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ENVIRONMENTAL ASSESSMENT

STATE HIGHWAY 121 SOUTH
FROM FM 1187 TO US 67
IN
JOHNSON COUNTY, TEXAS
TARRANT COUNTY, TEXAS

CSJ: 0504-05-001
CSJ: 0504-04-001

Submitted Pursuant to 42 U.S.C. 4332 (2)(c)

By the

U.S. Department of Transportation
Federal Highway Administration
Texas Department of Transportation

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I. Existing Conditions and Project Background

The State Highway (SH) 121 South project is proposed as an initial two-lane highway, with the proposed ultimate facility as a divided four-lane toll road. The facility would be approximately 14 miles in length and located in southern Tarrant County and Johnson County. The proposed facility would serve north and central Johnson County by connecting United States Highway (US) 67, in Cleburne, to Farm-to-Market Road (FM) 1187, both of which are part of the National Highway System. Please see Exhibit A: Project Location Map (Study Corridor), located in the Appendix.

In order for a roadway to be included as part of the National Highway system, it must be considered important to the nation's economy, defense, and mobility. The proposed SH 121 South project will enhance this system by providing a north-south linkage between these major highways in an area that does not currently have a north-south linkage that is suitable for significant traffic volume, or that is reasonably direct. Also, the cities in northern and central Johnson County and the County have indicated strong support for this project, and earlier similar proposed projects/concepts, since the early stages of project development,

The southern terminus of the proposed facility is at the US 67 on the northern side of Cleburne. US 67, which carries a large volume of traffic, is a major highway that is part of the National Highway System and the Texas Trunk System. US 67 serves northeast-southwest traffic across the state from Presido to Texarkana, providing access to many large population areas. US 67 passes through Cleburne, the County Seat of Johnson County. Within the project area, US 67 is primarily trends east to west. West of Cleburne, US 67 passes through Glen Rose, Stephenville (a source of commercial truck traffic) and through San Angelo. To the east of Cleburne, US 67 crosses IH 35W, US 287, IH 20 and connects and concurrently follows IH 35E east of Dallas..

The northern terminus of the project, FM 1187, is part of the National Highway System, and is also a major east-west roadway. FM 1187 extends from IH 20 west of Fort Worth in Parker County, through southern Tarrant County, past IH 35W and currently extends to Business 287 in Mansfield. From Business 287, the roadway continues as a city street in Mansfield, Debbie Lane, a four-lane divided roadway which intersects US 287, and a current extension to SH 360. Other projects under construction along FM 1187 include the "Crowley Bypass, " which starts 1.7 miles west of FM 731 and extends to the east between Burleson and Crowley to IH 35W. From immediately west of Crowley to FM 1902, FM 1187 is a four-lane divided highway. To the west of FM 1902, there is a current project to add shoulders and safety elements.

The proposed SH 121 South Project would connect other existing east-west highways and roads in this region. North of the US 67 southern terminus, the proposed facility would cross SH 171, a two lane State Highway that is predominantly east-west in this area. Further north it crosses FM 917, which extends from SH 171 in Godley in western Johnson County, through Joshua, past IH 35W, to Business 287 in Mansfield in western Tarrant County. To accommodate increased traffic volumes, there are currently several ongoing projects on FM 917 that are intended to facilitate safety and traffic flow. These include shoulder addition,

intersection improvements, addition of turn lanes and roadway realignment. North of FM 917, the proposed facility would extend to FM 1187.

Currently, there are two existing north-south routes which provide service from central Johnson County around Cleburne through northern Johnson County. These existing routes provide only indirect service between US 67 and FM 1187, and do not provide the service need that the proposed project is intended to address. The first route is FM 1902 which extends from FM 917 north to FM 1187. South of FM 917, FM 1902 continues as County Road (CR) 1022. FM 1902 is a two-lane roadway with numerous turns and many areas with adjacent residential development along it. The proposed new alignment for this project is in part attributable to difficulties in improving or expanding FM 1902.

The second route is SH 174 which extends from Meridian in Bosque County to IH-35W in Johnson County. SH 174 is generally a four-lane roadway, but it also has numerous turns and adjacent residential development along it. There are currently no programmed improvements to SH 174 near the proposed project area.

Further to the west of the project area, north-south indirect service between FM 1187 and US 67 is provided by FM 2331, which extends from SH 171, near the intersection with FM 917 in Godley, to FM 1187. FM 2331 intersects with SH 171 approximately 0.5 mile northwest of the intersection of FM 917 and SH 171, which is approximately 5.5 miles west of the intersection of FM 1902 and FM 917.

Indirect north-south service in western Johnson County is also provided by SH 171, which traverses this part of Johnson County in a northwest-southeast direction. In western Johnson County and eastern Parker County, a mile segment of SH 377 connects SH 171 and FM 1187 approximately 8 miles west of the intersection of FM 1187 and FM 1902. The distance from the targeted service area, and the indirect nature of the north-south component of SH 171, minimizes the potential of this roadway to meet the service need of the proposed project.

Although the service need described above fully justifies the proposed project, there is a proposed, but not approved, project that would connect FM 1187 in the project area to IH 30 near downtown Fort Worth. If the other proposed project is ultimately approved, FM 1187 would also provide a connection to the Fort Worth Metropolitan Area through south-central Tarrant County. This project, however, is on a different schedule. If approved, this project would proceed regardless of whether the other project proceeds or not. It fulfills a different service need in a different area, and is also planned to prevent deterioration of the level of service in this area due to expected growth and congestion.

II. Description of Proposed Project

A. Proposed Ultimate Facility

The ultimate proposed facility would be a four-lane divided toll road. Access ramps would be provided where necessary. Direct connections would be provided at the FM 1187 and US 67 interchanges. All major cross streets are planned to be grade-separated and access control

would be maintained throughout the length of the facility. Other structures include culverts and/or bridge structures at stream crossings.

The proposed facility would ultimately be a four-lane toll road. Right of way (ROW) for the facility varies from 240 feet (ft) to 400 ft where interchanges are provided. Please see Exhibit B: Proposed Typical Sections, located in the Appendix. Prior to construction of a toll facility, the environmental documentation would be re-evaluated, as necessary.

B. Proposed Interim Facility

If funding is not available to construct the ultimate facility, an interim facility could be constructed. The initial phase of the ultimate four-lane facility would be constructed as a two-lane, at grade facility from FM 1187 to US 67. ROW for the ultimate phase would be obtained during the initial phase. The proposed initial two-lane section would serve as an interim facility until such time that toll funding becomes available to construct the ultimate section. In the interim, the roadway would function as a two-lane rural highway section with at grade intersections. The interim facility should not pose a safety concern beyond the normal design considerations because this facility would be design for a 70 mph design speed. The proposed-posted speed would be 55 mph.

III. Purpose and Need for Action

A. Project History

The need for a radial freeway that would provide access to the southwest quadrant of Fort Worth, as well as to portions of Johnson County, was first identified in the early 1960s. Since that time the Texas Department of Transportation (TxDOT), the City of Fort Worth and the North Central Texas Council of Governments (NCTCOG) have conducted several studies to identify a route to facilitate the need. These initial studies primarily investigated a new location facility located north of downtown Fort Worth south to Johnson County. However, throughout this process, a facility servicing north and central Johnson County has also been extensively studied. As with this proposed project, a study initiated in 1987 evaluated US 67 as the southern terminus. A summary of the chronological events leading to the development of the proposed SH 121 from FM 1187 to US 67 is provided below.

- 1963 – Need for the development of a freeway in the City of Fort Worth from IH 35W to Tarrant County Line identified in the newly created Urban Transportation Plan.
- 1964 – "Northside-Southwest Freeway" included in the *1964-1985 Dallas-Fort Worth Region Transportation Study.*
- July 1970 – The Texas Highway Commission directs that planning and environmental studies be completed for the possible route selection of a radial freeway within southwest Tarrant County.
- May 2, 1973 - Public hearing for the proposed southwest radial conducted by TxDOT, the City of Fort Worth, Tarrant County and NCTCOG. Local residents and public officials endorse the recommended route.
- October 4, 1973 – Recommended route from IH 35W to IH20 approved under MO 68084 and designated as SH 121.
- Late 1970s to early 1980s – Cultural District emerges along the recommended route north of IH 30. New opposition to the recommended route leads to the need for a new route location study.
- January 1984 – City of Fort Worth completes the *Southwest Fort Worth Subarea Study: Evaluation of Transportation Alternatives.*
- August 29, 1985 - Texas Highway Commission directs preliminary engineering and environmental studies to investigate a new route alignment for SH 121 from IH35W to FM 1187 by authorizing Minute Order (MO) 83516.
- January 30, 1986 - Texas Highway Commission directs preliminary engineering and environmental studies to investigate a new route alignment for SH 121 from FM 1187 to SH 174 by authorizing MO 84030.
- February 4, 1986 – Regional Transportation Council adopts *Mobility 2000: The Regional Transportation Plan for North Central Texas.* SH 121 included as a designated freeway to FM 1187 and a proposed freeway south of FM 1187.

- March 1987 – TxDOT and Federal Highway Administration (FHWA) recognized the need for improved highway mobility between the Johnson County Seat (in Cleburne) and southwest Tarrant County A separate SH 121 project to meet this need was

developed, in part, from the previous SH 121 studies. The termini determined for this project were IH 20 at the north terminus and US 67 at the south terminus.

- On November 12, 1987, TxDOT conducted a public meeting to discuss suggested routes for the proposed south segment of SH 121. The meeting was held at the First Baptist Church in Crowley. Local government officials in attendance showed unanimous support for the extension of SH 121 into Johnson County. The Cities of Burleson, Joshua, and Crowley (all adjacent to the existing SH 174) supported the extension of SH 121 terminating at various points along SH 174. There was no agreement on the location of the southern terminus by these cities. At this meeting, the City of Burleson presented two reports entitled: *Analysis of Proposed Extension of Southwest Freeway SH 121* and *Alternative Evaluation for Southern Extension of Southwest Freeway SH 121.* Both of these reports supported an alternative that connects the proposed SH 121 with SH 174 just north of the city limits between Joshua and Burleson, north of FM 917.

- An Environmental Assessment (EA) for SH 121 (IH 20 to US 67) was completed by TxDOT and submitted to the Federal Highway Administration (FHWA) in July 1988. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the south segment was published in the Federal Register on August 4, 1988. A Draft Environmental Impact Statement (DEIS) for the south segment was prepared and identified four possible route alignments. Please see Exhibit C: 1989 DEIS Route Alternatives. The DEIS was submitted and approved by the FHWA on October 12, 1989. The proposed action for this section, would result in the construction of a four- to six-lane controlled access highway with frontage roads on each side of the highway, on new alignment, from just north of Bellaire Drive (including the IH 20 interchange) to US 67 in Johnson County. On January 21, 1993, a public hearing was held for the south segment at the First Baptist Church in Crowley. A preferred alternative was presented and the project was received with minimal opposition.

- The availability of funds for transportation projects was significantly restructured under the Intermodal Surface Transportation Efficiency Act (ISTEA) passed into legislation in December 1991, causing a major shift in the allocation of funding. Faced with reduced opportunities for funding the proposed freeway facility from IH 35W to US 67 (estimated at over $750 million), a SH 121 Task Force was established to keep the project moving forward.

- In 1994, the SH 121 Task Force retained a consulting firm to study alternative designs and proposals for the project corridor. The goals of this study were to: i) reduce project costs; ii) minimize the number of interchanges; iii) minimize frontage roads; and iv) explore alternative financing options for the facility. Due in large part to the fact that the previously proposed freeway project would never obtain full funding because of financial constraints, the study resulted in a finding that a toll funded facility was the only remaining viable option. A detailed feasibility study for the development of SH 121 as a toll road was commissioned by the Fort Worth City Council in October 1994. To date, the proposal has gained both political and community consensus from all the affected local entities.

- The feasibility study segmented the facility and identified four priority levels: i) from SH 199 to Overton Ridge Boulevard; ii) from Overton Ridge Boulevard to FM 1187; iii) from IH 35W at SH 183 to SH 199; and iv) from FM 1187 to US 67 in Cleburne. This report proposed reducing construction costs by minimizing frontage roads, grade-separated intersections and relocating the facility in Johnson County. Significant changes to the alignment and cross section were recommended. These changes significantly reduced the level of environmental impacts from those previously documented, and in October 1999 a decision was made to proceed with an EA rather than an EIS.

B. Need for the Project

Since the 1994 Feasibility Study, continued growth in Johnson County and increased congestion on SH 174 and IH 35W has made providing a connection between US 67 and FM 1187 a needed project regardless of other planned improvements. The proposed project has also enjoyed enthusiastic and vocal support from Johnson County communities.

Population, Employment, Growth and Social/Economic Demand

Continued growth and urbanization in the Dallas-Fort Worth region, specifically in this case, Johnson County, has resulted in the need for more efficient transportation systems to reduce existing congestion and accommodate future traffic demand. According to demographic data from NCTCOG the Dallas-Fort Worth Metroplex is one of the fastest growing areas in the United States and it is expected that this trend would continue through the year 2025. Much of this growth can be attributed to the region being a national leader in the creation of new jobs, corporate relocations and growth in the technology-based industry.

According to the NCTCOG, the population and employment opportunities within the project study corridor (PSC) are projected to grow. Johnson County alone anticipates a population growth of 98.36% between the years 1995 and 2025. During the same time period employment opportunities are expected to rise 77.67%. The NCTCOG has further divided the region into demographic forecast districts. The demographic forecast districts within the PSC are Districts 229, 802.01and 802.02. The demographic forecasts for these districts are provided in the following tables.

Table III-12025 DEMOGRAPHIC FORECAST DATA

DISTRICT 229			
	1995	2025	Growth
Population	3,150	11,950	279.37%
Households	1,250	4,500	260.00%
Employment Opportunities	200	1,800	800%
DISTRICT 802.1			
	1995	2025	Growth
Population	42,700	92,550	116.75%
Households	14,600	32,650	123.63%
Employment Opportunities	5,950	14,400	142.02%
DISTRICT 802.02			
	1995	2025	Growth
Population	30,500	50,150	64.43%
Households	10,950	18,650	70.32%
Employment Opportunities	16,050	24,500	52.65%

This growth demonstrates the need for additional local mobility within the Johnson County roadway network. The proposed project is needed as a vital link within the regional network as well. NCTCOG demographic forecast estimates for population and employment growth in Tarrant County, between the years 1995 and 2020, at 59.98% and 71% respectively.

With the realization of this demographic forecast, the need for local emergency access and health care services would continue to grow. Likewise, demand for the major recreational facilities in the area such as Lake Benbrook, Lake Whitney, Lake Pat Cleburne would continue to grow. As such, from both a local and regional standpoint, the need has arisen to supplement the existing roadway network with new facilities in order to accommodate projected growth.

System Linkage

NCTCOG together with the Regional Transportation Council (RTC) serves as the Metropolitan Planning Organization (MPO) for the Dallas-Fort Worth region. Since the early 1970s, there have been six transportation plans published by NCTCOG. The current plan, *Mobility 2025* was developed following completion of the transit and highway model validation for the base year 1995. The plan is based on regional transportation needs identified through the process of forecasting future travel demand, evaluating system alternatives and selecting those options which best meet the mobility needs of the region. SH 121 from FM 1187 to US 67 was identified as a necessary link within the regional system. The demand for a direct route from the outlying southern areas to southern Tarrant County justified inclusion within the Mobility 2025 plan. Mobility 2025 includes this portion of SH 121 as a four-lane grade separated controlled access facility (Exhibit D).

Vehicle congestion is typically evaluated by measuring a highway's ability to handle traffic demand, or Level of Service (LOS). LOS is a measure of a highway's ability to handle traffic demand. Traffic parameters and roadway design factors such as ADT volumes, peak-hour volumes, truck percentages, number of driving lanes, lane widths, vertical grades, passing opportunities, presence or absence of traffic signals, and access type/spacing affect the LOS. Guidelines for appropriate LOS on various types of highways have been established by the Transportation Research Board and are displayed in

Table III-2.

This project is necessary to maintain the existing level of service on local roadways. The anticipated increase in traffic on these local roadways would decrease their level of service if this north-south linkage to the major east-west thoroughfares is not provided. SH 121 would provide a needed north-south route to handle projected increases in traffic volumes as a result of increased development in the region.

Existing Network

There are a number of paved and unpaved local and private roads that cross the PSC as well as a system of County Roads and State maintained facilities. The Farm-to-Market, State Highways and County Roads that run in an east to west direction and that cross the PSC that the proposed SH 121 South project would provide a north-south linkage to areas from the most northerly of the east-west roads, moving south through the project area: FM 1187, CR 1014A, CR 920, CR 1015, CR 915, FM 1902, CR 1016, CR 913, FM 917, CR 1017, CR 904and SH 171.

In addition to the desire to prevent deterioration of the level of service on area roadways in the future, the existing local network is already experiencing unacceptable levels of congestion. Please see Exhibit E: Existing Traffic Network, located in the Appendix. The local network not only carries local trip distributions, but regional through movements as well. The proposed new location facility would provide a direct route thereby rendering relief to the local network. Traffic projections indicate the proposed facility would experience volumes as high as 50,000 vehicles per day in the design year 2025. Based on this volume the ultimate four-lane divided facility would experience a level of service "D."

Table III-2 LEVEL OF SERVICE CHARACTERISTICS

	Level of Service Characteristics
LOS A Unrestricted free flow	Drivers virtually unaffected by others High level of freedom to select speed and maneuver Excellent level of driver comfort and convenience
LOS B Slightly restricted stable flow	Driver aware of use by others Slight restriction in speed and maneuvering Good level of driver comfort and convenience
LOS C Moderately restricted stable flow	Driver operation significantly affected by others Moderate restriction in speed and maneuvering Fair level of comfort and convenience
LOS D Heavily restricted flow	Driver operation completely affected by others Severe restriction in speed and maneuvering Poor level of driver comfort and convenience
LOS E Unstable flow (approach flow greater than discharge flow)	Slow speeds and traffic backups; some stoppage Total restriction in vehicle maneuvering High driver frustration
LOS F Forced flow (approach flow greater than discharge flow)	Stop and go movements with long backups and delays Forced vehicle maneuvers Maximum driver frustration

Legislation, Funding and Local Government Support

Section 1602 of the Transportation Equity Act for the 21st Century (TEA-21, P.L. 105-178, June 9, 1998), known as the High Priority Projects Program provides designated funding for specific projects (commonly referred to as demonstration projects) identified by Congress and is now included in 23 U.S.C. 117. TEA-21 includes 1,850 of these projects, each with a specified amount of funding over the 6 years of TEA-21. The designated funding can only be used for the project as described in the law [1601(a)]. Funding in the amount of $25 million has been earmarked specifically for the construction of SH 121 from IH 30 to the Tarrant/Johnson County Line under this category of TEA-21. In addition, $7 million to extend SH 121 to US 67 in Cleburne has also been made available. The total SH 121 amount will be available for fiscal years 1998 through 2003.

South of CR 904 the City of Cleburne has negotiated ROW donations within the PSC. However, the location of the ROW donation did not prejudice the location of the proposed alternatives.

Modal Interrelationships

The construction of SH 121 would increase local access to the Dallas/Fort Worth International Airport, Amtrak and the mass transit system in Fort Worth provided by the Fort Worth Transportation Authority (The T). Planning efforts between the Dallas Area Rapid Transit (DART) and The T have been initiated to provide commuter rail service along the Railtran

Corridor between downtown Dallas and downtown Fort Worth. Regular passenger service along the Railtran corridor was initiated in 2001. SH 121 would provide access to this new component of the transit system.

Safety

The existing road network within the PSC is comprised of rural FM roads and unpaved roads. These roads typically have adequate to deteriorating pavement, high crowns, narrow or no shoulders, poor sight distances and undesirable geometry. Many of these facilities are carrying more vehicle traffic than they were designed to carry (see Exhibit E).

Access

The SH 121 project would make a concerted effort to provide access to existing roadways in order to alleviate resident access problems arising from the construction of SH 121. Restoring a comparable or better level of access to the impacted communities and avoiding "land-locking" any properties would be a primary concern of the project. State law specifies that "reasonable" access should be restored to impacted residents. Eight locations are identified as resident access points. These access locations are (north to south) CR 920, CR 915, CR 1016, north of CR 1017, north of CR 904and CR 909. Johnson County would own and maintain any new access roads constructed as a result of the subject project.

C. Purposes of the Proposed Action

The Preliminary Build Alternatives as well as the No-Build Alternative evaluated in this EA will be considered in terms of how well they serve the following purposes while meeting the underlying needs:

- Improve Regional Mobility and Increase People and Goods-Carrying Capacity

The DFW metropolitan area, including Tarrant and Johnson Counties, has been one of the most rapidly growing areas in the United States during the 1980's and 1990's. Growth trends in the population and employment have generated the need for increased travel and traffic. As a consequence, improved mobility has become an essential need to the region. The lack of adequate mobility causes citizens to have limited access to job opportunities and employers are denied full access to the region's pool of job skills and talents. Inadequate mobility also results in increasing amounts of unproductive time spent moving people and goods from one point to another. The addition of SH 121 to the regional transportation network would improve mobility, circulation and connectivity while at the same time enhancing the regional air quality.

- Alleviate Local Congestion

The traffic capacity constraints of existing roads and alternate north/south highways within the PSC and limitations on the availability of ROW for major capacity improvements have created congestion and would continue to intensify the situation. Likewise increased suburbanization and its nature of travel patterns has contributed to greater traffic congestion.

As Johnson County has grown, it has begun to reflect a more suburban nature. Commercial and residential land use within suburban areas tend to be spaced further apart than within urban areas. Due to these scattered travel patterns and lack of concentrated central locations, the ability to provide effective transit service is limited. Consequently, the dominant mode of transportation has become the personal automobile. Because distances between residential, commercial and employment are greater within suburban areas, trip frequencies, trip lengths and trip duration also tend to be greater. All are contributing factors that lead to increased congestion. The proposed project will improve mobility within the PSC and alleviate congestion on existing local roadways

Traffic congestion relief is illustrated by comparing the Congestion Level of Service Map from the NCTCOG Mobility 2025 Plan for the No Build Alternative (Exhibit D) and the Mobility 2025 Congestion Levels Committed Network Map (Exhibit D2) These exhibits illustrate sector congestion on the mapped areas. The No Build Alternative would result in considerably more sector congestion than with the 2025 Planned Improvements, of which the proposed project is the only major planned improvement within the PSC.

The proposed project will relieve traffic congestion on the major roadways (IH 35W, SH 174 and FM 1902) which run parallel to it. This traffic congestion relief is illustrated by comparing NCTCOG Level of Service Maps for the Mobility 2025 (Exhibit D3) and the

No-Build (Exhibit D4). These exhibits show congestion (as defined as level of service) on segments of the roadway network. The No-Build Alternative will result in more congestion on the defined roadway segments, where with the planned network improvements, the level of service on IH 35W, SH 174 and FM 1902 is generally improved, and at a minimum maintained.

IV. Alternatives Including Proposed Action

The need for a radial freeway through the southern portion of Tarrant County and the southwest quadrant of Fort Worth was identified as early as 1962. Since that time several local, regional and private studies have been undertaken to determine a locally and technically preferred means of addressing area transportation needs. The alternatives considered in this document are comprised of alternatives developed during prior studies as well as those developed for this environmental assessment.

A. Development of Alternatives

The development of alternatives has occurred over a fifteen-year period. Lack of funding, discontinuity in time and other local feasibility studies have impeded a direct and timely alternative development and selection process. The following is a synopsis of the development of those alternatives identified as satisfying the purpose and need of the proposed action.

Alternative A - This alternative was the outcome of the original TxDOT study begun in 1987. This study resulted in the development of four alternatives that traversed Tarrant and Johnson Counties from north to south terminating at various locations along SH 174 and at US 67. Please see Exhibit C: 1989 DEIS Alternatives, located in the Appendix. The four alternatives were presented in a public meeting in November of 1987. No opposition to the proposed facility was identified during the public meeting. Alternative A was referred to as the "Red" alternative, as depicted in Exhibit C. This alternative was met with support from the public and Johnson County public officials. The DEIS was approved in October of 1989. The alternative was presented at a public hearing in January 1993 with positive results. Subsequently, due to the lack of construction funds, the project was put on indefinite hold.

Alternative B - With the completion of the 1997 Tollway Feasibility Study, it was determined the project could move forward as a toll funded facility. Subsequently, the resultant alignment of the 1989 DEIS, Alternative A, was re-analyzed as part of an alignment study performed by the North Texas Tollway Authority (NTTA). Alternative A utilized existing facilities to minimize ROW acquisition needs in select sections of FM 1902 and CR 1022. It was determined that due to the large number of impacts to the adjacent property owners, as well as the need to leave these existing facilities intact for local mobility, a new location alignment would be required. Alternative B was developed to explore the possibility of providing the needed facility while maintaining the local existing facilities.

Alternative C – Early public commentary regarding Alternative B prompted local Johnson County public officials to request the project development team to investigate an alignment

located further to the west of the City of Joshua. In response to the request Alternative C was developed.

Alternative D - In May of 2000, a public meeting was held in the City of Cleburne at the Cleburne Civic Center. The route locations of Alternative A, Band C were presented to solicit public comment. During the meeting it was brought to the attention of the project development team that several new residential areas had either been built or were in the process of being built along Alternative B and Alternative C. City officials suggested that Alternative C might be too far west to attract usage from the Cities of Joshua and Burleson. In an effort to reduce residential impacts in the vicinity of FM 917, as well as new residential development along CR 904, members of the public suggested that the project development team develop a new alternative more compatible with the surrounding community and recent local development. Alternative D was developed as an alternative that takes into consideration local development and proximity to populated areas of Johnson County while utilizing elements of the previous alternatives A, B and C.

B. Description of Alternatives

The following is an explanation of each of the five alternatives considered to address the purpose and need of the proposed action. A route location exhibit is included in the Appendix to assist with the description of the proposed build alternatives. Please see Exhibit E: Proposed Route Alternatives, located in the Appendix.

No Build - The No Build Alternative assumes no major investments beyond those already programmed for funding. Improvements assumed under the No Build Alternative are included in the approved Metropolitan Transportation Plan (MTP) by the NCTCOG Mobility 2025 Plan Update) and the 2004-2006 State Transportation Improvement Program (STIP).

Congestion along the existing roadway network would worsen because of factors identified in the Need for the Project Section of this EA. In order to meet the ever-growing traffic demand, existing facilities in the PSC would require improvements.

Of the five alternatives, the No Build Alternative would present the least amount of impacts to the human environment, however, the No Build Alternative would fail to provide the needed mobility for Johnson County. Therefore, it has been determined that the No Build Alternative would not fulfill the purpose and need of the proposed action.

Alternative A - This alternative would utilize the existing FM 1902 and CR 1022 as a means to minimize additional ROW needs. The alternative would commence at the intersection of FM 1187 and FM 1902 and proceed south to the intersection of FM 917 and FM 1902. From this point FM 1902 terminates and the alternative would continue south following CR 1022. Near the intersection of CR 1022 and CR 904 the alternative would turn towards the southwest and traverses vacant open pasture before terminating at a point along US 67 approximately 1/2 mile west of the US 67 and SH 171 grade separation.

FM 1902 and CR 1022 play important roles within the mobility or local circulation of the area. Many commercial establishments and residences as well as a local cemetery are located

along these facilities. Alternative A is approximately 13 miles long. The alternative would impact approximately 141 property owners and would require approximately 532 acres of new ROW. The alternative would require the displacement of 60 residences, six commercial sites and two churches.

While this alternative would minimize impact to the surrounding natural environment by utilizing an existing roadway versus a new location route, this alternative was eliminated from further discussion based on its potential interruption to local travel patterns and impacts to surrounding property owners during construction. Potential interruptions to local traffic patterns include designating or constructing detours during construction. Potential impacts to property owners include restricting access to property during construction.

Alternative B - In an effort to address the short comings of Alternative A, this alternative was set on new location to complement the local roadway network and to minimize property owner disruption.

This alternative would originate approximately 0.25 mile west of the existing intersection of FM 1187 and FM 1902. It would then proceed south through vacant pastureland and intermittent residential areas before turning southeast approximately 1 mile north of the existing FM 1902 and CR 915 intersection. The alternative would cross FM 1920 approximately 0.10-mile northeast of the intersection at which point the proposed alignment would turn south and again cross over FM 1902. The alternative would continue south approximately 0.25 mile west of FM 1902 for approximately 2.5 miles where it would cross FM 917 approximately 0.5 mile west of the intersection of FM 1902 and FM 917. The alternative would proceed southeast for approximately 0.5 mile before turning southwest. At its intersection with CR 904, approximately 2,000 ft east of the CR 904 and CR 1017 intersection, the alternative would proceed due south before turning southeast approximately 1 mile north of SH 171. It would then continue southeast and terminate approximately 0.5 mile west of the existing US 67and SH 171 grade separation.

Alternative B is approximately 13 miles long. This alternative would impact approximately 131 property owners and require approximately 528 acres of new ROW. The alternative would require the displacement of 47 residences and three commercial sites.

The alternative was eliminated from further discussion based on anticipated disruption to residential and commercial growth that have developed along its alignment as well as the need for FM 1902 to remain intact to serve local mobility.

Alternative C - This alternative would follow the Alternative B alignment up to a point approximately 0.6 miles north of CR 910. Alternative C would then proceed southwest through the Sundance neighborhood where it would then cross FM 917 approximately 0.3 mile west of the intersection of FM 917 and CR 911. The alternative would then proceed south for approximately 0.5 mile before turning southeast. The alternative would then continue southeast where it would cross West Buffalo Creek. Once near the creek the alignment would turn south and follow the alignment of the West Buffalo creek where it would terminate at a point along US 67 approximately 0.5 mile west of the US 67 and SH 171grade separation.

This alternative is approximately 13 miles long. The alternative would impact approximately 122 property owners and require approximately 528 acres of new ROW. The alternative would require the displacement of 38 residences.

This alternative was eliminated from further discussion for several reasons. The purpose of the proposed action is to provide regional mobility to Johnson County and to alleviate the traffic burden on existing north-south facilities. By moving the alternative further west of the City of Joshua, use of the proposed facility might be discouraged, thus, encouraging the continued use of SH 174 by regional traffic. In addition to discouraging utilization of the proposed facility, this alignment would impact new residential areas along CR 904 that could otherwise be avoided by use of a different alternative.

Alternative D - This alternative follows the Alternative B alignment up to a point approximately 0.6 mile north of CR 910. Alternative D would then turn southeast where it crosses FM 917 at a point approximately 700 ft west of the FM 917and FM 1902 intersection. The alternative would then continue southeast for approximately 2 miles to a point where it crosses CR 904 at a point approximately 1,600 ft west of the intersection of CR 904 and CR 1022. Alternative D would terminate approximately 0.5 mile west of the US 67and SH 171 grade separation.

On October 19th, 2000 a second public meeting was held at the Joshua Community Room in the City of Joshua, Texas. All four alternatives were presented for public review and comment. Alternative D met with the least amount of opposition.

Alternative D is approximately 13 miles long. The alternative would impact approximately 127 property owners and require approximately 525 acres of new ROW. The alternative would require the displacement of 31 residences.

This alignment constitutes a culmination of the most desirable attributes of the other alternatives and fulfills the purpose and need of the proposed action. In addition, it would minimize residential impacts and provide an accessible north-south facility capable of offering Johnson County improved regional and local mobility.

C. Identification of the Preferred Alternative

Because of its compatibility with the purpose and need of the proposed action as well as the public comment justifying its creation, Alternative D was selected to move forward into further study. Alternative D is the designated preferred alternative of this study. Alternative D requires the least amount of new ROW and has fewer residential displacements than the other alternatives investigated.

V. Environmental Consequences

A. Social and Economic Issues

1. Land Use

The project is located within Johnson and Tarrant Counties. Land use within the PSC is undergoing a change from rural to more urban use as southwestern Fort Worth and suburban cities such as Burleson, Crowley, Joshua and Cleburne continue to grow.

The only area of the Proposed Alternative D included within the jurisdiction of a municipality is near the southern terminus of the project. Alternative D would traverse the northwestern boundary of the City of Cleburne north of SH 171 and south of CR 902.

The surrounding area is described as a developing rural area. As such, agrarian and undeveloped areas dominate the land use throughout the PSC with the exception of clusters of rural subdivisions composed of low-density single family residences and manufactured housing developments. Interspersed throughout the PSC are farms, ranches, retail/commercial businesses and small service/manufacturing firms. Use of Alternative D would not change or inhibit further use of the surrounding area for these purposes.

Recent development trends include new residential areas within the PSC as well as a proposed industrial park near the intersection of the Alternative D alignment and SH 171. The proposed facility would enhance both local and regional mobility to and from these areas.

2. Future land use in this area is difficult to predict. Until these areas are annexed or become part of a municipal extraterritorial jurisdiction (ETJ), future development patterns would largely be private land-owner decisions. The unincorporated areas of Tarrant and Johnson Counties and those areas outside an ETJ are regulated by county subdivision ordinances. These ordinances do not necessarily constitute zoning but rather require compliance with design specifications for streets, sewer and water lines, etc. Nonetheless, it is likely that construction of the proposed roadway would accelerate land use changes in the area. The proposed roadway would have indirect land use impacts primarily in the vicinity of interchanges where access roads and/or ramps are necessary. Access roads or ramps would increase the likelihood for commercial developments. It is anticipated that commercial land use would increase and/or shift to the areas surrounding the following interchanges: FM 1187, FM 1902, FM 917, SH 171 and US 67. It should be noted that the majority of the proposed roadway design does not include access roads and/or accessible driveway connections. This design would discourage commercial development along the proposed roadway.

