APPENDIX A

PROJECT MAP

SCALE 1:36,000

1.5 0.75 0 1.5 Miles

3,000 0 3,000 6,000 9,000 Feet

Source:
USGS 7.5 Minute Series (Topographic)
Denton East, TX - 1960, Photorevised 1968 &1973
Little Elm, TX - 1960, Photorevised 1968

Figure 1
Project Location Map

APPENDIX B

HNTB CORRIDOR STUDY MAP

April 4, 2004

Lewisville Lake Corridor Project

General location map

FIGURE 2

FIGURE 3
Sht. 1 of 5

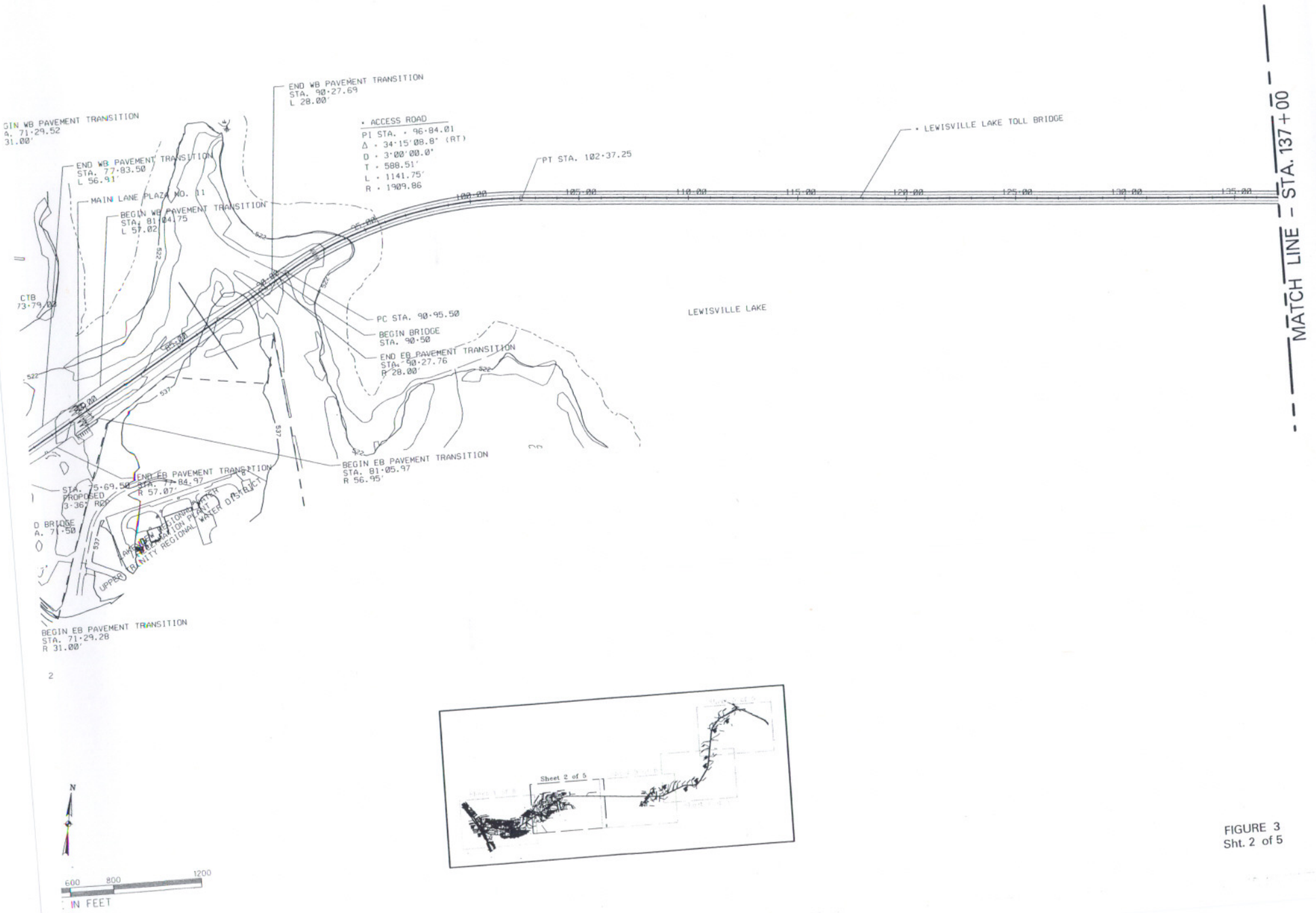


FIGURE 3
Sht. 2 of 5

FIGURE 3
Sht. 3 of 5

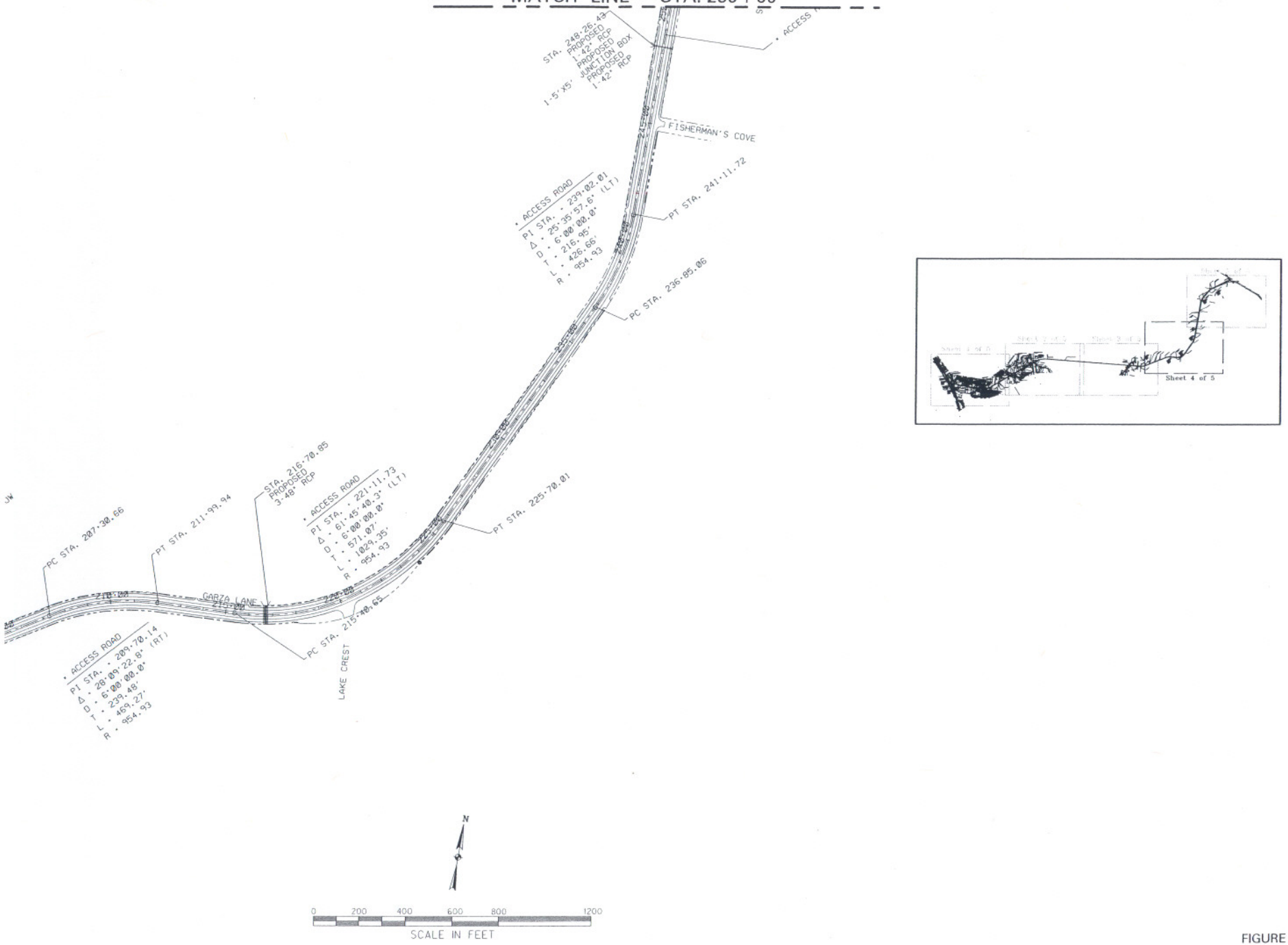


FIGURE 3
Sht. 4 of 5

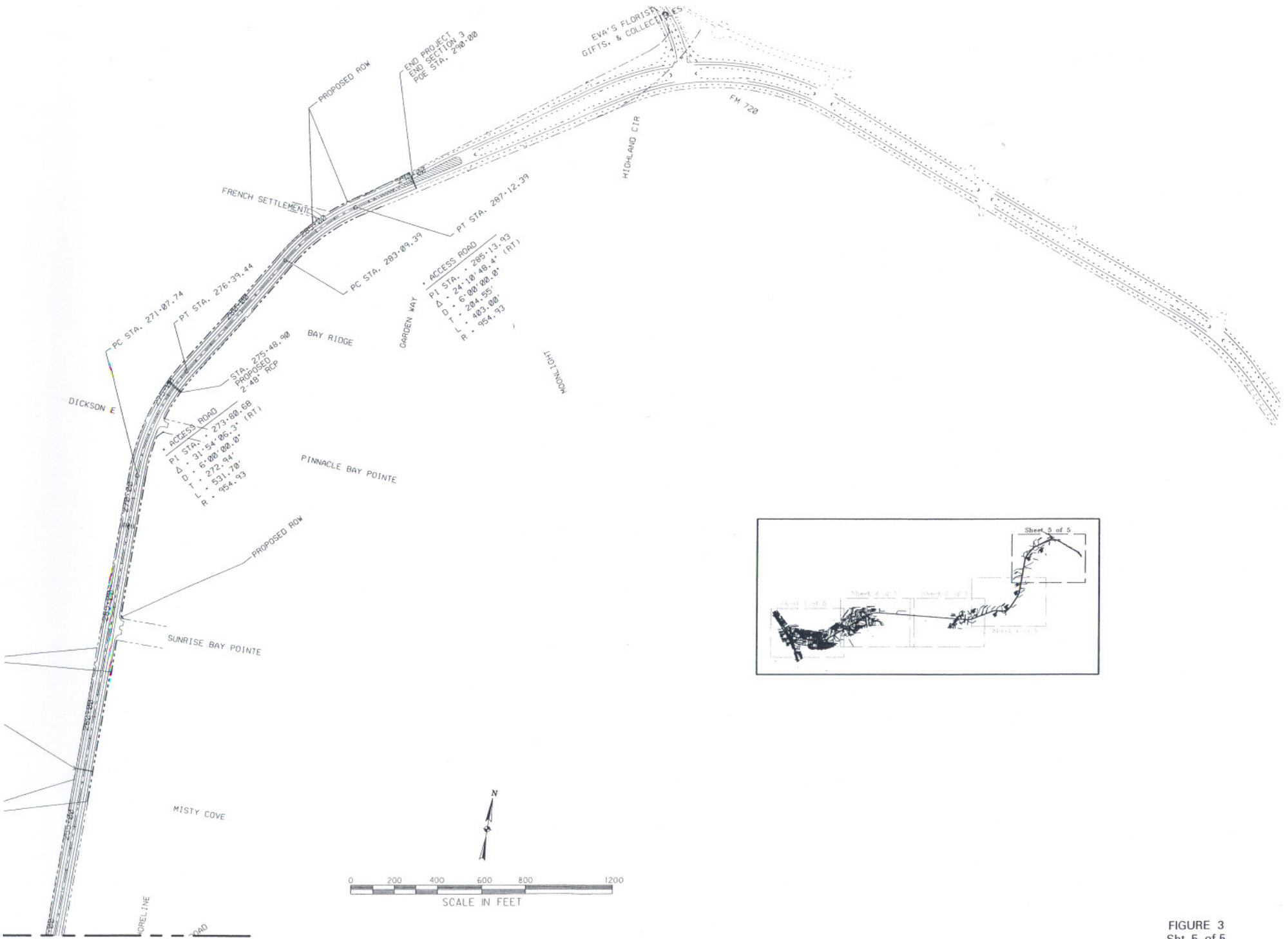
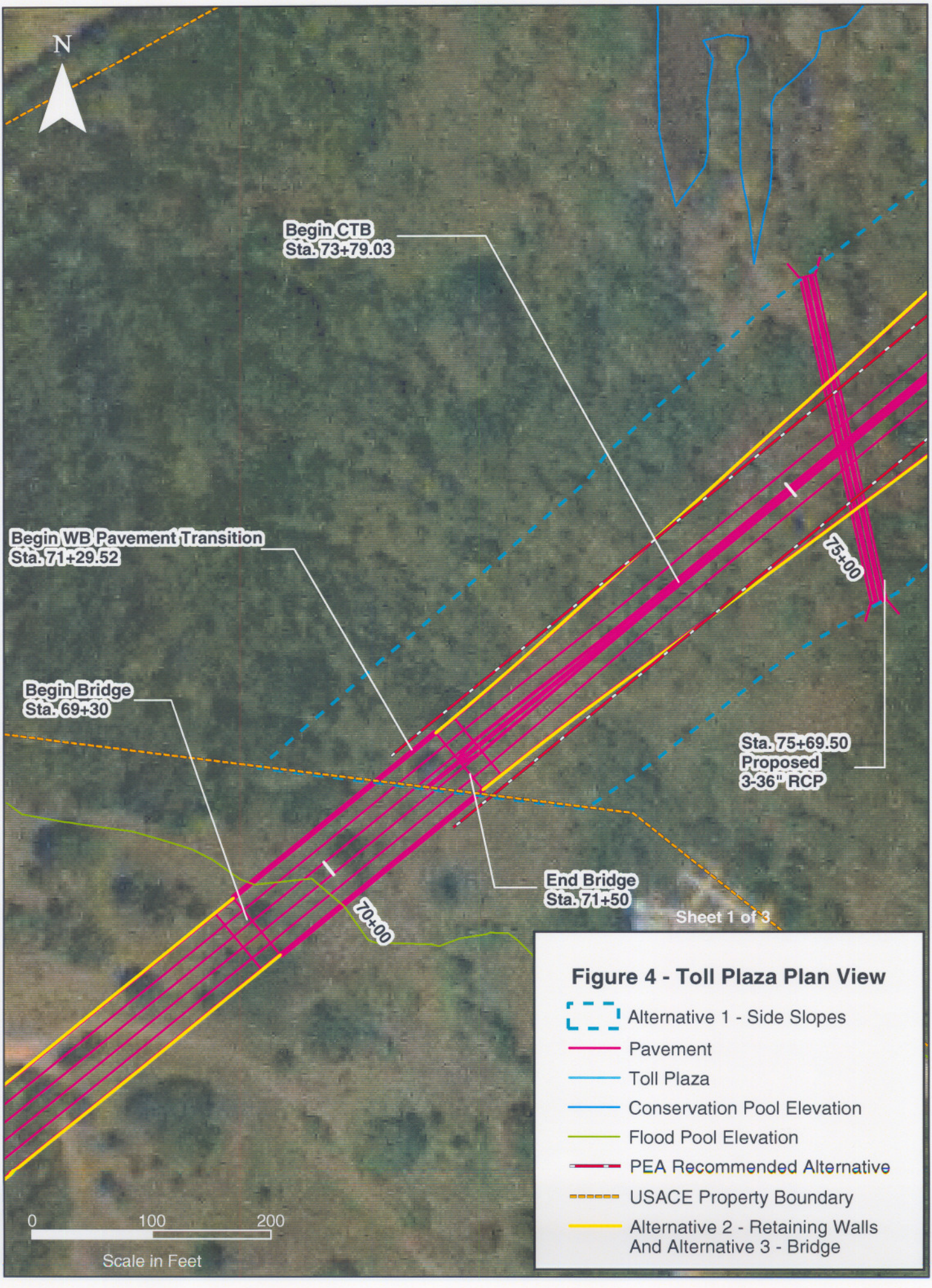
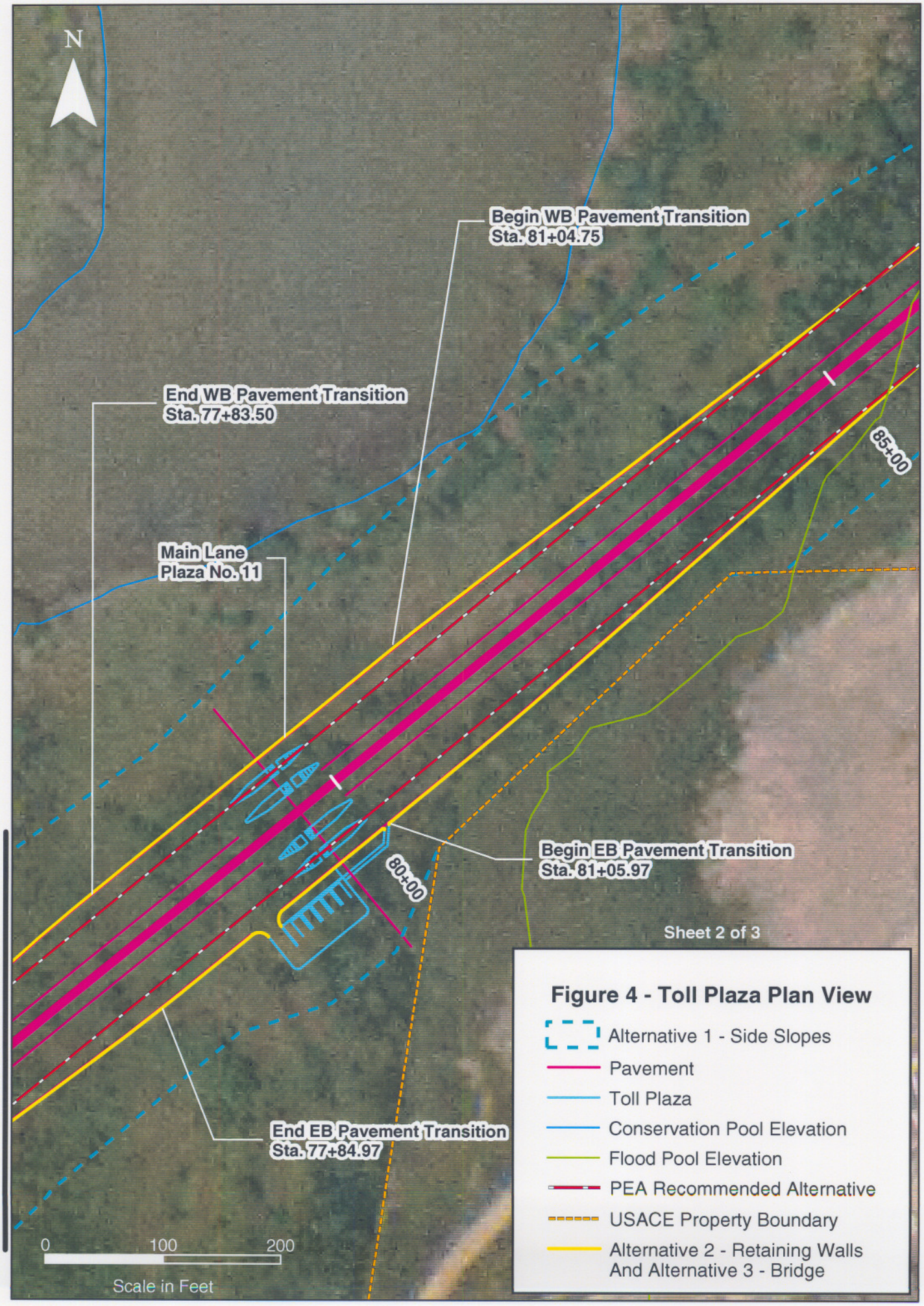
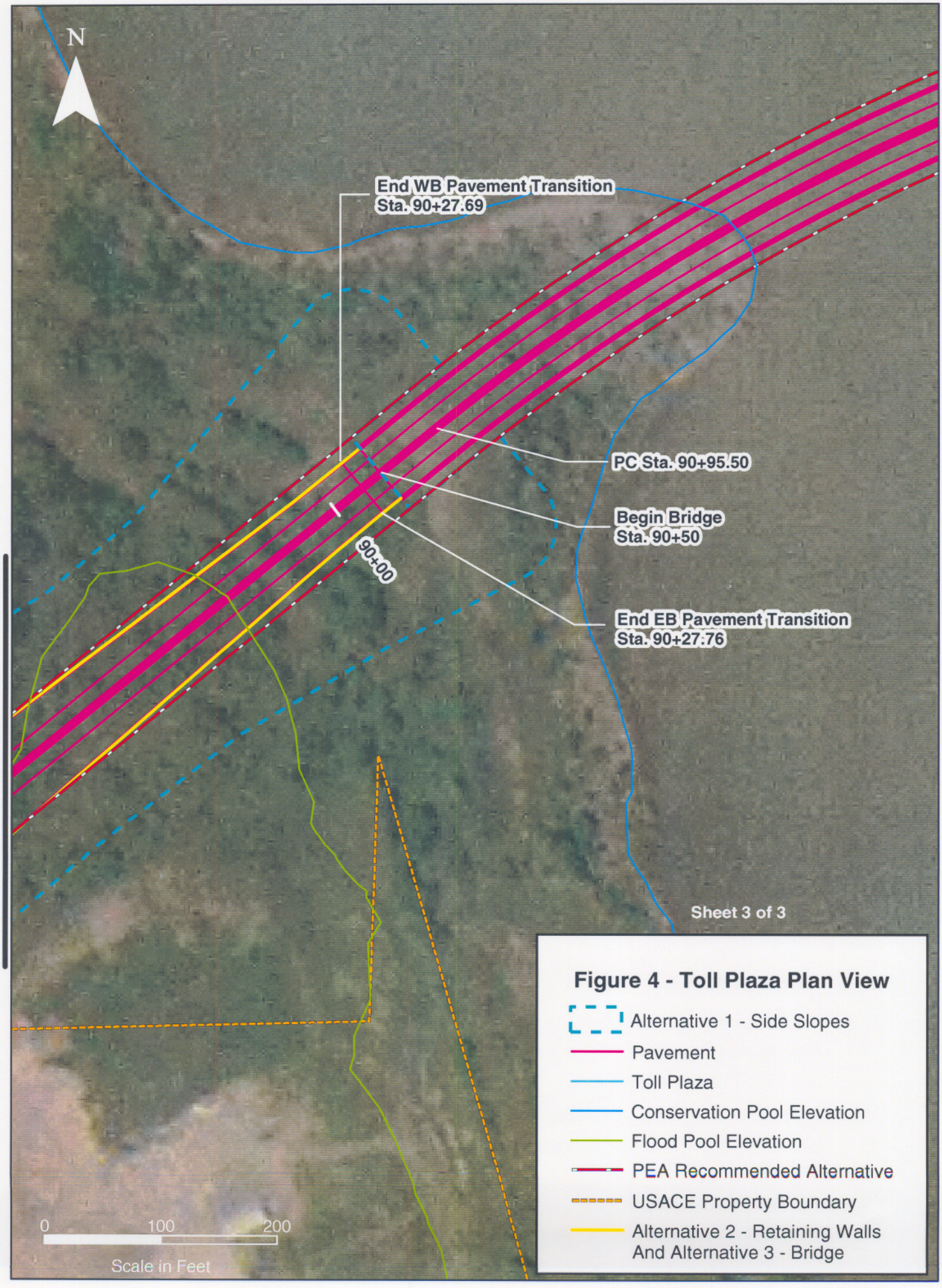
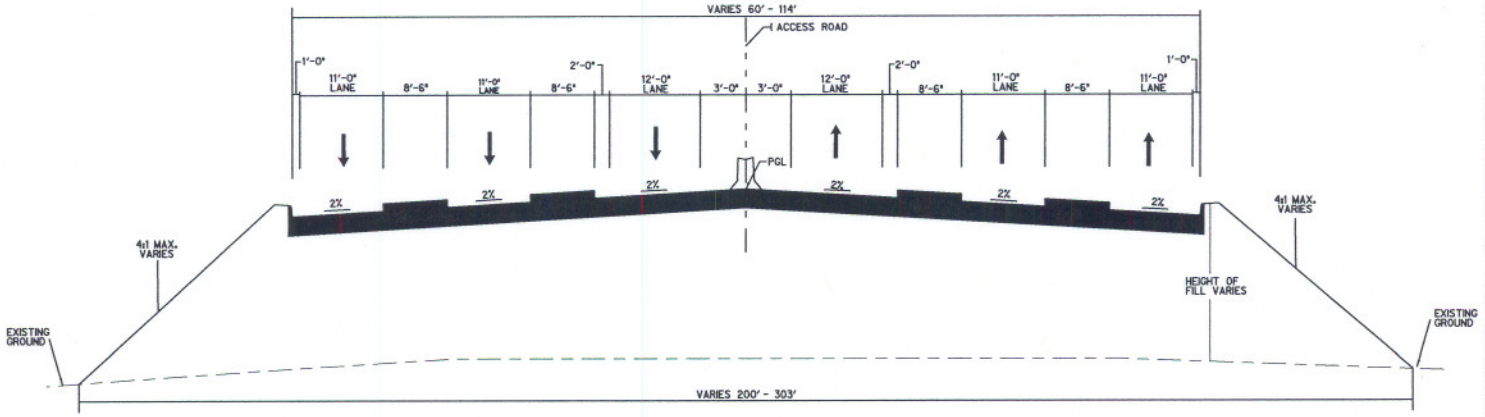


