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Hollaway Consulting Engineers, LLC

Statement of Qualifications

Professional Experience

Sheri E. Hollaway, P.E., CM has established Hollaway Consulting Engineers (HCE) with more than 30 years of experience in civil design and construction management, with a specific emphasis in aviation for nearly 20 years. During her tenure with major firms she has been responsible for marketing, building, coordinating and managing the design, construction management and contract administration of numerous airport projects performing phasing, grading, paving and drainage design. Ms. Hollaway has extensive construction management experience and contract administration on heavy, high dollar transportation construction projects. HCE is a State Certified DBE.

Project Experience

Houston Airport System

DCP Midstream Airport Work Plan and Airspace Study for Pipeline Repairs, *George Bush Intercontinental Airport (IAH), Houston, Texas*

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Work plan development for DCP Midstream to complete pipeline repairs and upgrades inside the Airport Operations Area of IAH

The project work plan was focused on construction and aircraft safety, operational areas, secure entrance and the impacts of construction on the daily operations of IAH for two pipeline repair projects, one near Runway 9-27 and the other by Runway 8L-26R.

As part of the work plan, Ms. Hollaway completed an Airspace Study and submitted Form 7460 to the FAA for determination of the impacts of the construction on Runway 8L-26R and Runway 9-27at GBIAH. She provided coordination between Houston

Airport System design and operation staff, DCP Midstream and the Contractor at preconstruction meetings

Reconstruction of Terminal A & B Southeast Ramp, *George Bush Intercontinental Airport, Houston, TX*

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and reconstruction of the Southeast Ramps at Terminals A and B at GBIAH included demolition, construction phasing, paving, waterline, sanitary sewer and drainage design for 62,000 square yards of apron and taxiway rehabilitation at IAH.

Ms. Hollaway coordinated utility relocations, taxiway and apron lighting, environmental station design and layout and provided a primary point of contact and coordination between the owner, sub-consultants and airline tenants, providing:

- Construction phase / contract administration including bi-weekly progress meetings, regular site visits
- Inspector coordination
- RFI response
- Change order negotiation
- Review of contractor pay requests and contract close-out

Critical Issue - Construction Phasing

- Continental would not permit any reduction in the number of operating gates during construction. A temporary building was erected to supply four (4) gates while Terminal E and the associated paving were constructed and connected to Terminal C.
- Extensive coordination to accommodate the airport's requirement to maintain two-way traffic on "SD".
- Coordination of construction activities of four coincidental construction projects of Terminal E, the FIS building, apron construction and entrance road and parking garage improvements.

**Reconstruction & Widening of Terminal C Southeast Ramp (Terminal E Apron),
George Bush Intercontinental Airport, Houston, TX**

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Primary design engineer for the apron expansion for the new Terminal E at GBIAH; included the removal and replacement of existing apron pavement and a small expansion to the apron to accommodate expansion of Terminal "C" by approximately 10 gates.

In approximately two years, the project quadrupled in size and scope as Continental Airlines took over the design to construct a new 23 gate terminal. The final project elements included design of:

- Apron pavement to within 5–feet of the proposed terminal building
- Slotted drains and a very deep box culvert system to capture storm water run-off
- Oil-water separator and lift station for capturing and handling first flush of run-off from the pavement
- Design of water, sewer and other utilities
- Underground fueling system for the new 23 gates
- Widening of Taxiway SF and Taxiway SD to accommodate Group 5 Aircraft,
- In-pavement lighting signage and marking
- Fiber optic backbone from the lift station to the CIC building.

Houston Airport System, Terminal Loop Road Reconstruction, Phase I, William P. Hobby Airport, Houston, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Performed the drainage study and design for the Terminal Loop Road reconstruction at William P. Hobby Airport.

The roadway would provide the primary drainage conduit for the entire expansion at the airport including the new terminal building and FIS, new Central Utility Plant and Parking Garage.

