



U.S. Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Office of Airports

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El Segundo, CA 90245

June 16, 2022

Mr. Harry Freitas
Director, Roads and Airports Department
County of Santa Clara
101 Skyport Drive
San Jose, California 95110-1302

Subject: Federal Aviation Administration review of Proposed Signage and Electrical Plan Sets and of the Construction Safety Phasing Plan for Reid-Hillview Airport

Dear Mr. Freitas;

This letter is in response to your May 13, 2022 submittal of the plan sets and specifications, as well as the Construction Safety Phasing Plan (CSPP) for the Signage and Electrical Project at Reid-Hillview Airport (RHV). The Federal Aviation Administration (FAA) has reviewed the documentation submitted and has provided comments in Attachments A, B and C.

The FAA applauds the efforts of the County of Santa Clara (County) to complete this important safety project. Improving nonstandard airfield signage, marking, and lighting is an important step by the County to address many of the airfield safety concerns raised by FAA in previous correspondence and will mitigate many contributing factors related to pilot confusion at RHV. We offer the comments to the County's proposed signage plan in this letter to ensure that the project is consistent with the County's federal agreement obligation to operate and maintain the airports in a safe and serviceable condition; and, is built in accordance with applicable FAA standards.

The FAA recognizes that the County's proposed Signage and Electrical upgrade project is focused on upgrading the airport signage; and as such, the documentation submitted only contained signage and electrical modifications. However, since airfield signage is intricately linked to airfield marking, it will require the County to expand their project to include required marking in order to meet FAA standards.

You will note that we have separated our comments into three (3) general sections for your consideration, those being: airfield signage, airfield marking, and airfield lighting. Generally speaking, our comments on your plan are as follows:

- The current taxiway designations at RHV are not consistent with the taxiway designation guidelines and standards.

- Holding Position Sign for Taxiway/Runway intersections do not meet the color requirements of Advisory Circular (A/C) 150/5340-18, *Standards for Airport Sign Systems*.
- There are a number of missing signs and, as the plan sets do not include marking and/or pavement signage, it appears there are missing pavement markings.
- There are a large number of existing surface painted signs at RHV. It is unclear, from the sign plan drawings, whether those signs will remain following the signage project.
- Signage and requisite markings are not in compliance with FAA standards: Hold lines are in non-standard locations. In addition displaced threshold markings, taxiway edge markings, and numerous inbound destination signs do not meet FAA standards.
- The Runway 13R and 31L displaced threshold lights do not meet standards.
- There are a number of locations at RHV where the taxiway geometry does not meet current airfield standards.
- A review of RHV via Google Earth shows pavement markings bleeding through which indicates that the County's eradication of old markings were not done in compliance with FAA standards

Thank you for providing us the opportunity to review the plan sets. The County's plan set provides a strong first draft. Once the County addresses FAA's comments, your plan will produce a much needed upgrade to the existing signage and marking infrastructure at RHV. Please let us know if you wish to discuss your revisions with FAA. If yes, our office will work with the County to set up a follow up meeting that includes our Air Traffic Services, Flight Standards, and Runways Safety Office organizations. We think such a meeting should be considered by the County and can be conducted with FAA within the next two weeks, or at the County's earliest convenience.

If you have any questions, please contact Laurie Suttmeier at (415) 656-9948 or by email at Laurie.Suttmeier@faa.gov.

Sincerely,

Mark A. McClardy
Director, Airports Division
Office of Airports, Western Pacific Region

cc: Laurie Suttmeier, Manager, FAA San Francisco Airports District Office
Brian Armstrong, Manager, Safety/Standards Branch, FAA, Western-Pacific Region
Dara Wheeler, Acting Chief, Division of Aeronautics, California Department of Transportation

Attachments

ATTACHMENT A

Required Plan Revisions

Airfield Signage:

FAA comments are broken out into two categories: sign-specific and system-wide corrections.