3. Relocations and Displacements

The construction of the proposed new location facility would require variable property acquisitions as well as residential relocations. Displacement impacts for proposed Alternative D are summarized in the following table.

Table V-1 DISPLACEMENT IMPACTS for ALTERNATIVE D

RELOCATION/DISPLACEMENT TYPE	IMPACTS
Properties Impacted	127
Commercial Relocations	0
Residential Relocations	31

The commercial and residential structures would be purchased and the owners or tenants relocated to locations away from the immediate project area. TxDOT is responsible for the purchase of ROW and for the relocation of property owners and tenants on the property. It is the policy of TxDOT that no person would be displaced due to ROW acquisition until decent, safe and sanitary house dwellings is made available for all residents. The project would not proceed to construction until adequate housing has been provided or made available to all affected persons regardless of race, color, religion, sex or national origin. Adequate replacement housing must also be within the financial means of all displaced families or individuals. The local housing market should easily accommodate the 31 residential displacements.

Replacement housing and business property exists within the immediate area. No substantial detrimental effects are anticipated upon the project area or upon the areas into which these individuals are relocated. Real estate agents in the cities of Joshua and Cleburne were contacted in order to determine the availability of housing in the general project area. All real estate agencies contacted indicated that housing in comparable price ranges is currently available in Joshua, Cleburne, and the surrounding area.

Information on the State's Relocation Assistance Program would be made available during the public involvement process. The State's Relocation Assistance Program is a comprehensive system that provides financial and advisory assistance to those individuals, families, businesses and non-profit organizations to be displaced by highway ROW acquisition. Affected individuals would be contacted personally and all services and benefits of the program would be made available to them in accordance with Title VI of the Civil Rights Act of 1968 and the Housing and Urban Development (HUD) Amendment Act of 1974. This project would also comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

There are no churches, schools or hospitals located along Alternative D. Emergency vehicle routing would be possible at all times during construction and would be coordinated as needed with the proper local agencies. Disaster protection and other emergency services would be improved due to the ease of travel afforded by completion of the project.

4. Community Cohesion

The impacts of a roadway on community cohesion may be defined as any effect that could sever or alter social interaction among groups or individual members of a community. The division or displacement of functioning neighborhoods or the act of limiting the ability of

groups to join and interact are examples of adverse impacts on community cohesion. The following discussion is an evaluation of the proposed alternative's potential for affecting community cohesion.

Johnson County has begun to reflect a more suburban nature and as such residential communities have emerged. Because Alternative D primarily lies outside the confines of a municipality, the growth and location of residential areas has been driven by independent developers. Therefore, the existing residential development tends to be separated and sporadic with out an adherence to a mandated development plan. However these residential communities are still located in close enough proximity to one another to prohibit the development of an alignment capable of entirely avoiding residential impacts. Adjusting the alignment to either the west or to the east would only lead to impacting other residential communities. Alternative D was developed to minimize the impact to the residential communities in the area. Where neighborhoods or residential areas were unavoidable the alignment was refined to limit the amount of impacts to the surrounding residential community. A total of five distinct residential communities are located along Alternative D. The residential development impacts of Alternative D are depicted in Exhibit N. The residential areas are listed below:

Bell Manor Estates is located just to the south of the Tarrant County border and adjacent to FM 1902. The neighborhood is located adjacent to Sparks Lane and is bounded on the east by FM 1902 and on the west by a terminating cul-de-sac. The neighborhood contains 21 residences of which five properties would be affected by Alternative D. The neighborhood is approximately 40 acres in size. The average lot size in the neighborhood is 2 acres. Alternative D would not split the neighborhood, but would require the relocation of five residences located adjacent to the cul-de-sac on the edge of the neighborhood.

Valley View Acres is located to the west of Bell Manor estates. It is located just to the south of the Tarrant/Johnson County border and approximately 0.5 mile west of FM 1902. The neighborhood contains 43 residences of which 12 properties would be affected by the proposed alignment. The neighborhood is approximately 90 acres in size. The average lot size in the neighborhood is two acres. The required takes would primarily consist of minor property clips. One relocation of a residence would be required.

Whispering Meadows is located at the intersection of Alternative D and CR 1016. This residential development is not yet established. Properties have been platted, but only one residence currently exists. The development contains five properties, all of which would be affected by the proposed alignment. The development is approximately 55 acres in size. The average lot size in the neighborhood is ten acres. One relocation of a residence would be required. Five properties in this neighborhood would be impacted. Three of which would experience property division. However, CR 1016 would be left intact to provide access for this neighborhood as well as those properties to the east whose only access to and from FM 1902 is provided by CR 1016.

Tamaron Park and the adjacent residential area/community is located to the south of the intersection of CR 1016 and FM 1902 and to the north of the intersection of CR 913 and FM 1902. The neighborhood consists of existing residences as well as unoccupied platted residential plots. The area is not yet fully developed and contains 40 residences of which 15 would be affected by Alternative D. The required ROW for Alternative D

would be approximately 25 acres of the 300 acre development. The average lot size in the neighborhood is five acres. Alternative D would require the relocation of seven residences. Access to FM 1902 would remain to provide a roadway link within the community.

Brushy Nob neighborhood is located off of FM 917 approximately 0.25 mile west of CR 1022. Access to the development is provided by Thousand Oaks off of FM 917 and Bryant Place off of CR 1022, with the main access provided via Thousand Oaks. The neighborhood contains 91 residences of which 12 would be affected by Alternative D. Brushy Nob is approximately 160 acres in size. ROW required for the project would impact approximately 14 acres of this neighborhood. The average lot size in the neighborhood is 1.75 acres. Alternative D would require the relocation of eight residences located in the far eastern portion of the neighborhood. Alternative D would eliminate access to the rest of the neighborhood for four residences located on Bryant Place. This situation would require traffic to exit the neighborhood via Bryant Place onto CR 1022 and to proceed north to FM 917 then proceed west on FM 917 to access the Thousand Oaks entrance. From the further most point of the separated residences, this new route would be approximately 0.75 mile. Alternative D would not entirely split the neighborhood but rather clip access to the four residences. This portion of the neighborhood can also be reached via CR 1022. Alternative D would traverse the neighborhood in the most advantageous way. The separation would occur at a point where the most convenient access to the residences would be retained. Coordination efforts with local officials and public input would continue to occur to ensure a prudent and appropriate means of traversing the residential development while minimizing the impact to the affected community members.

Alternative D would result in the avoidance of all but 12 of the 91 residences. Eight are displacements and the remaining four will be separated from the main subdivision. Based on available comparable housing, residents of the eight displaced residences will be able to relocate within the project area. There are no community facilities (schools, churches, hospitals, or parks) located within the community from which the four residences will be separated. The maximum increase in travel distance for the four separated residences would be 0.75 mile. There were no Community Cohesion issues identified during the public involvement process.

5. Environmental Justice

Executive Order 12898 concerning environmental justice mandates every Federal agency to identify and address the human health and environmental effects of all programs on low-income and minority populations. Environmental justice regulations serve to eliminate the occurrence of procedural, geographical and social inequities during the planning phase of project development. One of the critical principles of the environmental justice process entails the avoidance, minimization and mitigation of disproportionately high adverse effects on low-income and minority communities. The proposed project is located within four census tracts, mapped and designated by the United States Department of Commerce, Census Bureau (Census 2000) as 1302.1, 1302.2, 1303.00 (Johnson County) and 1110.09 (Tarrant County). The income and poverty level, as well as the ethnic composition within the PSC (by census tracts), the affected cities and counties as well as the State of Texas are summarized in Table V-2 and Table V-3, respectively.

Table V-2 INCOME and POVERTY LEVELS

	Median Household Income ($)	Per Capita Income ($)	Poverty Rate (%)
State of Texas	27,016	12,904	18.1
Johnson County	30,612	12,054	11.6
Tarrant County	32,335	15,178	11.0
City of Joshua	27,679	12,933	18.1
City of Cleburne	26,037	12,064	14.9
Project Area			
Tract 1302.1	31,389	10,659	10.8
Tract 1302.2	32,496	12,305	9.5
Tract 1303	27,301	11,691	12.4
Tract 1110.09	53,629	20,578	4.0

Table V-3 ETHNIC COMPOSITION COMPARISON

	Caucasian	African American	Hispanic	American Indian	Asian	Other
State of Texas	10,291,680	1,976,360	4,339,905	52,803	303,825	21,937
%	60.6	11.6	25.6	0.3	1.8	0.1
Johnson County	86,434	2,449	7457	379	397	49
%	88.9	2.5	7.7	0.4	0.4	0.1
Tarrant County	857,272	138,302	139,879	4,921	28,676	1,053
%	73.3	11.8	11.9	0.4	2.5	0.1
City of Joshua	3,643	2	146	29	8	0
%	95.1	0.1	3.8	0.8	0.2	0.0
City of Cleburne	18,535	1,210	2,321	53	81	5
%	83.5	5.4	10.4	0.2	0.4	0.1
Project Area (Census Tracts)	25,935	424	2,126	122	215	11
%	89.9	1.4	7.4	0.4	0.8	0.1

The potential impacts the proposed project may impose upon minority and low-income populations were evaluated. Table V-3 illustrates that the ethnic composition of the PSC population is approximately 90% Caucasian (Non-Hispanic) and 10% minority groups. The minority composition of the populations of the Cities of Joshua and Cleburne are 5% and 16%, respectively. Minority groups represent approximately 27% and 11% of the populations of Tarrant and Johnson Counties, respectively. By comparison, the minority population potentially impacted by the proposed project is relatively low. Table V-2 depicts that the median household income and the poverty rate for the State of Texas is $27,016 and 18%, respectively. The project area is located within census tracts 1302.1, 1302.2, 1303 and 1110.09 which have median household incomes of $31,389, $32,496, $27,301and $53,629,

respectively. The income of the households within the project area is above that of the statewide income of $27,016. The poverty rates within census tracts 1302.1, 1302.2, 1303 and 1110.09 are 10.8%, 9.5%, 12.4and 4.0%, respectively. These figures are below that of the statewide poverty rate of 18%.

The results of the analysis of the preceding data show that the project area has a lower minority composition, higher median household income and a lower poverty rate than the surrounding area as a whole. Therefore, the impacts, which might result from the proposed project, would not pose disproportionately high adverse effects on minority and low-income populations.

6. Economic Impacts

No adverse economic impacts are anticipated at this time. It is anticipated that some business development would be stimulated adjacent to and within the PSC. It is further anticipated that this development would have a positive net effect for the economic condition in the community and region. An enhanced transportation network within the PSC should increase the value of property and stimulate residential and commercial development. In the short term, land values in the existing residential areas might be adversely affected due to construction impacts. However, in the long term property values along the proposed facility are likely to increase, particularly if commercial development occurs.

The NCTCOG monitors and maintains development data for the North Central Texas Metropolitan Planning Area. Information on Major Employers in Johnson County was obtained from the inventory of data sets reporting all employment in the region with 400 or more employees. The primary sources of employment in Johnson County are the service and manufacturing industries. The major employers in the area are summarized in Table V-4.

Table V-4 MAJOR EMPLOYERS in JOHNSON COUNTY

Employer	Employees	Class
Walls Regional Hospital	500	Service
Walls Industries, Inc.	450	MFG
Wal-Mart	400	Retail

The proposed facility would indirectly enhance the local and regional network to improve access to and from these facilities.

7. Public Safety

Emergency vehicle routing would be possible at all times during construction and would be coordinated as needed with the proper local agencies. Disaster protection and other emergency services would be improved due to the ease of travel afforded by completion of the project. No detrimental effects are anticipated to public safety.

8. Pedestrian/Bicycle

The Transportation Equity Act for the 21st Century (TEA-21) calls for the mainstreaming of bicycle and pedestrian projects into the planning, design and operation of our Nation's transportation system. Bicycle and pedestrian projects and programs are eligible for but not guaranteed funding from almost all of the major Federal-aid funding programs. Because of the nature of the proposed roadway, bicycle and pedestrian facilities do not constitute an integral part of SH 121 at this time. However, accommodation for bicycling and walking can be incorporated into the future planning, operations and maintenance activities of the proposed project based on funding capabilities and public support.

9. Detours

The project would be constructed on new location where no roadway currently exists. During construction, cross traffic consisting primarily of local traffic would continue to use existing roadways as available. At various times during certain construction phases, particular cross roads may be temporarily closed for safety reasons. Construction of SH 121 would be performed in a manner so that the necessity for alternate route use for cross traffic would be kept to a minimum. If necessary, alternate routes for use by emergency and other public vehicles would be established and coordinated with the proper local agencies.

10. Utility Relocations or Adjustments

The adjustment and relocation of any utilities would be handled so that no significant interruptions would take place during construction of the proposed roadway. In all such cases, the appropriate authorities would perform the utility realignments, or adjustments. No schools, churches, hospitals, cemeteries, or other public facilities are within or adjacent to Alternative D. Fire protection and other emergency services would be improved due to the ease of travel afforded by completion of the project. Although the Cleburne City Airport is in the vicinity of Alternative D, airway clearance coordination and/or associated permits are not required because the proposed project would not obstruct air navigation.

11. Potential Direct and Indirect Impacts

The potential direct and indirect economic impacts of the project are related to issues such as: changes in land use and value (i.e., tax base); accessibility to and from business, residential, commercial and recreational points of interest; relocation of existing homes and businesses; and impacts to existing businesses due to changes in traffic patterns. Due to SH 121's long history of planning and development; many of these issues have been addressed through the associated local government zoning decisions and input on SH 121 route studies. Area stakeholders such as Johnson County, the City of Cleburne, and the City of Joshua have participated in regular Task Force Meetings for SH 121. Selections of alternatives and regional development were addressed. Stakeholders have also attended Public Meetings on the project. Acquisition of ROW for construction purposes represents a loss of tax revenue for local authorities, although the relative impact on a citywide or region wide basis can be considered minor. Also, the losses due to ROW purchase would likely be offset as adjacent land develops and land values begin to increase.

It is expected that implementation of the proposed Build alternative would have a positive net economic impact for Johnson County as well as enhance travel and mobility from Johnson County to the City of Fort Worth for the new residential areas and the proposed industrial park near Alternative D (the residential areas and the proposed industrial park are discussed in Section IV, beginning on page 13 of this document). Improved accessibility would in turn lead to an increase in development and urbanization, resulting in increased employment opportunities and an overall stimulation of the area's economy.

The potential direct and indirect physical and environmental impacts can also be reasonably assessed. Loss of jurisdictional waters of the United States, floodplain areas and wildlife habitat as well as impacts to air quality, water quality, and areas of historic significance have all been addressed in this document.

As stated previously in this document, planning for the proposed facility has occurred at a regional level through NCTCOG's *Mobility 2025 Plan Update* development process. In addition to traditional transportation goals, i.e., enhanced mobility, balanced multimodal systems, improved air quality, etc., equal consideration was given early in the planning process to other issues such as quality-of-life and financial goals. These goals were intended to represent the region's commitment to a comprehensive, cooperative and continuous transportation process. While directing planning efforts to consider transportation's long term impact on the economy and the environment, the stated goals were also intended to provide transportation services and infrastructure to those areas traditionally under-served.

B. Natural Resources

The proposed PSC lies within the Trinity River Basin in North Central Texas and the northwestern part of the west Gulf Coastal Plain of Texas. Structurally, the area lies between the east Texas Basin on the east and the Fort Worth Basin on the west. The project is located within the Texan Biotic Province (Blair 1950) and the Cross Timbers and Prairies Vegetation Region (Gould 1975). The flora and fauna found within the project area are typical of that found in the southeastern part of the country. The average rainfall for the region ranges from 30 to 40 inches per year, with the rainfall peaking in the month of May.

Topography in the area is rolling hills with elevations ranging from 695 ft to 1,065 ft above sea level. Benbrook Lake, in the vicinity of the northern terminus of the project area, supports diverse fish species and is an important habitat area for migratory, feeding and staging birds. Over 40 species of indigenous mammals have been inventoried within the PSC and over 500 species of birds are known to occur on a resident or transient basis.

1. Vegetation Impacts

The vegetation within the rural area located along Alternative D consists of grasses such as big bluestem, little bluestem, silver bluestem, Indian grass, switchgrass, wild rye, minor amounts of sideoats grama, blue grama, hairy grama, Texas wintergrass and buffalo grass. This area once contained significant amounts of prairie forbs such as western ragweed, littlesnout sedge, heath aster, gayfeather, lespedeza, sageworts and tephrosias. Previous

agricultural activities and land use in this region have contributed to the uplands currently being vegetated with a predominance of scrub oak, mesquite and juniper with mid- and shortgrass understories. The bottomland trees within the region are primarily hardwoods such as pecan, oak and elm, but have been invaded by mesquite. Characteristic understory shrubs and vines include skunkbush, saw greenbriar, bumelia and poison ivy.

Vegetation type as outlined in "Vegetation Types of Texas" (TPWD, 1984) would best be described as silver bluestem-Texas wintergrass grasslands including portions of oak-mesquite-juniper parks/woods in some upland areas of the project. Other areas of the project would be described as cleared pastureland.

Urban and rural development, industrial or commercial activities have displaced many of the native biotic communities. The vegetation in the urban areas along the northern part of Alternative D is predominately ornamental. Trees such as crepemyrtle, sweet gum, live oak, holly and mimosa are currently located along roads, medians and property lines.

In summary, the natural species of trees found along the project are: pecan - *Carya illinoensis,* hackberry – *Celtis laevigata,* mesquite-*Prosopis glandulosa,* honey locust *Gleditsia triacanthos,* sugarberry - *C laevigata,* live oak - *Quercus virginiana,* elm - *Ulmus americana and U crassifolia,* cottonwood - *Populus deltoides,* hickory - *C cordiformis,* post oak - *Q stellata,* soapberry - *Sapindus drummondii and* bois D'arc - *Macura pomifera.* Ornamental trees include crapemyrtle- *Lagerstroemia indica*, sweetgum-*Liquidambar styraciflua*, live oak- *Q virginiana*, holly-*Illex opaca*, mimosa-*Albizzia julibrissin* and red oak-*Q shumardii.*

Due to the nature of the proposed new location alternative, impacts to existing vegetation within the proposed ROW would be unavoidable. The vegetation impact was approximated with the use of aerial photography and field observation. ROW was annotated onto an aerial photograph and an area of impact was approximated. Please see Exhibit F: Vegetation Impacts, located in the Appendix. Approximately 525 acres would be required for the corridor. A total of 118 acres of trees, calculated through interpretation of aerial mapping and canopy cover would be removed for construction. The predominate species to be removed are mesquite, hackberry - *Celtis occidentalis*, post oak, bois D' arc, and honey locust. Access was not available to all areas of the proposed right of way. Therefore, some of the riparian and other vegetation areas are estimates based on aerial photos.

Six riparian sites are found on the project. Riparian habitat may be important travel corridors for wildlife, usually support a higher animal diversity than upland habitats and are recognized by the TPWD as an important habitat type. There is an estimated 3 acres of riparian habitat in the project area. Please see Exhibit F: Vegetation Impacts, located in the Appendix.

Approximately 126 acres of other habitat exists in the project area. Mesquite pasture, hackberry re-growth, and other scattered areas of upland trees are present in the project area. Please see Exhibit F: Vegetation Impacts, located in the Appendix for the location of the habitat types as well as an illustration of the impacts to each habitat type.
The mesquite pasture areas are composed of tracts of secondary growth of immature mesquite in abandoned pasture and farmland. There are approximately 104 acres of mesquite pasture with an average of 39% canopy cover. Within the mesquite pastures, the trees are

approximately four to ten ft tall and average 8 inches diameter at breast height (dbh). Grasses such as silver-bluestem, little bluestem, and ryegrass as well as variety of other common weeds and grass dominate the understory of the mesquite pastures.

The hackberry re-growth areas are located primarily around fence lines where they form linear strips of vegetation. There is approximately 1 acre of hackberry re-growth with an average of 70% canopy cover. In the hackberry re-growth areas, the trees range from 12 ft to 20 ft high, and average dbh is approximately 16 inches. The understory is dominated by various amounts of saw greenbriar and poison ivy.

The scattered areas of upland trees are comprised of a variety of mesquite, oaks, elms, pecan and bois d'arc trees. There are approximately 21 acres of this type of habitat with an average canopy coverage of 50%. Trees in this habitat type vary in height from 15 to 30 feet with a dbh varying from 12 inches to 30 inches. The understory is dominated by various amounts of skunkbush, saw greenbriar, bumelia and poison ivy.

No vegetation types exist in the study area that fit the descriptions of rare vegetation series (S1, S2, or S3 series levels) as described by the TxDOT – TPWD MOU.

TxDOT would minimize the impact caused by the loss of vegetation by preserving as many trees as possible. In accordance with Provision (4)(A)(ii) of the MOU and at the Fort Worth District's discretion, no mitigation for impacts to non-regulated habitat will be offered. TxDOT anticipates that impacts to riparian vegetation would be mitigated for as part of Section 404 mitigation requirements.

Trees within the ROW, but not in the construction zone, would not be removed if possible. These areas would be preserved to try to minimize the impact to wildlife habitat in the area. Sufficient and abundant similar vegetation would remain adjacent to and within the immediate vicinity, allowing the vegetation to naturally re-vegetate and re-establish along and within the impacted areas.

An on-site investigation determined that there are no significant natural plant communities or native prairie remnants that would be impacted by Alternative D. In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, landscaping would be limited to seeding and replanting the ROW with native species of plants where possible. A mix of native grasses would be used to re-vegetate the ROW. Herbs and shrubs native to the area (i.e. yaupon, bluebonnets, evening primrose) if available, would also be used where applicable.

Coordination for this project was initiated with the TPWD's Wildlife Division and Endangered Resources Division on May 24, 2002. The TPWD Wildlife Division responded with no comment on May 31, 2002 and the Endangered Resources Division's response period elapsed with no response. Please see Exhibit L: Resource Agency Coordination Letters, located in the Appendix.

Early coordination was also initiated on June 6, 2002 with the United States Fish and Wildlife Service (USFWS) regarding the project. A copy of the USFWS response letter is located in

Exhibit L: Resource Agency Coordination Letters, located in the Appendix. In its response, the USFWS expressed concern over the project's potential impacts to the Rock Creek watershed, the West Buffalo Creek watershed, and indirect or cumulative effects on fish and wildlife resources. TxDOT considered USFWS comments as documented in project record response to USFWS dated September 11, 2002 and located in Appendix L.

2. Threatened and Endangered Species

The entire PSC of Alternative D project is included in the Primrose, Joshua, and Cleburne West, Texas USGS 7.5 Minute Topographical Quadrangle maps. During project development, TxDOT would design, use and promote construction practices that minimize adverse affects on both regulated and unregulated wildlife habitat. Existing vegetation (especially native trees) would be avoided and preserved wherever practicable.

A database search of the USFWS 2001 Endangered Species List and the TPWD Biological Control Data System (BCD) was conducted to determine the potential presence of any endangered, threatened, candidate species or species of concern within Tarrant and Johnson Counties and within the PSC. Information found during these two searches were combined to produce Table V-5. Results of the database searches indicate that no Federal or State listed, or proposed to be listed, endangered or threatened species exist within the PSC.

Threatened and endangered bird and reptile species listed by USFWS and TPWD in Tarrant and Johnson Counties are shown in Table V-5 and include the: Arctic Peregrin Falcon (*Falco peregrinus* tundrius), Bald Eagle (*Haliaeetus leucocephalus*), Black-capped Vireo (*Vireo atricapillas*), Brazos Water Snake (*Nerodia harteri*), Golden-cheeked Warbler (*Dendroica chrysoparia*), Interior Least Tern (*Sterna antillarum* athalassos), Mountain Plover (*Charadrius montanus*), Piping Plover (*Charadrius melodus*), Texas Horned Lizard (*Phrynosoma cornutum*), Timber/Canebrake Rattlesnake (*Crotalus horridus*),White-faced Ibis (*Plegadis chihi*) and the Whooping Crane (*Grus americana*).

The most likely listed birds and reptiles to possibly occur in the project area are discussed in more detail in Exhibit G: Threatened/Endangered Species, located in the Appendix. In addition, TPWD lists several species as "rare" but with no regulatory protection status in both Johnson and Tarrant Counties. These include: Henslow's Sparrow (*Ammodramus henslowii*), Migrant Loggerhead Shrike (*Lanius ludowvicianus migrans*), Western Burrowing Owl (*Athene cunicularia hypugaea*), Plains Spotted Skunk (*Spilogale putorius interrupta*), Texas Garter Snake (*Thamnophis sirtalus annectens*).

There is only one vascular plant within Tarrant County that is reported by the TPWD as being rare, threatened, or endangered. The Auriculate False Foxglove (*Tomanthera auriculata*) is reported as extirpated in Texas. The last reported occurrence of the plant in Texas was more than 50 years ago (personal communication, Celeste Brancel-Brown, TPWD, November, 2001). The developed areas in the vicinity of the project would inhibit the possible occurrence of this species. There are no threatened or endangered plant species listed by the USFWS known to occur in Tarrant County (Source: Texas Parks and Wildlife Department, March 1999 and United States Fish and Wildlife Service, 2001).

Endangered Species Conclusion Although it is possible that one or more endangered or threatened wildlife species could occur near Alignment D, it is unlikely that those species would be affected by the project, including construction activities, given the scope of the project. The project's contractor would avoid, to a reasonable extent, doing harm to all wildlife during project construction. Conceivably, construction activities may temporarily affect migrating birds foraging in the area, and the noise and activity of machinery would disturb normal behavior patterns of most wildlife species. However, restriction of work activities to the project ROW and careful cleanup of the construction area should limit project effects to all wildlife. The limitation of construction activities to daylight hours would mean fewer impacts to nocturnal species that travel and forage at night.

Table V-5 LISTED ENDANGERED/THREATENED SPECIES TARRANT and JOHNSON COUNTY

BIRDS			
SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
Charadrius melodu	Piping Plover	Threatened	Threatened
Charadrius montanus	Mountain plover	Threatened (Candidate)	
Dendroica chrysoparia	Golden-cheeked warbler	Endangered	Endangered
Falco Peregrinus	Peregrine Falcon		Endangered
Falco Peregrinus Anatum	American Peregrine Falcon		Endangered
Falco Peregrinus Tundrius	Arctic Peregrine Falcon		Threatened
Grus Americana	Whooping Crane	Endangered	Endangered
Haliaeetus leucocephalus	Bald Eagle	Threatened	Threatened
Mycteria Americana	Wood Stork		Threatened
Sterna Antillarum Athalassos	Interior Least Tern	Endangered	Endangered
Passerherbulus henslowii	Henslow's sparrow	Rare	Rare
Vireo atricapillas	Black-capped Vireo	Endangered	Endangered
REPTILES			
SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
Phrynosoma cornutum	Texas Horned Lizard	Rare	Threatened
Thamnophis sirtalis annectens	Texas Garter Snake	Rare	Rare
Crotalus horridus	Timber/Canebreak Rattlesnake	Rare	Threatened
VASCULAR PLANTS			
SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
Tomanthera auriculata (extirpated)	False Foxglove		Extirpated in Texas

Source: Texas Parks and Wildlife Department – Biological and Conservation Data system (BCD).

3. Farmland Impacts and Soils

There are many soil series along the PSC that are described utilizing the general soil map units as developed by the United States Department of Agriculture, Soil Conservation Service Soil Survey of Tarrant County, 1981 and the Soil Survey of Johnson County, 1982. General soil map units found in the PSC include the Sanger-Purves-Slidell, the Ponder-Sanger-Slidell, the Aledo-Bolarand the Crosstell-Gasil-Rader units.

The Sanger-Purves-Slidell unit consists of nearly level and gently sloping, deep and shallow, clayey soils located mainly on uplands. The soils in this unit are mainly used as cropland, pastureland, rangeland and for rural residential purposes. The map unit is primarily made up of well-drained soils that have slopes of 0 to 5 percent.

The Ponder-Sanger-Slidell unit consists of nearly level and gently sloping, deep, slightly acid to moderately alkaline loamy and clayey soils located mainly on uplands. The soils in this unit are mainly used as cropland, pastureland, rangeland and for rural residential purposes. The map unit is primarily made up of well-drained soils that have slopes of 0 to 5 percent.

The Aledo-Bolar unit consists of gently sloping to strongly sloping, very shallow to moderately deep, moderately alkaline loamy soils located mainly on uplands. The soils in this unit are mainly used as rangeland, pastureland, cropland and for rural residential purposes. The map unit is primarily made up of well-drained soils that have slopes of 2 to 8 percent.

The Crosstell-Gasil-Rader unit consists of nearly level to sloping, deep, slightly acid loamy and sandy soils located on uplands. The soils in this unit are mainly used as pastureland and for rural residential purposes. The map unit is primarily made up of well-drained soils with 1 to 8 percent slope.

Alternative D is within an area that is currently being used for agricultural purposes or is zoned as agricultural. Pursuant to section 1541(a) of the Farmland Protection Policy Act (FPPA), enacted December 22, 1981, U.S.C. 4202 and as required by 1541(b) of FPPA, Federal agencies are (1) to use the criteria to identify and take into account the impacts of their programs on the preservation of farmland, (2) to consider alternative actions, as appropriate, that could lessen any impacts and (3) to ensure that their program, to the extent practicable, is compatible with State, local government and private programs and policies to protect farmland. In accordance with the FPPA, the additional ROW was scored using UNITED STATES Department of Agricultural Natural Resources Conservation Service (NRCS) Form AD-1006. The resulting score was above 60 points for the site assessment portion of the form. A copy of the form is included in Exhibit H: Farmland Conversion Impact Rating – Form AD 1006, located in the Appendix and is on file at the TxDOT Fort Worth District Office. Form AD-1006 was sent to the NRCS on July 9, 2001 and again on May 31, 2002. Please see Exhibit L: Resource Agency Coordination Letters, located in the Appendix.

The NRCS responded on June 7, 2002 (please see Exhibit L: Resource Agency Coordination Letters, located in the Appendix) stating that the project area does contain both Prime and Statewide Important farmland. The NRCS further stated that the project is exempt from additional consideration or coordination because the total AD-1006 score is less than 160.

4. Lakes, Rivers and Streams

Storm water runoff from this proposed construction would flow into eight intermittent stream crossings located within the Alternative D project limits. These crossings include West Buffalo Creek and tributaries in the south part of the project as well as tributaries to Rock Creek in the north portions of the project. There are several small impoundments consisting of artificial ponds generally less than one acre in surface area. These ponds are used mainly for livestock watering.

Unnamed Tributary to Rock Creek –

1. At Old Granbury Road, north of FM 1187.
2. North of FM 1187, west of Old Granbury Road.
3. CR 1015 realignment.
4. South of CR 915 near Ex Trans Line.
5. North side of CR 913.
6. South side of CR 913.

These streams flow into Segment # 0830 of the Clear Fork of the Trinity River; Benbrook Lake. This feature, as listed in the Texas Commission on Environmental Quality (TCEQ) Water Quality Inventory, is classified as having "water quality limited" and is designated for use as contact recreation, high quality aquatic habitat and public water supply. Data supports the attainment of criteria and uses. The water quality of wetlands and waters in the State shall be maintained in accordance with all applicable provisions of the Texas Surface Water Quality Standards including the General, Narrative and Numerical Criteria.

Unnamed Tributary to West Buffalo Creek and West Buffalo Creek -

1. South of CR 904
2. North of SH 171

These streams flow into Segment # 1228 of the Brazos River; Nolan River. This feature, as listed in the TCEQ Water Quality Inventory, is classified as a 1,550-acre reservoir capable of supporting public water supply use. Available data indicate that there are no water quality concerns. The water quality of wetlands and waters in the State shall be maintained in accordance with all applicable provisions of the Texas Surface Water Quality Standards including the General, Narrative and Numerical Criteria.

5. Jurisdictional Waters and Wetlands

The project crosses waters of the United States that are regulated by the United States Army Corps of Engineers (USACE) under authority of Section 404 of the Clean Water Act. Section 404 authorizes the USACE to issue permits for the discharge of dredged or fill material into the waters of the United States, including wetlands.

Jurisdictional waters of the United States, as described in the US Army Corp of Engineers Wetlands Delineation Manual, 1987, associated with the SH 121 PSC are of two types, as indicated by the USFWS Wetland Classification System. These jurisdictional areas consist of: riverine - all freshwater habitats contained within a channel, including streams, springs

and/or rivers, except those dominated by trees, shrubs or persistent emergent vegetation; and palustrine - water systems dominated by emergent vegetation, or small (less than 20 acres), shallow (less than 6 ft in depth) bodies of water without shoreline features dominated by bedrock or wave action.

The jurisdictional waters of the United States associated with ponds in the PSC are composed of small man-made surface water impoundments intended for livestock watering. These impoundments are mostly less than 1 acre in surface area. The impoundments designated PUBHh and PUBFh generally have some emergent vegetation and might contain small forage fish or are stocked with game fish, though they are not considered to be of high quality or serve as an important wildlife habitat. Riverine jurisdictional waters of the United States (streams and river) within the PSC demonstrate appreciable flow only after rainfall events.

Based on the preliminary level of engineering available, twelve jurisdictional water crossings were identified along the PSC. Impacts to eleven of these waters would require a Section 404 permit. Impacts to these waters were calculated and are included in Exhibit I: Jurisdictional Waters & Wetlands, located in the Appendix. The jurisdictional water impacts were calculated using aerial mapping, topographic surveys and current engineering drainage structure estimates. The estimates of impacts associated with each crossing are summarized in Table IV-6.

Based on the preliminary level of engineering available it is anticipated that two of the jurisdictional water crossings, F and G, would require Individual Permits while the remaining nine would be authorized under one or more of the following Nationwide Permits: 13, 14, 18, 25 or 33. In order to comply with Section 404, TxDOT would coordinate with the USACE when these impacts to these jurisdictional waters are known and prior to construction. TxDOT anticipates the issuance of the permits would be contingent upon measures to avoid, minimize, and mitigate for these separate and complete crossing impacts to these jurisdictional waters.

