MEAD & HUNT, INC.

APR 1 8 2006

Lansing, MI

JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

GLORIA J. JEFF
DIRECTOR

April 14, 2006

Mr. Chet Travis, Interim City Manager
City of Marshall
323 West Michigan Avenue
Marshall, Michigan 49068

Dear Mr. Travis:

Subject: Brooks Field; Marshall, Michigan
Airport Layout Plan (ALP) Airspace Approval
Airspace Case No. 05-AGL-942-NRA

Enclosed is one approved copy of the Brooks Field, Airport Layout Plan (ALP), dated December 1, 2005. This ALP is being approved on behalf of the FAA under the authority of Section 534 of the Airport and Airways Improvement Act (AAIA) of 1982 as amended, pursuant to the State Block Grant program. This letter cancels or supersedes all prior ALP approvals. The ALP approval is based on recognition of and adherence to the following:

1. The approval is not to be considered a commitment of Federal funding for the proposed development. The FAA has concurred with the proposed development for planning purposes only based on current safety, utility, and efficiency standards. Actual development should comply with approved standards applicable at the time of construction. No design standard modifications have been granted.

   If any of the design critical aircraft or aircraft groups change, this ALP must be reevaluated by the FAA.

2. Our approval does not infer or imply that the land in the airport vicinity is considered compatible with airport operations. Federal requirements stipulate:

   a. All development programs should be reasonably consistent with the plans of local and state planning agencies for the development in the airport vicinity.

   b. That fair consideration has been given to the interest of communities in or near the airport.

   c. That development programs provide for the protection and enhancement of the environment.

3. The FAA offers no objections to the proposed ultimate airspace utilization as depicted on the ALP based on considerations of safe and efficient use of airspace. The ALP has the status of "Plan on File" for the purpose of 14 CFR 77, Obstruction Evaluations, and 14 CFR 152, Airport Aid Program. A review of the airside landing area development was conducted according to the following 14 CFR's: -77, -152, and –157, Notice of Construction, Alteration, Activation, and Deactivation of Airports (reference Aeronautical Study Number 05-AGL-942-NRA). It should be noted that FAA cannot prevent erection of any structure near an airport. Airport environs can only be protected through state and local zoning ordinances, building regulations, and like requirements.

4. Approval is given subject to the condition that any proposed airport development requiring environmental processing shall not be undertaken without prior written environmental approval by the FAA. Any airport development action that falls within the scope of Paragraph 24 of FAA Order 5050.4A, or which involves any of the following:

   a. Construction of a 1,300' runway extension at the east end of Runway 10/28 for a total of 4,800' of runway.

   b. Extension of parallel taxiway connectors to meet the new runway end.

   c. Construction of a glider operation area.

   d. Construction of additional hangar and taxi streets in the northeast hangar area.

   e. Construction of a vehicle access road to the new hangar area.

   f. Land acquisition associated with any of the above items plus land acquisition which results in relocation of residential units where there is evidence of insufficient comparable replacement dwellings, major disruption of business activities, or acquisition which involves land covered under Section 4(f) of the DOT Act (rectified 49 USC Subtitle I, Section 303, January 12, 1983).

   g. Any airport development action that falls within the scope of Paragraph 24 of FAA Order 5050.4A, or which involves any of the following:

      i. Use of Section 4(f) lands.
      ii. Effect on any properties included in or eligible for inclusion in the National Register of Historic Places or other property of state or local historical, architectural, archeological, or cultural significance.
      iii. Land acquisition for the conversion of farmland, which scores more than 160 on Form AD-1006 and is protected under the Farmland Protection Policy Act (FPPA), to nonagricultural use through federal financial assistance or through conveyance of government land.
      iv. Wetlands, coastal zones, or flood plains.
      v. Endangered or threatened species.

Any items not covered above in item 4 shall not take place until the environmental processing has been approved by the FAA. All development items must comply with the National Environmental Policy Act of 1969 (P.L. 91-190).

To avoid conflicts with future development, we recommend you utilize the ALP when preparing leases. We further recommend you provide copies to the local and state planning zoning boards and county and city officials and encourage them to adopt compatible land use criteria in and around the airport. Copies should also be distributed to the Fixed Base Operators (FBO's) and airport users.

The Airport and Airway Improvement Act (49 USC 47107(a)(16)(D)) requires the sponsor to eliminate any adverse effects on Federal facilities, or bear all costs to relocate those facilities that are a result of an airport change. However, if AIP eligible construction/development items adversely affect FAA facilities, the cost of relocating the facilities may be eligible under AIP.

This approval does not include a detailed evaluation of actual construction. Prior to constructing any development on the airport, notice (FAA Form 7460-1) consistent with 14 CFR 77 must be filed with this office. This approval does not include approval for temporary construction equipment which may be used during actual construction, e.g., cranes, equipment staging areas, site access routes, etc. A separate construction safety/phasing plan for any project should be reviewed by the FAA no less than 60 days prior to beginning any project.

If development is planned without aviation trust fund investments that will change the status or geometrics of runways, taxiways, aprons, or other operating airport surfaces, notice (FAA Form 7480-1) must be filed with this office consistent with 14 CFR 157.

We trust we have provided a clear explanation of the conditions and terms of our approval. If you need further clarification, please contact John D. Pierce at (517) 335-9857.

Sincerely,

David L. Baker, P.E., Manager
AIP Programs
Airports Division
Multi-Modal Transportation Services Bureau

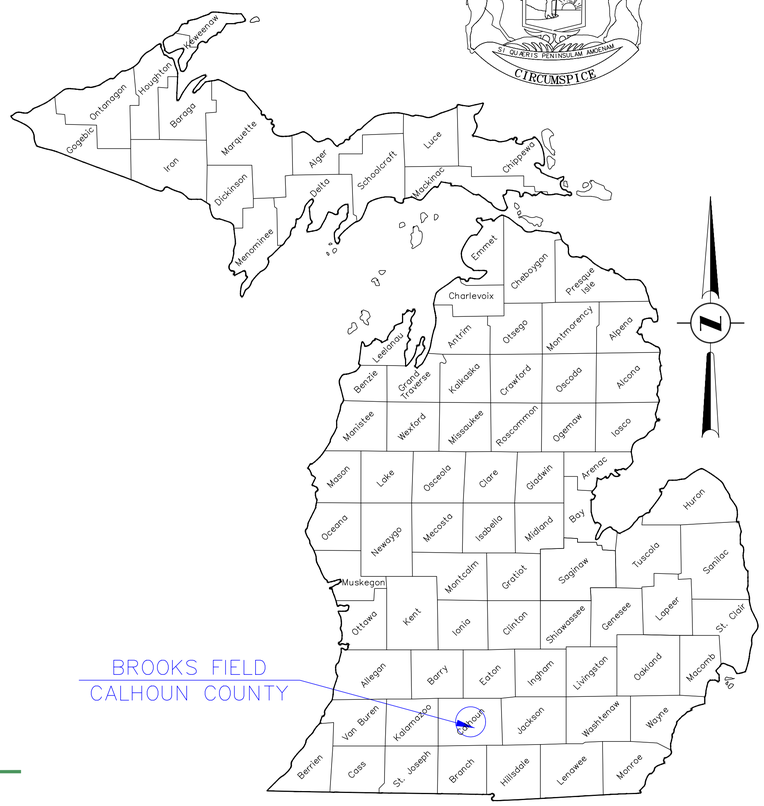
Enclosure
cc: ASW-320 (w/ALP on PDF file); FTW-FPO (w/ALP on PDF file); FAA-ADO (w/ALP); Superior SMO (w/ALP on PDF file); AGL-470 (w/ALP on PDF file); and S. Ward, Mead & Hunt Inc.

AERONAUTICS BUILDING • 2700 E. AIRPORT SERVICE DR. • LANSING, MICHIGAN 48906
www.michigan.gov • (517) 335-9283

LH-LAN-0 (01/03)

STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF AERONAUTICS

LANSING



BROOKS FIELD
MARSHALL, MICHIGAN

AIRPORT LAYOUT PLAN
MAY 2003 - REVISED MAY 2021

SHEET NUMBER	INDEX TO SHEETS	LATEST REVISION DATE
12	FAR PART 77 SHEET	8/04
11	EXISTING AND FUTURE BUILDING SHEET	5/21
10	OBSTRUCTION TABLES	5/21
9	FUTURE RUNWAY 28 APPROACH	11/18
8	EXISTING RUNWAY 28 APPROACH	11/18
7	EXISTING RUNWAY 10 APPROACH	5/21
6	PROPERTY PLAN	5/21
5	AERIAL LAYOUT PLAN	5/21
4	FUTURE AIRPORT LAYOUT PLAN	5/21
3A	INTERIM AIRPORT LAYOUT PLAN	5/21
3	EXISTING AIRPORT LAYOUT PLAN	5/21
2	DATA SHEET	8/04
1	TITLE AND APPROVAL SHEET	5/21

CITY OF MARSHALL

ORIGINAL SIGNED BY:

APPROVED: _____ DATE
GAIL BRADSTREET
FINANCIAL DIRECTOR

ORIGINAL SIGNED BY:

APPROVED: _____ DATE

MICHIGAN AERONAUTICS COMMISSION

ORIGINAL SIGNED BY:

APPROVED: _____ DATE
DIRECTOR

ORIGINAL SIGNED BY:

APPROVED: _____ DATE
DAVID L. BAKER, P.E. #40936
CHIEF ENGINEER

CERTIFICATION

On behalf of ***Mead & Hunt, Inc.*** I certify that the ALP prepared for ***BROOKS FIELD***, was prepared according to the ALP Checklist and accurately depicts the proposed use of airspace. The ALP conforms with FAA design standards, except as noted:

NO MODIFICATIONS OF STANDARDS, HOWEVER,
EVALUATION OF SEVERAL OBSTRUCTIONS ARE REQUESTED
FOR A DETERMINATION OF NON-HAZARD.

SIGNED: _____ DATE
STEPHANIE A. D. WARD, AICP
SR. AVIATION PLANNER

MEAD & HUNT

ENGINEERS
ARCHITECTS
SCIENTISTS
PLANNERS

(517) 321-8334
(517) 321-5932 FAX

CAPITAL CITY AIRPORT
2605 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906

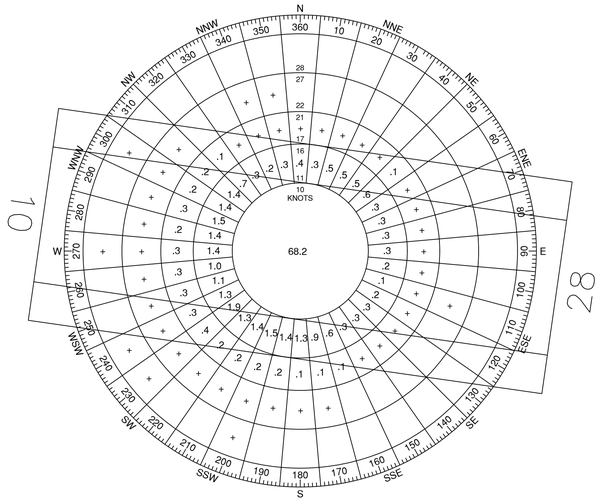
ORIGINAL SIGNED BY:

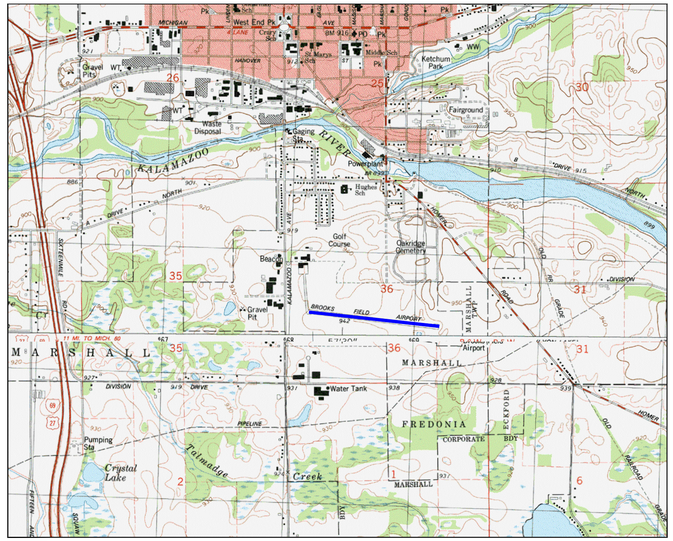
APPROVED: _____ DATE
RON ENGEL, P.E.
#030528

FILE NO.: 13-2

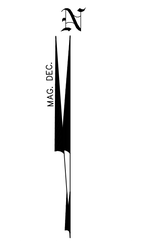
AERONAUTICAL STUDY NO.:

ALL WEATHER WIND ROSE

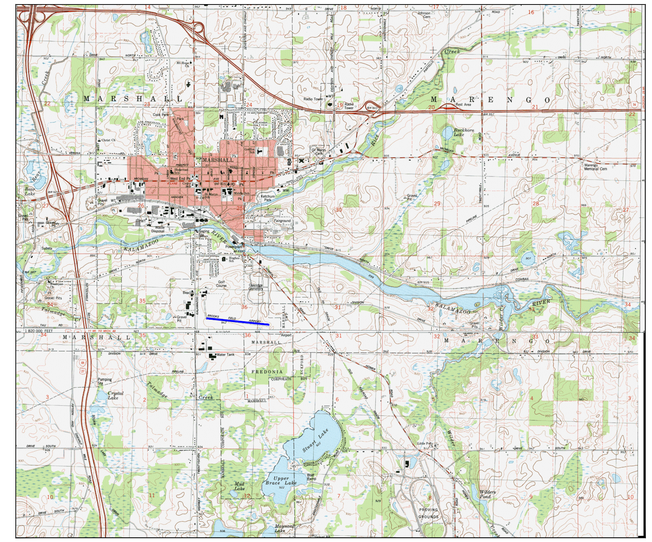




AIRPORT VICINITY MAP



MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)



