4

Building Area Development

OVERVIEW

The building area of an airport encompasses all of the airport property not devoted to runways, major taxiways, required clear areas, and other airfield-related functions. This chapter examines the factors that affect the siting of future building area facilities at Hanford Municipal Airport and alternative ways of accommodating projected demand. The focus is on providing direction for the appropriate expansion and use of the core building areas of the airport. The various design issues associated with Hanford Municipal Airport are discussed in the sections that follow. The *Building Area Plan* enclosed with the *Master Plan* report presents the recommended layout of facilities for these areas.

It should be recognized that there are potentially two distinct building areas on the airport. Currently only the west side of the airport has been developed. However, in the future it may be desirable to develop the land on the east side. Development of the east side is not expected to be needed during the 20-year planning period of this plan. This need should be reevaluated when this master plan is updated.

The existing building area contains most of the uses expected at a general aviation airport: aircraft storage hangars, shade hangars, aircraft tiedowns, a fueling facility, one fixed base operator, and the airport staff's office.

DESIGN FACTORS

Many factors influence the planning and, later, the development decisions associated with Hanford's building area. Most of these factors can be grouped under five basic headings:

Demand

The demand for additional building area facilities at Hanford Municipal Airport is forecast to be significant over the next 20-year planning period. As documented in Chapter 2, the number of based aircraft is forecast to increase from the current 62 aircraft to 110 aircraft.

About 89% of the aircraft currently based at Hanford Municipal Airport are single-engine, piston-powered aircraft. However, the airfield sees use by the full spectrum of aircraft: piston twins, turboprops, corporate jets, and helicopters. It is anticipated that the airport will see increasing use by turboprops and jets.

Demand for new fixed base operator (FBO) leaseholds is expected to be limited. However, the existing full-service FBO may expand its facilities. There is also the potential that a few specialized FBOs may be developed during the life of this plan.

Setback Distances

The interior boundary of the airport building areas is determined in large part by the necessary setback distances from the nearest runway, taxiway, or taxilane. The applicability of each Federal Aviation Administration (FAA) standard is discussed in the sections that follow.

Taxiway – A defined path, from one part of an airport to another, selected or prepared for the taxiing of aircraft.

Taxilane – The portion of the aircraft parking area used for access between taxiways, aircraft parking positions, hangars, fixed base operators, etc.

Existing Facilities

Generally the facilities at Hanford Municipal Airport are expected to remain viable throughout the 20-year planning period. Of course, periodic maintenance will be required to preserve the functionality of airfield pavement, structures, and associated drainage and utilities. The existing FBO office may require replacement prior to the end of the 20-year planning period.

Accessibility

An important design consideration is the ease of access to individual portions of the building areas from both the taxiway system and public roads.

At Hanford Municipal Airport, Taxiway A (the parallel taxiway) provides adequate access to the building area. The building area is relatively shallow; most facilities are directly visible from an aircraft on Taxiway A.

There are two components to vehicular accessibility: access to the airport; and access to the airfield (e.g., hangars, FBOs). The airport enjoys very convenient access from the road system. California State Highway 198 passes just north of the airport. An adjacent freeway exit provides access to South 10th Avenue. If one proceeds south on 10th Avenue, the next intersection is Hanford Armona Road. All vehicle access to the airport is from Hanford Armona Road.

Public access to the airfield can be made from four points. There is both a vehicle and pedestrian gate that provide access from the public parking lot adjacent to the airport office. Both gates are ciphered. There are two additional vehicle gates west of the airport parking lot. The gate adjacent to the shade hangars is padlocked. The western-most gate provides access to the FBO and is ciphered.

At a general aviation airport, the system of fencing and gates is intended to provide three functions:

- Exclude stray domestic and wild animals (e.g., dogs and deer)
- Prevent inadvertent entry of people and vehicles onto the airfield operations area
- Increase the difficulty of determined entry by those with malicious intent (i.e., thieves).

There are general Federal Aviation Administration guidelines for fencing and gates. Additional direction is expected to be provided by the Transportation Security Agency.

It is desirable to have vehicle access that does not require visitors to enter the airfield for box hangars, particularly larger box hangars, and fixed base operators. Those needing to access

smaller hangars, shade hangars, and tiedowns will typically have to enter the airfield operations area. Appropriate modifications to the existing airfield fencing and gate system are discussed later in this chapter.

