SECTION 106 REVIEW FOR TERMINALS C+A PIERS AND RENOVATIONS

DFW Central Terminal Area Expansion

Komatsu Architecture Contract Delivery Order 27 – Revision 4 06.27.2022

Marie Oehlerking

From:	noreply@thc.state.tx.us
Sent:	Friday, July 22, 2022 5:22 PM
То:	Marie Oehlerking; reviews@thc.state.tx.us
Subject:	Section 106 Submission

Categories: Filed by Newforma



Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas THC Tracking #202211732 Date: 07/22/2022 DFW Airport Terminals C & A Piers and Renovations 3003 South Service Road Dallas,TX 75261

Description: This project includes two additions to Terminal C and A respectively. It also includes interior renovations to both terminal buildings. Email to follow with oversized drawing files.

Dear Marie Oehlerking:

Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The review staff, led by Justin Kockritz and Rebecca Shelton, has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

• THC/SHPO concurs with information provided.

• No historic properties are present or affected by the project as proposed. However, if historic properties are discovered or unanticipated effects on historic properties are found, work should cease in the immediate area; work can continue where no historic properties are present. Please contact the THC's History Programs Division at 512-463-5853 to consult on further actions that may be necessary to protect historic properties.

Archeology Comments

• No historic properties affected. However, if cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC's Archeology Division at 512-463-6096 to consult on further actions that may be necessary to protect the cultural remains.

• THC/SHPO concurs with information provided.

We have the following comments: THC concurs that there are no historic properties that would be affected by the proposed Terminal A Renovation and Pier, Terminal C Renovation and Pier, and Terminal C Garages and Roadways projects.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If the project changes, or if new historic properties are found, please contact the review staff. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: justin.kockritz@thc.texas.gov, rebecca.shelton@thc.texas.gov.

This response has been sent through the electronic THC review and compliance system (eTRAC). Submitting your project via eTRAC eliminates mailing delays and allows you to check the status of the review, receive an electronic response, and generate reports on your submissions. For more information, visit <u>http://thc.texas.gov/etrac-system</u>.

Sincerely,

for Mark Wolfe, State Historic Preservation Officer Executive Director, Texas Historical Commission

Please do not respond to this email.

CULTURAL RESOURCES EVALUATION TEAM

DFW Environmental Affairs Division (EAD) Sandy Lancaster, Environmental Program Manager Madison Peppers, Environmental Project Manager

Landrum & Brown, Prime Consultant Andrew Kirchoff, Vice President Rob Adams, Project Manager

Komatsu Architecture, Lead Cultural Resources Sub-Consultant Karl Komatsu, Principal Investigator and Historical Architect Marie Oehlerking-Read, Historic Preservation Architecture Specialist

Integrated Environmental Solutions Kevin Stone, Vice President & Cultural Resources Director



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Included as separate files:

- C. Proposed Project Drawings (Folder)
 - i. Terminal A Renovation & Pier Drawings
 - ii. Terminal C Pier Drawings
 - iii. Terminal C Renovation Drawings
 - iv. Terminal C+A Renovation and Piers Basis of Design
 - v. Terminal C+A Renovation and Piers Renderings
- D. Design Criteria Packages (Folder)
- E. Terminals Cultural Resources Evaluation (PDF)
- F. Archeological Resources Desktop Analysis for the DFW Airport CTA Expansion by Integrated Environmental Solutions (PDF)



June 27, 2022

Mark Wolfe State Historic Preservation Officer Texas Historical Commission P.O. Box 12276 Austin, TX 78711-2276

RE: Initiation of Section 106 Consultation for Terminal C & A Renovations and Piers Project

Dear Mr. Wolfe:

On behalf of the Dallas Fort Worth International Airport and the Federal Aviation Administration (FAA), Komatsu Architecture is initiating consultation with the State Historic Preservation Office (SHPO) for the proposed Terminals C & A Renovations, Terminal C Garage and Roadways rehabilitation, and Terminal A & C Piers project (Piers) at DFW International Airport property. The DFW International Airport is seeking approval from the FAA to modify their Airport Layout Plan (ALP) to reflect the permanent alterations as proposed in this project. Since the ALP modification is considered a federal action, the FAA will review the undertaking in accordance with the National Environmental Policy Act of 1969 (NEPA). In addition, coordination with the SHPO, represented by the Texas Historical Commission (THC) is necessary in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations, 36 CFR Part 800, which requires that federal agencies consider the effects of their undertakings are project involving permits, funding, or other assistance. Therefore, we are requesting a review of the project to determine THC/SHPO recommendation to proceed. The Piers project includes the following design packages:

- Terminal A Renovation and Pier
- Terminal C Renovation and Pier, and
- Terminal C Garages and Roadways upgrades

The purpose of the project is to accommodate anticipated natural growth at DFW Airport by adding additional gates at Terminal A and C by adding new Piers that will connect to Terminal A in the vicinity of the North Skylink Station, adding a total of 5 net gates, and in the vicinity of the South



Skylink Station at Terminal C, adding a total of 4 net gates. To support the additional gates, limited modifications to the north, center, and south passenger processors are also included. Terminal C will also receive interior renovations throughout the entire footprint of the existing building. This interior work will include, replacing existing building systems, installing new finishes, and changing how the terminal functions internally to enhance the passenger experience, which requires a third addition located on the landside at the entry portals. Each portion of the project is explored in more detail in this report.

The Piers project will be constructed during the same general timeframe as the other Airport projects in the Central Terminal Area (CTA) Expansion. The CTA Expansion includes improvements and modifications to Terminal A and C in order to improve airport efficiency and accommodate growth. DFW and FAA recently coordinated with THC on the projects listed below:

- Utility Delivery System (UDS) includes Central Utility Plant, Boiler House, Pump House, and Utility Corridor – Section 106 report submitted to THC on Feb. 25, 2022; THC Concurrence received on March 10, 2022.
- Project Integration Office (PIO) New development on a vacant parcel within the southwest quadrant of DFW Airport. Section 106 review, particularly for archeological resources, was completed, and THC concurrence was received in 2018.
- High C Gates Replacement Demolition and rebuild of High C Gates; these were constructed in 1987. Section 106 review is completed, and THC concurrence was received on September 30, 2020.
- Airfield Ramp Efficiency Demolition and rebuild of Infields for improved aircraft movement including relocation of the Northeast Lighting Vault. Section 106 review is complete, and THC concurrence was received on April 20, 2022.







Image 1. CTA Expansion Program Overview

DFW Airport Cultural Resources Evaluation Overview

For the last two years, DFW Airport has proactively reviewed the Airport Operational Area (AOA) for potential historic resources as the Airport's age nears fifty years. The investigation process for the Evaluation report was organized in the following order:

- Terminal C Cultural Resources Evaluation (Task 1)
- DFW Airport Cultural Resources Evaluation: Terminals A, B, & E (Task 3A)

The resulting Terminals Cultural Resources Evaluation report is included in Attachment E. Detailed reviews of the Terminals' history, design, and existing integrity are included in this report along with historic contexts for the Airport as a whole. Detail analysis of the Terminals' eligibility for the National Register is also included in the report. Two intervening Section 106 Review reports have also been undertaken in this process. Those include:

- High C Gates Section 106 (Task 1B) Review complete and concurrence received from THC.
- Airfield Ramps Efficiency Section 106 (Task 4A) Review complete and concurrence received from THC.

These "Task" assignments were authorized by DFW EAD and provide the basis for this "Task 4B" report, which outlines the Section 106 consultation process for the Terminal C & A Renovations and Piers project. The Task sequence was driven in part by the schedule for the Airport's ongoing projects and the airline tenant needs, as well as replacement of aging infrastructure to meet current and future



capacity demands based on industry and DFW specific traffic projections. The Evaluations have followed standard protocols, recognized research, and information for cultural resource data to support National Historic Preservation Act (NHPA) Section 106 requirements to date at this stage of the process.

UNDERTAKING

The undertaking includes the following proposed additions and renovations. At Terminal C and A, a Pier addition will be added directly adjacent to one of two Skylink stations at each Terminal, southern station at C and northern station at A. The addition will include modifications to the exterior and interior of the Terminal building. Both Pier extensions have two floor levels. The Ramp level contains a new baggage handling system along with building support and services rooms, and American Airlines operations rooms. The Concourse level for both will provide new gate lounges and boarding areas, restrooms, and concessions areas. Terminal C will receive a second addition on the landside to expand the Ticketing and Bag Claim halls. This two-story addition will include a double-height space on the west and south sides to allow daylight to penetrate into the Bag Claim Hall. The expansion also provides an additional entry vestibule into the terminal along with vertical circulation elements. The addition attaches to and partially covers the 1974 landside façade. The landside addition at Terminal C is separate from the High C Gates modular addition currently under construction. Interior renovations will be undertaken at both Terminals. Terminal A will have limited interior renovation to alter the flow of the existing facility to support the Pier addition. Terminal C will receive a complete interior renovation to make the flow of pedestrian traffic more efficient. Details for each project component have been included below.

The Piers project is an important project for the continued growth of DFW International Airport (DFW) and American Airlines (American). Terminal C is the most active terminal for American and the existing conditions cannot support the demands of a modern airport terminal. The Piers and renovations will extend the life of the Terminals another thirty years.







Image 2. Terminals A and C Proposed Site Plan

Terminal C South Pier Addition

Following the High C Gate replacement, which is currently under construction as reviewed and concurred by the THC, which includes four gates, the Terminal C South Pier addition will provide nine gates, with a net increase of 4 gates. The configuration allows expansion of the original semicircular Terminal design. The Pier will tie in through the Skylink concourse and connect to the Terminal's existing concourse. This is part of DFW's strategic planning to make Terminal C, and next Terminal A, serviceable for the next thirty years.

Previously, DFW and other airports have expanded terminals in a similar manner with the "Stinger" layout, which provides elongated gate access through more temporary gate accessways. Terminal B is an example of this. The proposed new Pier is an iteration of the "Stinger" layout. This concept allows the original semicircular terminal configuration to accommodate more gates. It is also a transitional strategy to continue use of the original Terminals, as compared to total new construction seen at Terminal D, which is significantly differentiated from the original 1974 design through added height, geometry, transparency, and materials.







Image 3. Terminal C Expansion and Pier Phasing Plan.

The Terminal C South Pier will connect to the Terminal through the existing Skylink portal concourse that was constructed in 2005. The Skylink portal greatly altered the exterior appearance of the Terminals. Further explanation of Terminal C's development history is discussed in Attachment E. The exterior design of the Pier is a continuation of the introduction of new exterior aesthetic design features and color from the 2011-2017 TRIP features at Terminals A, B, and E. The new Pier design adapts that precedent and takes the transition features further. The physical "tie-in" to the existing Terminal precast concrete and window wall system on the airside provides a marked departure from the heavier material and coloration of the original Terminal shell, and provides a lighter, sleeker, and perhaps in today's version of airport design, a more appropriate "arrival image" of a refitted new commercial aviation terminal. The attachment of new and existing occurs appropriately at the modular sectional joints of the existing Terminal structure. The refitting of new horizontal window wall systems and assumed electro-chromic glass as featured in the trial bays of Terminal A at gates 23-25, within the original precast structure, further expresses the transition of the new pier facade design as it grows out and protrudes away from the existing semicircular geometry. Although not required, this does follow the basic philosophical and treatment tenets of the Secretary of the Interior's guidance for additions – to distinguish between original and new. The massing and scale of the Pier addition, compared to the



original, is also maintained, while reflecting the new functional split of arrival and departure levels of the reconfigured vertical height. This is done through a vertical separation. The Pier design separates the departure enplaning sequences from the flight arrival deplaning sequences.

The goals of the interior of the Piers include open spaces, easily identifiable paths of travel for passengers, and maximization of views to airside daylight will be achieved by the design. This will be accomplished through careful logical planning that maintains sufficient minimum 20-foot corridors, clear and easily identifiable signage and a curtain wall system that optimizes the floor to ceiling glazing units. A proscenium arch with LED signage will designate each gate. In addition, there will be one vertical LED signage column per gate lounge. A metal baffle ceiling with integrated linear lights will highlight the corridor spaces while a baffle ceiling with a modulated spacing will be used in the gate lounges. A perforated metal ceiling visually indicates the gate area.

As illustrated in the drawings and renderings below, the Terminal C Pier design is an extension of the 2005 Skylink Station design, as the overall style, materials, and color pallet coordinate. While different from the original precast concrete, semicircular design of HOK, the Skylink building vocabulary and massing now form a transitional spacer or connector from which the new Pier concept physically and conceptually attaches and extends outward. While the original design of the Skylink component was not envisioned this way, the subsequent design response and need of the Pier extension concept now makes it a rational progression of additions to the Terminal. The full set of 35% drawings has been included in the Attachment C folder.





Image 4: Terminal C Pier Aerial Rendering



Image 5: Terminal C Pier Exterior Ramp Rendering





Image 6: Terminal C Pier Interior Rendering





Image 7: Terminal C Pier Axons





Image 8. Terminal C Pier Floor Plan



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Image 9. Terminal C Pier Finish Diagrams



Terminal A North Pier Addition



Image 10. Terminal A Pier North Site Plan

Terminal A North Pier is conceptually the same to Terminal C South Pier. The internal functions and additional gates distinguish it from being an exact duplicate of the C Pier. The Skylink Station, again, acts as a transitional connector and the Terminal A Pier has the same architectural elements including materials and color pallet. By its location on the opposing side of the semicircular Terminal configuration, it requires a modified footprint for aircraft movements. It uses the same connection concept at the existing Skylink Station and Concourse layout to integrate its passenger circulation into the main terminal concourse. The Terminal A Pier will provide 10 gates, with a net increase of 5 gates.

Less interior renovation is required because Terminal A was included in the 20011-2017 TRIP updates. Some current standards updating, and the tie-in of the Pier will still require interior modifications and finish updates. Modifications to the existing terminal include new baggage handling space and relocation of security equipment. Select drawings and renderings illustrate this portion of the project are included below. The complete set of drawings is included in the Attachment C folder.







Image 11. Terminal A Pier Aerial Rendering



Image 12. Terminal A Pier Interior Rendering





Image 13: Terminal A Pier Axon





Image 14: Overall Terminal A Concourse Leve Renovation Plan





Image 15: Overall Terminal A Concourse Leve Pier Plan



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Image 16: Terminal A Concourse Level Finish Diagram



Terminal C Renovation

The Terminal C Renovation project primary work scope is to upgrade the infrastructure, functionality, and aesthetic of the Terminal to extend the life of the facility. The interior renovation of the Terminal's check-in areas, public restrooms, gate lounges, employee offices, and the operational areas, including new TSA Security Screening Checkpoint configurations, concession, and boutique retail facilities are included in the renovation. Security and Post-Pandemic health and safety criteria have influenced the new interior design concept design and passenger waiting area furnishings and layouts. This project brings Terminal C's interiors up to the same renovated standards that were accomplished in Terminals A, B, and E in the 2011-2017 Terminal Renovation Improvements Program (TRIP). In addition, the renovation will include preparation of the areas affected by the Terminal C Pier. The interior work will be completed in phases to allow the ongoing use of portions of the Terminal during construction.



Image 17. Extents of Terminal C Renovation Project.



The Terminal C Renovation reworks the existing vertical stacking arrangement separating the arrival and departure services allowing for more efficiency and comfortable passenger movement. The new arrangement is described by the Concept Design Team as:

"The terminal's current stacking arrangement has both arrival's and departure's functions on the upper-level. While there can be advantages to keeping everything on a single level, this has resulted in some negative passenger experience and operational issues. First, since both departure's drop-off and arrival's pickup share the upper-level roadway, vehicles are constantly weaving in and out of each other to find their appropriate spot on the curbside. In addition, vehicles are also trying to find the exits further increasing the amount of wave within the roadside. This congestion can also be seen on the interior of the Terminal at the Concourse Level. Departure's functions, arrival's functions, and concourse functions area all vying for the same space so that they can achieve the operational expectations set for them. For example, bag claim halls have taken the place of what would be revenue generating space for concessionaires. Another resultant of this is a poor wayfinding experience, passengers enter and exit the facility at different locations. Critical landmark moments are missing to help orient passengers and serve as strong intuitive wayfinding cues.

In order to alleviate these concerns, the arrivals functions will move to the lower level, resulting in a terminal configuration like Terminal D with departure's processors on the upper level and arrivals processors on the lower level. With processors split on two levels, it is anticipated that the vehicle traffic would be more balanced between the upper and lower curbside roadways, likely providing more effective use of overall curbside lengths. In addition, each curbside roadway would only have three general pick-up or drop-off zones to serve each of Terminal C's processors. Additionally, this would free up the Concourse Level to take better advantage of an expanded concessions program as well as create strong orientation moments to facilitate wayfinding for passengers."



Image 18. Reconfigured Arrival and Departure vertical separation for landside movement activities.









CENTRAL TERMINAL AREA EXPANSION - TERMINAL C - CHAPIER 4 | DESIGN CRITERIA PACKAGE | 26 MAY 2021 4-36 CORGAN CORGAN

Image 19. Two-story concourse areas with ticketing and security above and Concourse below with Passenger Lounges and Retail.



The Concept Design Team describes the gate seating as:

"DFW has identified an initiative to position its gate areas to serve the needs of an evolving passenger population. This includes 100% seat and table power, larger seats to increase utilization, and varied seating types. In order to accommodate the evolution of the gate area into the future, Terminal C shall integrate a strong technology backbone to be able to meet the expectations of the stakeholders. Additionally, seating offerings and furniture layouts are to remain flexible for alternative seating options."



Image 20. Enhanced Passenger Gate and Air Side Interiors including Health & Welfare layouts and features.





The exterior cladding of the addition introduces a new color scheme and architectural style including white paneling and glass curtain wall, which are seen at all recent Airport construction. The airside window wall will be modified utilizing similar glazing to the Terminal D Extension and the High C Gate Replacement using electro-chromic glass for energy efficiency enhancements.

The exterior scope items under the Terminal C Renovation include an addition at the landside that will expand the entry, ticketing, and baggage claim halls at the south portion of Terminal C. The Concept Design Team describes new entries and exterior improvements as:

"New enhanced entries will be constructed connecting the Terminal with the Garages at each of the main entry points. These will provide cover for pedestrians crossing the roadway and will serve as a landmark to signify the location of each main entry to the Ticketing Halls and Security Checkpoints. The canopies are divided into two segments. The top canopy will be anchored to the Terminal building on one side and have two concrete columns for support adjacent to the garages. The lower canopy will cantilever off of the Terminal vestibule and stretch over a portion of the roadway. There will be a total of four enhanced entries, all matching in appearance. The façade of the top canopy will accommodate signage panels similar to what was done as part of TRIP. These landmark elements also connect directly to the elevators within the garages for an improved customer experience."

Overall, the landside addition architectural design aesthetic may be interpreted as an attempt to provide a "transparent" counterpoint to the heavier, solid aesthetic of the 1974 HOK Terminal designs, even with their curtain wall systems that were dark bronze tint and brown/bronze frames. The modularity of the new addition is compatible with the original intent. However, the new DFW aesthetic emphasizes horizontal modules. As a distinction between old (existing) and new, and as an "appendage", the new design accomplishes that elusive sense defined in the Secretary of the Interior's Standards of "compatibility" with differentiation.







Image 21. Terminal C Airside Addition and Renovation



Image 22: Terminal C Airside Addition Aerial View





Image 23: Interior Renovation at Terminal C Looking Towards Parking Garages





Image 24: Terminal C Landside Addition Axons



TERMINAL C ROADWAYS AND GARAGES

The Terminal C Roadways and Garages program addresses the parking structures that are integral components to the Terminal. At Terminal C, three parking structures were added on the landside of the Terminal ring in 1985. Today, one of the three parking structures will be demolished and replaced due to weathering and performance related conditions of the concrete structure. Other sections are to be patched and repaired. All parking structures will be provided with better user information on parking spot availability, and other support services for the vehicle side of airport traffic. Originally, surface lots and some two-level parking garages were included in the design. The parking facilities now tower over the Terminals in terms of massing and bulk. As part of the original Terminal concept, the parking garages have changed the setting of the original Terminals and the original planning expanse visible at that time. The view and vision from International Parkway of an iconic village on the horizon that were the Terminals of HOK's Gyo Obata, can no longer be seen except for glimpses between the parking structures. See Attachment E for full historical context.



Image 25. Extents of Terminal C Garages and Roadways project.



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AREA OF POTENTIAL EFFECT

The Area of Potential Effect (APE) has been defined by Komatsu Architecture in the map below. An enlarged copy is provided in Attachment A. The Direct APE is applied to the direct interface of the proposed Terminal C Pier (south end of Terminal C) and Terminal A Pier A (north end of Terminal A) and approximately 100 feet outside of the immediate footprint. These components are the most significant exterior modifications proposed to the original Terminals C and A and in visual and physical proximity to the Central Terminal Area. The Direct APE also includes the overall Terminal footprints where the interior modifications are being undertaken. The Indirect APE is applied to approximately 300 feet surrounding the project areas to include all visual and physical elements within the proximity of the project.



Image 26: Area of Potential Effects Map



IDENTIFICATION OF HISTORIC PROPERTIES

Ground And Archeological Cultural Resource Investigation

IES, sub consultant to Komatsu Architecture, reviewed the project area for potential archeological cultural resources. Per the September 14, 2021 report found in Attachment F, their conclusions and recommendations were as follows:

"Komatsu and IES do not consider viable potential archeological cultural resources within the 62-acre APE of the Central Terminal Expansion project scope likely, and thus no known sites are eligible for the NRHP under Criteria Consideration D or G. With this report, DFW is requesting concurrence with the findings of this desktop analysis and the recommendation that no properties impacted by project's ground disturbances will be affected under 36 CFR Part 800.4(d)(1) within the current APE. It is the recommendation that the SHPO concur with these findings and has been prepared in accordance with FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, and FAA Order 5050.4B, NEPA Implementing Instructions for Airport Actions."

Historic Resources Analysis

The Terminals Cultural Resources Evaluation study from 2019-present explored the eligibility of the Terminal buildings. The full report is included as Attachment E. In summary, all 1974 Terminal buildings have been recommended as not eligible under National Register Criterion C for Architecture as significant modifications have occurred on both the exterior and interior of the building, which have altered the original design intent beyond recognition. The Terminals as a whole has been heavily modified and their integrity does not support any significance under Criteria C for Architecture as an individual landmark. The airside view of the Terminals from arriving flights has been compromised due to the 1984 – 2000 expansions and the addition of the Skylink structures, service modules for catering, apron functions, track and column bridging, and other additions that have obscured the original architectural setting and structures to such an extent that there is substantial loss of architectural integrity. These modifications are not only visible from the airside, but also from the north and south approach from International Parkway and the original arrival sequence for the public on the interior of the landside, which leaves the Terminals largely unrecognizable from the original





transparency and "drive to your gate" concept as constructed. The Terminal buildings are also not eligible under Criterion B for association with significant person or Criterion D for likelihood to yield information about history or pre-history.

It is the conclusion of the Cultural Resources Evaluation team that the DFW Airport Operational Area (AOA) and Central Terminal Area (CTA) continue to possess the non-physical planning attributes originally created in the 1965 to 1974 period of significance. These planning features attribute the spine road with node terminals that were intended to be expanded as the Airport grew. This concept is explored in-depth in Attachment E. The master plan iterations leading up to the 1969-1972 plan that was eventually executed by 1974 is retained in the current AOA layout and its integrity is still present even with the proposed Pier additions and renovations examined in this report. The 1974 plan, in fact, is continued even in the recently constructed Terminal D and currently deferred Terminal F program, as the placement of both Terminals maintain the original planning concept of the central spine and opposing terminal node sites. As noted in Attachment E, the process and events between 1965 and 1974 are actions of industry significance within the history of United States and even global commercial aviation. DFW's master plan eclipses the legendary Dulles Airport plan in its next generation concept of split runways with the central terminal locations between or at the end of the AOA at most major airports developed in the second half of the 20th century. DFW changed the operational pattern and capacity of airport design, influencing subsequent US and international aviation planning. Today, anyone of flying age and that has flown into or through DFW, can identify the diagrammatic planning concept of DFW from the air. This is further reinforced by various representations by DFW's branding and iconic logo which incorporates the spine and node image.

The planning concept continues to remain the essence of DFW's identity, but even that original plan concept, in its details, was designed to change and evolve overtime and the Airport has done just that, almost continuously, since its inception. Numerous projects have been undertaken to change and transform the Airport as technology and air travel have changed. Today, DFW should have the ability to plan, design, and update its operational facilities unencumbered by historic resource constraints.





The Indirect APE overlaps mostly flat, ground-level pavement that is not historic. International Parkway was reviewed as part of the "Cultural Resources Report for the International Parkway Project" (THC Tracking #202016919) completed by Integrated Environmental Solutions in August of 2020 and was determined ineligible for the National Register. Portions of the airside aprons and infield areas were reviewed as part of the "Airfield Ramp Efficiency Improvements Section 106 Assessment" (THC Tracking # 202208258) completed by Komatsu Architect in March of 2022 and were determined ineligible for the National Register as well.

The Hyatt Regency Hotel that occupies the center of the Terminal C landside ring falls in the indirect APE. The structure was original known as the Airport Marina East Hotel and was constructed around 1978, four years after the completion of the initial airport buildings. Designed by Bauer-Mori Architects of Honolulu, the hotel occupies the original surface parking in the infield of Terminal C's half loop. The hotel stood across International Parkway from Airport Marina West Hotel, which opened in 1974 in an unused half loop. The hotel plans included six levels of structured parking between the hotel and the elevated road along the land side of the terminal. The parking apparently remained unbuilt for a few years because in 1984, Datum Structures and Carter Burgess provided plans for an eight-level parking structure. The design incorporated the three levels of structured parking located against the elevated roadway when Terminal C opened.



Image 27: Top - 1984 View of Airport Marina East Hotel. Airport Marina West Hotel visible in the background. Bottom - Existing condition of the Hyatt Regency Hotel

Today, portions of the exterior look much as they did upon constructed. The interior was renovated in the 1980s and again in the early 2000s to accommodate current trends. The building was




constructed outside of the Airport's Period of Significance and altered the spatial and visual relationship between International Parkway and Terminal C of the original design intent. Therefore, the Hyatt Regency Hotel does not contribute to the Airport's significance. At this time, the building is only forty-four years old, which falls outside of historic age. The building does not qualify for National Register Criteria G: Significance prior to Fifty Years, as it does not possess any exceptional important design characteristics or historical associations. Therefore, the building is not historic in its own right. A preliminary opinion preceding its historic age evaluation, is that it does not represent any factors that would qualify the resource as eligible under Criterion C.

DETERMINATION OF FINDINGS

Komatsu Architecture finds that the proposed Terminal C & A Renovations and Piers project *does not have potential to cause adverse effects on historic properties* within the APE. This finding is proposed for both the Direct and Indirect Area of Potential Effect considerations.

The Terminal C and Terminal A Piers are similar in planning concepts and architectural design given the design documents provided to date. These additions are not the first to the original 1974 Terminals. As the Terminals Cultural Resources Evaluation in Attachment E explains, airside ring additions were added to the Terminals in1985, which compromised the architectural character integrity of the 1974 Terminal along with multiple subsequent alterations. Since the Terminals are not eligible in their own right, nor do the proposed changes affect adjacent historic resources, the Piers have "no potential to cause effects".

As extensions to the original Terminal planning and Terminal site concepts, the Piers do not adversely affect the overall master plan concept. This interpretation is based on the broader Terminal node planning concept rather than a physical, half-circle architectural design. In this matter, the interpretation relies on segregating the planning concept that is retained, from the 1974 architectural solution that was compromised with airport development of the parking, roadway, and Terminal airside additions (rings) in 1985 and later.





The Interiors of all existing Terminals have been modified since 1974. Terminal A has seen more modifications to its interior and landside exterior changes due to the TRIP scope. Terminal C has also been greatly altered from its original design as described in Attachment E. Therefore, the proposed interior renovations at both Terminals do not negatively affect historic properties.

Therefore, pursuant to 36 CFR 800.4(d)(1), Komatsu Architecture as DFW Airport's consultant and representative, and on behalf of the FAA, has determined that there are **No Adverse Effects on historic properties within the APE,** and requests the SHPO's concurrence on the consultant and agency's finding per 36 CFR Part 800.

Thank you in advance for your consideration. Sincerely,

Karl A. Fromatine

Karl Komatsu, President Komatsu Architecture



Project Site/Area	Individual	Effect on NRHP Resources	Status of SHPO	Date of SHPO
	Eligibility		Coordination	Concurrence
	Opinion			
1. Program	No Eligible	No Adverse Effects to any	Complete	3/22/2018
Integration Office (PIO)	Resources	Eligible Resource		
2. Service Delivery	Not Eligible	No Adverse Effects to any	Complete	3/10/2022
System - Central		Eligible Resource		
Utilidor, Boiler &				
Pump House				
3a. Airfield Ramp	Not Eligible	No Adverse Effects to any	Complete	4/20/2022
Efficiency		Eligible Resource		
3b. NE Airfield	Not Eligible	No Adverse Effects to any	Complete	4/20/2022
Lighting Vault		Eligible Resource		
4. Terminal C&A	Not Eligible	No Adverse Effect to any	In Progress	TBD
Renovations and Piers		Eligible Resource		

Table 1: Summary of CTA Expansion Findings In Progress



Attachment A: Enlarged Map of APE



Area of Potential Effects

Footprint of Project

Area of Direct Effects (100 ft.)

