hollister City Limits
- Hollister Sphere of Influence
- Hollister Planning Area Boundary
- Existing Runway- 13-31 length: 6,350', 6-24 length: 3,150'
- Future Runway- 13-31 length: 7,000', 6-24 length: 3,357'
- Roads
- Railroads
- Parcels
- Rivers

Policy Boundaries

- Airport Influence Area
- Airspace Protection Zone [1]
- Critical Airspace Protection Zone [2]
- FAA Height Notification Surface [3]

Notes

1. The Airspace Protection Zones are drawn in accordance with FAR Part 77, Subpart C and reflect the future runway lengths and instrument approaches for all runways except Runway 31. For Runway 31, the existing runway end location and instrument approach type are reflected, as the existing airspace surface are generally more restrictive than the airspace surfaces reflecting the future runway end and approach type.

2. The Critical Airspace Protection Zone encompasses the primary surface and the critical portions of the approach and transitional surfaces to where these surfaces intersect with the horizontal surface.

3. The FAA Height Notification Zone is established in accordance with FAR Part 77, Subpart B.

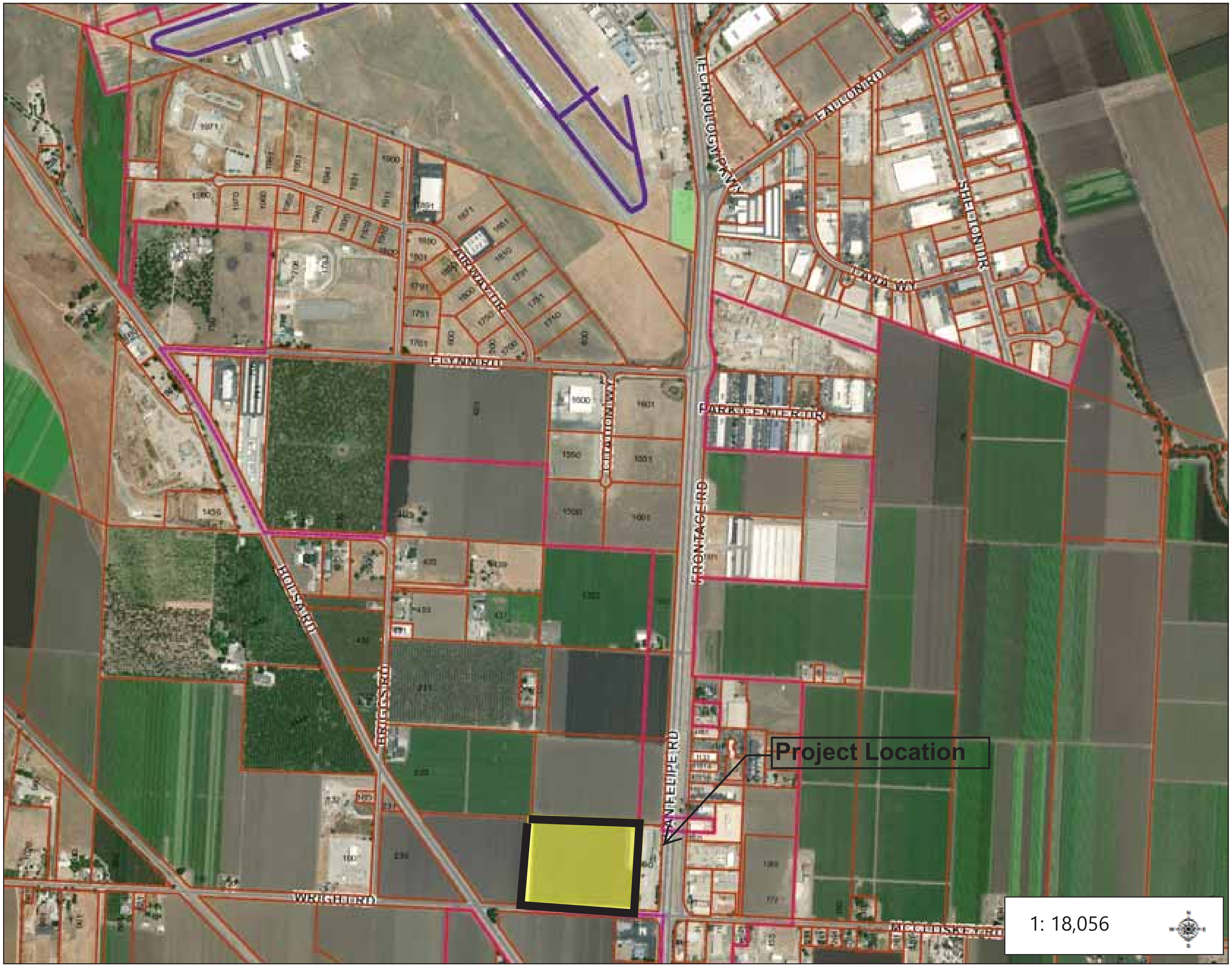
Hollister Municipal Airport

Land Use Compatibility Plan

Map 4

Compatability Policy Map: Airspace Protection Zones

County of San Benito **Project Location**



Legend

- SBC Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Runways
- Tentative Streets
- Park

Notes

3,009.3 | 0 | 1,504.66 | 3,009.3 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

ATTACHMENT 3

SCALE: 1" = 100'

VICINITY MAP
SCALE: 1" = 2000'

PROJECT TEAM

OWNER/APPLICANT
WRIGHT THIRTEEN, LLC
10 HARRIS COURT, SUITE B-1
MONTEREY, CA 93940

(831) 649-0230

CIVIL ENGINEER
WHITSON ENGINEERS
6 HARRIS COURT
MONTEREY, CA 93940

ANDREW HUNTER, RCE 67770
(831) 649-5225

DEVELOPMENT NOTES

PROPERTY DATA
ASSESSOR'S PARCEL NO.: 053-300-005
PARCEL SIZE: 13.19 AC
GENERAL PLAN DESIGNATION: NORTH GATEWAY COMMERCIAL
EXISTING ZONING: NORTH GATEWAY MG

AREA
SITE AREA: 13.18 AC
PROPOSED LOTS: 4 LOTS
PARCEL A: 4.29 AC
PARCEL B: 4.65 AC
PARCEL C: 4.07 AC
PARCEL D: 0.86 AC

PROPOSED BUILDING SIZE: 341,060 SF

LOT COVERAGE:
BUILDING AREA: 59%
PAVED AREA: 0.7%
LANDSCAPE AREA: 8%
REMAINING LOT COVERAGE TO BE A PERVIOUS GRAVEL SURFACE OR UNIMPROVED

PARKING DATA
TOTAL PARKING STALLS: 96
NUMBER OF ADA STALLS: 6

NOT FOR CONSTRUCTION

WHITSON ENGINEERS
6 Harris Court • Monterey, CA 93940
831 649-5225 • Fax 831 373-5065
Civil Engineering • Land Surveying • Project Management

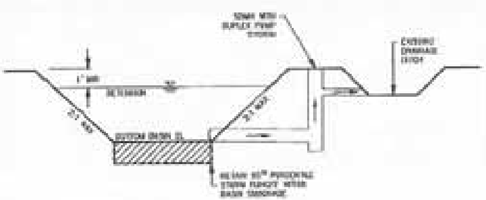
DRAFT

WRIGHT 13 - WRIGHT ROAD
HOLLISTER CALIFORNIA
AERIAL SITE PLAN
DEVELOPMENT PLAN SET
APN 053-300-005

C0.1

PRELIMINARY STORMWATER CALCULATIONS

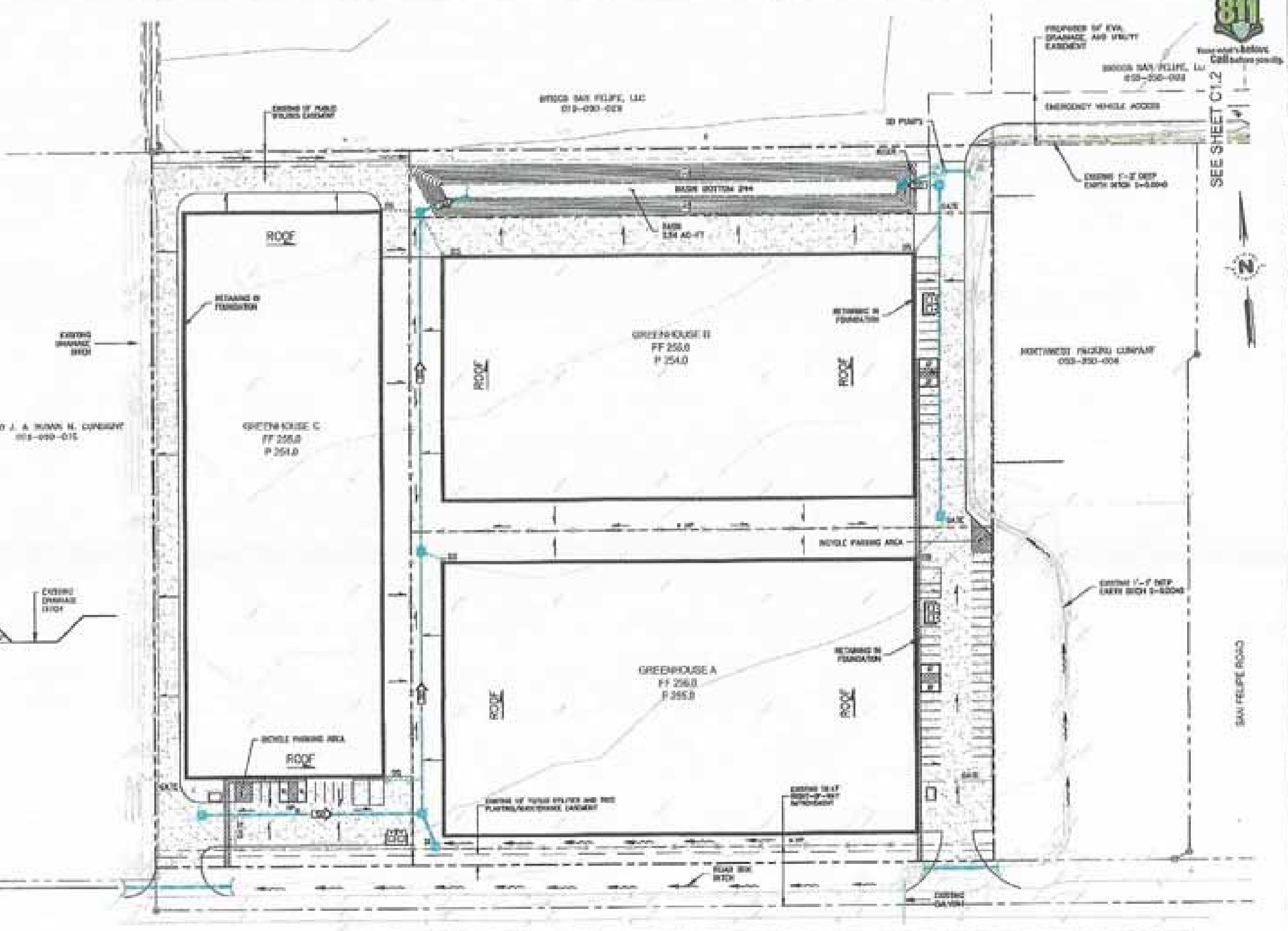
AREA DESCRIPTION	[illegible] AREA ([illegible])
PERVIOUS AREA	233,864 (5.4 ACRES)
IMPERVIOUS AREA	340,878 (7.8 ACRES)
TOTAL	[illegible] (13.2 ACRES)
PERCENT IMPERVIOUS	60%
WATER MANAGEMENT ZONE	1
ASSUMED SOIL TYPE	[illegible]
[illegible] 24-HOUR RAINFALL DEPTH	1.3 IN
2-YEAR PRE-DEVELOPMENT FLOW	3.1 CFS
10-YEAR PRE-DEVELOPMENT FLOW	7.2 CFS
ASSUMED INFILTRATION RATE	0.1 IN/HR
TOTAL REQUIRED BASIN VOLUME	2.9 AF
TOTAL BASIN VOLUME PROVIDED	3.34 AF



BASIN DESIGN CRITERIA:

1. BASIN WILL BE DESIGNED WITH A TWO PUMP STRUCTURE TO RELEASE STORM WATER AT THE 10-YEAR PRE-DEVELOPMENT FLOW RATE, THE 2-YEAR PRE-DEVELOPMENT FLOW RATE, AND SIZE OF THE PRE-DEVELOPMENT 100-YEAR DESIGN STORM.
2. BASIN IS DESIGNED TO NOT HOLD STANDING WATER AFTER STORM EVENTS SO AS TO NOT ATTRACT BIRDS. BASIN PUMPS SHALL BE TESTED AND PROGRAMMED ACCORDINGLY TO DRAIN WITHIN 24 HOURS.

① TYPICAL BASIN DETAIL
NOT TO SCALE



NOTES:

1. TOPOGRAPHIC SURVEY WAS PERFORMED BY REPUBLIC NATIONAL ON FEBRUARY 23, 2014 AND SUPPLEMENTAL TOPOGRAPHIC SURVEY BY WHITSON ENGINEERS ON [illegible].
2. THIS MAP PORTRAYS THE SITE AT THE TIME OF THE SURVEY AND DOES NOT SHOW SOILS OR GEOLOGY INFORMATION, UNDERGROUND CONDITIONS, ZONING OR REGULATORY INFORMATION.
3. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ELEVATIONS WERE DETERMINED THROUGH STATIC GPS OBSERVATIONS AND THE USE OF THE NATIONAL GEODETIC SURVEY'S ONLINE POSITION USER SERVICE (OPUS). AN ESTABLISHED NAVD88 ELEVATION OF [illegible] FEET FOR A [illegible] BRASS DISC IN THE TOP OF A CONCRETE HEADWALL FOR A STORM DRAIN PIPE LOCATED AT THE NORTHWEST CORNER OF [illegible] ROAD AND SAN FELIPE ROAD [illegible], DESIGNATED CITY OF HOLLISTER BENCHMARK [illegible] IS THE LOCAL BENCHMARK TO WHICH ALL ELEVATIONS SHOWN HEREON ARE REFERENCED.

LEGEND

SCALE: 1" = 50'

NOT FOR CONSTRUCTION

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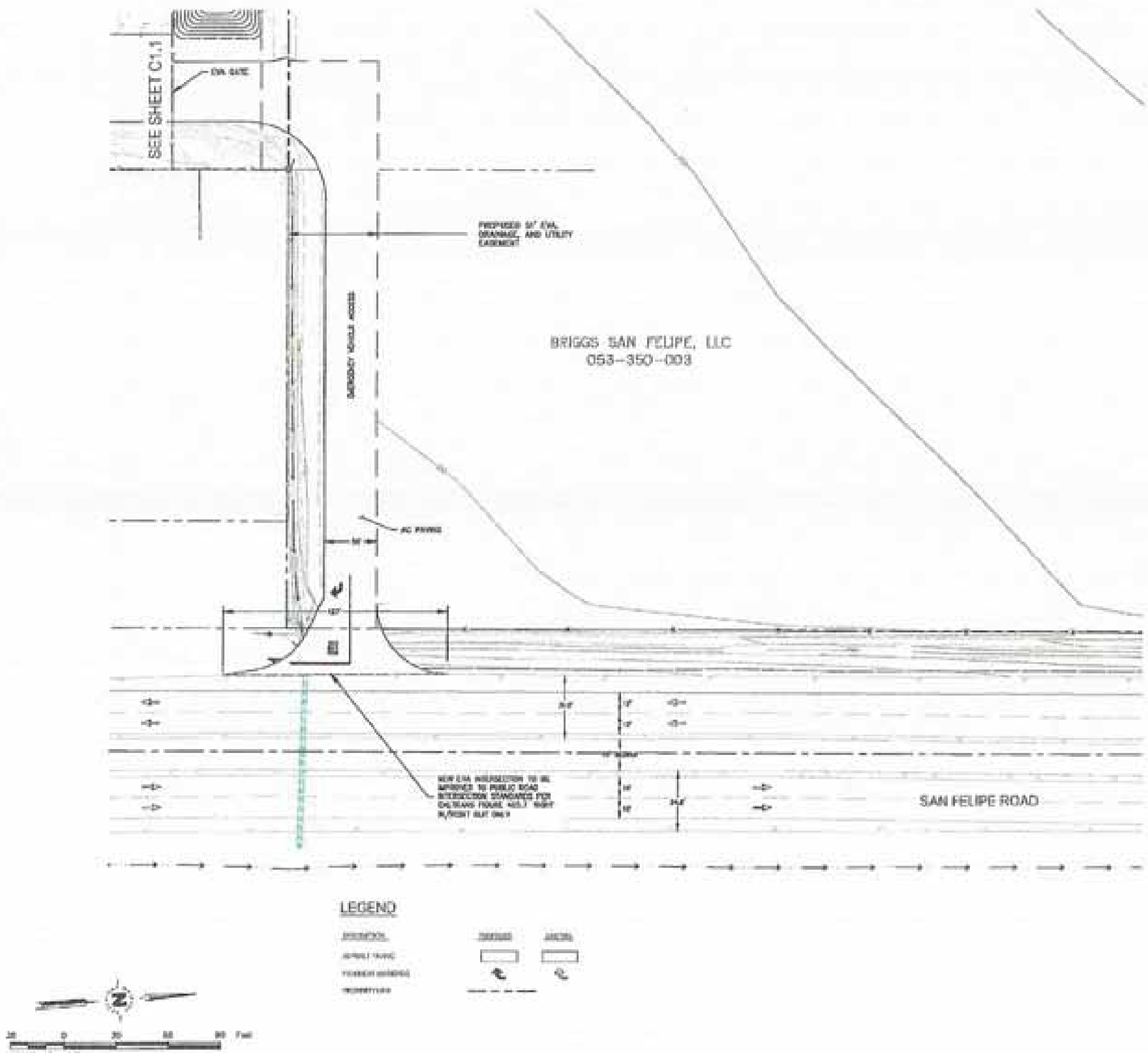
WRIGHT 13 - WRIGHT ROAD
HOLLISTER CALIFORNIA
CONCEPTUAL GRADING AND DRAINAGE PLAN
DEVELOPMENT PLAN SET

C1.1



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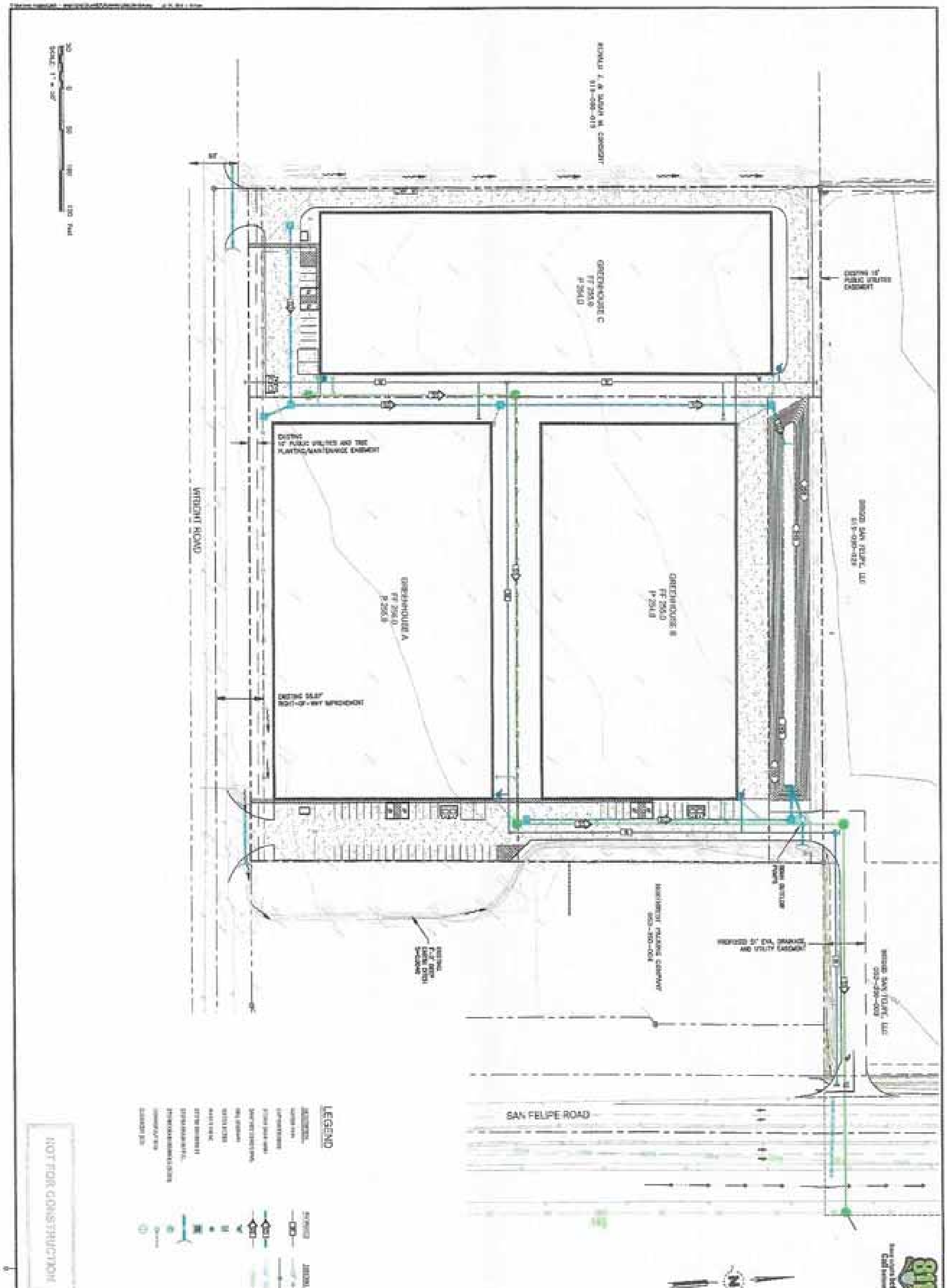
WRIGHT 13 - WRIGHT ROAD

HOLLISTER CALIFORNIA

CONCEPTUAL GRADING AND DRAINAGE PLAN

APN 053-350-003 DEVELOPMENT PLAN SET

C1.2



WRIGHT 13 - WRIGHT ROAD

HOLLISTER CALIFORNIA

CONCEPTUAL UTILITY PLAN

APN 053-336-005 DEVELOPMENT PLAN SET

C2.1

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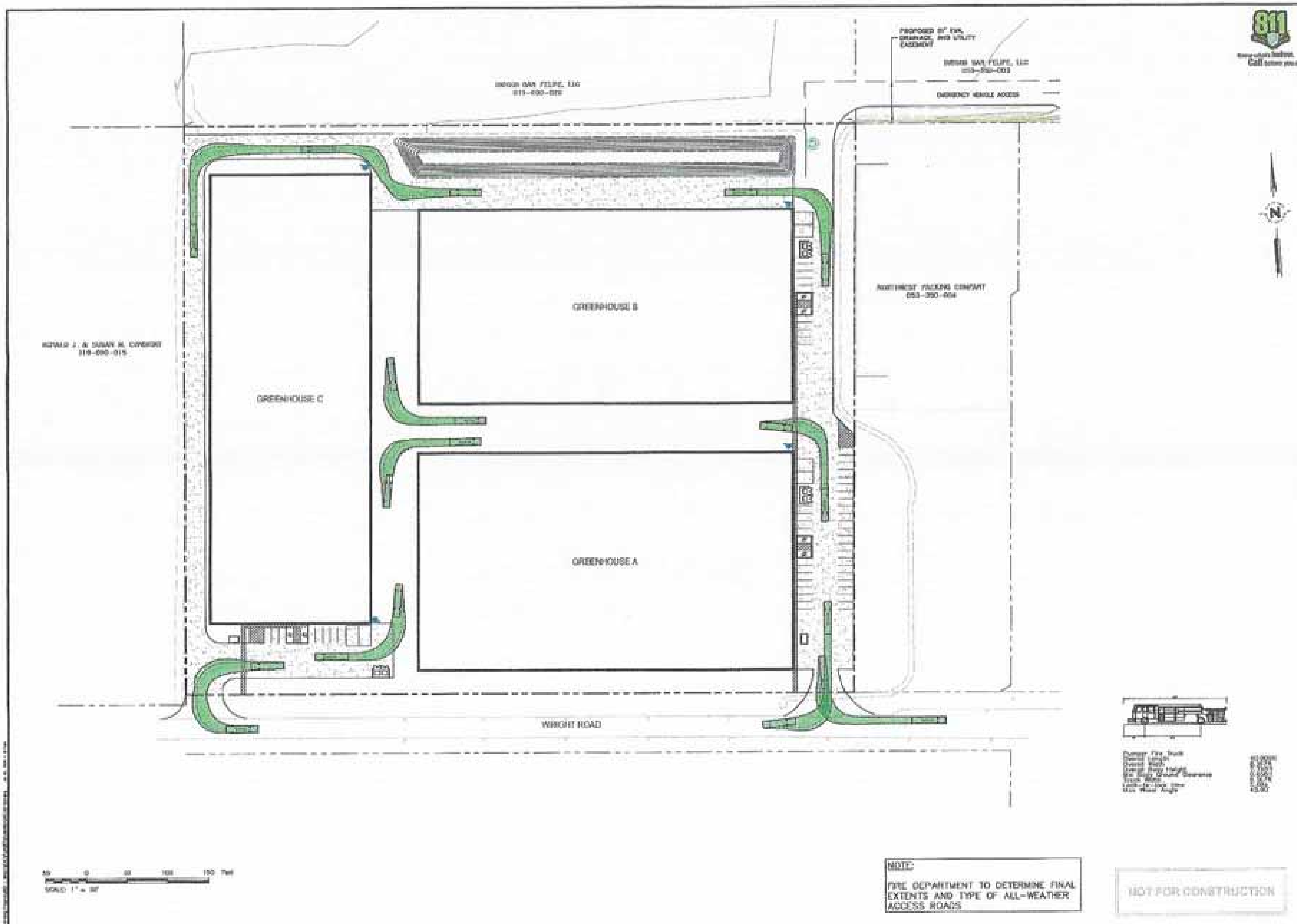

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WRIGHT 13 - WRIGHT ROAD

HOLLISTER CALIFORNIA

PRELIMINARY CIRCULATION PLAN - FIRE TRUCK

DEVELOPMENT PLAN SET

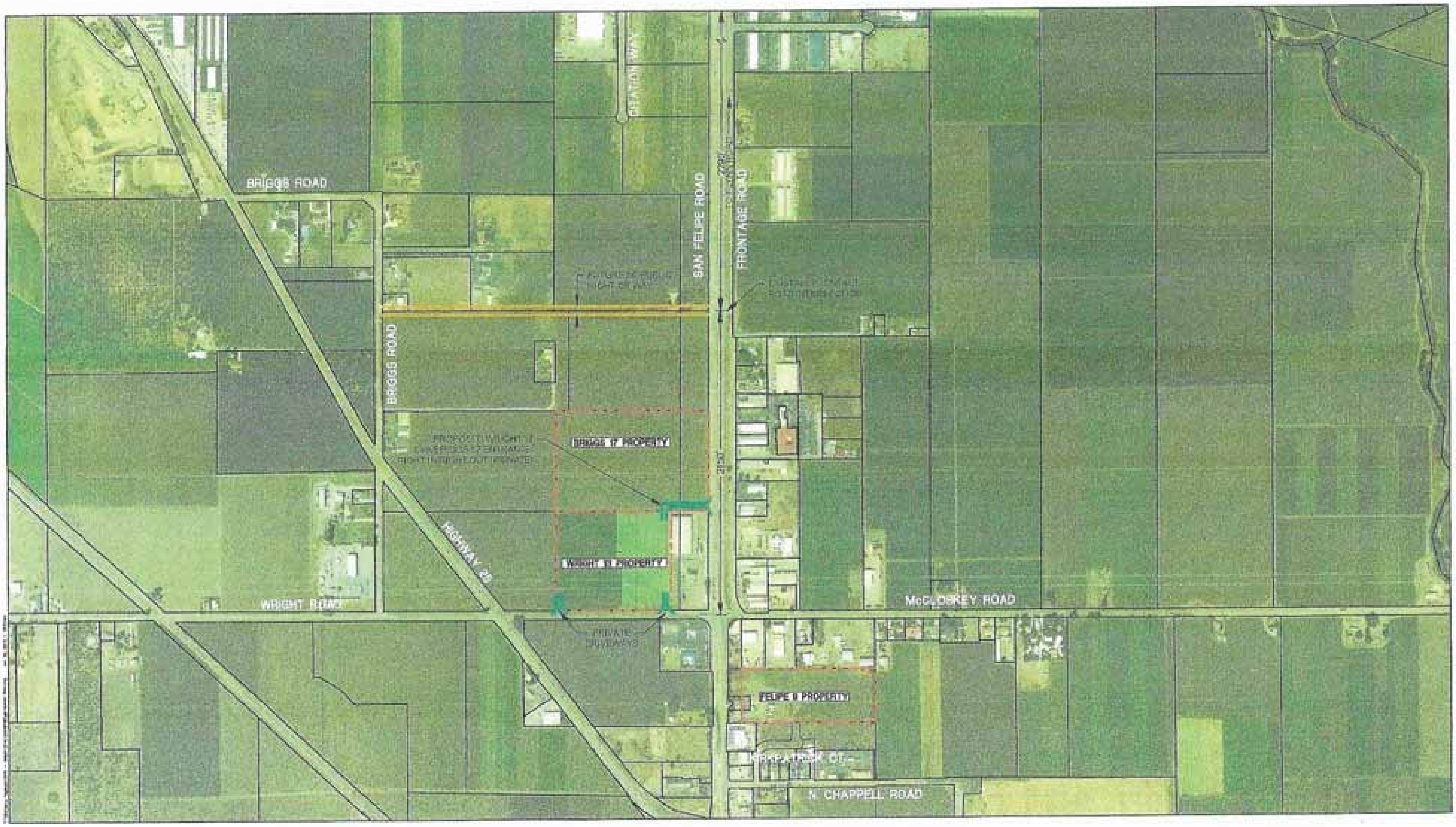
C3.1

SHEET C3.2	**WRIGHT 13 - WRIGHT ROAD**
	HOLLISTER — CALIFORNIA
	PRELIMINARY CIRCULATION PLAN - LARGE DELIVERY TRUCK
	APN 053-356-005 — DEVELOPMENT PLAN SET

WHITSON ENGINEERS
6 Harris Court • Monterey, CA 93940
831 649-5225 • Fax 831 373-5065
Civil Engineering • Land Surveying • Project Management

DRAFT

SCALE 1"=50'



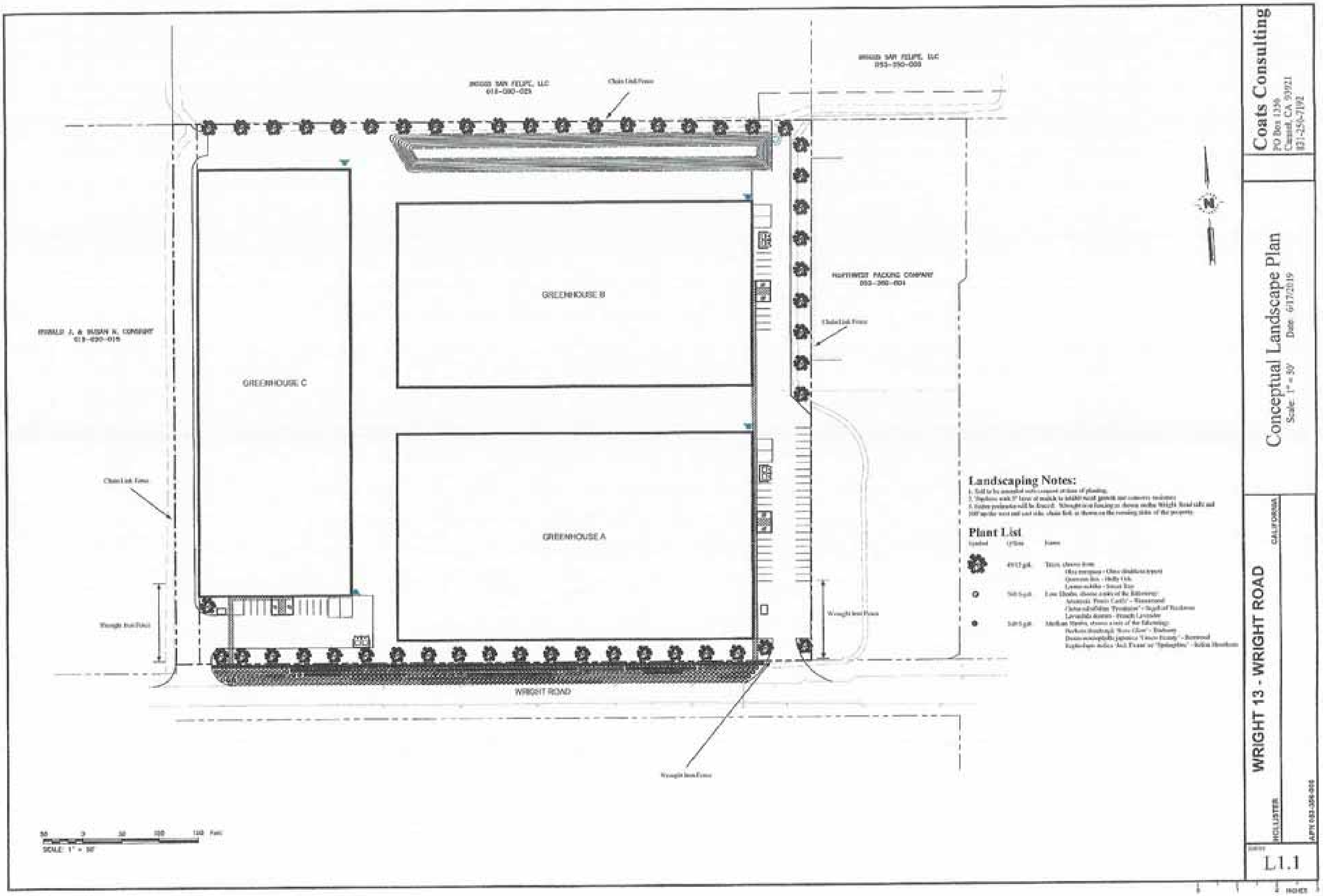
REGIONAL MAP-PROPOSED ACCESS AND CIRCULATION
HOLLISTER CULTIVATION PARK
HOLLISTER, CALIFORNIA

SCALE: 1" = 300'