FIGURE 3
Sht. 5 of 5

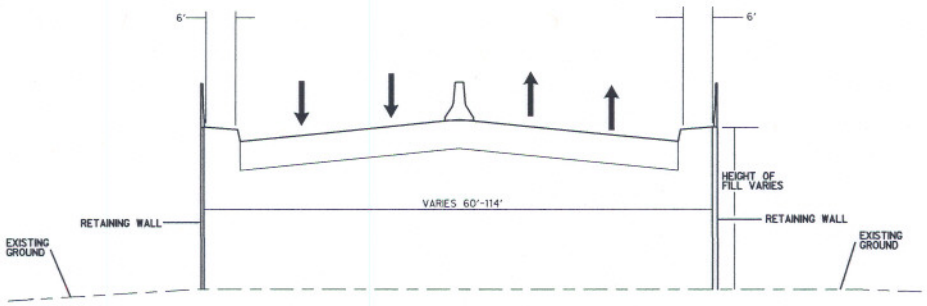

N
Begin CTB
Sta. 73+79.03
Begin WB Pavement Transition
Sta. 71+29.52
Begin Bridge
Sta. 69+30
End Bridge
Sta. 71+50
Sta. 75+69.50
Proposed
3-36" RCP
75+00
70+00
Matchline to Sheet 2
Sheet 1 of 3
0
100
200
Scale in Feet
Figure 4 - Toll Plaza Plan View
Alternative 1 - Side Slopes
Pavement
Toll Plaza
Conservation Pool Elevation
Flood Pool Elevation
PEA Recommended Alternative
USACE Property Boundary
Alternative 2 - Retaining Walls
And Alternative 3 - Bridge


N
Begin WB Pavement Transition
Sta. 81+04.75
End WB Pavement Transition
Sta. 77+83.50
Main Lane
Plaza No. 11
85+00
80+00
Begin EB Pavement Transition
Sta. 81+05.97
End EB Pavement Transition
Sta. 77+84.97
Matchline to Sheet 3
Matchline to Sheet 1
Sheet 2 of 3
0
100
200
Scale in Feet
Figure 4 - Toll Plaza Plan View
Alternative 1 - Side Slopes
Pavement
Toll Plaza
Conservation Pool Elevation
Flood Pool Elevation
PEA Recommended Alternative
USACE Property Boundary
Alternative 2 - Retaining Walls
And Alternative 3 - Bridge

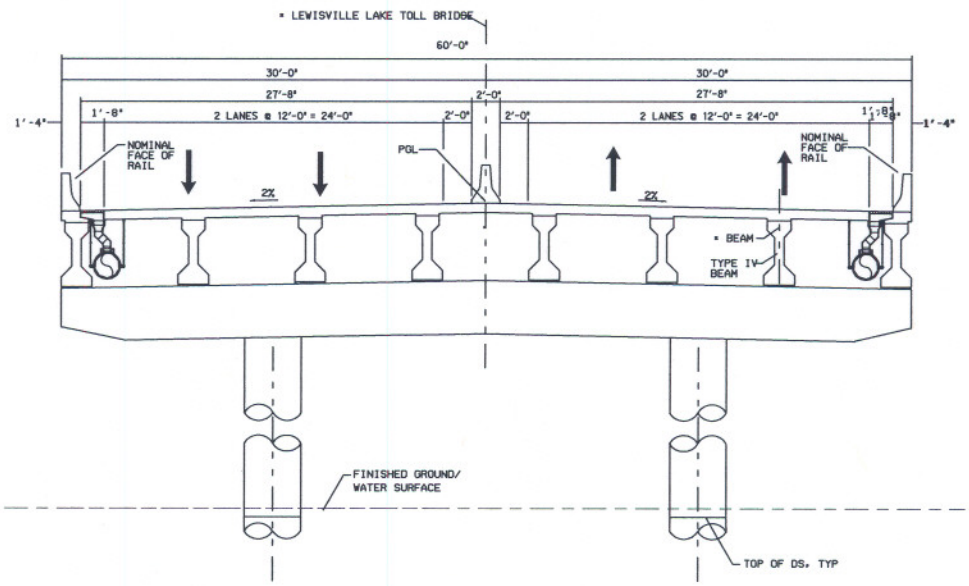

N
End WB Pavement Transition
Sta. 90+27.69
PC Sta. 90+95.50
Begin Bridge
Sta. 90+50
90+00
End EB Pavement Transition
Sta. 90+27.76
Matchline to Sheet 2
Sheet 3 of 3
0
100
200
Scale in Feet
Figure 4 - Toll Plaza Plan View
Alternative 1 - Side Slopes
Pavement
Toll Plaza
Conservation Pool Elevation
Flood Pool Elevation
PEA Recommended Alternative
USACE Property Boundary
Alternative 2 - Retaining Walls
And Alternative 3 - Bridge



ALTERNATIVE 1 - TOLL FACILITY WITH SIDE SLOPES AT TOLL PLAZA



ALTERNATIVE 2 - TOLL FACILITY WITH RETAINING WALLS



ALTERNATIVE 3 - BRIDGED TOLL FACILITY

FIGURE 5

PROPOSED TYPICAL SECTIONS

APPENDIX C

SITE PICTURES

Lake Lewisville Toll Bridge

Photo 1 – Looking south along length of asphalt runway

Photo 2 – Looking north at end of runway toward Lake Lewisville

Photo 3 – Airport taxiway and hanger/office

Photo 4 – Cove on Lake Lewisville with water treatment plant discharge line (note white buoy)

Photo 5 – Lake Lewisville Bridge corridor area

Photo 6 – Entrance sign to Water Reclamation Plant

Photo 7 – Open field east of Shady Shores Road (proposed Toll Plaza area)

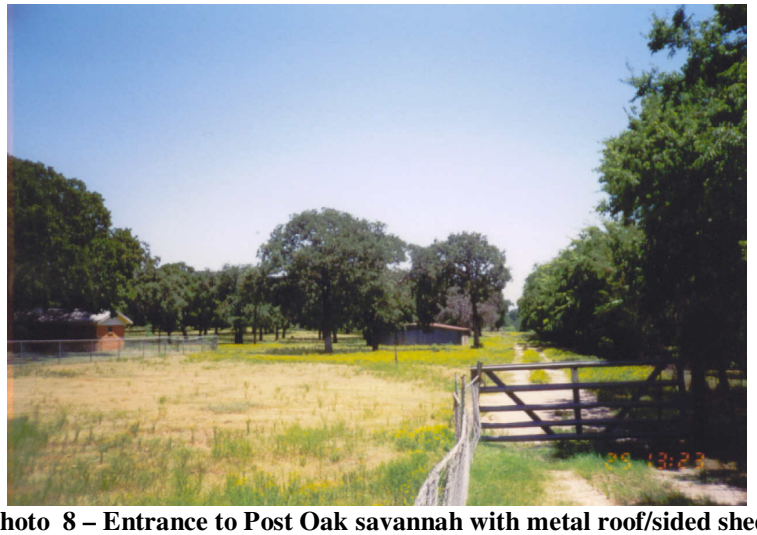


Photo 8 – Entrance to Post Oak savannah with metal roof/sided shed

Photo 9 – Open field east of Post Oak savannah

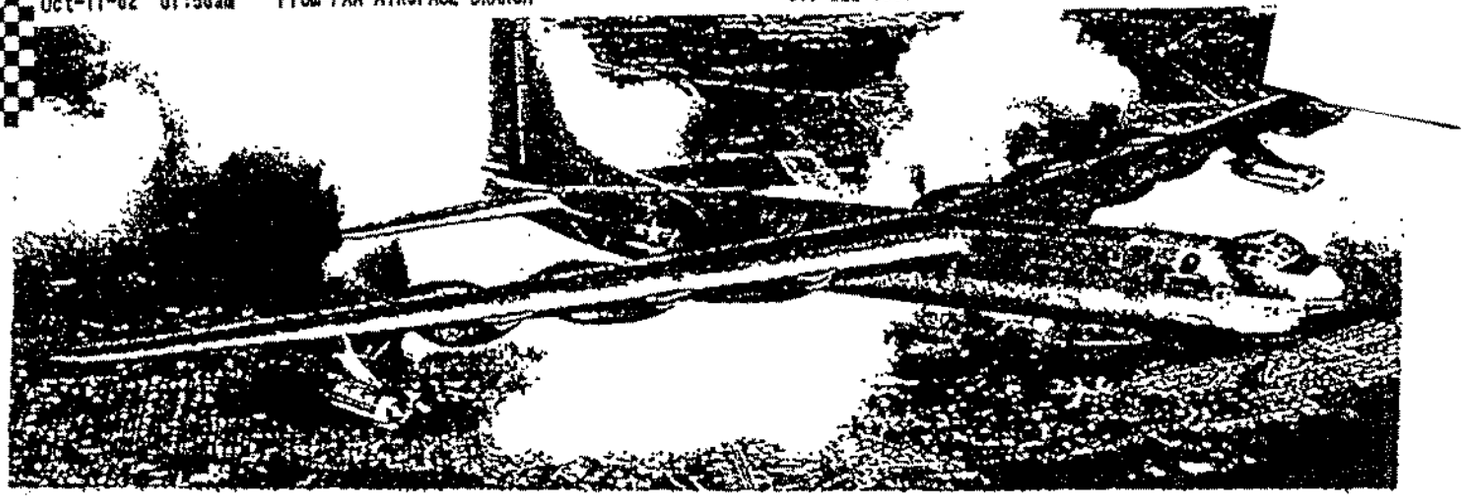
Photo 10 – Open field/pasture east of Shady Shores Road

Photo 11 – Terraces in open field/pasture east of Shady Shores Road

Photo 12 – Post Oak savannah east of Shady Shores Road and Swisher Road

APPENDIX D

CORRESPONDENCE/COMMENTS



B-36 THE PEACEMAKER

Bruce Beard – Senior Obstruction Evaluation Specialist
Federal Aviation Administration / Southwest Regional Office
Air Traffic Airspace Branch / Fort Worth TX 76193-0520
Office: 817-222-5536 / FAX: 817-222-5981 / bruce.beard @ faa.gov

TO: Bo Cung

FAX #: 817-338-4159

REFERENCE: Toll Bridge

COVER SHEET + PAGES = 9

www.faa.gov/ats/ata/ata400/oeaaa.html

received
10-11-02

A HARD COPY WILL [X] BE SENT.
WILL NOT [ ] BE SENT.

RECEIVED TIME OCT. 11. 7:52AM PRINT TIME OCT. 11. 7:56AM

Federal Aviation Administration
Southwest Regional Office
ASW-520
Fort Worth, TX 76137-0520

AERONAUTICAL STUDY No
2002-ASW-4442-OE

PRIOR STUDY No.
2002-ASW-2020-OE

Issued Date: 10/10/2002

GHALEB SUNNA
NORTH TEXAS TOLLWAY AUTHORITY
5900 WEST PLANO PKWY, STE 100
PLANO, TX 75093

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure Type:	BRIDGE / STA 99+03
Location:	LAKE DALLAS, TX
Latitude:	33-8-30.17 NAD83 } BRIDGE STA 99+03.78
Longitude:	97-0-47.53
Heights:	39 feet above ground level (AGL)
	561 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA advisory Circular 70/7460-1 K.

This determination expires on 4/10/2004 unless:

(a) extended, revised or terminated by the issuing office.
(b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed , as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is subject to review if an interested party files a petition on or before 11/9/2002. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted in triplicate to the Manager, Airspace Branch, Federal Aviation Administration, Washington, D.C. 20591.

This determination becomes final on 11/19/2002 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (817)222-5536. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2002-ASW-4442-OE.

Bruce C. Beard

(DNH)

Robert N. Stevens
Manager, Airspace Branch

Aeronautical Study Number 02-ASW-4442-OE supersedes and cancels Aeronautical Study Number 02-ASW-2020-OE.

The proposed construction would be located approximately 969 feet north of Runway 18 at the Lakeview Airport, Lake Dallas, Texas. It would exceed the obstruction standards of Title 14 of the Code of Federal Regulations (CFR), part 77 as follows:

• Section 77.23(a)(5) by 30 feet - a height exceeding the approach surface as applied to Runway 18 at the Lakeview Airport. The proposal would require the Runway 18 threshold to be displaced by 600 feet.

The proposal was circularized to all known interested persons for aeronautical comment by letter issued on July 7, 2002. Two letters of objection were received as a result of the circularization.

The owner of the Lakeview Airport objected to the proposal because the 600-foot displaced threshold would have presented a safety hazard to the marina located just south of the end of Runway 18.

The Aircraft Owners and Pilots Association objected to the proposal based on the fact that if Runway 18 were shortened, it could deter further operations from the airport, as well as hamper any type of future growth.

Subsequent to circularization and in the interest of aviation, the sponsor, at the sponsor's expense, provided the FAA with new survey data of both the Lakeview Airport, as well as the proposed structure. A licensed engineer conducted the survey. The survey revealed that Station #99-03.78 of the proposed bridge would be located approximately 1,203 feet north of Runway 18 and would not exceed any obstruction standards contained in CFR, part 77. Based on this there would be no requirement to displace the threshold of Runway 18.

AERONAUTICAL STUDY FOR POSSIBLE INSTRUMENT FLIGHT RULES (IFR) EFFECT DISCLOSED THE FOLLOWING:

➢ The proposed structure would have no effect on any existing or proposed IFR arrival/departure routes, operations, or procedures.

➢ The proposed structure would have no effect on any existing or proposed IFR en route routes, operations, or procedures.

➢ The proposed structure would have no effect on any existing or proposed IFR minimum flight altitudes.

AERONAUTICAL STUDY FOR POSSIBLE VISUAL FLIGHT RULES (VFR) EFFECT DISCLOSED THE FOLLOWING:

➢ The proposed structure would have no effect on any existing or proposed VFR arrival or departure routes, operations or procedures.

➢ The proposed structure would not conflict with airspace required to conduct normal VFR traffic pattern operations at any known public use or military airports.

The cumulative impact of the proposed structure, when combined with other existing structures is not considered significant. Study did not disclose any adverse effect on existing or proposed public-use or military airports or navigational facilities. Nor would the proposal affect the capacity of any known existing or planned public-use or military airport.

Therefore, it is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation.

This determination, issued in accordance with part 77, concerns the effect of the proposal on the safe and efficient use of the navigable airspace by aircraft and does not relieve the sponsor of any compliance responsibilities relating to laws, ordinances, or regulations of any Federal, state, or local governmental bodies. Determinations, which are issued in accordance with part 77, do not supersede or override any state, county, or local laws or ordinances.

Federal Aviation Administration
Southwest Regional Office
ASW-520
Fort Worth, TX 76137-0520

AERONAUTICAL STUDY No
2002-ASW-4443-OE

PRIOR STUDY No.
2002-ASW-2020-OE

Issued Date: 10/10/2002

GHALEB SUNNA
NORTH TEXAS TOLLWAY AUTHORITY
5900 WEST PLANO PKWY, STE 100
PLANO, TX 75093

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure Type:	BRIDGE / STA 103+68
Location:	LAKE DALLAS, TX
Latitude:	33-8-30.81 NAD83 } BRIDGE STATION 103+68.71
Longitude:	97-0-42.13
Heights:	43 feet above ground level (AGL)
	565 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA advisory Circular 70/7460-1 K.

This determination expires on 4/10/2004 unless:

(a) extended, revised or terminated by the issuing office.
(b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed , as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is subject to review if an interested party files a petition on or before 11/9/2002. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted in triplicate to the Manager, Airspace Branch, Federal Aviation Administration, Washington, D.C. 20591.

This determination becomes final on 11/19/2002 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (817)222-5536. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2002-ASW-4443-OE.

Bruce Beard (DNH)

Robert N. Stevens
Manager, Airspace Branch

Aeronautical Study Number 02-ASW-4443-OE supersedes and cancels Aeronautical Study Number 02-ASW-2020-OE.

The proposed construction would be located approximately 969 feet north of Runway 18 at the Lakeview Airport, Lake Dallas, Texas. It would exceed the obstruction standards of Title 14 of the Code of Federal Regulations (CFR), part 77 as follows:

• Section 77.23(a)(5) by 30 feet - a height exceeding the approach surface as applied to Runway 18 at the Lakeview Airport. The proposal would require the Runway 18 threshold to be displaced by 600 feet.

The proposal was circularized to all known interested persons for aeronautical comment by letter issued on July 7, 2002. Two letters of objection were received as a result of the circularization.

The owner of the Lakeview Airport objected to the proposal because the 600-foot displaced threshold would have presented a safety hazard to the marina located just south of the end of Runway 18.

The Aircraft Owners and Pilots Association objected to the proposal based on the fact that if Runway 18 were shortened, it could deter further operations from the airport, as well as hamper any type of future growth.

Subsequent to circularization and in the interest of aviation, the sponsor, at the sponsor's expense, provided the FAA with new survey data of both the Lakeview Airport, as well as the proposed structure. A licensed engineer conducted the survey. The survey revealed that Station #103-68.71 of the proposed bridge would be located approximately 1,293 feet north of Runway 18 and would not exceed any obstruction standards contained in CFR, part 77. Based on this there would be no requirement to displace the threshold of Runway 18.

AERONAUTICAL STUDY FOR POSSIBLE INSTRUMENT FLIGHT RULES (IFR) EFFECT DISCLOSED THE FOLLOWING:

➢ The proposed structure would have no effect on any existing or proposed IFR arrival/departure routes, operations, or procedures.

➢ The proposed structure would have no effect on any existing or proposed IFR en route routes, operations, or procedures.

➢ The proposed structure would have no effect on any existing or proposed IFR minimum flight altitudes.

AERONAUTICAL STUDY FOR POSSIBLE VISUAL FLIGHT RULES (VFR) EFFECT DISCLOSED THE FOLLOWING:

➢ The proposed structure would have no effect on any existing or proposed VFR arrival or departure routes, operations or procedures.

➢ The proposed structure would not conflict with airspace required to conduct normal VFR traffic pattern operations at any known public use or military airports.

The cumulative impact of the proposed structure, when combined with other existing structures is not considered significant. Study did not disclose any adverse effect on existing or proposed public-use or military airports or navigational facilities. Nor would the proposal affect the capacity of any known existing or planned public-use or military airport.

Therefore, it is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation.

This determination, issued in accordance with part 77, concerns the effect of the proposal on the safe and efficient use of the navigable airspace by aircraft and does not relieve the sponsor of any compliance responsibilities relating to laws, ordinances, or regulations of any Federal, state, or local governmental bodies. Determinations, which are issued in accordance with part 77, do not supersede or override any state, county, or local laws or ordinances.

Morovitz, Jason

From: Craig, Matt
Sent: Friday, October 11, 2002 1:31 PM
To: Morovitz, Jason; Lesh, Mike
Subject: FW: FAA Approves Toll Bridge Profile

FAA 2002-10-10.pdf

FYI...

-----Original Message-----
From: Bo Cung [mailto:BCung@HNTB.com]
Sent: Friday, October 11, 2002 9:47 AM
To: Ghaleb Sunna (E-mail)
Cc: Mark Bouma (E-mail); Chris Anderson (E-mail); John Becker (E-mail); John Polster (E-mail); Craig, Matt; Morgan, David; Doug Cox (E-mail); Randall Mayne (E-mail); Craig Kislingbury (E-mail); Jim Layton (E-mail); Sandra Nelson; Will Barresi; Michael Copeland (E-mail)
Subject: FAA Approves Toll Bridge Profile

Ghaleb,

FAA just faxed me a letter (see attached) that they're sending you to notify
NTTA that the proposed toll bridge would have no adverse effect on the operation of air navigation facilities (Lakeview Airport.)