AIRPORT LOCATION MAP

PERCENT WIND COVERAGE TABLE			
WEATHER	CROSSWIND COMPONENT (KNOTS)	RUNWAY 10	RUNWAY 28
ALL	10.5	48.32	66.23
		85.65	
	16.0	55.61	75.74
		98.33	
	20.0	56.45	76.87
		99.73	

NOTE : TAILWIND COMPONENT 3 KNOTS ON SINGLE RUNWAY END COVERAGES
SOURCE : NATIONAL CLIMATIC DATA CENTER;
FAA AIRPORT DESIGN VERSION 4.2
STATION : BATTLE CREEK, MI
PERIOD OF OBSERVATIONS : 1988-1997
58,177 ALL WEATHER OBSERVATIONS

SOURCE OF AERIAL PHOTOGRAPHY

ABRAMS
AERIAL SURVEY CORPORATION
124 NORTH LARCH LANSING, MI 48912
PO Box 15008 LANSING, MI 48901-5008

DATE OF PHOTOGRAPHY 8-14-01

AIRPORT DATA TABLE

COUNTY: CALHOUN	TOWNSHIP: MARSHALL	TOWN: T25
MEAN MAX TEMPERATURE: 83° F		RANGE: R6W
AIRPORT REFERENCE POINT: EXISTING	LAT: 42° 15' 4.29"	LONG: 84° 57' 19.61"
AIRPORT REFERENCE POINT: FUTURE	LAT: 42° 15' 3.55"	LONG: 84° 57' 11.02"
	EXISTING	**FUTURE**
AIRPORT ELEVATION	941'	941'
AIRPORT & TERMINAL AIDS	ROTATING BEACON, AWOS	ROTATING BEACON, AWOS
SERVICE LEVEL	GENERAL UTILITY	GENERAL UTILITY
AIRPORT REFERENCE CODE	B-II	B-II

RUNWAY APPROACH DATA TABLE

	EXISTING 10	FUTURE 10	EXISTING 28	FUTURE 28
RUNWAY LENGTH	3500'	4800'	3500'	4800'
DISPLACED THRESHOLD	NA	NA	NA	NA
EFFECTIVE LANDING LENGTH	3500'	4800' *	3500'	4800' *
RUNWAY WIDTH	75'	75'	75'	75'
PAVEMENT TYPE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH	12,500 lbs.	12,500 lbs.	12,500 lbs.	12,500 lbs.
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL
RUNWAY MARKING	VISUAL	NPIA	NPIA	NPIA
NAVIGATIONAL AIDS	W. SOCK, SEG. CIRCLE, ROT. BEACON	W. SOCK, SEG. CIRCLE, ROT. BEACON	W. SOCK, SEG. CIRCLE, ROT. BEACON	W. SOCK, SEG. CIRCLE, ROT. BEACON
APPROACH LIGHTING	PAPI	PAPI	PAPI	PAPI
AIRPORT REFERENCE CODE	B-II	B-II	B-II	B-II
CRITICAL AIRCRAFT	KING AIR, C-90	PENDING	KING AIR, C-90	PENDING
APPROACH	20:1	20:1	20:1	34:1
RUNWAY PROTECTION ZONE	500' x 700' x 1000'	500' x 700' x 1000'	500' x 700' x 1000'	500' x 700' x 1000'
APPROACH VISIBILITY MINIMUMS	460' AGL, 1 MILE	PENDING	460' AGL, 1 MILE	PENDING
RWY. END COORDINATES: LAT.	42° 15' 6.28"	42° 15' 6.28"	42° 15' 2.30"	42° 15' 00.81"
LONG.	84° 57' 42.72"	84° 57' 42.72"	84° 56' 56.50"	84° 56' 39.32"

* FUTURE RUNWAY LENGTH SHOWN IS BASED UPON PHYSICAL LIMITS OF THE SITE. THE FEASIBILITY OF EXTENDING TO THIS RUNWAY LENGTH WILL BE PREDICATED UPON A CHANGE IN CRITICAL AIRCRAFT AND DEMAND FOR RUNWAY LENGTH. A RUNWAY LENGTH OF SOMETHING SHORTER MAY BE AN INTERIM PHASE OF DEVELOPMENT.

GLOSSARY OF ABBREVIATIONS

GS	Glide Slope
HIRL	High Intensity Runway Lights
ILS	Instrument Landing System
MALSR	Medium Intensity Approach Light System with Runway Alignment Indicator Lights
MIRL	Medium Intensity Runway Lights
NDB	Non - Directional Radio Beacon
MM	Middle Marker
PAPI	Precision Approach Path Indicator
REIL	Runway End Identifier Lights
VASI	Visual Approach Slope Indicator
ARFF	Aircraft Rescue and Fire Fighting
ARP	Airport Reference Point
BRL	Building Restriction Line
CAT	Category of Instrument Approach
RWY	Runway
TWY	Taxiway

NO.	DATE	REMARKS	BY	CHK
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

DATA SHEET

MEAD & HUNT
ENGINEERS
ARCHITECTS
SCIENTISTS
PLANNERS

CAPITAL CITY AIRPORT
2605 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
(517) 321-8334
(517) 321-5932 FAX

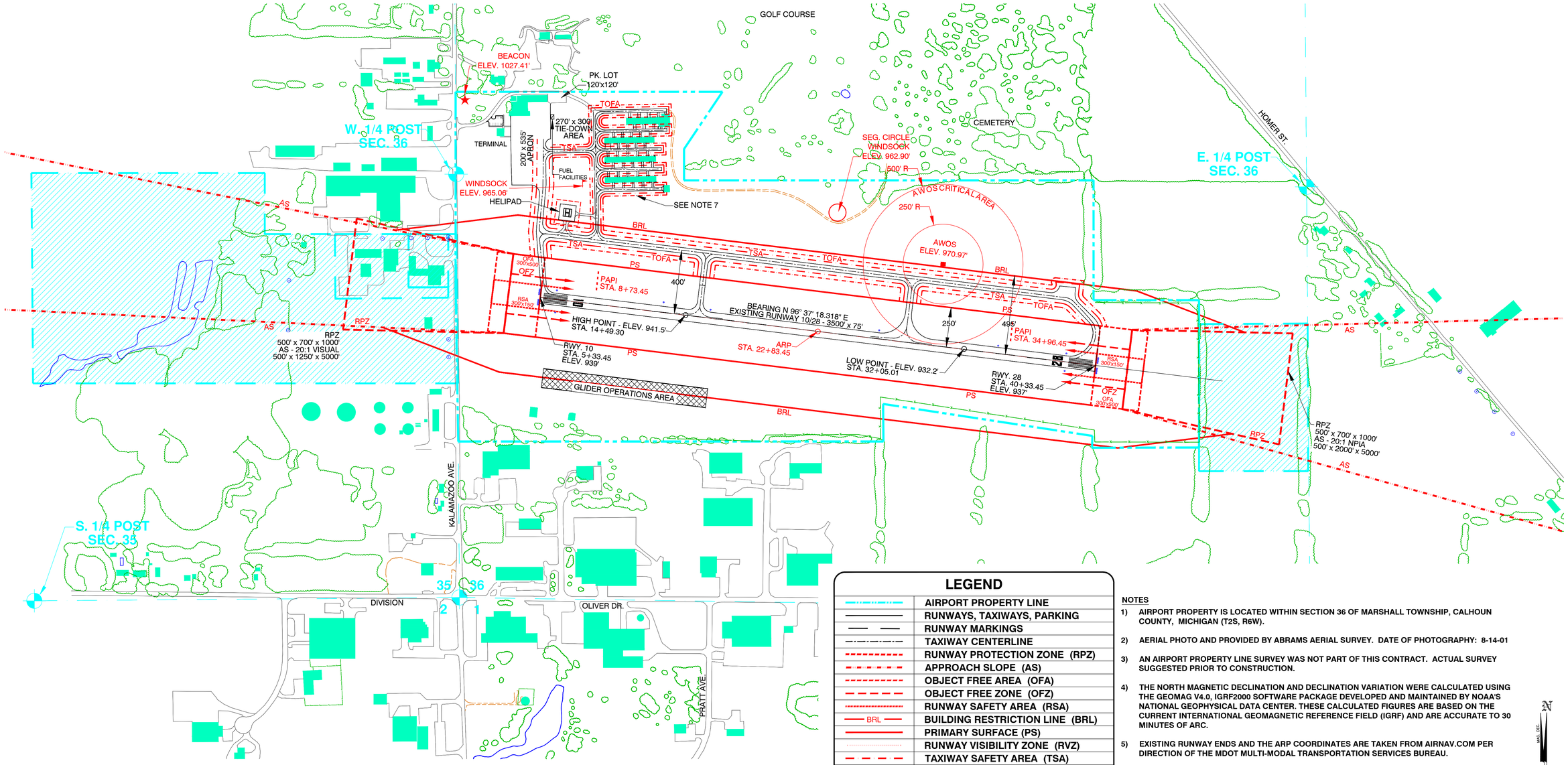
APPROVED

STEPHANIE A.D. WARD, AICP DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03

SHEET 2 OF 12

DRAWING NAME 13-2data FILE NUMBER 13-2



RUNWAY DATA

RUNWAY	LATITUDE	LONGITUDE	ELEVATION	STATION
10	42° 15' 6.281"	84° 57' 42.719"	939'	5+33.45
28	42° 15' 2.296"	84° 56' 56.495"	937'	40+33.45

SAFETY AREA DIMENSIONS

RUNWAY	RPZ	APPROACH SLOPE	RSA	OFA	OFZ
10	500'x700'x1000'	500'x1250'x5000' 20:1 VISUAL APPROACH	300'x150'	300'x500'	200'x250'
28	500'x700'x1000'	500'x2000'x5000' 20:1 NPIA APPROACH	300'x150'	300'x500'	200'x250'

DIMENSIONAL INFORMATION

	RWY 10	RWY 28
RUNWAY LENGTHS	3500'	3500'
RUNWAY WIDTHS	75'	75'
RUNWAY SHOULDER WIDTHS	NA	NA
TAXIWAY WIDTHS	35'	35'
TAXIWAY EDGE SAFETY MARGINS	7.5'	7.5'
TAXIWAY SHOULDER WIDTHS	NA	NA
TAXIWAY SAFETY AREA WIDTHS	79'	79'
TAXIWAY OBJECT FREE AREA WIDTHS	131'	131'
RWY. CENTERLINE TO TWY. CENTERLINE	400'	400'
RUNWAY CENTERLINE TO BRL	495'	495'

LEGEND

- AIRPORT PROPERTY LINE
- RUNWAYS, TAXIWAYS, PARKING
- RUNWAY MARKINGS
- TAXIWAY CENTERLINE
- RUNWAY PROTECTION ZONE (RPZ)
- APPROACH SLOPE (AS)
- OBJECT FREE AREA (OFA)
- OBJECT FREE ZONE (OFZ)
- RUNWAY SAFETY AREA (RSA)
- BRL — BUILDING RESTRICTION LINE (BRL)
- PRIMARY SURFACE (PS)
- RUNWAY VISIBILITY ZONE (RVZ)
- TAXIWAY SAFETY AREA (TSA)
- TAXIWAY OBJECT FREE AREA (TOFA)
- RUNWAY LIGHTS
- BUILDINGS
- PAVED ROADS
- UNPAVED ROADS
- WINDSOCK
- VASI OR PAPI
- REIL
- SEGMENTED CIRCLE
- BEACON
- FENCE LINE
- TREES AND TREE LINES
- RIVER - WATER
- EASEMENTS
- SECTION CORNER
- GLIDER OPERATIONS AREA

NOTES

1) AIRPORT PROPERTY IS LOCATED WITHIN SECTION 36 OF MARSHALL TOWNSHIP, CALHOUN COUNTY, MICHIGAN (T2S, R6W).

2) AERIAL PHOTO AND PROVIDED BY ABRAMS AERIAL SURVEY. DATE OF PHOTOGRAPHY: 8-14-01

3) AN AIRPORT PROPERTY LINE SURVEY WAS NOT PART OF THIS CONTRACT. ACTUAL SURVEY SUGGESTED PRIOR TO CONSTRUCTION.

4) THE NORTH MAGNETIC DECLINATION AND DECLINATION VARIATION WERE CALCULATED USING THE GEOMAG V4.0, IGRF2000 SOFTWARE PACKAGE DEVELOPED AND MAINTAINED BY NOAA'S NATIONAL GEOPHYSICAL DATA CENTER. THESE CALCULATED FIGURES ARE BASED ON THE CURRENT INTERNATIONAL GEOMAGNETIC REFERENCE FIELD (IGRF) AND ARE ACCURATE TO 30 MINUTES OF ARC.

5) EXISTING RUNWAY ENDS AND THE ARP COORDINATES ARE TAKEN FROM AIRNAV.COM PER DIRECTION OF THE MDOT MULTI-MODAL TRANSPORTATION SERVICES BUREAU.

6) RUNWAY BEARING LISTED WAS PROVIDED BY THE MDOT MULTI-MODAL TRANSPORTATION SERVICES BUREAU.

7) HANGAR AREA IS AIRPLANE DESIGN GROUP I WITH A TAXIWAY SAFETY AREA WIDTH OF 49' AND TAXILANE OBJECT FREE AREA WIDTH OF 79'.

