

LEGEND

SYMBOL	DESCRIPTION
—	AIRPORT PAVEMENT EDGE
—	RUNWAY CENTERLINE
—	PAVED ROAD
—	UNPAVED ROAD
—	FENCE
—	TREE LINE
—	BRUSH LINE
—	OBSURED CONTOURS
—	INDEX CONTOUR
—	INTERMEDIATE CONTOUR
—	DEPRESSION CONTOUR
—	STREAM
—	SWAMP
—	POND
—	BUILDINGS
—	FUEL TANKS
—	UTILITY POLE
—	TREE
—	BUILDING RESTRICTION LINE (BASED ON 25' STRUCTURES)
—	ROFA
—	RUNWAY PROTECTION ZONE
—	RSA
—	RUNWAY SAFETY AREA
—	AIRPORT PROPERTY LINE
—	TOWN LINE
—	HOLD LINE MARKINGS
*	OBSTRUCTION LIGHT

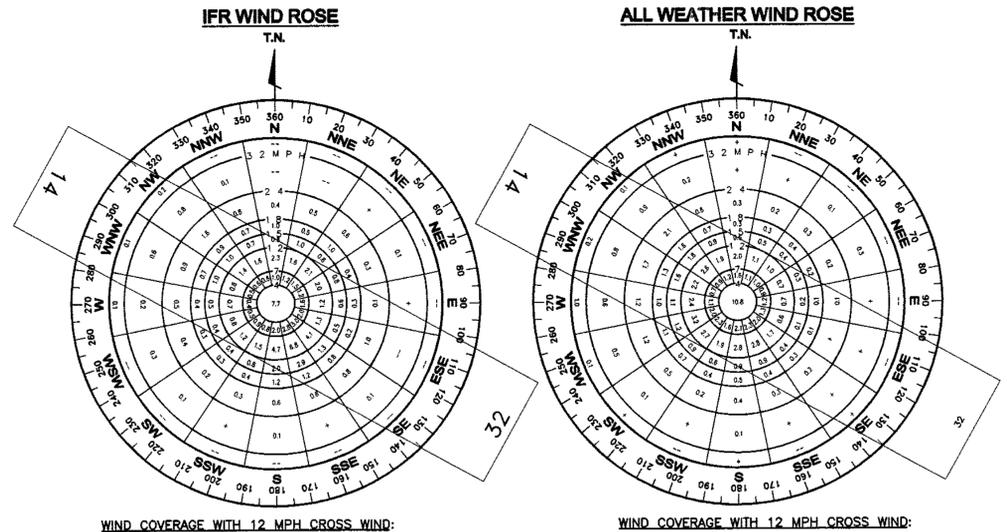
AIRPORT DATA	
AIRPORT ELEVATION	988 (SURVEYED)
NORMAL MAX. TEMP. OF HOTTEST MO.	79.6° F
AIRPORT & TERMINAL NAVAIDS / WX	NDB / GPS / ASOS
AIRPORT REFERENCE POINT	LAT. 47°17'07.815" N (EST.) LON. 68°18'45.900" W
AIRPORT REFERENCE CODE	A-1 SMALL AIRCRAFT

OWNER:
NORTHERN AROOSTOOK
REGIONAL AIRPORT AUTHORITY
P.O. BOX 88 FRENCHVILLE, ME 04745
(207) 543-6300

RUNWAY DATA		
	EXISTING	
EFFECTIVE GRADIENT	.24	.24
% WIND COVERAGE	SEE WIND ROSE	
INSTRUMENT RUNWAY PRECISION	NONE	NONE
INSTRUMENT RUNWAY NON-PRECISION	—	GPS/NDB
APPROACH SURFACES	20:1	20:1
RUNWAY LIGHTING	MIRL	MIRL
RUNWAY MARKINGS	BASIC	BASIC
NAVIGATIONAL AIDS	—	GPS / NDB
VISUAL AIDS	REIL	REIL / PAPI
RUNWAY STRENGTH	SW 25,000	SW 25,000
RUNWAY LENGTH	4801	4601
RUNWAY WIDTH	75	75
RUNWAY SAFETY AREA WIDTH	120'	120'
RUNWAY SAFETY AREA LENGTH	240'	240'
RUNWAY PROTECTION ZONE		
INNER WIDTH	250'	250'
OUTER WIDTH	450'	450'
LENGTH	1000'	1000'

