

CHAPTER XI. CONCEPTS FOR OTHER AIRPORT FACILITIES

1. PROPOSED AIR CARGO FACILITIES

The comparison of existing air cargo building space with projected demand (Chapter VII) indicates that demand will not exceed supply of 200,000 square feet (inclusive of the third cargo building, constructed in 1988) until about 1997-98. Between 1997 and 2007, an additional 86,000 square feet of space or the equivalent of one more linear building will be required.

The total available area of air cargo ramp is about 170,000 square yards, including some 73,000 square yards which is jointly used by air cargo aircraft and as an overflow area for parking of passenger aircraft.

Air cargo activity levels can fluctuate quickly, responding to decisions by individual companies to serve Phoenix or to establish sorting facilities at the airport. The above requirements represent predictable regular growth. If an unpredicted surge in demand were to occur in the future, the airport should be able to accommodate it.

The additional building and ramp areas could be developed either to the west of the existing cargo areas (after relocation of the airport maintenance facility) or to the east of the existing area (after removal of Terminal 1). These areas are shown on Figure IX-1. Either location would preserve the integrity of the cargo area. The easterly extension would be closer to the passenger air carrier ramps and would involve less travel by ground vehicles moving between the two areas. It would be limited operationally to some degree by cross-airport movements of aircraft on proposed Taxiway Z. Longer-term expansion of cargo to the east of Taxiway Z would become feasible after Terminal 2 is closed in the year 2000.

The availability of this long-term expansion space would meet post-2007 needs for routine air freight activities and would also enable the city to provide space for unanticipated growth.

The recommendation is to develop the predicted fourth air cargo building and ramp to the west of the existing facilities, reserving the area between the existing cargo area and T-3 (after removal of T-1 and T-2) for undetermined future expansion of passenger terminal facilities or of cargo facilities beyond the Year 2007.

2. PROPOSED GENERAL AVIATION FACILITIES

The location of general aviation activity centers on the airport are basically established. These are:

- the FBO and Executive Terminal on the south side of Runway 8L-26R;
- the corporate hangar area on the north side of Runway 8L-26R; and
- the Cutter facility on the south side of the airport.

In all of these locations (shown on Figure XI-1), recent development has taken place either by the city or by private interests (FBOs, corporate users) consistent with city policy. There are advantages to consolidation of general aviation functions at the south side of the airport and away from Runway 8L-26R. This would:

- improve aircraft movements along Taxiways A, AA, B and BB; and
- improve general aviation access to the proposed third runway, which will be shorter than the existing runways.

It is recommended that the general aviation functions remain generally as they are today, but as demand shrinks, general aviation facilities be reduced in scale on the north side of the airport. The airline gates are concentrated on the north side and removal of lighter aircraft would improve the north side of the airport operationally. Some of the T-hangars at the west end of Runway 8L-26R will be removed by the proposed hold area.

3. PROPOSED SUPPORT FACILITIES

A. City Maintenance Facilities

The existing maintenance facilities are scheduled to close in 1989 and be replaced by a new facility fronting Buckeye Road. There is adequate room in this location for expansion post-2007.

B. Airline Maintenance Facilities

The demand for airline maintenance space are dependent upon airline policy, making systematic forecasting difficult. A loss of maintenance capacity will occur when the DynAir facility is removed to allow for the expansion of Terminal 4. Alternative locations for expansion are limited. They include:

- the area west of the present cargo buildings, approximately 13 acres in extent, about the same size as DynAir. This area has been regarded as the direction for future expansion of air cargo facilities. This was the rationale for the current relocation of airport maintenance facilities to the Buckeye Road site. It is recommended that the site be retained for future cargo expansion.

