



# Surveying Specialty *Airport Surveying*

*Airport  
Airfield  
Aviation  
Aeronautical*





## Airport Surveying Airport / Airfield / Aviation / Aeronautical Surveys

### Overview

Surveying at airports requires a unique set of abilities including familiarity with specialized Federal Aviation Administration (FAA) guidelines, experience working with post-9/11 security procedures, coordinating with operations for access, and performing work with the utmost care, precision, and documentation for safety critical data.

Our airport experience includes dozens of tasks at Detroit Metropolitan Wayne County Airport (DTW), as well as projects at military bases such as Selfridge Air National Guard Base along with projects at smaller regional and local municipal airports.



We are experienced in providing a variety of services including:

- Federal Aviation Regulations FAR Part 77 Obstruction Surveys
- Layout for airfield pavement markings according to FAA Advisory Circular AC150/5340-1K
- Measurements in accordance with FAA Advisory Circulars AC 150/5300-16A, AC 150/5300-17B, and AC 150/5300-18B for geodetic control, imagery, and data collection/airport GIS
- FAA IDLE training level 3 certified in FAA Advisory circulars AC 150/5300-16, AC 150/5300-17, and AC 150/5300-18
- Construction layout within the airport operations area (AOA)
- As-built measurements in accordance with AC 150/5300-18 for submission to the FAA's Airport GIS
- Surveys for NAVAID's, lighting, and electrical

**"Spalding DeDecker was always there when needed, and worked diligently throughout, to provide the best possible service to the project."**

**-Jim Greenwald,  
Vice President Facilities and Airport Affairs,  
Northwest Airlines**





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Following is a partial list of projects on which we have performed airport surveying:

### INTERNATIONAL AND MAJOR HUB AIRPORTS

#### **Detroit Metropolitan Wayne County Airport, Romulus, Michigan (DTW):**

#### **Wayne County Airport Authority (WCAA) As-need Surveying for DTW and Willow Run Airports –**

Performed a wide range of tasks at DTW since 2008, working closely with internal contacts in a variety of departments including planning, operations, real estate, security, credentials, and permits/construction, along with other stakeholders from the WCAA and FAA. Tasks completed include: annual FAR Part 77 surface evaluations; tree tagging and identification for obstruction identification and reporting; obstruction evaluation and airport airspace analysis (OE-AAA) for instrument procedure development according to advisory circulars AC150/5300-16A, 150/5300-17B, and 150/5300-18B; layout for airfield pavement markings according to AC/150/5340-1K; topographical surveys for various engineering design projects; construction staking of improvements and paint striping to parking areas located outside the airport operations area (AOA). A partial list of tasks completed includes:



- Billboard Survey
- Surface painted hold signs/lead-off line
- Obstruction survey, four R/W ends
- Survey for 3R ALSF-2 lights
- Tag and locate private property trees
- Lower Rogell Drive layout
- Obstruction survey for eight R/W ends
- New employee parking/BF parking
- Phase 2 employee parking – lot 20/GTC
- Obstruction survey for remaining ends 2
- Obstruction survey, 27R/4R tree tags
- Pavement markings for aircraft positions
- Berry Terminal field verification
- Berry Terminal et. al. topo survey
- North employee parking lot survey
- R/W end 3R tree tagging
- Airfield surface painted hold signs
- North employee lot two-lane road
- 2009 obstruction survey
- Skychef employee parking lot
- Berry Terminal expanded mapping limits
- Zipper road location
- R/W 3R tree tagging
- 2010 remaining tree tags
- Verify airfield coordinates
- Rogell parking spaces layout
- Locate trees with contractor
- 2010 obstruction survey
- Tree tagging, locating, verification
- R/W 4R/22L topographical survey
- R/W 4R/22L added mapping areas
- Layout for boundary marks, taxiway, and nose wheel lines
- YIP features in R/W 9/27 surface
- 4R/22L OE-AAA survey
- Employee parking spaces, L. C. Smith

**DTW Enterprise/Alamo/Nation Rebranding Campaign** – Performed a detailed topographical survey to be used for planning and engineering for this project.

**DTW Enterprise Rent-A-Car (Construction Escort)** – Escorted personnel during the construction phase of the project. Worked closely with security, operations, and other departments to make sure contractors complied with all access requirements.

**DTW Enterprise Rent-A-Car** – Performed a topographical survey in the airport operations area and engineering design for a new driveway connecting adjacent parking areas. The drive is located within the AOA and required installation of a new security fence. Worked closely with DTW permits, real estate, and other departments to assure that all stakeholders’ concerns were addressed and that the construction would be in accordance with WCAA’s standards.

**DTW Runway Status Lights FAA Shelters** – Performed a topographical survey for HNTB for two areas. The survey was utilized by HNTB for the engineering design of FAA shelters as part of their status light upgrade project.