RUNWAY END GEOGRAPHIC COORDINATES		
RUNWAY	LATITUDE	LONGITUDE
14	47°17'17.586"N	68°19'15.987"W
32	47°16'58.005"N	68°18'15.770"W

PLAN
SCALE: 1" = 300'



WIND COVERAGE WITH 12 MPH CROSS WIND:
 RUNWAY 14: 45.3%
 RUNWAY 32: 32.9%
 COMBINED: 77.4%

LOCATION:
STATION #14607
CARIBOU, MAINE AIRPORT

OBSERVATIONS:
43,818
JANUARY, 1958 -
DECEMBER, 1962
24 OBSERVATIONS / DAY

SOURCE:
NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL CLIMATIC CENTER
ASHEVILLE, NORTH CAROLINA

FOR NON-CONFORMING CONDITIONS SEE DRAWING 3A

PROJECT NO.	301501
FILE NAME	frmp102.dwg
DESIGNED BY	AO
CHECKED BY	JK
DRAWN BY	BBH
DATE	MARCH, 2000
SCALE	AS SHOWN
DATE	MARCH, 2000
DESCRIPTION	DO NOT SCALE DRAWINGS
REV	
DATE	
BY	
CHKD	
APP'D	

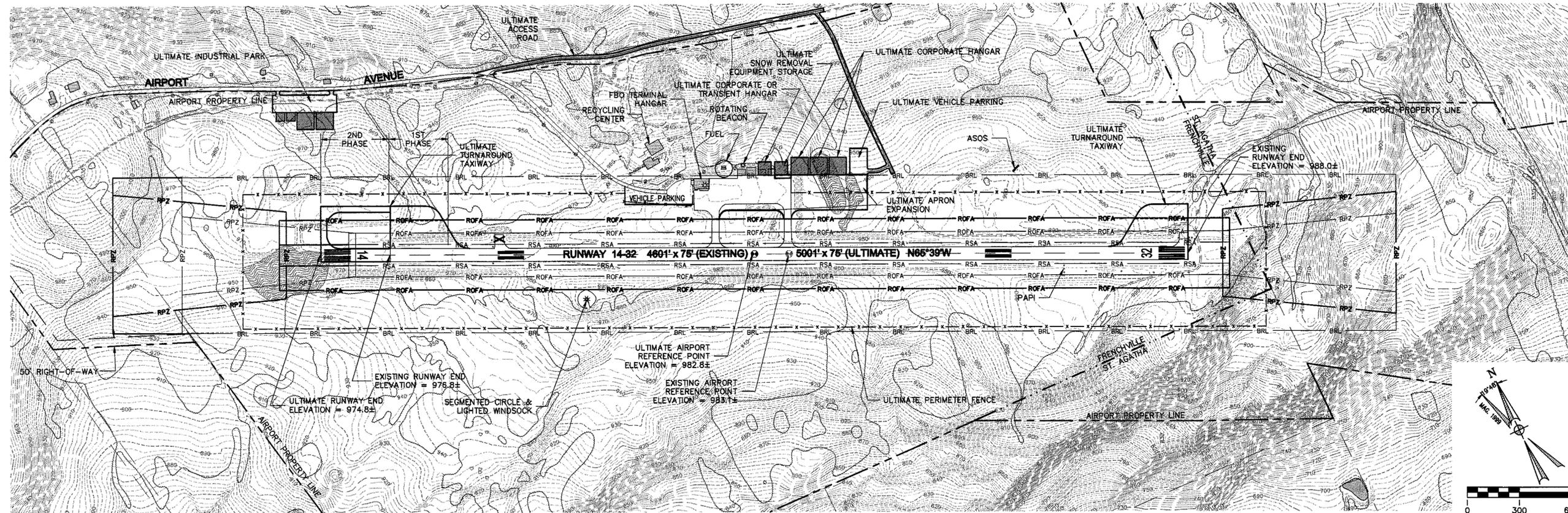
Hoyle, Tanner & Associates, Inc. **HTA**
engineers
planners
Companies
150 Dow Street, Manchester, NH 03101

