

Airport Plans

Introduction

The plan for the future development of King County International Airport/Boeing Field has evolved from an analysis of many considerations. Among these are: aviation demand forecasts and facility requirements; aircraft operational characteristics; environmental considerations; and as characterized in the previously noted statement of goals, the general direction of airport development prescribed by airport management. Forecasts are utilized as a basis for planning; however, facilities are only to be constructed to meet actual demand.

Previous chapters have established and quantified the future development needs of the airport. In this chapter, the various elements of the plan are categorically reviewed and detailed in summary and graphic format. A brief written description of the individual elements, represented in the set of *Airport Plans* for KCIA, is accompanied by a graphic description presented in the form of the *Airport Layout Plan (ALP)*, the *Airport Airspace Drawings*, the *Inner Portion of the Approach Surface Drawings*, the *Terminal Area Plans*, the *Airport Property Map*, and the *Land Use Drawing*.

Airport Layout Plan

The Airport Layout Plan (ALP) is a graphic depiction of existing and ultimate airport facilities that will be required to enable the airport to properly accommodate the forecast future demand. In addition, the ALP also provides detailed information on both airport and runway design criteria, which is necessary to define relationships with applicable standards. The following illustration, entitled *AIRPORT LAYOUT PLAN*, and the following paragraphs describe the major components of the future airport Development Plan.