MAG. DEC. 22

SCALE
0 150 300 600
1 inch = 300 feet

MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)

NO.	DATE	REMARKS	BY	CHK
6	5/21	AS-BUILT FOR TERMINAL BLDG	AEF	BJH
5	11/18	AS-BUILT FOR TREE CLEARING	BJH	AEF
4	11/15	AS-BUILT FOR FM 13-02-C21	BJH	AEF
3	1/10	AS-BUILT FOR FM 13-02-C17	AEF	RGN
2	10/05	AS-BUILT HELIPAD	AEF	SADW
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

EXISTING AIRPORT LAYOUT PLAN

MEAD & HUNT
ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
CAPITAL CITY AIRPORT
2600 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
(517) 321-8331
(517) 321-5802 FAX

APPROVED

STEPHANIE A.D. WARD, AICP — DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03

SHEET 3 OF 12

DRAWING NAME	13-2_Ex-ALP	FILE NUMBER	13-2

NOTES

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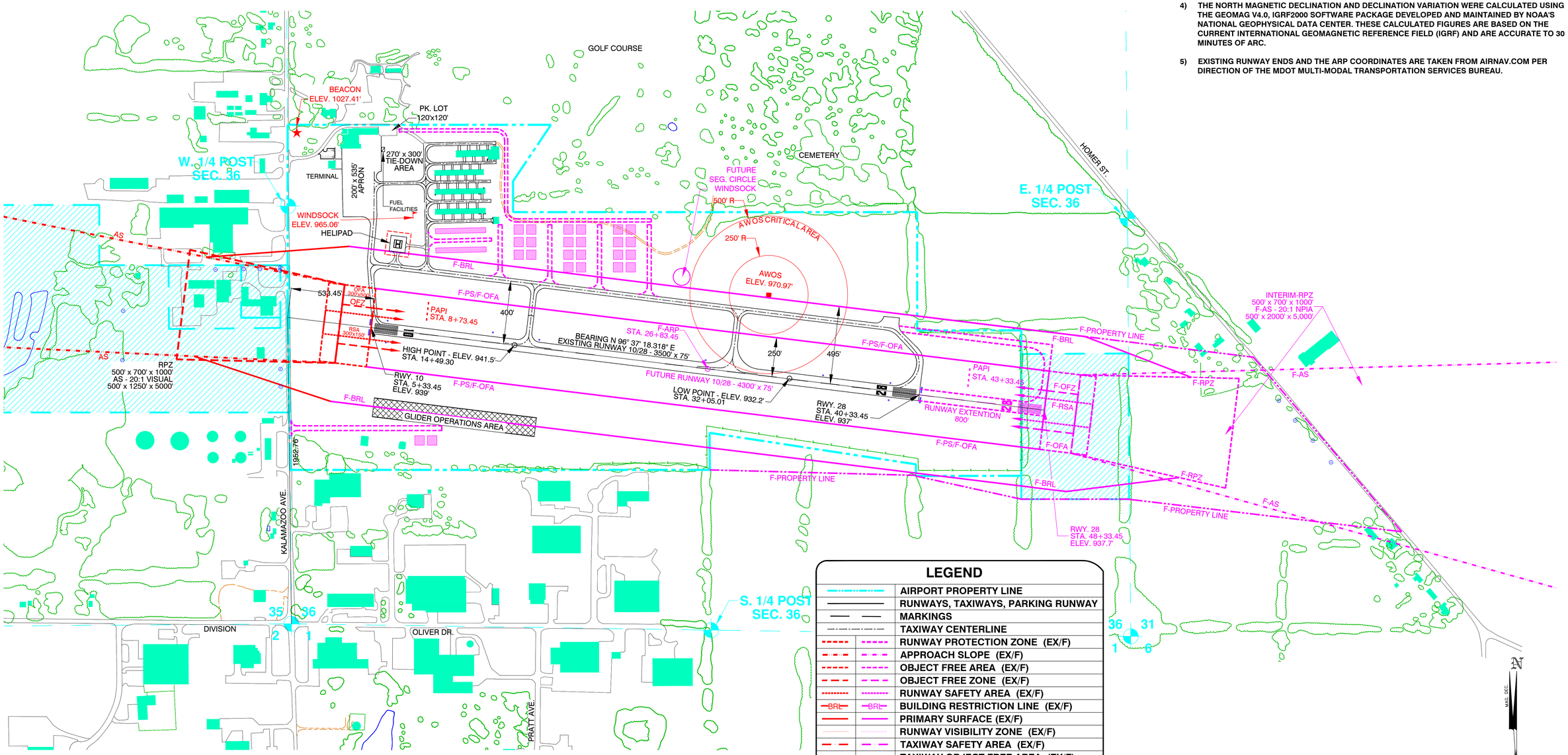

LEGEND

	AIRPORT PROPERTY LINE
	RUNWAYS, TAXIWAYS, PARKING RUNWAY
	MARKINGS
	TAXIWAY CENTERLINE
	RUNWAY PROTECTION ZONE (EX/F)
	APPROACH SLOPE (EX/F)
	OBJECT FREE AREA (EX/F)
	OBJECT FREE ZONE (EX/F)
	RUNWAY SAFETY AREA (EX/F)
BRL	BUILDING RESTRICTION LINE (EX/F)
	PRIMARY SURFACE (EX/F)
	RUNWAY VISIBILITY ZONE (EX/F)
	TAXIWAY SAFETY AREA (EX/F)
	TAXIWAY OBJECT FREE AREA (EX/F)
	RUNWAY LIGHTS
	EX-BUILDINGS
	F-BUILDINGS
	PAVED ROADS
	UNPAVED ROADS
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	FENCE LINE
	TREES AND TREE LINES
	RIVER - WATER
	EXISTING / FUTURE EASEMENT
	SECTION CORNER
	GLIDER OPERATIONS AREA

RUNWAY DATA

RUNWAY	LATITUDE	LONGITUDE	ELEVATION	STATION
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INT-28	42° 15' 01.68"	84° 56' 32.25"	940'	48+33.45

SAFETY AREA DIMENSIONS

RUNWAY	RPZ	APPROACH SLOPE	RSA	OFA	OFZ
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DIMENSIONAL INFORMATION

	RWY 10	RWY 28
RUNWAY LENGTHS	4300'	4300'
RUNWAY WIDTHS	75'	75'
RUNWAY SHOULDER WIDTHS	NA	NA
TAXIWAY WIDTHS	35'	35'
TAXIWAY EDGE SAFETY MARGINS	7.5'	7.5'
TAXIWAY SHOULDER WIDTHS	NA	NA
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REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

INTERIM AIRPORT LAYOUT PLAN (4300')

MEAD & HUNT
ENGINEERS
ARCHITECTS
SCIENTISTS
PLANNERS

CAPITAL CITY AIRPORT
3695 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
(517) 321-6204
(517) 321-5802 FAX

APPROVED

STEPHANIE A.D. WARD, AICP — DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03
SHEET	3A OF 12	

DRAWING NAME	13-2-FU-4300	FILE NUMBER	13-2

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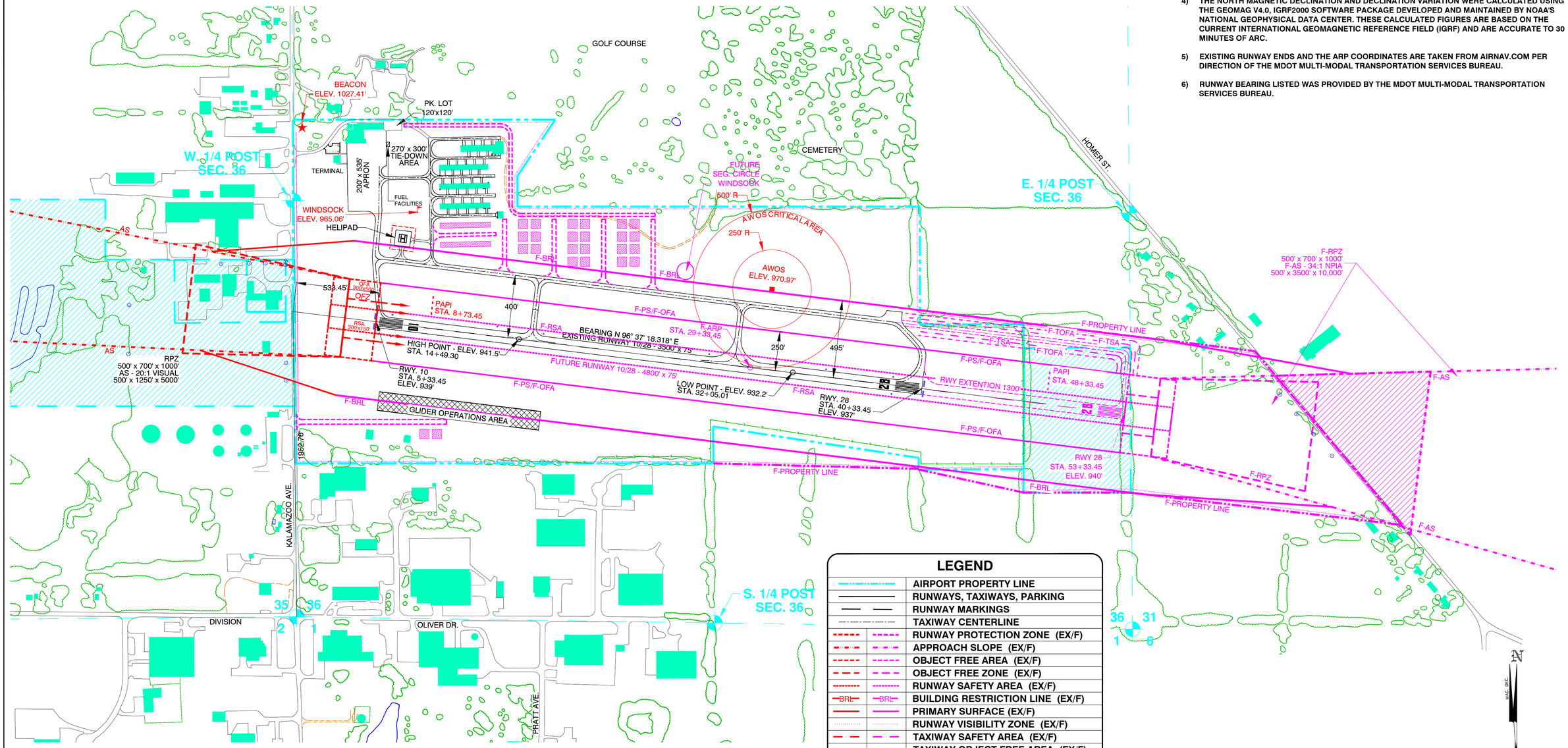
4) THE NORTH MAGNETIC DECLINATION AND DECLINATION VARIATION WERE CALCULATED USING THE GEOMAG V4.0, IGRF2000 SOFTWARE PACKAGE DEVELOPED AND MAINTAINED BY NOAA'S NATIONAL GEOPHYSICAL DATA CENTER. THESE CALCULATED FIGURES ARE BASED ON THE CURRENT INTERNATIONAL GEOMAGNETIC REFERENCE FIELD (IGRF) AND ARE ACCURATE TO 30 MINUTES OF ARC.

5) EXISTING RUNWAY ENDS AND THE ARP COORDINATES ARE TAKEN FROM AIRNAV.COM PER DIRECTION OF THE MDOT MULTI-MODAL TRANSPORTATION SERVICES BUREAU.

6) RUNWAY BEARING LISTED WAS PROVIDED BY THE MDOT MULTI-MODAL TRANSPORTATION SERVICES BUREAU.



LEGEND

	AIRPORT PROPERTY LINE
	RUNWAYS, TAXIWAYS, PARKING
	RUNWAY MARKINGS
	TAXIWAY CENTERLINE
	RUNWAY PROTECTION ZONE (EX/F)
	APPROACH SLOPE (EX/F)
	OBJECT FREE AREA (EX/F)
	OBJECT FREE ZONE (EX/F)
	RUNWAY SAFETY AREA (EX/F)
BRL	BUILDING RESTRICTION LINE (EX/F)
	PRIMARY SURFACE (EX/F)
	RUNWAY VISIBILITY ZONE (EX/F)
	TAXIWAY SAFETY AREA (EX/F)
	TAXIWAY OBJECT FREE AREA (EX/F)
	RUNWAY LIGHTS
	EX-BUILDINGS
	F-BUILDINGS
	PAVED ROADS
	UNPAVED ROADS
	WINDSOCK
	VASI OR PAPI
	REIL
	SEGMENTED CIRCLE
	BEACON
	FENCE LINE
	TREES AND TREE LINES
	RIVER - WATER
	EXISTING / FUTURE EASEMENT
	SECTION CORNER
	GLIDER OPERATIONS AREA

RUNWAY DATA

RUNWAY	LATITUDE	LONGITUDE	ELEVATION	STATION
10	42° 15' 6.28"	84° 57' 42.72"	939'	5+33.45
28	42° 15' 00.81"	84° 56' 39.32"	940'	53+33.45

SAFETY AREA DIMENSIONS

RUNWAY	RPZ	APPROACH SLOPE	RSA	OFA	OFZ
10	500'x700'x1000'	500'x1500'x5000' 20:1 VISUAL APPROACH	300'x150'	300'x500'	200'x250'
28	500'x1010'x1700'	500'x3500'x10000' 34:1 NPIA	300'x150'	300'x500'	200'x250'

DIMENSIONAL INFORMATION

	RWY 10	RWY 28
RUNWAY LENGTHS	4800'	4800'
RUNWAY WIDTHS	75'	75'
RUNWAY SHOULDER WIDTHS	NA	NA
TAXIWAY WIDTHS	35'	35'
TAXIWAY EDGE SAFETY MARGINS	7.5'	7.5'
TAXIWAY SHOULDER WIDTHS	NA	NA
TAXIWAY SAFETY AREA WIDTHS	79'	79'
TAXIWAY OBJECT FREE AREA WIDTHS	131'	131'
RWY. CENTERLINE TO TWY. CENTERLINE	400'	400'
RUNWAY CENTERLINE TO BRL	495'	495'

SCALE

0 150 300 600

1 INCH = 300 FEET

MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)

NO.	DATE	REMARKS	BY	CHK
6	5/21	AS-BUILT FOR TERMINAL BLDG	AEF	BJH
5	11/18	AS-BUILT FOR TREE CLEARING	BJH	AEF
4	11/15	AS-BUILT FOR FM 13-02-C21	BJH	AEF
3	1/10	AS-BUILT FOR FM 13-02-C17	AEF	RGN
2	10/05	AS-BUILT HELIPAD	AEF	SADW
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