<<FAA 2002-10-10.pdf>>

Bo Cung, P.E.
HNTB Corporation

512 Main St Ste 1200
Fort Worth, TX 76102
817.333.0824 voice
817.338.4159 fax

TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

October 1, 2002

Mr. Douglas Cargo
North Texas Turnpike Authority
8616 Northwest Plaza
Dallas, Texas 75225

Re: Project review under Section 106 of the National Historic Preservation Act of 1966
Review of draft report An Archeological Survey of the Lake Lewisville Toll Bridge Access Road, Denton County, Texas (NTTA/Antiquities Permit #2937)

Dear Mr. Cargo:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff led by Sergio A. Iruegas has completed its review of the draft archeological survey report referenced above for the proposed Lake Lewisville Toll Bridge Access Road. Based on the draft report results, we have determined that the proposed project will have no affect on historic properties, and the project may proceed provided that Texas Department of Transportation has no further concerns or comments on the draft report. In the event that buried cultural deposits are discovered during construction, work should cease in the immediate area and our office should be notified. Please have the author of the report revise the cover and cover sheet to show the correct Antiquities Permit number (#2937). The content of the draft report is acceptable. Please submit 20 copies of the final report to our office.

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 federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Sergio A. Iruegas at 512/463-8881.**

Sincerely,

for
F. Lawerence Oaks, State Historic Preservation Officer

received
10-8-02

LO/wjm/sai

Cc: Dr. Nancy Kenmotsu, TxDOT Environmental Affairs Division
Dr. Alan Skinner, AR Consultants, Inc.

TEXAS HISTORICAL COMMISSION
The State Agency for Historic Preservation

RICK PERRY, GOVERNOR
JOHN L. NAU, III, CHAIRMAN
F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

September 10, 2002

S. Alan Skinner, Ph.D.
AR Consultants
P.O. Box 820727
Dallas, TX 75382

Re: Project review under the Antiquities Code of Texas
Lake Lewisville Tollway Road Testing, Denton County
Texas Antiquities Permit Application #2937

Dear Colleague:

Thank you for your Antiquities Permit Application for the above referenced project. This letter presents the final copy of the permit application from the Executive Director of the Texas Historical Commission, the state agency responsible for administering the Antiquities Code of Texas.

Please keep this copy for your records. Additionally, please note that the Antiquities Permit investigations require production of 20 copies of the final report and verification that any artifacts recovered and records produced during the investigations are curated at the repository listed in the permit.

If you have any questions concerning this permit or if we can be of further assistance, please contact Lillie Thompson at 512/463-1858. The reviewer for this project is Sergio Iruegas, 512/463-6096.

Sincerely,

William A. Martin

for
F. Lawerence Oaks, State Historic Preservation Officer

FLO/lft

Enclosure

Cc: Douglas Cargo, North Texas Turnpike Authority
Nancy Kenmotsu, TxDOT

TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

RECEIVED
AUG 3 0 2002
BY:

August 26, 2002

received
9-3-02

Alan Skinner, Ph.D.
AR Consultants
P.O. Box 820727
Dallas, TX 75382

Re: Project Review under the Antiquities Code of Texas
Final Report: *Archaeological Evaluation of the Lake Lewisville Toll Bridge Project,* Antiquities Permit #2890 (North Texas Turnpike Authority, T2, T3)
PERMIT COMPLETE

Dear Colleague:

Thank you for your correspondence describing the above referenced project. This letter presents the comments of the Executive Director of the Texas Historical Commission, the state agency responsible for administering the Antiquities Code of Texas.

The Archeology Division is in receipt of twenty copies of the final report and a completed *Abstracts in Texas Contract Archeology* form for the above reference permit. The submission of twenty copies of the final report and abstract form demonstrates completion of your permit requirements under Permit #2890.

Thank you for your cooperation in this state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Lillie Thompson at 512/463-1858.**

Sincerely,

William A. Martin

for
F. Lawerence Oaks, State Historic Preservation Officer

FLO/lft

TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

August 8, 2002

Mr. Douglas Cargo
North Texas Turnpike Authority
8616 Northwest Plaza
Dallas, Texas 75225

Re: Project review under Section 106 of the National Historic Preservation Act of 1966
Review of draft report An Archeological Evaluation of the Lake Lewisville Toll Bridge Project
(NTTA/Antiquities Permit #2890)

Dear Mr. Cargo:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff led by Sergio A. Iruegas has completed its review of the draft reconnaissance report referenced above for the proposed Lake Lewisville Toll Bridge Project. We concur with Dr. Skinner's recommendation that the area on the west side of the lake has a high archeological potential while the remainder of the two access roads do not warrant further investigations. Accordingly, our office recommends that an intensive archeological survey with subsurface testing be conducted on the west side of the lake. Backhoe trenching should also be conducted if deep deposits are present in this area. The draft report is acceptable. Please submit 20 copies of the final report to our office.

In accordance with 36 CFR Part 800, the regulations of the National Historic Preservation Act, our office has entered into a Programmatic Agreement with the Federal Highway Administration and the Texas Department of Transportation (TxDOT). This agreement stipulates that TxDOT will initiate consultation with our office regarding possible effects undertakings may have on cultural resources. At the request of Dr. Nancy Kenmotsu, TxDOT will be a signatory on all antiquities permit applications that involve TxDOT in a direct or indirect manner. Please have the contracted professional archeologist submit an antiquities permit application through the Texas Department of Transportation Environmental Affairs Division which will in turn consult with our office regarding this federal undertaking. The professional archeologist can send the application to: Dr. Nancy Kenmotsu, Environmental Affairs Division, Texas Department of Transportation, Dewitt C. Greer State Highway Bldg., 125 E. 11th Street, Austin, Texas 78701-2483.

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 federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Sergio A. Iruegas at 512/463-8881.**

Sincerely,

William A. Martin

for

F. Lawerence Oaks, State Historic Preservation Officer
LO/wjm/sai

Cc: Dr. Nancy Kenmotsu, TxDOT Environmental Affairs Division
Dr. Alan Skinner, AR Consultants, Inc.

AR Consultants, Inc.

Archaeological and Environmental Consulting
P.O. Box 820727, Dallas, Texas 75382-0727
Phone: (214) 368-0478
Fax: (214) 361-6762
E-Mail: arcdigs@aol.com

July 29, 2002

Douglas Cargo, PhD
Environmental Scientist
Halff Associates, Inc.
8616 Northwest Plaza Drive
Dallas, TX 75225

Dear Dr. Cargo:

This letter concerns the house you wondered about the age of on Swisher Road for the Lake Lewisville Toll Bridge survey.

The house in question has crepe myrtles in front and trees surrounding the west side. I asked the gentleman who lives at the residence how old the house was. He replied he didn't know, but it was one of the original homesteads and that he was renting and had lived there for six years.

The single-story house is on the 1960 Denton East, USGS map. I inspected the outside only. The chimney and a portion of the garage wall, which was shiplapped, appear to be original. The house has been added to over time. The shingle roof is new. The front porch consists of a wooden add-on with screens. The garage is added on also. The garage is made of corrugated fiberglass siding, used in the 1960s. The rest of the outside of the house is made of rock that has been joined together by a cement, not concrete, that has not eroded very much. The rock itself hardly seems weathered. The rock is probably from quarries in the Woodbine Sandstone.

Although some part of the house may have been an original homestead, it has been modified sufficiently through time so that the original structure has been lost; therefore, its historical significance is greatly reduced.

I hope this answers your question. If it doesn't, please let me know and I will reinvestigate to answer any questions you have.

Sincerely,

Jesse Todd, MA
Research Archaeologist

received
7-29-02

Federal Aviation Administration
Southwest Region
Air Traffic Division, ASW-520
Fort Worth, TX 76193-0520

AERONAUTICAL STUDY
No: 02-ASW-2020-OE
PRIOR STUDY
No: 02-ASW-0022-OE

ISSUED DATE: 07/05/02

GHALEB SUNNA
NORTH TEXAS TOLLWAY AUTHORITY
5900 WEST PLANO PKWY, STE 100
PLANO TX 75093

** PRESUMED HAZARD **

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77 concerning:

Description: BRIDGE WITH POLE-MOUNTED LIGHTING
(LEWISVILLE LAKE TOLL BRIDGE)
Location: LAKE DALLAS TX
Latitude: 33-08-18.03 NAD 83
Longitude: 097-00-51.62
Heights: 68 feet above ground level (AGL)
603 feet above mean sea level (AMSL)

The initial findings of this study indicate that the structure as described above would exceed obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Therefore, pending resolution of the issues described below, it is hereby determined that the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 38 feet above ground level (573 feet above mean sea level), it would not exceed obstruction standards and a favorable determination could subsequently be issued.

To pursue the possibility of a favorable determination at the originally submitted height, further study would be necessary. Further study entails circularization to the public for comment. This process requires approximately 90 to 120 days from the date that further study is requested before any subsequent determination would be effective. The outcome cannot be predicted prior to public circularization.

Further study has been initiated by the FAA.

See attachment for further information.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at 817-222-5534. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 02-ASW-2020-OE.

Bruce C. Beard

Bruce C. Beard
Specialist, Airspace Branch

(DPH)

Attachment

RECEIVED TIME JUL. 5. 3:36PM PRINT TIME JUL. 5. 3:38PM

Federal Aviation Administration
Southwest Region
Air Traffic Division, ASW-520
Fort Worth, TX 76193-0520

AERONAUTICAL STUDY
No: 02-ASW-2020-OE
PRIOR STUDY
No: 02-ASW-0022-OE

ISSUED DATE: 07/05/02

GHALEB SUNNA
NORTH TEXAS TOLLWAY AUTHORITY
5900 WEST PLANO PKWY, STE 100
PLANO TX 75093

** PUBLIC NOTICE **

The Federal Aviation Administration is conducting an aeronautical study concerning the following:

Description: BRIDGE WITH POLE-MOUNTED LIGHTING
(LEWISVILLE LAKE TOLL BRIDGE)
Location: LAKE DALLAS TX
Latitude: 33-08-18.03 NAD 83
Longitude: 097-00-51.62
Heights: 68 feet above ground level (AGL)
603 feet above mean sea level (AMSL)

The structure as described above exceeds obstruction standards. To determine its effect upon the safe and efficient use of navigable airspace by aircraft and on the operation of air navigation facilities, the FAA is conducting an aeronautical study under the provisions of U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77.

In the study, consideration will be given to all facts relevant to the effect of the structure on existing and planned airspace use, air navigation facilities, airports, aircraft operations, procedures and minimum altitudes, and the air traffic control system.

Interested persons are invited to participate in the aeronautical study by submitting comments to the above FAA address. To be eligible for consideration, comments must be relevant to the effect the structure would have on aviation, must provide sufficient detail to permit a clear understanding, must contain the aeronautical study number printed in the upper right hand corner of this notice, and must be received on or before 08/11/02.

Airport managers are encouraged to post this notice. This notice may be reproduced and circulated by any interested person.

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

Bruce C Beard

Bruce C. Beard (CIR)
Specialist, Airspace Branch

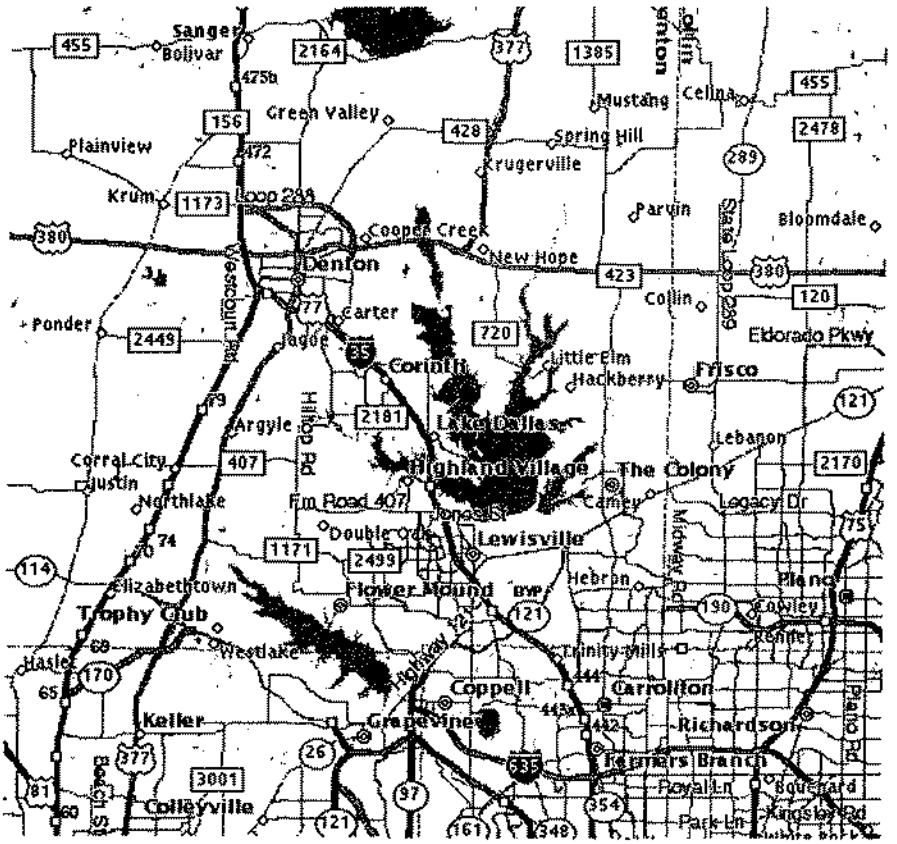
( ) Comments stated in attached letter.

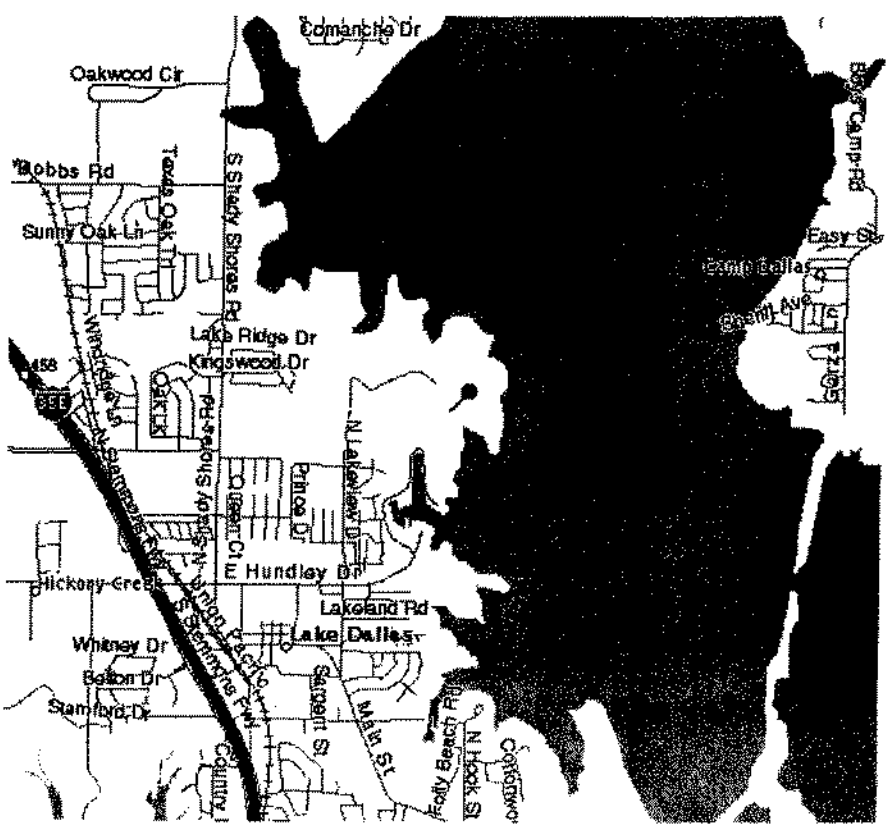
( ) No comments submitted.

Signature & Title Representing Date

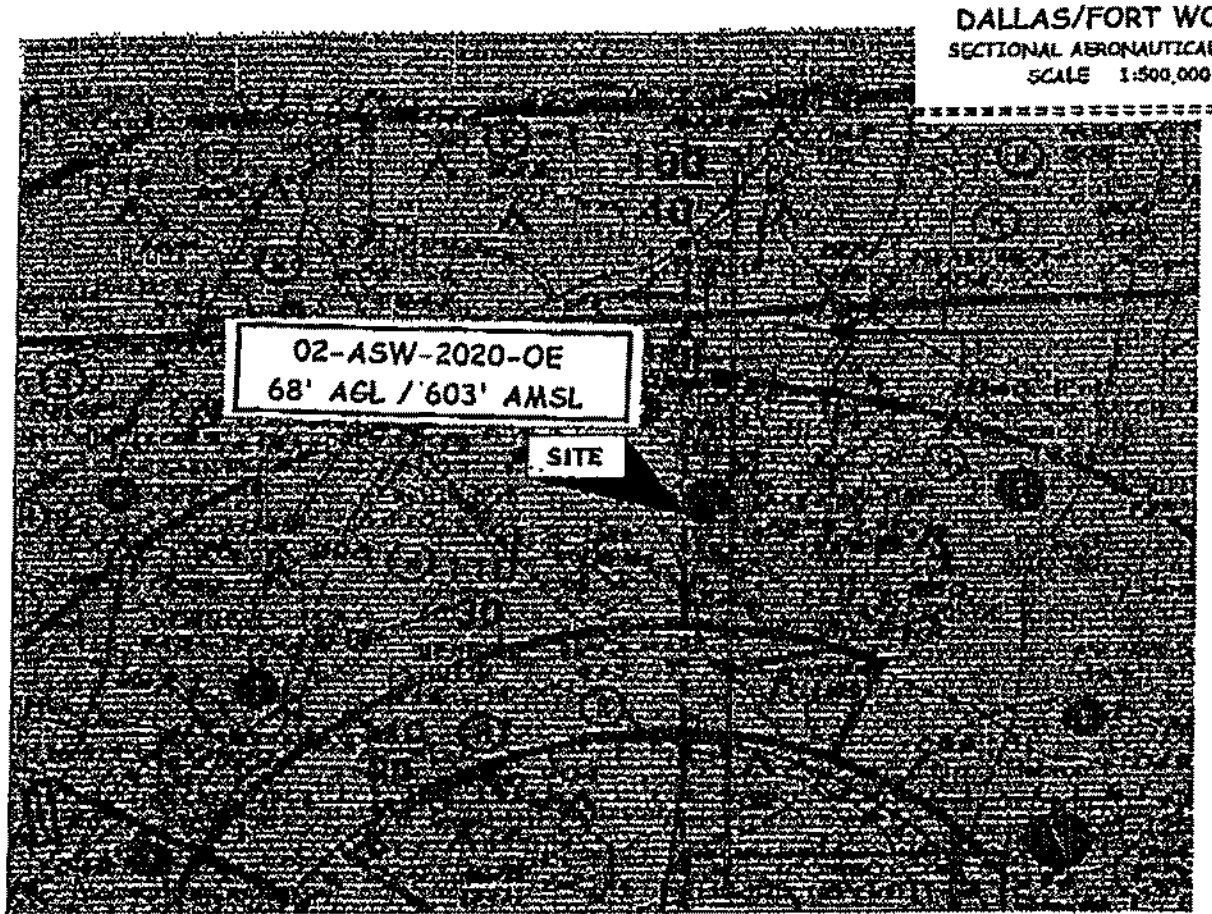
RECEIVED TIME JUL. 5. 3:36PM PRINT TIME JUL. 5. 3:38PM

General Location for proposed toll bridge (near Lakeview Airport).
See attached drawing for detailed information.





DALLAS/FORT WORTH
SECTIONAL AERONAUTICAL CHART
SCALE 1:500,000



AERONAUTICAL STUDY NUMBER 02-ASW-2020-OE LAKE DALLAS, TEXAS

The proposed construction would be located approximately 969 feet north of Rwy 18 at the Lakeview Airport, Lake Dallas, Texas. It would exceed the obstruction standards of the Code of Federal Regulations, Part 77, as follows:

1. Section 77.23 (a)(5) by 30 feet - a height exceeding the approach surface as applied to Rwy 18 at the Lakeview Airport. The structure would require the Rwy 18 threshold to be displaced by 600 feet. Departing aircraft could still use the entire length of Runway 18 for take-offs. Arriving aircraft would have available 2,215 feet for landings.

2. Preliminary study did not identify any effect that the proposed structure would have on existing or proposed instrument flight rules (IFR) operations, procedures, or minimum flight altitudes.

ATTACHMENT PAGE
AERONAUTICAL STUDY NUMBER 02-ASW-2020-OE
LAKE DALLAS, TEXAS

AGL = Above Ground Level / AMSL = Above Mean Sea Level
SIAP = Standard Instrument Approach Procedure
NM = Nautical Mile / RWY = Runway
MDA = Minimum Descent Altitude

The proposed construction would be located approximately 969 feet north of Rwy 18 at the Lakeview Airport, Lake Dallas, Texas. It would exceed the obstruction standards of Title 14 of the Code of Federal Regulations, part 77, as follows:

• Section 77.23 (a)(5) by 30 feet - a height exceeding the approach surface as applied to Rwy 18 the Lakeview Airport. The structure would require the Rwy 18 threshold to be displaced by 600 feet.

A favorable determination can be issued immediately at a structure height of 38 feet AGL / 573 feet AMSL, once we have received notification of acceptance of the lower height. A structure height of 68 feet AGL / 603 feet AMSL requires the FAA to conduct a formal aeronautical study of your proposal, WHICH MAY BEGIN. A formal aeronautical study entails the circularization of your proposal to the public for comment. The process requires a minimum of 90 to 120 days from the date that a formal study is requested before any resulting determination can be issued, so please plan accordingly. The nature of the determination cannot be prejudged prior to public circularization.

B-36 THE PEACEMAKER

Bruce Beard – Senior Obstruction Evaluation Specialist
Federal Aviation Administration / Southwest Regional Office
Air Traffic Airspace Branch / Fort Worth TX 76193-0520
Office: 817-222-5536 / FAX: 817-222-5981 / bruce.beard @ faa.gov

TO: CHALEB SUNNA

FAX #: 214-528-4826

REFERENCE: LEWISVILLE LAKE BRIDGE

COVER SHEET + PAGES = 5

BO V. CUNG 817-338-4159

www.faa.gov/ats/ata/ata400/oeaaa.cfm

A HARD COPY WILL ☐ BE SENT.
WILL NOT ☒ BE SENT.

