

# FREMONT MUNICIPAL AIRPORT FREMONT, NEBRASKA

## 2003 AIRPORT LAYOUT PLAN NARRATIVE REPORT



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**FREMONT MUNICIPAL AIRPORT**  
**FREMONT, NEBRASKA**

**AIRPORT LAYOUT PLAN**  
**NARRATIVE REPORT**  
**November 21, 2003 UPDATE**

PREPARED FOR THE  
CITY OF FREMONT NEBRASKA

BY

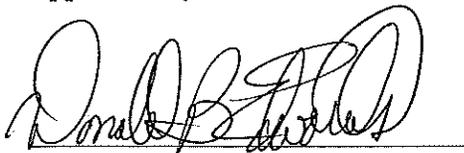
JEO CONSULTING GROUP, INC.

The preparation of this document was financed through a grant from the State of Nebraska Department of Aeronautics (Project No. FET SA-11) and funds from the City of Fremont, Nebraska. The contents of these documents may not reflect the official views or policy of the Federal Aviation Administration or the Nebraska Department of Aeronautics. The development plans presented are preliminary in nature. They are the opinion of JEO Consulting Group, Inc. and do not obligate the City of Fremont, the FAA, or the FAA to financial commitments, nor have detailed studies been performed for compliance to applicable Federal, State, and local regulations and laws.

This document has been approved and accepted by the City of Fremont, Nebraska.

Approved By:

On the date of:



Mayor  
City of Fremont, Nebraska

12-10-03

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**Note 1.**      ½ size color prints will be bound into this narrative document when the final plans are approved and signed.

## CHAPTER I

### DESCRIPTION OF EXISTING CONDITIONS

#### I. INTRODUCTION

This chapter provides a description of Fremont Municipal Airport (Fremont, Nebraska) and the area it serves. This information was gathered in a variety of ways including review of published data and reports, on-site inspections and telephone and other contacts with local, regional, state and federal agencies. This chapter presents only highlights of the information gathered. Other chapters contain more detailed data.

#### II. AIRPORT FACILITIES

Fremont Municipal Airport is owned and operated by the City of Fremont, Nebraska. The airport site comprises 639 acres and is located approximately 2 miles northwest of downtown Fremont, in Dodge County, Nebraska. Subsequent paragraphs provide details concerning the airport's facilities.

##### A. Airfield Facilities

The primary runway (13-31) at Fremont Municipal Airport (elev. -- 1,203 MSL) has a physical length of 5,500' and is 100' wide. The pavement surface is in good condition. The first 3190' of Runway 31 is existing asphalt overlay surfacing 100' wide and is in good condition and the northerly 100' wide by approximately 2,310' is concrete in excellent condition. Runway 18-36 is 2,444' in length and 50' wide. Its asphalt pavement is also in good condition. According to the current Airport Master Record (FAA form 5010) dated 8/8/2002, Runway 13-31 pavement strength is 28,000 pounds single-wheel and 48,000 pounds dual wheel and Runway 18-36 has a pavement strength of 36,000 pounds single-wheel and 58,000 pounds single-wheel. During the planning period both runways will remain at this pavement strength.

Runway 13-31 is equipped with medium intensity runway lights (MIRL's). Runway 18-36 does not have lights. Runway 13-31 also has Precision Approach Path Indicators (PAPI's) on both ends and runway end identifier lights (REIL's) on the 13 end. Other facilities and lighting include a rotating beacon, AWOS (freq 121.275), lighted wind indicator and segmented

circle. Radio communications are provided by Unicom. A non-directional beacon (NDB) is located on the field.

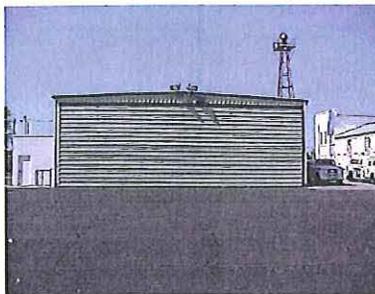
The airport has three published instrument approach procedures – VOR RWY 13, NDB RWY 13 and GPS RWY 13. These support straight-in approaches to RWY 13 with best minimums of 517' and one mile. Circling approaches are also available using the VOR, NDB or GPS. Weather information is provided by an AWOS 3.0 located on the field.

B. Buildings and Apron

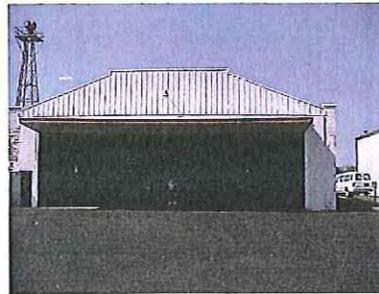
Landside facilities include an administration building, one shop hangar, and six conventional hangars (one of which is privately-owned). There are also three T-hangar structures. The existing aircraft parking apron consists of approximately 15,000 square yards of pavement including taxilanes and ramps to adjoining hangars.



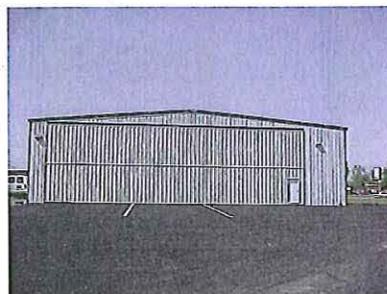
Terminal Building



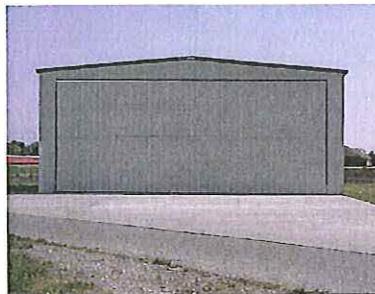
FBO Shop Hangar



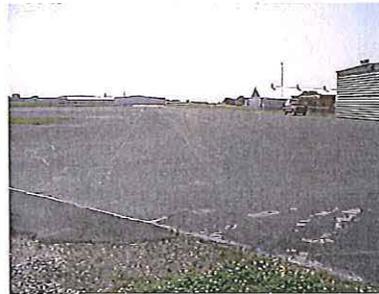
Corporate Storage



Corporate Hangar



Conventional Hangar



Apron Area

C. CFR Facilities

The City of Fremont Fire Department, located in downtown Fremont, which is approximately five minutes from the field, provides fire protection and rescue services.

### III. AIRPORT ACTIVITY

Fremont Municipal Airport is a non-tower facility; therefore, little recorded activity data were available. The principal sources of airport-specific information were the FAA's Form 5010, Airport Master Record and data obtained from airport management.

#### A. Based Aircraft

Data from Form 5010 show 34 based aircraft (BAC) in 2001. Airport records for 2002 show that the number of based aircraft has increased to 44. These include 38 single-engine aircraft and 7 twin-engine. Four of the based aircraft (one single-engine and three twin-engine) are turbo-prop types.



Twin-Turbo Prop Based Aircraft

#### B. Aircraft Operations

Accurate data concerning aircraft operations (an operation being defined as a take-off, a landing, or activity designed to simulate a take-off or landing) are usually not available at non-tower airports. This is true for the Fremont airport. With no specific operations data available information was taken from FAA Form 5010 and airport management records. The Form 5010 for August 8, 2002 shows 20,150 total operations at the airport.

Total operations consisted of the following components:

*	Air Taxi	3,200
*	General Aviation	
	Local	10,600
	Itinerant	6,200
*	Military	150
*	Total	20,150

The numbers for current operations were obtained from AIRPORT MASTER RECORD FORM 5010-1 Dated 8/8/2002 and contained in Appendix-I.

C. FBO and Other Activities

Services at Fremont Municipal Airport include major airframe repairs, major power plant repairs, and flight instruction. In addition, air taxi service is available as noted in the airport activity statistics. Fuel available includes 100 LL and Jet A.

IV. POPULATION DATA

Socio-economic data, such as population, provide insights concerning an area's past and future growth. Socio-economic characteristics may have a positive relationship to aviation activity and are often useful in preparing estimates of future airport activity.

Data from the U.S. Census of Population show Dodge County with a 2000 population of 36,160 an increase of 2% per year from 1960. The current growth rate of Dodge County is 4.8% per year.

V. AREA LAND USE

Land use in the vicinity of the airport is diverse. Areas to the immediate north and east are industrial and residential; areas to the south are residential. Land uses to the west are industrial and public while agricultural uses predominate to the northwest. Airport development potential is somewhat constrained by the proximity of roads and developed areas. Existing and future land use in the immediate areas around Fremont Municipal Airport are depicted in the Airport Layout Plan Drawings.

VI. SUMMARY

It does not appear that the proposed Airport Layout Plan for Fremont Municipal Airport would have a negative impact upon various cultural and environmental resources. Prior to initiating any specific phase of this proposed plan, however, specific plans and locations would be submitted to referenced agencies for their reviews.

Preceding sections have given an introduction and overview of Fremont Municipal Airport and the area it serves. Subsequent chapters will use and expand the information as necessary in considering specific aspects and issues of airport development.





FREMONT, NEBRASKA

AL-5759 (FAA)

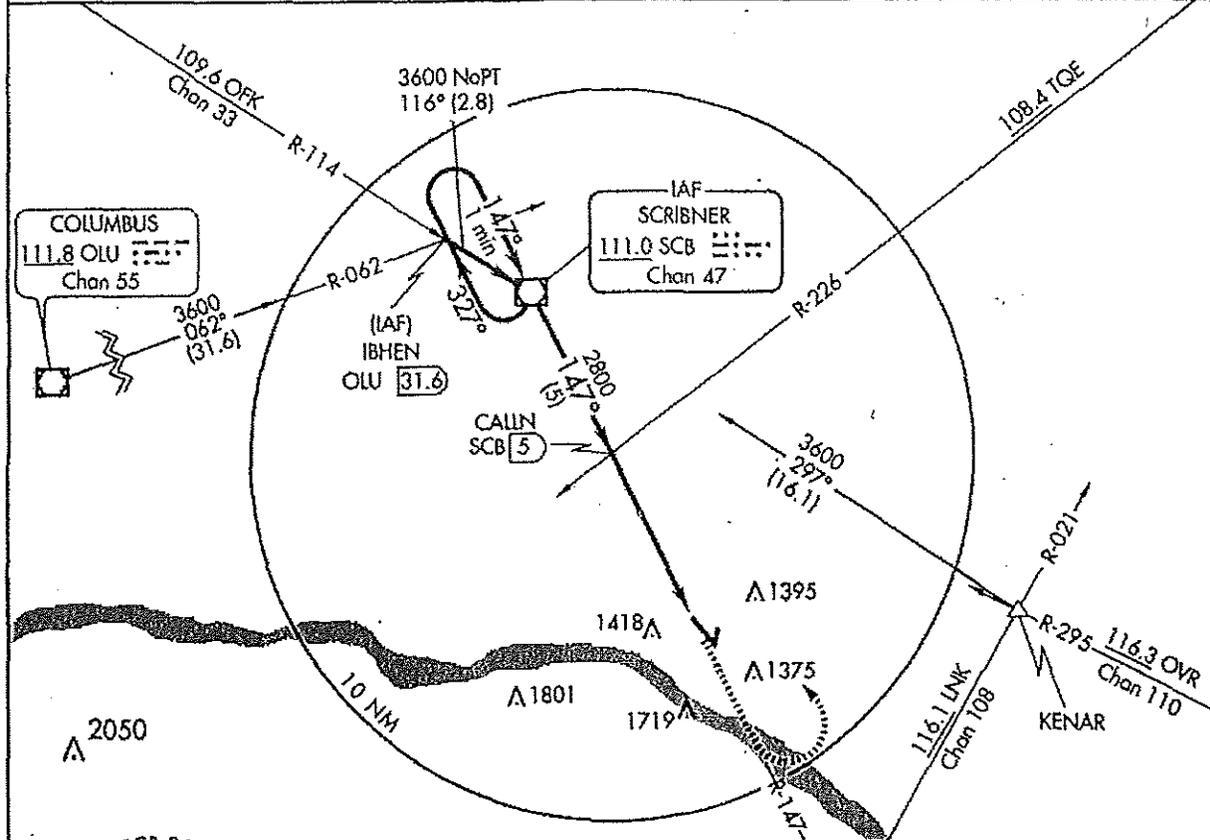
# VOR RWY 13 FREMONT MUNI (F'ET)

VOR/DME SCB <b>111.0</b> Chan 47	APP CRS <b>147°</b>	Rwy ldg <b>5500</b> TDZE <b>1203</b> Apt Elev <b>1203</b>
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**▽**  
**△** NA

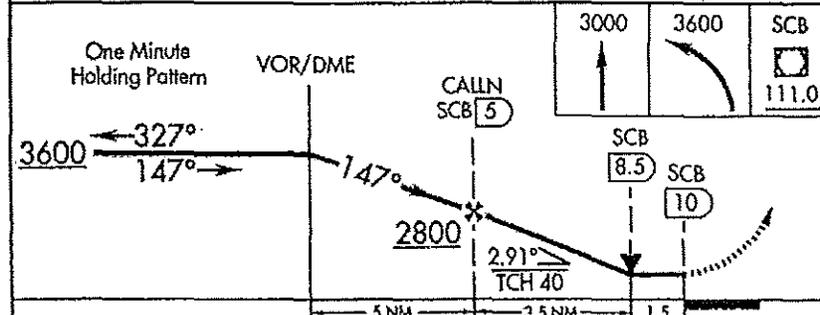
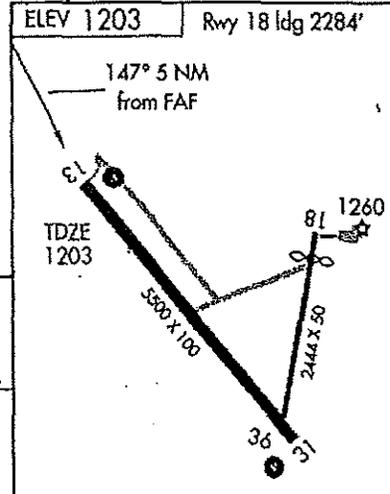
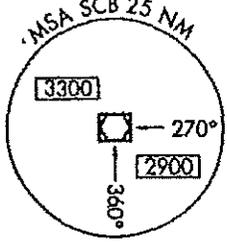
MISSED APPROACH: Climb to 3000, then climbing left turn to 3600 direct SCB VOR/DME and hold.

AWOS-3 <b>121.275</b>	OMAHA APP CON <b>120.1 354.05</b>	UNICOM <b>122.8 (CTAF) 0</b>
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NC-2, 30 OCT 2003

NC-2, 30 OCT 2003



CATEGORY	A	B	C	D	FAF to MAP 5 NM				
	S-13	1720-1 517 (600-1)		NA	Knots	60	90	120	150
CIRCLING	1780-1 577 (600-1)		NA	Min:Sec	5:00	3:20	2:30	2:00	1:40

FREMONT, NEBRASKA  
Amdt 1 03023

41°27'N-96°31'W  
119

FREMONT MUNI (F'ET)  
**VOR RWY 13**

FREMONT, NEBRASKA

AL-5759 (FAA)

# GPS RWY 13

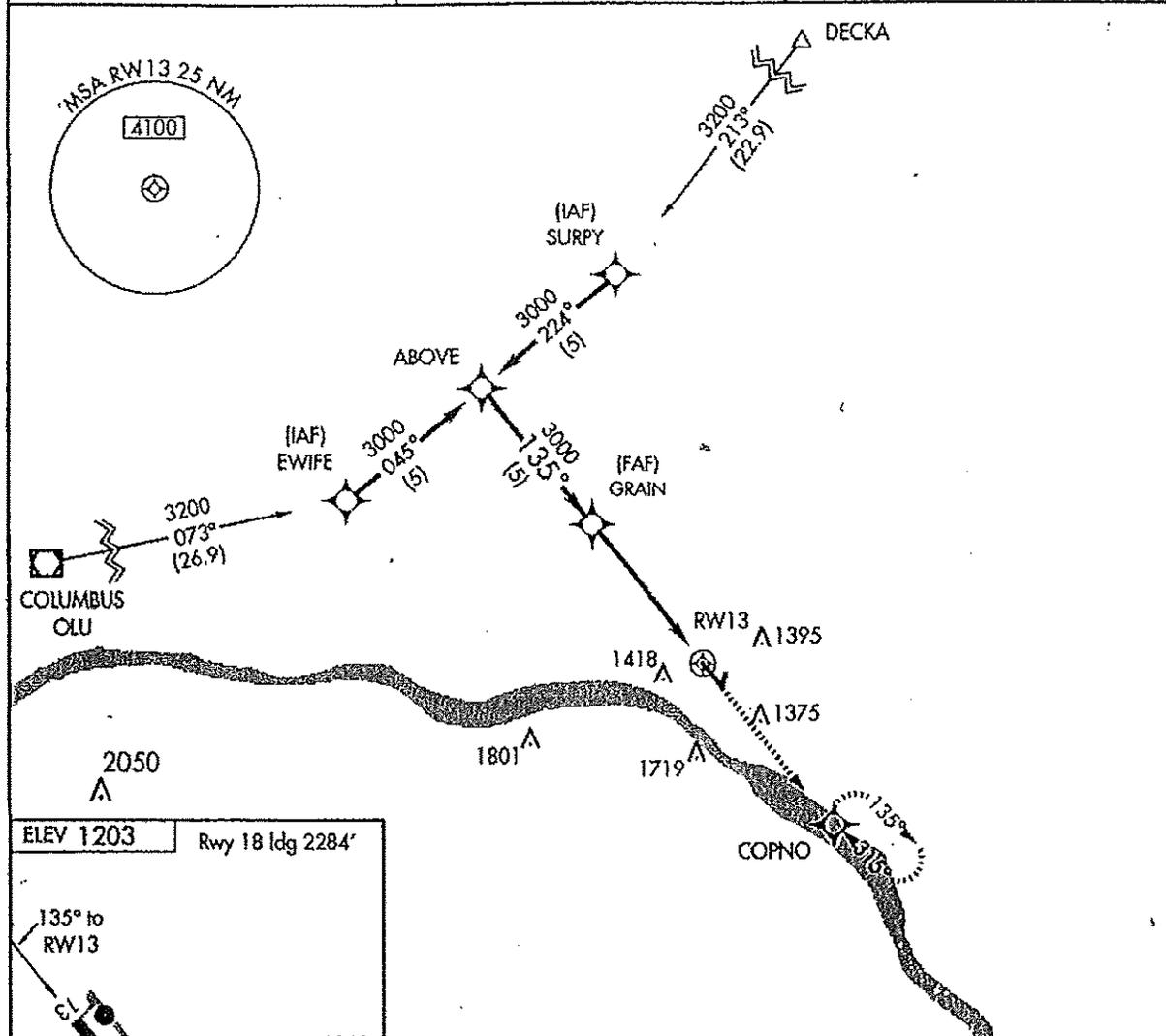
FREMONT MUNI (F'ET)

