R.L. Jones Airport Drainage Improvements

Tulsa Airport Authority, OK
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Completed in 2009

Meshek & Associates, PLC, provided civil design and construction inspection services for the R.L. Jones Airport under the Drainage Improvements Project totaling nearly $7 million in cost. The work begun in 2001 with the preparation of a Drainage Master Plan to address existing drainage issues. This phase of the project included the preparation of a GIS using ArcView V3.2 to facilitate the hydrology and hydraulics analysis, and to document all survey data and study information in the GIS format used by the Tulsa Airport Authority. The Master Drainage Plan resulted in the recommendation of several drainage improvements to be completed in three phases.

Phase I, completed in 2006, included design and construction management services for a 78-inch storm sewer outfall from N. Birch Street to the Arkansas River. Because this outfall pipe penetrated the existing levee, extra precautions were taken to ensure that flood protection was not compromised during the construction of this much needed improvement.

Phase II, completed in 2007, continued the improvements constructed in Phase I to include extension of the 78-inch trunk line from Birch Street to the airport property. This phase of the work also included improvements to the conveyance of stormwater system (from the northeast portion of the airport property to the detention facility in the southeast corner of the property) and enhancement of the existing detention facility to accommodate additional flow.

Lastly, Phase III of the project, completed in 2009, concluded the construction of drainage improvements on the airport property (from the southeast detention facility around the south and west up to the westerly entrance). Enhancements incorporated additional storage at the south end of the existing runways and in the southwest corner of the property. The runway safety zone will also be improved in this phase.

Top: ArcView V3.2 used to facilitate the hydrology and hydraulics analysis. Middle: 78-inch Levee penetration. Bottom: Design drawing of proposed improvements.

Project Fee and Special Features

Construction Cost: $7,000,000

Notable aspects of the design include the design of a new 78-inch Levee penetration and enhancement to existing stormwater conveyance and storage facilities.

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