FAA 2002-07-05.pdf

RECEIVED TIME JUL. 5. 3:36PM PRINT TIME JUL. 5. 3:38PM

Please Type or Print on This Form

Form Approved OMB No. 2120-0001

U.S. Department of Transportation
Federal Aviation Administration

Failure To Provide All Requested Information May Delay Processing of Your Notice

Notice of Proposed Construction or Alteration

FOR FAA USE ONLY
Aeronautical Study Number
- - -

1. Sponsor *(person, company, etc. proposing this action)* :
of: Ghaleb Sunna, Chief Engineer
Name: North Texas Tollway Authority
Address: 5900 West Plano Parkway, Suite 100
City: Plano State: TX Zip: 75093
Telephone: 214-461-2060 Fax: 214-528-4826

2. Sponsor's Representative *(if other than #1)* :
Attn. of: Bo V. Cung
Name: HNTB Corporation
Address: 512 Main Street, Suite 1200
bcung@hntb.com
City: Fort Worth State: TX Zip: 76102
Telephone: 817-333-0824 Fax: 817-338-4159

3. Notice of: ☒ New Construction ☐ Alteration ☐ Existing

4. Duration: ☒ Permanent ☐ Temporary (months, days)

5. Work Schedule: Beginning June 2005 End Feb. 2008

6. Type: ☐ Antenna Tower ☐ Crane ☐ Building ☐ Power Line
☐ Landfill ☐ Water Tank ☒ Other Bridge

7. Marking/Painting and/or Lighting Preferred:
☐ Red Lights and Paint ☐ Dual - Red and Medium Intensity White
☐ White - Medium Intensity ☐ Dual - Red and High Intensity White
☐ White - High Intensity ☐ Other

8. FCC Antenna Structure Registration Number *(if applicable)*:
N/A

9. Latitude: 33° 08' 18. 03"

10. Longitude: 097° 00' 51. 62"

11. Datum: ☒ NAD 83 ☐ NAD 27 ☐ Other

12. Nearest: City: Lake Dallas State: TX

13. Nearest Public-use (not private-use) or Military Airport or Heliport:
Lakeview Airport (30F)

14. Distance from #13. to Structure: 1,195 feet

15. Direction from #13. to Structure: North

16. Site Elevation *(AMSL)*: 562.87 ft.

17. Total Structure Height *(AGL)*: 40 ft.

18. Overall height (#16. + #17.) *(AMSL)*: 602.87 ft.

19. Previous FAA Aeronautical Study Number (if applicable):
02-ASW-0022-OE - OE

20. Description of Location: (Attach a USGS 7.5 minute Quadrangle Map with the precise site marked and any certified survey.)

The proposed bridge will cross Lewisville Lake from east to west 1,195 feet north of the north end of the Lakeview Airport runway. The proposed bridge will utilize pole-mounted roadway lighting.

See USGS 7.5 minute Quadrangle Maps Denton East, Tex. and Little Elm, Tex.

21. Complete Description of Proposal:

The Lewisville Lake Toll Bridge and Access Roads project calls for a proposed toll bridge to be constructed by the North Texas Tollway Authority. The proposed toll bridge will be located in Lake Dallas, Denton County (approximately 30 miles northwest of Dallas, Texas) and will span Lewisville Lake. The proposed toll bridge will be 60 feet wide and approximately 10,000 feet long. The bridge will consist of four 12' wide travel lanes; two traveling east and two traveling west. The bridge will be equiped with pole-mounted lighting that will extend 40 feet above the pavement surface.

Frequency/Power (kW)	
N/A	N/A

Notice is required by 14 Code of Federal Regulations, part 77 pursuant to 49 U.S.C., Section 44718. Persons who knowingly and willingly violate the notice requirements of part 77 are subject to a civil penalty of $1,000 per day until the notice is received, pursuant to 49 U.S.C., section 46301 (a).

I hereby certify that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to mark and/or light the structure in accordance with established marking and lighting standards as necessary.

Date	Typed or Printed name and Title of Person Filing Notice	Signature
4/17/02	**Bo Van Cung, P.E. Senior Project Manager**	

FAA Form 7460-1 (2-99) Supercedes Previous Edition

NSN: 0052-00-012-0008

TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

August 8, 2002

Mr. Douglas Cargo
North Texas Turnpike Authority
8616 Northwest Plaza
Dallas, Texas 75225

received
8-13-02

Re: Project review under Section 106 of the National Historic Preservation Act of 1966
Review of draft report An Archeological Evaluation of the Lake Lewisville Toll Bridge Project
(NTTA/Antiquities Permit #2890)

Dear Mr. Cargo:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff led by Sergio A. Iruegas has completed its review of the draft reconnaissance report referenced above for the proposed Lake Lewisville Toll Bridge Project. We concur with Dr. Skinner's recommendation that the area on the west side of the lake has a high archeological potential while the remainder of the two access roads do not warrant further investigations. Accordingly, our office recommends that an intensive archeological survey with subsurface testing be conducted on the west side of the lake. Backhoe trenching should also be conducted if deep deposits are present in this area. The draft report is acceptable. Please submit 20 copies of the final report to our office.

In accordance with 36 CFR Part 800, the regulations of the National Historic Preservation Act, our office has entered into a Programmatic Agreement with the Federal Highway Administration and the Texas Department of Transportation (TxDOT). This agreement stipulates that TxDOT will initiate consultation with our office regarding possible effects undertakings may have on cultural resources. At the request of Dr. Nancy Kenmotsu, TxDOT will be a signatory on all antiquities permit applications that involve TxDOT in a direct or indirect manner. Please have the contracted professional archeologist submit an antiquities permit application through the Texas Department of Transportation Environmental Affairs Division which will in turn consult with our office regarding this federal undertaking. The professional archeologist can send the application to: Dr. Nancy Kenmotsu, Environmental Affairs Division, Texas Department of Transportation, Dewitt C. Greer State Highway Bldg., 125 E. 11th Street, Austin, Texas 78701-2483.

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 federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Sergio A. Iruegas at 512/463-8881.**

Sincerely,

for
F. Lawerence Oaks, State Historic Preservation Officer
LO/wjm/sai
Cc: Dr. Nancy Kenmotsu, TxDOT Environmental Affairs Division
Dr. Alan Skinner, AR Consultants, Inc.

HNTB ARCHITECTS ENGINEERS PLANNERS

July 5, 2002

Mr. John R. Polster
Innovative Transportation Solutions
2701 Valley View Lane
Farmers Branch, Texas 75234

Reference: Lewisville Lake Corridor Project
NTTA's Response to the Corps of Engineers' Letter on the Toll Bridge Easement Request.

Dear Mr. Polster:

I received a copy of the letter from the US Army Corps of Engineers (USACE) dated June 17, 2002 and addressed to Denton County Commissioner Cynthia White. The letter responds to the Commissioner's request that the USACE grant Denton County and NTTA the needed easement for the construction of NTTA's proposed toll bridge across Lewisville Lake.

The NTTA and its General Engineering Consultant have reviewed the USACE's letter and while we appreciate the USACE assistance and cooperation, we do have some comments concerning the conditions stated in the letter.

- We appreciate the USACE's approval of our conceptual plans (schematic) for the proposed toll bridge. However, we are concerned that the USACE's sponsored public comment period will occur only after the final plans are complete since comments generated during this period may require significant plans revisions. We ask that the public comment period be scheduled between the 30% and 60% design submittal, so that the accepted comments can be more easily incorporated into the final plans.

- The USACE requires an administrative fee of $5,000 for the processing of the easement. Per the inter-local agreement between Denton County and NTTA, we anticipate that Denton County will pay this fee. The USACE also mentions additional environmental documents. While we are not certain of the additional requirements, we also anticipate Denton County will prepare these documents.

- The USACE requires free toll tags perpetually for all government vehicles at the Elm Fork Project Office. Since the NTTA's trust agreement prohibits free passage except for NTTA employees and representatives, as well as "police officers of the United States, of the State of Texas, and of its political subdivisions when any of them is acting in the discharge of his or her official duties...", the NTTA is concerned that it will not be able to meet this condition. We request a meeting with the USACE as quickly as possible to discuss and resolve this issue.

Again, the NTTA is pleased to see that the toll-bridge easement issue is nearing resolution. Please let me know if you have any questions.

Sincerely,

Bo V. Cung

Bo V. Cung, P.E.
Senior Project Manager
General Engineering Consultant

cc: Tracy Henry, ITS
Ghaleb Sunna, NTTA
Chris Anderson, NTTA
Mark Bouma, NTTA
Katie Nees, NTTA
Frank Stevenson, NTTA
John Becker, GEC
File

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO ATTENTION OF

June 17, 2002

R 6-19-02

Real Estate Division

SUBJECT: Proposed Easement for Toll Bridge, Denton County and North Texas Tollway Authority, Tract M-1101-2, Lewisville Lake, TX

Cynthia White
Denton County Commissioner
Courthouse-on-the-Square
110 West Hickory Street
Denton, Texas 76201

Dear Ms. White:

Pursuant to your request regarding subject easement, the U.S. Army Corps of Engineers (Corps) approves the County's conceptual plans for the proposed toll bridge across the Elm Fork Arm of Lewisville Lake. Upon receipt of final plans, which must include any regulatory and environmental approvals, the Corps will issue a news release granting a 30-day public comment period for discovery of any new information that may have surfaced subsequent to signing the Finding of No Significant Impact for the Lewisville Lake Programmatic Environmental Assessment.

The proposed easement will be issued jointly to Denton County and North Texas Tollway Authority at no cost; however, administrative fees in the amount of $5,000.00 will be assessed for processing the easement. Additionally, Denton County and the Toll Authority will be responsible for the cost of producing any environmental documentation.

By mutual agreement, Denton County and the North Texas Tollway Authority will provide free toll tags/passes, perpetually, for all Government vehicles at the Elm Fork Project Office.

J/FTWW00/PMworks/Jobs/32628/CLIENT PROJECTS/CORRESPOND/INCOMING

If the conditions stated above are acceptable to Denton County and North Texas Toll Authority, please sign and return a copy of this letter to the letterhead address, ATTENTION: CESWP-RE-MD.

Sincerely,

Hyla J. Head
Chief, Real Estate Division

The foregoing conditions are hereby accepted this ____ day of _____, 2002.

DENTON COUNTY

_____
Signature & Title

NORTH TEXAS TOLLWAY AUTHORITY

_____
Signature & Title

Cargo, Douglas

From: Bo Cung [BCung@HNTB.com]
Sent: Monday, August 19, 2002 4:14 PM
To: Cargo, Douglas
Subject: FW: Lewisville Lake Corridor Project. Corps of Engineers' respons e to request for easement


2002-07-05 Response to USACE.p...


USACE 2002-06-17 page 1.pdf


USACE 2002-06-17 page 2.pdf


Commisioner White - Corps Ease...

Doug,

Please read everything below. Attached is my response to USACE's responses

<<2002-07-05 Response to USACE.pdf>>

Bo Cung, P.E.
HNTB Corporation

512 Main St Ste 1200
Fort Worth, TX 76102
817.333.0824 voice
817.338.4159 fax

> -----Original Message-----
> From: Bo Cung
> Sent: Friday, June 21, 2002 4:07 PM
> To: Ghaleb Sunna (E-mail); Mark Bouma (E-mail); 'Stevenson, Frank
> .';
> Chris Anderson (E-mail); Katie Nees (E-mail)
> Cc: John Becker (E-mail); Michael Copeland (E-mail); John Polster
> (E-mail); Sandra Nelson; Will Barresi
> Subject: Lewisville Lake Corridor Project. Corps of Engineers'
> response to request for easement
>
> Attached is the letter from the US Army Corps of Engineer responding
to
> Commissioner White's request for the toll bridge easement.
>
> <<USACE 2002-06-17 page 1.pdf>> <<USACE 2002-06-17 page 2.pdf>>
>
> Also attached for your reference is the Commissioner's letter.
>
> <<Commisioner White - Corps Easement letter 1.pdf>>
>
> I am in the process of reviewing the Corps' letter and if you have any
> comments on same, please send them to me so that I can compile them
and
> have them forwarded to John Polster.
>
> Thanks.
>
> Bo Cung, P.E.
> HNTB Corporation
>
> 512 Main St Ste 1200
> Fort Worth, TX 76102
817.333.0824 voice
817.338.4159 fax
>

CYNTHIA WHITE
DENTON COUNTY COMMISSIONER

January 22, 2002

Douglas Cox, Lake Manager
Lewisville Lake
1801 N. Mill Street
Lewisville, Texas 75057

RE: Lewisville Lake Bridge

Dear Mr. Cox:

This letter serves as a Formal Request from Denton County to the U.S. Army Corps of Engineers (USACE) to obtain an easement for the Lewisville Lake Bridge.

Project Overview
The proposed project involves construction of a new roadway from IH-35E to FM-720 including a new bridge over Lewisville Lake. The route would utilize existing roadways in some locations and would require construction of a new roadway in other areas. Figure 1 shows the location of the proposed project.

There has already been an extensive amount of design and environmental survey work performed on the proposed Lake Lewisville Bridge crossing. In November 1993, Denton County completed a Feasibility Study on the proposal, including determinations of the need and type of facility, and identification and evaluation of various alternatives. Subsequently, in January 1995, Denton County completed an Environmental Overview Study that included public involvement and evaluation of the potential environmental impacts of the feasible alternatives recommended in the November 1993 Feasibility Study.

The project was evaluated in the August 1999 Lewisville Lake Programmatic Environmental Assessment and was included as a project that is anticipated to result in no significant adverse impacts.

In November 1999, the North Texas Tollway Authority (NTTA) and Denton County staff met with the USACE to discuss permitting requirements for the proposed bridge and the possibility of the facility becoming a Tollway bridge.

In April 2001, the first of a series of monthly coordination meetings was conducted between the USCOE, Denton County, NTTA, Little Elm, Frisco and a variety of consulting engineering firms to plan and coordinate the implementation of the Lewisville Lake Bridge project.

Courthouse-on-the-Square • 110 W. Hickory Street • Denton, TX 76201
Phone/Voicemail: 940.349.2810 • Fax 940.349.2811 • e-mail: cynthia.white@dentoncounty.com

In September 2001, Denton County and the NTTA entered into an interlocal agreement establishing a working relationship between the two entities to continue advancing the project.

Preliminary Easement Information

The following information should address the preliminary requirements for submitting easement requests to the Fort Worth USACE.

1. Describe the structure of facility.

   The proposed Lewisville Lake Bridge will be a four-lane concrete bridge crossing the Lake between IH-35E at Swisher Road on the west and connecting to Garza Lane and FM-720 on the east side of the Lake.

   The bridge, where it crosses Lewisville Lake, would be required to have (at a minimum) a 52-foot clearance above the uncontrolled spillway elevation of 532 msl. This height elevation would be maintained for a total span of 360 feet with support columns spaced on 120-foot centers. This passage expanse would be centered over the water expanse to allow unimpeded passage of sailboat masts during period of high water.

   The bridge would consist of four 12-foot wide travel lanes and six-foot wide outside shoulders. The bridge would be constructed within the 80 feet of right-of-way as identified in the Lewisville Lake Programmatic Environmental Assessment.

   Enclosed is a preliminary typical cross section for the bridge. Our consultant is in the process of finalizing the horizontal and vertical alignment for the bridge.

2. Provide basic construction methods (e.g. open trench, close trench, etc.)

   The bridge would be constructed by typical construction methods over water. A floating drill rig will be utilized where the water is high to drill the pier holes for the bridge columns. The columns will be formed and constructed of concrete. A pier cap will be constructed on top of the columns. Precast concrete beams will be laid between columns. Typical beam spans will be 100 to 120 feet. The bridge deck will be poured on top of the beams.

3. Identify the purpose and need for the structure or facility.

   The purpose of the project is to provide enhanced regional mobility between IH-35E and the Dallas North Tollway and between SH-380 and SH-121. The need for the project is justified by the current and future congestion on the existing roadway system. The regional area is experiencing extremely rapid urbanization.

4. Justify placement of structure or facility on government property. Include alternative routes and locations, including routes off of Government property.

In 1995, Denton County performed an Environmental Overview Study that evaluated six different alternative alignments.

Alternative 5 was selected and was submitted to the USCOE for consideration by the 1999 Programmatic EA. The enclosed figure shows the various alternative alignments which all involve constructing the proposed bridge on government property.

5. Identify Grantee:

   a. Name, address, and phone number of grantee. Identify to whom instrument will be assigned. (e.g. city, county, Department of Transportation, Water Entity).

      The requested roadway/bridge easement is being submitted on behalf of Denton County. The proposed bridge is currently being planned as a toll facility, therefore the North Texas Tollway Authority (NTTA) is required to have a legal commitment for the right-of-way easement. It is anticipated that Denton County would assign the easement to NTTA so that both entities would have the right to use the easement.

   b. Point of contact for processing (e.g. City Manager, Mayor)

      The following list of individuals may be considered that point-of-contact for this easement request:

      The Honorable Scott Armey, County Judge
      Denton County
      P.O. Box 2055
      Denton, TX 76202

      The Denton County Transportation Coordinator is:
      Mr. John Polster
      Innovative Transportation Solutions, Inc.
      2701 Valley View Lane
      Farmers Branch, TX 75234
      (972) 484-2525

      General Engineering Consultant for NTTA –
      HNTB Corporation has been hired by NTTA to coordinate the project between NTTA and Denton County.
      The Lewisville Lake Corridor Project Manager is:
      Mr. Bo V. Cung, P.E.
      512 Main Street, Suite 1200
      Fort Worth, TX 76102
      (817) 333-0824

6. State the duration for which the proposed easement is requested. Include the duration of the temporary license if one is needed (usually one year).

   The request is for a permanent easement.

7. Generally describe the location and dimensions of the requested easement area

   The requested easement would begin in the vicinity of Swisher Road on the west side of Lewisville Lake property and extend across the Lake to the Lakewood Village area for a length of approximately (±10,000 feet). The easement would be 80 feet wide and would conform to the location as depicted in the Lewisville Lake Programmatic EA.

Denton County certainly appreciates the opportunity to be considered for the easement request. If you have any questions or require additional information please call me at (972) 484-2525. Denton County understands that this is the first step in the easement request process and we look forward to our continued working relationship with the USCOE and the Lewisville Lake office.

Sincerely,

Cynthia White
Denton County Commissioner, Pct. 1

Enclosure

C: The Honorable Scott Armey – Denton County Judge
Mr. Bo Cung, P.E. – HNTB Corporation
Mr. Mark Bouma, P.E. – North Texas Tollway Authority
Mr. Frank Stevenson – North Texas Tollway Authority
Mr. David Morgan – Halff Associates, Inc.
Mr. John Polster – Innovative Transportation Solutions, Inc.

February 19, 2002

CYNTHIA WHITE
DENTON COUNTY COMMISSIONER

Mr. Douglas L. Cox
Lake Manager, Lewisville Lake
US Army Corps of Engineers
1801 Mill Street
Lewisville, TX

Reference: Lewisville Lake Bridge

Dear Mr. Cox:

I am sending you the two attachments referenced in my letter to you dated January 22, 2002. As indicated by the chronology provided in my letter, Denton County has been advancing this project for several years. Although my letter was submitted as the County's formal easement request, it is important to note that the County believed that its previous communications with USACE had satisfied that formal request requirement as of a substantially earlier date. We hope that our longstanding dialogue with the USACE can be taken into account in determining whether Denton County and this project can be "grandfathered" under the standards applicable at the time we began addressing these matters with USACE.

Denton County appreciates its fine working relationship with the USACE and the Lewisville Lake office.

If you would like any additional information regarding that issue, please do not hesitate to contact me at (972) 484-2525

Sincerely,

Cynthia White
Denton County Commissioner, Precinct 1

Enclosure

Cc: The Honorable Scott Armey – Denton County Judge
Mr. Bo Cung, P.E. – HNTB Corp.
Mr. Mark Bouma, P.E. – North Texas Tollway Authority
Mr. Frank Stevenson – North Texas Tollway Authority
Mr. David Morgan – Halff Associates, Inc.
Mr. John Polster – Innovative Transportation Solutions, Inc.

Courthouse-on-the-Square • 110 W. Hickory Street • Denton, TX 76201
Phone/Voicemail: 940.349.2810 • Fax 940.349.2811 • e-mail: cynthia.white@dentoncounty.com

TEXAS HISTORICAL COMMISSION
The State Agency for Historic Preservation

RICK PERRY, GOVERNOR
JOHN L. NAU, III, CHAIRMAN
F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

July 19, 2002

S. Alan Skinner, Ph.D.
AR Consultants
P.O. Box 820727
Dallas, TX 75382

Re: Project review under the Antiquities Code of Texas
Lake Lewisville Toll Bridge, Denton County
Texas Antiquities Permit Application #2890

Dear Colleague:

Thank you for your Antiquities Permit Application for the above referenced project. This letter presents the final copy of the permit application from the Executive Director of the Texas Historical Commission, the state agency responsible for administering the Antiquities Code of Texas.

Please keep this copy for your records. Additionally, please note that the Antiquities Permit investigations require production of 20 copies of the final report and verification that any artifacts recovered and records produced during the investigations are curated at the repository listed in the permit.

If you have any questions concerning this permit or if we can be of further assistance, please contact Lillie Thompson at 512/463-1858. The reviewer for this project is Sergio Iruegas, 512/463-6096.

Sincerely,

William A. Martin
for
F. Lawerence Oaks, State Historic Preservation Officer

FLO/lft

Enclosure

Cc: Douglas Cargo, North Texas Turnpike Authority

State of Texas

TEXAS ANTIQUITIES COMMITTEE

ARCHEOLOGY PERMIT # 2890

This permit is issued by the Texas Historical Commission, herafter referred to as the Commission, represented herein by and through its duly authorized and empowered representatives. The Commission, under authority of the Texas Natural Resources Code, Title 9, Chapter 191, and subject to the conditions hereinafter set forth, grants this permit for:

Reconnaissance Survey

To be performed on a potential or designated landmark or other public land known as:

Title: Lake Lewisville Toll Bridge
County: Denton
Location: Lake Lewisville

Owned or Controlled by: (hereafter known as the Permittee):

North Texas Turnpike Authority
8616 Northwest Plaza
Dallas, TX 75225

Sponsoredby (hereafter known as the Sponsor):

north Texas Turnpike Authority
8616 Northwest Plaza
Dallas, TX 75225

The Principal Investigator/Investigation Firm representing the Owner or Sponsor is:

Jesse Todd Alan Skinner
AR Consultants, Inc., P.O. Box 820727
Dallas, TX 75382

This permit is to be in effect for a period of:

1 year

and Will Expire on:

6/27/03

During the preservation, analysis, and preparation of a final report or until furhter notice by the Commission, artifacts, field notes, and other data gathered during the investigation will be kept temporarily at:

AR Consultants, Inc.

