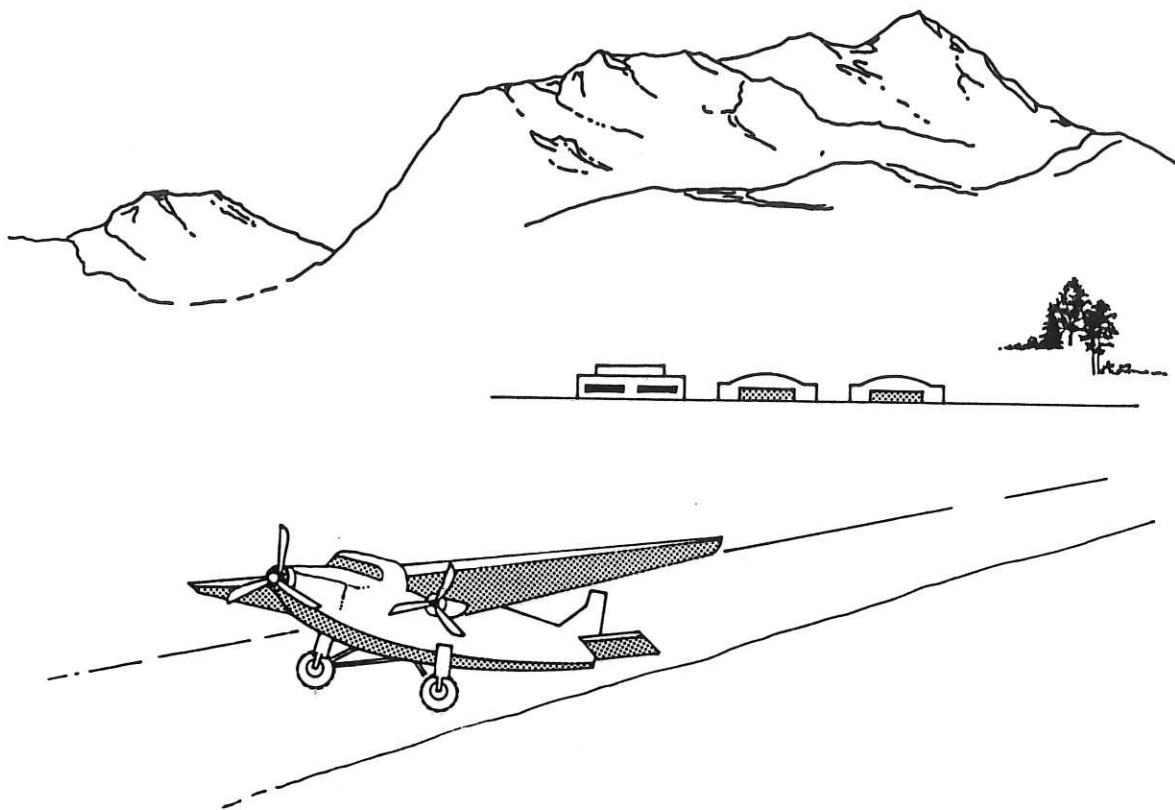


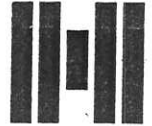
*Master Plan*  
*for the*  
**HEBER CITY AIRPORT**  
*-1984-*



**HORROCKS  
ENGINEERS**

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June 29, 1984

Heber City Council  
37 East 100 North  
Heber City, Utah 84032

Subject: Heber City Airport Master Plan

Gentlemen:

Transmitted herewith are ten (10) copies of the completed Master Plan for the Heber City Airport - 1984.

This Master Plan examines future needs and demands from projections based on data that was available in 1983-84.

It has been a pleasure to be able to serve you.

Very truly yours,

HORROCKS ENGINEERS

H. Lee Wimmer, P.E.  
Project Engineer

mp

Enclosures



HEBER CITY  
AIRPORT MASTER PLAN  
for  
1984 to 2000

Prepared By  
HORROCKS ENGINEERS  
One West Main Street  
American Fork, Utah 84003

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## INTRODUCTION AND SUMMARY

The purpose of the Heber City Airport Master Plan is to present detailed guidelines for future airport development that will satisfy the aviation demands of Wasatch County and be compatible with the environment, community development, other modes of transportation and other airports.

The Master Plan examined future need and demands from projections based on data that was available in 1983. The master plan should be reviewed and updated in future years to adjust for conditions and needs that do not meet the 1983 projections.

Heber City and the surrounding area has had basically a rural - agricultural oriented economy in the past. Recent years have produced a shift in the economy from agriculture to recreation. The economy currently relies heavily on skiing, boating, fishing, hunting, wind surfing and sail planes. Many condominium projects and proposed resort areas indicate a continued rapid growth.

The Heber Airport was built in 1946 and is classified by the Federal Aviation Administration as a Basic Utility, Stage I. An airport with this classification is capable of accommodating planes with a gross weight of 12,500 pounds including most single and twin engine planes. Usually, a Stage I airport is only the first step towards the development of a Stage II facility. The Utah Department of Transportation State Airport System Plan has designated Heber Airport for expansion to a Stage II facility within the next 15 to 20 years.

The Airport Layout Plan, Sheet 2 in the Appendix, identifies the major improvements that are needed to upgrade the airport to a Basic Utility, Stage

II classification. Staged development is planned over the next twenty years to provide for future demands as they occur, and to ease the burden of financing the project all at once. The total costs estimated for all of the improvements recommended within this master plan are \$2,193,190, with \$429,935 to be used during the first five years, \$528,888 to be used in five to ten years and \$1,234,367 to be used during the final ten years. It is anticipated that the Federal and State governments will share in most of the costs at approximately 90.94% and 4.53% respectively.

This Master Plan is to be periodically updated depending upon air traffic and population growth as well as economic conditions. Users of this Master Plan are also advised that although funding through the Federal Aviation Administration and the Utah Department of Transportation is specified, the funds are not necessarily available at the time. All projects requesting federal funding are prioritized with other projects throughout the state and may or may not be funded. In addition, parts of a project may be funded while another part may not.

SECTION I  
EXISTING AIRPORT INVENTORY

I-1      Historical Review

Heber City is located approximately 30 miles northeast of Provo, Utah at the junction of U.S. Highways 189 and 40. Geographically the City is in the center of a large valley east of the Wasatch front.

The Heber Airport was constructed in 1946. Its major purpose was to provide light air service for the agriculture-oriented economy as well as to provide closer air access to the Park City area. In the last 20 years, recreational uses have dominated the airport's activities. Additional ski resorts, hunting, fishing, horse racing, and water skiing have contributed to most of the activity. However, the airport itself has seen increased recreational flying and sail planning.

Recent reports and studies have indicated that in the next 5 to 10 years, the Heber Airport will need to be upgraded to accommodate the projected air traffic. Studies such as the Utah State Airport System Plan (updated-1981) and the Airports System Plan (1981) prepared for the Wasatch Front Regional Council and Mountainlands Association of Governments show that increasing ski resorts and overcrowding at Salt Lake International will bring an increase of light aircraft to the airport.

I-2      Inventory of Existing Airport

The Heber Airport is listed as a Basic Utility, Stage I facility and is included in the National Airport System Plan (NASP). The runway is 4,400 feet by 100 feet and has an asphalt surface designed for aircrafts of 4,000 pounds



or less. However, the airport generally services aircraft up to 12,500 pounds including some twin engine aircraft and an occasional lear jet and turboprop plane. There are no available hangars and only enough tiedowns for approximately 15 small planes.

The airport is served by a nearby city well that does not provide fire protection. Sewage disposal is provided by a septic tank and drain field system.

#### I-3      Meteorology

There is not a meteorological station in the Heber area. All measurements of temperature and wind speed are unofficial.

