

CHAPTER 7 - AIRPORT SYSTEM DESIGN

7.01 General

This chapter discusses the development program for Erie International Airport to the year 2020. This airport system design is based upon the airport's existing facilities, the recommended facility requirements and airport development alternatives discussed in Chapters 5 and 6, and a list of capital improvement projects planned to satisfy aviation demand to the year 2020.

7.02 Facility Requirements

As previously stated in this master plan report, the role of the airport will be as a transport-category, Airport Reference Code C-III Airport. The facility is expected to accommodate aircraft having approach speeds up to 140 knots (Aircraft Approach Categories A, B and C) and wingspans up to, but not including, 118 feet (Airplane Design Groups I, II, and III). Planning standards contained in FAA AC 150/5300-13, *Airport Design*, were used as guidance in planning development at the airport.

Tables 7-1 and 7-2 identify the airside and landside facility requirements for the 20-year development period as determined in Chapter 5.

The Airport Layout Plan (ALP), depicted on Sheet 3 of 9 at the end of this chapter, was developed as a result of these facility requirements, discussions with the Erie Municipal Airport Authority and members of the Airport Advisory Committees, and by incorporating comments made by the Federal Aviation Administration throughout the master planning process. The plan incorporates elements from several of the alternatives presented in Chapter 5. The ALP has been developed with a 7,500-foot primary runway length for take-off and landing on Runway 24.

As noted previously, runway length requirements are dependent upon the flight characteristics of the aircraft that the runway is intended to serve. The weight of the aircraft, the thrust developed by its engines, field elevation, temperature, non-stop flight distance, and the amount of fuel needed for the flight interrelate to determine the length of runway required for takeoff and landing with a desired payload (passengers plus cargo). A review of the runway length requirements for Erie International Airport to accommodate many of the more demanding aircraft, including the critical design aircraft, the McDonnell Douglas DC-9, indicated the need for a 7,500-foot runway length for takeoff. The present length of Runway 6-24 is 6,505 feet, which is adequate only under constrained conditions (e.g., lower temperatures or limited load). The usable runway length will be further limited by the requirement (at the time of any future runway rehabilitation or construction project) to provide runway safety areas that meet FAA design standards.

The Airport Layout Plan includes a 1,920-foot extension of Runway 24 and parallel Taxiway A, and requires the relocation of Powell Avenue. Runway 6 has a 925-foot displaced threshold to provide a runway safety area that meets standards. Runway 2-20 is

reconstructed at a shorter length (2,703 feet) and narrower width (60 feet) to accommodate only smaller aircraft. In the short term, remarking of Runway 2-20, replacement or relocation of edge lighting, and safety area improvements are proposed. The 765-foot displaced threshold for Runway 20 clears obstructions north of the Airport. General aviation development occurs east of Runway 2-20 and north of Taxiway A. Land acquisition and relocation assistance are planned for the extension of Runway 24. Land acquisition by easement and fee simple assures control of obstructions and activities within the RPZs and safety areas.

**TABLE 7-1
AIRSIDE FACILITIES SUMMARY**

Item	Existing	Proposed
Runways:		
6-24	6,505' x 150'	8,425' x 150'
2-20	3,530' x 150'	2,703' x 60'
Taxiways:		
6-24	Partial Parallel	Partial Parallel
2-20	Partial Parallel	Partial Parallel
Lighting:		
6-24	HIRL, MITL	HIRL, HITL
2-20	MIRL, MITL	MIRL, MITL
Navigation Aids:		
	VASI (R/W 20), NDB, ILS (R/W 6, 24), MALSR (R/W 6, 24), ATCT, VOR (R/W 6), VOR/DME (R/W 24), Wind Cone, ATIS	PAPI (R/W 6, 24, 2, 20), REILs (R/W 6, 24, 2, 20), NDB, ILS (R/W 6, 24), MALSR (R/W 6, 24), ATCT, VOR/DME (R/W 6, 24, 2, 20), Wind Cone, ATIS
Legend:	HIRL High Intensity Runway Lights MIRL Medium Intensity Runway Lights MITL Medium Intensity Taxiway Lights PAPI Precision Approach Path Indicator NDB Non-directional Beacon ILS Instrument Landing System VASI Visual Approach Slope Indicator REIL Runway End Identifier Lights MALSR Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights ATCT Air Traffic Control Tower ATIS Automated Terminal/Informational Service VOR/DME Very High Frequency Omni-Directional Range supplemented w/Distance Measuring Equipment	

Source: C&S Engineers, Inc.

**TABLE 7-2
LANDSIDE FACILITIES SUMMARY**

Item	Existing	Proposed
Terminal:		
Commercial Service		68,870 SF
GA		<u>3,250 SF</u>
TOTAL	48,097 SF	72,120 SF
Aircraft Traffic Control Tower:	At Terminal	New Site
Hangars:		
Conventional	29,950 SF	33,600 SF
T-Hangar	33,600 SF	42,000 SF
FBO	<u>38,000 SF</u>	<u>6,220 SF</u>
TOTAL	101,550 SF	81,820 SF
Apron:		
Commercial Service	22,000 SY	12,640 SY
General Aviation	19,000 SY	
Itinerant		25,600 SY
Based		3,300 SY
Hangar Related FBO	<u>20,000 SY</u>	<u>689 SY</u>
TOTAL	61,000 SY	42,229 SY
Auto Parking:	923 spaces	
Commercial Spaces		1,132
GA Spaces		73
Area		48,200 SY
Fuel Demand: (Two week period)	54,000 Gal.	22,216 Gal.

Source: C&S Engineers, Inc.

7.03 Airport Layout Plan

The Airport Layout Plan (Sheet 3 of 9) illustrates the overall development plan for Erie International Airport. The ALP presents the various airport improvement projects in three phases that are discussed below.

7.03-1 Phase 1 Development

Phase 1, or the short-term development, at Erie International Airport is concentrated on satisfying existing needs and correcting existing problems. These projects are considered to be the highest priorities in the development plan, and are supported by findings reached during previous portions of this study. The Phase 1 recommendations are:

- Design and Construct Safety Area Improvements
- Renovation of Existing Terminal Building
- Construct Rental Car Return & Maintenance Facility (4,000 SF)
- Expand Rental Car Parking (33 Spaces)
- Powell Avenue Relocation/Closure
- Land Acquisition, Easement Acquisition and Relocation Assistance
- Avigation Easement Acquisition for Obstruction Removal
- On- and Off-Airport Obstruction Removal
- Design and Construct Drainage Improvements
- Design and Construct 1,920-Foot Extension and Parallel Taxiway to Runway 24
- Runway 24 Lighting System Improvements (CAT II ALS; Runway Centerline; Touchdown Zone; and Electrical Building)
- Runway Extension Perimeter Fencing
- Design and Construct Relocated Parallel Taxiway A for Runway 24
- Design and Construct Access Taxiway to Runway 6 Threshold
- Design and Construct Air Traffic Control Tower
- Demolition of Fenestra Building
- Design and Construct Air Cargo Operations Facility
- Environmental Assessment for 5-Year CIP
- Design and Construct General Aviation Apron Expansion (15,000 SY)

7.03-2 Phase 2 Development

The intermediate-range development, Phase 2, encompasses the period 2006-2010 and includes airfield improvements and landside facilities development.

- Terminal Building Expansion (Phase 1)
- Design and Construct Terminal Apron Expansion (7,500 SY)
- Design and Construct Airport Maintenance/ARFF Facility
- Design and Construct International Trade Center
- Construct Two 10-Bay T-Hangars
- Redevelopment of Penn Brass Facility

- Design and Construct Shorten/Rehabilitation of Runway 2-20 (2,703' x 60')
- Design and Construct Noise Berm

7.03-3 Phase 3 Development

The long-range development, Phase 3, covers the period from 2011-2020. In this phase, additional airside and landside facilities are planned to be in place to complete the needs defined in this plan.

- Terminal Building Expansion (Phase 2)
- Design and Construct Terminal Auto Parking (200 Spaces)
- Design and Construct Terminal Apron Expansion (7,500 SY)
- General Aviation Area Development: T-Hangars, Apron, Access Taxiways

7.04 Obstruction Plan and Profile

The Approach and Obstruction Plan, Approach Profiles, and Obstruction Data Sheet for the airport are presented on Sheets 5, 6, and 7 of 9) which provide detailed obstruction information and depict the imaginary surfaces on and around Erie International Airport, through which no object should penetrate. The dimensions and criteria employed in determining these obstructions on or near the surfaces for the airport are those outlined in Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*. This analysis has been coordinated with the Erie International Airport Obstruction Evaluation. Appendix H, included with this Master Plan, presents the January 2002 Obstruction Evaluation draft final report.

7.04-1 FAR Part 77 Surfaces

As defined by FAR Part 77, the **primary surface** of a runway is defined as an area longitudinally centered on the runway for a width dependent on the type of runway, and extending 200 feet beyond each end of the landing threshold. At Erie International Airport, Runway 6-24 is defined as a transport-category runway with precision instrument approaches. Therefore, its primary surface width is 1,000 feet. Runway 2-20 is a visual runway with a primary surface width of 250 feet.

West 12th Street and the airport perimeter fence are identified as obstructions to the Runway 2-20 primary surface. The road and fence will be lighted. Obstructions to the Runway 6-24 primary surface include Asbury Road, perimeter fencing, light towers, poles, NAVAIDs, three buildings, the railroad, and several trees. The trees are recommended to be removed; other obstructions should be lighted. See Sheet 7 of 9 for specific obstruction information, including corrective actions recommended.

Approach surfaces are longitudinally centered on the extended runway centerline and extend outward and upward from each end of the primary surface. The slope and configuration of each runway approach surface also vary as a function of runway type and availability of instrument approaches. As previously mentioned, Runway 6-24 is a runway with precision instrument approaches for both runway ends that require an approach surface inner width of 1,000 feet, extending outward and upward at a 50 to 1 slope for an inner distance of 10,000 feet and at a 40 to 1 slope for an additional 40,000 feet, to an outer width of 16,000 feet. Runway 2-20 has approach surfaces for both runway ends with inner widths of 250 feet and extending outward and upward at a 20 to 1 slope for a distance of 5,000 feet to an outer width of 1,250 feet.

There are no obstructions to the approach surface for the Runway 2 relocated threshold. The Runway 20 threshold is recommended to be displaced 765 feet, providing a clear 20:1 approach surface for Runway 20.

The Runway 6 threshold is displaced 925 feet to provide standard runway safety areas. With this displacement, the approach surface has significantly fewer obstructions. See Sheet 7 of 9 for specific obstruction information and recommended action.

The **transitional surfaces** extend outward and upward from the primary and approach surfaces to the horizontal surface at right angles to the runway centerline at a slope of 7 to 1. There are numerous obstructions to the airport's transitional surfaces. Similar in nature to the primary and approach surface obstructions, many of the transitional surface obstructions include individual trees and groups of trees. Once again, specific obstruction information and corrective actions are shown on Sheet 7 of 9.

The **horizontal surface** is a horizontal plane 150 feet above the established airport elevation, which in the case of Erie International Airport is 733 feet above mean sea level (MSL). Thus, the horizontal surface is at an elevation of 883 feet above mean sea level. The perimeter of the horizontal surface is delineated by arcs with a radius of 5,000 feet from the center point of the runway ends for Runways 2 and 20, and 10,000 feet from the center point of the runway ends for Runways 6 and 24. Adjacent arcs from each runway are connected by lines tangent to these arcs. There are obstructions to the airport's horizontal surface, south of the Airport, as identified by the Obstruction Evaluation.

7.04-2 Runway Protection Zones (RPZ)

Runway protection zones are also shown on the ALP (Sheet 3 of 9). As defined by FAA AC 150/5300-13, *Airport Design*, the function of the RPZ is to enhance the protection of people and property on the ground by clearing RPZ areas (and maintaining them clear of incompatible objects and activities). This is best done by obtaining property interest in the RPZ area giving the airport owner the desired degree of control. The RPZ is trapezoidal in shape and centered on the extended runway centerline. The dimensions of the RPZ are determined by the type of aircraft that the facility expects to serve, and by the approach visibility minimums for each runway end. The RPZ begins at the end of the primary surface with an inner width the same as the width of the primary surface that it adjoins. For Runway 6, with approach visibility minimums of not lower than $\frac{3}{4}$ mile and serving aircraft in Approach Categories A, B, and C, the RPZ length is 1,700 feet and the outer width of the

RPZ is 1,010 feet. Runway 24 has planned approach visibility minimums of lower than $\frac{3}{4}$ mile; therefore, the RPZ length is 2,500 feet and the outer width of the RPZ is 1,750 feet. Runway 2-20 is planned to serve small aircraft exclusively. The RPZs for both runway ends have inner widths of 250 feet, lengths of 1,000 feet, and outer widths of 450 feet.

The airport does not currently control all of the land in the Runway Protection Zones. Therefore, land and/or easement acquisitions are necessary to assure the airport some form of control over current and future objects and obstructions in these areas, which is considered critical to the continued safe operation of the airport.

7.04-3 Threshold Siting Analysis

Runway threshold siting requirements are outlined in FAA Advisory Circular 150/5300-13, *Airport Design*, Appendix 2. This document identifies specific dimensions and slopes for all runway ends based on the type of aircraft operations and instrumentation associated with that runway. In most cases, the threshold is located at the beginning of full-strength runway pavement. However, displacement of the threshold may be required when it is not possible or practical to remove or relocate an obstruction in the airspace required for landing an aircraft. In addition to the need for airspace free of obstructions, some environmental concerns (e.g., noise abatement) may necessitate displacement of a threshold. Design standards for object free area and runway safety area lengths may dictate displacing the runway threshold in some cases.