FUTURE AIRPORT LAYOUT PLAN

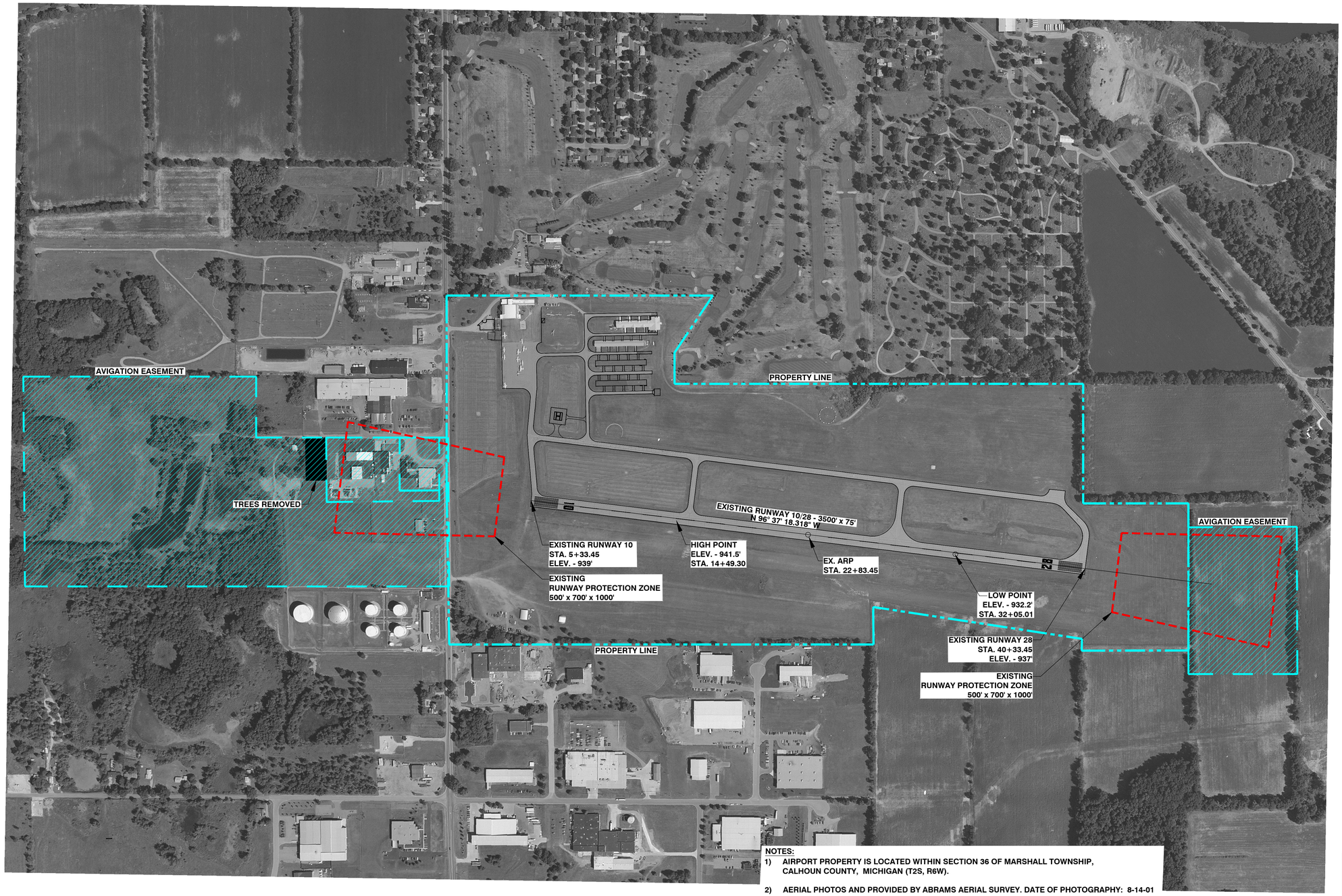
MEAD & HUNT
ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
CAPITAL CITY AIRPORT
3906 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
(517) 321-6004
(517) 321-5802 FAX

APPROVED

STEPHANIE A.D. WARD, AICP DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03
SHEET	4 OF 12	

DRAWING NAME	13-2_FU-ALP	FILE NUMBER	13-2



N
MAG. DEC.

MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)

SCALE

0 150 300 600

1 INCH = 300 FEET

LEGEND	
	PROPERTY LINE
	RUNWAY PROTECTION ZONE (RPZ)
	EXISTING PAVEMENT
	AVIGATION EASEMENT

NOTES:

1) AIRPORT PROPERTY IS LOCATED WITHIN SECTION 36 OF MARSHALL TOWNSHIP, CALHOUN COUNTY, MICHIGAN (T2S, R6W).

2) AERIAL PHOTOS AND PROVIDED BY ABRAMS AERIAL SURVEY. DATE OF PHOTOGRAPHY: 8-14-01

3) AN AIRPORT PROPERTY LINE SURVEY WAS NOT PART OF THIS CONTRACT. ACTUAL SURVEY SUGGESTED PRIOR TO CONSTRUCTION.

4) THE NORTH MAGNETIC DECLINATION AND DECLINATION VARIATION WERE CALCULATED USING THE GEOMAG V4.0, IGRF2000 SOFTWARE PACKAGE DEVELOPED AND MAINTAINED BY NOAA'S NATIONAL GEOPHYSICAL DATA CENTER. THESE CALCULATED FIGURES ARE BASED ON THE CURRENT INTERNATIONAL GEOMAGNETIC REFERENCE FIELD (IGRF) AND ARE ACCURATE TO 30 MINUTES OF ARC.

5) EXISTING RUNWAY ENDS AND THE ARP COORDINATES ARE TAKEN FROM AIRNAV.COM PER DIRECTION OF THE MDOT BUREAU OF AERONAUTICS.

6) RUNWAY BEARING LISTED WAS PROVIDED BY THE MDOT MULTI-MODAL TRANSPORTATION SERVICES BUREAU.

NO.	DATE	REMARKS	BY	CHK
6	5/21	AS-BUILT FOR TERMINAL BLDG	AEF	BJH
5	11/18	AS-BUILT FOR TREE CLEARING	BJH	AEF
4	11/15	AS-BUILT FOR FM 13-02-C21	BJH	AEF
2	10/05	AS-BUILT HELIPAD	AEF	SADW
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

AERIAL LAYOUT PLAN

MEAD & HUNT
ENGINEERS
ARCHITECTS
SCIENTISTS
PLANNERS
CAPITAL CITY AIRPORT
2905 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
(517) 321-8334
(517) 321-9002 FAX

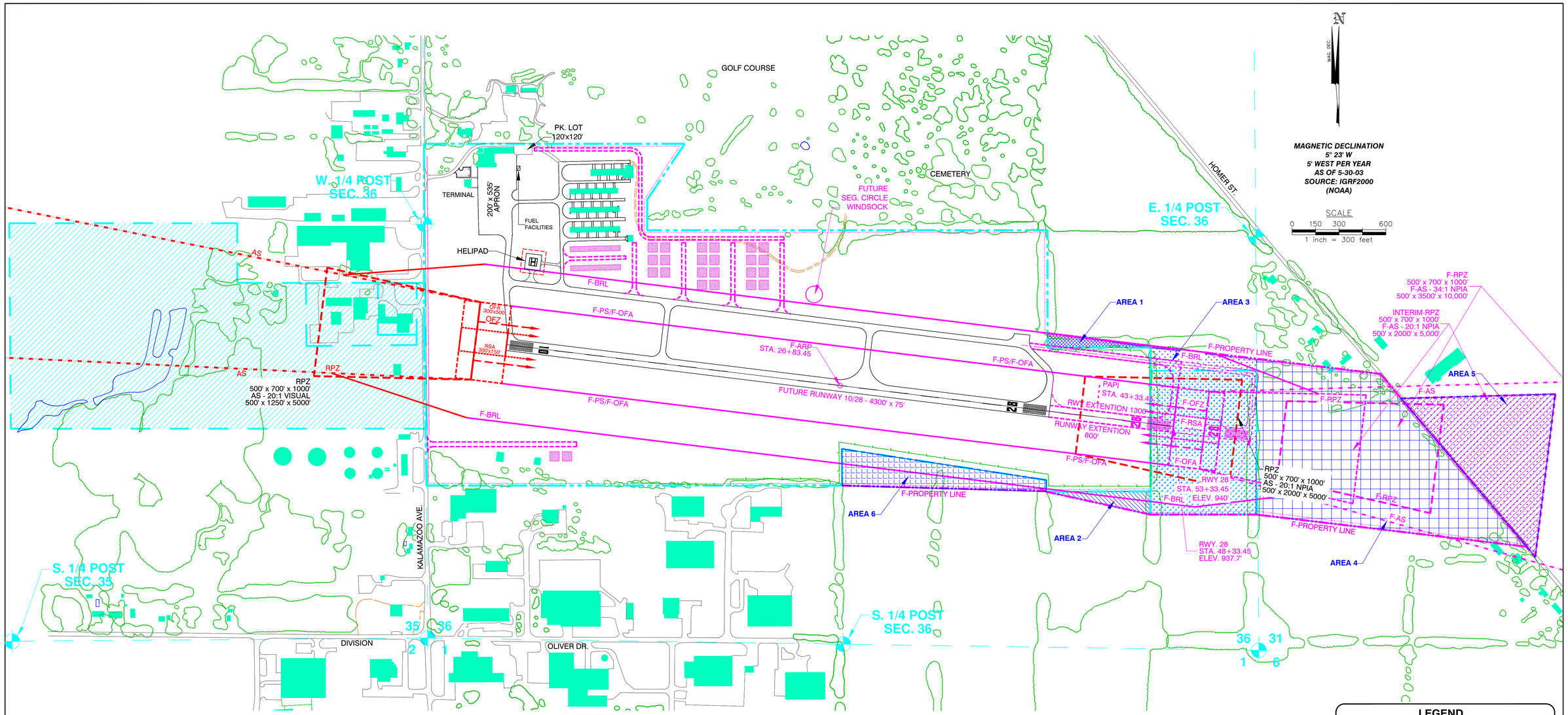
APPROVED

STEPHANIE A.D. WARD, AICP DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03

SHEET 5 OF 12

DRAWING NAME	13-2_Aerial	FILE NUMBER	13-2



FEDERAL PROJECT NUMBER	PARCEL NUMBER	GRANTORS	TYPE OF MEASUREMENT	LIBER & PAGE	DATE RECORDED	ACREAGE	CONTROLLING HEIGHTS*	NOTES
TOTAL FEE PROPERTY INTEREST								
TOTAL AVIGATION EASEMENT								

PENDING RECEIPT OF INFORMATION FROM SPONSOR

* CONTROLLING HEIGHTS COLUMN LISTS THE CRITERIA USED IN DETERMINING THE GOVERNING HEIGHTS AT WHICH THE AVIGATION EASEMENT INTERESTS WERE ACQUIRED.

WD = WARRANTY DEED
AE = AVIGATION EASEMENT
QC = QUIT CLAIM DEED
ROWE = RIGHT-OF-WAY EASEMENT

NOTES:

1. A TITLE SEARCH WAS NOT CONDUCTED AS PART OF THIS EXHIBIT "A" UPDATE.
2. UTILITY EASEMENTS ARE NOT SHOWN DUE TO LACK OF DATA ON SPECIFIC LOCATION.
3. MINERAL RIGHTS (mineral, coal, oil, gas) RETAINED BY STATE OF MICHIGAN.
4. INGRESS & EGRESS RIGHTS RETAINED BE GRANTOR FOR MAINTENANCE OF UTILITIES.
5. PORTION SOLD, AS APPROVED BY FAA, TO FREEDOM A&E CORP. SECURING AE OVER SAME AREA.
6. EASEMENT 17 ENCOMPASSES EXISTING EASEMENTS 5 & 6.

NOTES

1) AIRPORT PROPERTY IS LOCATED WITHIN SECTION 36 OF MARSHALL TOWNSHIP, CALHOUN COUNTY, MICHIGAN (T2S, R6W).

2) AN AIRPORT PROPERTY LINE SURVEY WAS NOT PART OF THIS CONTRACT. ACTUAL SURVEY SUGGESTED PRIOR TO CONSTRUCTION.

3) THE NORTH MAGNETIC DECLINATION AND DECLINATION VARIATION WERE CALCULATED USING THE GEOMAG V4.0, IGRF2000 SOFTWARE PACKAGE DEVELOPED AND MAINTAINED BY NOAA'S NATIONAL GEOPHYSICAL DATA CENTER. THESE CALCULATED FIGURES ARE BASED ON THE CURRENT INTERNATIONAL GEOMAGNETIC REFERENCE FIELD (IGRF) AND ARE ACCURATE TO 30 MINUTES OF ARC.

4) EXISTING RUNWAY ENDS AND THE ARP COORDINATES ARE TAKEN FROM AIRNAV.COM PER DIRECTION OF THE MDOT MULTI-MODAL TRANSPORTATION SERVICES BUREAU. ALL OTHER COORDINATES CALCULATED BY MEAD & HUNT USING A SOFTWARE PROGRAM PROVIDED BY FAA - DETROIT ADO.

5) RUNWAY BEARING LISTED WAS PROVIDED BY THE MDOT MULTI-MODAL TRANSPORTATION SERVICES BUREAU.