Heber Valley generally has better flying conditions than surrounding airports. Because of its elevation and surrounding mountains, the Valley receives little to no fog. This along with the dry intermountain weather accounts for a generally clear weather condition.

Winds at the Heber Airport occur primarily in the summer months. Winds off Dear Creek Reservoir to the south blow parallel to the runway in the afternoons. The winds blow counter to the runway flight pattern which make takeoffs and landings easier.

The hottest month in the Heber area is July and the July monthly mean maximum daily temperature is 87°F.

#### I-4      Financial Data

The airport is managed by a private company which operates a small sail plane business and sells small aircraft fuel. Because of the small scale of operation, there is very little overhead and expenses for the private party.

The major expense for the airport is snow removal during the winter months. This expense, along with runway lighting and weed control is assumed by Heber City. A breakdown for the expenses, both City and private, for the fiscal year 1982 is shown in Table I-2.

Income for the private company is from sail plane activities and fuel sales. City income is generated from rent to the private company. However, consideration is being given to construction of numerous small craft hangars for rental based upon current requests and demands. As the airport is expanded to accommodate small jets and overflow traffic from Salt Lake International and Provo Municipal airports, additional income will be realized from jet fuel sales and aircraft rentals.

TABLE I-1

## EXISTING HEBER AIRPORT STATISTICS

Runway

|                             |                  |
|-----------------------------|------------------|
| Surface . . . . .           | Asphalt          |
| Length . . . . .            | 4400 feet        |
| Pavement Width . . . . .    | 100 feet         |
| Pavement Strength . . . . . | 4000 lb.         |
| Lighting . . . . .          | Medium Intensity |
| Orientation . . . . .       | Azimuth 230°/50° |

Taxiway

|                          |                     |
|--------------------------|---------------------|
| Surface . . . . .        | Asphalt             |
| Pavement Width . . . . . | 50 Parallel Twy-24' |
| Lighting . . . . .       | None                |

|                                 |    |
|---------------------------------|----|
| <u>Based Aircraft</u> . . . . . | 12 |
|---------------------------------|----|

|                            |           |
|----------------------------|-----------|
| <u>Elevation</u> . . . . . | 5632 feet |
|----------------------------|-----------|

Apron

|                   |          |
|-------------------|----------|
| Surface . . . . . | Asphalt  |
| Length . . . . .  | 300 feet |
| Width . . . . .   | 150 feet |

|                         |   |
|-------------------------|---|
| <u>Access</u> . . . . . | 0.5 miles along a paved county road to U.S. Highway 189 |
|-------------------------|---|

|  |           |
|--|-----------|
| <u>Total City Owner Properties</u> . . . . . | 122 Acres |
|--|-----------|

Fixed Base Operator Facilities

|                      |   |
|----------------------|---|
| Operator . . . . .   | Heber Valley Flying Service             |
| Hangars . . . . .    | None                                    |
| Restrooms . . . . .  | 2                                       |
| Fuel Sales . . . . . | 100 Octane                              |
| Services . . . . .   | Minor repairs, instruction, sail planes |

TABLE I-2  
 HEBER AIRPORT HISTORICAL EXPENSES  
 FISCAL YEAR 1982

HEBER VALLEY FLYING SERVICE

|                    |              |
|--------------------|--------------|
| Rent               | \$ 900       |
| Utilities          | 2,750        |
| Airplane Fuel      | 30,240       |
| Filters            | 100          |
| Tiedown Ropes      | 100          |
| Maintenance        | <u>543</u>   |
| <br>Total Expenses | <br>\$34,633 |

Heber City

|                                    |                   |
|------------------------------------|-------------------|
| Maintenance                        | \$1,300           |
| (80% of this cost is snow removal) |                   |
| Utilities                          | 823               |
| Telephone                          | 120               |
| Special Supplies                   | 2,290             |
| (lights, etc.)                     | <u>          </u> |
| <br>Total                          | <br>\$4,533       |

## SECTION II

### FORECAST OF AVIATION DEMANDS

#### II-1 Community Data

The Heber Valley area is projected to have a major increase in population by 1990. The increased resort facilities and recreational activities have attracted land speculators and additional homesites and tourists.

Park City is also projected to have a major population growth by 1990. If studies for a proposed airport in the Park City area prove to be infeasible, Heber Airport will experience a heavier demand due to its close proximity. The Heber Airport would need to handle commuter flights carrying skiers and tourists from Salt Lake City.

Table II-1 lists population trends in the Wasatch (Heber City) and Summit (Park City) counties. The increased growth in the two counties are mostly in Heber and Park City.

#### II-2 Aviation Data

Short-range aviation planning at Heber Airport is not based on population growth of the surrounding area, but on current demands for small aircraft basing. Demand dictates that short-range growth will be proportional to the number of hangars available for rent.

Long-range aviation planning is based on increased population and recreation growth. Due to the projected population growth, commuter flights, private jets, and increasing small craft flights are anticipated. Table II-2 lists the aviation growth projections of the Utah Department of Transportation Airport System Plan through 2000. Figure II-1 shows an estimated of the

numbers of aircraft based at the Heber Airport according to the Airport System Plan. This does not include increased hangar rental.

TABLE II-1  
HEBER, UTAH & VICINITY  
POPULATION GROWTH

A. Past Growth - Wasatch County

| <u>Year</u> | <u>Population</u> | <u>10 Year<br/>Average Growth</u> |
|-------------|-------------------|-----------------------------------|
| 1960        | 5,308             | -                                 |
| 1970        | 5,863             | 10.5%                             |
| 1980        | 8,500             | 45%                               |

Heber Planning Area 1984 estimate: 9325

B. Projected Future Growth - Wasatch County

| <u>Year</u>   | <u>Population</u> | <u>5 Year<br/>Average Growth</u> |
|---------------|-------------------|----------------------------------|
| 1980 (census) | 8,500             | -                                |
| 1985          | 9,600             | 13%                              |
| 1990          | 10,500            | 9%                               |
| 1995          | 11,400            | 9%                               |
| 2000          | 12,350            | 8%                               |

C. Projected Future Growth - Summit County

| <u>Year</u>   | <u>Population</u> | <u>5 Year<br/>Average Growth</u> |
|---------------|-------------------|----------------------------------|
| 1980 (census) | 10,200            | -                                |
| 1985          | 12,900            | 26%                              |
| 1990          | 14,300            | 11%                              |
| 1995          | 15,150            | 6%                               |
| 2000          | 16,650            | 10%                              |

Sources: U. S. Census; Baseline Provisional Population Projections prepared by the Utah State Planning and Budget Office.