Table V-6 ESTIMATED JURISDICTIONAL WATER IMPACTS

Jurisdictional Water Crossing	Impact (Acres)
A	0.38
B	0.48
C	0.065
D	0.0
E	0.13
F	0.93
G	1.30
H	0.17
I	0.27
J	0.46
K	0.13
L	0.14

Pursuant to Executive Order 11990, Protection of Wetlands, on-site investigations were conducted in March of 2001 to identify possible jurisdictional wetlands along Alignment D. The 1992 National Wetlands Inventory maps as prepared by the USFWS, current aerial photographs and visual inspection of Alternative D were utilized to identify and locate possible wetlands. Several potential wetland areas along Alternative D were identified for further investigation to determine if the hydrological conditions, soil and vegetation met the criteria of wetlands. Right of entry letters were sent to those property owners where these potential wetland areas were identified. Where right of entry was provided field investigations were completed to verify the existence of wetland areas. Please see Exhibit G: Jurisdictional Waters and Wetlands, for the location of the site visits.

Based on the aforementioned wetland identification criteria, no wetlands were identified along Alternative D. During the design phase of the project and prior to the Section 404 permitting process, jurisdictional waterbodies and wetlands delineation will be accomplished as needed along Alternative D.

Where possible, Alternative D would be designed to approach and traverse stream crossings in a perpendicular fashion to minimize the need for channel modification. However, due to the meandering of some existing streams and the cost to bridge the associated widths, channelization of some existing streams would be required. Therefore, in accordance with the Fish and Wildlife Coordination Act, coordination with the USFWS would be required.

6. Floodplains

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (Panel Nos. 48251CO111 F and 48251CO125 F, September 27, 1991; 48251C0050 G, *revised* January 6, 1993; and 48439C0510 H and 48439C0520 H, *revised* August 2, 1995), Alignment D would cross 100-year floodplains and floodways at 8 locations. These locations consist primarily of low areas associated with small stream tributaries within the project limits. Tarrant and Johnson Counties are participants in the National Flood Insurance Program (NFIP). The hydraulic design practices for this project would be in accordance with the

current TxDOT design policy and standards. The highway facility would permit conveyance of the 100-year flood levels without causing significant damage to the highway, stream or other property. This project would not raise the base flood plain elevation to a level that would violate the applicable floodplain regulations or ordinances.

The City of Cleburne is a participant in the NFIP. The West Buffalo Creek drainage is within Zone AE. This area is inundated by 100-year floods and is within a Regulated Floodway Zone. The water quality of wetlands and waters in the State shall be maintained in accordance with all applicable provisions of the Texas Surface Water Quality Standards including the General, Narrative and Numerical Criteria. The TxDOT Project Manager would ensure that coordination with the FEMA administrator is completed in accordance with TxDOT procedures.

7. Water Quality

The Trinity Aquifer consists of early Cretaceous age formations of the Trinity Group, which extends from the Red River in North Texas to the Hill Country of South-Central Texas. Formations comprising the Trinity Group are (from youngest to oldest) the Paluxy Sand, Glen Rose and Twin Mountain-Travis Peak. The Travis Peak formation has historically been the most productive in the PSC. Its depth increases toward the east ranging from 550 ft at Eagle Mountain Lake to 1,490 ft at Arlington and has an approximate 300-ft thickness where it crosses the project area. The Paluxy Sand formation crops out in the northwestern part of Tarrant County and averages 160-ft in thickness, beginning at a depth of approximately 300 ft. The alluvial deposits in Tarrant and Johnson Counties furnish small to moderate quantities of ground water, the larger yields coming from lower terraces and floodplains. The quality of water from this formation is generally poor due to surface pollution.

Because this project would disturb more than 5 acres, TxDOT would be required to obtain a United States Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) General Permit for Construction Activity. This would be accomplished by filing a Notice of Intent (NOI) to comply with EPA stating that TxDOT would have a Storm Water Pollution Prevention Plan (SWP3) in place during construction of the proposed project. No long-term water quality impacts are expected as a result of the proposed project.

The project engineer would ensure that the appropriate steps be taken to control water pollution during and after construction according to the best management practices for erosion control as outlined by TCEQ Tier I projects. Specifically, as a result of impacts to jurisdictional waters associated with the construction of this project, Tier I Erosion Control, Post-Construction Total Suspended Solids (TSS) Control and Sedimentation Control devices would be required under the TCEQ Section 401. At least one Erosion Control device would be implemented and maintained until construction is complete. Erosion Control devices to be used include temporary vegetation, blankets/matting, mulch and sod. Also, at least one Post-Construction TSS Control device would be implemented upon completion of the project. Post-Construction TSS Control devices to be used include retention/irrigation, extended detention basins and vegetative filter strips. In addition, at least one Sedimentation Control device would be maintained and remain in place until completion of the project.

Sedimentation Control devices to be used include sandbag berms, silt fences, triangular filter dikes, rock berms and hay bale dikes.

The contractor would take appropriate measures to prevent, minimize and control the spill of fuels, lubricants and hazardous materials in the construction staging area. All spills, including those of less than 25 gallons shall be cleaned immediately and any contaminated soil shall be immediately removed from the site and be disposed of properly. All materials being removed or disposed of by the contractor would be done in accordance to applicable State and Federal laws and as not to degrade ambient water quality. All of these measures would be enforced under appropriate specifications in the plans, specifications and estimates (PS&E) stage of project development. These measures would be in place prior to the initiation of construction and would be maintained throughout the duration of the construction. Clearing of vegetation would be limited and/or phased in order to maintain a natural water quality buffer and minimize the amount of erodible earth exposed at any one time. Upon completion of the earthwork operations, disturbed areas would be restored and re-seeded according to the Department's specifications for "Seeding for Erosion Control".
Designated areas would be identified for soil disposal and material storage. These areas would be protected from run-on and run-off. Materials resulting from the destruction of existing structure(s) would be stored in this designated area. If work within a watercourse or wetland is unavoidable, heavy equipment shall be placed on mats, if necessary, to protect the substrate from gouging and rutting. All construction equipment and materials used within the stream channel and immediate vicinity would be removed as soon as the work schedule permits and/or when not in use and shall be stored in an area protected from run-on and run-off.

The USACE Section 404 permits, discussed in 5 above, would require Section 401 Certification review by the TCEQ.

8. Coastal Barrier and Coastal Zones

As of January 1997, the State of Texas has an approved Coastal Zone Management Plan (CMP). The proposed project does not lie within the CMP boundary. Because the project lies outside of the boundary, it has been determined that the proposed action would not have a direct or significant adverse effect on the coastal natural resources areas as identified in the applicable policies.

C. Cultural Resources

This project would be undertaken in conformance with a Programmatic Agreement between TxDOT, FHWA, the Advisory Council on Historic Preservation (ACHP) and the Office of the State Historic Preservation Officer (SHPO) providing for procedures and processes to conform to Federal and State laws. Under Section 106 of the National Historic Preservation Act of 1966, Federal agencies are required to "take into account" the "effects" that an undertaking will have on "historic properties." Historic properties are those included in or eligible for inclusion in the National Register of Historic Places (NRHP) and may include historic structures, buildings, cemeteries and archeological sites.

In addition, under 36 CFR 800.4 of the ACHP regulations pertaining to the protection of historic properties, Federal agencies are required to locate, evaluate and assess the effects a Federal undertaking would have on such properties. In compliance with Federal regulations, and on behalf of the Fort Worth District of TxDOT and FHWA, and in accordance with procedures established by the Programmatic Agreement between the FHWA, ACHP, TxDOT and the SHPO, this report focuses on the preliminary identification of potential historic properties within the PSC.

As the project would involve ROW purchased by the State or municipal entity of the State, extant historic properties under the jurisdiction of the Texas Antiquities Code (TAC) would also be considered under the provisions of the Memorandum of Understanding (MOU) between the Texas Historical Commission (THC/SHPO) and TxDOT. The TAC allows for all such properties to be designated as State Archeological Landmarks (SALs). Standards for designation as SALs are outlined in 13 TAC 26 of the Rules of Practice and Procedure of the TAC.

The general character of the Alternative D area is best described as mixed rural residential neighborhoods and cleared, open pasturelands with a small amount of commercial businesses. A USGS map of the PSC is provided in Exhibit J: USGS Map, located in the Appendix.

1. Archeology

A pedestrian survey along Alternative D revealed upland/undulating topography. Building and roadway construction, including State, County and private roads, as well as subsequent roadway maintenance has subjected the proposed ROW to cutting and grading at various points along Alternative D. The proposed ROW is currently utilized as pasture and rural residential neighborhoods. Alternative D would require approximately 525 acres of new ROW. Designs at this time do not anticipate any easements, however, should significant changes to the design occur, they would be evaluated for archeological resources.

Topography in the area is described as rolling hills with elevations ranging from 695 ft to 1,065 ft above sea level. Benbrook Lake is located in the vicinity of the northern terminus of the PSC. USGS quad maps containing the project include Primrose [TX], Joshua [TX], and Cleburne West [TX].

Two named drainages, Rock Creek and West Buffalo Creek are located within the PSC. In addition, six tributaries of Rock Creek and two tributaries of West Buffalo Creek are also located within the PSC. Some of the drainages appear to be shallow swales, with no obvious channel or banks either side of the proposed roadway.

The soil series present along the PSC are described utilizing the general soil map units as developed by the United States Department of Agriculture, Soil Conservation Service Soil Survey of Tarrant County, 1981 and the Soil Survey of Johnson County, 1982. General soil map units found in the PSC include the Sanger-Purves-Slidell, the Ponder-Sanger-Slidell, the Aledo-Bolarand the Crosstell-Gasil-Rader units. In summary the PSC is primarily made up of well-drained soils with 0 to 8 percent slopes. Further information on the soils present in the PSC are found in Chapter IV, B, 3, Farmland Impacts and Soils.

The geologic overview of the PSC according to the Geologic Atlas of Texas, Dallas Sheet (1987 revised) indicates primarily Lower Cretaceous formations. Beginning at the north end of the project and moving south, Weno Limestone (Kwl), Pawpaw Formation (Kpw), Grayson Marl, (Kgm), and Woodbine Formation (Kwb) are located within the project area. The West Buffalo Creek area of the project contains Alluvium and Quaternary deposits.

A records search at the Texas Archeological Research Laboratory (TARL) in February of 2001 revealed that no previously recorded sites exist along Alternative D. The portion of Alternative D that crosses the West Buffalo Creek area north of George Marti Dam was investigated for cultural resources in December of 1981 by Nancy Cole of the Soil Conservation Service. The area contains alluvial deposits discussed above. No sites were recorded as a result of the SCS investigation.
Given the geological and topographical make-up of the PSC, the most likely areas to contain archeological sites remains to be areas near previous and extant water sources. Although previous archeological investigations in the West Buffalo Creek area (discussed above) were negative for prehistoric cultural material, an archeological impact evaluation will be conducted to identify areas with the potential to contain archeological sites. Depending on the results of the evaluation, an archeological survey may be required. Tribal coordination was initiated January 2, 2001. The 45-day comment period elapsed without comment.

2. Historic Structures

A review of the NRHP and the Recorded Texas Historic Landmarks (RTHL) indicated that no historically significant properties have been previously documented within the area of potential effect (APE). A preliminary survey of the project area was conducted to determine whether or not there are structures 50 years old or older within the project's APE in accordance with the Programmatic Agreement among the FHWA, the THC, the ACHP and TxDOT.

During a historic building reconnaissance survey along Alternative D, one 50-year-old structure was identified within the APE. The structure appears to be a mid 20th Century farmhouse with possible additions. Photos of the structure are included in Appendix M: Photos of Farmhouse Structure. TxDOT has consulted with the SHPO regarding the eligibility of this structure for inclusion in the NRHP. No other structures in the APE appeared to be greater than 50 years old.

3. 4(f) Properties

Alternative D would not require the use of or substantially impair the purposes of any publicly owned land from a public park, recreational area, wildlife and waterfowl refuge land or as determined by the Federal, State or local officials having jurisdiction thereof; therefore, a 4(f) statement would not be required for these reasons.
Section 106 coordination with the SHPO is on-going. Therefore, any potential historical sites of National, State or local significance that may require a Sec 4(f) statement would be determined at the appropriate time.

Cultural Resources Summary

A preliminary assessment for important cultural resources within the PSC from FM 1187 to SH 67 in Cleburne has been conducted. Research has centered upon the identification of previously conducted archeological surveys, recorded archeological sites, properties listed on the NRHP, SALs and Texas Historical Markers (THM). This assessment was conducted at the TARL and the THC.

In 1994, TxDOT conducted an archeology survey of a previously proposed alignment. The area surveyed in 1994 is generally located between 250 and 1,000 ft outside of the current preferred alignment, but overlaps it in four locations. The archeology survey consisted of a pedestrian survey and subsurface investigations. One archeology site, 41TR137, was identified. The site is located outside of the currently preferred alignment.

In May 2002, Geo-Marine, Inc. conducted an archeology impact evaluation of the current preferred alignment. No archeological materials and no settings with reasonable potential to contain archeological historic properties (36 CFR 800.16.(1) or SALs (13 TAC 26.12)) were determined to be present. No further archeological work was recommended. The THC has concurred with this recommendation. Please see Exhibit L: Resource Agency Coordination Letters, located in the Appendix.

The APE, as designated by the TxDOT-ENV guidelines for historic building reconnaissance and documentation, consists of 0.25 mile on either side of new location ROW and 500 ft on either side of roadway expansion projects. Photographs of the 50-year-old farmhouse are found in Exhibit M. Two cemeteries were identified within the general project vicinity but would not be affected by the construction activities of the project. The THC has concurred with TxDOT's determination that no properties within the PSC are eligible for listing in the NRHP; therefore, no such properties will be effected by the project. Please see Exhibit L: Resource Agency Coordination Letters, located in the Appendix.

D. Air Quality

The project is partially located within Tarrant County and is therefore within the boundary of the NCTCOG Transportation Management Area (TMA). This area is designated as serious non-attainment for ozone. An area is designated as non-attainment when one or more of the National Ambient Air Quality Standards (NAAQS) are not met. Because the project is located in a region that is in non-attainment of the NAAQS, the transportation conformity rule applies. Other air quality levels should continue to meet Federal standards. Under the provisions of the Clean Air Act, states are required to develop and submit to the EPA a State Implementation Plan (SIP) for each non-attainment area. Additionally, the project comes from an operational Congestion Management System (CMS) that meets all requirements of 23 CFR - Highways, Parts 450 and 500.

All projects in the Dallas-Fort Worth 2004-2006 STIP that are proposed for Federal or State funds were initiated in a manner consistent with the Federal guidelines in Section 450 of Title 23 CFR and Section 613.200, Subpart B of Title 49 CFR. Energy, environment, air quality, cost and mobility considerations are addressed in the programming of the STIP. The

proposed action is consistent with the area's financially constrained MTP (Mobility 2025 Plan-2004 Update) and the 2004-2006 STIP as adopted by the NCTCOG as well as the Mobility 2025-2004 Update conforming plan approved by FHWA on April 8, 2004. The MTP and the STIP have been found to conform to the SIP. The primary pollutants from motor vehicles are carbon monoxide (CO), unburned hydrocarbons and oxides of nitrogen (NO_x). Hydrocarbons and oxides of nitrogen (NO_x) can combine in a series of reactions catalyzed by sunlight to produce photochemical oxidants such as ozone (O_3) and NO_2. Because these reactions take place over a period of several hours, maximum concentrations of photochemical oxidants are often found far downwind of the precursor sources. These pollutants are regional problems. The modeling procedures of O_3 and NO_2 require long-term meteorological data and detailed area-wide emission rates for all potential sources and are normally too complex to be performed within the scope of an environmental document for a highway project. Modeling these pollutants (for the purpose of comparing the modeling results with the NAAQS) is conducted by the regional air quality planning agency for the SIP.

Using the CALINE3/MOBILE6 computer program and the following traffic data, CO concentrations were determined in accordance with TxDOT requirements in the *Air Quality Guidelines*.

The traffic data used in the analysis was obtained from NCTCOG. CO concentrations for the proposed action were modeled using design year levels for the most traveled section of SH 121, which is expected to occur between FM 1187 in Tarrant County & CR 920 in Johnson County. Local concentrations of CO are not expected to exceed national standards at any time. Table V-7 lists the traffic volumes, emission factors, CO concentrations and the percent of the NAAQS for the existing and proposed facilities.

CO background (ambient) concentrations of 1.8 parts per million (ppm) by volume for a one-hour average and 1.2 ppm for an eight-hour average were used in the above analysis. The NAAQS for CO is 35 ppm for one-hour and 9 ppm for eight-hour. Carbon monoxide concentrations were modeled under the worst meteorological conditions (wind speed of 1 m/s; wind bearing of 315°; stability class of 5; surface roughness of 100 cm; mixing height of 1,000 m). Table V-7 depicts the air quality analysis results for the baseline (2005) and design (2025) years. The 2005 CO concentrations are 2.3 ppm or 6.5% of NAAQS for one-hour and 1.5 ppm or 16.7% of NAAQS for eight-hour. The 2025 CO concentrations are 3.0 ppm or 8.5% of NAAQS for one-hour and 1.9 ppm or 21.3.0% of NAAQS for eight-hour.

Table V-7 AIR QUALITY ANALYSIS

SH 121: FM 1187 to US 67							
Year	Traffic Volume[1]		Emission Factor	CO Concentration[2] (ppm)		% NAAQS[3]	
	ADT (vpd)	DHV (vph)	(g/mile)	One-Hour	8-Hour	One-Hour	8-Hour
2005	17,000	3,400	22.4	2.3	1.5	6.5	16.7
2025	68,500	7,398	12.6	3.0	1.9	8.5	21.3

[1] Highest traffic volume of the facility.
[2] Includes an ambient concentration of 1.8 ppm for the one-hour averaging time and 1.2 ppm for the eight-hour averaging time.
[3] One-hour NAAQS of 35 ppm and an eight-hour NAAQS of 9 ppm.

The control of particulate matter emanating from various construction activities would be in accordance with TCEQ Regulation 1. To minimize exhaust emissions, contractors would be required to use emission control devices and limit unnecessary idling of construction vehicles.

Included in this project's contract would be the TxDOT standard specification for construction that requires the contractor to be familiar and comply with all Federal, State, local laws, ordinances and regulations that affect the conduct of work. The construction, maintenance and operation of this facility would be consistent with the SIP as prepared by the TCEQ.

Topography and meteorology would not seriously restrict dispersion of air pollutants. Local concentrations of CO under the worst meteorological conditions are not expected to exceed national standards at any time.

A. Noise Impacts

This analysis conforms to the Federal Highway Administration (FHWA) Regulation 23 CFR 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise," and TxDOT's 1996 Guidelines for Analysis and Abatement of Highway Traffic Noise.

Sound from highway traffic is generated primarily from a vehicle's tires, engine and exhaust. It is commonly measured in decibels and is expressed as "dB."

Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as "dBA." Table IV-8 illustrates some common sound sources and associated noise levels.

Also, because traffic sound levels are never constant due to the changing number, type and speed of vehicles, a single value is used to represent the average or equivalent sound level and is expressed as "Leq."

Table V-8 COMMON SOUND/NOISE LEVELS

COMMON SOUND/NOISE LEVELS		
Outdoor	DBA	Indoor
Pneumatic hammer	100	Subway Train
Gas lawn mower at 1 meter		
	90	Food blender at 1 meter
Downtown (large city)	80	Garbage disposal at 1 meter
Lawn mower at 30 meters	70	Vacuum cleaner at 3 meters
		Normal speech at 1 meter
Air conditioning unit	60	Clothes dryer at 1 meter
Babbling brook		Large business office
Quiet urban (daytime)	50	Dishwasher (next room)
Quiet urban (nighttime)	40	Library

The traffic noise analysis typically includes the following elements:

- Identification of land use activity areas that might be impacted by traffic noise.
- Determination of existing noise levels.
- Prediction of future noise levels.
- Identification of possible noise impacts.
- Consideration and evaluation of measures to reduce noise impacts.

The FHWA has established the following Noise Abatement Criteria (NAC) for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur.

Table V-9 NOISE ABATEMENT CRITERIA

FHWA NOISE ABATEMENT CRITERIA		
Activity Category	DBA Leq	Description of Land Use Activity Areas
A	57 (exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
C	72 (exterior)	Developed lands, properties or activities not included in categories A or B above.
D	--	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

NOTE: primary consideration is given to exterior areas (Category A, B or C) where frequent human activity occurs. However, interior areas (Category E) are used if exterior areas are physically shielded from the roadway, or if there is little or no human activity in exterior areas adjacent to the roadway.

Absolute criterion: the predicted noise level at a receiver approaches, equals or exceeds the NAC. "Approach" is defined as one dBA below the NAC. For example: a noise impact would occur at a Category B residence if the noise level is predicted to be 66 dBA or above.

Relative criterion: the predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. "Substantially exceeds" is defined as more than 10 dBA. For example: a noise impact would occur at a Category B residence if the existing level is 54 dBA and the predicted level is 65 dBA (11 dBA increase).

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is any positive action taken to reduce the impact of traffic noise on an activity area.

The FHWA traffic noise modeling software was used to calculate baseline and predicted traffic noise levels. The model primarily considers the number, type and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the locations of activity areas likely to be impacted by the associated traffic noise.

Baseline and predicted traffic noise levels for 25,000 vehicles per day (vpd) in 2005 and 40,000 vpd in 2025 were modeled at 17 Category B receivers that represent the residences adjacent to the highway project that might be impacted by traffic noise and that may potentially benefit from reduced noise levels. Please see Exhibit K: Noise Receivers Location Map, located in the Appendix.

Table V-10 NOISE LEVELS

TRAFFIC NOISE LEVELS (dBA Leq)						
Receiver	NAC Category	NAC Level	Existing 2000	Predicted 2022	Change (+/-)	Noise Impact
R1	B	67	60	65	5	No
R2	B	67	59	65	6	No
R3	B	67	63	67	4	Yes
R4	B	67	61	66	5	Yes
R5	B	67	66	69	3	Yes
R6	B	67	61	64	3	No
R7	B	67	63	66	3	Yes
R8	B	67	62	66	4	Yes
R9	B	67	62	66	4	Yes
R10	B	67	62	66	4	Yes
R11	B	67	63	66	3	Yes
R12	B	67	62	65	3	No
R13	B	67	63	66	3	Yes
R14	B	67	64	66	2	Yes
R15	B	67	64	66	2	Yes
R16	B	67	65	67	2	Yes
R17	B	67	66	68	2	Yes

As indicated in Table IV-10, predicted noise levels exceed existing levels by a maximum of 6 dBA, and the NAC was approached, equaled, or exceeded at 13 receivers. Therefore, the project would result in a traffic noise impact and the following noise abatement measures were considered: traffic management, alteration of horizontal and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone and the construction of noise walls.

Before any abatement measure can be incorporated into the project, it must be both feasible and reasonable. In order to be feasible, the measure should reduce noise levels by at least five dBA at impacted receivers; and to be reasonable it should not exceed $25,000 for each benefited receiver.

Traffic management: control devices could be used to reduce the speed of the traffic; however, the minor benefit of one dBA per five mph reduction in speed does not outweigh the associated increase in congestion and air pollution. Other measures such as time or use restrictions for certain vehicles are prohibited on State Highways.

Alteration of horizontal and/or vertical alignments: any alteration of the existing alignment would displace existing businesses and residences, require additional ROW and not be cost effective/reasonable.

Buffer zone: the acquisition of sufficient undeveloped land adjacent to the highway project to preclude future development that could be impacted by highway traffic noise would not be cost effective/reasonable.

Noise barriers: this is the most commonly used noise abatement measure. However, for this project, a noise barrier would not be cost effective. Barriers are not feasible and reasonable because most of the affected receivers are in effect separate/individual receivers. Also, noise barriers could have a detrimental impact on some nearby businesses by restricting views by potential customers.

None of the above noise abatement measures are both feasible and reasonable; therefore, no abatement measures are proposed for this project.

Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers are expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

Land use activity areas adjacent to the project are primarily Category D, undeveloped land. Also, no new development is currently planned, designed or programmed in these areas. There is no NAC for undeveloped land; therefore, the project would not result in any noise impacts. However, to avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs should ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted 2025 noise impact contours. On the date of approval of this document (Date of Public Knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new development adjacent to the project.

Table V-11 TRAFFIC NOISE IMPACTS and LAND USE

Undeveloped Area	Land Use	Impact Contour (dBA)	Distance (FT)
STA. 1036+72.56 to FM1187	Residential	66	144
	Commercial	71	Within ROW
FM1187 to CR 920	Residential	66	157
	Commercial	71	7
CR 920 to STA. 1204+00	Residential	66	187
	Commercial	71	37
STA.1204+00 to STA. 1227+00	Residential	66	117
	Commercial	71	Within ROW
STA. 1227+00 to FM1902	Residential	66	134
	Commercial	71	2
FM 1902 to CR 913	Residential	66	134
	Commercial	71	Within ROW
CR 913 to STA. 1439+00	Residential	66	120
	Commercial	71	Within ROW
STA. 1439+00 to FM 917	Residential	66	54
	Commercial	71	Within ROW
FM 917 to CR 904	Residential	66	158
	Commercial	71	13
CR904 to Sparks Road	Residential	66	104
	Commercial	71	Within ROW
Sparks Road to Industrial Blvd	Residential	66	105
	Commercial	71	Within ROW
Industrial Blvd to US 67	Residential	66	22
	Commercial	71	Within ROW

A copy of this traffic noise analysis would be provided to local officials to ensure, to the maximum extent possible, future developments are planned, designed and programmed in a manner that would avoid traffic noise impacts.

F. Hazardous Materials

A preliminary investigation was conducted to identify any environmentally regulated locations within the PSC spanning from FM 1187 in Tarrant County to US 67 in Johnson County. A Federal and State regulatory file search of the EPA and TCEQ databases was performed in order to locate sites within the PSC known to be or potentially be contaminated with hazardous waste/material. The EPA databases reviewed include the National Priorities

List (NPL), the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS), the Resource Conservation and Recovery Information System (RCRIS), the Emergency Response Notification System (ERNS) and the Toxic Release Inventory System (TRIS). The TCEQ databases searched include the Texas State Superfund, the Industrial and Hazardous Waste (IHW), the Leaking Petroleum Storage Tanks (LPST), the Municipal Solid Waste Landfills (MSWLF), the Registered Petroleum Storage Tanks (RPST) and the Voluntary Cleanup Program (VCP). The data sheets obtained from the search are on file at the TxDOT Fort Worth District Office. A map of the relevant regulated sites is included in the Appendix.

1. National Priority List (NPL)/CERCLA

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) provides for the remediation of Superfund sites, abandoned areas contaminated with hazardous waste. The EPA has established the NPL which prioritizes the Superfund sites based on the Hazardous Ranking System to determine the order of funds allocation for remedial processes. The EPA database CERCLIS is a compilation of the site and non-site specific NPL/Superfund data. A review of these records was performed and no Superfund sites were listed within the PSC.

2. Resource Conservation and Recovery Act (RCRA)

RCRA gives the EPA the authority to control the generation, transportation, treatment, storage and disposal of hazardous waste. The EPA database RCRIS is a compilation of the RCRA facilities categorized as Treatment, Storage, and/or Disposal (TSDF), Generators (G) and RCRA Administrative Action Tracing System (RAATS). The search for the RCRA TSDF locations was performed for sites within 1 mile of the proposed ROW. That of the RCRA (G) and RCRA (RAATS) was completed for locations within 0.25 mile of the proposed ROW. Review of the EPA records depict that two RCRA (G) facilities exist within 0.25 mile of the proposed ROW: Delco Fiberglass Products, Inc. at SH 174, Joshua (ID No. TXD056373723) and Skipper-B Trailer Co. at SH 174 2 M N, Joshua (ID No. TX 064218340). None of these facilities were listed in the EPA records as having any Class I violations.

3. Emergency Response Notification System (ERNS)

ERNS supports the release notification requirements of section 103 of CERCLA; and section 300.501 and 300.65 of the National Oil and Hazardous Substances Contingency Plan. Additionally, ERNS serves as a mechanism to document and verify incident location information as initially reported, and is utilized as a direct source of easily accessible data, needed for analyzing oil and hazardous substances spills. The ERNS database was searched for spill sites within 0.25 mile of the proposed ROW. A review of the results indicates that no sites exist within this parameter.

4. Toxic Release Inventory System (TRIS)

TRIS contains information regarding usage, manufacturing, treatment, transportation and release of toxic chemicals into the environment. Manufacturers of toxic chemicals are

required to submit an annual report to the EPA and the states indicating the amount and location chemicals are released into the air, water, or land, injected underground, or transferred to off-site facilities. The TRIS database was used to search for toxic release sites within 0.25 mile of the proposed ROW. A review of the results indicates that no toxic release sites exist within the designated search area.

5. Texas Superfund Sites

A registry of the Texas State Superfund sites, the State equivalent to the NPL, is maintained by the TCEQ. The database was searched for State Superfund sites within 1.0 mile of the proposed ROW. The review indicated that no such sites exist within these limits.

6. Industrial and Hazardous Waste (IHW)

The TCEQ maintains a listing of permit applications for IHW sites. Hazardous waste is defined as any solid waste listed as hazardous or possesses one or more hazardous characteristics as defined in federal waste regulations. Industrial waste is waste that results from or is incidental to operations of industry, manufacturing, mining, or agriculture. The permit applications database was searched for IHW sites within 0.25 mile of the proposed ROW. The review indicated that no IHW sites exist within these limits.

7. Registered Petroleum Storage Tank (RPST)

The RPST listing maintained by the TCEQ includes both aboveground (ASTs) and underground (USTs) storage tanks. The results of the database query indicate that three RPSTs sites exist within 0.25 mile of the proposed ROW. Information regarding the ASTs and USTs of concern is summarized in Table IV-11..

Table V-12 REGISTERED PETROLEUM STORAGE TANKS SPECIFICATIONS

Facility Name	Location	Tank Size, Type and Material Stored	Date Installed	Status
Davie Truckers, Inc.	1317 CR 920 A Crowley	1-21940 gal AST/unknown	1940	Active
Star 1	FM 917 & FM 1902 Joshua, Texas	1- 12000 gal UST/ diesel	1989	Active
		1- 4000 gal UST/diesel	1989	Active
Mann Farm & Ranch, Inc.	815 W. Industrial Blvd. Cleburne, Texas	1- 10000 gal AST/unknown	1978	Active
		1- 10000 gal AST/unknown	1978	Active

8. Leaking Petroleum Storage Tank (LPST)

The LPST listing maintained by the TCEQ is an active listing of known petroleum storage tank releases. The regulatory database was reviewed to locate any LPSTs existing within 0.5 mile of the proposed ROW. The results indicate that no LPSTs are located within the area of concern.

9. Municipal Solid Waste Landfills (MSWLF)

The Division of Solid Waste of the TCEQ maintains a permit application list for the MSWLF. An MSWLF is an area of land or an excavation that has received only municipal solid waste combined with other solids and is not a land application unit, surface impoundment, injection well, or waste pit. A review of the TCEQ records indicates that no MSWLF exist within 0.5 mile of the proposed ROW. The TCEQ has contracted an agency to complete an initial identification of statewide closed and abandoned landfills. NCTCOG maintains an inventory of the permitted and unauthorized sites within the North Central Texas Region. Permitted sites are authorized sites that are now closed. Unauthorized sites have no permit and are considered abandoned. The NCTCOG database of permitted and unauthorized landfills was reviewed to determine if any MSWLFs exist within 0.5 mile of the proposed ROW. The results indicate that no such sites are present.

10. Voluntary Cleanup Program (VCP)

The VCP, instituted by an amendment to the Texas Solid Waste Disposal Act, provides a process for individuals to pursue the remediation of contaminated properties. This program relieves the future lenders and landowners, who are not considered responsible parties, of liability to clean the contaminated area. It also, provides a streamlined process to restore unused or underutilized properties for economically productive or community beneficial use. The TCEQ maintains a database containing information on sites within the VCP. The results of the VCP database review indicate that no VCP sites exist within 0.5 mile of the proposed ROW.

11. Spill Incidents

The TCEQ supports a database documenting incidents of hazardous material spills. The record summarizes pertinent information regarding the incident such as the substance, amount and location of spills, as well as the medium into which the spill occurred (air, water, or land). The TCEQ database was searched for spill sites within 0.25 mile of the proposed ROW. A review of the results indicates that no sites exist within this parameter.

VI. Conclusion

TxDOT recommends implementation of Alternative D for the construction of SH 121 from FM 1187 to US 67 Cleburne Bypass on new location based on the information presented in this EA. Alternative D would improve regional mobility, increase people and goods-carrying capacity and alleviate local congestion. The engineering, social, economic, and environmental investigations conducted thus far on this proposed project indicate that it will result in no significant impacts on the quality of the human environment. A Finding of No Significant Impact (FONSI) is anticipated.