Upon completion of the final permit report, the same artifacts, field notes, and other data will be placed in a permanent curatorial repository at:

Texas Archeological Research Lab.

Scope of Work under this permit shall consist of:

Archaeological Overview.

ARCHEOLOGY PERMIT # 2890

This permit is granted on the following terms and conditions:

1) This project must be carried out in such a manner that the maximum amount of historic, scientific, archeological, and educational information will be recovered and preserved and must include the scientific techniques for recovery, recording, preservation and analysis commonly used in archeological investigations.

2) The Principal Investigator/Investigation Firm, serving for the Owner/Permittee and/or the Project Sponsor, is responsible for insuring that specimens, samples, artifacts, materials and records that are collected as a result of this permit are appropriately cleaned, and cataloged for curation. These tasks will be accomplished at no charge to the Commission, and all specimens, artifacts, materials, samples, and original field notes, maps, drawings, and photographs resulting from the investigations remain the property of the State of Texas, or its political subdivision, and must be curated at an appropriate repository. Verification of curation by the repository is also required, and duplicate copies of any requested records shall be furnished to the Commission before any permit will be considered complete.

3) The Principal Investigator/Investigation Firm serving for the Owner/Permittee, and/or the Project Sponsor is responsible for the publication of results of the investigations in a thorough technical report containing relevant descriptions, maps, documents, drawings, and photographs. A draft copy of the report must be submitted to the Commission for review and apporval. Any changes to the draft report requested by the Commission must be made or addressed in the report, or under separate written response to the Commission. Once a draft has been apporoved by Commission, twenty (20) copies of the final report shall be furnished to the Commission.

4) If the Owner/Permittee, Project Sponsor, or Principal Investigator/Investigation Firm fails to comply with any of the Commission's Rules of Practice and Procedure or with any of the specific terms of this permit, or fails to properly conduct or complete this project within the allotted time, the permit will fall into default status and/or the Commission may cancel the permit until such time that the terms of the permit are properly completed. Notification of Cancellation shall be sent to the Owner/Permittee and the Principal Investigator/Investigation Firm, and all work associated with the permit must then stop immediately upon receipt of the notice. Notification of Default status shall be sent to the Principal Investigator/Investigation Firm, and the Principal Investigator will not be eligible to be issued any new permits until such time that the conditions of this permit are complete.

5) The Owner/Permittee, Project Sponsor, and Principal Investigator/Investigation Firm, in the conduct of the activities hereby authorized, must comply with all laws, ordinances and regulations of the State of Texas and of its political subdivisions including, but not limited to, the Antiquities Code of Texas; they must conduct the investigation in such a manner as to afford protection to the rights of any and all lessees or easement holders or other persons having an interest in the property; and they must return the property to its original condition insofar as possible, to leave it in a state which will not create hazard to life nor contribute to the deterioration of the site or adjacent lands by natural forces.

6) Any duly authorized and empowered representative of the Commission may, at any time, visit the site to inspect the field work as well as the field records, materials, and specimens being recovered.

7) For reasons of site security associated with nautical historical resources, the Project Sponsor (if not the Owner/Permittee), Principal Investigator, and Investigation Firm shall not issue any press releases, or divulge to the news media, either directly or indirectly, information regarding the specific location of, or other information that might endanger those resources, or their associated artifacts without first consulting with the Commission, and the State agency or political subdivision of the State that owns or controls the land where the resource has been discovered.

8) This permit may not be assigned by the Principal Investigator/Investigation Firm, Owner/Permittee, or Project Sponsor in whole, or in part to any other individual, organization, institution, or corporation not specifically mentioned in this permit, without the written consent of the Commission.

9) Hold Harmless: The Owner/Permittee hereby expressly releases the State and agrees that Owner/Permittee will hold harmless, indemnify, and defend (including reasonable attorney's fees and costs of litigation) the State, its officers, agents, and employees in their official and/or individual capacities from every liability, loss, or claim for damages to persons or property, direct or indirect of whatsoever nature arising out of, or in any way connected with, any of the activities covered under this permit.

10) Addendum: The Owner/Permittee, Project Sponsor and Principal Investigator/Investigation Firm must abide by any addenda hereto attached.

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[1]Upon a finding that it is in the best interest of the State, this permit is issued on 6/27/03.

James E. Bruseth, for the
Texas Historical Commission

TEXAS HISTORICAL COMMISSION

ANTIQUITIES PERMIT APPLICATION FORM
ARCHEOLOGY

GENERAL INFORMATION

I. PROPERTY TYPE AND LOCATION

Project Name (and/or Site Trinomial) Lake Lewisville Toll Bridge
County (ies) Denton
USGS Quadrangle Name and Number Denton East and Little Elm, TX 7.5' USGS 3397-114
UTM Coordinates Zone 14 E 697800 N 3671100 - E. end
Location Lake Lewisville 683000 3667200 - W. end
Federal Involvement ☐ Yes ☐ No
Name of Federal Agency
Agency Representative

II. OWNER (OR CONTROLLING AGENCY)

Owner North Texas Turnpike Authority
Representative Douglas Cargo
ddress 8616 North West Plaza
City/State/Zip Dallas, Tx 75225
Telephone (include area code) (214) 346-6358 Email Address

III. PROJECT SPONSOR (IF DIFFERENT FROM OWNER)

Sponsor
Representative
Address
City/State/Zip
Telephone (include area code) Email Address

PROJECT INFORMATION

I. PRINCIPAL INVESTIGATOR (ARCHEOLOGIST)

Name S. Alan Skinner and Jesse Todd
Affiliation AR Consultants, Inc.
Address P.O. Box 820727
City/State/Zip Dallas Tx 75382
Telephone (include area code) (214) 368-0478 Email Address arcdigs@aol.com

(OVER)

ANTIQUITIES PERMIT APPLICATION FORM (CONTINUED)

PROJECT DESCRIPTION

Proposed Starting Date of Fieldwork July 5, 2002
Requested Permit Duration 1 Years _____ Months (1 year minimum)
Scope of Work (Provided an Outline of Proposed Work) Archaeological overview

III. CURATION & REPORT

Temporary Curatorial or Laboratory Facility AR Consultants, Inc.
Permanent Curatorial Facility TARL

IV. LAND OWNER'S CERTIFICATION

I, Douglas Cargo, as legal representative of the Land Owner, North Texas Turnpike Authority, do certify that I have reviewed the plans and research design, and that no investigations will be preformed prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Owner, Sponsor, and Principal Investigator are responsible for completing the terms of the permit.
Signature Douglas B. Cargo Date 6/25/02

V. SPONSOR'S CERTIFICATION

_____, as legal representative of the Sponsor, _____, do certify that I have review the plans and research design, and that no investigations will be performed prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Sponsor, Owner, and Principal Investigator are responsible for completing the terms of this permit.
Signature _____ Date _____

VI. INVESTIGATOR'S CERTIFICATION

I, S. Alan Skinner and Jesse Todd, as Principal Investigator employed by AR Consultants Inc. (Investigative Firm), do certify that I will execute this project according to the submitted plans and research design, and will not conduct any work prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Principal Investigator (and the Investigative Firm), as well as the Owner and Sponsor, are responsible for completing the terms of this permit.
Signature S. Alan Skinner Date 6/25/02

Principal Investigator must attach a research design, a copy of the USGS quadrangle showing project boundaries, and any additional pertinent information. Curriculum vita must be on file with the Division of Antiquities Protection.

FOR OFFICIAL USE ONLY

Reviewer _____ Date Permit Issues _____
Permit Number _____ Permit Expiration Date _____
Type of Permit _____ Date Received for Data Entry _____

xas Historical Commission
..cheology Division
P.O. Box 12276, Austin, TX 78711-2276
Phone 512/463-6096
www.thc.state.tx.us

TEXAS HISTORICAL COMMISSION
The State Agency for Historic Preservation

NTTA Toll Bridge Meeting Notes
July 25, 2002
USCOE Office

Attendees:

Name	Organization	Phone #	E-Mail
Bo Cung	HNTB	817-333-0824	bcung@hntb.com
Mark Bouma	NTTA	214-461-2058	mbouma@ntta.org
Randall Mayne	COE	972-434-1667	
David Morgan	HALFF	214-346-6390	dmorgan@halff.com
Craig Kislingbury	COE	972-434-1667	
Ghaleb Sunna	NTTA	214-461-2060	gsunna@ntta.org
Michael Copeland	HNTB/NTTA	214-224-3062	mcopeland@ntta.org
Chris Anderson	NTTA	214-461-2021	canderson@ntta.org
Doug Cox	COE	972-434-1666	Douglas.L.Cox@swf02.usace.army.mil
Paul Nealy	COE	817-481-4541	Paul.W.Nealy@swf02.usace.army.mil
Kale Horton	COE Regulatory	817-886-1863	kale.e.Horton@swof02.usace.army.mil
Dale King	COE	972-434-1666	Dale.S.King@swf02.usace.army.mil
Jason Morovitz	HALFF ASSOC.	214-346-6386	jmorovitz@halff.com
Douglas Cargo	HALFF ASSOC.	214-346-6358	dcargo@halff.com

Storm Water pollution Prevention

3o Cung explained the difficulty of capturing the runoff from the toll bridge deck due to its enormous length and that the TNRCC does not have as strict requirements as it did in the past. Bo asked if the COE could allow runoff from the bridge be emptied directly into the lake. Doug Cox explained the requirements in the PEA, and that the Corps does not require all runoff to be captured. It only requires that oil and debris to be retained and clean water can be emptied into the lake. Mark Bouma directed Bo Cung to investigate options. One option could be the use of individual oil/water separators suspended from the bridge. The devices should be able to handle the 1st quarter inch of rain, which is the most contaminated.

Doug Cox stated that sedimentation does not have to be captured. However, sanding operation on the bridge during wintertime need to utilize more environmentally sensitive material.

COE will follow EPAs requirements for chemicals.

Easements

Bo Cung stated that in the easement letter from COE to Denton County, COE requested that free toll tags be issued to COE Project personnel, and that the NTTA has a concern about it. Mark Bouma explained that by policy, NTTA cannot issue free toll tags to individuals but there is a possibility that toll tags could be issued to official vehicles. Doug Cox stated that since the bridge is in the COE's right-of-way, the COE has the right to use the facility with or without toll tags. Paul Nealy stated there are 30 vehicles that would require toll tags. Mark Bouma assured the COE that this issue could be resolved. Mark will investigate.

Bo Cung also mentioned that as part of the easement letter, the COE stated that after final design is complete, he Corps would hold a public meeting. Bo asked if the meeting could be held sooner because once the final

lesign is complete, it would be very complicated to make changes to it. Doug Cox stated that the public notification process, which could last 30 days, could begin after NTTA revises the conceptual plans to incorporate COE's comments, obtains clearance from the FAA and modifies the EA.

The public meeting is to inform interested parties and not to seek public approval

Regulatory Issues

Craig Kislingbury reminded everyone to review COE comments on the schematic plans. Bo Cung stated that COE's comments would be incorporated. There were discussions concerning fills in the flowage easement areas and the needs to have culverts to accommodate ephemeral streams.

Bo Cung summarized the NTTA's application, which was submitted to the FAA for the construction of the toll bridge. The FAA had notified NTTA that the structure envelope encroaches into Lakeview Airport airspace. However, the FAA is soliciting comments on the proposed construction and if no negative comments are received, the FAA will approve the structure as is.

There were questions concerning discharges from the lake and Doug Cox explained that the City of Dallas is managing the discharge.

Lake Lewisville Toll Bridge Project

7/25/02

Name	Organization	Phone	Email
Bo Cung	HNTB	817-333-0824	bcung@hntb.a
Mark Bouma	NTTA	214-461-2058	MBOUMA@NTTA.ORG
Randall Mayne	COE	972-434-1667	
David Morgan	Halff	214-346-6390	dmorgan@halff.com
Craig Rushingbury	COE	972-434-1667	
Ghaleb Sunna	NTTA	214-461-2060	GSunna@NTTA.ORG
Michael Copeland	HNTB/NTTA	214.224.3062	mcopeland@ntta.org
Chris Anderson	NTTA	214.461.2021	CANDERSON@NTTA.ORG
Doug Coy	COE	972-434-1666	Douglas.L.Coy@swf02.usace.army.m
L Neely	COE	817/481-4541	Paul.W.Neely@SWF02.usace.army.mil
Kale Horton	USACE-Regulatory	817 886 1863	Kale.E.Horton@swf02.usace.army.mil
Dale King	COE	972/434-1666	DALE.S.KING@SWF02.USACE.ARMY.MIL
Jason Morovitz	Halff Associates	214-346-6386	JMOROVITZ@HALFF.COM
Douglas Cargo	Halff Associates	214 346-6358	dcargo@halff.com

APPENDIX E

TRANSACTION SCREEN QUESTIONNAIRE

Transaction Screen Questionnaire

Owner/Occupant Inquiry and Site Visit Observation	Information Source	Response		
		Yes	No	Unk
1a. Is the property used for industrial purposes? Specify:	Owner/Occupants			
	Observation		X	
1b. Is any adjoining property used for industrial purposes? Specify: Lakewood Regional Water Reclamation Plant - Upper Trinity Regional Water District	Owner/Occupants			
	Observation	X		
2a. Did you observe evidence or do you have any prior knowledge that the property has been used for industrial purposes in the past? Specify: Lakewood Regional Water Reclamation Plant - Upper Trinity Regional Water District	Owner/Occupants			
	Observation		X	
2b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used for industrial purposes in the past? Specify: Lakewood Regional Water Reclamation Plant - Upper Trinity Regional Water District	Owner/Occupants			
	Observation	X		
3a. Is the property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, or landfill or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Owner/Occupants			
	Observation		X	
3b. Is any adjoining property used s a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, or landfill or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Owner/Occupants			
	Observation	X		
4a. Did you observe evidence or do you have any prior knowledge that the property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Owner/Occupants			
	Observation		X	
4b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Owner/Occupants			
	Observation		X	
5a. Are any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than 5 gallons in volume or 50 gallons in the aggregate currently stored on or used at the property or at the facility?	Owner/Occupants			
	Observation		X	
5b. Did you observe evidence or do you have any prior knowledge that any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than 5 gallons in volume or 50 gallons in the aggregate have previously been stored on or used at the property or at the facility?	Owner/Occupants			
	Observation		X	
6a. Are any industrial drums (typically, 55 gallons) or sacks of chemicals currently located on the property or at the facility?	Owner/Occupants			
	Observation		X	
6b. Did you observe evidence or do you have any prior knowledge that any industrial drums (typically, 55 gallons) or sacks of chemicals have previously been located on the property or at the facility?	Owner/Occupants			
	Observation		X	
7a. Did you observe evidence or do you have any prior knowledge that fill dirt that originated from a contaminated site has been brought onto the property?	Owner/Occupants			
	Observation		X	
7b. Did you observe evidence or do you have any prior knowledge that fill dirt that is of an unknown origin has been brought onto the property? Very small amount for erosion control.	Owner/Occupants			
	Observation	X		
8a. Are any pits, ponds, or lagoons in connection with waste treatment, or waste disposal currently located on the property?	Owner/Occupants			
	Observation		X	
8b. Did you observe evidence or do you have any prior knowledge that any pits, ponds, or lagoons in connection with waste treatment or waste disposal have previously been located on the property?	Owner/Occupants			
	Observation		X	
9a. Is any stained soil currently on the property?	Owner/Occupants			
	Observation		X	
9b. Did you observe evidence or do you have any prior knowledge that any stained soil has previously been on the property?	Owner/Occupants			
	Observation		X	
10a. Are any registered or unregistered storage tanks (ASTs or USTs) currently located on the property?	Owner/Occupants			
	Observation		X	
10b. Did you observe evidence or do you have any prior knowledge that nay registered or unregistered storage tanks (ASTs or USTs) have previously been located on the property?	Owner/Occupants			
	Observation		X	

Transaction Screen Questionnaire

11a. Are any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground currently located on the property or adjacent to any structure located on the property?	Owner/Occupants				
	Observation			X	
11b. Did you observe evidence or do you have any prior knowledge that any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground currently located on the property or adjacent to any structure located on the property?	Owner/Occupants				
	Observation			X	
12a. Are any flooring, drains, or walls that are stained by substances other than water or are emitting foul odors currently located within the facility?	Owner/Occupants				
	Observation			X	
12b. Did you observe evidence or do you have any prior knowledge that any flooring, drains, or walls that are stained by substances other than water or are emitting foul odors currently located within the facility?	Owner/Occupants				
	Observation			X	
13a. If the property is served by a private well or nonpublic water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	Owner/Occupants				
	Observation			X	
13b. If the property is served by a private well or nonpublic water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental or health agency?	Owner/Occupants				
	Observation			X	
14. Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?	Owner/Occupants				
15a. Has the owner or occupant of the property been informed of the past existence of hazardous substances or petroleum products with respect to the property or any facility located on the property?	Owner/Occupants				X
15b. Has the owner or occupant of the property been informed of the current existence of hazardous substances or petroleum products with respect to the property or any facility located on the property?	Owner/Occupants				X
15c. Has the owner or occupant of the property been informed of the past existence of environmental violations with respect to the property or any facility located on the property?	Owner/Occupants				X
16. Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?	Owner/Occupants				X
17. Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum product involving the property?	Owner/Occupants				X
18a. Does the property discharge wastewater on or adjacent to the property, other than stormwater into a stormwater system?	Owner/Occupants				
	Observation			X	
18b. Does the property discharge wastewater on or adjacent to the property, other than stormwater into a sanitary sewer system?	Owner/Occupants				
	Observation			X	
19. Did you observe evidence or do you have any prior knowledge that any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried, and/or burned on the property?	Owner/Occupants				
	Observation			X	
20. Do any records exist indicating the presence of polychlorinated biphenyls (PCBs) for a transformer, capacitor, or any hydraulic equipment?	Owner/Occupants				
21. Does the owner or occupant have any knowledge of any asbestos-containing materials or presumed asbestos-containing materials on any facility located on the property?	Owner/Occupants				X

Transaction Screen Questionnaire

(See Guide to TSQ Appendix F, in Handbook RE-6 for information on database resources.)

Government Records and Historical Sources Inquiry	Response Yes	Response No
22. Do any of the following federal government record systems list the property or any property within the circumference of these areas:		
a. National Priorities List — within 1.0 mile (1.6 km)?		X
b. CERCLIS List — within 0.5 mile (0.8 km)?		X
c. RCRA CORRACTS Facilities — within 1.0 mile (1.6 km)?		X
d. RCRA TSD Facilities — within 0.5 mile (0.8 km)?		X
23. Do any of the following state record systems list the property or any property within the circumference of these areas:		
a. List that is the state equivalent to NPL maintained by state environmental agency of hazardous waste sites identified for investigation or remediation — within approximately 1.0 mile (1.6 km)?		X
b. List that is the state equivalent to CERCLIS maintained by state environmental agency of sites identified for investigation or remediation —within 0.5 mile (0.8 km)?		X
c. Leaking Underground Storage Tank (LUST) List — within 0.5 mile (0.8 km)?		X
d. Solid Waste/Landfill Facilities — within 0.5 mile (0.8 km)?		X

24. Based on a review of fire insurance maps or consultation with the local fire department serving the property, are any buildings, or other improvements on the property or on an adjoining property, identified as having been used for any industrial use or uses likely to lead to contamination of the property?	Yes	No	N/A
			X

25a. Does the database indicate the average radon level for the subject property county/Zip Code? If so, record level: <2 pCi/l.	Yes	No	N/A	
		X		

25b. Has radon testing been conducted on the subject property?	Yes	No	N/A	Unk
		X		

25c. In what EPA radon zone is the subject property (Check one)	1	2	3
			X

Transaction Screen Questionnaire

General Information (*the person preparing the Transaction Screen Questionnaire must complete and sign the following*):

Complete By Name: Douglas B. Cargo, Ph.D.	Title: Environmental Scientist
Firm: Halff Associates, Inc.	Telephone Number *(Include Area code)*
Address (*Street, City, State Zip + 4*) *8609 Northwest Plaza Drive, Dallas, Texas 75225*	
Date	Preparer's Relationship to the Postal Service (*e.g., employee, agency, consultant*)

Name of Owner/Occupant Who Provided the Information

Address (*Street, City, State Zip + 4*)

Telephone Number *(Include Area code)*	Date

Name of Owner/Occupant Who Provided the Information

Address (*Street, City, State Zip + 4*)

Telephone Number *(Include Area code)*	Date

Copies of the Completed *Transaction Screen Questionnaire* have been filed at:

Copies of the Completed *Transaction Screen Questionnaire* have been mailed or delivered to:

Preparer represents that, to the best of the preparer's knowledge, the above statements and facts are true and correct, and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

Signature Douglas B. Cargo	Date 7/29/02
Signature	Date
Signature	Date

Acknowledgment: This questionnaire was modified from ASTM Designation: E 1528-96, *Standard Practice for Environmental Assessments: Transaction Screening Process.*

APPENDIX F

REGULATORY DATA MAP – HAZARDOUS MATERIALS

The EDR Corridor Study Report

Study Area
Lake Lewisville Toll Bridge+Access Rds
Lake Dallas, TX 75065

June 17, 2002

Inquiry number 797913.1r

Environmental Data Resources, Inc.

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR).

TARGET PROPERTY INFORMATION

ADDRESS

LAKE LEWISVILLE TOLL BRIDGE+ACCESS RDS
LAKE DALLAS, TX 75065

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CORRACTS	Corrective Action Report
RCRIS-TSD	Resource Conservation and Recovery Information System
RCRIS-LQG	Resource Conservation and Recovery Information System
RCRIS-SQG	Resource Conservation and Recovery Information System
ERNS	Emergency Response Notification System

STATE ASTM STANDARD

SHWS	State Superfund Registry
SWF/LF	Permitted Solid Waste Facilities
CLI	Closed Landfill Inventory
TX VCP	Voluntary Cleanup Program Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST	Petroleum Storage Tank Database

TX Spills..... Spills Database
IOP..... Innocent Owner/Operator Program
Multimedia..... Multi Media Enforcement Cases
Ind. Haz Waste..... Industrial & Hazardous Waste Database
WasteMgt..... Commercial Hazardous & Solid Waste Management Facilities
AIRS..... Current Emission Inventory Data

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE ASTM STANDARD

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Texas Natural Resource Conservation Commission's Leaking Petroleum Storage Tank Database.