- a small area on the south side of the airport adjacent to Cutter. This area may be included in the realignment of the Air National Guard boundaries. In all events it has limited potential because of its size and juxtaposition to the Cutter facility. This site is not recommended for airline maintenance.
- a strip of land which it is recommended be acquired on the northeast side of the airport adjacent to Air Lane. This tract south of Air Lane relocated adjacent to the Southern Pacific Railroad is about 350 feet wide by 2,500 feet long, a total of 20 acres. This tract respects the 750-foot building restriction line. It is not ideally dimensioned for airline maintenance facilities but would permit construction of up to 36-foot height at the southern boundary and up to 86 feet at the northern boundary of the tract. Tail height of the B-737 is 36 feet. Tail height for the B-757 is 44 feet. Parking of these two representative aircraft types in an apron backing on to Air Lane relocated would be a workable layout. Ancillary storage, administrative and automobile parking spaces would likely be located with separate frontage as Air Lane. This is a narrow site but with a linear layout of buildings and aircraft parking positions, it would meet the maintenance needs of all but the larger aircraft in the fleet. This is a potential site for airline maintenance. Depending on the demand, the two general aviation hangars in this area would have to be relocated in the long-term.
- a small area east of Taxiway W and south of Sky Harbor Boulevard. This area lies between the Building Restriction Line (BRL) for Runway 26L and Sky Harbor Boulevard. The possible construction heights are about 36 feet at the BRL and about 110 feet adjacent to the roadway. Development of limited airline maintenance at this site is feasible, but reservation for future undefined aviation uses is recommended for this very strategically located tract.

America West is planning extensions of its existing maintenance facility to the east to accommodate B-757 and B-747 aircraft.

C. Fuel Storage Facilities

It is the policy of the airport to consolidate fuel storage into the north-eastern corner of the airport and remove the underground storage tanks at various other locations adjacent to the DynAir maintenance hangar and Gate 207. This consolidation will include an airline storage area and a city storage area. The FBOs will provide their own storage facilities.

The airline storage tanks are currently owned by a consortium of airlines and managed and operated by DynAir. Fuel from the facility is piped underground to hydrant pits located at all gates at Terminals 2 and 3 and at four gates at Terminal 1. The facility consists of 2 x 30,000-barrel tanks (2,520,000-gallon total capacity). A third tank of 15,000-barrel capacity is planned. This will raise the total storage of Jet-A fuel to 3,150,000 gallons; adequate for the

predicted demand in 2007. All gates at T-3 and T-4 will be served by hydrant fueling points. There is adequate space at the existing facility for construction of the additional tank.

The city storage facilities currently total 382,000 gallons of Jet-A fuel and 90,000 gallons of AVGAS in six locations on the airport. All of these should be removed. A consolidated facility in the northeastern part of the airport would consist of two 1,500-barrel storage tanks of Jet-A (totaling 126,000 gallons) and one 1,500-barrel tank of AVGAS (totaling 63,000 gallons). The facility should have a truck loading rack which would serve all fuel trucks on the airport. Trucks would service the Executive Terminal, air cargo aircraft and commuter aircraft from this location. The city facility will be located adjacent to the realignment of Air Lane - 40th Street and should ideally be served by a spur from the South Pacific Railroad.

D. Airport Rescue and Firefighting Facilities (ARFF)

The existing building is ideally located with respect to meeting FAA criteria for access to the runways. The development of the northwest concourse of Terminal 4 will result in a minor interaction with the ARFF. No gate on the concourse would be unusable, although there would be some restrictions placed on aircraft parking at the gate immediately adjacent to the terminal building. The temporary shelter for two emergency vehicles would require relocation. The emergency vehicles may be housed in a southerly extension of the ARFF building. Increased operational levels will not require additional vehicles.

If future aircraft maneuvering requirements result in significant restrictions, it may become necessary to relocate the ARFF. This is not anticipated, but alternative sites are the parking areas at the north and south sides of Sky Harbor Boulevard immediately west of proposed Taxiway Y.

E. Air Traffic Control Tower and Other FAA Facilities

From the present FAA Air Traffic Control Tower, controllers have limited visibility of a 575-foot section of Taxiway X. The line-of-sight crosses the taxiway at heights which vary from 7.5 feet to 16 feet. Aircraft with tail heights of less than 16 feet are not visible for a distance of 230 feet.

The line-of-sight between the existing tower and crossover Taxiway W, currently under construction, will be more seriously affected when Terminal 4 is constructed. The line-of-sight for controllers will be 30 feet above the taxiway for a 420-foot length of the taxiway. In addition, much of the north apron to T-4 will be obscured.

The line-of-sight for the existing ATC tower personnel in an east-west direction, parallel to the central spine of the terminal area, is shown in Figure XI-3.

The height of the existing cab is the maximum permissible to meet FAA Part 77 criteria, although FAA could clearly grant a waiver if overall operation and safety considerations demanded it.