Area of Indirect Effects (300 ft.)



Attachment B: Existing Conditions Photo Index

Terminal A Existing Site Plan



Terminal A Airside – Existing Condition of Skylink Station and Apron





Terminal C Existing Site Plan



Terminal C Airside – Existing Condition of Skylink Station and Apron





View of Skylink Station and Jet Bridges at Terminal C



Existing Entry at the landside of Terminal C







American Airlines Admirals Club Rooftop Addition at landside of Terminal C

For additional existing conditions photos, see Attachment E.





Terminals A, B, C and E Cultural Resources Evaluation



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INTRODUCTION

Komatsu Architecture (Komatsu) and its Subconsultants have been contracted by the Dallas Fort Worth International Airport (DFW Airport) to evaluate the Terminal C building and coordinate with the Federal Aviation Administration (FAA) and Texas Historical Commission (THC). The purpose of this report is to present a preliminary historic evaluation of Terminal C and discuss DFW Airport's potential eligibility for listing in the National Register of Historic Places (NRHP) as its context. Terminal C is located within the airport's Central Terminal Area (CTA) (see Image 1-2). This Preliminary Evaluation is based on an initial review of documents, drawings, and photographs provided by DFW; secondary sources gathered by the sub-consultants; and observations collected during site visits to the airport on March 12th through May 20th, 2019. The Evaluation conclusions and opinions are from a prescribed cultural resource perspective using National Register of Historic Places guidelines, and are not criticisms on the various design elements, or prior architectural and engineering programs that have been implemented over the past 45 years.

REGULATORY SETTING

SECTION 106 OF THE NATIONAL HISTORICAL PRESERVATION ACT (NHPA):

The NHPA (54 U.S. Code [USC] 300101), specifically Section 106 of the NHPA (54 USC 306108) requires the SHPO, represented by the THC, to administer and coordinate historic preservation activities, and to review and comment on all actions licensed by the federal government that will have an effect on properties listed in the NRHP, or eligible for such listing. Per 36 Code of Federal Regulations (CFR) Part 800, the federal agency responsible for overseeing the action must make a reasonable and good faith effort to identify cultural resources. Federal actions include, but are not limited to, construction, rehabilitation, repair projects, demolition, licenses, permits, loans, loan guarantees, grants, and federal property transfers.

ANTIQUITIES CODE OF TEXAS (ACT)

DFW Airport is a political subdivision of the State of Texas, therefore, it is required to comply with the ACT. The ACT was passed in 1969 and requires state agencies and political subdivisions of the state (i.e., cities, counties, river authorities, municipal utility districts, school districts, etc.) to notify the THC of ground-disturbing activities on public land that have the potential to impact archeological sites. Advance project review and coordination by the THC is required only for undertakings with more than 5 acres or 5,000 cubic yards of ground disturbance. However, if the activity occurs inside a

designated historic district, affects a recorded archeological site, or requires onsite investigations the project will need to be reviewed by the THC regardless of project size.

HOW TO COMPLETE THE NATIONAL REGISTER REGISTRATION FORM

The NPS provides specific guidance on evaluating resources that have potential historic significance and determining how structures add to the historic character of a property deemed historically significant. According to the National Register Bulletin, *How to Complete the National Register Registration Form*, a "contributing building, site, structure or object adds to the historic associations, historic architectural qualities, or archeological values for which a property is significant." ¹ A contributing feature must be present during the period of significance, relate to the documented significance of the property, and possess historic integrity, or, in the case of archeological properties, be capable of yielding important information about the period of its significance. A noncontributing feature does not add to the historic architectural qualities, historic associations, or archeological values for which a property is significant because it was not present during the period of significance, does not relate to the significance of the property, no longer retains integrity to the period of significance, or is not capable of yielding important information.

For a building, site, structure, or object to contribute to a property's significance, the property itself must be eligible for the National Register. This Preliminary Evaluation will therefore address DFW's potential significance under National Register criteria before evaluating Terminal C's possible contribution to that significance. For the purposes of this discussion, the boundaries of the "property" evaluated are considered to be those of DFW Airport's Operational Boundary defined in Image 1, although formal boundaries for a potential National Register property have not been determined.

¹ This discussion of National Register of Historic Places significance has been taken from two bulletins published by the register: How to Complete the National Register Registration Form and How to Apply the National Register Criteria for Evaluation (U.S. Department of the Interior, National Park Service, 1997).



Image 1: Location Map: Terminal C at DFW International Airport



Image 2: Map of Central Terminal Area Resources thru 1974 (1970s)

NATIONAL REGISTER CRITERIA FOR ELIGIBILITY

To be considered eligible for listing on the National Register, a cultural resource must be 50 years or older, possess integrity of location, design, setting, materials, workmanship, feeling, and association, and possess at least one of the four following criteria:

- Criterion A (History) Properties satisfy Criterion A if they are associated with events that have made a significant contribution to the broad patterns of our United States history at a local, state, or national level
- Criterion B (People) Properties satisfy Criterion B if they are associated with the lives of persons significant in our past. Under Criterion B, a property can be significant only if it is associated with an important individual's productive life.
- Criterion C (Design) Properties satisfy Criterion C if they embody the distinctive characteristics of a type, period, or method of construction, if they represent the work of a master, if they possess high artistic values, or if they represent a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D (Archeology) Properties satisfy Criterion D if they have yielded, or may be likely to yield, information important to prehistory or history.2

Properties satisfying one or more of these criteria may be eligible for the National Register at the local, state, and/or national levels. The Register identifies areas of significance in order to more specifically define the sphere within which the property achieved importance. The Preliminary Evaluation provides an opinion of the level of the airport's significance, where that significance is found, and describes such significance or lack thereof in the criteria relevant to DFW.

NATIONAL REGISTER CRITERIA CONSIDERATIONS

In addition to these criteria, the National Register identifies seven "Criteria Considerations" that address properties not usually eligible for listing on the National Register. These include (A) religious properties, (B) moved properties maintaining architectural value, (C) birthplaces or graves of historic personages, (D) cemeteries, (E) reconstructed building accurately executed in a suitable environment (F) commemorative properties, and (G) properties less than 50 years old, if it is of exceptional importance. The Criteria Considerations outline special circumstances in which such properties may be eligible for the National Register.

² Criterion D (archeology) will be addressed in a later submission.

BACKGROUND & HISTORIC CONTEXT

Dallas Fort Worth International Airport was planned, designed, and constructed during a period in which jet aircraft became the primary mode of air transportation in the United States. Continued innovations in the size and speed of the new planes and affordable ticket prices spurred a tremendous increase in air travel in the years of the airport's planning – 300 percent between 1960 and 1970. The changes wrought by the new aircraft and the increase in air travel forced federal and local governments, airport authorities, planners, engineers, and architects to adapt older transportation paradigms, as well as create new ones, to maintain the safety, efficiency, reliability, and profitability of the system. As a result of the new requirements, the period also witnessed a tremendous construction boom at the nation's airports. Many older airports were altered to accommodate the new planes, and a small number of completely new airports built during the period and one of the last completed before air travel and airport construction slumped in the 1970s. This Historical Background and Context provides information related to the factors – technological, political, regulatory, and aesthetic – that influenced the design and construction of DFW. An additional section is devoted to the description of Terminal C as it was initially constructed and later alterations.

The following sections will trace the development of DFW, its original design, and its impact on the region and the state. For a more complete and detailed history on the development of airports please see the **Resource 1: Historical Background and Context**.

THE PATH TO A REGIONAL AIRPORT IN NORTH CENTRAL TEXAS

The idea for a regional airport to serve the independent cities of Dallas and Fort Worth dates to 1927, purportedly when Dallas made an overture to Fort Worth to develop a joint airport as Dallas was in the process of acquiring property to become Love Field. Fort Worth declined and subsequently each city developed its own, with Fort Worth creating Meacham Field (originally named Fort Worth Municipal Airport for 2 years). The governor-appointed Texas Aeronautics Advisory Committee proposed the idea again in 1940 as it worked with the federal Civil Aeronautics Administration to create an aviation master plan for the state of Texas. However, the competing interests of the two cities, World War II, the rapidly changing nature of aviation in the United States, and the evolving state and federal government's regulations of the commercial airline industry prevented a regional

solution from being implemented quickly. Fort Worth, for instance, completed its own airport, Amon Carter Field, by 1953. It was constructed on a Depression-era, federally funded, auxiliary airfield called Midway Field (It was renamed the Greater Southwest International Airport in 1960).³

Not until the Federal Aviation Act of 1958 created the Federal Aviation Administration (FAA), did the federal government possess the requisite leverage – through the power to appropriate or withhold funding for airport construction – to facilitate a resolution of the impasse.⁴ The FAA and the Civil Aeronautics Board (CAB) took a number of steps in the early 1960s, including denying funding for a new runway at Love Field in Dallas, which shepherded the cities toward a regional airport solution. This process culminated in the CAB's determination in 1964 that a new regional airport was required. The CAB's investigation also determined that no existing airport could be adequately expanded to accommodate regional airline needs for the foreseeable future and left the selection of a suitable site for a new airport to the cities.⁵

PLANNING A NEW AIRPORT

In the years that followed the CAB decision in 1965 that neither Love Field nor Greater Southwest International Airport could act as the area's regional airport, local, state, and federal government representatives, hired consultants, and civic groups, as well as business and homeowner interests, participated in a massive planning effort to accomplish the task of developing a regional airport that satisfied multitudinous stakeholders. Economic, transportation, safety, residential, and other factors influenced decision makers. The planning for DFW involved four incorporated cities and eleven counties, as well as state and local interests and the federal government. Referenda on the planned airport were submitted twice to area voters. The Texas legislature passed a bill creating the North Central Texas Airport Authority to guide the project, signed by Governor John Connally on February 28, 1967, and the North Central Texas Council of Governments (COG), formed in 1966, undertook much of the land-use planning once the site was determined. While the administrative structures of the

³ Stanley H. Scott and Levi H. Davis, A Giant in Texas: A History of the Dallas-Fort Worth Regional Airport Controversy, 1911-1974 (Quanah, Texas: Nortex Press, 1974), 1-3, 17-20.

⁴ George Edward Burlage, "Federalism's Expanding Dimensions: A Case Study of Decision-Making of the Dallas-Fort Worth Regional Airport," Master's Thesis, North Texas State University, 1969, 129-130; National Historic Landmarks Program, American Aviation Heritage: A National Historic Landmarks Theme Study (U.S. Department of the Interior, National Park Service, Washington, D.C., March 2011), 227.

⁵ Scott and Davis, 42-49.

airport authority and the COG were being organized, the FAA provided guidance to those bodies, as well as the two cities. 6

Numerous studies formed the foundation for the planning, beginning with the site selection study by TAMS, the results of which were released on September 25, 1965. The study, carried out in consultation with the FAA, analyzed three sites under nine criteria, including three that were considered "absolute requirements" – noise abatement, appropriate runway approaches, and air space compatibility. One of the three sites satisfied all the requirements – the so-called "North Site," midway between and slightly north of Dallas and Fort Worth along the Dallas County-Tarrant County line. The site selection study recommended acquiring a minimum of 10,700 acres of the underproducing farm and ranch land in the area, but emphasized the wisdom of acquiring as much as 18,220 acres while real estate was relatively inexpensive in order to provide a site that would satisfy the region's airport needs for the foreseeable future. A site of such size would provide areas for expansion, buffer zones that would both protect the development that would inevitably arise as the airport took shape from noise problems, and a means of managing potential obstructions to aircraft during takeoff and landing. The study also recommended planning with the Texas Highway Department as soon as the site was selected. The site selection study was the first of eleven carried out by TAMS and its sub-consultants over the next three years, resulting in an "Airport Master Plan" released on December 22, 1967.⁷

While the consultants developed plans for the airport itself, governmental and civic bodies continued a variety of planning exercises considered vital to the airport's success. The FAA conducted a comprehensive air traffic simulation study at its National Aviation Facilities Experimental Center (NAFEC) in Atlantic City, New Jersey to determine flight patterns and airport capacity. DFW was the first airport in the country to have the benefit of the NAFEC simulation capabilities in its planning process. The FAA also encouraged Dallas and Fort Worth to investigate a rapid transit system to transport passengers to and from the airport from the surrounding communities.⁸

⁶ Scott and Davis, 49-52; Darwin Payne and Kathy Fitzpatrick, From Prairie to Planes: How Dallas and Fort Worth Overcame Politics and Personalities to Build One of the World's Biggest and Busiest Airports (Dallas: Three Forks Press, 1999), 107-109; Newman, Henry L. "An Innovative Approach to Airport Planning." Journal of Air Law and Commerce 39:3, 356-358.

⁷ Tippetts-Abbett-McCarthy-Stratton, "Site Selection Study, Dallas-Fort Worth Regional Airport ([New York]: Tippetts-Abbett-McCarthy-Stratton, [1965]), 55-60, 67-68; "Airport Master Plan" ([New York]: Tippetts-Abbett-McCarthy-Stratton, [1967]), cover letter.

⁸ Payne and Fitzpatrick, 125-126; "Site Selection Study," 68.

In addition, the FAA insisted on comprehensive land use planning in order to avoid mistakes committed in the past, when airports outside cities guickly became hemmed in by incompatible development that the airports themselves had spawned. The development prevented expansion of the airports, resulted in construction that potentially obstructed flight paths, and created noise problems for improperly located residential neighborhoods, hospitals, schools, and other public facilities. Among the most important initial efforts to facilitate the DFW planning process were meetings with local jurisdictions and stakeholders. North Texas State University in Denton sponsored "clinics" for local land use planners in all the communities that would be impacted by the airport. Airport officials and TAMS made presentations to officials in the individual communities and to independent school districts. The latter outreach resulted in alterations to the districts' building plans so as not to place schools where noise might be a problem. The airport planning bodies worked with two offices of the Texas Highway Department to ensure adequate surface transportation for both airport users and the surrounding communities. Another significant result of the planning effort was the creation of model ordinances to regulate and restrict the construction height in the vicinity of the airport and to prevent incompatible development based on noise impact. Ultimately, all the affected communities adopted such ordinances. The planning work incorporated DFW into a broader aviation plan, known as the North Central Texas State Planning Region Airport System Plan, developed by the COG under a grant from the FAA. The plan was an effort to guide commercial, military, and general aviation throughout the region. In 1973, just as DFW prepared for its opening, the FAA's Newman called the airport a "wonderful monument to cooperation, imagination, and innovation in planning." Several architectural journals, evaluating the airport, concurred with this assessment, although perhaps not in quite such glowing language. Newman also emphasized that DFW's planning process "must be applied as the model for others to use."9

⁹ Newman, 353, 355-359; Molly Ivins, "Biggest Public-Works Project Since the Pyramids," New York Times, September 16, 1973, 16; "Airports," Architectural Forum, May 1972, 30; Rita Robison, "Dallas/Fort Worth Airport: A Thrust towards 2001," Progressive Architecture, December 1973, 72. Newman's quotation can be found on page 353.

DEVELOPMENT OF THE AIRPORT DESIGN

TAMS' "Airport Master Plan," completed with eight other consultants, combined and updated previous studies, including the 1965 site selection study and the "Airport Layout Plan" of 1966. It responded to increased requirements in certain areas – the result of additional studies – including the number of gates that would be required upon opening and square footage for buildings to be constructed. Acknowledging the rapidly changing environment in which airport authorities and airport designers worked, TAMS stated that the master plan was "based on the premise of constant change" and strove to develop an approach that was "pre-designed for expansion." TAMS imagined the airport as a linear terminal located between parallel runways, so that the terminal could serve aircraft on both sides. An innovation of the plan was to locate the terminal in the center of the large site, rather than near its entrance, and run the airport's access road through it. (Image 3) The length of the roadway meant that the terminal could be expanded along it without changing the circulation. "Since a linear system has no geometric terminus," the plan states, "any part can be readily expanded as air traffic continues to increase in the future." Further, TAMS designed the gates as repeatable modules that could be reproduced as needed. The spine road brought passengers directly to the terminal, minimizing walking distances, which had begun to plague airports as they expanded to serve more passengers and aircraft. The TAMS design also sought to keep walking distances to a minimum by placing parking structures on top of the concourses. (Image 4) Spiraling access ramps peeled off the spine road to reach the parking decks. The vertical integration of parking and terminal also conserved space for expansion. The physical concentration of arrivals, departures, ticketing, baggage claim, operations, amenities, security screening, parking, and intra-terminal transit was accomplished by proposing an enormous terminal building of eight levels (four parking decks), with the concourse located below the entrances along the spine road.¹⁰

The master plan proposed two stages of development – initial development by 1975 and build out in 1985. By 1975 two north-south runways would be in operation and two diagonal crosswind runways.

¹⁰ "Airport Master Plan," 50-52.



Image 3: The 1967 master plan proposed a spine road running through a linear terminal approximately two miles long.



Image 4: The TAMS plan reduced walking distances for passengers by locating parking on top of the terminal building.

Two more north-south runways would be added by 1985. The north-south runways would extend 11,000 feet when the airport opened, accommodating jet requirements foreseen for that date. By 1985, the runways would be lengthened to 14,000 to suit the larger, faster jets that were expected. The crosswind runways would start at 9,000 feet and be lengthened to 12,000.¹¹

In 1968, DFW's chief administrator, Thomas M. Sullivan, who came south after serving at the Port Authority of New York, brought in two additional architectural firms, Hellmuth Obata and Kassabaum (HOK) of St. Louis and Bodsky, Hopf, and Adler of New York (BHA), to review the TAMS plans to ensure that they satisfied airport goals. Sullivan had worked with both firms in New York. He was concerned with the use of a large single terminal as a means to accomplish the airport's many tasks. As a result of their review, Sullivan recommended, and the airport authority agreed, that the two firms should be hired to revise the approved 1967 plan in eight weeks during the summer of 1968. HOK and BHA formed a second joint venture with other consultants to design the terminals, spine road, and landscape, while TAMS remained the project's general consultants, engineers, and planners. In the New York Times, Molly Ivins described TAMS as responsible for everything up to the terminals, and the firm had also "inked in" the idea for the spine road.¹²

Gyo Obata (1923-) represented HOK, while Richard Adler (1928-2012) became responsible for Brodsky, Hopf, and Adler's input. Obata acted as the dominant designer and visionary for the project, while Adler was the primary technical planner. Their design replaced TAMS' single, long terminal with a modular approach – half-loop terminals on either side of the spine road, now envisioned as a parkway (ultimately known as International Parkway). Obata and Adler also reduced TAMS' eight-level terminal building to half loops of three levels each. The reduction in height was accomplished by moving the parking areas to the center of the semicircles. In this arrangement, flyers could still drive straight to the terminal gates they would depart from, and the distance from parking area to boarding area measured less than a hundred feet. A "people mover" on the landside of the airport, known as AirTrans, was planned to ferry passengers between the terminals and from remote parking. The airport authority planned four terminals for the project's initial phase, but that number could be expanded to as many as thirteen (over three phases – 1975, 1985, and 2001) by repeating the half-circle module. (Image 5) Further, the semicircular buildings were designed to be constructed as a series of wedges,

¹¹ "Airport Master Plan," 59.

¹² Ivins, "Biggest Public-Works Project Since the Pyramids."

so that the airport could build as much space as it needed and expand as its business did. The buildings were to be carried out in precast concrete columns, beams, and panels, with a glazing system of bronze-colored aluminum frames and bronze-tinted glass – a construction system that could also be repeated as the airport expanded. (Image 6) That the kit of parts for constructing the airport could be manufactured offsite saved both time and money. ¹³ A 1969 design team report emphasized this aspect of the design. "The trend toward larger aircraft and automation," the report states, "requires a flexible [sic] system of building components which can be changed or expanded before occupancy or while the facility is in operation. … An awareness of these influences was instrumental in the development of a building systems approach to the terminal buildings."¹⁴

¹³ Payne and Fitzpatrick, 122-130, 172-173; Rita Robison, "A Thrust toward 2001," Progressive Architecture, December 1973, 72.

¹⁴ Hellmuth, Obata & Kassabaum, Brodsky, Hopf and Adler, et al., "Outline Specifications and Reports: Terminal Buildings, Dallas-Fort Worth Regional Airport," prepared for Dallas Fort-Worth Regional Airport, 1969, 62.



Image 5: The airport layout reimagined by HOK and BHA proposed a series of half loops along the central spine road.



Image 6: DFW was constructed of precast concrete members, as seen in this undated photograph of the airport.

Obata, architect of the Smithsonian Institution's National Air and Space Museum in Washington, the McDonnell Planetarium in St. Louis, and the Galleria in Houston, indicated that the large expanse of the DFW property suggested the use of smaller, repeatable terminals as a way to introduce a human scale for passengers amidst the vast scale of the airport. ¹⁵ *Architectural Record* termed the decentralized plan with nearby parking areas that decreased typical walking distances "almost revolutionary" in airport planning design. ¹⁶ Obata's use of flanking pylons and cantilevered canopies at the entrances and the variations in rhythm offered by the modular design also broke up the mass of the repeating building units. In addition, Obata varied the landside and airside architectural expression. The heavy, exposed concrete forms seen as one approached the airport from the parking areas gave way, in the airside concourses, to walls of glass that opened onto limitless skies beyond the runways. On the interior, Obata and Adler's concrete, aluminum, and glass elements acted as a frame for decorative treatment determined by the airlines and other businesses located in the airport. Documents reviewed for this study show that HOK-BHA, with the exception of flooring, provided no guidelines for this decoration nor had input into interior decorative forms or materials.¹⁷

Reports issued by HOK reveal that alterations to the plans were made even after construction began on December 11, 1968. The reports, dating to 1969 and 1970, included outline specifications and cost estimates responding to additional information gathered and requests by the Dallas/Fort Worth Regional Airport Board and the airlines. The 1969 report discussed two major modifications approved by the airport board that focused on automobile access and parking. One of the modifications described the elevated "enplaning" road system (for arriving passengers) as "removable" in the first phase of development. The other called for relocation and redesign of interchanges in the spine road to allow for "direct entry" into the terminal loop. The airport board may have been looking for aspects of the design to postpone in order to meet its opening date, scheduled by this time for 1972. The report pointed out, however, that time would be lost through redesigning the interchanges. The proposed deletion of the enplaning road seems to have been dropped because in 1970, the design team discussed it as one of the components needing redesign. The impetus for the redesign was a request by the airlines for increased operations space, resulting in relocation of the intra-terminal transit system and the roadways. The relocation removed the first two rows of parking in

¹⁵ Payne and Fitzpatrick, 123, 130.

¹⁶ Foxhall, 118-119.

¹⁷ Robison, 72; "Outline Specifications and Reports: Terminal Buildings," 1969, 7-27; Hellmuth, Obata & Kassabaum, Brodsky, Hopf and Adler, et al., "D/FW Regional Airport Terminal Complex Scope and Estimates," prepared for Dallas Fort-Worth Regional Airport, 1970, 2-16.

the infield areas, which was compensated for by design of structured parking along the elevated road. For American Airlines, one row of a two-level parking structure was to be constructed next to the road and two rows of a one-level structure. The terminal infields were to be prepared for future structured parking. Another change was the addition of two parking garage structures in the infield of the spine road to accommodate rental cars and valet parking.¹⁸

The design team included landscape architects Richard B. Myrick and Associates, and a landscape master plan was prepared by the early 1970s. The plan addressed the large scale of the airport by introducing a simple palette of plant materials – live oak, crape myrtle, azalea, Bermuda grass lawns – to be massed in large groupings. (Image 7) The simple, bold masses in the spine road and terminal loop infields were meant to be comprehended at speed as passengers approached and departed on the spine road and to create a sense of entry and exit. In pedestrian areas, Myrick proposed landscape features at a more intimate scale, such as flowerbeds and fountains. The design also continued the airport's sand-colored concrete palette in built features, including the loop road structures, pylons displaying flight information, and other buildings. Like the airport itself, the landscape plan was designed to be added to as the airport expanded. Based on historical photographs and later drawings, it appears that the landscape plan was implemented mostly as planned in the parkway and along the AirTrans right of way, but not in the terminal loop infields, which served as surface parking.¹⁹

¹⁸ Briddon, Champie, Marrain, 188; "Outline Specifications and Reports: Terminal Buildings," 1969, 52; "D/FW Regional Airport Terminal Complex Scope and Estimates," 15-21.

¹⁹ Hellmuth, Obata & Kassabaum, Brodsky, Hopf and Adler, project architects, and Richard B. Myrick & Associates, project landscape architects, "Landscape D/FW: master plan, Dallas/Fort Worth Regional Airport. Dallas: [s.n., 1972?], 1-5.



Image 7: The landscape master plan for the airport envisioned a simple palette with massed plantings. The dark green circles in this drawing represent live oaks, the medium green circles are cedar elms, light green is lawn, and the orange circles are crape myrtles.

A functional feature of the spine road was the air traffic control tower, commissioned and paid for by the FAA. It was planned to be located between the terminals in order to control arrivals and departures on both the east and west sides of the airport. Designed by Welton Becket and Associates of Los Angeles, the tower stood 196 feet tall and featured an eleven-sided cab supported by four shafts constructed of precast concrete sections. Welton Becket was one of the firms the FAA hired to produce prototypes for air traffic control towers. Research for this study did not reveal whether the DFW tower was a prototypical design, designed specifically for this airport, and/or acted as an "audition" for the FAA's prototype program.²⁰

²⁰ Payne and Fitzpatrick, 144; Brodherson, 91.

CONSTRUCTION, OPENING, AND IMPACT

The 1968 groundbreaking ceremony took place at the junction of the Dallas and Tarrant county lines where the cities of Grapevine, Irving, and Euless met. Holloway Construction Company of Michigan won the bid to construct the facility. Early on, the size of the airport and the length of its runways caused concern that acquiring enough cement to complete the job within the timeframe proposed could be a problem. H.B. Zachary Company of San Antonio and South Prairie Company of Wichita, Kansas, hired to provide the concrete work, seem not to have suffered cement shortages, however. Besides construction of the terminals, spine road, and people mover system, the project included hangars, maintenance buildings, an administrative building, service roads, emergency services buildings, fuel storage, blast barriers, and other structures. Beyond the airport facilities, the airport board contracted with AMFAC of Honolulu, Hawaii, to build a 450-room hotel within one of the future terminal loops (now the site of Terminal D).

Dedication ceremonies for the airport took place on September 20-23, 1973. The opening ceremonies included the first landing in the United States of the supersonic Concorde SST. (Image 8) U.S. Department of Transportation Secretary Claude S. Brinegar, FAA Administrator John Shaffer, and Henry Newman, who was responsible for persuading Dallas and Fort Worth to pursue a regional airport, spoke at the dedication. Although the airport was ready to greet commercial passengers on October 1, 1973, the airport did not officially open for business until January 13, 1974. This was because airlines were concerned about the effects of starting services at a new airport during the holiday travel season.²¹

When it opened, as Dallas Fort Worth Regional Airport was the largest in the world in terms of area.²² (Image 9) Sixty-six gates were in operation, serving nine major commercial airlines and eight commuter airlines. Eight hundred flights per day took off and landed from the airport. As planned by the FAA, it generally – although not completely – replaced the smaller airports in Dallas and Fort Worth, immediately becoming the fourth-busiest airport in the United States and the busiest in Texas. The airport's design influenced the design of two airports, Rio de Janeiro International Airport, designed by Hidroservice Engenharia de Projetos Limitada, and Terminal 2 at Charles De Gaulle Airport outside Paris, by Aeroports de Paris (Image 10).

²¹ Payne and Fitzpatrick, 132-146, 160-173.

²² DFW became Dallas Fort Worth International Airport in the late 1980s.

It also had an immediate economic impact on the Dallas-Fort Worth area. The payroll of DFW alone stood at \$100 million per year and estimates of its contributions to the local economy reached \$350 million in its first year. As time passed, estimates of its economic impact grew to more than \$11 billion per year. A significant new center of both passenger and freight transportation, DFW spurred the relocation of numerous corporate headquarters to the immediate vicinity – 225 per year during the first decade of operation, according to one estimate.²³ As a result, the Dallas-Fort Worth area ranked third nationally in the number of corporate headquarters, behind New York and Chicago. The airport thus became a jobs generator and kicked off a real estate boom in which land that had sold for \$30 to \$40 an acre in the 1960s could fetch \$250,000 in the 1980s. The airport became the center of the "Southwest Metroplex" (later simply, "the Metroplex"), a term coined by the North Texas Commission, which had been formed in 1971 specifically to market the area and its airport to the world.²⁴



Image 8: The first landing in the United States of the supersonic Concorde aircraft took place at DFW during the dedication ceremonies in September 1973.

²³ Payne and Fitzpatrick, 215.

²⁴ Payne and Fitzpatrick, 180-216, 272; John Zukowsky, ed., Building for Air Travel: Architecture and Design for Commercial Aviation. New York: Prestel-Verlag, 1996, plates 113-117.



Image 9: DFW was the largest airport in the world in terms of area when it opened on January 13, 1974.



Image 10: DFW influenced the design of at least two airports, including Terminal 2 of Charles de Gaulle International Airport outside Paris.