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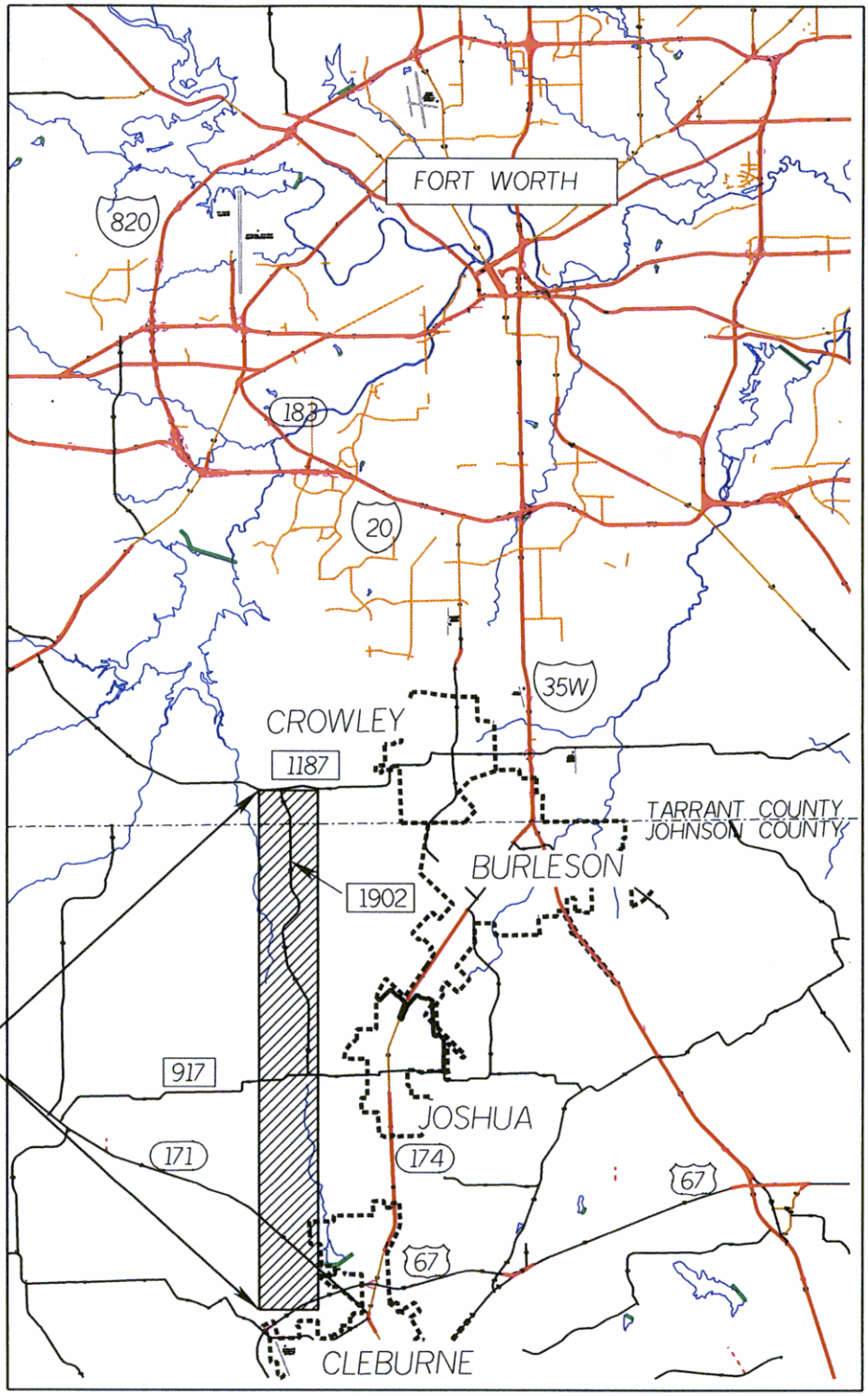
EXHIBIT A. PROJECT LOCATION MAP

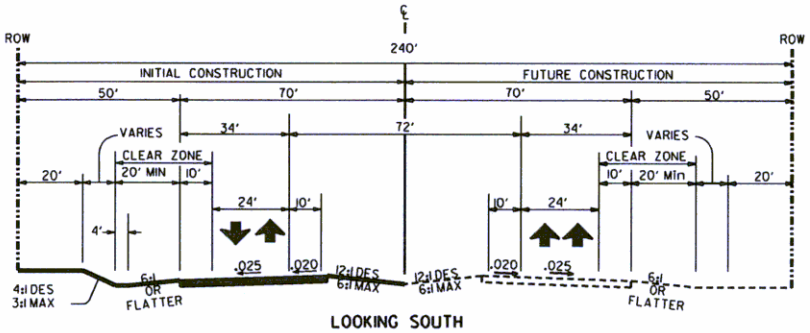


STUDY LIMITS

FROM
FM 1187
TO
US 67

PROJECT LOCATION MAP	
SH 121 SOUTH FROM: FM 1187 TO: US 67	
Texas Department of Transportation	EXHIBIT A

EXHIBIT B. PROPOSED TYPICAL SECTIONS



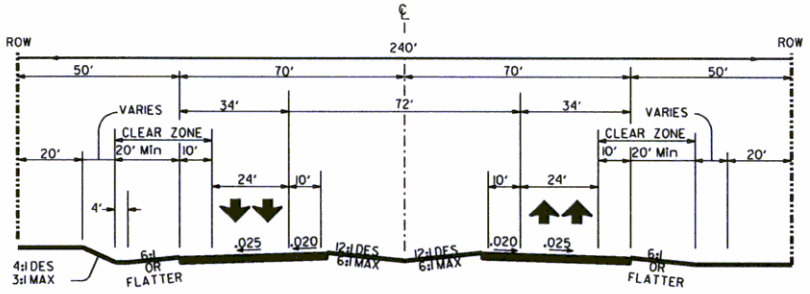
LOOKING SOUTH

MINIMUM CONSTRUCTION TYPICAL SECTION

ADDITIONAL WIDTH MAY BE NEEDED

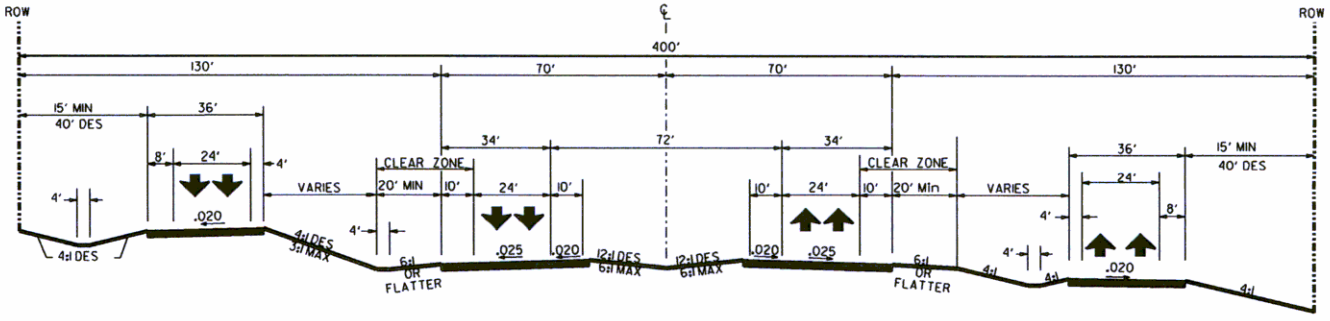
1 THRU LANE EACH DIRECTION INITIALLY

2 THRU LANES EACH DIRECTION FUTURE



ULTIMATE TYPICAL SECTION

2 THROUGH LANES EACH DIRECTION



ULTIMATE TYPICAL SECTION

2 THROUGH LANES EACH DIRECTION

WITH RAMPS AT

INTERCHANGES

SCALE: N.T.S.

PROPOSED TYPICAL SECTIONS

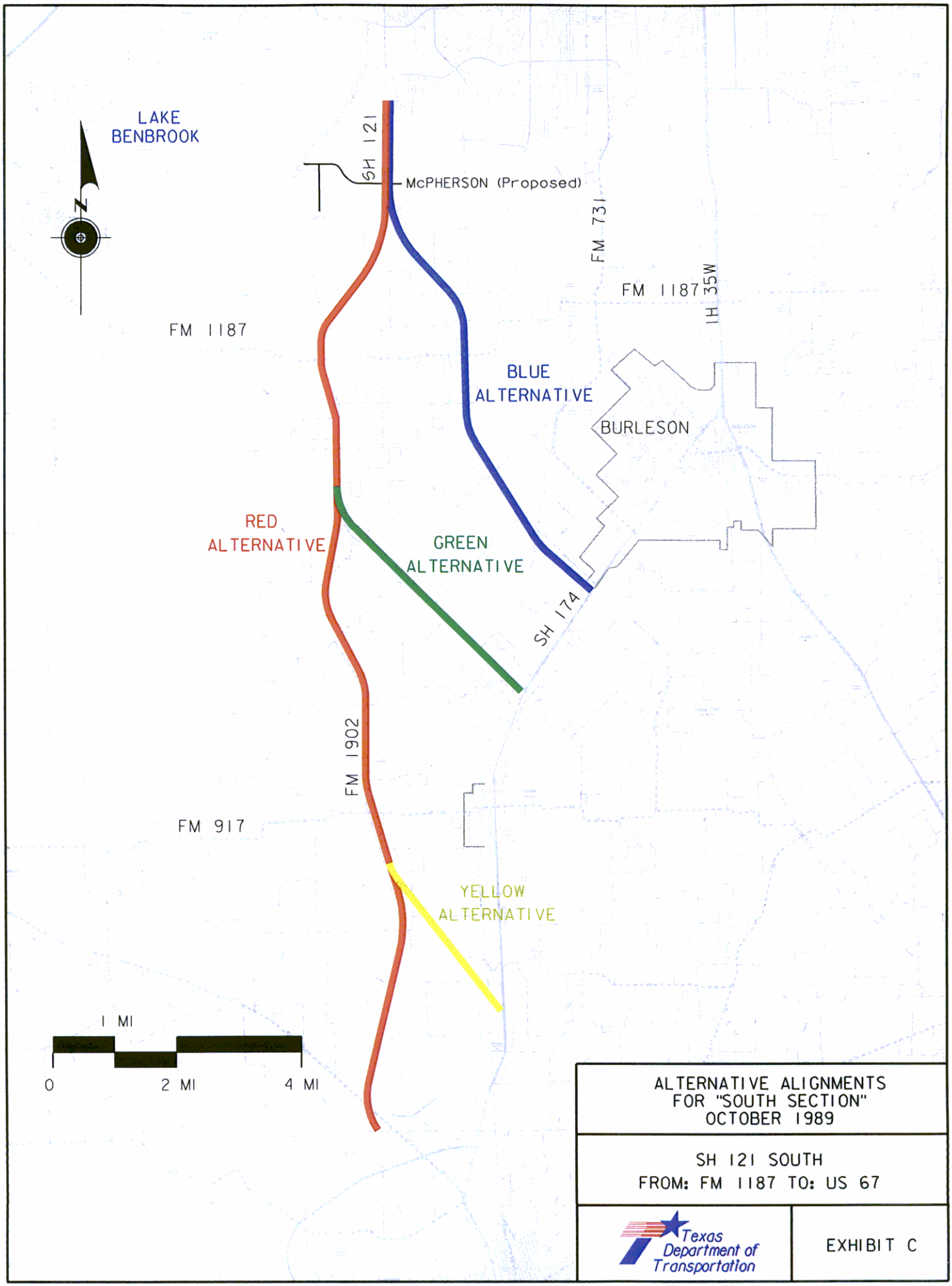
SH 121 SOUTH

FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT B

EXHIBIT C. 1989 DEIS ROUTE ALTERNATIVES



ALTERNATIVE ALIGNMENTS
FOR "SOUTH SECTION"
OCTOBER 1989

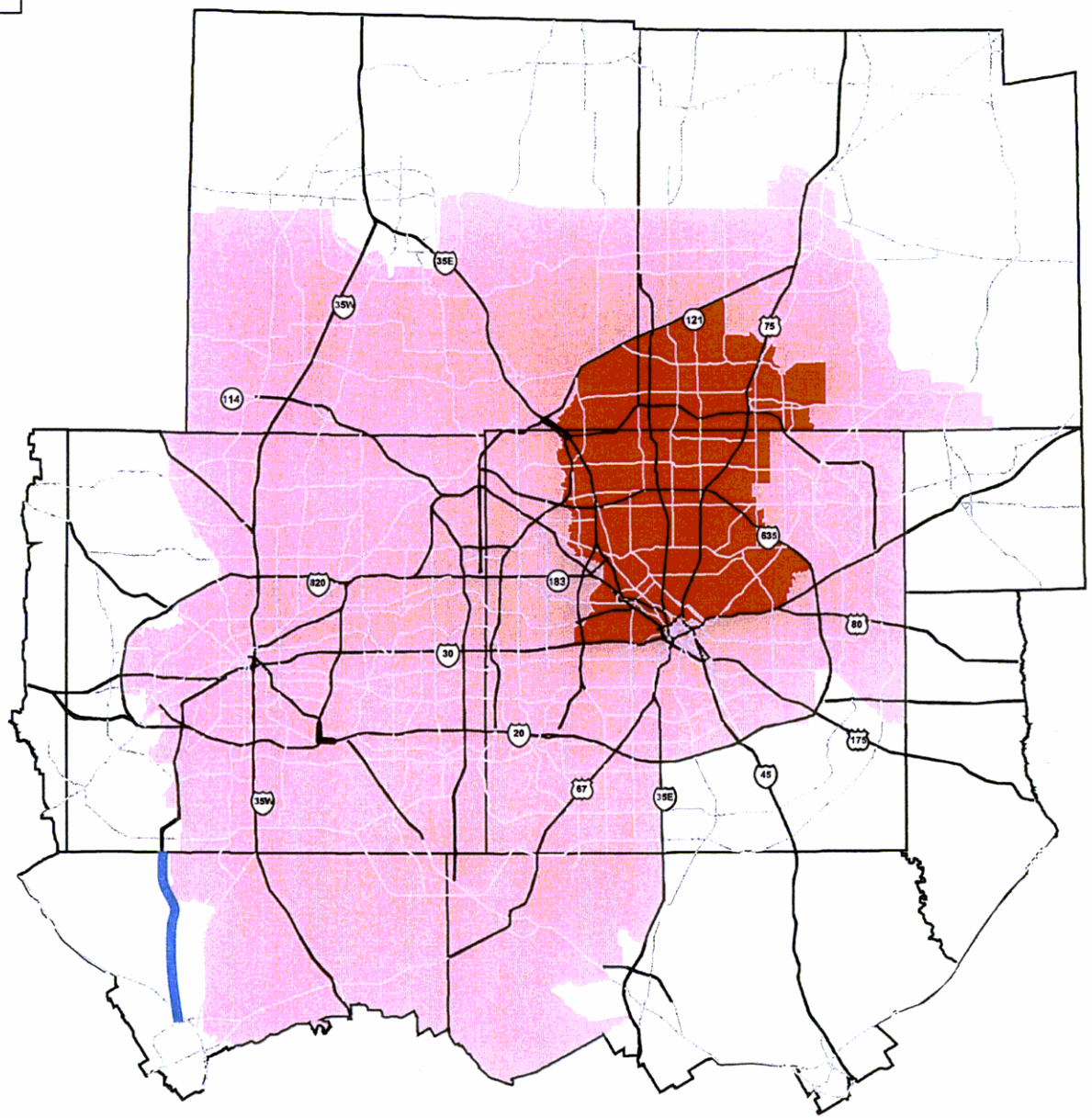
SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT C

EXHIBIT D. MOBILITY 2025 AND LOS MAPS

Exhibit D-1



2025 Congestion Levels

Legend

Areas of Moderate Peak-Period Congestion

Areas of Severe Peak-Period Congestion

Annual Cost of Congestion = $8.2 Billion

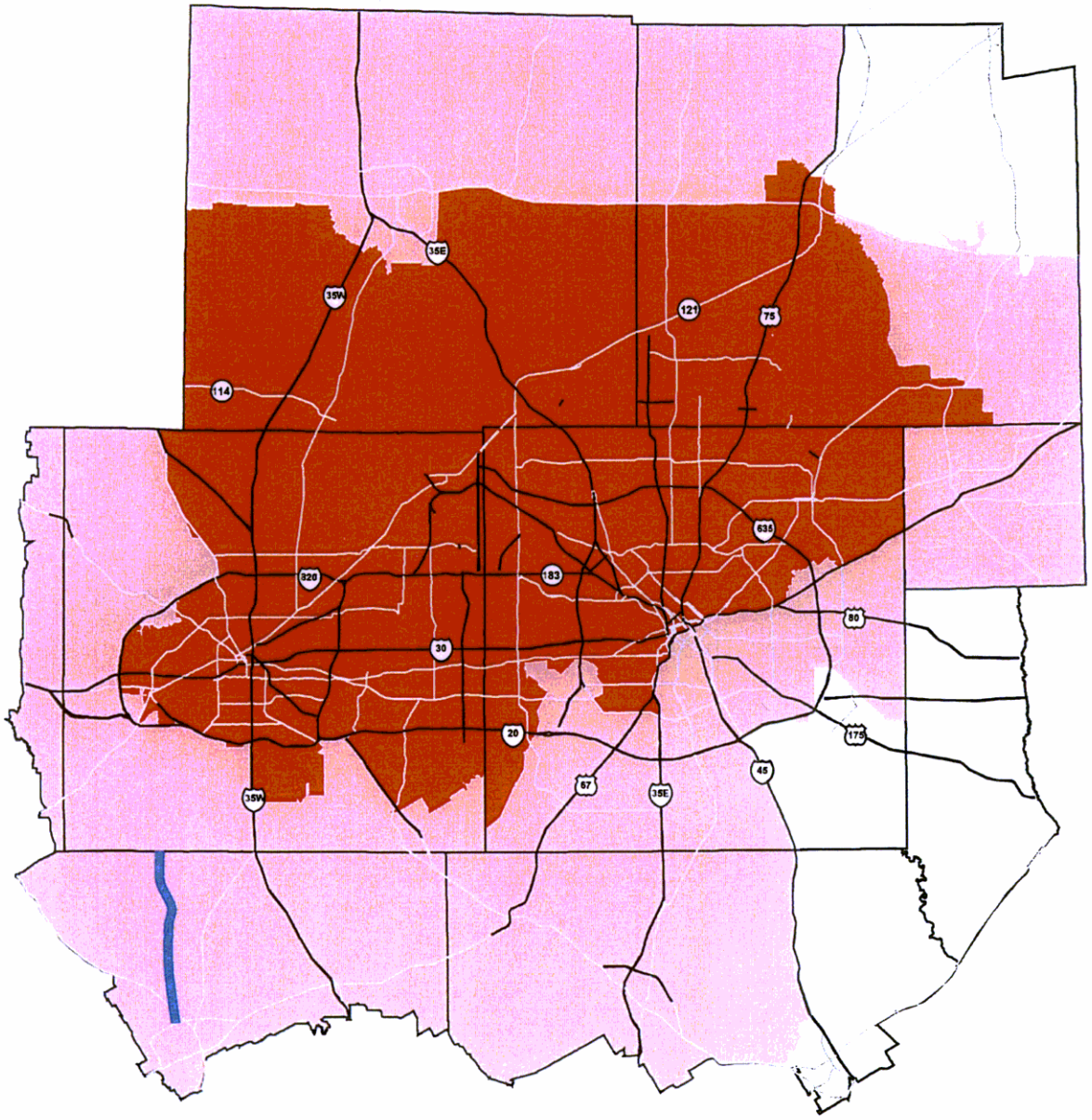
Proposed Project

MOBILITY 2025 UPDATE

North Central Texas Council of Governments Transportation

N

Exhibit D-2



2025 Congestion Levels Committed Network

Legend

Areas of Moderate Peak-Period Congestion

Areas of Severe Peak-Period Congestion

Annual Cost of Congestion = $15.5 Billion

Proposed Project

Committed Network has existing and programmed improvements

MOBILITY 2025 UPDATE

North Central Texas Council of Governments Transportation

N

Exhibit D-3

Year 2025 Roadway Level of Service
Build (2025 Network- Planned Improvements)

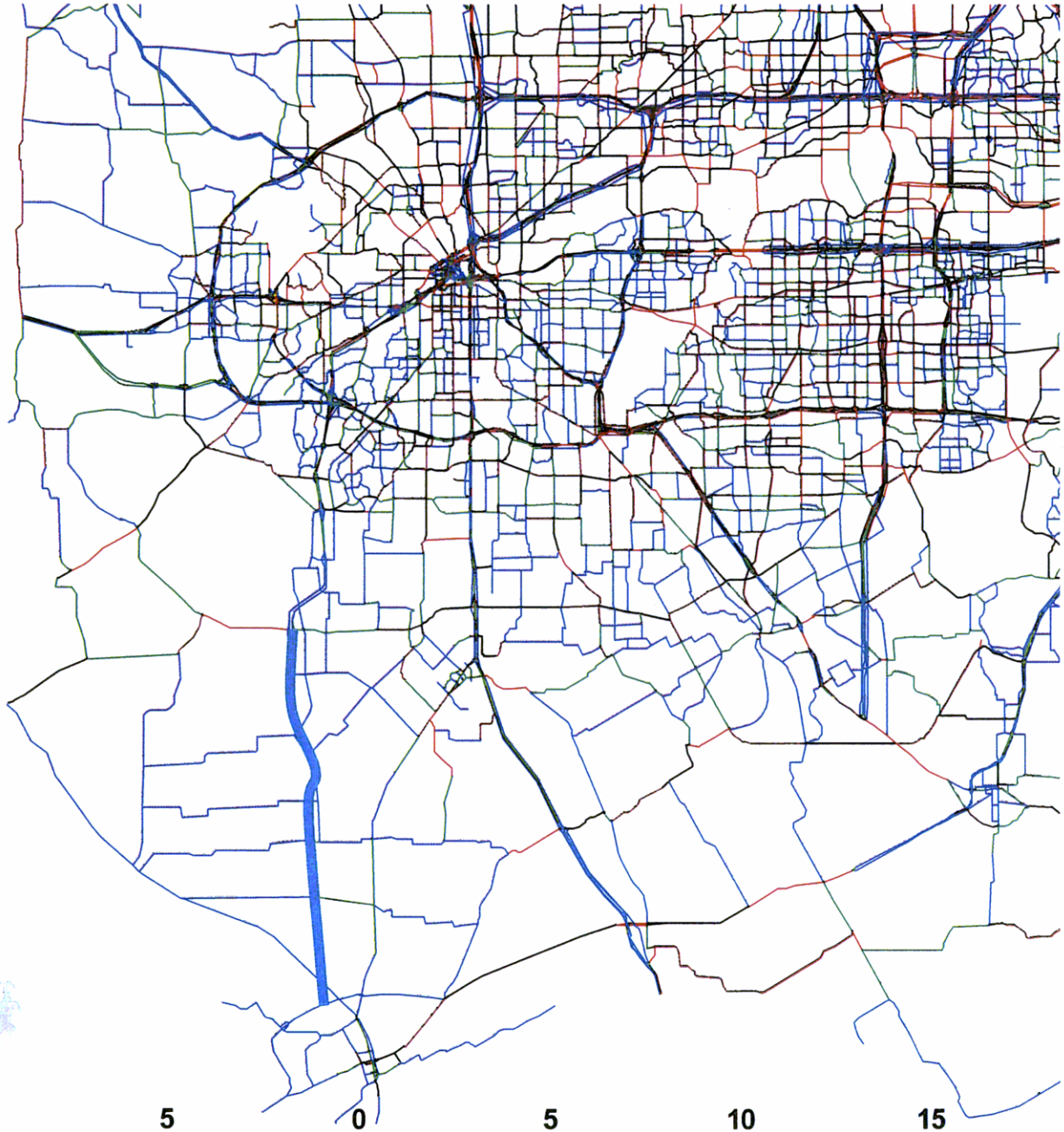


Exhibit D-4

Year 2025 Roadway Level of Service
No Build (1999 Network + TIP projects)

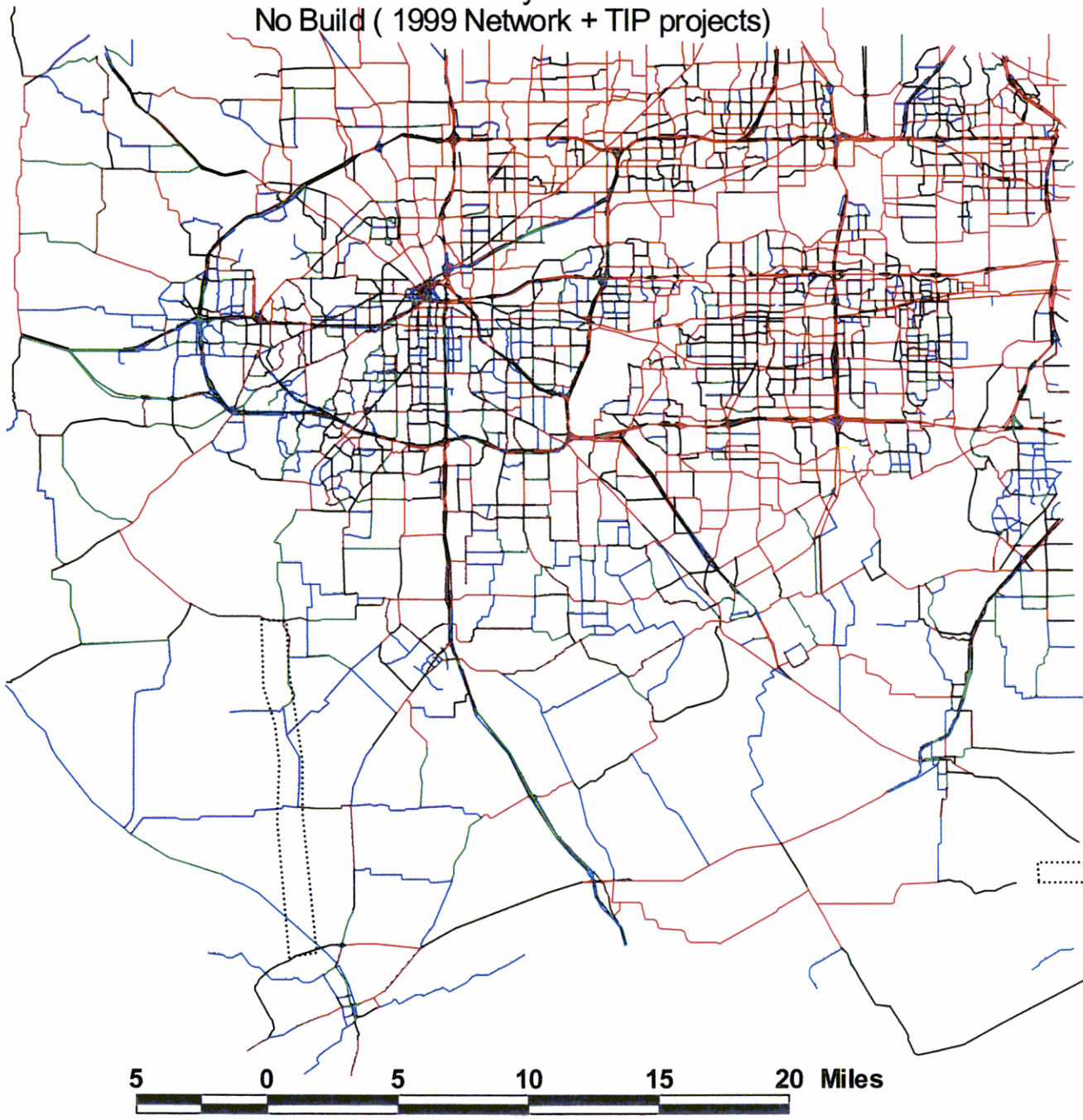
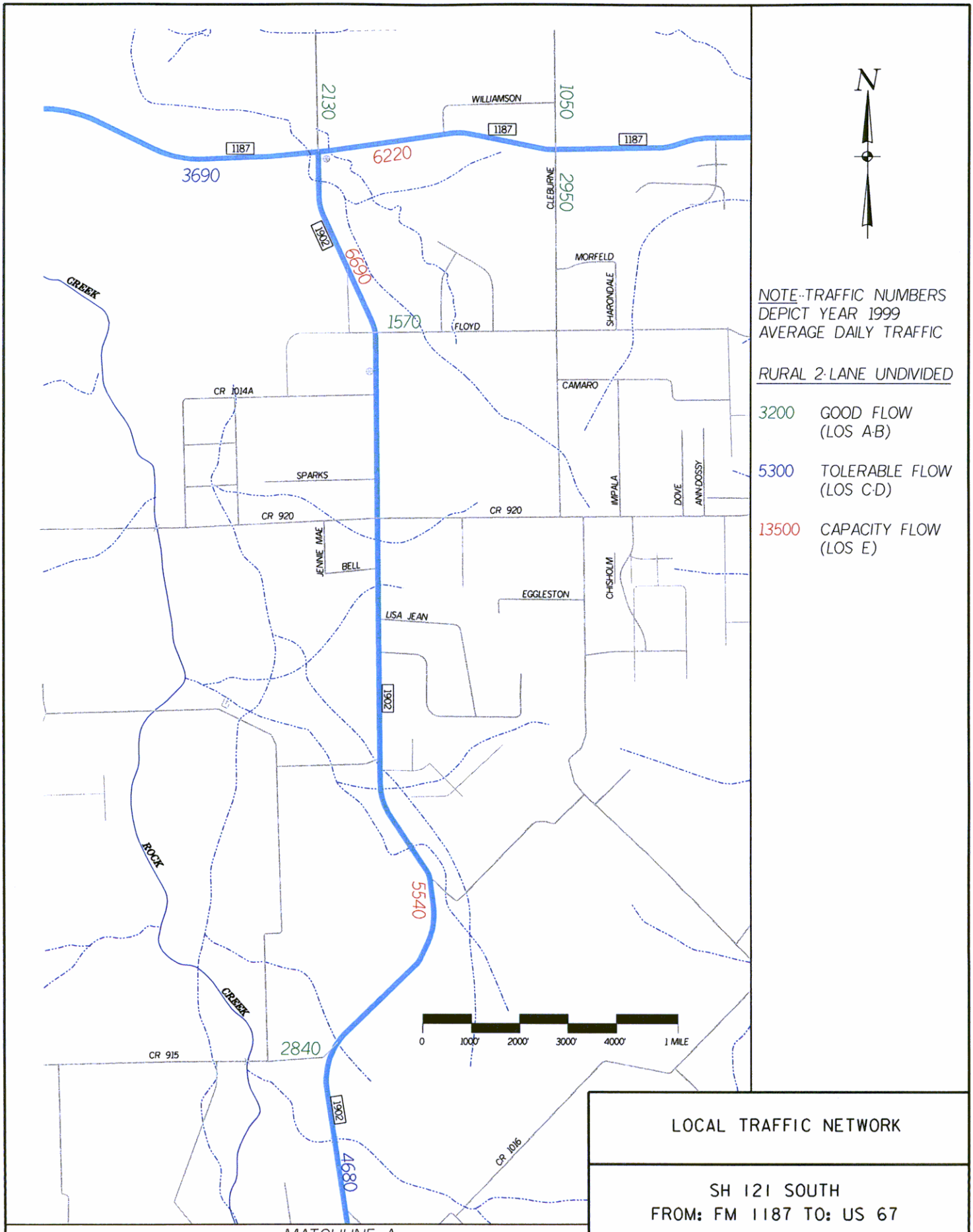
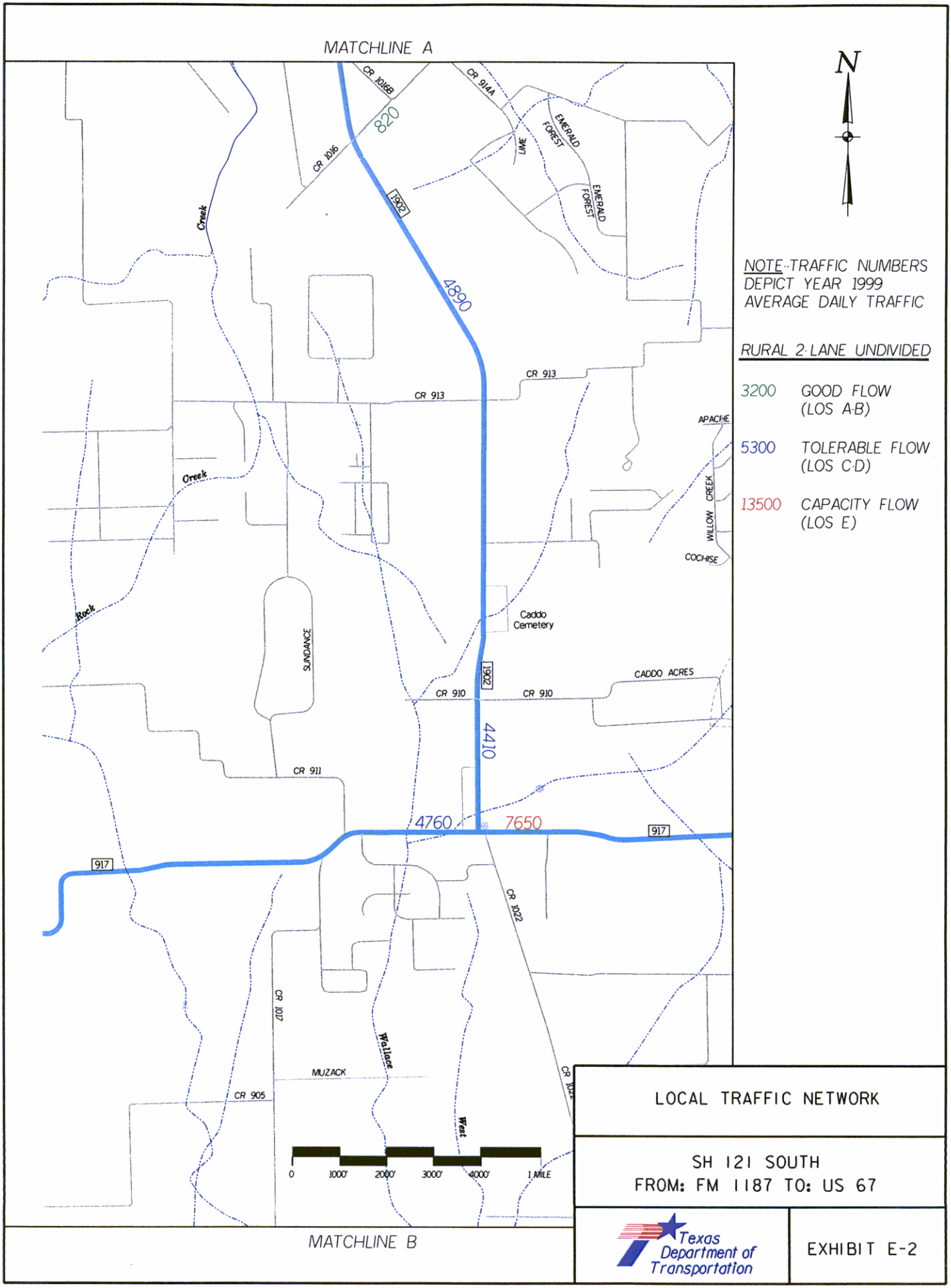
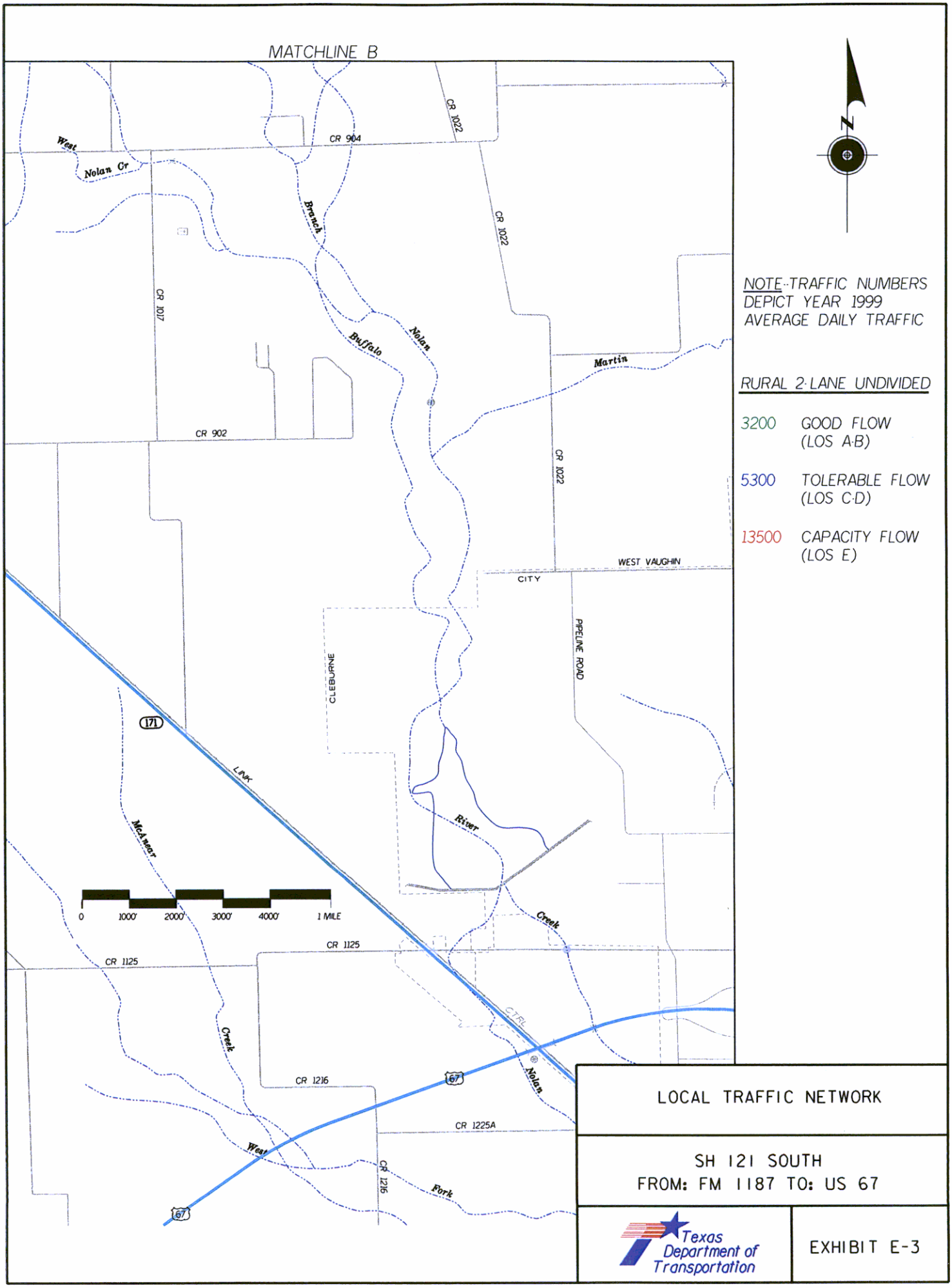
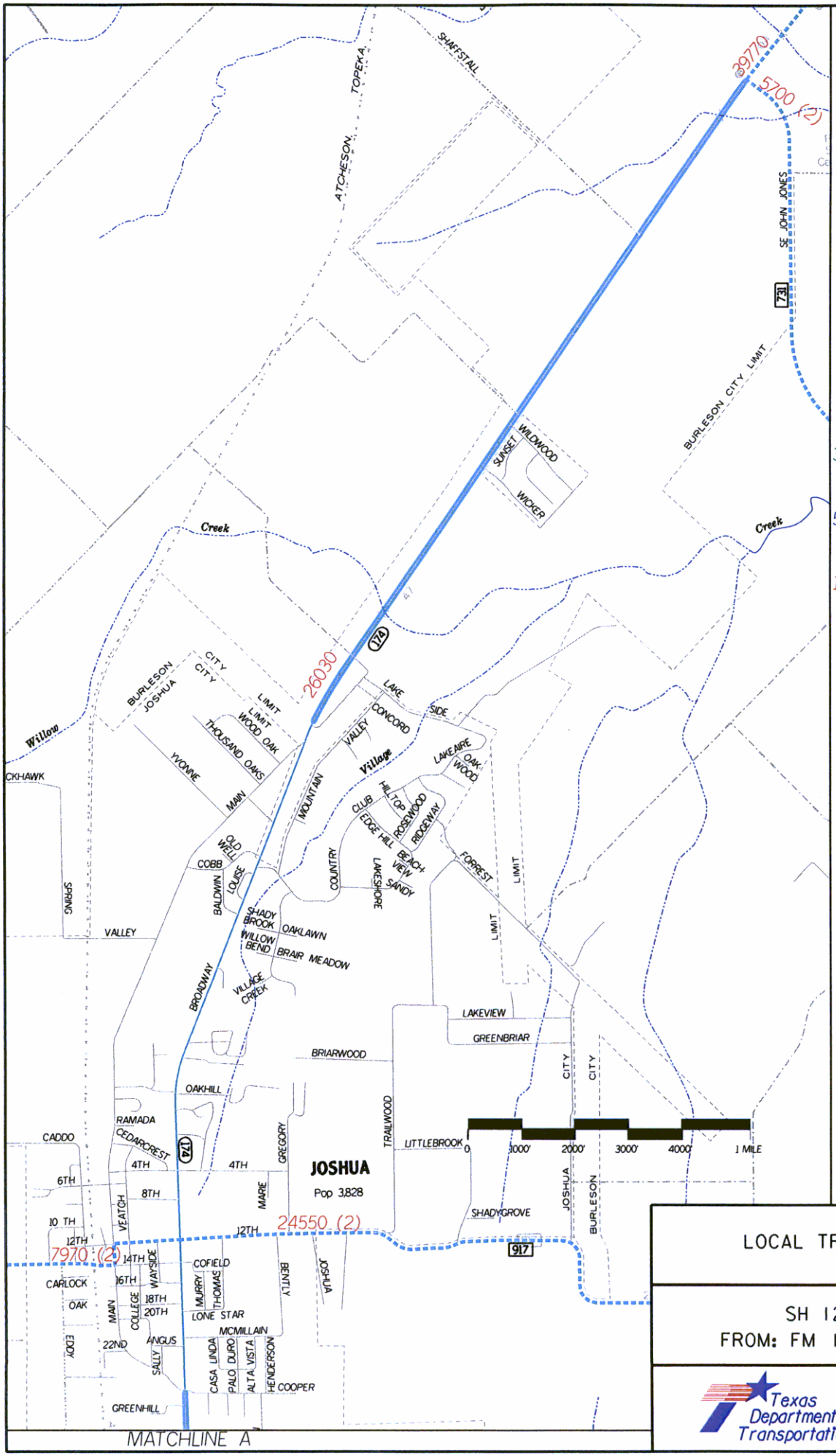