The analysis examined two alternative locations for the tower to determine if either would provide better coverage of the critical cross taxiways than the existing location. The locations are:

- Alternative 1 - East of Terminal 3 and west of Taxiway X
- Alternative 2 - East of Taxiway X and west of Terminal 4

The lines-of-sight for these locations are also shown in Figure XI-1. For Alternative 1, coverage of Taxiway W would not be significantly improved, and Taxiways X, Y and Z would be visible from the tower.

Alternative 2 would provide significant benefits, providing clear lines-of-sight to all runways and cross taxiways. It would, however, result in larger shadows from the Terminal 3 concourses. Current development of T-4 calls for a three-level rental car facility at the west end of the terminal building to include facilities for automobile washing and fueling. The construction of a replacement tower in this location would be complicated but not eliminated by these uses.

An alternative to the construction of a new tower would be raising the level of the existing tower to reduce the line-of-sight problems. This cannot be done in compliance with FAR Part 77 criteria.

The tower was constructed at its present site contrary to the recommendation of the city. The resolution of the line-of-sight problem is, therefore, regarded as the responsibility of the FAA. The Alternative 2 location will be congested by rental car facilities and ramps for T-4, but it is a feasible site for possible development by the FAA at a later date.

F. Miscellaneous Uses, West End of Airport

Alternative locations for a series of airport support functions were examined in an analysis of the entire west end of the airport. The generally compatible uses to be accommodated in this area are:

- the U.S. Postal Service has requested that a 4 to 5-acre site be provided for a 70,000-square foot facility. It would need good public access and would include a retail outlet and financial center. A key location requirement is direct ramp access.
- potential expansion of the air cargo ramp to the west and construction of an additional air cargo building;
- airport maintenance facility;

- airline ground equipment maintenance facilities for USAir, TWA and Delta Airlines with opportunity for other airlines to locate similar operations in the area;
- U.S. Postal Service for on-airport postal facility;
- employee parking, for the airport maintenance and air cargo facilities; and
- taxicab, limousine, and bus hold lot.

The location shown in Figure XI-2 best meets the requirements.

The current postal facility is located in the new cargo building. The replacement facility should be located at one of the sites assigned for "Future Aviation Related Use" in the west end layout.

G. Airline Flight Kitchens

Locations for flight kitchens are established. Facilities are either constructed or planned for Sky Chefs and Marriott in the areas west of the existing location of 24th Street. These meet foreseeable needs.