A review of the LUST list, as provided by EDR, and dated 03/27/2002 has revealed that there is 1 LUST site within the searched area.

Site	Address	Map ID	Page
PAYLESS CASHWAYS INC	***500 N STEMMONS***	***4***	***10***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Texas Natural Resource Conservation Commission's Petroleum Storage Tank Database.

A review of the UST list, as provided by EDR, and dated 04/29/2002 has revealed that there are 4 UST sites within the searched area.

Site	Address	Map ID	Page
LAKE CITIES MUA	N END LAKEVIEW DR	1	3
PHILLIPS 66 CO 57283	600 N STEMMONS DR	2	6
VIDEO PLUS INC	200 SWISHER RD	3	9
PAYLESS CASHWAYS INC	***500 N STEMMONS***	***4***	***10***

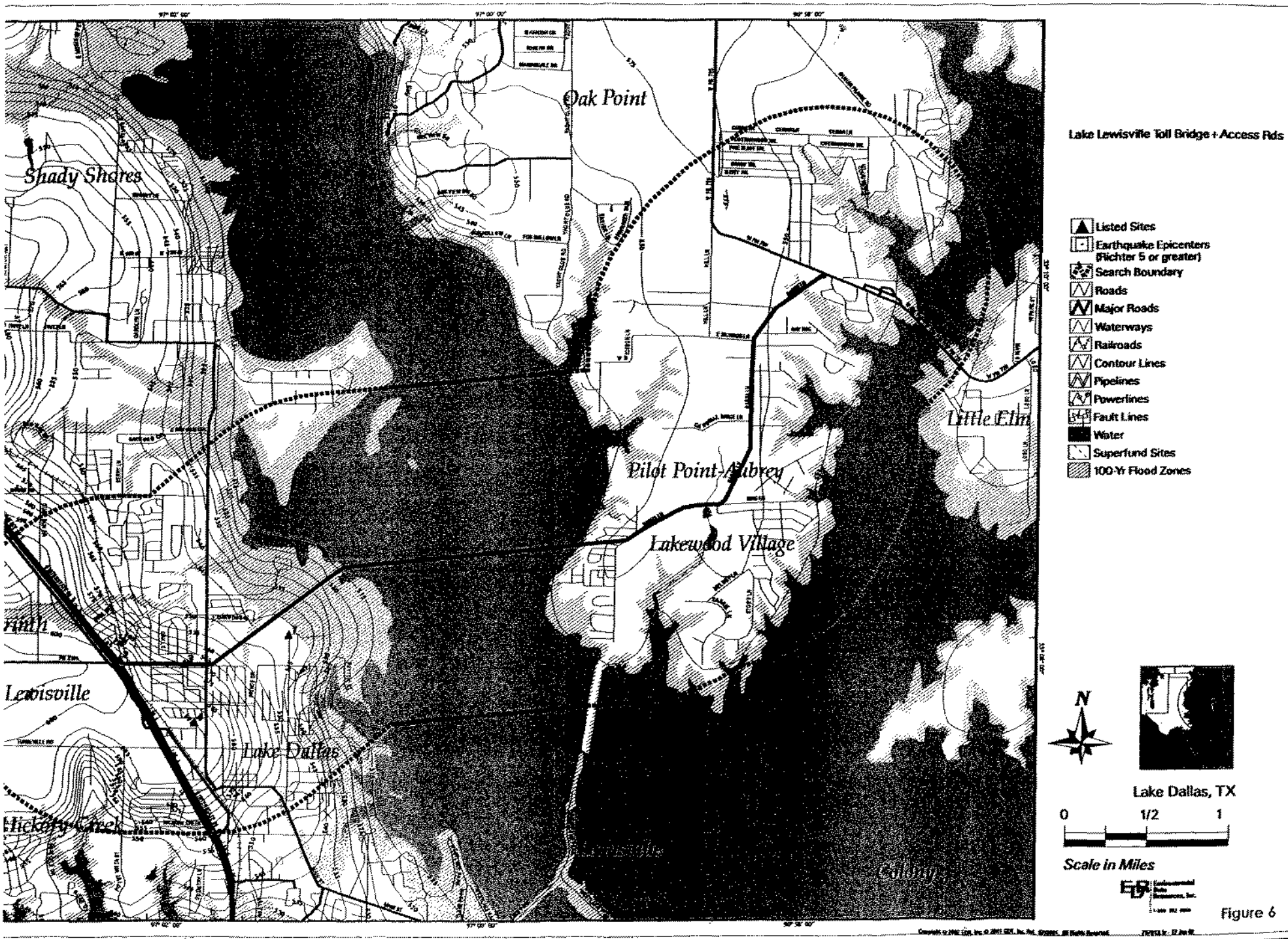
Oak Point
Shady Shores
Little Elm
Pilot Point-Aubrey
Lakewood Village
Lewisville
Lake Dallas
Hickory Creek
Colony
Lake Lewisville Toll Bridge + Access Rds
Listed Sites
Earthquake Epicenters (Richter 5 or greater)
Search Boundary
Roads
Major Roads
Waterways
Railroads
Contour Lines
Pipelines
Powerlines
Fault Lines
Water
Superfund Sites
100-Yr Flood Zones
N
Lake Dallas, TX
0
1/2
1
Scale in Miles

Figure 6

APPENDIX G

REGULATORY DATA AND MAP – WATER WELLS

The EDR Well Search Report
EDR Area Study

Well Search
Lake Lewisville Toll Bridge+Access Rds
Lake Dallas, TX 75065

June 17, 2002

Inquiry number 797913.1w

Environmental Data Resources, Inc.

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

GROUNDCHECK VERSION 2.1
SUMMARY

FEDERAL DATABASE WELL INFORMATION

MAP ID	WELL ID

NO WELLS FOUND

STATE WATER WELL INFORMATION

MAP ID	WELL ID
1	0610068
2	1849503
3	1849502
4	1849403
4	0610112
4	0610112
4	0610112
5	0610160
5	1849702
6	0610160
6	1849701
7	0610160
7	1849708
8	0610108
9	1849711
9	1849710
9	0610160
9	0610160
10	0610214
10	1849709
11	1849707
11	0610032
11	0610032
11	1849703
12	1956901
13	0610041
13	1849705
14	1849704
15	0610208
15	0610070
16	0610029
16	0610029
16	0610029
16	1964318
16	1964305
16	1964304
17	0610029
17	1964307
17	1964301

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Map ID:	17
PWS ID:	TX0610045
PWS Name:	HARBOR GROVE WATER SUPPLY CORP C/O JAMES CRAWFORD - PRESIDENT P O BOX 575 LAKE DALLAS, TX 75065

PWS currently has or had major violation(s) or enforcement: No

GEOCHECK VERSION 2.1
SUMMARY

USGS TOPOGRAPHIC MAP(S)

2433096-A8 LEWISVILLE EAST, TX

USGS TOPOGRAPHIC MAP(S)

2433096-B8 LITTLE ELM, TX
2433097-A1 LEWISVILLE WEST, TX
2433097-B1 DENTON EAST, TX

AREA RADON INFORMATION

Federal Area Radon Information for Zip Code: 75068

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.400 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

Federal Area Radon Information for Zip Code: 76205

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.800 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

Federal Area Radon Information for Zip Code: 75065

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.800 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

Federal EPA Radon Zone for DENTON County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for DENTON COUNTY, TX

Number of sites tested: 28

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.107 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.900 pCi/L	100%	0%	0%
Basement	Not Reported	Not Reported	Not Reported	Not Reported

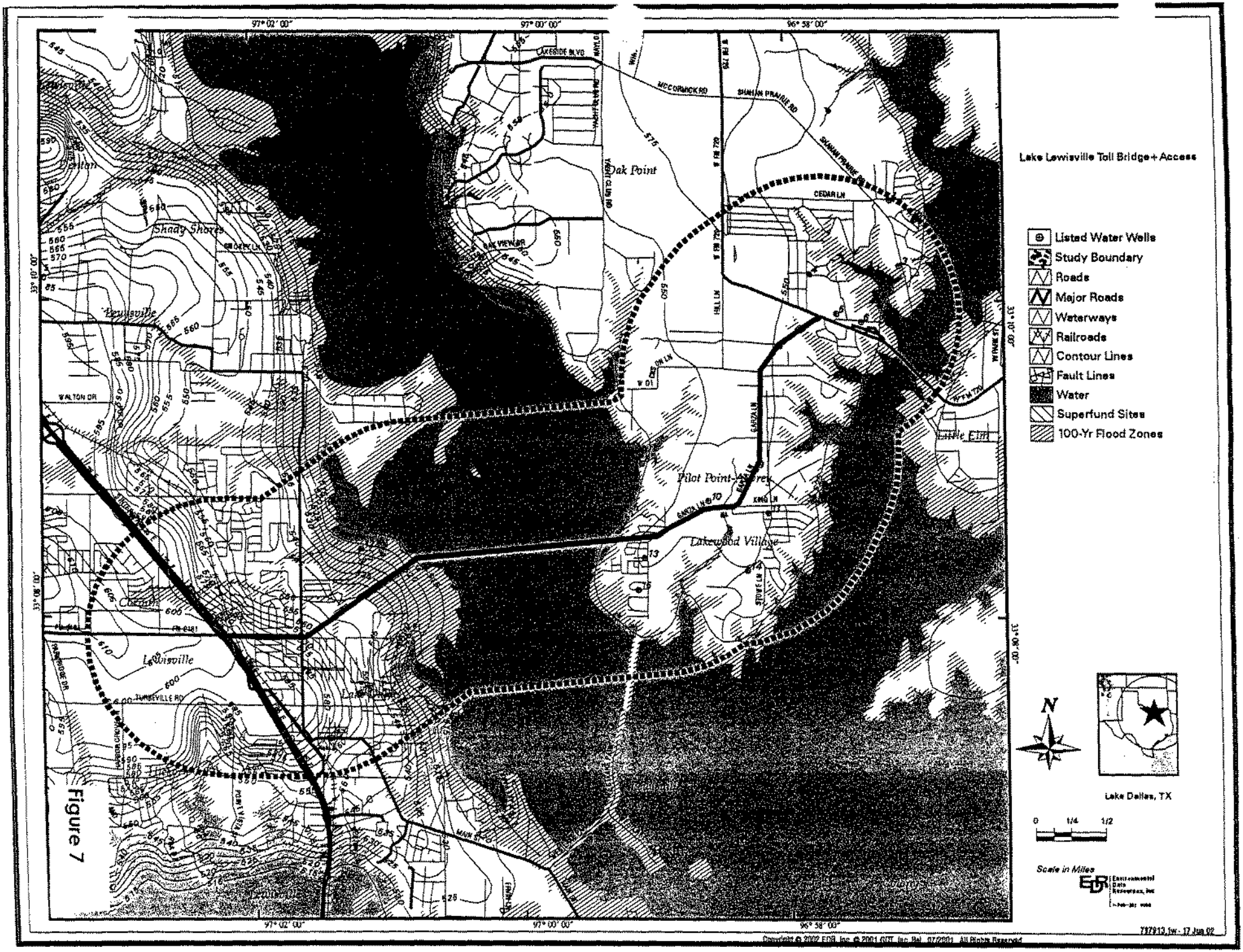

Figure 7

APPENDIX H

HISTORICAL REPORT

AN

ARCHAEOLOGICAL EVALUATION

OF THE

LAKE LEWISVILLE TOLL

BRIDGE PROJECT

Texas Antiquities Permit No. 2890

Jesse E. Todd, MS, MA
and
S. Alan Skinner, PhD.

Submitted to:

HALFF ASSOCIATES, INC.
Dallas, Texas

Prepared by:

AR CONSULTANTS, INC.
P.O. Box 820727
Dallas, Texas 75382

Cultural Resources Report 2002-24
July 23, 2002

ABSTRACT

An archaeological evaluation was conducted along two proposed access roads to a proposed toll bridge that would cross Lake Lewisville in Denton County, Texas, to determine the likelihood of encountering prehistoric or historic archaeological sites. This investigation was done for Halff Associates, Inc on the behalf of the North Texas Turnpike Authority. The roads cross from the Blackland Prairie on the east to the Eastern Cross Timbers. The intersection of the two vegetative communities occurs along the eastern access road route and although the archaeological potential differs between the two areas, the Cross Timbers is considered to have a higher potential, the entire eastern road route has been disturbed by farming and more recently by housing developments. Consequently, ARC concludes that the eastern access route does not warrant an archaeological survey. The same recommendation is made for the western route from IH-35E to just east of Shady Shores Drive. However, the area between Shady Shores Drive and the lake edge has not been extensively disturbed, although it has been farmed, and settings are present that may have been occupied prehistorically. Because of this situation, AR Consultants recommends a comprehensive archaeological survey of this part of the western access road route.

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LIST OF FIGURES

r-arc LakeLewisBridge2

INTRODUCTION

In early July, 2002, AR Consultants, Inc. (ARC) conducted an on-site evaluation of the archaeological potential of two proposed roads which will provide access to the proposed Lake Lewisville Toll Bridge in Denton County, Texas (Figure 1). The eastern road will extend from the shore of Lake Lewisville to Garza Road which it will follow until it intersects Hwy 720. The western road will coincide with Swisher Road from Interstate Hwy 35E until it intersects with Shady Shores Drive. The proposed access road will then continue east for a short distance before it bends to the north at an approximately 30 degree angle and continue to Lake Lewisville shoreline. The road corridors will range from 90-120' in width. The evaluation was conducted for Halff Associates, Inc, working for the North Texas Turnpike Authority (NTTA).

The study was conducted in order to begin the environmental review needed to meet relevant federal and state environmental legislative requirements. These include a Section 404 Permit for the Clean Water Act that is administered by the Fort Worth District of the US Army Corps of Engineers. Other relevant legislation includes the National Historic Preservation Act of 1966, as amended (PL-96-515), the National Environmental Policy Act of 1969 (PL-90-190), the Archeological and Historical Preservation Act of 1974, as amended (PL-93-291), Executive Order No. 11593 "Protection and Enhancement of the Cultural Environment" and Procedures for the Protection of Historic and Cultural Properties (36CFR800), Appendix C. In addition, the Texas Antiquities Code is applicable since NTTA is a state agency.

The following report contains a brief description of the natural environment, the culture history and then a review of previous investigations in the area. This is followed by the methodology, map review and field findings. A research design and recommendations are contained in the final chapter. A list of references cited concludes the report. This report was written in accordance with the guidelines for short reports adopted by the Texas Historical Commission, Archeology Division, and developed by the Council of Texas Archeologists (ND).

This report has been termed an "**evaluation**", as it is the result of the review of historic maps coupled with an experiential assessment based on a "windshield" survey of the proposed routes. The evaluation included a field inspection which provides a ground truth impression of site potential that incorporates the known archaeology and the natural environment into the determination of those areas with high and low potential for archaeological sites, and into a formal research design (Binford 1964). The evaluation does not reach the level of a reconnaissance as defined in the Airlie Report (McGimsey and Davis 1977:74), or in the Council of Texas Archeologists Guidelines for Cultural Resource Management Reports (ND:2), or in 36CFR, Part 66, as it does not involve any real on the ground field survey, other than getting out of a vehicle. Rather, it might be termed an Archaeology Assessment Report (McGimsey and Davis 1977:74).

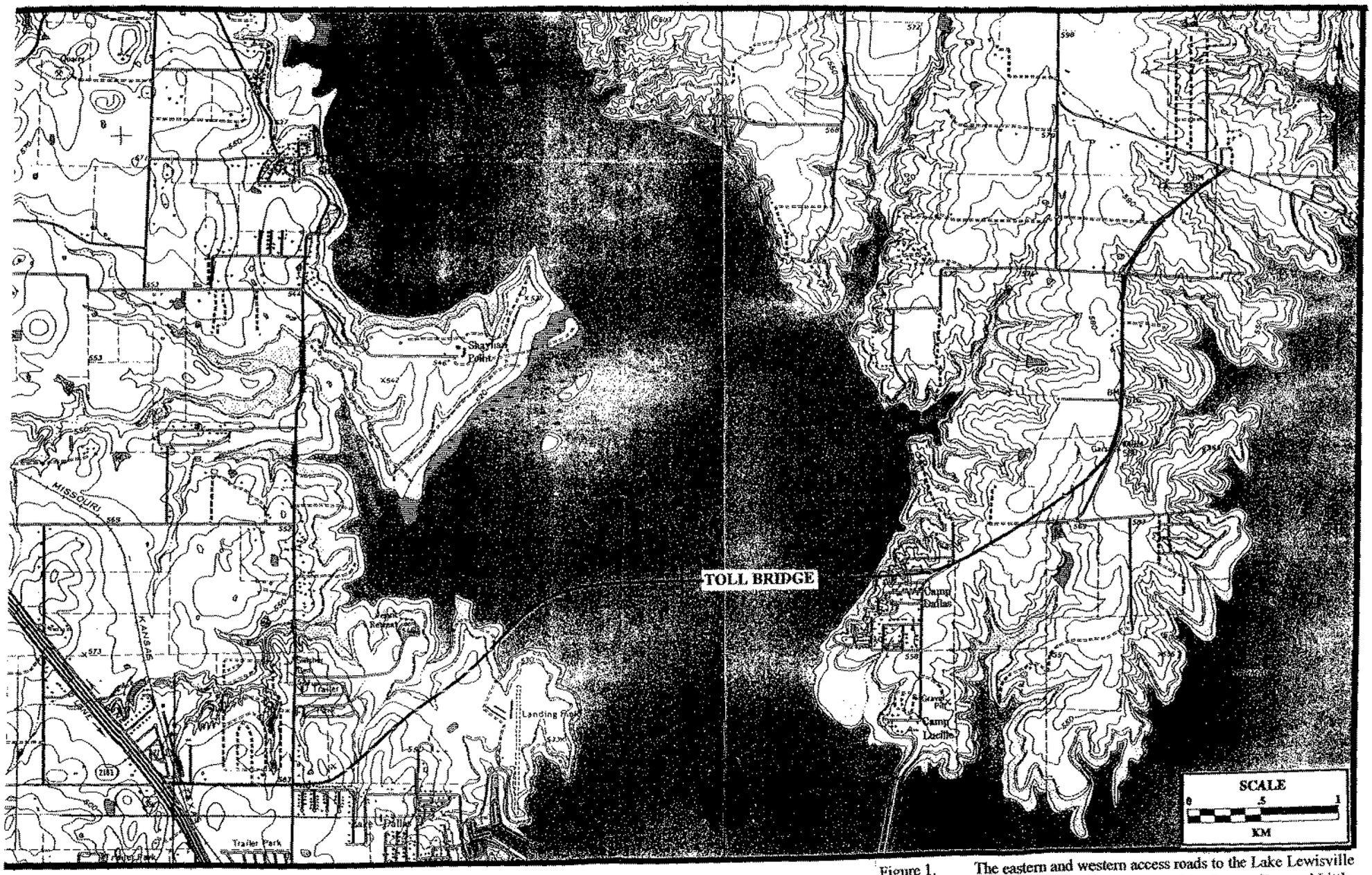

Figure 1. The eastern and western access roads to the Lake Lewisville Toll Bridge shown on sections of the Denton East and Little Elm, TX 7.5' USGS maps.

NATURAL SETTING

The location of the proposed Lake Lewisville Toll Bridge study area spans the western edge of the Blackland Prairie (Diggs, Lipscomb, and O'Kennon 1999) and the eastern edge of the Eastern Cross Timbers. For more than a century, parts of the area have been plowed extensively, and this has resulted in erosion and modification to the natural landscape that are hard to imagine looking at today's pastures, lake and housing developments.

The western portion of the study area rests on Cretaceous-aged Woodbine Sandstone that is overlain by Quaternary fluviatile terrace deposits near the lake. The eastern portion of the study area crosses Quaternary-aged fluviatile terrace deposits that rest on Cretaceous-aged Woodbine Sandstone and Eagle Ford Shale (Bureau of Economic Geology 1967).

Bedrock decomposition and pedogenesis in the study area have resulted in creation of the two soil associations: the Birome-Gasil-Callisburg and the Navo-Wilson (Ford and Pauls 1980:General Soil Map). The Birome-Gasil-Callisburg Association overlies the Woodbine Sandstone, and the Eagle Ford Shale underlies the Navo-Wilson Association.

Water is a limited resource in the prairie/cross timbers environment. There are no perennial streams crossed by the access roads, but there are some intermittent streams. Brune (1981) lists no springs in the study area.

As indicated above, Denton County is located in the Blackland Prairie and Eastern Cross Timbers vegetative areas of Texas (Gould 1975; Kuchler 1969: Region No. 68). Kuchler classifies the prairie as being dominated by Andropogon-Sipa grasses, and Gould notes that little bluestem is the climax dominant. Various other grasses are also present. Mesquite is also present today but this is due to recent invasion of this species into the Blackland. The Eastern Cross Timbers consists of various species of oaks, hickory and an understory consisting of oak saplings, woody vines and greenbriar. The Eastern Cross Timbers corresponds to the sandy soil (Prikryl 1990:9)

Prehistoric, and historic, inhabitants of the Eastern Cross Timbers would have been able to use mast for food as well as deer, squirrel and turkey, along with aquatic animals. Food resources prehistorically for the Blackland Prairie included bison and antelope (Lynott 1979) as well as various edible grasses.

CULTURE HISTORY

The history and prehistory of this part of Denton County are summarized in several reports prepared by the University of North Texas (Lebo and Brown 1990; Brown and Lebo 1991; Ferring and Yates 1997). Prehistoric Native American settlement in Denton County began at least 10,000 years ago as attested to by the presence of distinctively shaped dart points (Crook and Harris 1957) at the Lewisville site and the Aubrey Clovis site (Ferring 1989). Moreover, artifact collectors report the presence of Clovis, Folsom, Scottsbluff and other Paleo-Indian points from the surface of sites in the region. The presence of exotic, i.e., non-local, lithic resources indicates that these early people traveled a territory where higher quality lithics were available or were involved in a system of raw material trading. These early people hunted now-extinct large game, but probably also foraged off the land.