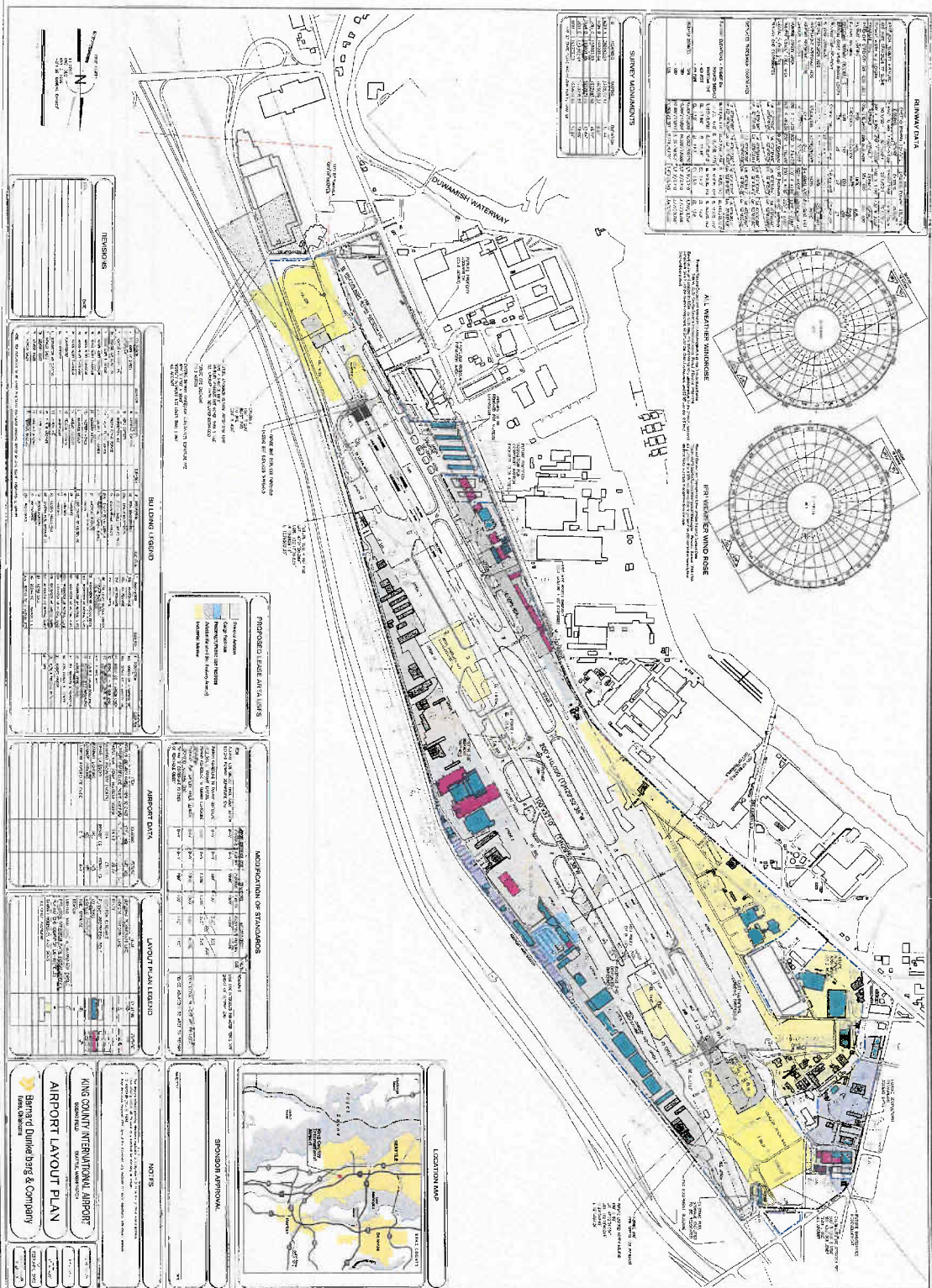


Figure E1 Airport Layout Plan

Airspace Plan

The Airport Airspace Drawing is based upon Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*. In order to protect the airport's airspace and approaches from hazards that could affect the safe and efficient operation of aircraft, federal criteria contained in the FAR Part 77 document have been established to provide guidance in controlling the height of objects in the vicinity of airports. FAR Part 77 criteria specify a set of imaginary surfaces, which, when penetrated, identify an object as being an obstruction.

The *AIRPORT AIRSPACE DRAWINGS*, which are illustrated in the following figures, provide plan and profile views depicting these criteria as they specifically relate to KCIA. The plan is based on the ultimate planned runway lengths and helipad locations, along with the ultimate planned instrument approach capabilities associated with each runway end or helipad location. For the runway system, it is based on larger-than-utility criteria with precision instrument approaches to Runway 13R/31L and visual approaches with utility criteria for Runway 13R/31L. The helipad approaches are visual.

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Runway System

The airport's runway configuration will remain structured around two runways. The primary runway, Runway 13R/31L, will be retained as at its existing length and width (10,000' x 200'). The major improvement identified on the Airport Layout Plan is to provide the FAA specified Runway Safety Area on the south end of the main runway.

As explained in the previous chapter, in order to meet the safety area criteria and maintain the 10,000 foot takeoff runway length, a system of improvements is recommended. This system of recommendations includes construction of additional runway pavement on the north end of the runway and implementation of declared distances criteria. As a result of these recommendations, the airport is able to retain a 10,000 foot runway length for takeoffs (accelerate stop distance available) in both directions, although the landing length in both directions will be only 9,200 feet.

The secondary runway, Runway 13L/31R, will remain at its existing length (3,710') and width (100'), with its existing displaced approach thresholds (Runway 13L - 250', Runway 31R - 375').

Another important consideration related to runway development at KCIA is the existing and planned instrument approach system.

- Runway 13R and Runway 31L currently have Instrument Landing System (ILS) precision approach capabilities that will be maintained.
- The current ILS capabilities will be supplemented with Transponder Landing System (TLS), Localizer Type Directional Aid (LDA), and Global Positioning System/Flight Management System (GPS/FMS) capabilities, if these newer systems prove to be of benefit in providing improved approach capabilities or in providing improved flight track management.
- Runway 13L/31R will continue to be a visual approach only facility.

Land Acquisition. The only specific land acquisition identified, is the acquisition of Runway Protection Zone Easement in the area where the Runway 31L Runway Protection Zone extends off of airport property. Because the airport is constrained by lack of land, any area within the airport's street-related geographic boundary (East Marginal Way, South Norfolk Street, Airport Way South, South Hardy Street, Albro Place South, and Ellis Avenue) that is available for acquisition should be purchased. These areas of potential land acquisition are indicated on the Airport Layout Plan.

Runway Approach Instrumentation and Lighting. The existing instrument approach capabilities to Runway 13R/31L are to be maintained with the existing approach lighting system (portions to be placed "in-pavement" with construction on new pavement on north end of runway) serving Runway 13R and ground based NAVAID system. The addition of Precision Approach Path Indicator (PAPI) lights and Runway End Identifier Lights (REILS) serving both ends of Runway 13L/31R is recommended.