A. Specific Sign Corrections:

1. We note that several runway incursions to Runway 31R have occurred on Taxiway E following landing on Runway 31L when the pilot was instructed to hold short of Runway 31R. This appears to show an operational need to include both Runway inscriptions at least on Taxiway E. (Reference AC 150/5340-18G, Paragraph 1.5.1). Additionally, ensure the holding position signs are installed in-line with the holding position marking. Both runway ends need to be treated the same for continuity Please consult with air traffic control.
2. **Holding Position Sign for Taxiway/Runway Intersections (S-01, S-02, S-03, S-04, S-09, S-10, S-13, S-14, S-15, S-19, S-20, S-22, S-23, S-24, S-25, S-47, S-48, S-51, S-57, S-60, and S-61)** do not meet the color requirements of AC 150/5340-18.
 - a. These signs must have white inscription with a black outline on a red background.
 - b. The sign at each runway end on Taxiways A and E, contain the inscription only for the takeoff runway, while all other signs contain both runway designation numbers. This is consistent with the standards in most applications. However, at runway ends where there is an operational need, such as in the situation where a taxiway crosses the runway at the threshold, both runway designation numbers should be used.
3. **Inbound Destination Sign (S-28, S-30, S-33, S-34, and 46)** – There are numerous “PARKING” inbound destination signs along Taxiway Z and on Taxiway connectors between Taxiways Y and Z. The purpose of these signs is unclear as these signs point to multiple locations on the airport. Limit the number of these signs to directing transient pilots to parking areas and eliminating those signs that direct based aircraft to parking areas.

For consistency, the sign “PARKING” for a standardized location description. (Reference: AC 150/5340-18G, Paragraph 1.10.2.) Accepted names and abbreviations used for inbound destinations are:

- 1) APRON - general parking, servicing, and loading areas
- 2) RAMP - synonymous with APRON
- 3) FBO - fixed-base operator

Additionally, major destination areas are usually shown on inbound destination signs. Therefore, the surface painted “RAMP” markings along Taxiways Yankee and Zulu are not required per the standard. Sign inscriptions should be consistent; do not use two different inscriptions for the same area (e.g. RAMP and PARKING)

In this example, there are surface painted markings in numerous locations that state RAMP, and yet the signage, pointing in the same direction, states PARKING.

4. **Boundary Sign (S-01, S-02, S-03, S-04, S-9, S-10, S-13, S-14, S-15, S-19, S-20, S-21, S-23, S-24, S-25, S-47, S-48, S-51, S-57, S-60, and S-61).** The sign plan currently depicts RSA/OFZ boundary signs at all runway exit locations. This sign is typically used only at controlled airports at the request of the airport traffic control tower (ATCT). The County should consult with local Air Traffic Control to determine if these signs are necessary at all locations. (Reference: AC 150/5340-18G, Paragraph 1.7.1.)

B. System-Wide Corrections

1. **Location Signs.** Ensure that all location signs meet the requirement of AC 150/5340-18, and do not include extra lines in the sign panel. The location sign has a yellow inscription with a yellow border on a black background. The yellow border is set in from the inner edge of the sign to yield a continuous black margin.
2. **Taxiway Nomenclature Convention.** The current taxiway designations at RHV are not consistent with the taxiway designations guidelines and standards. The taxiway system should be re-designated as part of this project since most if not all existing airfield signs are being replaced.

Please reference the guidelines and standards in AC 150/5340-18 when developing or revising an airport signage plan. Per the standards, a runway with a parallel taxiway, use alphanumeric designators at the entrance and exit taxiways located at the ends and along the runway.

Apply an increasing, sequentially numbered pattern from one runway end to the other runway end, such as A1, A2, A3, A4, A5. For example, Taxiway Z should be changed to Taxiway A; Taxiway Y to Taxiway B; and, all connecting taxiways be re-designated, from north to south, as B1, B2, B3, etc. (Reference: FAA Advisory Circular (AC) 150/5340-1G, 1.4)

3. **Missing Signage Corrections**

- a) **Direction Signs (S-26, S-28, S-30).** The plan depicts direction signs for Taxiway Golf and Foxtrot, however, the published airport diagram (21 Apr – 19 May 2022) does not identify these taxiways.