APP CRS	Rwy ldg	5500
135°	TDZE	1203
	Apt Elev	1203

▼  
▲ NA

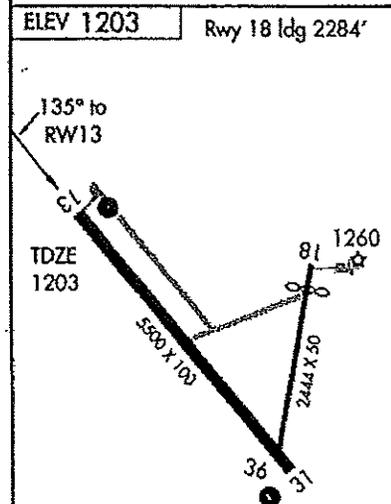
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AWOS-3 121.275	OMAHA APP CON 120.1 354.05	UNICOM 122.8 (CTAF) 0
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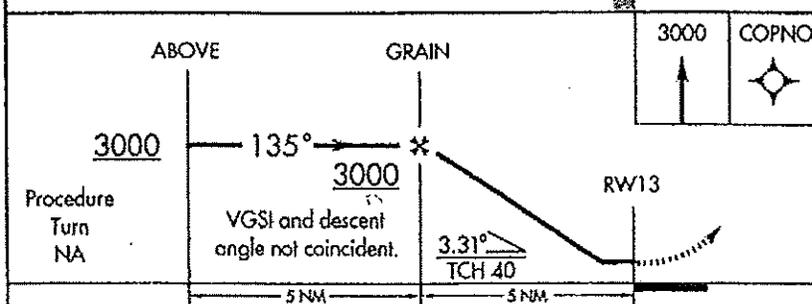


NC-2, 30 OCT 2003

NC-2, 30 OCT 2003



ELEV 1203	Rwy 18 ldg 2284'
REIL Rwy 13 0	MURL Rwy 13-31



CATEGORY	A	B	C	D
S-13	1720-1 517 (600-1)		NA	NA
CIRCLING	1780-1 577 (600-1)		NA	NA

FREMONT, NEBRASKA  
Orig-B 03023

41°27'N-96°31'W  
121

FREMONT MUNI (F'ET)  
GPS RWY 13

FREMONT, NEBRASKA

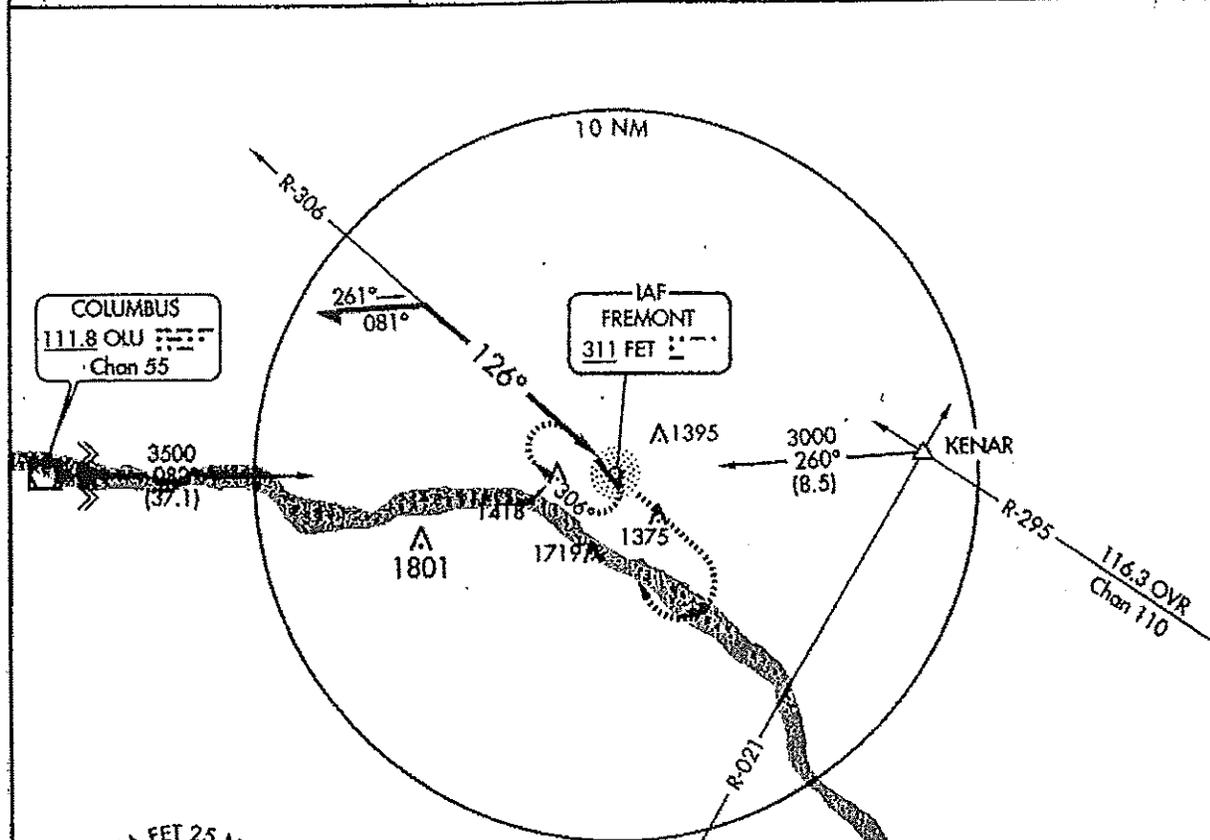
120  
AL-5759 (FAA)

**NDB RWY 13**  
FREMONT MUNI (FET)

NDB FET <b>311</b>	APP CRS <b>126°</b>	Rwy ldg TDZE Apl Elev	<b>5500</b> <b>1203</b> <b>1203</b>
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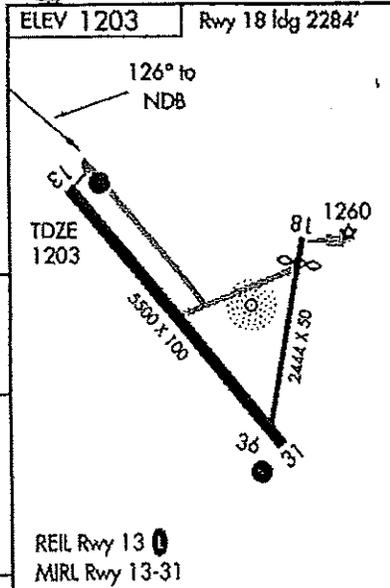
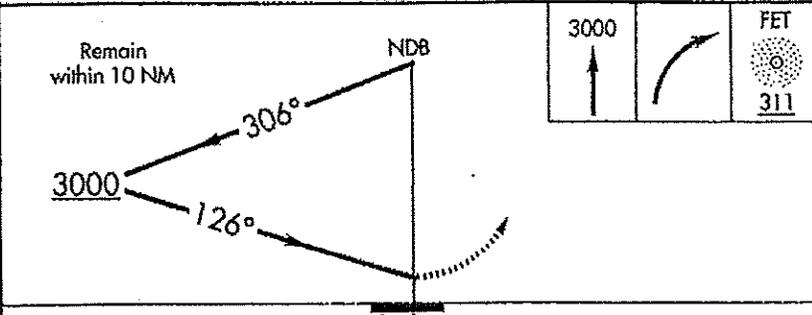
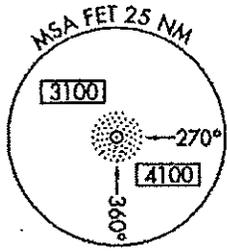
**MISSED APPROACH:** Climb to 3000, then right turn direct FET NDB and hold.

AWOS-3 <b>121.275</b>	OMAHA APP CON <b>120.1 354.05</b>	UNICOM <b>122.8 (CTAF)</b>
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NC-2, 30 OCT 2003

NC-2, 30 OCT 2003



CATEGORY	A	B	C	D						
S-13	1880-1	677 (700-1)		NA	Knots	60	90	120	150	180
CIRCLING	1880-1	677 (700-1)		NA	Min:Sec					

FREMONT, NEBRASKA  
Amdt 3A 03135

41°27'N-96°31'W

FREMONT MUNI (FET)  
**NDB RWY 13**

## CHAPTER II

### FORECASTS OF AVIATION DEMAND

#### I. INTRODUCTION

In preparing an airport layout plan, estimates of future activity levels provide the basis for evaluating the adequacy of current airport facilities including their capacity to handle increased traffic levels. Forecasts are also used to identify the types, quantities, and timing for needed improvements. This chapter discusses how forecasts of aviation demand were developed for Fremont Municipal Airport.

#### II. DETAILS OF FORECAST DEVELOPMENT

Forecasts were developed for several components of demand at Fremont Municipal Airport. These include:

- \* Based aircraft
- \* Aircraft operations
  - Local/itinerant
  - Annual/design hour
- \* Passengers/pilots
- \* Aircraft Mix
- \* Surface Traffic

The results for each of these are described in sections that follow.

#### A. General Aviation Activity

General aviation activity includes all civil flying not classified as air carrier. This includes such activities as personal and corporate flying, flight instruction, aerial photography and agricultural spray operations. Subsequent sections provide forecasts of general aviation activity at Fremont Municipal Airport.

##### (1) Based Aircraft

The number of based aircraft at an airport is important in determining future activity and the need for expanded or improved airport facilities. Forecasts of based aircraft are used to estimate the need for certain types of facilities, such as hangars and aircraft apron. At non-tower

general aviation airports, projections of based aircraft also often serve as the basis for forecasts of other components such as aircraft operations. Forecasts of based aircraft are consequently quite important in the airport planning process.

The preparation of a forecast of based aircraft for Fremont Municipal followed examination of applicable methodologies and available data. The initial step involved identification of registered aircraft data (aircraft registered to owners residing in Dodge County and in the State of Nebraska as well as those registered in the U.S.) and based aircraft (45 in 2002) at Fremont Municipal.

The most recent data from the FAA's web site for registered aircraft was used to acquire data. These data were compared to historic information for 1984 and 1989 to establish perspective concerning past aircraft ownership levels. The following numbers were recorded.

<u>Location</u>	<u>Registered Aircraft*</u>		
	<u>2002</u>	<u>1989</u>	<u>1984</u>
Dodge County	52	45	45
State of Nebraska	2,617	2,378	2,852
U.S. Total	342,307	268,931	266,886

\* – does not include air carrier aircraft

As can be seen from these data, registered aircraft in the State of Nebraska declined during this 10-year period. During that same period, however, registered aircraft in both Dodge County and the U.S. increased slightly. The increase for Dodge County was 15.52% while the national total grew by 27.3%.

Like registered aircraft in Dodge County, based aircraft at Fremont Municipal have increased in recent years. Data recorded on the FAA's Form 5010 (Airport Master Record), for example, show based aircraft fluctuating from 29 to 34 from 1980-1999. Data provided for this study by the fixed base operator (FBO) show 44 based aircraft in May, 2002.

Further context for preparing projections of based aircraft was sought from the forecasts presented in the Nebraska State Airport Systems Plan and from the FAA Aviation Forecasts: Fiscal Years 1997-2008. The former shows based aircraft fluctuating between 30 and 31 during the period from 1990 - 2010. Given the airport's current level of 44 based aircraft, this was not considered a reasonable forecast for use in this study.

The FAA's forecasts of total active general aviation aircraft (FAA Aviation Forecasts: Fiscal Years 1997 - 2008) were also examined to identify industry-wide trends, which might affect activity at Fremont. That document states, in part, that "The active general aviation aircraft fleet is projected to total 196,800 in 2008, an increase of almost 14,800 aircraft (0.8 percent annual growth) over the 12-year forecast period." The report further notes that "business use of general aviation aircraft will expand at a more rapid pace than personal use" and that general aviation hour's flown are anticipated to increase at an average annual rate of 1.4 percent per year. This higher growth rate in hours flown is attributed to "... greater hours flown per aircraft."

For the purposes of this study, estimates of future based aircraft were prepared using the assumption that Fremont Municipal would grow at approximately the same rate as national growth in general aviation hours flown. This was justified on the basis of recent rapid growth at the airport. As noted above, based aircraft at Fremont Municipal have increased from 31 in 1994 to 44 in 2002. This increase greatly exceeds the national averages for growth in either registered aircraft or general aviation hours flown; however, growth at this pace clearly was not considered sustainable. With the new runway length, facilities planned, and the proximity to the Omaha area that has become short on storage space for aircraft, it is assumed that Fremont Municipal will grow at a rate greater than is expected in the future. Based aircraft were, therefore, forecast using the growth rate of 1.0% per year for the initial ten years of the planning period (through 2012) and at a rate of 1.25% per year for the balance of the planning period. Using this approach, the following estimates of based aircraft were derived:

<u>Year</u>	<u>Number of BAC</u>
2002 (existing)	44
2007	46
2012	49
2022	55

Comparison of these projections with those in the state system plan indicates that this study's forecasts are higher. The system plan shows Fremont based aircraft as 30 to 31 throughout the period to 2010. At Fremont Municipal, however, based aircraft in 2002 (44) substantially exceed the state system plan's projection (31) for 2010.

(2) General Aviation Operations

Forecasts of general aviation annual operations were prepared using projections of based aircraft, FAA Form 5010 data and information from FAA Aviation Forecasts Fiscal Years 1997-2008. Form 5010 data showed operations per based aircraft (OPBA) ratios ranging from 516 to 530. Form 5010 Dated 8/8/02 indicates an operation per based aircraft of 458. The Nebraska State Airport System Plan used an OPBA value of 452 throughout the forecast period.

FAA forecasts indicate that aircraft will be used more intensively in future years; therefore, OPBA should increase. Accordingly, general aviation annual operations at Fremont Municipal using a slightly increasing OPBA – 550 in 2007, 590 in 2012 and 730 in 2022. The forecasts of annual general aviation operations are summarized in Table II-1.

**TABLE II-1**

Year	Based Aircraft	G.A. Ops Per Aircraft	Annual General Aviation Operations					Critical Aircraft
			Total	Air Taxi	Local	Military	Itinerant	
2002	44	458	20,150	3,200	10,600	150	6,200	530
2007	46	550	25,300	3,600	15,050	150	6,500	886
2012	49	590	28,910	4,200	17,560	150	7,000	1156
2022	55	730	40,150	5,200	26,800	150	8,000	2008

(3) Local/Itinerant Operations

Forecasts of general aviation operations were broken down into more detailed components of demand, the first being local and itinerant operations. (A local operation is a takeoff or a landing performed by an aircraft that will operate within the local traffic pattern, in sight of the airfield, or an operation that simulates a takeoff/landing. Local operations may also include departures or arrivals from flight in local practice areas within 20 miles of the airport. Itinerant operations are all other arrivals and departures.)

Projections of local/itinerant general aviation operations were made in the same way as the forecasts of annual operations; that is, Form 5010 data and other information from the FAA were reviewed. FAA 5010 data for 2002 showed approximately 53% of total operations were local in nature. The balance, including general aviation, air taxi and military were itinerant.

FAA Aviation Forecasts Fiscal Years 1997-2008, as noted earlier, includes conclusions concerning aircraft registrations and utilization rates which imply growing use of aircraft for business, rather than recreational, purposes. With respect to both aircraft registrations and hours flown, growth in activity by business aircraft, such as turboprop types, is expected to grow.

This information suggests that itinerant activity could constitute an increasing share of total general aviation activity at Fremont Municipal during the planning period; however, given that flight instruction activities and new pilot registrations appear to be on the increase nationally, it was considered reasonable to estimate local operations as remaining in the range of 60% to 70% of total operations during the planning period. Forecasts of local and itinerant operations, presented in Table II-1, are based upon the conclusion that local operations, while increasing in number, will comprise approximately 70 percent of total operations by the end of the planning period.

B. Air Taxi

The FAA defines an air taxi as "An air carrier certificated in accordance with FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft." (Source: FAA Aviation Forecasts Fiscal Years 1997-2008.) Historic data for 1994 through 1997 show 2,000 to 2,500 estimated air taxi operations at Fremont Municipal. Current 5010 data indicates 3,200 air taxi operations per year. Projected air taxi operations were estimated by increasing air taxi activity by 100 operations per year. This produced the following estimates of air taxi operations during the planning period:

<u>Year</u>	<u>Air Taxi Operations</u>
2002	3,200
2007	3,900
2012	4,200
2022	5,200

For planning purposes air taxi operations are considered as 100% itinerant.

C. Military

Military activity at Fremont Municipal has generally been minimal. FAA Form 5010 data show 150 estimated annual operations at the airport in recent years. For planning purposes,

future military operations were projected at 150 annually and held constant for the planning period.

D. Design Hour Operations

Design hour operations were forecast as a function of total annual operations. Average daily operations were first calculated by dividing total annual operations by 365. Design day operations were obtained by multiplying average daily operations by 1.9. The next step involved an assumption that a typical design hour would be 15 percent of design day operations. These projections are presented below:

<u>Year</u>	<u>Design Hour Operations</u>
2007	20
2012	23
2022	31

E. Forecast of Pilots and Passengers

The number of individuals using an airport during design hour conditions is a factor in defining future needs for terminal and auto parking space. Data in past FAA studies indicate a ratio of two persons (one pilot and one passenger) per general aviation design hour operation. Because Fremont Municipal also has air taxi and military traffic, this planning ratio was used in combination with forecasts of total design hour operations. This approach projections of design hour general aviation pilots and passengers as follow: 2007 -- 40 persons; 2012 -- 46 persons; and 2022 -- 62 persons.

F. Aircraft Mix

Aircraft mix, or fleet mix, refers to types of aircraft that use, or will use, the airport. This factor is considered in determining requirements for runway length, strength, and width, among other parameters. These influences result from three characteristics of aircraft -- weight, approach speed, and wingspan -- for which the FAA has provided planning guidelines. These are discussed below.

FAA Advisory Circular 150/5300-13, Airport Design suggests two weight categories. "Small aircraft" weigh 12,500 pounds or less; "large aircraft" are types whose maximum certificated weight is less than 60,000 pounds.

Regarding approach speed, the advisory circular lists five categories of aircraft:

- \* A - speed of less than 91 knots
- \* B - speed of 91 knots or more but less than 121 knots
- \* C - speed of 121 knots or more but less than 141 knots
- \* D - speed of 141 knots or more but less than 166 knots
- \* E - speed of 166 knots or more

With respect to wingspan, the FAA's classification system divides aircraft into six Airplane Design Groups as follow:

- \* Design Group I - wingspans up to but not including 49 feet
- \* Design Group II - wingspans up to but not including 79 feet
- \* Design Group III - wingspans up to but not including 118 feet
- \* Design Group IV - wingspans up to but not including 171 feet
- \* Design Group V - wingspans up to but not including 197 feet
- \* Design Group VI - wingspans up to but not including 262 feet

At present, Fremont Municipal Airport has 44 based aircraft. Of these, 40 are Category A, Design Group I type, and are small airplanes weighing less than 12,500 pounds. Larger based aircraft consist of:

MAKE& MODEL	OWNER	CATEGORY&DESIGN	OPERATIONS /YEAR
Piper Cheyenne	Great Plains Communications	B-I	120 (1)
Piper Cheyenne	Dugan Funeral Services	B-I	120 (1)
Pilatus PC-12	Richard Wikert	B-II	120 (1)
Ratheon Kingair 350	Taylor & Martin	C-II	350 (1)

Discussions with the FBO indicated substantial use of the airport by aircraft that are larger than the typical based aircraft. Additionally, a nonscientific survey was done by mailing questionnaires to known users of the airport, regional businesses and air charter companies. Numerous operations are noted from executive general aviation jet and turbo prop aircraft. Among the aircraft types identified by the FBO and the survey are:

MAKE& MODEL	OWNER	CATEGORY&DESIGN	OPERATIONS /YEAR
Cessna Citation 550	Itinerant/unknown	B-II	300 (2)
	Silverhawk Aviation		(1)
	Hormel Foods		100 (1)
Dassault Falcon 900	Itinerant/unknown	B-II	300 (2)
Raytheon			
Kingair 90-200	Itinerant/unknown	B-II	400 (2)
Raytheon Kingair 350	Itinerant/unknown	C-II	50 (2)
Israel Aircraft Ind.			
1125 Westwind & Galaxy	Hormel Foods	C-II	30 (1)
Gates Lear 55	Itinerant/unknown	C-I	100 (2)

(1) Confirmed operations – see Appendix I, page II-10

(2) Estimated operations from interview with FBO.