NORTHERN AROOSTOOK REGIONAL AIRPORT
FRENCHVILLE, MAINE
AIRPORT MASTER PLAN UPDATE

EXISTING
AIRPORT LAYOUT PLAN

DRAWING NO.
2

SHEET 2 OF 8



PLAN
SCALE: 1" = 300'

EXISTING NON-CONFORMING CONDITIONS

Description	Planned	Standard	Remarks	Date Approved
The holding position marking on the turnaround taxiways at the approach ends of Runways 14 and 32	The holding position markings are located 80 ft. from the runway centerline.	The holding position marking should be located 125 ft. from the runway centerline for runways designated with an aircraft approach category and airplane design group of A-1, small airplanes only.	To be corrected to meet the ultimate design standards of 200 ft. separation for an approach category and airplane design group of B-I. Project included in the Long Term Capital Improvement Program.	
Runway wind coverage	The combined all-weather wind coverage for Runway 14/32 is 77.74%	FAA AC 150/5300-13, Airport Design - An airport should have a combined wind coverage of 95%.	Request a Modification to Standards.	
Runway threshold lights	There are six runway threshold lights at the approach end of Runway 32.	Non-precision instrument runways should have eight runway threshold lights.	To be corrected as part of the turnaround taxiway improvement project.	
Penetration to the Federal Aviation Regulation, Part 77 Primary Surface	There is an area of ground penetration to the primary surface located directly in front of the terminal hangar (noted as obstruction # 31, on Drawing 4, FAR Part 77 Surface, Runway Plan and Profile, of this Airport Layout Plan drawing set.	An object (including ground) is an obstruction to the primary surface if it penetrates the following surface, described as: 500 ft. wide centered on the runway centerline, extending 200 ft. beyond each runway end, and it extends above the elevation of the nearest point on the runway centerline.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Penetration to the Federal Aviation Regulation, Part 77 Primary Surface	There is an area of ground penetration to the primary surface located the north side of the approach end of Runway 32 (noted as obstruction # 30, on Drawing 4, FAR Part 77 Surfaces, Runway Plan and Profile, of this Airport Layout Plan drawing set.	An object (including ground) is an obstruction to the primary surface if it penetrates the following boundaries: 500 ft. wide centered on the runway centerline, extending 200 ft. beyond each runway end, and it extends above the elevation of the nearest point on the runway centerline.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Penetration to the Federal Aviation Regulation, Part 77 Primary Surface	There is an area of ground penetration to the primary surface located the south side of the approach end of Runway 32 (noted as obstruction # 29, on Drawing 4, FAR Part 77 Surfaces, Runway Plan and Profile, of this Airport Layout Plan drawing set.	An object (including ground) is an obstruction to the primary surface if it penetrates the following boundaries: 500 ft. wide centered on the runway centerline, extending 200 ft. beyond each runway end, and it extends above the elevation of the nearest point on the runway centerline.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Penetration to the Federal Aviation Regulation, Part 77 Primary Surface	There is an area of ground penetration to the primary surface located on the south side of Runway 14/32, beginning approximately 900 ft. southeast of the approach end of Runway 14 (noted as obstruction # 33, on Drawing 4, FAR Part 77 Surfaces, Runway Plan and Profile, of this Airport Layout Plan drawing set.	An object (including ground) is an obstruction to the primary surface if it penetrates the following boundaries: 500 ft. wide centered on the runway centerline, extending 200 ft. beyond each runway end, and it extends above the elevation of the nearest point on the runway centerline.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Penetration to the Federal Aviation Administration, Part 77 Transitional Surface	The lighted windsock penetrates the transitional surface	An object is an obstruction to the transitional surface if it extends above the following surface, described as extending outward and upward at right angles to the runway centerline, at a slope of 7:1 from the sides of the primary surface and from the sides of the approach surfaces.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Penetration to the Federal Aviation Administration, Part 77 Transitional Surface	The fence that borders the south side of the vehicle parking lot penetrates the transitional surface	An object is an obstruction to the transitional surface if it extends above the following surface, described as extending outward and upward at right angles to the runway centerline at a slope of 7:1 from the sides of the primary surface and from the sides of the approach surfaces.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Penetration to the Federal Aviation Administration, Part 77 Transitional Surface	The FBO terminal hangar penetrates the transitional surface.	An object is an obstruction to the transitional surface if it penetrates the following surface, described as extending outward and upward at right angles to the runway centerline at a slope of 7:1 from the sides of the primary surface and from the sides of the approach surfaces.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	