Taxiway System

The existing parallel taxiway systems are to be maintained with no major modifications. Improvements related to the provision of additional exit taxiways serving Runway 13R/31L are the only significant taxiway projects illustrated on the ALP. A new angled exit taxiway (north of Taxiway A4) is programmed for the east side of the runway and Taxiway B2 is programmed to be widened and strengthened for use by large aircraft on the west side of the Runway. The need for these exit taxiway improvements is driven by the fact that KCIA is a very busy two runway airport. By providing well located exit taxiways, runway occupancy times for landing aircraft can be minimized and the ability to efficiently accommodate aircraft operations is increased. These exit taxiway improvements are supported by Air Traffic Control Tower personnel.

Landside Development

The ALP also allocates various development areas for landside facilities. Landside facilities include terminal facilities, aircraft parking aprons, hangars, aircraft maintenance facilities, aerospace facilities, automobile access and parking, support facilities, etc. Detailed descriptions of these landside development areas are provided in the *Landside Development Area* section of this chapter.

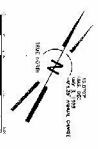
On-Airport Land Use. In general, on-airport land use patterns at the airport will remain the same as they are presently. The west side of the airport will continue to be dominated by aerospace uses with some general aviation facilities. The northwest corner of airport property will continue to be non-aviation (not requiring taxiway access) facilities. The east side of airport property will continue to be a mix of general aviation facilities, air cargo facilities, and passenger terminal facilities. The smaller general aviation hangars and aprons will be located on the north and south ends of the east side development area, while the larger corporate general aviation facilities, the air cargo facilities and the terminal facilities will be centrally located.