**From this data the Critical Aircraft was established as a C-II aircraft having 530 operations per year or 3% of the total airport operations.**

Prior to the preparation of the previous Airport Layout Plan, and in conjunction with a runway 13/31 expansion program in 1992, a survey was conducted that determined that sufficient potential existed for an ultimate Airport Reference Code (ARC) of C-II. This reference code determines that the airport should have a runway width of 100 feet and a length of 5,500 feet.

The survey results were accepted and the FAA subsequently provided grant funds to extend the runway to the current 5,500 foot length. Based upon this information, and the current operations the consultant recommends that the **critical aircraft** for planning purposes be a 1125 Westwind Astra, approach Category C and Design Group I. This Category and Design group aircraft currently have 530 operations per year at Fremont Municipal. For planning purposes, the number of critical aircraft operations was increased at the rate of 0.1% per year of total

operations for the balance of the planning period. It is estimated that such aircraft types, represented by business jet traffic, will conduct 5.00% percent of operations at the end of the planning period. This would amount to 1156 annual operations by C-II aircraft in 2012 and 2008 operations in 2022. The results are shown in Table II-1.



Cessna Citation II – Terminal Building in Background

G. Annual Instrument Approaches

Fremont Municipal Airport has three published instrument approach procedures. FAA data for the first three months of 2002 showed an average of 6 annual instruments approaches (AIA's) per month. Assuming activity grows as projected, and the airport is used by larger aircraft, it is estimated that annual instrument approaches (AIA's) would increase at somewhat a faster rate than total operations.

H. Design Hour Surface Traffic

To account for passenger, service and related vehicles, a ratio of .8 vehicle per design hour general aviation pilot/passenger and air carrier passenger was used in estimating future levels of surface traffic at the airport. This ratio applied to projections of design hour pilots/passengers gives the following results:

*	2007	20 design hour vehicles
*	2012	23 design hour vehicles
*	2022	31 design hour vehicles

### III. SUMMARY

Preceding sections have presented forecasts of aviation demand for Fremont Municipal Airport. These forecasts will be used in subsequent chapters in developing recommendations for future facility development at the airport.



### III. RUNWAY LENGTH

The sufficiency of the existing runway length was reviewed using information from the inventory of existing facilities and the forecasts of aviation demand. The primary runway (13/31) has a length of 5,500'. With respect to aircraft use, airport management information shows substantial business and corporate traffic including turboprop and business jet equipment.

FAA Advisory Circular 150/5300-13, "Airport Design" references computer program Airport Design V4.2 which was used to determine runway length requirements for Fremont Municipal. Table III-1 summarizes the information used and the results obtained by employing this methodology with data for Fremont (elevation = 1,203 M.S.L.; mean daily maximum temperature of the hottest month = 92.0° F. Based upon this analysis, the consultant recommends that the airport be planned to provide a fully usable runway length of 5,500', the length recommended for accommodating 75 percent of the fleet of large airplanes weighing 60,000 pounds or less. Comparison of this runway length requirement with the current facilities at the airport shows that the existing runway length (5,500') meets this standard.

The wind coverage provided to the airport by runway 13/31 at the 10.5 knot cross wind component is 91.34%. This would indicate that crosswind runway 18/36 would be required for approximately 8.7 percent of the yearly operations based upon the 10.5 knot crosswind component. With the 2002 operations level of (20,150), this would indicate the crosswind runway would be required for approximately 1,900 operations per year. Based on the aircraft mix at the airport and runway 18/36 not having lighting we assume that 70% of total operations are by A-I category aircraft and they operate 90% of the time in daylight. We would then estimate the operations that would require the use of Runway 18/36 to be approximately 1200 per year. The desired cross wind coverage for the airport runway system at 10.5 knots would be 95%. Further reasoning would indicate that the number of operations in a year that may be canceled due to wind would increase from approximately 200 with the current 98.34% wind coverage to 1200 with the closing of 18/36.

The primary runway length requirement to serve 75% of the small aircraft at this airport would be 2,940 feet. Runway 13/31 is considered to be the primary runway and runway 18/36 is considered the crosswind runway. AC-150/5325-4A (Runway Length Requirements for Airport

Design) Chapter 1, page 1 Paragraph 3.a, States; (A crosswind runway should have a length of at least 80 percent of the primary runway length). Designating RWY 18/36 for small aircraft exclusively and applying an 80% crosswind length requirement, the minimum length of runway 18/36 is then determined to be 2,352 feet.

### **RUNWAY 18/36**

Runway 18/36 is currently 2,444' in length with a 160' displaced threshold at the 18 approach end. Declared distance calculations show that the runway has a Landing distance available length of 2,284' in both directions and a Take off Run Available of 2,444' in both directions.

Current regulation emphasizes that residences, occupied structures, and places of public assembly not be located in the runway protection zones. Runway ends 18, and 36 have numerous residences and businesses located within the associated Runway Protection Zones (RPZ's) at the current time.

The cost to purchase the structures in the runway protection zones vs. the number of aircraft operations requiring the use of Runway 18/36 was calculated as follows:

Runway 18/36 has approximately 25 houses and one large business in the area of the Runway Protection Zones. The assumed total cost to purchase these structures and relocate the occupants was \$4,150,000 in 2002 dollars. Using the projected annual operations in Table II-1 on page II-4, 8.7% of these require 18/36 by wind coverage, then 70% of this total being aircraft limited by the 10.5 knot component and then 90% of the total for day time only. This calculation gives a total assumed number of operations by aircraft requiring runway 18/36 over the 20 year planning period of 29,000. The cost per operation attributed to the purchase structures in the RPZ's is approximately \$143 over the 20 year planning period.

Although this is a significant expense, input from local Pilots has raised concern that significant safety issues may exist if runway 18/36 is not maintained.

Considering these issues regarding runway 18/36 the consultant concurs with the City of Fremont's decision to:

Keep Runway 18/36 open in the current configuration. 2,444' x 50' wide.

Plan to acquire the property in the runway protection zones and eliminate places of occupancy and assembly.

Plan to widen the runway from 50' to 60' to meet standards.

Install Medium Intensity Runway Lights. (MIRL)

### RUNWAY 13/31

Runway 13/31 at the current orientation has approximately 30 houses and 30 mobile homes located in the runway protection zone associated with the runway 31 end.

We have compared the cost of acquisition and relocation for these 60 residences with the option of displacing the threshold for runway 31 by 850' and adding 850' of runway to the opposite (13) end and only displacing 5 residences. The displacement of the threshold requires the use of declared distances to maintain the 5,500' runway length for take off.

Estimated cost to purchase and relocate the residences within the existing RPZ for Runway 31.

30 Houses @ \$150,000 Each =	\$4,500,000
30 Mobile Homes @ \$25,000 Each =	\$ 750,000
Total	\$5,250,000

Estimated cost to displace the threshold on runway 31 by 850' and construct 850' of Runway and taxiway.

850'x100' runway extension	\$ 800,000
850'x35' taxiway extension	\$ 600,000
Relocate PAPI's for 31	\$ 20,000
Runway and Taxiway marking	\$ 50,000
Purchase 5 Residences in RPZ for RWY 31	\$ 750,000
Total	\$2,220,000

With the significant cost of buying these residences and the undesirable action of relocating residents we have planned for an 850' threshold displacement from the current runway 31 end location and the construction of 850' of runway on the 13 end.

**TABLE III-1**  
**RUNWAY LENGTH REQUIREMENTS**

**AIRPORT AND RUNWAY DATA**

Airport elevation . . . . .	1203 feet
Mean daily maximum temperature of the hottest month . . . . .	92.00 F.
Maximum difference in runway centerline elevation . . . . .	0 feet
Length of haul for airplanes of more than 60,000 pounds . . . . .	500 miles
Wet and slippery runways	

**RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN**

Small airplanes with approach speeds of less than 30 knots . . .	340 feet
Small airplanes with approach speeds of less than 50 knots . . .	900 feet
Small airplanes with less than 10 passenger seats	
(18/36) 75 percent of these small airplanes . . . . .	2940 feet
95 percent of these small airplanes . . . . .	3490 feet
100 percent of these small airplanes . . . . .	4130 feet
Small airplanes with 10 or more passenger seats . . . . .	4530 feet
Large airplanes of 60,000 pounds or less	
(13/31) 75 percent of these large airplanes at 60 percent useful load	5500 feet
75 percent of these large airplanes at 90 percent useful load	7000 feet
100 percent of these large airplanes at 60 percent useful load	5900 feet
100 percent of these large airplanes at 90 percent useful load	9000 feet
Airplanes of more than 60,000 pounds . . . . .	Approximately 5430 feet

#### IV. WIND COVERAGE

Advisory Circular 150/5300-13 indicates the desirability of providing 95 percent coverage for crosswind components. Examination of the runway system at Fremont Municipal and wind data from the National Oceanic and Atmospheric Administration (NOAA) shows that primary runway (13/31) provides 91.3% coverage for a crosswind component of 10.5 knots per hour and 95.8% for 13 knots. Combined wind coverage for both runways (10.5 knot crosswind component) is 98.3%. This coverage exceeds the FAA's desirable level of 95% wind coverage for the airport. It is desirable that both existing runways be maintained in order to provide the desirable wind coverage. The wind rose and table of coverage is located in appendix A.

#### V. DETERMINATION OF FACILITY REQUIREMENTS

Requirements for specific facilities were determined based upon forecasts of aviation demand and applicable planning standards such as presented in various advisory circulars and other publications of the FAA. Chief among sources consulted was Advisory Circular 150/5300-13, referenced earlier.

##### A. Landside Facility Requirements

Estimates were prepared for several categories of landside facilities including:

- Hangars and hangar apron
- Local aircraft apron
- Itinerant aircraft ramp
- Access and auto parking

The results of each of these are described in subsequent subsections.

##### (1) Hangars and Hangar Apron

Requirements for hangars and hangar apron depend upon several factors including the number and types of based aircraft, local preferences for hangar versus tie-down storage, preferences for T-hangars versus conventional hangars, and fees for the types available. Other considerations include the number of fixed base operators at the airport and service they provide.

Hangar requirements at Fremont Municipal Airport were examined using current aircraft storage patterns and forecasts of aviation demand. Inventory data showed three T-hangar structures and seven conventional hangars. Numbers of units available are 24 units (t-hangar) and 22 units available in conventional type hangars. Recently history has shown strong growth in the number of aircraft based at the airport; therefore, it was considered prudent to reserve space for several additional T-hangars and one additional conventional hangar, if needed. Space is available and will be depicted on the Airport Layout Plan.

Accepted planning practices indicate that aircraft apron should be provided in an amount equivalent to the area of conventional hangar space. This facilitates aircraft movements and allows for temporary storage of aircraft as needed. Current area of conventional hangars amounts to approximately square yards. This amount of ramp should also be available and additional ramp provided, if needed, as hangar space is expanded.

(2) Local Aircraft Apron

FAA guidelines suggest that aircraft parking areas, or apron, be provided for at least the number of aircraft not housed in hangars. At the present time all based aircraft are hangared. With respect to future planning, it is recommended that paved tie-down space be provided for minimum of five aircraft. Using this number and a planning standard of 300 square yards of space per aircraft would produce a need for 1,500 square yards of local ramp.

(3) Itinerant Aircraft Ramp

Itinerant ramp accommodates transient aircraft. Due to its normal location near terminal facilities, based aircraft owners may occasionally use this ramp for short periods. FAA Advisory Circular 150/5300-13 describes a methodology for estimating future itinerant general aviation ramp needs. This technique involves four steps. Step 1 produces estimated peak month itinerant operations by assuming them equal to 10% of annual itinerant operations. Step 2 estimates average daily itinerant operations for the peak month by dividing peak month itinerant operations (from Step 1) by 30. In Step 3, it is assumed that the busy itinerant day is 10% more active than the average day. Step 4 uses the final assumption that parking will be needed for 50% of the itinerant aircraft during the busiest day of the peak month. (This provides parking for aircraft equivalent in number to 25% of peak day itinerant operations.) Based upon this information, 3,240 Square feet (360 square yards) is allowed for each aircraft to be accommodated.

This methodology was used with forecasts of operations to prepare recommendations for general aviation itinerant ramp. The results are as follow:

<u>Year</u>	<u>Itinerant Aircraft Accommodated</u>	<u>Ramp Area (sq. yds.)</u>
2002	11	2,960
2007	12	4,320
2012	13	4,680
2022	15	5,400

Current useable apron space is approximately 1,200 sq. yds with 6,900 sq. yds required during the planning period.

(4) Access and Auto Parking

Access to the airport is provided by a two-lane paved road. Capacity of a two-lane access road is approximately 900 vehicles per hour provided each lane is 12 feet wide. (This estimated capacity was derived using techniques presented in the Highway Capacity Manual, Highway Research Board.) Traffic levels anticipated due to the airport activity are low; consequently, this road should be sufficient to accommodate airport-related traffic as well as that from other sources.

With respect to auto parking, FAA planning guidelines were used to estimate the number of spaces required, and associated areas, for each of the planning periods. Spaces were calculated on the basis of providing 0.8 stall for each forecast pilot or passenger during the peak hour. Areas for parking were computed using a standard of 320 square feet per parking stall. Recommendations for auto parking are as follow:

<u>Year</u>	<u>No. of Spaces</u>	<u>Area (sq. ft.)</u>
2002	24	7,680
2007	27	8,640
2022	34	10,880

(5) Fuel Storage

Fuel storage requirements were calculated as a function of aircraft operations. The method used involved four steps. In Step 1, average daily operations were estimated by dividing total annual operations by 365. Step 2 involved assumptions for average fuel required per aircraft operation. These rates were: 10 gallons per operation in 2002; 12 gallons per operation in 2007; and 15 gallons per operation in 2022. The rates were multiplied by average daily

operations from Step 1 to determine average daily fuel usage. Step 3 translated these requirements into weekly needs by multiplying average daily usage by 7. Step 4 provided for peaks in use by increasing average weekly storage requirements by 10 percent. This produced estimated requirements as follow (numbers are rounded):

- 2002 4,826 gallons
- 2007 6,404 gallons
- 2022 12,705 gallons

It should be noted that this approach assumes weekly fuel deliveries. Less frequent deliveries will require proportionally more fuel storage capacity. Current fuel storage of 12,000 gal of 100LL and Jet A this should be sufficient for the planning period.



B. Airside Facility Requirements

For the purposes of this study, airside facilities include the following:

- Runways and taxiways
- Approach and landing aids
- Lighting and marking

Future needs were determined on the basis of forecasts of demand, especially projected operations and aircraft mixes. Guidelines from the FAA were also used, most notably those presented in Advisory Circular 150/5300-13.

At present some airport users must cross runway 18 to get to the existing t-hangar area. This is a significant safety issue that needs to be addressed. Closing the runway in the planning period will make it significantly safer to cross from the apron to the t-hangar structures. In the

present planning period an alternate access from the Hwy 30 bypass should be planned to provide safer access to the t-hangar area.

(1) Runways and Taxiways

As indicated in the preceding discussion of airfield capacity, existing runway lengths were considered adequate for the planning period. With respect to pavement strength, runway 13/31 is rated at 48,000 pounds dual wheel and runway 18/36 is rated at 58,000 pounds dual wheel. From the survey of aircraft using the airport the pavement strength for runway 13/31 appears to be adequate for the planning period. The pavement strength for runway 18/36 is more than adequate as that runway is for small aircraft exclusively.

The width of primary runway 13/31 is 100' this is consistent with standards for C-II aircraft and should be maintained through the planning period. The primary taxiway from the apron and the current runway 18/36 are 50 feet wide. In the planning period the width of these taxiways should be reduced to 35 feet.

Fremont Municipal currently has a partial parallel taxiway to serve traffic on the primary runway. It also has a taxiway that provides access to the airfield and a connecting taxiway between the primary and crosswind runways. Given the projected number of operations at this airport, it is recommended that of a full parallel taxiway be constructed for the primary runway, which will reduce back taxi and increase safety, and the capacity of the runway. Recommended width for this taxiway is 35'.

(2) Approach and Landing Aids

Fremont Municipal Airport has three published instrument approach procedures as described in Chapter I. The airport has been approved for an omni-directional approach lighting system (ODALS) for approach end 13. This will improve conditions for future instrument approaches (projected to exceed 450 by year 2018) and will be a phase for the planning period to reach lower than  $\frac{3}{4}$  mile visibility on runway 13.

Runway 13-31 is also equipped with PAPI's on both ends and REIL's on runway end 13. This equipment should be adequate for the planning period.

Runway 13/31 has medium intensity runway lights (MIRL's), also considered adequate for the planning period. Runway marking is non-precision (13/31) and visual for (18/36) which is consistent with current airport needs.

In the long term planning is for a precision approach to runway 13 with less than ¾ mile visibility. This will require a larger RPZ, precision instrumentation navigational aids to be installed, precision runway painting be done, and installation of a MALSR approach lighting system to replace the ODAL system.

## VI. SUMMARY

Preceding sections have provided the consultant's recommendations concerning landside and airside facilities to serve aviation demand at the Fremont Municipal Airport. The following chapter describes the schedule (phasing) for these recommended improvements and also provides general estimates of costs.

**CAPACITY AND FACILITY SUMMARY TABLE**

<b>FACILITY</b>	<b>EXISTING</b>	<b>ULTIMATE/RECOMMENDED</b>
Runway 31-31	100' x 5,500'	100' x 5,500'
Runway 18-36	50' x 2,444'	60' x 2,444'
Taxiways	50' wide 12,000 SY 35' wide 15,000 SY	35' wide Full Parallel Taxiway RWY 13/31 T-hangar/apron areas
Wind Coverage	10.5 knots combined 98.5%	10.5 knots combined 98.5%
Hangars	24 t-units, 21 conventional units	36 t-units, 21 conventional
Local Aircraft Apron	5 spaces 1,500 SY	5 spaces, 1,500 SY
Itinerant Aircraft Apron	3,240 SY	5,400 SY
Auto Parking	20 spaces	34 spaces
Approach Lighting	None	ODALS, upgrade to MALSR RWY 13
PAPIs	Runway 13-31	Runway 13-31
REILS	Runway 13	Runway 13
Runway Lighting	Runway 13-31 MIRL	Runway 13-31 & 18-36 MIRL
Taxiway Lighting	Taxiway MITL	Taxiway MITL

## CHAPTER IV

### DEVELOPMENT PHASING

#### I. INTRODUCTION

Development recommended for Fremont Municipal Airport involves projects to improve efficiency, safety-related items, and expansion to accommodate demand. This work will be accomplished in phases as dictated by activity levels and availability of funds. Further, the need for specific improvements will be reviewed periodically to determine the continued applicability of recommendations made herein.

#### II. DEVELOPMENT PHASING

In keeping with FAA planning guidelines, recommended improvements are identified for implementation in phases. The short-term (0-5 years) includes work for which the need is considered most immediate. The intermediate-term (6-10 years) might be considered as including projects for which the need is less imperative. The long-term (11-20 years) encompasses actions for which the requirement is less certain.