PROPERTY ACQUISITION TABLE

AREA	ACRES	DISPOSITION
1	0.7	FEE
2	1.1	FEE
3	16.0	FEE
4	28.9	FEE
5	11.8	EASEMENT
6	4.6	FEE

LEGEND

- EXISTING AIRPORT PROPERTY LINE
- FUTURE AIRPORT PROPERTY LINE
- RUNWAYS, TAXIWAYS, PARKING
- RUNWAY MARKINGS
- EX-RUNWAY PROTECTION ZONE (RPZ)
- F-RUNWAY PROTECTION ZONE (F-RPZ)
- BUILDINGS
- PAVED ROADS
- UNPAVED ROADS
- TREES AND TREE LINES
- RIVER - WATER
- EXISTING AVIGATION EASEMENTS
- FUTURE AVIGATION EASEMENT
- SECTION CORNER
- AREA 1 - (0.7 AC)
- AREA 2 - (1.1 AC)
- AREA 3 - (16 AC)
- AREA 4 - (28.9 AC)
- AREA 5 - (11.8 AC)
- AREA 6 - (4.6 AC)

NO.	DATE	REMARKS	BY	CHK
6	5/21	AS-BUILT FOR TERMINAL BLDG	AEF	BJH
5	11/18	AS-BUILT LOCAL TREE CLEARING	BJH	AEF
4	11/15	AS-BUILT FOR FM 13-02-C21	BJH	AEF
3	1/10	AS-BUILT FOR FM 13-02-C17	AEF	RGN
2	10/06	AS-BUILT HELIPAD	AEF	SADW
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

PROPERTY PLAN

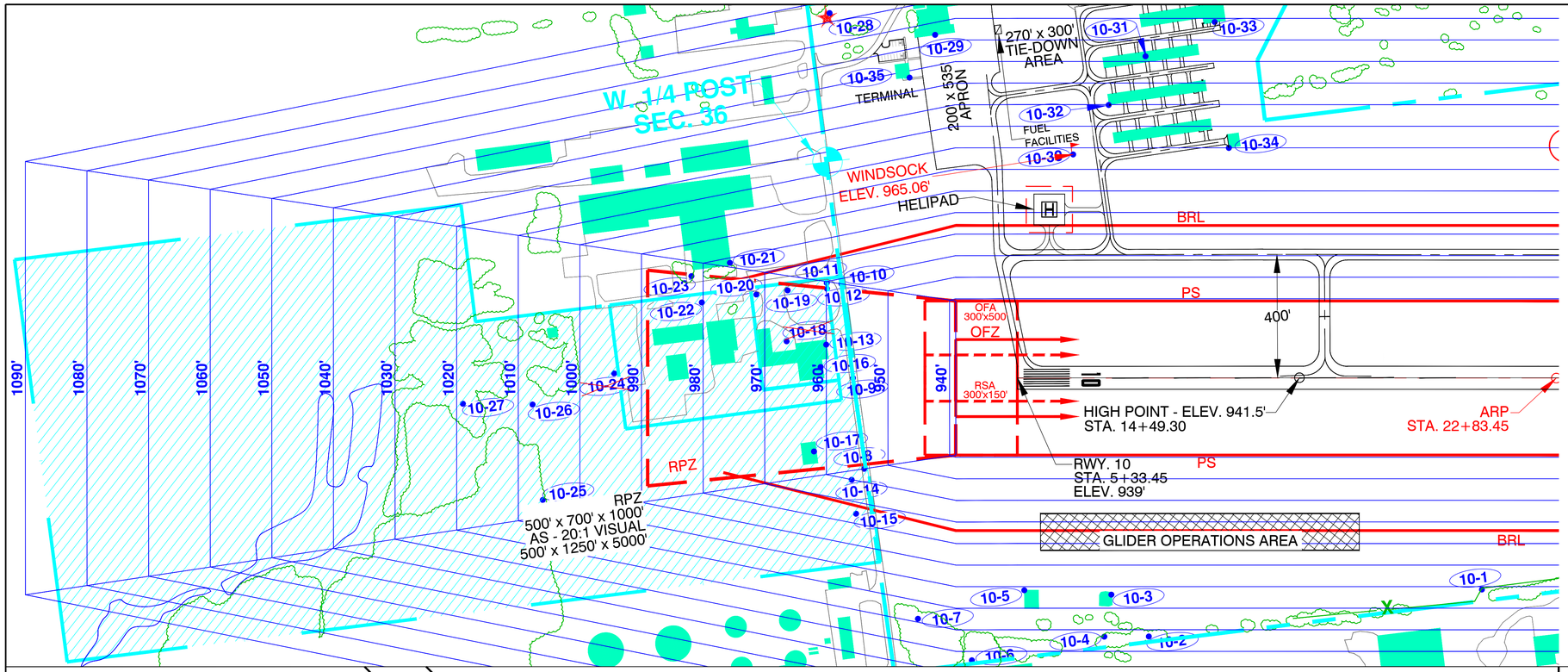
MEAD & HUNT
ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
CAPITAL CITY AIRPORT
3905 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
(517) 321-8284
(517) 321-9892 FAX

APPROVED

STEPHANIE A.D. WARD, AICP — DATE

DESIGNED	SADW	7/02	
DRAWN	JSB	5/03	
CHECKED	SADW	6/03	
SHEET	6	OF	12

DRAWING NAME	13-2_Property	FILE NUMBER	13-2

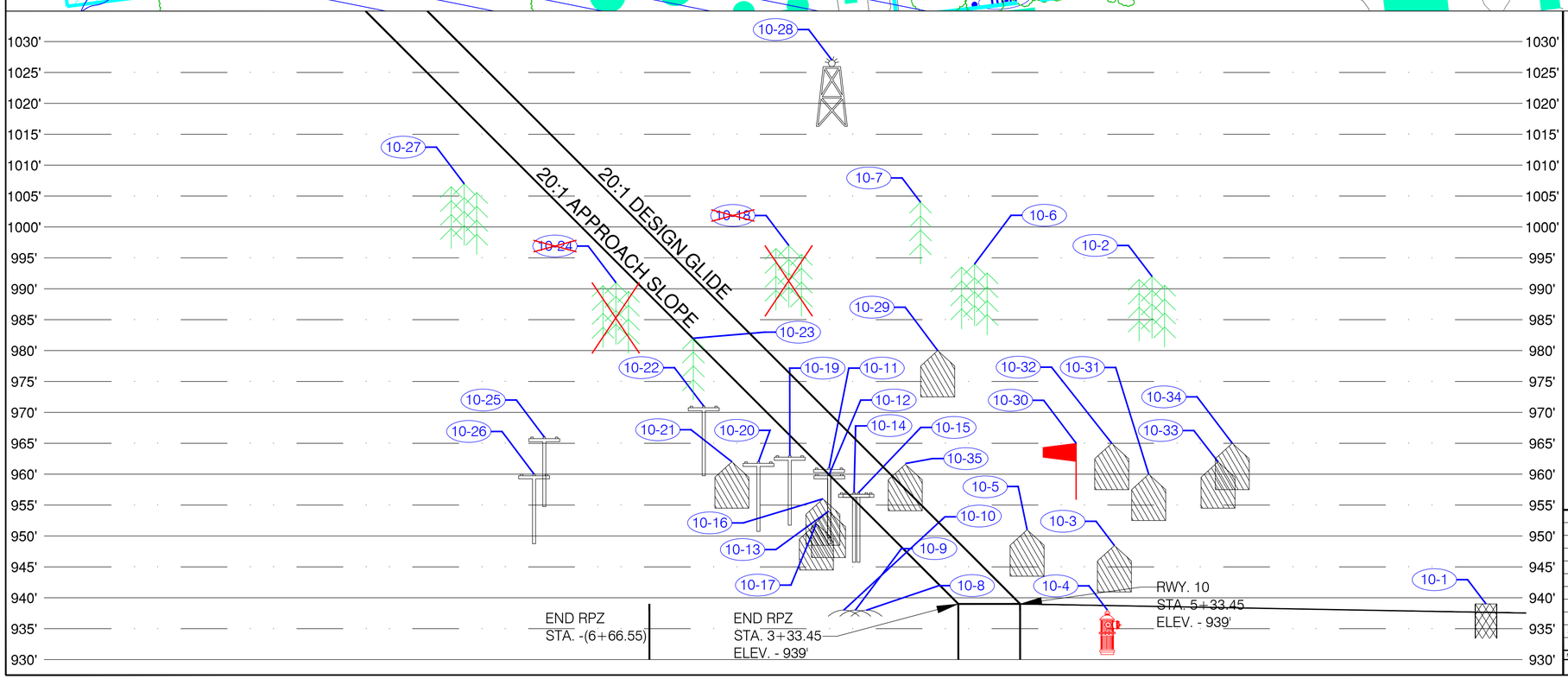


OBSTRUCTION INFORMATION		
#'S	DESCRIPTION	ELEVATION
10-1	FENCE	939'
10-2	TREES	992'
10-3	HANGAR	948'
10-4	HYDRANT-VALVE	938'
10-5	BUILDING	951'
10-6	TREES	994'
10-7	TREE	1004'
10-8	ROAD / AS	938'
10-9	ROAD / CENTERLINE	938'
10-10	ROAD / AS	938'
10-11	POWER POLE	961'
10-12	POWER POLE	960'
10-13	BUILDING	954'
10-14	POWER POLE	957'
10-15	POWER POLE	957'
10-16	BUILDING	956'
10-17	BUILDING	952'
~~10-18~~	~~TREES~~	~~987'~~
10-19	POWER POLE	963'
10-20	POWER POLE	962'
10-21	BUILDING	962'
10-22	POWER POLE	971'

OBSTRUCTION INFORMATION		
#'S	DESCRIPTION	ELEVATION
10-23	TREE	982'
~~10-24~~	~~TREES~~	~~991'~~
10-25	POWER POLE	966'
10-26	POWER POLE	960'
10-27	TREES	1007'
10-28	BEACON	1027'
10-29	BUILDING	980'
10-30	WINDSOCK	965'
10-31	HANGAR	960'
10-32	T-HANGAR	965'
10-33	HANGAR	962'
10-34	BOX HANGAR	965'
10-35	BUILDING	962'

NOTES

1) OBSTRUCTION 10-18 AND 10-24 REMOVED FROM EXISTING RUNWAY 10 APPROACH AS INITIATED BY THE CITY OF MARSHALL AND 11-1-18 INFORMATION PROVIDED BY AIRPORT MANAGER.



LEGEND

- AIRPORT PROPERTY LINE
- RUNWAYS, TAXIWAYS, PARKING
- RUNWAY MARKINGS
- TAXIWAY CENTERLINE
- RUNWAY PROTECTION ZONE (RPZ)
- APPROACH SLOPE (AS)
- OBJECT FREE AREA (OFA)
- OBJECT FREE ZONE (OFZ)
- RUNWAY SAFETY AREA (RSA)
- BRL — BUILDING RESTRICTION LINE (BRL)
- PRIMARY SURFACE (PS)
- RUNWAY VISIBILITY ZONE (RVZ)
- TAXIWAY SAFETY AREA (TSA)
- TAXIWAY OBJECT FREE AREA (TOFA)
- RUNWAY LIGHTS
- BUILDINGS
- PAVED ROADS
- UNPAVED ROADS
- WINDSOCK
- VASI OR PAPI
- REIL
- SEGMENTED CIRCLE
- BEACON
- FENCE LINE
- TREES AND TREE LINES
- RIVER - WATER
- EASEMENTS
- SECTION CORNER
- GLIDER OPERATIONS AREA

MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)

SCALE
0 100 200 400
1 INCH = 200 FEET

NO.	DATE	REMARKS	BY	CHK
6	5/21	AS-BUILT FOR TERMINAL BLDG	AEF	BJH
5	11/18	AS-BUILT FOR TREE CLEARING	BJH	AEF
4	11/15	AS-BUILT FOR FM 13-02-C21	BJH	AEF
3	1/10	AS-BUILT FOR FM 13-02-C17	AEF	SADW
2	10/05	AS-BUILT HELIPAD	AEF	SADW
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

EXISTING RUNWAY 10 APPROACH

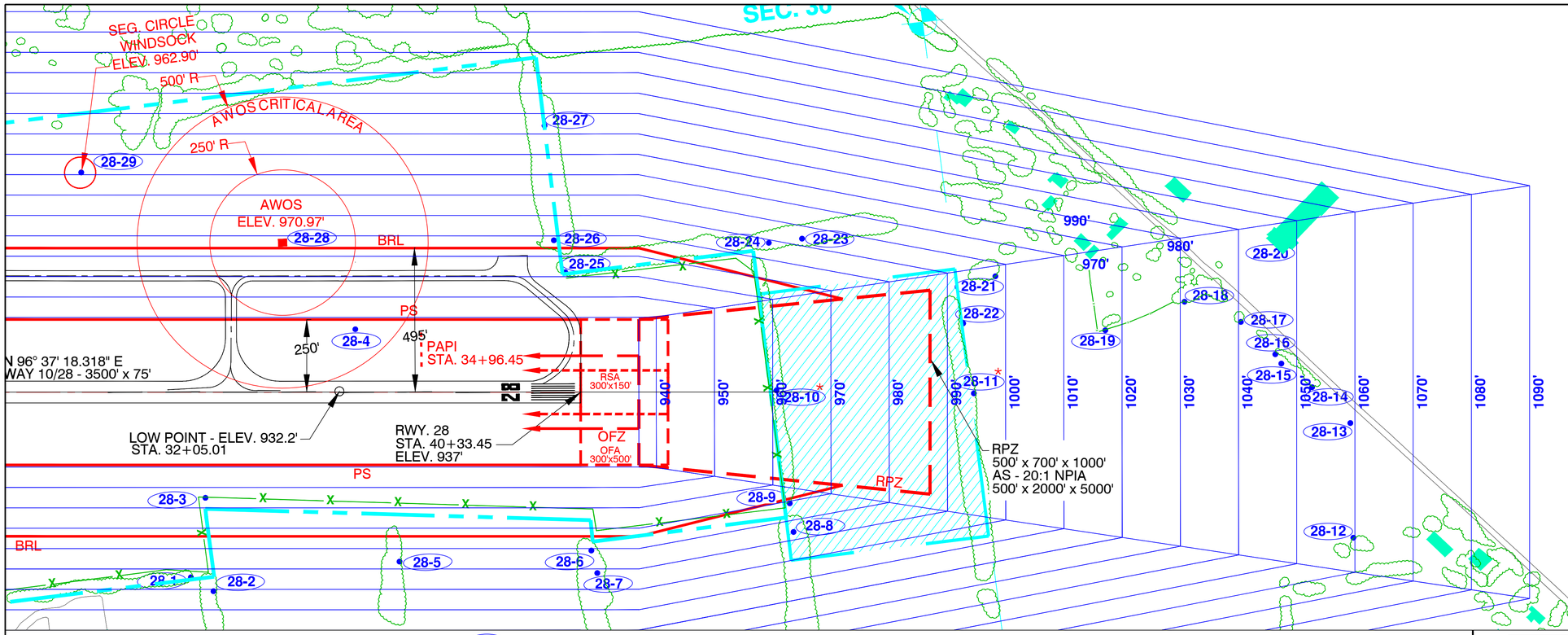
MEAD & HUNT
ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
CAPITAL CITY AIRPORT
2600 S. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
(517) 321-8334
(517) 321-5032 FAX