The proposed relocated threshold for Runway 2 moves the 20:1 threshold siting surface for Runway 2 a distance of 827 feet to the northeast. This surface is clear of all obstructions except a tree canopy, recommended for removal, that would require a further displacement of 90 feet if not removed. The Runway 20 threshold siting surface with a slope of 20:1 is penetrated by several trees. A recommended displacement of 765 feet clears the threshold siting surface of all obstructions. The Runway 6 threshold siting analysis with a 20:1 slope revealed that a 1,711-foot displacement would be required for the surface to clear the railroad, which is lighted. The proposed 1,920-foot runway extension for Runway 24 moves the 34:1 threshold siting surface for the runway end 1,920 feet to the northeast. This surface is penetrated by several individual trees and groups of trees that are recommended to be removed. There are no permanent or man-made penetrations to the threshold siting surface.

All objects noted in the threshold siting analysis are depicted and discussed, along with the corrective action recommended for each, as part of the obstruction evaluation, included in Appendix H.

7.04-4 Obstruction Summary

It should be noted that an object is considered an obstruction if it penetrates an FAR Part 77 surface or it is located within a Runway Protection Zone. A bush or tree top located within 10 feet of an FAR Part 77 surface may also be considered an obstruction. As can be seen from the previous information, the airspace surrounding Erie International Airport has a significant number of trees that are obstructions to the FAR Part 77 surfaces. Obstruction removal is recommended in the phasing of projects for the airport. In order to control the

future construction of obstacles that may hamper the safe operation of aircraft using Erie International Airport, it is recommended that this Obstruction Plan and Profile be incorporated into the zoning ordinances of the municipalities surrounding the Airport.

7.05 Land Use and Ground Access Plan

Sheet 8 of 9, Land Use and Ground Access Plan, indicates the overall pattern of land use and ground access around Erie International Airport. It also indicates the existing land uses in the immediate area of the airport and recommended zoning for both Millcreek and Fairview Townships.

As shown, the airport is sited south of Pennsylvania State Route 5, north of U.S. Route 20, and west of Interstate 79. Access is provided to the terminal area from West 12th Street (Route 5). Interstate 90 to the south is less than 5 miles from the airport terminal.

The immediate area surrounding the airport is a mixture of Residential, Recreational, Commercial, and Industrial uses. Although the airport does not have a history of frequent aircraft noise-related complaints, the approach and departure paths to most airports may receive a higher level of perceived noise exposure due to aircraft overflights. Therefore, the following land use compatibility measures should be considered for residential areas and other noise-sensitive land uses to be sited within 1,000 feet of the approach and departure flight paths.

7.05-1 Comprehensive Planning and Zoning

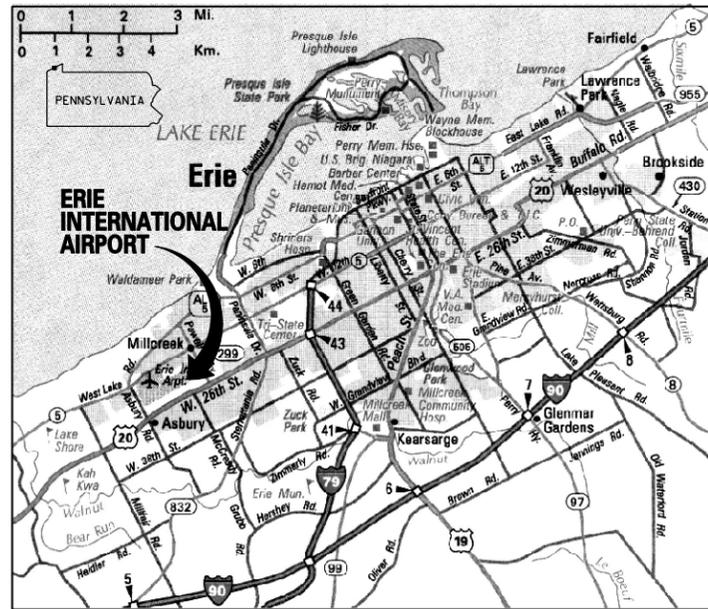
Erie County and the communities near the airport, including Millcreek and Fairview Townships, are encouraged to establish an Airport Approach District that will serve to inform nearby residents of potential impacts and discourage residential development in the runway approach areas. An effective working relationship between the airport and the surrounding communities is perhaps *the most important single step* in accomplishing the process of compatible land use planning and support for achieving airport-oriented land use measures. As an example, in certain cases (such as the erection of water towers, communications, antennae, etc.) structures may penetrate the approach or navigational airway surfaces associated with runways at the airport. Determinations of the height of structures by airport and community representatives on a case-by-case basis may be necessary to insure that consideration is given to the placement of potential hazards near the airport. This process should include information available to airport personnel transmitted through an active involvement in community affairs.

7.05-2 Encourage and Maintain Compatible Land Uses

Recognizing that low-density residential development may not and most likely should not be eliminated from all areas near the airport that may be impacted by some level of aircraft sound, a policy of encouraging compatible development is recommended. This includes continued promotion of open land and industrial/commercial development in available vacant areas near the airport. To this end, the airport should make it a goal to own all of the land within the RPZs and additional adjoining land as feasible.

7.05-3 Capital Improvements Program

Airport representatives should also remain aware of community expenditures for various capital improvements and encourage those that will directly or indirectly increase compatible land use in the airport vicinity. For example: The extension of sewer or water lines into new areas, often done initially to serve industrial or institutional development, frequently encourages residential development that also utilizes this community infrastructure. Thus, the extension of services to potentially airport-sensitive land uses near the airport should be reviewed. The use of these basic approaches within the time frame of this airport master plan should reduce or eliminate the likelihood of problems over potential airport related land use impacts.



LOCATION MAP
NOT TO SCALE

AIRPORT MASTER PLAN

**ERIE INTERNATIONAL AIRPORT,
TOM RIDGE FIELD
CITY OF ERIE, PENNSYLVANIA**

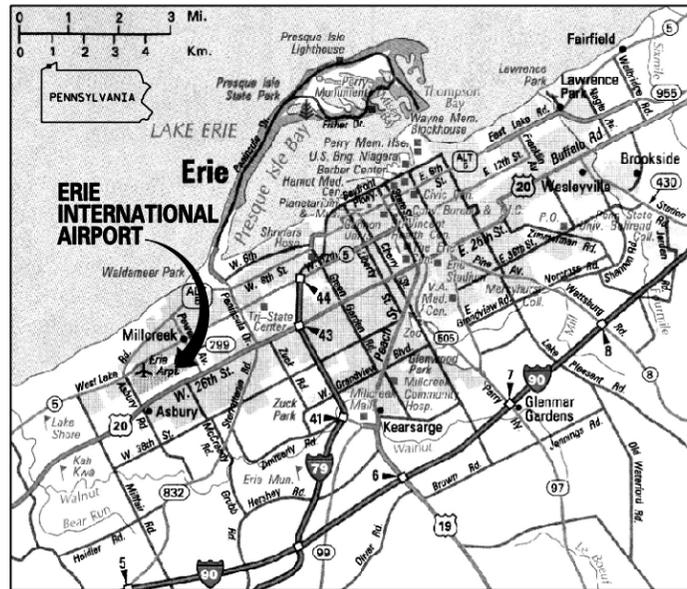
ERIE INTERNATIONAL AIRPORT TOM RIDGE FIELD

JUNE 2004

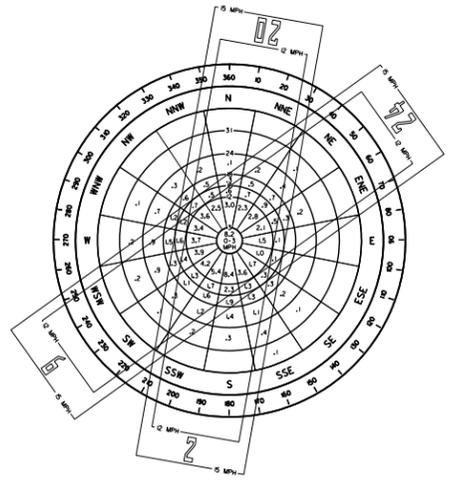
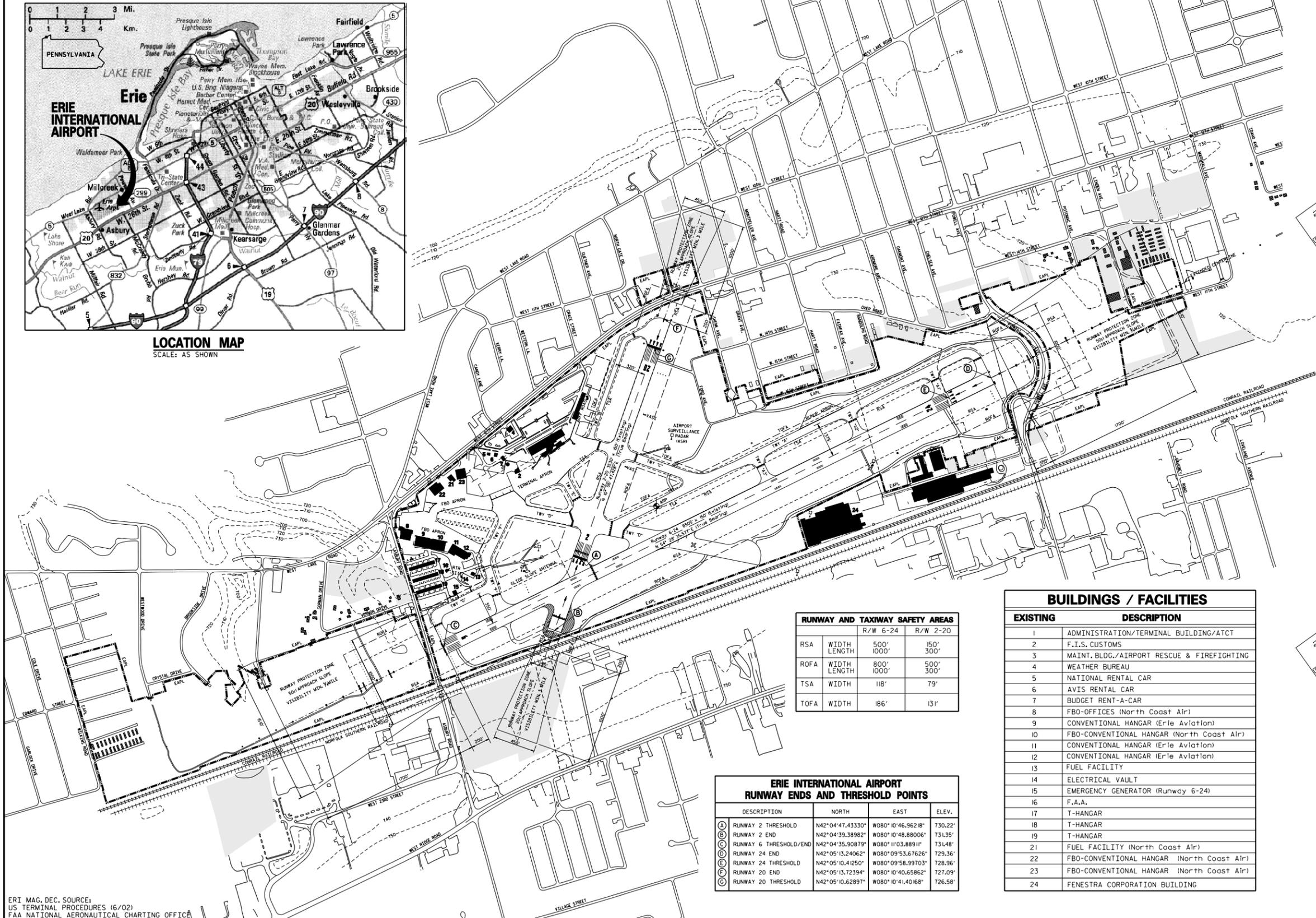
SHEET NO. TITLE

- 1. TITLE SHEET**
- 2. EXISTING AIRPORT LAYOUT**
- 3. AIRPORT LAYOUT PLAN**
- 4. TERMINAL AREA PLAN**
- 5. APPROACH AND OBSTRUCTION PLAN**
- 6. APPROACH PROFILES**
- 7. OBSTRUCTION DATA SHEET**
- 8. OFF AIRPORT LAND USE AND GROUND ACCESS PLAN**
- 9. AIRPORT PROPERTY MAP**





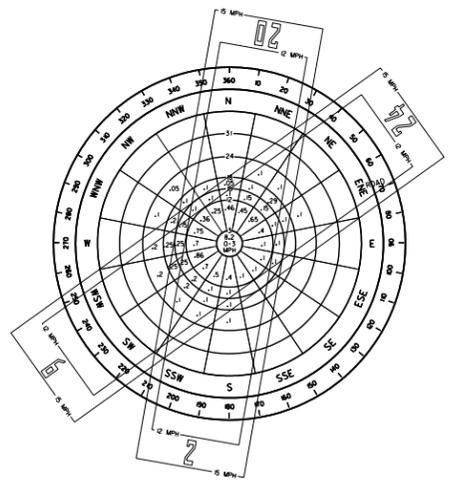
LOCATION MAP
SCALE: AS SHOWN



ALL WEATHER WIND ROSE

ALL WEATHER WIND COVERAGE		
	12 MPH	15 MPH
RUNWAY 6-24	85.26%	92.75%
RUNWAY 2-20	84.48%	92.36%
BOTH RUNWAYS	94.52%	96.88%