Recommended development, by phase, is as follows:

##### A. Phase 1 (1 to 5 year)

- Construct Omni Directional Approach Lighting System (ODALS) RWY 13
- Purchase Land to 35' Building Restriction Line
- Seal Coat Runway and Taxiway Pavement
- Complete South Portion of Parallel Taxiway Runway (13/31) 1800' x 35' install Medium Intensity Taxiway Lights (MITL).
- Construct one 6-Place T-Hangar

##### B. Phase 2 (5 to 10 year)

- Overlay Asphalt Pavement RWY 13/31, RWY 18/36, Taxiways, and Apron
- Construct 6900 sq. yds of apron
- Purchase land in Runway Protection Zones 13 & 31
- Construct one 6-Place T-Hangars

C. **Phase 3 (10 to 20 year)**

- Seal Asphalt Pavement, RWY 13/31, Taxiways, Apron
- Purchase land for precision approach RPZ runway 13
- Install Remote Communications Outlet (RCO)
- Construct 850' runway 13 extension with Medium Intensity Runway Lights
- Construct 850' parallel taxiway extension with Medium Intensity Taxiway Lights.
- Install Medium Intensity Approach Light System with Rail (MALSR) Rwy 13
- Install Precision Approach Navigation Aid (ILS) to Rwy 13
- Purchase property in Runway Protection Zones to runways 18 and 36.
- Widen runway 18/36 from 50' to 60' and install Medium Intensity Runway Lights MIRL.
- Expand auto parking

These recommendations, depicted on the Airport Layout Plan, respond to requirements at Fremont Municipal Airport as identified at this time. They should be reviewed periodically within the context of changing activity levels and airport conditions. The Airport Layout Plan can then be updated to reflect improvements made as well as changes in the recommendations dictated by new conditions.

III. **COST ESTIMATES**

Generalized cost estimates for the proposed improvements were prepared using information from the state airport system plan and locally available information. Table IV-1 summarizes these costs, by phase, and also identifies those amounts eligible for federal and state matching grants.

IV. **PROJECT COORDINATION**

The recommendations presented in this report have been coordinated with state and local agencies and governments.

TABLE IV-1
------------

Cost Estimates and Development Phasing, Fremont Municipal Airport, Fremont, Nebraska				
PHASE 1 (1 TO 5 YEARS)				
ITEM	TOTAL COST	FEDERAL SHARE	STATE SHARE	LOCAL SHARE
ODALS Runway 13	\$120,000	\$108,000	\$3,600	\$8,400
Purchase land in BRL for 13	\$25,000	\$22,500	\$750	\$1,750
Seal Coat Runway and Taxiway Asphalt pavement	\$300,000	\$270,000	\$9,000	\$21,000
Complete Parallel Taxiway Rwy 13/31 (35'x1800' concrete) with MITL	\$455,000	\$409,500	\$13,650	\$31,850
* Construct 6 Place T-hangar	\$250,000			\$250,000
<b>Subtotal Phase 1 construction</b>	<b>\$1,150,000</b>	<b>\$810,000</b>	<b>\$27,000</b>	<b>\$313,000</b>
PHASE 2 (5 to 10 YEARS)				
Overlay Asphalt Pavement, RWY 13/31, RWY 18/36, Taxiways and Apron	\$2,650,000	\$2,385,000	\$79,500	\$185,500
Construct 6900 SY Concrete Apron	\$500,000	\$450,000	\$15,000	\$35,000
Purchase Land in RPZ's 13 & 31	\$100,000	\$90,000	\$3,000	\$7,000
* Construct 6 Place T-hangar	\$250,000			\$250,000
<b>Subtotal Phase 2 construction</b>	<b>\$3,500,000</b>	<b>\$2,925,000</b>	<b>\$97,500</b>	<b>\$477,500</b>
PHASE 3 (10 to 20 YEARS)				
Seal Coat Runway and Taxiway Asphalt pavement	\$150,000	\$135,000	\$4,500	\$10,500
Purchase land for precision approach RPZ RWY 13 & Residences in 31 RPZ	\$870,000	\$783,000	\$26,100	\$60,900
Install Remote Communications Outlet (RCO)	\$50,000	\$50,000	\$0	\$0
Construct 850' Concrete RWY 13/31 extension with MIRL (9500 SY)	\$870,000	\$783,000	\$26,100	\$60,900
Construct 850' Concrete Taxiway Extension with MITL (5000 SY)	\$450,000	\$405,000	\$13,500	\$31,500
Construct MALSR RWY 13	\$400,000	\$360,000	\$12,000	\$28,000
Install ILS to RWY 13	\$250,000	\$250,000	\$0	\$0
Purchase Property in Runway Protection Zones to RWY 18/36	\$4,150,000	\$3,735,000	\$124,500	\$290,500
Widen Runway 18/36 from 50' to 60' and install Medium Intensity Runway Lights	\$600,000	\$540,000	\$18,000	\$42,000
Expand Auto Parking	\$40,000	\$0	\$0	\$40,000
<b>Subtotal Phase 3 construction</b>	<b>\$7,830,000</b>	<b>\$7,041,000</b>	<b>\$224,700</b>	<b>\$564,300</b>
<b>TOTAL COSTS PHASE 1+2+3</b>	<b>\$12,480,000</b>	<b>\$10,776,000</b>	<b>\$349,200</b>	<b>\$1,354,800</b>

- Anticipated State Loan

**APPENDIX -I**

**NEBRASKA AVIATION SYSTEM PLAN**

**SURVEY OF AIRPORT USERS**

**AIRPORT MASTER RECORD 5010-1**

**WIND ROSE**

# RECOMMENDED SYSTEM

 National Airport

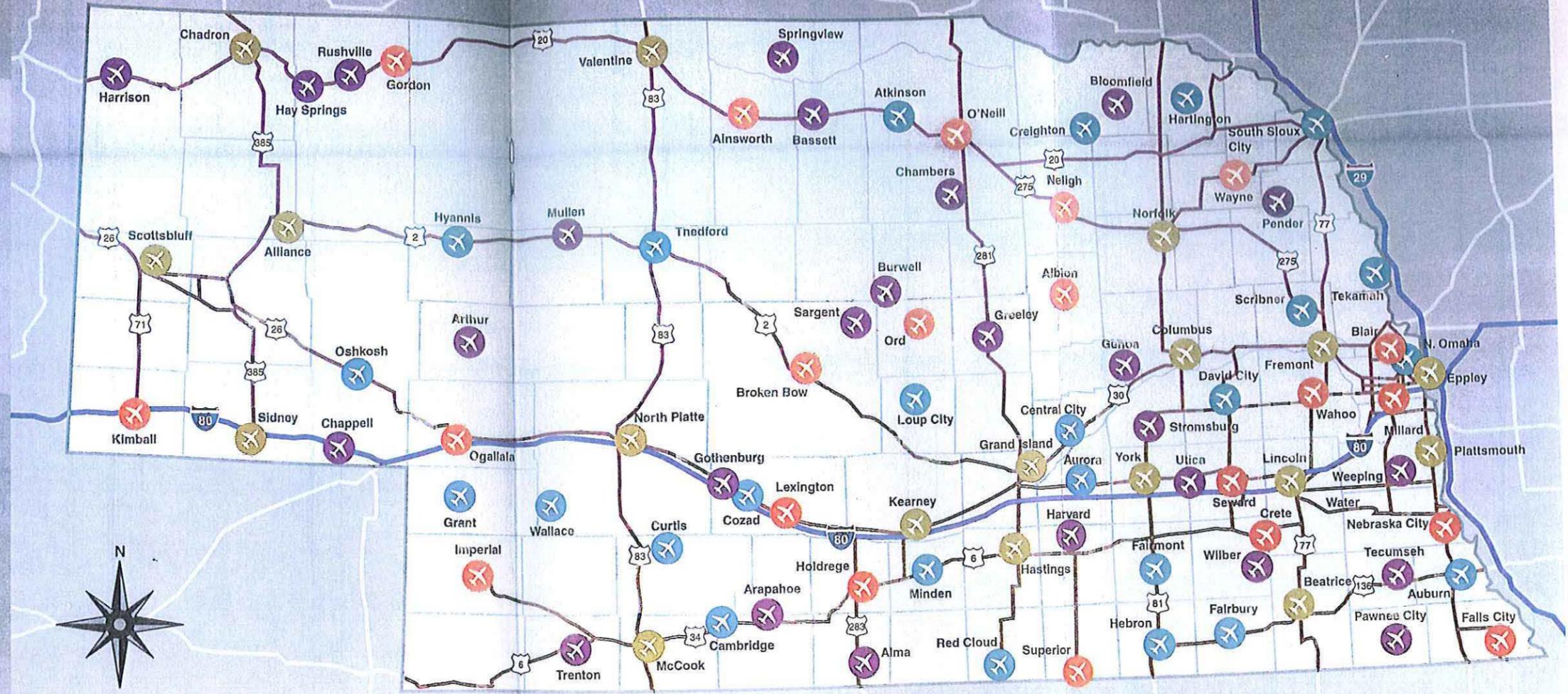
 Regional Airport

 Local Airport

 Limited Airport

 Interstate

 Principal Highway



**NATIONAL AIRPORTS** -- Maintain a consistent and contributing role in enabling the local, regional, and statewide economy to have access to and from the national and worldwide economy.

**RUNWAY LENGTH:** 75% Large Aircraft at 60% Useful Load (5,500' and up)  
**RUNWAY WIDTH:** To Meet ARC (100' - 150' typical)  
**CROSSWIND RUNWAY:** As Needed to Meet 95% Coverage  
**TAXIWAY:** Full Parallel  
**NAVIGATIONAL AID:** Precision Approach  
**WEATHER:** Automated Weather Reporting  
**SERVICES:** Phone, Restrooms, FBO, Maintenance, Jet Fuel, Ground Transportation, RCO/ATCT  
**FACILITIES:** Terminal, Aircraft Apron, Hangars, Auto Parking  
**GROUND ACCESS:** Full paved road from associated city to terminal  
 Roadway signs on and off site

**REGIONAL AIRPORTS** -- Maintain a contributing role in supporting the local and regional economy and connecting it to the state and national economy.

**RUNWAY LENGTH:** 100% of Small Aircraft w/ less than 10 passenger seats (4,000' - 6,200')  
**RUNWAY WIDTH:** To Meet ARC (75' typical)  
**TAXIWAY:** Partial Parallel  
**NAVIGATIONAL AID:** Non-Precision Approach  
**WEATHER:** Automated Weather  
**SERVICES:** Phone, Restrooms, FBO, Maintenance, Jet Fuel, Ground Transportation  
**FACILITIES:** Terminal, Aircraft Apron, Hangars, Auto Parking  
**GROUND ACCESS:** Full paved road from associated city to terminal  
 Roadway signs on and off site

**LOCAL AIRPORTS** -- Maintain a supplemental contributing role for the local economy.

**RUNWAY LENGTH:** 95% of Small Aircraft (NPIAS\*\* airports) (3,400' - 6,000' typical)\*  
 75% of Small Aircraft (non-NPIAS) (2,900' - 4,500' typical)  
**RUNWAY WIDTH:** 60'-NPIAS, 50'-non-NPIAS  
**TAXIWAY:** Turnarounds & Connectors  
**NAVIGATIONAL AID:** Non-Precision Approach  
**SERVICES:** Phone, Restrooms, Fuel  
**FACILITIES:** Pilots Lounge, Aircraft Apron, Hangars, Auto Parking  
**GROUND ACCESS:** Roadway signs on and off site

**LIMITED AIRPORTS** -- Maintain a limited contributing role for the local economy.

**RUNWAY LENGTH:** 95% of Small Aircraft (NPIAS\*\*) (3,400'-6,000' typical)\*  
 Maintain existing (non-NPIAS)  
**RUNWAY WIDTH:** 60' Paved or 120' Turf (NPIAS\*\* airport)  
 50' Paved or 100' Turf (non-NPIAS)  
**TAXIWAY:** Connector and/or Turnarounds  
**SERVICES:** Phone, Restrooms  
**FACILITIES:** Aircraft Apron, Hangars, Auto Parking  
**GROUND ACCESS:** Roadway signs on and off site

\*Length increases as elevation increases  
 \*\*National Plan of Integrated Airport Systems

Dear Airport User:

The City of Fremont, Nebraska is in the process of Up Dating the Airport Layout Plan for the Fremont Municipal Airport. (FET)

In order to maintain the current 5,500' of runway length and plan for improved instrument approach procedures we need to document the need for these features. In order to maintain and enhance the airport please take a few moments to complete the following and return to:

Tom Trumble  
Manager of Aviation Services  
JEO Consulting Group, Inc.  
P.O. Box 207  
Wahoo, Ne. 68066

Name and Address: Chief Pilot  
Great Plains Communications Inc.  
P.O. Box 500  
Blair, Ne. 68008

Aircraft Make, Model & N# 1 Cheyenne IXL (Piper) N359GP  
Req. Runway Length @ Gross Wt. 3600  
2 \_\_\_\_\_  
Req. Runway Length @ Gross Wt. \_\_\_\_\_  
3 \_\_\_\_\_  
Req. Runway Length @ Gross Wt. \_\_\_\_\_

Current Annual Trips to Or from Fremont. 1 450  
2 450  
3 \_\_\_\_\_

Comments: Maintaining the current facilities and length are very important to attracting new and keeping current business usage.

Thomas A Rowdall 7-26-02  
Signature Date

Dear Airport User:

The City of Fremont, Nebraska is in the process of Up Dating the Airport Layout Plan for the Fremont Municipal Airport. (FET)

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Tom Trumble  
Manager of Aviation Services  
JEO Consulting Group, Inc.  
P.O. Box 207  
Wahoo, Ne. 68066

Name and Address: Dugan Funeral Services, Inc.  
751 N. Lincoln  
Fremont, Ne. 68025

Aircraft Make, Model & N# 1 PAYI (31T1) N82TW  
Req. Runway Length @ Gross Wt. 4500ft  
2 C182 N3251Y  
Req. Runway Length @ Gross Wt. \_\_\_\_\_  
3 2000 - 1500lb  
Req. Runway Length @ Gross Wt. \_\_\_\_\_

Current Annual Trips to Or from Fremont. 1 130  
2 \_\_\_\_\_  
3 \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

[Signature] [Signature] 7/25/02  
Signature Date

*Closing 18.36 would be a bad deal -  
with winds over 15-20k do even use it  
with the PA31T1*

Dear Airport User:

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Tom Trumble  
Manager of Aviation Services  
JEO Consulting Group, Inc.  
P.O. Box 207  
Wahoo, Ne. 68066

Name and Address: Chief Pilot  
Taylor & Martin, Inc.  
P.O. Box 349  
Fremont, Ne. 68025

Aircraft Make, Model & N# 1 300TM  
Req. Runway Length @ Gross Wt. 5,500'  
2 \_\_\_\_\_  
Req. Runway Length @ Gross Wt. \_\_\_\_\_  
3 \_\_\_\_\_  
Req. Runway Length @ Gross Wt. \_\_\_\_\_

Current Annual Trips to Or from Fremont. 1 100 +  
2 \_\_\_\_\_  
3 \_\_\_\_\_

Comments: Each year we have to  
deviate to an alternate airport  
because of High approach minimums at FET

Bill Simms 7-26-02  
Signature Date

Bill Simms  
Chief Pilot

Dear Airport User:

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In order to maintain the current 5,500' of runway length and plan for improved instrument approach procedures we need to document the need for these features. In order to maintain and enhance the airport please take a few moments to complete the following and return to:

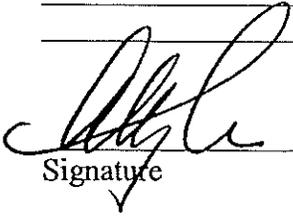
Tom Trumble  
Manager of Aviation Services  
JEO Consulting Group, Inc.  
P.O. Box 207  
Wahoo, Ne. 68066

Name and Address: Jasmin Mateer  
Silverhawk Aviation Inc.  
1751 W. Kearney Ave.  
Lincoln, Ne. 68524

Aircraft Make, Model & N# 1 1415C CITATION 550  
Req. Runway Length @ Gross Wt. 5,000  
2 305S  
Req. Runway Length @ Gross Wt. 4800  
3 280SC  
Req. Runway Length @ Gross Wt. 12,500

Current Annual Trips to Or from Fremont. 1 Varies on Demand  
2 \_\_\_\_\_  
3 \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

  
Signature

8-16-02  
Date



JUL 26 2002

Dear Airport User:

The City of Fremont, Nebraska is in the process of Up Dating the Airport Layout Plan for the Fremont Municipal Airport. (FET)

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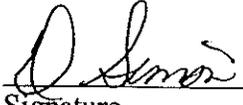
Tom Trumble  
Manager of Aviation Services  
JEO Consulting Group, Inc.  
P.O. Box 207  
Wahoo, Ne. 68066

Name and Address: Donna Simon  
Elliott Aviation Inc.  
3636 Wilbur Plaza  
Omaha, Ne. 68110

Aircraft Make, Model & N# 1 N779DC Diamond Jet  
Req. Runway Length @ Gross Wt. 5500  
2 N796A N240RE KA200- KA90  
Req. Runway Length @ Gross Wt. 3500  
3 N580EA Baron 58  
Req. Runway Length @ Gross Wt. 3000

Current Annual Trips to Or from Fremont. 1 \_\_\_\_\_  
2 \_\_\_\_\_  
3 \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

  
Signature

7-26-02  
Date

# AIRPORT MASTER RECORD

> 1 ASSOC CITY: FREMONT 4 STATE: NE LOC ID: FET FAA SITE NR: 12716.\*A  
 > 2 AIRPORT NAME: FREMONT MUNI 5 COUNTY: DODGE NE  
 3 CBD TO AIRPORT (NM): 02 NW 6 REGION/ADO: ACE/NONE 7 SECT AERO CHT: OMAHA

**GENERAL**

10 OWNERSHIP: PUBLIC  
 > 11 OWNER: CITY OF FREMONT  
 > 12 ADDRESS: PO BOX 1263  
 FREMONT, NE 68026  
 > 13 PHONE NR: 402-727-2630  
 > 14 MANAGER: MARK VYHLIDAL  
 > 15 ADDRESS: CITY OF FREMONT STREET  
 FREMONT, NE 68025  
 > 16 PHONE NR: 402-727-2691  
 > 17 ATTENDANCE SCHEDULE:  
 MONTHS DAYS HOURS  
 ALL ALL 0700-2000

**SERVICES**

> 70 FUEL: 100LL A  
 > 71 AIRFRAME RPRS: MAJOR  
 > 72 PWR PLANT RPRS: MAJOR  
 > 73 BOTTLE OXYGEN: NONE  
 > 74 BULK OXYGEN: NONE  
 75 TSNT STORAGE: HGR TIE  
 76 OTHER SERVICES:  
 CHTR INSTR SALES

**BASED AIRCRAFT**

90 SINGLE ENG:	37
91 MULTI ENG:	6
92 JET:	0
TOTAL:	43
93 HELICOPTERS:	0
94 GLIDERS:	0
95 MILITARY:	0
96 ULTRA-LIGHT:	0

**FACILITIES**

> 80 ARPT BCN: CG  
 > 81 ARPT LGT SKED: DUSK-DAWN  
 > 82 UNICOM: 122.800  
 > 83 WIND INDICATOR: YES-L  
 84 SEGMENTED CIRCLE: YES  
 85 CONTROL TWR: NONE  
 86 FSS: COLUMBUS  
 87 FSS ON ARPT: NO  
 88 FSS PHONE NR: 402-563-1508  
 89 TOLL FREE NR: 1-800-WX-BRIEF