APPROVED
STEPHANIE A.D. WARD, AICP DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03

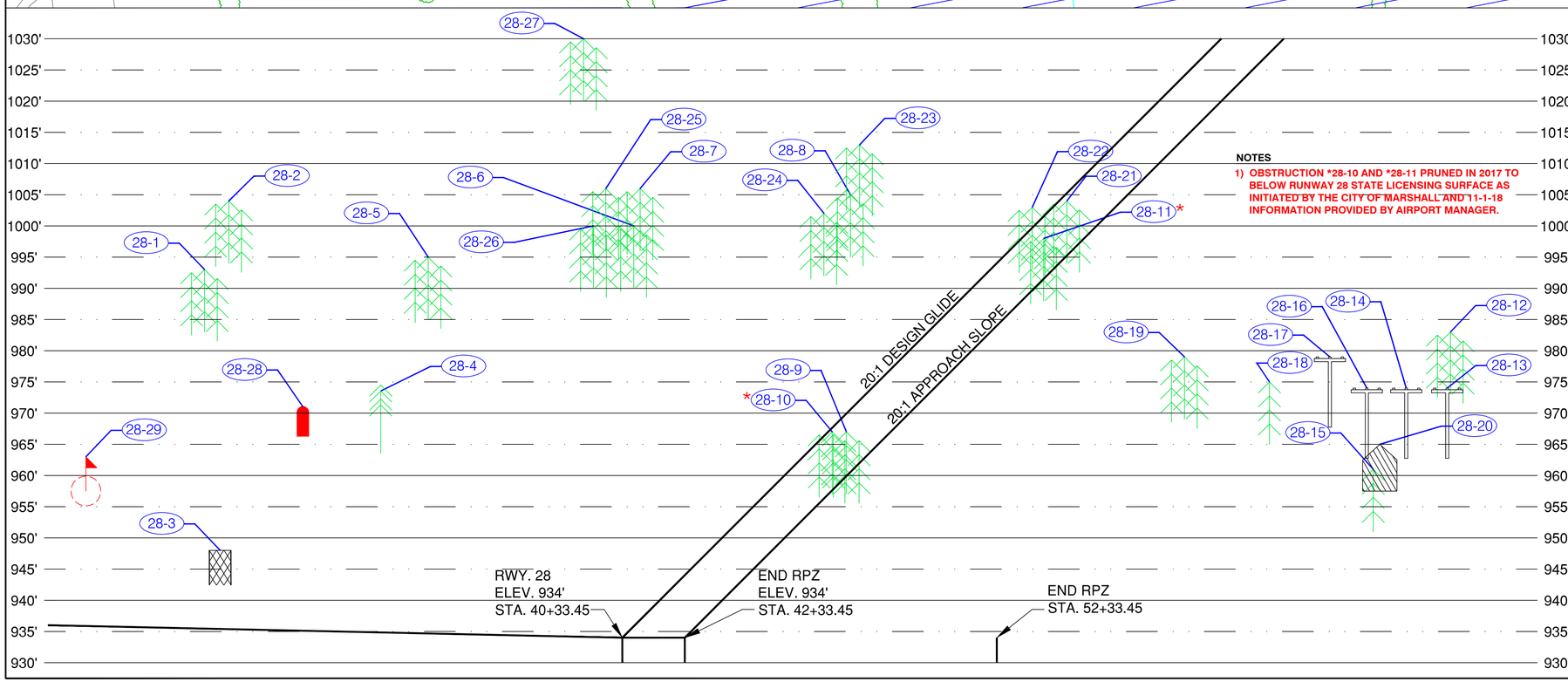
SHEET 7 OF 12

DRAWING NAME 13-2_Ex-10 App | FILE NUMBER 13-2



LEGEND

	AIRPORT PROPERTY LINE
	RUNWAYS, TAXIWAYS, PARKING
	RUNWAY MARKINGS
	TAXIWAY CENTERLINE
	RUNWAY PROTECTION ZONE (RPZ)
	APPROACH SLOPE (AS)
	OBJECT FREE AREA (OFA)
	OBJECT FREE ZONE (OFZ)
	RUNWAY SAFETY AREA (RSA)
BRL	BUILDING RESTRICTION LINE (BRL)
	PRIMARY SURFACE (PS)
	RUNWAY VISIBILITY ZONE (RVZ)
	TAXIWAY SAFETY AREA (TSA)
	TAXIWAY OBJECT FREE AREA (TOFA)
	RUNWAY LIGHTS
	BUILDINGS
	PAVED ROADS
	UNPAVED ROADS
	WINDSOCK
	VASI OR PAPI
	REIL
	SEGMENTED CIRCLE
	BEACON
	FENCE LINE
	TREES AND TREE LINES
	RIVER - WATER
	EASEMENTS
	SECTION CORNER
	GLIDER OPERATIONS AREA



NOTES

1) OBSTRUCTION *28-10 AND *28-11 PRUNED IN 2017 TO BELOW RUNWAY 28 STATE LICENSING SURFACE AS INITIATED BY THE CITY OF MARSHALL AND 11-1-18 INFORMATION PROVIDED BY AIRPORT MANAGER.

OBSTRUCTION INFORMATION

#'S	DESCRIPTION	ELEVATION
28-1	TREES	993'
28-2	TREES	1004'
28-3	FENCE	948'
28-4	TREE	NA
28-5	TREES	995'
28-6	TREES	1000'
28-7	TREES	1006'
28-8	TREES	1005'
28-9	TREES	967'
*28-10	TREES	967'
*28-11	TREES	998'
28-12	TREES	983'
28-13	POWER POLE	974'
28-14	POWER POLE	974'
28-15	TREE	961'
28-16	POWER POLE	974'
28-17	POWER POLE	979'
28-18	TREE	975'
28-19	TREES	979'
28-20	BUILDING	965'
28-21	TREES	1004'
28-22	TREES	1003'

OBSTRUCTION INFORMATION

#'S	DESCRIPTION	ELEVATION
28-23	TREES	1013'
28-24	TREES	1002'
28-25	TREES	1006'
28-26	TREES	1000'
28-27	TREES	1030'
28-28	AWOS	971'
28-29	SEG. CIRCLE	963'

MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)

SCALE
0 100 200 400
1 INCH = 200 FEET

NO.	DATE	REMARKS	BY	CHK
5	11/18	AS-BUILT FOR TREE CLEARING	BJH	AEF
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

EXISTING RUNWAY 28 APPROACH

MEAD & HUNT
ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
CAPITAL CITY AIRPORT
2605 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
(517) 321-6334
(517) 321-5932 FAX

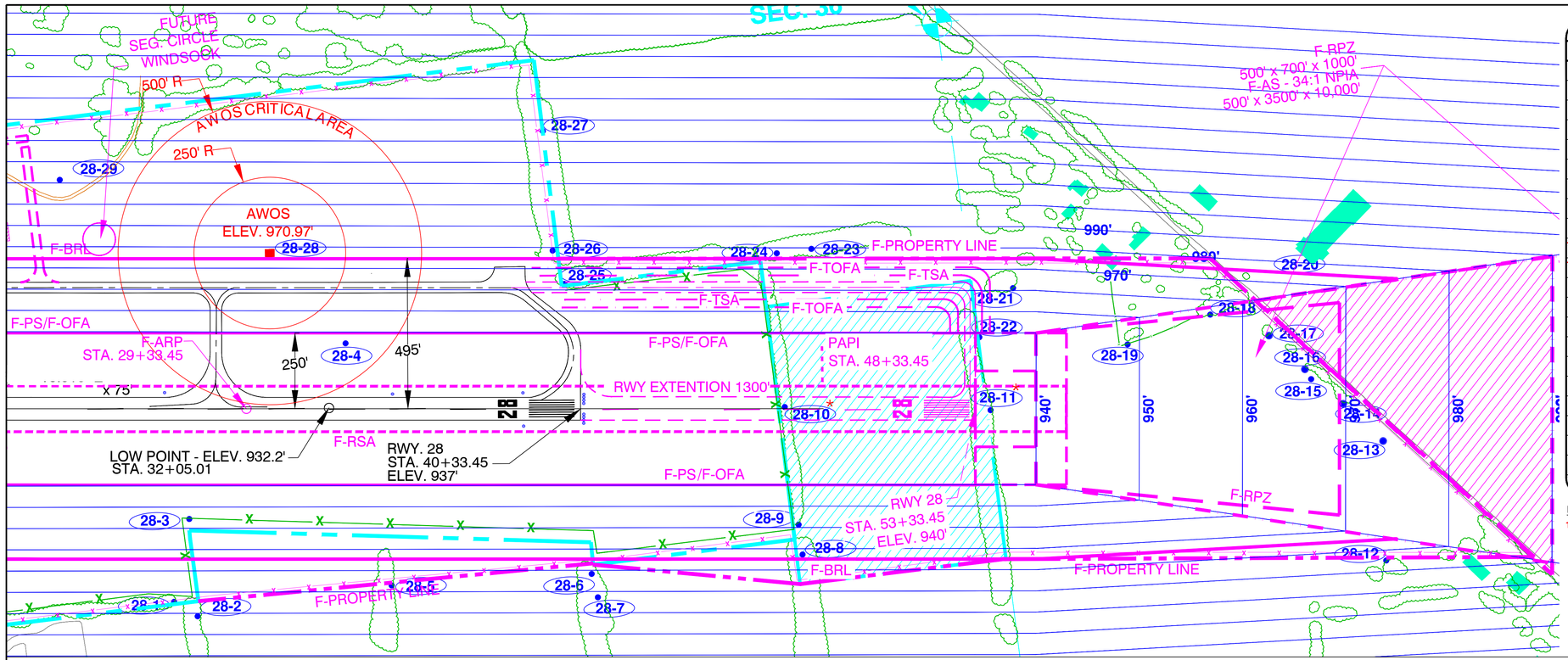
APPROVED

STEPHANIE A.D. WARD, AICP DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03

SHEET 8 OF 12

DRAWING NAME 13-2_Ex-28 App | FILE NUMBER 13-2



OBSTRUCTION INFORMATION		
#'S	DESCRIPTION	ELEVATION
28-1	TREES	993'
28-2	TREES	1004'
28-3	FENCE	948'
28-4	TREE	NA
28-5	TREES	995'
28-6	TREES	1000'
28-7	TREES	1006'
28-8	TREES	1005'
28-9	TREES	967'
*28-10	TREES	967'
*28-11	TREES	998'
28-12	TREES	983'
28-13	POWER POLE	974'
28-14	POWER POLE	974'
28-15	TREE	961'
28-16	POWER POLE	974'
28-17	POWER POLE	979'
28-18	TREE	975'
28-19	TREES	979'
28-20	BUILDING	965'
28-21	TREES	1004'
28-22	TREES	1003'

OBSTRUCTION INFORMATION		
#'S	DESCRIPTION	ELEVATION
28-23	TREES	1013'
28-24	TREES	1002'
28-25	TREES	1006'
28-26	TREES	1000'
28-27	TREES	1030'
28-28	AWOS	971'
28-29	SEG. CIRCLE	963'

NOTES

1) OBSTRUCTION *28-10 AND *28-11 PRUNED IN 2017 TO BELOW RUNWAY 28 STATE LICENSING SURFACE AS INITIATED BY THE CITY OF MARSHALL AND 11-1-18 INFORMATION PROVIDED BY AIRPORT MANAGER.

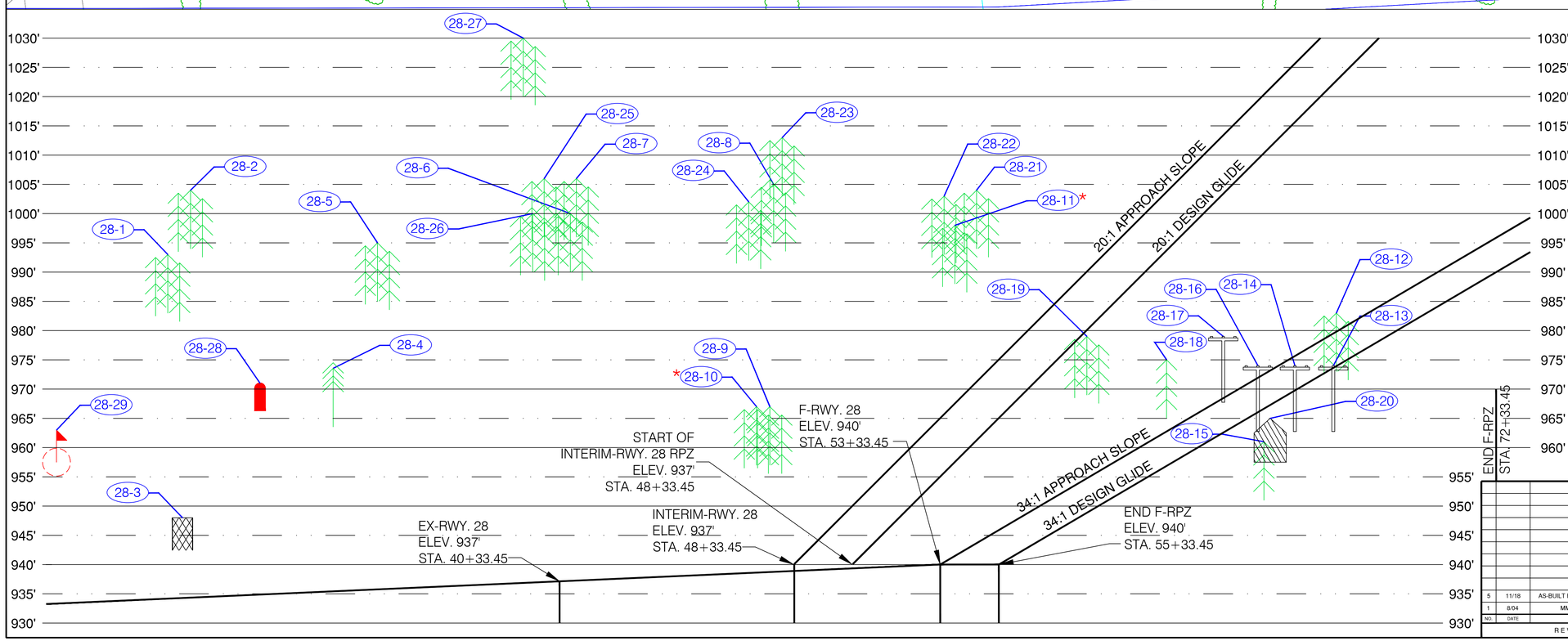
N

MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)