SOURCE: NOAA NATIONAL CLIMATIC CENTER, ASHVILLE, N.C.
ERIE INTERNATIONAL AIRPORT
ERIE PENNSYLVANIA
OBSERVATIONS: 103,625 OBSERVATIONS
1948-1978



IFR WIND ROSE

IFR WIND COVERAGE		
	12 MPH	15 MPH
RUNWAY 6-24	98.87%	99.47%
RUNWAY 2-20	98.00%	98.95%
BOTH RUNWAYS	99.40%	99.77%

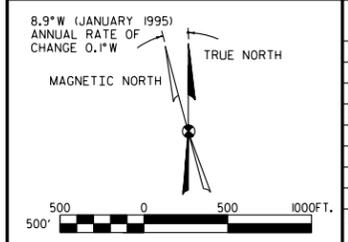
SOURCE: NOAA NATIONAL CLIMATIC CENTER, ASHVILLE, N.C.
ERIE INTERNATIONAL AIRPORT
ERIE PENNSYLVANIA
OBSERVATIONS: 12,423 OBSERVATIONS
1948-1978

RUNWAY AND TAXIWAY SAFETY AREAS			
		R/W 6-24	R/W 2-20
RSA	WIDTH	500'	150'
	LENGTH	1000'	300'
ROFA	WIDTH	800'	500'
	LENGTH	1000'	300'
TSA	WIDTH	118'	79'
TOFA	WIDTH	186'	131'

ERIE INTERNATIONAL AIRPORT RUNWAY ENDS AND THRESHOLD POINTS			
DESCRIPTION	NORTH	EAST	ELEV.
(A) RUNWAY 2 THRESHOLD	N42°04'47.43330"	W080°10'46.96218"	730.22'
(B) RUNWAY 2 END	N42°04'39.38982"	W080°10'48.88006"	731.35'
(C) RUNWAY 6 THRESHOLD/END	N42°04'35.90879"	W080°11'03.88919"	731.48'
(D) RUNWAY 24 END	N42°05'13.24062"	W080°09'53.67626"	729.36'
(E) RUNWAY 24 THRESHOLD	N42°05'10.42500"	W080°09'58.99703"	728.96'
(F) RUNWAY 20 END	N42°05'13.72394"	W080°10'40.65862"	727.09'
(G) RUNWAY 20 THRESHOLD	N42°05'10.62897"	W080°10'41.40168"	726.58'

BUILDINGS / FACILITIES	
EXISTING	DESCRIPTION
1	ADMINISTRATION/TERMINAL BUILDING/ATCT
2	F.I.S. CUSTOMS
3	MAINT. BLDG./AIRPORT RESCUE & FIREFIGHTING
4	WEATHER BUREAU
5	NATIONAL RENTAL CAR
6	AVIS RENTAL CAR
7	BUDGET RENT-A-CAR
8	FBO-OFFICES (North Coast Air)
9	CONVENTIONAL HANGAR (Erie Aviation)
10	FBO-CONVENTIONAL HANGAR (North Coast Air)
11	CONVENTIONAL HANGAR (Erie Aviation)
12	CONVENTIONAL HANGAR (Erie Aviation)
13	FUEL FACILITY
14	ELECTRICAL VAULT
15	EMERGENCY GENERATOR (Runway 6-24)
16	F.A.A.
17	T-HANGAR
18	T-HANGAR
19	T-HANGAR
21	FUEL FACILITY (North Coast Air)
22	FBO-CONVENTIONAL HANGAR (North Coast Air)
23	FBO-CONVENTIONAL HANGAR (North Coast Air)
24	FENESTRA CORPORATION BUILDING

ERI MAG. DEC. SOURCE:
US TERMINAL PROCEDURES (6/02)
FAA NATIONAL AERONAUTICAL CHARTING OFFICE



AIRPORT DATA	
ITEMS	EXISTING
AIRPORT ELEVATION (MSL)	733'
REFERENCE POINT (ARIP) LAT. (NAD 83)	N 42°04'55.277"
REFERENCE POINT (ARIP) LONG. (NAD 83)	W 80°10'34.376"
MEAN MAXIMUM TEMPERATURE	80.2° F
MAGNETIC VARIATION (YEAR)	9° W (1999)
AIRPORT CATEGORY	C III
CRITICAL AIRCRAFT	NA
AIRPORT NAVAIDS	I.L.S., VOR, NDB, VOR/DME, ATCT, RTR, ASR, VORTAC

RUNWAY DATA			
ITEMS	RUNWAY 6-24		RUNWAY 2-20
	EXISTING		EXISTING
PHYSICAL LENGTH & WIDTH	6500' X 150' (ASPH.)		3507' X 150' (ASPH.)
EFFECTIVE GRADIENT (%)	.031		.113
WIND COVERAGE (12 MPH) (%)	85.26		84.48
PAVEMENT STRENGTH (000 LBS.)	65(S), 98(D), 180(DT)		50(S), 60(D), 150(DT)
APPROACH SURFACES	50:1		20:1
RUNWAY LIGHTING	HIRL		MIRL
RUNWAY MARKING	PRECISION		NON-PRECISION
NAVIGATION AIDS	ILS, ASR, VORTAC		VASI

LEGEND	
EXISTING AIRPORT BUILDING	█
PROPERTY LINE	---
EXISTING AIRPORT PROPERTY LINE	---
RUNWAY OBJECT FREE AREA	---
CONTOUR LINE	---
OBSTRUCTION LIGHTED	⊕
EXISTING KNOWN AVIGATION EASEMENT	---

REVISIONS		
BY	DATE	CHANGE

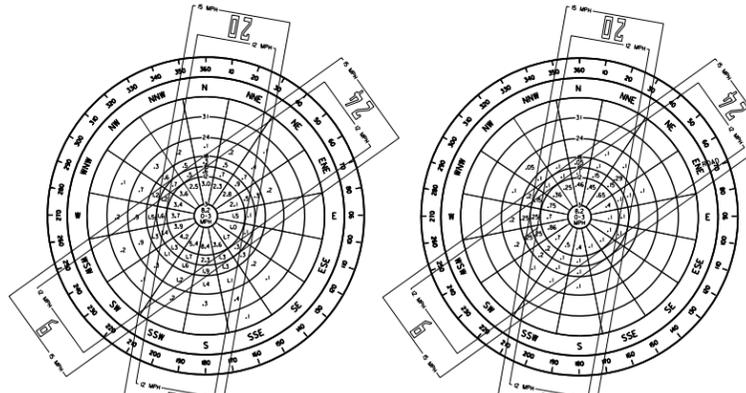
ERIE INTERNATIONAL AIRPORT

CITY OF ERIE ERIE COUNTY, PENN.

EXISTING AIRPORT LAYOUT

DESIGNED: JCT	DRAWN: JCT	SHEET 2 OF 9
CHECKED: KCK	DATE: JUNE 2004	
PROJECT FILE NO.: 858.002.001		CADD FILE NO.: 1634AP07.DGN

**ENGINEERS
DESIGN BUILD
TECHNICAL RESOURCES
OPERATIONS**



ALL WEATHER WIND ROSE

ALL WEATHER WIND COVERAGE		
	0-5 MPH	5-15 MPH
RUNWAY 6-24	85.26%	92.75%
RUNWAY 2-20	84.48%	92.36%
BOTH RUNWAYS	94.52%	96.88%

SOURCE: NOAA NATIONAL CLIMATIC CENTER, ASHVILLE, N.C.
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 1948-1978

IFR WIND ROSE

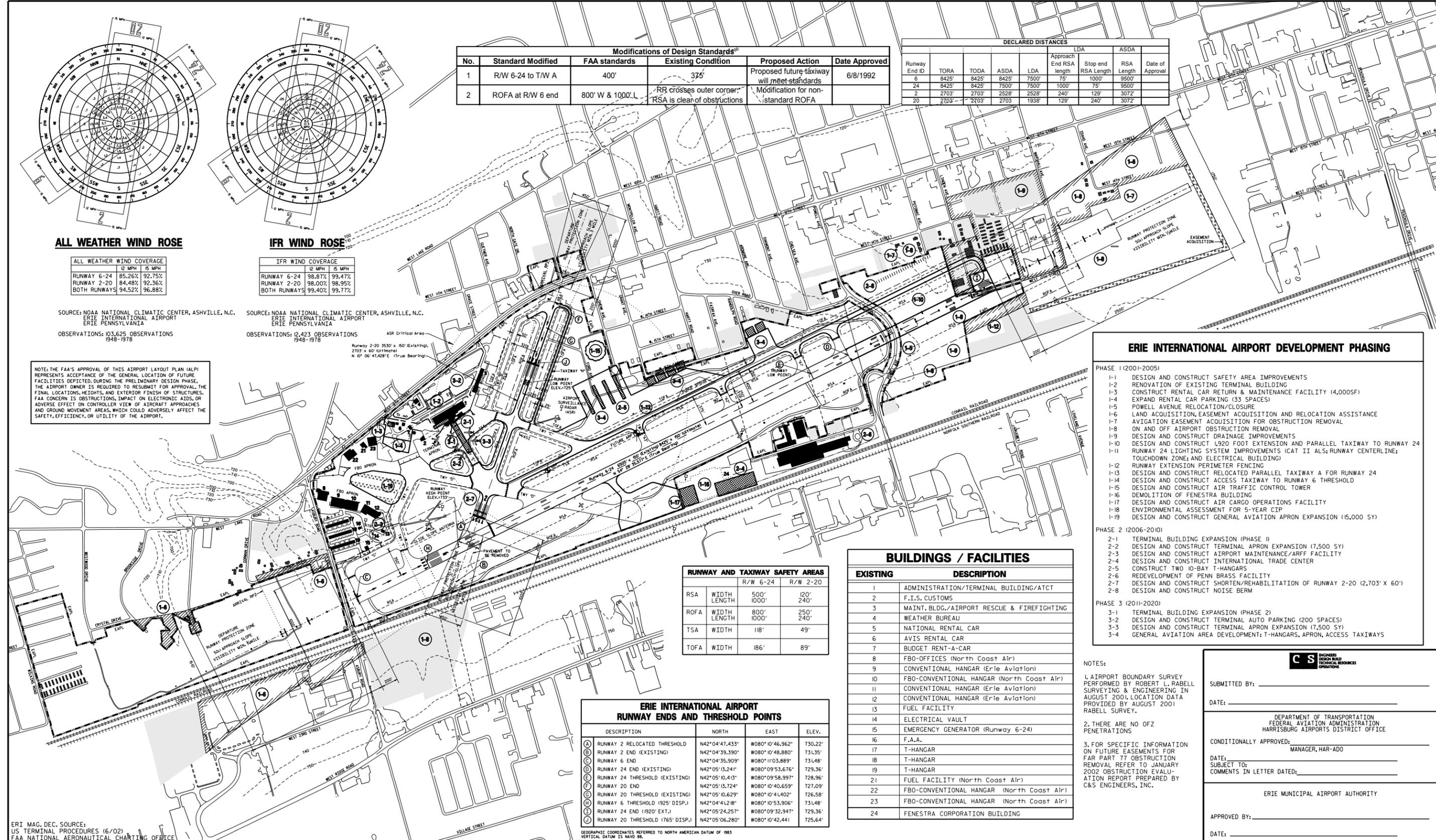
IFR WIND COVERAGE		
	0-5 MPH	5-15 MPH
RUNWAY 6-24	98.87%	99.47%
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BOTH RUNWAYS	99.40%	99.77%

SOURCE: NOAA NATIONAL CLIMATIC CENTER, ASHVILLE, N.C.
 ERIE INTERNATIONAL AIRPORT
 ERIE, PENNSYLVANIA
 OBSERVATIONS: 12,423 OBSERVATIONS
 1948-1978

Modifications of Design Standards ⁶⁰					
No.	Standard Modified	FAA standards	Existing Condition	Proposed Action	Date Approved
1	R/W 6-24 to T/W A	400'	375'	Proposed future taxiway will meet standards	6/8/1992
2	ROFA at R/W 6 end	800' W & 1000' L	RR crosses outer corner, RSA is clean of obstructions	Modification for non-standard ROFA	

DECLARED DISTANCES								
Runway End ID	TORA	TODA	ASDA	LDA	LDA			Date of Approval
					Approach End RSA Length	Stop end RSA Length	RSA Length	
6	8425'	8425'	8425'	7500'	75'	1000'	9500'	
24	8425'	8425'	7500'	7500'	1000'	75'	9500'	
2	2703'	2703'	2528'	2528'	240'	129'	3072'	
20	2703'	2703'	2703'	1938'	129'	240'	3072'	

NOTE: THE FAA'S APPROVAL OF THIS AIRPORT LAYOUT PLAN (ALP) REPRESENTS ACCEPTANCE OF THE GENERAL LOCATION OF FUTURE FACILITIES DEPICTED DURING THE PRELIMINARY DESIGN PHASE. THE AIRPORT OWNER IS REQUIRED TO RESUBMIT FOR APPROVAL THE FINAL LOCATIONS, HEIGHTS, AND EXTERIOR FINISH OF STRUCTURES. FAA CONCERN IS OBSTRUCTIONS, IMPACT ON ELECTRONIC AIDS, OR ADVERSE EFFECT ON CONTROLLER VIEW OF AIRCRAFT APPROACHES AND GROUND MOVEMENT AREAS, WHICH COULD ADVERSELY AFFECT THE SAFETY, EFFICIENCY, OR UTILITY OF THE AIRPORT.