TABLE II-2

## PRESENT AND PROJECTED HEBER AIRPORT OPERATIONS

Itinerant Operations

|                                     | <u>1980</u> | <u>1985</u> | <u>1990</u> | <u>2000</u> |
|-------------------------------------|-------------|-------------|-------------|-------------|
| Single Engine                       | 5,220       | 6,419       | 6,929       | 10,480      |
| Twin Engine                         | 30          | 131         | 788         | 1,965       |
| Jets, Turboprops,<br>Commuter Lines | --          | --          | 158         | 655         |
|                                     | <hr/>       | <hr/>       | <hr/>       | <hr/>       |
| Subtotal                            | 5,250       | 6,550       | 7,875       | 13,100      |

Local Operations

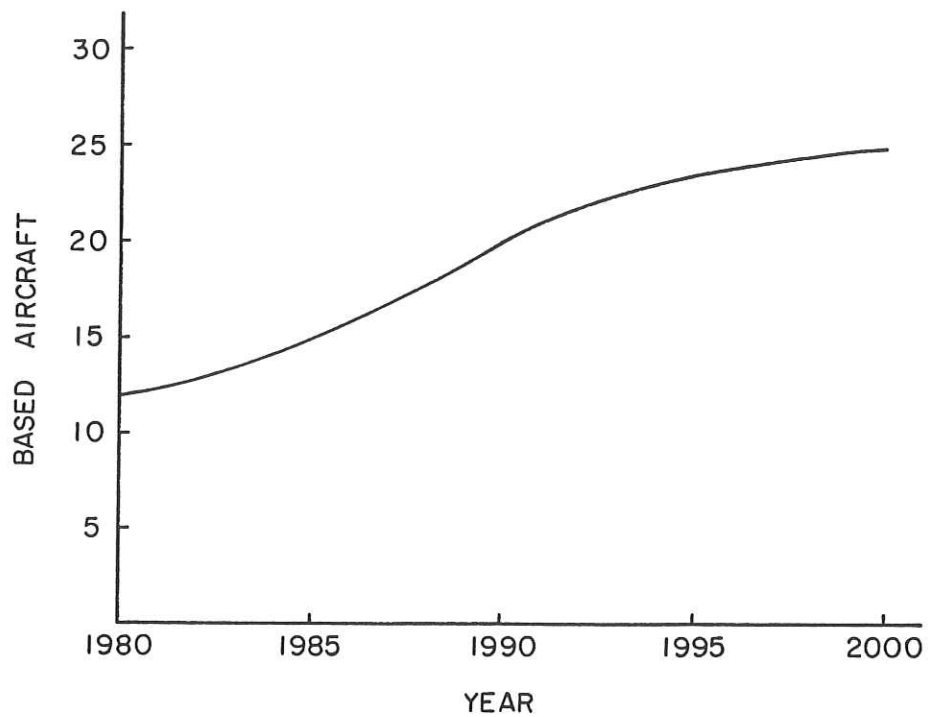
|               |        |        |        |        |
|---------------|--------|--------|--------|--------|
| Single Engine | 15,750 | 19,700 | 23,128 | 29,731 |
| Twin Engine   | --     | --     | 472    | 919    |
|               | <hr/>  | <hr/>  | <hr/>  | <hr/>  |
| Subtotal      | 15,750 | 19,700 | 23,600 | 30,650 |

|                         |        |        |        |        |
|-------------------------|--------|--------|--------|--------|
| Total Annual Operations | 21,000 | 26,250 | 31,475 | 43,750 |
|-------------------------|--------|--------|--------|--------|

Source: Utah State Airport System Plan, Update-1981 prepared by the Utah Department of Transportation.



FIGURE II-1



ESTIMATE OF AIRCRAFT TO BE BASED  
AT HEBER AIRPORT

Source: Utah State Airport System Plan, Update-1981, prepared by the Utah Department of Transportation.

SECTION III  
DEMAND CAPACITY ANALYSIS

III-1     General

The demand capacity analysis of the Heber Airport involved examination of the demand which will be placed upon the airport in comparison with the capability of the airport facilities to handle those demands. Items considered in this analysis include air space requirements, runway and taxiway systems, tie down and terminal areas, airport accessibility and serviceability.

III-2     Air Space

Presently there are no air space reservations in the Heber area and forecasts do not show a need for a network there in the future. There are no physical obstructions associated with the existing airport, and expansion to the southeast will create no new hazards.

III-3     Runways

A single runway will provide capacity to handle an estimated minimum of 90,000 arrival operations. The traffic at Heber Airport is not anticipated to reach this level of use alleviating the need to plan for dual runway.

The 4,400 foot existing runway length is adequate for the short-term growth projected. However, the runway has various improvements needed to ensure safe and efficient operations. A 4,000 pound load was the original pavement design in 1948. In 1968 a 2-inch road mix overlay was placed. Since, 1968 no other major work to upgrade the runway has occurred, although use of the runway by aircraft heavier than 4,000 pounds has increased. Wear on the runway

and some settling has caused ponding and depressions. A crowned overlay would remedy the existing drainage problem. In addition, during the summer months there are often planes on the runway from landing as another plane is beginning to take off. A turn around for up to 2 aircraft would allow the landing plane an area to temporarily get off the runway to turn around as well as to allow the other plane to take off.

Long term planning shows a need to increase the length of the runway. As increased use of the airport by commuter lines and large private aircraft continues, the runway will need to be expanded to meet Basic Utility, Stage II requirements. This means the airport must be expanded to 7,800 feet as specified in the Utah Airport System Plan. The pavement for this expansion would be designed for a 30,000 pound load with a resurfacing to the existing runway to increase the maximum load to the same amount. The extension would not have any clear way problems but private acreage would need to be obtained.

Current width of the runway is 100 feet and is sufficient for a Stage I or Stage II airport. As the runway length is increased, the width would remain at 100 feet.

One problem which needs to be alleviated before any construction on the short of long term proposals is the Heber City's roadmix area on the northeast side of the runway. This must be relocated at least 400 feet away from the runway area.

#### III-4      Tie Down Aprons and Hangars

An airport should have sufficient parking and storage space to accommodate aircraft based at the airport as well as itinerant air traffic that might use the airport. Heber Airport has an 45,000 square feet of apron space with enough tie downs for approximately 15 small planes. Larger planes which land

at the airport must park in a field north of the apron. It is recommended that the apron area be expanded so as to avoid congestion and accommodate larger aircraft.

Currently, there are 3 single plane hangars at the airport. None of these are available as they are all privately run. The City needs to make land available on a lease basis to private parties to construct T-hangars. This lease would have a time limit of no more than 10 years and specify the types of hangars built and uses they are put to. The land most readily available is the vacant land east of the existing hangars.

#### III-5     Taxiways

The Heber Airport has a taxiway 50' x 200' from mid-runway to the apron and a part-parallel taxiway beginning at the apron and going to the head of the runway. The part-parallel taxiway is 24 feet wide with a bituminous surface. Current demands do not show a need for a full length parallel taxiway but do show a need for a turn around at the south end of the runway as mentioned earlier.

As the airport expands and enplanements increase to up to 53,000 for the year 2000, as forecasted by the Utah Airport System Plan, a full parallel taxiway, 30 feet wide, will need to be installed.

#### III-6     Terminal Area

The existing terminal building consists of a small lounge, 2 restrooms, an office, and a small airplane repair shop. The building was built in 1948 and does not have a direct line of site to both ends of the runway. Due to the old and unattractive nature of the existing building, it is proposed that a new building be constructed on the same site as the proposed hangars.

The Federal and State governments do not fund renovations of existing or construction of new terminal buildings. Heber City will need to finance the terminal building with interested private parties or through bonds. The new terminal would be constructed on the site of the existing building.

III-7     Access Road

The existing access road will need to be relocated in the area near the proposed hangar site so as to follow the fence along the property line. Funding for this project will be from joint participation between Heber City and the State.

III-8     Automobile Parking

Currently there is no parking available for the cars of the airport users. People using the airport must park in the vacant lot east of the terminal building. On rainy days the field is very muddy.

SECTION IV  
FACILITY REQUIREMENTS

IV-1      General

The total airport development and expansion through the year 2000 is shown on Appendix Sheet 2.

IV-2      Land Acquisition

There will not need to be any land acquisition for the short-term development. However, in order to expand the runway to 7,000 feet an additional 36 acres will need to be acquired. This will need to be accomplished early in the total development and the land can be leased until the runway is extended.

IV-3      Runway

To meet the short-term demands, the runway needs an overlay to increase safety, drainage, and maximum load capacity. This increase in load capacity would allow airplanes of 12,500 pounds or less safe usage. The long-term demands require an increase of 2,600 feet with a width of 100 feet and a load of 30,000 pounds. This would allow commuter lines and private jets to utilize the airport.