ALTERATION TO DFW IN THE ERA OF DEREGULATION

True to the constantly changing nature of airports and original design intent, construction, additional studies, and alteration did not stop with the opening flight. A 1978 study concluded that all the facilities set out for completion in 1975 had, in fact, been accomplished by that date, including the addition of nine gates to reach the initial target of seventy-five. Additional parking was constructed (possibly the structured parking that was one of the 1970 modifications to the plan), as were additional (unspecified) terminal facilities and a new warehouse maintenance building. The airport board also initiated studies to determine terminal facility needs in five and ten years and to evaluate the usefulness of a terminal dedicated to international flights. It is not known whether those studies affected plans to expand three DFW terminals on the air side in 1983. It may be that the 1983 plans followed the original master plan, which set terminal construction milestones in 1975, 1985, and 2001²⁵.

An important stimulus to change at DFW was, however, an unanticipated evolution in the airline industry caused by the Airline Deregulation Act of 1978. The legislation had been enacted to increase competition and profitability among airlines in a period during which operating costs increased and profits dropped. The act loosened the tight management of air travel by the federal government, creating major competition for market share between airlines and airports. Braniff Airlines, the largest carrier serving DFW at the time, filed for bankruptcy in 1982 as a result of the change, was rescued in 1984 by Hyatt, but went out of business for good in 1989. Other airlines – especially American Airlines – adapted an old approach to the new circumstances, creating a hub-and-spoke template that funneled passengers from smaller airports to larger hubs, where they caught connecting flights to their final destinations. DFW functioned as a regional hub, but the approach undermined the premise on which the airport had been designed, which relied on point-to-point travel. The decentralized terminal layout meant that some connecting flights required long walks or AirTrans rides between terminals. Ultimately, deregulation fostered competition, lowered airfares, and increased the number of routes available, resulting in an increase in total passenger loads. Ten years after it opened, despite

²⁵ Landrum & Brown, "Terminal Area Requirements Study, Dallas/Fort Worth Airport," prepared for Dallas Fort Worth Regional Airport, July 1978, I-1, II-8 – II-10); Payne and Fitzpatrick, 211, 233-241; Omniplan Architects and Green Architects/CRS, "Terminal 3E Airside Expansion," drawings A-2 ff., July 29, 1983, Dallas Fort Worth Airport Archives; Turner, Collie, & Braden, et al 1/7. DFW became known as Dallas Fort Worth International Airport around 1987, according to Payne and Fitzpatrick.

the change in air travel caused by deregulation, DFW was the second busiest airport in the United States.²⁶

The switch to the hub-and-spoke model ultimately encouraged the airport board to initiate a new master plan, known as the Airport Development Plan (ADP). Released in 1991, the ADP, as it was known, was designed to make major changes to the airport in three phases, ending in 2010. The plan called for new terminal construction, a new control tower to serve the east runways, expanded maintenance facilities, lengthened runways, a new people-mover system, and new emergency buildings, among other projects. Significantly, the ADP advocated a move away from the HOK-BHA half-loop terminal arrangement in order to satisfy hub-and-spoke airline operations, even depicting that arrangement in its illustrations. (Image 11) The airport board updated and reduced the scope of the ADP in 1997. Neither plan was implemented systematically, but some of the most important recommendations have been undertaken. These include extending the existing runways, constructing new runways, and adding new air traffic control towers. DFW has continuously added to and altered its existing facilities in an effort to keep up with the increasing numbers of passengers, flights, carriers, security requirements, and amenities expected by travelers. Multiple-story parking structures have replaced the surface parking within three of the four half-loop terminals. DFW also built airside tracks supported by concrete columns and rooftop stations for the Skylink people mover that replaced the original AirTrans system at the beginning of the twenty-first century, causing alterations to all the existing terminals where stations were located. In 2005, a new terminal, Terminal D (in the position designated 4E in the master plan,) was constructed, and Terminals A, B, and E were each renovated between 2007 and 2017. The renovation, Terminal Renewal and Improvement Program (TRIP), work included replacing original window walls and existing floors, adding dropped ceilings, and painting the raw concrete structural elements among other things. The period also witnessed continuous redecoration and reorganization of the terminals as security requirements increased, new airlines called DFW home, existing airlines changed or added gate locations, and the trend toward treating airport concourses as shopping malls gained momentum.²⁷

²⁶ American Aviation Heritage, 228-229.

²⁷ Payne and Fitzpatrick, 239-281; Turner Collie & Braden, et al, "Airport Development Plan, Dallas/Fort Worth International Airport," prepared for Dallas/Fort Worth International Airport Board, March 1991, 2-2 – 2-10; "1997 Airport Development Plan Update: Executive Summary," Dallas/Fort Worth International Airport, n.d. The designations of the terminals were also changed in 1997 from the original numerical and directional shorthand to alphabetical labels.



Image 11: The 1991 Airport Development Plan reimagined DFW without the half-loop terminals that had been the centerpiece of its design.

THE EVOLUTION OF TERMINAL C

Terminal C (originally designated Terminal 3E) is the middle of three terminals constructed on the east side of International Parkway and was in operation – shared by American and Eastern airlines – when DFW opened in January 1974.²⁸ Like the other three original terminals (A, B, and E), it was conceived as a three-story, half-circle building, constructed with a precast concrete frame of columns and beams with infill of concrete panels and glass and aluminum window walls. The southernmost section of the half circle was not constructed by the time the airport opened, presumably because it was not yet needed.

As built, Terminal C adhered to the HOK-BHA design. On the landside, Terminal C featured a regular rhythm of entrances interspersed with walls of precast concrete panels and glazing (Image 12). The entrances consisted of concrete pylons flanking a cantilevered concrete canopy. Outboard of the pylons, the designers located a vertically oriented section featuring glass doors on the lower level to provide entrance and exit from AirTrans, windows and precast concrete beams on the second level, and windows and precast concrete fascia on the third level. Between the entrance sequences, four precast concrete columns created bays filled as the vertical sections were, with the exception of the lower level, which held a continuous band of windows that marked the AirTrans stations. The airside elevation followed a different pattern, in which vertically oriented light standards set the rhythm (Image 13). The light standards (stanchions) consisted of two precast concrete columns that extended above the roofline. Light fixtures were attached to narrow concrete panels between the columns above the roof, with larger concrete panels between the columns below the roof. Three bays of columns and windows spanned the space between the light standards.

Changes to Terminal C itself and its surroundings occurred quickly. Drawings were issued in 1978 for construction of the Airport Marina East Hotel (now the Hyatt Regency Hotel), designed by Bauer-Mori Architects of Honolulu, in the infield of Terminal C's half loop. The hotel stood across International Parkway from Airport Marina West Hotel, which opened in 1974 in an unused half loop. The hotel plans included six levels of structured parking between the hotel and the elevated road along the land side of the terminal. The parking apparently remained unbuilt for a few years because in 1984, Datum Structures and Carter Burgess, both engineering firms, provided plans for an eight-level

²⁸ Payne and Fitzpatrick, 181.

parking structure. The design incorporated the three levels of structured parking located against the elevated roadway when Terminal C opened. In addition to removing potential green space next to the terminal, the hotel and parking facility altered the spatial and visual relationship between International Parkway and the terminal.



Image 13: Detail of the airside elevation of Terminal C.

The work associated with the new parking structure also included T-shaped canopies over the sidewalk in the southern section of the Terminal C loop.²⁹ Canopies had been built over the sidewalks

²⁹ Bauer-Mori Architects, "Airport Marina East Hotel," drawings A-1 ff., August 29, 1978; Bleakley, Bruce A. Dallas/Fort Worth International Airport (Charleston, South Carolina: Arcadia Publishing, 2013), 81; Datum Structures-Carter Burgess, "Terminal 3EC Parking and Roadways," sheet no. 9-1-1 ff., 9-18-1 ff., August 15, 1984, Dallas Fort Worth Airport Archives.

along the sections of Terminal C that had been completed in 1974. Presumably, the southern section of the loop did not receive the canopies because the terminal itself had not been completed in that area.

Around 1983, the airport took advantage of the HOK-BHA "kit of parts" approach to DFW's design to expand Terminal C (along with two other terminals) on the air side, adding another linear bay to the existing air side perimeter of the structure. The purpose appears to have been to widen the concourses. The work included moving the window wall system of the original construction to the new exterior wall location, although most segments of airside elevations were changed, some of the window walls were salvaged. A connection linking Terminal C to Terminal A (originally 2E) was also built in 1983, although the nature of its construction is uncertain.³⁰ The connection of Terminal C to Terminal A may have been part of the airport's adaptation to the effects of deregulation. American Airlines, which occupied part of Terminal C, had already developed its hub-and-spoke approach by 1981.³¹ The connection between the Terminals A and C may have been an attempt to move passengers more efficiently between gates to catch connecting flights, because the original AirTrans and subsequent rail people movers have to loop around the terminals due to the terminal node pattern on either side of the central spine (International Parkway).

Additional alterations soon followed. In 1985, Datum Structures and Carter Burgess, JRJ Architects of Dallas, developed plans to expand Terminal C on its south end. The work expanded an existing finger to the landside (over the AirTrans right of way), and the enlarged space was used to create two additional gates. It followed the HOK-BHA design for the terminal, using precast concrete columns and beams and window wall or concrete panel infill, which suggests that it may have been part of the original master plan. The work was completed in January 1988.³² Terminal C was extended farther south to complete its half loop at about the same time (refer to Image 23). The construction consisted of a one-story concourse area raised on concrete columns; some of the ground-level spaces below the concourse were also fitted out for airline offices, employee locker rooms, and toilet facilities.³³ The

³⁰ Omniplan Architects and Geren Architects/CRS, "Terminal 3E Airside Expansion," drawings A-2 ff., July 29, 1983, Dallas Fort Worth Airport Archives; Turner Collie & Braden, et al, 1/7.

³¹ Peat Marwick Main & Company, "Economic Impacts of the Airport Development Plan, Dallas/Fort Worth International Airport," prepared for North Texas Commission, July 1989, 6-7.

³² Datum Structures, Carter Burgess, and JRJ Architects, "Terminal 3EC Expansion," sheet no. 0.02, 4.101 ff., October 1, 1985, Dallas Fort Worth Airport Archives.

³³ Gary McKibben & Associates, MSQ Engineering, "DFW International Airport Passenger Terminal Facilities," sheet no. A2 ff., March 2, 1990, Dallas Fort Worth Airport Archives.
temporary construction did not follow the HOK-BHA precast concrete design used for the original terminal. Instead, the exterior finish material is a stucco infill wall system (Image 14).

The development of a new people-mover system for DFW, called Skylink, which opened in 2005, resulted in changes on both the air and land sides of Terminal C and on the interior. The significant landside change was the closure of the AirTrans system. Since that time, a major portion of the AirTrans concrete guiderail infrastructure (3,900 linear feet) has been removed, by DFW actions approved by the THC in 2013. Some stations, escalators, rights of way, and landscaping of the system remained in place, they became inactive and most parts of the system were demolished. The remaining portions have not been maintained (Image 15). On the air side, Skylink consists of tracks elevated to the airport's roof level by concrete supports. A physical and visual impact due to the track construction has been the removal of the concrete light standards (stanchions) that were the vertical elements setting the rhythm of the HOK-BHA airside elevation. The Skylink stations, of which Terminal C has two, also hide its airside elevations and are visible from the landside (Image 16). Alterations on the interior caused by the construction of Skylink are more evident at the station areas, where portions of the airside window walls of the HOK-BHA design have been removed and replaced, space has been rearranged, and materials altered to move passengers back and forth from concourse to Skylink. The Skylink stations are elevated above the original terminal, making them visible from both the land side and air side views, sheathed in white metal panels. Their size and color dramatically change the appearance and focus of the original terminal architectural design.

Original Terminals A, B, and E underwent extensive renovation between 2007and 2017 in what was known as the Terminal Renewal and Improvement Program (TRIP). Terminal C was not extensively renovated at that time and has avoided most exterior alterations that have affected the other terminals (Image17). Two recent changes, however, are visible on the exterior of Terminal C: (1) the construction of a rooftop addition on the land side that is part of the American Airlines' Admirals Club (Image 18) and (2) construction and installation of a fabric and metal tent-like structure spanning the gap between two T-shaped concrete canopies over the sidewalks, erected in 2006 (Image 19).

On the interior, alterations to Terminal C have also been, for the most part, superficial, they have obscured the original HOK-BHA design in several places including obscuring key concepts and the visual experience of transparency from the land side to air side. Recent upgrades to systems included a dropped ceiling in some locations in the concourse; these dropped ceilings hiding the original

concrete framing (Image 20). Painting the concrete structural members in some places has also taken place, again changing the architects' original intent.

One of the spurs to alterations in the twenty-first century has been the increased emphasis on airline security. Security alterations including the location of check points, rope lines, screening equipment, offices, and other features interrupt the open flow of space that was part of the original design. Baggage claim areas were also altered and have been separated from the airside waiting areas by a clear glass partition supported by a low concrete wall (Image 21). Numerous changes have also taken place in recent years as a result of the increased number and type of vendors located at the airport. Decoration of the terminals was not included in the original HOK-BHA design and was expected to change as airlines were added and moved over the course of time. Decorative features mainly obscure the original structural system.



Image 14: The airport added temporary construction around 1988 to provide extra gates in the southern part of Terminal C. The temporary buildings still function as initially planned.



Image 15: The AirTrans stations were closed when the Skylink people mover system opened.

Image 16: The Skylink stations block views of portions of the original airside elevations of the terminals.



Image 17: Entrance sequences at Terminal C remain in their original form.



Image 18: This rooftop addition to Terminal C contains American Airlines Admirals Club.

Image 19: A tent-like structure was erected in 2006 to span a gap in the concrete sidewalk canopies.

Image 20: Alterations to Terminal C have included dropped ceilings and painted structural elements, which sometimes occur directly adjacent to original features, such as the bronzecolored aluminum-framed window wall seen here.



Image 21: A glass wall was erected between the baggage claim area in Terminal C during the Twenty-First Century (post September 11, 2001). Some of the terminal's original concrete framing elements can be seen in the baggage claims area, through the glass wall.

Image 22: Map of Terminal C Resources thru 1974 (1970s)

Image 23: Map of Terminal C Current Structures



OBSERVATIONS AND ANALYSIS

PRELIMINARY NATIONAL REGISTER ELIGIBILITY

DFW has and must continue to adapt to changes in aircraft, airline operations, security needs, safety requirements, passenger expectations, and other factors. Because of this, the DFW Airport facilities, Terminal C included, have undergone many changes since their initial construction. Major changes include replacement of surface parking areas with structured parking, alterations to the original terminal entrances on the Landside, the addition of the Skylink tracks and stations on the Airside, the construction of Terminal D in early 2005, and alterations to the interiors to accommodate security requirements, airport functions, and the expansion of retail opportunities.

SIGNIFICANCE ASSESSMENT OF TERMINAL C

The history and development of air travel and DFW Airport was reviewed in order to determine Terminal C's historical significance. The Terminal is reviewed under each National Register Criteria below.

Criterion A: Based on a preliminary review of archival information and site visits, the team has concluded that Terminal C is not eligible under Criterion A as an individual landmark as significant events did not take place solely within or around the Terminal. Terminal C as a sole facility also did not contribute to the broad patterns of history at the local, state, or national level.

However, DFW Airport is potentially significant at the local and state levels under Criterion A, for its role in the transition of Dallas-Fort Worth and Texas air travel from reliance on nearby, local airfields to larger regional airports that could accommodate the latest jet aircraft. DFW largely replaced airports previously used by area residents and became the busiest airport in the state, and one of the busiest in the country, when it opened in 1974.

This review has also determined that DFW Airport is potentially significant under Criterion A at the local level in the areas of community planning and development, politics/government, and economics for the area-wide cooperation required to bring the project to fruition and the impacts that the airport had on the area's economic base. Building the airport required transportation, land use, environmental, economic, residential, labor, and other planning efforts among two cities, eleven

counties, the state of Texas, and the federal government. Additionally, the board of the airport authority included members of both the Dallas and Fort Worth communities. The effort marked a significant achievement in local cooperation, concluding a process that had begun 40 years earlier. As a result, the Dallas-Fort Worth area received an immediate economic boost, with added jobs, the relocation of corporate headquarters to the area, and an increase in real estate values. Estimates of the economic impact on the area began at \$350 million in the airport's first year of operation and an average of 225 new or relocated corporate headquarters per year in the first decade.

Terminal C, as one of the four original terminal nodes, has the potential to contribute to the integrity of the Airport as a whole is determined eligible for the National Register. However, if it is to be considered "contributing", it is for the sole reason that Terminal C occupies one of the original designated terminal pod locations, as all other aspects of integrity have been compromised to the extent that it is not architecturally significant. (See Criterion C below for further explanation.) It would appear more justifiable as a contributing resource to the Airport as the Terminal retains its characteristic "location" as one of the concept terminal nodes addressed under Criterion A for planning only. The ultimate determination of the Airport's eligibility must await a thorough, more complete evaluation of its overall planning and physical realization of that plan integrity, which is the central task for the next phase of under Komatsu's scope of work for DFW.

Criterion B – Association with Significant People - DFW's design team included Gyo Obata (1923-) who represented Hellmuth Obata and Kassabaum (HOK), while Richard Adler (1928-2012) was responsible for Brodsky, Hopf, and Adler's input. Obata acted as the dominant designer and visionary for the project, while Adler was the primary technical planner. Although the Airport's design team included notable designers and firms, these significant people are better memorialized by their other projects and seminal work. Therefore, Terminal C is not eligible under Criterion B, because it is not associated with any significant person's life or career.

Criteria C – **Significant** Architectural Design or Construction – The original design of DFW Airport and Terminal C had potential to be eligible for the National Register under Criteria C for its architectural style and planning concepts. However, in its function as a working airport, DFW has had to adapt to changes in aircraft, airline operations, security needs, safety requirements, passenger expectations, and other factors over its lifetime. Because of this, the original facilities have undergone many changes since their initial construction. Major changes at each Terminal include:

- replacement of surface parking areas on the Land Side with structured parking,
- alterations to the original terminal entrances on the Landside,
- exterior cladding on the Landside,
- the removal of the AirTrans system
- the addition of the Skylink tracks and stations on the Airside, which extremely altered the roof line of the terminals and major views the terminal from all approaches
- removal of the character defining light stanchions at the roof
- alterations to the interiors to accommodate security requirements, airport functions, the expansion of retail, and associated cladding that obscures the original precast concrete features
- Growth of metropolitan area around Airport has resulted in a change of the original flat setting into numerous industrial, office, and residential developments

The original design of Terminal C, inside and out, has been out of necessity, re-set, re-made, and reenvisioned. The original "drive to your gate" functional and design intent of a transparent terminal with visually direct connection of vehicle to plane access was the defining design feature that no longer exists (Image17 -19). Terminal C does not retain enough architectural integrity to be eligible for the National Register under Criterion C, individually and potentially not eligible as a contributing resource in the overall Airport historic district. For more detailed information, see the review of the seven aspects of integrity in the following section.

Criterion D – Information Potential - A property may be eligible for listing on the NRHP under Criterion D if it has yielded or is likely to yield information important to the prehistory or history.³⁴ This criterion is mostly applied to archaeological sites; however, when applied to a building, structure, or object, the property "must be, or must have been, the principal source of the important information".³⁵Terminal C does not appear to have any potential to yield important construction information or any other significant historical information that would qualify it for individual listing under Criterion D. A cultural resources database search was completed by HDR and is included in Resource 8. This search reviewed the existing documented archaeological surveys and sites of the area and the conclusions proposed no action should be taken at this time. Therefore, Terminal C is not significant under Criteria D.

³⁴ NPS 1997.

³⁵ NPS 1997: 21.

INTEGRITY OF TERMINAL C

To determine Terminal C's eligibility for the National Register, the seven aspects of integrity were evaluated based on the National Register criteria. These aspects include location, design, setting, materials, workmanship, feeling, and association. The steps involved in assessing the integrity of a property include:

- Defining the essential physical features that represent a property's significance.
- Determining whether the essential physical features are visible enough to convey their significance.
- Determining whether a property needs to be compared with similar properties. And,
- Determining which aspects of integrity are vital to the property being nominated and if those aspects are present.

As the National Register states, "Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant."³⁶ These aspects and the ability of Terminal C to satisfy these standards are discussed below.

Location is the place where a historic property was constructed or the place where the historic event associated with the property occurred. The location of the elements of DFW that stood when the airport opened in 1974 – runways, terminals, air traffic control tower, International Parkway, etc. – remain in their original locations. Although alterations have been made to these buildings and structures, their locations have remained constant. The location of Terminal C has not changed and therefore retains integrity to the period of significance (1965-1974) in this category.

Setting is the physical environment of a historic property. DFW's, and consequently Terminal C's, setting was altered in several ways since it originally opened. The metropolitan area of Dallas and Fort Worth has expanded closer to the airport, covering the flat ground with highways, residential developments, offices, and industrial buildings. Development related to the airport was expected, however, as the project was planned for aviation related technical requirements as well as anticipated environmental conditions. The 18,000-acre expanse of DFW property remains divided into open space devoted to runways and future construction and developed areas holding terminals, hangars, airport-support facilities, and commercial buildings. Within this basic arrangement, later construction, particularly structured parking on the landside and the Skylink tracks and stations on the airside, have encroached on the original setting of Terminal C diminishing the integrity of the setting. An

³⁶ How to Apply the National Register Criteria for Evaluation, 44-45.

understanding of the original Terminal C landside facades can still be viewed in limited sightlines from the original upper and lower approach roads, including partial views between the now taller and closer parking structures. Another partial view of the original Terminal C façade can be seen from the parking area and approach roads near Terminal B. On the airside, the Skylink tracks and stations obscure the rhythm of the Terminal's original concrete design and glass bays. The integrity of the setting of Terminal C is therefore determined to be low.

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time, while **Association** is the direct link between an important historic event or person and a historic property. DFW continues to function as an international airport, and its important construction, including the terminals (such as Terminal C), runways, hangars, and original air traffic control tower, convey the feeling of this original purpose. The built landscape continues to be associated with this function. The airport's design aesthetic has undergone renovations, structural additions, change of scale from the encroachment of the taller parking structures in proximity to the terminal facades, and new cladding that obscure the original features in some locations. Alterations have had a greater effect on the feeling and association of the interior spaces of the airport, hiding many of the concrete elements and replacing original window walls of the terminals that convey the design's circa 1970 character. Although some features have undergone renovations and modifications, such as the painting of concrete columns and beams in the renovated terminals, they remain in place.

Terminal C was not renovated when the other original terminals were and , therefore, continues to display some of the concrete structure and bronze-colored aluminum window frames associated with the airport's original construction. The "feeling" is evaluated to be of low integrity when derived from a sense of arrival views and terminal approaches past and present; therefore, the visual connection once existing between the terminals has been lost. "Association" of the Terminal C is low, and that of the Airport as a whole is modest, at best, from International Parkway.

Design is the combination of elements that create the form, plan, space, structure, and style of a property and **Materials** are the physical elements combined or deposited during a particular period of time in a particular pattern or configuration to form a historic property. **Workmanship** is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. As stated above, alterations have taken place at Terminal C that have affected the original appearance of the airport's characteristic elements. These include some exterior cladding on the

landside, demolition of sections of the AirTrans guideway system, the construction of Skylink on the airside, and the renovations and added functions (such as security and retail) on the interior. DFW's basic overall design, which employs a central spine road to link individual, half loop terminals, however, remains apparent. The design's use of precast concrete elements and window walls to create repeating rhythms along the facades also remains evident more on the landside than the arrival experience from the airside, despite the modifications and addition of finishes such as cladding materials and paint. These alterations affect the perception of the original materials and machine-made finishes in some locations at Terminal C.

TERMINAL C DESIGN AND EXISTING CONDITIONS

When the original 1973 Phase 1 program for the Airport construction was completed, only 65% of the proposed Final Design configuration for Terminal C was finished (Image 24). Subsequent additions to Terminal C only partially followed the standards of the precast components. Justifiable modifications to these buildings' "kit of parts" were necessary to accommodate new requirements.³⁷

One of the most significant site context changes that substantially diminish the integrity of Terminal C are the parking garage infill structures. The overall terminal design intent was, the "drive to gate" concept that integrated both the passenger terminal and the parking areas as a single unit, not as typical separate functions, and structures. This concept was executed by low lying parking areas that allowed transparency from the parking lot through the terminal buildings out to the airfields. This concept has been completely altered due to the addition of large parking structures, which reduce transparency and pedestrian traffic flows.

The 1980 infill addition of the Airport Marina East Hotel, now the Hyatt Regency at Terminal C, and the Tensile Fabric Arrival Canopies block the original views and add stark, contrasting visual focal points (Image 25). Perhaps most dramatically, the two sleek white Skylink stations have altered the scale, visual identity, and architectural design concept of the original terminal's presence. There is, by intent, no relation to the modular definition of the terminal massing, structure, or façade pattern of these additions. The size and color contrast of the stations make them the dominant visual feature,

³⁷ Terminal C Phase 1 was completed to Column Line 96. The 1985 addition overlapped Column Line 95 to 109 due to construction technique and sequencing. In 1990-1993, unknown plans appear to have expanded the Terminal from about Column 108 to 124. Finally in the 1995-2001 addition, gates 42 and 43 expanded the Terminal from Column Lines 124 to 132.

detracting and changing the focus of the original design intent. A defining design feature of DFW's precast component imagery, the vertical high light stanchions, were removed in preparation for the Skylink system.³⁸ The sense of arrival has been changed in scale and by visual view blockage both from a distance and now between the canyon-like effect on the arrival concourse, once a panoramic experience of the complete terminal from end to end. Originally the terminals could be seen in their entirety from the International Parkway (Image 26), and within close proximity at the Arrival level – originally the view from the terminals and the vehicle arrival concourse level captured views of the Parkway and opposing terminals (Image 27). Several third level additions for the Admirals Club and Operations support blocks introduce different massing, fenestrations, and roof configurations along the terminal arrival elevation (Image 28).

On the airside, Terminal C, received an outer 30' wide addition along the perimeter circumference along the entire terminal (Image 27). The entire length has partially re-located original window walls with new wedge infill units at each bay and some insulated panels at service blocks that creates a different façade fenestration from the original. The interior design feature of a ceremonial main lobby (denoted by the interior large cylindrical pylons that now form the Admirals Club entry lobby), expressed by the exterior taller clerestory bay on the airside for viewing was removed; and the adjacent 3 story blocks were removed with the perimeter expansion. The landside three story areas that are visible from the Arrival Ramp level were also reconfigured. The prominent light stanchions were initially left wedged between the new outer perimeter; the former exterior wall, 30' in from the Ramp area (Image 28). Having been compromised in functionality and as above, with the Skylink rail system structure, these were removed (Image 29-30).

³⁸ The remnants of the main Terminal C AirTrans Station near Gates 28-32 are interesting, but the determination of noneligibility and removal of most of the systems guideways and other stations, make it somewhat irrelevant in the determination of significant or eligible features.



Image 24: Terminal C Landside Expansion Plan 1985.



Image 25: Current View of Terminal 3E (C) from International Parkway.



Image 26: Original setting view of Terminal 3E (C) and original parking context from the 3W Marina West Hotel (demolished). Central Utilities Plant in foreground.



Image 27: Terminal 3E (C) from International Parkway. Note unobstructed view of the terminal, its depressed parking, and view of the prominent iconic architectural feature, the light stanchions.



Image 28: Terminal C Changes, Admirals Club addition and Office block (not in view) with Skylink visible from the Arrival concourse; Arrival canopies referenced in Image 24 not in this view.

TERMINAL C CONSTRUCTION MATERIALS AND DESIGN INTENT

Terminal C has undergone multiple renovations diluting its resemblance to the original intent of Obata and the HOK-BHA team. Additions in 1985, 1988, 1990, and 1995 reflect changes in architectural detail technology and aesthetic. In addition, some twenty other minor project alterations ranging from the replacement at the upper gate section additions of the original "stick" window wall aluminum frames with neoprene "zipper" gasket window frames³⁹, to window glazing,⁴⁰ to color variations in additional concrete structural components,⁴¹ to the use of stucco infill panels and fascia strips,⁴² all affect the appearance of the otherwise original substantial monolithic quality of the design (Figure 33-35).

³⁹ These "zipper" gasket window frames were easier to install and had inherent thermal gap characteristics. However, this alteration changed Terminal C's landside facades, which no longer maintains the original appearance of the first completed section.

⁴⁰ New window glazing de-emphasized the vertical modular proportions and transparent look to a horizontal large pane format often called "ribbon" windows. This 1980s stylistic change was a popular method of glass façade design but is inconsistent with the original 1975 plan.

⁴¹ Additional precast concrete structural components are similar but have slight color variations from the original palette. ⁴² The use of lighter-weight stucco infill panels and fascia strips were results of economy in materials, construction, and cost. However, these affect the original Brutalist style. The infill panels do not appear as substantial as the original concrete panels, and possibly are EFIS synthetic stucco-like systems with foam backing rather than solid concrete. These panels also do not have the exposed aggregate finish. Instead they have a textured trowel finish, a popular design from the 70's, 80's, and 90's. Finally, the field and edge control joint patterns and edge bead components establish a different proportion and scale from the original precast exposed aggregate concrete panels.