ERIE INTERNATIONAL AIRPORT DEVELOPMENT PHASING

- PHASE 1 (2001-2005)**
- I-1 DESIGN AND CONSTRUCT SAFETY AREA IMPROVEMENTS
 - I-2 RENOVATION OF EXISTING TERMINAL BUILDING
 - I-3 CONSTRUCT RENTAL CAR RETURN & MAINTENANCE FACILITY (4,000SF)
 - I-4 EXPAND RENTAL CAR PARKING (33 SPACES)
 - I-5 POWELL AVENUE RELOCATION/CLOSURE
 - I-6 LAND ACQUISITION, EASEMENT ACQUISITION AND RELOCATION ASSISTANCE
 - I-7 AVIGATION EASEMENT ACQUISITION FOR OBSTRUCTION REMOVAL
 - I-8 ON AND OFF AIRPORT OBSTRUCTION REMOVAL
 - I-9 DESIGN AND CONSTRUCT DRAINAGE IMPROVEMENTS
 - I-10 DESIGN AND CONSTRUCT 1,920 FOOT EXTENSION AND PARALLEL TAXIWAY TO RUNWAY 24
 - I-11 RUNWAY 24 LIGHTING SYSTEM IMPROVEMENTS (CAT II ALS; RUNWAY CENTERLINE; TOUCHDOWN ZONE; AND ELECTRICAL BUILDING)
 - I-12 RUNWAY EXTENSION PERIMETER FENCING
 - I-13 DESIGN AND CONSTRUCT RELOCATED PARALLEL TAXIWAY A FOR RUNWAY 24
 - I-14 DESIGN AND CONSTRUCT ACCESS TAXIWAY TO RUNWAY 6 THRESHOLD
 - I-15 DESIGN AND CONSTRUCT AIR TRAFFIC CONTROL TOWER
 - I-16 DEMOLITION OF FENESTRA BUILDING
 - I-17 DESIGN AND CONSTRUCT AIR CARGO OPERATIONS FACILITY
 - I-18 ENVIRONMENTAL ASSESSMENT FOR 5-YEAR CIP
 - I-19 DESIGN AND CONSTRUCT GENERAL AVIATION APRON EXPANSION (15,000 SY)
- PHASE 2 (2006-2010)**
- 2-1 TERMINAL BUILDING EXPANSION (PHASE II)
 - 2-2 DESIGN AND CONSTRUCT TERMINAL APRON EXPANSION (7,500 SY)
 - 2-3 DESIGN AND CONSTRUCT AIRPORT MAINTENANCE/ARFF FACILITY
 - 2-4 DESIGN AND CONSTRUCT INTERNATIONAL TRADE CENTER
 - 2-5 CONSTRUCT TWO 10-BAY T-HANGARS
 - 2-6 REDEVELOPMENT OF PENN BRASS FACILITY
 - 2-7 DESIGN AND CONSTRUCT SHORTEN/REHABILITATION OF RUNWAY 2-20 (2,703' X 60')
 - 2-8 DESIGN AND CONSTRUCT NOISE BERM
- PHASE 3 (2011-2020)**
- 3-1 TERMINAL BUILDING EXPANSION (PHASE 2)
 - 3-2 DESIGN AND CONSTRUCT TERMINAL AUTO PARKING (200 SPACES)
 - 3-3 DESIGN AND CONSTRUCT TERMINAL APRON EXPANSION (7,500 SY)
 - 3-4 GENERAL AVIATION AREA DEVELOPMENT; T-HANGARS, APRON, ACCESS TAXIWAYS

RUNWAY AND TAXIWAY SAFETY AREAS			
		R/W 6-24	R/W 2-20
RSA	WIDTH	500'	120'
	LENGTH	1000'	240'
ROFA	WIDTH	800'	250'
	LENGTH	1000'	240'
TSA	WIDTH	118'	49'
TOFA	WIDTH	186'	89'

BUILDINGS / FACILITIES

EXISTING	DESCRIPTION
1	ADMINISTRATION/TERMINAL BUILDING/ATCT
2	F.I.S. CUSTOMS
3	MAINT. BLDG./AIRPORT RESCUE & FIREFIGHTING
4	WEATHER BUREAU
5	NATIONAL RENTAL CAR
6	AVIS RENTAL CAR
7	BUDGET RENT-A-CAR
8	FBO-OFFICES (North Coast Air)
9	CONVENTIONAL HANGAR (Erie Aviation)
10	FBO-CONVENTIONAL HANGAR (North Coast Air)
11	CONVENTIONAL HANGAR (Erie Aviation)
12	CONVENTIONAL HANGAR (Erie Aviation)
13	FUEL FACILITY
14	ELECTRICAL VAULT
15	EMERGENCY GENERATOR (Runway 6-24)
16	F.A.A.
17	T-HANGAR
18	T-HANGAR
19	T-HANGAR
21	FUEL FACILITY (North Coast Air)
22	FBO-CONVENTIONAL HANGAR (North Coast Air)
23	FBO-CONVENTIONAL HANGAR (North Coast Air)
24	FENESTRA CORPORATION BUILDING

ERIE INTERNATIONAL AIRPORT RUNWAY ENDS AND THRESHOLD POINTS

DESCRIPTION	NORTH	EAST	ELEV.
(A) RUNWAY 2 RELOCATED THRESHOLD	N42°04'47.433"	W080°10'46.962"	730.22'
(B) RUNWAY 2 END (EXISTING)	N42°04'39.390"	W080°10'48.880"	731.35'
(C) RUNWAY 6 END	N42°04'35.909"	W080°11'03.889"	731.48'
(D) RUNWAY 24 END (EXISTING)	N42°05'13.241"	W080°09'53.676"	729.36'
(E) RUNWAY 24 THRESHOLD (EXISTING)	N42°05'10.413"	W080°09'58.997"	728.96'
(F) RUNWAY 20 END	N42°05'13.724"	W080°10'40.659"	727.09'
(G) RUNWAY 20 THRESHOLD (EXISTING)	N42°05'10.629"	W080°10'41.402"	726.58'
(H) RUNWAY 6 THRESHOLD (925' DISP.)	N42°04'41.218"	W080°10'53.906"	731.48'
(I) RUNWAY 24 END (1920' EXT.)	N42°05'24.257"	W080°09'32.947"	729.36'
(J) RUNWAY 20 THRESHOLD (765' DISP.)	N42°05'06.280"	W080°10'42.441"	725.64'

NOTES:
 1. AIRPORT BOUNDARY SURVEY PERFORMED BY ROBERT L. RABELL SURVEYING & ENGINEERING IN AUGUST 2001. LOCATION DATA PROVIDED BY AUGUST 2001 RABELL SURVEY.
 2. THERE ARE NO OFZ PENETRATIONS
 3. FOR SPECIFIC INFORMATION ON FUTURE EASEMENTS FOR FAR PART 77 OBSTRUCTION REMOVAL REFER TO JANUARY 2002 OBSTRUCTION EVALUATION REPORT PREPARED BY C&S ENGINEERS, INC.

CS ENGINEERS DESIGN BUILD TECHNICAL RESOURCES OPERATIONS

SUBMITTED BY: _____
 DATE: _____

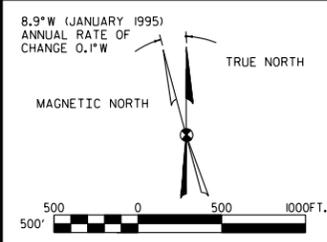
DEPARTMENT OF TRANSPORTATION
 FEDERAL AVIATION ADMINISTRATION
 HARRISBURG AIRPORTS DISTRICT OFFICE

CONDITIONALLY APPROVED: _____
 MANAGER, HAR-ADO

DATE: _____
 SUBJECT TO:
 COMMENTS IN LETTER DATED: _____

ERIE MUNICIPAL AIRPORT AUTHORITY

APPROVED BY: _____
 DATE: _____



AIRPORT DATA		
ITEMS	EXISTING	FUTURE
AIRPORT ELEVATION (MSL)	733.0'	733.0'
REFER. PT. (ARP) LAT. (NAD 83)	N 42°04'55.273"	N 42°05'00.205"
REFER. PT. (ARP) LONG. (NAD 83)	W 80°10'34.409"	W 80°10'24.591"
MEAN MAXIMUM TEMPERATURE	80.2° F	80.2° F
MAGNETIC VARIATION (YEAR)	8.9° W (1995)	8.9° W (1995)
AIRPORT CATEGORY	C III	C III
CRITICAL AIRCRAFT	DC-9-30	DC-9-30
AIRPORT NAVAIDS	PRECISION	PRECISION
NPIAS SERVICE LEVEL	PR	PR

RUNWAY DATA					
ITEMS	RUNWAY 6-24		RUNWAY 2-20		
	EXISTING	FUTURE	EXISTING	FUTURE	
PHYSICAL LENGTH & WIDTH	6505' X 150' (ASPH.)	8425' X 150' (ASPH.)	3530' X 150' (ASPH.)	2703' X 60' (ASPH.)	
EFFECTIVE GRADIENT (%)	.033	.025	.121	.115	
WIND COVERAGE (12 MPH) (%)	85.26	85.26	84.48	84.48	
PAVEMENT STRENGTH (1000 LBS.)	65(S), 98(D), 180(DT)	65(S), 98(D), 180(DT)	50(S), 60(D), 150(DT)	50(S), 60(D), 150(DT)	
APPROACH SURFACES	50:1	50:1	20:1	20:1	
RUNWAY/TAXIWAY LIGHTING	HIRL/MITL	HIRL/MITL	MIRL/MITL	MIRL/MITL	
RUNWAY MARKING	PRECISION	PRECISION	NON-PRECISION	NON-PRECISION	
NAVIGATION AIDS	VASI (20)	VASI (20)	VASI (20)	VASI (20)	

LEGEND	
EXISTING AIRPORT BUILDING	[Symbol]
PROPOSED BUILDING	[Symbol]
PROPERTY LINE	[Symbol]
EXISTING AIRPORT PROPERTY LINE	[Symbol]
RUNWAY OBJECT FREE AREA	[Symbol]
RUNWAY SAFETY AREA	[Symbol]
CONTOUR LINE	[Symbol]
OBSTRUCTION LIGHTED	[Symbol]
LAND ACQUISITION	[Symbol]
EXISTING KNOWN AVIGATION EASEMENT	[Symbol]

REVISIONS		
BY	DATE	CHANGE

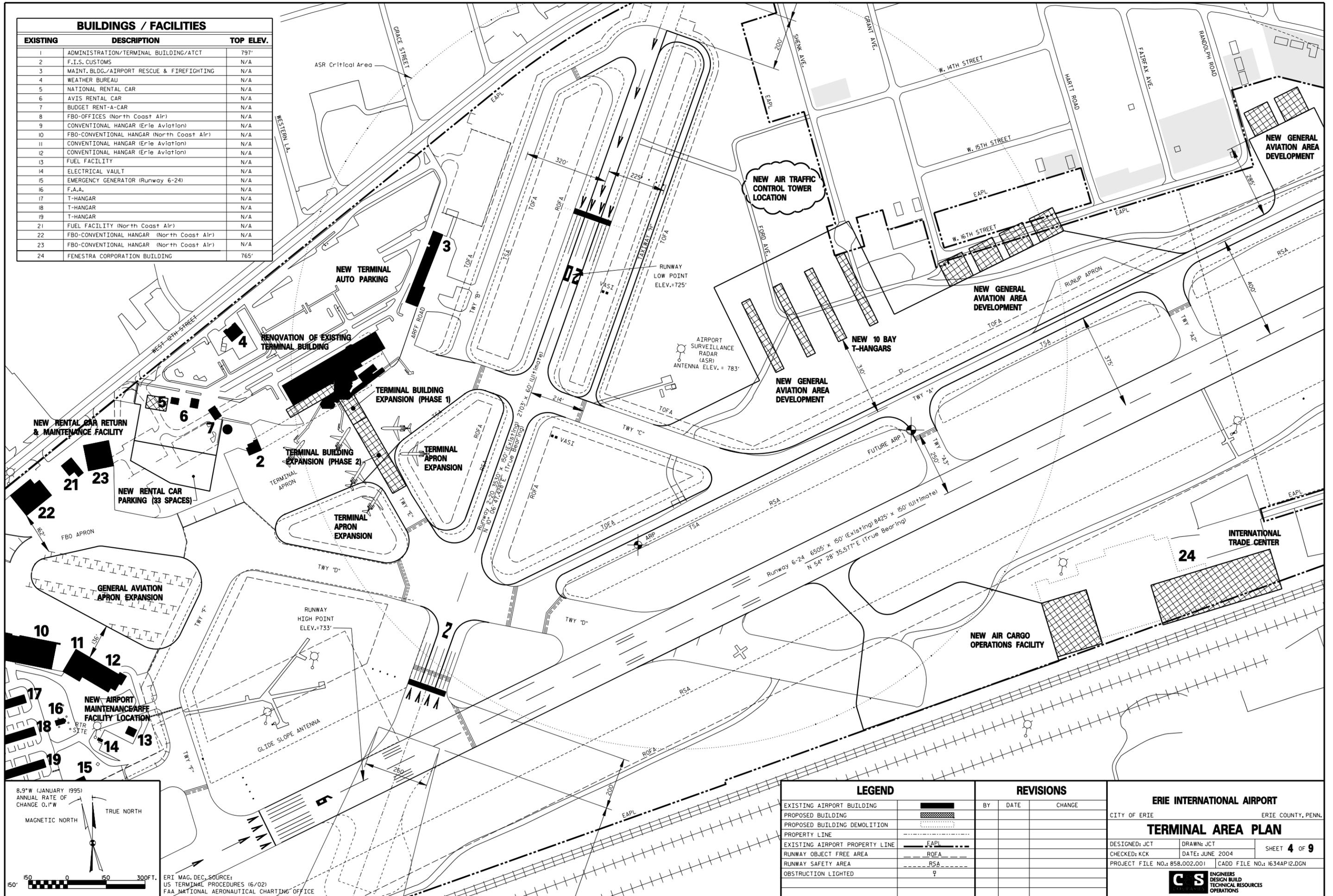
ERIE INTERNATIONAL AIRPORT
 CITY OF ERIE ERIE COUNTY, PENN.