PLAN VIEW NORTH APPROACHES

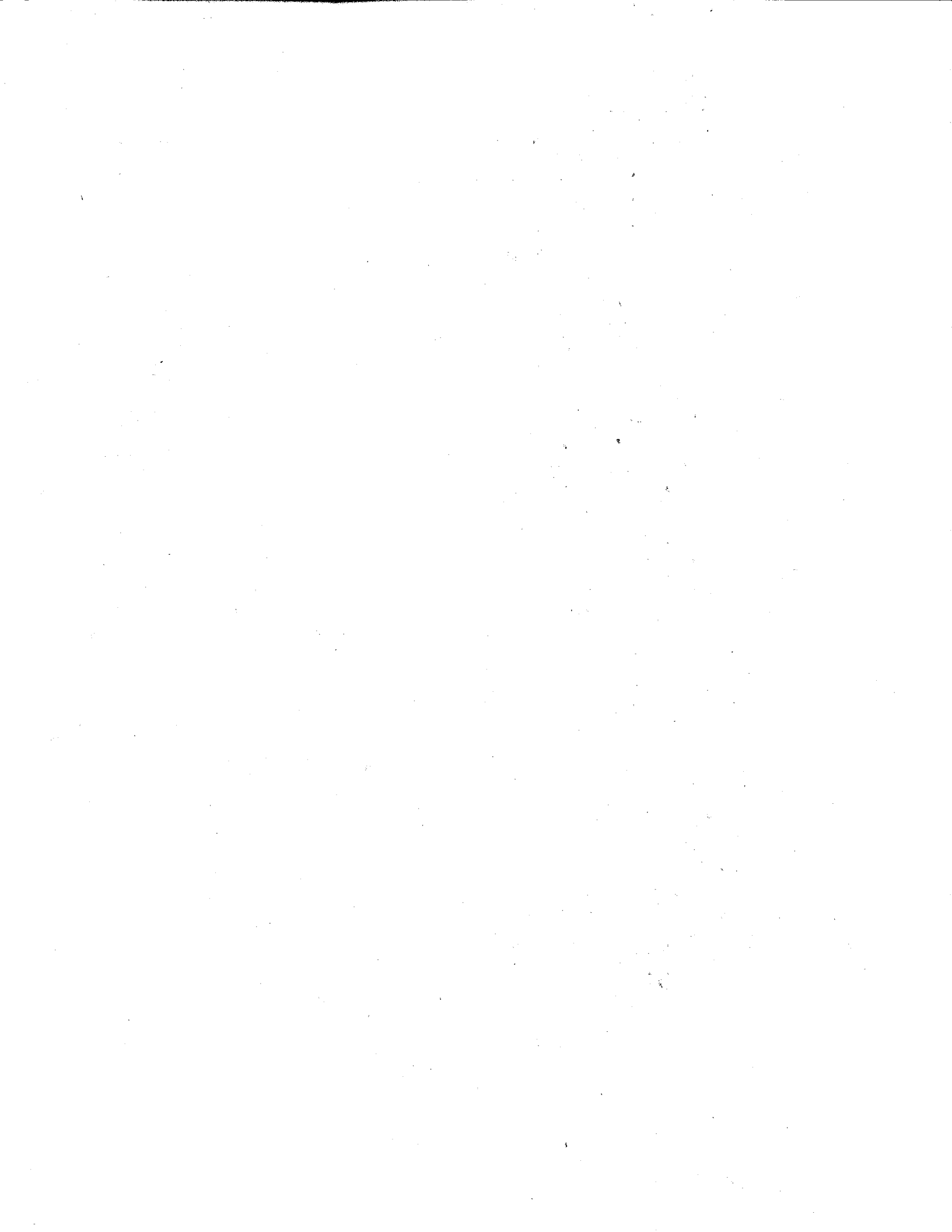
PART 77 OBSTRUCTIONS

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Figure E2 Airport Airspace Drawing-North Approach



Inner Portion of the Approach Surface Drawings

To provide a more detailed view of the inner portions of the Part 77 imaginary approach surfaces and the Runway Protection Zone (RPZ) areas, the following drawings are provided. An RPZ is trapezoidal in shape, centered about the extended runway centerline and typically begins 200 feet beyond the end of the runway. The RPZs are safety areas within which it is desirable to clear all objects (although some uses are normally acceptable). The size of the RPZ is a function of the design aircraft and the visibility minimums associated with the runway's instrument approach capabilities.

The *INNER PORTION OF THE APPROACH SURFACE DRAWINGS*, which are depicted in the following illustrations, provide large-scale drawings with both plan and profile delineations. They are intended to facilitate identification of the roadways, utility lines, railroads, structures, and other possible obstructions that may lie within the confines of the inner approach surface area associated with each runway end. As with the *AIRPORT AIRSPACE DRAWINGS*, the *INNER PORTION OF THE APPROACH SURFACE DRAWINGS* are based upon the ultimate planned runway length, along with the ultimate planned approaches to each runway.