Image 29: Terminal 3E (C) 1984 prior to Air Side expansion; note façade position of Light Stanchions.



Image 30: Terminal 3E (C) Plan of Air Side entire perimeter addition 1986. Construction completed in 1985. Note removal of bay expressing original ceremonial Central Lobby from Land Side Entry to Air Side, removal of 3 story blocks at façade with window wall proportion changes, and slightly wider bay spacing due to new expansion wedge dimension increases.



Image 31: Terminal C Airside as it looks today with the addition of Skylink. This image illustrates the extent of additive massing on the Air Side, operational structures, and architectural changes to these facades and implied internal changes, which are visible to the deplaning (arriving) passengers.



Image 32: Terminal C Airside as it looked after the 1980s expansion.



Image 33: 1974-76 Terminal C Temporary Gate Addition and ABM Modifications.



Image 34: 1985-86 Terminal C Addition with replicated window wall and infill wall panels; different wedge divider.



Image 35: 1990's Terminal C Addition introduction of different gasket frame window wall system.

EXISTING EXTERIOR TECHNICAL CONDITIONS AND MATERIALS OF TERMINAL C43

The status of DFW's investigations and technical assessments of the physical condition of the concrete components are not available as a factor to consider during this team's determination of integrity. Komatsu Architecture recommends further analysis for both short and long-term stewardship of the myriad of concrete elements comprising each terminal, roadway, and support facility. If internal issues are detected, then long-term "sustainability" of the resources in their present form and condition may become questionable. This possible future deterioration of Terminal C's precast elements could call into question the terminal's extant condition for eligibility due to the sustainability of future retention costs compared to replacement costs.

The Cultural Resource Team Historical Architect has been tasked with preservation observations only on support for historical integrity purposes, and not structural or material integrity. However, the team has observed some concrete component issues at several locations. The evolution of precast concrete panels up to the 1970s had largely assumed that exposure to an exterior moisture penetration source would be from one side (exterior), with a dry side (interior). Lack of scientific knowledge about moisture penetration, retention, and the chemical processes was exceeded by the ever-increasing sculptural and three-dimensional exterior use of precast panels at this time. Later, the industry introduced water vapor and water repellant coatings once the accompanying issues began to be encountered.

DFW's concrete stanchions were most likely subject to internal corrosion due to the exposure on all sides of their thinner components. This exposure has likely permitted moisture penetration to the ferrous steel reinforcing and attachment plates. This material and chemical action would create a safety and potential failure hazard. The two remaining stanchion sets mounted on the Connector Crosswalk Bridge between Terminals C and A have early indications exhibiting this deterioration.⁴⁴ Overall, the team has been surprised that more corrosion and cracking were not observed. We do believe that causes of distress, including minor "hairline cracks, extensive surface spalling, water stained panel or surface and observed compressive distress may be only partially observable evidence of potential internal chemical or physical deterioration in the panel reinforcing and surrounding

⁴⁴ The Connector Crosswalk Bridge was added at an unknown date (drawings and documents are unavailable).

⁴⁴ The Connector Crosswalk Bridge was added at an unknown date (drawings and documents are unavailable).

aggregate composition. It is our historical architectural suggestion that if these internal factors could be pre-emptively analyzed and addressed, as the future cosmetic "repair" work could become cumulative. Further, it is likely to occur or reoccur as the potential for internal degradation continues.⁴⁵

Window wall systems also exhibit signs of aging including chalking and fading of anodized coatings, ghost etching, and clouding on some of the glazing panes. The film is in poor condition and presents an unsightly peeling appearance visible from both the interior and exterior, although this is typically thought of as a "reversible" condition. Integrity is evaluated in its current existing state and does not account for what the condition or integrity could be if restored, repaired, or otherwise enhanced in the future.



Image 36: Remaining Ramp Light Stanchion between Terminals A and C at Connector Bridgeway.

⁴⁵ Please see the Resources section for the team's supplemental technical approach recommendation.

EXISTING INTERIOR CONDITIONS AND MATERIALS OF TERMINAL C

The interior of Terminal C has undergone extensive changes including the accommodations required by various security requirements,⁴⁶ re-allocation of floor space away from waiting lounge areas to comprehensive shopping and dining options,⁴⁷ and the reorientation of spaces from horizontal to vertical.⁴⁸

These programs, in addition to the Terminal C expansions of 1985 and 1991, have had a detrimental impact on Terminal C's integrity.⁴⁹ It is readily observed that the already compromised state in the architectural design and style are to a point where TRIP modifications made to Terminals A, B, and E, would actually be beneficial in unifying a multi-terminal design, which has not been cohesive since 1985 for Terminal C. The original interiors of all terminals were organized to permit transparency with internal placement of ticketing kiosks, operational storage, and other small "back-of-house" kiosk blocks clustered at strategic points, allowing views from the entrance and landside walkways through to the boarding and passenger lounges and on to the planes themselves (Image 37). Only 10 years later, all terminals starting with Terminal C, were modified with an Air Side perimeter addition along the entire circumference with a 30' bay, increasing the depth of the terminal(s) from the Land-Side to the Air Side further, to a typical 147'-6" depth from the original 85' and intermediate passenger lounge sections of only 42.5' depth, to the original maximum of 117'-6" (Image 38), and without the transparent and open interiors, except at some baggage claim bays. This displaced the original passenger waiting lounges to the outer ring in smaller compartmented areas, allowing a new passenger concourse to be fitted on both sides with the emerging trend of creating a shopping mall

⁴⁶ Security requirements have significantly changed from those first required by the Civil Aviation Administration in the 1950s, to those of the Federal Aviation Administration, the Airline Deregulation Act of 1978, and more recently the Transportation Safety Administration.

⁴⁷ To develop revenue potential, DFW replaced the original convenience coffee shops and newsstands with stores, restaurants and rent-by-the-hour sleep venues. Less emphasis is placed on expansive passenger terminal seating areas and instead space has been dedicated to revenue-producing their-party vendor leases. Each vendor complies with the airport's guidelines, but storefronts and sales spaces are now encroaching on what was one a passive lounge area. Space on both sides of the primary Air/Secure side circulation corridor has been allocated in specific zones for these high energy, grab-andgo shops.

⁴⁸ The experiential and orientation aspects of DFW's terminals have been dramatically changed from the original design and concepts. The transparency of service islands and distance from terminal entry to boarding gate is no longer direct and perpendicular to the concourse. Now entirely segmented and with increased depth of operational and security functions, the visual connection and distance of the "Drive to your Gate" concept now is accommodated by lengthy dual corridors for the Land Side and the Air Side concourses, or more like corridors. While materials are generally similar to the original interior palates – ceiling acoustic tiles, natural and painted exposed concrete structural elements, the finishes of the vendor and the current patterned or themes terrazzo floors – all have changed the nature and feel of the terminal interior public spaces. ⁴⁹ To accommodate regional routes, American Airlines made renovations to land-side interior passenger areas. In 1986

American Airlines initiated a separate commuter terminal (2E or the American Eagle Terminal) which is currently under extensive renovations.

merchandising concourse. Expanded operations spaces were also inserted in this gain of additional internal useable space. The Plan figures illustrate the original openness and transparency of the terminals versus the expansion and infill tenant (American for C and Braniff for B) changes that totally changed the character, setting, and feeling of all the terminals. These changes are evident in Terminal C, despite the fact Terminal C is yet to receive the remainder of the 2007-2017 TRIP interior modifications and exterior entrance enhancements. As previously mentioned in the exterior descriptions, the original ramp light stanchions that were visible on the exterior Air Side façade, were temporarily left in place behind the new Air Side 30' depth ring addition; and were eventually removed with the 2005 Skylink project. The extraordinary design conceived as being able to virtually see your plane from the vehicle arrival drop-off or from the main public entrances, the "drive to your gate" concept borrowed from the Kansas City design, have been completely lost. **The architectural site context, design, and materials integrity of Terminal C have been compromised to a degree that these categories no longer meets the National Register criteria for eligibility.**



Image 37: Terminal C American lobby entrance at Air Side; note cylindrical pylons; upstairs dining area overlooking concourse; and Gate entrances immediately along Air Side window wall.



Image 38: Terminal C Air Side Expansion Drawing Sheet 4-2-9 showing openness and dimensions of depth for passenger and gate expansion.

TERMINAL C CONCLUSIONS

DETERMINATION OF ELIGIBILITY SYNOPSIS

The following synopsis is provided for DFW's basis of submittal to FAA and THC review for Preliminary Concurrence. As relevant to the discussion of the Owner request to pursue preliminary findings on Terminal C first, and the Airport overall second – and how this has influenced our sequence of research, findings, and conclusions. Komatsu chose to use the different term "conditional" or "conditionally" to infer something different from the typical application of "potential", with the difference in our scope and work context.

PRELIMINARY CONCLUSIONS WITH RESPECT TO TERMINAL C ARE AS FOLLOWS:

Criterion A – Terminal C would be conditionally eligible.

As one of the 4 original and 13 planned terminal nodes, Terminal C from a planning or "location" aspect would be eligible. The difficulty of separating contributing factors comes with the recommendation that under Criterion C below, Terminal C is not eligible under the architectural factors as an individual resource due to integrity issues. Over the past 40+ years, Terminal C has undergone structural and architectural modifications necessary to maintain safe, secure, and efficient airport operations. As such, Terminal C does not possess the architectural integrity associated with the original building. However, the terminal potentially meets the integrity factors under Criteria A.

Criterion B – Terminal C is not eligible.

Terminal C is not eligible under Criterion B because it is not associated with any significant person, other than the architect, Gyo Obata, which is further discussed below in Criterion C. To be eligible for listing on the NRHP under Criterion B, a property must be associated with the lives of significant persons in the past (NPS 1997). The DFW terminals were designed by Gyo Obata with HOK in cooperation with Richard Adler of Brodsky, Hopf, and Adler and Thomas W. According to the National Register Bulletin 15, a person must be individually significant within the historic context and a property is not eligible that was only "owned or used by a person who is a member of an identifiable profession, class, or social or ethnic group" (NPS 1997:15).

Criterion C – Terminal C is not eligible.

Of the seven factors addressed by the NRHP criteria for integrity, the factors that transcend the others for Terminal C to convey its original significance, are the Design (original intent as constructed vs existing status); immediate Setting of the terminal when thought of as the parking and enclosed building as a whole; and its visual relation to the original International Parkway spine and visual connection with the parkway and other terminals. In light of Terminal C's lack of integrity documented in this evaluation, Terminal C does not retain enough architectural integrity to be eligible for the National Register under Criterion C, individually and potentially not eligible under architectural contributing resources in the overall airport evaluation.

The Location and Association factors of significance and corresponding integrity exhibited in the built DFW Airport, while remaining in their original site location and association as one of four original terminals, are more appropriately represented under Criterion A as Airport and Aviation planning and innovation factors.

Changes resulting in loss of the integrity of Terminal C - its Setting, Feeling, and Design, (similarly Terminals A, B, and E, as will be addressed in Task 3 of this evaluation), have substantially compromised the existing facility's ability to convey its architectural significance and original design that may or may not have been possessed in the original design presence, image, and context as an individual terminal. It is important to account for the parking facilities (original and present) as integral to the terminal itself and its evaluation. From a design perspective and original context, they are inseparable (Image 39-41).

The association of recognized design and planning firms may not convey the level of significance of the seminal design status in other executed architectural works by these firms. The original design intent, inside and out, has been out of necessity, re-set, re-made, and re-envisioned. The original functional and design intent of a transparent terminal with visually direct connection of vehicle to plane access was the defining design feature that no longer exists (Image 42-43). However, their association under Criteron A airport planning remains valid.

Materials, and Workmanship are potentially eligible under C, however, as with the suggestion above for Location and Association, could perhaps be better represented under Criterion A that could address the broader patterns of the construction industry development and increased application in the US markets of mass-production components of precast concrete; its material availability geographically in Texas; and its preference for DFW for economic and project budget factors. The quality of the pre-cast and cast-in-place architectural finishes are marginally to moderately acceptable in the standards of the day – and would not be ranked as an example of the state of the art architectural finish (significant examples include the 1972 Kimbell Art Museum, locally that represents the level of high quality available from the mid-sixties). The concrete work at DFW is representative of mass-production quality in the vernacular of industrial applications that was demanded by the economical budget of DFW's bond and federal grant funding (Image 44-46). As an architectural feature, the fact that precast concrete was used is not extraordinary as many examples existed from the 50's on; and the design of panels and DFW's architectural signature of the high light stanchions was in fact present prior to the airport design; examples at the Dallas Brookhollow Center at Mockingbird Lane and Stemmons Freeway near Love Field, referenced earlier, along with other nationally and internationally recognized examples preceding its conception (Image 47-49). This defining feature is now removed.

Criterion D – Terminal C not eligible.

Terminal C do not appear to have any potential to yield important construction information or any significant information that would qualify it for individual listing under Criterion D.





Image 40: Terminal 3E (C) from International Parkway, 1974



Image 41: Terminal B 2004 Multi-Level Parking Garages and Skylink under construction.



Image 42: Historical reference from Terminal 2W (B); 1974 Terminal Walk-thru from Land Side Terminal entrance, past perpendicular Ticketing Counters, and straight through to Passenger Lounges and Gates.



Image 43: Terminal B 2W Braniff Layout – note the shallow depth of original Terminals at 117'-6' and 42'-6.



Image 44: Terminal C Pre-Air Side Expansion with original façade light stanchions.



Image 45: Terminal C Air Side Ring w Stanchions embedded at secondary roof line.



Image 46: DFW's recognizable, iconic Ramp Light Stanchions – removed with the terminal expansions and Skylink construction of 2003-2005.

TERMINALS A, B, and E

Four terminals were constructed as part of the original1974 airport construction project. Only one terminal, Terminal B, fully executed the half circle HOK design. The other terminals were only partially completed, approximately two-thirds of the design. The original terminals were designated as 2W, 2E, 3E, and 4E, until 1996, when they were renamed Terminals A, B, C, and E respectively (see Image 1). Terminal D was completed in 2005. The original expansion plans for the airport envisioned the location of a future Terminal F at the Short-Term Overflow Parking west of Terminal E (see Image 2). This is where the proposed design for Terminal F is also located.



Image 1 - 1974 Terminal Map with airline carriers and parking zones per terminal. Note all east Terminals have partial footprints.

Image 2 – Current Terminal Map





Image 4 - View north on International Parkway.

Terminal C (originally designated Terminal 3E) is the middle of three terminals constructed on the east side of International Parkway and was in operation, shared by American and Eastern airlines, when DFW opened in January 1974.⁵⁰ Like the other three original terminals (A, B, and E), it was conceived as a three-story, half-circle building, constructed with a precast concrete frame of columns and beams with infill of concrete panels with glass and aluminum window walls. The southernmost section of Terminal C's half circle was not constructed by the time the airport opened, presumably because it was not yet needed. In fact, all three terminals on the east side of International Parkway (A, C, and E) were built as two-thirds of the intended design since their tenants did not yet require the full build-out. The tenants of Terminal B (2W), Braniff, Mexican Airways, and Metroflight, initiated their service from DFW in 1974 and required the full half circle design.

As built, Terminals A, B, and E also adhered to the HOK-BHA design. On the landside, all terminals featured a regular rhythm of entrances interspersed with walls of precast concrete panels and glazing. The entrances consisted of concrete pylons flanking a cantilevered concrete canopy. Outboard of the pylons, the designers located a vertically oriented section featuring glass doors on the lower level to provide entrance and exit from AirTrans, windows and precast concrete beams on the second level, and windows and precast concrete fascia on the third level. Between the entrance sequences, four precast concrete columns created bays filled as the vertical sections were, with the exception of the lower level, which held a continuous band of windows that marked the AirTrans stations. The airside elevations of the terminals followed a different pattern, in which vertically oriented light standards set the rhythm. The light standards (stanchions) consisted of two precast concrete columns that extended above the roofline. Light fixtures were attached to narrow concrete panels between the columns above the roof, with larger concrete panels between the columns below the roof. Three bays of columns and windows spanned the space between the light standards.

⁵⁰ Payne and Fitzpatrick, 181.


Image 5 - Full half-circle Terminal 2W (B) Air France Concorde and Braniff Intl 747; note low Infield parking grade below Departure/Enplaning Deck. January 13, 1974



Image 6 - Fat Albert in Foreground at Terminal 2W (B) with Marina Hotel 1976 on current site of Terminal D; Note original Air Side Terminal façade, pre-expansion

THE EVOLUTION OF TERMINAL B

When the original 1974 Phase 1 program for the airport construction was completed and the airport was opened to the public, Braniff's Terminal B (2W) was the only terminal to have the full half circle design imagined in the proposed design, where only 65% of the proposed final design for Terminals A (2E), C (3E), and E (4E) were finished.⁵¹ Because of this, Terminal B is the least changed and altered of the original terminals as no major additions or gate expansions have been necessary. The lack of modifications can also be seen as a physical manifestation of the lower usage of the building as the long-standing commuter airline terminal for the major, as well as regional, carriers. The current parking capacity of Terminal B also reflects its lower passenger use as well.

As with Terminal C, one of the first major modifications for Terminal B was the outer ring airside expansion that took place after 1985 for all terminals. Terminal B's design also evolved with the infill of certain bays on the landside, which partially followed the standards of the precast components found in the HOK design and were the result of the need to accommodate new requirements. This was anticipated by the airport's "kit of parts" design to accommodate an active airport. Some of the infill occurred during the Terminal Renewal and Improvement Program (TRIP) period between 2007 and 2017. However, Terminal B did not receive all the TRIP improvements and cosmetic changes applied to Terminal A (2E) and E (4E). Because of these differences in alterations, Terminal B is individually reviewed below. Terminals A and E are reviewed together in a subsequent section.

⁵¹ In contrast, Terminal C Phase 1 was completed to Column Line 96. The 1985 addition overlapped Column Line 95 to 109 due to construction technique and sequencing. In 1990-1993, unknown plans appear to have expanded the Terminal from about Column 108 to 124. Finally, in the 1995-2001 addition, gates 42 and 43 expanded the Terminal from Column Lines 124 to 132.



Image 7 - Terminal 2W (B) at full build-out circa 1974. Original façade line of airside is intact and indicated by gate jetway and stanchions at roof. Also note the lack of parking garage infill at the landside.

PARKING GARAGE INFILL

One of the most significant site context alterations at Terminal B are the parking garage infill structures at the southernmost parking area of the half circle. The overall terminal design intent was the "drive to gate" concept that integrated both the passenger terminal and the parking areas as a single unit, not as typical separate functions, and structures. This concept was executed by low lying parking areas that allowed transparency from the parking lot through the terminal buildings out to the airfields. This concept has been completely altered due to the addition of parking structures, which reduce transparency and pedestrian traffic flows, although not as drastically as at Terminals A, C, and E. The sense of arrival has been changed in scale and by visual view blockage both from a distance and now between the canyon-like effect on the arrival concourse, once a panoramic experience of the complete terminal from end to end. Originally the terminals could be seen in their entirety from the International Parkway, and within close proximity at the Arrival level – originally the view from the terminals and the vehicle arrival concourse level captured views of the Parkway and opposing terminals.

The landside was once again modified in the 1980s, with the addition of tensile fabric arrival canopies were added to each entrance. These additions block the original views of the building, and add stark, contrasting visual focal points to the landslide.



Image 8 - Terminal B tensile fabric structure additions on land side. There are two large entry canopy's installed with a lower concave canopy installed saddling the large one on each side.

Some of the original, ground-level infield parking still exists with partial views from the parking to the terminal similar to what would have been observed in 1974. Limited height parking structures have been added to the departure/enplaning concourse level at the concentric parking rings closest to the terminal. The higher parking deck sections eliminate the original open "drive and park at your gate" as a visible concept. This is a major loss to the original setting of each terminal (the other terminals have lost even more of this association due to the servicing of higher volume use/traffic requiring the high capacity build-up of the landside infield parking need at 2E (A) and 4E (E), similar to the already cited Terminal 3E (C) loss of setting and context. The airside terminal elevations are clearly visible and uncluttered; the gate light stanchions are flush at the façade face; and the depth of the terminal between airside and landside are very shallow particularly in the extended concourses beyond the terminal central service bays.



Image 9 - Current condition of Terminal B, not elevated garage to the south and the added large tensile entry canopies on the land side.

OUTER RING EXPANSION

On the airside, Terminal B, received an outer thirty-foot-wide addition along the perimeter circumference of the entire terminal after 1985. The original window walls were partially relocated with new wedge infill units at each bay and some insulated panels at service blocks that creates a different façade fenestration from the original.

SKYLINK

The development of a new people-mover system for DFW, called Skylink, which opened in 2005, resulted in changes on both the air and landsides of Terminal B, and on the interior. The significant landside change was the closure of the AirTrans system. Since that time, a major portion of the AirTrans concrete guiderail infrastructure has been removed (by DFW actions approve separately by the THC in 2013). Some stations, escalators, rights of way, and landscaping of that system remained in place, and are inactive and most parts of the system were demolished at the stations. The remaining portions have not been maintained. On the airside, Skylink consists of tracks elevated to the airport's roof level by concrete supports. A physical and visual impact due to the track construction has been the removal of the concrete light standards (stanchions) that were the vertical elements setting the rhythm of the HOK-BHA airside elevation. The Skylink stations, of which Terminal B has two, also hide its airside elevations and are visible from the landside. The Skylink stations are elevated

above the original terminal, making them visible from both the land side and air side views, sheathed in white metal panels. Their size and color dramatically change the appearance and focus of the original terminal architecture.

TERMINAL B TRIP EXTERIOR

The Terminal Renewal and Improvement Program (TRIP) made exterior and interior electrical, plumbing, and some interior partition modifications at Terminal B in 2000. This was the third terminal in the TRIP program to be completed.⁵² A major modification that was made on the landside was delineating the Arrival-Baggage Claim areas by adding a horizontal flat roof port cochere that reachs out across the arrival and departure road. They are constructed of an aluminum metal panel and a white masonry coating applied over the original raw concrete-surface entry towers. The white accents are also repeated with the Tensile structures at the vehicle ramp approaches. Most prominent are the white Skylink Stations that are visible from both the Land and Air Side, two per Terminal.



Image 10 - Terminal B TRIP Main Portal Treatment. Note replacement horizontal, tinted glazing system at far right.

⁵² The Existing Terminal B, after the 2007-2017 TRIP modifications, developed by Manhattan-Byrne/JRT Joint-Venture (VAI Architects)



Image 11 - White structure of 2005 Skylink visible in background. Note its size, scale, and massing contrasted with original. One of two stations per terminal, their dominance shifts the focus and image setting from 1974 design.



Image 12 - White TRIP entrance contrasted with original 1974 entrance configuration and design features.



Image 13 - Example of original entrances in existing condition at Terminal B. Typical at all terminals, except where TRIP modifications are applied.

TERMINAL B (2W) BRANIFF ERA

For the 1974 opening, the major carrier tenant, Braniff, attempted to carry its branding and marketing program into the terminal interiors since it was restricted from making visible exterior changes to the HOK terminal aesthetics. The Terminal B (2W) Interiors evolution actually began in 1965 with the hiring of Harding L. Lawrence, Executive Vice President of Continental Airlines, who was installed as the President and CEO for Braniff International. His innovations multiplied the airlines earnings tenfold until 1978, when overexpansion, corporate excesses, and the effects of the Airline Deregulation Act of 1978 combined to bring about its rapid decline and dissolution by 1982. Immediately initiating his development plan, he hired Jack Tinker Associates and its wunderkind, Mary Wells, to recast what he thought of Braniff as one of several stodgy airlines, with a sweeping marketing, branding, and public relations campaign that would stretch throughout the decade of Braniff's rise to the top. Not coincidentally, Lawrence also married Wells by 1967 during the Paris Air Show.

Together, they called on world class designers to reinforce their desire to have "international status" and re-imagine the airline in a campaign called "End of the Plain Plane" by the duo. The designers included famous names Emilio Pucci, Beth Levine, and Alexander Girard. Pucci, an Italian fashion designer, was brought on to design the "hostess" uniforms with 18 layered garments that were taken off during flight and advertised as "The Air Strip". ⁵³ Levine, a New York based show designer, coordinated the hostess' footwear. French architect, Alexander Girard, designed their line of furniture for ticket areas and lounges with Herman Miller fabrics, that became so popular, Braniff even offered for sale to the public in 1967.

Additional designers were later added to the campaign including Sonny Liston, Salvador Dali, and Andy Warhol with the tag line "If you've got it – flaunt it". Starting in 1973, Lawrence and Wells commissioned artist and sculptor, Alexander Calder, to execute their "Flying Colors" suite of aircraft used for their South America flights and for the company's celebration of the United States Bicentennial on the then new Boeing 727-200's, DC-8s, and Boeing's 100th 747-127, for the first flight from DFW to London featured at DFW's opening.

⁵³ D Magazine; Rosenthal, Beth Ellen and Selcraig, Bruce; February 1981



Image 15 - Braniff's Mary Wells' risqué "hostess" ad campaign "The Air Strip" epitomized the airline.



Image 16 - Alexander Calder's first DC 8 aircraft signature décor for South American flights.



Image 17 - Entry portal lobby with perpendicular Ticket Counter. Gate Counter beyond at Departure Lounge.

Braniff approached their layout and use of the typical DFW Terminal with a different attitude befitting their branding and marketing through their aircraft and uniforms that preceded their flagship presence at DFW. Their plan used the portals as Ticketing Pass-Throughs, perpendicular to terminal concourses. This allowed an immediate transparency that was a gesture of "walk into the terminal, see the planes, get your ticket, and see your gate from the same spot" – or at least see through to the Air Side. The Gate Counters at that time could also be used as ticket counters if you did not need to make changes. With no security pass-throughs, a passenger stepping into the terminal might be forty-five feet or at most sixty feet from the airside window wall. Braniff did pull back its glamour and use standard waiting areas; however, their baggage claims and carousel arrays were decorated in their corporate spirit.



Image 18 - 1974 Terminal B (2W) walk-thru from landside terminal entrance located past perpendicular Ticketing Counters and straight through to Passenger Lounges and Gates.



Image 19 - Gate Counter w Braniff signature décor and graphics.



Image 20 - Braniff Baggage Claim Area and Carousel at 2W (B) Design by Harper + George.

Braniff's design strategy was to create first impressions at DFW – deviating from airport standard fixtures to custom interior lighting schemes, colorful banners and wall coverings, designed by their international talents – Alexander Girard, Emilio Pucci, and Jack Lenor Larsen, with textile banners by Harper + George, affiliated with Herman Miller. Their ticket counters were memorable for the huge round lanterns that brought the high ceilings to scale and created bright focal points to welcome passengers. Within the design discipline of the HOK precast modular terminals, Braniff sought to infuse Terminal B (2W) with their culture, branding aesthetic, and their high-flying symbolism of both stylish travel and eventually low-cost fares. From 1935 to their fast-disappearing legacy created in less than 20 years from 1965 to 1984, their loyal following still has reunions and an online presence. Terminal 2W as Terminal B since 1996, is the witness to the many challenges of the ever-changing landscape of commercial aviation.

With the closing of Braniff and the reappropriation of Terminal B to other airlines, the iconic interiors of Braniff disappeared forever altering Terminal B. The infrastructure of the HOK pre-cast concrete design was maintained although modified throughout the years. The interior design feature of a ceremonial main lobby, denoted by the interior large interior light globes and Jack Lenor Larsen banners, expressed by the exterior taller clerestory bay on the airside for viewing was removed. The adjacent 3 story blocks were removed with the perimeter expansion. The landside three story areas that are visible from the Arrival Ramp level were also reconfigured.



Image 21 - Remaining original interior feature from 2W in B – Braniff Chapel.



Image 22 - Terminal B (2W) with gates on the left and landside windows on right



Image 23 - Terminal B TRIP airside concourse layout and gate waiting areas.

THE EVOLUTION OF TERMINALS A and E

Initially, Terminals A and E was a partial, two-thirds version of the full terminal design when the Airport opened in 1974. Terminal A (2E) was originally configured with only two primary Entrance and Operations blocks, the least of any of the four terminals, which were shared by its airline tenants. Plans for modifications were already completed in 1974 by Neuhaus and Taylor, for Terminal E (4E) at the request of Delta, with construction completed in 1975. The early infill additions to each Terminal followed the standards of the precast components.

Each Terminal had multiple tenant carriers upon opening, and each has gone through several primary carrier occupants. Both Terminals were primary terminal hubs for Delta Airlines at one time or another, and Western Airlines, when it merged with Delta in 1987. Texas International Airways also operated out of A (2E) initially, until its merger with Continental, also in 1986, which was located in E (4E) in 1974. Terminal E has seen its initial airline tenants disappear, merge, or re-emerge in a second life. Unlike the Braniff inaugural history at 2W (B), or the longest occupancy run by American at 3E (C), many of the corporate associations with terminals have been overtaken by Delta first (acquisition of Western) and then American. Delta under the 1978 Airline Deregulation Act, recast its former hub operations and while reducing its operations, still kept a presence as regional level collector/connector presence at DFW with full terminal gate commitments, first at A (2E), and now at E (4E).

Most of the basis of Terminal C's evaluation, its context, design characteristics, materials descriptions, and operational changes apply to A and E, as was also referenced for Terminal B. Terminals A and E are, in terms of changes, more similar to each other than Terminal B. Elements of the Terminal Renewal and Improvement Program (TRIP) have been applied more extensively at Terminals A and E. Because of their similarities, Terminal A and E are addressed together in this section.