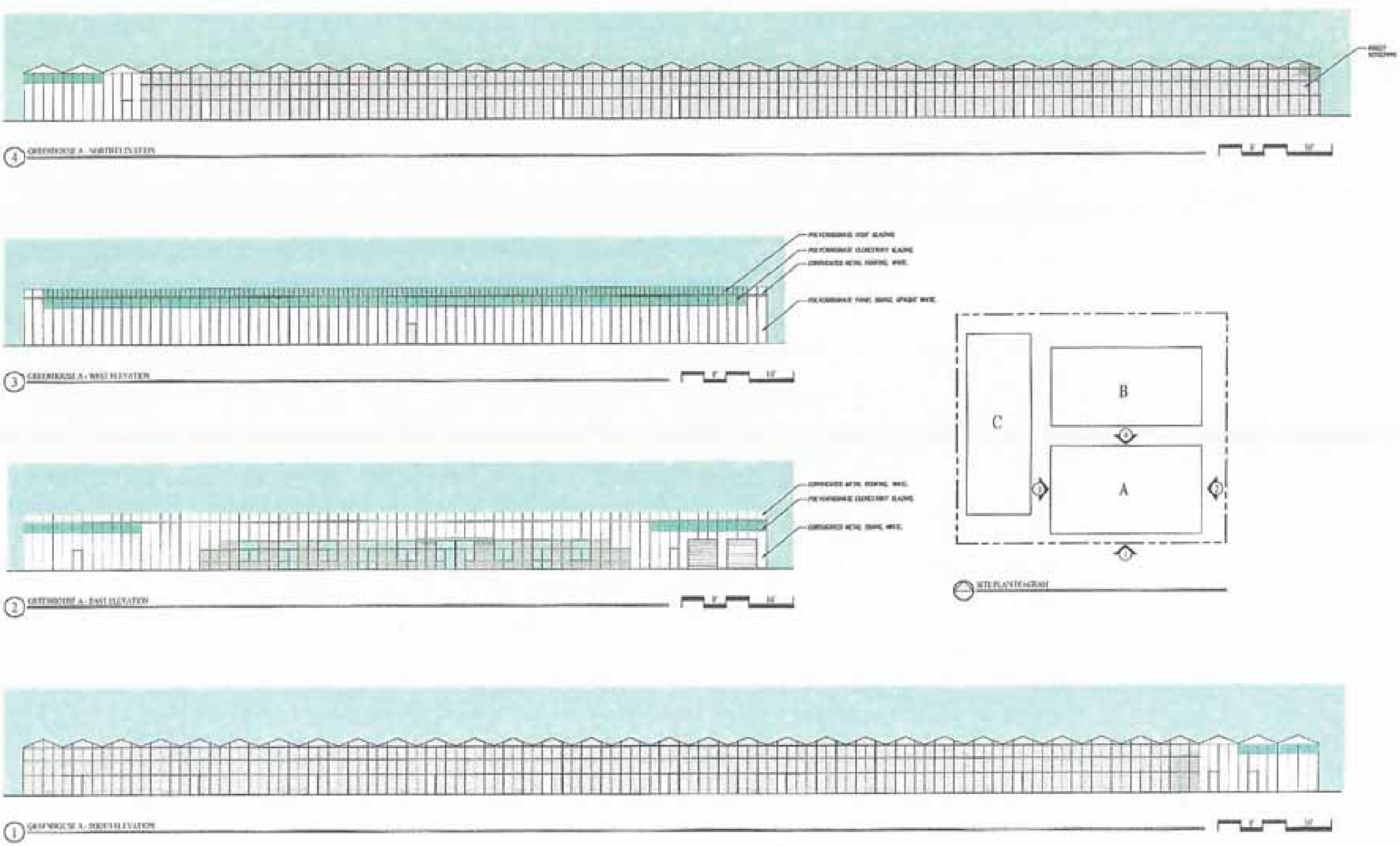
Whitson Engineers

6/26/2019
Sheet 1 of 3

1" = 300'



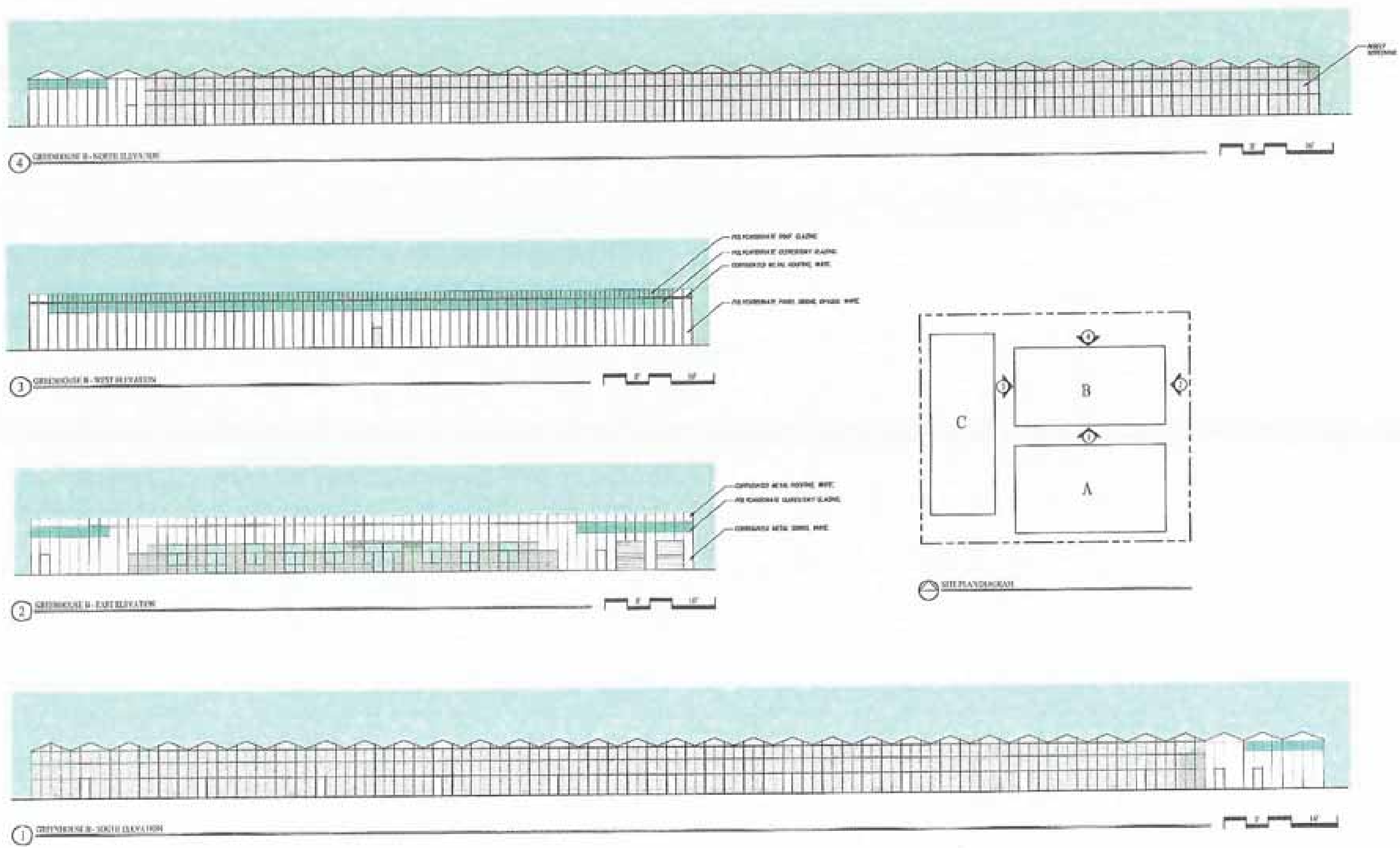
Coats Consulting
PO Box 1336
Carmel, CA 93921
831-250-7192
Conceptual Landscape Plan
Scale: 1" = 30'
Date: 6/17/2019
WRIGHT 13 - WRIGHT ROAD
HOLLISTER
CALIFORNIA
L1.1
GREENHOUSE A
GREENHOUSE B
GREENHOUSE C
WRIGHT ROAD
NORTHWEST PACKING COMPANY
053-260-001
Chain Link Fence
Wrought Iron Fence
SCALE: 1" = 30'
N
Landscaping Notes:
Plant List
Lavandula dentata - French Lavender



WRIGHT 13 - WRIGHT ROAD

GREENHOUSE A BUILDING ELEVATIONS

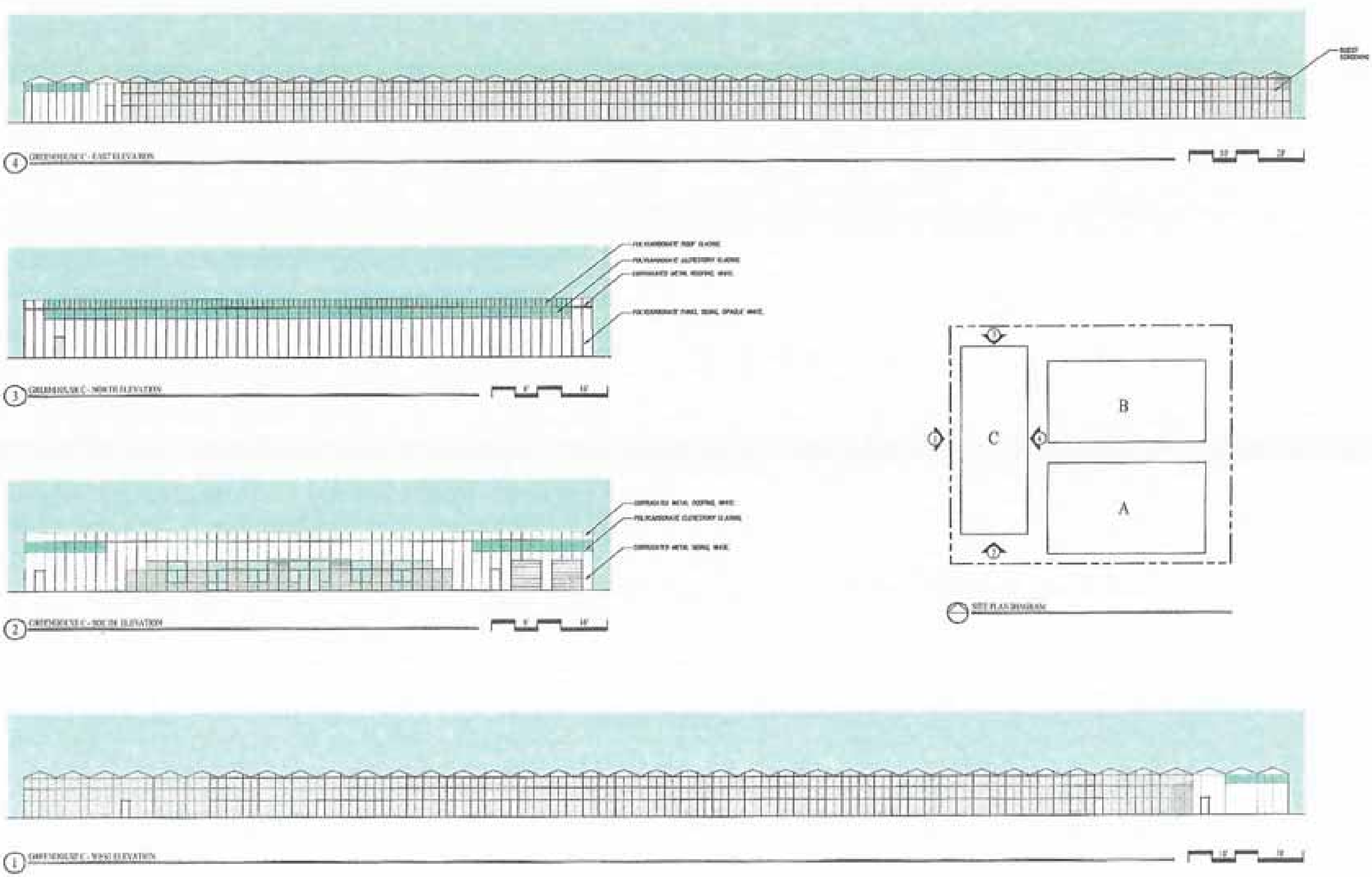
MARCH 14, 2019



WRIGHT 13 - WRIGHT ROAD

GREENHOUSE B BUILDING ELEVATIONS

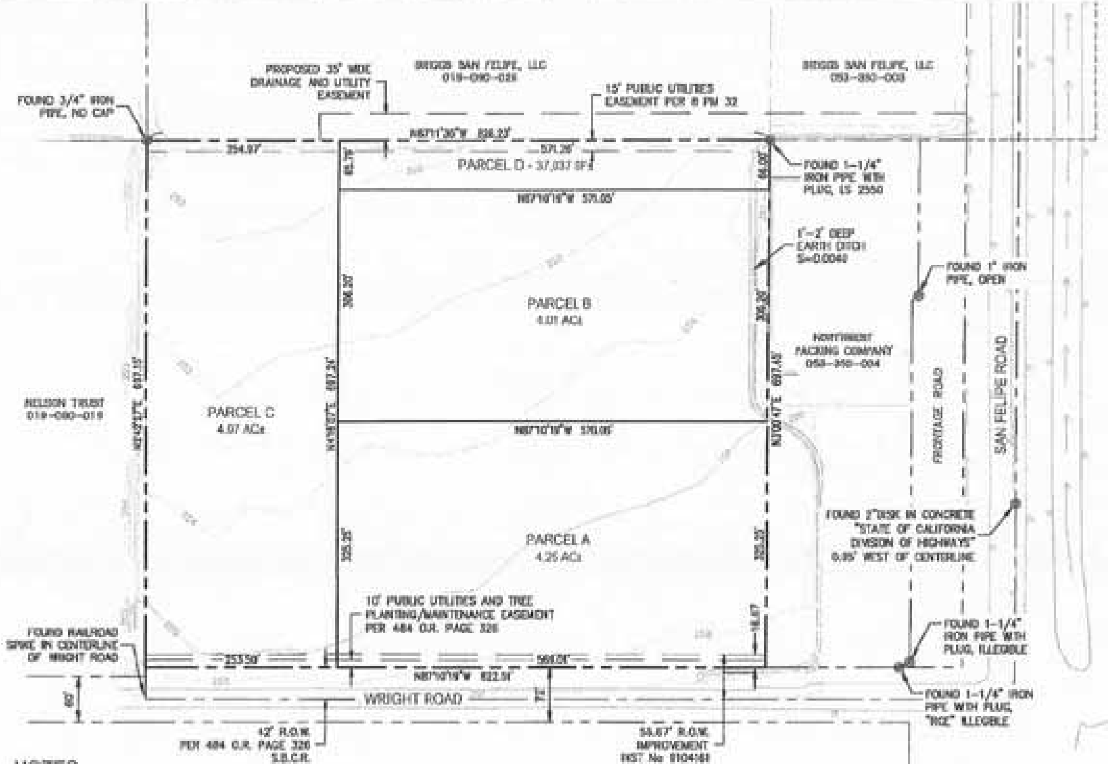
MARCH 14, 2019

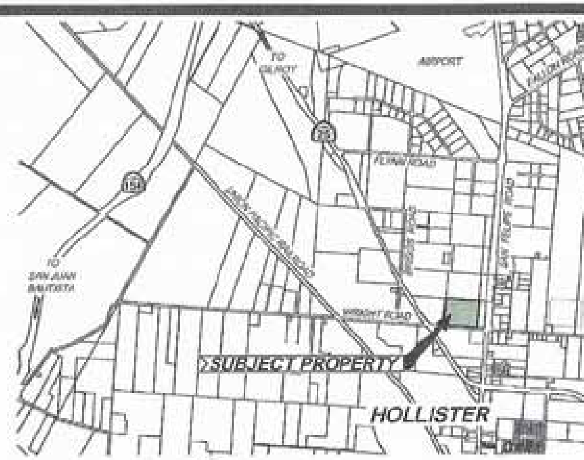


WRIGHT 13 - WRIGHT ROAD

GREENHOUSE C BUILDING ELEVATIONS

MARCH 14, 2019





VICINITY MAP
SCALE: 1" = 2000'

LEGEND

- SUBJECT PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPOSED PARCEL LINE
- CENTERLINE
- MONUMENT AS NOTED
- EXISTING DIRT ROAD
- EXISTING CONTOUR

NOTES

1. OWNER: WRIGHT THIRTEEN, LLC, 10 HARRIS COURT, SUITE B-1, MONTEREY, CA 93940
2. ENGINEER: WHITSON ENGINEERS, 6 HARRIS COURT, MONTEREY, CA 93940
3. LEGAL DESCRIPTION: BEING ALL OF PARCEL 2, AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD MAY 23, 1991 IN BOOK 8, OF PARCEL MAPS, AT PAGE 32, SAN BENITO COUNTY RECORDS
4. CONTOUR INTERVAL: 1 FOOT
5. A.P.N.: 053-350-005
6. SITE AREA: ±13.19 ACRES
7. EXISTING ZONING: NORTH GATE COMMERCIAL (NG)
8. EXISTING LAND USE: AGRICULTURE
9. PROPOSED LAND USE: CANNABIS CULTIVATION AND MANUFACTURING FACILITIES
10. GENERAL PLAN DESIGNATION: NORTH GATE COMMERCIAL
11. NUMBER OF PROPOSED PARCELS: 4
12. NO IMPROVEMENTS REQUIRED OR PROPOSED AS A PART OF THIS MAP

TENTATIVE PARCEL MAP
WRIGHT THIRTEEN

RANCHO SAN JUSTO
CITY OF HOLLISTER, COUNTY OF SAN BENITO
STATE OF CALIFORNIA

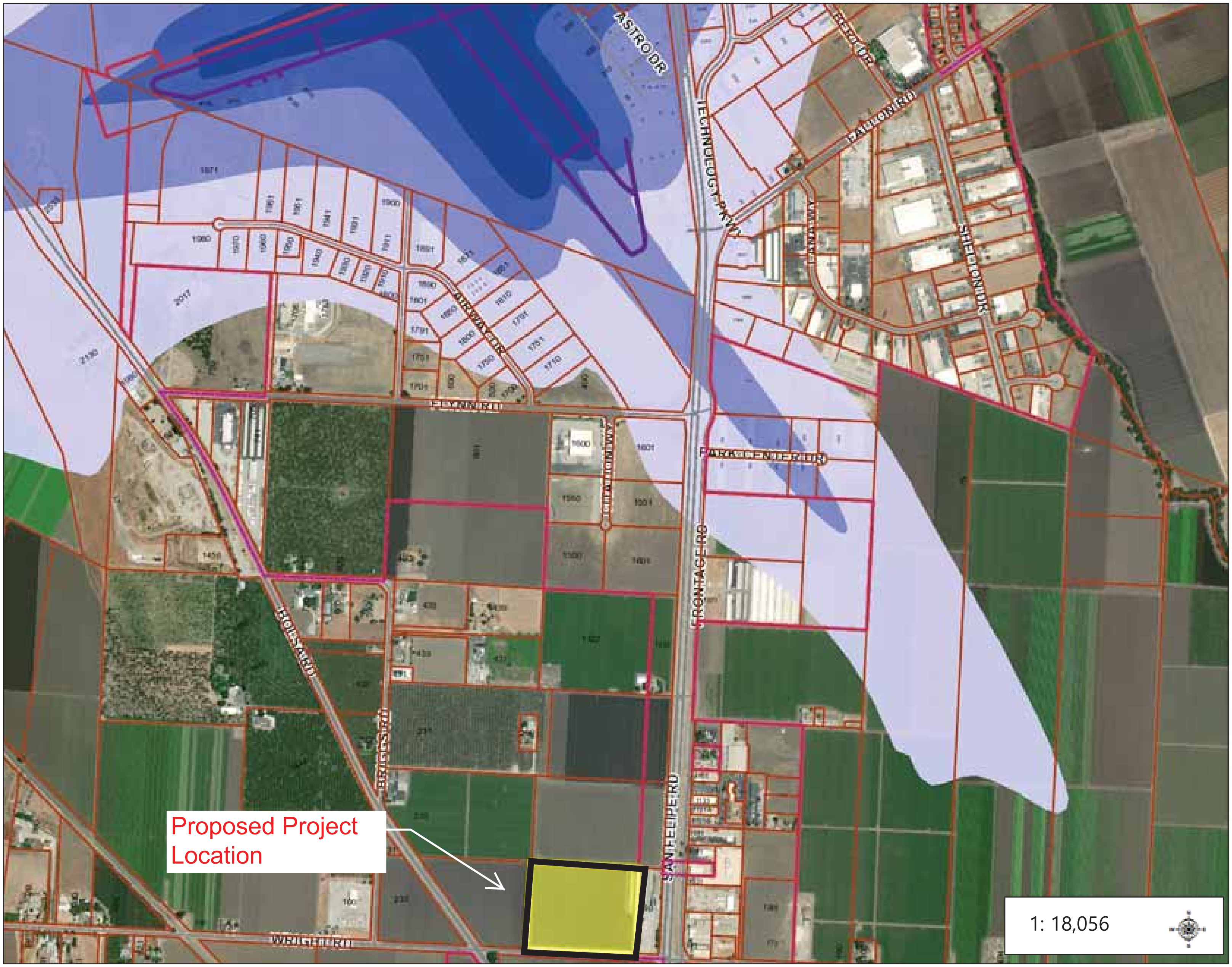
PREPARED BY:

WHITSON ENGINEERS
6 Harris Court · Monterey, CA 93940
831 649-5225 · Fax 831 373-5065
CIVIL ENGINEERING · LAND SURVEYING · PROJECT MANAGEMENT

DATE: DECEMBER 20, 2017 JOB NO. 3601.00

ATTACHMENT 4

County of San Benito Noise Contours



Legend

- SBC Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Runways
- Hollister Airport Noise Impact Z
  - 55 - 60 dB CNEL
  - 60 - 65 dB CNEL
  - 65 - 70 dB CNEL
  - 70+ dB CNEL
- Tentative Streets
- Park

3,009.3 0 1,504.66 3,009.3 Feet

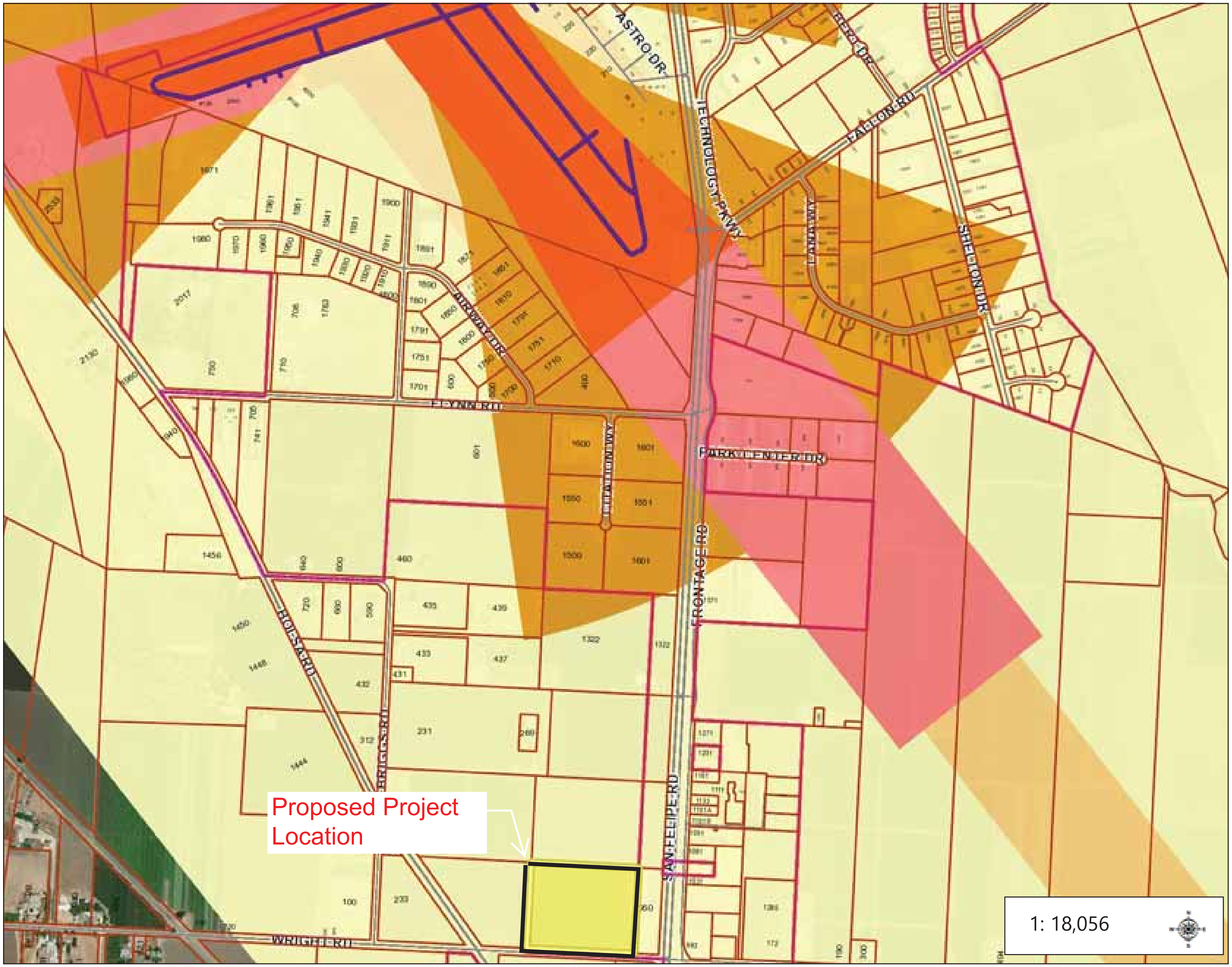
WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Notes

Attachment 5

County of San Benito safety Zones



Legend

- SBC Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Runways
- Hollister Airport Safety Zones
  - Runway Protection Zone
  - Inner Approach/Departure Zone
  - Inner Turning Zone
  - Outer Approach/Departure Zone
  - Sideline Zone
  - Traffic Pattern Zone
- Tentative Streets
- Park

Notes

3,009.3 0 1,504.66 3,009.3 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Usage Intensity Criteria [1]	Safety Zone 1	2	3	4	5	6	Additional Criteria
Max. Sitewide Average Intensity (people/acre)	10	60	100	150	100	300	Numbers below indicate zone in which condition applies
Max. Single-Acre Intensity (people/acre)	20	120	300	450	300	1,200	
Land Use Category [2]	**Land Use Acceptability** (see page 2-49 for legend)						
Eating/Drinking Establishments: restaurants, fast-food dining, bars [approx. 60 s.f./person] [6]	Red	Yellow	Yellow	Yellow	Yellow	Green	2-5: Intensity limits as indicated
Limited Retail/Wholesale: furniture, automobiles, heavy equipment, lumber yards, nurseries [approx. 250 s.f./person] [6]	Red	Yellow	Green	Green	Yellow	Green	2, 5: Intensity limits as indicated; design site to place parking inside and bldgs outside of zone if possible
Offices: professional services, doctors, finance, civic; radio, television & recording studios, office space associated with other listed uses [approx. 215 s.f./person] [6]	Red	Yellow	Yellow	Yellow	Yellow	Green	2-5: Intensity limits as indicated
Personal & Miscellaneous Services: barbers, car washes, print shops [approx. 200 s.f./person] [6]	Red	Yellow	Yellow	Yellow	Yellow	Green	2-5: Intensity limits as indicated
Vehicle Fueling: gas stations and fueling facilities at trucking & transportation terminals	Red	Red	Green	Green	Yellow	Green	5: Allowed only if airport serving
Industrial, Manufacturing, and Storage Uses							
Hazardous Materials Production: oil refineries, chemical plants	Red	Red	Yellow	Yellow	Yellow	Yellow	3-6: Allowed only if alternative site outside zone would not serve intended function; Fire Marshal to determine if special design features should be incorporated into structure to withstand damage from aircraft collision; exercise caution with uses creating plumes and other airspace hazards [3]
Heavy Industrial	Red	Yellow	Yellow	Yellow	Yellow	Green	2-5: Avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Light Industrial, High Intensity: food products preparation, electronic equipment [approx. 200 s.f./person] [6]	Red	Yellow	Yellow	Yellow	Yellow	Green	2-5: Intensity limits as indicated; avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Light Industrial, Low Intensity: machine shops, wood products, auto repair [approx. 350 s.f./person] [6]	Red	Yellow	Yellow	Yellow	Yellow	Green	2 - 4: Intensity limits as indicated 5: Single story only; max. 10% in mezzanine 2-5: Avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Indoor Storage: wholesale sales, warehouses, mini/other indoor storage, barns, greenhouses [approx. 1,000 s.f./person] [6]	Red	Yellow	Green	Green	Green	Green X	2: Single story only; max. 10% in mezzanine

Table 2, continued

Land Use Acceptability		Interpretation/Comments
(green)	*Normally Compatible*	Normal examples of the use are compatible under the presumption that usage criteria will be met. Atypical examples may require review to ensure compliance with usage intensity criteria. Noise, airspace protection, and/or overflight limitations may apply.
(yellow)	*Conditional*	Use is compatible if indicated usage intensity limit and/or other listed conditions are met.
(red)	*Incompatible*	Use should not be permitted under any circumstances.

Notes

1 Usage intensity criteria applicable to all nonresidential development (i.e., Normally Compatible as well as Conditional land uses). Nonresidential development must satisfy both forms of intensity limits (see Policy 3.3.6). See Note 6 below and Policy 3.3.7 for information on how to calculate nonresidential intensity. Up to 10% of total floor area may be devoted to ancillary use (see Policy 3.3.6(c)).

2 Multiple land use categories and compatibility criteria may apply to a project. Land uses not specifically listed shall be evaluated using the criteria for similar uses.

3 These uses may pose hazards to flight as they may attract birds or other wildlife; generate dust or other visual hazards; or create physical hazards (e.g., power lines or other tall objects). See *Section 3.4* for applicable airspace protection policies.

4 Capacity of people for Large and Major Assembly Facilities obtained from International Building Code.

5 Residential density limits provided in terms of dwelling units per acre (du/ac). Construction of a single-family home, including a second dwelling unit as defined by state law, allowed on a legal lot of record if such use is permitted by local land use regulations. A family day care home (serving ≤ 14 children) may be established in any dwelling. See *Policies 1.4.5* and *3.3.5(h).*

6 Common occupancy load factors (approximate number of square feet per person) source: Mead & Hunt, Inc. based upon information from various sources including building and fire codes, facility management industry sources, and ALUC surveys. The common occupancy load factors represent the maximum occupancy during a normal peak period occupancy, not on the highest attainable occupancy used in building and fire codes. Common occupancy load factors provided in the table for specific land uses may be used as a means of calculating the usage intensity of a proposed development. See Policy 3.3.7 for other methods of calculating usage intensities.

Table 2, continued

Solar Glare Analysis Report – Wright 13 and Briggs 17 Greenhouses

Wright 13, LLC and Briggs 17, LLC, Hollister, California

Version 2.0

Issued For Use

09 October 2020

Delivered to: Geary Coats, Coats Consulting

Solas Energy Consulting Inc.
Suite 282, 1721 29 Ave SW
Calgary, Alberta T2T 6T7

Phone: 403-454-9463
Email: pmcgarrigle@solasenergyconsulting.com
Web: www.solasenergyconsulting.com

Acknowledgement

Prepared by: Keith Knudsen
Jason Mah
Paula McGarrigle
Gabriel Risbud-Vincent

Document Purpose

This report provides an assessment of glare hazard from the proposed Wright 13 and Briggs 17 Greenhouse Projects in Hollister, California, USA.

Document History

Wright 13 and Briggs 17 Solar Glare Analysis

Version	Date	Comments
1.0	07 October 2020	Issued for Review
2.0	09 October 2020	Issued for Use

Disclaimer

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Issued For Use

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Glossary

Term	Description
After-image	Visual image that persists after the stimulus that caused it has stopped.
ALUC	Airport Land Use Commission
Azimuth	Horizontal angle of the Sun around an object. North is 0°, east is 90°, south is 180°, and west is 270°.
Coats	Coats Consulting
FAA	Federal Aviation Administration
FP	Flight path
mrad	Measure of angle, 1/1000th of a radian
SGHAT	Solar Glare Hazard Analysis Tool
Subtended Angle	Size of an object divided by the distance from the observer.
W/m^2	Watts per square metre

1 INTRODUCTION

The Wright 13, LLC and Briggs 17, LLC are proposing to build multiple greenhouses in the city of Hollister, California. The Wright 13 and Briggs 17 projects (Projects) will be located at the north end of the city in San Benito County, approximately 1.25 miles south of the Hollister Municipal Airport.

The San Benito County Airport Land Use Commission (ALUC) reviews development proposals that may affect operations at the Hollister Municipal Airport, Frazier Lake Airpark, and surrounding areas. The ALUC has requested that the project applicants provide an analysis of potential impacts to aviation due to solar glare from the Projects. Reflective surfaces, like the glass roof sections of the greenhouses, may reflect sunlight and produce glare along flight paths at the Hollister Municipal Airport. In addition, ALUC is charged with ensuring new proposed projects within the ALUC area of responsibility are consistent with the ALUC land use plan.

Solas Energy Consulting Inc. (Solas) was retained by Coats Consulting (Coats) to conduct a solar glare analysis for flight paths at the Hollister Municipal Airport. This report documents the potential for solar glare from the Projects for airplanes on final approach to the airport.

2 PROJECT DESCRIPTION

Wright 13 will include three greenhouses situated on a 13-acre parcel of land, and Briggs 17 will include a single greenhouse on a 17-acre parcel. Both sites are at the north end of the City of Hollister, California. The Projects are on the west side of San Felipe Road, with California State Route 25 to the west and Wright Road to the south. The end of the nearest runway at the Hollister Municipal Airport is about 0.8 miles north of the Briggs site, and one mile north of the Wright site. The immediate surrounding area includes residential buildings, industrial/commercial establishments, and agricultural land. The approximate location of the Projects is shown in Figure 1. The parcels are currently being used for agriculture. The greenhouses will be approximately two storeys tall, and they will incorporate tempered glass for the roofs.