IV-4      Aprons and Hangars

Presently, there are tie downs sufficient for 15 airplanes. This is enough for the current demand. By 1990 there will need to be an expansion up to 25 and by 2000 there will need to be a minimum of 40 tie downs. In order to

accommodate the anticipated increase in small aircraft based at the airport, an addition of 30,000 square feet of apron will need to be constructed in the early stage of development. An additional 22,500 square feet will be needed by 2000 to accommodate jets, turboprops, and commuter line traffic.

Hangar space is minimal in the Heber as well as Provo and Salt Lake City airports. At this time there are no useful hangars at the Heber Airport. Present demands indicate up to 10 hangars could be rented. Sufficient land exists on the east to construct numerous hangars. The Heber City Council needs to make this land available by lease to interested private parties to construct hangars. It is also the City Council's responsibility to solicit the interested parties and establish guidelines as to types of hangars built and their use.

#### IV-5      Taxiways

Currently there is need for a turnaround area at the southern end of the runway. Often during the summer months a plane will be trapped at the end of the runway after landing while another plane is in takeoff. A turnaround would allow the landed plane to exit the runway temporarily to turn around and let the moving plane pass. It is recommended that a turnaround area 80 feet wide be constructed in the early part of the total airport development.

With an estimated increase of enplanements up to 53,000 by year 2000, it is recommended that a parallel taxiway be constructed from the southern end of the extended runway to the apron at the same time as, or shortly after, the extension of the runway. The width of the taxiway will be 30 feet and will be 300 feet from the edge of the taxiway to the center of the runway.

IV-6      Clear Zones

Due to zoning restrictions and farm land around the airport, there are no concerns with the clear zones on either end of the airstrip. No further problems will be encountered when the runway is extended except a county road that will need to be relocated. This is shown on Appendix Sheet 3.

IV-7      Terminal Facilities

It is recommended that Heber City fund the construction of a new terminal facility jointly with the State and other interested private groups. This terminal building would be built in the vacant land already owned by the City behind the existing terminal building. A nicer facility would attract more pilots from outside the area.

In addition to constructing a new terminal building, future development will require paving the entire hanger area as well as the parking area as shown in Drawing 2.



SECTION V  
ENVIRONMENTAL ISSUES

V-1      General

The Heber Airport is located just outside the Heber City limits and is surrounded by farmlands. There are no streams, lakes, or open lands near enough to the proposed expansions for the expansions to have much impact on the environment.

V-2      Noise

The existing airport operations generate noise and it is anticipated that increasing usage of the airport will generate noise at even higher levels than are being experienced now. However, the airport is far enough from residential areas to keep noise problems at a minimum.

V-3      Displacement

The proposed expansions to the airport will not displace any persons. The land to be acquired for the expansion is farmland. Appendix Sheet 2 shows the current property owners.

V-4      Pollution

Relatively little pollution results from an airport of this size. Airplanes and automobiles using the airport will generate some airborne emissions; however, the amount of these emissions is very small when compared to the emissions from other automobile traffic in the Heber area.

Sewer facilities at the airport consist of a septic tank and drain field. There is a potential for pollution from this source. This source would have very little impact on the surrounding area, especially when compared to the nearby city sanitary landfill.

V-5        Aesthetics

Construction of the proposed expansions at Heber will not significantly effect the aesthetics of the area. Building the new terminal in the early part of development will actually improve the aesthetics near the apron.

V-6        Community Disruption

Expansion of the airport will increase the activity level of Heber somewhat because it will make the area more accessible to recreationalists and small craft owners basing their aircrafts at Heber. It may also contribute to new industries; decisions to locate in Heber, thereby increasing the population.

However, with the population growth that has been projected for Heber, it is not felt that an airport expansion will have a major impact on population growth.

V-7        Recreation Area

No recreation areas will be displaced by the proposed airport expansion. The expansion would bring growth to the existing areas, thereby boosting the economy of the Heber area.

V-8      Transportation

A county road will interfere with the proposed expansion on the southeast end of the runway and a short section of this road will need to be relocated. This relocation would not have a major overall effect on traffic but during the time the relocation was under construction there would be some disruption of traffic.

V-9      Wildlife

The area being considered for the expansions appears to be of marginal use to wildlife species and the proposed improvements will not have a significant effect.

V-10     Unique or Historical Sites

The areas being considered for expansion of the airport do not contain any sites of unique or historical significance.

V-11     Water Table

The water table under the existing airport and the areas being considered for expansion is fairly high, ranging from 3 to 4 feet deep. However, the soils in the area are quite stable and consist largely of gravel, therefore it is not likely that there will be any need to lower the water table or install subsurface drainage.

SECTION VI  
SITE SELECTION

VI-1      General

The existing airport site was the only location given serious consideration in the studies conducted for this master plan. The reason for not examining alternate sites is that the existing airport (constructed in 1948) was located following a site selection procedure.

Conditions at the existing site are favorable for an airport with no major problem with expanding at that site.

Community acceptance to an airport is good. Existing development around the airport is agricultural zoned as such. The airport is away from the major residential area, so noise generated by the airport will not be a serious problem. Access to the airport is good with U.S. Highway 189 running parallel to the airport. Expansion of the existing airport to the south will be away from existing developed areas.

Utilities already provided at the site include electricity, telephone, water from city wells, and sewage disposal with a septic tank and drain field.

Expansion of the airport at the existing site is not expected to effect any important wildlife breeding, nesting or feeding grounds or to substantially alter the behavior pattern for any species of animal or endanger any species of plant.

SECTION VII  
LAND USE PLAN

VII-1     General

The purpose of land use planning as it relates to the Heber Airport is to insure that the property surrounding the airport is developed in a manner that is compatible with the airport. Without proper planning, development could limit future expansion of the airport and future airport operations and expansion could have a detrimental effect on uses to which the surrounding property might be put.

VII-2     Existing Development

Most of the land around the airport is privately owned farmland. The land immediately U.S. Highway 189, a county road, and the city landfill is owned by the the City. Southeast of this and surrounded by the two county roads and U.S. Highway 189 is county owned land. All other land for the proposed expansion is privately owned farmland.

Current zoning for the land surrounding the airport is zoned for farming and regulations govern all new buildings to comply with the airport clear zones. There is no anticipated problems with obstructions to the expanded runway. Appendix Sheet 1 shows current zoning in the airport vicinity.

VII-3     Recommendations

Since Wasatch County owns a portion of the land necessary for the expansion, it is important to include county officials in the planning process.

The City should work closely with the county in maintaining the current zoning and regulations to insure all building around the airport complies with air traffic requirements.

It is recommended that the City utilize the services of the Utah Highway Department in negotiating the land for expansion. The Utah Highway Department will assist sponsors of airport improvement by performing appraisals, review appraisals, negotiate for land acquisition, and recommend methods of speedy condemnation. When State personnel are used for these services, the Utah Department of Transportation deducts such employee costs from the State share of the federal grant.

SECTION VIII  
COSTS AND FINANCING

VIII-1    General

In preparing the Master Plan and scheduling the improvements, an important consideration is the financial portion of the project. This section itemizes the total estimated costs of the recommended improvements and examines the economic feasibility of constructing the improvements in stages over the next twenty years.

VIII-2    Cost Estimates

The development of the Heber Airport has been planned for the next twenty years. Table VIII-1 is a listing of the improvements which are recommended, with the estimated cost of the total project. The costs are based on the contractor estimates at 1984 prices.

VIII-3    Staging of Development

It is proposed to stage the development of the project rather than constructing it all at once. This will help to spread the financial burden over several years and will keep individual portions of the project from being constructed until they are needed.