**DTW Runway 22L De-Icing Pad** – Provided construction layout/contractor staking for this fast-paced project constructed by John Carlo. Included staking underground utilities including pre-fabricated trench drain, along with staking for paving and providing as-built measurements along a tightly spaced grid for each layer of sub-grade, stone, asphalt, and concrete that formed the flexible pavement section. Crews worked around the clock to meet the project schedule.





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**DTW Midfield Terminal – Topographical Survey** – Topographical survey for the planning of the design for the Midfield Terminal. Situated on a four-square-mile section of the airport that was completely surrounded by runways and taxiways.

**DTW Northwest Airlines Taxiways** – Construction layout for striping and airfield markings of taxiways.

**DTW Runway 3R-21L Electrical** – Construction layout of all electrical features for the reconstruction of Runway 3R-21L and the southern end of Taxiway W.

**DTW Security Expansion** – Construction layout of the security expansion addition to the Midfield Terminal.



**DTW Northwest Midfield Terminal** – The project consisted of construction layout of the mile-long terminal building including: Layout of each column line along the entire length of the East Terminal and the West Terminal along with the tunnel, which connects both terminals; layout of each jetway; layout for all supplemental control lines and benchmarks; supplemental anchor bolt and steel-erection surveys.

**DTW Westin Hotel** – Construction layout of piles to build a pedestrian walk bridge between the Westin Hotel and the Northwest Terminal concourse.

**DTW Bridge over Rogell Drive** – As-built drawing of the new bridge abutment.

**DTW Passenger Tram** – Construction layout of the express tram which carries passengers from one end of the mile-long terminal to the center to the other end in just 2.5 minutes, using a two-mile-long cable and cars that ride on a cushion of air. Work consisted of furnishing horizontal and vertical control and maintaining vertical accuracy under 1/16 inch for the entire project.

**DTW Edison Substation at Metro Airport** – Construction layout for the screen-wall for Edison Substation that supplies power for the entire Northwest Terminal.

**DTW Energy Center Building** – Construction layout of the boilers and compressors for the energy center, which supplies all heating and cooling for Midfield Terminal.

**DTW Metro Airport Gas Main Layout** – Layout of a gas main to the Energy Building.

**DTW Northwest Midfield Terminal** – Construction layout of the taxiways and utilities surrounding and servicing the new terminal, including electrical taxiway lights, paint striping, and concrete apron encompassing 0.5 square miles of new pavement.

**DTW Northwest Windshear Project** – Construction layout for the relocation of the windshear energy tower. The mile-long electrical duct bank, 3/4 ft deep, was staked from the tower to the new location of the windshear building.

**DTW Northwest 3L De-icing** – Construction layout of taxi lights and electrical duct banks for the new de-icing facility.

**DTW Northwest Otis Elevator** – Layout of elevator hydraulic piston sleeves.

**DTW Northwest Midfield Terminal Water Feature** – Construction layout of the plates for each water pump on the centrally located marble water feature.

**DTW New Edison Substation** – Construction layout for two-mile-long electrical vaults and duct bank from Eureka Road to the New Edison Substation.

**DTW Jetway Systems** – Measurements for vertical and horizontal locations for Northwest B Gate foundations for FMC Airport Systems.



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### REGIONAL, MUNICIPAL, COUNTY, AND LOCAL AIRPORTS

#### ***Willow Run Airport, Ypsilanti, Michigan (YIP):***

Willow Run is operated by the Wayne County Airport Authority and serves as a reliever to DTW, with its primary mission involving cargo transportation.

#### **YIP WCAA As-needed Surveying Services for DTW and Willow Run**

– Survey to locate obstructions in the runway 9/27 surface for planning purposes, investigating the possibility of expanding the runway to its full length, requiring demolition of a portion of the adjacent General Motors manufacturing building to eliminate the displaced threshold.



**YIP Kalitta Air** – Performed topographical survey and engineering site plan for development of this parcel within the airport.

**Meyers-Diver's Airport, Tecumseh, Michigan** – Completed base map of site using aerial mapping/photogrammetric techniques and measured elevations for tree canopy for obstruction analysis. Supplemented mapping with runway centerline profile.

**Three Rivers - Dr. Haines Airport, Three Rivers, Michigan** – Performed construction layout for runway edge lights and PAPI units, including performing a survey for the PAPI units to check for obstructions along the horizon.

**Marlette Township Airport, Marlette Township, Michigan** – Performed a topographical survey to be used for pavement replacement.

### MILITARY AIRPORTS AND AIR BASES

#### ***Selfridge Air National Guard (SANG) Base, Harrison Township, Michigan:***

**SANG Base Pre-fabricated Metal Building** – Performed a topographical survey for two areas on the air base for The Johnson McAdams firm for the purpose of design and site plan for new pre-fabricated metal buildings proposed on the sites.

