ALPHA
SURVEY GROUP

AIRPORT

PROJECT EXPERIENCE

Proposed Fuel Farm Improvements - Airport Solutions Group/Marshfield Municipal Airport
The project consisted of a topographic/existing conditions survey in support of the design of a new Fuel Farm. The survey included the location of pavement, maintenance buildings, utilities, wetland delineation, and other relevant features. The survey control was tied into recently set PAC and SAC monumentation utilizing conventional survey control. The final deliverable was prepared in AutoCAD C3D 2016 format utilizing ALPHA's layering and symbology convention.

Construct Oil/Water Separator - Airport Solutions Group/Taunton Municipal Airport
The project consisted of a topographic/existing conditions survey in support of the design for a new oil/water separator system. The survey included the location of pavement, maintenance buildings, utilities, wetland delineation, and other relevant features. The survey control was tied into the PAC and SAC monumentation utilizing conventional survey control. The final deliverable was prepared in AutoCAD C3D 2016 format utilizing ALPHA's layering and symbology convention.

Aviation/Hanger Lease Boundaries, Downey Street - New Bedford Regional Airport
The Airport desired to have the lease areas east of the Fire Station monumented, which is comprised of the Sandpiper I and II, Hanger 8, and Nor-East Hangers. ALPHA performed research with the Airport and the Bristol County South Registry of Deeds to obtain record information of the lease areas. Reconnaissance was performed for evidence of the lease lines and an on-the-ground survey performed of all of the lease parcels. The data was compared with the record information and the lease lines were reconciled and the corners monumented in the field.

Reconstruct Runway 14 - 22 Project - Airport Solutions Group/New Bedford Regional Airport
ALPHA performed a topographic/existing conditions survey of the Runway 14-32 area encompassing 92 acres of the runway and abutting infields, outfields, and taxiway. An extensive survey control network was established, tying into the PAC and SAC monumentation, and adjusted by the least squares method. Topographic information was observed based on a 25-foot grid system and included the runway/taxiway lighting, utility structures (with inverts on gravity structures), all runway markings, and other relevant features. The final deliverable was prepared in AutoCAD C3D 2016 format utilizing ALPHA's layering and symbology convention.

Colonial Airlines Ramp Lease Boundary - New Bedford Regional Airport
ALPHA performed research with the Airport and the Bristol County South Registry of Deeds to obtain record information of the Colonial Airlines Lease. Reconnaissance was performed for evidence of the lease lines, and relevant site features were located to assist

with reestablishing the lease lines. The field data was compared with the record information and the lease lines were reconciled, and monumetation set at the corners.

Colonial Airlines Reconstruct Terminal Aprons - Airport Solutions Group/New Bedford Regional Airport

ALPHA performed an existing conditions survey of a 6 Acre area from Taxiway A around the Colonial Hanger, and southerly between the Airport Boundary and the Long-Term Parking Lot. Topographic detail was located on a 25-foot grid, utilities (including gravity structures with inverts), roads, parking areas, and other relevant features. Survey control was based on existing points with coordinates provided by others. These points were observed with GPS, and additional control within the project area was also established by GPS observations. The final deliverable was prepared in AutoCAD C3D 2016 format utilizing ALPHA's layering and symbology convention.

Runway 14 Land Swap and ANR Subdivision - Airport Solutions Group/New Bedford Regional Airport

ALPHA performed extensive research with the Airport and the Bristol County South Registry of Deeds of multiple parcels between New Plainville Road, Shawmut Avenue, and Old Plainville Road. Survey control was established horizontally in the MA State Plane Coordinate System referenced to the NAD83 datum. Reconnaissance for record monuments and an on-the-ground survey was performed to locate found monuments and other evidence of boundary lines. The information was analyzed, the record and field data reconciled, and an Approval-Not-Required plan prepared in support of a land swap between the Airport and an abutting private land owner.

Runway 14-32 Tree Clearing - Airport Solutions Group/New Bedford Regional Airport

The project consisted of an existing conditions survey of 8 acres of wooded land located at the northerly end of the runway. In addition, the survey included the staking of approximately 3000 LF of the Approach Lines off Runway 14-32, and the location of 2400 LF of fence and centerline of New Plainville and Old Plainville Roads. The existing conditions/topographic survey included location of the pavement and utilities (with inverts on gravity structures), utility research and compilation in the two Roads, location of wetland delineation, topography, and other relevant features. Survey control was established in the NAD83 and NAVD88 datums. One-foot contours were generated from the topographic data. The final deliverable was prepared in AutoCAD C3D 2016 format utilizing ALPHA's layering and symbology convention.