AIRPORT LAYOUT PLAN

DESIGNED: JCT DRAWN: JCT SHEET **3** OF **9**
 CHECKED: KCK DATE: JUNE 2004
 PROJECT FILE NO.: 858.002.001 CADD FILE NO.: I634AP08.DGN

CS ENGINEERS DESIGN BUILD TECHNICAL RESOURCES OPERATIONS

BUILDINGS / FACILITIES		
EXISTING	DESCRIPTION	TOP ELEV.
1	ADMINISTRATION/TERMINAL BUILDING/ATCT	797'
2	F.I.S. CUSTOMS	N/A
3	MAINT. BLDG./AIRPORT RESCUE & FIREFIGHTING	N/A
4	WEATHER BUREAU	N/A
5	NATIONAL RENTAL CAR	N/A
6	AVIS RENTAL CAR	N/A
7	BUDGET RENT-A-CAR	N/A
8	FBO-OFFICES (North Coast Air)	N/A
9	CONVENTIONAL HANGAR (Erie Aviation)	N/A
10	FBO-CONVENTIONAL HANGAR (North Coast Air)	N/A
11	CONVENTIONAL HANGAR (Erie Aviation)	N/A
12	CONVENTIONAL HANGAR (Erie Aviation)	N/A
13	FUEL FACILITY	N/A
14	ELECTRICAL VAULT	N/A
15	EMERGENCY GENERATOR (Runway 6-24)	N/A
16	F.A.A.	N/A
17	T-HANGAR	N/A
18	T-HANGAR	N/A
19	T-HANGAR	N/A
21	FUEL FACILITY (North Coast Air)	N/A
22	FBO-CONVENTIONAL HANGAR (North Coast Air)	N/A
23	FBO-CONVENTIONAL HANGAR (North Coast Air)	N/A
24	FENESTRA CORPORATION BUILDING	765'



8.9"W (JANUARY 1995)
ANNUAL RATE OF
CHANGE 0.1"W

MAGNETIC NORTH
TRUE NORTH

150' 0 150 300 FT.

ERI MAG. DEC. SOURCE:
US TERMINAL PROCEDURES (6/02)
FAA NATIONAL AERONAUTICAL CHARTING OFFICE

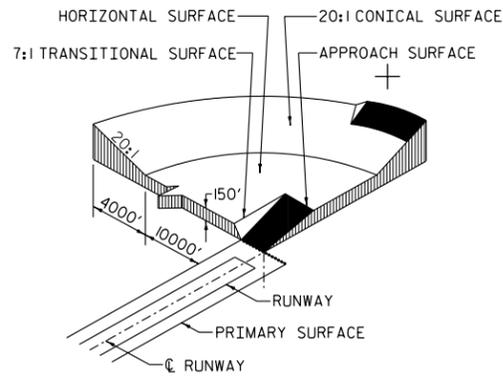
LEGEND		REVISIONS		
EXISTING AIRPORT BUILDING		BY	DATE	CHANGE
PROPOSED BUILDING				
PROPOSED BUILDING DEMOLITION				
PROPERTY LINE				
EXISTING AIRPORT PROPERTY LINE				
RUNWAY OBJECT FREE AREA				
RUNWAY SAFETY AREA				
OBSTRUCTION LIGHTED				

ERIE INTERNATIONAL AIRPORT
CITY OF ERIE ERIE COUNTY, PENN.

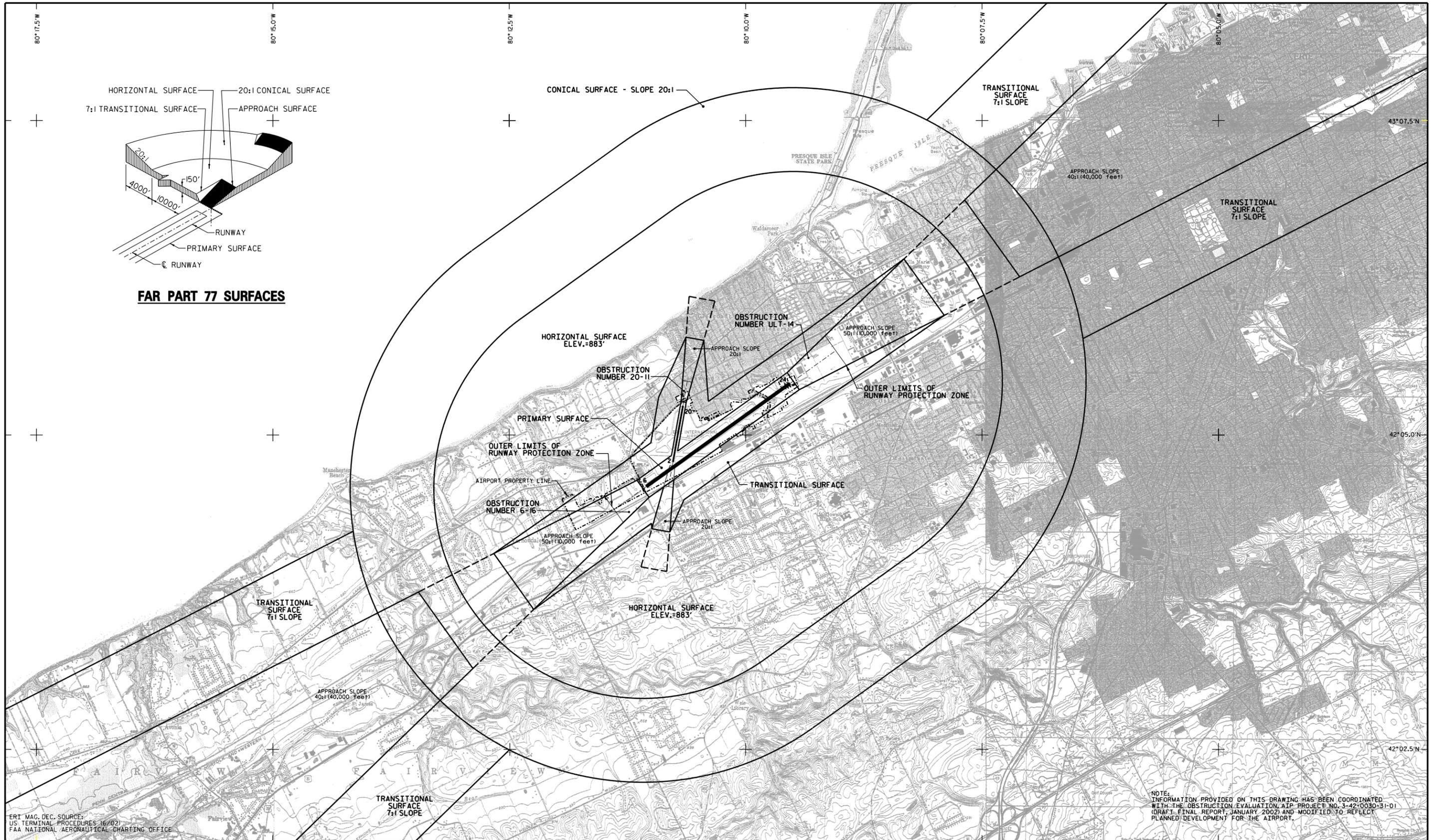
TERMINAL AREA PLAN

DESIGNED: JCT DRAWN: JCT SHEET **4** OF **9**
CHECKED: KCK DATE: JUNE 2004
PROJECT FILE NO.: 858.002.001 CADD FILE NO.: I634AP12.DGN

CS ENGINEERS
DESIGN BUILD
TECHNICAL RESOURCES
OPERATIONS

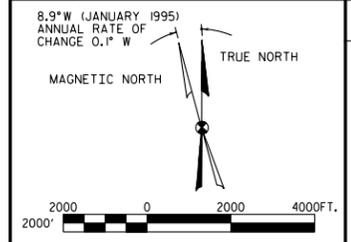


FAR PART 77 SURFACES



ERI MAG. DEC. SOURCE:
US TERMINAL PROCEDURES (6/02)
FAA NATIONAL AERONAUTICAL CHARTING OFFICE

NOTE:
INFORMATION PROVIDED ON THIS DRAWING HAS BEEN COORDINATED
WITH THE OBSTRUCTION EVALUATION, AEP-PROJECT NO. 3-42-0030-31-01
(DRAFT FINAL REPORT, JANUARY 2002) AND MODIFIED TO REFLECT
PLANNED DEVELOPMENT FOR THE AIRPORT.



- NOTES**
1. ALL ELEVATIONS SHOWN IN FEET ABOVE MEAN SEA LEVEL.
 2. ESTABLISHED AIRPORT ELEVATION IS 733 FEET.
 3. ALL CLOSE-IN OBSTRUCTIONS (TREES/BUSHES) SHOULD BE REMOVED OR TOPPED.
 4. ALL MAN-MADE OBSTRUCTIONS IN HORIZONTAL AND CONICAL SURFACES SHOULD BE MARKED AND LIGHTED.
 5. THIS PLAN WAS PREPARED FROM AVAILABLE PLANS OF RECORD AND SURVEY PERFORMED BY ROBERT L. RABELL SURVEYING AND ENGINEERING IN AUGUST 2001.
 6. OBJECTS MAY BE CONSIDERED OBSTRUCTIONS IF LOCATED WITHIN 10' OF FAR PART 77 SURFACES OR WITHIN THE RPZ.
 7. OBSTRUCTION NUMBERING IS CONSISTENT WITH OBSTRUCTION STUDY (DRAFT FINAL REPORT, JANUARY 2002) PREPARED FOR ERIE INTERNATIONAL AIRPORT BY C&S ENGINEERS, INC.

NOTE:
HEIGHTS OF BUILDINGS AND STRUCTURES IN THE AIRPORT ENVIRONS ARE RESTRICTED BY THE MILLCREEK TOWNSHIP ZONING ORDINANCE (AS AMENDED APRIL 18, 2000), AND THE MILLCREEK TOWNSHIP AIRPORT ZONING ORDINANCE (1983).

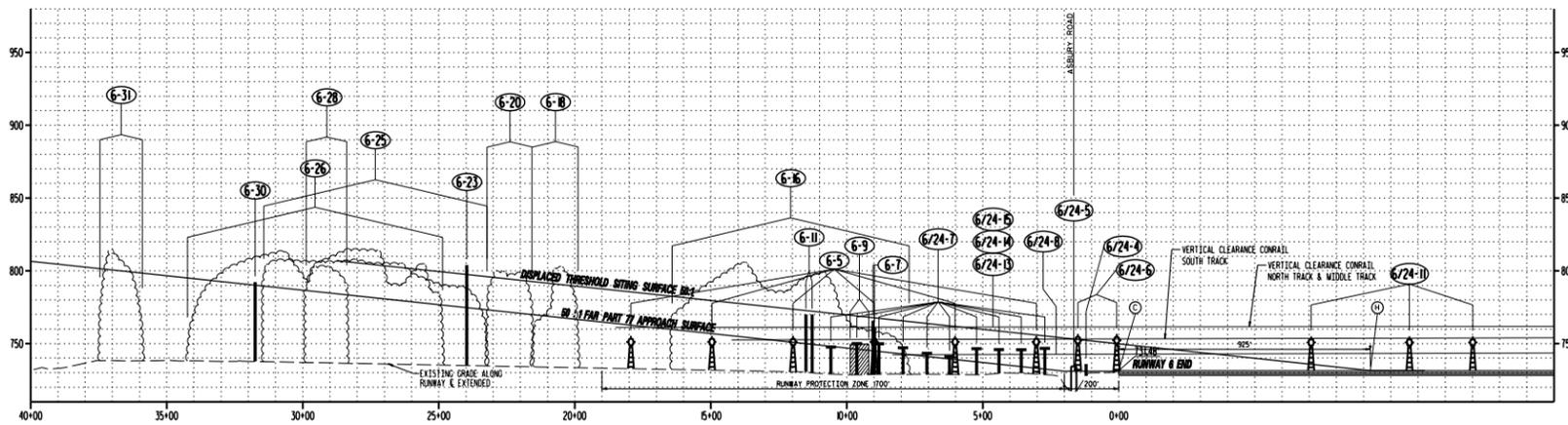
LEGEND		REVISIONS		
		BY	DATE	CHANGE
PAVED RUNWAY				
OBSTRUCTION				
FAR PART 77 SURFACES				
NON CRITICAL LIMITS OF FAR PART 77 SURFACES				

ERIE INTERNATIONAL AIRPORT
CITY OF ERIE ERIE COUNTY, PENN.