The development of the project has been divided into three stages. Stage I covers the first five years of development. Stage II covers the next five years, and Stage III covers the final ten years. Following is a list of improvements anticipated for the completion during each stage.

Stage I (0-5 years)

1. Overlay the existing runway, taxiways, and apron.
2. Construction the turnaround at the southern end of the runway.
3. Lease the vacant land for construction of hangars.

Stage II (5-10 years)

1. Acquire 36 acres of additional land.
2. Relocate the access road.
3. Construct the new terminal building.
4. Construct apron expansion (200' x 150').
5. Construct parking area.
6. Construct hangar taxiway.

Stage III (10-20 years)

1. Construct the runway extension
2. Relocate County road.
3. Construct parallel taxiway.
4. Construct apron expansion (150' x 150')

VIII-4 Economic Feasibility

In examining the economic feasibility of the airport expansion, many things need to be considered. Many of the benefits which are received from an airport are not in the form of direct cash income, but from the indirect affect it has on the economy of the surrounding area.

At the present time, the only funds Heber City receives directly from the airports are those received from the rental agreement with the private operator. This currently amounts to \$900 per year. With the upgraded facilities and funds from the leased hangar area, yearly income to the city could approach approximately \$7,000 to \$9,000. This income would offset much of the maintenance cost of snow removal, weed control, striping, and lights.



However, it is assumed the City will still supplement the remainder of the costs.

In the past, the City has relied on contributions from the City's general fund as well as assistance from the Utah Department of Transportation and the F.A.A. to construct and maintain the facilities. To provide for the proposed improvements, additional funds will be required from the City, State, and F.A.A.

#### VIII-5 Financing Plan

The development of the project requires a considerable cash outlay, which is impossible for Heber City to generate. By using State and Federal assistance as well as local tax revenues the project can be constructed.

In the past, F.A.A. has provided 90% funding for eligible airport improvement projects with the State providing 5%. However, at the present time the amount of F.A.A. participation in eligible projects is 90.94%. The remaining amount will be divided evenly between the State of Utah and Heber City at 4.53% each. The only exception to this is the construction of the terminal building where Heber City bears the entire construction cost.

TABLE VIII-1  
COST ESTIMATE  
(MID 1984 \$)

| <u>Item No.</u> | <u>Description</u>                                | <u>Quantity</u> | <u>Unit</u> | <u>Unit Cost</u> | <u>Amount</u>    |
|-----------------|---|-----------------|-------------|------------------|------------------|
| I               | Existing System Overlay (2" Asphalt)              |                 |             |                  |                  |
|                 | 1. Runway (4400' x 100')                          | 5,430           | Tons        | 50               | \$271,500        |
|                 | 2. Taxiway (50' x 200')                           | 130             | Tons        | 50               | 6,500            |
|                 | 3. Part-Parallel Taxiway (2400' x 24')            | 720             | Tons        | 50               | 36,000           |
|                 | 4. Apron (300' x 150')                            | 560             | Tons        | 50               | 28,000           |
|                 |   |                 |             |                  | <u>\$342,000</u> |
| II              | Runway Turnaround (80' x 80')                     |                 |             |                  |                  |
|                 | 1. Clear and grub                                 | 0.01            | AC          | 3,000            | 30               |
|                 | 2. Excavation and embankment                      | 0.01            | AC          | 1,000            | 10               |
|                 | 3. 2" asphalt                                     | 90              | Tons        | 50               | 4,500            |
|                 | 4. 8" gravel base                                 | 300             | Tons        | 10               | 3,000            |
|                 |   |                 |             |                  | <u>7,540</u>     |
| III             | Access Road (1500' x 25')                         |                 |             |                  |                  |
|                 | 1. Clear and grub                                 | 1               | AC          | 3,000            | 3,000            |
|                 | 2. Excavation and embankment                      | 1               | AC          | 1,000            | 1,000            |
|                 | 3. 3" asphalt                                     | 700             | Tons        | 50               | 35,000           |
|                 | 4. 6" gravel base                                 | 1,320           | Tons        | 10               | 13,200           |
|                 |   |                 |             |                  | <u>43,905</u>    |
| IV              | Apron Expansion (early development) (200' x 150') |                 |             |                  |                  |
|                 | 1. Clear and grub                                 | 0.7             | AC          | 3,000            | 2,100            |
|                 | 2. Excavation and embankment                      | 0.7             | AC          | 1,000            | 700              |
|                 | 3. 2" asphalt                                     | 380             | Tons        | 50               | 19,000           |
|                 | 4. 8" gravel base                                 | 1,410           | Tons        | 10               | 14,100           |
|                 |   |                 |             |                  | <u>35,900</u>    |
| V               | Apron Expansion (later development) (150' x 150') |                 |             |                  |                  |
|                 | 1. Clear and grub                                 | 0.5             | AC          | 3,000            | 1,500            |
|                 | 2. Excavation and embankment                      | 0.5             | AC          | 1,000            | 500              |
|                 | 3. 2" asphalt                                     | 290             | Tons        | 50               | 14,500           |
|                 | 4. 8" gravel base                                 | 1,050           | Tons        | 10               | 10,500           |
|                 |   |                 |             |                  | <u>27,000</u>    |
| VI              | Parking (50' x 75')                               |                 |             |                  |                  |
|                 | 1. Clear and grub                                 | 0.01            | AC          | 3,000            | 30               |
|                 | 2. Excavation and embankment                      | 0.01            | AC          | 1,000            | 10               |
|                 | 3. 3" asphalt                                     | 80              | Tons        | 50               | 4,000            |
|                 | 4. 6" gravel base                                 | 140             | Tons        | 10               | 1,400            |
|                 |   |                 |             |                  | <u>5,440</u>     |
| VII             | Land Acquisition                                  | 36              | AC          | 6,000            | 216,000          |
| VIII            | Runway Expansion (2600' x 100')                   |                 |             |                  |                  |
|                 | 1. Clear and grub                                 | 6               | AC          | 3,000            | 18,000           |
|                 | 2. Excavation and embankment                      | 6               | AC          | 1,000            | 6,000            |
|                 | 3. 2" asphalt                                     | 3,210           | Tons        | 50               | 160,500          |
|                 | 4. 8" gravel base                                 | 12,140          | Tons        | 10               | 121,400          |
|                 |   |                 |             |                  | <u>305,900</u>   |

TABLE VIII-1 CONTINUED  
COST ESTIMATE  
(MID 1984 \$)