- b) The sign plan does not include any taxiway direction signs preceding taxiway-taxiway intersections for northbound and southbound traffic on Taxiway Y. (Reference: AC 150/5340-18G, Paragraph 1.8., 1.8.1, and associated Figures) such as:
1. Taxiway Alpha, Yankee, and Zulu intersections. As a pilot or vehicle operator exits Runway 13L-31R onto Taxiway Alpha there is no visual cue to indication the direction of Taxiway Yankee and Zulu.
 2. The intersection of Taxiway Charlie and Yankee is missing a location sign.
 3. Taxiway Echo, Yankee, and Zulu intersection. As a pilot or vehicle operator exits Runway 13L-31R onto Taxiway Echo there is no visual cue to indication the direction of Taxiway Yankee and Zulu.
- c) The sign plan does not include taxiway direction signs preceding the taxiway-taxiway intersections for northbound and southbound traffic on Taxiway Z at its intersections with Taxiways D or B. (Reference: AC 150/5340-18G, Paragraph 1.8., 1.8.1, and associated Figures)
- d) There are a large number of existing surface painted signs at RHV. It is unclear, from the sign plan drawings, whether those signs will remain following the signage project. While we understand that the subject project does not currently include any new markings, it would be helpful to see all signage, including surface signage that will exist following the project to insure that no conflicts will exist.

4. **Vehicle Roadway Signs**

- A. There appears to be an access road at the following locations, however, there is no depiction of vehicle roadway signs; this is non-standard:
- 1) west of Taxiway Charlie leading to Runway 13R;
 - 2) at Taxiway Delta, leading to/from the segmented circle; and
 - 3) at 13R threshold markings to/from what appears to be a perimeter road
- B. Install standard highway stop signs on vehicle roadways at the intersection of each roadway with a runway or taxiway. At airports with ATCT, unless there is a letter of agreement with the air traffic control (ATC) allowing drivers to cross taxiways without clearance, install “DO NOT PROCEED CONTACT ATC” signs on vehicle roadways instructing the driver not to proceed without clearance from ATC. Specifically, we direct your attention to the perimeter road that routes through the approach area for runways 31L and 31R.

Please review AC 150/5345-44, *Specification for Runway and Taxiway Signs*) for additional information about unlighted mandatory instruction signs to be installed to help vehicle operators maintain their situational awareness when approaching runways and provide a visual reference to aid in identifying them.

AIRFIELD MARKINGS

- 1) **Hold lines are in non-standard locations.** There are parts of the hold lines on Taxiways A and E between the runways that are less than 125 feet from the runway centerline. These hold lines and associated hold position signs need to be realigned/relocated to comply with the standard. At RHV, the minimum standard for runway centerline to hold line distance is 125 feet. This distance is necessary to keep aircraft out of the Runway Obstacle Free Zones (ROFZ). The ROFZ clearing standard does not allow aircraft and other object penetrations, except for locating frangible NAVAIDs in the OFZ because of their function. We also note that the current configuration, and that shown on the project plan, are not consistent with the Airport Layout Plan (ALP) signed by the County and approved by the FAA in 2008. The 2008 ALP shows the hold lines in the proper configuration. (Reference: AC 150/5300-13B, Paragraph 3.31).
- 2) The plan does not include all markings. Please redraft the plan sheets and include all requisite markings. For example: the enhanced taxiway centerline markings are not depicted at any of the taxiway/runway hold marking locations. These provide supplemental visual cues to alert pilots of an upcoming runway holding position marking in order to minimize the potential for runway incursions. To reinforce situational awareness before entering a runway, this safety enhancement is only used on those taxiways that directly enter a runway.
- 3) The existing displaced threshold markings are not to standard. The displaced threshold must include the appropriate marking scheme (i.e. runway threshold bar and arrowheads with and without arrow shafts).
 - a. To ensure standardization, the diagram should identify all markings in the appropriate colors, as specified in the current version of AC 150/5340-1, *Standards for Airport Markings*.
- 4) **Taxiway Edge Marking.** Taxiway edge markings are not in compliance with FAA standards. The dashed taxiway edge marking (at **S-25, S-037, S-47, and S-61**) is used where there is an operational need to define the edge(s) of a taxi route on or contiguous to a sizeable paved area that permits pilots to cross over this surface marking. However, this marking should not extend on the runway side of the surface holding position marking. As depicted it sends an inconsistent message to the pilot. Ensure all markings are consistent with the current versions of AC 150/5340-1.
- 5) **Surface Painted Taxiway Markings.** Surface painted markings are required. Throughout the plan, there appears to be Taxiway Yankee and Zulu surface painted markings but no above ground Taxiway Zulu direction sign leading out the apron area at Taxiways Bravo, Charlie, Delta, and Echo. The surface painted marking is required where it is not possible to provide a taxiway direction sign in accordance with AC 150/5340-18. Optionally, it may be installed where operational experience has indicated that its presence at a troublesome taxiway intersection can assist flight crews in better ground navigation.