Ms. Hollaway managed four separate design teams to ensure the drainage study and plans would accommodate all planned construction stormwater runoff. She coordinated with the City and Design teams to obtain the required Code Enforcement and Office of the City Engineer Construction Permits.

Design and Construction of Taxiways A, D and F, Ellington Airport, Houston, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and construction of Taxiway A, D, and F at Ellington Airport included pavement demolition, construction phasing, paving for approximately 500,000 square yards of apron and taxiway pavement. This included upgrade of the airfield taxiway, apron lighting systems and drainage improvements. Ms. Hollaway served as the primary point of contact on the project with Jacobs. She coordinated closely with Airport Operations personnel as well as tenants for the closure of the Taxiways while maintaining an operational airport. Ms. Hollaway designed quick construct pavement sections for all taxiway work tie-ins to Runway 17R-35L to minimize the duration of the runway closure required to construct the pavements.

DCP Midstream Airport Work Plan and Airspace Study for Pipeline Construction, Ellington Airport, Houston, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Developed a work plan for DCP Midstream to complete pipeline repairs construction along the western property line of Ellington Airport and crossing into the Airport Operations Area on the south side of the airport.

The project included creating a work plan that considered construction safety, aircraft safety and operational areas, secure entrance and the impacts of construction operations on the daily operations of EFD for new pipeline construction running along the western edge of the EFD property and crossing through the Airport Operations Area on the south side of the airport. Airspace Study was submitted to FAA-Form 7460 to determination of the impacts of the construction on Runway 4-22 and Runway 17R-35L at EFD. There was continual coordination between Houston Airport System design and operation staff, DCP Midstream and the Contractor at preconstruction meetings.

Enterprise Seaway Pipeline Construction Airport Work Plan and Airspace Study for Pipeline Construction, Ellington Airport, Houston, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Work plan development for Enterprise Seaway Pipeline to complete pipeline repairs construction along the western property line of Ellington Airport and crossing into the Airport Operations Area on the south side of the airport.

Work plan focused on construction safety, aircraft safety and operational areas, secure entrance and the impacts of construction operations on the daily operations of EFD. The new pipeline construction ran along the western edge of the EFD property and crossing through the Airport Operations Area on the south side of the airport.

Airspace Study was submitted to FAA-Form 7460 to determination of the impacts of the construction on Runway 4-22 and Runway 17R-35L at EFD. There was continual coordination between Houston Airport System design and operation staff, DCP Midstream and the Contractor at preconstruction meetings.

Phillips Pipeline Airspace Studies, Houston Area, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Six separate Airspace studies for Phillips Pipeline at six separate General Aviation airports in the Houston area. The Airspace studies were required for construction of a new pipeline corridor from the Beaumont Area through Houston to the Sweeney area. Coordinated and submitted the FAA Form 7460 for FAA review and determination.

GA Airports (Last Five Year)

Texas Department of Transportation (TxDOT) Aviation Division Lone Star Executive Airport, Extend Runway 14-32 and Parallel Taxiway, Montgomery County, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and construction of a 1,500 foot extension of Runway 14-32 and parallel Taxiway A

The work associated with this extension consisted of concrete pavement design, grading and drainage, pavement markings, perimeter road, electrical and Navigational Aids (NAVAIDS) relocation.

Project Elements:

- FAA coordination for the relocation of the ILS.
- Extensive drainage analysis of Crystal Creek and proposed culvert beneath Runway 14-32, termination of Airport Road across the proposed runway extension.
- A quarter of a million cubic yards of excavation required for the project to meet standard grading criteria.
- Floodplain mitigation: Crystal Creek lies within the proposed RPZ of Runway 14-32, and its associated floodplain boundary encroaches into Runway 14 end safety area. In order to develop the grading of the RSA to FAA standards.
- Proposed perimeter road around the north end Runway Protection Zone was proposed and included seven crossings of Crystal Creek.