EXHIBIT E. LOCAL TRAFFIC NETWORK


N
2130
1050
WILLIAMSON
1187
1187
1187
3690
6220
2950
CLEBURNE
1902
6690
MORFELD
SHARONDALE
CREEK
1570
FLOYD
CR 1014A
CAMARO
SPARKS
IMPALA
DOVE
ANN DOSSY
CR 920
CR 920
JENNIE MAE
BELL
CHISHOLM
EGGLESTON
LISA JEAN
1902
ROCK
5540
CREEK
0
1000'
2000'
3000'
4000'
1 MILE
CR 915
2840
1902
4680
CR 1016
NOTE--TRAFFIC NUMBERS DEPICT YEAR 1999 AVERAGE DAILY TRAFFIC
RURAL 2-LANE UNDIVIDED
3200 GOOD FLOW (LOS A-B)
5300 TOLERABLE FLOW (LOS C-D)
13500 CAPACITY FLOW (LOS E)
MATCHLINE A
LOCAL TRAFFIC NETWORK
SH 121 SOUTH
FROM: FM 1187 TO: US 67
Texas Department of Transportation
EXHIBIT E-1


MATCHLINE A
N
NOTE-TRAFFIC NUMBERS DEPICT YEAR 1999 AVERAGE DAILY TRAFFIC
RURAL 2-LANE UNDIVIDED
3200 GOOD FLOW (LOS A-B)
5300 TOLERABLE FLOW (LOS C-D)
13500 CAPACITY FLOW (LOS E)
CR 1016B
CR 914A
820
CR 1016
1902
EMERALD FOREST
EMERALD FOREST
Creek
4890
CR 913
CR 913
APACHE
Creek
WILLOW CREEK
COCHISE
Rock
Caddo Cemetery
SUNDANCE
1902
CADDO ACRES
CR 910
CR 910
4410
CR 911
4760
7650
917
917
CR 1022
CR 1017
Wallace
MUZACK
CR 905
West
0 1000' 2000' 3000' 4000' 1 MILE
MATCHLINE B
LOCAL TRAFFIC NETWORK
SH 121 SOUTH
FROM: FM 1187 TO: US 67
Texas Department of Transportation
EXHIBIT E-2


MATCHLINE B
N
NOTE--TRAFFIC NUMBERS DEPICT YEAR 1999 AVERAGE DAILY TRAFFIC
RURAL 2-LANE UNDIVIDED
3200 GOOD FLOW (LOS A-B)
5300 TOLERABLE FLOW (LOS C-D)
13500 CAPACITY FLOW (LOS E)
CR 904
CR 1022
CR 1017
CR 902
West Nolan Cr
Branch
Buffalo
Nolan
Martin
WEST VAUGHN CITY
CLEBURNE
PIPELINE ROAD
171
LINK
McAnear
River
Creek
CR 1125
CTRL
CR 1216
67
CR 1225A
West Fork
0 1000' 2000' 3000' 4000' 1 MILE
LOCAL TRAFFIC NETWORK
SH 121 SOUTH
FROM: FM 1187 TO: US 67
Texas Department of Transportation
EXHIBIT E-3



NOTE--TRAFFIC NUMBERS DEPICT YEAR 1999 AVERAGE DAILY TRAFFIC

RURAL 2-LANE UNDIVIDED

3200 (2)	GOOD FLOW (LOS A-B)
5300 (2)	TOLERABLE FLOW (LOS C-D)
13500 (2)	CAPACITY FLOW (LOS E)

RURAL 4-LANE DIVIDED

15800	GOOD FLOW (LOS A-B)
20100	TOLERABLE FLOW (LOS C-D)
29500	CAPACITY FLOW (LOS E)

LOCAL TRAFFIC NETWORK

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT E-4

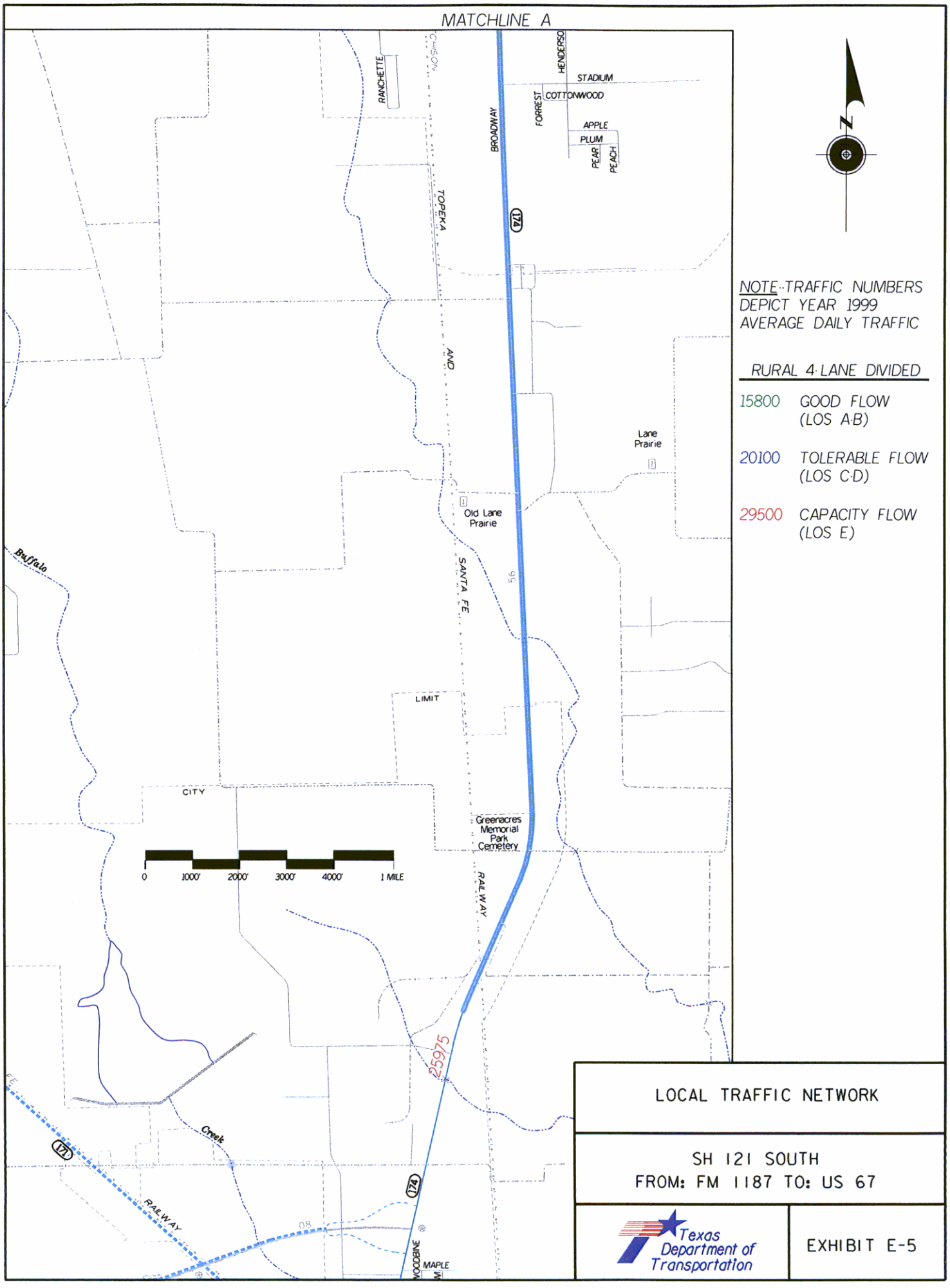

MATCHLINE A
RANCHETTE
HENDERSON
STADIUM
COTTONWOOD
FORREST
APPLE
PLUM
PEAR
PEACH
BROADWAY
174
TOPEKA
AND
SANTA FE
Lane Prairie
Old Lane Prairie
Buffalo
LIMIT
CITY
Greenacres Memorial Park Cemetery
0 1000' 2000' 3000' 4000' 1 MILE
RAILWAY
25975
Creek
171
RAILWAY
WOODBINE
MAPLE
N
NOTE--TRAFFIC NUMBERS DEPICT YEAR 1999 AVERAGE DAILY TRAFFIC
RURAL 4-LANE DIVIDED
15800 GOOD FLOW (LOS A-B)
20100 TOLERABLE FLOW (LOS C-D)
29500 CAPACITY FLOW (LOS E)
LOCAL TRAFFIC NETWORK
SH 121 SOUTH
FROM: FM 1187 TO: US 67
Texas Department of Transportation
EXHIBIT E-5

EXHIBIT F. PROPOSED ROUTE ALTERNATIVES

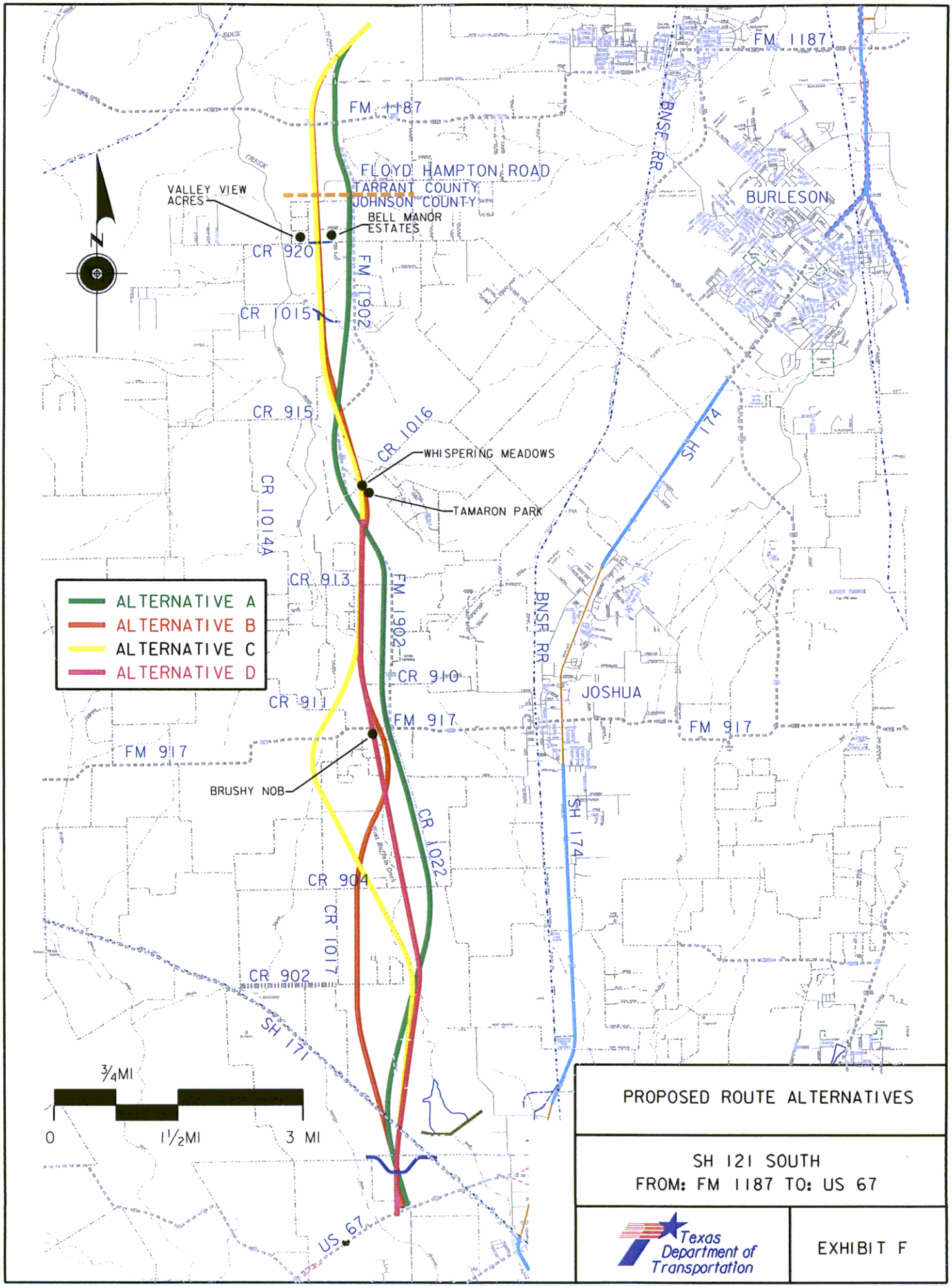

FM 1187
FM 1187
FLOYD HAMPTON ROAD
TARRANT COUNTY
JOHNSON COUNTY
VALLEY VIEW ACRES
BELL MANOR ESTATES
BNSF RR
BURLESON
CR 920
FM 1902
CR 1015
CR 915
CR 1016
WHISPERING MEADOWS
TAMARON PARK
CR 1014A
SH 174
CR 913
FM 1902
BNSF RR
CR 910
JOSHUA
CR 911
FM 917
FM 917
FM 917
BRUSHY NOB
SH 174
CR 1022
CR 904
CR 1017
CR 902
SH 171
US 67
ALTERNATIVE A
ALTERNATIVE B
ALTERNATIVE C
ALTERNATIVE D
3/4MI
0
1 1/2MI
3 MI
PROPOSED ROUTE ALTERNATIVES
SH 121 SOUTH
FROM: FM 1187 TO: US 67
Texas Department of Transportation
EXHIBIT F

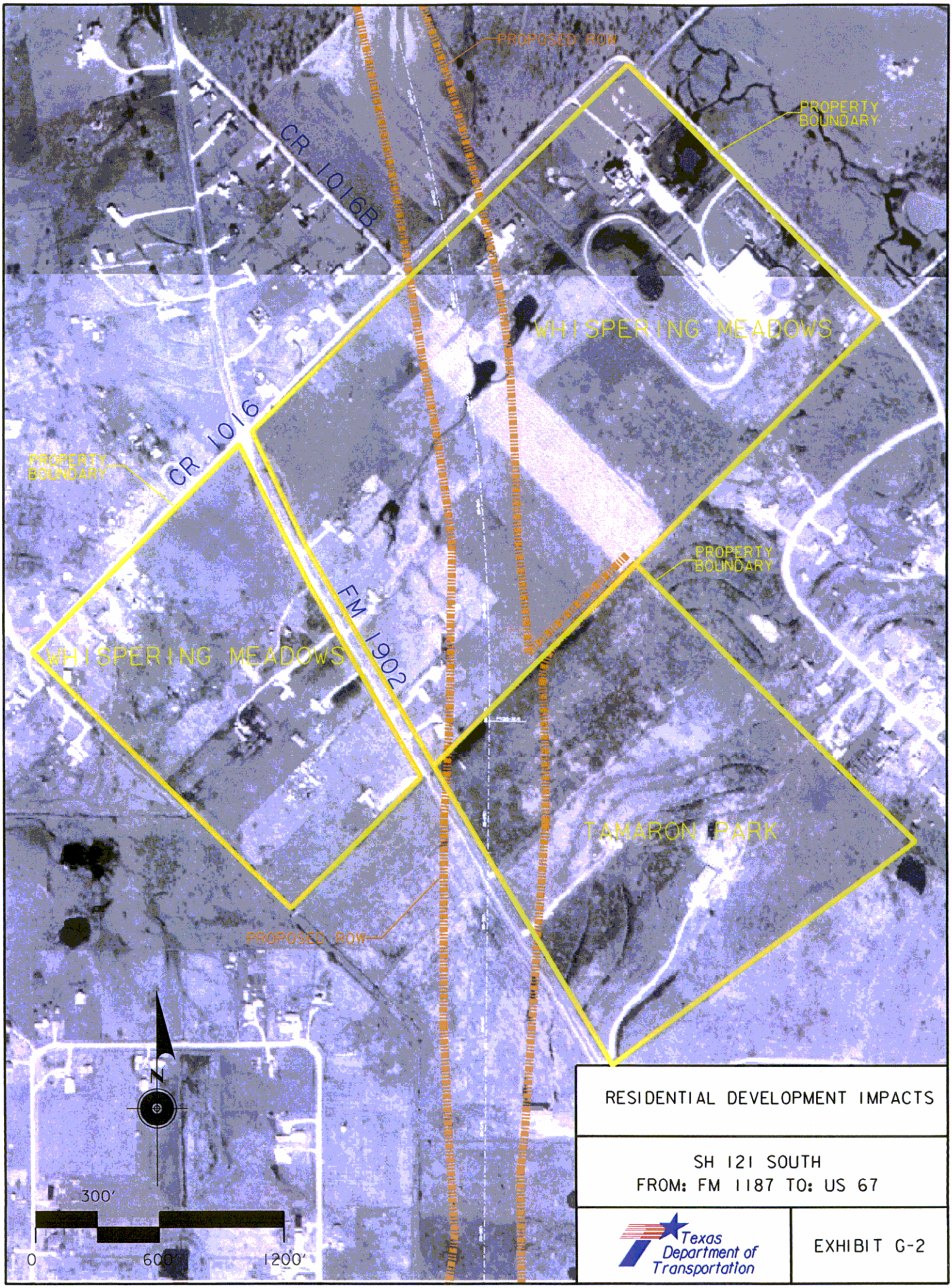
EXHIBIT G. RESIDENTIAL DEVELOPMENT IMPACTS OF ALTERNATIVE D

RESIDENTIAL DEVELOPMENT IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT G-1

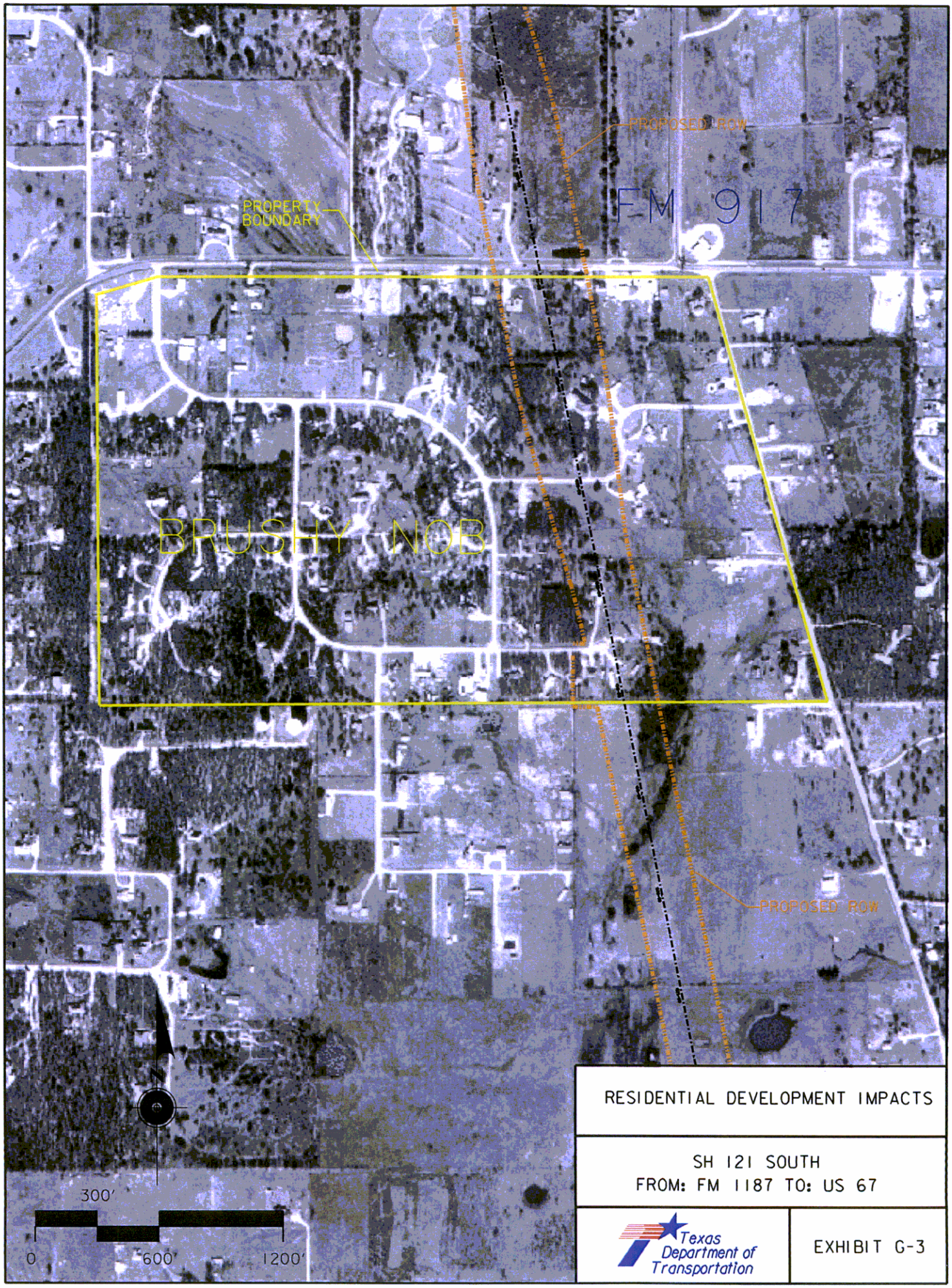


RESIDENTIAL DEVELOPMENT IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT G-2



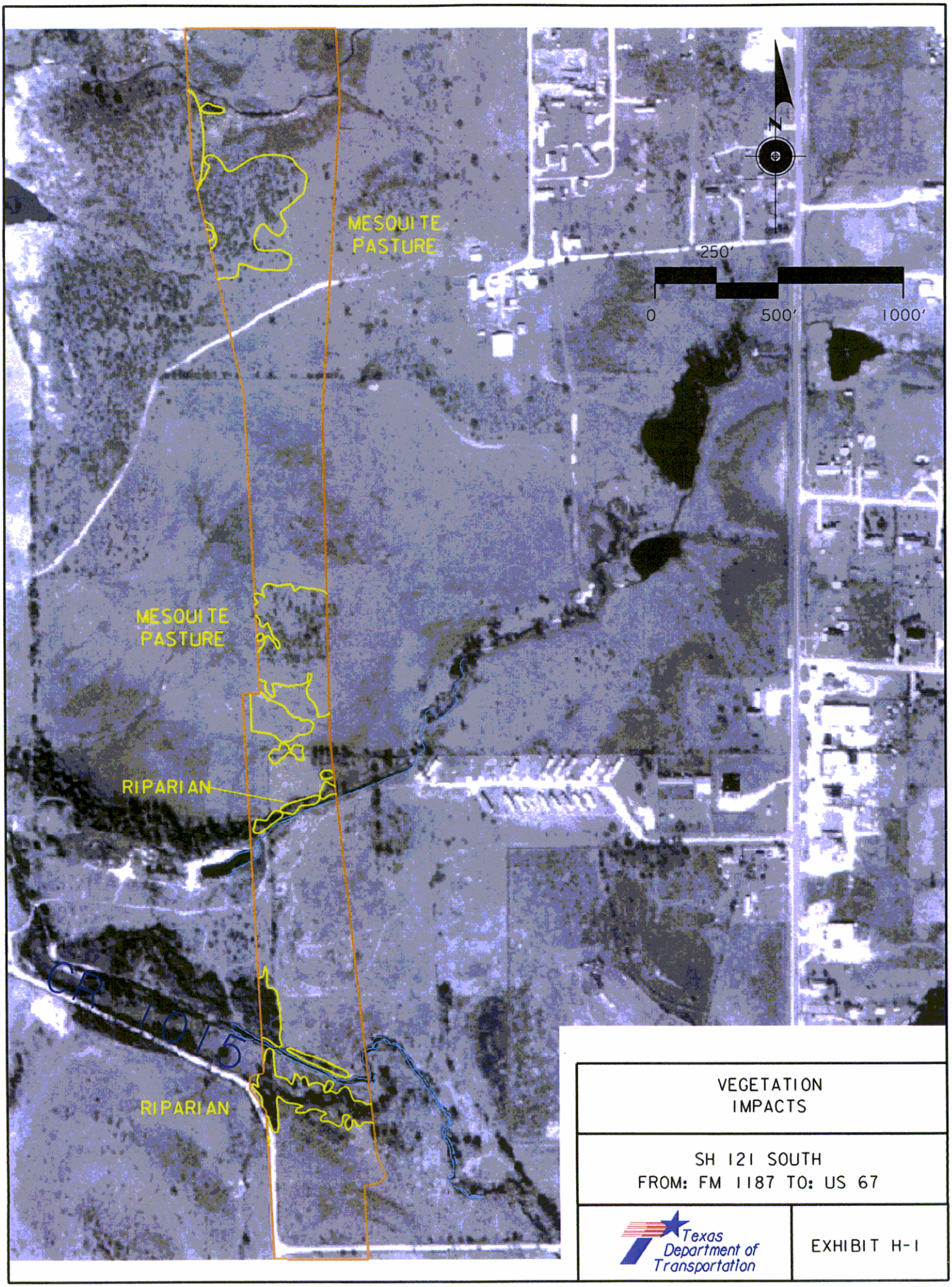
RESIDENTIAL DEVELOPMENT IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT G-3