Development Staging

Another important factor in the preparation of a building area plan is the timing of future development. The object is to have a plan that is cost effective and flexible enough to respond to changes in the type and pace of facility demand. The plan must also make sense at each stage of development. Sometimes, the desired location for facilities in the short-term may conflict with the optimum long-range plan.

It is anticipated that there will be demand for a range of hangar sizes. These may include shade hangars, T-hangars, small box hangars, and large box hangars. The design of the building areas will enable each size of hangar to be constructed independently; they do not require other development as a precursor to their implementation. Sites for accommodating the various types of demand are presented later in this chapter.

The timing of construction of additional aircraft storage hangars and fixed base operator facilities will be dependant upon demand. It is not proposed that any facilities be built speculatively. Additionally, it is recommended that the City not construct large box hangars or facilities for fixed base operators. These are typically much more likely to become vacant than small box hangars and T-hangars.

BUILDING RESTRICTION LINE RELOCATION

The purpose of a Building Restriction Line (BRL) is to ensure safe use of the airport by providing:

- Clearances necessary for visual and instrument flight operations
- Clear visibility from the air traffic control tower, when one exists
- Clear visibility between runways, when multiple runways exist

The existing BRL is set to provide FAR Part 77 airspace clearances over a 20-foot tall building. The building area underlies the Part 77 transition surface. The transition surface angles upwards at a 7:1 ratio (7 feet horizontal for every 1-foot rise). The transition surface is joined to the primary surface which overlays the runway. The current primary surface is 500 feet wide centered on the runway centerline. No change is proposed.

PRINCIPAL BUILDING AREA FEATURES

Based Aircraft Storage and Parking

The forecasts prepared as part of this master plan update indicate that demand will exist for storage facilities for up to 48 additional based aircraft by the year 2025. All of the future demand is contingent upon hangar availability. A need for additional tiedowns to accommodate based aircraft is not anticipated.

Hangars

Demand for all but the largest hangars can be met in the area west of the existing hangars. Two taxilanes already exist to serve new hangars. Up to 70 additional T-hangars, shade hangars or small box hangars could be constructed in this area. This exceeds the forecast demand for small hangars for the 20-year planning period.

The demand for larger box hangars will need to be met elsewhere on the airport. The taxilanes that provide access to the hangar area mentioned above do not have sufficient wingtip clearance to accommodate larger aircraft.

North of the existing hangar area there is land available for large hangar sites. Three alternatives were developed to permit exploration of the relative strengths of various configurations. They are evaluated in the paragraphs that follow and illustrated in Figures 4A, 4B, and 4C at the end of this chapter.

As the demand for specific sizes of hangars cannot be anticipated, the best design will be one that permits construction of a variety of hangar sizes. Each of the alternatives could accommodate box hangars ranging in size from 60-foot square

to 100-foot square. The alternatives are flexible enough to permit variations on these sizes (e.g., an 80-foot by 100-foot hangar). All three alternatives take their vehicle access from the existing road that leads to the FBO. Each alternative would also require modification of the detention basin located west of the FBO.

The three alternatives differ principally in how the taxilanes and road access are configured. Alternative 1 utilizes two taxilanes for access to the hangars. One connects to the existing apron south of the FBO and the second connects directly to Taxiway A. Alternative 2 uses the same basic taxilane configuration as Alternative 2. The two alternatives differ in that Alternative 1 aligns the second phase of hangars parallel to the building restriction line, while Alternative 2 retains the alignment of existing hangars. Alternative 3 uses a single taxilane that connects to the existing apron south of the FBO.

Although all alternatives utilize the existing access road in their design, they differ significantly in their ultimate road alignments. Alternative 1 would increase the length of the access road to the FBO. However, the route would be simple and intuitive. The second alternative has the shortest route to the FBO; it is substantially the same as the current route. Alternative 3 requires a looping route to access the FBO.

The convoluted access road route in Alternative 3 would constrain the flexibility in developing hangars. If the full route was not constructed in the first phase, it would require realignment of the road with each succeeding phase. This alternative is, therefore, dismissed as impractical. Alternative 2 would require the least initial investment, but would permit only a few box hangars to be constructed before a second taxilane had to be added. Alternative 1 is judged to be the superior alternative. Although initially slightly more expensive to implement, it supports more development before a second taxilane is needed. This alternative has been incorporated into the airport layout plan.