- A HEC-RAS model was created for Crystal Creek within the Airport property limits, and culverts were designed to provide no impacts upstream and downstream of the airport.
- Design of a large box culvert beneath the Runway and Taxiway extension to convey the 100-year flow for approximately 315 acres upstream of the Airport and convey that flow to a proposed detention pond before outfalling into Crystal Creek.
- Detention pond to mitigate the increased impervious cover as a result of the new pavement.
- Relocation of the Glideslope, Medium-intensity Approach Lighting System with Runway Alignment Indicator Lights, Localizer and associated sheds.
- Relocation of the Automated Surface Observing System

Critical Element: The extensive amount of grading required. This important design effort was completed utilizing 3D modeling technology to develop a grading and drainage model to accurately quantify the amount of earthwork that was required as a result of the floodplain mitigation, detention pond and construction of the runway and taxiway extension. FAA coordination was critical throughout the project.

Texas Department of Transportation (TxDOT) Aviation Division, Coulter Field Airport, Pavement Rehabilitation and Airfield Electrical Improvements, Bryan, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: The design and construction of the pavement edges and shoulders of Runway 15/33. Existing stake mounted runway lights and the bury system was no longer functionally reliable. The Constant Current Regulators in the vault were at the end of their service life and needed to be replaced.

Project Background: This project included:

- Removal of grass from pavement edge and crack sealing to meet FAA requirements.
- Airfield electrical improvements: Replaced the MIRLs with LED MIRLs in a can and conduit system including lightning protection.
- Replaced the primary and supplemental wind cones with LED tip downwind cones and constructed a new segmented circle.
- CCRs in existing vault were removed and replace with new CCRs.
- Constructed a drainage flume
- Repaired erosion at the headwall of the existing box culvert under the Runway

Texas Department of Transportation (TxDOT) Aviation Division, Bridgeport Municipal Airport, Runway Reconstruction and Airfield Electrical Improvements, Bridgeport, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and reconstruction, extending and widening Runway 17-35

Project Elements:

- Relocated and constructed a new parallel taxiway and cross taxiways.
- Reconstructed the asphalt apron pavement.
 - Airfield pavements were constructed with P-401 bituminous concrete pavement on stabilized soils with P-209 aggregate.
- Upgrades to the airfield drainage using both open ditches and culverts crossing under the pavements.
- Construction of an underdrain along the runway and taxiway pavements to protect pavement and base material from potential underground flows.
- Installation of new MIRLS, upgraded airfield signage, new electrical vault, new PAPIs and airfield beacon and tower.

Critical Element: Numerous pipelines crossed the airfield. This required coordination with various pipeline companies as a critical element of the design. Ms. Hollaway assisted both TxDOT and the City of Bridgeport in negotiations with the pipeline companies to relocate or remove pipelines.

Texas Department of Transportation (TxDOT) Aviation Division, Kleberg County Airport, Reconstruct Runway 13-31 and South Parallel Taxiway, Kleberg County, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and construction phase services for the reconstruction of Runway 13-31 and the south parallel taxiway at the Kleberg County Airport. The project consisted primarily of pavement and drainage design. The new runway and taxiway pavement was designed to re-use 100% of the existing asphalt and base material as a quality base for the new pavement. This reduced the overall construction time and construction cost. Other project elements:

- Drainage Study
- Drainage improvement to reduce flooding:
 - Replaced failed culverts under the existing cross taxiways
 - Re-graded the infields
 - Improved Runway Safety
- Captured and re-routed stormwater run-off upstream and detained it offsite

Texas Department of Transportation (TxDOT) Aviation Division, Gillespie County Airport, Pavement Rehabilitation, Helicopter Apron, and Hangar Apron, near Fredericksburg, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: A design and construction phase services for the rehabilitating of the existing runway, taxiway and apron pavement. The runway, taxiway, and apron, incorporating nearly 142,000 square yards of rehabilitation including crack repair and maintenance seal coat.