PARKING GARAGE INFILL

The context has changed dramatically at Terminal A and E. Limited height parking structures were added to the departure/enplaning concourse level at the concentric parking rings at Terminals A and E by 1980, however, this was not enough to support the tenant's, Delta, growth with the successful acquisition of Western in 1987. Additional, higher parking deck sections were added to Terminal A and E, as at C, after 1996. These four to five story garages eliminate the original open "drive and

park at your gate" as a visible concept, which results in a loss the original setting of each terminal. The high-volume traffic and use of the parking garages further add to the change in the context of the terminal and how a person experiences arrival at the terminal.

OUTER RING EXPANSION

As with Terminal B and C, the outer ring airside expansion took place after 1985 for Terminals A and E. On the airside, each terminal received an outer thirty-foot-wide addition along the perimeter circumference of the entire building. The original window walls were partially relocated with new wedge infill units at each bay and some insulated panels at service blocks that creates a different façade fenestration from the original. The interior design feature of a ceremonial main lobbies expressed by the exterior taller clerestory bay on the airside for viewing was removed or obscured within the additions and modifications and the adjacent three-story blocks appear to be set back with the perimeter expansion. The landside three-story massings that are visible from the Arrival Ramp level were also reconfigured.

SKYLINK

The development of a new people-mover system for DFW, called Skylink, which opened in 2005, resulted in changes on both the air and land sides of Terminals A and E, and on the interior where the station entrances were inserted as new circulation nodes on the Air Side concourse. The significant landside change was the closure of the AirTrans system. Since that time, a major portion of the AirTrans concrete guiderail infrastructure has been removed by DFW actions approve separately by the THC in 2013. Some stations, escalators, rights of way, and landscaping of that system remained in place, and are inactive and most parts of the system were demolished at the stations. The remaining portions have been mothballed. On the airside, Skylink consists of track superstructure elevated to the airport's roof level by concrete supports. A physical and visual impact due to the track construction has been the removal of the concrete light standards (stanchions) that were the vertical elements setting the rhythm of the HOK-BHA airside elevation. The Skylink stations, of which each terminal has two, also hide its airside elevations and are also visible from the landside. Alterations on the interior caused by the construction of Skylink are more evident at the station areas, where portions of the airside window walls of the HOK-BHA design have been removed and replaced, spaces has been rearranged, and materials altered to move passengers back and forth from concourse to Skylink. The Skylink stations are elevated above the original terminal, making them visible from both the

landside and airside views, sheathed in white metal panels. Their size and color dramatically change the appearance and focus of the original terminal architectural design. The prominent light stanchions were initially left wedged between the original edge of the building and the outer ring expansion until the 2005 Skylink insertion. Having been compromised in functionality and as above with the Skylink rail system structure, the light stanchions were removed and replaced with ramp illumination mounted along the Skylink system where needed.

TRIP

The Terminals received new glazing and curtain wall systems on certain bays on the landside and airside, taking place during the TRIP period of 2007-2017. Terminals A and E received the most comprehensive TRIP improvements and cosmetic changes. Terminal A was the field test for application of electrochromic glass in 2019. The glass has an interactive electrical charge with a controllable tinting effect that creates a blue appearance on the airside in Terminal A between Gates 20 and 22.

TERMINAL A EXPANSION

In the most differentiating departure from the 1974 HOK terminal aesthetics, the Terminal A Expansion applies the TRIP aesthetic of white metal panel surfaces and horizontal curtain wall features on the exterior. The 2005 Terminal D exemplifies the new DFW terminal architectural aesthetics – white, sleek metal over the original sense of heavy concrete forms and surfaces.



Image 24 Terminal A Expansion façade in background contrasted with 1974 precast concrete design



Image 25 - Terminal A 2004 Multi-Level Parking Garages and Skylink under construction.



Image 26 - Terminal E Aerial – Note white 2015-16 TRIP and 2005 Skylink elements in front of Air Side



Image 27 - Terminal A 2015 TRIP Entrance – new "white" aesthetics and metal panel "hi-tech" materials

TERMINAL A, B, E PRELIMINARY NATIONAL REGISTER ELIGIBILITY

DFW has and must continue to adapt to changes in aircraft, airline operations, security needs, safety requirements, passenger expectations, and other factors. Because of this, the DFW Airport facilities, the terminals, that are inclusive of their parking components, have undergone many changes since their initial construction. Major changes include replacement of surface parking areas with structured parking, terminal connector walkways, addition of aircraft gate capacity (e.g. Terminal E-satellite, Terminals B stinger, etc.), alterations to the original terminal entrances and curtain wall design on the Land Side and Air Side, the addition of the Skylink tracks and stations on the Airside, the construction of Terminal D in early 2005, and alterations to the interiors to accommodate security requirements, airport functions, and the expansion of retail opportunities.

SIGNIFICANCE ASSESSMENT

The history and development of air travel and the history and development of DFW Airport were reviewed in order to determine Terminal A, B, and E's historical significance. The Terminals are reviewed under each National Register Criteria below.

Criterion A – Association with Significant Event or Broad Pattern of History

Based on review of the available archival information and site visits, Komatsu Architecture has concluded that Terminal A, B, and E are not eligible under Criterion A as an individual landmark as significant events did not take place solely within or around the Terminal. The Terminals as a sole facility also did not contribute to the broad patterns of history at the local, state, or national level. Terminal B's association with Braniff airlines for ten years at DFW is a fraction of the Terminal's history and does not warrant significance status. Furthermore, Terminal B architectural design was related to the HOK master plan for the airport and was not solely constructed for Braniff. Other than American Airlines association with Terminal C, and later A and E, no other DFW terminal has the integrated airline history with their terminals quite like Braniff.⁵⁴ Terminal A and E have their longest histories with American Airlines; however, Delta has also flown out of each terminal as well. Their occupancy of the terminals has followed the standards of DFW's original 1974 design with modifications specifically for each respective airline mostly with remote terminals and Frequent Flier club alterations and interior

⁵⁴ Both American Airlines associations are outside of the period of significance of the airport. Furthermore, American can claim other national and international significant airport terminal associations outside of DFW.

design. The Terminals have been most altered by the TRIP program, with A and E receiving the first program elements starting in 2007 and through 2015. Terminal B has been completed as of 2017.

Criterion B – Association with Significant People

DFW's design team included Gyo Obata (1923-) who represented Hellmuth Obata and Kassabaum (HOK), while Richard Adler (1928-2012) was responsible for Brodsky, Hopf, and Adler's input. Obata acted as the dominant designer and visionary for the project, while Adler was the primary technical planner. Local Architects were HKS, Preston M Geren & Associates, and Harrell & Hamilton for the terminals' design. Although the Airport's design team included notable designers and firms, these significant people are better memorialized by their other projects and seminal work. Despite Terminal B's association with Braniff Airlines, the architectural design was not created by one of the designers Braniff consulted as part of their brand. Therefore, Terminal A, B, and E are not eligible under Criterion B, because they were not associated with any significant person's life or career.

Criteria C – Significant Architectural Design or Construction

The original design of DFW Airport and the terminals had potential to be eligible for the National Register under Criteria C for its architectural style and planning concepts. However, in its function as a working airport, DFW has had to adapt to changes in aircraft, airline operations, security needs, safety requirements, passenger expectations, and other factors over its lifetime. Because of this, the original facilities have undergone many changes since their initial construction. Major changes at each Terminal include:

- replacement of surface parking areas on the landside with structured parking,
- alterations to the original terminal entrances on the landside,
- exterior cladding on the landside,
- the removal of the AirTrans system,
- the addition of the Skylink tracks and stations on the airside, which extremely altered the roof line of the terminals and major views the terminal from all approaches,
- removal of the character defining light stanchions at the roof,
- alterations to the interiors specific to Braniff during the period of significance that was unique to Terminal B,
- alterations to the general terminal interiors generically fit other airlines, to accommodate security requirements, airport functions, the expansion of retail, and associated cladding that obscures the original precast concrete features,
- growth of metropolitan area around Airport has resulted in a change of the original flat setting into numerous industrial, office, and residential developments.

The original design of the terminals, inside and out, has been out of necessity, re-set, re-made, and re-envisioned. The original "drive to your gate" functional and design intent of a transparent terminal with visually direct connection of vehicle to plane access was the defining design feature that no longer exists. Terminal B, while the least changed of the four terminals, still does not retain enough architectural integrity to be eligible for the National Register under Criterion C, individually. For more detailed information, see the review of the seven aspects of integrity in the following section.

Criterion D – Information Potential - A property may be eligible for listing on the NRHP under Criterion D if it has yielded or is likely to yield information important to the prehistory or history.⁵⁵ During construction, the fossilized remains of a Plesiosaur (70m years BC) were excavated and restored with a grant from Braniff. It remained on display in Terminal B (2W) between Gates 10 and 11, until Braniff ceased operations, where it was moved to the Central Utilities Plant. It has, since 1984, been reported missing.⁵⁶



Image 28 – Missing Plesiosaur at Braniff Terminal B.

Although this criterion is mostly applied to archaeological sites, when applied to a building, structure, or object, the property "must be, or must have been, the principal source of the important information".⁵⁷ Terminal B does not appear to have any potential to yield important construction information or any other significant historical information that would qualify it for individual listing under Criterion D. A cultural resources database search was completed by HDR and is included in Resource 8. This search reviewed the existing documented archaeological surveys and sites of the area and the conclusions proposed no action should be taken at this time. Therefore, the terminals, including Terminal B, are not significant under Criteria D.

⁵⁵ NPS 1997.

⁵⁶ Davis, Debbie; DFW Then vs DFW Now: TRIP-Part 1, 2017

⁵⁷ NPS 1997: 21.

INTEGRITY ASSESSMENT

To determine Terminal A, B, and E's eligibility for the National Register as individual resources, the seven aspects of integrity were evaluated based on the National Register criteria. These aspects include location, design, setting, materials, workmanship, feeling, and association. The steps involved in assessing the integrity of a property include:

- Defining the essential physical features that represent a property's significance.
- Determining whether the essential physical features are visible enough to convey their significance.
- Determining whether a property needs to be compared with similar properties. And,
- Determining which aspects of integrity are vital to the property being nominated and if those aspects are present.

As the National Register states, "Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant."⁵⁸ These aspects and the ability of each terminal to satisfy these standards individually are discussed below.

Location is the place where a historic property was constructed or the place where the historic event associated with the property occurred. The location of the elements of DFW that stood when the airport opened in 1974 – runways, terminals, air traffic control tower, International Parkway, etc. – remain in their original locations. Although alterations have been made to these buildings and structures, their locations have remained constant. The location of Terminal A, B, and E have not changed and, therefore, retains integrity to the period of significance (1965-1974) in this category.

Setting is the physical environment of a historic property. The airport's, and consequently the terminals, setting was altered in several ways since it originally opened. The metropolitan area of Dallas and Fort Worth has expanded closer to the airport, covering the flat ground with highways, residential developments, offices, and industrial buildings. Development related to the airport was expected, however, as the project was planned for aviation related technical requirements as well as anticipated environmental conditions. The 18,000-acre expanse of DFW property remains divided into open space devoted to runways and future construction and developed areas holding terminals, hangars, airport-support facilities, and commercial buildings. Overall, the density of airport development within the Airport Operations Area has increased dramatically.

⁵⁸ How to Apply the National Register Criteria for Evaluation, 44-45.

Within this basic arrangement, later construction, particularly structured parking on the landside and the Skylink tracks and stations on the airside, have encroached significantly on the original setting of Terminal A, C, and E, and visibly a little less at Terminal B. However, the tiered decks matching up to the enplaning/departure level, and the taller structured parking on the South end of the Terminal, still play a substantial role of diminishing the integrity of the setting. An understanding of the original Terminal B landside facades can still be viewed in limited sightlines from the original upper and lower approach roads, including partial views between the now taller and closer parking structures. Another partial view of the original Terminal B façade can be seen from the parking area and approach roads. However, the views to Terminals A and E have been completely obscured from International Parkway, reducing the Terminals' integrity under the Setting factor.

On the airside, the Skylink tracks and stations obscure the rhythm of the Terminals' original concrete design and glass bays, including the 1985-86 terminal ring expansions covering the original facades and removal of the signature light stanchions. The ramp levels with additional covered areas and equipment enclosures, further obstruct any semblance of the original airside operations context. Therefore, the integrity of the settings for Terminals A, B, and C are determined to be low.

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. DFW continues to function as an international airport, and its important construction, including the terminals, runways, hangars, and original air traffic control tower, convey the feeling of this original purpose. The built landscape continues to be associated with this function. The airport's design aesthetic has undergone renovations, structural additions, change of scale from the encroachment of the taller parking structures in proximity to the terminal facades.

The TRIP modifications emphasize a new design aesthetic on the exterior at Terminals A and E, predominantly a white palette for new additions' exterior cladding and the garages. The TRIP modifications also introduced a total change-over to airy, white interiors from the raw earth tones of concrete, dark brown/bronze curtainwall systems and infill panels. Terminals A and E continue to display some of the concrete structure and bronze-colored aluminum window frames associated with the airport's original construction in very limited areas. Terminal B was not renovated as substantially as Terminals A and E were, so it continues to display some of the concrete structure and bronze-colored aluminum window frames, the

removal of Braniff's iconic interiors have had a significant impact on Terminal B's feeling at the interior that also negatively affect its feeling factor.

The "feeling" is evaluated to be of low integrity for all three terminals when derived from a sense of arrival views and terminal approaches past and present, because the visual connection that once existed between the terminals has been lost form International Parkway. Similarly, "feeling" is also low at the interiors.

Association is the direct link between an important historic event or person and a historic property. Terminal A, B, and E's "association" is low, and that of the Airport as a whole is modest at best. Important events did not take place in or around the airport. Although significant people were involved with the planning and design of the airport and, at Terminal B in particular, were involved with Braniff airlines, none have close enough ties to the remaining architecture of Terminal B to qualify it as historic.

Design is the combination of elements that create the form, plan, space, structure, and style of a property and **Materials** are the physical elements combined or deposited during a particular period of time in a particular pattern or configuration to form a historic property. **Workmanship** is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. As stated above, alterations have taken place at each of the terminals that have affected the original appearance of the airport's characteristic elements. These include some exterior cladding on the landside, demolition of sections of the AirTrans guideway system, the construction of Skylink on the airside, and the renovations and added functions (such as security and retail) on the interior. DFW's basic overall design, which employs a central spine road to link individual, half loop terminals, however, remains apparent. The design's use of precast concrete elements and window walls to create repeating rhythms along the facades also remains evident more on the landside than the arrival experience from the airside, despite the modifications and addition of finishes such as cladding materials and paint. These alterations affect the perception of the original materials and machine-made finishes in some locations at Terminal B and many locations at Terminals A and E.

The quality of the pre-cast and cast-in-place architectural finishes are marginally to moderately acceptable in the standards of the day – and would not be ranked as an example of the state-of-theart architectural finish Significant examples include the 1972 Kimbell Art Museum, which locally represents the level of high quality available from the mid-sixties. The concrete work at DFW is representative of mass-production quality in the vernacular of industrial applications that was demanded by the economical budget of DFW's bond and federal grant funding. As an architectural feature, the fact that precast concrete was used is not extraordinary as many examples existed from the 1950s on, and the design of panels and DFW's architectural signature of the high light stanchions was in fact used in other building designs prior to DFW. Examples include the Dallas Brookhollow Center at Mockingbird Lane and Stemmons Freeway near Love Field, along with other nationally and internationally recognized examples preceding its conception. This defining feature is now removed. Materials, and Workmanship are potentially eligible under C. However, as with the suggestion above for Location and Association, could perhaps be better represented under Criterion A that could address the broader patterns of the construction industry development and increased application in the US markets of mass-production components of precast concrete, its material availability geographically in Texas, and its preference for DFW for economic and project budget factors.

TERMINALS A, B, E CONCLUSIONS

The following synopsis is provided for DFW's basis of submittal to FAA and THC review for Preliminary Concurrence. As relevant to the discussion of the Owner request to pursue preliminary findings on Terminal C first, Terminals A, B, and E second, and the Airport overall third– and how this has influenced our sequence of research, findings, and conclusions. **Preliminary conclusions with respect** to Terminals A, B, and E are as follows:

Criterion A – Terminal A, B, and E are potentially eligible.

As three of the four original and thirteen planned terminal nodes, Terminal A, B, and E from a planning or "location" aspect would be eligible. The difficulty of separating contributing factors comes with the recommendation that under Criterion C below, were Terminal A, B, and C are not eligible under the architectural factors as an individual resource due to integrity issues. Over the past forty plus years, all three terminals have undergone structural and architectural modifications necessary to maintain safe, secure, and efficient airport operations. As such, Terminal A, B, and E do not possess the architectural integrity associated with the original building. However, the terminals potentially meet the integrity factors under Criteria A for planning criteria only when considered as resources that contribute to the Airport as a whole.

DFW Airport is potentially significant at the local and potentially at state level under Criterion A, for its role in the transition of Dallas-Fort Worth and Texas air travel from reliance on nearby, local airfields to larger regional airports that could accommodate the latest jet aircraft. DFW largely replaced airports previously used by area residents and became the busiest airport in the state, and one of the busiest in the country, when it opened in 1974. This review has also determined that DFW Airport is potentially significant under Criterion A at the local level in the areas of community planning and development, politics/government, and economics for the area-wide cooperation required to bring the project to fruition and the impacts that the airport had on the area's economic base. Building the airport required transportation, land use, environmental, economic, residential, labor, and other planning efforts among two cities, eleven counties, the state of Texas, and the federal government. Additionally, the board of the airport authority included members of both the Dallas and Fort Worth communities. The effort marked a significant achievement in local cooperation, concluding a process that had begun forty years earlier. As a result, the Dallas-Fort Worth area received an immediate economic boost, with added jobs, the relocation of corporate headquarters to the area, and an increase in real estate values. Estimates of the economic impact on the area began at \$350 million in

the airport's first year of operation and an average of 225 new or relocated corporate headquarters per year in the first decade.

Terminal A, B, and E, each as one of the four original terminal nodes, has the potential to contribute to the integrity of the Airport as a whole if it is determined eligible for the National Register. However, if each resource is to be considered "contributing", it is for the sole reason that the Terminal occupies one of the original designated terminal pod locations, as all other aspects of integrity have been compromised to the extent that it is not architecturally significant. (See the integrity section below for further explanation.) Each Terminal would appear more justifiable as a contributing resource to the Airport as it retains its characteristic "location" as one of the Airport's eligibility must await a thorough, more complete evaluation of its overall planning and physical realization of that plan integrity, which is the central task for the next Task 3B of under Komatsu's scope of work for DFW.

Criterion B – Terminal A, B, and E are not eligible.

Terminal A, B, and E are not eligible under Criterion B because it is not associated with any significant person, other than the architect, Gyo Obata, which is further discussed below in Criterion C. To be eligible for listing on the NRHP under Criterion B, a property must be associated with the lives of significant persons in the past (NPS 1997). The DFW terminals were designed by Gyo Obata with HOK in cooperation with Richard Adler of Brodsky, Hopf, and Adler and Thomas W. According to the National Register Bulletin 15, a person must be individually significant within the historic context and a property is not eligible that was only "owned or used by a person who is a member of an identifiable profession, class, or social or ethnic group" (NPS 1997:15).

Criterion C – Terminal A, B, and E are not eligible.

Of the seven factors addressed by the NRHP criteria for integrity, the factors that transcend the others for the terminals to convey their original significance, are the Design (original intent as constructed vs existing status); immediate Setting of the terminal when thought of as the parking and enclosed building as a whole; and its visual relation to the original International Parkway spine and visual connection with the parkway and other terminals. In light of Terminal A, B, and E's lack of integrity documented in this evaluation, the terminals do not retain enough architectural integrity to be eligible for the National Register under Criterion C, individually and potentially not eligible under architectural contributing resources in the overall airport evaluation.

Criterion D – Terminal A, B, and E are not eligible.

The terminals do not appear to have any potential to yield important construction information or any significant information that would qualify it for individual listing under Criterion D.

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RESOURCES

AIRPORT CULTURAL RESOURCE EVALUATION

Resource 1: Historical Background & Context

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- Resource 4: Corporate Campus Context
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RESOURCE 1: HISTORICAL BACKGROUND & CONTEXT

BY ROBINSON ASSOCIATES, INC.

Introduction

Dallas Fort Worth International Airport was planned, designed, and constructed during a period of time in which jet aircraft became the primary mode of air transportation in the United States. Continued innovations in the size and speed of the new planes and affordable ticket prices spurred a tremendous increase in air travel in the years of the airport's planning – 300 percent between 1960 and 1970.⁵⁹ The changes wrought by the new aircraft and the increase in air travel forced federal and local governments, airport authorities, planners, engineers, and architects to adapt older transportation paradigms, as well as create new ones, to maintain the safety, efficiency, reliability, and profitability of the system. As a result of the new requirements, the period also witnessed a tremendous construction boom at the nation's airports. Many older airports were altered to accommodate the new planes, and a small number of completely new airports built during the period and one of the last completed before air travel and airport construction slumped in the 1970s. This Historical Background and Context provides information related to the factors – technological, political, regulatory, and aesthetic – that influenced the design and construction of DFW. An additional section is devoted to the description of Terminal C as it was initially constructed and later alterations.

AIRPORTS IN THE JET AGE:

THE IMPACT OF JET AIRCRAFT ON AIRPORT PLANNING AND DESIGN:

Jet aircraft had several advantages over the piston-engine airliners used in commercial air transport in the years just after World War II. They were faster: the first commercial jet airliner, the DeHavilland Comet, of the British Overseas Aircraft Corporation (BOAC), flew at 480 miles per hour, compared to the piston-driven Douglas DC-3's 180 mph. Jets were also quieter and vibrated less than pistonengine planes. Still, commercial airlines in the United States did not immediately adopt the new technology due to the costs of the metal alloys required to build their engines and the amount of fuel needed to power them. Jet aircraft also required longer runways for takeoff, adding to the cost of their use. BOAC's first commercial flight took place on May 3, 1952. Pan American Airlines became the

⁵⁹ Robert Bruegmann, "Airport City," in Building for Air Travel: Architecture and Design for Commercial Aviation, John Zukowsky, ed. (New York: Prestel-Verlag, 1996), 199.

first American carrier to use a jet-powered plane commercially in a flight from New York to Paris on October 26, 1958. National Airlines offered the first domestic jet service, beginning on December 10, 1958, with flights from New York to Los Angeles. The American plane making these runs was the Boeing 707, which flew at nearly 600 miles per hour and carried twice as many passengers as the Comet. Innovations in jet engine design made short and intermediate flights commercially viable by the early 1960s, and Boeing developed the 747, the first wide-body jetliner, in the mid-1960s. It was flown commercially for the first time on January 22, 1970, by Pan Am. The craft could carry as many as 490 passengers.⁶⁰

The introduction of jetliners, advances in their technology, and their eventual ubiquity in commercial air travel resulted in modifications of existing airports and the re-envisioning of future airports. One of the most influential factors on the design of airports to serve jets was the amount of land required: runways needed to be much longer to support jet takeoffs, larger buffer zones were needed to make the surrounding areas safe and to control noise, and the larger planes and increase in passengers and baggage required larger terminals, hangars, and other buildings. These land area requirements raised debates on the best locations for airports and whether existing airports either within or close to major cities could be safely and economically expanded to accommodate the new planes. In the United States, responsibility for development of airports rested with municipal governments, although the federal government, through a succession of agencies that evolved into the Federal Aviation Administration, took care of developing aids to navigation, provided some funding, and managed the use of the nation's airways. Many municipal governments did not have enough land at their disposal to provide for the necessary expansion of existing facilities to suit the new jets or would not impose the tax burden on its citizens necessary to purchase such lands.⁶¹

Cities responded to this situation in different ways. Some were in a position to accommodate the early use of jets, although they did not plan specifically to do so. Chicago, for instance, acquired land beyond its boundaries in 1946 to establish a new airport because the city's Midway Airport was too constrained by urban development for expansion to meet an expected post-war increase in air travel. O'Hare International Airport was constructed on the acquired property between 1957 and 1963.

⁶⁰ National Historic Landmarks Program, American Aviation Heritage: A National Historic Landmarks Theme Study, U.S. Department of the Interior, National Park Service, Washington, D.C., March 2011, 219-223.

⁶¹ American Aviation Heritage, 225; Mark J. Bouman, "Cities of the Plane: Airports in the Networked City," in Building for Air Travel: Architecture and Design for Commercial Aviation, John Zukowsky, ed. (New York: Prestel-Verlag, 1996), 179-180.
During World War II, the U.S. Air Transport Command selected Love Field in Dallas as a major supply base, purchased 100 acres of land for expansion, and rebuilt and lengthened its runways. Between 1956 and 1958, Dallas built a new terminal at Love Field and extended its runways further. The alterations helped keep Love Field competitive with Fort Worth's Carter Field, which opened in 1953. The first new airport planned and built to respond to the requirements of jet aircraft was Dulles International, in Chantilly, Virginia, about 27 miles from Washington, D.C. President Dwight D. Eisenhower determined the location of the new airport in 1958 after numerous site selection studies. Dulles was designed by a joint venture led by Boyd Anderson, a partner with the engineering firm Ammann and Whitney, which had long experience in airport design. The venture included Eero Saarinen and Associates as lead architects. When it opened in 1962, Dulles Airport covered 10,000 acres and employed two parallel runways, each 11,500 feet long. (Figure 1) By contrast, Carter Field topped out at 1,780 acres, and Love Field's longest runway measured 7,750 feet.⁶²

Dulles' design team located Saarinen's terminal midway between the two parallel runways, an organization that would be much copied in future airport planning. With the exception of the location of the terminal, this design had much in common with early airport layouts in which a single terminal acted as the gateway to the airfield. (Figure 2) Due to the distance between the terminal and the runways, however, Dulles developed a unique solution for internal transportation within the large land area it encompassed, employing "mobile lounges" – essentially tall buses – to move people from terminal to aircraft. The use of the lounges allowed Saarinen's sculptural concrete, steel, and glass terminal to stand out in the landscape. Airport design of this period did not often, however, place aesthetic issues ahead of practical ones. In the words of David Brodherson, airports, beginning in the late 1950s "became human processing and distribution systems, warehousing masses of people, even if only briefly." As the period progressed, four general configurations embodied the differing approaches to processing and distribution. In the linear or gate arrival plan, a long, shallow terminal acted as the interface between ground transportation or parking and airside boarding. The parallel concourse format employed a horizontal stack of terminals separated by runways. In the pier or pier finger organization, appendages stretched from the arrival terminal or terminals to airside boarding areas. Finally, the satellite arrangement used an arrival terminal as a gateway and distributed

⁶² David Brodherson, "An Airport in Every City," in Building for Air Travel: Architecture and Design for Commercial Aviation, John Zukowsky, ed. (New York: Prestel-Verlag, 1996), 83-93; Stanley H. Scott and Levi H. Davis, A Giant in Texas: A History of the Dallas-Fort Worth Regional Airport Controversy, 1911-1974 (Quanah, Texas: Nortex Press, 1974), 11, 22-23, 34; American Aviation Heritage, 225; "Love Notes: Chronology of Events," Dallas Airport System website, <u>http://www.dallaslovefield.com/love-notes-chronology-of-events.html</u>, accessed May 14, 2019; Bouman, 185.



Figure 1: Dulles Airport opened in 1962 on 10,500 acres of land.



Figure 16: Typical terminal configurations. The two layouts on the left represent designs for less busy and less complicated airports. Those on the right illustrate the types of layouts most often in use by the time jet aircraft were introduced.

passengers to separate airside buildings for boarding. Hybrids employing combinations of these ideas could also be found.⁶³

Other details of airport planning also focused on the efficient processing and movement of human cargo. Dulles resolved the issue of its distance from the center of Washington by establishing a dedicated toll road extending from the Capital Beltway that surrounds the city (U.S. Interstate 495) to the airport. At O'Hare, on the other hand, a light rail system transported passengers between Chicago's central business district and the airport. At the airport itself, a multi-level circulation system at the four, semi-autonomous, pier finger terminal buildings separated arriving from departing traffic, automobile from rail traffic, and so on. As airports increased in size to accommodate greater numbers of passengers and airplanes in the 1960s, movement between the arrival terminal and boarding areas became the focus of attention. Tampa International Airport and Dallas Fort Worth have the distinction of having been planned with "people movers" between terminals. Both airports were planned in the late 1960s. Tampa's light rail system was installed when its older airport was redeveloped into a satellite configuration, which opened in 1971. DFW's AirTrans vehicle system went into operation when the airport opened in 1974.⁶⁴

A pair of federal agencies also acted as crucial influences on the planning and organization of airports during the first fifteen years of the jet age. Created by the Federal Aviation Act of 1958, the Federal Aviation Agency (FAA) and the Civil Aeronautics Board (CAB) functioned as an independent agencies, rather than bureaus of the Commerce Department.⁶⁵ The act charged the FAA with research and development regarding navigational aids, standards for pilots, aircraft, and airlines, planning and operation of the nation's airways, and acquisition and maintenance of air navigation facilities. The CAB's responsibilities included pricing and route regulation and accident investigation. The FAA's early efforts included pursuit of improved air traffic control technology. By 1970, the agency also sought prototypes of air traffic control towers, which the FAA commissioned and built at the nation's airports. I.M. Pei and Associates prepared the first standardized tower plan for O'Hare Airport in

⁶³ Brodherson, 81, 91. The quotation can be found on page 81.