EXHIBIT H. VEGETATION IMPACTS

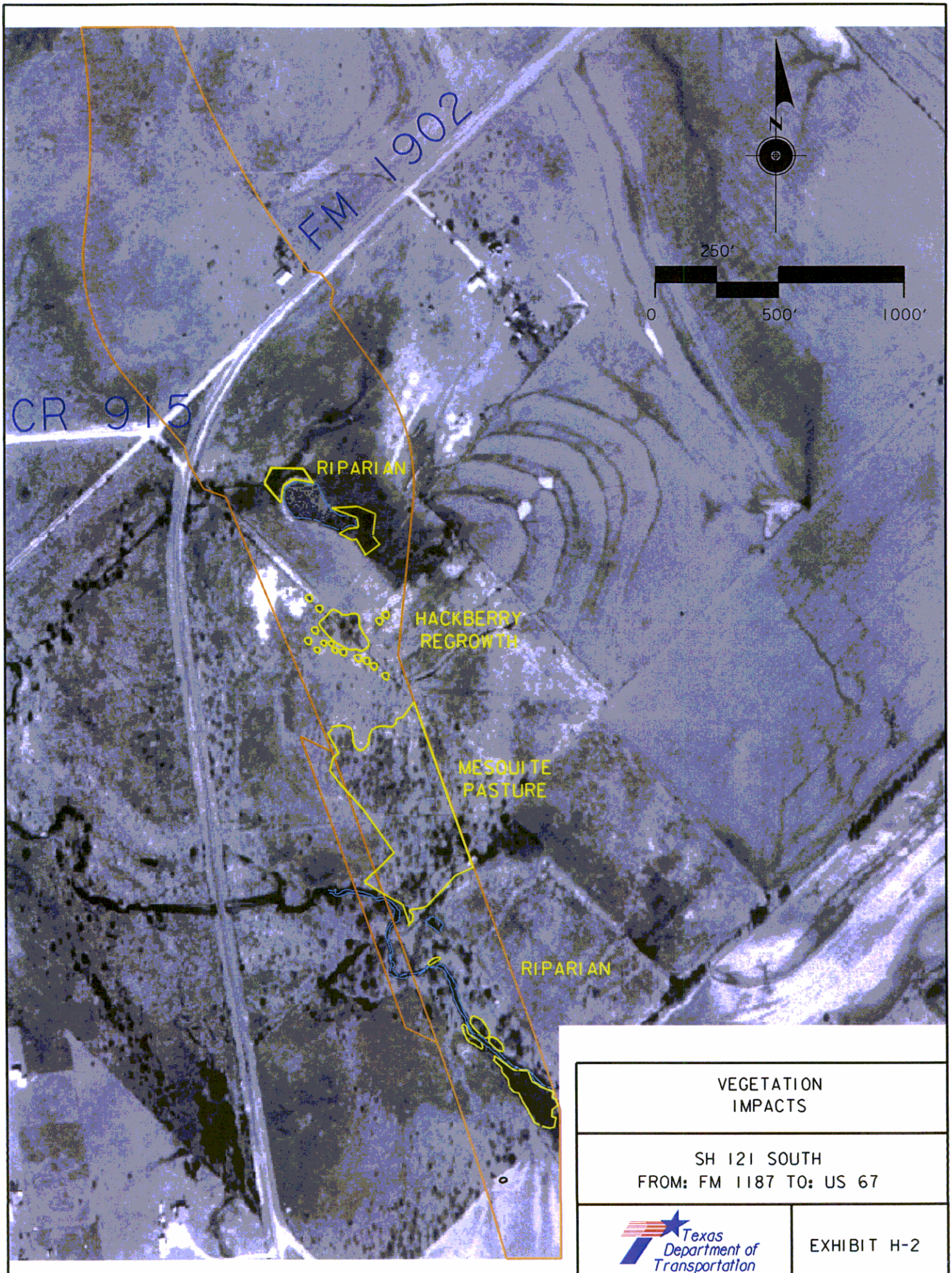


VEGETATION
IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT H-1

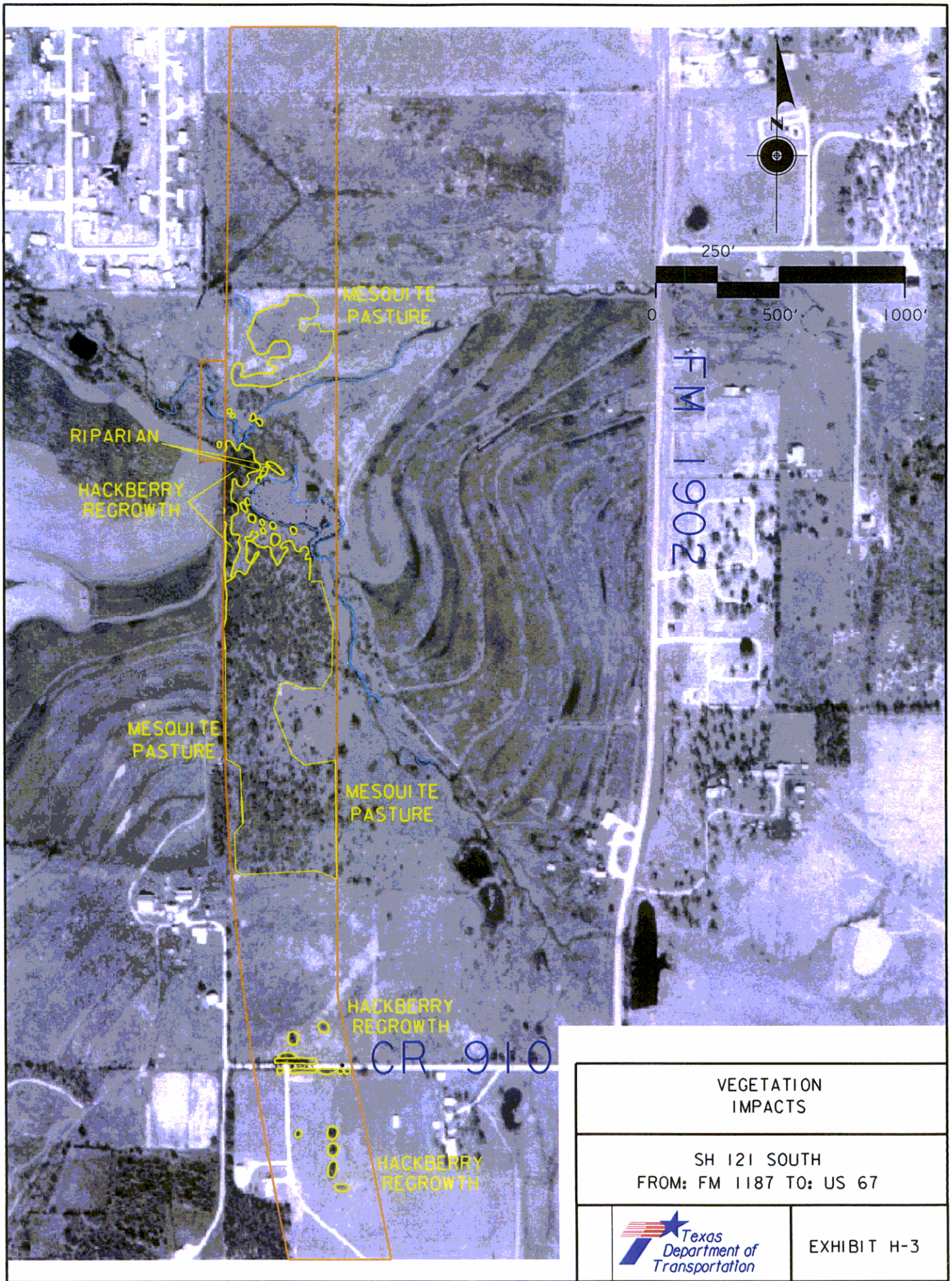


VEGETATION IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT H-2

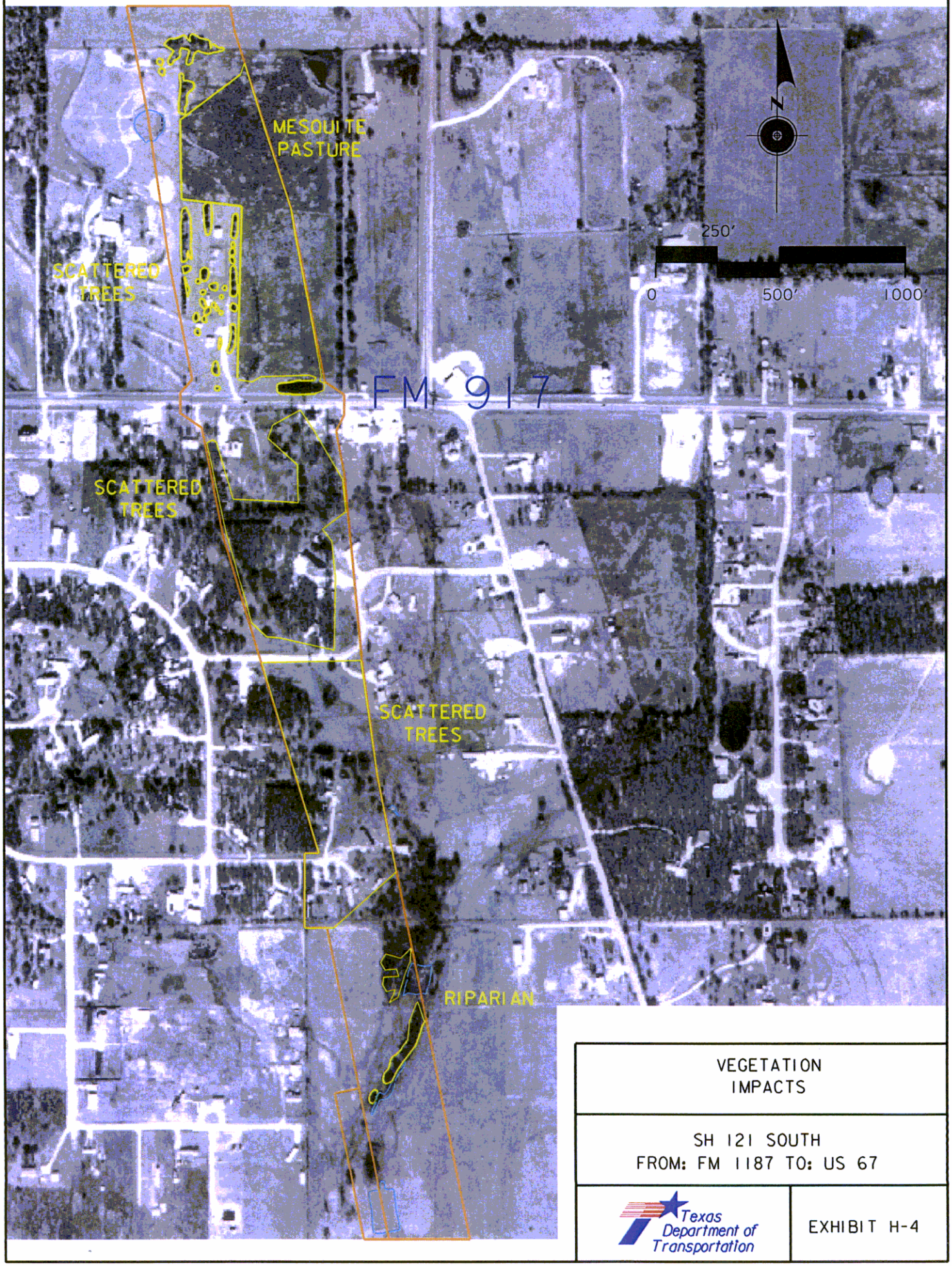


VEGETATION IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT H-3

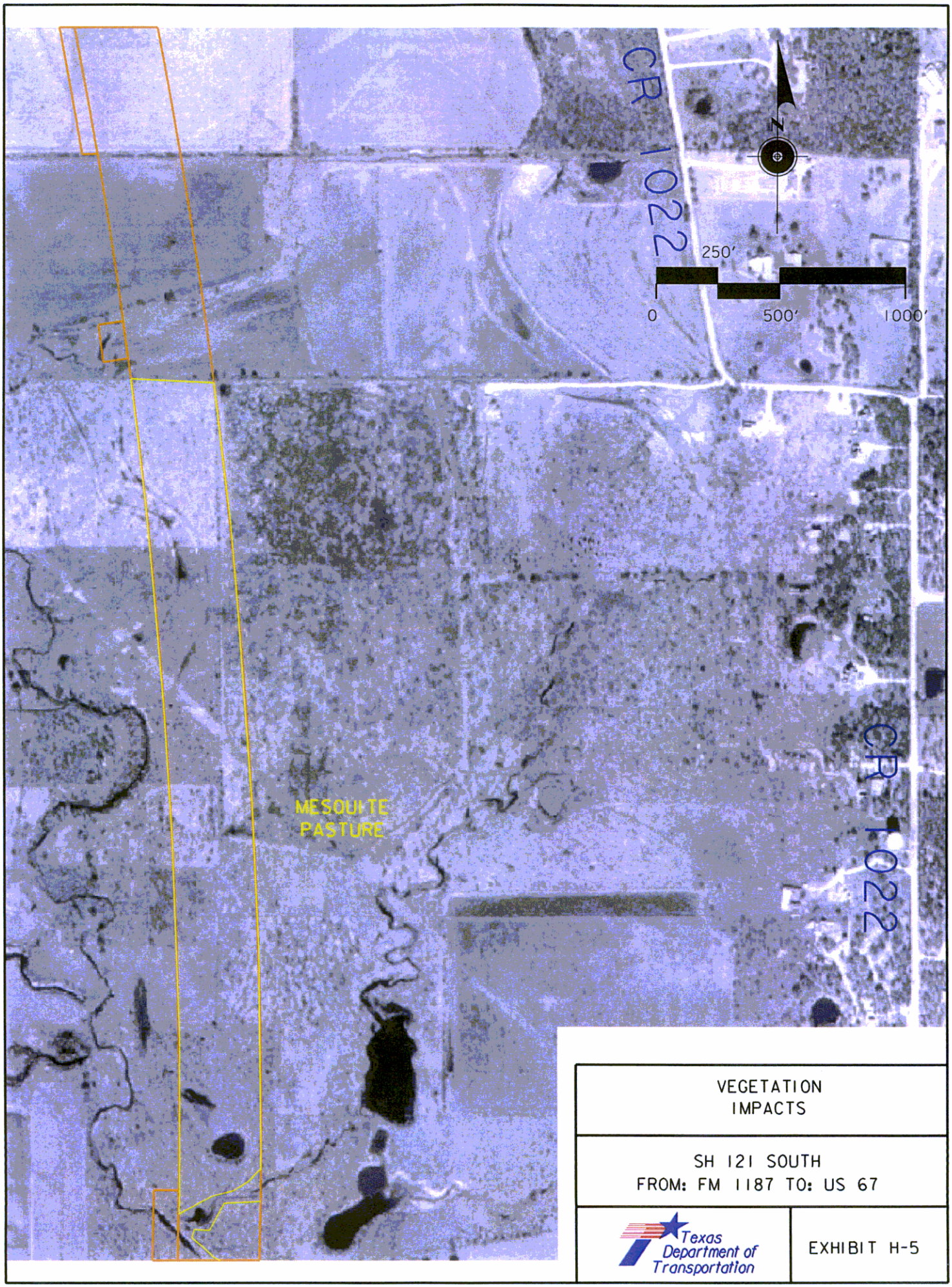


VEGETATION IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT H-4

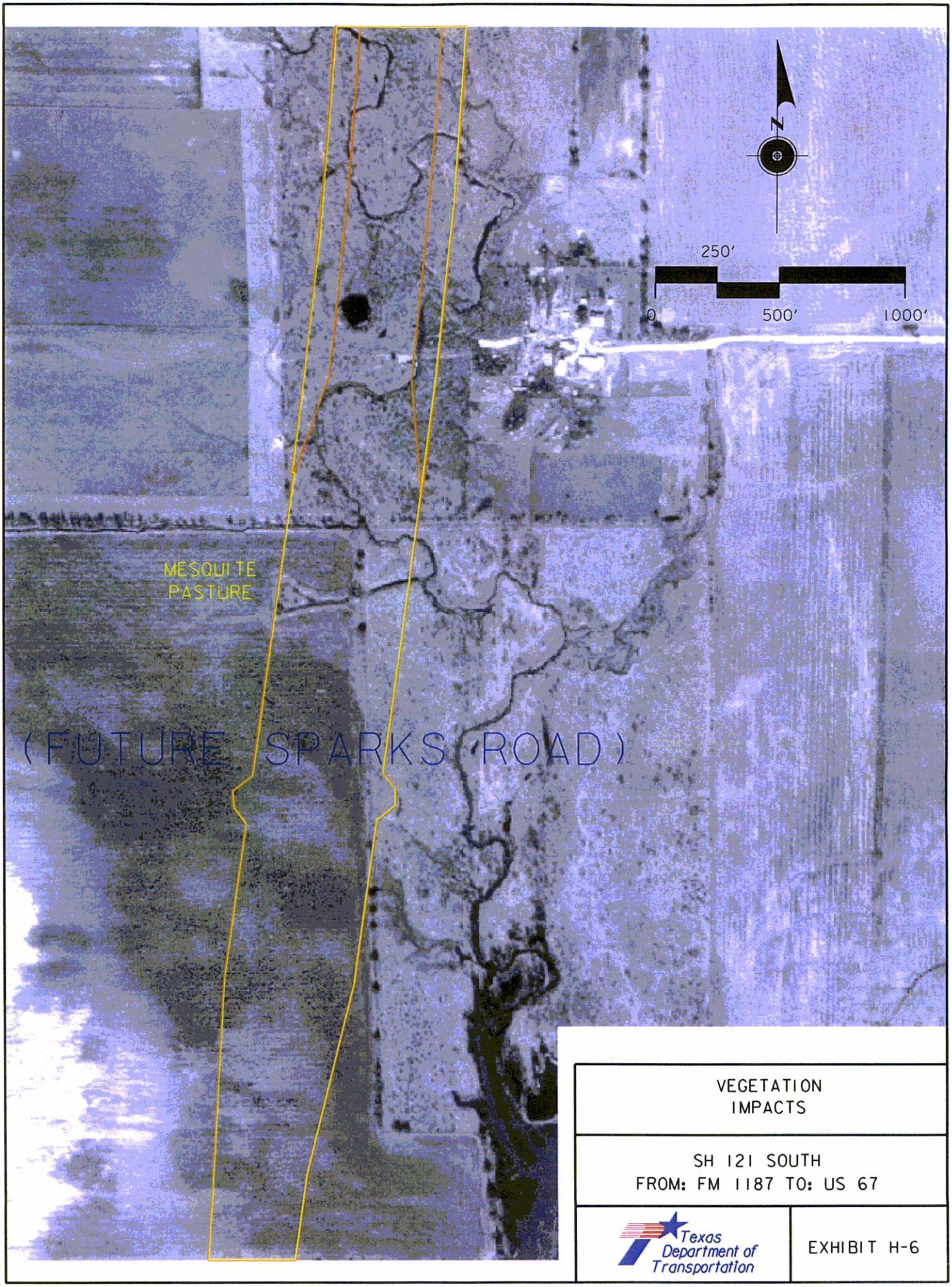


VEGETATION
IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT H-5



VEGETATION
IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT H-6

SH 121 SOUTH VEGETATION IMPACTS

Exhibit 1

	MESQUITE PASTURE					RIPARIAN					HACKBERRY REGROWTH					SCATTERED UPLAND TREES				
	sft	Mesquite Pasture acres	Canopy %	Canopy acres	SFT*Canopy	sft	Riparian acres	Canopy %	Canopy acres	SFT*Canopy	sft	Hackberry acres	Canopy %	Canopy acres	SFT*Canopy	sft	Scattered acres	Canopy %	Canopy acres	SFT*Canopy
	164930	3.786271809	0.4	1.514508724	65972	12372	0.284022	0.4	0.113609	4948.8										
	111703	2.564348026	0.6	1.538608815	67021.8	14656	0.336455	0.5	0.168228	7328										
	33744	0.774655647	0.2	0.154931129	6748.8	3648	0.083747	0.45	0.037686	1641.6										
Total	310377	7.125275482		3.208048669	139742.6	40173	0.922245	0.6	0.553347	24103.8										
					0.450235037	Total 70849	1.626469		0.87287	38022.2										
										0.6										

Exhibit 2

	MESQUITE PASTURE					RIPARIAN					HACKBERRY REGROWTH					SCATTERED UPLAND TREES				
	sft	Mesquite Pasture acres	Canopy %	Canopy acres	SFT*Canopy	sft	Riparian acres	Canopy %	Canopy acres	SFT*Canopy	sft	Hackberry acres	Canopy %	Canopy acres	SFT*Canopy	sft	Scattered acres	Canopy %	Canopy acres	SFT*Canopy
Total	249997	5.739141414	0.65	3.730441919	162498.05	9469	0.217378	0.55	0.119558	5207.95	Total 25119	0.576653	0.6	0.345992	1507.1.4					
					0.65	12670	0.290863	0.7	0.203604	8869					0.6					
						21278	0.488476	0.75	0.366357	15958.5										
						Total 43417	0.996717		0.689519	30035.45										
										0.691790082										

Exhibit 3

	MESQUITE PASTURE					RIPARIAN					HACKBERRY REGROWTH					SCATTERED UPLAND TREES				
	sft	Mesquite Pasture acres	Canopy %	Canopy acres	SFT*Canopy	sft	Riparian acres	Canopy %	Canopy acres	SFT*Canopy	sft	Hackberry acres	Canopy %	Canopy acres	SFT*Canopy	sft	Scattered acres	Canopy %	Canopy acres	SFT*Canopy
	77623	1.78197888	0.5	0.89098944	38811.5	1427	0.032759	0.8	0.026208	1141.6	Total 31504	0.723232	0.8	0.578586	25203.2					
	419583	9.632300275	0.7	6.742610193	293708.1	607	0.013935	0.8	0.011148	485.6					0.8					
Total	497206	11.41427916		7.633599633	332519.6	Total 2034	0.046694		0.037355	1627.2										
					0.668776322					0.8										

Exhibit 4

	MESQUITE PASTURE					RIPARIAN					HACKBERRY REGROWTH					SCATTERED UPLAND TREES				
	sft	Mesquite Pasture acres	Canopy %	Canopy acres	SFT*Canopy	sft	Riparian acres	Canopy %	Canopy acres	SFT*Canopy	sft	Hackberry acres	Canopy %	Canopy acres	SFT*Canopy	sft	Scattered acres	Canopy %	Canopy acres	SFT*Canopy
Total	346907	7.963888889	0.65	5.176527778	225489.55	4712	0.108173	0.95	0.102764	4476.4						120000	2.754821	0.1		12000
					0.65	10158	0.233196	0.95	0.221536	9650.1						382000	8.769513	0.75		286500
						Total 14870	0.341368		0.3243	14126.5						336807	7.732025	0.25		84201.75
										0.95						19500	0.447658	0.95		18525
																71000	1.629936	0.95		67450
																Total 929307	21.33395			468676.75
																				0.504329301

Exhibit 5

	MESQUITE PASTURE					RIPARIAN					HACKBERRY REGROWTH					SCATTERED UPLAND TREES				
	sft	Mesquite Pasture acres	Canopy %	Canopy acres	SFT*Canopy	sft	Riparian acres	Canopy %	Canopy acres	SFT*Canopy	sft	Hackberry acres	Canopy %	Canopy acres	SFT*Canopy	sft	Scattered acres	Canopy %	Canopy acres	SFT*Canopy
Total	961814	22.0802112	0.1	2.20802112	96181.4															
					0.1															

Exhibit 6

	MESQUITE PASTURE					RIPARIAN					HACKBERRY REGROWTH					SCATTERED UPLAND TREES				
	sft	Mesquite Pasture acres	Canopy %	Canopy acres	SFT*Canopy	sft	Riparian acres	Canopy %	Canopy acres	SFT*Canopy	sft	Hackberry acres	Canopy %	Canopy acres	SFT*Canopy	sft	Scattered acres	Canopy %	Canopy acres	SFT*Canopy
Total	2152904	49.42387511	0.4	19.76955005	861161.6															
					0.4															

	MESQUITE PASTURE					RIPARIAN					HACKBERRY REGROWTH					SCATTERED UPLAND TREES				
PROJECT TOTALS	sft	Mesquite Pasture acres	Canopy %	Canopy acres	SFT*Canopy	sft	Riparian acres	Canopy %	Canopy acres	SFT*Canopy	sft	Hackberry acres	Canopy %	Canopy acres	SFT*Canopy	sft	Scattered acres	Canopy %	Canopy acres	SFT*Canopy
	4519205	103.7466713			1817592.8	131170	3.011249			83811.35	56623	1.299885			40274.6	929307	21.33395			468676.75
					0.402193041					0.638952123					0.711276338					0.504329301

EXHIBIT I. RESOURCE AGENCY COORDINATION LETTERS

cc: CRM

RECEIVED
JUN 04 2002

Texas Department of Transportation

DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

21 May 2002

SECTION 106: Determination of NRHP Eligibility
Johnson County, FTW
CSJ 2118-01-008

MAY 2 : RECD

SH 121 from FM 1187 to US 67

RECEIVED
MAY 22 2002
TEXAS HISTORICAL COMMISSION

Bob Brinkman
History Programs Division
Texas Historical Commission
Austin, Texas 78711

Dear Mr. Brinkman:

In accordance with the provisions of our Statewide Programmatic Agreement for Cultural Resources, we are initiating coordination with your agency regarding National Register eligibility of one property located within the project's area of potential effect (APE). This federally funded project will widen an existing transportation facility and extend its alignment in northern Johnson County. The project would acquire additional right-of-way. A map and photos are included.

Organized in 1867, Johnson County sustained a largely agricultural economy throughout the subsequent decades. Completion of the Gulf, Colorado and Santa Fe line through the county in 1881 spurred the value of agricultural production to $1,554,960 by 1890. Cotton production led this increase, with 18,826 bales ginned in the county in that year. Nearly half of the approximately 3,000 farms in the county were involved in sharecropping cotton by the turn of the century. The county's population remained nearly 80% rural throughout this period, reaching a peak of 37,286 in 1920. Declining agricultural revenues and the effects of the Great Depression prompted a steady decline in subsequent decades.

As detailed below, field survey efforts identified only one pre-1955 property within the APE, which ranged from 500' to 1300' based on project parameters. Severe alterations and the loss of its historically associated outbuildings preclude eligibility for this modest architectural resource, however. Despite its probable role in the region's agrarian economy, this property is therefore ***not eligible*** for listing in the National Register of Historic Places.

ID #	Location	Property Type	Subtype	Stylistic Influence	Date	Integrity Issues	NR Elig.
1	FM 917, west of FM 1902	Domestic	Ctr. hall plan farmhouse	NA	c.1890	porch infill, additions, fenestration changes	No

SH 121 from FM 1187 to US 67, 21 May 2002, page two

We request your written concurrence with this determination of eligibility within 30 days of receiving this letter. If you have any questions or comments concerning this project, please contact me at 416-2657.

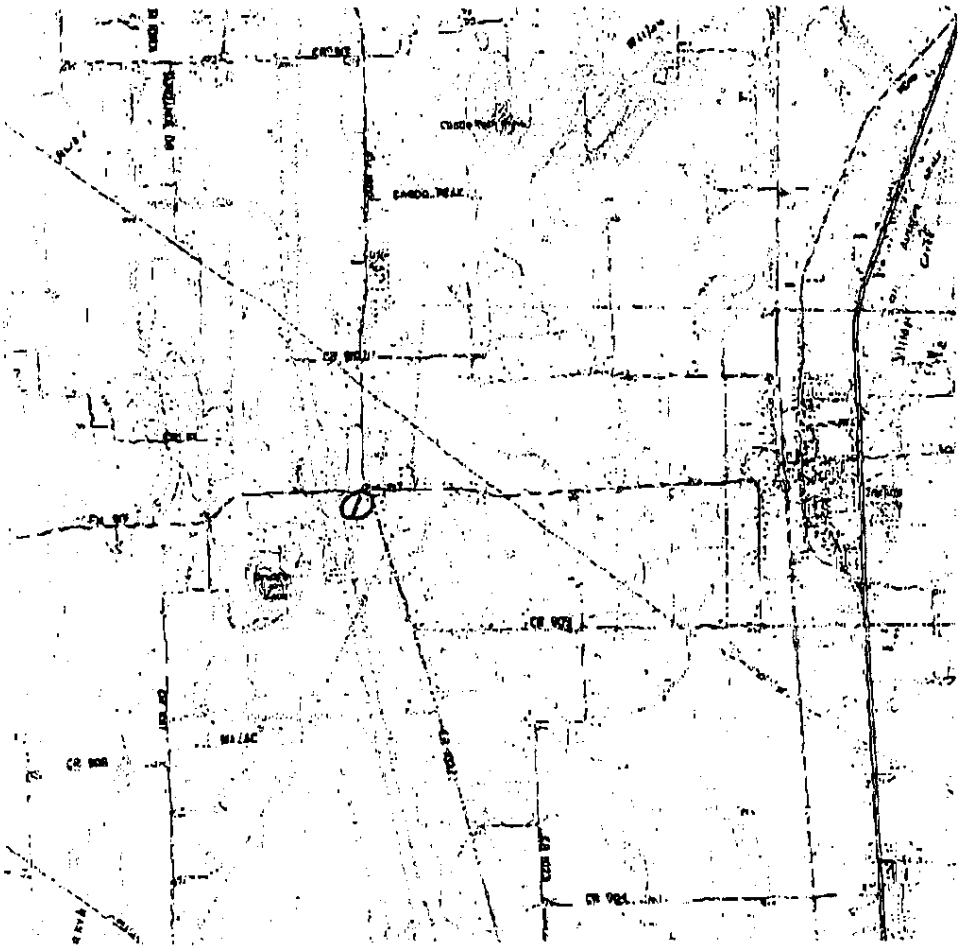
Sincerely,

Bruce Jensen
Architectural Historian
Environmental Affairs Division

attachments

NOT ELIGIBLE
for listing in the
National Register of Historic Places
PROJECT MAY PROCEED
by Ruth Blo
for F. Lawerence Oaks
State Historic Preservation Officer
Date 30 MAY 2002

SITE LOCATION MAP



ETS

ARCHEOLOGICAL COORDINATION

Impact Evaluations, No Further Work Recommended

(Section 106 and ANTIQUITIES CODE OF TEXAS)

RECEIVED
JUN 03 2002
TEXAS HISTORICAL COMMISSION

Date: 05/31/2002

COUNTY	DISTRICT	PROJECT	CSJ	*F30/T20 Concur, no further work	*F10/T10 Unable to Concur
El Paso	El Paso	Loop 375	2552-01-021	✓	
Hansford	Amarillo	F.M. 520	1621-01-013	✓	
Hardeman	Childress	FM 1166	1312-01-013	✓	
Johnson	Fort Worth	SH 121	2118-01-008	✓	
Wise	Fort Worth	FM 2123	1606-02-012	✓	

Number of Projects: 5

F. Lawerence Oaks
State Historic Preservation Officer and Executive Director

6/11/02
Date

Texas Department of Transportation

DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

May 24, 2002

NH ( )
Environmental Assessment Coordination
Johnson and Tarrant Counties
CSJ 2118-01-008; 2118-02-008

SH 121 South: From FM 1187 to US 67

Dr. Ray C. Telfair
Texas Parks and Wildlife Department
Wildlife Division
Wildlife Habitat Assessment Program
11942 FM 848
Tyler, Texas 75707-9657

Dear Dr. Telfair:

Consistent with the Memorandum of Understanding signed by our two agencies, attached is a copy of the environmental assessment covering the subject project for your review and comment. Any comments you may have on this document will assist the Department in ensuring that the Department's projects are sensitive to the natural resources of the state.

Please submit any comments you may have within 45 days from the date of this letter. If you do not have any comments on the document, please sign and date the bottom of this letter and return a copy to the Environmental Affairs Division. If no response is received after the 45 days have expired, we will proceed with project development. If you have any questions regarding this project, please contact Mr. William Hood at (512) 416-2623.

Sincerely,

Michelle Skinner
Project Management
Environmental Affairs Division

Attachment
☑ NO COMMENT: Ray C. Telfair II
Wildlife Habitat Assessment Program
DATE: May 31, 2002

Texas Department of Transportation

DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

May 24, 2002

DIST 02 FT. WORTH
TXDOT MAILROOM

MAY 3 0 2002

NH ( )
Environmental Assessment Coordination
Johnson and Tarrant Counties
CSJ 2118-01-008; 2118-02-008

SH 121 South: From FM 1187 to US 67

Ms. Celeste Brancel-Brown
Texas Parks and Wildlife Department
Endangered Resources Branch
3000 S. I.H. 35, Suite 100
Austin, Texas 78704

Dear Ms. Brown:

Consistent with the Memorandum of Understanding signed by our two agencies, attached is a copy of the environmental assessment covering the subject project for your review and comment. Any comments you may have on this document will assist the Department in ensuring that the Department's projects are sensitive to the natural resources of the state.

Please submit any comments you may have within 45 days from the date of this letter. If you do not have any comments on the document, please sign and date the bottom of this letter and return a copy to the Environmental Affairs Division. If no response is received after the 45 days have expired, we will proceed with project development. If you have any questions regarding this project please contact Mr. William Hood at 512-416-2623.

Sincerely,

Michelle Skinner
Project Management
Environmental Affairs Division

Attachment
☐ NO COMMENT:_____
Texas Biological and Conservation Data System
DATE:_____
MMS:M
bcc: Fort Worth District
ERG
Reference: ENV 850

USDA United States Department of Agriculture

Natural Resources Conservation Service

101 South Main
Temple, Texas
76501-7602

June 7, 2002

Subject: LNU-Farmland Protection-
SH 121 Highway Proposed
Johnson County, Texas

Texas Department of Transportation
P.O. Box 6868
Fort Worth, Texas
76115-0686

Attention: Robert Hall, Environmental Coordinator

We have reviewed the information provided concerning proposed S. H. 121 in Johnson County, Texas. This is part of an Environmental Evaluation for the above-referenced highway being prepared for the TxDOT and FHWA. We have evaluated the soils for this project as required by the Farmland Protection Policy Act (FPPA).