- Construction of a new 2,900 square yard concrete helicopter parking apron and
- A 3,300 square yard bituminous hangar apron.
- Modifications to the airports detention pond and outfall structure to increase for stormwater runoff
- Replacement of stake mounted MIRLs with can mounted MIRLs and the direct bury cabling upgraded to provide for cabling in conduit.
- Replaced primary and secondary windcones
- 1,800 linear feet of game fencing deter wildlife from the airport property.

Texas Department of Transportation (TxDOT) Aviation Division, Georgetown Municipal Airport, Runway Safety Area Grading and Miscellaneous Pavement Repairs and Improvements, Georgetown, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Assignment consisted of clearing and grading the extended runway safety area for Runway 36 and installing new chain link fencing around the newly purchased property at the south end of the airport. Additional elements:

- Reconstructed Taxiway G and Taxiway H
- Crack sealing and seal coating all asphaltic pavements
- Re-striping the airfield pavements.

Texas Department of Transportation (TxDOT) Aviation Division, San Saba County Airport, Runway Extension, Pavement Rehabilitation and Electrical Improvements, San Saba, Texas (2011)

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and construction phase services to extend Runway 13-31. The project involved:

- Extending Runway 13-31 approximately 400 feet north

- Constructing a hold apron/turnaround on Runway 31
- Reconstructing failed pavement sections of Runway 13-31 and the hangar apron
- Pavement design, demolition, and grading and drainage for Runway Safety Area
- Correcting grading issues
- Improved drainage along the shoulders of Runway 13-31
- Installation of Medium Intensity Runway Lights
- Installation of new PAPI
- Coordinated construction phasing to maintain an operational runway for as long as possible during the project.
- Removal and relocation of wildlife game fencing
- Installation of new airport signage
- Replacement of the rotating beacon, tower and the wind cone
- Airport pavements were crack sealed, seal coated and marked

Small Air Carrier Airports

Reconstruct GA Apron, Phase II and III, McAllen-Miller International Airport, McAllen, TX

Project Manager/Project Engineer: Sheri E. Hollaway P.E., CM

Project Profile: Reconstruction of approximately 76,000 square yards of general aviation ramp pavement, construction of a new stormwater drainage system totaling over 3,500 feet in length and approximately 6,000 feet of security fencing.

Project Elements:

- Designed six alternates to assist the Owner in competing for FAA discretionary funds.
- Completed in three separate construction phases and under two separate FAA AIP Grants.
- Constructed of bituminous concrete, approximately $\frac{3}{4}$ of the reconstructed ramp was constructed using Portland cement concrete (PCC). Remaining ramp was reconstructed using bituminous concrete.
- System upgraded storm sewers to 15-inch through 72-inch culverts to convey flows for the ultimate build out of the ramp.
- Fuel trapping structure to capture relating to fuel spills in the fueling ramp area of the two FBO's.
- Design/installation of a user-friendly wash-rack, complete with several water meter connections and hose-bibs.
- Removal of underground storage tanks from the ramp area.
- Installation of Precision Approach Path Indicator (PAPI's) for Runway 18-36.

- Installation of sanitary sewers from the water rack to the city main.
- Overhead ramp and edge lighting.

Re-Grade Extended Runway Safety Areas, McAllen-Miller International Airport, McAllen, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Construction of this project was to re-grade the Extended Runway Safety Areas (ERSAs) at the Airport to meet FAA requirements.

Design Elements:

- Installation of a large box culvert system to enclose existing drainage ditches that surrounded the airport property and encroached on the ERSA.
- FAA coordination for construction work around and adjacent to the FAA's NAVAIDs.
- Perimeter Service Road was improved and relocated to ensure it did not encroach in the ERSA.
- Security Fencing was also installed along the airport perimeter.