| <u>Item No.</u>                           | <u>Description</u>                            | <u>Quantity</u> | <u>Unit</u> | <u>Unit Cost</u> | <u>Amount</u>  |
|---|---|-----------------|-------------|------------------|----------------|
| IX  | Taxiway (4600' x 24')                         |                 |             |                  |                |
|   | 1. Clear and grub                             | 4               | AC          | 3,000            | \$ 12,000      |
|   | 2. Excavation and embankment                  | 4               | AC          | 1,000            | 4,000          |
|   | 3. 2" asphalt                                 | 1,360           | Tons        | 50               | 68,000         |
|   | 4. 8" gravel base                             | 5,160           | Tons        | 10               | 51,600         |
|   |   |                 |             |                  | <u>135,600</u> |
| X   | Runway Exit (150' x 20' and 70' x 20')        |                 |             |                  |                |
|   | 1. Clear and grub                             | 0.1             | AC          | 3,000            | 300            |
|   | 2. Excavation and embankment                  | 0.1             | AC          | 1,000            | 100            |
|   | 3. 2" asphalt                                 | 60              | Tons        | 50               | 3,000          |
|   | 4. 8" gravel base                             | 210             | Tons        | 10               | 2,100          |
|   |   |                 |             |                  | <u>5,500</u>   |
| XI  | County Road Relocation (2570' x 50')          |                 |             |                  |                |
|   | 1. Clear and grub                             | 3               | AC          | 3,000            | 9,000          |
|   | 2. Excavation and embankment                  | 3               | AC          | 1,000            | 3,000          |
|   | 3. 2" asphalt                                 | 1,430           | Tons        | 50               | 71,500         |
|   | 4. 8" gravel base                             | 2,700           | Tons        | 10               | 27,000         |
|   |   |                 |             |                  | <u>110,500</u> |
| XII                                       | Fencing (4 strand, 3' high)                   | 5,100           | FT          | 1.5              | 7,650          |
| XIII                                      | Terminal Building                             | 1,990           | SF          | 55               | 109,450        |
| XIV                                       | Hangar Taxiway (450' x 20')                   |                 |             |                  |                |
|   | 1. Clear and grub                             | 0.2             | AC          | 3,000            | 600            |
|   | 2. Excavation and embankment                  | 0.2             | AC          | 1,000            | 200            |
|   | 3. 2" asphalt                                 | 120             | Tons        | 50               | 6,000          |
|   | 4. 8" gravel base                             | 420             | Tons        | 10               | 4,200          |
|   |   |                 |             |                  | <u>11,000</u>  |
| XV  | Pave Hanger and Terminal Areas (350,000 S.F.) |                 |             |                  |                |
|   | 1. Clear and grub                             | 8               | AC          | 3,000            | 24,000         |
|   | 2. Excavation and embankment                  | 8               | AC          | 1,000            | 8,000          |
|   | 3. 2" Asphalt                                 | 4,320           | Tons        | 50               | 216,000        |
|   | 4. 8" Gravel Base                             | 16,340          | Tons        | 10               | 163,400        |
|   |   |                 |             |                  | <u>411,400</u> |
| Total Construction                        |   |                 |             |                  | \$1,783,080    |
| Engineering - 7%                          |   |                 |             |                  | 124,820        |
| Construction Management & Inspection - 5% |   |                 |             |                  | 89,150         |
| Legal - 1%                                |   |                 |             |                  | 17,830         |
| Contingencies - 10%                       |   |                 |             |                  | <u>178,310</u> |
| Total Project Cost                        |   |                 |             |                  | \$2,193,190    |

TABLE VIII-2  
STAGE COSTS BREAKDOWNS  
(MID 1984 \$)

Stage I

|  |        |                   |
|--|--------|-------------------|
| Construction Costs                           |        | \$ 349,540        |
| Legal, Engineering, Contingencies, etc - 23% |        | <u>80,395</u>     |
| Total  |        | <u>\$ 429,935</u> |
| FAA  | 90.94% | \$ 390,983        |
| State  | 4.53%  | \$ 19,476         |
| Heber City                                   | 4.53%  | \$ 19,476         |

Stage II

|   |                          |                   |
|---|--------------------------|-------------------|
| Construction Costs                            |                          | \$ 429,990        |
| Legal, Engineering, Contingencies, etc. - 23% |                          | <u>98,898</u>     |
| Total   |                          | <u>\$ 528,888</u> |
| Total Costs Eligible for FAA and State Funds  |                          | \$ 394,264        |
| FAA   | 90.94% of eligible funds | \$ 358,544        |
| State   | 4.53% of eligible funds  | \$ 17,860         |
| Heber City*                                   |                          | \$ 152,484        |

Stage III

|   |        |                    |
|---|--------|--------------------|
| Construction Costs                            |        | \$1,003,550        |
| Legal, Engineering, Contingencies, etc. - 23% |        | <u>230,817</u>     |
| Total   |        | <u>\$1,234,367</u> |
| FAA   | 90.94% | \$1,122,533        |
| State   | 4.53%  | \$ 55,917          |
| Heber City                                    | 4.53%  | \$ 55,917          |

\* Heber City will need to solicit investments from private parties of bonds to help fund the construction of the terminal building. There is no assistance from the Federal or State grants to build new of additional buildings.



- |  |   |
|--|---|
|  | RA-1 RESIDENTIAL AGRICULTURE - CONDOS, 4 PLEXES           |
|  | RA-2 1 ACRE, SINGLE FAMILY RESIDENTIAL W/ LIMITED ANIMALS |
|  | RA-3 1 ACRE, SINGLE FAMILY RESIDENTIAL W/ MORE ANIMALS    |
|  | AO-1 AIRPORT OVERLAY - HEIGHT RESTRICTION                 |
|  | WC-1 WATERSHED CONSERVATION                               |

- |  |                           |
|--|---------------------------|
|  | FPO-1 FLOOD PLAIN OVERLAY |
|  | A-1 AGRICULTURAL          |
|  | C-1 COMMERCIAL            |
|  | G-1 GRAZING               |
|  | I-1 INDUSTRY              |