APPROACH AND OBSTRUCTION PLAN

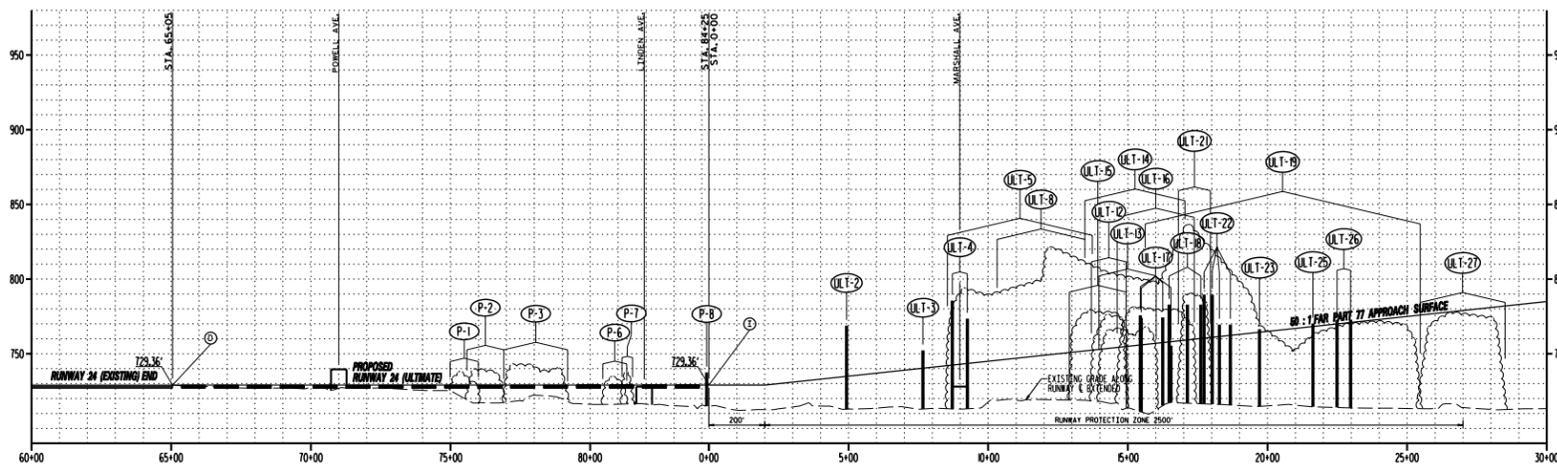
DESIGNED: JCT DRAWN: JCT SHEET **5** OF **9**
CHECKED: KCK DATE: JUNE 2004
PROJECT FILE NO.: 858.002.001 CADD FILE NO.: 1634APO9.DGN

C&S ENGINEERS DESIGN BUILD TECHNICAL RESOURCES OPERATIONS



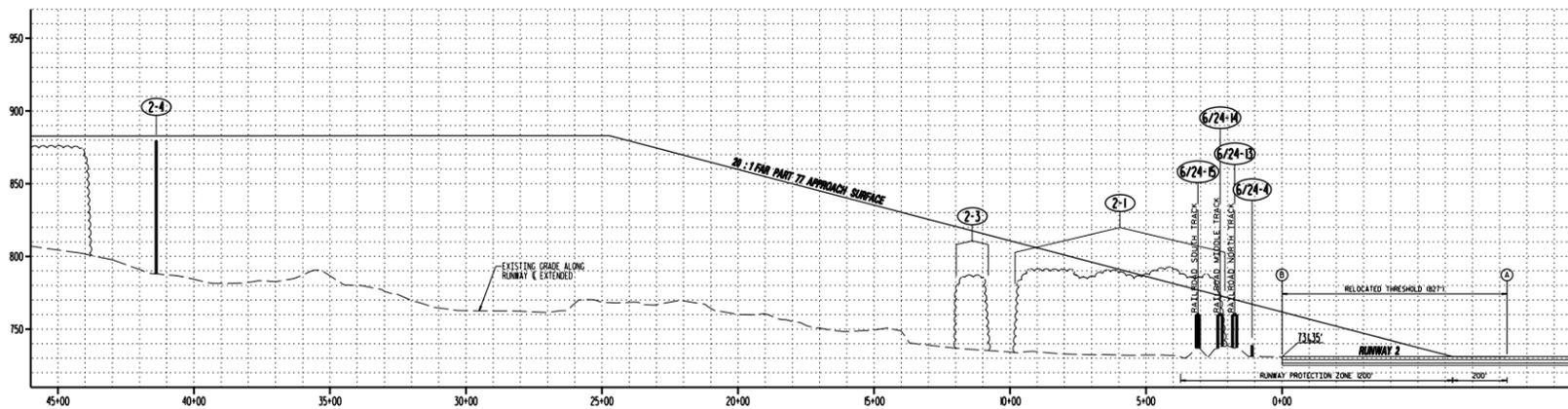
RUNWAY 6 APPROACH PROFILE

SCALE: H: 1" = 300'
SCALE: V: 1" = 100'



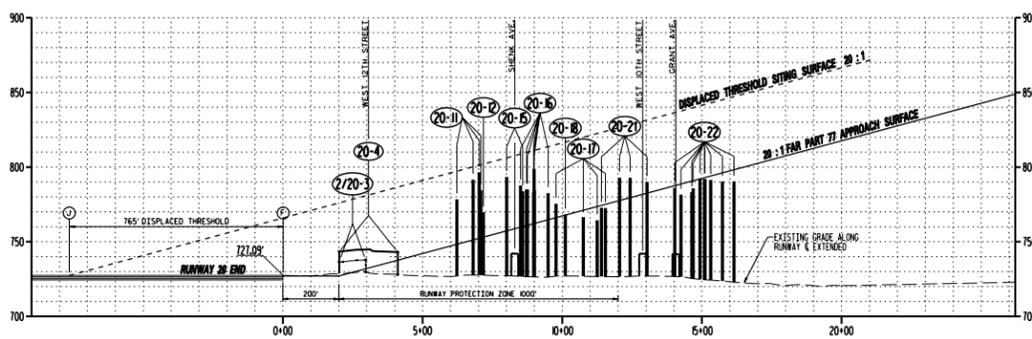
RUNWAY 24 APPROACH PROFILE

SCALE: H: 1" = 300'
SCALE: V: 1" = 100'



RUNWAY 2 APPROACH PROFILE

SCALE: H: 1" = 300'
SCALE: V: 1" = 100'



RUNWAY 20 APPROACH PROFILE

SCALE: H: 1" = 300'
SCALE: V: 1" = 100'

ERIE INTERNATIONAL AIRPORT RUNWAY ENDS AND THRESHOLD POINTS			
DESCRIPTION	NORTH	EAST	ELEV.
(A) RUNWAY 2 RELOCATED THRESHOLD	N42°04'47.433"	W080°10'46.962"	730.22'
(B) RUNWAY 2 END (EXISTING)	N42°04'39.390"	W080°10'48.880"	731.35'
(C) RUNWAY 6 END	N42°04'35.909"	W080°11'03.889"	731.48'
(D) RUNWAY 24 END (EXISTING)	N42°05'13.241"	W080°09'53.676"	729.36'
(E) RUNWAY 24 THRESHOLD (EXISTING)	N42°05'10.413"	W080°09'58.997"	728.96'
(F) RUNWAY 20 END	N42°05'13.724"	W080°10'40.659"	727.09'
(G) RUNWAY 6 THRESHOLD (EXISTING)	N42°05'10.629"	W080°10'41.402"	726.58'
(H) RUNWAY 6 THRESHOLD (925' DISP.)	N42°04'41.28"	W080°10'53.906"	731.48'
(I) RUNWAY 24 END (1920' EXT.)	N42°05'24.257"	W080°09'32.947"	729.36'
(J) RUNWAY 20 THRESHOLD (765' DISP.)	N42°05'06.280"	W080°10'42.441"	725.64'

GEOGRAPHIC COORDINATES REFERRED TO NORTH AMERICAN DATUM OF 1983
VERTICAL DATUM IS NAVD 88.

LEGEND	
	EXISTING RUNWAY PAVEMENT
	DISPLACED THRESHOLD SITING SURFACE
	THRESHOLD SITING SURFACE
	FAR PART OF APPROACH SURFACE
	EXISTING GRADE ALONG CENTERLINE
	VERTICAL CLEARANCE OVER RAILROAD
	VERTICAL CLEARANCE OVER ROADS
	VERTICAL CLEARANCE OVER FENCE
	HAZARD/LIGHT TOWERS
	UTILITY POLE
	INDIVIDUAL TREE
	EXISTING DRIVING RANGE POLE
	TREE CANOPY
	BUILDING
	OBSTRUCTION NUMBER

- NOTES:
1. VERTICAL DATUM IS NAVD 88
 2. INFORMATION PROVIDED ON THIS DRAWING HAS BEEN COORDINATED WITH THE OBSTRUCTION EVALUATION, AIP PROJECT NO. 3-42-0030-31-01 (DRAFT FINAL REPORT, JANUARY 2002) AND MODIFIED TO REFLECT PLANNED DEVELOPMENT FOR THE AIRPORT.
 3. OBSTRUCTION NUMBERING IS CONSISTENT WITH OBSTRUCTION STUDY (DRAFT FINAL REPORT, JANUARY 2002) PREPARED FOR ERIE INTERNATIONAL AIRPORT BY C&S ENGINEERS, INC.



REVISIONS		
BY	DATE	CHANGE

ERIE INTERNATIONAL AIRPORT		
CITY OF ERIE		ERIE COUNTY, PENN.
APPROACH PROFILES		
DESIGNED: JCT	DRAWN: JCT	SHEET 6 OF 9
CHECKED: KCK	DATE: JUNE 2004	
PROJECT FILE NO.: 858.002.001	CADD FILE NO.: I634AP11.DGN	

C&S ENGINEERS
DESIGN BUILD
TECHNICAL RESOURCES
OPERATIONS

Runway 6-24 Primary (P) and Transitional (T) Surfaces (Existing)
Stationing from Runway 6-24