Significant portions of the project were constructed as night-only work to minimize operational impacts to the Airport's longest and only ILS runway.

McCreery Aviation Hangar Development Airspace Studies, McAllen Miller International Airport, McAllen, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Two separate Airspace studies for McCreery Aviation at McAllen-Miller International Airport in McAllen, Texas.

Project Background: Coordinated and submitted the FAA Form 7460 for FAA review and determination.

Airport Improvement Program Coordination, FIS Conceptual Study, Corpus Christi International Airport, Corpus Christi, TX (2009-2010)

Facility/Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Extension of staff to the Airport Director and staff in the development and coordination of the Airport Improvement Program (AIP); Project Manager for the FIS Conceptual Study.

The Federal Inspection Facility was undersized to meet the passenger requirements for an international flight. This project investigated minimum design requirements for FIS facilities and developed conceptual layout of an expanded facility designed to more

than quadruple the current FIS capacity according to the Federal Customs & Border Protection specifications.

Electrical Tunnel Study was performed on the existing 50 year old leaking tunnel located under the Airport's air carrier pavement. The team prepared recommendations for repair or replacement of the tunnel based on the field testing and investigation. Extensive Field testing was undertaken. It was determined that the existing vault was structurally sound and strong enough for the anticipated aircraft loading. Recommendations for repairing the cracks and sealing the conduit penetrations in the tunnel walls were provided.

Construct Taxiway "V", Lubbock International Airport, Lubbock, TX

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and construction administration for paving, storm sewer, construction phasing, and drainage for a new exit taxiway.

The project consisted of the design of approximately 11,000 square yards of 14 inch non-reinforced PCC pavement with 6 inch cement treated base for the new taxiway. The new taxiway crosses one of the Playa Lakes in the Lubbock area and was designed as a balanced cut-fill project. All embankment material was excavated from the Playa Lake to maintain the detention volume.

Design elements:

- Temporary PAPI system
- Temporary threshold lighting system for the displaced threshold
- Installation of new guidance signs, new MITL's and HIRL's
- Modifications to the electrical vault to place the new taxiway lighting and guidance signs on a separate circuit

Critical Issues:

One third of the construction area was inside the Runway Safety Area. The phasing of the construction minimize operational impacts during construction adjacent to the airport's primary runway

Install Security Fencing, Amarillo Rick Husband International Airport, Amarillo, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and construction included the installation of approximately 10.5 miles of new security fencing with a concrete mow strip around the airport property; initiated immediately after 9/11 for airport security.

The new fencing installed was 8 foot chain link with 3-strand barbed wire. A 3 foot wide concrete mow strip was constructed at the base. The project included installation of numerous access controlled gates for both vehicle and pedestrian access.

General Aviation Airports

Texas Department of Transportation (TxDOT) Aviation Division, Decatur Municipal Airport, Extend Runway 35, Decatur, TX

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and construction manager for a 300-foot bituminous extension of Runway 35, a hold apron for Runway 17 and a hangar access taxiway.

Design Elements:

- Installation of REIL's on Runway 17
- Airfield signage and marking modifications
- Relocation of water, sewer, and phone and power utilities for the corporate hangar areas
- Design of a new service road from the airport entrance to the new hangar area
- Storm drainage and detention for the taxilane for future development

Specific attention was given to minimizing total earthwork for the project in order to control costs and meet agency funding eligibility requirements while stockpiling material on the airport to accommodate the airport's plan to build corporate hangars along the proposed taxilane.

The use multiple additive alternates, and coordination with funding agencies, allowed the owner to not only award the functionally completed base bid, but several alternates. This allowed for maximum use of the available funds while facilitating the future development needs of the airport and community.

The project was designed using P.401 bituminous pavement for all base bid construction with additive alternates for P. 501 Portland Cement Concrete Pavements.