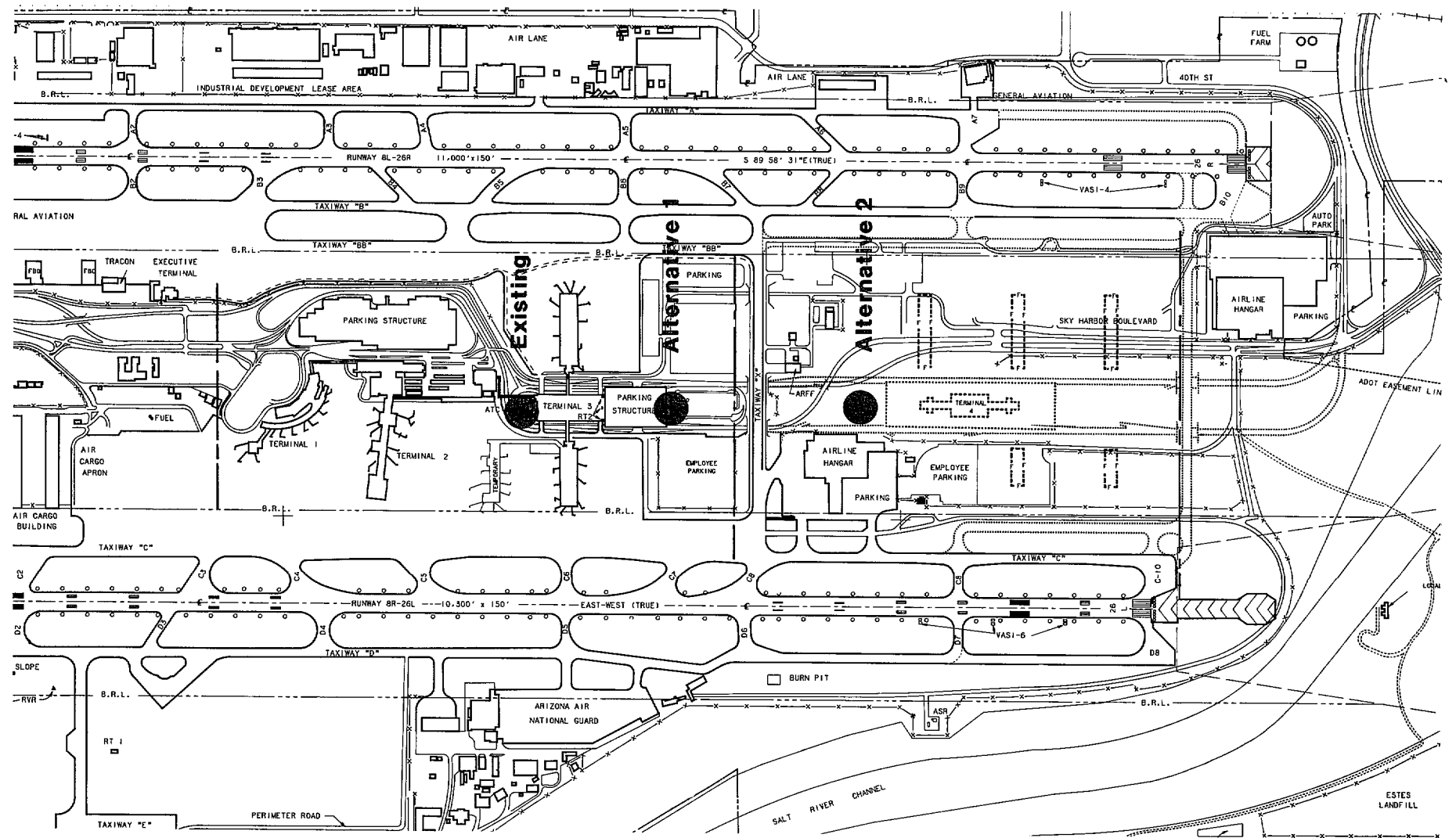
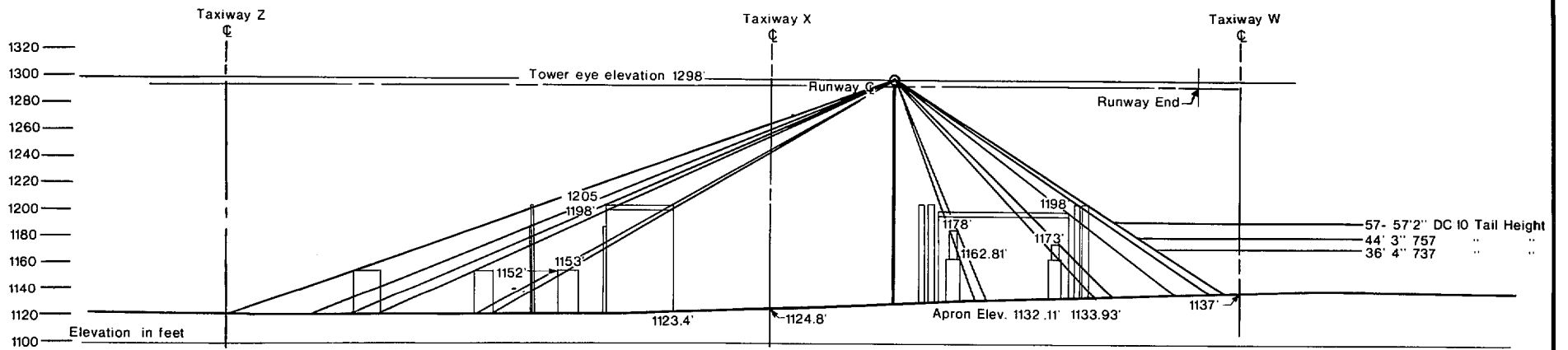