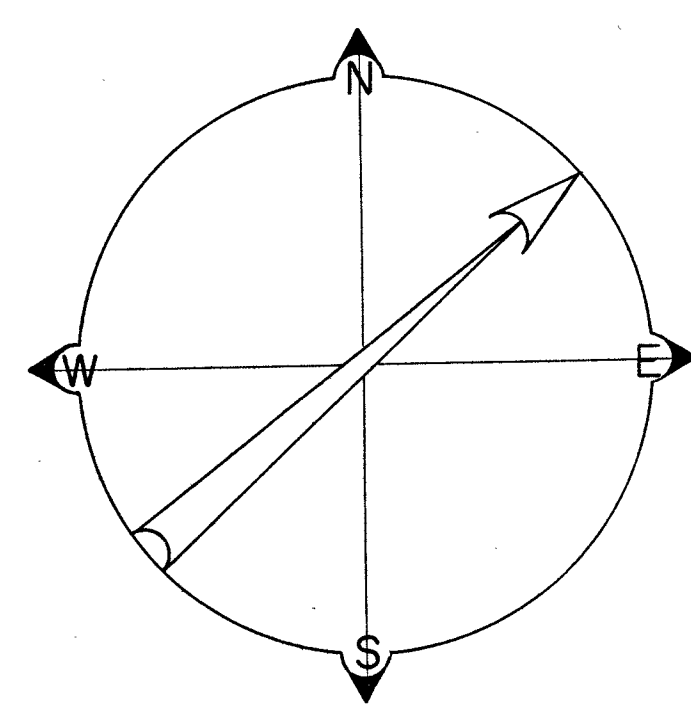
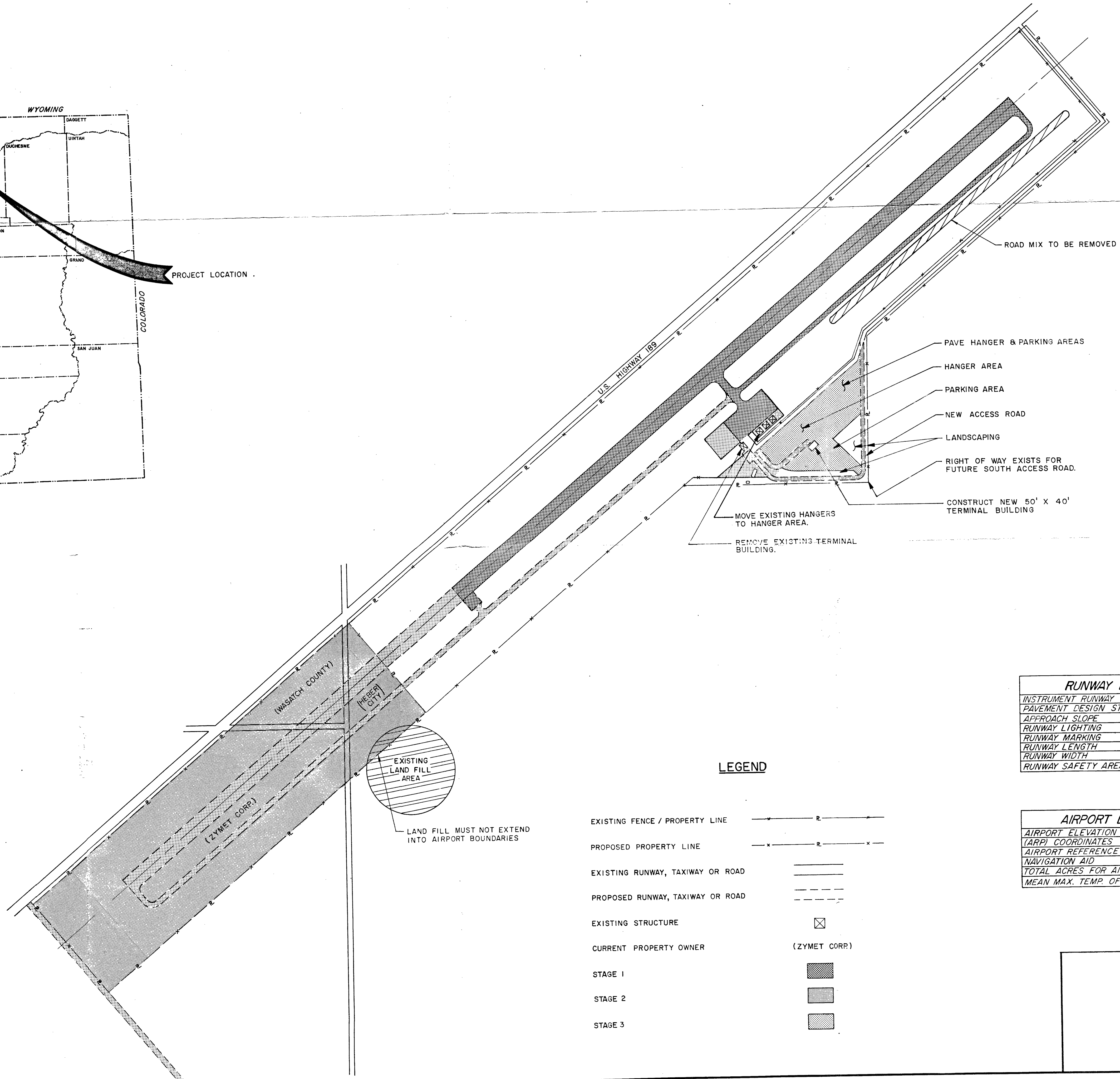
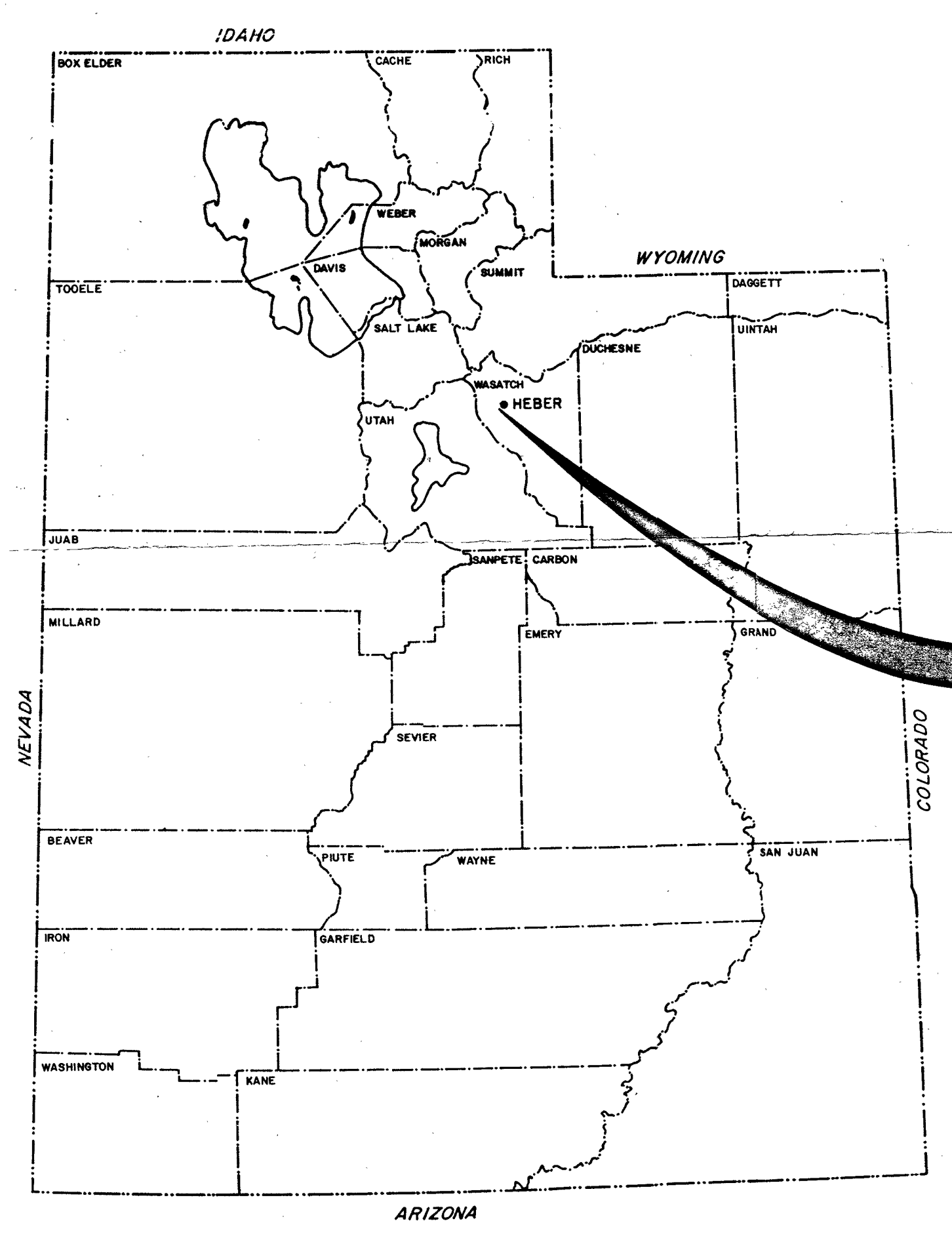
**HORROCKS  
ENGINEERS**

**AMERICAN FORK  
ROOSEVELT  
VERNAL**

# HEBER AIRPORT MASTER PLAN ZONING MAP

|                 |                |                     |                   |
|-----------------|----------------|---------------------|-------------------|
| DESIGNED<br>JCP | CHECKED<br>HLW | DRAWN               | DATE<br>2-84      |
| APPROVED        | DATE<br>6 / 84 | PROJECT NO.         | SCALE<br>1"=3000' |
| REVISIONS       | DWG. NO.       | SHEET NO.<br>1 OF 3 |                   |





**LEGEND**

- EXISTING FENCE / PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING RUNWAY, TAXIWAY OR ROAD
- PROPOSED RUNWAY, TAXIWAY OR ROAD
- EXISTING STRUCTURE
- CURRENT PROPERTY OWNER (ZYMET CORP.)
- STAGE 1
- STAGE 2
- STAGE 3

| RUNWAY DATA                      | EXISTING | PROPOSED  |
|----------------------------------|----------|-----------|
| INSTRUMENT RUNWAY                | NONE     | NONE      |
| PAVEMENT DESIGN STRENGTH (GROSS) | 4000 lb  | 30,000 lb |
| APPROACH SLOPE                   | 20:1     | 20:1      |
| RUNWAY LIGHTING                  | MIRL     | MIRL      |
| RUNWAY MARKING                   | BASIC    | BASIC     |
| RUNWAY LENGTH                    | 4400'    | 7000'     |
| RUNWAY WIDTH                     | 100'     | 60'       |
| RUNWAY SAFETY AREA               | 400'     | 200'      |