**OPERATIONS**

100 AIR CARRIER:	0
101 COMMUTER:	0
102 AIR TAXI:	3,600
103 G A LOCAL:	10,600
104 G A ITRNT:	6,200
105 MILITARY:	150
TOTAL:	20,550

OPERATIONS FOR  
MOS ENDING

18 AIRPORT USE: PUBLIC  
 19 ARPT LAT: 41-26-56.900N ESTIMATED  
 20 ARPT LONG: 096-31-12.700W  
 21 ARPT ELEV: 1203 SURVEYED  
 22 ACREAGE: 639  
 > 23 RIGHT TRAFFIC: 13, 18  
 > 24 NON-COMM LANDING: NO  
 25 NPIAS/FED AGREEMENTS:NGY  
 26 FAR 139 INDEX:

**RUNWAY DATA**

> 30 RUNWAY IDENT:  
 > 31 LENGTH:  
 > 32 WIDTH:  
 > 33 SURF TYPE-COND:  
 > 34 SURF TREATMENT:  
 35 GROSS WT: SW  
 36 (IN THSDS) DW  
 37 DTW  
 38 DDTW

13/31	18/36
5,500	2,444
100	50
ASPH-CONC-G	ASPH-G
28	36
48	58

**LIGHTING/APCH AIDS**

> 40 EDGE INTENSITY:  
 > 42 RWC MARK TYPE-COND  
 > 43 VGS  
 44 THR CROSSING HGT  
 45 VISUAL GLIDE ANGLE  
 > 46 CNTRLN-TDZ  
 > 47 RVR-RVV  
 > 48 REIL  
 > 49 APCH LIGHTS

MED	
NPI - G / NPI - G	BSC - G / BSC - G
P2L / P2L	/
/	/
/	/
- / -	- / -
- / -	- / -
Y /	/
/	/

**OBSTRUCTION DATA**

50 FAR 77 CATEGORY  
 > 51 DISPLACED THR  
 > 52 CTLG OBSTN  
 > 53 OBSTN MARKED/LGTD  
 > 54 HGT ABOVE RWY END  
 > 55 DIST FROM RWY END  
 > 56 CNTRLN OFFSET  
 57 OBSTN CLNC SLOPE  
 58 CLOSE-IN OBSTN

A(NP) / A(V)	A(V) / A(V)
/	160 /
POLE / ROAD	ROAD / TREE
/	/
27 / 15	15 / 45
1,300 / 820	240 / 1,165
100R / 100L	0B / 175L
40:1 / 41:1	2:1 / 21:1
N / N	N / N

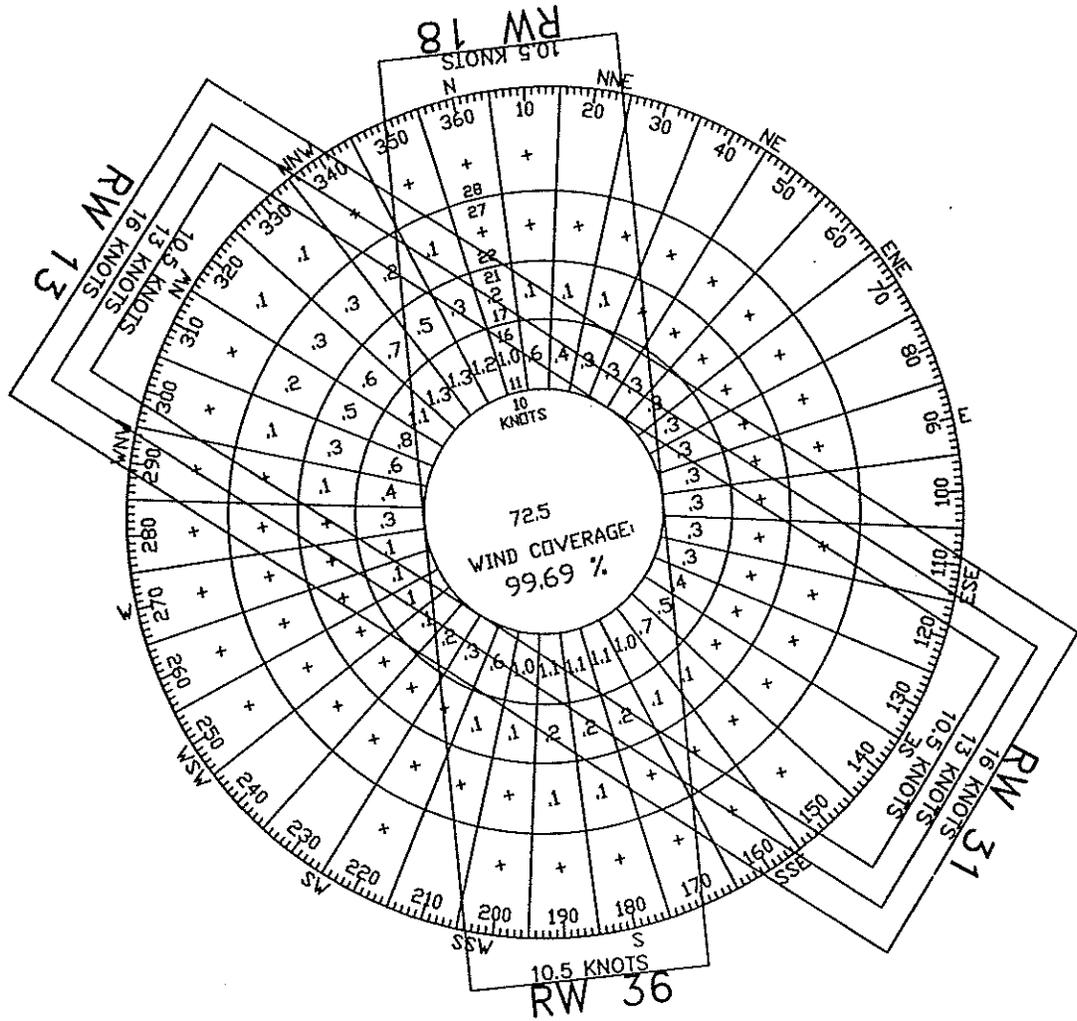
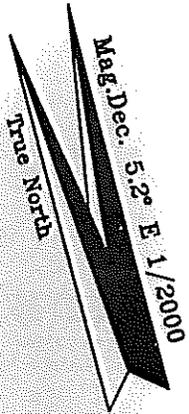
**DECLARED DISTANCES**

> 60 TAKE OFF RUN AVBL (TORA)  
 > 61 TAKE OFF DIST AVBL (TODA)  
 > 62 ACLT STOP DIST AVBL (ASDA)  
 > 63 LNDG DIST AVBL (LDA)

/	/
/	/
/	/
/	/

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

- 110 REMARKS:  
 A 011 CLARK BOSCHULT, DIRECTOR OF PUBLIC WORKS 402-727-2636.  
 A 014 STREET COMMISSIONER - MARK VYHLIDAL.  
 A 017 FOR ATTENDANT AFT HRS CALL (402) 727-4665/9341.  
 A 033 RWY 13/31 S 3190 FT ASPH; 100 FT WIDE.  
 A 057 RWY 18 APCH RATIO 26:1 TO DSPLCD THLD.  
 A 081 ACTVT REIL RY 13 AND PAPI RYS 13 & 31 - CTAF.  
 A 110 THIS AIRPORT HAS BEEN SURVEYED BY THE NATIONAL GEODETIC SURVEY.  
 A 110-01 (E81) TURN OFF ONLY.



WIND COVERAGE ALL OBSERVATIONS			
	10.5 KNOTS	13 KNOTS	16 KNOTS
RUNWAY 13-31	91.34%	95.75%	98.87%
RUNWAY 18-36	90.94%	94.90%	98.04%
COMBINED COVERAGE	98.34%	99.47%	99.88%

SOURCE: NOAA National Climate Center  
Ashville, North Carolina

DATA STATION: Columbus Municipal Airport AWOS  
Columbus, Nebraska

OBSERVATIONS: 1991-2001

ALL WEATHER

**JE O**  
**JOHNSON ERICKSON O'BRIEN**  
 ENGINEERING ARCHITECTURE SURVEYING  
 402/443-4681  
 P.O. BOX 207  
 WAHOO, NEBRASKA 68066  
 BRANCH OFFICES:  
 NEBRASKA CITY, NE 402/873-6766  
 HASTINGS, NE 402/462-5657  
 NORFOLK, NE 402/371-6416  
 CARROLL, IA 712/792-9711

# FREMONT MUNICIPAL AIRPORT

## FREMONT, NEBRASKA

### 2003 ALP UPDATE

NEBRASKA DEPT. OF AERONAUTICS PROJECT SA-11

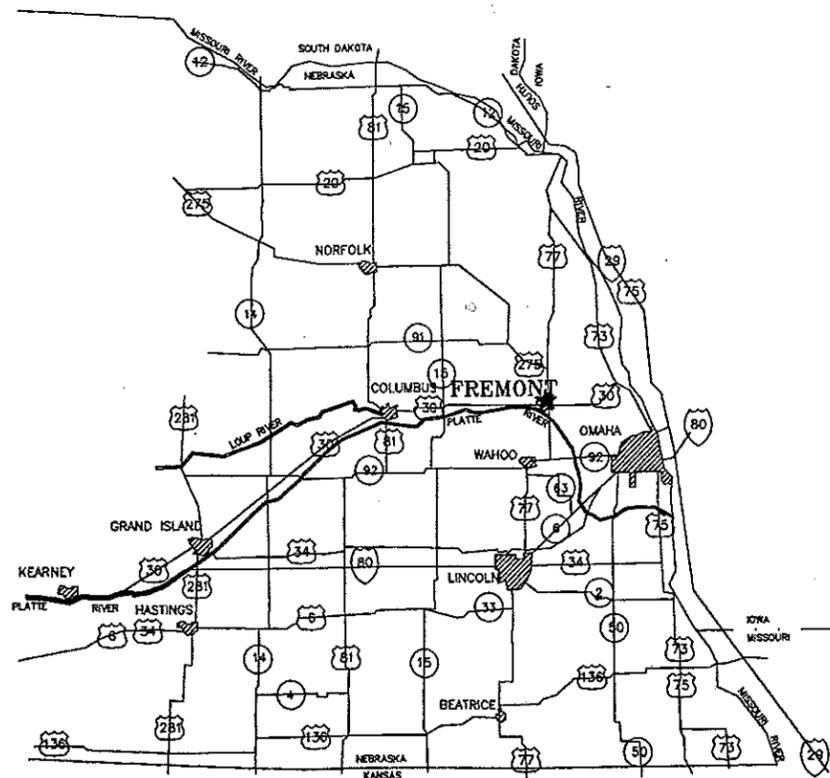
SHEET: COVER SHEET

PROJECT: FREMONT MUNICIPAL AIRPORT  
 FREMONT, NEBRASKA  
 2003 ALP UPDATE

**CITY OFFICIALS**

**MAYOR** DONALD B. EDWARDS  
**CITY COUNCIL:**  
**PRESIDENT** ROY LEMONS  
**MEMBERS** GARY BOLTON  
 PATTY E. EMANUEL-VAUGHAN  
 MARY S. SCHIERMEYER-MARSH  
 ROBERT L. WARNER  
 SCOTT SCHALLER  
 BERNARD MRUZ  
 DALTON BENSON  
 KIMBERLY VOLK  
 DEAN SKOKAN  
 CLARK BOSCHULT

**CITY CLERK**  
**CITY ATTORNEY**  
**DIRECTOR OF PUBLIC WORKS**



LOCATION PLAT

**INDEX OF SHEETS:**

- SHT. 1 COVER SHEET
- SHT. 2 AIRPORT LAYOUT PLAN
- SHT. 3 PART 77 AIRSPACE DRAWING
- SHT. 4 PART 77 AIRSPACE DRAWING
- SHT. 5 PART 77 APPROACH PROFILES
- SHT. 6 INNER PORTION OF APPROACH SURFACE & PROFILE RUNWAY 13/31
- SHT. 7 INNER PORTION OF APPROACH SURFACE & PROFILE RUNWAY 18/36
- SHT. 8 TERMINAL AREA MAP
- SHT. 9 LAND USAGE MAP
- SHT. 10 AIRPORT PROPERTY MAP

	ARC EXIST.	ARC ULT.
RUNWAY 18/36	A-I SMALL AIRCRAFT OVER 50 KNOTS VISUAL	SAME
RUNWAY 13/31	B-II LARGE AIRCRAFT 1 MILE	C-II LARGE AIRCRAFT 3/4 MILE



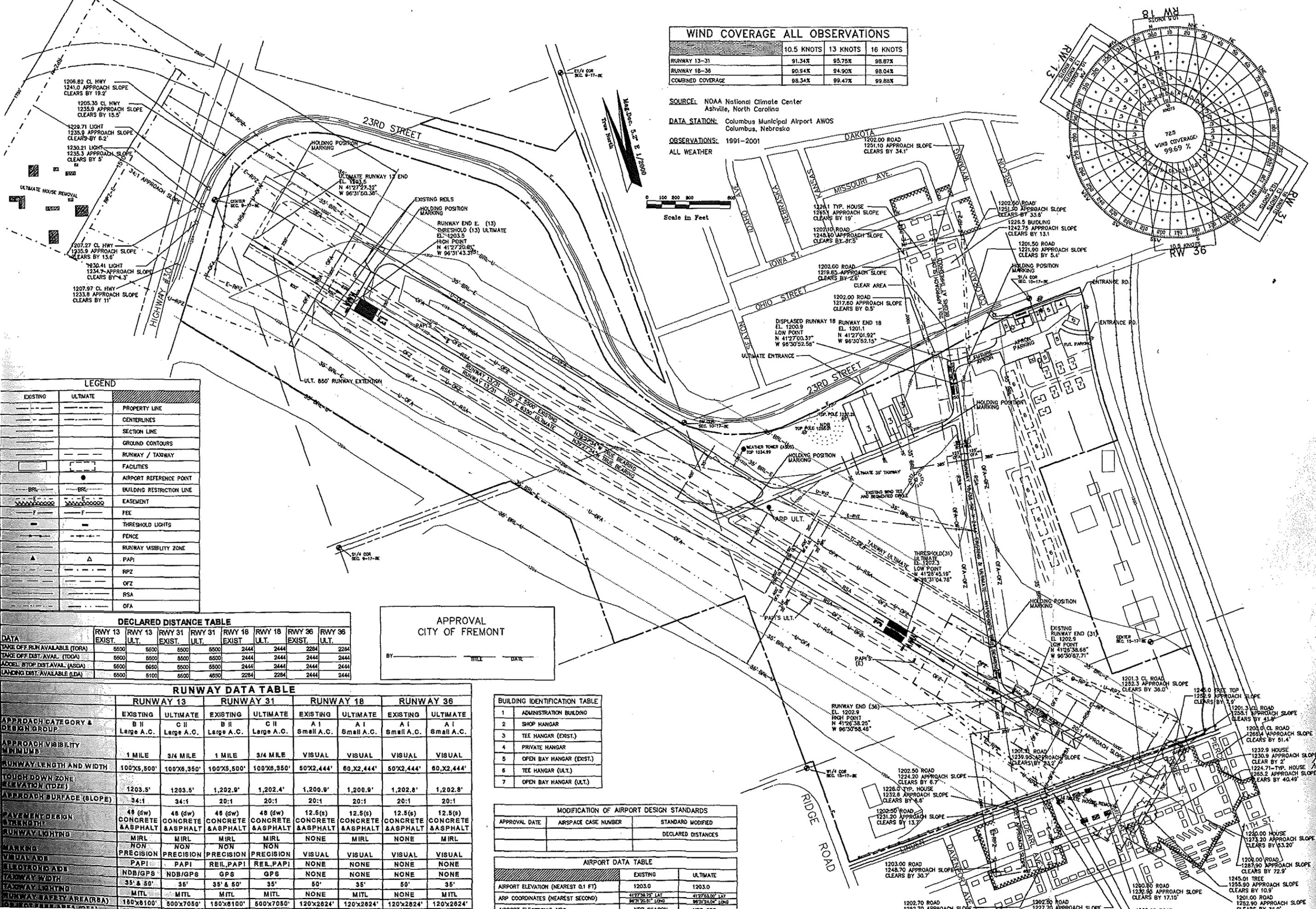
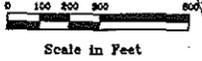
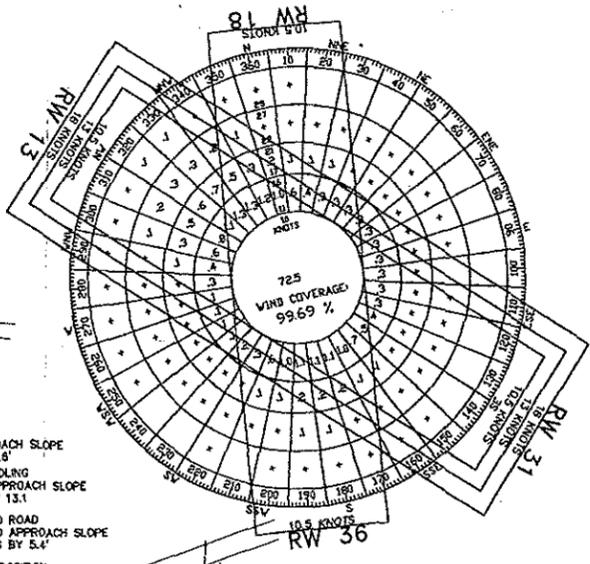
DATE 5-28-02  
 SCALE  
 DRAWN SJH  
 JOB NO. 291A3  
 FIELD BOOK  
 REVISIONS 4/07/03 11/21/03  
 DRAWING FILE NAME 291A3\_1.DWG



**WIND COVERAGE ALL OBSERVATIONS**

	10.5 KNOTS	13 KNOTS	16 KNOTS
RUNWAY 13-31	91.34%	95.75%	98.87%
RUNWAY 18-36	90.54%	94.90%	98.04%
COMBINED COVERAGE	98.34%	99.47%	99.88%

SOURCE: NOAA National Climate Center  
 Ashville, North Carolina  
 DATA STATION: Columbus Municipal Airport AWOS  
 Columbus, Nebraska  
 OBSERVATIONS: 1991-2001  
 ALL WEATHER



**LEGEND**

EXISTING	ULTIMATE	PROPERTY LINE
---	---	CENTERLINES
---	---	SECTION LINE
---	---	GROUND CONTOURS
---	---	RUNWAY / TAXIWAY
---	---	FACILITIES
---	---	AIRPORT REFERENCE POINT
---	---	BUILDING RESTRICTION LINE
---	---	EASEMENT
---	---	FEE
---	---	THRESHOLD LIGHTS
---	---	FENCE
---	---	RUNWAY VISIBILITY ZONE
---	---	PAPI
---	---	RPZ
---	---	OFZ
---	---	RSA
---	---	OFA