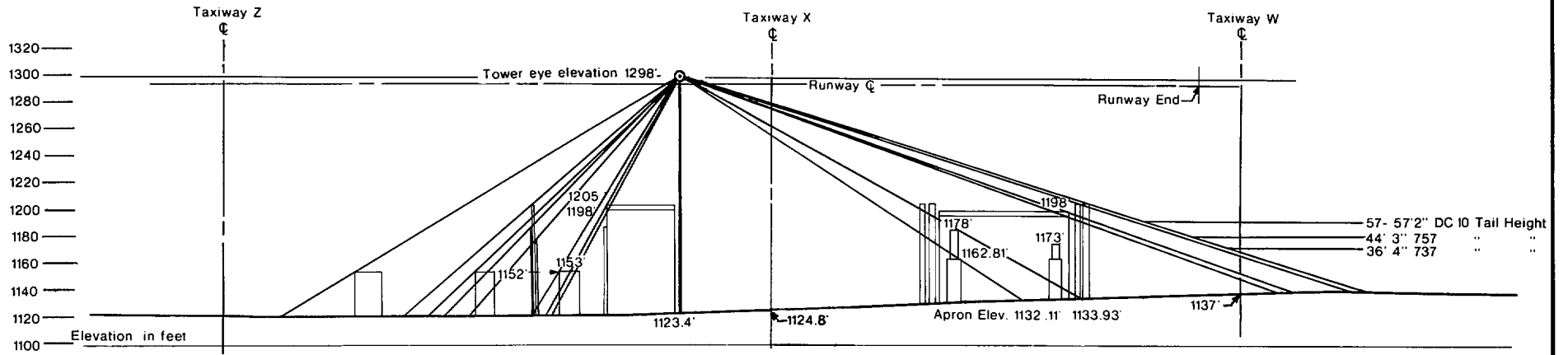
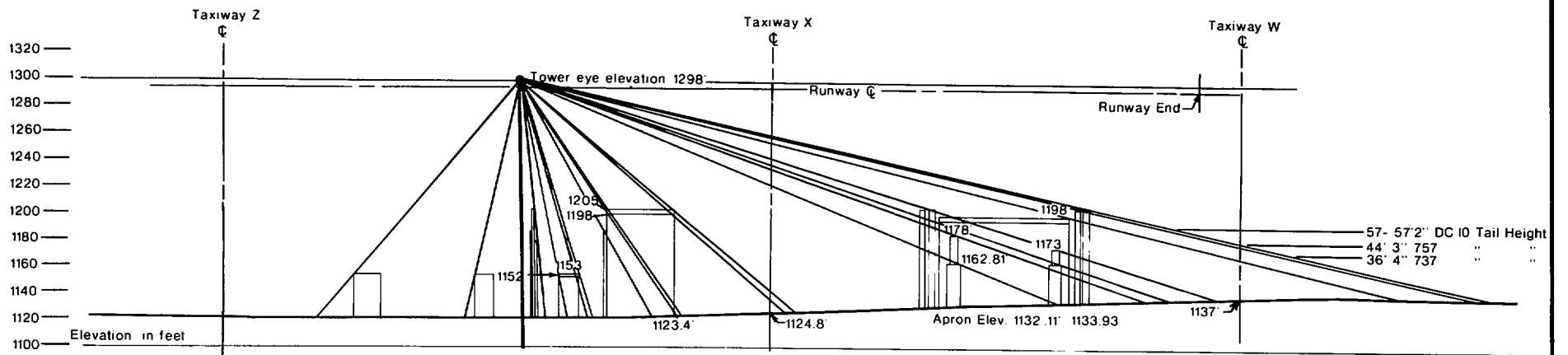
H. Airport Hotel