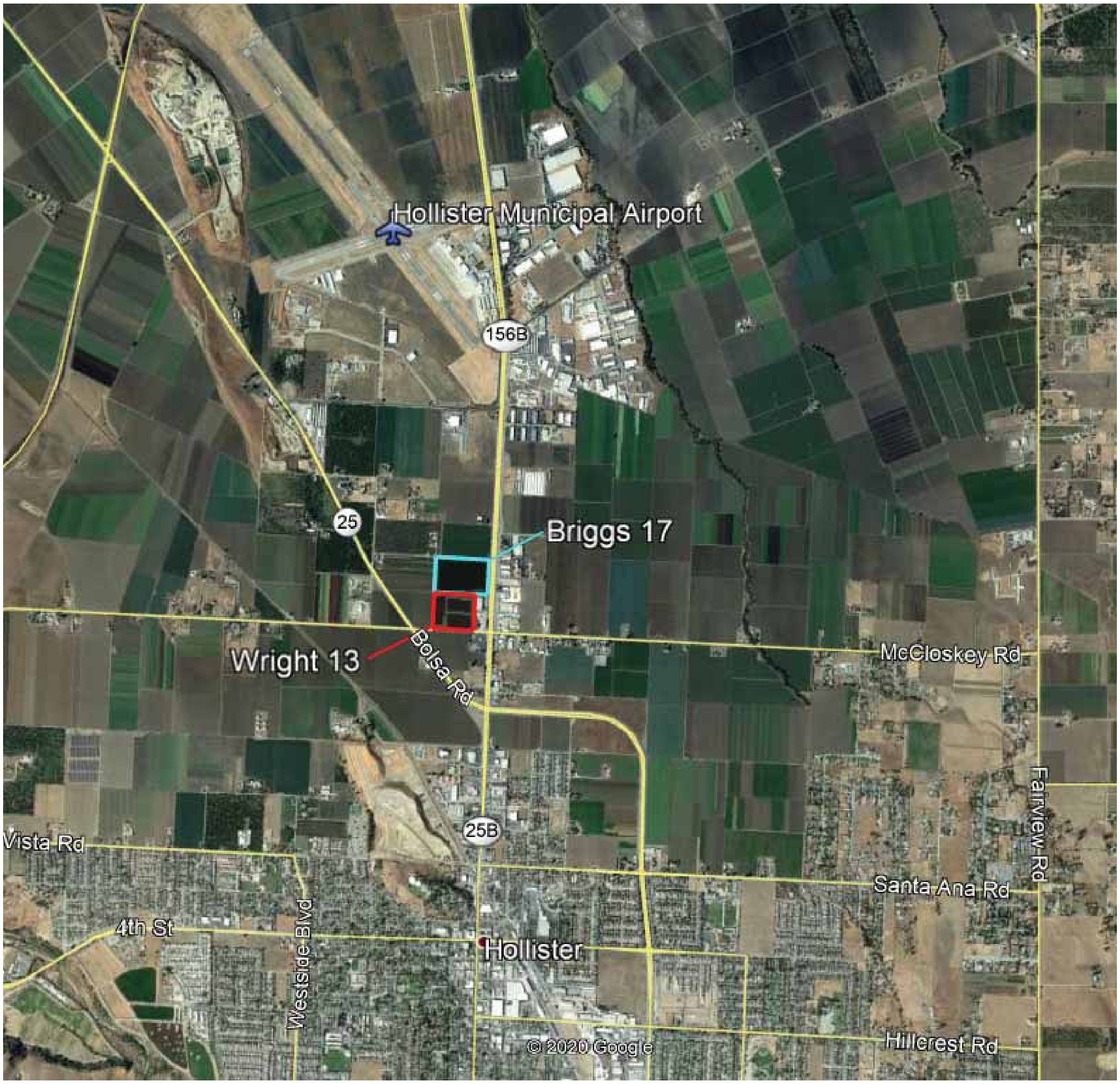

Figure 1: Location of the Projects and proximity to Hollister and the Hollister Municipal Airport

Figure 2 outlines the Wright site in red, and the Briggs site in blue. The greenhouse footprints are shown as the dark interior areas.

Figure 2: Project Boundaries and Proposed Wright 13 and Briggs 17 Greenhouses

3 PROJECT ASSUMPTIONS

The Wright site consists of approximately 13 acres of land, with the greenhouses occupying about eight acres. The Briggs site encompasses 17 acres with a greenhouse footprint of about 12 acres. Solas used multiple sources to determine the site elevations, including publicly available topographic contours from the Google Maps interface, and preliminary drawings provided by Coats. Solas assumed a constant ground elevation of about 252 feet above sea level for the entire Wright site, and 248 feet for the Briggs site. These values represent the current minimum elevations at the sites, which result in a conservative glare analysis. A change of grade will affect the results of the glare analysis.

The Project greenhouses will have sections of their roofs built with tempered glass. The roofs are designed with peaks at regular intervals and a slope of approximately 23 degrees. The glass panes will face east and west (azimuth angles of 93 and 273 degrees, respectively) for Wright A and B, while the glass will face north and south (three and 183 degrees, respectively) for Wright C. The glass panes of the Briggs greenhouse will face east and west. The roof line starts 17.0 feet above ground level, extending to a height of 20.1 feet at the top.[1] Solas modelled the roofing as smooth glass without anti-reflective coating. The side walls of the greenhouses were not modelled in this analysis.

The model assumes the reflective surface lies in a plane defined by the outlined area, so the analysis was completed at the top and bottom extents of the roof to determine glare from different parts of the glass panes. The analysis was also run at an intermediate height above ground of 18.5 feet to help identify trends in the frequency and size of glare.

Solas based the location of the greenhouses on the satellite imagery maps provided by Coats. A single footprint was evaluated instead of two buildings for Wright A and B, resulting in a more conservative analysis. Overlapping footprints with identical dimensions were plotted for each greenhouse to model the different roof azimuths. Only the more conservative values were kept for simultaneous instances of glare from each set of footprints.

Detailed input parameters and assumptions can be found in Appendix A.

[1] Data provided by Coats.

4 GLARE REGULATIONS AND RECEPTORS

The Federal Aviation Administration (FAA) reviews solar PV facilities that are proposed in proximity to airstrips for the potential of glare. A similar review may be completed for other glare-producing objects like mirrored or highly reflective building features. The FAA may accept an evaluation using one of the following levels of assessment:[2]

1. a qualitative analysis of potential impact in consultation with the Air Traffic Control Tower, pilots, and airport officials;
2. a demonstration field test with solar panels at the proposed site in coordination with Air Traffic Control Tower personnel; or,
3. a geometric analysis to determine days and times when there may be an ocular impact.

This analysis falls into the third category referenced above. This report summarizes the results using geometric analysis (ForgeSolar's Solar Glare Hazard Analysis Tool (SGHAT), or GlareGauge[3]) for the Projects.

The Hollister Municipal Airport Land Use Compatibility Plan states that developments that may produce visual hazards, such as glare, are subject to additional review by the ALUC. Along with the review conducted by the ALUC, sources of glare must be consistent with FAA rules and regulations.[4]

Solas evaluated multiple flight paths (FPs) for airplane landing approaches at the Hollister Municipal Airport. Standard flight landing paths (FP1-4) were modelled using standard FAA evaluation parameters. Solas did not model an air traffic control tower since the Hollister Municipal Airport does not have a control tower. Specific parameters used to analyze flight operations can be found in Appendix A.

Solas analyzed the potential for glare at the receptors shown in Figure 3. Four flight paths (landing approaches represented by green lines) were evaluated.

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[2] https://www.faa.gov/airports/environmental/policy_guidance/media/FAA-Airport-Solar-Guide-2018.pdf, accessed: September 16, 2020.

[3] Copyright, Sims Industries, 2015

[4] http://sanbenitocog.org/wp-content/uploads/2018/10/ADOPTED-ALUCP-June-2012.pdf, accessed: September 16, 2020.

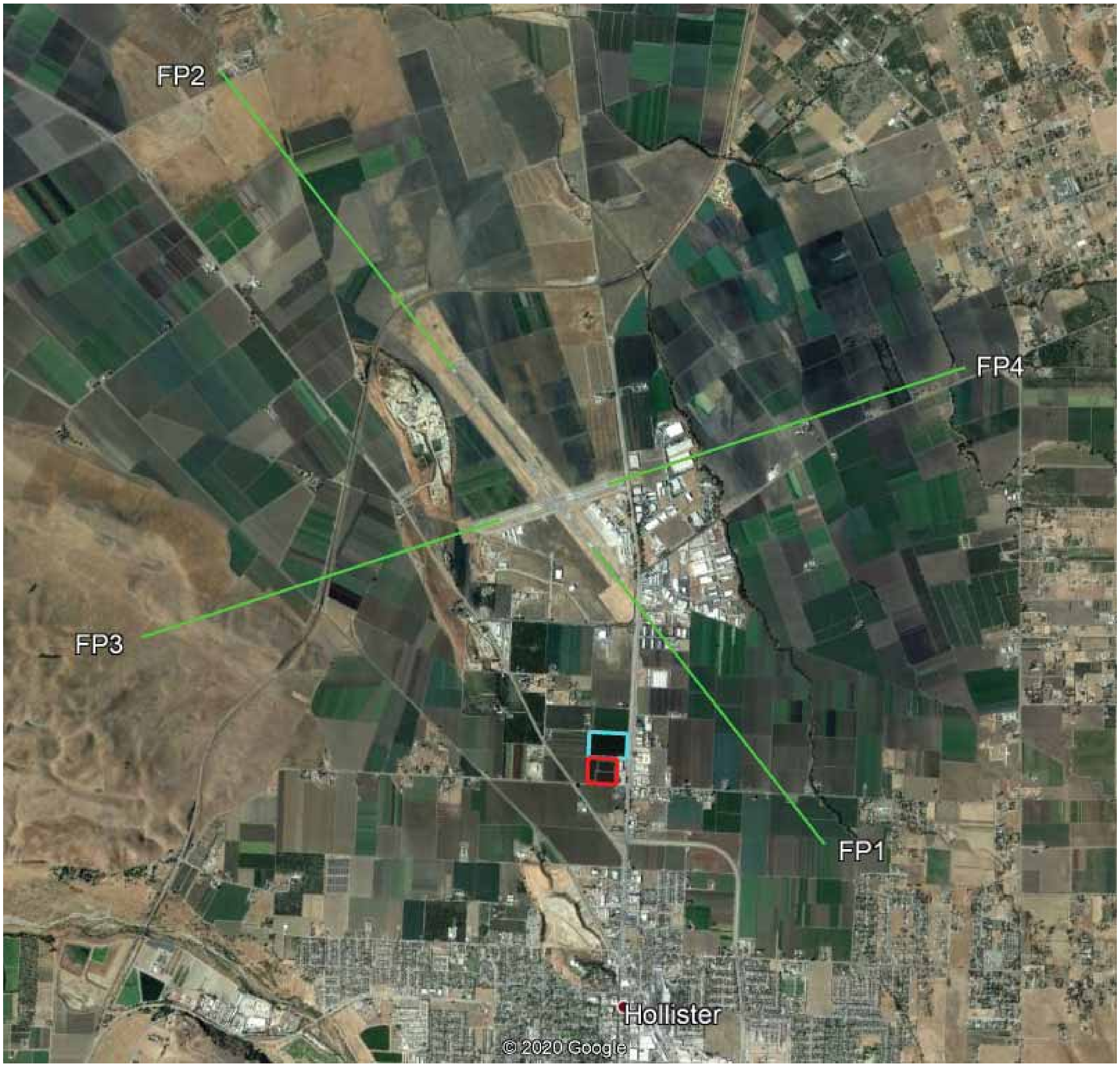


Figure 3: Wright 13 and Briggs 17 Projects with Flight Paths Identified

Table 1 describes the receptors used in the analysis. The horizontal viewing angle for flight routes is limited to 50 degrees in either direction from the direction of travel. Solas does not consider glare outside of this field of view to be a risk to the pilot.[5]

[5] Rogers, J. A., et al., Federal Aviation Administration, Evaluation of Glare as a Hazard for General Aviation Pilots on Final Approach, 2015.

Table 1: Description of Receptors

Receptor Number	Location	Description
FP1	Hollister Municipal Airport	Northwest-bound descent at runway 31, 2-mile approach from 603 feet above landing threshold
FP2	Hollister Municipal Airport	Southeast-bound descent at runway 13, 2-mile approach from 603 feet above landing threshold
FP3	Hollister Municipal Airport	Northeast-bound descent runway 6, 2-mile approach from 603 feet above landing threshold
FP4	Hollister Municipal Airport	Southwest-bound descent at runway 24, 2-mile approach from 603 feet above landing threshold

5 GLARE PREDICTION METHOD

The impact of glare depends on the interaction between the position of the sun, the angle and orientation of the reflective surface, the reflectivity of the surface, the size of the project, and the relative location of the observer. The modelling software assumes there is no cloud cover and does not include screening effects from existing or proposed foliage, terrain, buildings or other obstacles. The model is therefore considered to be conservative.

The sun's position is described using the angle of elevation and solar azimuth. The angle of elevation is the angle between the horizon and the centre of the sun. The azimuth is measured as the angle from true north in a clockwise direction.

Solas performed the glare analysis using the ForgeSolar GlareGauge[6] software tool. This tool uses project inputs and solar positioning calculations to determine if glare will occur at identified observation points. If glare is found, the tool calculates the retinal irradiance (brightness) and subtended angle (size divided by distance) of the glare source. These two factors predict ocular hazards ranging from temporary after-image to retinal burn. Minor topographic features are not always identified in GlareGauge due to the resolution of topographic contours from Google Earth.

"Green" rated glare indicates a low potential for after-image, "yellow" rated glare indicates the potential for after-image exists, and "red" rated glare indicates the potential for retinal damage. Glare that is beyond 50 degrees from a driver's or pilot's line-of-sight does not constitute a safety hazard.[7]

The amount of light reflected by a surface depends on the sunlight's angle of incidence at the surface as illustrated in Figure 4.

[6] Copyright, Sims Industries, 2015

[7] Ho, C. K. and Sims, C. A., Sandia National Laboratories, 2016, Solar Glare Hazard Analysis Tool (SGHAT) User's Manual v. 3.0.

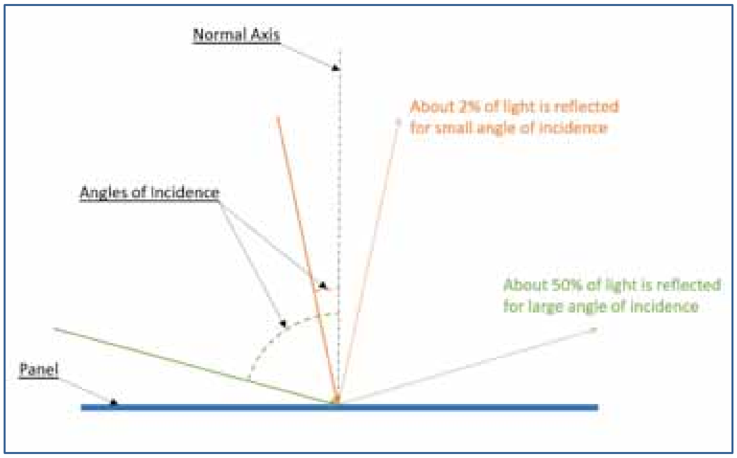


Figure 4: Reflected Light and Angle of Incidence (illustration only) on a reflective surface/panel.

Glass with anti-reflective coating may reflect approximately two percent of incident sunlight on average, which is less than the amount of light open water and uncoated glass typically reflect. Open water and uncoated glass reflect approximately ten percent of incident sunlight.[8,9] The software models the reflectivity for each angle of incidence based on experiments Sandia National Laboratories performed for a variety of different solar PV module types.[10] Very little light is reflected when the sun is nearly perpendicular to the glass, but more light is reflected when the sun is at a shallow angle to the glass.

All flight paths have been modelled using a +/- 50-degree field-of-view based on the standard approach in the ForgeSolar software and the report entitled “Evaluation of Glare as a Hazard for General Aviation Pilots on Final Approach”.[11]

5.1 Limitations of the Model

This analysis aims to provide an indication of the glare that may be produced by the proposed reflective surfaces on the greenhouse roofs. The prediction methods employed in the analysis have uncertainty. The following lists some of the limitations inherent in the analysis.

- The base model assumes clear skies at all times. The model does not use historical weather pattern data. This results in a total cumulative duration of glare that is likely higher than what will occur over the course of a year.
- The model does not consider shading.

[8] Lasnier and Ang, 1990, Photovoltaic Engineering Handbook. Taylor & Francis, New York.

[9] US EPA, 2013, AERSURFACE User’s guide, EPA-454/B-08-001.

[10] Ho, C. K. and Sims, C. A., Sandia National Laboratories, 2016, Solar Glare Hazard Analysis Tool (SGHAT) User's Manual v. 3.0.

[11] Rogers, J. A., et al., Federal Aviation Administration, Evaluation of Glare as a Hazard for General Aviation Pilots on Final Approach, 2015.

- Obstructions such as foliage, structures, and hills between the greenhouses and observation points are not modelled by ForgeSolar's GlareGauge software tool.
  - The model does not consider the impact of trees and foliage as it is variable.
- Ocular and perceived hazards differ from person to person, depending on multiple environmental, optical, and human factors.
- Changes in the site and rooftop elevations from the assumptions may change the results of the analysis.
- Footprints encompassing large areas may have reduced accuracy due to the calculation method limitations.
  - Subdivided areas may provide more accurate information related to glare spot locations, but the glare spot size will be limited by the smaller subdivided footprint.
  - The larger, undivided footprint will have more accurate glare spot size results.

A separate analysis could be performed to evaluate the impact of topographical features available in Google Earth on the predicted glare. Combining the corresponding instances of glare from the analysis of subdivided areas with the glare spot sizes from the analysis of undivided footprints partially overcomes the calculation limitations for large footprints. This method provides a more accurate estimate of the potential glare than assessing undivided and subdivided footprints separately.

6 ANALYSIS RESULTS

The following sections provide the results of the glare analysis and illustrative examples of the predicted glare.

6.1 Wright 13 Glare Results

Solas does not expect the Wright 13 greenhouses to produce red-grade glare or yellow-grade glare at the evaluated flight paths. The model predicts green-grade glare at all flight paths evaluated. Results assume there are clear skies year-round and there is no screening between the greenhouses and the flight paths.

summarizes the results and level of glare at the receptors as minutes per year assuming clear skies. Time of day is provided in standard time year-round. The results of the GlareGauge analysis identified that the following locations will experience green-grade glare:

- FP1 — Northwest-bound descent (Runway 31) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **237 minutes** (approximately four hours) per year. The glare occurs from March to May, and July to September, around 6:00 p.m. standard time (7:00 p.m. daylight savings time) for up to 17 minutes per day. These results assume there are clear skies year-round.
- FP2 — Southeast-bound descent (Runway 13) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **1,165 minutes** (approximately 19 hours) per year. The glare occurs between October and March around 10:30 a.m. standard time (11:30 a.m. daylight savings time) for up to 67 minutes per day. These results assume there are clear skies year-round.
- FP3 — Northeast-bound descent (Runway 6) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **297 minutes** (approximately five hours) per year. The glare occurs from March to May, and August to September, between 6:44 and 9:58 a.m. standard time (7:44 and 10:58 a.m. daylight savings time) for up to 10 minutes per day. These results assume there are clear skies year-round.
- FP4 — Southwest-bound descent (Runway 24) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **862 minutes** (approximately 14 hours) per year. The glare occurs between September and March around 2:20 p.m. standard time (3:20 p.m. daylight savings time) for up to 55 minutes per day. These results assume there are clear skies year-round.

Changes to the modelling assumptions (see Appendix A) will affect these results.

Table 2: Glare Hazard by Receptor assuming year-round Clear Skies, in Minutes per Year (Wright 13)

Location	Receptor	Hazard Level	Roof Elevation		
			17.0 ft	18.5 ft	20.1 ft
Northwest-bound descent (Runway 31)	FP1	G	236	236	237
		Y	-	-	-
		R	-	-	-
Southeast-bound descent (Runway 13)	FP2	G	1,165	1,165	1,161
		Y	-	-	-
		R	-	-	-
Northeast-bound descent (Runway 6)	FP3	G	297	291	289
		Y	-	-	-
		R	-	-	-
Southwest-bound descent (Runway 24)	FP4	G	862	859	855
		Y	-	-	-
		R	-	-	-

Table 2 indicates that the southeast-bound landing approach to runway 13, FP2, experiences the most annual green glare from the Wright greenhouses. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

A summary of the cumulative duration of the highest level of glare predicted for each of the above receptors is provided in Figure 5. These results assume there are clear skies year-round.

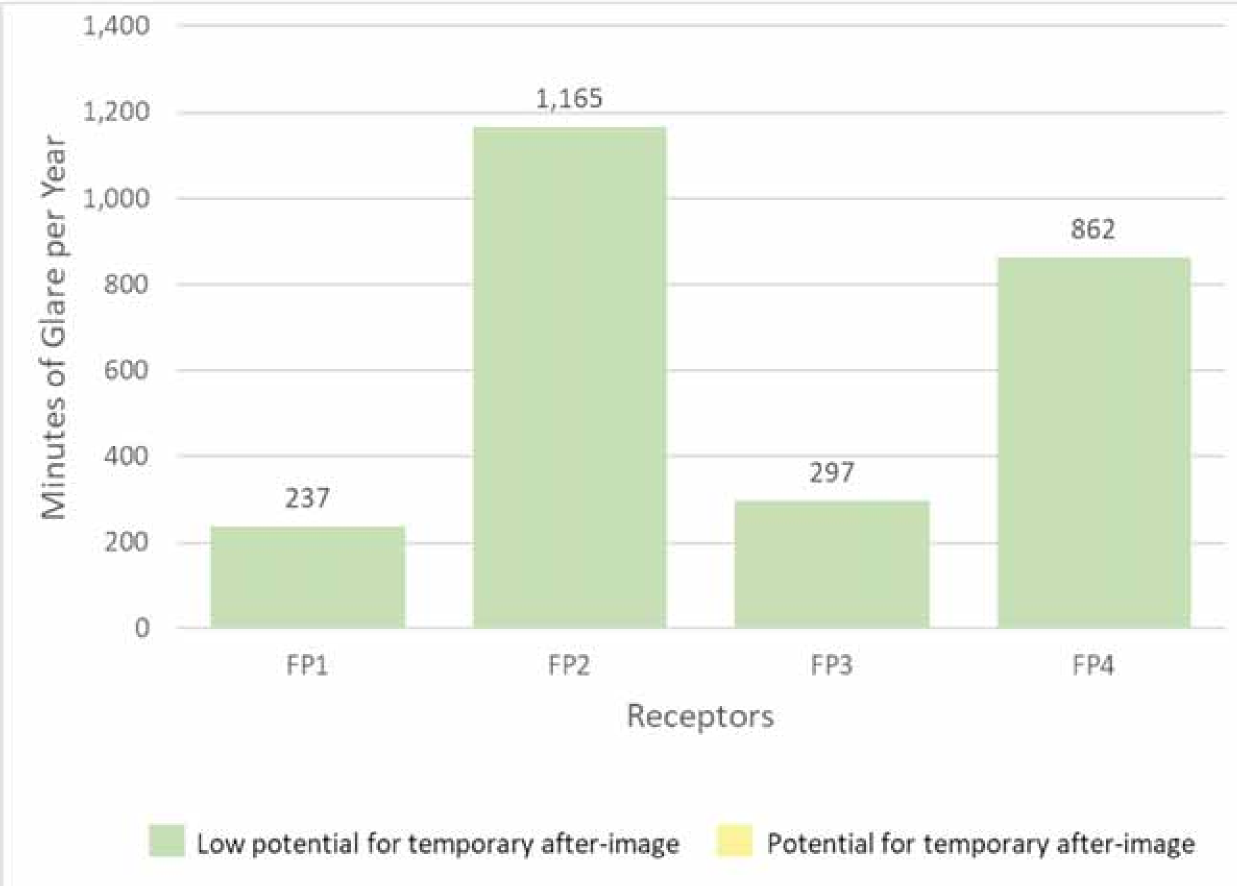


Figure 5: Annual Green-Grade Glare at affected Receptors near the Project (Clear skies year-round, Wright 13)

Table 3 shows the timeframes for the occurrence of glare and reports only the highest-intensity glare for each case and location. The cells in the table are colour-coded to match the intensity level and show the time of day, dates, and duration of the glare. The results demonstrate that green-grade glare may be present for short periods in the spring and summer at FP1 and FP3. Green glare may also be seen at FP2 and FP4 for up to an hour per day from fall until spring.

Table 3: Seasonality and Duration of the Highest Level of Glare at each Receptor (Clear skies year-round, Wright 13)

Receptor	Roof Elevation		
	17.0 ft	**18.5 ft**	**20.1 ft**
FP1	5:37 PM-6:30 PM 23 Mar-26 May; 15 Jul-18 Sep Up to 17 mins.	5:37 PM-6:30 PM 23 Mar-26 May; 15 Jul-18 Sep Up to 15 mins.	5:37 PM-6:30 PM 23 Mar-27 May; 15 Jul-18 Sep Up to 15 mins.
FP2	9:37 AM-11:25 AM 4 Oct-7 Mar Up to 67 mins.	9:37 AM-11:25 AM 4 Oct-7 Mar Up to 67 mins.	9:37 AM-11:25 AM 4 Oct-7 Mar Up to 66 mins.
FP3	6:44 AM-9:58 AM 12 Mar-7 May; 3 Aug-28 Sep Up to 10 mins.	6:44 AM-9:58 AM 12 Mar-7 May; 3 Aug-28 Sep Up to 10 mins.	6:53 AM-9:58 AM 12 Mar-7 May; 3 Aug-28 Sep Up to 10 mins.
FP4	1:20 PM-3:13 PM 23 Sep-17 Mar Up to 55 mins.	1:20 PM-3:13 PM 23 Sep-17 Mar Up to 52 mins.	1:20 PM-3:13 PM 23 Sep-17 Mar Up to 50 mins.

6.1.1 Detailed Glare Example for Wright 13 — Southeast-bound Descent with a 2-mile Approach (FP2, Runway 13)

Solas completed a detailed glare example for FP2, representing the highest duration of glare. FP2 represents an airplane landing at runway 13 of the Hollister Municipal Airport with a 2-mile approach from the northwest. The Wright 13 greenhouses remain southeast of the airplane as it lands. The flight path utilizes the standard three-degree descent slope and field-of-view of 50 degrees in either direction from straight ahead. Figure 6 illustrates the time of day and seasonality for glare hazard for FP2 from the roof elevation of 17.0 feet (the bottom extent of the roof). The potential for after-image from green-grade glare occurs between 9:37 and 11:25 a.m. standard time (9:37 a.m. and 12:25 p.m. daylight savings time) from October to March. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

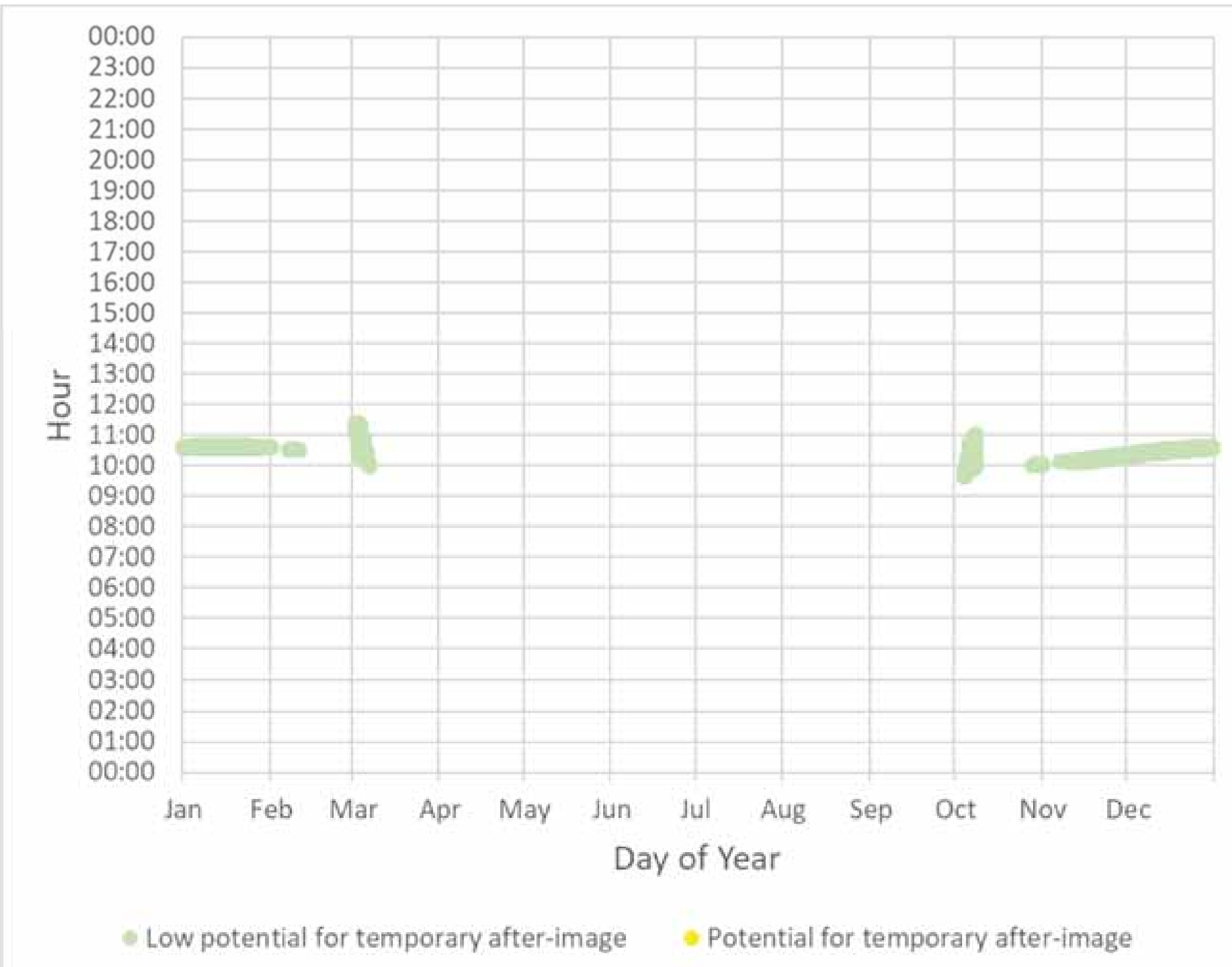


Figure 6: Time of Glare Hazard for FP2 (Clear skies year-round, Wright 13)

Figure 7 shows the daily duration for each level of glare that may be experienced at FP2. This flight path can experience up to 67 minutes of green glare in a day. All the glare is classified in the green category. These results assume there are clear skies year-round.

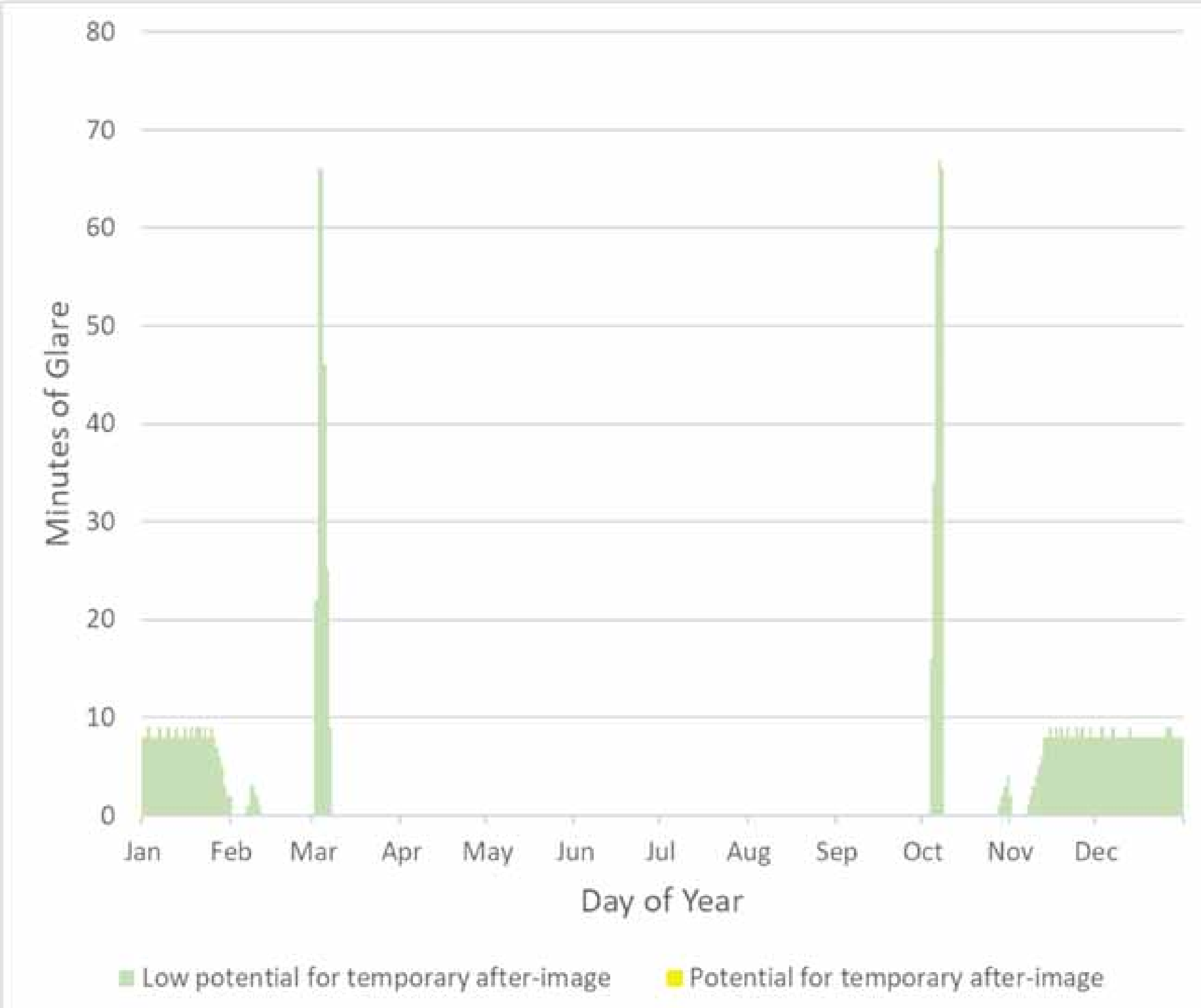


Figure 7: Daily Duration of Glare at FP2 (Clear skies year-round, Wright 13)

Figure 8 plots the glare hazard according to the size of the glare spot (Subtended Source Angle), brightness of the glare (Retinal Irradiance), and the glare level (green, yellow, and red zones). The size and brightness of the glare spots are displayed using logarithmic scales. At FP1, the glare is 660 times dimmer than staring at the sun but will appear up to two times bigger than the perceived diameter of the sun viewed from the same location. These results assume there are clear skies year-round.

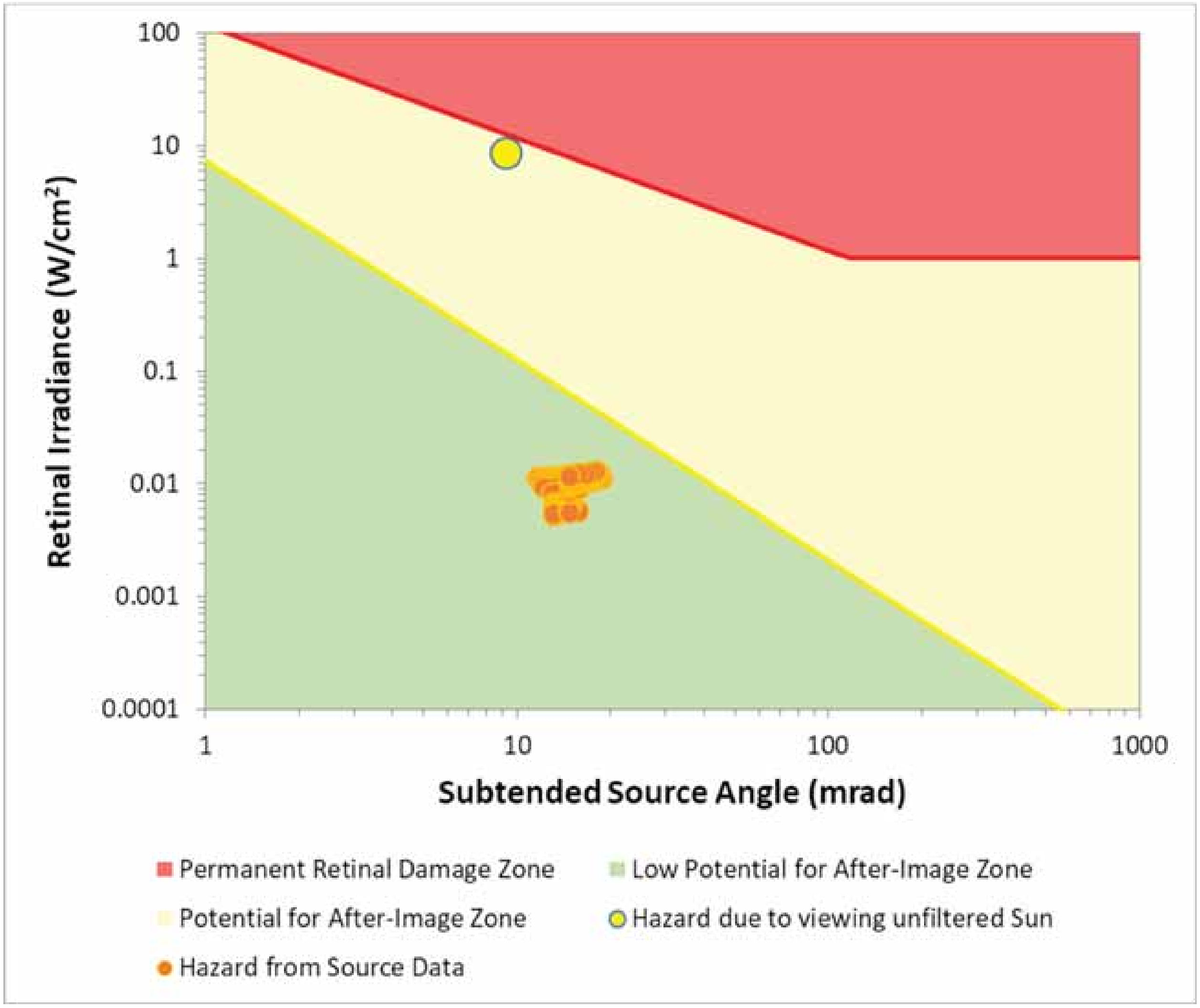


Figure 8: Log-Log Hazard Plot for FP2 (Clear skies year-round, Wright 13)

6.2 Briggs 17 Glare Results

Solas does not expect the Briggs greenhouse to produce red-grade glare or yellow-grade glare at the evaluated flight paths. The model predicts green-grade glare at FP2, FP3, and FP4. Results assume there are clear skies year-round and there is no screening between the greenhouses and the flight paths.