**DECLARED DISTANCE TABLE**

DATA	RWY 13 EXIST.	RWY 13 ULT.	RWY 31 EXIST.	RWY 31 ULT.	RWY 18 EXIST.	RWY 18 ULT.	RWY 36 EXIST.	RWY 36 ULT.
TAKE OFF R/LN AVAILABLE (TORA)	5500	5500	5500	5500	2444	2444	2284	2284
TAKE OFF DIST. AVAIL. (TODA)	5500	5500	5500	5500	2444	2444	2444	2444
ACCEL. & STOP DIST. AVAIL. (ASDA)	5500	5500	5500	5500	2444	2444	2444	2444
LANDING DIST. AVAILABLE (LDA)	5500	5100	5500	4550	2284	2284	2444	2444

**APPROVAL CITY OF FREMONT**

BY: \_\_\_\_\_ TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

**RUNWAY DATA TABLE**

	RUNWAY 13		RUNWAY 31		RUNWAY 18		RUNWAY 36	
	EXISTING	ULTIMATE	EXISTING	ULTIMATE	EXISTING	ULTIMATE	EXISTING	ULTIMATE
<b>APPROACH CATEGORY &amp; DESIGN GROUP</b>	B II Large A.C.	C II Large A.C.	B II Large A.C.	C II Large A.C.	A I Small A.C.	A I Small A.C.	A I Small A.C.	A I Small A.C.
<b>APPROACH VISIBILITY MINIMUM</b>	1 MILE	3/4 MILE	1 MILE	3/4 MILE	VISUAL	VISUAL	VISUAL	VISUAL
<b>RUNWAY LENGTH AND WIDTH</b>	100'x5,500'	100'x6,350'	100'x5,500'	100'x6,350'	50'x2,444'	60'x2,444'	50'x2,444'	60'x2,444'
<b>TOUCH DOWN ZONE (ELEVATION) (TDZE)</b>	1203.5'	1203.5'	1,202.9'	1,202.4'	1,200.9'	1,200.9'	1,202.8'	1,202.8'
<b>APPROACH SURFACE (SLOPE)</b>	34:1	34:1	20:1	20:1	20:1	20:1	20:1	20:1
<b>PAYMENT DESIGN STRENGTH</b>	48 (dw) CONCRETE & ASPHALT	12.5 (s) CONCRETE & ASPHALT						
<b>RUNWAY LIGHTING</b>	MIRL	MIRL	MIRL	MIRL	NONE	MIRL	NONE	MIRL
<b>MARKING</b>	NON PRECISION	NON PRECISION	NON PRECISION	NON PRECISION	VISUAL	VISUAL	VISUAL	VISUAL
<b>VISUAL AIDS</b>	PAPI	PAPI	REL_PAPI	REL_PAPI	NONE	NONE	NONE	NONE
<b>RESOUNDING AIDS</b>	NDB/GPS	NDB/GPS	GPS	GPS	NONE	NONE	NONE	NONE
<b>TAXIWAY WIDTH</b>	35' & 50'	35'	35' & 50'	35'	50'	35'	50'	35'
<b>TAXIWAY LIGHTING</b>	MITL	MITL	MITL	MITL	NONE	MITL	NONE	MITL
<b>RUNWAY SAFETY AREA (RSA)</b>	150'x8100'	500'x7050'	150'x8100'	500'x7050'	120'x2624'	120'x2624'	120'x2624'	120'x2624'

**BUILDING IDENTIFICATION TABLE**

1	ADMINISTRATION BUILDING
2	SHOP HANGAR
3	TEE HANGAR (EXIST.)
4	PRIVATE HANGAR
5	OPEN BAY HANGAR (EXIST.)
6	TEE HANGAR (ULT.)
7	OPEN BAY HANGAR (ULT.)

**MODIFICATION OF AIRPORT DESIGN STANDARDS**

APPROVAL DATE	AIRSPACE CASE NUMBER	STANDARD MODIFIED
		DECLARED DISTANCES

**AIRPORT DATA TABLE**

	EXISTING	ULTIMATE
AIRPORT ELEVATION (NEAREST 0.1 FT)	1203.0	1203.0
ARP COORDINATES (NEAREST SECOND)	412738.75° LAT 963120.61° LONG	412738.02° LAT 963124.04° LONG
AIRPORT ELECTRONIC AIDS	NDB BEACON	NDB GPS

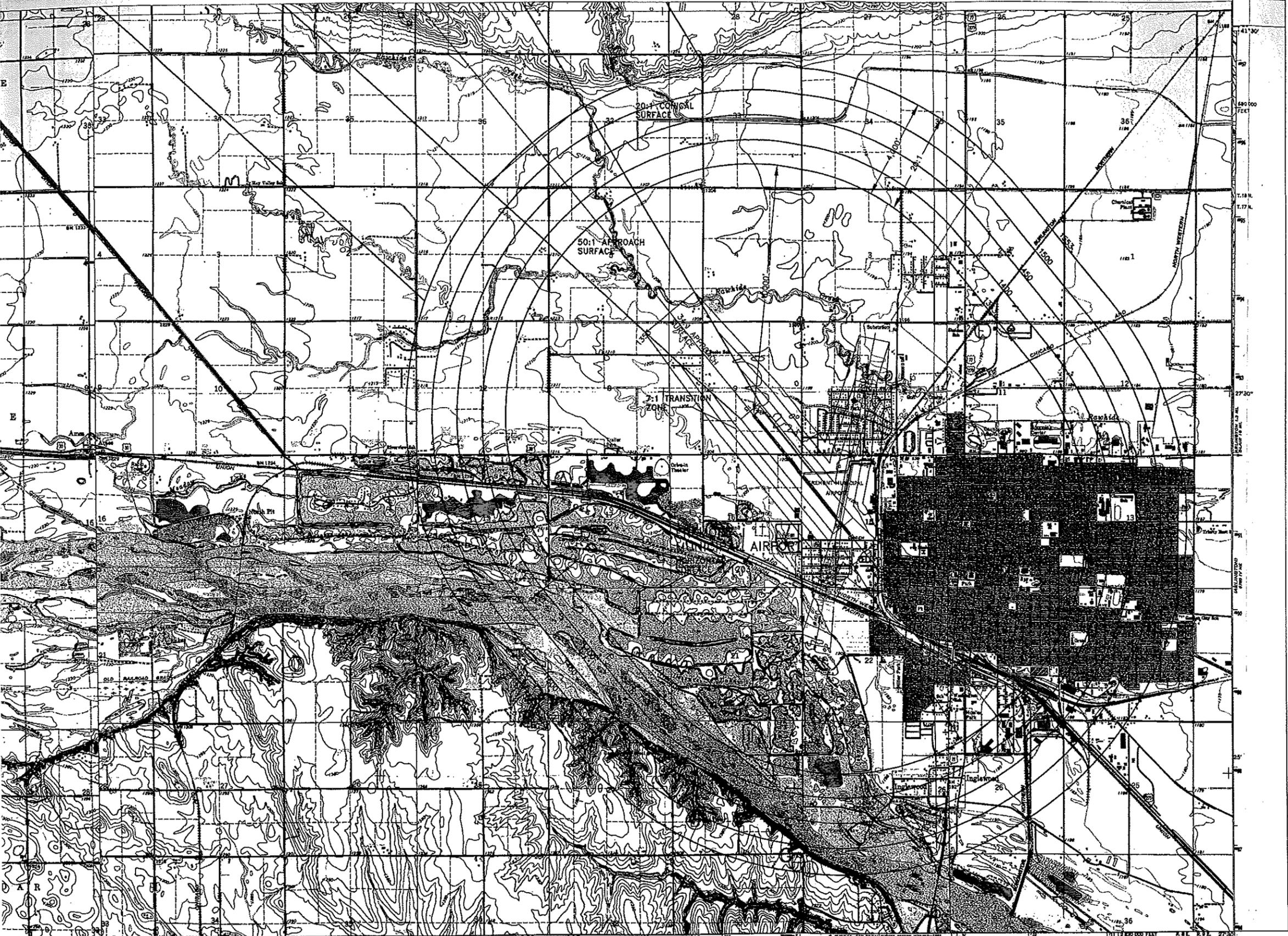
**JOHNSON  
ERICKSON  
O'BRIEN**  
ENGINEERING  
ARCHITECTURE  
SURVEYING  
402/443-4681  
P.O. BOX 207  
WABOO, NEBRASKA  
68068  
BRANCH OFFICES  
NEBRASKA CITY, NE  
402/873-6788  
HASTINGS, NE  
402/462-5657  
NORFOLK, NE  
402/371-0416  
CARROLL, IA  
712/792-9711

SHEET: PART 77 AIRSPACE DRAWING

PROJECT: FREMONT MUNICIPAL AIRPORT  
FREMONT, NEBRASKA  
2003 ALP UPDATE



DATE: B-22-02  
SCALE: 1" = 2000'  
DRAWN: LH  
JOB NO.: 291A3  
FIELD BOOK:  
REVISIONS: 4/07/03  
DRAWING FILE NAME: 291A3\_3.DWG  
DRAWING NO.:  
SHEET 3 OF 10



**LOCAL ZONING**  
THE LOCAL ZONING FOR FREMONT MUNICIPAL AIRPORT FOLLOWS THE GUIDELINES FOR AIRPORT ZONING REGULATIONS UNDER AIRPORT ZONING ACT, (SECTIONS 3-301 TO 3-303, R.R.S. 1943) PREPARED BY THE NEBRASKA DEPARTMENT OF AERONAUTICS, LINCOLN, NEBRASKA, JANUARY 1, 1974.  
THE ZONING COMMENCES AT THE AIRPORT PROPERTY LINE AND EXTENDS OUTWARD 3 MILES.  
APPROACH ZONES AND 7:1 TRANSITION SLOPE FOLLOW THE GUIDELINES OF FAA PART 77. AT THE END OF THE 7:1 TRANSITION AREAS A HEIGHT OF 150' EXTENDING TO THE 3 MILE LIMIT CURRENTLY ARE IN PLACE AT THE AIRPORT.

**NOTE**  
REFER TO THE INNER PORTION OF THE APPROACH SURFACE PLAN VIEW DETAILS FOR CLOSE IN OBSTRUCTIONS.

**OBSTRUCTION DATA TABLE**

NO.	ELEV.	DISCRIPION	LOCATION	PENETRATION	DISPOSITION
A	1418'	ELEVATOR	10,000' WEST	65'	NONE
B	1719'	RADIO TOWER	14,000' SW	219'	NONE
C	1801'	RADIO TOWER	23,000' SW		NONE
D	1545'	RADIO TOWER	28,000' WEST		NONE
E	1395'	RADIO TOWER	9,000' NE		NONE
F	1375'	RADIO TOWER	12,000' EAST	50'	NONE
G	1717'	RADIO TOWER	15,000' SOUTH	207'	NONE
H	1570'	RADIO TOWER	15,000' SOUTH	20'	NONE
I	1440'	RADIO TOWER	15,000' SOUTH		NONE

**ROAD CLASSIFICATION**  
Primary highway, all weather, hard surface. Light-duty road, all weather, improved surface. Secondary highway, all weather, hard surface. Unimproved road, fair or dry weather. U.S. Route. State Route.

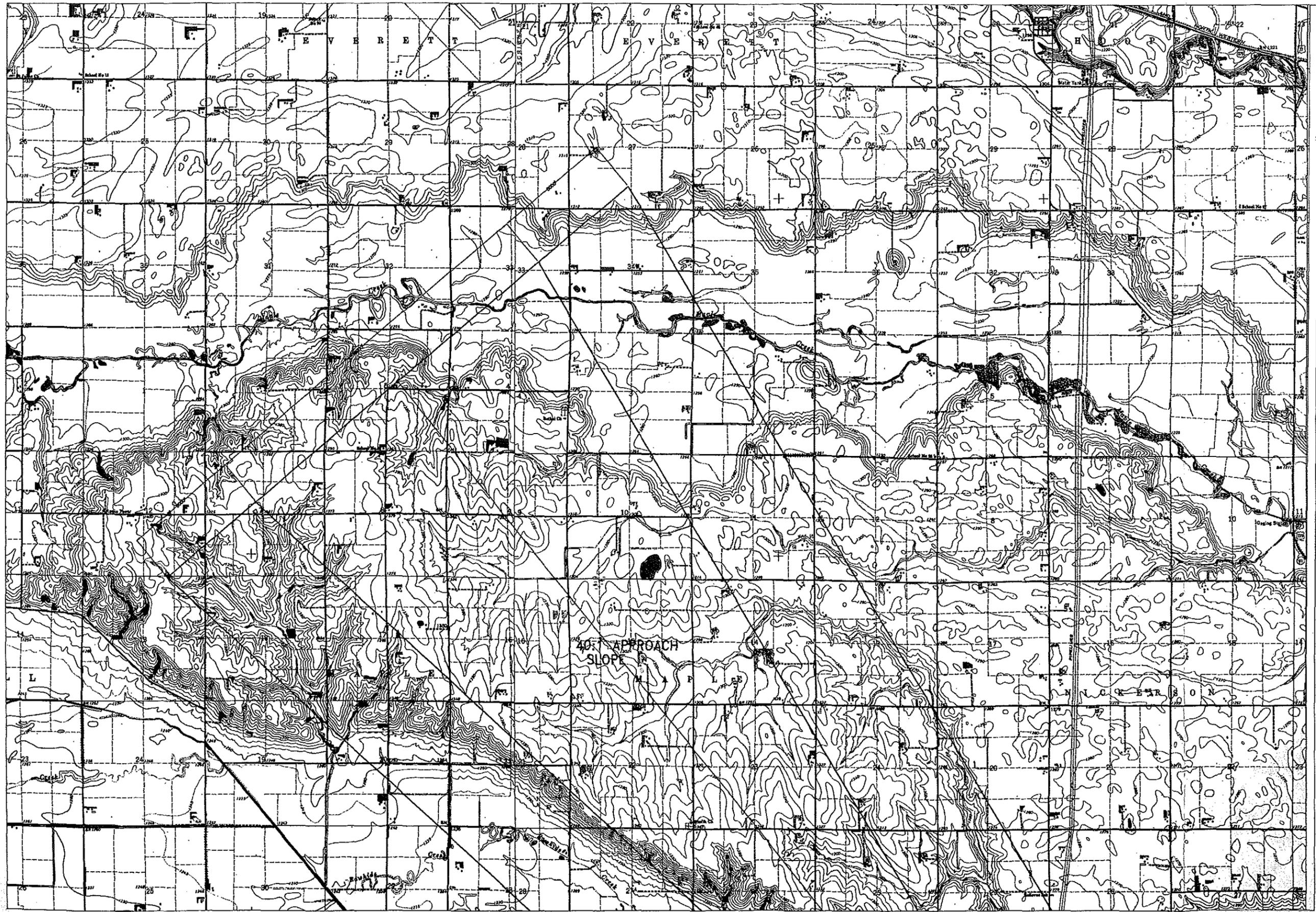
**ROAD CLASSIFICATION**  
Light-duty road, all weather, improved surface. Unimproved road, fair or dry weather. U.S. Route. State Route.

Map prepared, edited, and published by the Geological Survey part of the Department of the Interior program of the development of the Missouri River Basin control by USGS and USCGS. Topography by photogrammetric methods from aerial stereographs taken 1966. Field checked 1968. Spheroid projection. 1927 North American datum. 1000-foot grid based on Nebraska coordinate system, south zone. 100-meter Universal Transverse Mercator grid ticks, on 14, shown in blue. Not indicates areas in which only landmark buildings are shown.

SCALE 1:24,000  
CONTOUR INTERVAL 10 FEET  
DOTTED LINES REPRESENT 6-FOOT CONTOURS  
NATIONAL SPHEROID VERTICAL DATUM OF 1927

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO, 80225

typed, edited, and published by the Geological Survey part of the Department of the Interior program of the development of the Missouri River Basin control by USGS and USCGS. Topography by photogrammetric methods from aerial stereographs taken 1966. Field checked 1968. Spheroid projection. 1927 North American datum. 1000-foot grid based on Nebraska coordinate system, south zone. 100-meter Universal Transverse Mercator grid ticks, on 14, shown in blue. Not indicates areas in which only landmark buildings are shown.



**JOHNSON  
ERICKSON  
O'BRIEN**

**ENGINEERING  
ARCHITECTURE  
SURVEYING**

402/443-4661  
P.O. BOX 207  
WAKO, NEBRASKA  
68066

**BRANCH OFFICES:**

NEBRASKA CITY, NE  
402/873-5768

HASTINGS, NE  
402/462-5557

NORFOLK, NE  
402/371-6416

CARROLL, IA  
712/792-9711

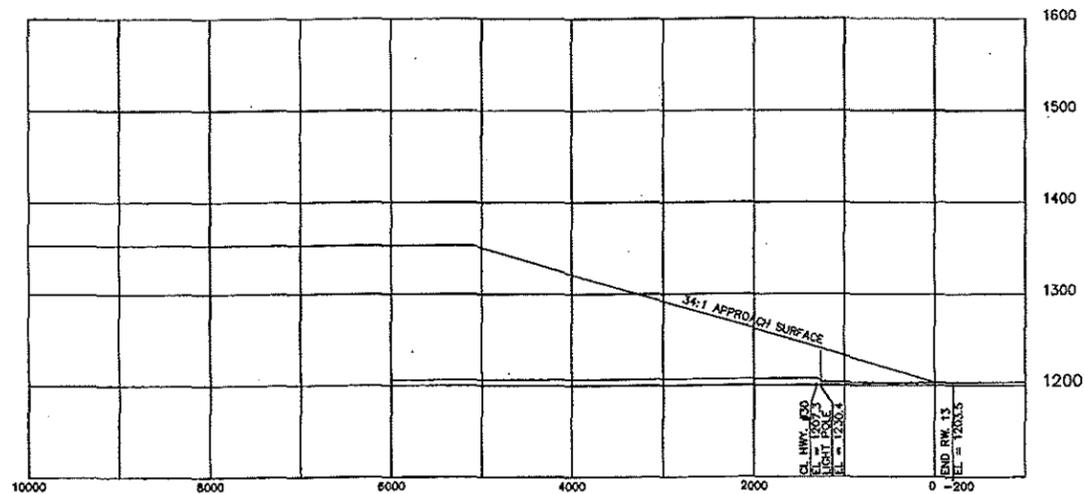
**SHEET:  
PART 77 AIRSPACE DRAWING**

**PROJECT:  
FREMONT MUNICIPAL AIRPORT  
FREMONT, NEBRASKA  
2003 ALP UPDATE**



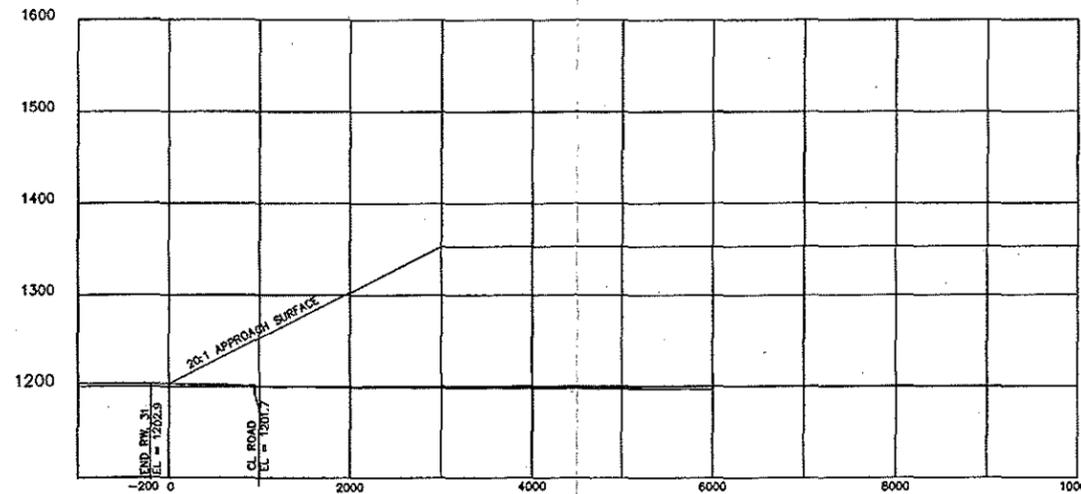
DATE  
8-22-02  
SCALE  
1" = 2000'  
DRAWN  
SH  
JOB NO.  
291A3  
FIELD BOOK