ULTIMATE NON-CONFORMING CONDITIONS

Description	Ultimate	Standard	Remarks	Date Approved
Penetrations to the Federal Aviation Regulation, Part 77 Horizontal Surface	The top of Cyr mountain and three radio towers located in the same vicinity penetrate the ultimate horizontal surface	An object (including ground) is an obstruction to the horizontal surface if it penetrates the following boundaries: a horizontal plane 150 ft. above the established airport elevation, the perimeter of which is established by swinging 10,000 ft. arcs from the point where the primary surface and the extended runway centerline intersect at the approach end of each runway, and connecting the arcs by tangent lines.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Penetrations to the Federal Aviation Regulation, Part 77 Horizontal and Conical Surfaces	Areas of trees located north of the airport penetrate the ultimate horizontal and conical surfaces	An object (including ground) is an obstruction to the horizontal and conical surfaces if it penetrates the following boundaries: Horizontal Surface - a horizontal plane 150 ft. above the established airport elevation, the perimeter of which is established by swinging 10,000 ft. arcs from the point where the primary surface and the extended runway centerline intersect at the approach end of each runway, and connecting the arcs by tangent lines. Conical Surface - a surface extending outward and upward from the edges of the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 ft.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Runway edge lights	Runway 14/32 is equipped with Medium Intensity Runway Lights	FAA AC 150/5340-24, Runway and Taxiway Edge Lighting Systems - A runway with a precision instrument approach should be equipped with High Intensity Runway Lights (HIRL)	Request a Modification to Standards	
Federal Aviation Regulation, Part 77 Approach Surface	The ultimate approach surface for Runway 32 is described as extending 10,000 ft. at a slope of 34:1.	Federal Aviation Regulation, Part 77, requires that runways with a precision instrument approach maintain an approach surface that extends 10,000 ft. at a slope of 50:1 with an additional 40,000 ft. at a slope of 40:1.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	
Federal Aviation Regulation, Part 77 Primary Surface	The ultimate primary surface for Runway 14/32 is described as being 500 ft. wide and extending 200 ft. beyond each approach end of the runway.	Federal Aviation Regulation Part 77 requires that runways with a precision instrument approach maintain a primary surface that is 1,000 ft. wide and extends 200 ft. beyond the end of each approach end of the runway.	Conduct an airspace study to determine if the obstruction is a hazard to air navigation and, if required, what corrective measures need to be taken.	

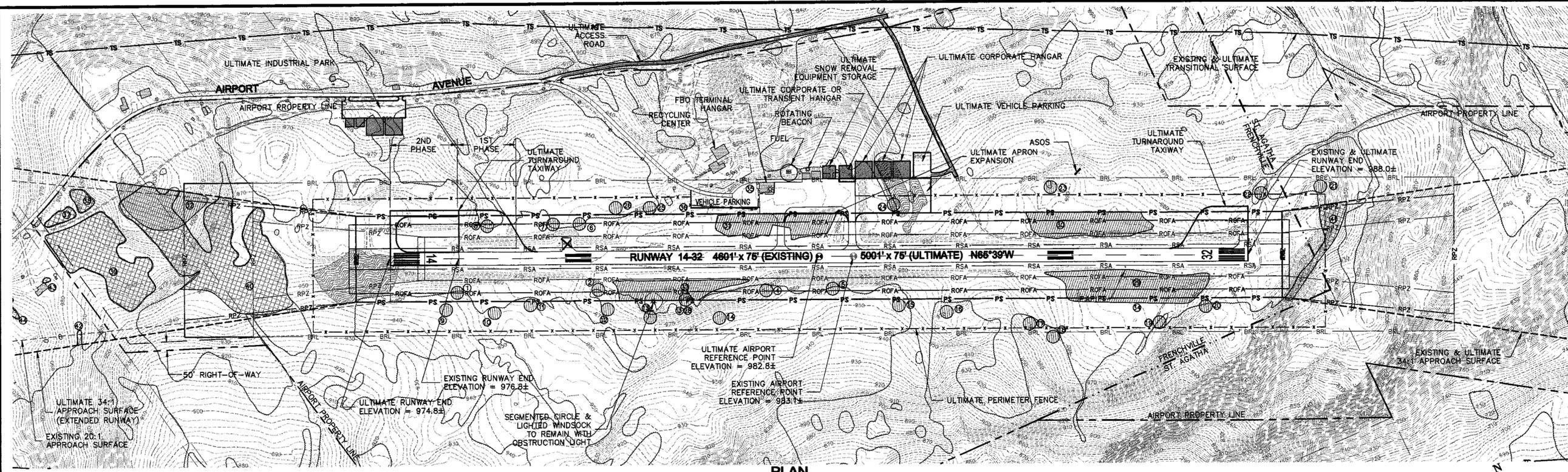
Note: Tree and brush obstruction data was determined using assumed heights. Therefore, that information is not included on this table. When an accurate survey is conducted this table should be updated if necessary.