Table 4 summarizes the results and level of glare at the receptors as minutes per year assuming clear skies. Time of day is provided in standard time year-round. The results of the GlareGauge analysis identified that the following locations will experience green-grade glare:

- FP2 — Southeast-bound descent (Runway 13) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **163 minutes** (approximately three hours) per year. The glare occurs in March, October, and December between 9:38 and 10:38 a.m. standard time (10:38 a.m. and 11:38 a.m. daylight savings time) for up to 10 minutes per day. These results assume there are clear skies year-round.
- FP3 — Northeast-bound descent (Runway 6) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **252 minutes** (approximately four hours) per year. The glare occurs in March, in May, and from July to September between 9:07 and 9:58 a.m. standard time (10:07 and 10:58 a.m. daylight savings time) for up to three minutes per day. These results assume there are clear skies year-round.
- FP4 — Southwest-bound descent (Runway 24) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **323 minutes** (approximately five hours) per year. The glare occurs between October and February between 1:40 and 2:26 p.m. standard time for up to four minutes per day. These results assume there are clear skies year-round.

FP1 is not expected to experience any glare from the Project. Changes to the modelling assumptions (see Appendix A) will affect these results.

Table 4: Glare Hazard by Receptor assuming year-round Clear Skies, in Minutes per Year (Briggs 17)

Location	Receptor	Hazard Level	Roof Elevation		
			17.0 ft	18.5 ft	20.1 ft
Northwest-bound descent (Runway 31)	FP1	G	-	-	-
		Y	-	-	-
		R	-	-	-
Southeast-bound descent (Runway 13)	FP2	G	162	163	162
		Y	-	-	-
		R	-	-	-
Northeast-bound descent (Runway 6)	FP3	G	252	249	252
		Y	-	-	-
		R	-	-	-
Southwest-bound descent (Runway 24)	FP4	G	322	323	323
		Y	-	-	-
		R	-	-	-

Table 4 indicates that the northwest-bound landing approach, FP1, experiences no glare. Pilots descending towards the three other runways, however, will experience some green glare. Solas expects FP2 and FP3 to observe glare from the west-facing roof glass, while FP4 will experience glare from the east-facing glass. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

A summary of the cumulative duration of the highest level of glare predicted for each of the above receptors is provided in Figure 9. These results assume there are clear skies year-round.

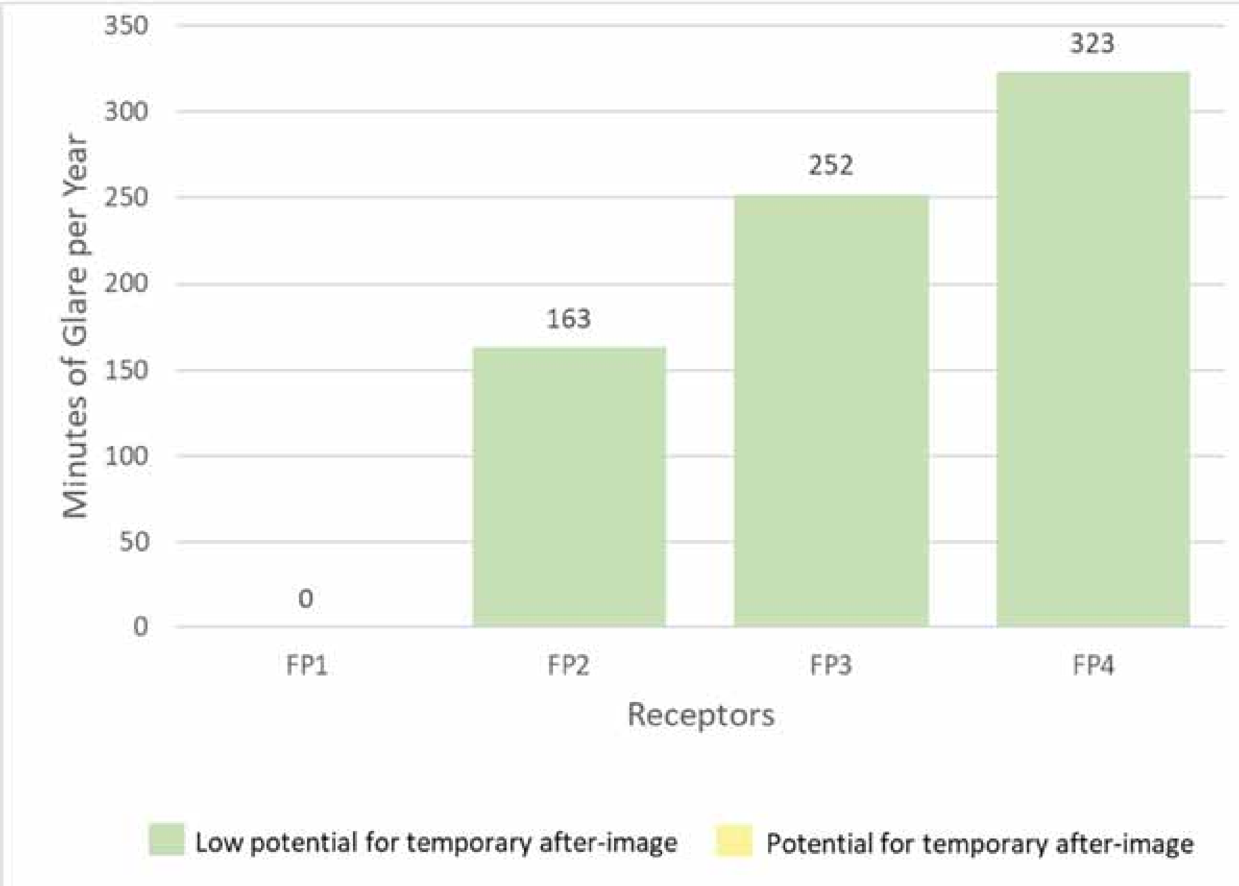


Figure 9: Annual Green-Grade Glare at affected Receptors near the Project (Clear skies year-round, Briggs 17)

Table 5 shows the timeframes for the occurrence of glare and reports only the highest-intensity glare for each case and location. The cells in the table are colour-coded to match the intensity level and show the time of day, dates, and duration of the glare. The results demonstrate that green-grade glare may be present for short periods in the morning at FP2 and FP3, and in the evening for FP4.

Table 5: Seasonality and Duration of the Highest Level of Glare at each Receptor (Clear skies year-round, Briggs 17)

Receptor	Roof Elevation		
	17.0 ft	**18.5 ft**	**20.1 ft**
FP1	No Glare		
FP2	9:38 AM-10:38 AM 1 Mar-10 Mar; 1 Oct-10 Oct; 11 Dec-29 Dec Up to 10 mins.	9:38 AM-10:38 AM 1 Mar-10 Mar; 1 Oct-10 Oct; 11 Dec-29 Dec Up to 10 mins.	9:38 AM-10:38 AM 1 Mar-10 Mar; 1 Oct-10 Oct; 11 Dec-28 Dec Up to 10 mins.
FP3	9:08 AM-9:58 AM 18 Mar-13 May; 29 Jul-22 Sep Up to 3 mins.	9:08 AM-9:58 AM 18 Mar-13 May; 29 Jul-22 Sep Up to 3 mins.	9:07 AM-9:58 AM 18 Mar-14 May; 29 Jul-22 Sep Up to 3 mins.
FP4	1:40 PM-2:26 PM 22 Oct-19 Feb Up to 4 mins.	1:40 PM-2:26 PM 22 Oct-19 Feb Up to 4 mins.	1:40 PM-2:26 PM 22 Oct-19 Feb Up to 4 mins.

6.2.1 Detailed Glare Example for Briggs 17 — Northeast-bound Descent with a 2-mile Approach (FP4, Runway 24)

Solas completed a detailed glare example for FP4. FP4 represents an airplane landing at runway 24 of the Hollister Municipal Airport with a 2-mile approach from the southwest. The Project greenhouses remain on the left side of the airplane as it lands. The flight path utilizes the standard three-degree descent slope and field-of-view of 50 degrees in either direction from straight ahead. Figure 10 illustrates the time of day and seasonality for glare hazard for FP4 from the roof elevation of 17.0 feet (the bottom extent of the roof). Green glare occurs between 1:40 and 2:26 p.m. standard time (2:40 and 3:36 a.m. daylight savings time) between October and February. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

Figure 10: Time of Glare Hazard for FP4 (Clear skies year-round, Briggs 17)

Figure 11 shows the daily duration for each level of glare that may be experienced at FP4. This flight path can experience up to four minutes of green glare in a day. All of the glare is classified in the green category. These results assume there are clear skies year-round.

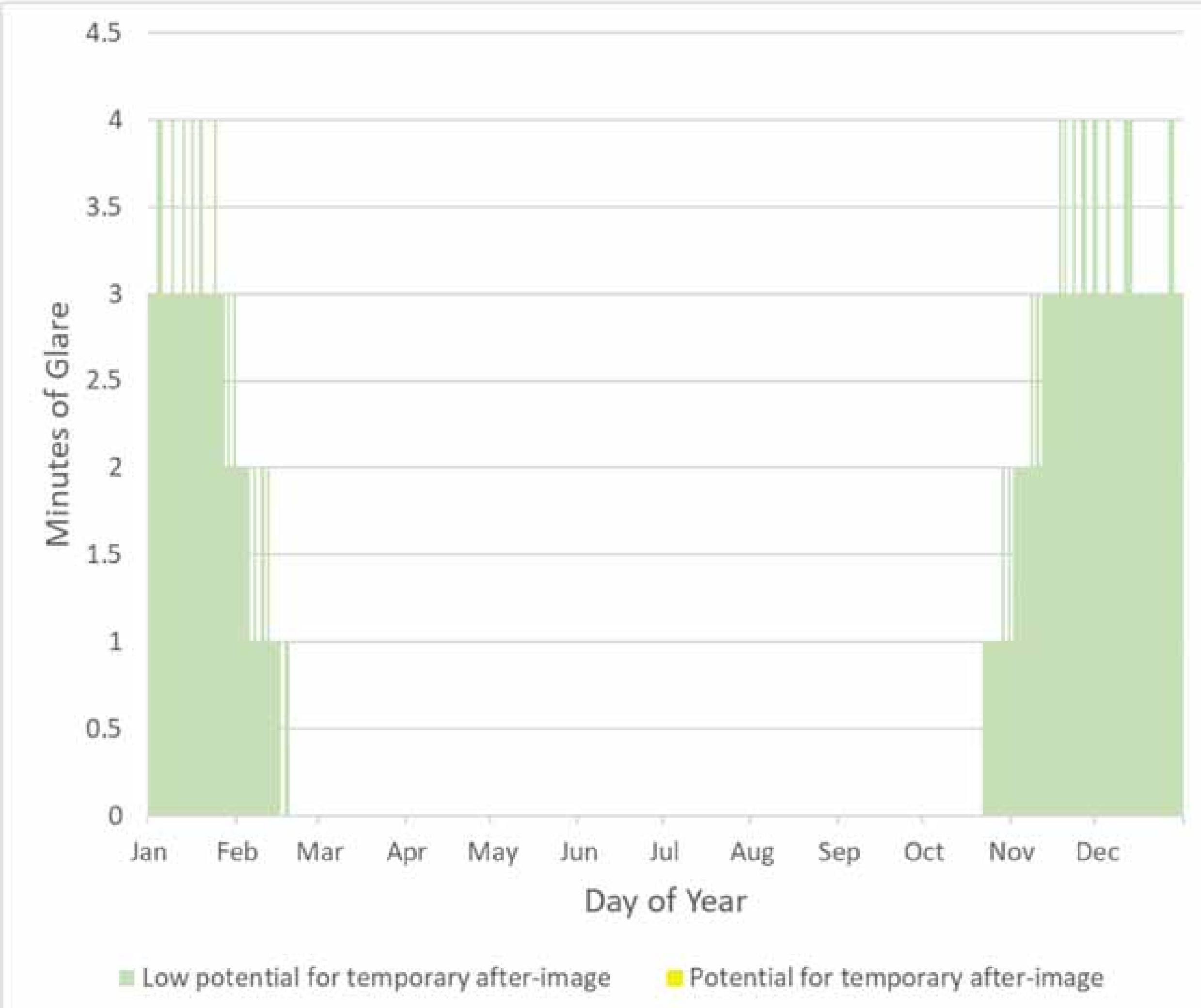


Figure 11: Daily Duration of Glare at FP4 (Clear skies year-round, Briggs 17)

Figure 12 plots the glare hazard according to the size of the glare spot (Subtended Source Angle), brightness of the glare (Retinal Irradiance), and the glare level (green, yellow, and red zones). The size and brightness of the glare spots are displayed using logarithmic scales. At FP4, the glare is 1520 times dimmer than staring at the sun but will appear up to 3.7 times bigger than the perceived diameter of the sun viewed from the same location. These results assume there are clear skies year-round.

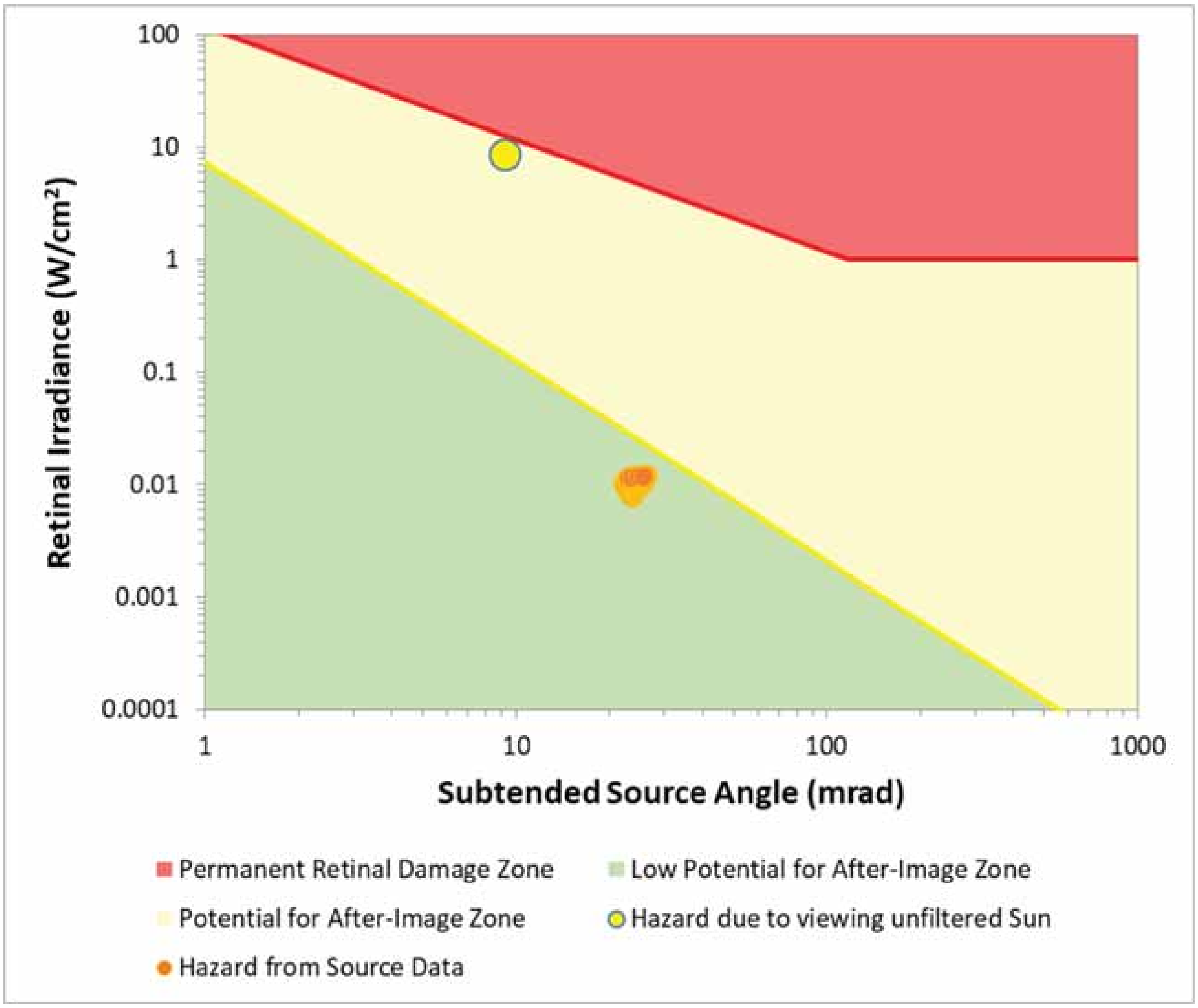


Figure 12: Log-Log Hazard Plot for FP4 (Clear skies year-round, Briggs 17)

6.3 Glare Visual Representation

Solas developed a catalogue of glare representations to help stakeholders understand and visualize the glare they may experience from reflective surfaces. Solas' glare catalogue includes a range of images depicting glare of varying intensity from actual solar arrays and buildings. The irradiance of the glare shown in Figure 13 is of similar intensity to the glare Solas predicts observers will experience from the Project. Solas expects glare to reach up to 120 watts per square metre (W/m^2), while the figure below provides a representation at an irradiance level of 158 W/m^2.

Figure 13: Solas Glare Catalogue Image (158 W/m^2) at a similar irradiance level to those expected at the Project

Figure 14 shows reference points for glare irradiance levels from various solar PV facilities and buildings. This figure is shown to provide context for the glare representation above.

158 W/m^2
(green)

190 W/m^2
(yellow)

279 W/m^2
(yellow)

Figure 14: Glare Irradiance Level Reference Points from the Solas Glare Catalogue

7 GLARE-MITIGATING FEATURES

Glare has been predicted from the greenhouses using base assumptions and the GlareGauge software. Solas completed additional analyses to model real-world features that could reduce the glare impact.

7.1 Cloud Cover and Typical Weather Patterns

The GlareGauge model assumes that clear skies occur every day of the year resulting in glare durations that are higher than observers are likely to experience. Solas obtained the fraction of days with less than 20 percent cloud cover for each month of the year using modelled data normalized over 30 years. Solas incorporated Meteoblue's data for Hollister, which is believed to be somewhat representative.[12]

Clouds reduce reflection by diffusing sunlight. On cloudy days, this diffusion will decrease the intensity of green glare and potentially eliminate the glare completely. According to Meteoblue's data, around 48 percent of days throughout the year are expected to have more than 20 percent cloud cover.

[12] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/hollister_united-states-of-america_5357499, accessed: September 15, 2020.

8 CONCLUSIONS AND DISCUSSION

The analysis results indicate that there is likely no incidence of red or yellow-grade glare from the Wright 13 or Briggs 17 greenhouses. All greenhouses are expected to produce green glare for all four flight paths, with one exception: pilots landing at runway 31 (FP1) of the Hollister Municipal Airport are not expected to experience any glare from the Briggs 17 greenhouse.

Overall, the Wright 13 greenhouses affect the Runway 13 path (FP2) the most. FP2 is expected to observe up to 1,165 minutes of green glare from Wright 13 yearly, between October and March, from 9:37 and 11:25 a.m. Briggs 17 affects the Runway 24 path (FP4) the most, emitting green glare for up to 323 minutes yearly. Green glare at FP4 from Briggs 17 occurs between October and February, from 1:40 to 2:26 p.m. The glare seen from flight paths will look much dimmer than the sun but will appear larger.

Glare predicted to be produced by the greenhouse roofs is only categorized in the “green” level, indicating an observer is unlikely to experience an after-image after looking at a glare spot. The size and intensity of the glare spot and resulting after-image are dependent on the distance between the observer and the array. An increase in the distance between the observer and greenhouses will decrease the impact and after-image created by the glare. The after-image an observer may experience could temporarily appear as a slightly darker or discoloured spot or line in the observer’s vision. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

Cloud cover and typical weather patterns provide a variable source of glare mitigation. Clouds may diffuse incident sunlight, lessening the impact of reflections from reflective surfaces. The impact of cloud cover was assessed using modelled weather data normalized over 30 years. Approximately 48 percent of days throughout the year are expected to have more than 20 percent cloud cover.

Based on the information associated with the geographic configuration of the glass panes on the greenhouse roofs, glare from the Project has a low potential to pose a risk to flight operations at the Hollister Municipal Airport. Changes to the Project layout or specifications will affect the results of the analysis.

Appendix A ForgeSolar Modelling Assumptions

Wright 13 — Greenhouse Roof Glass Parameters

Roof azimuth (Wright A&B): 93 degrees (east) and 273 degrees (west)
Roof azimuth (Wright C): 3 degrees (north) and 183 degrees (south)
Roof tilt/slope: 23 degrees
Glass material: Smooth glass without anti-reflective coating
Vary reflectivity with sun position? Yes
Ground elevation: 253 feet (Wright A&B), 252 feet (Wright C)
Height above ground: assessed at 17.0 feet, 18.5 feet, and 20.1 feet

Briggs 17 — Greenhouse Roof Glass Parameters

Roof azimuth: 93 degrees (east) and 273 degrees (west)
Roof tilt/slope: 23 degrees
Glass material: Smooth glass without anti-reflective coating
Vary reflectivity with sun position? Yes
Ground elevation: 248 feet (minimum elevation)
Height above ground: assessed at 17.0 feet, 18.5 feet, and 20.1 feet

Flight Path Parameters

Glide slope: 3 degrees
Plane height above threshold ground elevation (2 miles from threshold): 603 feet
Plane height above ground (at threshold): 50 feet
Horizontal/Azimuthal viewing angle: 50 degrees from centre
Maximum downward viewing angle: 30 degrees from horizontal

Agenda Item 3

Staff Report

To:	Airport Land Use Commission
From:	Veronica Lezama, Transportation Planner Telephone: (831) 637-7665
Date:	November 19, 2020
Subject:	Land Use Consistency Determination

Recommendation:

FIND Project No. 2018-6, Associated with Assessor Parcel Nos. 019-090-026 and 053-350-0030 located on 1100 San Felipe Road in the City of Hollister, CONSISTENT with the 2012 Hollister Municipal Airport Land Use Compatibility Plan.

Summary:

The ALUC application associated with assessor parcel numbers 019-090-026 and 053-350-0030 were reviewed in accordance with the adopted 2012 Hollister Municipal Airport Land Use Compatibility Plan.

Financial Considerations:

The Airport Land Use Commission (ALUC) has an adopted application fee structure. The fee consists of a minimum $300 non-refundable payment that is submitted at the time the application is provided to ALUC.

Background:

Land use actions proposed within the Hollister Municipal Airport Influence Area (Attachment 1) are subject to ALUC review to determine consistency with the Hollister Municipal Airport Land Use Compatibility Plan. The purpose of the Compatibility Plan is to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards.

Staff Analysis:

ALUC staff received an application for a Consistency Determination with the adopted 2012 Hollister Municipal Airport Land Use Compatibility Plan.

Project Description:

The proposed project, Briggs 17, is located at 1100 San Felipe Road in the City of Hollister, San Benito County (Attachment 2). The project area is located in the north/central portion of the Hollister planning area, north of Wright Road, on the west side of San Felipe Road, east of State

Route (SR) 25 in an area known historically as "Cottage Corners." Hollister Municipal Airport is located approximately 1.5 miles to the north. The applicant is proposing the construction of 544,670 square feet of indoor cannabis cultivation, distribution, and manufacturing facilities on San Felipe Road. Specifically, the project would construct a single large warehouse-style structure with a building footprint of 544,670 square feet, including a 64,500 square foot "Head House" which includes offices, employee areas (Attachment 3).

During a project review, the Airport Land Use Commission considers several Compatibility Plan policies including: ***Noise, Safety, Airspace Protection***, and ***Overflight***. An analysis of each of the four compatibility factors is discussed below.

Noise Policy 3.2.

The Noise Policy objective is to avoid establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise. The magnitude noise impacts are depicted by four contours, which show the greatest annualized noise impacts anticipated to be generated by the airport over the next 20 years.

The project is proposed outside of the Noise Contours (Attachment 4). As such, the project does not require additional noise attenuation measures beyond what is required by the California Building Code. As a result, the proposed project is consistent with the Hollister Municipal Airport Land Use Compatibility Plan's Noise Policy.

Safety Policy 3.3.

The Safety Policy objective is to minimize the risks associated with an off-airport aircraft accident or emergency landing. The policy focuses on reducing the potential consequences of such events by limiting sensitive land uses (i.e. residential) and intensities of non-residential uses (i.e. commercial, industrial, etc.). This policy is defined in terms of the geographic distribution of where accidents are most likely to occur based on the six safety zones.

The project is proposed within the Safety Zone 6 (Attachment 5)- the least restrictive of the Safety Zones. According to Table 2: Safety Compatibility Criteria, the *Indoor Storage* use is *Normally Compatible* and allowed within Safety Zone 6 (Attachment 6). The applicant is also proposing 64,500 square foot "Head House" which includes offices and employee areas. The proposed office space land use category is also *Normally Compatible* and allowed within Safety Zone 6 (Attachment 6).

As an additional condition of compatibility, the project must also comply with the indicated usage intensity limits and other listed conditions identified in Table 2: Safety Compatibility Criteria (Attachment 6). The cultivation park will operate 24 per day, seven days per week.

Twenty-four employees will be present for each of the three 8-hour shifts. No retail point of sale will take place at the facility. Shifts start and end times are proposed for non-peak hours to avoid peak travel times. As such, the project is consistent with the Compatibility Plan's Safety Policy.

Airspace Protection Policy 3.4.

The Airspace Protection Policy seeks to prevent creation of land use features that can be hazards to the airspace required by aircraft in flight and have the potential for causing an aircraft accident to occur.

In evaluating the airspace protection compatibility of the proposed development, three categories of hazards to airspace shall be considered: physical, visual, and electronic. The categories of hazard applicable to the project are outlined in bold below.

a. **The height of structures and other objects situated near the airport are a primary determinant of physical hazards to the airport airspace.**

   ALUC Staff Analysis: The project is proposed outside of the Critical Airspace Protection Zone and any object in this zone is allowed to have a height of up to 35 feet above the ground. The project structures will not exceed 20 feet in height and therefore consistent with the Federal Regulation 49 CFR Part 77, which establishes standards and notification requirements for objects affecting navigable airspace.

b. **Land use features that have the potential to attract birds and certain other wildlife to the airport area are also to be evaluated as a form of physical hazards (FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*).**

   ALUC Staff Analysis: The applicant is proposing a shared detention basin designed not hold standing water after storm events so as to not attract birds, basin pumps shall be sized and programmed accordingly to drain within 24 hours. The detention basin design is consistent with the Compatibility Plan.

c. **Visual hazards of concern include certain types of lights, sources of glare, and sources of dust, steam, or smoke.**

   ALUC Staff Analysis: The applicant is proposing the construction of 544,670 square feet of indoor glass greenhouse buildings for a cannabis cultivation facility. San Benito Airport Land Use Commission staff requested that the applicant provide a glare study as greenhouses may have the potential to pose hazard to pilots in the form of glare. The applicant provided a Solar Glare Analysis Study to evaluate the potential for solar glare from the project for airplanes on the final approach to the airport (Attachment 7).

   The impact of glare depends on the interaction between the position of the sun, the angle and orientation of the reflective surface, the reflectivity of the surface, the size of the project, and the relative location of the observer. “Green” rated glare indicates a low potential for after-image, “yellow” rated glare indicates the potential for after-image exists, and “red” rated glare indicates the potential for retinal damage.

The report concluded that the preparer of the study “Solas does not expect the Briggs greenhouse to produce red-grade glare or yellow-grade glare at the evaluated flight paths.” The results of the Glare Gauge analysis identified four locations that will experience green-grade glare as described in detail in the report, page 23. Green rated glare indicates a low potential for after-image.

a. Electronic hazards are ones that may cause interference with aircraft communications or navigation.

Staff Analysis: None

The proposed project is consistent with the Compatibility Plan’s Airspace Protection Policy.

Overflight Policy 3.5.

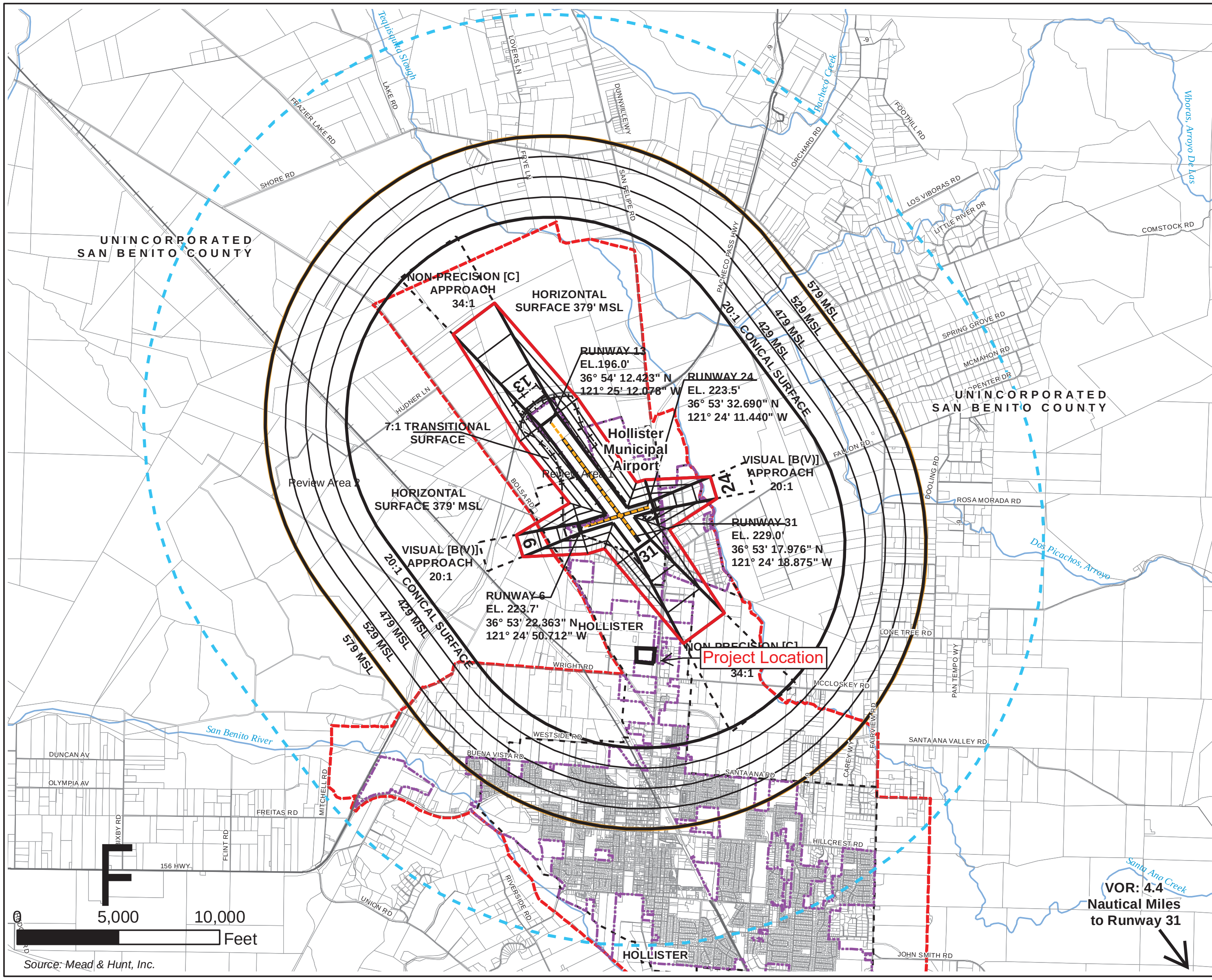
The Overflight Compatibility Policy is intended to help notify people, through real estate disclosures, about the presence of aircraft overflight near airports so that they can make informed decisions regarding acquisition or lease of property in the affected areas. Overflight policies do not apply to non-residential development. The applicant is proposing a non-residential use and is therefore consistent with the Overflight Compatibility Policy.

Executive Director Review: ___*MG*___ Counsel Review: N/A

Supporting Attachment(s):

1. Compatibility Policy Map: Airport Influence Area
2. Project Location Map
3. Project Site Plan
4. Noise Contour Map
5. Safety Zones Map
6. Table 2: Safety Compatibility Criteria
7. Glare Analysis Report

ATTACHMENT 1



Legend

- Existing Airport Property
- Future Property Acquisition
- Hollister City Limits
- Hollister Sphere of Influence
- Hollister Planning Area Boundary
- Existing Runway- 13-31 length: 6,350', 6-24 length: 3,150'
- Future Runway- 13-31 length: 7,000', 6-24 length: 3,357'
- Roads
- Railroads
- Parcels
- Rivers

Policy Boundaries

- Airport Influence Area
- Airspace Protection Zone [1]
- Critical Airspace Protection Zone [2]
- FAA Height Notification Surface [3]

Notes

1. The Airspace Protection Zones are drawn in accordance with FAR Part 77, Subpart C and reflect the future runway lengths and instrument approaches for all runways except Runway 31. For Runway 31, the existing runway end location and instrument approach type are reflected, as the existing airspace surface are generally more restrictive than the airspace surfaces reflecting the future runway end and approach type.

2. The Critical Airspace Protection Zone encompasses the primary surface and the critical portions of the approach and transitional surfaces to where these surfaces intersect with the horizontal surface.