SCALE

0 100 200 400

1 inch = 200 feet



LEGEND

	AIRPORT PROPERTY LINE
	RUNWAYS, TAXIWAYS, PARKING
	RUNWAY MARKINGS
	TAXIWAY CENTERLINE
	RUNWAY PROTECTION ZONE (RPZ)
	APPROACH SLOPE (AS)
	OBJECT FREE AREA (OFA)
	OBJECT FREE ZONE (OFZ)
	RUNWAY SAFETY AREA (RSA)
BRL	BUILDING RESTRICTION LINE (BRL)
	PRIMARY SURFACE (PS)
	RUNWAY VISIBILITY ZONE (RVZ)
	TAXIWAY SAFETY AREA (TSA)
	TAXIWAY OBJECT FREE AREA (TOFA)
	RUNWAY LIGHTS
	EX-BUILDINGS
	F-BUILDINGS
	PAVED ROADS
	UNPAVED ROADS
	WINDSOCK
	VASI OR PAPI
46	REIL
	SEGMENTED CIRCLE
	BEACON
	FENCE LINE
	TREES AND TREE LINES
	RIVER - WATER
	EASEMENTS
	SECTION CORNER
	GLIDER OPERATIONS AREA

NO.	DATE	REMARKS	BY	CHK
5	11/18	AS-BUILT FOR TREE CLEARING	BJH	AEF
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

FUTURE RUNWAY 28 APPROACH

MEAD & HUNT
ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
CAPITAL CITY AIRPORT
2605 E. AIRPORT SERVICE DRIVE
LANSING, MICHIGAN 48906
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(517) 321-5002 FAX

APPROVED

STEPHANIE A.D. WARD, AICP DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03
SHEET	9 OF 12	

DRAWING NAME	13-2_Fu-28 App	FILE NUMBER	13-2

OBJECT			ALLOWABLE ELEV.		PENETRATION		DISPOSITION		RUNWAY IMPACTED		
NO.	DESCRIPTION	TOP ELEV.	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	LOCATION
10-1	FENCE	939'	1000'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-2	TREES	992'	1023'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-3	HANGAR	948'	1003'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-4	HYDRANT-VALVE	938'	1023'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-5	HANGAR	951'	1002'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-6	TREES	994'	1035'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-7	TREE	1004'	1019'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-8	ROAD / AS	953**	954'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-9	ROAD / CENTERLINE	953**	956'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-10	ROAD / AS	953**	958'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-11	POWER POLE	961'	960'	-	1'	1'	DONH	DONH	10	10	RPZ
10-12	POWER POLE	960'	960'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-13	BUILDING	954'	960'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-14	POWER POLE	957'	960'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-15	POWER POLE	957'	975'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-16	BUILDING	956'	961'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-17	BUILDING	952'	962'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
~~10-18~~	~~TREES~~	~~987'~~	~~967'~~	~~-~~	~~20'~~	~~20'~~	~~TOP~~	~~TOP~~	~~10~~	~~10~~	~~RPZ~~
10-19	POWER POLE	963'	966'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-20	POWER POLE	962'	971'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-21	BUILDING	962'	977'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-22	POWER POLE	971'	980'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
10-23	TREE	982'	982'	-	NA	-	REMAIN	REMAIN	10	10	RPZ
~~10-24~~	~~TREES~~	~~991'~~	~~994'~~	~~-~~	~~NA~~	~~-~~	~~REMAIN~~	~~REMAIN~~	~~10~~	~~10~~	~~AS~~
10-25	POWER POLE	966'	1006'	-	NA	-	REMAIN	REMAIN	10	10	AS
10-26	POWER POLE	960'	1008'	-	NA	-	REMAIN	REMAIN	10	10	AS
10-27	TREES	1007'	1019'	-	NA	-	REMAIN	REMAIN	10	10	AS
10-28	BEACON	1027'	1084'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-29	BUILDING	980'	1065'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-30	WINDSOCK	965'	1007'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-31	HANGAR	960'	1048'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-32	HANGAR	965'	1030'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-33	HANGAR	962'	1068'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-34	HANGAR	965'	1010'	-	NA	-	REMAIN	REMAIN	10	10	TS
10-35	BUILDING	962'	1050'	-	NA	-	REMAIN	REMAIN	10	10	TS

OBJECT			ALLOWABLE ELEV.		PENETRATION		DISPOSITION		RUNWAY IMPACTED		
NO.	DESCRIPTION	TOP ELEV.	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	LOCATION
28-1	TREES	993'	993'	995'	NA	NA	TOP	TOP	28	28	TS
28-2	TREES	1004'	1000'	1001'	4'	3'	TOP	REMAIN	28	28	TS
28-3	FENCE	948'	954'	956'	NA	NA	REMAIN	REMAIN	28	28	TS
28-4	TREE	REMOVED							28	28	PS
28-5	TREES	995'	988'	987'	7'	8'	TOP	TOP	28	28	TS
28-6	TREES	1000'	980'	981'	20'	19'	TOP	TOP	28	28	TS
28-7	TREES	1006'	992'	992'	14'	14'	TOP	TOP	28	28	TS
28-8	TREES	1005'	985'	973'	20'	32'	TOP	TOP	28	28	TS
28-9	TREES	967'	971'	959'	NA	8'	REMAIN	TOP	28	28	TS
*28-10	TREES	967'	961'	939'	6'	28'	TOP	REMOVE	28	28	RPZ/PS
*28-11	TREES	998'	995'	940'	3'	58'	TOP	REMOVE	28	28	AS/PS
28-12	TREES	983'	1060'	985'	NA	NA	REMAIN	REMAIN	28	28	AS/TS
28-13	POWER POLE	974'	1059'	974'	NA	NA	REMAIN	REMAIN	28	28	AS/RPZ
28-14	POWER POLE	974'	1053'	970'	NA	4'	REMAIN	LOWER	28	28	AS/RPZ
28-15	TREE	961'	1047'	967'	NA	NA	REMAIN	REMAIN	28	28	AS/RPZ
28-16	POWER POLE	974'	1046'	966'	NA	8'	REMAIN	LOWER	28	28	AS/RPZ
28-17	POWER POLE	979'	1040'	963'	NA	16'	REMAIN	LOWER	28	28	AS/RPZ
28-18	TREE	975'	1031'	957'	NA	18'	REMAIN	TOP	28	28	AS/RPZ
28-19	TREES	979'	1017'	949'	NA	30'	REMAIN	TOP	28	28	AS/RPZ
28-20	BUILDING	965'	1048'	984'	NA	NA	REMAIN	REMAIN	28	28	AS/TS
28-21	TREES	1004'	998'	961'	6'	43'	TOP	TOP	28	28	AS/TS
28-22	TREES	1003'	993'	940'	10'	63'	TOP	REMOVE	28	28	AS/PS
28-23	TREES	1013'	993'	979'	20'	34'	TOP	TOP	28	28	TS
28-24	TREES	1002'	987'	977'	15'	25'	TOP	TOP	28	28	TS
28-25	TREES	1006'	961'	963'	45'	43'	TOP	REMOVE	28	28	TS/OFA
28-26	TREES	1000'	978'	978'	22'	22'	TOP	TOP	28	28	TS
28-27	TREES	1030'	1034'	1034'	NA	NA	REMAIN	REMAIN	28	28	TS
28-28	AWOS	971'	975'	977'	NA	NA	TOP	TOP	28	28	TS
28-29	SEGMENTED CIRCLE	963'	1010'	1012'	NA	NA	REMAIN	REMAIN	28	28	TS

ABBREVIATION LEGEND

AS = APPROACH SLOPE
TS = TRANSITIONAL SURFACE (7:1)
EW = EXISTING WAIVER
PS = PRIMARY SURFACE
RPZ = RUNWAY PROTECTION ZONE

OBSTRUCTION DATA LEGEND

NUMBER = OBSTRUCTION NUMBER ON APPROACH SHEETS
DESCRIPTION = TYPE OF OBSTRUCTION (ROAD, TREES, BUILDING)
TOP ELEV. = HEIGHT OF OBSTRUCTION AT HIGHEST POINT OF OBJECT
ALL. ELEV. = ELEVATION ALLOWED BY RUNWAY SURFACE (AS, BS, PS, RPZ)
PEN. = PENETRATION OF OBSTRUCTION INTO RUNWAY SURFACE (ALL. ELEV. (-) TOP ELEV.)
DISPO. = DISPOSITION OF OBSTRUCTION (TOP, REMAIN, REMOVE)
LOC. = LOCATION OF OBSTRUCTION RELATIVE TO RUNWAY SURFACES

OPTIONS FOR DISPOSITION

EW = REQUEST THAT THE EXISTING WAIVER WHICH COVERS THIS OBSTRUCTION REMAINS IN PLACE AS NOTED IN AIRSPACE CASE 91-AGL-680-NRA.

REMAIN = OBSTRUCTION IS LOCATED WITHIN A RUNWAY SURFACE, HOWEVER, PENETRATION INTO THE APPROACH SURFACE IS NOT A PROBLEM.

REMOVE = THE OBSTRUCTION WILL BE REMOVED FOR CONSTRUCTION OF RUNWAY.

TOP = OBSTRUCTION IS A TREE WHICH REQUIRES TOPPING TO MAINTAIN HEIGHT CLEARANCE.

WAIVER = REQUEST THAT A NEW WAIVER BE GRANTED FOR THE OBSTRUCTION BASED ON THIS MASTER PLAN UPDATE.

NA = NOT APPLICABLE - MEANING IT WILL BE AN OBSTRUCTION ONLY IN THE ULTIMATE CONSTRUCTION STAGE

DONH = REQUEST DETERMINATION OF NON-HAZARD

NOTES

* = TREE MAY BE PART OF A TREE LINE / WOODED AREA WHICH MAY EXTEND CLOSER TO THE RUNWAY SURFACES VERSUS THE LOCATION OF THE INDIVIDUAL TREE LISTED. PRUNING, TOPPING, OR REMOVAL OF THE TREE / TREE LINE TO BE DETERMINED AT THE TIME OF CONSTRUCTION / DESIGN BASED ON OVERALL IMPACT.

** = TOP ELEVATION OF ROADS REFLECTS THE ADDITION OF 15' REQUIRED CLEARANCE OVER ROADWAYS. (EX. ROAD ELEVATION + 15' REQUIRED CLEARANCE = TOP ELEVATION)

1) OBSTRUCTION MITIGATION IN THE TRANSITIONAL SURFACE NOT OWNED BY THE AIRPORT SHOULD BE CLEARED AS FUNDS BECOME AVAILABLE.

2) FINAL DISPOSITION OF TREES TO BE "TOPPED" WILL BE DETERMINED AT TIME OF CONSTRUCTION. FINAL DISPOSITION (TOPPED, PRUNING OR REMOVAL) WILL BE BASED UPON ACTUAL HEIGHT OF TREES AND PREFERENCE OF OWNER.

3) ORDER OF IMPORTANCE FOR LOCATION OF THE OBSTRUCTION:
   1. RUNWAY AREA
   2. PRIMARY SURFACE (PS)
   3. OBJECT FREE AREA (OFA) / RUNWAY SAFETY AREA (RSA)
   4. RUNWAY PROTECTION ZONE (RPZ)
   5. APPROACH SLOPE (AS)
   6. TRANSITIONAL SURFACE (TS)

4) LOCATION LISTED IN THE TABLE IS BASED ON THE ABOVE ORDER OF IMPORTANCE CRITERIA.

5) OBSTRUCTION 10-18 AND 10-24 REMOVED FROM EXISTING RUNWAY 10 APPROACH AS INITIATED BY THE CITY OF MARSHALL AND 11-1-18 INFORMATION PROVIDED BY AIRPORT MANAGER.

6) OBSTRUCTION *28-10 AND *28-11 PRUNED IN 2017 TO BELOW RUNWAY 28 STATE LICENSING SURFACE AS INITIATED BY THE CITY OF MARSHALL AND 11-1-18 INFORMATION PROVIDED BY AIRPORT MANAGER.