The subsequent period, the Archaic, lasted from 7,000-6,000 B.C. to possibly as late as A.D. 700-800. The Archaic peoples lived throughout the counties but particularly along the major and minor stream valleys where they were able to hunt and gather native foods. Dart points, grinding stones, fire-cracked rock, and scrapers are common artifacts found on Archaic sites. The earliest Archaic peoples continued making and using exotic cherts for dart points, but as time passed, there was a shift toward the use of local lithics for chipped stone tools. These local materials are described as Uvalde Gravels (Menzer and Slaughter 1971; Byrd 1971). Large Archaic sites are generally located on terraces or ridges that overlook the Elm Fork of the Trinity. Smaller lithic scatters have been recorded in upland areas throughout the county. These sites appear to be Archaic in age, but none have been thoroughly studied.

About A.D. 700-800, a major change is found in the artifacts and settlement patterning of the prehistoric sites. This is attributed to the drying up of the smaller tributaries. During this period, which is known as the Late Prehistoric, Caddoan pottery from East Texas appears as trade material along with the indigenous Nocona Plain pottery. It has been suggested that farming may have been practiced. Arrowheads appear about this same time and apparently the bow and arrow had been added to the hunting tools.

At the end of the Late Prehistoric period, there appears to have been a general abandonment of the north-central Texas area based on an absence of sites with trade goods that might have been obtained from French, Spanish or English traders (Skinner 1988). This simplistic interpretation is tied to a general drying trend and attempts to factor in negative information generated by professional and avocational archaeologists who have conducted numerous site surveys throughout the region (Peter, Cliff and Green 1996:2). There is very little evidence of historic era Native American occupation anywhere in the region although historic accounts indicate that groups were present in the early 1800's.

A consensus about the paleoenvironmental conditions of North Central Texas over the past 12,000 years has not been reached. Discussions by Prikryl (1993), Ferring and Yates (1997), Humphrey and Ferring (1994), and Brown (1998) offer disparate interpretations based on different analytical approaches. The following discussion relies heavily on Ferring's investigations and focuses upon the past two thousand years. Correlating periods of rapid alluviation with higher precipitation and slow alluviation with drier conditions, Ferring has concluded that the Late Holocene [5000 yr BP to the present] was a wet period with moderate alluviation, except for a dry period between 2000-1000 yr BP [AD 1-1000]. It was during this dry period that the West Fork Paleosol was established on the stable surfaces of the river meanders along the Upper Trinity and its tributaries. This interpretation is supported by changing patterns seen in stable isotope analysis. Brown (1998) offers a differing interpretation based on isotopic analyses of mussel shells from a prehistoric site (41DL270) on Denton Creek. He concludes that the period from 1500-2500 yr BP was cooler and/or wetter and that before and after the environment was warmer and drier, but he points out that this interpretation may only be applicable for the Elm Fork tributary and not the region.

The history of man's presence in North Central Texas continues with the first written accounts by the French and Spanish explorers. There is tantalizing evidence to the south in Dallas County of possible visits by Spanish explorers. Current research, however, seems to indicate that Anglo settlers were the first non-Indians to visit the survey area. Established European settlement in Denton County began before the mid-1800's with the establishment of the Peter's Colony after Texas independence. These early settlers were farmers who selected bottomland along the Elm Fork of the Trinity. The town of Little Elm was established with a post office in 1845 (Bridges 1978). Commercial farming was not important until after the Civil War, and the early settlers were essentially self-sufficient. Besides the plants and animals they grew, wild animals and plants were commonly consumed. Denton became the county seat in 1856. By 1875, cotton, corn, and wheat were the main cash crops. Up to half of these crops were grown by tenant farmers who either paid rent to the land owner for their house, tools, and seed or by tenants who gave the landowner a third of the grain and a quarter of the cotton or other cash crops. By the turn of the century, all of the major communities had been established and some had passed away.

Previous Investigations

Stephenson (1949) conducted an archaeological survey of what was to become Lake Lewisville for the Smithsonian Institution River Basin Survey and recorded 27 prehistoric sites; however, none are in the study area. R. King Harris, an avocational archaeologist, recorded sites on a 1936 Denton County road map during the 1940s to 1960s. He recorded three sites, 41Dl – 19 2, 3 and 4, east of the western portion of the study area. Two of these sites contained pottery while the other did not. These sites are now under water. Nunley (1973) performed an archaeological survey of the shore line of what then was the Garza-Little Elm Reservoir for the US Army Corps of Engineers and recorded 50 sites. No sites were found in the study area.

In February 1977, the Texas Water Development Board conducted an archaeological survey of various portions of the eastern portion of the study area for a pipeline, including both the Blackland Prairie and Eastern Cross Timbers, but discovered no sites. In April of 1984, they conducted an archaeological survey that cut across the western portion of the survey area in two places, but again recorded no sites. Lebo and Brown (1990) did an archaeological survey of the shoreline of Lake Lewisville and discovered a historic trash scatter, 41DN453, south of the eastern portion of the study area on an upland ridge. The trash, consisting of glass, ironware sherds, tin cans and personal items (a boot and toy) suggested that it was associated with a farmstead. The farmstead is on the Denton County soils map of 1918 and the 1936 Denton County Road map, but not on the 1960 USGS map. Any features, houses, etc. associated with this site have been destroyed by nature or human development in the area. Their recommendation was that the site provided no significant information to the archaeological record of the area and no further research was warranted because of it being inundated and eroded (Lebo and Brown 1990:111). There is an undescribed site, 41DN58, south of 41DN 453 (TASA 2002), but Lebo and Brown (1990:111) describe it as a multicomponent site. South of the western portion of the study area, they recorded a historic trash scatter and architectural items, 41N450, ca. 1880-1920, east of the airplane strip on a small point of land. In addition, they recorded a pre-1900s historic trash scatter, 41DN451, consisting of earthenwares, stonewares and bottle glass and located just north of the western access road route on a small point of land. The site had been severely damaged by borrow pit activity and a road (Lebo and Brown 1990:109 – 110). There are two undescribed sites (41DN51 and 52) southeast of the study area as well (TASA 2002).

AR Consultants performed an archaeological survey just northeast of the study area on Hackberry Branch and Stewart Creek but found no cultural resources (Trask and Skinner 2002). Recent surveys north along Office Creek (Skinner 2002) and east in the floodplain of Cottonwood Branch between the communities of Little Elm and Frisco (Skinner and Kent 1998) did not record any archaeological sites. A survey of jurisdictional wetlands in Lone Star Ranch north of Lebanon Road (Skinner and Trask 2000) also did not record any archaeological sites. The scarcity of sites, particularly of prehistoric sites, is common in the Blackland Prairie. When sites have been found in the prairie, they are usually associated with a permanent water source.

METHODOLOGY AND RESULTS

Prior to the field survey, records were checked with Texas Historical Commission's Archeological Sites Atlas (2002). Historic maps, including the 1918 Soil Map of Denton County (Carter and Beck 1918) and the R. King Harris' map (1936) were also reviewed. No historic farmsteads were shown on the maps, however.

With the aid of appropriate project system design maps, USGS maps and soil information for Denton County, roads were driven that were parallel to or coincided with the proposed access roads where possible. Notes were made about the general description of the area, including notes about the geomorphology, biotic community, drainages and suburban housing developments, and photographs were taken. Where access was impossible, the closest roads available were driven.

Since Lewisville Lake divides the study area, the following discussion consists of a description of the proposed western and eastern access routes.

Western Road

The western portion of the proposed route will replace Swisher Road from Interstate Hwy 35E until Swisher Road intersects Shady Shores Drive. The new road will continue east for a short distance and then turn to the north and reach a toll plaza and the bridge at the shore of Lake Lewisville. Soils in this area consist of sands (Ford and Pauls 1980:General Soils Map) and, as mentioned previously, the proposed western access road is in the Eastern Cross Timbers.

From the intersection of Interstate Hwy 35E and Swisher Road, and across the railroad tracks, on both sides of Swisher Road are modern housing developments, warehouses, houses and a school house, all less than 50 years in age. On the north side of Swisher Road, east of KJs, which is approximately 400 feet east of the intersection of I35E and Swisher road, there is a grassy field extends to the Jackson Ranch, a modern housing development.

East of the Swisher Road and Shady Shores Drive intersection, access was not available. Visual inspection from this point did not note any historic standing structures more than 50 years old. From this area, the proposed access road crosses a ridge, toe slope and knoll that are present which could not be inspected since no access was available, nor was the shore line able to be inspected for the same reason.

No historic or prehistoric archaeological sites were noted during this evaluation, nor were any historic sites, or houses older than 50 years, noted. Surface visibility was non-existent until east of the intersection of Swisher Road and Shady Shores Drive where the surface

visibility ranged from 30 to 40 percent. It is unknown if this percentage of ground visibility is consistent for the rest of the study area since no access was available.

Eastern Road

The eastern portion of the study begins at the intersection of Garza Road and FM 720, It then will replace Garza Road and terminate at the Lake Lewisville shoreline. At the Garza Road and Hwy 720 intersection, a grassy area on the south side of the road and then there is a wooded drainage and houses. Trees are on the north side of the road until the Garza Road nears French Settlement Road where there is a grassy field. The proposed eastern access road study area is divided by two biotic communities. The eastern half is in the Blackland Prairie and consists of clay soils while the western half is sandy and is in the Eastern Cross Timbers (Ford and Pauls 1980:General Soils Map).

From the intersection of Garza Road and Hwy 720 to the shore of Lake Lewisville, both sides of the road consisted of alternating fields and modern housing developments. The greatest stretch of road in forest is the east side from the second bend in Garza Road to, and including, Camp Dallas. The shore could not be inspected because there was no access to it.

No prehistoric or historic archaeological sites, nor houses or other standing structures older than 50 years were noted along the proposed access road on the east side of the lake. There is a ridge present, similar to the one in the proposed western access road study area, between Garza Road and Lake Lewisville that might have the same potential for archaeological sites. Unfortunately, it is out of the study area. No doubt the ridge has been plowed in the past century and any prehistoric, or historic sites, may have eroded or been destroyed by modern land development. Since it is not along the shore, Stephenson (1949), Nunley (1973), nor Lebo and Brown (1990) reconnoitered the area.

RESEARCH DESIGN

The purpose of the following research design is to provide a framework whereby fieldwork at Lake Lewisville will contribute to a better understanding of prehistoric and historic settlement in Denton County. It is our conclusion that there is little potential of finding significant prehistoric or historic sites in the Blackland part of the eastern route due to the known low biotic diversity of prairie environments, the absence of reliable water sources, surface deflation accelerated by historic farming, and land modification caused by recent construction of housing developments. Although the Eastern Cross Timbers portion of the eastern route has a greater biodiversity, it too has been modified by farming and land development for housing and there is little possibility of finding preserved site deposits. The western route is totally within the Eastern Cross Timbers and it also has been extensively modified by farming and land development. However, a ridge toe-slope and a knoll are present within the proposed route east of Swisher Road and these locations are likely to have been occupied prehistorically and should be considered to be areas of high archaeological potential.

With this said, the following research question is posed for consideration with regard to the two portions of the study area.

Based on the Lake Ray Roberts survey, it is an interesting question of how prehistoric inhabitants utilized the Blackland Prairie/Eastern Cross Timber boundary. Ferring and Yates (1997) excavated 12 sites, found in both the Blackland Prairie and the Eastern Cross Timbers, with the majority in the Eastern Cross Timbers. In a similar setting, Ferring and Yates' (1996) excavated 5 sites at Lake Lewisville. They state that Lake Lewisville is an ideal setting for studying the prehistory and history of Denton County because the Blackland Prairie and Eastern Cross Timbers come into contact (Ferring and Yates 1996:41). Although the sites they excavated were in the Cross Timbers area, they were close to the ecotone between the Blackland Prairie and the Eastern Cross Timbers. On the other hand, the settlement pattern described by Lebo and Brown (1990:16) in their shoreline survey of Lewisville Lake consisted of sites situated along topographic high areas between intermittent drainages in both the Blackland Prairie and the Eastern Cross Timbers and close to the Elm Fork of the Trinity River. Their analysis of the settlement pattern for Lake Lewisville, although different from the Ferring and Yates (1996) study, is similar to the settlement pattern for Lake Ray Roberts (Ferring and Yates 1997). Sites in the Eastern Cross Timbers would have been ideally situated for the hunting of deer and the gathering of acorns while the Blackland Prairie would be suitable for hunting antelope and bison. Potentially, the same people could have lived in the Eastern Cross Timbers area while hunting in the Blackland Prairie.

With that said about the ecotone,

"The question then arises, are there sites located on similar topographic features further away from ecotonal boundaries, and permanent water sources?"

A direct corollary to the above question is,

"Does the occurrence of sites diminish gradually or suddenly the further away from the boundary of the Blackland Prairie/Eastern Cross Timbers and a permanent body of water, in this case the Elm Fork?"

Both portions of the study area have ridges that are in similar geologic situations, one in the Blackland Prairie and one in the Eastern Cross Timbers. Unfortunately the ridge in the eastern portion is outside the study area, but there is a ridge in the western portion of the study area which needs to be investigated by pedestrian survey and shovel testing. Although no immediate answer will be provided, the groundwork for future research may be laid, and which will be answered by future research, about the relationship between the occurrences of sites located further away from an ecotone and permanent bodies of water.

In addition to being further away from the water, the area that should be investigated in the western portion of the area may, in fact, reflect a Blackland Prairie/Eastern Cross Timbers boundary. According to Ford and Pauls (1980:Sheet 34), the area in question consists of sandy soils and Navo and Wilson clays and Altoga silty clay. The Bureau of Economic Geology map (1967) only records the area as being a part of the Woodbine Sandstone. If it is a boundary area, then its potential to yield archeological information about the boundary area should be valuable in increasing the knowledge about the prehistory of Denton County.

RECOMMENDATIONS

AR Consultants has concluded that all of the proposed eastern access road crosses areas of low archaeological probability and that this situation has been aggravated by modern land development and farming. No further archaeological investigations are recommended for the eastern access road corridor. The proposed route of the western access road from IH-35E to just east of the Swisher Road and Shady Shores Road intersection has an unknown archaeological probability because it too has been heavily impacted by farming and land development. However, the ridge, toe-slope and knoll located within the corridor between Shady Shores Road and the lake edge have not been extensively disturbed and appear to offer settings which may have been occupied prehistorically and therefore have a high archaeological potential. Therefore, a comprehensive archaeological survey and shovel testing are recommended as a necessary procedure for evaluating the archaeological potential of this part of the route. Although the UNT crews may have visited the lake edge of this area, we have been unable to find that they did any testing of the knoll or the ridge.

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APPENDIX I

ARCHAEOLOGICAL REPORTS

AN

ARCHAEOLOGICAL SURVEY

OF

THE LEWISVILLE TOLL

BRIDGE ACCESS ROAD

DENTON COUNTY, TEXAS

Texas Antiquities Permit 2937

Jesse E. Todd, MS, MA
and
S. Alan Skinner, PhD

Submitted to:

HALFF ASSOCIATES, INC.
Dallas, Texas

Prepared by:

AR CONSULTANTS, INC.
P.O. Box 820727
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Cultural Resources Report 2002-33
September 10, 2002

In late August and early September 2002, an archaeological survey was conducted along a proposed access road right-of-way that would extend from the junction of Swisher Road and Shady Shores Drive east to the shore where a toll bridge across Lake Lewisville in Denton County, Texas is proposed. The purpose of the survey was to determine the likelihood of encountering prehistroric or historic archaeological sites within the road alignment. This investigation was done for Halff Associates, Inc. on behalf of the North Texas Tollway Authority (NTTA).

A records research did not reveal any historic or prehistoric cultural resources in the study area. A comprehensive survey located no archaeological resources. Shovel-testing failed to locate any buried cultural resources but did show that the A-horizon was thin and rested on a clay Bt-horizon throughout. The conclusion is that this area in the Eastern Cross Timbers in North Texas has a low potential for containing significant cultural resources.

Based on the field investigation, it is AR Consultant's recommendation that no further cultural resource investigations are warranted on this property. The Texas Historical Commission should be advised if buried cultural resources are uncovered during construction, and, if found, construction should cease immediately in that area until proper investigations can be carried out.

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r-arcLakeLewisvilleBridge2

INTRODUCTION

In the late summer of 2002, AR Consultants, Inc. (ARC) conducted a comprehensive archaeological survey of a section of the proposed route for the access road to the proposed Lake Lewisville Toll Bridge in Denton County, Texas (Figure 1). This archaeological survey was done after an evaluation of the access road routes on the east and west sides of Lake Lewisville was conducted (Todd and Skinner 2002). The evaluation report documented the impacts that had occurred to the terrain during the twentieth century and also recommended that the route extending west from the lake edge to Shady Shores Drive has the highest potential for containing lightly disturbed or buried prehistoric deposits. The western access road will extend from Interstate Highway 35E along Swisher Road it its junction with Shady Shores Drive. Just east of Shady Shores Drive, the proposed access road route continues east across the upland for a short distance before it turns to the north at an approximately 30 degree angle and continues to the Lake Lewisville shoreline. The road corridor study area will range in width from 90 to 120 feet. The evaluation was conducted for the North Texas Tollway Authority (NTTA) through the Dallas office of Halff Associates, Inc.

The archaeological survey was conducted as part of the environmental review needed to meet relevant federal and state environmental legislative requirements. These include a Section 404 Permit for the Clean Water Act that is administered by the Fort Worth District of the US Army Corps of Engineers. Other relevant legislation includes the National Historic Preservation Act of 1966, as amended (PL-96-515), the National Environmental Policy Act of 1969 (PL-90-190), the Archeological and Historical Preservation Act of 1974, as amended (PL-93-291), Executive Order No. 11593 "Protection and Enhancement of the Cultural Environment" and Procedures for the Protection of Historic and Cultural Properties (36CFR800), Appendix C. In addition, the Texas Antiquities Code is applicable since NTTA is a state agency.

The following report contains a brief description of the natural environment, the culture history and then a review of previous investigations in the area. This is followed by the research design and methodology. The description of the archaeologically surveyed corridor constitutes the major part of this report. Recommendations are contained in the final chapter. A list of references cited concludes the report. This report was written in accordance with the guidelines for short reports adopted by the Texas Historical Commission, Archeology Division, and developed by the Council of Texas Archeologists (ND).

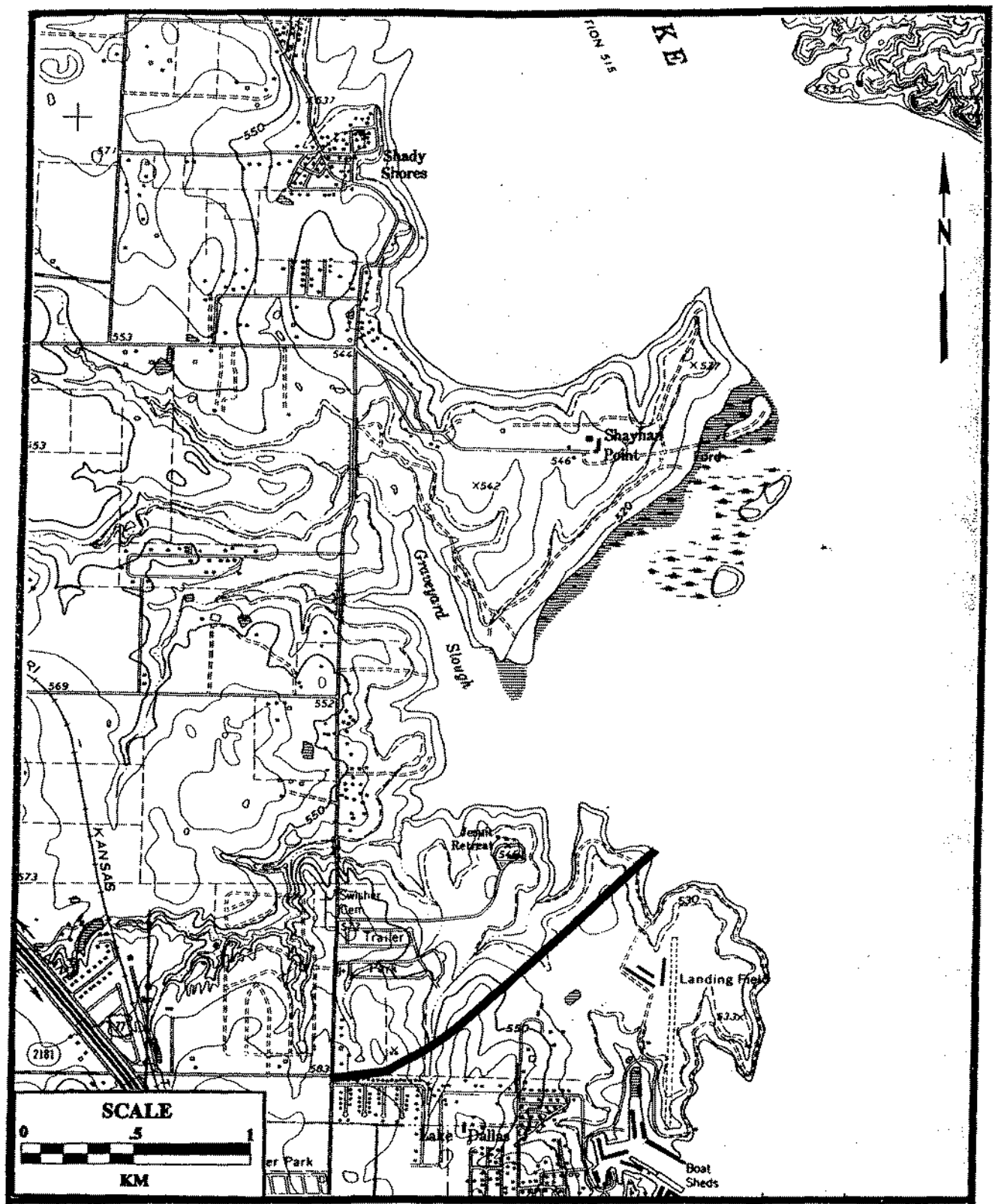

Figure 1. The proposed access road right-of-way to the Lake Lewisville Toll Bridge shown on a section of the Denton East, TX 7.5' USGS map.

AR Consultants

Administrative Information:

Sponsor:	North Texas Tollway Authority through Halff Associates, Inc.
Review Agencies:	Fort Worth District, Corps of Engineers and the Texas Historical Commission, Archeology Division
Principal Investigator:	Jesse Todd
Field Crew:	S. Alan Skinner and Todd
Project Man-days:	3
Acres Surveyed:	15
Sites Investigated:	
Prehistoric:	None
Historic:	None

NATURAL SETTING

The location of the proposed access road west of the Lake Lewisville Toll Bridge location is at the eastern edge of the Eastern Cross Timbers. For more than a century, parts of the area have been plowed extensively, and this has resulted in erosion and modification to the natural landscape that are hard to imagine looking at today's pastures, lake and housing developments.