CERTIFIES THAT ALL AIRPORT ELEMENTS SHOWN ON THIS ALP ARE IN ACCORDANCE WITH CRITERIA CONTAINED IN THE CURRENT EDITION OF THE FAA ADVISORY CIRCULAR 150/5300-13, CHANGE 5, EXCEPT AS NOTED IN THE ABOVE TABLES ENTITLED "EXISTING NON CONFORMING CONDITIONS" AND "ULTIMATE NON CONFORMING CONDITIONS".

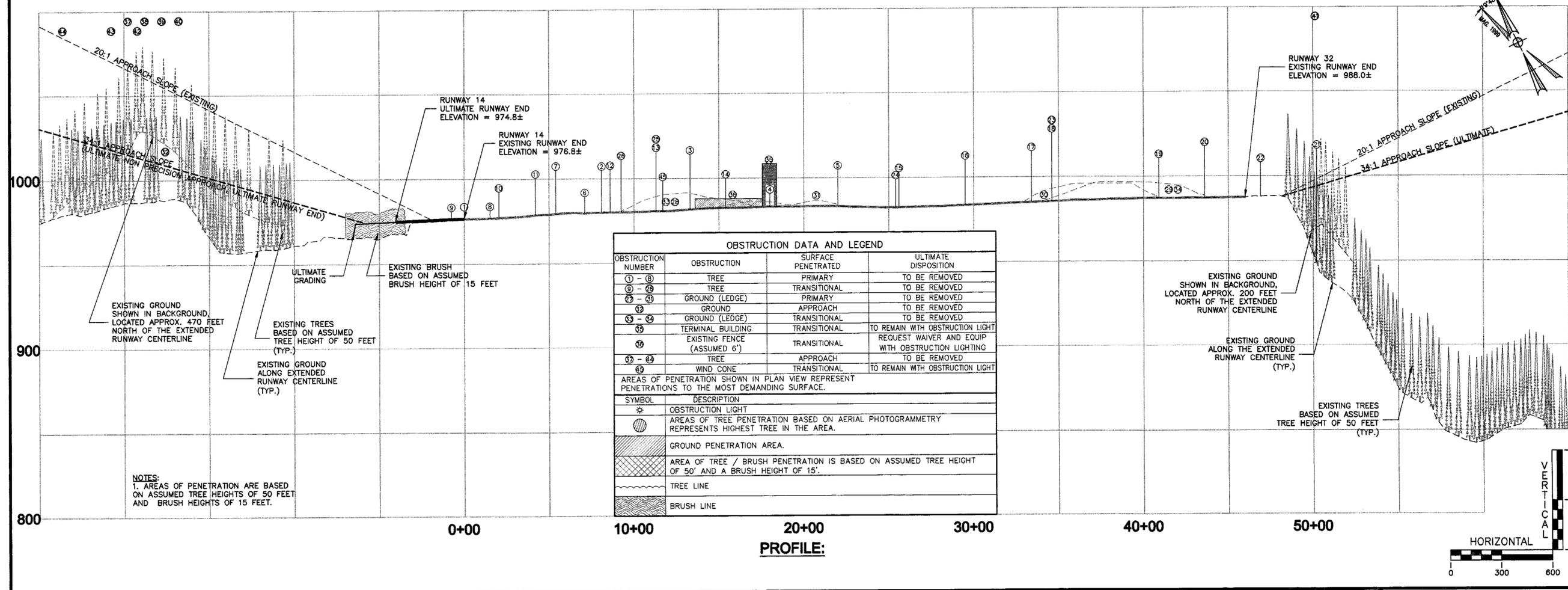
CERTIFICATION
 NARAA (NAME OF SPONSOR)
 [Signature] (NAME)
 [Date] (DATE)