NO.	DATE	REMARKS	BY	CHK
3	5/21	AS-BUILT FOR TERMINAL BLDG	STW	BJH
2	11/18	AS-BUILT FOR TREE CLEARING	BJH	AEF
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

OBSTRUCTION TABLES

MEAD & HUNT
ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
CAPITAL CITY AIRPORT
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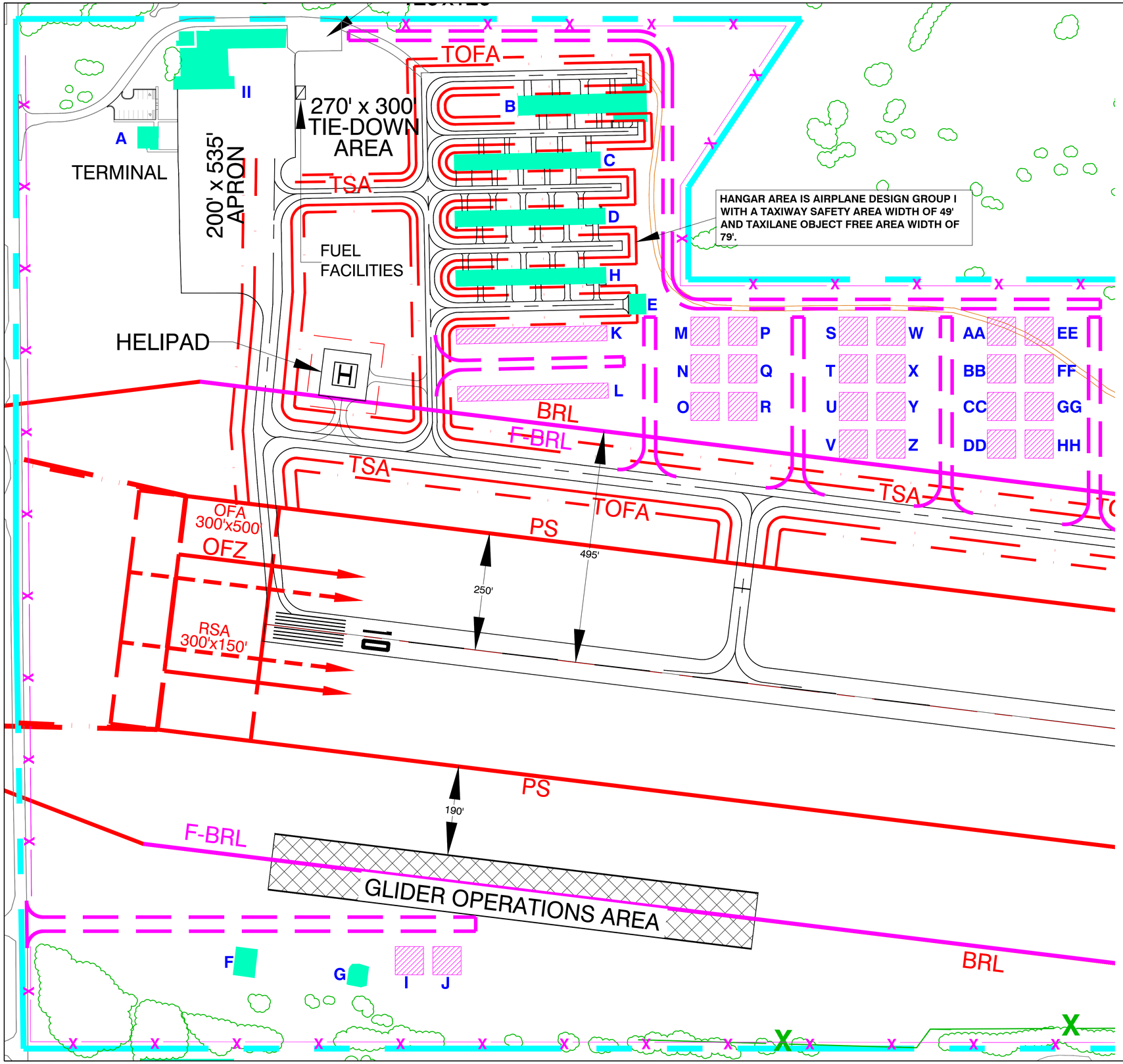
APPROVED

STEPHANIE A.D. WARD, AICP DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03

SHEET 10 OF 12

DRAWING NAME 13-2_App-tbl FILE NUMBER 13-2



EXISTING		
	BUILDING	ELEVATION
A	TERMINAL	962'
B	T-HANGAR	962'
C	T-HANGAR	960'
D	T-HANGAR	965'
E	BOX HANGAR	965'
F	BOX HANGAR	951'
G	HANGAR	948'
H	T-HANGAR	NA
II	HANGAR	980'

FUTURE		
	BUILDING	ELEVATION
I	BOX HANGAR	NA
J	BOX HANGAR	NA
K	T-HANGAR	NA
L	T-HANGAR	NA
M	BOX HANGAR	NA
N	BOX HANGAR	NA
O	BOX HANGAR	NA
P	BOX HANGAR	NA
Q	BOX HANGAR	NA
R	BOX HANGAR	NA
S	BOX HANGAR	NA
T	BOX HANGAR	NA
U	BOX HANGAR	NA
V	BOX HANGAR	NA
W	BOX HANGAR	NA
X	BOX HANGAR	NA
Y	BOX HANGAR	NA
Z	BOX HANGAR	NA
AA	BOX HANGAR	NA
BB	BOX HANGAR	NA
CC	BOX HANGAR	NA
DD	BOX HANGAR	NA
EE	BOX HANGAR	NA
FF	BOX HANGAR	NA
GG	BOX HANGAR	NA
HH	BOX HANGAR	NA

LEGEND
AIRPORT PROPERTY LINE
RUNWAYS, TAXIWAYS, PARKING
F-PAVEMENT
RUNWAY MARKINGS
TAXIWAY CENTERLINE
RUNWAY PROTECTION ZONE (RPZ)
APPROACH SLOPE (AS)
OBJECT FREE AREA (OFA)
OBJECT FREE ZONE (OFZ)
RUNWAY SAFETY AREA (RSA)
BRL — BUILDING RESTRICTION LINE (BRL)
PRIMARY SURFACE (PS)
RUNWAY VISIBILITY ZONE (RVZ)
TAXIWAY SAFETY AREA (TSA)
TAXIWAY OBJECT FREE AREA (TOFA)
RUNWAY LIGHTS
EX-BUILDINGS
F-BUILDINGS
PAVED ROADS
UNPAVED ROADS
WINDSOCK
VASI OR PAPI
REIL
SEGMENTED CIRCLE
BEACON
FENCE LINE
TREES AND TREE LINES
RIVER - WATER
EASEMENTS
SECTION CORNER
GLIDER OPERATIONS AREA

N

MAG. DEC.

MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)

SCALE

0 50 100 200

1 INCH = 100 FEET

NO.	DATE	REMARKS	BY	CHK
4	5/21	AS-BUILT FOR TERMINAL BLDG	AEF	BJH
3	11/15	AS-BUILT FOR FM 13-02-C21	BJH	AEF
2	1/10	AS-BUILT FOR FM 13-02-C17	AEF	RGN
1	10/05	AS-BUILT HELIPAD	AEF	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

EXISTING AND FUTURE BUILDING SHEET

MEAD & HUNT
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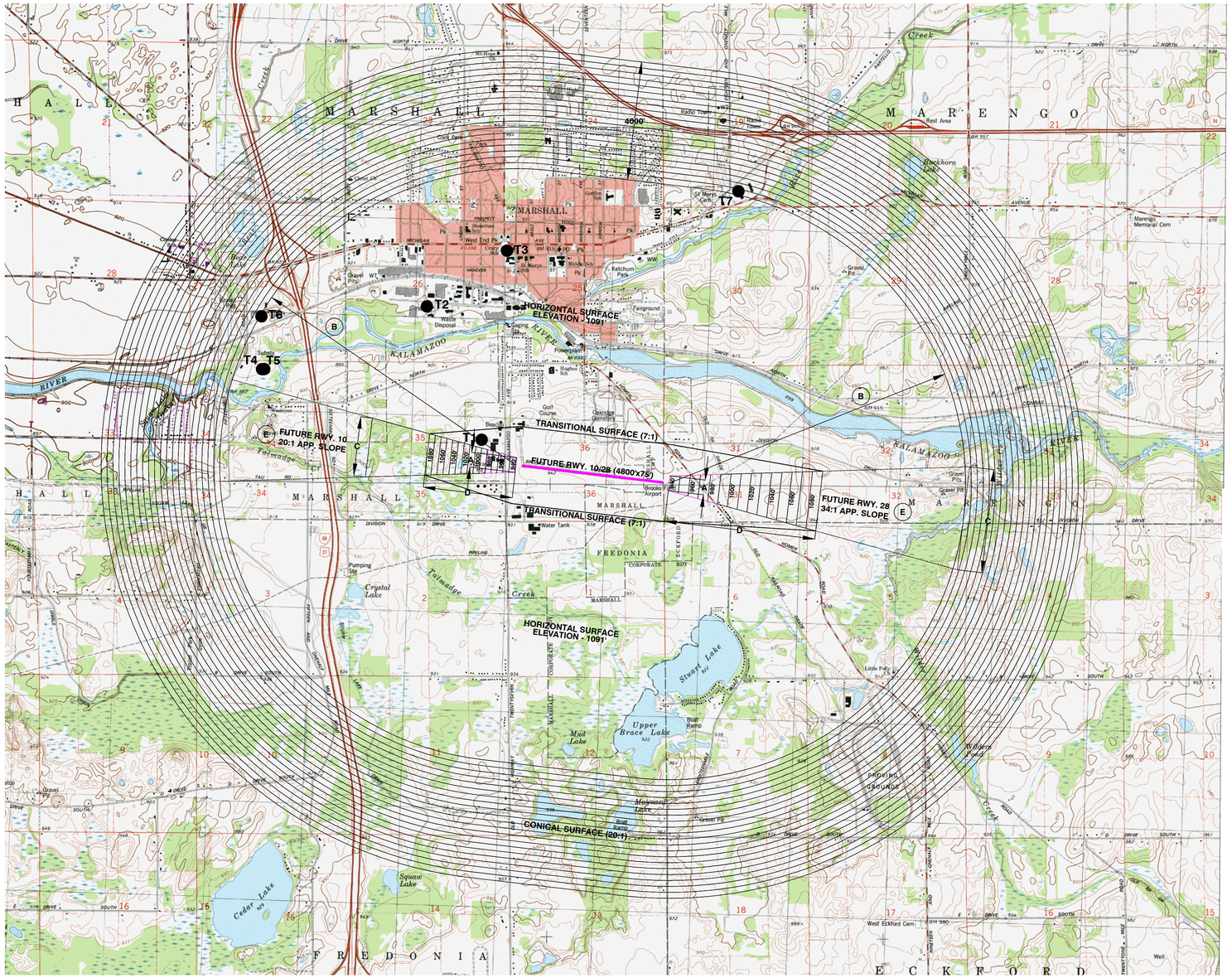
APPROVED

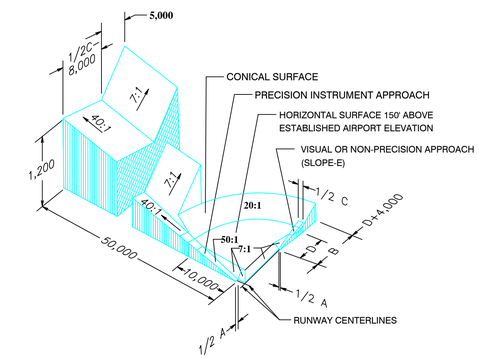
STEPHANIE A.D. WARD, AICP DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03
SHEET	11 OF 12	

DRAWING NAME	13-2_Building	FILE NUMBER	13-2



EX-RUNWAY END 10	EX-RUNWAY END 28
LAT. 42° 15' 6.28" LONG. 84° 57' 42.72"	LAT. 42° 15' 2.30" LONG. 84° 56' 56.50"
	F-RUNWAY END 28 LAT. 42° 15' 00.81" LONG. 84° 56' 39.32"



ISOMETRIC VIEW OF SECTION A-A

FAA PART 77 APPROACH SURFACE DIMENSIONS

DIM	ITEM	EX-10	EX-28	F-10	F-28
A	WIDTH OF PRIMARY SURFACE	500'	500'	500'	500'
B	RADIUS OF HORIZONTAL SURFACE	5000'	5000'	5000'	10000'
C	APPROACH SURFACE END WIDTH	2000'	2000'	2000'	3500'
D	APPROACH SURFACE LENGTH	5000'	5000'	5000'	10000'
E	APPROACH SLOPE	20:1	20:1	20:1	34:1

OBJECTS WITHIN PART 77 SURFACE

OBJECT	LATITUDE	LONGITUDE	AGL	MSL
T1 - TOWER	42° 15' 12.54"	84° 58' 0.75"	38'	975'
T2 - ANTENNA	42° 15' 59.15"	84° 58' 24.93"	184'	1079'
T3 - TOWER	42° 16' 16.15"	84° 57' 49.93"	120'	1032'
T4 - TOWER	42° 15' 37.20"	84° 59' 39.30"	216'	1103'
T5 - TOWER	42° 15' 37.20"	84° 59' 38.90"	212'	1090'
T6 - TOWER	42° 15' 55.15"	84 59' 38.57"	181'	1091'
T7 - TOWER	42° 16' 36.65"	84° 56' 6.33"	180'	1090'

OBJECTS LOCATED WITH THE USE OF PRINTOUT PROVIDED BY MDOT BUREAU OF AERONAUTICS DATED 12/18/98 FROM THE DIGITAL OBSTACLE FILE ISSUED BY NOAA.

MEAD & HUNT AND MDOT BUREAU OF AERONAUTICS ARE NOT RESPONSIBLE FOR THE ACCURACY OF THE NOAA DATABASE. THE DATABASE MAY NOT BE INCLUSIVE OF ALL OBSTACLES WITHIN THE PART 77 SURFACES SHOWN.

SECTIONAL CHARTS & THE FAA SHOULD BE REFERENCED FOR ADDITIONAL INFORMATION DUE TO THE CONTINUED PROLIFERATION OF TOWERS AND ASSOCIATED OBSTACLES.

N
MAG. DEC.

SCALE
0 1000 2000 4000
1 INCH = 2000 FEET

MAGNETIC DECLINATION
5° 23' W
5' WEST PER YEAR
AS OF 5-30-03
SOURCE: IGRF2000
(NOAA)

NO.	DATE	REMARKS	BY	CHK
1	8/04	MMTSB REVIEW	JSB	SADW

REVISIONS

BROOKS FIELD
MARSHALL, MICHIGAN

FAR PART 77

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APPROVED

STEPHANIE A.D. WARD, AICP — DATE

DESIGNED	SADW	7/02
DRAWN	JSB	5/03
CHECKED	SADW	6/03
SHEET	12 OF 12	

DRAWING NAME	13-2_Part-77	FILE NUMBER	13-2