- 6) **Eradication of old markings not implemented according to FAA standards.** Google image appears to show the intermediate hold lines at the 13L run-up area, which extended at one time south of the runway hold lines, to have been “removed” with black paint. However, **drawing E2.1** of the plan set shows them marked/planned.

The FAA does not endorse painting over the old markings because this inadequate practice merely preserves the old marking which, in some cases, has misled pilots and required extra maintenance. These should be removed from plans and, correctly removed from the pavement. Reference 5340-1M, paragraph 1.3.6: Removal of Markings.

Pavement markings that are no longer needed are not to be painted over but instead are to be physically removed. Physical removal of markings is achieved by water blasting, shot blasting, sand blasting, chemical removal, or other acceptable means that do not harm the pavement. The physical removal of any old marking(s) must include a predetermined larger size and shape of a removal area that encompasses the old marking(s) and by grouping adjacent markings together into a larger rectangular removal area. The rationale behind this practice is to eliminate the continued visual appearance of the removed marking(s).

- 7) **Runway Incursion Mitigation (RIM) and Hot Spots.** The FAA has identified several RIM and Runway Incursion Hot Spots on RHV that have contributed to a number of surface events. The FAA takes the position that it is appropriate for the County to propose how it plans to address the RIM and runway incursion Hot Spot locations as part of the signage plan project.

AIRFIELD LIGHTING

- 1) The Runway 13R and 31L displaced threshold lights do not meet standards. The threshold lights are not located correctly in relation to the Displaced Threshold Bar. The lights are currently aligned with the trailing edge of the threshold bar and should be aligned with the leading edge of the threshold bar. Consideration should be given to correcting this non-standard condition by relocating the lights as part of this signage and electrical project. An alternative to relocating the lights is to remove and adjust the location of the threshold bar and all associated runway markings. (Reference: AC 150/5340-1M, Paragraph 2.9.1.3 and AC 150/5340-30J, Figure A-5, Note 6 and Paragraph 2.3.2.2.2.)

ATTACHMENT B

Recommendations and Reminders

1. The plan should identify signs in the appropriate colors, as specified in the current version of AC 150/5340-18, *Standards for Airport Sign Systems*. Signs should be graphically depicted on the plan in close proximity to their locations on the airfield.
2. Canted Signs (**S-14, S-37 and S-47**). In reference to the specified signs, we recommend these signs be canted toward the associated taxiway centerline to the extent standards permit, to align angle of view for approaching aircraft, also realizing they serve aircraft within the run-up area as well as on centerline.
3. Runway Edge Lights and REILs: We recommend that the REILs and edge lights be kept on separate circuits.
4. Taxiway Z: We recommend the SCC consider installing lighting on Taxiway Zulu to replace existing reflectors.
5. Verify that the County has installed roadway signs located near a runway outside the runway safety area (RSA) and clear of the obstacle free zone (OFZ) surface. See AC 150/5300-13, *Airport Design* for RSA and OFZ surfaces and dimensions.
6. Verify that the signs are designed in accordance with AC 150/5300-13, for TOFA dimensional standards.
7. To increase vehicle driver situational awareness, a type L-858Y, size 1, style 4, taxiway direction sign may be installed with the STOP/DO NOT PROCEED CONTACT ATC sign at locations where a vehicle service road intersects a taxiway.
8. The addition of surface painted hold position signs should be considered by the County as an additional strategy to reduce Runway Incursions at RHV.

ATTACHMENT C

Construction Safety Phasing Plan Comments

Construction Safety Phasing Plan Review			
Location	Section	Issue	Comments
Sheets 5,6,7,8	Critical Areas Construction Phase 1	Contractor Access onto Airfield	Construction vehicles will be accessing through the gate near the University. Will this gate be standing open, unattended?
Sheet 8	Legend/Drawing	Legend Mismatch	Legend shows hash marks, but work in the field is indicated as a stair-step depiction
General Comments	Tenant Notificaiton	Construction Activities and Schedule	Has this been accomplished? Tenant notification regarding the plans for construcion vehicles being on the airfield and certain runways and taxiways being closed intermittantly is an important safety initiative.