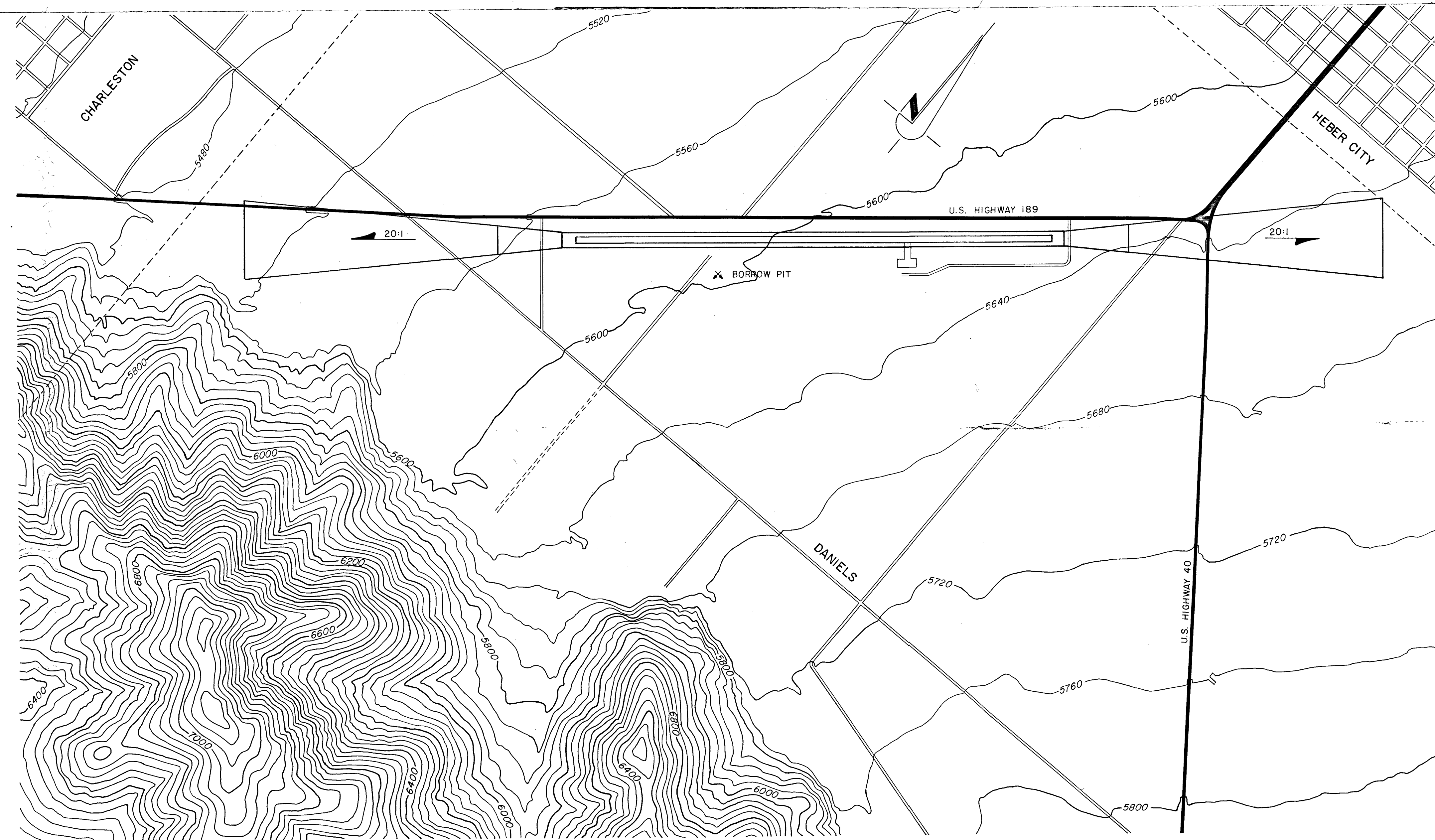
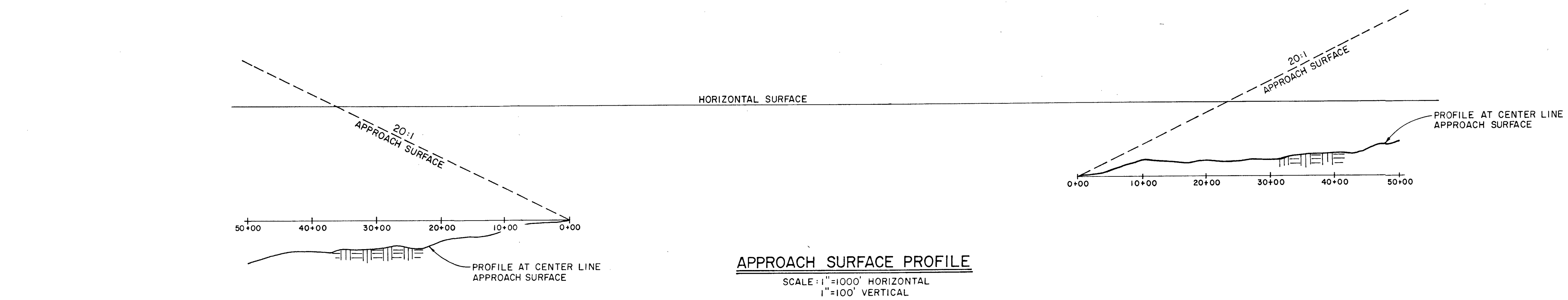
| AIRPORT DATA                     | EXISTING           | PROPOSED           |
|----------------------------------|--------------------|--------------------|
| AIRPORT ELEVATION                | 5632'              | 5632'              |
| (ARPI) COORDINATES               | LONG. 111° 25' 30" | LONG. 111° 25' 30" |
| AIRPORT REFERENCE POINT          | LAT. 40° 29' 05"   | LAT. 40° 29' 05"   |
| NAVIGATION AID                   | NONE               | NONE               |
| TOTAL ACRES FOR AIRPORT USE      | 122                | 153                |
| MEAN MAX. TEMP. OF HOTTEST MONTH | 87°                | 87°                |

**HORROCKS ENGINEERS** AMERICAN FORK  
ROOSEVELT VERNAL

**HEBER AIRPORT MASTER PLAN**

**AIRPORT LAYOUT PLAN**

|                 |                |              |                  |             |            |
|-----------------|----------------|--------------|------------------|-------------|------------|
| DESIGNED<br>JCP | CHECKED<br>HLW | DATE<br>6/84 | SCALE<br>1"=300' | DRAWING NO. | SHEET      |
| DRAWN<br>GDF    | TAKEEN         | REVISED      |                  |             | No. 2 OF 3 |



**APPROACH SURFACE PLAN**  
 SCALE: 1"=1000'

**HORROCKS** AMERICAN FORK  
**ENGINEERS** ROOSEVELT  
 VERNAL

HEBER AIRPORT MASTER PLAN

APPROACH & CLEAR ZONE PLAN & PROFILE

|                 |                |              |                |             |            |
|-----------------|----------------|--------------|----------------|-------------|------------|
| DESIGNED<br>JCP | CHECKED<br>HLW | DATE<br>6/84 | SCALE<br>NOTED | DRAWING NO. | SHEET      |
| DRAWN<br>GDF    | TRACED         | REVISED      |                |             | No. 3 OF 3 |