⁶⁴ Brodherson, 84; John Zukowsky, ed., "An Airport in Every City," in Building for Air Travel: Architecture and Design for Commercial Aviation, (New York: Prestel-Verlag, 1996), Plate 111.

⁶⁵ The agencies later became part of the U.S. Department of Transportation when it was created during the presidency of Lyndon Johnson.

1971. ⁶⁶ As a source of funding for airport construction, the FAA and the CAB also guided the location and development of airports around the country. Municipalities seeking federal grants needed to satisfy federal guidelines on safety, efficiency, and economy. The agencies released a joint statement on May 2, 1961, outlining that policy, which emphasized that "the use of a single airport serving adjacent communities, where such action may result in a saving both to the Federal Government and the localities served, as well as improving the air service to the area, should be an increasingly important factor in consideration of applications for federal funds for airport construction."⁶⁷ This policy had a tremendous influence on the development of an airport serving the adjacent localities of Dallas and Fort Worth.

POST-WORLD WAR II ARCHITECTURE, AIRPORTS, AND THE DALLAS-FORT WORTH AREA

Airports represent a building type invented in the twentieth century, and while railroad stations influenced the layout of early airports, their architecture has generally derived from twentieth-century ideas of beauty, construction, and functionality. Art Deco and Art Moderne terminals, as well as traditional styles, such as Spanish Colonial Revival in Los Angeles and San Francisco, characterized the design of airport terminals before World War II. Concrete was often the material of choice for these buildings, but the concrete was either clad to resemble more traditional forms or employed in easily recognizable architectural elements, such as porticoes or columns. The International Style competed with classically influenced forms beginning in the 1930s (Midway Airport, Chicago, 1931) and continuing through the 1950s. After World War II, however, architects also began to explore alternatives to the grid-like forms and polished finish of the International Style, focusing on more personal and expressive approaches to design. The Swiss-French architect Le Corbusier's investigation into the uses of concrete – both its sculptural qualities, as at his Chapel of Notre-Dame-du-Haut at Ronchamp (1950-1955), and the aggressiveness and power expressed by the material in its raw form, as exhibited in the Cité Radieuse in Marseille (1947-1952, also known as the Unité d'Habitation) – is an example of this pursuit.⁶⁸ (Figure 3) Commentators often term LeCorbusier's later work Expressionist.

⁶⁶ Theresa L. Kraus, The Federal Aviation Administration: A Historical Perspective, 1903-2008 (Washington, D.C.: U.S Department of Transportation Administration, 2008), 9-11; Brodherson, 91.

⁶⁷ Arnold E. Briddon, Ellmore A. Champie, and Peter A. Marrain, FAA Historical Fact Book: A Chronology, 1926-1971 (Washington, D.C.: U.S. Department of Transportation, Federal Aviation Administration, 1974), 108.

⁶⁸ Brodherson, 68-69; Marvin Trachtenberg and Isabelle Hyman, Architecture from Prehistory to Post-Modernism: The Western Tradition (New York: Harry N. Abrams, 1986), 541-548.

At the same time, architectural theorist Sigfried Giedion's call in 1944 for a new monumentality suitable to the modern age had a profound influence on the intellectual world of architecture. Challenging architects to be bolder, he argued that modern architecture required "the reconquest of the monumental expression" and that people wanted "their buildings to be more than a functional fulfillment," representing joy, excitement, and community life.⁶⁹ Modernists in the United States and Europe embraced in form and materials an assertive new approach to architecture that challenged the ubiquitous glass box of the International Style.⁷⁰ This influence on airport design can be seen in Saarinen's work, both at Dulles Airport and at the Trans World Airlines terminal at John F. Kennedy International Airport in New York. (Figure 4) Le Corbusier's explorations of raw concrete in block-like forms, as at Cité Radieuse, led to a different manner of design, which came to be referred to as "Brutalism," after the French term for concrete – beton brut. Concrete proved ideally suited to creating a heavy monumentality for assertive architecture. British architects such as James Stirling experimented with irregular blocks of rough concrete surfaces in the 1950s; Louis I. Kahn and Paul Rudolph developed the approach in the United States in the 1960s. Rudolph's School of Art and Architecture Building at Yale, completed in 1963, is considered one of the key American Brutalist works. The style became associated with public buildings in the U.S. in the 1960s and 1970s, such as the Boston City Hall (Kallman McKinnell & Knowles, 1968) and the FBI Headquarters in Washington (Charles F. Murphy and Associates, 1975). A review of literature on airports of the period, however, reveals only four American facilities employing exposed concrete surfaces – Kansas City International Airport (Kivett and Myers, 1968-1972, cast in place), Pittsburgh International Airport (Tasso Katselas, precast), Honolulu International Airport (Ossipoff-Chang Joint Venture, precast), and Dallas Fort Worth (Hellmuth Kassabaum & Obata-Brodsky, Hopf and Adler, 1968-1974, precast).⁷¹

Both Dallas and Fort Worth received a healthy dose of late modern concrete architecture beginning around 1970. Some of the best known American architects of the period, including Edward Durell Stone, I.M. Pei, and Paul Rudolph, were commissioned for offices, residences, and public buildings. The city halls of both Fort Worth (Stone, 1971) and Dallas (Pei, 1978) exhibit raw concrete

⁶⁹ Sigfried Giedion, "The Need for a New Monumentality," in New Architecture and City Planning: A Symposium, edited by Paul Zucker (New York: Philosophical Library, 1944), 552.

⁷⁰ David P. Handlin, American Architecture (London: Thames and Hudson, 1985), 247.

⁷¹ Marcus Whiffen, American Architecture since 1780: A Guide to the Styles (Cambridge, Massachusetts: MIT Press, 1969), 279-284; Brodherson, 81-95.; "Prestressed, Precast Concrete at Airports", Jerome, Dorothy Editor, Prestressed Concrete Institute (PCI), PCItems Vol 330 March 1975

aggressiveness to the public they serve in a Formalist, rather than an Expressionist, composition. (Figure 5) Rudolph is represented in the Dallas-Fort Worth area by, among other works, Brookhollow Plaza, originally built in precast concrete as an office building in 1970 but now adapted to senior housing. (Figure 6) Several other precast concrete structures were built in the early years of the 1970s, including Rudolph's Sid W. Richardson Science Building at Texas Christian University (1971), the ACS Headquarters Building (Fisher & Spillman, 1972), and Richland College (Oglesby Group and Perkins & Will, 1972).⁷²



Figure 3: LeCorbusier's use of raw concrete, as in the roof terrace at Cité Radieuse in Marseille (1947-1952), influenced many post-World War II architects.

⁷² Larry Paul Fuller, The American Institute of Architects Guide to Dallas Architecture (New York: McGraw Hill Construction Information Group, 1999), 6, 46, 78, 154, 185, 195.



Figure 4: Eero Saarinen explored the sculptural and expressive possibilities of concrete in his design for the Trans World Airlines terminal at John F. Kennedy Airport in New York, which opened in 1962.



Figure 5: The use of raw concrete for the exterior finish of public buildings could be found in both Dallas and Fort Worth by the early 1970s, as seen in Edward Durell Stone's Fort Worth City Hall, completed in 1971.



Figure 6: Paul Rudolph's Brookhollow Plaza employed precast concrete forms for an office building in Dallas in 1970.

RESOURCE 2: LIST OF DFW AIRPORT DESIGN FIRMS, 1965-1974

BY KOMATSU ARCHITECTURE

TERMINAL A [2E] ARCHITECTURAL ENGINEERING PLANS (1971 design)
Hellmuth Obata Kassabaum, Architects
Brodsky Hopf & Adler, Architects
Harrell & Hamilton, Associate Architects
Preston M Geren, Associate Architects
LeMessurier & Asssociates, Structural Engineers
Terry-Rosenlund Co, Structural Engineers
Herman Blum Consulting Engineers – Mechanical, Electrical, Plumbing
Cowan Love & Jackson, Inc. – Mechanical, Electrical, Plumbing
TERMINAL B [2W] ARCHITECTURAL ENGINEERING PLANS (1971 design)
Hellmuth Obata Kassabaum, Architects
Brodsky Hopf & Adler, Architects

Harrell & Hamilton, Associate Architects Preston M Geren, Associate Architects LeMessurier & Associates, Structural Engineers Terry-Rosenlund Co, Structural Engineers Herman Blum Consulting Engineers – Mechanical, Electrical, Plumbing Cowan Love & Jackson, Inc. – Mechanical, Electrical, Plumbing

TERMINAL C [3E] ARCHITECTURAL ENGINEERING PLANS (1971 design) Hellmuth Obata Kassabaum, Architects Brodsky Hopf & Adler, Architects Harrell & Hamilton, Associate Architects

Preston M Geren, Associate Architects LeMessurier & Associates, Structural Engineers Terry-Rosenlund Co, Structural Engineers Herman Blum Consulting Engineers – Mechanical, Electrical, Plumbing Cowan Love & Jackson, Inc. – Mechanical, Electrical, Plumbing

TERMINAL C [3E] EXPANSION SECTION 98 – 109 (1985 design) JPJ Architects (formerly Jarvis Putty Jarvis) Datum Structural Engineers Carter & Burgess, Mechanical, Electrical Plumbing, and Civil Engineers

TERMINAL C [3E] EXPANSION Gates 43 & 44 (1990) Gary McKibben & Associates Architects MSQ Engineering, Mechanical, Electrical, Plumbing Engineers

TERMINAL E [4E] ARCHITECTURAL ENGINEERING PLANS (1971 design) Hellmuth Obata Kassabaum, Architects Brodsky Hopf & Adler, Architects Harrell & Hamilton, Associate Architects Preston M Geren, Associate Architects LeMessurier & Asssociates, Structural Engineers Terry-Rosenlund Co, Structural Engineers Herman Blum Consulting Engineers – Mechanical, Electrical, Plumbing Cowan Love & Jackson, Inc. – Mechanical, Electrical, Plumbing

TERMINAL BUILDING FOUNDATIONS – 2W, 2E, & 4E (1970 design) Hellmuth Obata Kassabaum, Architects Brodsky Hopf & Adler, Architects Harrell & Hamilton, Associate Architects Preston M Geren, Associate Architects LeMessurier & Associates, Structural Engineers Terry-Rosenlund Co, Structural Engineers

MAIN CONTROL TOWER DFW 32 (1971 design) Welton Becket & Associates, Architects & Engineers G.R. Spencer & Associates, Engineers Ellisor Engineers, Structural Engineers Marmon Mok & Green, Landscape Architects

TAXIWAY BRIDGES (1971 design)

Tippits Abbett McCarthy Stratton, Engineers and Architects Forrest & Cotton, Consulting Engineers Carter & Burgess, Inc. Engineers and Planners

AIRFIELD HARDSTAND (1971 design) Tippits Abbett McCarthy Stratton, Engineers and Architects Forrest & Cotton, Consulting Engineers Carter & Burgess, Inc. Engineers and Planners

AIRFIELD PAVING (1971 design) Tippits Abbett McCarthy Stratton, Engineers and Architects Forrest & Cotton, Consulting Engineers Carter & Burgess, Inc. Engineers and Planners

LANDSCAPING – INTERNATIONAL PARKWAY AND INFIELD (design 1971-1973) TBD (Myrick Newman Dahlberg)?

TERMINAL E [2W] BRANIFF MODIFICATIONS (1974 design) Harwood K Smith & Partners, Inc. Architects [now HKS] Datum Structural Engineers Gaynor & Sirman Mechanical Electrical Engineers

TERMINAL D [3W] APRON IMPROVEMENTS (1978 design) Carter & Burgess, Inc. Civil Engineers

AIRPORT MARINA WEST HOTEL (1971 design) Unknown

AIRPORT MARINA EAST HOTEL (1978 design)

Bauer Mori Architects

TERMINAL C [3E} AIR SIDE EXPANSIONS (1983) OmniPlan Architects Datum Engineers, Structural Carter & Burgess, Inc., Mechanical Electrical Plumbing

RESOURCE 3: EVOLUTION OF TERMINAL C

Maps Created Komatsu Architecture from DFW GIS DATA

















RESOURCE 4: CORPORATE CAMPUS CONTEXT

The most well-known early American example is Hersey, Pennsylvania, home of Hershey Chocolate as the all-inclusive vision of a benevolent company entrepreneur taking care of his workers by creating its own community with worker housing, schools, the factor, and family amenities for recreation and leisure, as well as provisioning through grocery store commissaries, and even retail shops with discounted goods. Other early examples of workplace campuses (not as comprehensive in terms of employee living and working communities) include the Sears Robuck & Co Chicago Plant of 1906, and Henry Ford's 1913 main manufacturing and assembly line plant at Highland Park, MI. Known as the Golden Age of Corporate America from an architectural perspective, the post-WWII era of the late 50's, and then the corporate symbols of 60's, and early 70's are marked by icons such as the Ford Motor Company's Headquarters in 1953 at Dearborn, MI by Skidmore Owings & Merrell; Bell Laboratories in 1957 by Eero Saarinen; the John Deere Company Headquarters in Moline, Illinois in 1964 by Saarinen (after his death in 1961) that had followed the transition to pastoral campuses such as the Connecticut General Life by SOM in 1957 and Bristol Myer Squibb Headquarters in Lawrenceville, NJ.

RESOURCE 5: COMMERCIAL AVIATION CORPORATE CONTEXT

Early aviation in the US and in Europe (particularly England and Germany) saw start-up companies with small one or two room offices attached to hangers at airfields. This became more prevalent with the advent of air mail service. However, it seems that as aviation companies graduated from start-up to corporate companies, they followed the path of other businesses with offices in downtown areas. The then regional carriers that became national carriers were based in financial centers of their home base of operations – New York, Chicago, Philadelphia, Atlanta, and Dallas/Fort Worth (American became "American" in a hangar at Meacham Field in Fort Worth). Only Braniff International Airways, that as Braniff started at Love Field and then based their operations at the then new DFW Airport, by 1978 had constructed their new international headquarters within the Airport Operations boundary.

From the beginning of commercial passenger service, the companies first in Europe and then the US, did establish operational facilities and most notably "air maid", "stewardess" and "steward" in England schools and training facilities at their respective airfields. Much of this history is researched in

Kathleen M. Barry's <u>Femininity In Flight: A History of Flight Attendants⁷³</u>This trend led into the genesis of Braniff's desire to locate its entire corporate administration and training facilities at DFW Airport. The context is explained with this commercial aviation historical context.

Moving to the fully developed commercial aviation era, Flight attendants from the airlines received training prior to the establishment of the American Airlines Stewardess College in 1957. Many carriers let commercial stewardess schools train stewardesses saving themselves considerable expense.

One such school was the McConnell Hostess School in Minneapolis, MN. McConnell gained considerable attention in 1947 when it was featured in a *Life* Magazine article that detailed how the school trained young women to serve as stewardesses. It offered 8 weeks of training and cost \$325. The school remained in business until the 1990s.

A few accredited universities also offered stewardess training programs developed in cooperation with airlines starting with De Paul University in 1942. The University of Denver had an advertisement in *Flying* Magazine's March 1948 issue for aeronautic courses for hostess training in their School of Aeronautics. There were also training courses for other aeronautic fields such as aircraft engine mechanics, airline airport management, air transportation, and flight and ground school.

United Airlines moved its stewardess training to existing buildings at the Cheyenne, Wyoming airport in 1947 with stewardesses staying in a commercial hotel downtown. United Airlines used and modified existing airport buildings for training with offsite living in hotels which was the typical method of training prior to construction of the American Airlines Stewardess College in 1957. The Cheyenne terminal and hangar buildings still exist today and are listed on the National Register of Historic Places.

While not the first stewardess training facility, American Airlines Stewardess College was the most widely covered and advertised as the first facility of its type in 1957. The college provided training and housing for stewardesses in a fully integrated facility designed specifically for that purpose in a country

⁷³ Barry, Femininity in Flight.

club setting with swimming pool, tennis courts and trails. The natural setting and designed landscape in addition to the building and its courtyard were important features.

As in so many of its endeavors American Airlines was the leader in stewardess training and created a state-of-the-art-facility for stewardesses which became a model for its time. In its advertisements and articles such as those in *Life* Magazine, American Airlines called it the only college in the country entirely devoted to the training of airline stewardesses. The airline went on to state in an advertisement that everywhere at the facility you could see signs of American's advanced training methods, most modern visual aids, complete mock-ups of aircraft, and courses that included radio navigation and meteorology. The training lasted up to six weeks. American Airlines' Stewardess College, constructed in 1957, was the largest and most comprehensive all-inclusive airline facility dedicated to stewardess training. It has since been removed by its successor facilities as a part of American's Headquarters. The college was initially designed to train 750 women a year. By 1965, 900 students were scheduled to receive training and the additions were meant to accommodate this growth. It remained operational until 2020.

In July of 1961, United Airlines flight attendants got a new training center at United's executive offices in Arlington Heights, Illinois near Chicago O'Hare Airport. Although a different architectural style, the facility followed and was built with the fully integrated concept of the American Airlines facility. It was also considered a state-of-the-art facility for its time. The United Airlines training center with some modifications still exists today.

In the early 1960s, at the other end of training spectrum from American Airlines and United Airlines, was Continental Airlines which by-passed specialized training altogether and sent its hostesses to the Powers Modelling School supplemented with a mere half-day of specific guidance on emergency procedures. This type of training was still typical of many airlines. McConnell Hostess School continued to be a source of training for many airlines.

Braniff Hostess College opened in 1968 as a dormitory and training school in a single building in Dallas. It later transferred these functions to its new DFW facility. While not the campus-like setting of the 1957 American Airlines Stewardess College or 1961 United Airlines Training center in suburban Chicago, it provided an integrated building for living and training for their stewardesses.

Trans World Airlines opened Breech Academy on December 3, 1969 on a 25-acre three-building campus in Overland Park, Kansas to train flight attendants, ticket agents and even pilots. It operated until 1988 and other airlines sent their flight attendants to the academy due to its popularity. For its time it was considered a state-of-the-art training center for flight attendants even though other airline personnel also were trained there. American Airlines and United Airlines facilities were built specifically for flight attendants and were also state-of-the-art facilities at the time of their construction. The Breech Academy campus buildings still exist but have been significantly modified into offices.

From photographs Delta Airlines appears to have built its state of-the-art flight attendant training center at Atlanta's Hartsfield Jackson International Airport circa 1970s. It is still in existence today. There is also a facility in Salt Lake City. And as of 2021, American is completing its comprehensive campus on leased DFW Airport property outside of the Airport Operations Area, that includes its worldwide corporate facilities, including training for all personnel, with all-inclusive accommodations.

RESOURCE 6: WELTON DAVID BECKET

ARCHITECT 1902-1969

Born in Seattle, Welton Becket received his Bachelor of Architecture degree from the University of Washington in 1927. With classmate Walter C Wurdeman and Los Angeles architect Charles F Plummer, they formed the firm of Plummer Wurdeman and Becket in 1933-1935. Their first significant commission was won in a competition for the great Pan-Pacific Auditorium. Plummer used his proceeds to join an exclusive tennis club from which they received residential commissions for Hollywood luminaries James Cagney, Robert Montgomery, and other celebrities. After Plummer's death in 1939, Wurdeman & Becket continued to receive notable commissions as the beginning of their corporate portfolio. From popular exclusive restaurants, they developed a "total design" reputation, responsible for all the architectural and engineering services to complete interior design and accessories, such as menus, silverware and table furnishings such as napkins, down to signature restaurant matchboxes. After Wurdeman's death in 1949, the firm became Welton Becket Associates. From which he grew the firm into one of the largest national architectural firms. Welton Becket was selected for some of the Fortune 500's highest profile corporations and their facilities, among them:

- Beverly-Wilshire Apartment Hotel, Beverly Hills Ca 1928
- Pan Pacific Auditorium, Los Angeles, CA 1934
- Manila Jai Alai Bldg, Manila PH 1948
- Bullock's Westwood Department Store, CA 1950
- Capitol Records Bldg, Hollywood, CA 1956
- Southland Life Insurance Center, Dallas, TX 1958
- Santa Monica Civic Center, CA 1958
- Theme Building at Los Angeles International Airport w/ William Pereira 1961
- Newport Center, CA 1962
- Cullen Center, Houston, TX 1962-1973
- Kaiser Center, Oakland, CA 1963
- Century City Master Plan, Los Angeles, CA 1963
- Performing Arts Center of Los Angeles County 1967-2003 (Disney Hall w/ Frank Gehry)
- Exxon Mobil Bldg, Houston, TX 1968
- Humble Oil Building, Los Angeles, CA
- McKesson Plaza, San Francisco, CA 1969

FIRM NAME LIST

Wurdeman Plummer & Becket 1933 – 1938 Wurdeman and Becket 1938-1940 Bodmer Wurdeman and Becket 1941 – 1945 Wurdeman and Becket 1945-1949 Welton Becket and Associates 1950 Welton Becket Associates 1969 Ellerbe-Becket Architects 1987 AECOM – Ellerbe Becket, an AECOM Company 2009

RESOURCE 7: BRANIFF DEVELOPMENT & LEADERSHIP

From RFBTP Networks Ltd (GB), Fly Away (<u>http://flywaysimulation.com/news/4683</u> Braniff International Airways: The History of An Amazing Airline; updated January 28, 2016

1928 - Founder, Thomas E Braniff⁷⁴ along with Oklahoma Oilmen form Tulsa-Oklahoma City Airways June 1928⁷⁵

1930 - AVCO Purchase of Tulsa-Oklahoma City Airways; Aviation Corporation was a holding company; went on to purchase other airlines, including one that became American Airlines⁷⁶

1930 – Braniff Airways chartered: New venture by Thomas E and Paul R Braniff

1934 to 1942 - HQ in Oklahoma City gradually moved various operations to Dallas

1935 - US Postal Service; Braniff acquired lucrative, pivotal route between Chicago and Dallas after the air service Postal scandal of 1934

1935 – Paul Braniff leaves the company after his successful presentation in Washington DC to win the Chicago-Dallas US Post Office delivery route

1935 – Tom Braniff hires Charles "Chuck" Beard as Chief Operating Officer overseeing all daily operations

1948 - Inaugural flights to South America – Braniff begins International Service

1952 - Merger with Mid-Continent Airlines; routes from Texas and Louisiana to Minnesota and the Dakotas

⁷⁴ From RFBTP Networks Ltd (GB), Fly Away (<u>http://flywaysimulation.com/news/4683</u> Braniff International Airways: The History of An Amazing Airline; updated January 28, 2016

 ⁷⁵ <u>https://www.britannica.com/topic/Braniff</u>
 ⁷⁶ From RFBTP Networks Ltd (GB), Ibid

1954 – Tom Braniff dies in hunting trip plane crash while on a flying boat plane in Louisiana; Paul Braniff, still with ownership interests in Braniff, dies of cancer

1954 – Chuck Beard named President and Chief Executive Officer, first non-family president

1965 – Under Beard's leadership, Braniff transitions to all jet aircraft

1965 – Great America Corporation acquires Braniff; C. Edward Acker, its Chief Financial Officer, becomes Executive Vice President and CFO of Braniff. Braniff then hires Harding L Lawrence from Continental Airlines, their Executive Vice President as Braniff's new President.

1967 – Harding Lawrence marries Mary Wells, advertising star of Jack Tinker Associates, hired to transform Braniff to an elite and style image. She brought on fashion designer Emilio Pucci, shoe designer Beth Levine, and architect Alexander Girard to rebrand the company just as Harding's bold route and some unorthodox operating moves were about to help increase the airline's earnings tenfold during the next decade.

1968 - Purchase of Panagra; South American routes operated by Pan American Airways and W.R. Grace; Braniff merges all South American routes operating under its name

1970 – Terminal of the Future – Braniff introduces the SkyRail system at their Love Field facility from which they would later introduced the concept of a people-mover system that was eventually incorporated at DFW by the HOK team

1978 – Braniff moves into its new Braniff Place, a one-of-a-kind \$75m corporate campus that included all facilities for its business operations, including a 25,000sf apartment for Harding and Mary Wells Lawrence, and some of its multi-million dollar corporate art collection assembled by the Lawrences

1981 – In January, Lawrence removed from Braniff by its banks, and John J Casey, Vice Chair of Braniff's board (Casey's brother, Albert, was then American's Chairman of the Board)

1981 – John Casey leaves Braniff in the Fall, 1981 to join Pan Am Airways. Howard Putnam becomes CEO, inheriting the airline that lost \$44m in 1979; \$131m in 1980; \$144m in 1981.

1982 – May 12th, Braniff seeks bankruptcy protection and operations begin ceasing beginning with the Latin American Division (LAD) which was in the process of being sold as of that date; and the Pacific routes starting with Honolulu, were cancelled that evening

RESOURCE 8: CULTURAL RESOURCES DATABASE SEARCH

BY HDR, Inc.

Project Details

HDR completed this database search as part of an NRHP eligibility assessment at the DFW International Airport. No proposed action is affiliated with this search, the results of which, presented below, provide an inventory of the archaeological surveys and sites recorded on the DFW property to date. For the purposes of this background search, the Area of Potential Effects (APE) aligns with the boundaries of the DFW property (Figure 1).

Geological Background

The underlying geology within the APE consists of the Eagle Ford Group, undivided, of Gulfian age (USGS 2019). According to the Natural Resources Conservation Service (NRCS 2019), there are 55 mapped soil units within the APE (

Table 1).

Table 1. Soils within the APE.

Description
Altoga silty clay loam, 5 to 12 percent slopes
Altoga silty clay, 5 to 12 percent slopes, eroded
Arents, frequently flooded
Arents, loamy
Axtell fine sandy loam, 1 to 3 percent slopes
Axtell fine sandy loam, 2 to 5 percent slopes, moderately eroded
Bastsil fine sandy loam, 0 to 2 percent slopes
Bastsil fine sandy loam, 0 to 3 percent slopes
Birome fine sandy loam, 1 to 5 percent slopes
Birome-Aubrey-Rayex complex, 5 to 15 percent slopes
Branyon clay, 0 to 1 percent slopes
Burleson clay, 0 to 1 percent slopes
Burleson clay, 1 to 3 percent slopes

Table 1. Soils within the APE.

Symbol	Description
21	Crockett fine sandy loam, 1 to 3 percent slopes
22	Crockett fine sandy loam, 2 to 5 percent slopes, eroded
21	Crosstell fine sandy loam, 1 to 3 percent slopes
22	Crosstell fine sandy loam, 3 to 8 percent slopes
24	Ferris clay, 5 to 12 percent slopes, eroded
25	Ferris-Heiden complex, 2 to 5 percent slopes
34	Ferris-Heiden complex, 5 to 12 percent slopes
35	Ferris-Urban land complex, 5 to 12 percent slopes
27	Frio silty clay, frequently flooded
29	Gasil fine sandy loam, 1 to 3 percent slopes
30	Gasil fine sandy loam, 3 to 8 percent slopes
31	Gasil sandy clay loam, graded, 1 to 5 percent slopes
32	Gasil-Urban land complex, 1 to 8 percent slopes
33	Heiden clay, 1 to 3 percent slopes
42	Heiden clay, 2 to 5 percent slopes, eroded
43	Houston Black clay, 0 to 1 percent slopes
34	Houston Black clay, 1 to 3 percent slopes
45	Houston Black-Urban land complex, 0 to 4 percent slopes
35	Houston Black-Urban land complex, 1 to 4 percent slopes
36	Justin loam, 1 to 3 percent slopes
37	Konsil fine sandy loam, 1 to 5 percent slopes
38	Leson clay, 1 to 3 percent slopes
47	Lewisville silty clay, 3 to 5 percent slopes, eroded
41	Lott silty clay, 1 to 3 percent slopes
42	Lott-Urban land complex, 1 to 5 percent slopes
45	Mabank fine sandy loam, 0 to 1 percent slopes
50	Navo clay loam, 1 to 3 percent slopes

Table 1. Soils within the APE.

Symbol	Description
53	Normangee clay loam, 1 to 3 percent slopes
55	Ovan clay, frequently flooded
59	Pulexas fine sandy loam, frequently flooded
63	Rader fine sandy loam, 0 to 3 percent slopes
64	Rader-Urban land complex, 0 to 3 percent slopes
70	Silawa fine sandy loam, 3 to 8 percent slopes
71	Silstid loamy fine sand, 1 to 5 percent slopes
70	Sunev clay loam, 1 to 3 percent slopes
71	Sunev clay loam, 3 to 8 percent slopes
80	Trinity clay, 0 to 1 percent slopes, frequently flooded
81	Urban land, 0 to 16 percent slopes
83	Whitesboro loam, frequently flooded
78	Wilson clay loam, 0 to 1 percent slopes
84	Wilson clay loam, 0 to 2 percent slopes
79	Wilson clay loam, 1 to 3 percent slopes

Database Results

A review of the Texas Historical Commission's (THC) Archeological Sites Atlas (Atlas) was conducted in order to identify known cultural resources and previous cultural resources surveys that have been conducted within the APE. The Atlas review indicated that there have been 41 previous cultural resources surveys conducted, 78 archaeological sites recorded, 1 Official Texas Historical Marker (OTHM), and 2 cemeteries located within the APE (Map). An additional 3 OTHMs and 1 cemetery are located within the bounds of the DFW Airport; but, are not technically located on DFW land. No Recorded Texas Historic Landmarks or National Register of Historic Places (NRHP)-listed properties or districts are located within the APE. A good portion of the APE has been previously surveyed for cultural resources (see Figure 2). The details for all 41 surveys are listed below in Table **2**.