3. The FAA Height Notification Zone is established in accordance with FAR Part 77, Subpart B.

Hollister Municipal Airport
Land Use Compatibility Plan

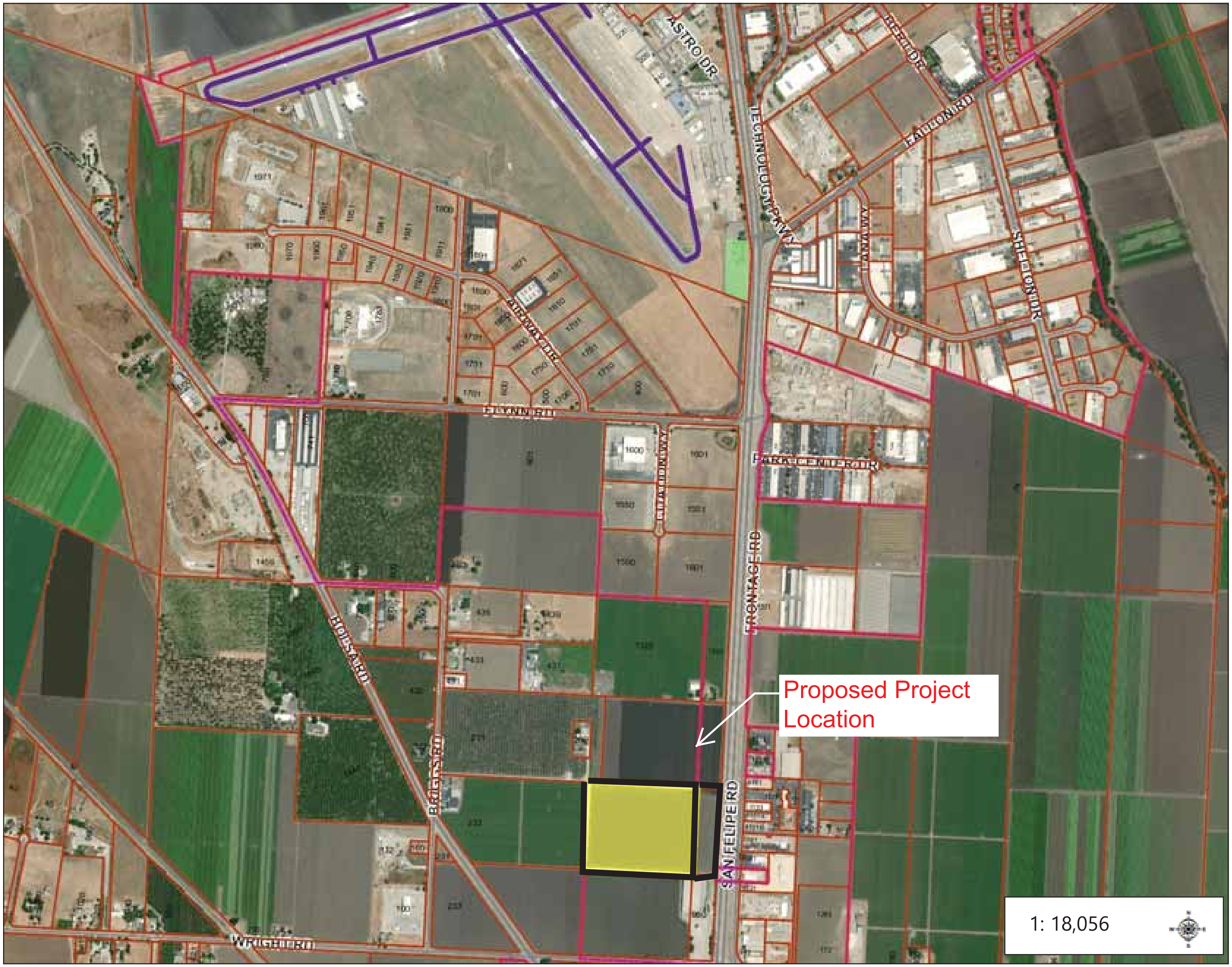
Map 4

Compatability Policy Map: Airspace Protection Zones

ATTACHMENT 2

County of San Benito

Project Location



1: 18,056

Legend

- SBC Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Runways
- Tentative Streets
- Park

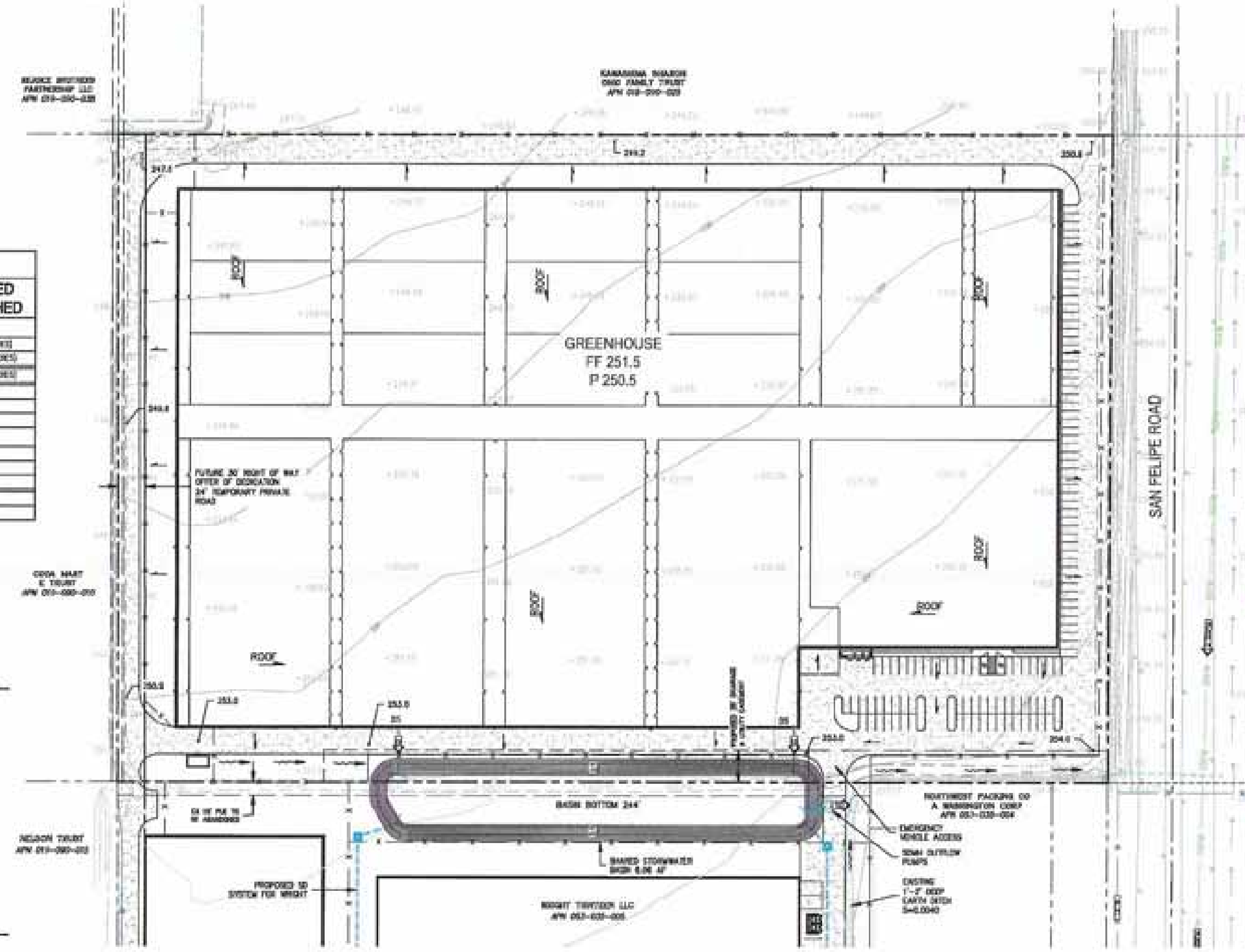
3,009.3 | 0 | 1,504.66 | 3,009.3 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Notes

Attachment 3

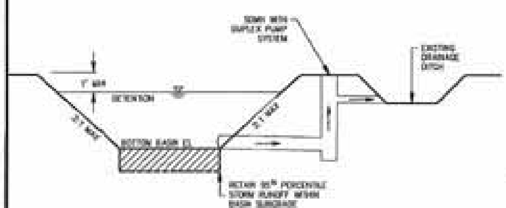


PRELIMINARY STORMWATER CALCULATIONS

FEATURE	BRIGGS 17	WRIGHT 13	COMBINED WATERSHED
AREA DESCRIPTION	ESTIMATED AREA BREAKDOWN (SF)		
PERVIOUS AREA	214,711 (4.9 ACRES)	130,092 (3.0 ACRES)	334,803 (7.7 ACRES)
IMPERVIOUS AREA	557,861 (12.8 ACRES)	454,518 (10.4 ACRES)	1,012,379 (23.2 ACRES)
TOTAL	772,572 (17.7 ACRES)	574,610 (13.2 ACRES)	1,347,182 (30.9 ACRES)
PERCENT IMPERVIOUS	72%	79%	75%
WATER MANAGEMENT ZONE	1		
ASSUMED SOIL TYPE	C (SORRENTO, SILTY CLAY LOAM)		
95TH PERCENTILE 24-HOUR RAINFALL DEPTH	1.2 IN		
2-YEAR PRE-DEVELOPMENT FLOW[1]	----	----	4.8 CFS
10-YEAR PRE-DEVELOPMENT FLOW[1]	----	----	11.3 CFS
ASSUMED INFILTRATION RATE	0.1 IN/HR		
TOTAL REQUIRED BASIN VOLUME[2]	----	----	3.46 AF
TOTAL BASIN VOLUME PROVIDED[2]	----	----	3.50 AF

[1] THE TIME OF CONCENTRATION ON THE BRIGGS AND WRIGHT WATERSHEDS VARY INDEPENDENTLY OF EACH OTHER, RESULTING IN 2 AND 10-YEAR PRE-DEVELOPMENT FLOWS NOT COMPARATIVE TO THE COMBINED WATERSHED PRE-DEVELOPMENT FLOWS.

[2] THE TIME OF CONCENTRATION ON THE BRIGGS AND WRIGHT WATERSHEDS VARY INDEPENDENTLY OF EACH OTHER, RESULTING IN A BASIN VOLUME NOT COMPARATIVE TO THAT OF THE COMBINED WATERSHED BASIN VOLUME.



BASIN DESIGN CRITERIA:

1. BASIN WILL BE DESIGNED WITH A TWO PUMP STRUCTURE TO RELEASE STORM WATER AT THE 10-YEAR PRE-DEVELOPMENT FLOW RATE, THE 2-YEAR PRE-DEVELOPMENT FLOW RATE, AND 50% OF THE PRE-DEVELOPMENT 100-YEAR DESIGN STORM.

(1) TYPICAL BASIN DETAIL
NOT TO SCALE

SCALE: 1" = 60'

NOTES:

1. TOPOGRAPHIC SURVEY WAS PERFORMED BY WHITSON ENGINEERS ON JUNE 30, 2017.
2. THIS MAP PORTRAYS THE SITE AT THE TIME OF THE SURVEY AND DOES NOT SHOW SOILS OR GEOLOGY INFORMATION, UNDERGROUND CONDITIONS, ZONING OR REGULATORY INFORMATION.
3. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ELEVATIONS WERE DETERMINED THROUGH STATIC GPS OBSERVATIONS AND THE USE OF THE NATIONAL GEODETIC SURVEY'S ONLINE POSITION USER SERVICE (OPUS). AN ESTABLISHED NAVD88 ELEVATION OF 259.58 FEET FOR A 3-1/2" BRASS DISC IN THE TOP OF A CONCRETE HEADWALL FOR A STORM DRAIN PIPE LOCATED AT THE NORTHWEST CORNER OF MCCLOSKEY ROAD AND SAN FELIPE ROAD (HIGHWAY #156 FRONTAGE ROAD), DESIGNATED CITY OF HOLLISTER BENCHMARK #26, IS THE LOCAL BENCHMARK TO WHICH ALL ELEVATIONS SHOWN HEREON ARE REFERENCED.

LEGEND

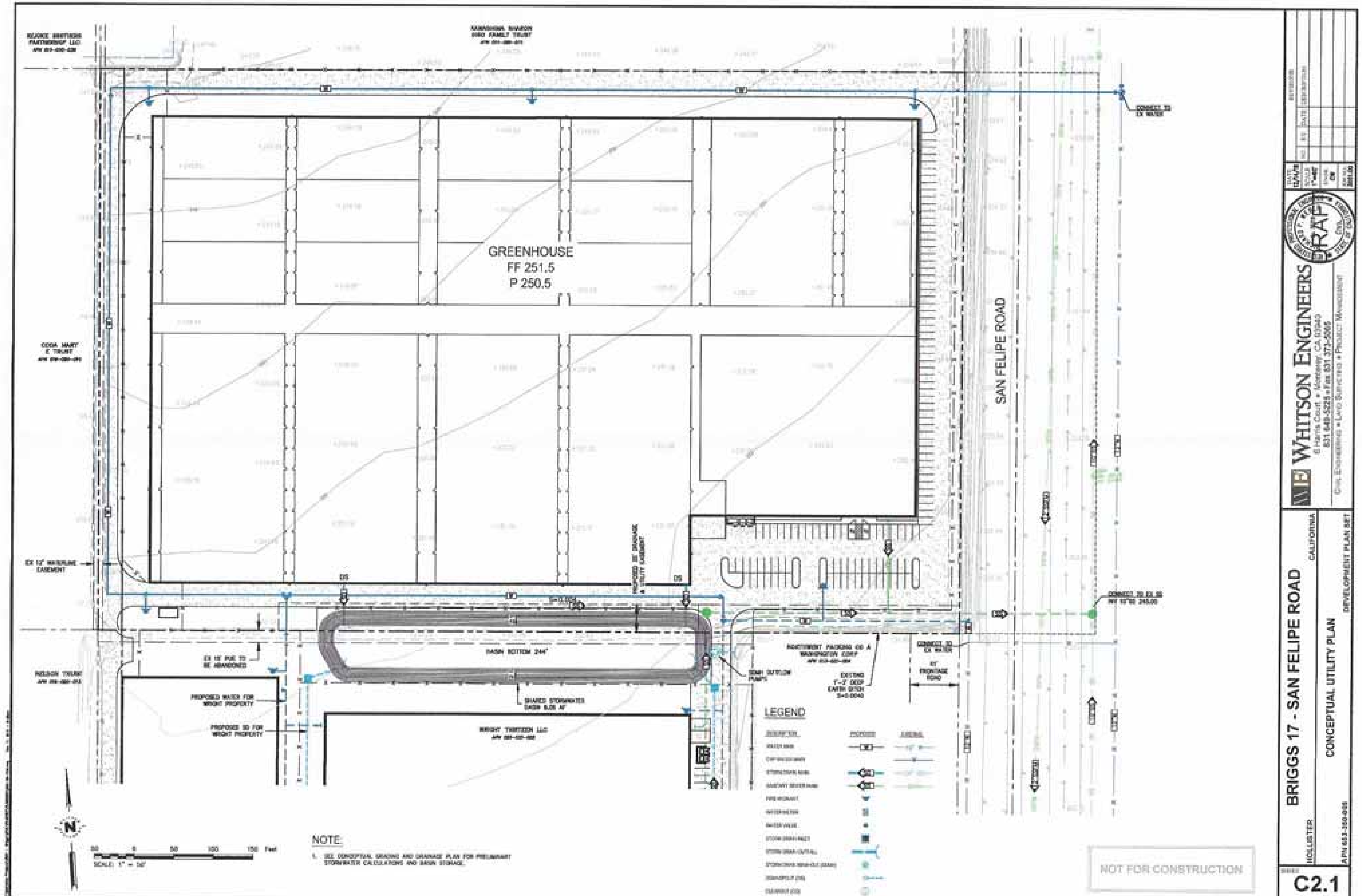
DESCRIPTION	PROPOSED	EXISTING
STORM DRAIN MAIN		
DIRECTION OF FLOW		
STORM DRAIN INLET		
STORM DRAIN OUTFALL		
STORM DRAIN MANHOLE (SDMH)		
DOWNSPOUT (DS)		
PACKED DIRT		

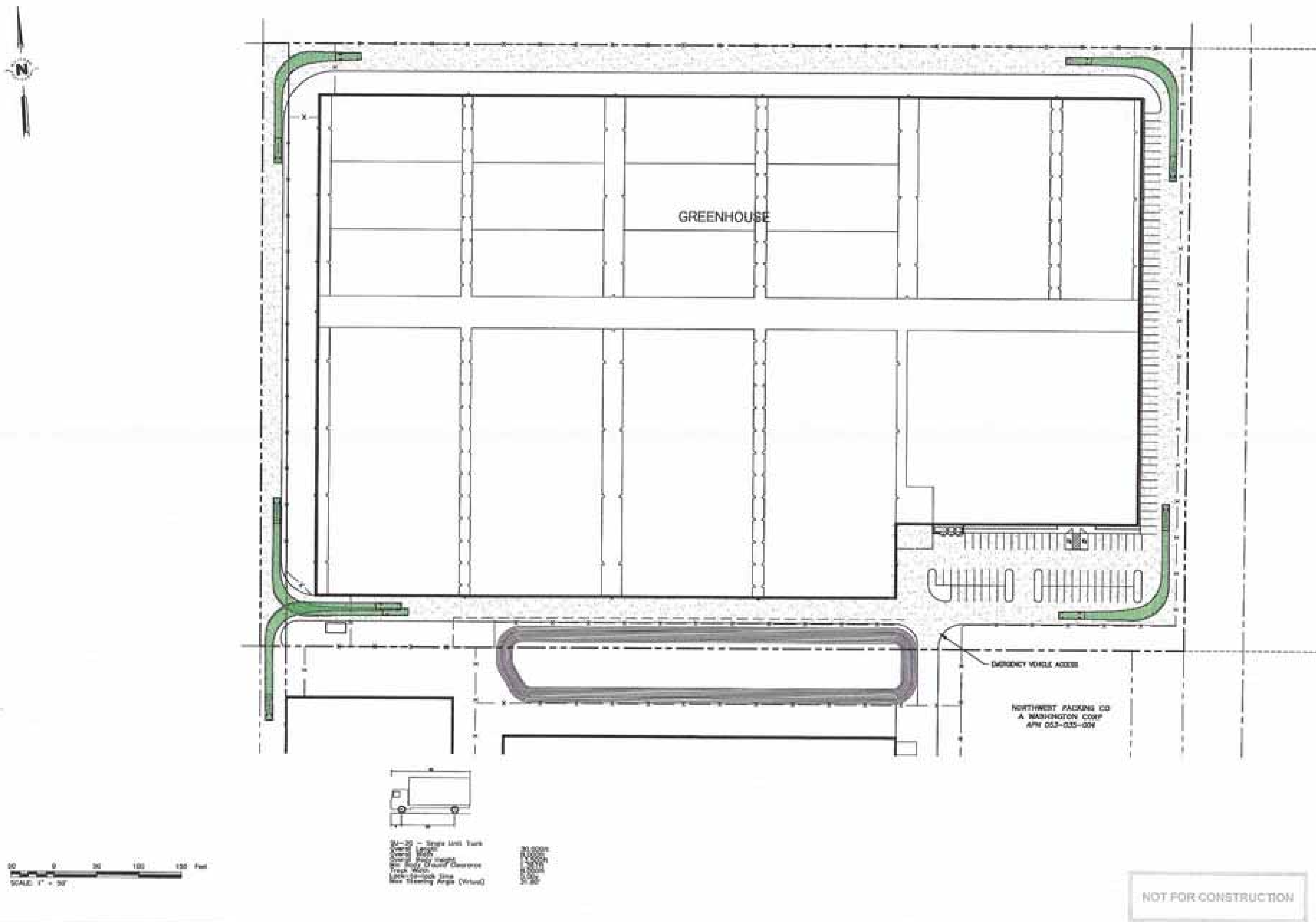
NOT FOR CONSTRUCTION

WHITSON ENGINEERS
6 Harris Court • Monterey, CA 93940
831 649-5225 • Fax 831 373-5065
Civil Engineering • Land Surveying • Project Management

BRIGGS 17 - SAN FELIPE ROAD
HOLLISTER CALIFORNIA
CONCEPTUAL GRADING AND DRAINAGE PLAN
DEVELOPMENT PLAN SET
APN 053-350-005

SHEET C1.1


GREENHOUSE
FF 251.5
P 250.5
SAN FELIPE ROAD
CONNECT TO EX WATER
EX 12" WATERLINE EASEMENT
DS
BASIN BOTTOM 244'
SHARED STORMWATER BASIN
EX 15" PUE TO BE ABANDONED
PROPOSED WATER FOR WRIGHT PROPERTY
PROPOSED SD FOR WRIGHT PROPERTY
WRIGHT THIRTEEN LLC
SEMI OUTFLOW PUMPS
EXISTING 1'-3' DEEP EARTH DITCH
FRONTAGE ROAD
LEGEND
NOTE:
1. SEE CONCEPTUAL GRADING AND DRAINAGE PLAN FOR PRELIMINARY STORMWATER CALCULATIONS AND BASIN STORAGE.
SCALE: 1" = 50'
NOT FOR CONSTRUCTION
BRIGGS 17 - SAN FELIPE ROAD
HOLLISTER
CALIFORNIA
CONCEPTUAL UTILITY PLAN
DEVELOPMENT PLAN SET
WHITSON ENGINEERS
6 Harris Court • Monterey, CA 93940
831 649-5225 • Fax 831 373-5065
Civil Engineering • Land Surveying • Project Management
DRAFT
C2.1



BRIGGS 17 - SAN FELIPE ROAD

HOLLISTER CALIFORNIA

PRELIMINARY CIRCULATION PLAN-SMALL DELIVERY

DEVELOPMENT PLAN SET

APN 053-350-005

WHITSON ENGINEERS
6 Harris Court • Monterey, CA 93940
831 649-5225 • Fax 831 373-5065
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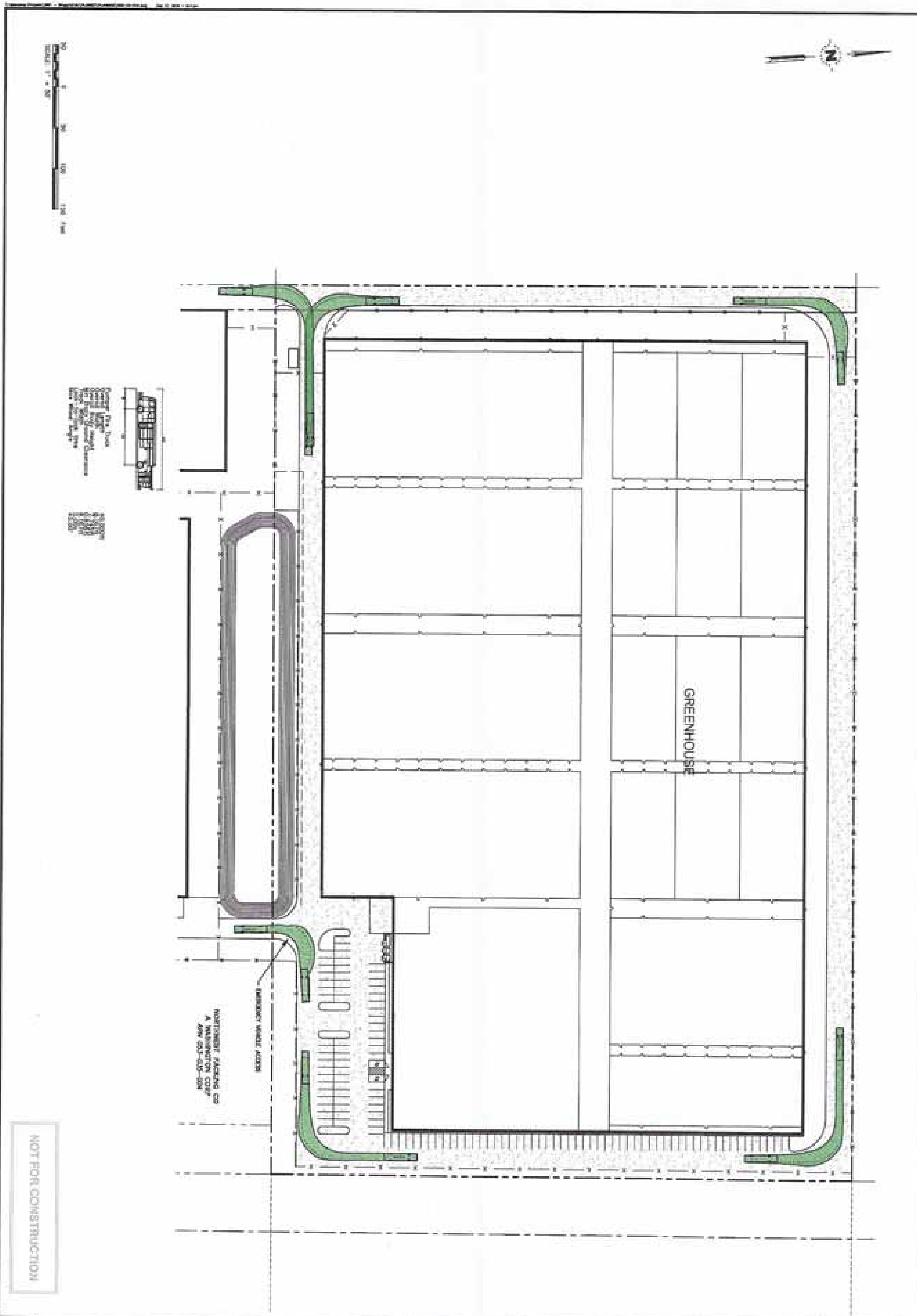
DRAFT

SHEET C3.1



BRIGGS 17 - SAN FELIPE ROAD

HOLLISTER CALIFORNIA

PRELIMINARY CICULATION PLAN - FIRE TRUCK

APN 653-350-005

DEVELOPMENT PLAN SET

SHEET C3.2

WHITSON ENGINEERS

6 Harris Court • Monterey, CA 93940

831 649-5225 • Fax 831 373-5065

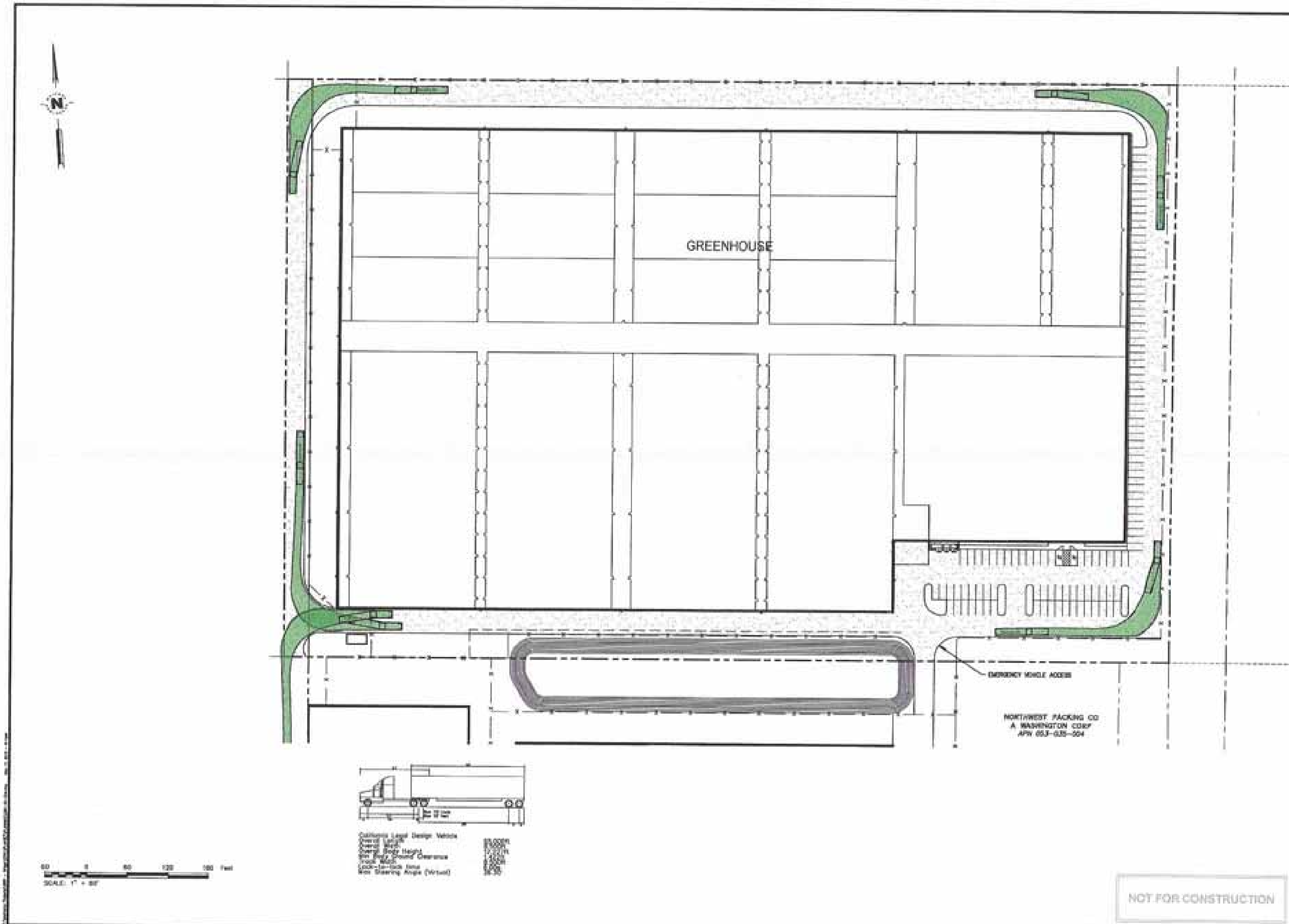
Civil Engineering • Land Surveying • Project Management

DRAFT

SCALE 1"=50'

NO.	BY	DATE	DESCRIPTION

REVISIONS



BRIGGS 17 - SAN FELIPE ROAD

HOLLISTER CALIFORNIA

PRELIMINARY CIRCULATION PLAN - LARGE DELIVERY TRUCK

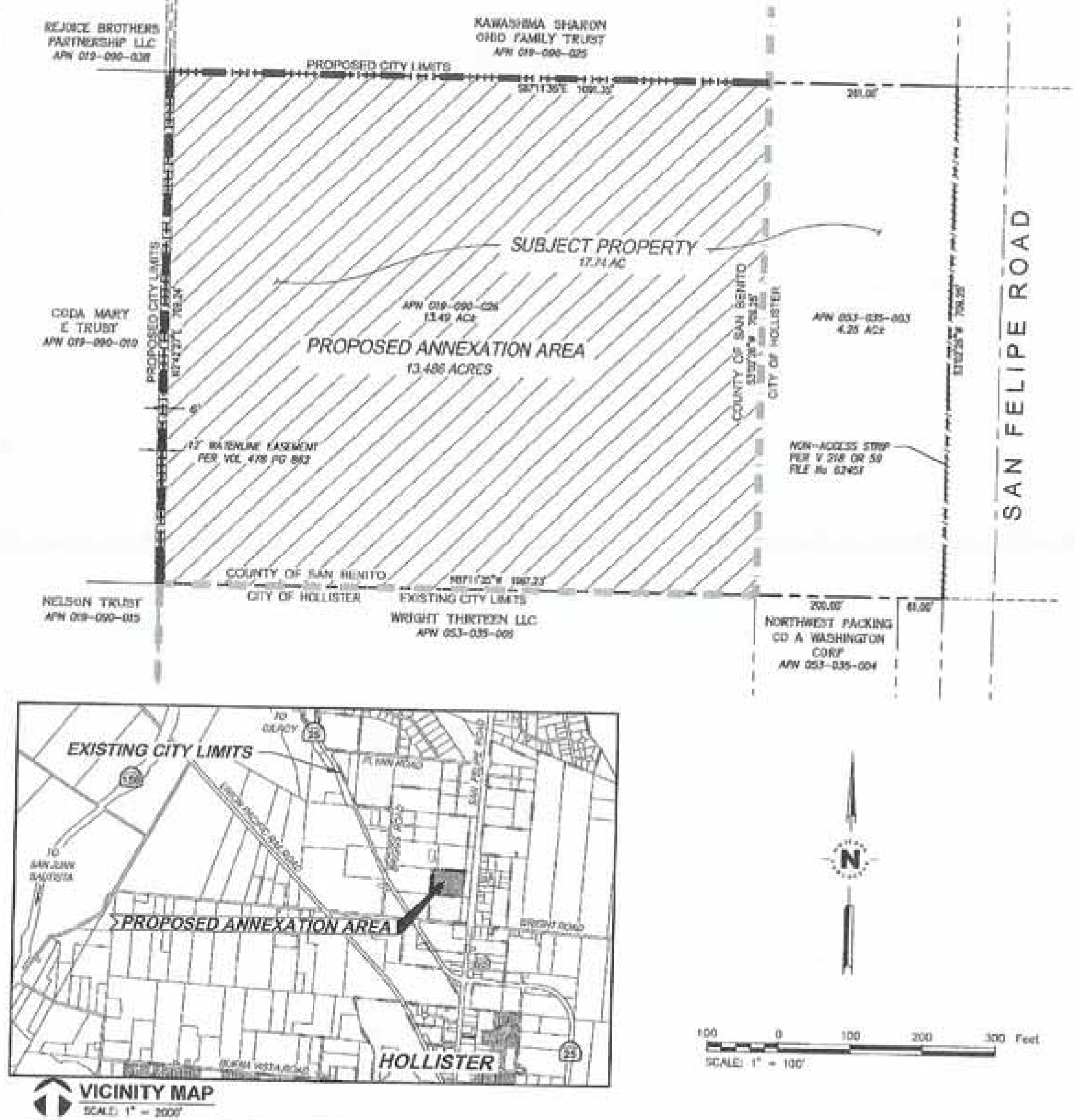
DEVELOPMENT PLAN SET

APN 653-350-005

WHITSON ENGINEERS
6 Harris Court • Monterey, CA 93940
831 649-5225 • Fax 831 373-5065
Civil Engineering • Land Surveying • Project Management

DRAFT

SHEET C3.3



LAFCO STATEMENT

I HEREBY CERTIFY THAT THIS ANNEXATION WAS COMPLETED ON THE ______ DAY OF ______________, 2018.

BY: ______________________________
EXECUTIVE OFFICER, SAN BENITO COUNTY
LOCAL AGENCY FORMATION COMMISSION

CITY CLERK'S STATEMENT

I HEREBY STATE THAT THE FOLLOWING ORDER WAS ADOPTED BY THE CITY COUNCIL OF THE CITY OF HOLLISTER, COUNTY OF SAN BENITO, STATE OF CALIFORNIA, AT A MEETING OF SAID COUNCIL

HELD ON THE ______ DAY OF ____________ 20___

______________________________ ____________
THOMAS A. GRAVES, CMC DATE
CITY CLERK OF THE CITY OF HOLLISTER

RECORDER'S STATEMENT

FILED THIS ______ DAY OF ______________, 20__, AT ___:___ __M.
IN BOOK ____ OF MAPS, AT PAGE ______, AT THE REQUEST OF WHITSON ENGINEERS.