The study area rests on Cretaceous-aged Woodbine Sandstone that is overlain by Quaternary fluviatile terrace deposits that are older than 10,000 years near the lake (Bureau of Economic Geology 1967). There may be archaeological sites in these sediments, but as yet none have been found in the Lake Lewisville area. Bedrock decomposition and pedogenesis in the study area have resulted in creation of the Birome-Gasil-Callisburg soil association (Ford and Pauls 1980:General Soil Map). Soils in the study area, from Shady Shores Drive to the lake shore, are Birome fine sandy loam, 1 to 3 percent slopes, Navo clay loam, 3 to 5 percent slopes, Konsil fine sandy loam, 1 to 3 percent slopes, Wilson clay loam, 1 to 3 percent slopes, Navo clay loam, 1 to 3 percent slopes and Altoga silty clay, 3 to 5 percent slopes (Ford and Pauls 1980:Sheet 34).

Most of these soils are upland soils, but the Navo and Wilson can form in an alluvial setting. The top of the Wilson Bt horizon occurs at 5 inches below the present ground surface. The rest of the soils' Bt horizons range from 5 to 12 inches below the present ground surface. Based on these depths, backhoe trenching was determined to not be necessary and shovel-testing should be sufficient to encounter Bt horizons.

There are no perennial streams crossed by the proposed access road, but there are some intermittent streams. Brune (1981) lists no springs in the study area.

Denton County is located in the Blackland Prairie and Eastern Cross Timbers vegetative areas of Texas (Gould 1975; Kuchler 1969: Region No. 68). The study area, however, is in the Eastern Cross Timbers which consists of various species of oaks, hickory and an understory consisting of oak saplings, woody vines and greenbriar. The Eastern Cross Timbers corresponds to the sandy soil (Prikryl 1990:9)

Prehistoric, and historic, inhabitants of the Eastern Cross Timbers would have been able to use mast for food as well as deer, squirrel and turkey, along with aquatic animals.

CULTURE HISTORY

The history and prehistory of this part of Denton County are summarized in several reports prepared by the University of North Texas (Lebo and Brown 1990; Ferring and Yates 1998). Prehistoric Native American settlement in Denton County began at least 10,000 years ago as attested to by the presence of distinctively shaped dart points (Crook and Harris 1957) at the Lewisville site and the Aubrey Clovis site (Ferring 1989). Moreover, artifact collectors report the presence of Clovis, Folsom, Scottsbluff and other Paleo-Indian points from the surface of sites in the region. The presence of exotic, i.e., non-local, lithic resources indicates that these early people traveled through a territory where higher quality lithics were available or the people were involved in a system of raw material trading. These early people hunted now-extinct large game, but probably also foraged off the land.

The subsequent period, the Archaic, lasted from 7,000-6,000 B.C. to possibly as late as A.D. 700-800. The Archaic peoples lived throughout the counties but particularly along the major and minor stream valleys where they were able to hunt and gather native foods. Dart points, grinding stones, fire-cracked rock, and scrapers are common artifacts found on Archaic sites. The earliest Archaic peoples continued making and using exotic cherts for dart points, but as time passed, there was a shift toward the use of local lithics for chipped stone tools. These local materials are described as Uvalde Gravels (Menzer and Slaughter 1971; Byrd 1971). Large Archaic sites are generally located on terraces or ridges that overlook the Elm Fork of the Trinity. Smaller lithic scatters have been recorded in upland areas throughout the county. These sites appear to be Archaic in age, but none have been thoroughly studied.

About A.D. 700-800, a major change is found in the artifacts and settlement patterning of the prehistoric sites. This is attributed to the drying up of the smaller tributaries. During this period, which is known as the Late Prehistoric, Caddoan pottery from East Texas appears as trade material along with the indigenous Nocona Plain pottery. It has been suggested that farming may have been practiced. Arrowheads appear about this same time and apparently the bow and arrow had been added to the hunting tool kit.

At the end of the Late Prehistoric period, there appears to have been a general abandonment of the north-central Texas area based on an absence of sites with trade goods that might have been obtained from French, Spanish or English traders (Skinner 1988). This simplistic interpretation is tied to a general drying trend and attempts to factor in negative information generated by professional and avocational archaeologists who have conducted numerous site surveys throughout the region (Peter, Cliff and Green 1996:2). There is very little evidence of historic era Native American occupation anywhere in the region although historic accounts indicate that groups were present in the early 1800's.

The history of man's presence in North Central Texas continues with the first written accounts by the French and Spanish explorers. There is tantalizing evidence to the south in Dallas County of possible visits by Spanish explorers. Current research, however, seems to indicate that Anglo settlers were the first non-Indians to visit the survey area. Established European settlement in Denton County began before the mid-1800's with the establishment of the Peter's Colony after Texas independence. These early settlers were farmers who selected bottomland along the Elm Fork of the Trinity. The town of Little Elm was established with a post office in 1845 (Bridges 1978). Commercial farming was not important until after the Civil War, and the early settlers were essentially self-sufficient. Besides the plants and animals they grew, wild animals and plants were commonly consumed. Denton became the county seat in 1856. By 1875, cotton, corn, and wheat were the main cash crops. Up to half of these crops were grown by tenant farmers who either paid rent to the land owner for their house, tools, and seed or by tenants who gave the landowner a third of the grain and a quarter of the cotton or other cash crops. By the turn of the century, all of the major communities had been established and some had passed away.

A consensus about the paleoenvironmental conditions of North Central Texas over the past 12,000 years has not been reached. Discussions by Prikryl (1993), Ferring and Yates (1997), Humphrey and Ferring (1994), and Brown (1998) offer disparate interpretations based on different analytical approaches. The following discussion relies heavily on Ferring's investigations and focuses upon the past two thousand years. Correlating periods of rapid alluviation with higher precipitation and slow alluviation with drier conditions, Ferring has concluded that the Late Holocene [5000 yr BP to the present] was a wet period with moderate alluviation, except for a dry period between 2000-1000 yr BP [AD 1-1000]. It was during this dry period that the West Fork Paleosol was established on the stable surfaces of the river meanders along the Upper Trinity and its tributaries. This interpretation is supported by changing patterns seen in stable isotope analysis. Brown (1998) offers a differing interpretation based on isotopic analyses of mussel shells from a prehistoric site (41DL270) on Denton Creek. He concludes that the period from 1500-2500 yr BP was cooler and/or wetter and that before and after the environment was warmer and drier, but he points out that this interpretation may only be applicable for the Elm Fork tributary and not the region.

Previous Investigations

Stephenson (1949) conducted an archaeological survey of what was to become Lake Lewisville for the Smithsonian Institution River Basin Survey and recorded 27 prehistoric sites; however, none are in the study area. R. King Harris, an avocational archaeologist, recorded sites on a 1936 Denton County road map during the 1940s to 1960s. He recorded three sites, 41Dl – 19 2, 3 and 4, east of the study area. Two of these sites contained pottery while the other did not. These sites are now under water. Nunley (1973) performed an archaeological survey of the shoreline of what then was the Garza-Little Elm Reservoir for the US Army Corps of Engineers and recorded 50 sites. No sites were found in the study area.

In April of 1984, the U. S. Army Corps of Engineers conducted an archaeological survey that cut across the western portion of the survey area in two places, but again recorded no sites (TASA 2002). The University of North Texas (Lebo and Brown 1990:109 – 110) did an archaeological survey of the shoreline of Lake Lewisville and recorded a historic trash scatter and architectural items, 41N450, ca. 1880-1920, east of the airplane strip on a small point of land. In addition, they recorded a pre-1900s historic trash scatter, 41DN451, consisting of earthenwares, stonewares and bottle glass and located just north of the western access road route on a small point of land. The site had been severely damaged by borrow pit activity and a road. There are two undescribed sites (41DN51 and 52) southeast of the study area as well (TASA 2002). Ferring and Byers (2001) conducted an archaeological survey along Swisher Road (Hwy 2181) west of I-35E but recorded no cultural resources.

RESEARCH DESIGN AND METHODOLOGY

The purpose of the research design below is to insure that fieldwork will contribute to better understanding of prehistoric and historic settlement in Denton County. Geographic locations for sites found in Lebo and Brown's (1990) research and Ferring and Yates (1998) excavation of 5 sites in the Lake Lewisville area suggest that sites are found on benches, and their toes, and knolls. Usually the sites are close to permanent water.

The question then arises, "Are there sites located in these topographic features further away from permanent water sources?"

In addition to being further away from the water, the study area to be investigated may, in fact, reflect a Blackland Prairie/Eastern Cross Timbers ecotonal boundary. According to Ford and Pauls (1980:Sheet 34), the area in question consists of sandy soils, Birome, Callisburg, Gasil and Konsil, and Navo and Wilson clays and Altoga silty clay. The Bureau of Economic Geology map (1967) only records the area as being a part of the Woodbine Sandstone. Ferring and Yates (1998:146) discuss the importance of the boundary area at Lake Lewisville. They state that archaeological sites are situated close to the Blackland Prairie, probably to hunt bison.

One then asks, "What is the potential for archaeological sites in the study area if it is a boundary area?"

In order to address these questions, the field personnel, with the aid of appropriate project system design maps, USGS maps and soil information for Denton County, conducted a pedestrian survey (Texas Historical Commission 2002) of the proposed access road from the shore of Lake Lewisville to the end of the project area. The area of potential effect (APE) for the road corridor ranges from 90-120' and the wider width was consistently inspected.

The ground surface was carefully inspected even in areas where visibility was less than thirty percent. Shovel tests were placed at intervals of 100 meters as recommended by the Council of Texas Archeologists (2002) except in locations where it was deemed necessary to place shovel tests closer. Shovel tests were not dug in disturbed areas or where the soil was visible. Sandy matrices were screened and inspected for artifacts as were the pit walls. The clay which could not be screened was manually inspected for cultural resources as well as the pit walls.

RESULTS

Prior to the field survey, records were checked with Texas Historical Commission's Archeological Sites Atlas (2002). Historic maps, including the 1918 Soil Map of Denton County (Carter and Beck 1918) and the R. King Harris' map (1936) were also reviewed. No historic farmsteads were shown on the maps and previous surveys had not recorded any sites within the area of potential effect.

Beginning from the shore, the proposed access road right-of-way rose at a rather gentle slope. The vegetation of the bench, and along the shore, consisted of Johnson grass, briars, grasses, honey suckle, hog weed, squash-like vines, cedar elm, cottonwood, weeping willow and small honey locusts as seen in Figure 2. The area appears to have been regularly cleared with a brush hog. Shovel tests 1 and 2 in this area indicated that a layer of sand overlaid clay with large amounts of calcium carbonate, this area is mapped as Altoga silty clay by the Soil Conservation Service.

Along the rise up to the knoll, the area was heavily forested with oaks, elms, bois d'arc, hickory, honey locust and hackberry trees. Understory consisted of briars, hog grass, berry vines, prickly pear and various grasses. The area appeared to have been plowed in the past, and possibly cleared of timber. Shovel test 3 indicated sandy clay overlying clay with calcium carbonate nodules which is classified as Navo clay loam.

Figure 2. Vegetation on the knoll in the vicinity of shovel test 2. View is to the northeast with the lake in the background.

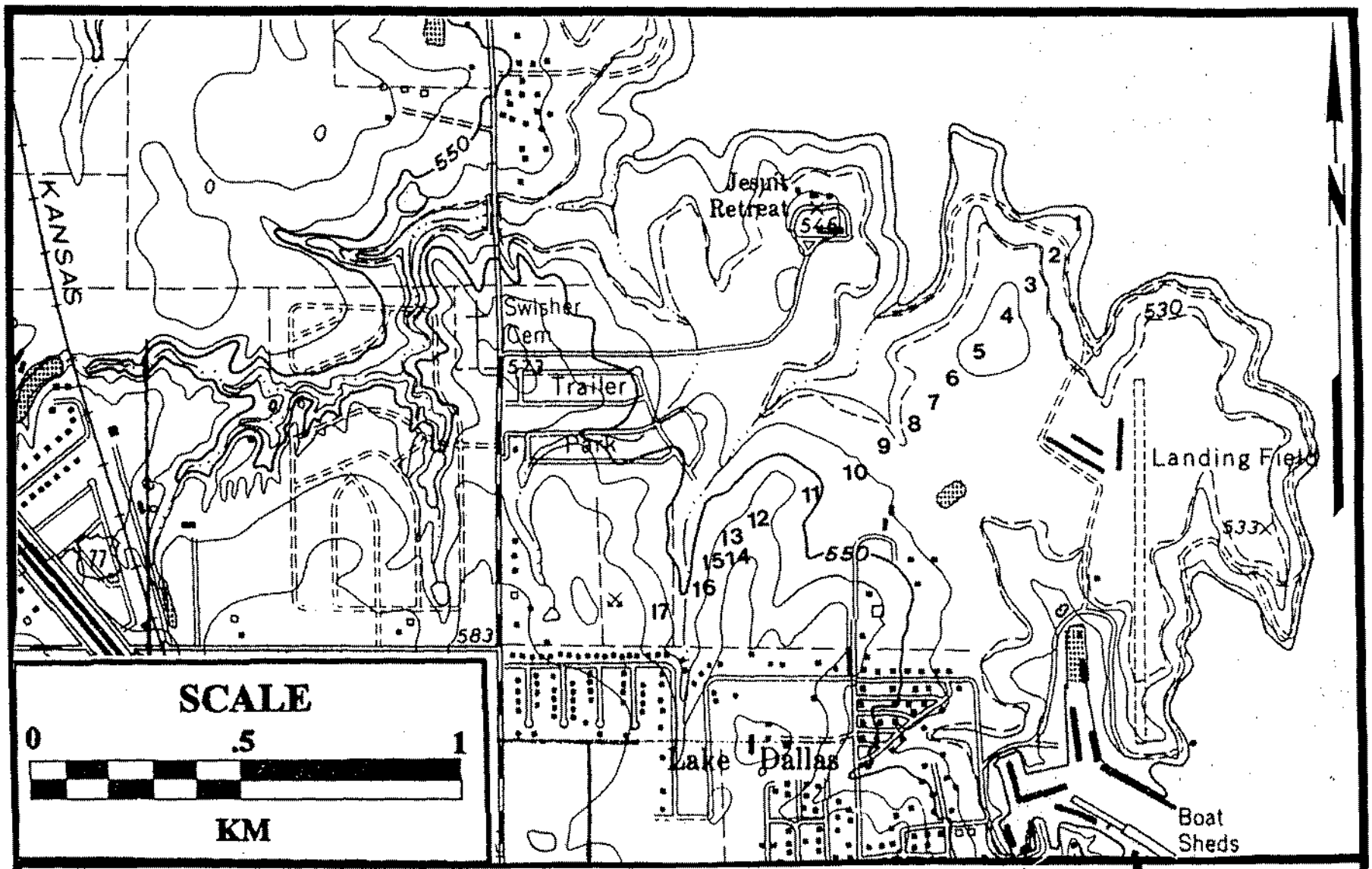

Figure 3. The proposed access road study area shown on an enlarged section of the Denton East, TX 7.5' USGS map. The locations of numbered shovel tests are shown.

The knoll was forested along the lake edge with the vegetation described in the previous paragraph. The central area of the knoll was covered with grasses and a few mesquite trees. Since this area had potential to contain cultural resources, shovel tests 4 and 5 were dug. No cultural artifacts were found. The soil consisted of Wilson clay loam.

From the knoll, the land descended to an intermittent drainage. This area was heavily forested with all of the vegetation described already, except for mesquite trees. Shovel tests 6 and 7 indicated the soil consisted of a silty to sandy clay that corresponds with Navo clay loam.

The intermittent drainage was heavily forested, but the oak trees were much larger than the ones prior to it, and even after it. The squash-like vines were climbing up trees instead of lying on the ground, probably because there was not much ground space that was not occupied by some other form of vegetation. The intermittent drainage had a muddy bottom and was a meter deep with gentle sloping banks. The soil from shovel test 8, placed on the east bank, encountered the same sandy clay that was found in shovel test 7. Shovel test 9, on the west bank, yielded sandy clay also, but was underlain by reddish brown clay, similar to the soil to the west. The soil is classified as Navo clay loam. The Callisburg sand washed in from the slope to the west and overlaid the Navo clay loam.

The area from the intermittent drainage to the toe of a knoll consisted of unimproved pasture with various grasses, briars, tomato-like vines and a scattering of elms. The land had been plowed, terraced, bulldozed and possibly mined. A 15-foot tall pile of sand and hematitic gravel was just north of the proposed access road. It was inspected for cultural resources, but none were found. Shovel test 10 in this area yielded hard sandy clay, listed as Callisburg fine sandy loam, that was almost impossible to dig. In addition, due to disturbance, the ground visibility in this area was 100 percent in places.

The toe of ridge consisted of unimproved pasture with grasses and some mesquites. Most of the toe, however, had been bulldozed, plowed and terraced. Roads throughout the toe consisted of loosely consolidated sand with hematitic gravel. In fact, in many areas, there was no vegetation, just hematitic gravel and sand. Picnic tables, old and new corrals and bulldozed piles of trash were noted. No shovel tests were placed in the toe area because of the amount of disturbance and 100 percent visibility. Shovel test 11, immediately outside the disturbed area, yielded sandy clay, very consolidated with depth and was identified as Callisburg fine sandy loam.

From the toe, the land surface descended to an intermittent drainage. This area was forested, but not as heavily as the prior forested areas. Trees consisted mostly of oaks, elms and hackberries. Understory consisted of briars and grapevines. There was a scattering of grassy areas as well. Shovel test 13 was placed on a small knoll, but encountered hematitic gravel in sandy almost immediately. Shovel test 15 was placed in the knoll to insure that the gravel was widespread and not a cultural feature. None of the gravel appeared to have been heated, nor were any cultural materials recovered. This area is also mapped as Callisburg fine sandy loam soil.

Figure 4. View of two-track road and where soil has been mined in the pasture adjacent to Shady Shores Drive. View is to northeast.

Figure 5. View of the level upland showing the affect of grazing and dry weather on the soil at west end of the study area. View is to the southwest.

The intermittent drainage had a shallow, sandy channel that contained limestone gravel and cobbles. Shovel test 15 and 16 indicated the soil was sandy clay/loam overlying sandy clay. The soil in the area is classified as Navo clay loam. The drainage was inspected for cultural materials, but none were found.

Southwest from the intermittent drainage, there was about 10 meters of forest before a fence line. This fence line marked the easternmost boundary for a farm that extended east from Shady Shores Drive. The area was bulldozed, terraced and mined and had several roads, and sand piles, in it. The soil on the surface consisted of sand with hematitic clay, and, in most places, ground visibility was 100 percent as seen in figures 4 and 5. A soil profile, near the house, indicated the upper 15 to 20 cm was sand overlying yellowish red sandy clay. Shovel test 17, placed close to the fence, uncovered sandy clay as well. No shovel tests were placed close to the house due to the amount of disturbance and ground visibility. The soil from the southwest of the intermittent drainage to the end of the survey area is classified as Birome fine sandy loam.

A pedestrian survey and 17 shovel-tests failed to discover any cultural resources. Based upon this survey, the entire study area is within the Eastern Cross Timbers biotic zone. The interesting discovery of the survey is the absence of occupation on the knoll adjacent to the lake edge. Given that the Elm Fork channel is east of the knoll, and under the lake, the knoll appeared to have presented a topographic setting similar to site 41DN27, an Archaic to Late Prehistoric site, excavated by Ferring and Yates (1998) and located at the upland edge east of Little Elm Creek. The difference, however, is the proximity to water. Site 41DN27 is very close to Little Elm Creek while the lake edge knoll is considerably more distant from the river. The distance from reliable water sources seems to be a major factor in the location of prehistoric sites in the Lake Lewisville area.

Table 1. Shovel test descriptions.

ST NO.	DEPTH (CM.)	DESCRIPTION*	COMMENTS
1	0 – 29 29 – 57+	Strong brown (7.5YR7/8) sandy clay Yellow (10YR7/8) clay with calcium carbonate gravel	
2	0 – 11 11 – 37+	Dark yellowish brown (10YR4/6) sandy clay Yellow clay with a high amount of calcium carbonate gravel	
3	0 – 8 8 – 32+	Dark yellowish brown sandy clay Yellow clay with calcium carbonate gravel	
4	0 – 33+	Dark yellowish brown (10YR3/4) clay	Very hard to dig, dry, blocky
5	0 – 43+	Brown (7.5YR5/3) clay	Dry, blocky
6	0 – 48+	Dark yellowish brown (10YR4/4) silty clay	
7	0 – 41+	Brownish yellow (10YR6/8) sandy clay	
8	0 – 38+	Brownish yellow sandy clay	
9	0 – 18 18 – 38+	Dark grayish brown (10YR4/2) sandy clay Reddish brown (5YR4/4) clay	Loosely consolidated
10	0 – 21 21 – 38+	Strong brown sandy clay Reddish brown clay	
11	0 – 11 11 – 13+	Yellowish red (5YR5/8) sandy clay Same except very, very well consolidated	Loosely consolidated Almost impossible to dig
12	0 – 15 15 – 25+	Reddish yellow (7.5YR6/6) sandy clay Same except very, very well consolidated	Loosely to medium consolidated Very hard to dig
13	0 – 15 15 - 20	Light yellowish brown (10YR6/4) sandy clay Same except has hematitic (Woodbine) gravel	Hard to dig
14	0 – 11 11 - 15	Light yellowish brown sandy clay Same except has hematitic (Woodbine) gravel	Hard to dig
15	0 – 29 29 – 35+	Yellowish brown (10YR5/6) sandy loam Yellowish red (5YR5/8) sandy clay	Loosely consolidated Becomes more consolidated with depth
16	0 – 16 16 – 32+	Brown sandy clay Reddish yellow sandy clay	Loosely consolidated Becomes more consolidated with depth
17	0 – 38+	Yellowish brown sandy clay	Dry, well consolidated, hard to dig

*Note: Munsell color charts are used only once after being described in the table

RECOMMENDATIONS

Based on the ground survey and 17 shovel tests, it is AR Consultants' conclusion that there is a low potential for cultural resources being present in the study area, and that further archaeological investigations are unwarranted. Furthermore, land clearing, plowing and terracing would have disturbed any shallow site deposits contained in the shallow sandy loam A-horizons had sites been present. No evidence of deep alluvial or colluvial sediments was encountered in the shovel test or the drainage banks.

If cultural resources are encountered during road construction, work should immediately stop in that area and the North Texas Tollway Authority and the Texas Historical Commission should be notified.

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