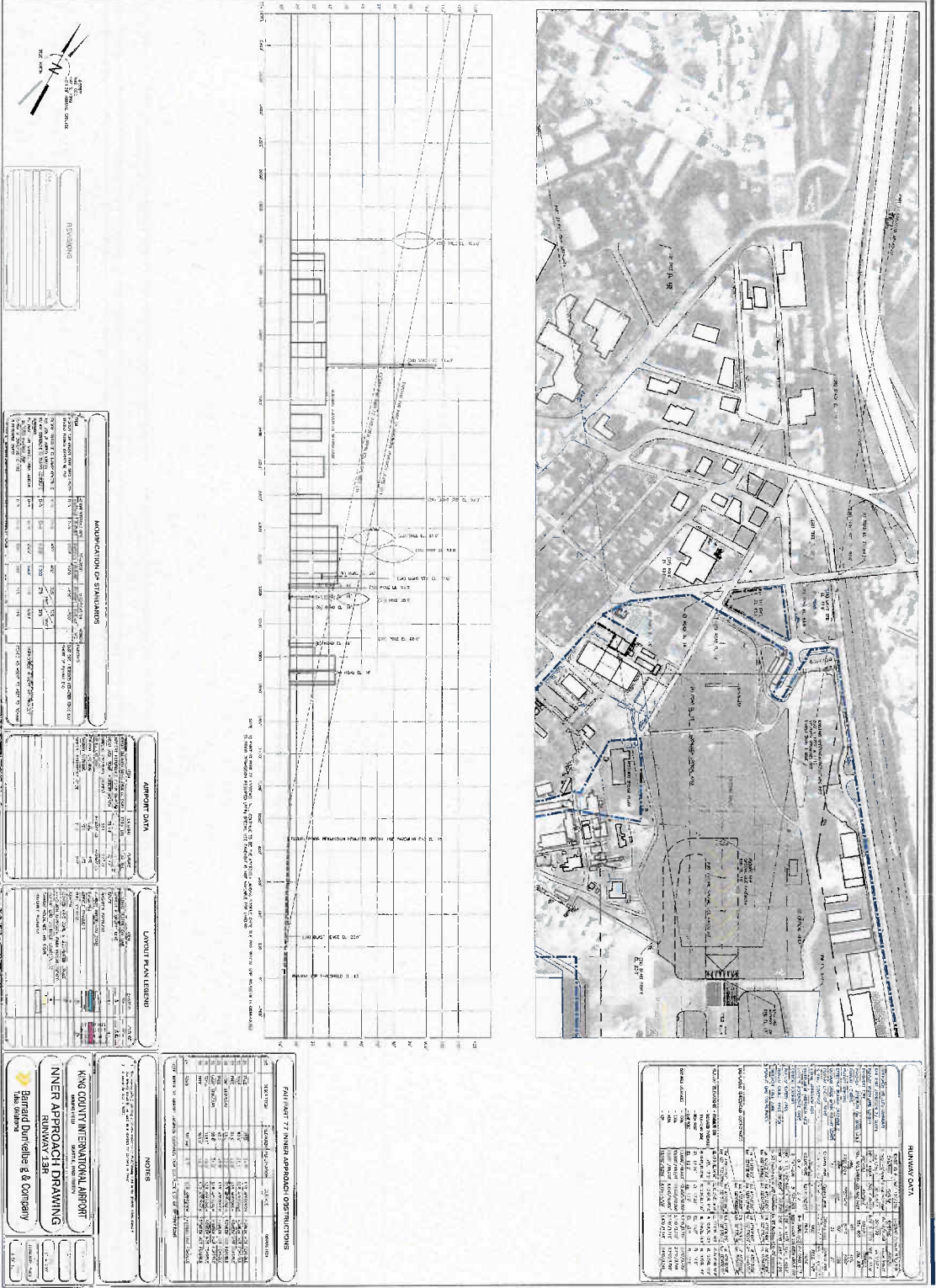


Figure E5 Inner Approach Drawing Runway 13R

Landside Development Area Plan

The following illustrations, entitled *TERMINAL AREA PLANS*, present a detailed view of the more intensely developed landside use areas on the airport.

Terminal Area Plan North Area

The *TERMINAL PLAN NORTH AREA*, presents a detailed view of the northern one-half of airport property. On the west side of the runway system, the Boeing Lease area is the dominant land use. As described in the previous chapter, the northwest corner will continue to be utilized by those facilities that do not require taxiway access. Taxiway access to the northwest area is not possible due to flight safety considerations associated with the inner approach area of Runway 13R.

On the east side of the runway system the *TERMINAL PLAN NORTH AREA* illustrates the general aviation, terminal, and cargo development proposed on the northern portion of airport property.

Terminal Plan South Area

The *TERMINAL PLAN SOUTH AREA*, presents a detailed view of the southern portion of airport property. On the west side of the runway system, air traffic control tower/ARFF facilities are located toward the north end of the drawing, with general aviation development located further south.

On the east side the plan provides a graphic description of the general aviation and air cargo facilities programmed for the southern end of airport property.

Airport Property Map

The *AIRPORT PROPERTY MAP*, which is presented in the following illustration, indicates how various tracts of land within the airport boundaries were acquired (e.g., Federal funds, surplus property, local funds, etc.). The purpose of the Airport Property Map is to provide information for analyzing the current and future aeronautical use of land acquired with Federal funds.

Land Use Drawing

The *LAND USE DRAWING*, presented in the following figure, depicts existing and recommended use of all land within the ultimate airport property line and in the vicinity of the airport (including the area contained in the future 65 DNL noise contour). The purpose of the Land Use Drawing is to provide airport management a plan for leasing revenue-producing areas on the airport. This map can also provide guidance to local authorities for establishing appropriate land use zoning in the vicinity of the airport.