REVISIONS  
4/07/03  
DRAWING FILE NAME  
291A3\_3.DWG



**APPROACH PROFILE RUNWAY 13**  
 SCALE: 1" = 1000' HORIZ.  
 1" = 100' VERT.

OBSTRUCTION TABLE					
ITEM	DESCRIPTION	PENETRATION	DISPOSITION	ELEV.	
		N	D	N	F

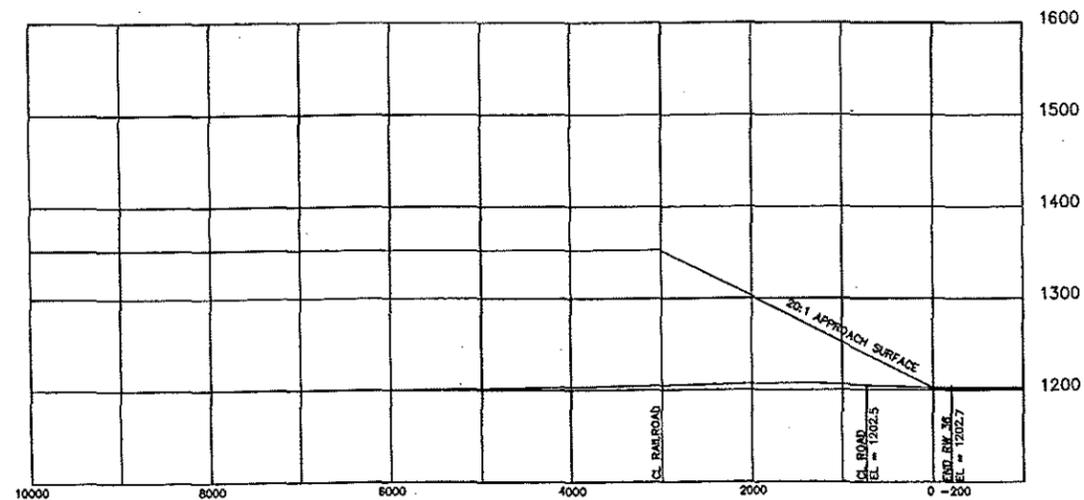


**APPROACH PROFILE RUNWAY 31**  
 SCALE: 1" = 1000' HORIZ.  
 1" = 100' VERT.

OBSTRUCTION TABLE					
ITEM	DESCRIPTION	PENETRATION	DISPOSITION	ELEV.	
		N	D	N	F

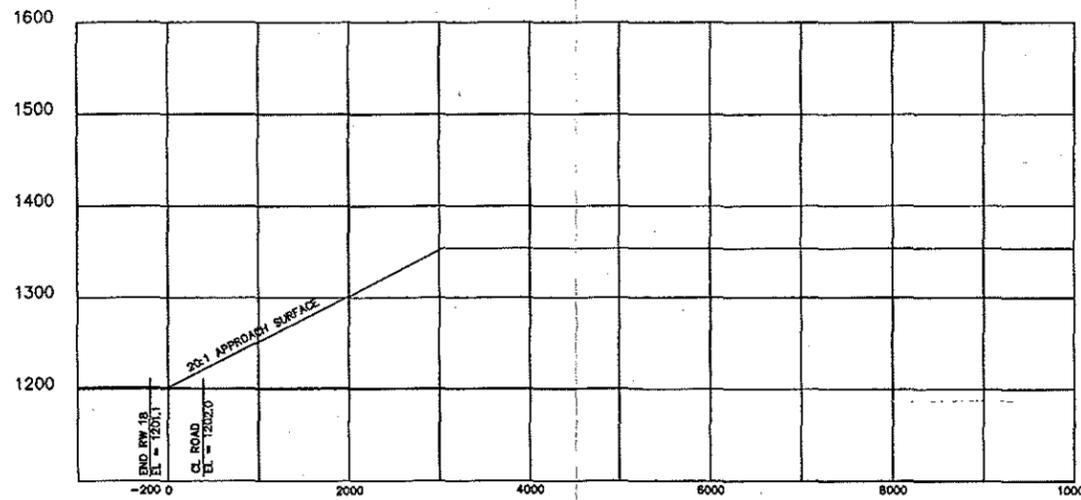
**NOTE**

REFER TO THE INNER PORTION OF THE APPROACH SURFACE PLAN VIEW DETAILS FOR CLOSE IN OBSTRUCTIONS.



**APPROACH PROFILE RUNWAY 36**  
 SCALE: 1" = 1000' HORIZ.  
 1" = 100' VERT.

OBSTRUCTION TABLE					
ITEM	DESCRIPTION	PENETRATION	DISPOSITION	ELEV.	
		N	D	N	F



**APPROACH PROFILE RUNWAY 18**  
 SCALE: 1" = 1000' HORIZ.  
 1" = 100' VERT.

OBSTRUCTION TABLE					
ITEM	DESCRIPTION	PENETRATION	DISPOSITION	ELEV.	
		N	D	N	F



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BRANCH OFFICES:

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HASTINGS, NE  
402/482-5857

NORFOLK, NE  
402/371-6416

CARROLL, IA  
712/792-9711

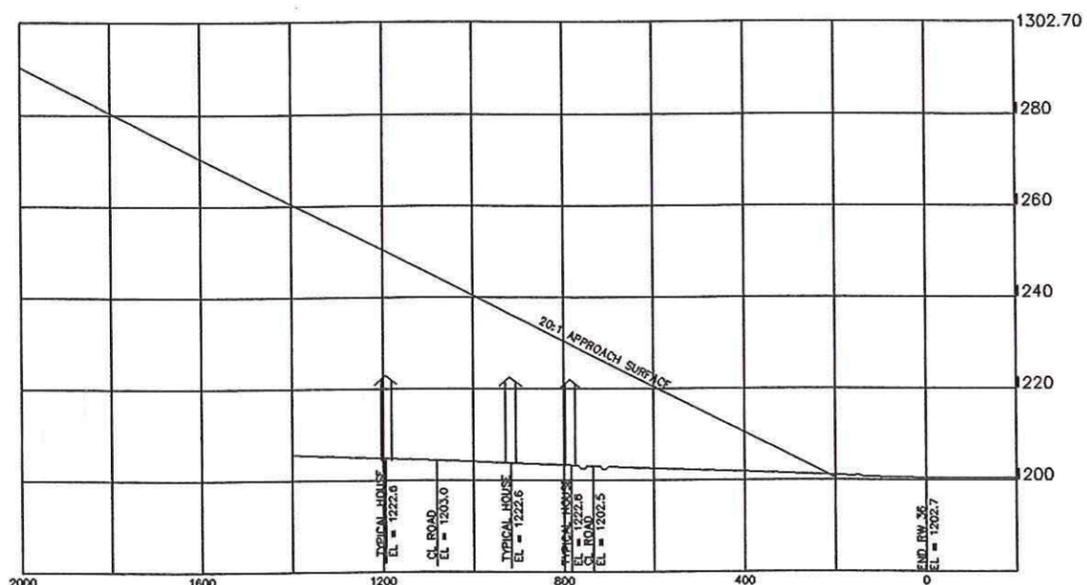
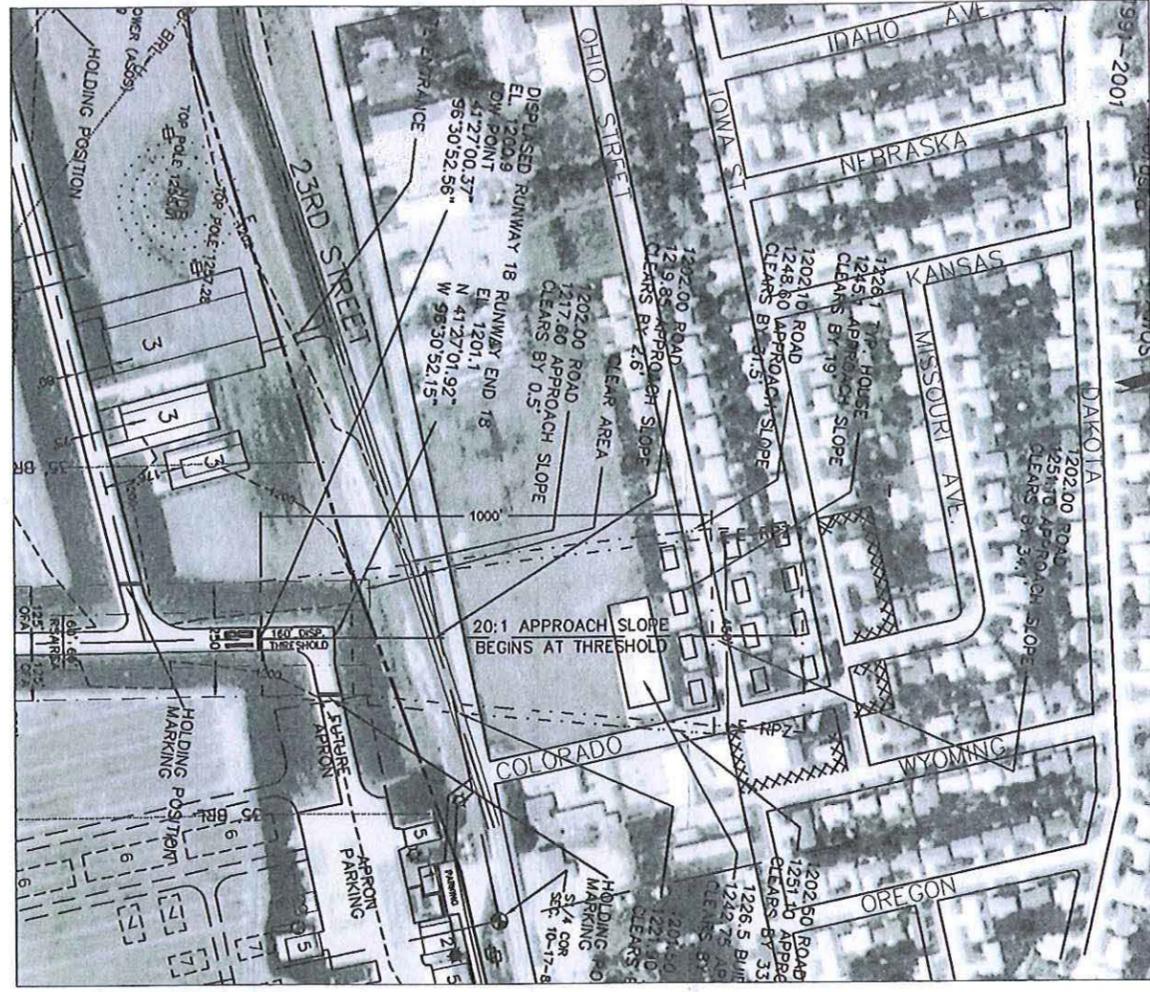
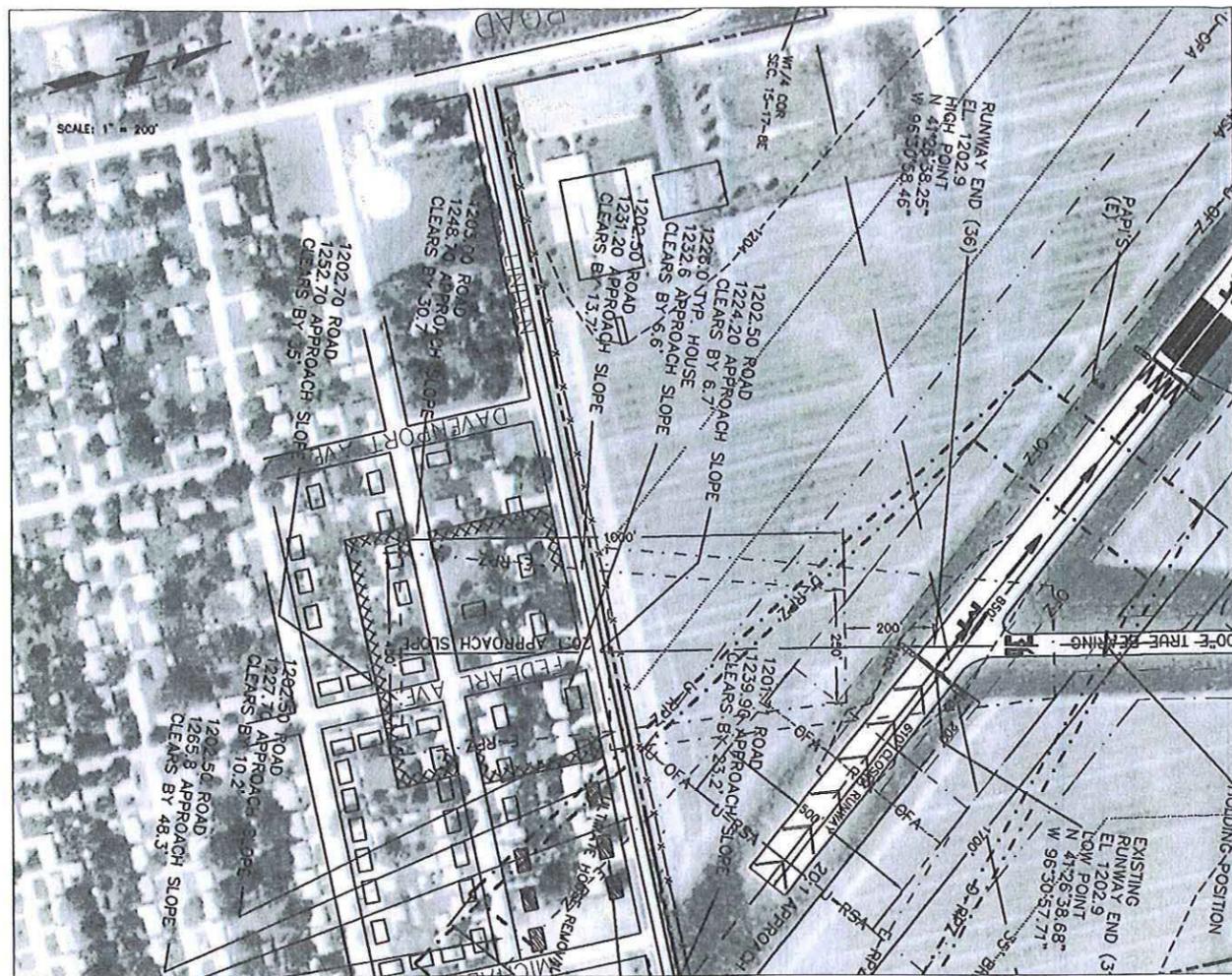
SHEET:  
PART 77  
APPROACH PROFILES

PROJECT:  
FREMONT MUNICIPAL AIRPORT  
FREMONT, NEBRASKA  
2003 ALP UPDATE

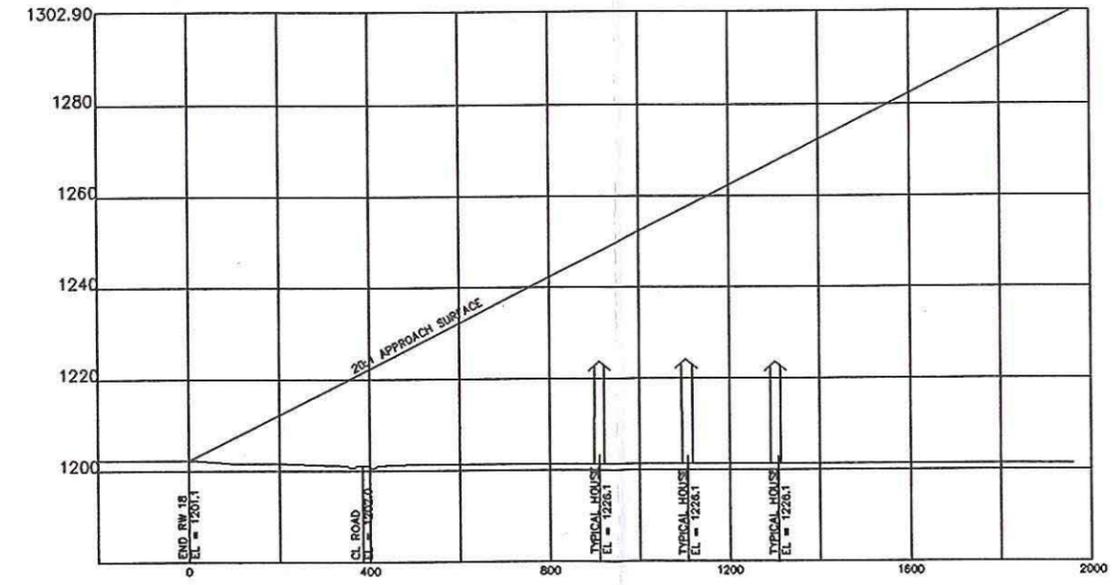


DATE
SCALE 1" = 1000'
DRAWN LH
JOB NO. 291A3
FIELD BOOK
REVISIONS 4/07/03
DRAWING FILE NAME 291A3_4.DWG
DRAWING NO.