The need and potential locations for a first-class hotel at Sky Harbor have been the subjects of study since 1985. The current study examines alternative sites for a nationally recognized hotel including the following features:

- 300 guest rooms (of 350-500 square feet)
- 10,000 square feet of meeting/banquet space
- 100-seat dining room
- 75-seat coffee shop
- 125-seat cocktail lounge
- Swimming pool
- Health club/exercise room
- Tennis court/racquetball court
- Gift shop

The sites evaluated were:

- existing airport hotel site expanded to the west;
- employee parking lots immediately north of the existing airport hotel site;
- vacant land east of the proposed Taxiway "W" and south of Sky Harbor Boulevard;



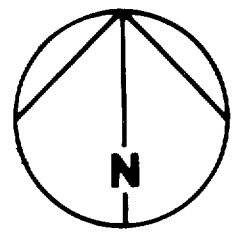
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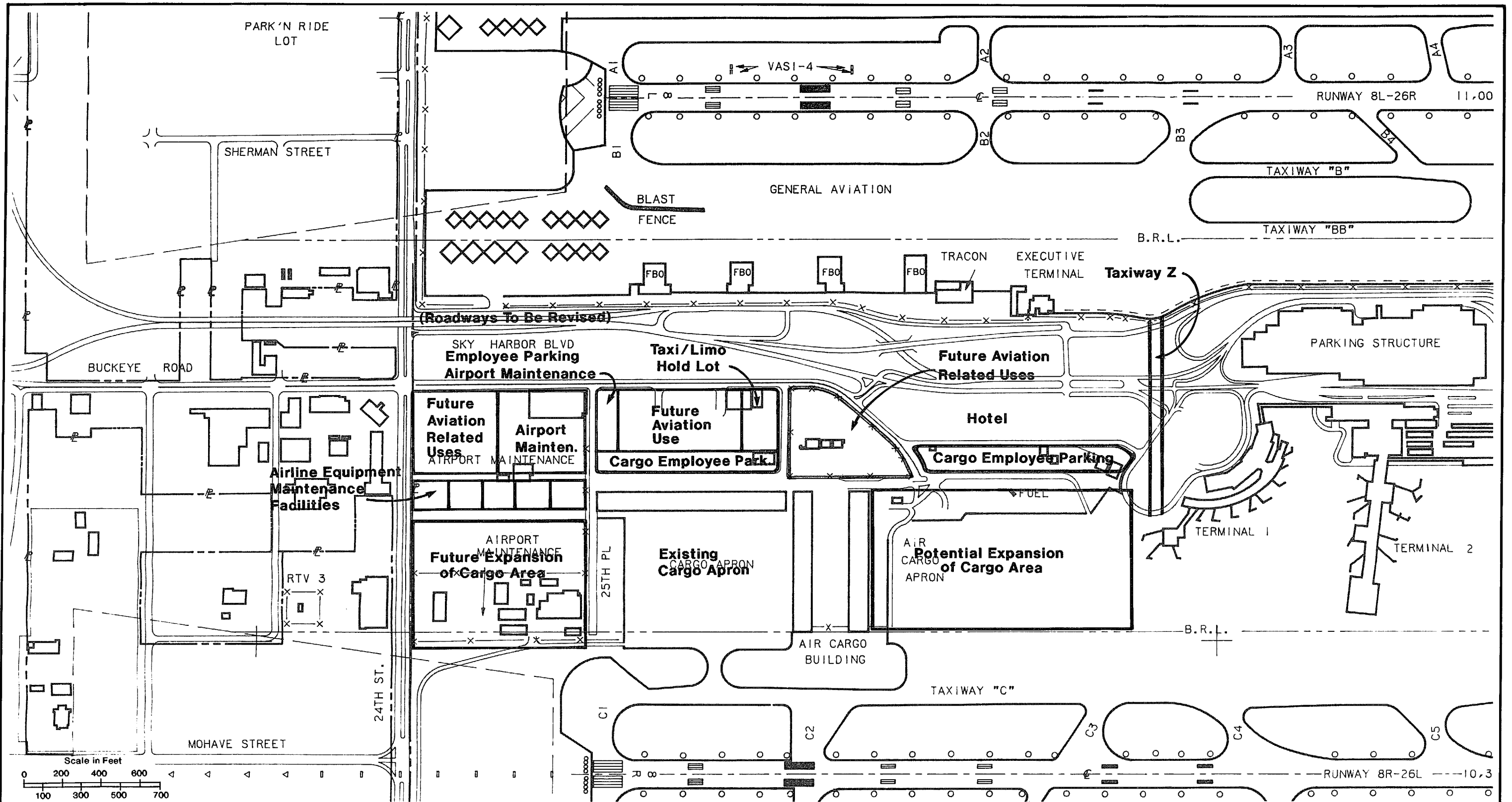


PHOENIX SKY HARBOR INTERNATIONAL AIRPORT MASTER PLAN UPDATE

ATC Tower Location Analysis

Figure XI-1





PHOENIX SKY HARBOR INTERNATIONAL AIRPORT MASTER PLAN UPDATE

Layout, West End Of Airport

Figure XI-2

<p>----- Airport Boundary</p> <p>----- Runway Safety Area</p> <p>----- Runway Clear Zones</p> <p>----- Runway Centerline</p>	<p>----- Building Restriction Line</p> <p>----- Railroad</p> <p>----- Fenceline</p> <p>----- Future Development</p>	<p>▭ Future Pavement</p>	
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- site west of the cargo area adjacent to 24th Street; and the
- site on the present location of Terminal 1.
- Site on the present location of the International Terminal, immediately west of Terminal 3.

The conclusion of this analysis is that Site 1, the existing hotel site with the western extension, is the most feasible site. Extension to the west would entail removal of two small commercial office buildings.