Texas Department of Transportation (TxDOT) Aviation Division, Gillespie County Airport, Drainage Study and ALP Update, near Fredericksburg, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Master Drainage Study and Airport Layout Plan (ALP) update for planned future development. Elements of assignment:

- Master Drainage Plan (Note: Without the Master Drainage Plan, the Airport was required to obtain TxDOT and City of Fredericksburg approval for each individual development project undertaken.)
 - Study evaluated the existing drainage system as well as near term and long term builds out of the airport.
 - Models were developed to assist in determining the required drainage and detention systems necessary for the development.
 - Elimination of the existing airfield detention, located at the center of the airport in prime development property.
- Cost estimates for in developing a Capital Improvement program
- Coordinated with TxDOT and The City of Fredericksburg to obtain approval for any and all construction and development
- Coordinated with the FAA for approval of the proposed onsite detention facility.

Texas Department of Transportation (TxDOT) Aviation Division, Liberty Municipal Airport, Drainage Study, Liberty, Texas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Drainage study and Environmental investigation

The study purpose was to develop alternatives for improving drainage out of the airport infields, filling in the stock pond if possible.

New culverts were installed under the existing runway out falling into newly graded ditches to the county road west of the airport. An existing stock pond, intended to act airport water detention, was lower than the outfall from runway infields providing no benefit. During the alternatives development, it was discovered that the pond was considered a waterway of the United States. Ms. Hollaway coordinated with TxDOT and the US Army Corp of Engineers to determine the required permitting and studies to complete final design and construction of the project.

Widen Taxiway A, Phase I, West Memphis Municipal Airport, West Memphis, Arkansas

Project Manager: Sheri E. Hollaway P.E., CM

Project Profile: Design and construction to widen the parallel Taxiway "A" from stub Taxiway "C" to Runway 35.

Design Elements:

- P-501 PCC Pavement as well as P-401 bituminous pavement, grading and drainage
- Upgrade of the existing taxiway lighting system and signage improvements
- Rehabilitation of the runway, including spall repair, joint repair and crack sealing was also an important part of the project

Critical Issues:

- Design of separate pavement sections for the Taxiway tie-in at Runway 35 to minimize closure of the airport's only runway.
- Fast construct pavement sections were specifically designed for these tie-ins whereby the existing pavement could be demolished and new pavement reconstructed with a single weekend of runway closure.
- Detailed construction phasing was completed to ensure that airport operations were minimally impacted and runway closures for repairs were scheduled as night only work.

This was Phase I of a two-phase project to widen the parallel and stub taxiways.

Extend Runway 4, Walnut Ridge Regional Airport, Walnut Ridge, AK

Project Manager: Sheri E. Hollaway

Project Profile: Design of 1000 feet of P-401 bituminous extension to Runway 4.

Design Elements:

- Relocation of an existing water and sewer line
- Installation of drainage improvements and design of a drainage channel to the extended runway safety area

Critical Issues: - Wetlands in Runway Safety Area

- Wetlands mitigation and relocation
- Extensive embankment bring the Runway Safety Area to grade
- Wetland mitigation and improvements to the runway / taxiway lighting systems

PM worked with the airport manager and the area highway engineer to locate proposed borrow sites and complete geotechnical testing of the soils at the identified locations to ensure that sufficient and approved borrow material could be provided for the project.

Re-grade Runway and Taxiway Shoulders, Purchase New Vacuum Sweeper, West Memphis Municipal Airport, West Memphis Arkansas

Project Manager/Project Engineer: Sheri E. Hollaway P.E., CM

Project Profile: Re-grade and re-establish the runway and taxiway shoulders. Constructed primarily on very silty, organic and highly erosive topsoils, the airport did not have paved runway or taxiway shoulders. The soils erosion resulted in drop-offs from the edge of pavement to the top of the shoulder in excess of three to five inches. FAA Advisory Circulars limit the pavement drop off to a maximum of two-inches. There was minimized impact to the airport users due to closures of the airport's only runway.