Design for Construction of Taxiway D - Airport Solutions Group/Orange Municipal Airport Commission

The project consisted of a topographic/existing conditions survey of the Runway 14-32 area encompassing 30 acres of the taxiway and adjacent infields and outfields. An extensive survey control network was established, tying into the PAC and SAC monumentation, and adjusted by the least squares method. Topographic information was observed based on a 25-foot grid system and included the runway/taxiway lighting, utility structures (with inverts on gravity structures), all runway markings, and other relevant features. The final deliverable was prepared in AutoCAD C3D 2014 format utilizing ALPHA's layering and symbology convention.

Construct & Mark Taxiway B Project - Walsh Contracting/Taunton Municipal Airport
Based on prior work performed at the Airport, ALPHA provided survey services to verify existing control and establish new control as required by the contractor.

Bass Creek Vegetation Removal Project - RC & D, Inc./GZA GeoEnvironmental, Inc. & Marshfield, MA Board of Public Works
ALPHA provided survey services to layout 3500 linear feet of the centerline of the proposed 10-foot channel of the Bass River. The layout was performed utilizing GPS methodology and required coordination with Airport Operations when working within the end of the runway.

Design for Construction Taxiway B - Airport Solutions Group/Taunton Municipal Airport Commission
The project consisted of a topographic/existing conditions survey in support of the design of Taxiway improvements. A topographic survey was performed based on a required 25-foot grid survey of the paved taxiway and runway intersection, including the grass 'infield area'. Topography was also obtained on approximately 10 acres of undeveloped land adjacent to the Taxiway/Runway. The work performed was based on prior survey control established by ALPHA over the entire airport property in support of an Environmental Assessment/Environmental Impact Report, and was tied to existing Airport PAC and SAC control monuments utilizing GPS technology. The final deliverable was prepared in AutoCAD C3D 2014 format utilizing ALPHA's layering and symbology convention.

Construct Runway 5 and Runway 23 End Safety Areas - Walsh Contracting Corporation/New Bedford Airport Commission
ALPHA provided survey control verification and densification and construction layout services in support of End Runway improvements. Utilizing GPS, observations were made to existing PAC and SAC control for localizing new project control points to the established network. Approximately 1700 LF of perimeter fence and 6500 LF of Wildlife Fence were laid-out prior to construction. The client performed its' own layout of other features during construction. Upon project completion, ALPHA performed an as-built survey of approximately 16 acres of the northerly end of the main runway including relocated water, gas, electric, and communications lines. At the southerly end, only utility lines were as-built due to a follow-on contract in that area. The final deliverable was prepared in AutoCAD C3D format utilizing ALPHA's layering and symbology convention.

Preparation of EA/EIR for Airport Development - Airport Solutions Group/Taunton Municipal Airport Commission
ALPHA performed a topographic/existing conditions survey in support of the preparation of an Environmental Assessment/Environmental Impact Report. The survey formed the basis of a study for further development to include turf runway improvements and additional hangers and associated taxiways. The survey includes the collection of topographic and planimetric data, and the location of wetland delineation of approximately 130 acres of the airport. GPS and conventional survey equipment were used for data collection which included an existing turf runway and portions of a paved taxiway. The survey was tied into PAC and SAC Airport control monuments utilizing

GPS technology. The final deliverable was prepared in AutoCAD C3D format utilizing ALPHA's layering and symbology convention.

Apron Improvements Project - Jacobs Engineering/Quonset RI Air National Guard Base, North Kingstown, RI

The project consisted of a topographic survey in support of the design for replacement of an existing 18 acre concrete apron. Survey control was established based on existing Base control, a topographic survey was performed of the existing concrete panel apron grid (varying pattern sizes), located all utility features (including inverts on gravity structures), and the compilation of underground utilities based on ANG record utility data. A digital CAD file was delivered to the Client prepared in the National CAD standard format.

Airport Projects - Barbato Construction Company/Massachusetts Military Reservation (formerly Otis Air Force Base), Bourne, Mashpee, and Sandwich, MA

ALPHA has provided survey support for a number of projects for our client including:

- **Aircraft Navigation Improvements** - Establish visual aids for aircraft orientation to navigation antenna array consisting of six orientation points and antenna vector markings.
- **Tactical Air Navigation (TACAN) Signs –** Provided survey services to layout signs and painted pavement markings on Taxiways A, B and D to ensure accuracy in location and bearing orientation. ALPHA's Client was the Massachusetts Air National Guard 102D Fighter Wing at Otis Air National Guard Base.