The demand for box hangars is currently soft at Hanford Municipal Airport. As demand for hangars becomes stronger, the recommended box hangar layout should be evaluated to ensure that it would support the mix of hangar sizes for which demand exists.

Based Tiedowns

Approximately a dozen based aircraft are tied down on the main apron. Several of these aircraft are operated by the FBO. It is anticipated that these aircraft can remain on the main apron through the 20-year planning period. If the FBO constructs a hangar for its aircraft, only a few other based aircraft will continue to need tiedowns. No new tiedown positions are needed to meet based demand in the future.

Transient Aircraft Parking

As noted in Chapter 2, peak transient aircraft parking demand is forecast to increase from 8 aircraft to 15 aircraft over the next 20 years. During this period, the share of large aircraft is expected to continue to increase. The main apron is large enough to accommodate this demand. However, specific parking areas for larger aircraft have not been designated. The need for an area designated for large aircraft will depend upon whether a new FBO site is created that can accommodate these aircraft. The volume of transient use by large aircraft should be monitored. When the main apron receives its next maintenance treatment (e.g., overlay), the need for reconfiguration of the parking apron to provide a designated space for large aircraft should be evaluated.

Fixed Base Operations

There may be demand for leaseholds for fixed base operations (FBOs) during the 20-year life of this plan. The most likely source of demand is for the existing FBO to expand its facility. There is also potential demand for leasehold for specialty FBOs (e.g., those offering only a limited number of services). It is not anticipated that there would be sufficient activity to support a second full-service FBO by the end of the planning period.

The planned relocation of the building restriction line eliminates the potential to expand the existing FBOs facility. Therefore, sites for new or relocated FBOs are needed. General site requirements for FBOs are similar to those of larger box hangars:

- Street access for delivery trucks and other visitors that does not require entering the airfield operations area
- Paved parking lots and delivery areas
- Fencing and gates to meet security requirements
- Sufficient space on the leasehold for staging and parking aircraft

Two areas would be suitable for creation or relocation of a full-service FBO. The best site would be the area currently occupied by portable hangars. The existing portable hangars could be relocated to the west in the area designated for T-hangars and small box hangars. This would permit creation of centrally located FBO leasehold with clear views of the fuel island and the parking aprons. A spur from the existing FBO access road could be extended to this site. The road would divide the hangar area. However, given the shallowness of the hangar area, this is not a significant drawback. Alternatively, a new FBO facility could be sited in the area shown for 100-foot square hangars, when the new taxilane is extended to serve the proposed first phase box hangar development. Road access would be direct and taxiing simple. This site would be somewhat less visible from the parallel taxiway. Transient tiedowns and the fuel island would not be visible from the FBO. This second site would be acceptable for a full-service FBO, but more suitable for a specialty FBO. Due to the high variability in size requirements, specific leaseholds are not shown on the building area plan.

SUPPORTING FACILITIES

Aircraft Fuel Storage and Dispensing

Both low-lead Avgas and Jet 'A' fuel are currently provided at Hanford Municipal Airport. Dispensing is from self-serve pumps located adjacent to the transient apron. A new location near the transient parking apron is proposed. It will provide better circulation for aircraft than the current location.

Fencing and Gates

The events of 9/11 dramatically increased public and agency concerns over aviation security. Although most attention is focused on airports with scheduled passenger service, all airports can expect security requirements to be increased. At general aviation airports such as Hanford Municipal Airport, the physical requirements for increased security focus on controlling entry to the airfield.

The airport perimeter is completely fenced. Fencing is chain link with some sections topped with three strands of barbed wire. A ciphered roll gate provides access to the transient apron from the public parking lot. A nearby ciphered pedestrian gate also provides access to the airport manager's office and transient apron. The only other publicly-accessible gate is a ciphered gate that provides access to the FBO. Several padlocked gates exist along the perimeter of the airport's building area to provide access for service and emergency vehicles.

Cipher Gate: A gate equipped with a lock that is opened with a code. Ciphered vehicle gates commonly have an electronic pad into which the codes can be entered. Pedestrian gates can either have an electronic pad or mechanically operated buttons built into the lock.

Vehicle Access and Parking

Vehicle access to the airport is obtained from Hanford Armona Road. There is an easy connection to State Highway 198 via South 10th Avenue. No change is needed to support all development contemplated in this master plan. If the east side of the airport is ultimately developed, a street network already exists to serve the area. Access to the east side would be via East 3rd Street to either 9 1/8th Avenue or 9th Avenue.