The proposed project does contain Prime and Statewide Important Farmland soils as defined by the FPPA. Several map units identified in the Soil Survey of Johnson County are classified as Prime Farmland and Statewide Important Farmland. Approximately 431.4 acres of land will be acquired of which about 298.4 acres is classified as Important Farmland by the FPPA. These soils had a composite score of 74 and the Total Points on Part VII of the AD-1006 is 142. This site will require no additional consideration since the rating score is less then 160. The FPPA states, "Sites receiving a total score of less than 160 need not be given further consideration for protection and no additional sites need to be evaluated", 7CFR Part 658.4 (c) 2.

Attached is the completed AD-1006 (Farmland Conversion Impact Rating) form for this project indicating the exemption status of this proposed project.

Thanks for the quality resource materials you submitted to evaluate this project. If you have any questions please call James Greenwade at (254)-742-9960 or Sam Brown at (254)-742-9854, Fax (254)-742-9859.

Thanks,

James M. Greenwade
Soil Scientist
Soil Survey Section
USDA-NRCS, Temple, Texas

EXHIBIT J. THREATENED/ENDANGERED SPECIES

Threatened and Endangered Species

- **Bald Eagle** (Haliaeetus leucocephalus) The bald eagle's habitat is most often near large water sources where fish are abundant and is migratory across the rolling plains of Texas (M Udvary, Audubon Society Field Guide to NA birds, Western Region. NY: A Knopf, 1977:485). There is probably insufficient water in the immediate project area for the bird to remain in the area for an extended period. Should the bald eagle be found in the area, it would probably be passing through during migration. There is no critical habitat for the bald eagle in the vicinity of the project. Based upon a site investigation of the project area, it appears no suitable nesting or roosting areas occur in the project area.

  Protected Status: Listed as endangered by Texas Parks and Wildlife Department and Threatened by US Fish and Wildlife Service.

  Conclusion: It is highly unlikely this particular species would occur in the project area, except possibly during its migration between winter and summer habitats. There is little suitable habitat located in the project area.

- **Black-capped Vireo** (*Vireo atricapillas*) is a small insectivorous songbird which builds it's nests in low, brushy habitats of Texas, Oklahoma and Mexico. The black-capped vireo winters on the Pacific Coast of Mexico (USFWS 1991, BCV Recovery Plan, Austin, Tx). The black-capped vireo arrives in Texas in late March to late April to breed and migrates south by late September. Breeding habitat of the black-capped vireo is generally described as various dimensions/distributions of shrubland thickets where vegetation extends to ground level. Typical nesting substrate includes sumac, shin oak, Texas live oak, Ashe juniper and other woody vegetation that forms on open to partially closed canopy.

  Protected status: Listed as endangered by both Texas Parks and Wildlife Department and US Fish and Wildlife Service.

  Conclusion: It is highly unlikely this particular species would occur in the project area. There is little suitable habitat located in the project vicinity.

- **Golden-cheeked warbler** (*Dendroica chrysoparia*) is a small insectivorous neotropical migratory bird that nests only in the mixed juniper-oak woodlands of Texas and winters in Mexico and Central America (USFWS 1992, GCW Recovery Plan). The golden-cheeked warbler is the only bird whose breeding ground is contained solely within the State of Texas. The warblers return to Texas from their wintering ground in mid-march and construct nests made from Ashe juniper bark. Therefore, the principal limiting factor for suitable nesting habitat is the availability of sufficiently-sized Ashe juniper with stripping bark. Other limiting factors include availability of arthropod prey, canopy cover and proximity to water (USFWS 1992).

Protected status: Listed as endangered by both Texas Parks and Wildlife Department and US Fish and Wildlife Service.

Conclusion: It is highly unlikely this particular species would occur in the project area. There is little suitable habitat located in the project vicinity.

- **Mountain plover** (*Charadrius montanus*), an unusual shorebird since it spends its entire life avoiding water, is a Great Plains native that breeds on the arid shortgrass prairie across a widely distributed area, from Montana south to Texas, with most occurring in Colorado, Montana and Wyoming (News Release, U.S. Fish and Wildlife Service, Lakewood, Co, February 12, 1999). Typically, breeding strongholds are confined to small areas of native prairie in Montana and Colorado. Fall flocking begins in July, with birds leaving the breeding grounds by August and arriving on the wintering grounds in early November. They depart from the wintering grounds in mid-March and arrive at breeding grounds a few days later. The mountain plover is generally considered an inhabitant of the arid shortgrass prairie, which is dominated by blue gama and buffalo grass.

  Protected Status: Listed as threatened (proposed) by both Texas Parks and Wildlife Department and US Fish and Wildlife Service.

  Conclusion: It is highly unlikely this particular species would occur in the project area, except possibly during its migration between winter and summer habitats.

- **Piping plover** (*Charadrius melodus*) spends the summer months in Canada, Great Lakes region, Nebraska and the Dakotas, and winters along the Gulf Coast of Texas and Mexico (NGS, Field Guide to Birds of North America, 1987 p. 104). The plover's preferred habitat is sandy beaches, lakeshores and sand dunes.

  Protected Status: Listed as threatened by both Texas Parks and Wildlife Department and US Fish and Wildlife Service.

  Conclusion: It is highly unlikely this particular species would occur in the project area, except possibly during its migration between winter and summer habitats. There is little suitable habitat located in the project area.

- **Whooping crane** (*Grus americana*) A small population of whooping crane breeds in freshwater marshes in Alberta, Canada and winters in Aransas National Wildlife Refuge on the Texas Gulf Coast.

  Protected Status: Listed as endangered by both Texas Parks and Wildlife Department and US Fish and Wildlife Service.
  Conclusion: There is no suitable whooping crane habitat located in the project area. It is highly unlikely this particular species would occur in the project area, except possibly during its migration between winter and summer habitats.

EXHIBIT K. FARMLAND CONVERSION IMPACT RATING – FORM AD 1006

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 6/25/01
Name Of Project SH 121 Southern Extension	Federal Agency Involved Federal Highway Administration
Proposed Land Use State Highway	County And State Johnson County, Texas
PART II *(To be completed by NRCS)*	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).*	Yes ☐	No ☐	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %		Amount Of Farmland As Defined in FPPA Acres: %	
Name Of Land Evaluation System Used	Name Of Local Site Assessment System		Date Land Evaluation Returned By NRCS	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	407.3			
B. Total Acres To Be Converted Indirectly	24.1			
C. Total Acres In Site	431.4	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	13			
2. Perimeter In Nonurban Use	10	8			
3. Percent Of Site Being Farmed	20	7			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	0	0			
6. Distance To Urban Support Services	0	0			
7. Size Of Present Farm Unit Compared To Average	10	3			
8. Creation Of Nonfarmable Farmland	25	22			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	5			
11. Effects Of Conversion On Farm Support Services	25	0			
12. Compatibility With Existing Agricultural Use	10	5			
TOTAL SITE ASSESSMENT POINTS	160	68	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	68	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	68	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

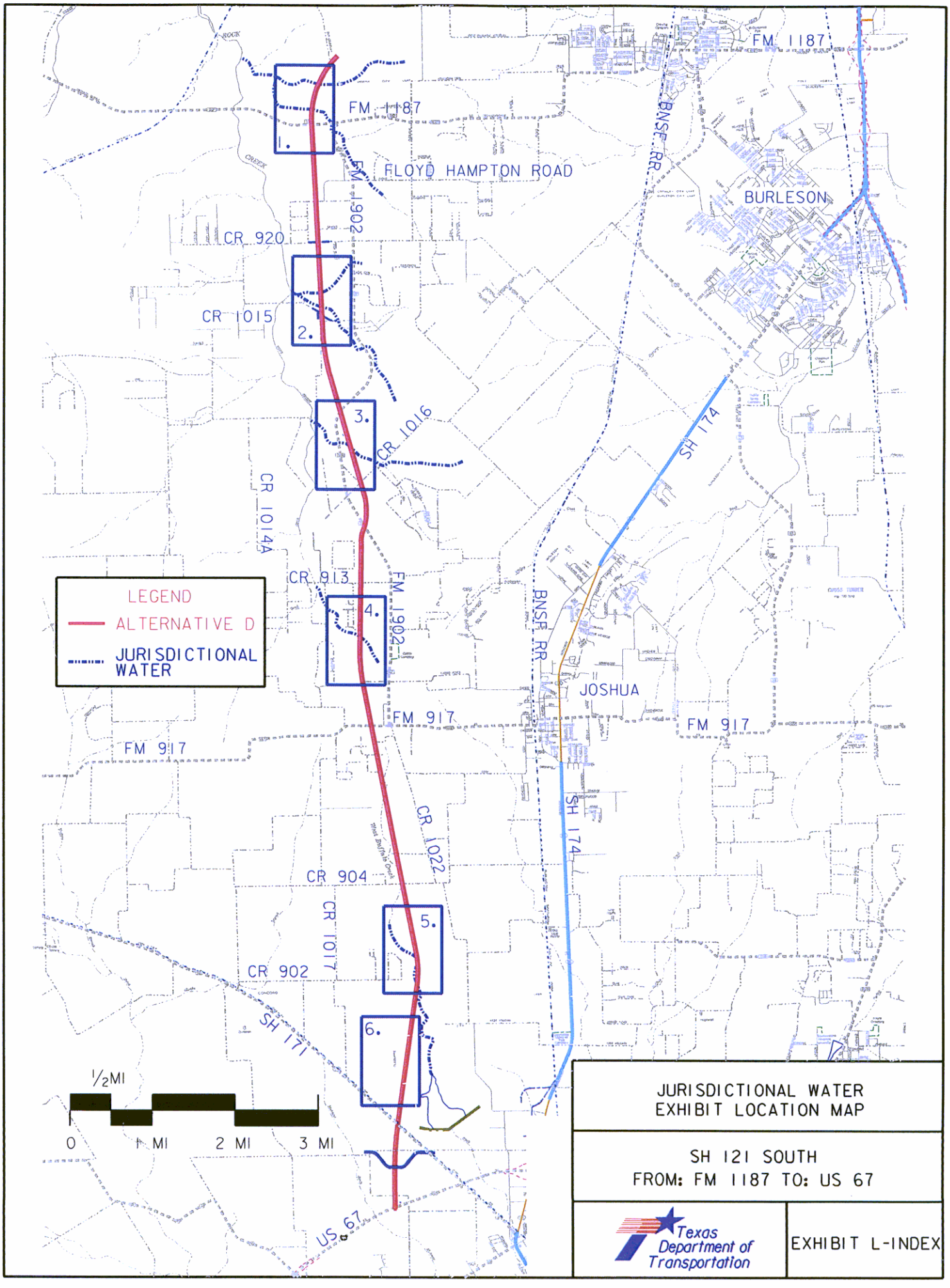
Reason For Selection:

(See Instructions on reverse side)

Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff

EXHIBIT L. JURISDICTIONAL WATER & WETLANDS


FM 1187
FM 1187
FLOYD HAMPTON ROAD
FM 1902
CR 920
CR 1015
CR 1016
CR 1014A
BNSF RR
BURLESON
SH 174
1.
2.
3.
4.
5.
6.
LEGEND
ALTERNATIVE D
JURISDICTIONAL WATER
CR 913
FM 1902
FM 917
FM 917
FM 917
JOSHUA
SH 174
CR 1022
CR 904
CR 1017
CR 902
SH 171
US 67
1/2MI
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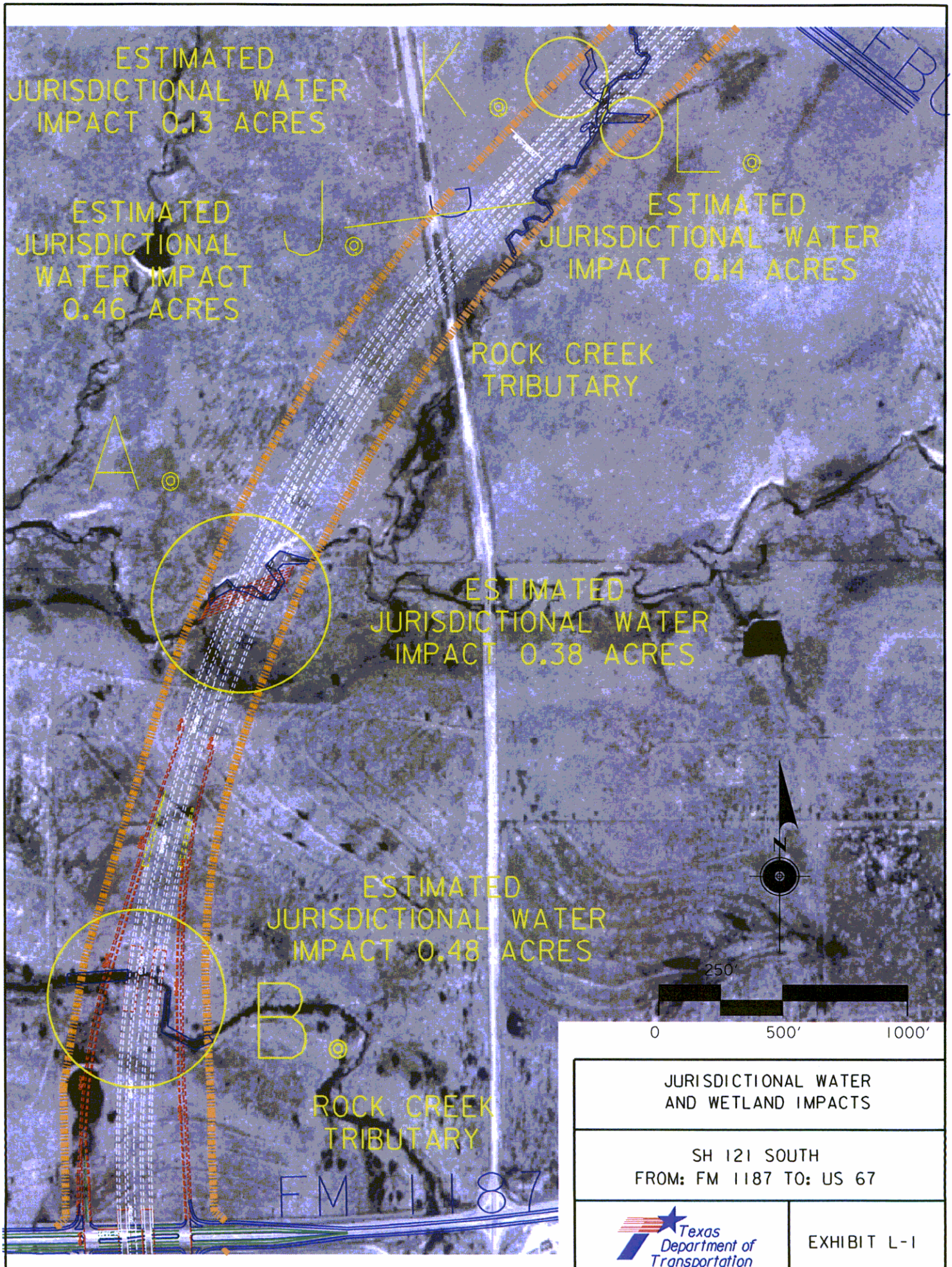
1 MI
2 MI
3 MI
JURISDICTIONAL WATER
EXHIBIT LOCATION MAP
SH 121 SOUTH
FROM: FM 1187 TO: US 67
Texas Department of Transportation
EXHIBIT L-INDEX

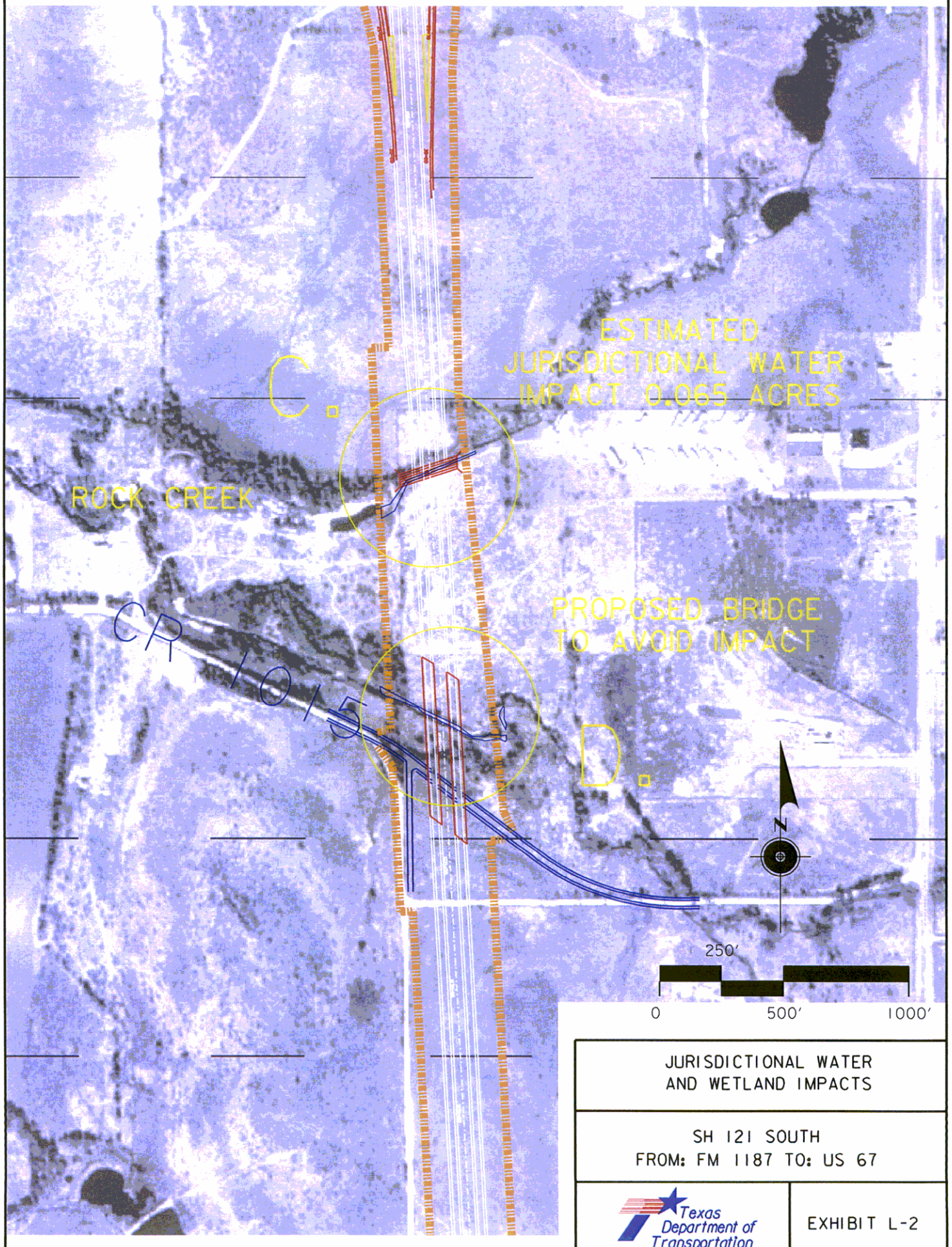


JURISDICTIONAL WATER
AND WETLAND IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT L-1

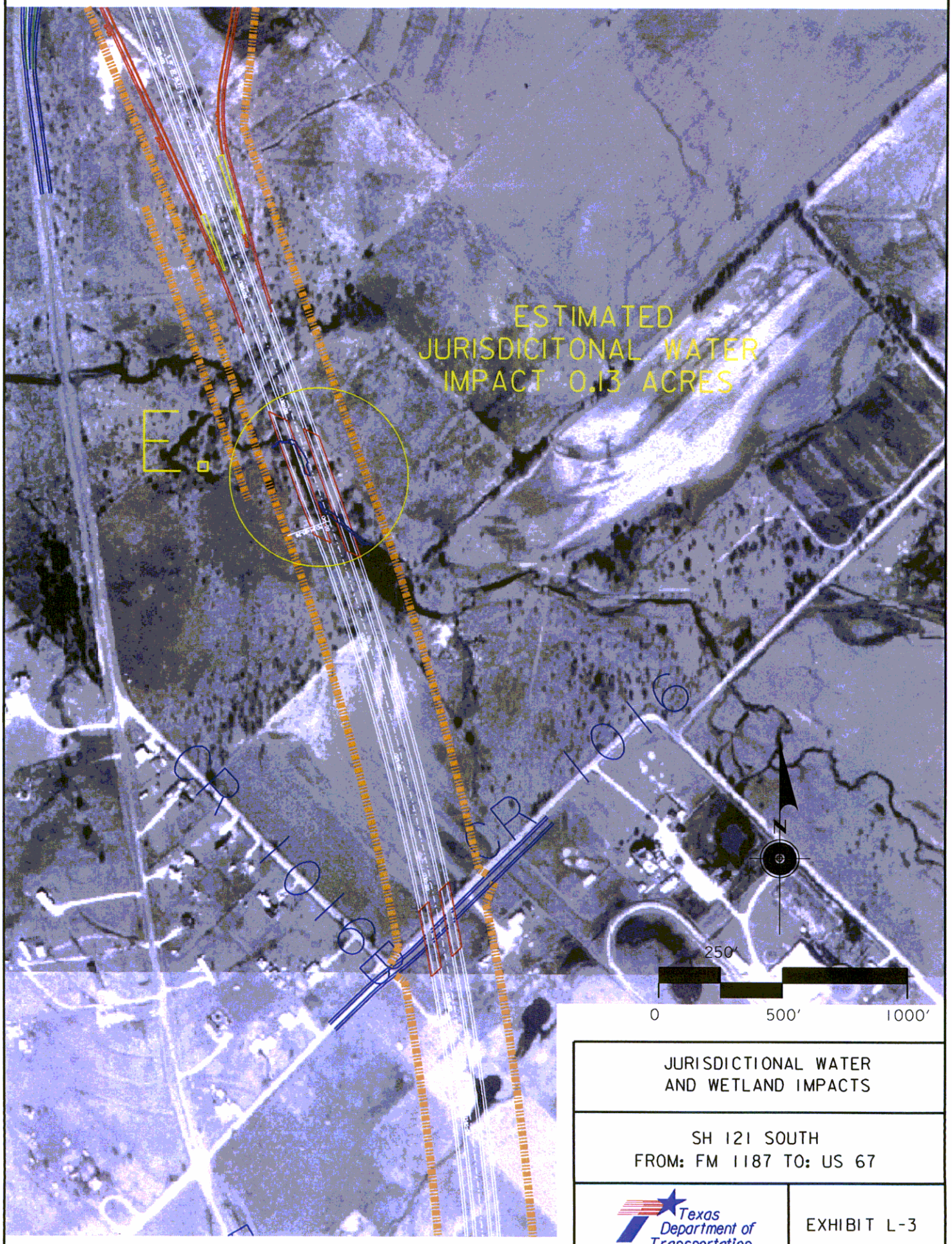


JURISDICTIONAL WATER
AND WETLAND IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT L-2

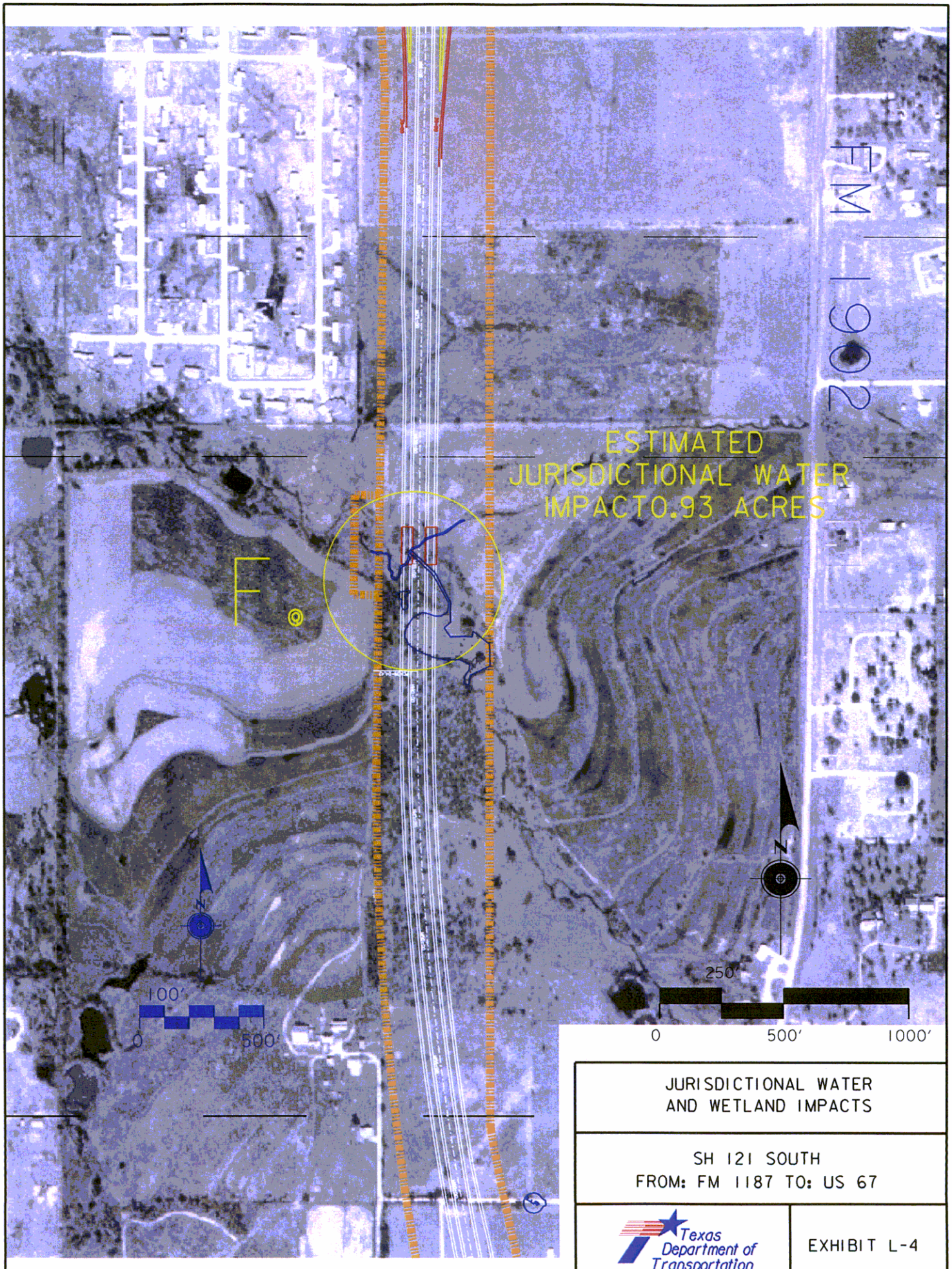


JURISDICTIONAL WATER
AND WETLAND IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT L-3

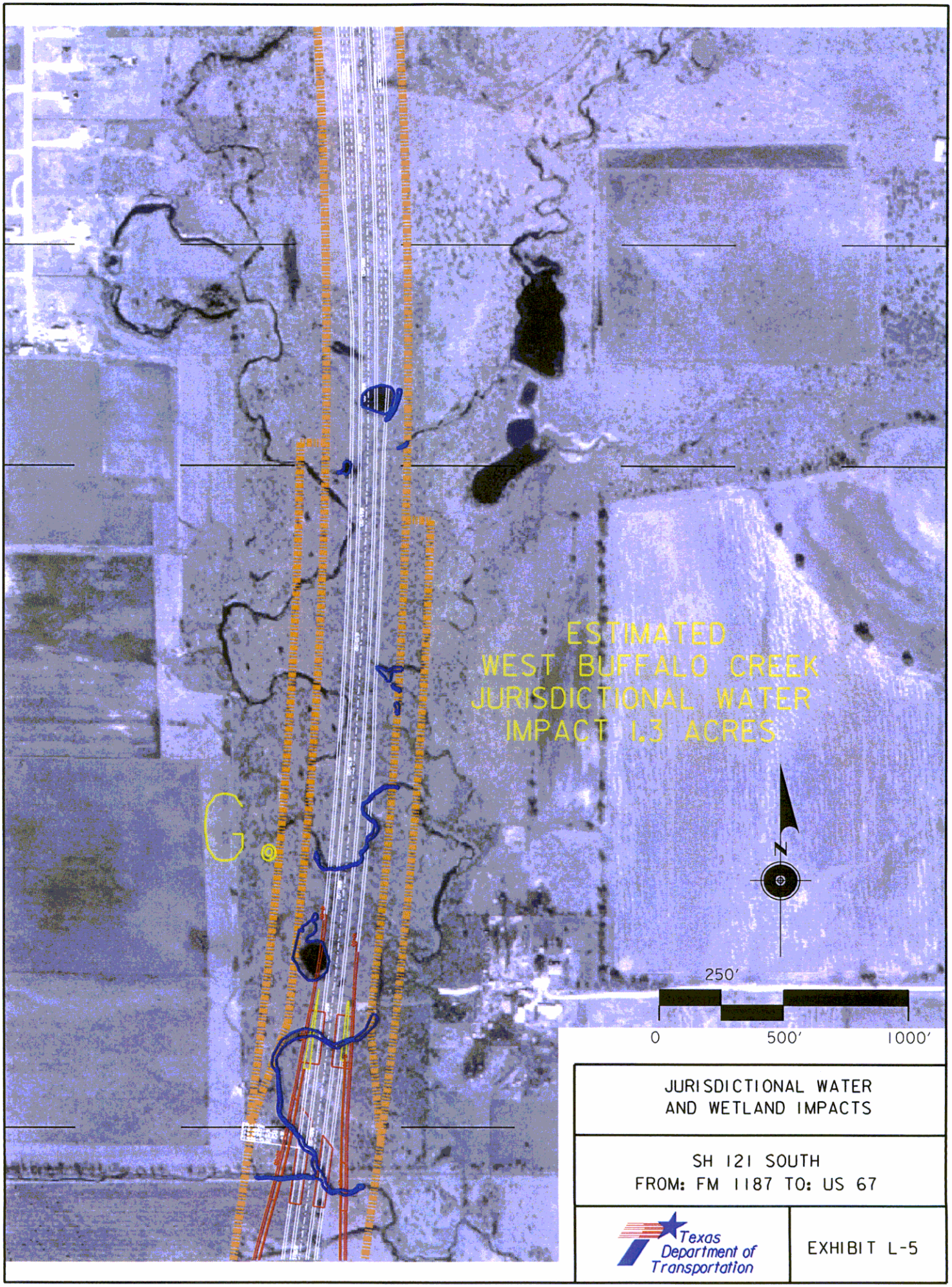


JURISDICTIONAL WATER
AND WETLAND IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT L-4

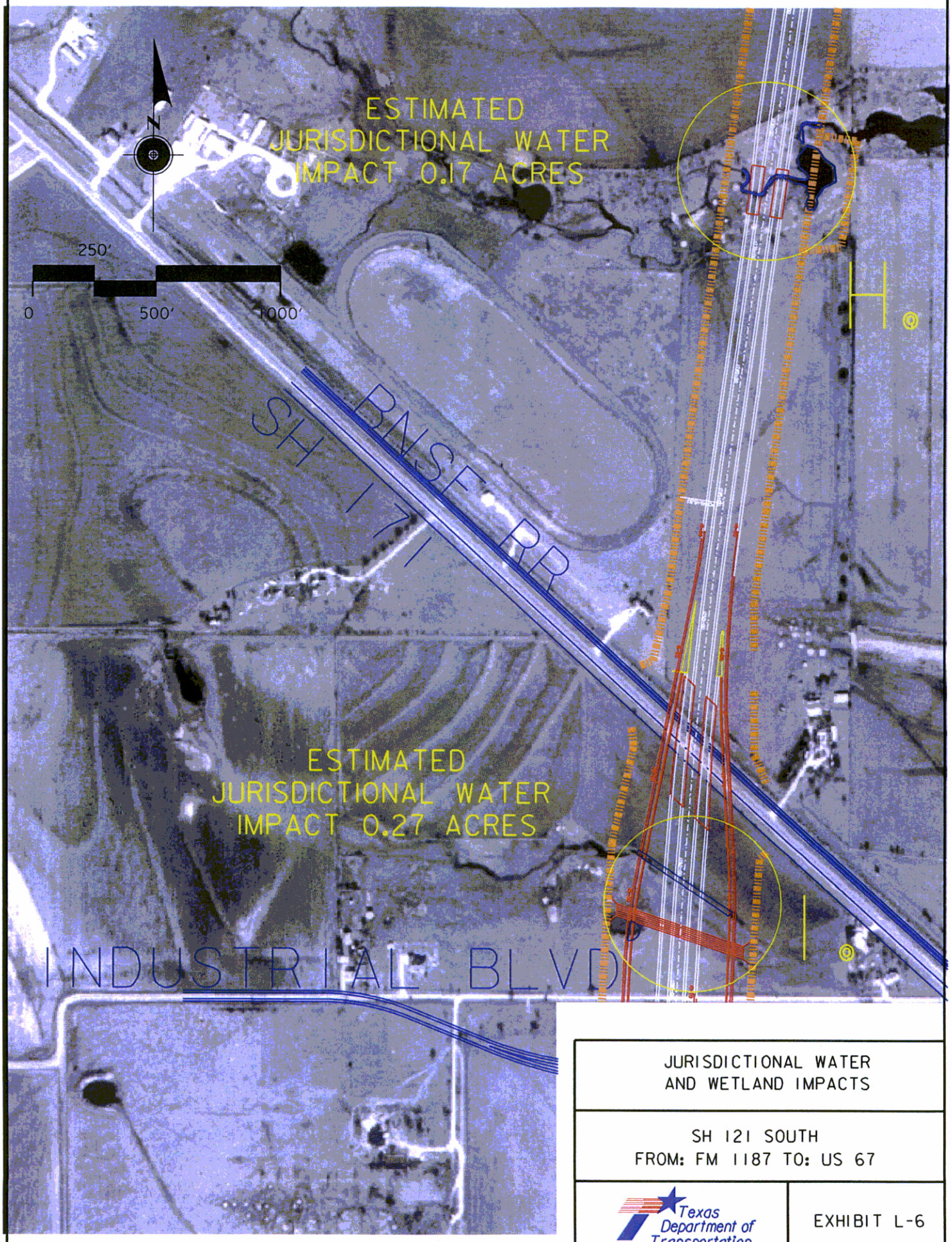


JURISDICTIONAL WATER
AND WETLAND IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT L-5



JURISDICTIONAL WATER
AND WETLAND IMPACTS

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT L-6

DATA FORM
ROUTINE WETLAND DETERMINATION

GENERAL

Project	SH 121 South			Site #	1	Date	3/13/2001
CSJ	2118-02-008	Investigator	GP, GW		County		Johnson
Scope							
Describe Topography of the Investigation Site							
Area lies between a stock pond and a tributary of Rock Creek. Area gradually drains from the stock pond to the creek in times of flooding.							
Is this site significantly disturbed? How so?			No				
Is this site a problem area?			No				
NWI map name	Joshua		File name/path				

VEGETATION: (list plants by order of dominance)

Dominant Plant Species	Taxonomic Name	Stratum	Indicator
Broadwing Sedge	*Carex alata Torr.*	Herb	OBL
Spikerush	*Eleochris Spp.*	Herb	OBL
Ryegrass	*Lolium perreme*	Herb	FACU
Little Barley	*Hordeum pusillum*	Herb	FACU
Wild Onion	*Allium canadense*	Herb	FACU
Honey Locust	*Gleditsia triancanthos*	Tree	FACU
Percent Dominant Species That Are OBL, FACW, FAC			60%
Remarks			

HYDROLOGY

Is this site inundated?		No	Depth of water surface (if applicable)		
Yes	Soil Saturated			Oxidized Root Channels	
	High Water Marks			Water Stained Leaves	
	Debris Lodged Above Ground			Sediment Deposits On Plants	
Yes	Drift Lines			Other	
Remarks	Area surrounds a small drainage channel that relieves the stock pond in times of flooding.				