Obstruction Number	Station	O/S (Ft)	Highest Elevation	Surface Elevation	Penetration Surface	Surface Penetrated	Obstruction Description	Within RPZ	On Airport Property	Within Wetlands	Recommended Actions
0/24-1	-1+73	506 LT	745.3	731	14.3	T	Building	No	No	No	Light
0/24-2	-1+55	709 LT	780.8	781	19.6	T	(12) Trees	No	No	No	Remove
0/24-3	-0+91	855 LT	801.8	781	20.8	T	0.44 ac Trees	No	No	No	Remove
0/24-4	-0+80	335 LT	732.0	731	1.0	P	3070 LF Fence	No	Yes	No	Light
0/24-5	-0+78	477 LT	737.0	731	6.0	P	1170 LF Road	Yes	No	No	Lower
0/24-6	-0+06	327 RT	755.0	731	24.0	P	(2) Light Towers	No	Yes	No	None
0/24-7	0+12	459 RT	752.0	731	21.0	P/T	(31) Poles	Yes	No	No	Light
0/24-8	1+72	409 RT	752.9	731	21.9	P/T	3820 LF Access Rd.	Yes	No	No	Fixed By Function
0/24-9	2+32	546 RT	746.3	738	8.3	T	0.03 ac Trees	No	No	No	Remove
0/24-10	3+27	547 RT	747.5	738	9.5	T	0.04 ac Trees	No	No	No	Remove
0/24-11	10+89	450 RT	758.8	731	25.8	P	(3) Light Towers	No	Yes	No	Fixed By Function
0/24-12	11+29	348 LT	771	731	40.0	P	(8) NAVAIDS	No	Yes	No	Fixed By Function
0/24-13	13+36	561 RT	781.5	740	21.5	P/T	5050 LF RailRoad	Yes	No	No	Light
0/24-14	15+28	659 RT	781.2	753	8.2	P/T	5000 LF RailRoad	Yes	No	No	Light
0/24-15	15+34	571 RT	781.5	740	21.5	P/T	4000 LF RailRoad	Yes	No	No	Light
0/24-16	21+18	779 RT	773.2	772	1.2	T	Tree	No	No	No	Remove
0/24-17	21+53	777 RT	771.5	770	1.5	T	Utility	No	No	No	Bury
0/24-18	21+99	987 RT	826.4	800	26.4	T	1.14 ac Trees	No	No	No	Remove
0/24-19	25+30	908 RT	808.8	790	18.8	T	1.71 ac Trees	No	No	No	Remove
0/24-20	25+75	1037 RT	813.5	807	6.5	T	0.05 ac Trees	No	No	No	Remove
0/24-21	40+57	397 RT	736.2	731	5.2	P	2300 LF Fence	No	Yes	No	Light
0/24-22	43+84	846 RT	795.7	780	15.7	T	(5) Trees	No	No	No	Remove
0/24-23	45+27	530 RT	765.9	731	34.9	P/T	Building	No	Yes	No	Light
0/24-24	45+31	1057 LT	812.9	809	3.9	T	(8) Trees	No	No	No	Remove
0/24-25	47+87	989 LT	792	800	-8.0	T	(3) Trees	No	No	No	Remove
0/24-26	48+20	847 RT	765.5	750	15.5	T	(5) Utilities	No	Yes	No	Bury
0/24-27	48+82	845 RT	788.5	779	10.5	T	0.43 ac Trees	No	0.16 ac	No	Remove
0/24-28	49+33	554 RT	797.3	738	59.3	T	(5) Trees	No	Yes	No	Remove
0/24-29	49+59	279 RT	748.2	731	17.2	P	NAVAID	No	Yes	No	Fixed By Function
0/24-30	50+25	783 LT	775.3	770	5.3	T	Tree	No	No	No	Remove
0/24-31	51+20	488 RT	785	731	54.0	P	Tree	No	Yes	No	Remove
0/24-32	51+33	579 RT	777.9	740	37.9	T	Tree	No	Yes	No	Remove
0/24-33	51+71	805 LT	796.1	773	26.1	T	(9) Trees	No	No	No	Remove
0/24-34	51+98	780 RT	780.2	767	13.2	T	Building	No	Yes	No	Light
0/24-35	52+06	596 RT	808.9	743	65.9	T	0.24 ac Trees	No	0.24 ac	No	Remove
0/24-36	52+77	622 RT	758.6	750	9.8	T	(8) Poles	No	No	No	Bury
0/24-37	52+94	755 LT	802.7	786	36.7	T	0.20 ac Trees	No	No	No	Remove
0/24-38	53+09	800 LT	791.4	772	19.4	T	(5) Trees	No	No	No	Remove
0/24-39	53+15	830 LT	792.4	791	1.4	T	(5) Trees	No	No	No	Remove
0/24-40	53+18	436 RT	775.8	731	44.6	P	Tree	No	Yes	No	Remove
0/24-41	54+44	426 RT	750.6	731	19.6	P	Building	No	No	No	Light
0/24-42	54+57	703 LT	788.5	780	28.5	T	(4) Trees	No	No	No	Remove
0/24-43	55+24	433 RT	752.8	731	21.8	P	Building	No	No	No	Light
0/24-44	56+81	488 RT	807.3	731	76.3	P	(2) Trees	No	Yes	No	Remove
0/24-45	57+10	555 RT	785.1	738	47.1	T	(8) Trees	No	(1) Tree	No	Remove
0/24-46	58+01	825 LT	787.5	775	-7.5	T	Tree	No	No	No	Remove
0/24-47	60+10	652 LT	755.7	750	5.7	T	0.17 ac Trees	No	No	No	Remove
0/24-48	60+88	941 LT	798.4	792	6.4	T	(8) Trees	No	No	No	Remove
0/24-49	61+03	715 RT	777.5	780	17.5	T	(4) Trees	No	No	No	Remove
0/24-50	62+14	883 LT	801.7	780	21.7	T	(7) Trees	No	No	No	Remove
0/24-51	63+00	685 RT	786.8	755	31.8	T	(9) Utilities	No	No	No	Bury/Light
0/24-52	63+82	992 RT	824.8	800	24.8	T	0.47 ac Trees	No	0.32 ac	No	Remove
0/24-53	64+47	927 RT	800.3	790	10.3	T	Tree	No	No	No	Remove
0/24-54	64+87	698 LT	784.7	758	28.7	T	(2) Trees	No	No	No	Remove
0/24-55	65+11	921 LT	796.1	799	7.1	T	(5) Trees	No	No	No	Remove
0/24-56	65+15	354 RT	731.3	729.3	2.0	P	1780 LF Fence	1185 LF	Yes	No	Light
0/24-57	65+58	1020 LT	802.8	803	-0.2	T	0.19 ac Trees	No	No	No	Remove
0/24-58	65+85	682 LT	779.3	755	24.3	T	(7) Trees	No	No	No	Remove

Runway 24 Approach (A) and Transitional (T) Surfaces (Ultimate)
FAR Part 77 50:1 Approach Slope

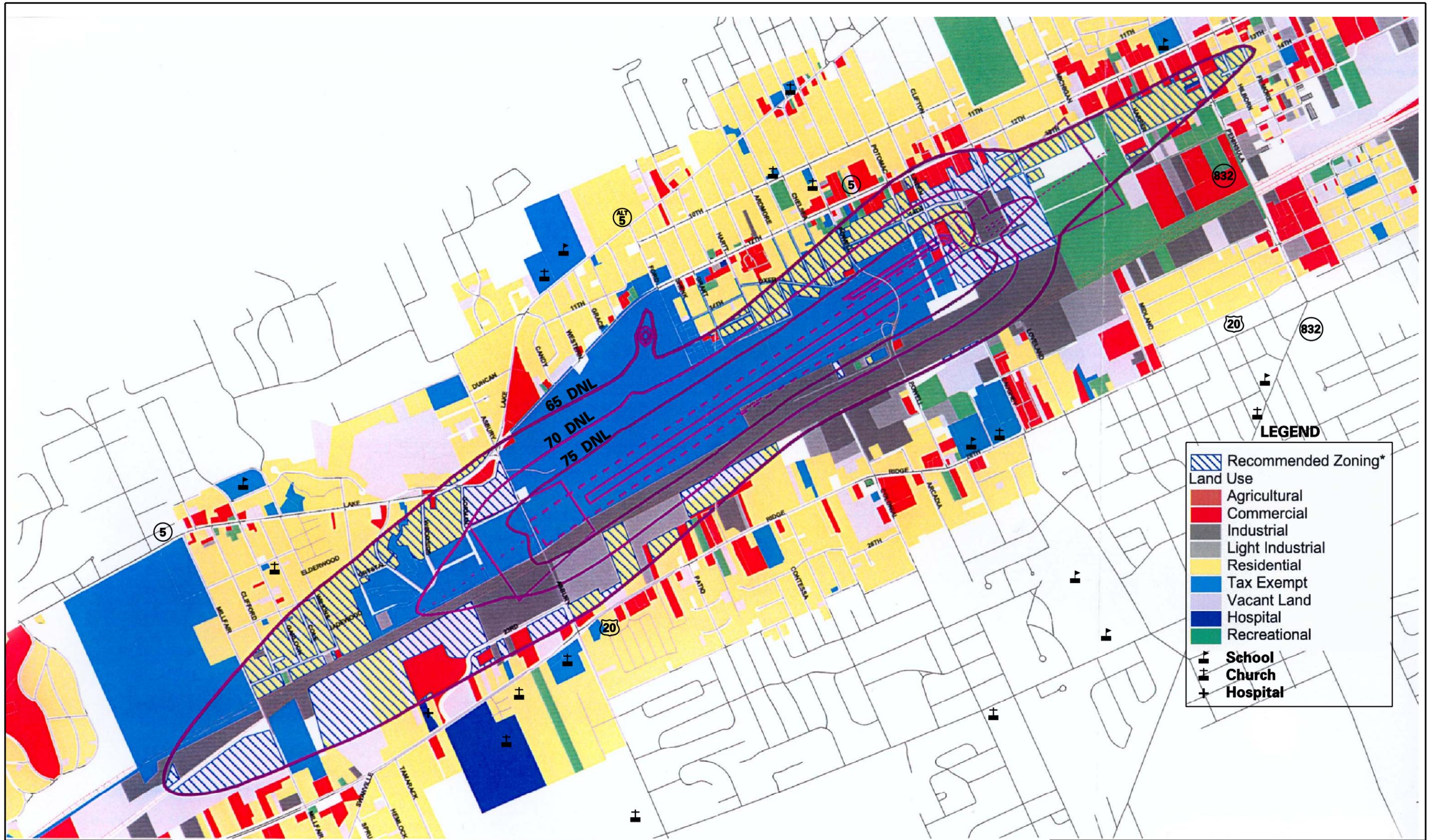
Obstruction Number	Station	O/S (Ft)	Highest Elevation	Surface Elevation	Penetration Surface	Surface Penetrated	Obstruction Description	Within RPZ	On Airport Property	Within Wetlands	Recommended Actions
ULT-1	4+29	895 LT	752.5	743	9.5	T	Tree	No	No	No	Remove
ULT-2	5+00	280 LT	768.8	738	32.8	A	Tree	Yes	No	No	Remove
ULT-3	7+72	158 RT	752.2	741	11.2	A	Tree	Yes	No	No	Remove
ULT-4	8+95	167 LT	785.6	744	41.6	A	(13) Trees	Yes	No	No	Remove
ULT-5	10+42	208 LT	788.5	745	43.5	A	2.00 ac Trees	2.00 ac	No	0.85 ac	Remove
ULT-6	11+04	782 LT	789.9	788	21.9	T	Tree	No	No	No	Remove
ULT-7	11+12	868 LT	790.1	780	10.1	T	0.54 ac Trees	No	No	No	Remove
ULT-8	12+44	513 LT	820.1	750	70.1	A	1.23 ac Trees	1.23 ac	No	No	Remove
ULT-9	12+58	672 LT	762.0	751	11.0	T	(2) Trees	No	No	No	Remove
ULT-10	13+29	788 RT	782.7	785	17.7	T	4.00 ac Trees	No	No	0.54 ac	Remove
ULT-11	13+81	824 LT	780.8	775	5.6	T	0.25 ac Trees	No	No	No	Remove
ULT-12	14+08	605 RT	774.1	754	20.1	A	0.29 ac Trees	0.29 ac	No	0.29 ac	Remove
ULT-13	14+31	645 LT	768.9	755	13.9	A	0.48 ac Trees	0.36 ac	No	No	Remove
ULT-14	14+33	474 LT	802.8	753	49.8	A	2.02 ac Trees	2.02 ac	No	1.42 ac	Remove
ULT-15	14+34	407 RT	780.1	754	26.1	A	0.41 ac Trees	0.41 ac	No	0.26 ac	Remove
ULT-16	15+50	154 RT	780.9	756	24.9	A	1.08 ac Trees	1.08 ac	No	0.75 ac	Remove
ULT-17	16+38	499 LT	774.4	758	16.4	A	(4) Trees	Yes	No	No	Remove
ULT-18	16+97	692 LT	782.9	781	21.9	A	(3) Trees	Yes	No	No	Remove
ULT-19	17+20	239 LT	835.7	798	37.7	A	1.83 ac Trees	1.83 ac	No	No	Remove
ULT-20	17+78	829 LT	776.5	775	1.5	T	(4) Trees	No	No	No	Remove
ULT-21	17+84	486 LT	789.4	782	27.4	A	0.14 ac Trees	0.14 ac	No	No	Remove
ULT-22	18+42	549 LT	786.6	783	28.6	A	(4) Trees	Yes	No	No	Remove
ULT-23	19+09	735 LT	766.5	785	1.5	A	Tree	Yes	No	No	Remove
ULT-24	19+70	804 LT	769.4	770	-0.6	T	Tree	No	No	No	Remove
ULT-25	21+65	454 LT	770.2	789	1.2	A	Tree	Yes	No	No	Remove
ULT-26	22+85	516 LT	772.8	771	1.8	A	(8) Trees	Yes	No	No	Remove
ULT-27	26+49	888 RT	775	776	-1.0	A	0.59 ac Trees	No	No	0.59 ac	Remove

Runway 24 Primary and Transitional Surfaces (Ultimate)
Stationing from Runway 6-24

Obstruction Number	Station	O/S (Ft)	Highest Elevation	Surface Elevation	Penetration Surface	Surface Penetrated	Obstruction Description	Within RPZ	On Airport Property	Within Wetlands	Recommended Actions
P-1	75+36	427 RT	736.1	729	7.1	P	0.07 ac Trees	No	0.07 ac	0.07 ac	Remove
P-2	75+92	95 RT	737.9	729	8.9	P	0.23 ac Trees	No	0.23 ac	0.23 ac	Remove
P-3	77+18	288 RT	741.2	729	12.2	P	0.43 ac Trees	No	0.43 ac	0.43 ac	Remove
P-4	78+34	388 RT	737.9	729	8.9	P	0.07 ac Trees	No	0.07 ac	0.07 ac	Remove
P-5	79+41	148 RT	736.3	729	6.3	P	0.03 ac Trees	No	0.03 ac	0.03 ac	Remove
P-6	80+86	63 RT	734.4	729	5.4	P	0.08 ac Trees	No	0.08 ac	0.08 ac	Remove
P-7	81+35	45 LT	738.1	729	9.1	P	0.07 ac Trees	No	0.07 ac	0.07 ac	Remove
P-8	84+18	38 LT	737.5	729	8.5	P	Tree	No	Yes	No	Remove

Runway 20 Approach (A) and Transitional (T) Surfaces
FAR Part 77 20:1 Approach Slope

Obstruction Number	Station	O/S (Ft)	Highest Elevation	Surface Elevation	Penetration Surface	Surface Penetrated	Obstruction Description	Within RPZ	On Airport Property	Within Wetlands	Recommended Actions
20-1	2+03	484 RT	803.2	779	24.2	T	(3) Trees	No	No	No	None ¹
20-2	2+84	459 LT	770.3	776	-4.7	T	0.06 ac Trees	No	No	No	None ¹
20-3	2+83	493 RT	798.0	782	16.0	T	0.40 ac Trees	No	No	No	None ¹
20-4	3+14	65 RT	746.8	732	14.8	P/A/T	975' W. 12th St.	620'	No	No	Light
20-5	3+34	395 LT	778.2	771	7.2	T	(8) Trees	No	No	No	None ¹
20-6	3+68	400 LT	786.5	773	13.5	T	(8) Trees	No	No	No	None ¹
20-7	5+28	257 RT	790.5	767	33.5	T	(9) Trees	No	No	No	None ¹
20-8	5+87	178 LT	791.0	747	44.0	T	(5) Trees	No	No	No	None ²
20-9	5+95	502 LT	788.2	795	-6.8	T	(3) Trees	No	No	No	None ¹
20-10	6+55	437 RT	785.0	788	-3.0	T	(5) Trees	No	No	No	None ¹
20-11	7+16	74 LT	796.5	752	44.5	A	(4) Trees	Yes	No	No	None ²
20-12	7+21	113 RT	789.8	762	17.8	A	(2) Tree	Yes	No	No	None ²
20-13	7+44	201 LT	789.2	757	32.2	T	(3) Trees	No	No	No	None ²
20-14	7+51	382 LT	775.8	784	-8.4	T	Tree	No	No	No	None ²
20-15	8+09	166 LT	793.4	757	36.4	A	(2) Trees	Yes	No	No	None ²
20-16	9+04	87 RT	796.7	762	36.7	A	(11) Trees	Yes	No	No	None ²
20-17	9+75	145 LT	775.6	768	9.8	A	(4) Trees	Yes	No	No	None ²
20-18	10+15	48 RT	788.4	768	0.4	A	Tree	Yes	No	No	None ²
20-19	10+68	239 LT	782.8	771	-8.2	T	Tree	No	No	No	None ²
20-20	10+79	234 RT	802.9	774	28.9	T	(6) Trees	No	No	No	None ²
20-21	12+10	160 RT	793.1	778	15.1	A	(4) Trees	(2) Trees	No	No	None ²
20-22	15+00	167 RT	792.3	792	0.3	A	(10) Trees	No	No	No	None ²
20-23	6+30	162 LT	752.4	749	3.4	A	2 Houses	Yes	No	No	None ²



LEGEND

	Recommended Zoning*
	Land Use
	Agricultural
	Commercial
	Industrial
	Light Industrial
	Residential
	Tax Exempt
	Vacant Land
	Hospital
	Recreational
	School
	Church
	Hospital

8.9" W (JANUARY 1995)
ANNUAL RATE OF
CHANGE 0.1" W

TRUE NORTH

MAGNETIC NORTH

700 0 700 1400 FT.