Public parking is available in front of the airport manager's office and adjacent to the FBO's building. The parking lot near the manager's office provides sufficient capacity for current operations and long-term growth. Parking needs will need to be evaluated if the FBO develops a new facility. The leasehold alternatives presented earlier should have sufficient space for automobile parking.

TOTAL ACREAGE:

FAA Eligible (Taxiways)

FAA Non-eligible (Aprons)

N

0 200' 400'

FEET

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Figure 4A

Box Hangar Alternative 1

Hanford Municipal Airport

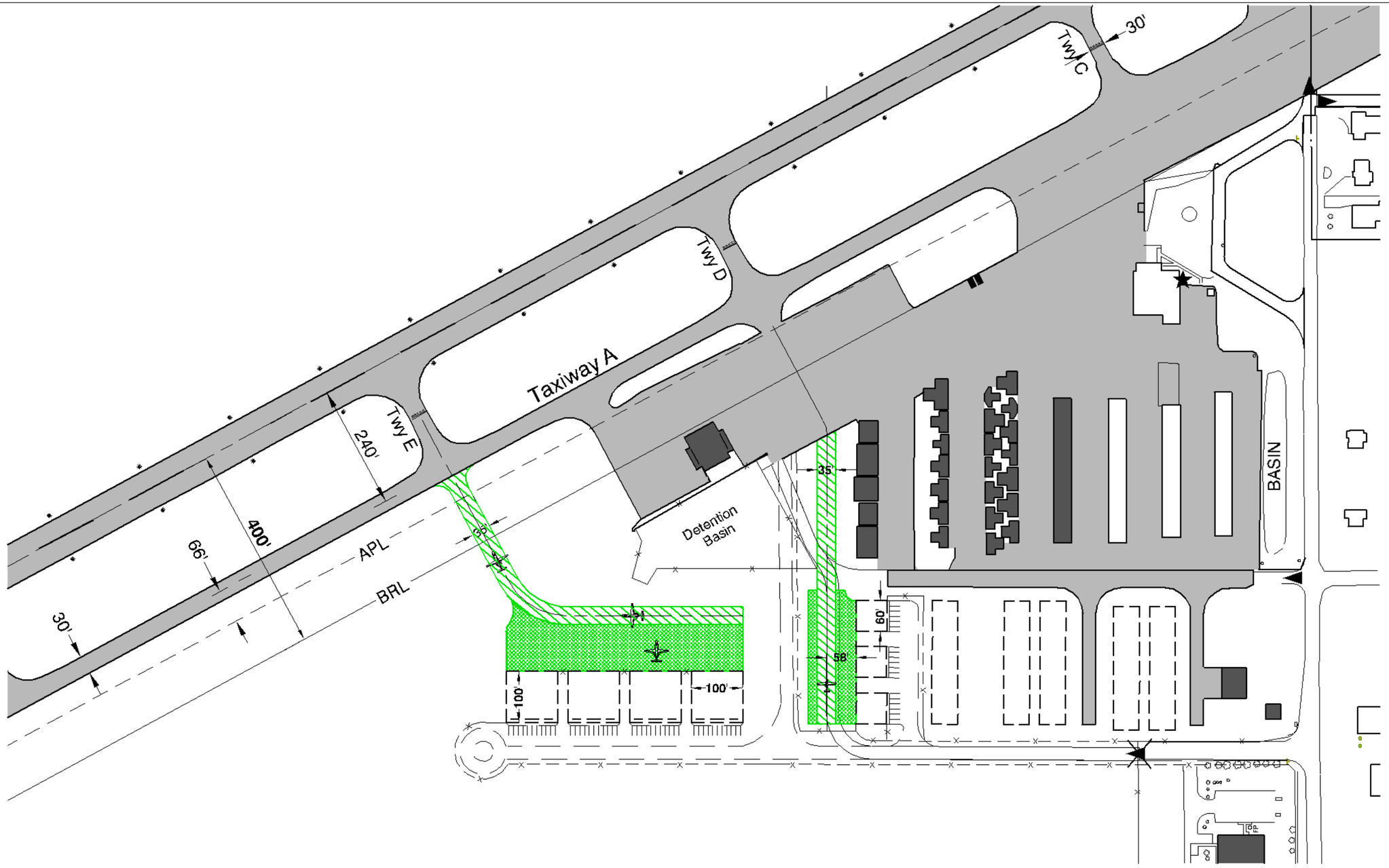

Figure 4B

Box Hangar Alternative 2

Hanford Municipal Airport

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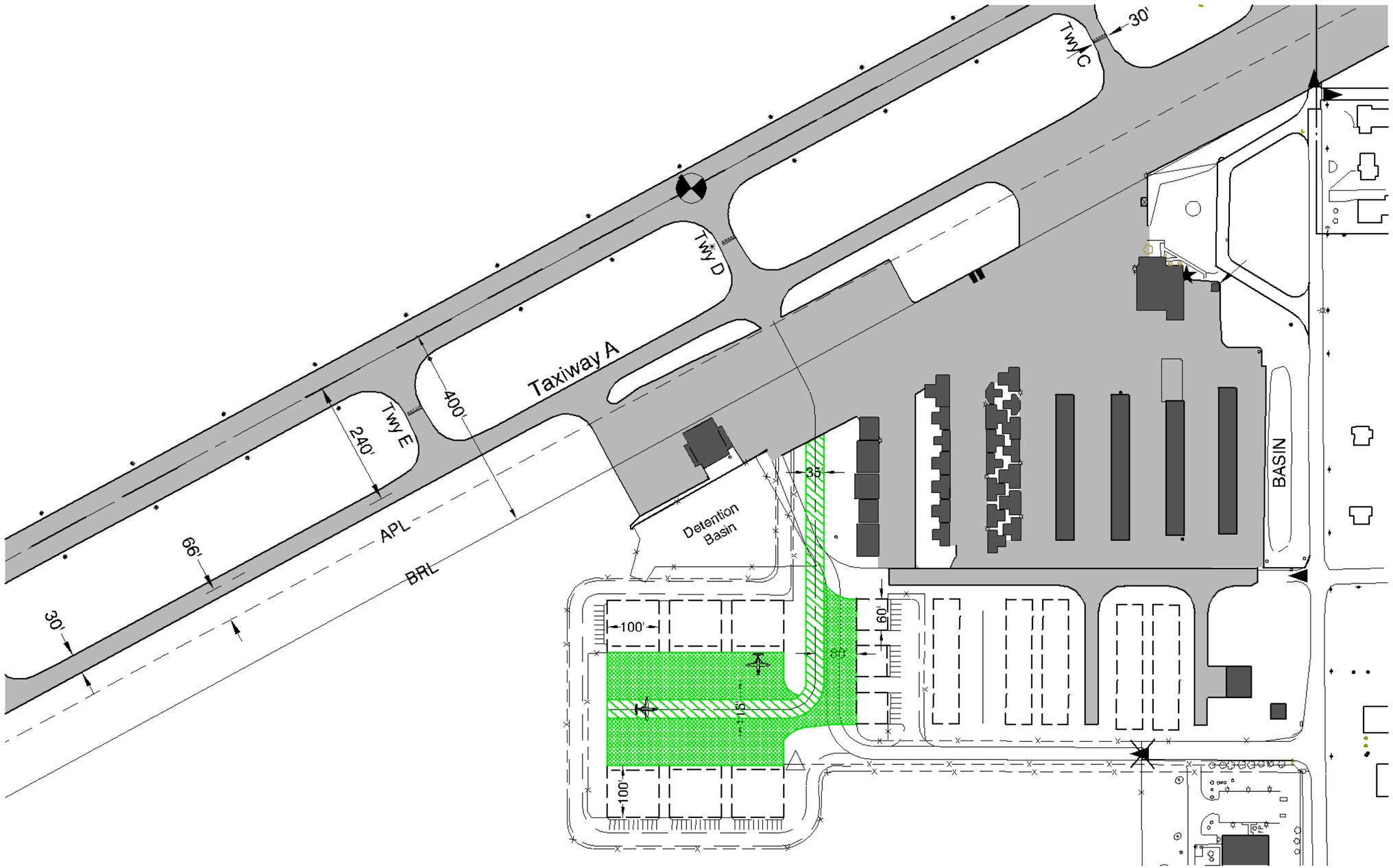

TOTAL ACREAGE:

FAA Eligible (Taxiways)

FAA Non-eligible (Aprons)

Figure 4C

Box Hangar Alternative 3

Hanford Municipal Airport

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