PROJECT NO. 301501
 FILE NAME: Imp108.dwg
 DO NOT SCALE DRAWINGS
 HOYLE, TANNER & ASSOCIATES, INC. HTA
 150 Dow Street, Manchester, NH 03101
 SCALE: AS SHOWN DATE: APRIL, 2000
 CHECKED BY: BBH
 DESIGNED BY: AO
 DRAWN BY: BBH
 PROJECT NO. 301501
 FILE NAME: Imp108.dwg
 DO NOT SCALE DRAWINGS
 CHECKED BY: BBH
 DESIGNED BY: AO
 DRAWN BY: BBH

NORTHERN ARROOSTOOK REGIONAL AIRPORT
 FRENCHVILLE, MAINE
 AIRPORT MASTER PLAN UPDATE
 AIRPORT LAYOUT PLAN
 NON CONFORMING CONDITIONS
 DRAWING NO. 3A
 SHEET 4 OF 8



PLAN



OBSTRUCTION DATA AND LEGEND

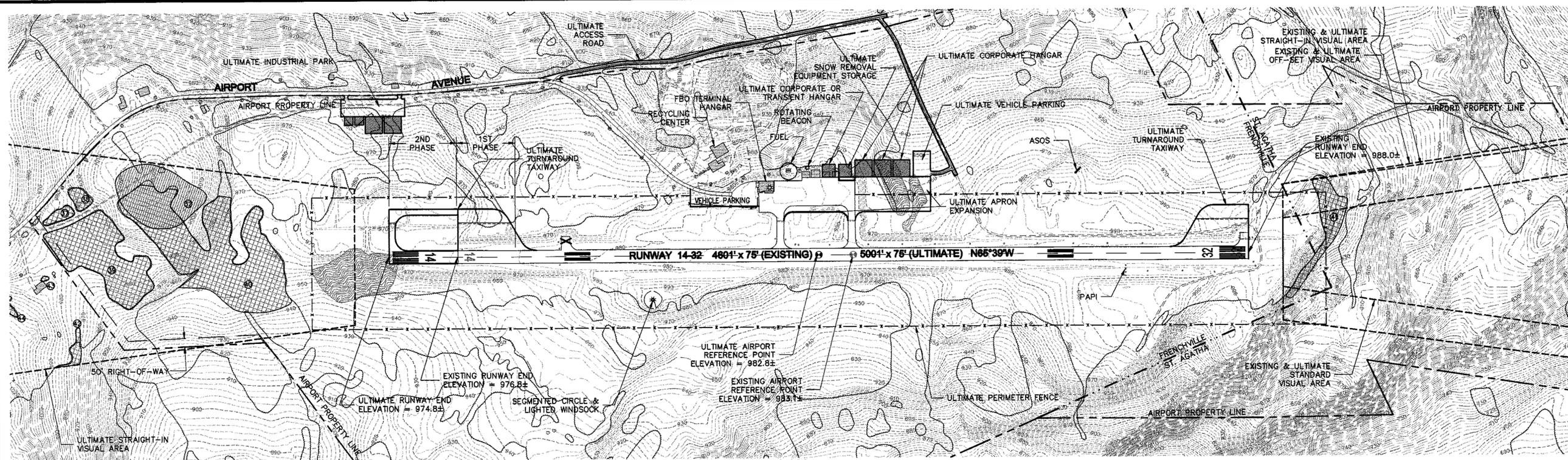
OBSTRUCTION NUMBER	OBSTRUCTION	SURFACE PENETRATED	ULTIMATE DISPOSITION
① - ⑥	TREE	PRIMARY	TO BE REMOVED
⑦ - ⑧	TREE	TRANSITIONAL	TO BE REMOVED
⑨ - ⑫	GROUND (LEDGE)	PRIMARY	TO BE REMOVED
⑬	GROUND	APPROACH	TO BE REMOVED
⑭ - ⑮	GROUND (LEDGE)	TRANSITIONAL	TO BE REMOVED
⑯	TERMINAL BUILDING	TRANSITIONAL	TO REMAIN WITH OBSTRUCTION LIGHT
⑰	EXISTING FENCE (ASSUMED 6')	TRANSITIONAL	REQUEST WAIVER AND EQUIP WITH OBSTRUCTION LIGHTING
⑱ - ⑲	TREE	APPROACH	TO BE REMOVED
⑳	WIND CONE	TRANSITIONAL	TO REMAIN WITH OBSTRUCTION LIGHT