FILE NO.: ________

____
JOE PAUL GONZALEZ, COUNTY RECORDER

____
BY: DEPUTY

LEGEND

- SUBJECT PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING CITY LIMIT LINE
- PROPOSED CITY LIMIT LINE
- CENTERLINE
- EASEMENT LINE
- ANNEXATION AREA

DISTANCES ARE EXPRESSED IN FEET AND DECIMALS THEREOF.

ANNEXATION MAP

OF

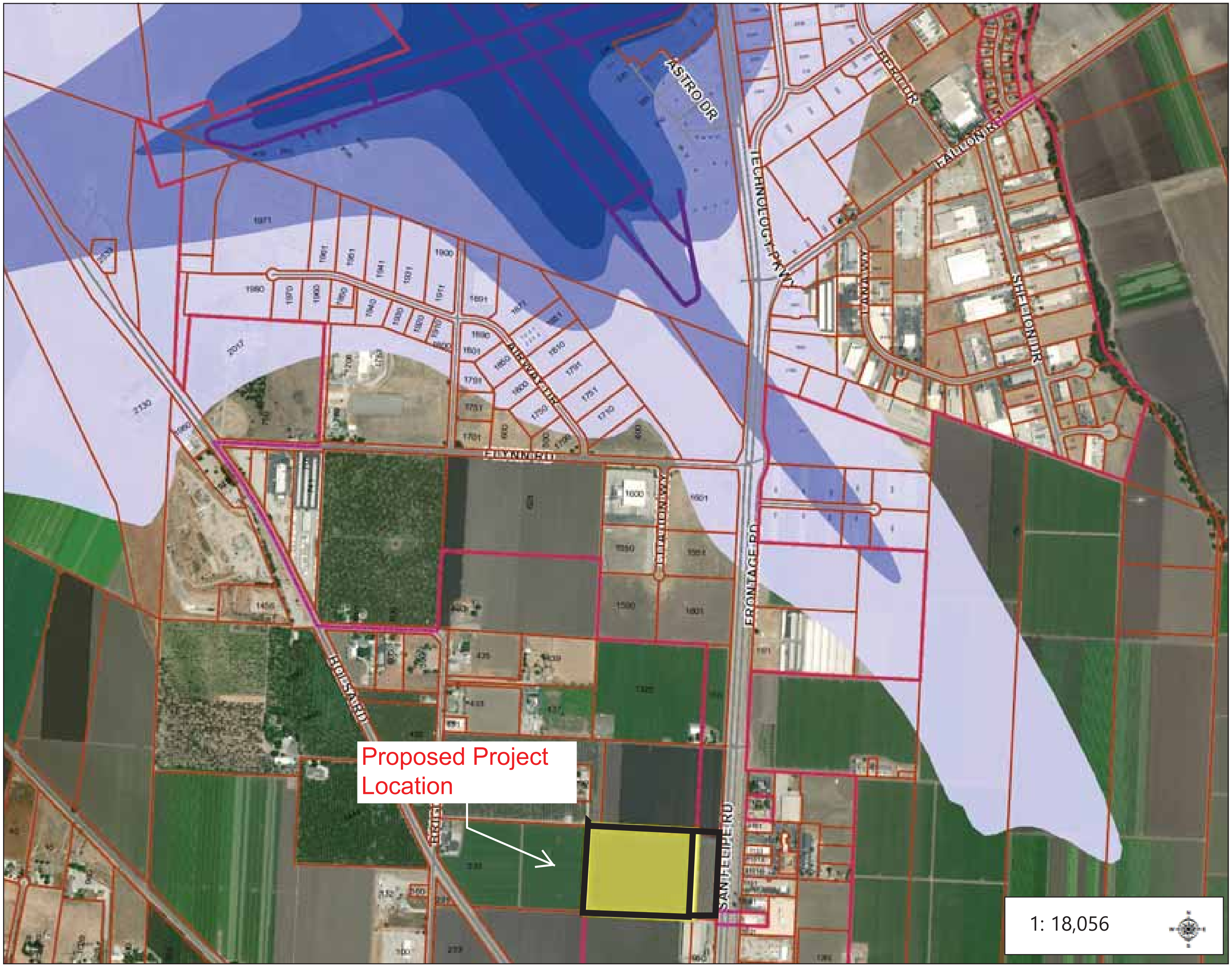
A PORTION OF HOMESTEAD LOT 11
SAN JUSTO RANCHO
TO THE CITY OF HOLLISTER
SAN BENITO COUNTY, CALIFORNIA

PREPARED BY:

WHITSON ENGINEERS
6 Harris Court · Monterey, CA 93940
831 649-5225 · Fax 831 373-5065
CIVIL ENGINEERING · LAND SURVEYING · PROJECT MANAGEMENT
DATE: MARCH 2018 JOB NO. 3661.00

ATTACHMENT 4

County of San Benito **Noise Contours**



Legend

- SBC Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Runways
- Hollister Airport Noise Impact Z
  - 55 - 60 dB CNEL
  - 60 - 65 dB CNEL
  - 65 - 70 dB CNEL
  - 70+ dB CNEL
- Tentative Streets
- Park

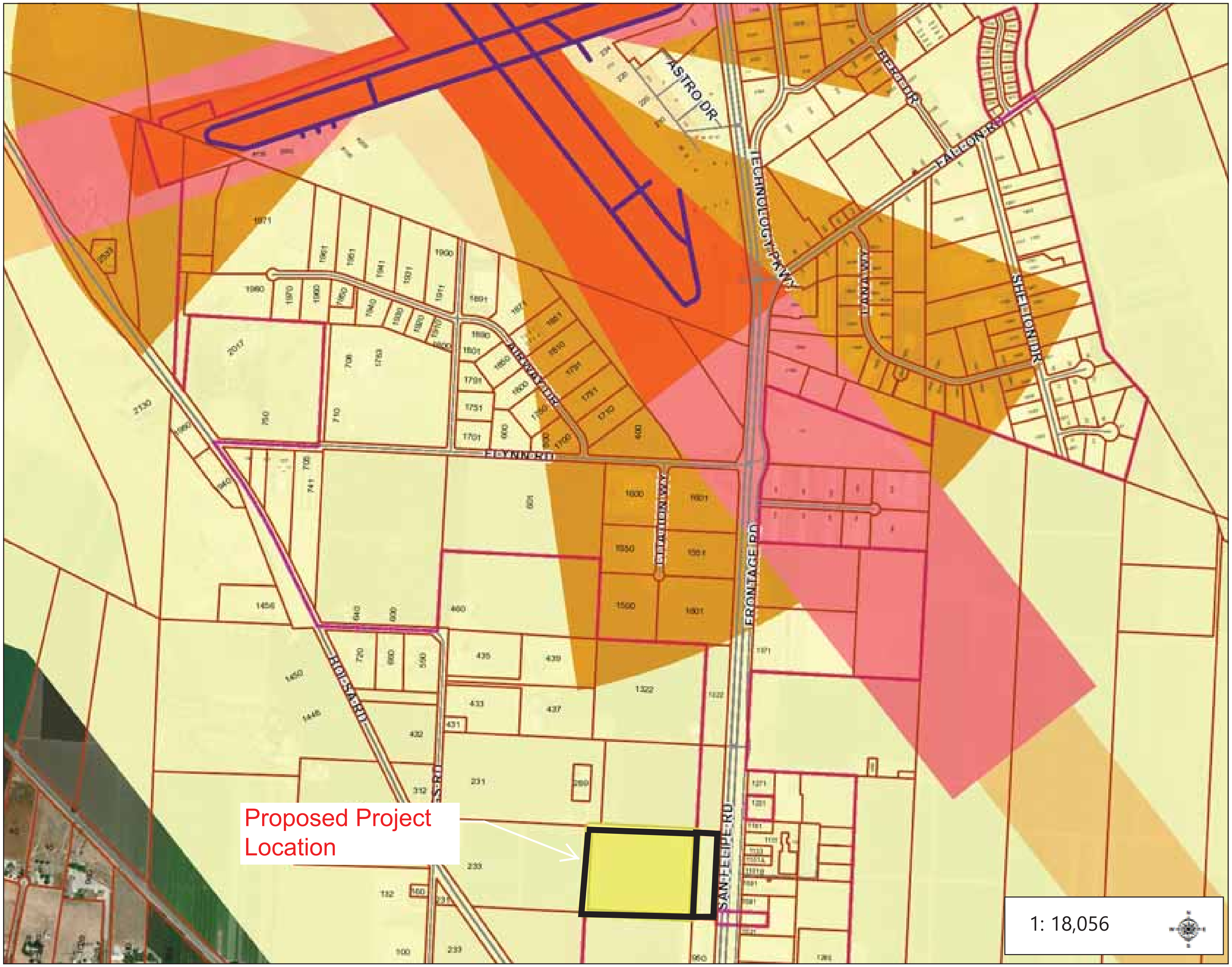
Notes

3,009.3 0 1,504.66 3,009.3 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

County of San Benito Safety Zones



Legend

- SBC Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Runways
- Hollister Airport Safety Zones
  - Runway Protection Zone
  - Inner Approach/Departure Zone
  - Inner Turning Zone
  - Outer Approach/Departure Zone
  - Sideline Zone
  - Traffic Pattern Zone
- Tentative Streets
- Park

3,009.3 0 1,504.66 3,009.3 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Notes

Usage Intensity Criteria [1]	Safety Zone						Additional Criteria
	1	2	3	4	5	6	
Max. Sitewide Average Intensity (people/acre) Max. Single-Acre Intensity (people/acre)	10 20	60 120	100 300	150 450	100 300	300 1,200	Numbers below indicate zone in which condition applies
Land Use Category [2]	**Land Use Acceptability** (see page 2-49 for legend)						
Eating/Drinking Establishments: restaurants, fast-food dining, bars [approx. 60 s.f./person] [6]							2-5: Intensity limits as indicated
Limited Retail/Wholesale: furniture, automobiles, heavy equipment, lumber yards, nurseries [approx. 250 s.f./person] [6]							2, 5: Intensity limits as indicated; design site to place parking inside and bldgs outside of zone if possible
Offices: professional services, doctors, finance, civic; radio, television & recording studios, office space associated with other listed uses [approx. 215 s.f./person] [6]						X	2-5: Intensity limits as indicated
Personal & Miscellaneous Services: barbers, car washes, print shops [approx. 200 s.f./person] [6]							2-5: Intensity limits as indicated
Vehicle Fueling: gas stations and fueling facilities at trucking & transportation terminals							5: Allowed only if airport serving
Industrial, Manufacturing, and Storage Uses							
Hazardous Materials Production: oil refineries, chemical plants							3-6: Allowed only if alternative site outside zone would not serve intended function; Fire Marshal to determine if special design features should be incorporated into structure to withstand damage from aircraft collision; exercise caution with uses creating plumes and other airspace hazards [3]
Heavy Industrial							2-5: Avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Light Industrial, High Intensity: food products preparation, electronic equipment [approx. 200 s.f./person] [6]							2-5: Intensity limits as indicated; avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Light Industrial, Low Intensity: machine shops, wood products, auto repair [approx. 350 s.f./person] [6]							2 - 4: Intensity limits as indicated 5: Single story only; max. 10% in mezzanine 2-5: Avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Indoor Storage: wholesale sales, warehouses, mini/other indoor storage, barns, greenhouses [approx. 1,000 s.f./person] [6]						X	2: Single story only; max. 10% in mezzanine

Table 2, continued

Land Use	Acceptability	Interpretation/Comments
(green)	*Normally Compatible*	Normal examples of the use are compatible under the presumption that usage criteria will be met. Atypical examples may require review to ensure compliance with usage intensity criteria. Noise, airspace protection, and/or overflight limitations may apply.
(yellow)	*Conditional*	Use is compatible if indicated usage intensity limit and/or other listed conditions are met.
(red)	*Incompatible*	Use should not be permitted under any circumstances.

Notes

1 Usage intensity criteria applicable to all nonresidential development (i.e., Normally Compatible as well as Conditional land uses). Nonresidential development must satisfy both forms of intensity limits (see Policy 3.3.6). See Note 6 below and Policy 3.3.7 for information on how to calculate nonresidential intensity. Up to 10% of total floor area may be devoted to ancillary use (see Policy 3.3.6(c)).

2 Multiple land use categories and compatibility criteria may apply to a project. Land uses not specifically listed shall be evaluated using the criteria for similar uses.

3 These uses may pose hazards to flight as they may attract birds or other wildlife; generate dust or other visual hazards; or create physical hazards (e.g., power lines or other tall objects). See *Section 3.4* for applicable airspace protection policies.

4 Capacity of people for Large and Major Assembly Facilities obtained from International Building Code.

5 Residential density limits provided in terms of dwelling units per acre (du/ac). Construction of a single-family home, including a second dwelling unit as defined by state law, allowed on a legal lot of record if such use is permitted by local land use regulations. A family day care home (serving ≤ 14 children) may be established in any dwelling. See *Policies 1.4.5* and *3.3.5(h).*

6 Common occupancy load factors (approximate number of square feet per person) source: Mead & Hunt, Inc. based upon information from various sources including building and fire codes, facility management industry sources, and ALUC surveys. The common occupancy load factors represent the maximum occupancy during a normal peak period occupancy, not on the highest attainable occupancy used in building and fire codes. Common occupancy load factors provided in the table for specific land uses may be used as a means of calculating the usage intensity of a proposed development. See Policy 3.3.7 for other methods of calculating usage intensities.

Table 2, continued

Attachment 7

Solar Glare Analysis Report – Wright 13 and Briggs 17 Greenhouses

Wright 13, LLC and Briggs 17, LLC, Hollister, California

Version 2.0

Issued For Use

09 October 2020

Delivered to: Geary Coats, Coats Consulting

Solas Energy Consulting Inc.
Suite 282, 1721 29 Ave SW
Calgary, Alberta T2T 6T7

Phone: 403-454-9463
Email: pmcgarrigle@solasenergyconsulting.com
Web: www.solasenergyconsulting.com

Acknowledgement

Prepared by: Keith Knudsen
Jason Mah
Paula McGarrigle
Gabriel Risbud-Vincent

Document Purpose

This report provides an assessment of glare hazard from the proposed Wright 13 and Briggs 17 Greenhouse Projects in Hollister, California, USA.

Document History

Wright 13 and Briggs 17 Solar Glare Analysis

Version	Date	Comments
1.0	07 October 2020	Issued for Review
2.0	09 October 2020	Issued for Use

Disclaimer

While this document is believed to contain correct information, Solas Energy Consulting Inc. (“SOLAS”) does not make any warranty, either expressed or implied, nor assumes any legal liability or responsibility for accuracy, completeness, methodology, usefulness, reliability, or current status of any material contained in this document (“Report”), nor shall SOLAS assume any liability with respect to any matter or information referred to or contained in the Report, nor shall any person relying on the Report (“Recipient”) or any party to whom the Recipient provides the Report or information have any claim against SOLAS arising out of such Report. The interpretation of this or any other data or report related to this project is solely the responsibility of the client.

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Issued For Use

Glossary

Term	Description
After-image	Visual image that persists after the stimulus that caused it has stopped.
ALUC	Airport Land Use Commission
Azimuth	Horizontal angle of the Sun around an object. North is 0°, east is 90°, south is 180°, and west is 270°.
Coats	Coats Consulting
FAA	Federal Aviation Administration
FP	Flight path
mrad	Measure of angle, 1/1000th of a radian
SGHAT	Solar Glare Hazard Analysis Tool
Subtended Angle	Size of an object divided by the distance from the observer.
W/m^2	Watts per square metre

1 INTRODUCTION

The Wright 13, LLC and Briggs 17, LLC are proposing to build multiple greenhouses in the city of Hollister, California. The Wright 13 and Briggs 17 projects (Projects) will be located at the north end of the city in San Benito County, approximately 1.25 miles south of the Hollister Municipal Airport.

The San Benito County Airport Land Use Commission (ALUC) reviews development proposals that may affect operations at the Hollister Municipal Airport, Frazier Lake Airpark, and surrounding areas. The ALUC has requested that the project applicants provide an analysis of potential impacts to aviation due to solar glare from the Projects. Reflective surfaces, like the glass roof sections of the greenhouses, may reflect sunlight and produce glare along flight paths at the Hollister Municipal Airport. In addition, ALUC is charged with ensuring new proposed projects within the ALUC area of responsibility are consistent with the ALUC land use plan.

Solas Energy Consulting Inc. (Solas) was retained by Coats Consulting (Coats) to conduct a solar glare analysis for flight paths at the Hollister Municipal Airport. This report documents the potential for solar glare from the Projects for airplanes on final approach to the airport.

2 PROJECT DESCRIPTION

Wright 13 will include three greenhouses situated on a 13-acre parcel of land, and Briggs 17 will include a single greenhouse on a 17-acre parcel. Both sites are at the north end of the City of Hollister, California. The Projects are on the west side of San Felipe Road, with California State Route 25 to the west and Wright Road to the south. The end of the nearest runway at the Hollister Municipal Airport is about 0.8 miles north of the Briggs site, and one mile north of the Wright site. The immediate surrounding area includes residential buildings, industrial/commercial establishments, and agricultural land. The approximate location of the Projects is shown in Figure 1. The parcels are currently being used for agriculture. The greenhouses will be approximately two storeys tall, and they will incorporate tempered glass for the roofs.

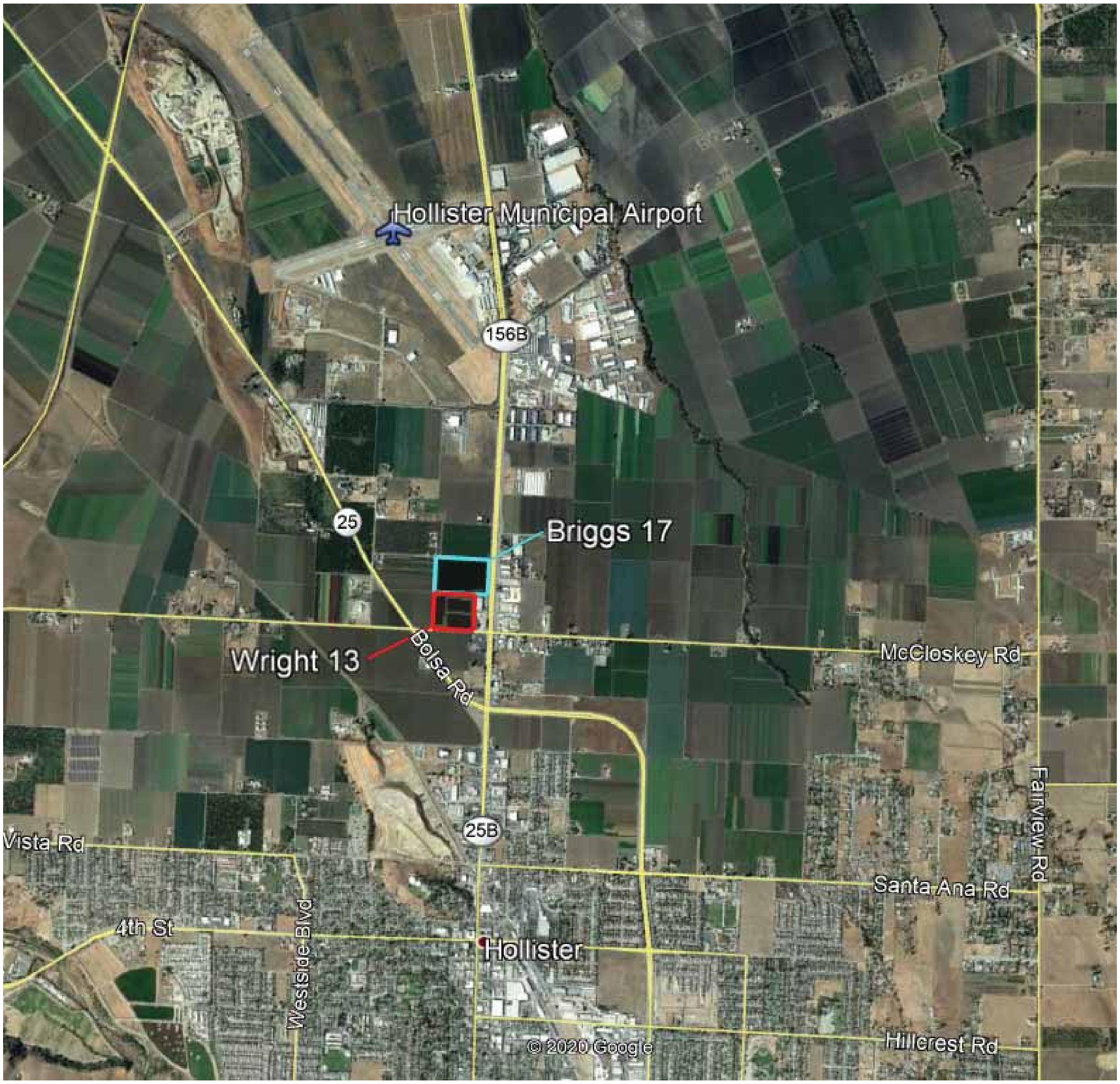


Figure 1: Location of the Projects and proximity to Hollister and the Hollister Municipal Airport

Figure 2 outlines the Wright site in red, and the Briggs site in blue. The greenhouse footprints are shown as the dark interior areas.

Figure 2: Project Boundaries and Proposed Wright 13 and Briggs 17 Greenhouses

3 PROJECT ASSUMPTIONS

The Wright site consists of approximately 13 acres of land, with the greenhouses occupying about eight acres. The Briggs site encompasses 17 acres with a greenhouse footprint of about 12 acres. Solas used multiple sources to determine the site elevations, including publicly available topographic contours from the Google Maps interface, and preliminary drawings provided by Coats. Solas assumed a constant ground elevation of about 252 feet above sea level for the entire Wright site, and 248 feet for the Briggs site. These values represent the current minimum elevations at the sites, which result in a conservative glare analysis. A change of grade will affect the results of the glare analysis.

The Project greenhouses will have sections of their roofs built with tempered glass. The roofs are designed with peaks at regular intervals and a slope of approximately 23 degrees. The glass panes will face east and west (azimuth angles of 93 and 273 degrees, respectively) for Wright A and B, while the glass will face north and south (three and 183 degrees, respectively) for Wright C. The glass panes of the Briggs greenhouse will face east and west. The roof line starts 17.0 feet above ground level, extending to a height of 20.1 feet at the top.[1] Solas modelled the roofing as smooth glass without anti-reflective coating. The side walls of the greenhouses were not modelled in this analysis.

The model assumes the reflective surface lies in a plane defined by the outlined area, so the analysis was completed at the top and bottom extents of the roof to determine glare from different parts of the glass panes. The analysis was also run at an intermediate height above ground of 18.5 feet to help identify trends in the frequency and size of glare.

Solas based the location of the greenhouses on the satellite imagery maps provided by Coats. A single footprint was evaluated instead of two buildings for Wright A and B, resulting in a more conservative analysis. Overlapping footprints with identical dimensions were plotted for each greenhouse to model the different roof azimuths. Only the more conservative values were kept for simultaneous instances of glare from each set of footprints.

Detailed input parameters and assumptions can be found in Appendix A.

[1] Data provided by Coats.

4 GLARE REGULATIONS AND RECEPTORS

The Federal Aviation Administration (FAA) reviews solar PV facilities that are proposed in proximity to airstrips for the potential of glare. A similar review may be completed for other glare-producing objects like mirrored or highly reflective building features. The FAA may accept an evaluation using one of the following levels of assessment:[2]

1. a qualitative analysis of potential impact in consultation with the Air Traffic Control Tower, pilots, and airport officials;
2. a demonstration field test with solar panels at the proposed site in coordination with Air Traffic Control Tower personnel; or,
3. a geometric analysis to determine days and times when there may be an ocular impact.

This analysis falls into the third category referenced above. This report summarizes the results using geometric analysis (ForgeSolar's Solar Glare Hazard Analysis Tool (SGHAT), or GlareGauge[3]) for the Projects.

The Hollister Municipal Airport Land Use Compatibility Plan states that developments that may produce visual hazards, such as glare, are subject to additional review by the ALUC. Along with the review conducted by the ALUC, sources of glare must be consistent with FAA rules and regulations.[4]

Solas evaluated multiple flight paths (FPs) for airplane landing approaches at the Hollister Municipal Airport. Standard flight landing paths (FP1-4) were modelled using standard FAA evaluation parameters. Solas did not model an air traffic control tower since the Hollister Municipal Airport does not have a control tower. Specific parameters used to analyze flight operations can be found in Appendix A.

Solas analyzed the potential for glare at the receptors shown in Figure 3. Four flight paths (landing approaches represented by green lines) were evaluated.

[2] https://www.faa.gov/airports/environmental/policy_guidance/media/FAA-Airport-Solar-Guide-2018.pdf, accessed: September 16, 2020.

[3] Copyright, Sims Industries, 2015

[4] http://sanbenitocog.org/wp-content/uploads/2018/10/ADOPTED-ALUCP-June-2012.pdf, accessed: September 16, 2020.

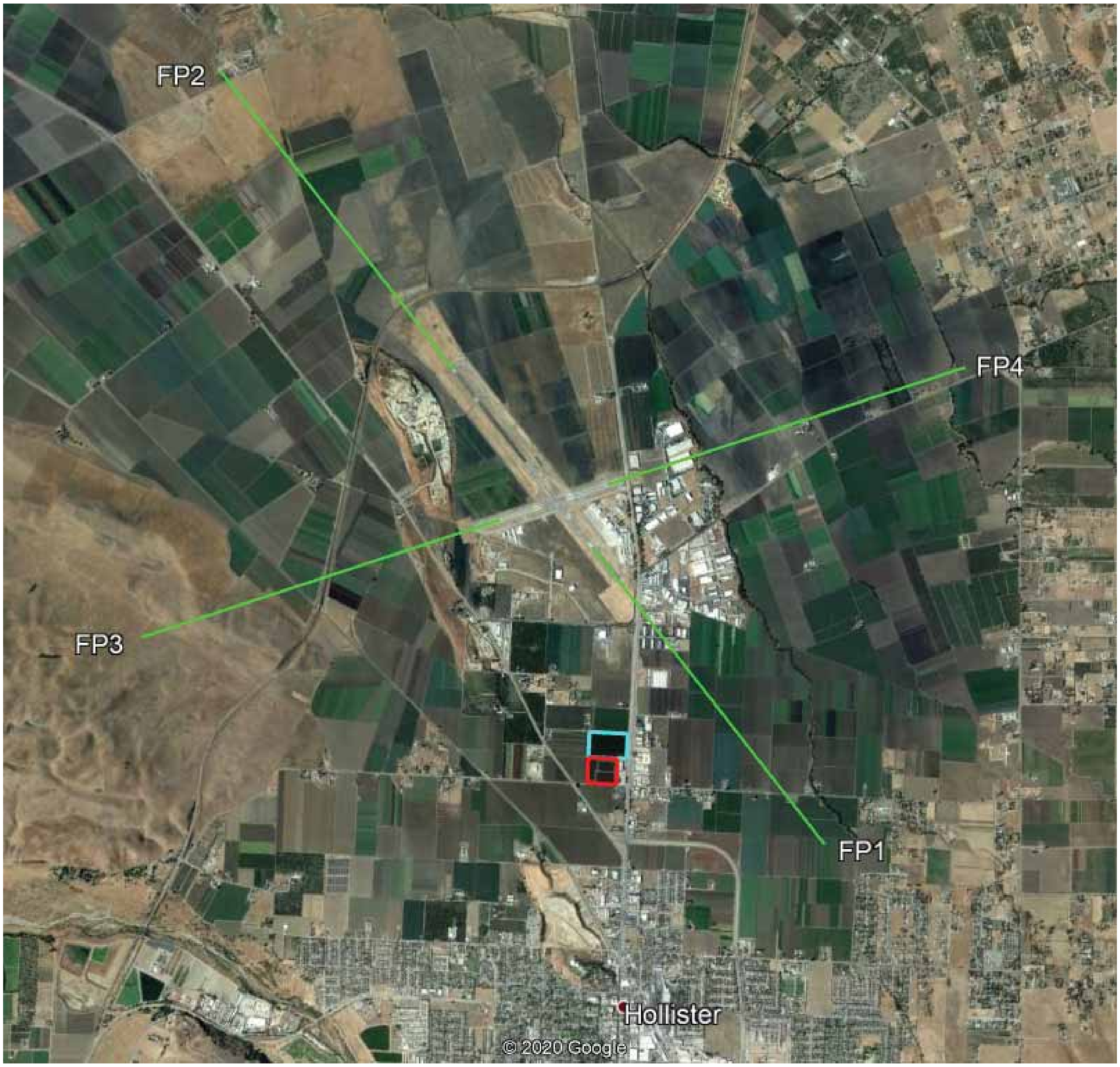


Figure 3: Wright 13 and Briggs 17 Projects with Flight Paths Identified

Table 1 describes the receptors used in the analysis. The horizontal viewing angle for flight routes is limited to 50 degrees in either direction from the direction of travel. Solas does not consider glare outside of this field of view to be a risk to the pilot.[5]

[5] Rogers, J. A., et al., Federal Aviation Administration, Evaluation of Glare as a Hazard for General Aviation Pilots on Final Approach, 2015.

Table 1: Description of Receptors

Receptor Number	Location	Description
FP1	Hollister Municipal Airport	Northwest-bound descent at runway 31, 2-mile approach from 603 feet above landing threshold
FP2	Hollister Municipal Airport	Southeast-bound descent at runway 13, 2-mile approach from 603 feet above landing threshold
FP3	Hollister Municipal Airport	Northeast-bound descent runway 6, 2-mile approach from 603 feet above landing threshold
FP4	Hollister Municipal Airport	Southwest-bound descent at runway 24, 2-mile approach from 603 feet above landing threshold

5 GLARE PREDICTION METHOD

The impact of glare depends on the interaction between the position of the sun, the angle and orientation of the reflective surface, the reflectivity of the surface, the size of the project, and the relative location of the observer. The modelling software assumes there is no cloud cover and does not include screening effects from existing or proposed foliage, terrain, buildings or other obstacles. The model is therefore considered to be conservative.

The sun's position is described using the angle of elevation and solar azimuth. The angle of elevation is the angle between the horizon and the centre of the sun. The azimuth is measured as the angle from true north in a clockwise direction.

Solas performed the glare analysis using the ForgeSolar GlareGauge[6] software tool. This tool uses project inputs and solar positioning calculations to determine if glare will occur at identified observation points. If glare is found, the tool calculates the retinal irradiance (brightness) and subtended angle (size divided by distance) of the glare source. These two factors predict ocular hazards ranging from temporary after-image to retinal burn. Minor topographic features are not always identified in GlareGauge due to the resolution of topographic contours from Google Earth.

"Green" rated glare indicates a low potential for after-image, "yellow" rated glare indicates the potential for after-image exists, and "red" rated glare indicates the potential for retinal damage. Glare that is beyond 50 degrees from a driver's or pilot's line-of-sight does not constitute a safety hazard.[7]

The amount of light reflected by a surface depends on the sunlight's angle of incidence at the surface as illustrated in Figure 4.

[6] Copyright, Sims Industries, 2015

[7] Ho, C. K. and Sims, C. A., Sandia National Laboratories, 2016, Solar Glare Hazard Analysis Tool (SGHAT) User's Manual v. 3.0.

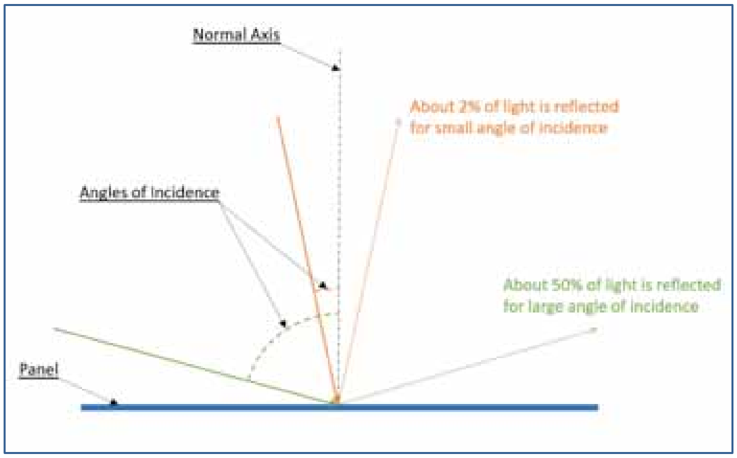


Figure 4: Reflected Light and Angle of Incidence (illustration only) on a reflective surface/panel.

Glass with anti-reflective coating may reflect approximately two percent of incident sunlight on average, which is less than the amount of light open water and uncoated glass typically reflect. Open water and uncoated glass reflect approximately ten percent of incident sunlight.[8,9] The software models the reflectivity for each angle of incidence based on experiments Sandia National Laboratories performed for a variety of different solar PV module types.[10] Very little light is reflected when the sun is nearly perpendicular to the glass, but more light is reflected when the sun is at a shallow angle to the glass.

All flight paths have been modelled using a +/- 50-degree field-of-view based on the standard approach in the ForgeSolar software and the report entitled “Evaluation of Glare as a Hazard for General Aviation Pilots on Final Approach”.[11]

5.1 Limitations of the Model

This analysis aims to provide an indication of the glare that may be produced by the proposed reflective surfaces on the greenhouse roofs. The prediction methods employed in the analysis have uncertainty. The following lists some of the limitations inherent in the analysis.

- The base model assumes clear skies at all times. The model does not use historical weather pattern data. This results in a total cumulative duration of glare that is likely higher than what will occur over the course of a year.
- The model does not consider shading.

[8] Lasnier and Ang, 1990, Photovoltaic Engineering Handbook. Taylor & Francis, New York.

[9] US EPA, 2013, AERSURFACE User’s guide, EPA-454/B-08-001.

[10] Ho, C. K. and Sims, C. A., Sandia National Laboratories, 2016, Solar Glare Hazard Analysis Tool (SGHAT) User's Manual v. 3.0.

[11] Rogers, J. A., et al., Federal Aviation Administration, Evaluation of Glare as a Hazard for General Aviation Pilots on Final Approach, 2015.

- Obstructions such as foliage, structures, and hills between the greenhouses and observation points are not modelled by ForgeSolar's GlareGauge software tool.
  - The model does not consider the impact of trees and foliage as it is variable.
- Ocular and perceived hazards differ from person to person, depending on multiple environmental, optical, and human factors.
- Changes in the site and rooftop elevations from the assumptions may change the results of the analysis.
- Footprints encompassing large areas may have reduced accuracy due to the calculation method limitations.
  - Subdivided areas may provide more accurate information related to glare spot locations, but the glare spot size will be limited by the smaller subdivided footprint.
  - The larger, undivided footprint will have more accurate glare spot size results.

A separate analysis could be performed to evaluate the impact of topographical features available in Google Earth on the predicted glare. Combining the corresponding instances of glare from the analysis of subdivided areas with the glare spot sizes from the analysis of undivided footprints partially overcomes the calculation limitations for large footprints. This method provides a more accurate estimate of the potential glare than assessing undivided and subdivided footprints separately.

6 ANALYSIS RESULTS

The following sections provide the results of the glare analysis and illustrative examples of the predicted glare.