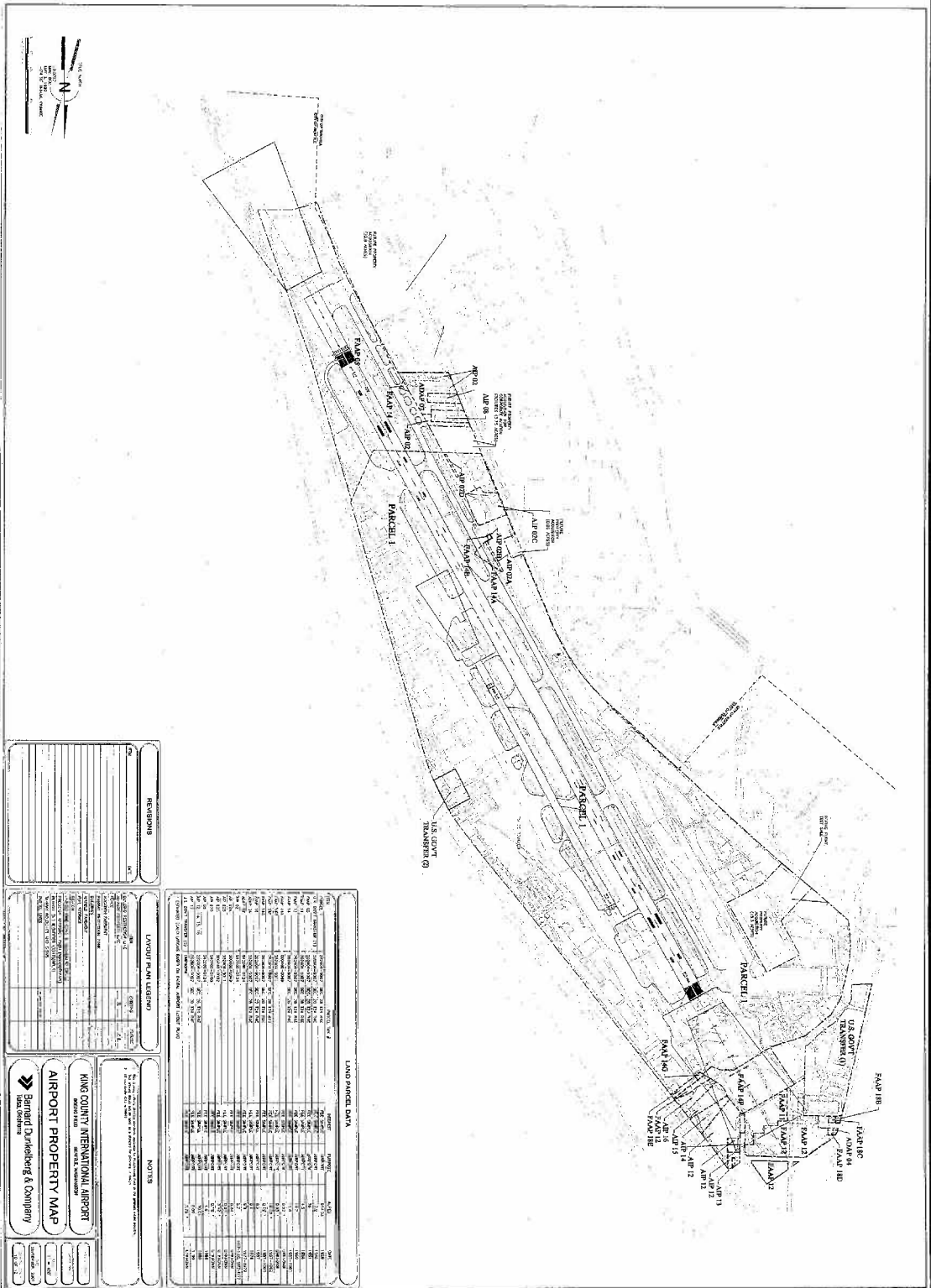


Figure E10 Airport Property Map