ID Ag	Agency	Report Title	Contractor	Year	Comments /
					Recommendations
8400006368	FHWA			1986	
8400006368	THD			1984	
8400006520	FGWA			1988	
8400006620	THD			1984	
8400006621	EPA			1979	
8400006640		_			
8400006641	·	_	_		
8400006642	EPA			1979	
8400006644	EPA / TDWR			1982	
8500011567	TxDOT	Archeological	TxDOT	2006	TAP #4054
		Survey of the Texas			
		Department of			
		Transportation's			
		Abilene,			
		Brownwood, Fort			
		Worth, and Waco			
		Districts, 2006			
8500012256	TxDOT	Cultural Resources	GMI, Inc.	2004	3561
		Evaluation of			
		Proposed			
		Improvements at			
		Five Intersections			
		Along Airfield Drive,			
		Dallas-Fort Worth			
		International Airport,			
		Dallas and Tarrant			
		Counties, Texas			

Table 2. Previous Cultural Resources Surveys Conducted within One Mile of the APE.

חו	Agency	Report Title	Contractor	Year	Comments /
U					Recommendations
8500014089	FAA	An Archaeological	AR	2007	4491
		Survey for	Consultants,		
		Chesapeake Energy	Inc.		
		Corporation at DFW			
		International Airport			
		Dallas and Tarrant			
		Counties, Texas			
8500014173	FAA	An Archaeological	AR	2007	4491
		Survey for	Consultants,		
		Chesapeake Energy	Inc.		
		Corporation at DFW			
		International Airport			
		Dallas and Tarrant			
		Counties, Texas			
8500014658	FAA	An Archaeological	AR	2007	4491
		Survey for	Consultants,		
		Chesapeake Energy	Inc.		
		Corporation at DFW			
		International Airport			
		Dallas and Tarrant			
		Counties, Texas			
8500014689	FAA	An Archaeological	AR	2007	4491
		Survey for	Consultants,		
		Chesapeake Energy	Inc.		
		Corporation at DFW			
		International Airport			
		Dallas and Tarrant			
		Counties, Texas			

Table 2. Previous Cultural Resources Surveys Conducted within One Mile of the APE.

ID	Agency	Report Title C	Contractor	Year	Comments /
					Recommendations
8500015529	FAA	Survey and Testing	AR	2007	4773
		at the Armadillo	Consultants,		
		(41TR219) Site	Inc.		
		Dallas/Fort Worth			
		International Airport,			
		Tarrant County,			
		Texas			
8500017832	FAA / DFW	Archeological	Geo-Marine	2010	5563
	Airport	Survey of the			
		Proposed 20-inch			
		Reclaimed Water			
		Line at Dallas-Fort			
		Worth International			
		Airport, Tarrant			
		County, Texas			
8500018495	FAA	Intensive	Hicks & Co.	2010	5773
		Archeological			
		Survey of the			
		Proposed Mid Cities			
		Boulevard, Tarrant			
		County, Texas			
8500018586	City of Fort	Archaeological	AR	2010	5423
	Worth	Testing in Calloway	Consultants,		
		Cemetery Road,	Inc.		
		Tarrant County,			
		Texas			

Table 2. Previous Cultural Resources Surveys Conducted within One Mile of the APE.

ID	Agency	Report Title Contrac	Contractor	Voor	Comments /
			Contractor	rear	Recommendations
8500025634	FAA	Archeological	Integrated	2013	6412
		Survey of the	Environmental		
		Proposed DFW	Solutions		
		International Airport			
		Commercial			
		Development			
		Buildings 1 and 2			
		Coppell, Dallas			
		County, Texas			
8500035357	FTA / County	Archaeological	URS	2013	4775
	of Tarrant	Resources Intensive	Corporation		
		Survey of the Fort			
		Worth			
		Transportation			
		Authority TEX Rail			
		Corridor, Tarrant			
		County, Texas			
8500044569	FAA	Cultural Resources	Integrated	2013	6652
		Survey of the	Environmental		
		Proposed DFW	Solutions		
		International Airport			
		Commercial			
		Development			
		Logistics Center			
		Buildings I and II			
		Coppell, Dallas and			
		Tarrant Counties,			
		Texas			

Table 2. Previous Cultural Resources Surveys Conducted within One Mile of the APE.

חו	Agongy	Papart Titla	Contractor	Voor	Comments /
U	Agency	Report fille	Confidenci	Teur	Recommendations
8500057906	DFW Airport	An Archaeological	AR	2008	4491
	/ FAA	Survey for	Consultants,		
		Chesapeake Energy	Inc.		
		Corporation at DFW			
		International Airport			
		Dallas and Tarrant			
		Counties, Texas			
8500061867	DFW Airport	Cultural Resources	Integrated	2014	6835
		Survey of the	Environmental		
		Proposed Global	Solutions		
		Logistics Phase II			
		Alternate Site, City			
		of Euless, Tarrant			
		County, Texas			
8500063870	Alan	—	AR	2015	
	Plummer		Consultants,		
	Associates,		Inc.		
	Inc.				
8500067996	DFW Airport	-	Integrated	2015	7126
			Environmental		
			Solutions		

Table 2. Previous Cultural Resources Surveys Conducted within One Mile of the APE.
חו	Agency	Report Title	Contractor	Year	Comments /
	rigency	Report fille	Connucion	rear	Recommendations
8500075358	DFW Airport	A 2,705-acre	Integrated	2015	7373
		Cultural Resources	Environmental		
		Survey for the	Solutions		
		Property Inventory			
		Project, Project Blue			
		Sky, and Trigg Lake			
		Access Road, Dallas			
		and Tarrant			
		Counties, Texas			
8500076723	TxDOT	Intensive	URS	2015	7257
		Archaeological	Corporation		
		Linear Survey and			
		Deep Testing of the			
		East-West			
		Connector Roadway			
		From SH 360 at			
		East of Harwood			
		Road to			
		International			
		Parkway at Rental			
		Car Drive, Tarrant,			
		County, Texas			
850000303	USACE			1999	
8500007915					
8500007916					
8500007618					
8500007927					
8500007928					

Table 2. Previous Cultural Resources Surveys Conducted within One Mile of the APE.

	Agoney	Roport Title	Contractor	Voor	Comments /
U	Agency	Report fille	Confidenci	Teur	Recommendations
8500079832	DFW Airport	Cultural Resource	Integrated	2016	7650
		Survey of Southwest	Environmental		
		End-Around Taxiway	Solutions		
		Project, Tarrant			
		County, Texas			
8500080193	DFW Airport	Cultural Resources	Integrated	2017	7925
		Survey of the	Environmental		
		American Airlines	Solutions		
		Employee Parking			
		Lease Area Project,			
		Tarrant County,			
		Texas			
8500080243	DFW Airport	Cultural Resources	Integrated	2017	8034
		Survey of the	Environmental		
		American Airlines	Solutions		
		Trinity River			
		Complex Building 6			
		Project, DFW			
		International Airport,			
		Tarrant County,			
		Texas			
8500080417	DART	Archeological	AmaTerra	2017	7996
		Resource Survey:	Environmental		
		Cotton Belt Corridor	Solutions,		
		Regional Rail,	LLC.		
		Tarrant, Dallas, and			
		Collin Counties,			
		Texas			

Table 2. Previous Cultural Resources Surveys Conducted within One Mile of the APE.

חו	Agency	Report Title	Contractor	Voor	Comments /
	Agency	Report fille	Connacion	reur	Recommendations
8500080546	DFW Airport	Cultural Resources	Integrated	2018	8215
		Survey of the East	Environmental		
		and West Materials	Solutions		
		Management Sites,			
		Dallas/Fort Worth			
		International Airport,			
		Dallas and Tarrant			
		Counties, Texas			
8500080615	DFW Airport	Cultural Resources	Integrated	2018	8392
		Survey for the 17th	Environmental		
		Street Stockpile	Solutions		
		Project, Dallas Fort			
		Worth International			
		Airport, Tarrant			
		County, Texas			
8500080614	DFW Airport	Cultural Resources	Integrated	2018	8352
		Survey of the	Environmental		
		Southwest Campus	Solutions		
		Expansion 2, Dallas			
		Fort Worth			
		International Airport,			
		Tarrant County,			
		Texas			

Table 2. Previous Cultural Resources Surveys Conducted within One Mile of the APE.

The majority of the sites within the APE are located along the edge of the airport boundaries, and several have been destroyed (see Figure 2). Of the 78 sites, 70 are ineligible for inclusion in the NRHP, 2 have undetermined eligibility statuses, and 6 have not been evaluated for NRHP eligibility (Table 3). Details for all 78 sites are listed below in Table 3.

Identifier Affiliation			NRHP	Commente / Pacommendations
		redures/runchon	Eligibility	Comments / Recommendations
				NRHP eligibility was evaluated in
				May 2001. The site was
1101303	Historic	Farmetoad	Ingligible	recorded as being ineligible for
4 I DL3 7 Z	TISIONC	rumsiedu	mengible	NRHP inclusion. Determination
				ID: 21544; Tracking #:
				200108097.
	Historic	Farmstead		NRHP eligibility was evaluated in
			Ineligible	May 2001. The site was
1101205				recorded as being ineligible for
4 I DL393				NRHP inclusion. Determination
				ID: 21545; Tracking #:
				200108097.
				NRHP eligibility was evaluated in
				May 2001. The site was
41DL397	∐:staria	E armata a d	Ingligible	recorded as being ineligible for
	TISIONC	Tamsieda	Ineligible	NRHP inclusion. Determination
				ID: 21546; Tracking #:
				200108097.

Table 3 Previous	v Recorded	Archaeological	Sites Located	within One	Mile of the	APF
TUDIE 5. FIEVIOUSI	у кесогаеа /	Archaeologicai	Siles Localea		i wine or me	ALT.

Idantifiar	Affiliation	Footures/Function	NRHP	Commonts / Recommondations
Ideniiiei	Annunon	reduces/renchon	Eligibility	Comments / Recommendations
				NRHP eligibility was evaluated in
				May 2001. The site was
1101200	Listoria	Formational	Inaliaibla	recorded as being ineligible for
4 I DL3 90	THSIONC	Tamisieda	ineligible	NRHP inclusion. Determination
				ID: 21547; Tracking #:
				200108097.
				NRHP eligibility was evaluated in
				May 2001. The site was
4101200	Ll'at a ui a	Farmstead	Ineligible	recorded as being ineligible for
4 I DL399	HISTORIC			NRHP inclusion. Determination
				ID: 21548; Tracking #:
				200108097.
				NRHP eligibility was evaluated in
				May 2001. The site was
4101400	Historic		Ingligible	recorded as being ineligible for
4101400	THSIONC		mengible	NRHP inclusion. Determination
				ID: 21549; Tracking #:
				200108097.
			·	NRHP eligibility was evaluated in
				May 2001. The site was
410401	Historic	Homostand	Ineligible	recorded as being ineligible for
4 DL40	THSIONC	Homestead		NRHP inclusion. Determination
				ID: 21550; Tracking #:
				200108097.

Idontifiar	Affiliation	Footuros/Function	NRHP	Commonte / Recommondations
ideniller	Annulion		Eligibility	
				NRHP eligibility was evaluated in
				May 2001. The site was
410402	Historic	Cattonwood Church	Indiaible	recorded as being ineligible for
41DL402	THSIONC		mengible	NRHP inclusion. Determination
				ID: 21551; Tracking #:
				200108097.
				NRHP eligibility was evaluated in
				May 2001. The site was
		Farmstead	Ineligible	recorded as being ineligible for
4 I DL403	HISTORIC			NRHP inclusion. Determination
				ID: 21552; Tracking #:
				200108097.
				NRHP eligibility was evaluated in
				December 2008. The site was
		Storm cellar		recorded as being ineligible for
41DL439	HISTORIC		Ineligible	NRHP inclusion. Determination
				ID: 966; Tracking #:
				200902949.
				NRHP eligibility was evaluated in
				February and December 2008.
				The site was recorded as being
41DL460	Historic	House site	Ineligible	ineligible for NRHP inclusion
				both times. Determination IDs:
				980 and 1280; Tracking #s:
				200902949 and 200804349.

Identifier Affiliation	Features/Function	NRHP	Comments / Recommendations	
	, uniteriori	r outeros, r onenen	Eligibility	
				NRHP eligibility was evaluated in
				February and December 2008.
				The site was recorded as being
41DL461	Historic	Push pile	Ineligible	ineligible for NRHP inclusion
				both times. Determination IDs:
				981 and 1281; Tracking #s:
				200902949 and 200804349.
				NRHP eligibility was evaluated in
		Concrete foundations		February and December 2008.
		concrete touridations,		The site was recorded as being
41DL462	Historic	concrete pipes, well, and windmill Farmstead	Ineligible	ineligible for NRHP inclusion
				both times. Determination IDs:
				982 and 1282; Tracking #s:
				200902949 and 200804349.
				NRHP eligibility was evaluated in
				February and December 2008.
				The site was recorded as being
41DL463			Ineligible	ineligible for NRHP inclusion
				both times. Determination IDs:
				983 and 1283; Tracking #s:
				200902949 and 200804349.
				NRHP eligibility was evaluated in
				February and December 2008.
				The site was recorded as being
41DL464	Historic	Farmstead	Ineligible	ineligible for NRHP inclusion
				both times. Determination IDs:
				984 and 1284; Tracking #s:
				200902949 and 200804349.

Identifier	Affiliation	Features/Function		Comments / Recommendations
			Eligibility	
				NRHP eligibility was evaluated in
				February and December 2008.
				The site was recorded as being
41DL465	Historic	Farmstead	Ineligible	ineligible for NRHP inclusion
				both times. Determination IDs:
				985 and 1285; Tracking #s:
				200902949 and 200804349.
				NRHP eligibility was evaluated in
		Farmstead	Ineligible	February and December 2008.
				The site was recorded as being
41DL466	Historic			ineligible for NRHP inclusion
				both times. Determination IDs:
				986 and 1286; Tracking #s:
				200902949 and 200804349.
				NRHP eligibility was evaluated in
				February and December 2008.
				The site was recorded as being
41DL467			Ineligible	ineligible for NRHP inclusion
				both times. Determination IDs:
				987 and 1287; Tracking #s:
				200902949 and 200804349.
				NRHP eligibility was evaluated in
41DL492				December 2008. The site was
	Historic	Farmstead	Ineliaible	recorded as being ineligible for
	TISIOIIC	Farmstead	пендые	NRHP inclusion. Determination
				ID: 988; Tracking #:
				200902949.

Identifier Affiliation		Eastures /Function	NRHP	Comments / Recommendations
Ideniiiei	Annunon	rediores/ronchon	Eligibility	Comments / Recommendations
			<u>.</u>	NRHP eligibility was evaluated in
				February 2013. The site was
4101510	Historic	Farmstoad	Inaliaibla	recorded as being ineligible for
41DLJ10	THSIONC	Tumsieuu	mengible	NRHP inclusion. Determination
				ID: 24890; Tracking #:
				201304343.
				NRHP eligibility was evaluated in
				October 2013. The site was
		Foundation and well	Ineligible	recorded as being ineligible for
4 I DL3 I 7	HISTORIC			NRHP inclusion. Determination
				ID: 29142; Tracking #:
				201401247.
				NRHP eligibility was evaluated in
				October 2013. The site was
1101519	Historic			recorded as being ineligible for
4101310	THSIONC	Tumsieuu	mengible	NRHP inclusion. Determination
				ID: 29143; Tracking #:
				201401247.
				NRHP eligibility was evaluated in
41DL521				July 2016. The site was
	Historic	School	Ineligible within ROW	recorded as being ineligible for
	THSIOIIC	School		NRHP inclusion within the ROW.
				Determination ID: 31719;
				Tracking #: 201608822.

Identifier	Affiliation	Features/Function	NRHP	Comments / Recommendations
Ideniiiei	Annunon	reduces/renchon	Eligibility	Comments / Recommendations
				NRHP eligibility was evaluated in
				July 2016. The site was
4101500	Historic	Warehouse	Inaliaibla	recorded as being ineligible for
4 I DLJZZ	THSIONC	vvarenouse	mengible	NRHP inclusion. Determination
				ID: 31720; Tracking #:
				201608822.
				NRHP eligibility was evaluated in
				July 2016. The site was
4101602	Historic	Farmstead	Ineligible	recorded as being ineligible for
4 I DL523				NRHP inclusion. Determination
				ID: 31721; Tracking #:
				201608822.
				NRHP eligibility was evaluated in
				July 2016. The site was
4101524	Historic		Ingligible	recorded as being ineligible for
4TDLJZ4	THSIONC		mengible	NRHP inclusion. Determination
				ID: 31722; Tracking #:
				201608822.
				NRHP eligibility was evaluated in
41DL525				July 2016. The site was
	Historic	Farmetoad	Ineligible	recorded as being ineligible for
	THSIONC	Farmstead		NRHP inclusion. Determination
				ID: 31723; Tracking #:
				201608822.

Identifier	Affiliation	Features/Function	NRHP Eligibility	Comments / Recommendations
41DL526	Historic	Farmstead	Ineligible	NRHP eligibility was evaluated in July 2016. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 31724; Tracking #: 201608822.
41DL527	Historic	Farmstead	Ineligible	NRHP eligibility was evaluated in February 2016. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 31468 Tracking #: 201603567.
41DL528	Historic	Residential neighborhood (1960s)	Ineligible	NRHP eligibility was evaluated in February 2016. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 31469 Tracking #: 201603567.
41TR16	Prehistoric / Historic	Lithic scatter and historic artifact scatter	Unknown	Recorded in 1979
41TR17	Prehistoric	Lithic scatter	Ineligible within ROW	NRHP eligibility was evaluated in February 2011. The site was recorded as being ineligible within the ROW for NRHP inclusion. Determination ID: 21734; Tracking #: 201107830.

Idoptifier	Affiliation	Footuros/Function	NRHP	Commonte / Recommondations	
Ideniiier	Amilation	rediores/runchon	Eligibility	Comments / Recommendations	
				NRHP eligibility was evaluated in December 2008. The site was	
				recorded as being ineligible for	
41TR18	Prehistoric	Campsite	Ineligible	NRHP inclusion. Determination	
				ID: 979; Tracking #:	
				200902949.	
				NRHP eligibility was evaluated in	
				December 2008. The site was	
41TR19	Prehistoric	Lithic scatter and historic debris	Ineligible	recorded as being ineligible for	
	/ Historic		ineligible	NRHP inclusion. Determination	
				ID: 979; Tracking #:	
				200902949.	
				NRHP eligibility was evaluated in	
		Prehistoric: Lithic and		July 2016. The site was	
41TR20	Prehistoric	burned rock scatter	Undetermined	recorded as being undetermined	
4TTR20	/ Historic	Historic: 20 th Century	Ondelermined	for NRHP inclusion.	
		house		Determination ID: 31718;	
				Tracking #: 201608822.	
A1TP21	Prohistoria	Lithic acattor		NRHP testing recommended by	
4111121	Trenisione		UTIKHUWH	previous investigators.	
				NRHP eligibility was evaluated in	
				December 2008. The site was	
∦1T ₽ ? 2	Prohistoric	Lithic and burned rock	Inaligibla	recorded as being ineligible for	
411122	THEMISION	scatter	mengible	NRHP inclusion. Determination	
				ID: 972; Tracking #:	
				200902949.	

Identifier	Affiliation	Features/Function	NRHP	Comments / Recommendations	
			Eligibility		
41TR23	Prehistoric	Lithic scatter	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 970; Tracking #: 200902949.	
		Prehistoric: open			
41TR79 /	Prehistoric	campsite			
	/ Historic	Historic: artifact scatter	Unknown	-	
		from a 19 th /20 th			
		Century residence			
41TR80			Unknown		
111100			UNKIIOWII		
		_		NRHP eligibility was evaluated in	
				NRHP eligibility was evaluated in December 2008. The site was	
417001	Dubituit			NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for	
41TR81	Prehistoric	Lithic procurement site	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination	
41TR81	Prehistoric	Lithic procurement site	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 973; Tracking #:	
41TR81	Prehistoric	Lithic procurement site	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 973; Tracking #: 200902949.	
41TR81	Prehistoric	Lithic procurement site	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 973; Tracking #: 200902949. NRHP eligibility was evaluated in	
41TR81	Prehistoric	Lithic procurement site	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 973; Tracking #: 200902949. NRHP eligibility was evaluated in February 2016. The site was	
41TR81	Prehistoric	Lithic procurement site Prehistoric: open		NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 973; Tracking #: 200902949. NRHP eligibility was evaluated in February 2016. The site was recorded as being ineligible for	
41TR81 41TR82	Prehistoric Prehistoric / Historic	Lithic procurement site Prehistoric: open campsite	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 973; Tracking #: 200902949. NRHP eligibility was evaluated in February 2016. The site was recorded as being ineligible for NRHP inclusion. Determination	
41TR81 41TR82	Prehistoric Prehistoric / Historic	Lithic procurement site Prehistoric: open campsite Historic: debris	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 973; Tracking #: 200902949. NRHP eligibility was evaluated in February 2016. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 31481; Tracking #:	

Identifier	Affiliation	Features/Function	NRHP Eligibility	Comments / Recommendations	
41TR87			Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 978; Tracking #: 200902949.	
41TR126	Prehistoric / Historic	Prehistoric: lithic scatter Historic: Estille Farm	Ineligible within ROW	Disturbed. NRHP eligibility was evaluated in March 2018. The site was recorded as being ineligible within the ROW for NRHP inclusion. Determination ID: 33410; Tracking #: 201806898.	
41TR127	Prehistoric / Historic	Prehistoric: Lithic procurement site Historic: farmstead	Ineligible	NRHP eligibility was evaluated in December 2008. The prehistoric component of the site was recorded as being ineligible for NRHP inclusion. Determination ID: 974; Tracking #: 200902949.	
41TR176	Historic	Farmstead	Ineligible	NRHP eligibility was evaluated in May 2001. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 21553; Tracking #: 200108097.	

Identifier Affiliatio		Features/Function	NRHP Comments / Recommendation		
Ideninei	Annunon	reduces/renchon	Eligibility	Comments / Recommendations	
				NRHP eligibility was evaluated in	
41TR177				May 2001. The site was	
	Listoria	Formatand	Inaliaible	recorded as being ineligible for	
	THSIONC	Tamisieda	ineligible	NRHP inclusion. Determination	
				ID: 21554; Tracking #: 200108097. NRHP eligibility was evaluated in	
				recorded as being ineligible for NRHP inclusion. Determination ID: 21554; Tracking #: 200108097. NRHP eligibility was evaluated in May 2001. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 21555; Tracking #: 200108097. NRHP eligibility was evaluated in	
				NRHP eligibility was evaluated in	
				May 2001. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 21555; Tracking #:	
41TR178		Enurode and	hadiniki.		
	LISTOLIC	Farmstead	Ineligible		
				200108097.	
				NRHP eligibility was evaluated in	
				May 2001. The site was recorded as being ineligible for	
1170170	Historic	Farmstoad	Indiaible		
4111(177	THSIONC	i unisieuu	mengible	NRHP inclusion. Determination	
			ID: 21556; Tracking #:		
				200108097.	
				NRHP eligibility was evaluated in	
				May 2001. The site was	
11TD100	Historic	Homostand	Inaliaibla	recorded as being ineligible for	
4111100	THSIONC	Homestead	Ineligible	NRHP inclusion. Determination	
				ID: 21557; Tracking #:	
				200108097.	

Identifier	Affiliation	Features/Function	NRHP	Comments / Recommendations
Ideninei	Annunon	rediores/rediction	Eligibility	Comments / Recommendations
				NRHP eligibility was evaluated in
41TR181				May 2001. The site was
	Listoria	Homostord	Inaliaible	recorded as being ineligible for
	THSIONC	Tiomesiedu	mengible	NRHP inclusion. Determination
				ID: 21558; Tracking #:
				NRHP inclusion. Determination ID: 21558; Tracking #: 200108097. NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 968; Tracking #: 200902949.
				NRHP eligibility was evaluated in
				December 2008. The site was
41TR214		Here esterned	la alta:hla	recorded as being ineligible for NRHP inclusion. Determination
	HISTORIC	Flomestedd	Ineligible	
		ID: 968; Tracking 200902949.	ID: 968; Tracking #:	
				200902949.
				NRHP eligibility was evaluated in
				December 2008. The site was recorded as being ineligible for
11TP215	Historic	Dainy farm complex	Inaligible	
4111213	THSIONC	NRHP inclusion. De	NRHP inclusion. Determination	
			ID: 971; Tracking #:	
				200902949.
				NRHP eligibility was evaluated in
				December 2008. The site was
11TP216	Historic	Middon	Inoligible	recorded as being ineligible for
4111210	THSIOILC	Midden	Ineligible	NRHP inclusion. Determination
				ID: 969; Tracking #:
				200902949.

Identifier	Affiliation	Features/Function	NRHP Eligibility	Comments / Recommendations
41TR218	Historic	Artifact scatter and midden	Ineligible	NRHP eligibility was evaluated in December 2008. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 977; Tracking #: 200902949.
41TR219	Prehistoric	Lithic and burned rock scatter	Ineligible	NRHP eligibility was evaluated in February 2008, December 2008, and April 2009. The site was recorded as being ineligible for NRHP inclusion in February 2008, undetermined for NRHP inclusion in December 2008, and ineligible for NRHP inclusion in April 2009. Determination IDs: 975, 1060, and 21728; Tracking #s: 200902949, 200804827, and 200905563.
41TR221	Historic	Morgan Hood Survey Pioneer Cemetery	Undetermined	NRHP eligibility was evaluated in December 2008. The site was recorded as being undetermined for NRHP inclusion. Determination ID: 967; Tracking #: 200902949.

Identifier	Affiliation	Features/Function	NRHP	Comments / Recommendations
				NRHP eligibility was evaluated in July 2010. The site was
41TR241	Historic	Farmstead	Ineligible	recorded as being ineligible for NRHP inclusion. Determination ID: 8135; Tracking #: 2010014259.
41TR273	Prehistoric / Historic	Prehistoric: lithic scatter Historic: midden	Ineligible	NRHP eligibility was evaluated in September 2015. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 31174; Tracking #: 201505573.
41TR274	Historic	Farmstead	Ineligible	NRHP eligibility was evaluated in September 2015. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 31175; Tracking #: 201505573.
41TR275	Historic	Farmstead	Ineligible	NRHP eligibility was evaluated in September 2015. The site was recorded as being ineligible for NRHP inclusion. Determination ID: 31176; Tracking #: 201505573.
41TR277	Historic	Location of former farmstead	Unknown	Destroyed. Recommended ineligible by previous investigators.

Identifiar	Affiliation	Features/Function	NRHP	Comments / Recommondations	
Ideniiiei	Amilation	reduces/renchon	Eligibility	Comments / Recommendations	
				NRHP eligibility was evaluated in	
417000				February 2016. The site was	
	Historic	Middon	Inaliaibla	recorded as being ineligible for NRHP inclusion. Determination ID: 31483; Tracking #: 201603565. NRHP eligibility was evaluated in February 2016. The site was recorded as being ineligible for NRHP inclusion. Determination	
4111270	THSIONC	Midden	mengible		
				ID: 31483; Tracking #:	
				201603565.	
				NRHP eligibility was evaluated in	
41TR291 Hist				February 2016. The site was	
			la alta:hla	recorded as being ineligible for	
	LISTOLIC	Surface anifact scatter	Ineligible	NRHP inclusion. Determination	
			ID: 31484; Tracking #: 201603565.	ID: 31484; Tracking #:	
				201603565.	
				NRHP eligibility was evaluated in	
				February 2016. The site was recorded as being ineligible for	
A1TD202	Historic	Industrial complex and	Ingligible		
4111272	THSIONC	historic artifact scatter	ifact scatter NRHP inclusion. ID: 31485; Track 201603565.	NRHP inclusion. Determination	
				ID: 31485; Tracking #:	
				201603565.	
				NRHP eligibility was evaluated in	
				February 2016. The site was	
1170000	Historic	Surface artifact ecattor	Ineligible	recorded as being ineligible for	
4111273	THSIONC	Sundce drinder scaller		NRHP inclusion. Determination	
				ID: 31486; Tracking #:	
				201603565.	