6.1 Wright 13 Glare Results

Solas does not expect the Wright 13 greenhouses to produce red-grade glare or yellow-grade glare at the evaluated flight paths. The model predicts green-grade glare at all flight paths evaluated. Results assume there are clear skies year-round and there is no screening between the greenhouses and the flight paths.

summarizes the results and level of glare at the receptors as minutes per year assuming clear skies. Time of day is provided in standard time year-round. The results of the GlareGauge analysis identified that the following locations will experience green-grade glare:

- FP1 — Northwest-bound descent (Runway 31) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **237 minutes** (approximately four hours) per year. The glare occurs from March to May, and July to September, around 6:00 p.m. standard time (7:00 p.m. daylight savings time) for up to 17 minutes per day. These results assume there are clear skies year-round.
- FP2 — Southeast-bound descent (Runway 13) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **1,165 minutes** (approximately 19 hours) per year. The glare occurs between October and March around 10:30 a.m. standard time (11:30 a.m. daylight savings time) for up to 67 minutes per day. These results assume there are clear skies year-round.
- FP3 — Northeast-bound descent (Runway 6) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **297 minutes** (approximately five hours) per year. The glare occurs from March to May, and August to September, between 6:44 and 9:58 a.m. standard time (7:44 and 10:58 a.m. daylight savings time) for up to 10 minutes per day. These results assume there are clear skies year-round.
- FP4 — Southwest-bound descent (Runway 24) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **862 minutes** (approximately 14 hours) per year. The glare occurs between September and March around 2:20 p.m. standard time (3:20 p.m. daylight savings time) for up to 55 minutes per day. These results assume there are clear skies year-round.

Changes to the modelling assumptions (see Appendix A) will affect these results.

Table 2: Glare Hazard by Receptor assuming year-round Clear Skies, in Minutes per Year (Wright 13)

Location	Receptor	Hazard Level	Roof Elevation		
			17.0 ft	18.5 ft	20.1 ft
Northwest-bound descent (Runway 31)	FP1	G	236	236	237
		Y	-	-	-
		R	-	-	-
Southeast-bound descent (Runway 13)	FP2	G	1,165	1,165	1,161
		Y	-	-	-
		R	-	-	-
Northeast-bound descent (Runway 6)	FP3	G	297	291	289
		Y	-	-	-
		R	-	-	-
Southwest-bound descent (Runway 24)	FP4	G	862	859	855
		Y	-	-	-
		R	-	-	-

Table 2 indicates that the southeast-bound landing approach to runway 13, FP2, experiences the most annual green glare from the Wright greenhouses. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

A summary of the cumulative duration of the highest level of glare predicted for each of the above receptors is provided in Figure 5. These results assume there are clear skies year-round.

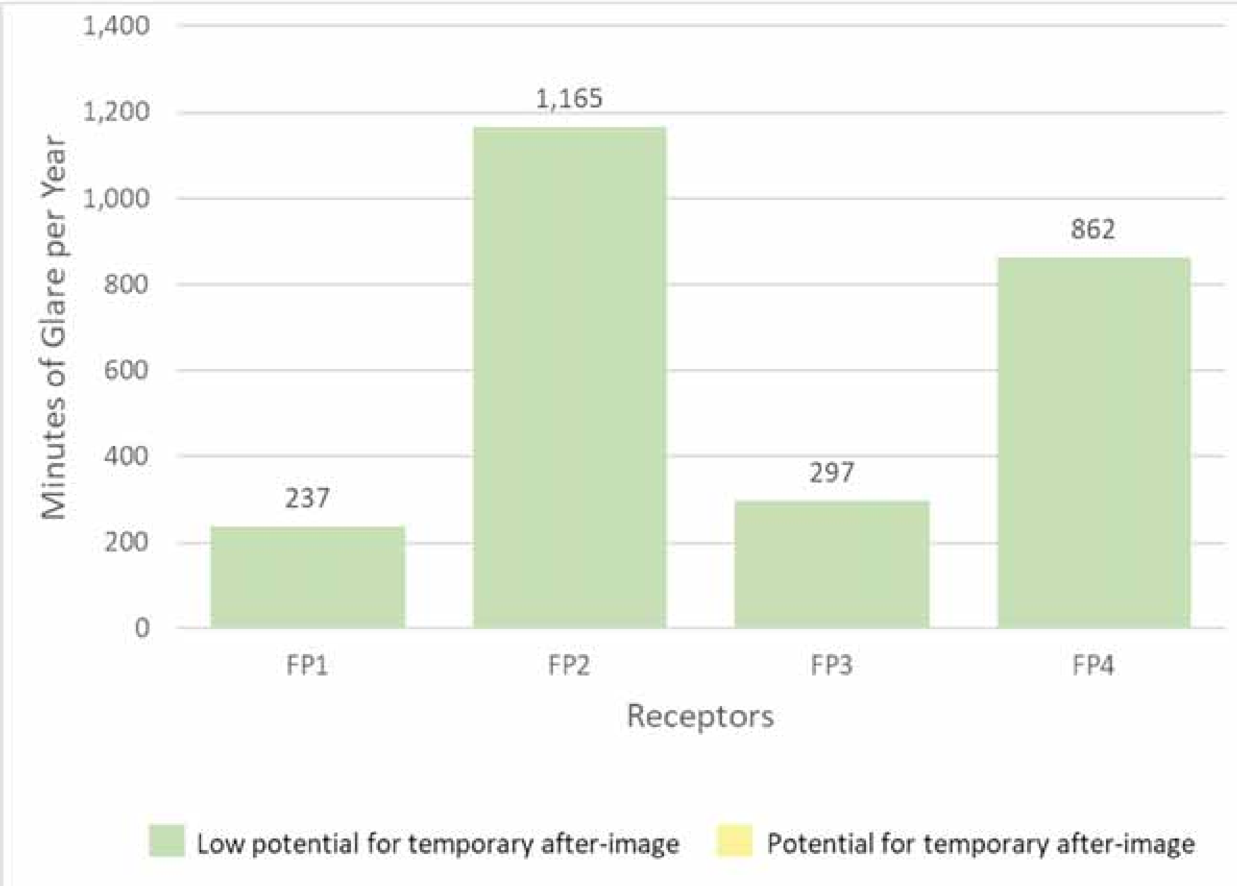


Figure 5: Annual Green-Grade Glare at affected Receptors near the Project (Clear skies year-round, Wright 13)

Table 3 shows the timeframes for the occurrence of glare and reports only the highest-intensity glare for each case and location. The cells in the table are colour-coded to match the intensity level and show the time of day, dates, and duration of the glare. The results demonstrate that green-grade glare may be present for short periods in the spring and summer at FP1 and FP3. Green glare may also be seen at FP2 and FP4 for up to an hour per day from fall until spring.

Table 3: Seasonality and Duration of the Highest Level of Glare at each Receptor (Clear skies year-round, Wright 13)

Receptor	Roof Elevation		
	17.0 ft	**18.5 ft**	**20.1 ft**
FP1	5:37 PM-6:30 PM 23 Mar-26 May; 15 Jul-18 Sep Up to 17 mins.	5:37 PM-6:30 PM 23 Mar-26 May; 15 Jul-18 Sep Up to 15 mins.	5:37 PM-6:30 PM 23 Mar-27 May; 15 Jul-18 Sep Up to 15 mins.
FP2	9:37 AM-11:25 AM 4 Oct-7 Mar Up to 67 mins.	9:37 AM-11:25 AM 4 Oct-7 Mar Up to 67 mins.	9:37 AM-11:25 AM 4 Oct-7 Mar Up to 66 mins.
FP3	6:44 AM-9:58 AM 12 Mar-7 May; 3 Aug-28 Sep Up to 10 mins.	6:44 AM-9:58 AM 12 Mar-7 May; 3 Aug-28 Sep Up to 10 mins.	6:53 AM-9:58 AM 12 Mar-7 May; 3 Aug-28 Sep Up to 10 mins.
FP4	1:20 PM-3:13 PM 23 Sep-17 Mar Up to 55 mins.	1:20 PM-3:13 PM 23 Sep-17 Mar Up to 52 mins.	1:20 PM-3:13 PM 23 Sep-17 Mar Up to 50 mins.

6.1.1 Detailed Glare Example for Wright 13 — Southeast-bound Descent with a 2-mile Approach (FP2, Runway 13)

Solas completed a detailed glare example for FP2, representing the highest duration of glare. FP2 represents an airplane landing at runway 13 of the Hollister Municipal Airport with a 2-mile approach from the northwest. The Wright 13 greenhouses remain southeast of the airplane as it lands. The flight path utilizes the standard three-degree descent slope and field-of-view of 50 degrees in either direction from straight ahead. Figure 6 illustrates the time of day and seasonality for glare hazard for FP2 from the roof elevation of 17.0 feet (the bottom extent of the roof). The potential for after-image from green-grade glare occurs between 9:37 and 11:25 a.m. standard time (9:37 a.m. and 12:25 p.m. daylight savings time) from October to March. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

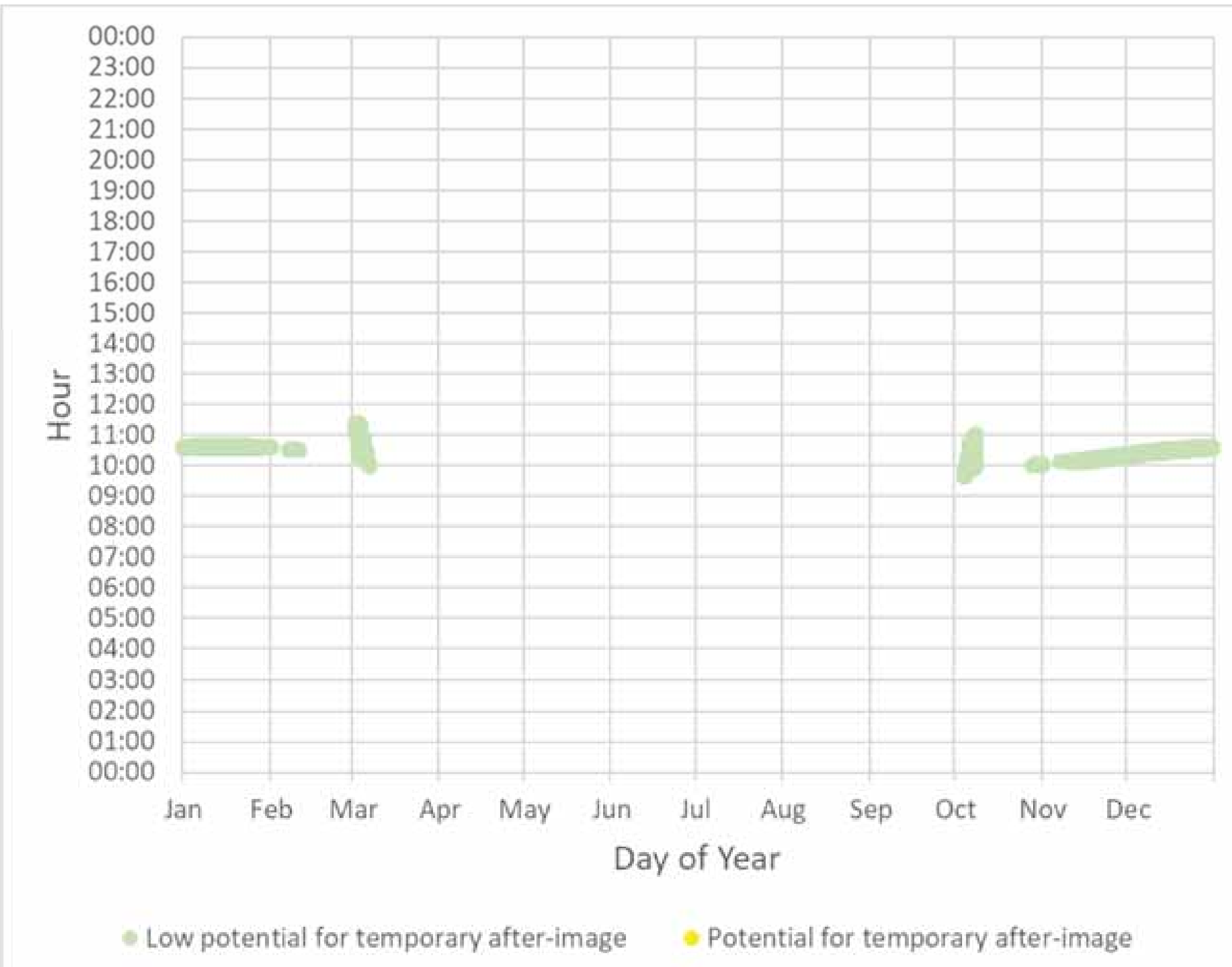


Figure 6: Time of Glare Hazard for FP2 (Clear skies year-round, Wright 13)

Figure 7 shows the daily duration for each level of glare that may be experienced at FP2. This flight path can experience up to 67 minutes of green glare in a day. All the glare is classified in the green category. These results assume there are clear skies year-round.

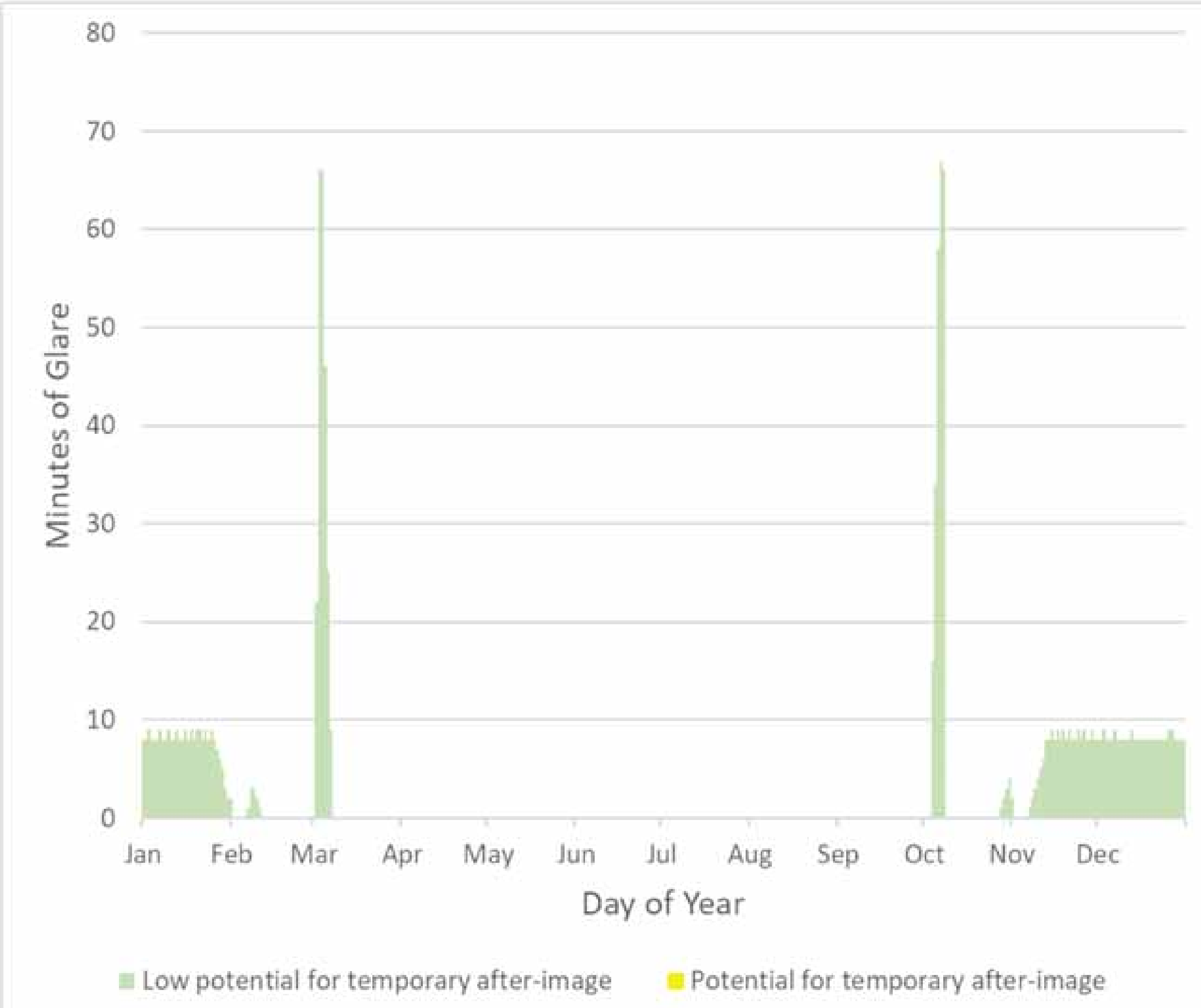


Figure 7: Daily Duration of Glare at FP2 (Clear skies year-round, Wright 13)

Figure 8 plots the glare hazard according to the size of the glare spot (Subtended Source Angle), brightness of the glare (Retinal Irradiance), and the glare level (green, yellow, and red zones). The size and brightness of the glare spots are displayed using logarithmic scales. At FP1, the glare is 660 times dimmer than staring at the sun but will appear up to two times bigger than the perceived diameter of the sun viewed from the same location. These results assume there are clear skies year-round.

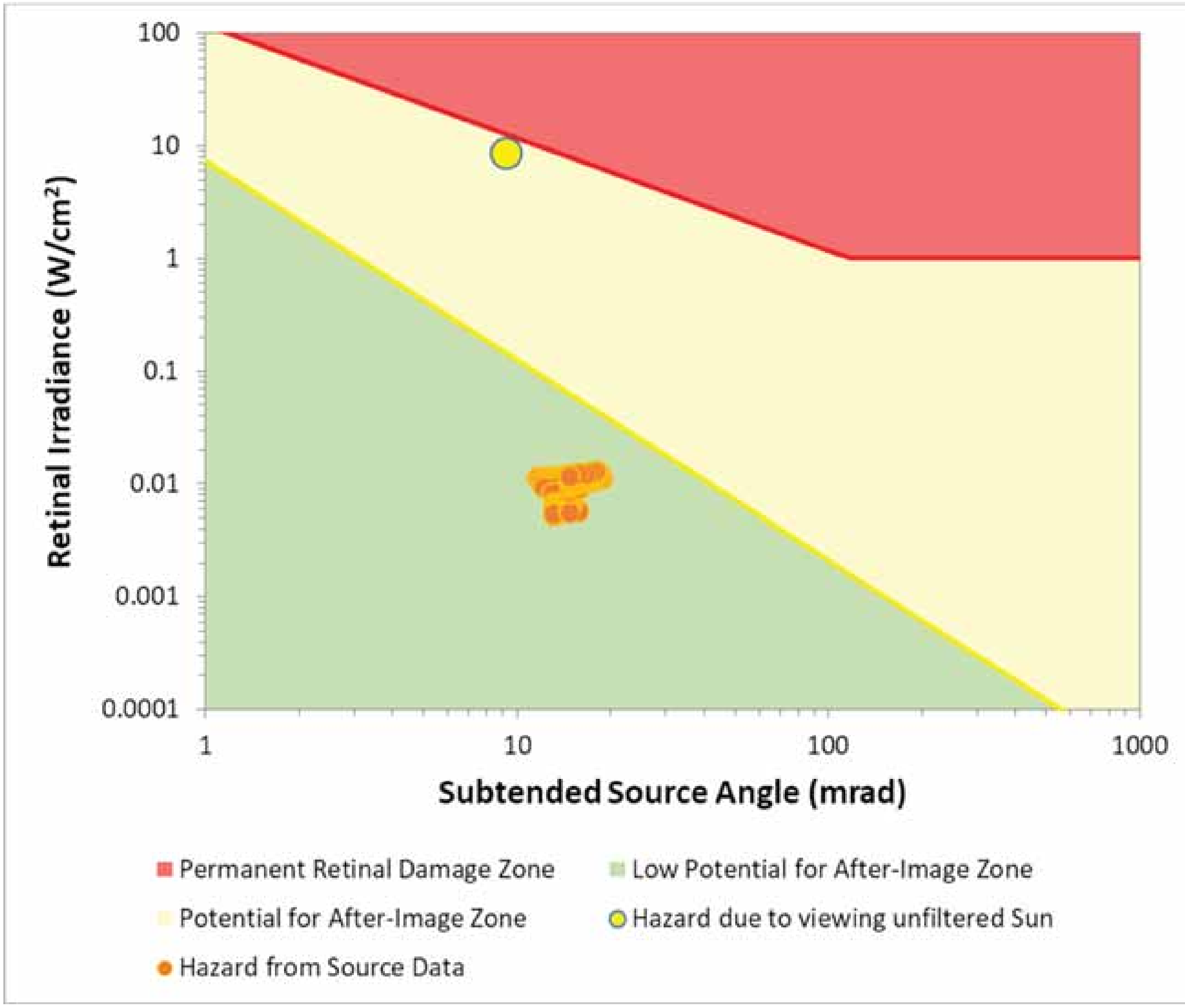


Figure 8: Log-Log Hazard Plot for FP2 (Clear skies year-round, Wright 13)

6.2 Briggs 17 Glare Results

Solas does not expect the Briggs greenhouse to produce red-grade glare or yellow-grade glare at the evaluated flight paths. The model predicts green-grade glare at FP2, FP3, and FP4. Results assume there are clear skies year-round and there is no screening between the greenhouses and the flight paths.

Table 4 summarizes the results and level of glare at the receptors as minutes per year assuming clear skies. Time of day is provided in standard time year-round. The results of the GlareGauge analysis identified that the following locations will experience green-grade glare:

- FP2 — Southeast-bound descent (Runway 13) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **163 minutes** (approximately three hours) per year. The glare occurs in March, October, and December between 9:38 and 10:38 a.m. standard time (10:38 a.m. and 11:38 a.m. daylight savings time) for up to 10 minutes per day. These results assume there are clear skies year-round.
- FP3 — Northeast-bound descent (Runway 6) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **252 minutes** (approximately four hours) per year. The glare occurs in March, in May, and from July to September between 9:07 and 9:58 a.m. standard time (10:07 and 10:58 a.m. daylight savings time) for up to three minutes per day. These results assume there are clear skies year-round.
- FP4 — Southwest-bound descent (Runway 24) — There is low potential for temporary after-image (green-grade glare) from the glass roofs for a total of **323 minutes** (approximately five hours) per year. The glare occurs between October and February between 1:40 and 2:26 p.m. standard time for up to four minutes per day. These results assume there are clear skies year-round.

FP1 is not expected to experience any glare from the Project. Changes to the modelling assumptions (see Appendix A) will affect these results.

Table 4: Glare Hazard by Receptor assuming year-round Clear Skies, in Minutes per Year (Briggs 17)

Location	Receptor	Hazard Level	Roof Elevation		
			17.0 ft	18.5 ft	20.1 ft
Northwest-bound descent (Runway 31)	FP1	G	-	-	-
		Y	-	-	-
		R	-	-	-
Southeast-bound descent (Runway 13)	FP2	G	162	163	162
		Y	-	-	-
		R	-	-	-
Northeast-bound descent (Runway 6)	FP3	G	252	249	252
		Y	-	-	-
		R	-	-	-
Southwest-bound descent (Runway 24)	FP4	G	322	323	323
		Y	-	-	-
		R	-	-	-

Table 4 indicates that the northwest-bound landing approach, FP1, experiences no glare. Pilots descending towards the three other runways, however, will experience some green glare. Solas expects FP2 and FP3 to observe glare from the west-facing roof glass, while FP4 will experience glare from the east-facing glass. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

A summary of the cumulative duration of the highest level of glare predicted for each of the above receptors is provided in Figure 9. These results assume there are clear skies year-round.

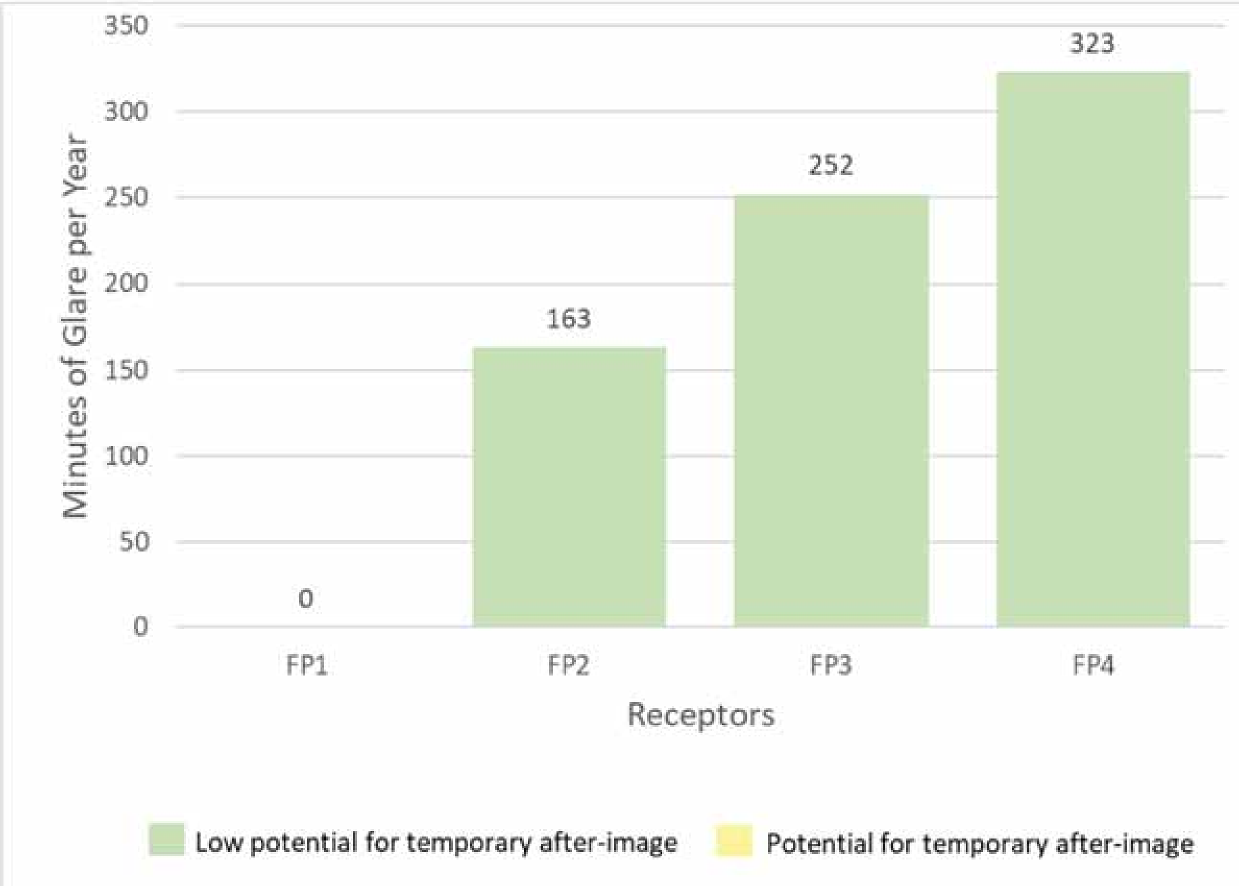


Figure 9: Annual Green-Grade Glare at affected Receptors near the Project (Clear skies year-round, Briggs 17)

Table 5 shows the timeframes for the occurrence of glare and reports only the highest-intensity glare for each case and location. The cells in the table are colour-coded to match the intensity level and show the time of day, dates, and duration of the glare. The results demonstrate that green-grade glare may be present for short periods in the morning at FP2 and FP3, and in the evening for FP4.

Table 5: Seasonality and Duration of the Highest Level of Glare at each Receptor (Clear skies year-round, Briggs 17)

Receptor	Roof Elevation		
	17.0 ft	18.5 ft	20.1 ft
FP1	No Glare		
FP2	9:38 AM-10:38 AM 1 Mar-10 Mar; 1 Oct-10 Oct; 11 Dec-29 Dec Up to 10 mins.	9:38 AM-10:38 AM 1 Mar-10 Mar; 1 Oct-10 Oct; 11 Dec-29 Dec Up to 10 mins.	9:38 AM-10:38 AM 1 Mar-10 Mar; 1 Oct-10 Oct; 11 Dec-28 Dec Up to 10 mins.
FP3	9:08 AM-9:58 AM 18 Mar-13 May; 29 Jul-22 Sep Up to 3 mins.	9:08 AM-9:58 AM 18 Mar-13 May; 29 Jul-22 Sep Up to 3 mins.	9:07 AM-9:58 AM 18 Mar-14 May; 29 Jul-22 Sep Up to 3 mins.
FP4	1:40 PM-2:26 PM 22 Oct-19 Feb Up to 4 mins.	1:40 PM-2:26 PM 22 Oct-19 Feb Up to 4 mins.	1:40 PM-2:26 PM 22 Oct-19 Feb Up to 4 mins.

6.2.1 Detailed Glare Example for Briggs 17 — Northeast-bound Descent with a 2-mile Approach (FP4, Runway 24)

Solas completed a detailed glare example for FP4. FP4 represents an airplane landing at runway 24 of the Hollister Municipal Airport with a 2-mile approach from the southwest. The Project greenhouses remain on the left side of the airplane as it lands. The flight path utilizes the standard three-degree descent slope and field-of-view of 50 degrees in either direction from straight ahead. Figure 10 illustrates the time of day and seasonality for glare hazard for FP4 from the roof elevation of 17.0 feet (the bottom extent of the roof). Green glare occurs between 1:40 and 2:26 p.m. standard time (2:40 and 3:36 a.m. daylight savings time) between October and February. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

Figure 10: Time of Glare Hazard for FP4 (Clear skies year-round, Briggs 17)

Figure 11 shows the daily duration for each level of glare that may be experienced at FP4. This flight path can experience up to four minutes of green glare in a day. All of the glare is classified in the green category. These results assume there are clear skies year-round.

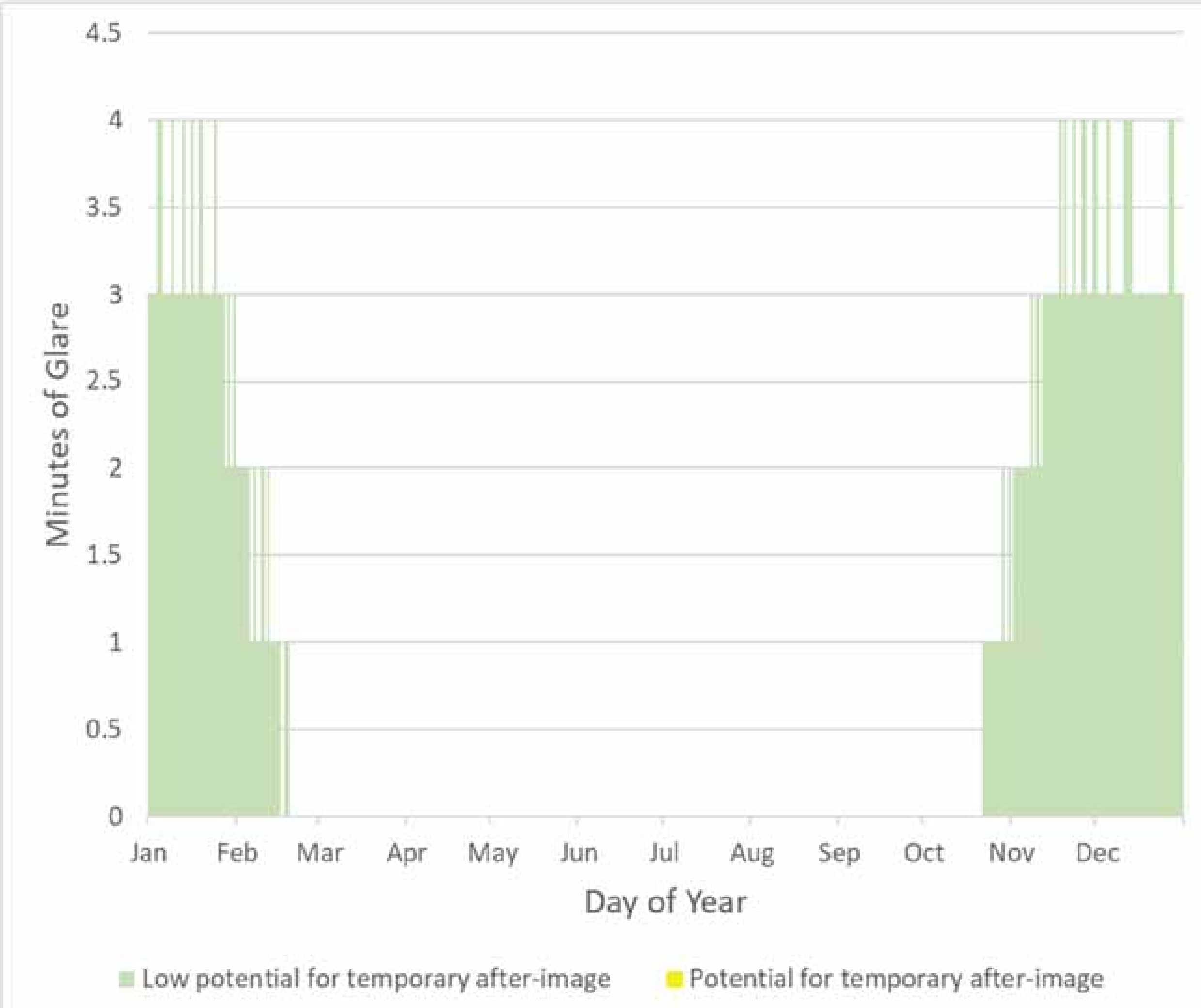


Figure 11: Daily Duration of Glare at FP4 (Clear skies year-round, Briggs 17)

Figure 12 plots the glare hazard according to the size of the glare spot (Subtended Source Angle), brightness of the glare (Retinal Irradiance), and the glare level (green, yellow, and red zones). The size and brightness of the glare spots are displayed using logarithmic scales. At FP4, the glare is 1520 times dimmer than staring at the sun but will appear up to 3.7 times bigger than the perceived diameter of the sun viewed from the same location. These results assume there are clear skies year-round.