AREAS OF PENETRATION SHOWN IN PLAN VIEW REPRESENT PENETRATIONS TO THE MOST DEMANDING SURFACE.

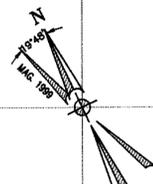
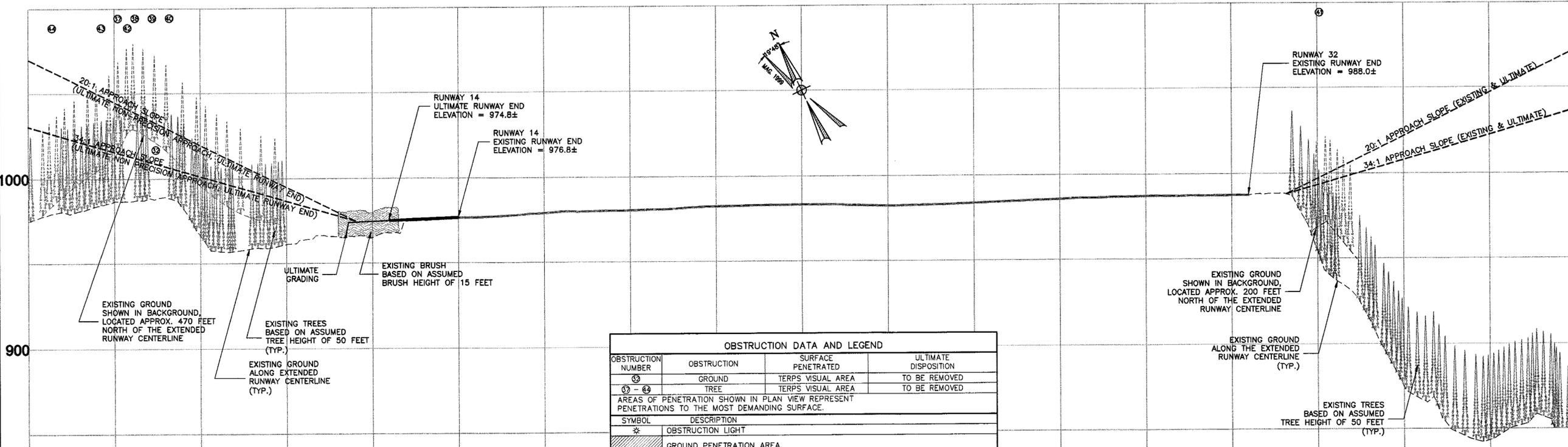
SYMBOL	DESCRIPTION
⊛	OBSTRUCTION LIGHT
⊙	AREAS OF TREE PENETRATION BASED ON AERIAL PHOTOGRAMMETRY REPRESENTS HIGHEST TREE IN THE AREA.
▨	GROUND PENETRATION AREA.
▩	AREA OF TREE / BRUSH PENETRATION IS BASED ON ASSUMED TREE HEIGHT OF 50' AND A BRUSH HEIGHT OF 15'.
—	TREE LINE
—	BRUSH LINE

NOTES:
 1. AREAS OF PENETRATION ARE BASED ON ASSUMED TREE HEIGHTS OF 50 FEET AND BRUSH HEIGHTS OF 15 FEET.