Idontifior	Affiliation	NRF Eastures/Eurotian	NRHP	Commonts / Recommondations
Ideniiiei	Amilanon	reduces/renchon	Eligibility	Comments / Recommendations
			<u>.</u>	NRHP eligibility was evaluated in
				February 2016. The site was
417004	Historic	Artifact acattor	Ingligible	recorded as being ineligible for
4111274	THSIONC	Annaci scaner	mengible	NRHP inclusion. Determination
				ID: 31487; Tracking #:
				201603565.
				NRHP eligibility was evaluated in
41TR295 H				February 2016. The site was
	Ll'at a ui a		la altatia la	recorded as being ineligible for NRHP inclusion. Determination ID: 31488; Tracking #:
	HISTORIC	Surface anifact scatter	Ineligible	
				201603565.
				NRHP eligibility was evaluated in
				February 2016. The site was
11TP204	Historic	Surface artifact scattor	Inaligible	recorded as being ineligible for
4111270	THSIONC	ISTORIC Surface artifact scatter Ineligible NRHP ind ID: 3148 201603	NRHP inclusion. Determination	
				ID: 31489; Tracking #:
				201603565.
				NRHP eligibility was evaluated in
				February 2016. The site was
11TP207	Prohistoric	Lithic scatter	Inaligible	recorded as being ineligible for
4111277	Trenisione	Linic sculer	Ineligible	NRHP inclusion. Determination
				ID: 31490; Tracking #:
				201603565.

Identifier Affiliation		Footuros/Function	NRHP Commonts / Pager	Commonte / Pacommondations	
Ideniiiei	Annunon	rediores/ronchon	Eligibility	Comments / Recommendations	
				NRHP eligibility was evaluated in	
				June 2017. The site was	
11TD201	Probistoria	Lithic acattor	Indiaible	recorded as being ineligible for	
411K304	FrenisionC	Limic scaller	ineligible	NRHP inclusion. Determination	
				ID: 32557; Tracking #:	
				201707471.	
				NRHP eligibility was evaluated in	
				March 2018. The site was	
41TR310	Listerie	A Airel el el el	la alta:hla	recorded as being ineligible for	
	LISTOLIC	Midden	Ineligible NRHP inclusion. Determinati		
	ID: 33 2018	ID: 33411; Tracking #:			
				201806898.	
				NRHP eligibility was evaluated in	
				March 2018. The site was	
≬1 ⊤D211	Listoria	Artifact control	Ingligible	recorded as being ineligible for	
4116311	Historic	Artifact scatter	Ineligible	NRHP inclusion. Determination	
	ID: 3		ID: 33412; Tracking #:		
				201806898.	
41TR312	Historic	Farmstead	Unknown	_	
				NRHP eligibility was evaluated in	
				July 2017. The site was	
41TD215	Historic	Surface artifact scattor	Inaligible	recorded as being ineligible for	
CICALL F	TISIONC	Sonace annaci scaller	Ineligible	NRHP inclusion. Determination	
				ID: 33599; Tracking #:	
				201811265.	

Identifier	۸ ff:l: ation	on Faaturos/Function	NRHP	Commonte / Pasammondations	
		reditires/runction	Eligibility	Comments / Recommendations	
				NRHP eligibility was evaluated in	
				April 2019. The site was	
4170214			la altatia la	recorded as being ineligible for	
4118310	_		Ineligible	NRHP inclusion. Determination	
				ID: 34209; Tracking #:	
				201906244.	
				NRHP eligibility was evaluated in	
				A 2019. The site was recorded	
4170217		_	Ineligible	as being ineligible for NRHP	
4118317				inclusion. Determination ID:	
				34136; Tracking #:	
				201905605.	
				NRHP eligibility was evaluated in	
				March 2019. The site was	
4170210			la alta tha	recorded as being ineligible for	
4118318			Ineligible	NRHP inclusion. Determination	
				ID: 34137; Tracking #:	
				201905605.	

One OTHM is located within the APE, while 3 are not technically located within the APE (

Table 4. OTHMs within the APE.

; see Figure 2). The 3 markers technically not located within the APE are in small cut-outs around cemeteries within the larger DFW Airport boundary. See

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Table 4. OTHMs within the APE. for details of the markers.

Marker Number	Marker Name	Address / Location	Date Erected	Comments
346	Bear Creek Cemetery	Adjacent to the site of the	1980	Not within APE
		Bear Creek Missionary		
		Baptist Church		
3470	Morgan Hood Survey	SH 26 northbound,	1983	Located within
	Pioneer Cemetery	between Great Wolf Drive		APE
		and Bass Pro Drive (Bethel		
		Road), east side of the		
		road.		
3396	Minter's Chapel Cemetery	DFW Airport, W. Airfield	1979	Not within APE
		Drive, .25 mile north of		
		Glade Road intersection		
3397	Minter's Chapel Methodist	DFW Airport, W. Airfield	1982	Not within APE
	Church	Drive, .25 mile north of		
		Glade Road intersection.		
		Moved from 4334 Heritage		
		Avenue.		

Table 4. OTHMs within the APE.

Similarly to the OTHMs, 2 cemeteries are located in small cut-out areas that do not technically belong to the DFW Airport (see Figure 2). One of these cemeteries (TR-C037) may extend into the APE. Cemetery TR-C025 is technically located on DFW Airport property (Table 5).

Cemetery Number	Cemetery Name	Address / Location	Comments
TR-C037	Bear Creek Cemetery	Approx. 0.34 mile northwest of intersection of SH 360 and Airport Ewy	Not within APE
TR-C033	Minter's Chapel Cemetery	Southwest of intersection of W. Airfield Dr. and W 27 th St.	Not within APE
TR-C025	Morgan Hood Survey Pioneer Cemetery	Approx. 0.23 mile southwest of intersection of SH 26 and Bass Pro Dr.	Located within APE

Table 5. Cemeteries within the APE.

Summary and Recommendations

The Atlas search revealed that 41 previous cultural resources surveys have been conducted, 78 archaeological sites, 1 OTHM, and 2 cemeteries have been recorded within the APE. Since no ground-disturbing activities are being proposed as part of this evaluation, which involves no proposed action, there is no anticipated impact to any recorded cultural resources at this time. Any future project designs will require additional study and archaeological considerations.

References

Natural Resources Conservation Service (NRCS), United States Department of Agriculture

2019 Web Soil Survey. Available online at: http://websoilsurvey.nrcs.usda.gov/, accessed May 17, 2019.

United State Geologic Society (USGS). 2019 Texas Geology Map Viewer. Available online at: https://txpub.usgs.gov/txgeology/, accessed May 17, 2019.



Map 1. General Location of the Project Area.



Map 2. Previous Recorded Cultural Resources and Surveys within the Airport Boundaries.



13 September 2021

Mr. Mark Wolfe Texas Historical Commission 1511 Colorado Street Austin, Texas 78701

RE: Archeological Resources Desktop Analysis for the Dallas/Fort Worth International Airport Central Terminal Expansion-Terminal C Project, DFW International Airport, Dallas and Tarrant Counties, Texas

INTRODUCTION

Integrated Environmental Solutions, LLC (IES), has been contracted by Komatsu Architecture., on behalf of the Dallas Fort Worth International Airport (DFW), to conduct the archeological resources review and agency coordination for the proposed DFW Central Terminal Area Expansion – Terminal C Project on DFW property. The proposed project area or Area of Potential Effects (APE) is located on 14 tracts on DFW property in Dallas and Tarrant counties (**Attachment A, Figure 1**). Approval from the Federal Aviation Administration (FAA) will be required to modify the Airport Layout Plan (ALP) to reflect the permanent alterations on the DFW property. Since the ALP is considered a federal action, the project will require compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA). Additionally, as the DFW is a political subdivision of the State of Texas, the project will be subjected to the provisions of the Antiquities Code of Texas (ACT).

PERTINENT REGULATIONS

Antiquities Code of Texas (ACT)

As the DFW is considered a political subdivision of the State of Texas under Section 52, Article III, or Section 59, Article XVI, of the Texas Constitution, the DFW is required to comply with the Antiquities Code of Texas (ACT). The ACT, as outlined in the Texas Administrative Code (TAC) Title 13 Part II and the Texas Natural Resource Code (TNRC) Title 9 Chapter 191, requires that political subdivisions notify the THC at least 30 days in advance prior to any project that may affect potential or designated archeological sites. While advance project review by the THC is required for undertakings with more than 5 acres (ac) or 5,000 cubic yards of ground disturbance, the THC can still request project smust comply with the ACT. If the activity occurs inside a designated historic district, affects a recorded archeological site, or requires on-site investigations, the project will need to be reviewed by the THC, regardless of project size.

Section 106 of the National Historical Preservation Act (NHPA)

The NHPA (54 U.S. Code [USC] 306101), specifically Section 106 of the NHPA (54 USC 306108), requires the State Historic Preservation Officer (SHPO), represented by the Texas Historical Commission (THC), to administer and coordinate historic preservation activities, and to review and comment on all actions licensed by the federal government that will have an effect on properties listed in the National Register of Historic Places (NRHP), or eligibility for such listing. Per 36 Code of Federal Regulations Part 800 (36 CFR 800), the federal agency responsible for overseeing the action must make a reasonable and good faith effort to identify cultural resources. Federal actions include, but are not limited to, construction, rehabilitation, repair projects, demolition, licenses, permits, loans, loan guarantees, grants, and federal property transfers. Approval will be required from the FAA to modify the ALP that will reflect the permanent alterations to the DFW property. Since this is considered a federal action, the project will consequently require compliance with the NEPA and Section 106 of the NHPA.

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AREA OF POTENTIAL EFFECTS

The APE for the project encompasses approximately 69 ac across 14 tracts. Current project plans call for the installation of construction laydown, staging, and parking areas associated with improvements to Terminal C. In addition, the proposed project will include modifications to the east airfield and to the runway apron surrounding the east side of the terminal. Ground disturbances associated with the proposed project will vary across the 14 tracts, but will include general land clearing, grading, and erosion control. Depths of impacts associated with the proposed project will generally be within a few feet (ft) of the current ground surface.

METHODOLOGY

Background Research

During the background review, a variety of literature and online sources were referenced to determine if potential archeological resources were located within the APE. These sources included U.S. Geological Survey (USGS) topographic maps, the *Soil Survey of Dallas County, Texas*, the *Soil Survey of Tarrant County, Texas*, the Geologic Atlas of Texas (Dallas Sheet), the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) digital soil databases for Dallas and Tarrant counties, the 1936 State Highway Maps of Dallas and Tarrant counties, the Texas Historic Overlay georeferenced map database, the Texas Department of Transportation (TxDOT) Potential Archeological Liability Map (PALM), and both past and current aerial photographs of the proposed project area. Additionally, a file search of the Texas Archeological Site Atlas (TASA) and Texas Historical Sites Atlas (THSA) was performed for the proposed location and surrounding areas. This review was performed by Principal Investigator Anne Gibson on 02 September 2021.

The TxDOT PALM examines "the character and classification of the soils and assesses the shallow and deep geoarcheological potential or the likelihood that soil could contain buried cultural materials in reasonable context (i.e., historic/recent disturbances, landscape setting, and soils data) for each soil series" (Abbott 2011:161). The TxDOT PALM model identifies where sites are likely to be preserved in a reasonable context versus indicating where sites are likely to exist (Abbott 2011:154, 2011:179). "The resolution of the PALM is appropriate to the scale of landform mapping (1:24,000)" (Abbott 2011:175). Any analysis of the data beyond the scale of mapping can result in a misunderstanding of the detail of mapping (Abbott 2011). Due to the more detailed evaluation required to accurately evaluate cultural resources potential for field methodology development (typically 1:7,000 or less), the cultural resources potential evaluation, presented in this document, includes an assessment of the PALM results at a more detailed level to determine if the project area has retained a reasonable degree of contextual integrity, as assumed by the PALM model. A reasonable context is evaluated through a review of historical and modern aerial photographs to evaluate the level of previous ground disturbance that has transpired within a given area.

BACKGROUND REVIEW

Topography, Geology, and Soils

The Euless and Grapevine 7.5-minute USGS topographic quadrangle maps illustrate that the APE is situated within a broad, gently undulating upland ridge that encompasses the majority of the DFW property and separates the Bear Creek and Hackberry Creek watersheds. However, due to land improvements associated with the construction of DFW, the natural rolling topography was graded with minimal slope (**Attachment A, Figure 2**). Elevations within the APE range from 530 to 580 ft (161 to 177 meters [m]) above modern sea level (amsl).

The APE is located within the Northern Blackland Prairie of the Texas Blackland Prairie ecoregion. The Northern Blackland Prairie is distinguished from surrounding regions by gently rolling hills and dark, fine-textured soils that primarily support prairie vegetation (Griffith et al. 2007). Historical vegetation included little bluestem, big bluestem, yellow Indiangrass, and tall dropseed. Most of the native prairie has been converted to cropland, non-native pasture, and expanding urban uses around Dallas, Waco, Austin, and San Antonio. Vertisols dominate the Blackland Prairie ecoregion and consist of high clay content soils with significant shrink and swell potential (Ressel 1981). The APE is underlain by the Cretaceous-age Eagle Ford Formation (Kef), which is comprised of shale, sandstone, and limestone (McGowen et al. 1987; USGS 2021; Attachment A, Figure 3).

As shown by the *Soil Survey of Dallas County, Texas* and *Soil Survey of Tarrant County, Texas*, there are eight soil map units within the APE (Coffee et al. 1980; Ressel 1981; **Table** 1; **Attachment A, Figure 4**). The entire APE contains soils typically found within upland settings in the Northern Blackland Prairie. Soil data was viewed from the USDA NRCS Web Soil Survey (USDA 2021).

Soil Map Unit Description	Percentage of the APE
Dallas County Soils	
34 – Ferris-Heiden complex, 5 to 12 percent slopes - This component is described as clay located on ridges. Typical Bk subsoil horizon depth is 8 to 24 in (20 to 61 centimeters [cm]). Depth to a root restrictive layer or bedrock is 40 to 60 in (102 to 152 cm) to densic material. The natural drainage class is well drained.	3.4
41- Heiden clay, 1 to 3 percent slopes - This component is described as clay located on ridges. Typical Bk subsoil horizon depth is 18 to 58 in (46 to 91 cm). Depth to a root restrictive layer or bedrock is 40 to 65 in (102 to 165 cm) to densic material. The natural drainage class is well drained.	3.8
42 - Heiden clay, 2 to 5 percent slopes, eroded - This component is described as clay located on ridges. Typical Bk subsoil horizon depth is 6 to 18 in (15 to 46 cm). Depth to a root restrictive layer or bedrock is 40 to 65 in (102 to 165 cm) to densic material. The natural drainage class is well drained.	31.2
45 - Houston Black-Urban land complex- This component is described as clay located along upland ridges. The soil has a depth to a root restrictive layer or bedrock of greater than 80 in (203 cm). The natural drainage class is moderately well drained.	9.3
Tarrant County Soils	
33- Heiden clay, 1 to 3 percent slopes - This component is described as clay located on ridges. Typical Bk subsoil horizon depth is 18 to 58 in (46 to 91 cm). Depth to a root restrictive layer or bedrock is 40 to 65 in (102 to 165 cm) to densic material. The natural drainage class is well drained.	2.4
34 - Houston Black clay, 1 to 3 percent slopes - This component is described as clay located along upland ridges. Typical Bk subsoil horizon depth is 6 to 70 in (15 to 178 cm). The soil has a depth to a root restrictive layer or bedrock of greater than 80 in (203 cm). The natural drainage class is moderately well drained.	9.8
35 - Houston Black-Urban land complex, 1 to 4 percent slopes - This component is described as clay located along upland ridges. The soil has a depth to a root restrictive layer or bedrock of greater than 80 in (203 cm). The natural drainage class is moderately well drained.	0.6
81 – Urban land, 0 to 16 percent slopes - This component is described as built-up areas where 75 percent or more of the surface is covered by urban land development.	39.6

Table 1: Soil Map Units Located Within the APE

Texas Archeological Sites Atlas Review

A file search within the TASA and the THSA electronic databases, maintained by the THC and the Texas Archeological Research Laboratory (TARL), identified that there are no previously recorded archeological sites, National Register properties, historical markers, or cemeteries located within the proposed APE (TASA 2021; THSA 2021). The TASA database indicates one archeological survey has been previously conducted within the APE (**Table 2**; **Attachment A**, **Figure 5**). The eastern portions of the APE within Dallas County were surveyed by IES for the Property Inventory Project (PIP) Tranche 2 under Texas Antiquities Permit No. 7373 (Stone et al. 2018). No archeological sites were recorded within the APE during this survey. IES received concurrence from the THC for the PIP Tranche 2, along with additional project components, on 29 December 2017 (**Attachment B**). In addition, the TASA database indicates that 15 previously conducted archeological surveys and 17 previously recorded archeological sites are located within 1 mi of the APE (**Table 2** and **3**).

	Table 2: Previously	Conducted Archeological	Surveys within	1 Mile of the APE
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	ACT Permit	Permit		Survey		
Agency	No.	Firm/Institution	Date	Туре	Location (Approximate)	
U.S. Environmental Protection Agency (EPA)	No data	No data	1979	Linear	0.54 mi west of APE	
Texas Department of Transportation	3561	Geo-Marine Inc. (GMI)	2004	Area	0.33 mi west of APE	
FAA	4491	AR Consultants, Inc. (ARC) 2008 Area 0.18 mi west of		0.18 mi west of APE		
FTA, Tarrant County	4775	URS Corporation (URS)	2013	Area	0.34 mi west of APE	
FAA	5773	Hicks and Company	2010	Area	0.27 mi west of APE	
DFW	6835	IES 2014 Area 0.98 r		0.98 mi northwest of APE		
Alan Plummer Associates, Inc.	7119	ARC	ARC 2015 Area 0.65 mi west of		0.65 mi west of APE	
DFW	7126	IES	2015	Area	0.28 mi south of APE	
TxDOT	7257	URS Corporation	2015	Area	0.82 mi south of APE	
DFW	7373	IES	2015	Area	Overlaps eastern portions of APE	
DFW	7650	IES	2016	Area	0.25 mi north of APE	
Dallas Area Rapid Transit (DART)	7996	AmaTerra Environmental, Inc.	2017	Area	0.32 mi west of APE	
DFW	8215	IES	2018	Area	0.51 mi east of APE	
DFW	8352	IES	IES 2018 Area 0.31 mi northwest of A		0.31 mi northwest of APE	
DFW	9161	IES	2020	Area	0.73 mi northwest of APE	
DFW	9162	IES	2019	Area	0.41 mi west of APE	

Site	Time	Cite Turne	Cite Cine	Depth	Cultural Materials	Topographic	NRHP	Deference
Trinomiai	Period	Site Type	Site Size	Extent	Cultural Materials	Setting	Eligibility	Reference
41DL523	Historic	Farmstead	375 by 240 ft	0-30	Nails, glass shards, plastic fragments, and asphalt	Upland	Ineligible	Hamilton 2015
41DL524	Historic	Farmstead	375 x 240	0-30	Windmill foundation, nails, glass shards, plastic fragments, and asphalt	Upland	Ineligible	Hamilton 2015
41DL525	Historic	Farmstead	205 x 620	0-30	Wells, culverts, fence line, irises, tin cans, glass bottle fragments and shards, metal pails, plastic fragments, whiteware sherds, and metal fragments	Upland	Ineligible	Hamilton 2015
41DL527	Historic	Farmstead	2,650 x 250 ft	0-30	Roadway, concrete aggregates, metal wiring, sheet metal, brick and brick fragments, glass bottles and shards	Lowland	Ineligible within ROW	Hamilton 2015
41DL558	Historic	Structure	21 x 20 m	Surface	Concrete foundation of an industrial building	Upland	Ineligible	Gibson and McCormick 2020
41TR16	Prehistoric	Lithic scatter	200 x 500 m	10-50	Biface fragment, exhausted core, burned rock; a mass of 1920-1940 refuse	Creek bank	Unknown	Whitsett and Fox 1979
41TR17	Prehistoric	Lithic scatter	150 x 400 m	0-20	Lithic debitage	Sandstone bluff	Ineligible within ROW	Whitsett and Fox 1979
41TR18	Prehistoric/ Historic	Lithic scatter	120 x 340 m	Unknown	Lithic debitage; graffiti in sandstone outcrop	Stream terrace	Ineligible	Whitsett 1979
41TR63	Prehistoric	Quarry and chipping station	210 x 110 m	No data	No data	Upland terrace	Unknown	Lorrain 1973
41TR87	Historic	Residential	200 x 130 m	Surface	Concrete foundations, concrete footings, animal pen, bricks, food cans, oil drum barrels, earthenware, bottle glass, domestic trash	Ridge	Ineligible	Gibson and McCormick 2019
41TR218	Historic	Artifact Scatter	30 x 50 m	25	Nails, bolts, glass, and other 20th century debris	Upland terrace	Ineligible	Shelton 2008
41TR273	Prehistoric/ Historic	Lithic scatter; historic scatter	165 x 175 m	0-20	Trash midden, debitage, biface, lithics, tested cobbles	Dissected upland	Ineligible	Stone and Hamilton 2015
41TR274	Historic	Farmstead	230 x 230 ft	0-20	Domestic debris, brick fragment, clear glass, scrap metal, appliances	Upland terrace	Ineligible	Stone and Hamilton 2015
41TR275	Historic	Farmstead	230 x 230 ft	0-20	Trash midden, domestic debris, construction materials	Upland slope	Ineligible	Stone and Hamilton 2015
41TR295	Historic	Historic Scatter	60 x 50 ft	Surface	Building materials	Upland	Ineligible	Gibson 2015
41TR312	Historic	Farmstead	75 x 77 m	0-30	Bricks, concrete chunks, nail, ceramic, glass, bone fragment	Upland	Ineligible	Gibson and Chapman 2018

Disturbance Analysis

During the background review, it was determined that ground-disturbing activities have transpired within the APE related to past land use. Prior to DFW construction in the early 1970s, the APE was primarily used for agricultural and ranching purposes as early as 1942 and presumably since the late 19th and early 20th centuries. The majority of the APE has been cleared of woody vegetation at various points through the 20th century, although small portions of the APE have become overgrown with secondary tree growth.

Since 1969, significant ground disturbances have transpired throughout the APE related to broad-scale surface grading and transportation development. As depicted within 1970 aerial photographs, once DFW construction began, ground disturbances associated with large-scale grading for the terminals, runways, and International Parkway occurred within the center of DFW property and all structures in the vicinity of the APE were demolished. Portions of the APE were further disturbed by taxiway improvements and recent installation of materials storage areas within the APE and on surrounding properties.

Archeological Resource Potential

Prehistoric Resources

Data presented within the PALM for Dallas and Tarrant counties indicates the entire APE features a low potential for shallow or deeply-buried cultural materials within areas that have retained a reasonable contextual setting. Similar conclusions were reported by AR Consultants, Inc. (ARC) in 2007 and 2008. ARC conducted intensive pedestrian surveys of 1.210 acres on the DFW property under Texas Antiquities Permit Number 4491 and published their results in the report An Archaeological Survey for Chesapeake

Energy Corporation at DFW International Airport, Dallas and Tarrant Counties, Texas (Shelton et al. 2008). Through this study, three environmental zones were identified within the DFW that contain varying amounts of cultural resources probability. The current APE will have ground disturbances within Zone 1 (**Attachment A, Figure 6**).

Zone 1 is comprised of the Blackland Prairie Uplands ecoregion, which consists of mostly level clay or clay loam soils over limestone bedrock. Water permeates very slowly to the water table causing surface run-off and high shrink and swell potential. This setting has a low biotic diversity and is dominated by short grasses. Due to the limited resources available within the area, it has a low probability for containing prehistoric sites (Shelton et al. 2008). In summary, based on past research, previous THC coordination, and the results of this analysis, it was determined that the APE contains a low potential to contain prehistoric resources.

Historic-Period Resources

Historic-period resources within North-Central Texas are primarily related to farmsteads, houses, and associated outbuildings and structures that date from the mid-19th to the mid-20th centuries. Typically, these types of resources are located along old roadways, but also can be located along railroads, streams, and open pastures. Although determining the presence of the earliest buildings and structures are problematic, maps depicting these features are available post-1895.

Historical aerial photographs indicate that the APE was used for agricultural and ranching activities until groundbreaking for the construction of DFW in 1970. The 1931 Grapevine USGS topographic quadrangle map depicts a building within the portion of the APE adjacent to Terminal C. By 1956, aerial photographs indicate the building had been removed. Historical maps and aerial photograph resources indicate the other portions of the APE were devoid of buildings or structures. Based on this background research and identified past disturbances, there is a low potential for encountering historic-age resources within the APE.

CONCLUSIONS

Based on the results of this desktop analysis and previous IES investigations, the proposed project area has been exposed to previous ground disturbance and contains a low potential for containing either prehistoric or historic-age archeological resources. For these reasons, IES recommends that this project be allowed to proceed without the need for additional archeological resources investigations. However, if any archeological resources are encountered during construction, the operators should immediately stop construction activities in the area of the inadvertent discovery. The project cultural resources consultant should then be contacted to initiate further consultation with the THC prior to resuming construction activities.

If you have questions, please contact me by telephone at (972) 562-7672 or via email at kstone@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC

Kevin Stone, MA, RPA Vice President – Cultural Resources Director

IES Reference Number: 03.006.093

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2021 U.S. Department of the Interior Mineral Resources On-Line Spatial Data Website. http://mrdata.usgs.gov/sgmc/tx.html (accessed September 2021).

ATTACHMENT A Figures


Glade Rd

Rd Line

t at

W Northgate Dr

s Airfield Dr

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County: Tarrant, Dallas State: Texas State: Texas Date map created: 9/8/2021 Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI Streetmap IES Project Ref: 03.006.093 2,000 4,000 ft Т

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County: Tarrant, Dallas State: Texas

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Date map created: 9/8/2021 Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI Streetmap IES Project Ref: 03.006.093

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4,000 ft

1,200 m

Area of Potential Effects

Archeological-Environmental Zone
Zone 1 - Blackland Prairies Uplands
Zone 2 - Eastern Cross Timbers

Zone 3 - Bear Creek Floodplain

ATTACHMENT B Previous THC Coordination



11 December 2017

Mr. Mark Wolfe Texas Historical Commission 1511 Colorado Street Austin, TX 78701

RECEIVED by DEC 1 2 2017 for Mark Wolfe State Historic Preservation, Officer Track#

Re: Additional Correspondence Letter for the Section 106 of the National Historic Preservation Act of 1966 and Antiquities Code of Texas Project Review of the Property Inventory Project (FAA/DFW Airport/Permit #7373/THC Track 201608822)

Dear Mr. Wolfe,

On July 28, 2016 the Texas Historical Commission (THC) issued comment for the Section 106 of the National Historic Preservation Act of 1966 and Antiquities Code of Texas review of the draft report titled A 2,705-acre Cultural Resources Survey for the Property Inventory Project, Project Blue Sky, and Trigg Lake Access Road, Dallas and Tarrant Counties. The draft report was submitted under Antiquities Permit 7373 and processed under THC Track 201608822. Through this review, the THC concurred with the National Register of Historic Places (NRHP) eligibility determinations of 22 archeological sites identified and documented within the project's Area of Potential Effects (APE); therefore, would not require further investigation. However, the THC stated that to complete their review of the draft report, additional information and clarification would be needed to properly address five comments. Two of the five comments pertained to minor editorial requests, while the remaining three were substantive and pertained to cemeteries located directly adjacent to the APE (Attachment A). To address these comments additional field and archival research efforts were needed. IES is currently working to address the THC's remaining comments, which will be presented within a final interim report. These comments are summarized below:

Editorial Comments

- Add NRHP eligibility recommendations to the sites table within the report abstract.
- Methodology used for the reconnaissance surveys need to be clarified.

Substantive Comments

- Please clarify how the 150-foot buffers recommended for Bear Creek Cemetery, Alexander-Dobkins Family Cemetery, and the Harrington Family Cemetery were established without the use of archival research or known cemetery boundaries. To determine historic cemetery boundaries, we highly recommend archival research to be conducted to better understand the historical use of the parcels of land. Archival research should include review of deed records, cemetery records, family histories, and census records.
- In lieu of archival research, mechanical testing is the preferred method to determine where unmarked grave shafts are present.
- Once the cemetery avoidance buffers are better defined, please have the DFW International Airport provide a letter to the THC stating how these cemeteries will be clearly identified with avoidance buffers marked in the field. The avoidance buffers should be clearly marked so that the cemeteries will be avoided during construction, no be within staging zones, or impacted by heavy equipment.

The following table (**Table 1**) and attached figures (**Attachment B**) were compiled based on the information presented within the July 28th comment letter to summarize and depict the remaining tracts that have and have not been cleared by the THC.

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Tranche	Tranche Area	Tract Name	THC Review Status	THC Comments to be Addressed
1	Walnut Hill	1B1	Incomplete	Determine Harrington Family Cemetery Presence/Absence within the APE
4	- South Bear Creek	4A2	Incomplete	Determine Bear Creek Cemetery Presence/Absence within the APE
4		4A5	Incomplete	Determine Alexander-Dobkins Family Cemetery Presence/Absence within the APE

Table 1: Remaining Permit 7373 APE Tracts without THC Clearance

In summary, the DFW International Airport understands that the THC's review of Tracts 1B1, 4A2, and 4A5 will remain incomplete until the agency's comments have been addressed. However, all other portions of the APE have been cleared and do not require any further coordination with the THC prior to construction. We are asking that the THC concur with the information provided.

If you have questions, please contact me by phone at 972-562-7672 or via email at kstone@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC

Kevin Stone Cultural Resources Principal Investigator

cc: John MacFarlane, Federal Aviation Administration Robert A. Horton, DFW International Airport Sandra Lancaster, DFW International Airport Environmental Affairs Esther Chitsinde, DFW International Airport Environmental Affairs