SOIL

Mapped Soil Conditions			
Soil Name	Typical Color	Drainage Class	Hydric List?
Pursley Clay Loam	Dark gray brown	Frequently flooded, well drained	No

Field Soil Conditions					
Depth	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture
10"	A1	10YR 3/1			

	Oxidized Root Channels		Low Chroma Colors
	Mineral Concretions		High Organic Content
	Sulfidic Odor		Bright Mottling
	Gleying		Other
Remarks	Soil matched that described in Johnson County soil survey. Soil matched sample taken in an area further upland.		

DETERMINATION

Hydrophytic Vegetation present at the investigation site?	Yes	Fluctuating Hydrology?	Yes	Hydric Soils Present?	No

Is this site a jurisdictional wetland? If not, explain why it is not:
No. Soil does not exhibit hydric features
What is the approximate size of the wetland? (if applicable)
Are there jurisdictional waters associated with site? Identify stream name or other description.
Yes. A tributary of Rock Creek and a jurisdictional stock pond bound the area.
Ordinary High Water Mark Elevation
Remarks

(REVISED JUNE 2000)

DATA FORM
ROUTINE WETLAND DETERMINATION

GENERAL

Project	SH 121 South			Site #	2	Date	3/13/2001
CSJ	2118-02-008	Investigator	GP, GW		County		Johnson
Scope							
Describe Topography of the Investigation Site							
Area lies near a stock pond and a tributary of West Buffalo Creek. Low area located adjacent to stock pond							
Is this site significantly disturbed? How so?			No				
Is this site a problem area?			No				
NWI map name	Joshua		File name/path				

VEGETATION: (list plants by order of dominance)

Dominant Plant Species	Taxonomic Name	Stratum	Indicator
Broadwing Sedge	*Carex alata Torr.*	Herb	OBL
Curly Dock	*Rumex Crispus*	Herb	FACW
Rough Cocklebur	*Xanthium Strumarium*	Herb	FACW
Ryegrass	*Lolium perreme*	Herb	FACU
Johnson Grass	*Sorghum halepense*	Herb	FACU
Honey Locust	*Gleditsia triancanthos*	Tree	FACU
Percent Dominant Species That Are OBL, FACW, FAC			60%
Remarks			

HYDROLOGY

Is this site inundated?		No	Depth of water surface (if applicable)		
Yes	Soil Saturated			Oxidized Root Channels	
	High Water Marks			Water Stained Leaves	
	Debris Lodged Above Ground			Sediment Deposits On Plants	
Yes	Drift Lines			Other	
Remarks	Area surrounds a small drainage channel that relieves the stock pond in times of flooding.				

SOIL

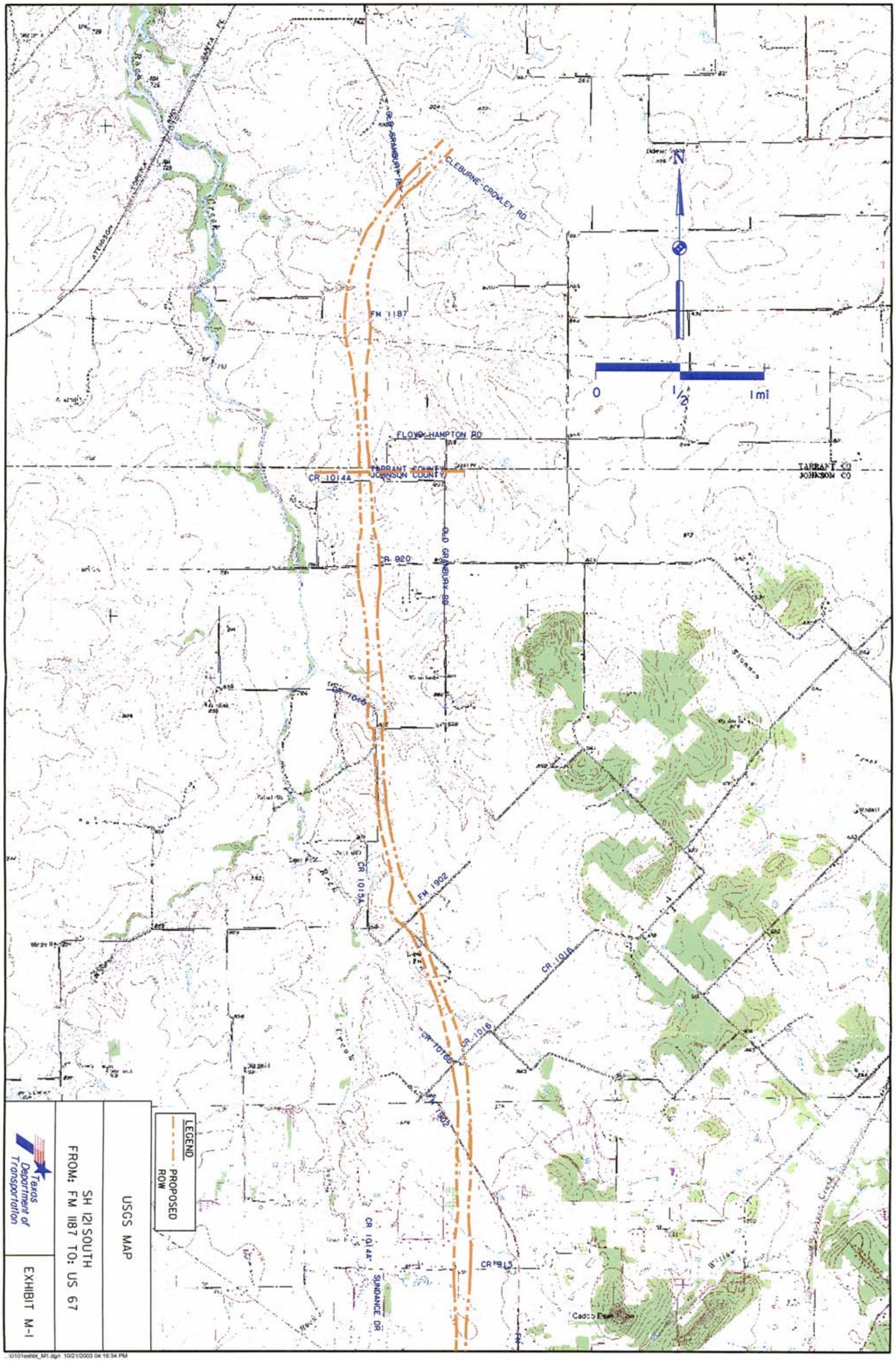
Mapped Soil Conditions					
Soil Name		Typical Color		Drainage Class	Hydric List?
Slidell Clay		Dark gray brown		Well drained	No
Field Soil Conditions					
Depth	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture
10"	A1	10YR 3/1			
	Oxidized Root Channels			Low Chroma Colors	
	Mineral Concretions			High Organic Content	
	Sulfidic Odor			Bright Mottling	
	Gleying			Other	
Remarks	Soil matched that described in Johnson County soil survey. Soil matched sample taken in an area further upland.				

DETERMINATION

Hydrophytic Vegetation present at the investigation site?	Yes	Fluctuating Hydrology?	Yes	Hydric Soils Present?	No
Is this site a jurisdictional wetland? If not, explain why it is not:					
No. Soil does not exhibit hydric features					
What is the approximate size of the wetland? (if applicable)					
Are there jurisdictional waters associated with site? Identify stream name or other description.					
Yes. A tributary of West Buffalo Creek and a jurisdictional stock pond bound the area.					
Ordinary High Water Mark Elevation					
Remarks					

(REVISED JUNE 2000)

EXHIBIT M. USGS MAP



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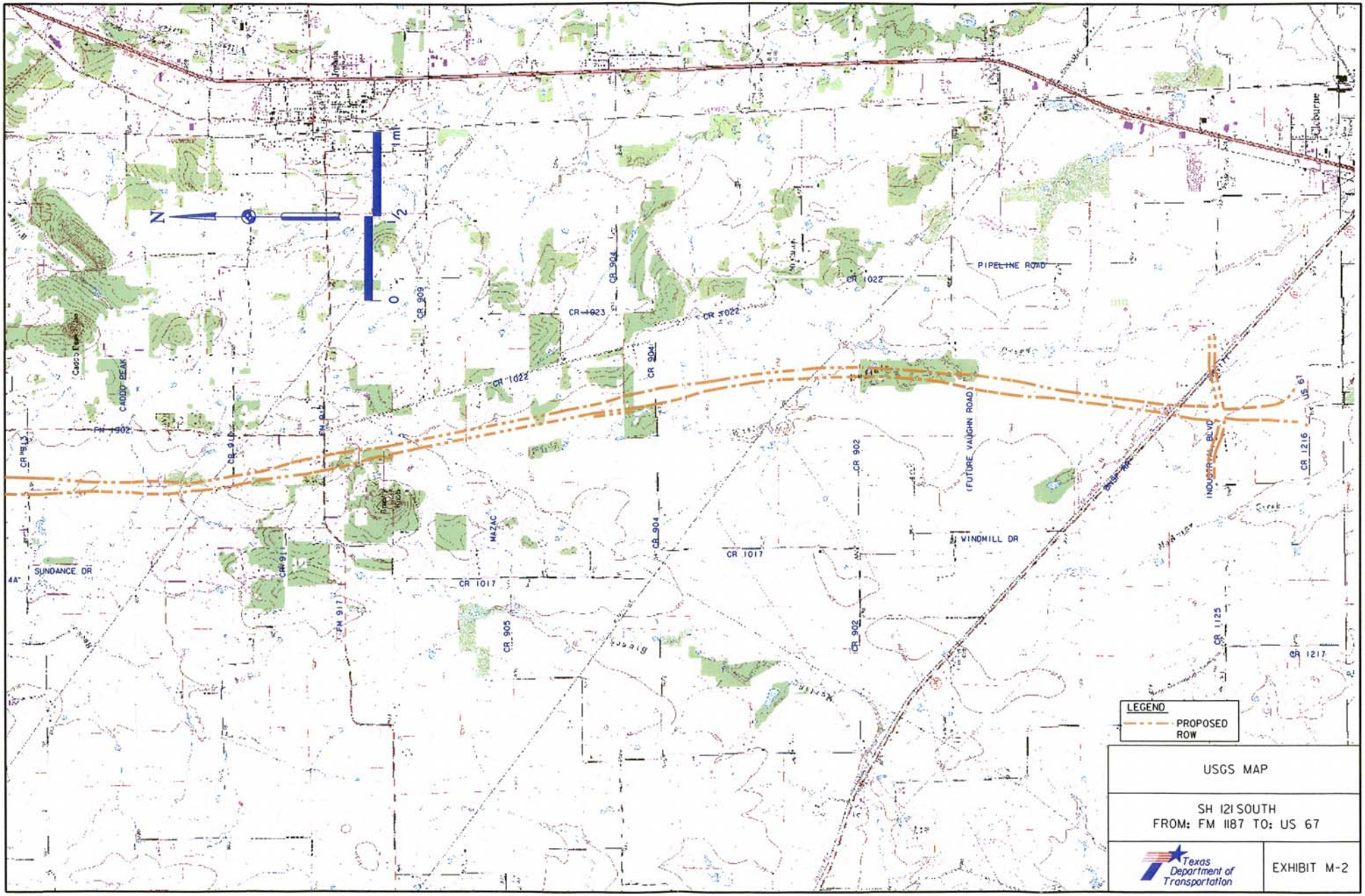
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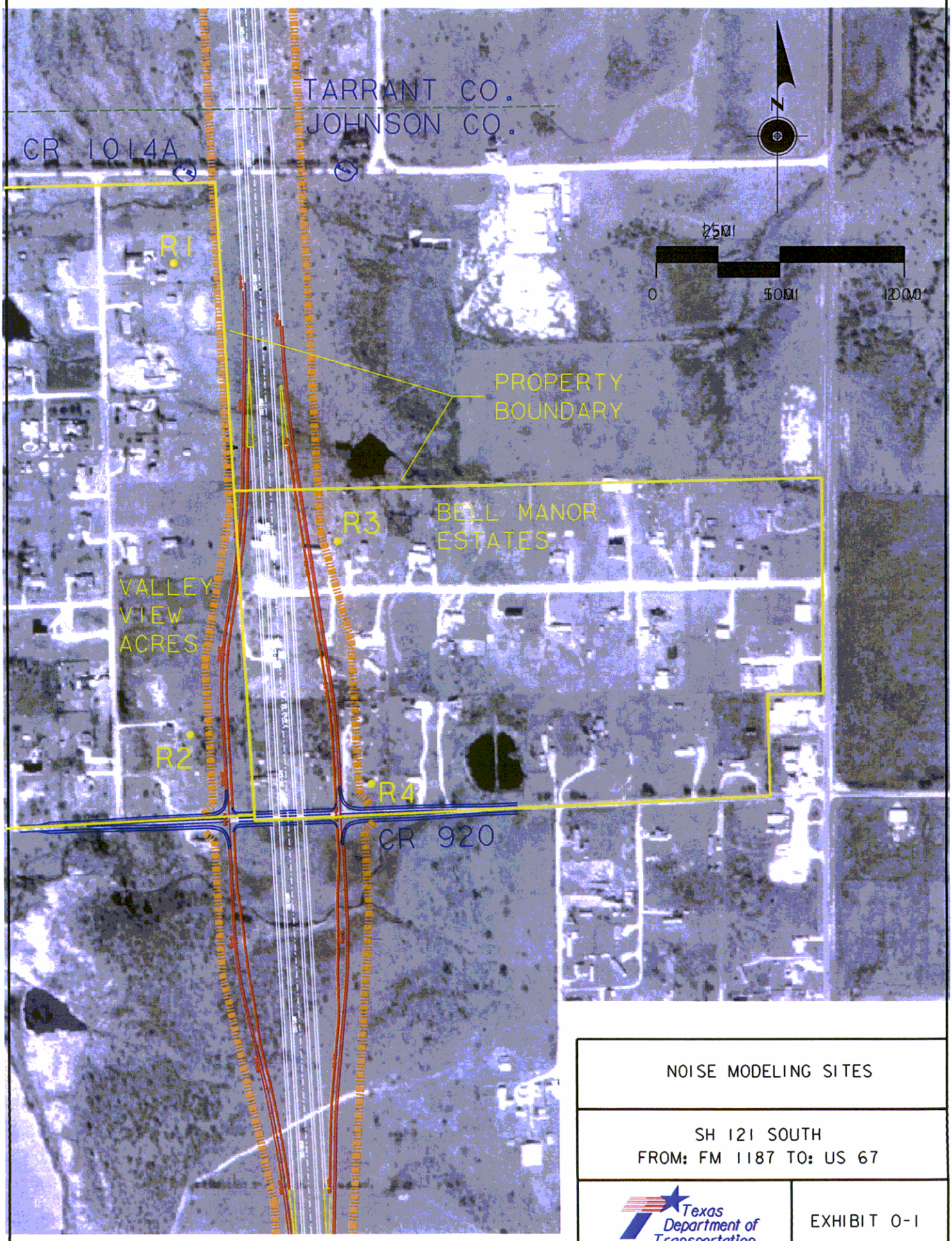
CR 909
CR 904
CR 1023
CR 1022
PIPELINE ROAD
CADDO PEAK
FM 1902
CR 910
FM 917
MAZAC
CR 1017
SUNDANCE DR
CR 905
CR 902
(FUTURE VAUGHN ROAD)
WINDMILL DR
INDUSTRIAL BLVD
US 67
CR 1216
CR 1125
CR 1217
LEGEND
PROPOSED ROW
USGS MAP
SH 121 SOUTH
FROM: FM 1187 TO: US 67
Texas Department of Transportation
EXHIBIT M-2

EXHIBIT N. PHOTOS OF FARMHOUSE STRUCTURE

EXHIBIT N. House Structure on FM 917 Just West of FM 1902

EXHIBIT O. NOISE RECEIVER LOCATION MAP

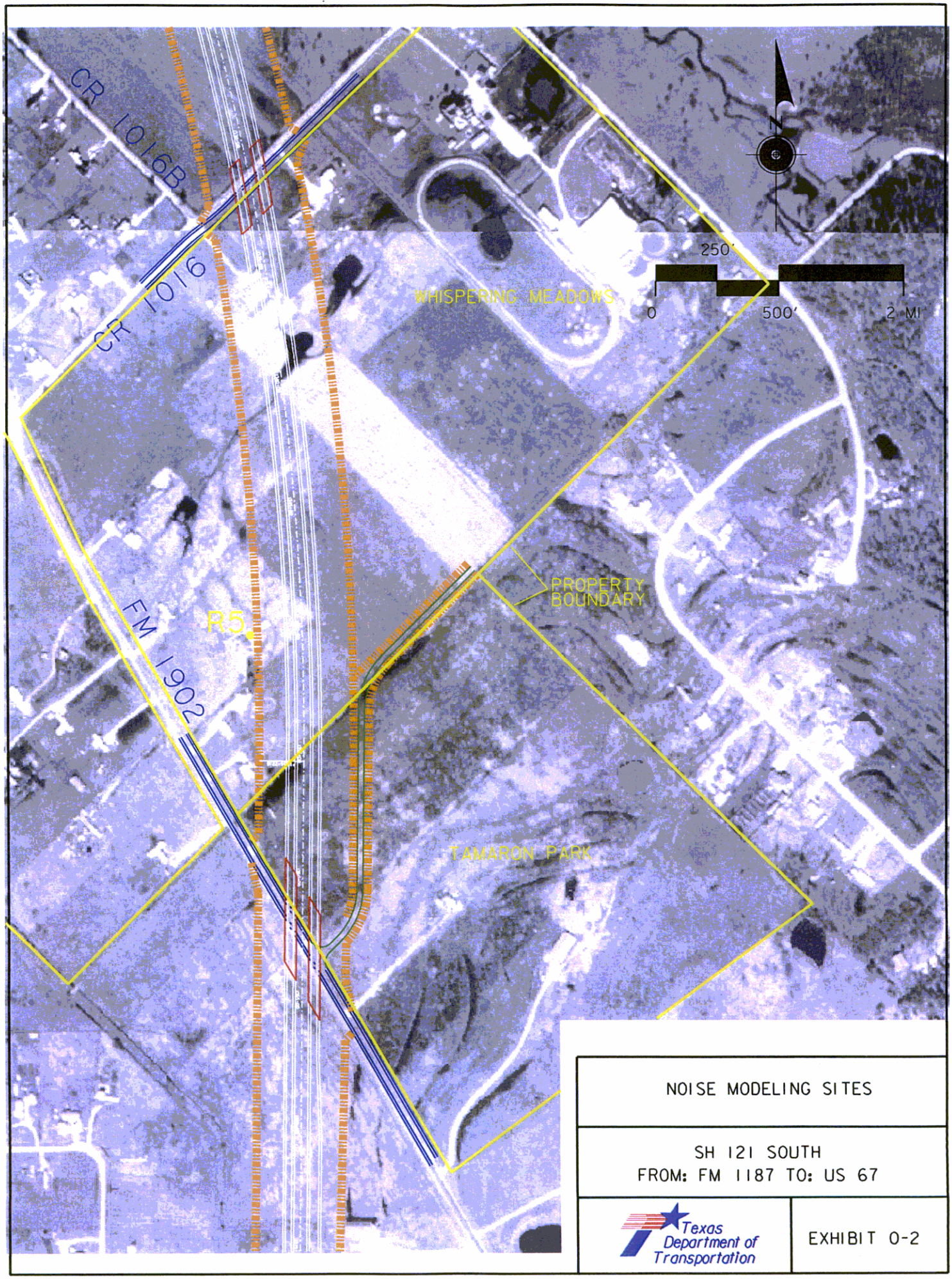


NOISE MODELING SITES

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT O-1

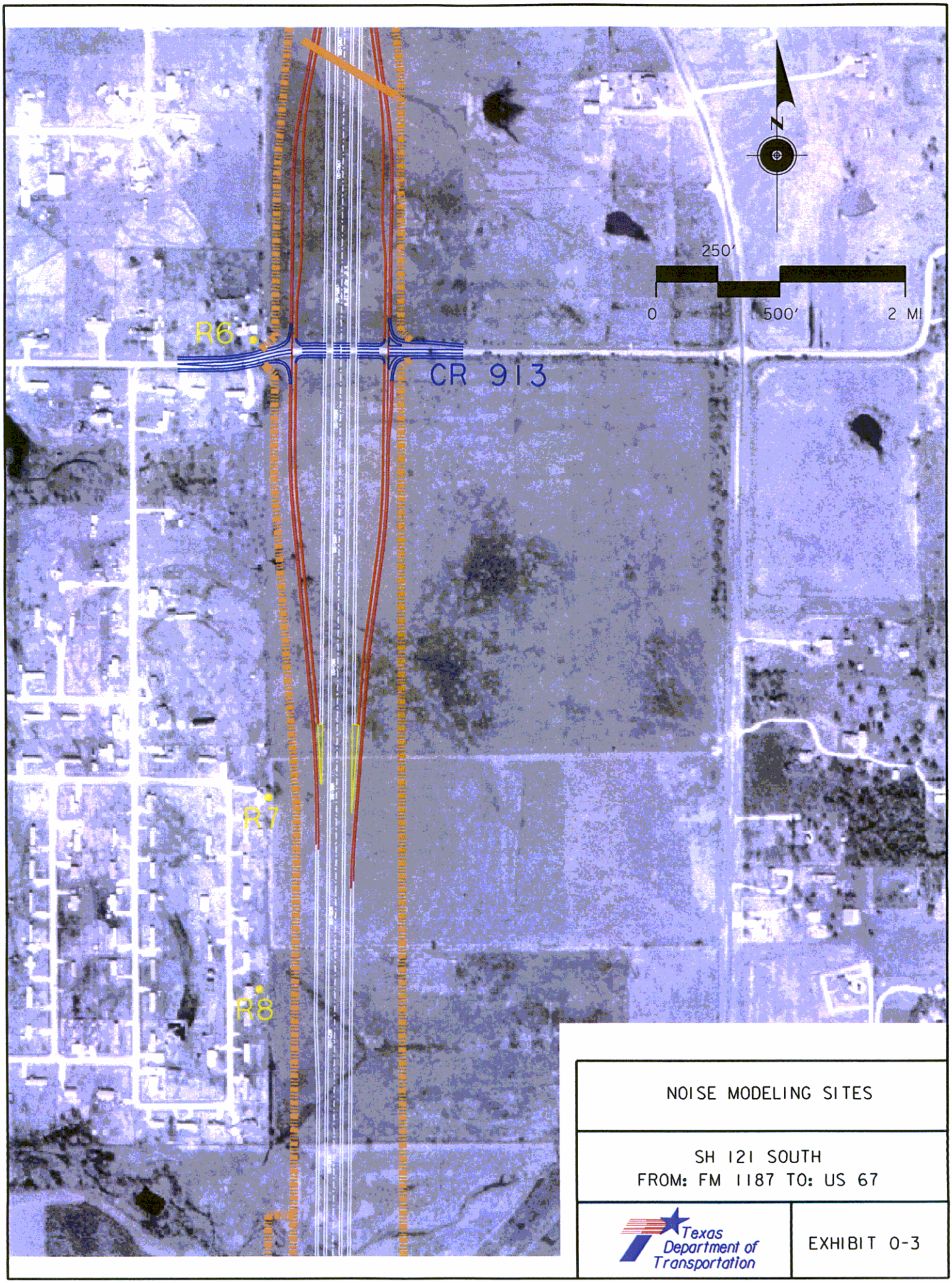


NOISE MODELING SITES

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT O-2

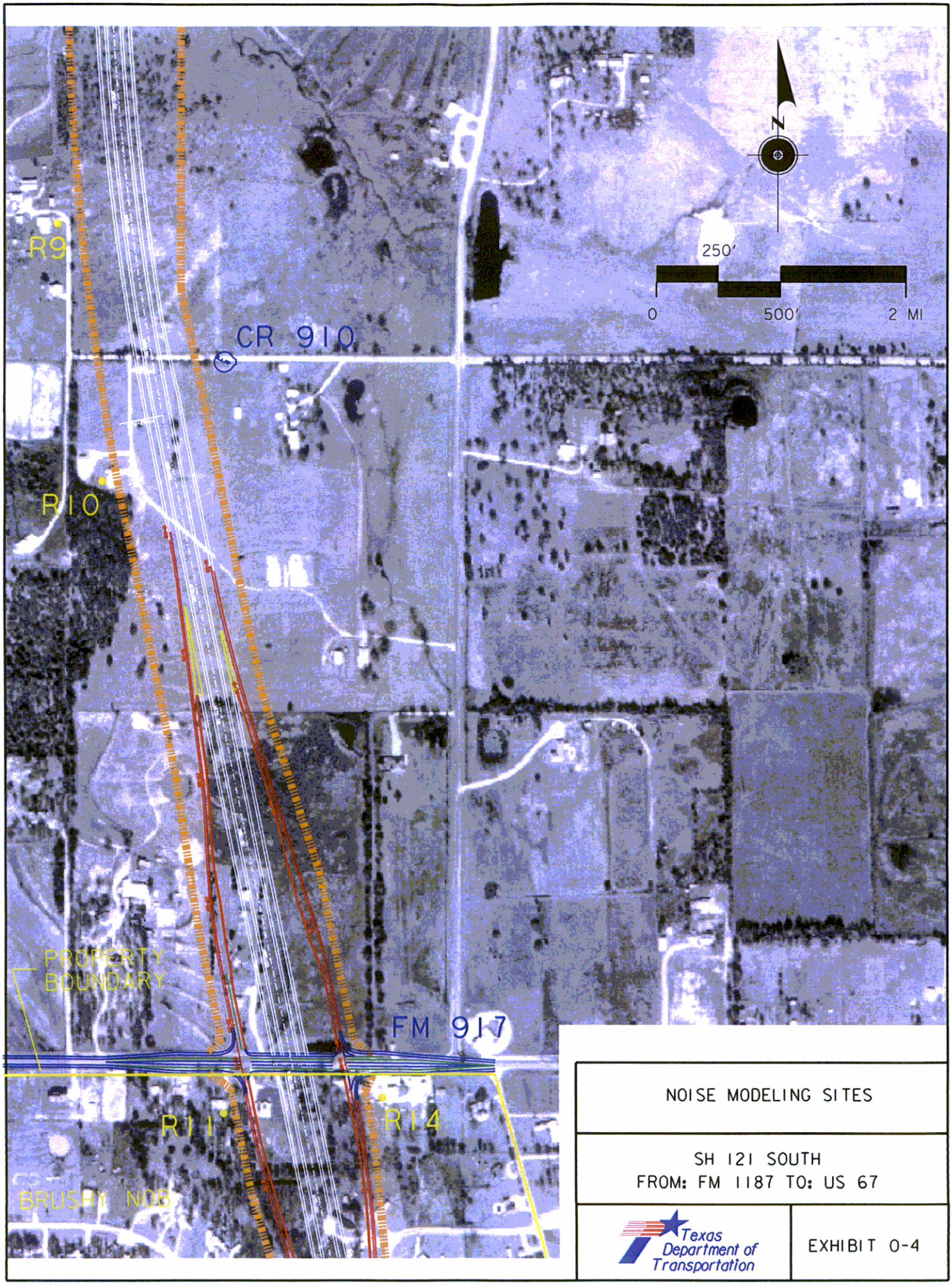


NOISE MODELING SITES

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT 0-3

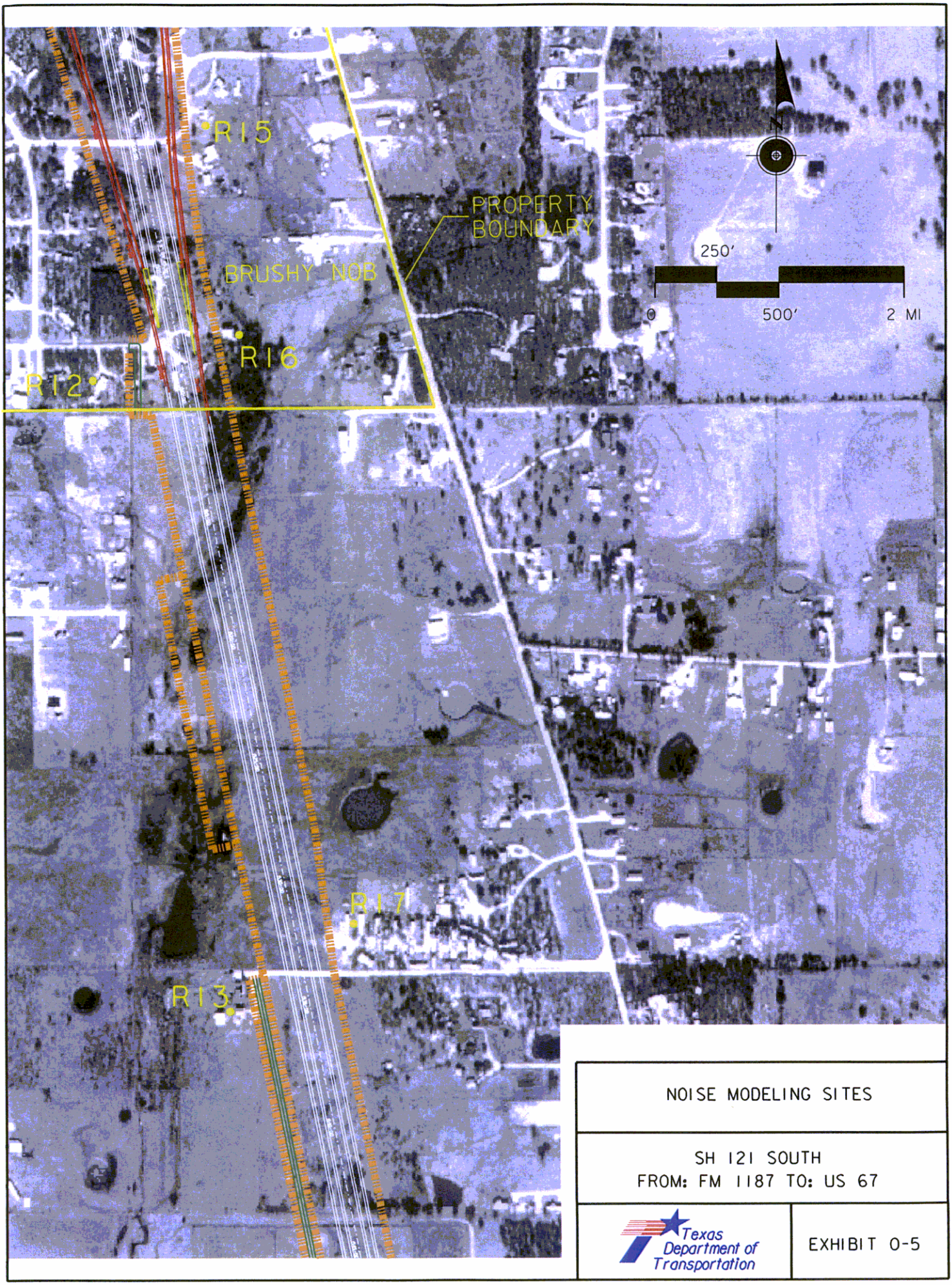


NOISE MODELING SITES

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT O-4



NOISE MODELING SITES

SH 121 SOUTH
FROM: FM 1187 TO: US 67

Texas Department of Transportation

EXHIBIT O-5