ERI MAG. DEC. SOURCE:
US TERMINAL PROCEDURES (6/02)
FAA NATIONAL AERONAUTICAL CHARTING OFFICE

SOURCES: PARCEL DATA PROVIDED BY ERIE COUNTY PLANNING DEPARTMENT (2000); 1993 AERIAL PHOTOGRAPHY; FIELD REVIEW (2001).

***NOTE: HATCHED AREAS INDICATE RECOMMENDED COMMERCIAL OR INDUSTRIAL ZONING FOR COMPATIBLE LAND USE.**

REVISIONS		
BY	DATE	CHANGE

ERIE INTERNATIONAL AIRPORT
CITY OF ERIE ERIE COUNTY, PENN.

OFF AIRPORT LAND USE & GROUND ACCESS PLAN

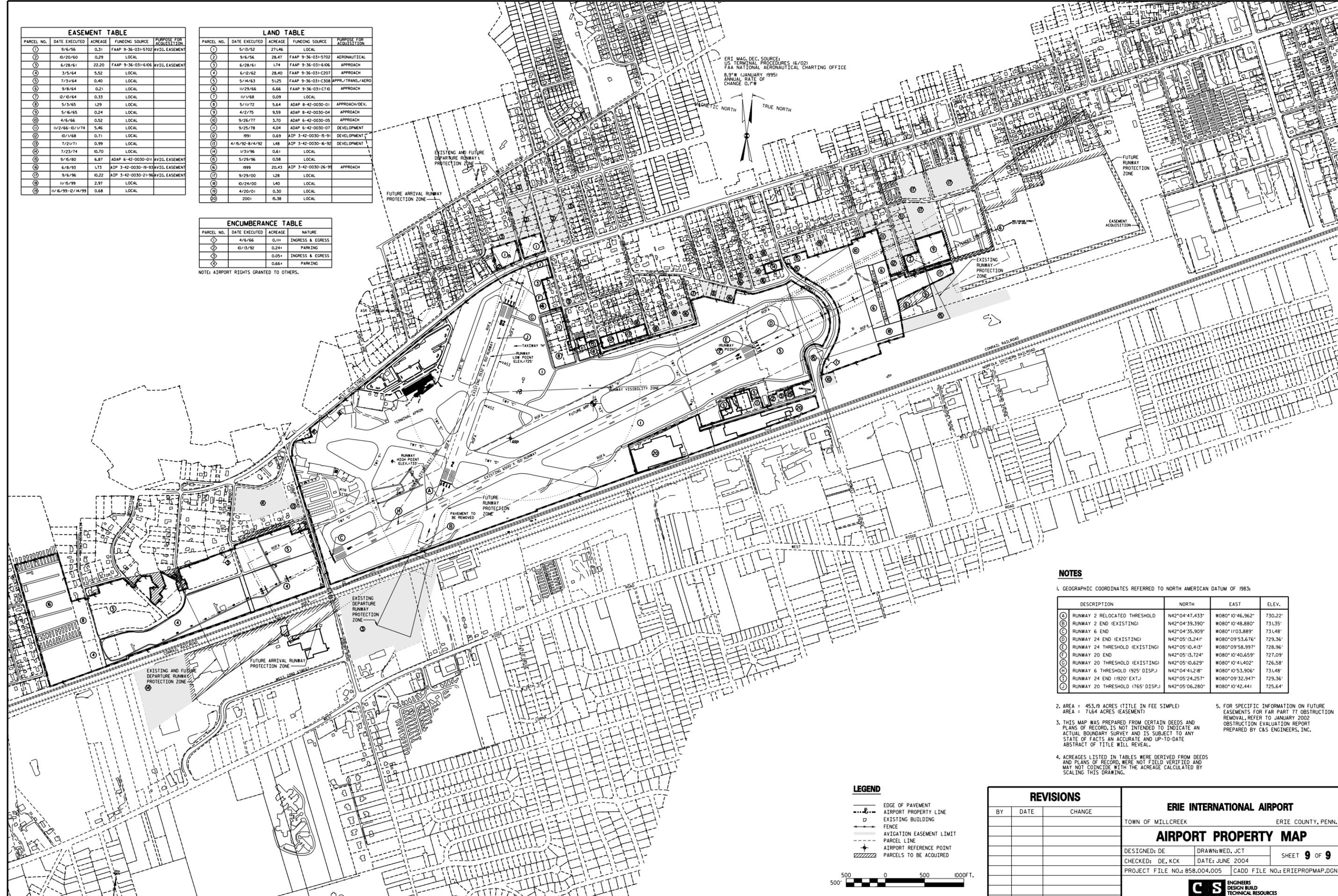
DESIGNED: JCT, CB DRAWN: JCT, CB SHEET **8** OF **9**
 CHECKED: KCK DATE: SEPTEMBER 2002
 PROJECT FILE NO.: 858.002.001 CADD FILE NO.: I634AP13.DGN

EASEMENT TABLE				
PARCEL NO.	DATE EXECUTED	ACREAGE	FUNDING SOURCE	PURPOSE FOR ACQUISITION
1	9/6/56	0.31	FAAP 9-36-031-5702	AVIG. EASEMENT
2	10/20/60	0.29	LOCAL	
3	6/28/61	22.20	FAAP 9-36-031-6-06	AVIG. EASEMENT
4	3/5/64	5.52	LOCAL	
5	7/31/64	0.40	LOCAL	
6	9/8/64	0.21	LOCAL	
7	12/10/64	0.33	LOCAL	
8	5/3/65	1.29	LOCAL	
9	5/16/65	0.24	LOCAL	
10	4/6/66	0.52	LOCAL	
11	11/2/66-10/11/74	5.46	LOCAL	
12	10/1/68	0.71	LOCAL	
13	7/21/71	0.99	LOCAL	
14	7/23/74	10.70	LOCAL	
15	9/15/80	6.87	ADAP 6-42-0030-011	AVIG. EASEMENT
16	6/8/93	1.73	AIP 3-42-0030-19-93	AVIG. EASEMENT
17	9/6/96	10.22	AIP 3-42-0030-21-96	AVIG. EASEMENT
18	11/5/99	2.97	LOCAL	
19	11/16/99-12/14/99	0.68	LOCAL	

LAND TABLE				
PARCEL NO.	DATE EXECUTED	ACREAGE	FUNDING SOURCE	PURPOSE FOR ACQUISITION
1	5/13/52	271.46	LOCAL	
2	9/6/56	28.47	FAAP 9-36-031-5702	AERONAUTICAL
3	6/28/61	1.74	FAAP 9-36-031-6-06	APPROACH
4	6/12/62	28.40	FAAP 9-36-031-C207	
5	5/14/63	51.25	FAAP 9-36-031-C308	APPR./TRANS./AERO
6	11/29/66	6.66	FAAP 9-36-031-CT10	APPROACH
7	11/1/68	0.09	LOCAL	
8	5/11/72	5.64	ADAP 8-42-0030-01	APPROACH/DEV.
9	4/2/75	9.59	ADAP 8-42-0030-04	APPROACH
10	9/26/77	3.70	ADAP 6-42-0030-05	APPROACH
11	9/25/78	4.04	ADAP 6-42-0030-07	DEVELOPMENT
12	991	0.69	AIP 3-42-0030-5-91	DEVELOPMENT
13	4/16/92-8/4/92	1.48	AIP 3-42-0030-6-92	DEVELOPMENT
14	1/31/96	0.51	LOCAL	
15	5/29/96	0.68	LOCAL	
16	999	20.43	AIP 3-42-0030-26-99	APPROACH
17	9/29/00	1.28	LOCAL	
18	10/24/00	1.40	LOCAL	
19	4/20/01	0.30	LOCAL	
20	2001	6.38	LOCAL	

ENCUMBRANCE TABLE			
PARCEL NO.	DATE EXECUTED	ACREAGE	NATURE
1	4/6/66	0.11	INGRESS & EGRESS
2	10/13/92	0.24	PARKING
3		0.05	INGRESS & EGRESS
4		0.66	PARKING

NOTE: AIRPORT RIGHTS GRANTED TO OTHERS.



ERI MAG. DEC. SOURCE:
US TERMINAL PROCEDURES (6/02)
FAA NATIONAL AERONAUTICAL CHARTING OFFICE
8.9" W (JANUARY 1995)
ANNUAL RATE OF
CHANGE 0.1" W

NOTES

1. GEOGRAPHIC COORDINATES REFERRED TO NORTH AMERICAN DATUM OF 1983:

DESCRIPTION	NORTH	EAST	ELEV.
A RUNWAY 2 RELOCATED THRESHOLD	N42°04'47.433"	W080°10'46.962"	730.22'
B RUNWAY 2 END (EXISTING)	N42°04'39.390"	W080°10'48.880"	731.35'
C RUNWAY 6 END	N42°04'35.909"	W080°11'03.889"	731.48'
D RUNWAY 24 END (EXISTING)	N42°05'13.241"	W080°09'53.676"	729.36'
E RUNWAY 24 THRESHOLD (EXISTING)	N42°05'10.413"	W080°09'58.997"	728.96'
F RUNWAY 20 END	N42°05'13.724"	W080°10'40.659"	727.09'
G RUNWAY 20 THRESHOLD (EXISTING)	N42°05'10.629"	W080°10'41.402"	726.58'
H RUNWAY 6 THRESHOLD (925' DISP.)	N42°04'41.218"	W080°10'53.906"	731.48'
I RUNWAY 24 END (1920' EXT.)	N42°05'24.257"	W080°09'32.947"	729.36'
J RUNWAY 20 THRESHOLD (765' DISP.)	N42°05'06.280"	W080°10'42.441"	725.64'

- 2. AREA = 453.19 ACRES (TITLE IN FEE SIMPLE)
AREA = 71.64 ACRES (EASEMENT)
- 3. THIS MAP WAS PREPARED FROM CERTAIN DEEDS AND PLANS OF RECORD, IS NOT INTENDED TO INDICATE AN ACTUAL BOUNDARY SURVEY AND IS SUBJECT TO ANY STATE OF FACTS AN ACCURATE AND UP-TO-DATE ABSTRACT OF TITLE WILL REVEAL.
- 4. ACREAGES LISTED IN TABLES WERE DERIVED FROM DEEDS AND PLANS OF RECORD, WERE NOT FIELD VERIFIED AND MAY NOT COINCIDE WITH THE ACREAGE CALCULATED BY SCALING THIS DRAWING.
- 5. FOR SPECIFIC INFORMATION ON FUTURE EASEMENTS FOR FAR PART 77 OBSTRUCTION REMOVAL, REFER TO JANUARY 2002 OBSTRUCTION EVALUATION REPORT PREPARED BY CBS ENGINEERS, INC.

LEGEND

- EDGE OF PAVEMENT
- - - AIRPORT PROPERTY LINE
- EXISTING BUILDING
- FENCE
- - - AVIGATION EASEMENT LIMIT
- PARCEL LINE
- AIRPORT REFERENCE POINT
- ▨ PARCELS TO BE ACQUIRED



REVISIONS

BY	DATE	CHANGE

ERIE INTERNATIONAL AIRPORT

TOWN OF MILLCREEK ERIE COUNTY, PENN.

AIRPORT PROPERTY MAP

DESIGNED: DE DRAWN: WED, JCT SHEET 9 OF 9
CHECKED: DE, KCK DATE: JUNE 2004
PROJECT FILE NO.: 858.004.005 CADD FILE NO.: ERIEPROP.MAP.DGN