**SANG Base and Joy Boulevard Water Main and Meter Pit** – Performed a topographical survey, engineering design, and construction staking for a meter pit and new section of water main linking the base to the Mt. Clemens municipal water supply. Work performed on behalf of City of Mt. Clemens as their consulting engineer and required close coordination with SANG management.

**SANG Base Visitor Center and Security Checkpoint/Entrance** – Construction staking for Lakeshore Engineering for a new main entrance, security checkpoint with guard shack, visitor center, and parking area. Staking included grading, underground utilities, paving, and building improvements.

**SANG Base Medical Training Facility** – Construction staking for Walbridge for a new joint-forces medical training facility including underground utilities, new parking area, and new building.

**SANG Base New Building** – Performed staking for Wiss, Janney, Elstner Associates for construction of a new building on base.

**SANG Base Runway As-built Survey** – Performed as-built measurements and prepared record drawings for construction completed by Dan's Excavating. Record drawings were prepared to rigorous standards to meet specific guidelines.

**SANG Base Taxiway Lighting Units** – Performed layout for Rauhorn Electric for taxiway lighting units, which were directional and required precise alignment in pointing.

**SANG Base East Ramp** – Performed topographical survey, supplemental grade calculation, and construction staking for John Carlo, Inc. for pavement reconstruction in several areas of the East Ramp (apron).



## SERVICES



### Survey & Mapping

Speed and technical accuracy are the cornerstones of Spalding DeDecker Associates, Inc.'s (SDA) survey and mapping services. Our licensed survey professionals oversee up to nine U.S. crews daily to accommodate any project's complex and stringent requirements. Most of our field and office staff are Certified Survey Technicians. By electronically converting site data, we quickly and accurately collect the necessary data. Using state-of-the-art equipment, including a Leica 1203 TCRP robotic total station, a Trimble R8 GPS receiver, or a digital level, our surveyors collect data quickly and efficiently and provide construction layout with a one-person or two-person crew.



#### Services

- Aerial Control Surveys
- ALTA / ACSM Land Title Surveys
- Anchor Bolt Surveys
- Aviation / Airfields
- Boundary Surveys
- Column Line Layout
- Condominium Exhibit B Documents
- Construction Staking
- Crane Rail Surveys

- Easement Documentation
- Elevation Certificates / LOMA's
- Floodplain Surveys
- GPS Rental & Training
- Industrial Surveying
- Laser Scanning
- Mortgage Surveys
- Oil & Gas Pipeline Surveys
- Parcel Splits
- Remonumentation Programs

- Right-of-Way Surveys
- Site Feasibility Studies
- Stockpile Quantities
- Subdivision Platting
- Subsidence Monitoring
- Topographical Surveys
- Tree Surveys
- Tunnel Surveying
- Utility Surveys
- Wetland Delineation Surveys





# SPALDING DeDECKER ASSOCIATES, INC.



Established in 1954, Spalding DeDecker Associates, Inc. (SDA) is an employee-owned consulting engineering firm specializing in infrastructure, land development, and surveying. With offices in Detroit, Rochester Hills, and San Antonio, and multiple field offices, SDA offers a diverse core of engineering services for municipal, land development, transportation, and water / wastewater projects. The firm also offers complete construction engineering, landscape architectural, pavement management, and land surveying & mapping services.

## offices

### Headquarters - Rochester Hills

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fax (248) 844-5404

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Cleveland, Ohio 44125  
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## facebook / LinkedIn

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[www.linkedin.com/company/spalding-dedecker-associates-inc](http://www.linkedin.com/company/spalding-dedecker-associates-inc)

## directors / officers

**President** Steve E. Benedettini  
**Chairman** George M. Platz, PS  
Catherine M. DeDecker, PS

Michael F. H. DeDecker, PS  
Thomas J. Dohr, PE  
Cheryl L. Gregory, PE

Thomas J. Sovel, PE

## professional staff (licensed in multiple states)

- Professional Engineers
- Professional Surveyors
- Registered Landscape Architects

## technical staff

- ACSM Certified Survey Technicians
- Certified Floodplain Managers
- Certified Public Infrastructure Inspector
- Confined Space Entry & Attendants
- Construction Documents Technologist
- MicroStation & AutoCAD Technicians
- O&M Technicians
- OSHA HAZWOPER 40 Hour Training
- Red Cross - CPR, AED, & First Aid
- Safe2Work Safety Training

### MDOT Technician Training:

- Concrete Inspection
- Bituminous Inspection
- Aggregate Technician
- Density Technology
- Bridge Inspection
- Computerized Office Technician
- FieldManager / FieldBook

### MDEQ:

- Stormwater Management Operator - Construction Site & Industrial Site
- Soil Erosion and Sedimentation Control
- Drinking Water S-3
- Waste Water S-1

**100% Employee-Owned | ISO 9001-2008 Based for Quality | MUST Certified for Drug Compliance**