PROJECT NO. 301501	FILE NAME frnp104.dwg	CHECKED BY JJK	DATE APRIL, 2000	SCALE AS SHOWN
Hoyle, Tanner & Associates, Inc. HTA <small>engineers planners</small> <small>150 Dow Street, Manchester, NH 03101</small>				
NORTHERN AROOSTOOK REGIONAL AIRPORT FRENCHVILLE, MAINE AIRPORT MASTER PLAN UPDATE				
FAR PART 77 SURFACES RUNWAY PLAN AND PROFILE				
DRAWING NO. 4				
SHEET 5 OF 8				

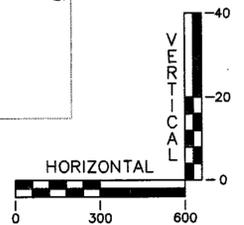


PLAN



OBSTRUCTION DATA AND LEGEND			
OBSTRUCTION NUMBER	OBSTRUCTION	SURFACE PENETRATED	ULTIMATE DISPOSITION
②	GROUND	TERPS VISUAL AREA	TO BE REMOVED
③ - ④	TREE	TERPS VISUAL AREA	TO BE REMOVED
AREAS OF PENETRATION SHOWN IN PLAN VIEW REPRESENT PENETRATIONS TO THE MOST DEMANDING SURFACE.			
SYMBOL	DESCRIPTION		
*	OBSTRUCTION LIGHT		
[Hatched Box]	GROUND PENETRATION AREA.		
[Cross-hatched Box]	AREA OF TREE / BRUSH PENETRATION IS BASED ON ASSUMED TREE HEIGHT OF 50' AND A BRUSH HEIGHT OF 15'.		
[Wavy Line]	TREE LINE		
[Dotted Line]	BRUSH LINE		

NOTES:
 1. AREAS OF PENETRATION ARE BASED ON ASSUMED TREE HEIGHTS OF 50 FEET AND BRUSH HEIGHTS OF 15 FEET.



PROFILE

REV	DATE	DESCRIPTION

PROJECT NO. **301501**
 FILE NAME: **frp105.dwg**
 DO NOT SCALE DRAWINGS

Hoyle, Tanner & Associates, Inc. **HTA**
 engineers planners
 Companies
 150 Dow Street, Manchester, NH 03101
 SCALE: AS SHOWN
 DATE: APRIL, 2000
 DESIGNED BY: AO
 DRAWN BY: BBH
 CHECKED BY: JK

NORTHERN AROOSTOOK REGIONAL AIRPORT
 FRENCHVILLE, MAINE
 AIRPORT MASTER PLAN UPDATE
TERPS-VISUAL AREA
RUNWAY PLAN AND PROFILE
 (BASED ON TERPS CHANGE 17)

DRAWING NO. **5**
 SHEET 6 OF 8



LEGEND

SYMBOL	DESCRIPTION
---	AIRPORT PROPERTY LINE
[Hatched Box]	ASSUMED TREE PENETRATION TO HORIZONTAL / CONICAL SURFACES BASED ON ASSUMED TREE HEIGHT OF 50' AND ASSUMED BRUSH HEIGHT OF 15'.
[Solid Black Box]	ASSUMED PENETRATION (SEE FAR PART 77 SURFACE RUNWAY PLAN AND PROFILE)
[Dotted Box]	ASSUMED TREE PENETRATION TO TRANSITIONAL AND PRIMARY SURFACES BASED ON AERIAL PHOTOGRAMMETRY.
[Cross-hatched Box]	GROUND PENETRATION TO FAR PART 77 SURFACE.
[Star Symbol]	PROPOSED LOCATION OF OBSTRUCTION LIGHTS.
[Sun Symbol]	EXISTING LOCATION OF OBSTRUCTION LIGHTS.

AIRPORT ELEVATION: 988 M.S.L.

USGS MAP DATA:
 COMPILED FROM PHOTOGRAPH TAKEN 1982
 FIELD CHECKED 1984, MAP EDITED 1986



PROJECT NO. 301501	FILE NAME frmpl06.dwg	CHECKED BY JK	DRAWN BY BBH	DESIGNED BY AO	DATE: APRIL, 2000	SCALE: AS SHOWN	REV.	DESCRIPTION
Hoyle, Tanner & Associates, Inc. <small>engineers planners surveyors</small> HTA <small>Companies</small> 150 Dow Street, Manchester, NH 03101								
NORTHERN AROOSTOOK REGIONAL AIRPORT FRENCHVILLE, MAINE AIRPORT MASTER PLAN UPDATE								
FEDERAL AVIATION REGULATIONS (FAR) PART 77 IMAGINARY SURFACES								
DRAWING NO. 6								
SHEET 7 OF 8								