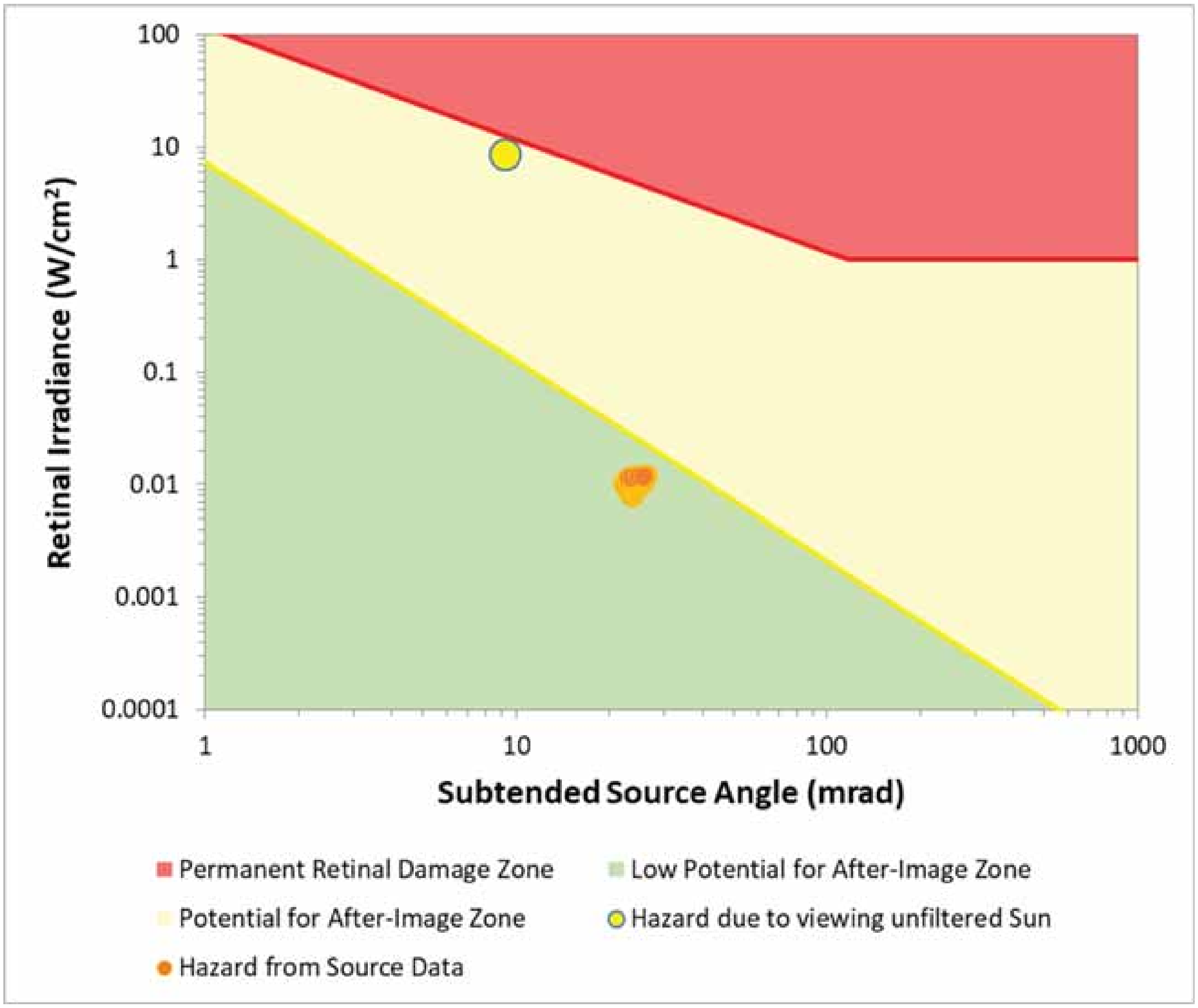


Figure 12: Log-Log Hazard Plot for FP4 (Clear skies year-round, Briggs 17)

6.3 Glare Visual Representation

Solas developed a catalogue of glare representations to help stakeholders understand and visualize the glare they may experience from reflective surfaces. Solas' glare catalogue includes a range of images depicting glare of varying intensity from actual solar arrays and buildings. The irradiance of the glare shown in Figure 13 is of similar intensity to the glare Solas predicts observers will experience from the Project. Solas expects glare to reach up to 120 watts per square metre (W/m^2), while the figure below provides a representation at an irradiance level of 158 W/m^2.

Figure 13: Solas Glare Catalogue Image (158 W/m^2) at a similar irradiance level to those expected at the Project

Figure 14 shows reference points for glare irradiance levels from various solar PV facilities and buildings. This figure is shown to provide context for the glare representation above.

158 W/m2
(green)

190 W/m2
(yellow)

279 W/m2
(yellow)

Figure 14: Glare Irradiance Level Reference Points from the Solas Glare Catalogue

Issued For Use

7 GLARE-MITIGATING FEATURES

Glare has been predicted from the greenhouses using base assumptions and the GlareGauge software. Solas completed additional analyses to model real-world features that could reduce the glare impact.

7.1 Cloud Cover and Typical Weather Patterns

The GlareGauge model assumes that clear skies occur every day of the year resulting in glare durations that are higher than observers are likely to experience. Solas obtained the fraction of days with less than 20 percent cloud cover for each month of the year using modelled data normalized over 30 years. Solas incorporated Meteoblue's data for Hollister, which is believed to be somewhat representative.[12]

Clouds reduce reflection by diffusing sunlight. On cloudy days, this diffusion will decrease the intensity of green glare and potentially eliminate the glare completely. According to Meteoblue's data, around 48 percent of days throughout the year are expected to have more than 20 percent cloud cover.

[12] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/hollister_united-states-of-america_5357499, accessed: September 15, 2020.

8 CONCLUSIONS AND DISCUSSION

The analysis results indicate that there is likely no incidence of red or yellow-grade glare from the Wright 13 or Briggs 17 greenhouses. All greenhouses are expected to produce green glare for all four flight paths, with one exception: pilots landing at runway 31 (FP1) of the Hollister Municipal Airport are not expected to experience any glare from the Briggs 17 greenhouse.

Overall, the Wright 13 greenhouses affect the Runway 13 path (FP2) the most. FP2 is expected to observe up to 1,165 minutes of green glare from Wright 13 yearly, between October and March, from 9:37 and 11:25 a.m. Briggs 17 affects the Runway 24 path (FP4) the most, emitting green glare for up to 323 minutes yearly. Green glare at FP4 from Briggs 17 occurs between October and February, from 1:40 to 2:26 p.m. The glare seen from flight paths will look much dimmer than the sun but will appear larger.

Glare predicted to be produced by the greenhouse roofs is only categorized in the “green” level, indicating an observer is unlikely to experience an after-image after looking at a glare spot. The size and intensity of the glare spot and resulting after-image are dependent on the distance between the observer and the array. An increase in the distance between the observer and greenhouses will decrease the impact and after-image created by the glare. The after-image an observer may experience could temporarily appear as a slightly darker or discoloured spot or line in the observer’s vision. The effects of green-grade glare are considered negligible as it has a low risk of after-image.

Cloud cover and typical weather patterns provide a variable source of glare mitigation. Clouds may diffuse incident sunlight, lessening the impact of reflections from reflective surfaces. The impact of cloud cover was assessed using modelled weather data normalized over 30 years. Approximately 48 percent of days throughout the year are expected to have more than 20 percent cloud cover.

Based on the information associated with the geographic configuration of the glass panes on the greenhouse roofs, glare from the Project has a low potential to pose a risk to flight operations at the Hollister Municipal Airport. Changes to the Project layout or specifications will affect the results of the analysis.

Appendix A ForgeSolar Modelling Assumptions

Wright 13 — Greenhouse Roof Glass Parameters
Roof azimuth (Wright A&B): 93 degrees (east) and 273 degrees (west)
Roof azimuth (Wright C): 3 degrees (north) and 183 degrees (south)
Roof tilt/slope: 23 degrees
Glass material: Smooth glass without anti-reflective coating
Vary reflectivity with sun position? Yes
Ground elevation: 253 feet (Wright A&B), 252 feet (Wright C)
Height above ground: assessed at 17.0 feet, 18.5 feet, and 20.1 feet

Briggs 17 — Greenhouse Roof Glass Parameters
Roof azimuth: 93 degrees (east) and 273 degrees (west)
Roof tilt/slope: 23 degrees
Glass material: Smooth glass without anti-reflective coating
Vary reflectivity with sun position? Yes
Ground elevation: 248 feet (minimum elevation)
Height above ground: assessed at 17.0 feet, 18.5 feet, and 20.1 feet

Flight Path Parameters
Glide slope: 3 degrees
Plane height above threshold ground elevation (2 miles from threshold): 603 feet
Plane height above ground (at threshold): 50 feet
Horizontal/Azimuthal viewing angle: 50 degrees from centre
Maximum downward viewing angle: 30 degrees from horizontal

Agenda Item 4

Staff Report

To:	Airport Land Use Commission
From:	Veronica Lezama, Transportation Planner Telephone: (831) 637-7665
Date:	November 19, 2020
Subject:	Land Use Consistency Determination

Recommendation:

FIND Project No. 2016-04, Associated with Assessor Parcel No. 051-170-003, Located at 335 Apollo Court in the City of Hollister, CONSISTENT with the 2012 Hollister Municipal Airport Land Use Compatibility Plan with Special Conditions.

Summary:

The ALUC application associated with assessor parcel number 051-170-003 was reviewed in accordance with the adopted 2012 Hollister Municipal Airport Land Use Compatibility Plan.

Financial Considerations:

The Airport Land Use Commission (ALUC) has an adopted application fee structure. The fee consists of a minimum $300 non-refundable payment that is submitted at the time the application is provided to ALUC.

Background:

Land use actions proposed within the Hollister Municipal Airport Influence Area (Attachment 1) are subject to ALUC review to determine consistency with the Hollister Municipal Airport Land Use Compatibility Plan. The purpose of the Compatibility Plan is to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards.

Staff Analysis:

ALUC staff received an application for a Consistency Determination with the adopted 2012 Hollister Municipal Airport Land Use Compatibility Plan.

Project Description:

The applicant is proposing the construction of a two-story building at 335 Apollo Court on a 1.708 acre site within a Light Industrial Zoning District in the City of Hollister. (Attachment 2). Specifically, the ground floor would be 16,675 sq. ft. the mezzanine 1,441 sq. ft. for a total building area of 18,116 sq. ft. The second floor will consist of a 1,203 square foot office

(Attachment 3). According to the applicant, approximately half of the 16,675 square foot warehouse will be leased by Monterey Foam Company Inc. The company will use the building to manufacture architectural details used on the exterior of both commercial and residential structures. The proposed metal building would be 31'-0 feet in height from the first floor to the top of the parapet.

During a project review, the Airport Land Use Commission considers several Compatibility Plan policies including: ***Noise, Safety, Airspace Protection***, and *Overflight*. An analysis of each of the four compatibility factors is discussed below.

Noise Policy 3.2.

The Noise Policy objective is to avoid establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise. The magnitude noise impacts are depicted by four contours, which show the greatest annualized noise impacts anticipated to be generated by the airport over the next 20 years.

The project is proposed outside of the Noise Contours (Attachment 4). As such, the project does not require additional noise attenuation measures beyond what is required by the California Building Code. As a result, the proposed project is consistent with the Hollister Municipal Airport Land Use Compatibility Plan's Noise Policy.

Safety Policy 3.3.

The Safety Policy objective is to minimize the risks associated with an off-airport aircraft accident or emergency landing. The policy focuses on reducing the potential consequences of such events by limiting sensitive land uses (i.e. residential) and intensities of non-residential uses (i.e. commercial, industrial, etc.). This policy is defined in terms of the geographic distribution of where accidents are most likely to occur based on the six safety zones.

The project is proposed within the Safety Zone 6 (Attachment 5)- the least restrictive of the Safety Zones. According to Table 2: Safety Compatibility Criteria, the *Indoor Storage* use is Normally Compatible and allowed within Safety Zone 6 (Attachment 6). The applicant is also proposing a 1,203 square foot office on the second floor. The proposed office land use category is also *Normally Compatible* and allowed within Safety Zone 6 (Attachment 6).

As an additional condition of compatibility, the project must also comply with the indicated usage intensity limits and other listed conditions identified in Table 2: Safety Compatibility Criteria (Attachment 6). The project's usage intensities are proposed at 47 employees and will not exceed those allowed in Safety Zone 6. As such, the project is consistent with the Compatibility Plan's Safety Policy.

Airspace Protection Policy 3.4.

The Airspace Protection Policy seeks to prevent creation of land use features that can be hazards to the airspace required by aircraft in flight and have the potential for causing an aircraft accident to occur. In evaluating the airspace protection compatibility of the proposed development, three categories of hazards to airspace shall be considered: physical, visual, and electronic. The categories of hazard applicable to the project are outlined in bold below.

a. **The height of structures and other objects situated near the airport are a primary determinant of physical hazards to the airport airspace.**

   ALUC Staff Analysis: The project is proposed outside of the Critical Airspace Protection Zone (Attachment 1) and any object in this zone is allowed to have a height of up to 35 feet above the ground. The project structures will not exceed 31 feet in height and therefore consistent with the Federal Regulation 49 CFR Part 77, which establishes standards and notification requirements for objects affecting navigable airspace.

b. **Land use features that have the potential to attract birds and certain other wildlife to the airport area are also to be evaluated as a form of physical hazards (FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*).**

   Staff Analysis: The applicant identifies two rainwater retention ponds on the southern portion of the property. In accordance with the Federal Aviation Administration's Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports, the retention pond shall be designed as follows:*

   > "Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48–hour detention period after the design storm and remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins..."

   Special Condition/Mitigation Measure: In order for the project to be consistent with the Compatibility Plan's Airspace Protection Policy it must ensure that the rainwater retention pond is designed in accordance with the FAA's Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*.

c. Visual hazards of concern include certain types of lights, sources of glare, and sources of dust, steam, or smoke.

a. Electronic hazards are ones that may cause interference with aircraft communications or navigation.

Overflight Policy 3.5.

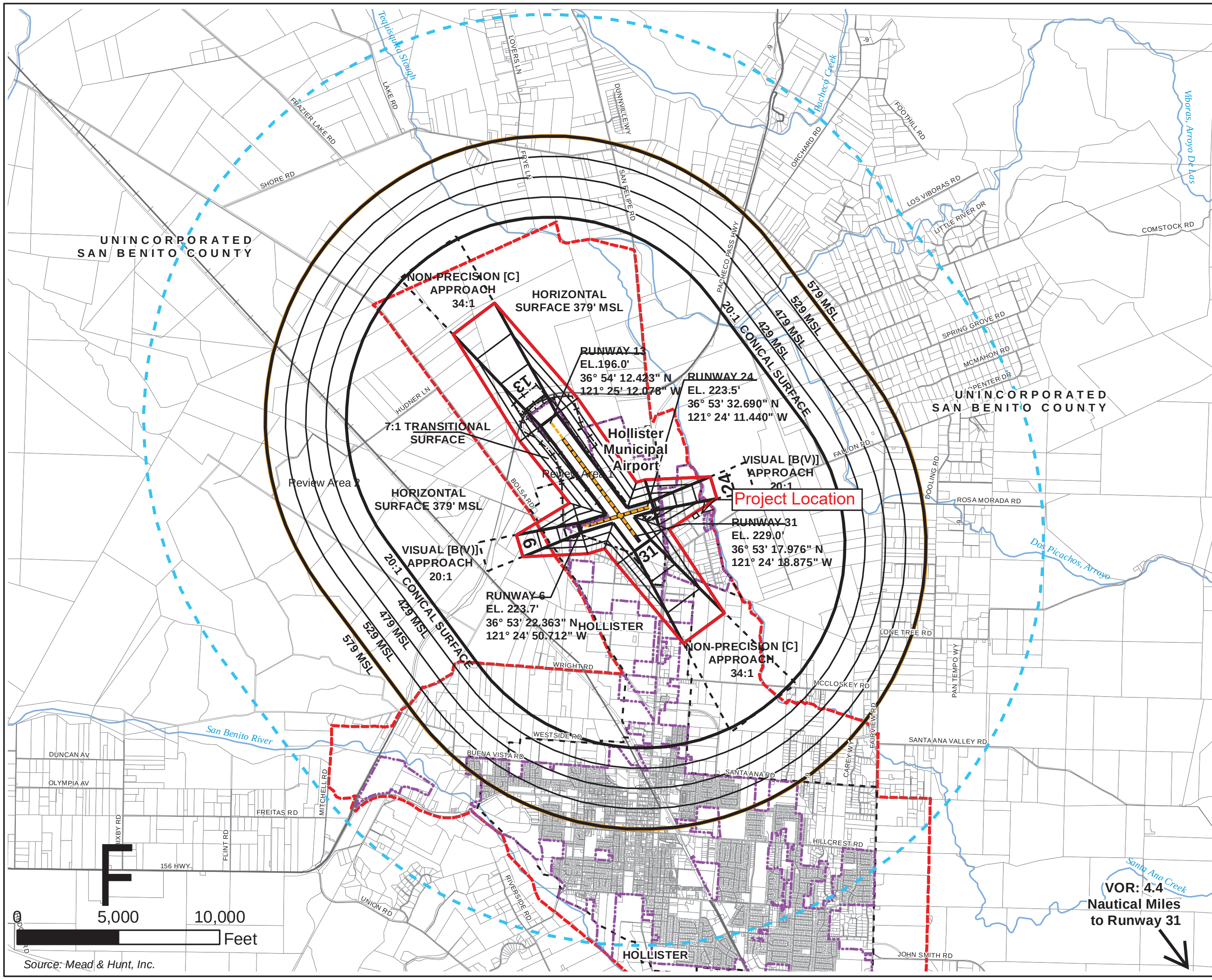
The Overflight Compatibility Policy is intended to help notify people, through real estate disclosures, about the presence of aircraft overflight near airports so that they can make informed decisions regarding acquisition or lease of property in the affected areas. Overflight policies do not apply to non-residential development. The applicant is proposing a non-residential use and is therefore consistent with the Overflight Compatibility Policy.

Executive Director Review:__MG___ Counsel Review: N/A

Supporting Attachment(s):

1. Compatibility Policy Map: Airport Influence Area
2. Project Location Map
3. Project Site Plan
4. Noise Contour Map
5. Safety Zones Map
6. Table 2: Safety Compatibility Criteria

330 Tres Pinos Road, Suite C7▪ Hollister, CA 95023 ▪ Phone: 831-637-7665 ▪ Fax: 831-636-4160
www.SanBenitoCOG.org



Legend

- Existing Airport Property
- Future Property Acquisition
- Hollister City Limits
- Hollister Sphere of Influence
- Hollister Planning Area Boundary
- Existing Runway- 13-31 length: 6,350', 6-24 length: 3,150'
- Future Runway- 13-31 length: 7,000', 6-24 length: 3,357'
- Roads
- Railroads
- Parcels
- Rivers

Policy Boundaries

- Airport Influence Area
- Airspace Protection Zone [1]
- Critical Airspace Protection Zone [2]
- FAA Height Notification Surface [3]

Notes

1. The Airspace Protection Zones are drawn in accordance with FAR Part 77, Subpart C and reflect the future runway lengths and instrument approaches for all runways except Runway 31. For Runway 31, the existing runway end location and instrument approach type are reflected, as the existing airspace surface are generally more restrictive than the airspace surfaces reflecting the future runway end and approach type.

2. The Critical Airspace Protection Zone encompasses the primary surface and the critical portions of the approach and transitional surfaces to where these surfaces intersect with the horizontal surface.

3. The FAA Height Notification Zone is established in accordance with FAR Part 77, Subpart B.

Hollister Municipal Airport
Land Use Compatibility Plan

Map 4

Compatability Policy Map: Airspace Protection Zones

ATTACHMENT 2

County of San Benito Project Location

Legend

- Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Runways
- Tentative Streets
- Park

1,504.7 0 752.33 1,504.7 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Notes

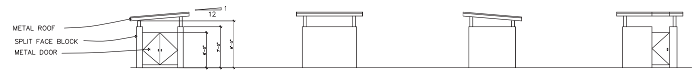
ATTACHMENT 3

FIRST FLOOR = 16,675 SF
SECOND FLOOR = 1,203 SF

TOTAL = 17,878 SF

OCCUPANT LOAD:
WAREHOUSE = 16,675 SF = 34 PEOPLE
OFFICE = 1,203 SF = 13 PEOPLE

TOTAL = 47 PEOPLE

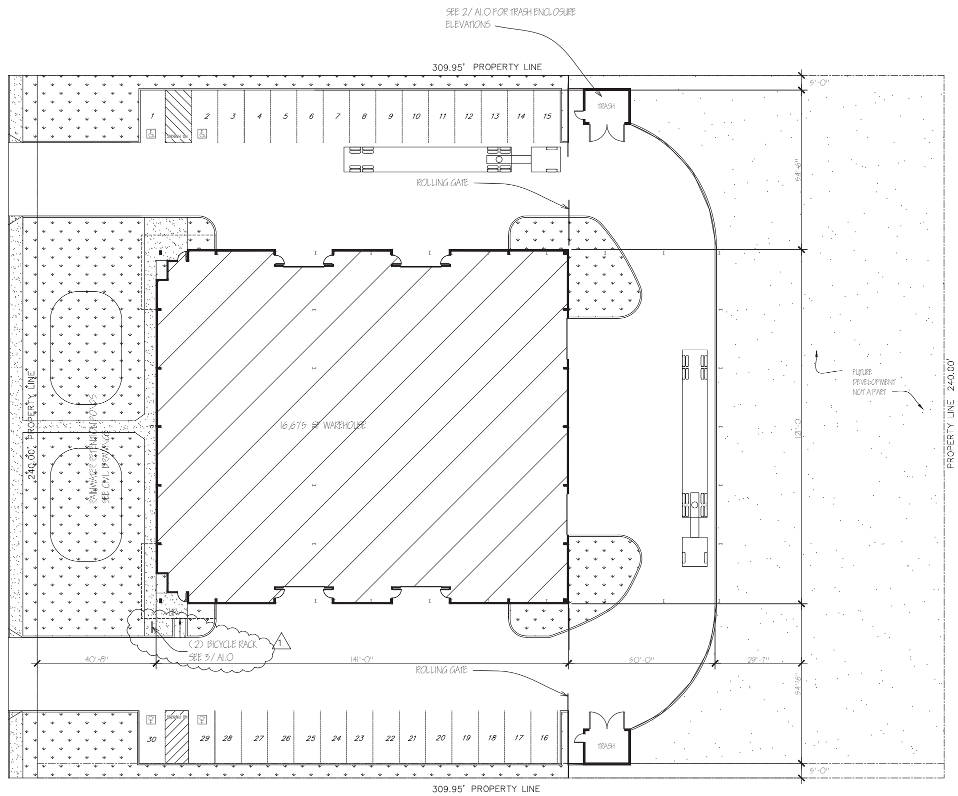


(2) TRASH ENCLOSURE ELEVATIONS

PARKING ANALYSIS:
WAREHOUSE = 16,675 SF = 17 PARKING STALLS
OFFICE = 1,203 SF = 4 STALLS

PARKING REQUIRED = 21 STALLS
PARKING PROVIDED = 30 STALLS

596 SF PER STALL



(1) SITE PLAN

(3) (2) BICYCLE
BICYCLE RACK

0 20' 40' 60' 80'
GRAPHIC SCALE

REF. NORTH

ISSUED / REVISED
12-6-16

REID LERNER ARCHITECTS
7680 MONTEREY STREET #105
GILROY, CA 95020
PHONE 408-842-9942

STEEL SOLUTIONS INC
PO BOX 2566
1745 SAN FELIPE ROAD, #5
HOLLISTER, CA 95024
831-638-0774

A NEW WAREHOUSE
GREYSTONE PLASTERING
349 APOLLO WAY
HOLLISTER, CALIFORNIA 95023

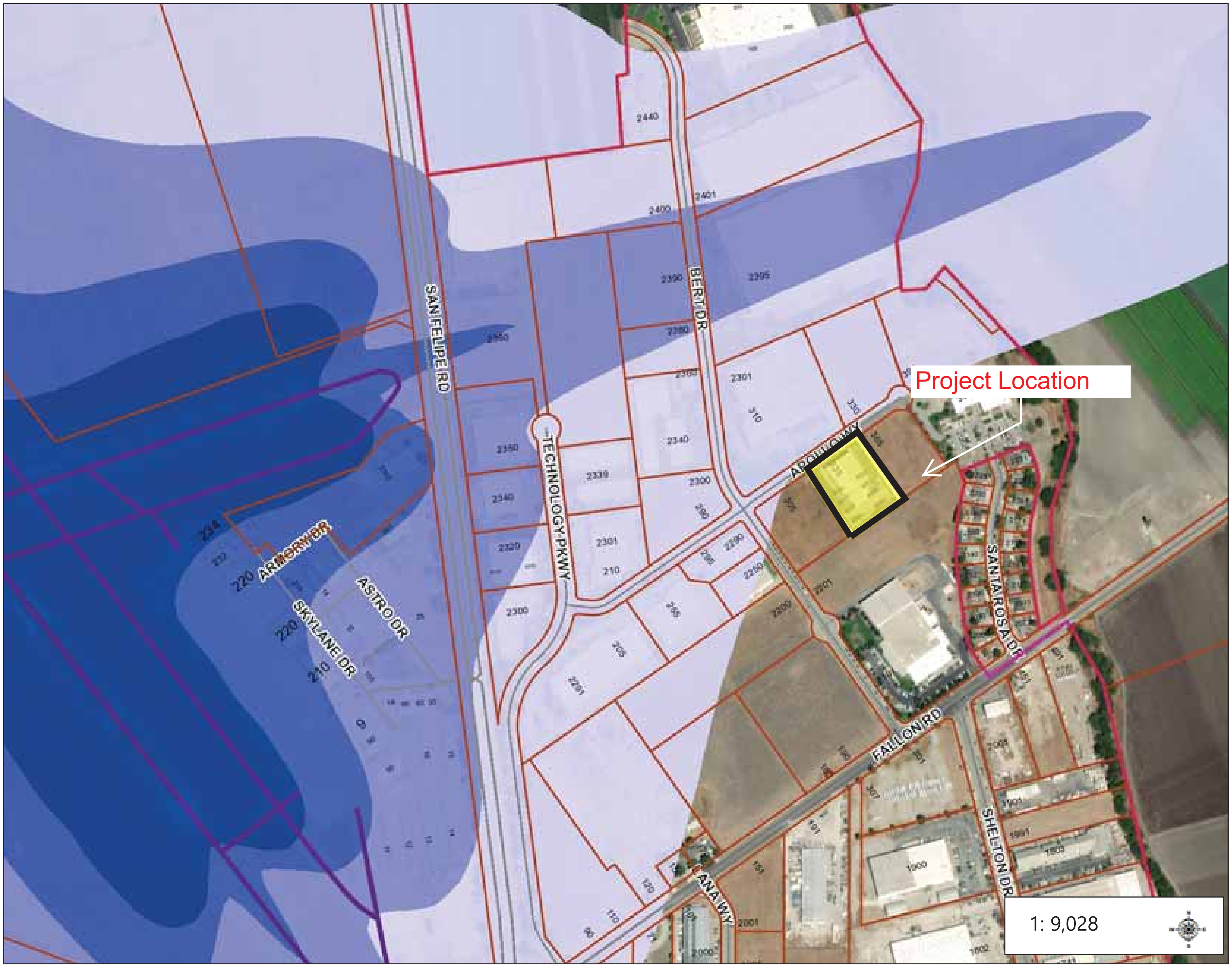
SITE PLAN

DRAWN: RS
CHECKED: RL
DATE: 10-12-2016

A1.0

ATTACHMENT 4

County of San Benito Noise Contours



Legend

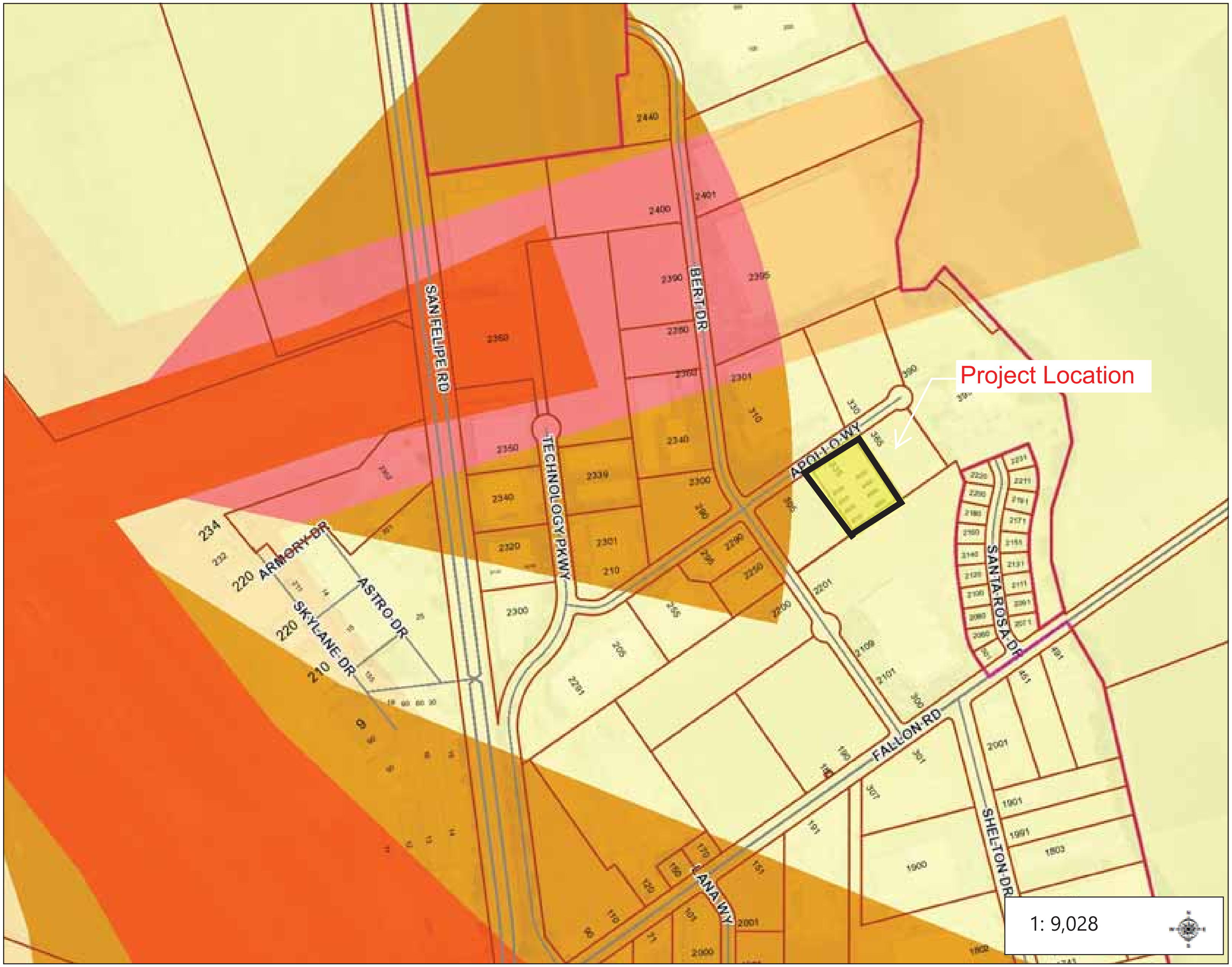
- SBC Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Runways
- Hollister Airport Noise Impact Z
  - 55 - 60 dB CNEL
  - 60 - 65 dB CNEL
  - 65 - 70 dB CNEL
  - 70+ dB CNEL
- Tentative Streets
- Park

1,504.7 0 752.33 1,504.7 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Notes

County of San Benito **Safety Zones**



Legend

- SBC Parcels
- California County Boundaries
  - <all other values>
  - San Benito
- City Limit
- Tentative Subdivision
- Hollister Airport Safety Zones
  - Runway Protection Zone
  - Inner Approach/Departure Zone
  - Inner Turning Zone
  - Outer Approach/Departure Zone
  - Sideline Zone
  - Traffic Pattern Zone
- Tentative Streets
- Park

Notes

1,504.7 0 752.33 1,504.7 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Usage Intensity Criteria [1]	Safety Zone						Additional Criteria
	1	2	3	4	5	6	
Max. Sitewide Average Intensity (people/acre)	10	60	100	150	100	300	Numbers below indicate zone in which condition applies
Max. Single-Acre Intensity (people/acre)	20	120	300	450	300	1,200	
Land Use Category [2]	**Land Use Acceptability** (see page 2-49 for legend)						
Eating/Drinking Establishments: restaurants, fast-food dining, bars [approx. 60 s.f./person] [6]							2-5: Intensity limits as indicated
Limited Retail/Wholesale: furniture, automobiles, heavy equipment, lumber yards, nurseries [approx. 250 s.f./person] [6]							2, 5: Intensity limits as indicated; design site to place parking inside and bldgs outside of zone if possible
Offices: professional services, doctors, finance, civic; radio, television & recording studios, office space associated with other listed uses [approx. 215 s.f./person] [6]						X	2-5: Intensity limits as indicated
Personal & Miscellaneous Services: barbers, car washes, print shops [approx. 200 s.f./person] [6]							2-5: Intensity limits as indicated
Vehicle Fueling: gas stations and fueling facilities at trucking & transportation terminals							5: Allowed only if airport serving
Industrial, Manufacturing, and Storage Uses							
Hazardous Materials Production: oil refineries, chemical plants							3-6: Allowed only if alternative site outside zone would not serve intended function; Fire Marshal to determine if special design features should be incorporated into structure to withstand damage from aircraft collision; exercise caution with uses creating plumes and other airspace hazards [3]
Heavy Industrial							2-5: Avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Light Industrial, High Intensity: food products preparation, electronic equipment [approx. 200 s.f./person] [6]							2-5: Intensity limits as indicated; avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Light Industrial, Low Intensity: machine shops, wood products, auto repair [approx. 350 s.f./person] [6]							2 - 4: Intensity limits as indicated 5: Single story only; max. 10% in mezzanine 2-5: Avoid bulk production/storage of hazardous (flammable, explosive, corrosive, or toxic) materials; permitting agencies to evaluate possible need for special measures to minimize hazards if struck by aircraft
Indoor Storage: wholesale sales, warehouses, mini/other indoor storage, barns, greenhouses [approx. 1,000 s.f./person] [6]						X	2: Single story only; max. 10% in mezzanine

Table 2, continued

Land Use	Acceptability	Interpretation/Comments
(green)	*Normally Compatible*	Normal examples of the use are compatible under the presumption that usage criteria will be met. Atypical examples may require review to ensure compliance with usage intensity criteria. Noise, airspace protection, and/or overflight limitations may apply.
(yellow)	*Conditional*	Use is compatible if indicated usage intensity limit and/or other listed conditions are met.
(red)	*Incompatible*	Use should not be permitted under any circumstances.

Notes

1 Usage intensity criteria applicable to all nonresidential development (i.e., Normally Compatible as well as Conditional land uses). Nonresidential development must satisfy both forms of intensity limits (see Policy 3.3.6). See Note 6 below and Policy 3.3.7 for information on how to calculate nonresidential intensity. Up to 10% of total floor area may be devoted to ancillary use (see Policy 3.3.6(c)).

2 Multiple land use categories and compatibility criteria may apply to a project. Land uses not specifically listed shall be evaluated using the criteria for similar uses.

3 These uses may pose hazards to flight as they may attract birds or other wildlife; generate dust or other visual hazards; or create physical hazards (e.g., power lines or other tall objects). See *Section 3.4* for applicable airspace protection policies.

4 Capacity of people for Large and Major Assembly Facilities obtained from International Building Code.

5 Residential density limits provided in terms of dwelling units per acre (du/ac). Construction of a single-family home, including a second dwelling unit as defined by state law, allowed on a legal lot of record if such use is permitted by local land use regulations. A family day care home (serving ≤ 14 children) may be established in any dwelling. See *Policies 1.4.5* and *3.3.5(h)*.

6 Common occupancy load factors (approximate number of square feet per person) source: Mead & Hunt, Inc. based upon information from various sources including building and fire codes, facility management industry sources, and ALUC surveys. The common occupancy load factors represent the maximum occupancy during a normal peak period occupancy, not on the highest attainable occupancy used in building and fire codes. Common occupancy load factors provided in the table for specific land uses may be used as a means of calculating the usage intensity of a proposed development. See Policy 3.3.7 for other methods of calculating usage intensities.

Table 2, continued