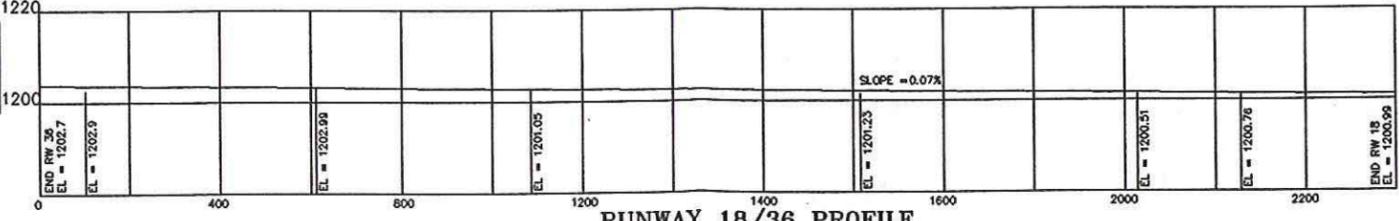


**APPROACH PROFILE RUNWAY 36**  
 SCALE: 1" = 200' HORIZ.  
 1" = 20' VERT.



**APPROACH PROFILE RUNWAY 18**  
 SCALE: 1" = 200' HORIZ.  
 1" = 20' VERT.

OBSTRUCTION TABLE					
ITEM	DESCRIPTION	PENETRATION	DISPOSITION	ELEV.	
		N	O	N	F



**RUNWAY 18/36 PROFILE**

OBSTRUCTION TABLE					
ITEM	DESCRIPTION	PENETRATION	DISPOSITION	ELEV.	
		N	O	N	F

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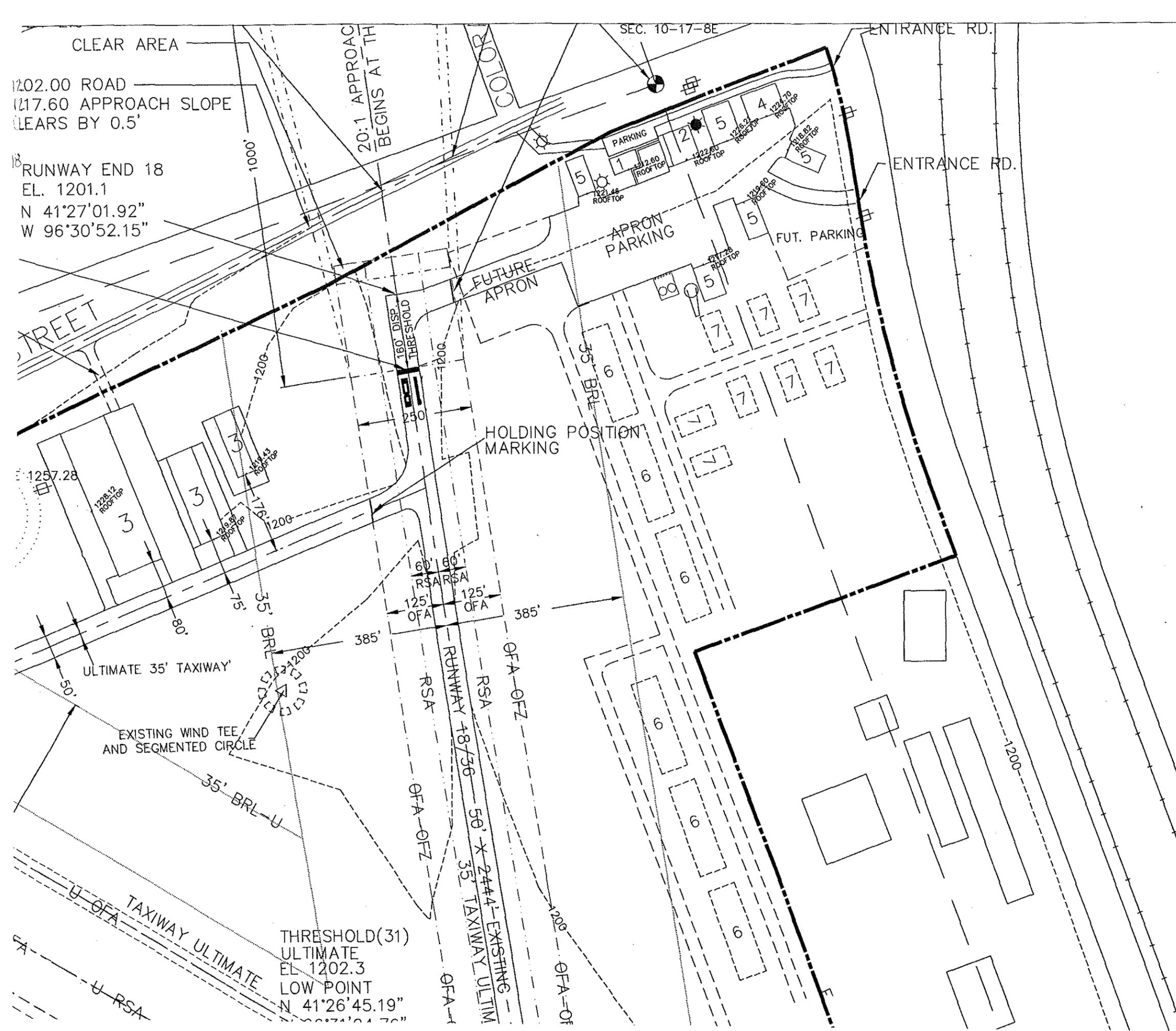
BRANCH OFFICES:  
 NEBRASKA CITY, NE 402/873-6766  
 HASTINGS, NE 402/462-5557  
 NORFOLK, NE 402/371-6416  
 CARROLL, IA 712/792-9711

SHEET:  
**INNER PORTION OF APPROACH SURFACE & PROFILE RUNWAY 18/36 PROFILE**

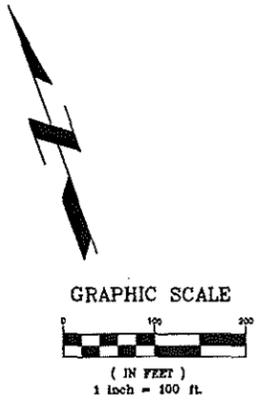
PROJECT:  
**FREMONT MUNICIPAL AIRPORT FREMONT, NEBRASKA 2003 ALP UPDATE**



DATE: 07-02-1999  
 SCALE: 1" = 200'  
 DRAWN: LH 07-02-1999  
 JOB NO.: 291A3  
 FIELD BOOK:  
 REVISIONS: 4/07/03  
 DRAWING FILE NAME: 291A3\_6



**JEO**  
**JOHNSON**  
**ERICKSON**  
**O'BRIEN**  
 ENGINEER  
 ARCHITECT  
 SURVEYOR  
 402/443-46  
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 BRANCH OFFICE  
 NEBRASKA CITY, NE  
 402/873-67  
 HASTINGS, NE  
 402/462-56  
 NORFOLK, NE  
 402/371-84  
 CARROLL, IA  
 712/782-91



**BUILDING IDENTIFICATION TABLE**

1	ADMINISTRATION BUILDING
2	SHOP HANGAR
3	TEE HANGAR (EXIST.)
4	PRIVATE HANGAR
5	OPEN BAY HANGAR (EXIST.)
6	TEE HANGAR (ULT.)
7	OPEN BAY HANGAR (ULT.)

**LEGEND**

EXISTING	ULTIMATE	
---	---	PROPERTY LINE
---	---	CENTERLINES
---	---	SECTION LINE
---	---	GROUND CONTOURS
---	---	RUNWAY / TAXIWAY
---	---	FACILITIES
●	●	AIRPORT REFERENCE POINT
---	---	BUILDING RESTRICTION LINE
---	---	EASEMENT
---	---	FEE
---	---	THRESHOLD LIGHTS
---	---	FENCE
---	---	RUNWAY VISIBILITY ZONE
▲	▲	PAPI
---	---	RPZ
---	---	OFZ
---	---	RSA
---	---	OFA

SHEET:  
 TERMINAL AREA MAP

PROJECT:  
 FREMONT MUNICIPAL AIRPORT  
 FREMONT, NEBRASKA  
 2003 ALP UPDATE

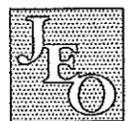


DATE  
 07-06-1999  
 SCALE  
 1" = 100'  
 DRAWN  
 LH 07-06-199  
 JOB NO.  
 291A3  
 FIELD BOOK  
 REVISIONS  
 4/07/03.11/21  
 DRAWING FILE NAME  
 291A3\_7  
 DRAWING NO.

AGRICULTURAL

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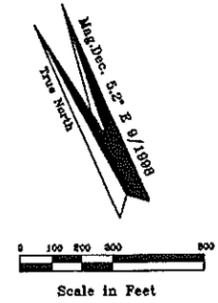
BRANCH OFFICES:

NEBRASKA CITY, NE 402/873-6765

HASTINGS, NE 402/462-5657

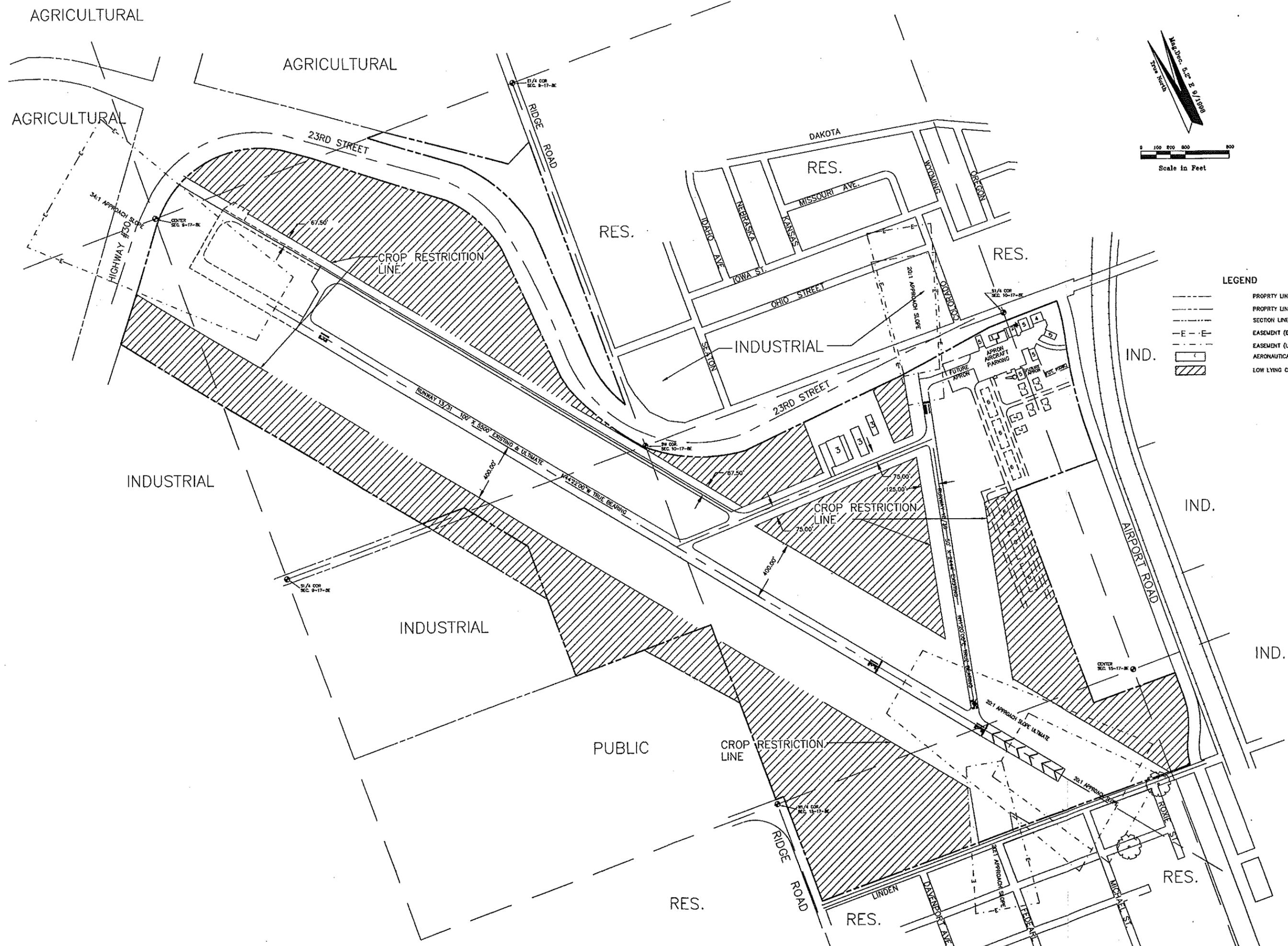
NORFOLK, NE 402/371-6416

CARROLL, IA 712/792-9711



LEGEND

- PROPERTY LINE (EXISTING)
- PROPERTY LINE (ULTIMATE)
- - - SECTION LINE
- E - E EASEMENT (EXISTING)
- E - E EASEMENT (ULTIMATE)
- [Hatched Box] AERONAUTICAL USE
- [Hatched Box] LOW LYING CROP USE



SHEET: LAND USE MAP

PROJECT: FREMONT MUNICIPAL AIRPORT  
FREMONT, NEBRASKA  
2003 ALP UPDATE



DATE	05-29-02
SCALE	1" = 300'
DRAWN	LH 07-08-1999
JOB NO.	291A3
FIELD BOOK	
REVISIONS	4/07/03
DRAWING FILE NAME	291A3_8.DWG
DRAWING NO.	



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402/873-6766

HASTINGS, NE  
402/462-5657

NORFOLK, NE  
402/571-6416

CARROLL, IA  
712/792-9711

SHEET: AIRPORT PROPERTY MAP

PROJECT: FREMONT MUNICIPAL AIRPORT  
FREMONT, NEBRASKA  
2003 ALP UPDATE



DATE: 05-29-2002

SCALE: 1" = 300'

DRAWN: LH 07-06-1999

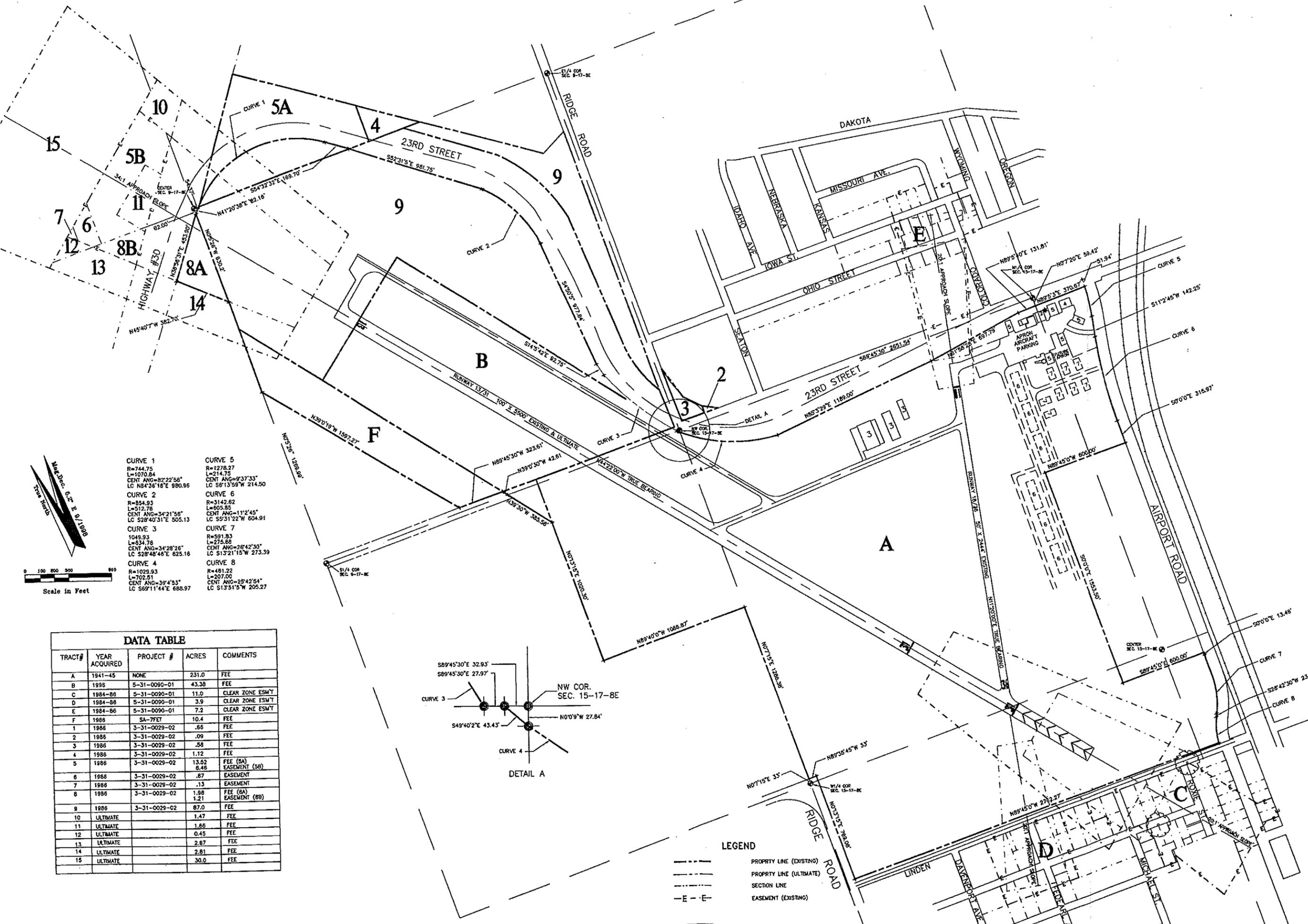
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FIELD BOOK:

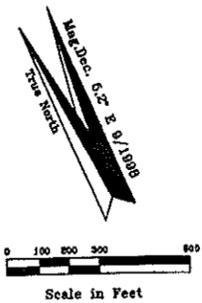
REVISIONS: 4/07/03

DRAWING FILE NAME: 291A3\_9.DWG

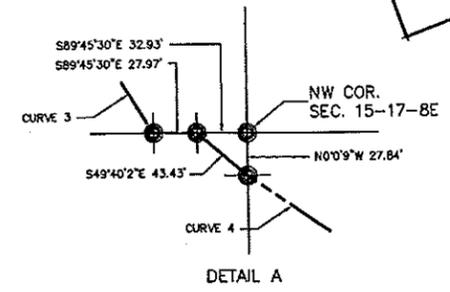
DRAWING NO.:



<b>CURVE 1</b> R=744.75 L=1070.84 CENT ANG=82°22'58" LC N84°36'18"E 980.96	<b>CURVE 5</b> R=1278.27 L=214.75 CENT ANG=9°37'33" LC S6°13'59"W 214.50
<b>CURVE 2</b> R=854.93 L=512.78 CENT ANG=34°21'56" LC S28°40'31"E 505.13	<b>CURVE 6</b> R=3142.62 L=605.85 CENT ANG=11°2'45" LC S9°31'22"W 604.91
<b>CURVE 3</b> R=1049.93 L=634.78 CENT ANG=34°28'26" LC S28°48'46"E 625.16	<b>CURVE 7</b> R=591.83 L=275.88 CENT ANG=28°42'30" LC S13°21'15"W 273.39
<b>CURVE 4</b> R=1029.93 L=702.51 CENT ANG=39°4'53" LC S69°11'44"E 685.97	<b>CURVE 8</b> R=481.22 L=207.00 CENT ANG=25°42'54" LC S13°51'5"W 205.27



TRACT #	YEAR ACQUIRED	PROJECT #	ACRES	COMMENTS
A	1941-45	NONE	231.0	FEE
B	1996	5-31-0090-01	43.38	FEE
C	1984-86	5-31-0090-01	11.0	CLEAR ZONE ESM'T
D	1984-88	5-31-0090-01	3.9	CLEAR ZONE ESM'T
E	1984-86	5-31-0090-01	7.2	CLEAR ZONE ESM'T
F	1986	SA-7FET	10.4	FEE
1	1986	3-31-0029-02	.66	FEE
2	1986	3-31-0029-02	.09	FEE
3	1986	3-31-0029-02	.58	FEE
4	1986	3-31-0029-02	1.12	FEE
5	1986	3-31-0029-02	13.62 6.46	FEE (5A) EASEMENT (5B)
6	1986	3-31-0029-02	.87	EASEMENT
7	1986	3-31-0029-02	.13	EASEMENT
8	1986	3-31-0029-02	1.98 1.21	FEE (8A) EASEMENT (8B)
9	1986	3-31-0029-02	87.0	FEE
10	ULTIMATE		1.47	FEE
11	ULTIMATE		1.86	FEE
12	ULTIMATE		0.45	FEE
13	ULTIMATE		2.67	FEE
14	ULTIMATE		2.81	FEE
15	ULTIMATE		30.0	FEE



**LEGEND**

---	PROPERTY LINE (EXISTING)
---	PROPERTY LINE (ULTIMATE)
---	SECTION LINE
-E-E-	EASEMENT (EXISTING)
-E-E-	EASEMENT (ULTIMATE)