



CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701-2724

PLANNING DEPARTMENT

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MEMORANDUM

TO: Rapid City Public Works Committee

FROM: Patsy Horton, Transportation Planning Coordinator

DATE: October 7, 2003

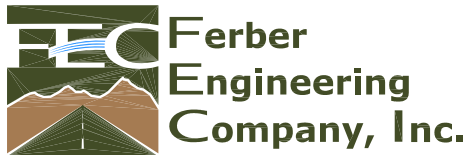
RE: Eglin Street Corridor Study – Executive Summary and Final Report

Attached for your review and approval is a copy of the Eglin Street Corridor Study Executive Summary and Final Report. Ferber Engineering presented the Final Draft Report at the September 9, 2003, Public Works Committee meeting.

Three public meetings were held during the development of the study and extensive public comment was received. The public hearing on August 14 was the first of two public hearings to be held during the approval of this document. After your review and acceptance on October 14, 2003, of the Executive Summary and Final Report, the final document will be submitted to the South Dakota Department of Transportation and the Federal Highway Administration.

There were no additional comments received during the review process of the Final Draft Report. Because of the cost involved with printing the final reports, we have provided you with copies of the Executive Summary only. However, if you wish to review a copy of the full report or if you have any questions, please feel contact me.

STAFF RECOMMENDATION: Staff recommends that the Executive Summary and Final Report of the Eglin Street Corridor Study be approved.



- Civil Engineering
 - Water Resources
 - Transportation
 - Land Surveying



EGLIN STREET CORRIDOR STUDY

EXECUTIVE SUMMARY

Prepared for:

Rapid City Metropolitan Planning Organization

September 2003

EXECUTIVE SUMMARY

The Rapid City Metropolitan Planning Organization contracted with Ferber Engineering Company and Interstate Engineering, Inc. to prepare a Corridor Analysis for Eglin Street (SD Highway 230) in northeastern Rapid City, SD. The project includes that portion of Eglin Street extending west of US Highway 16B (I-90 Business Loop / East North Street) to LaCrosse Street and extending east of Elk Vale Road (SD Highway 437) approximately ½ mile.

Eglin Street as identified in the Rapid City Major Street Plan lies south of and roughly parallel to I-90, from LaCrosse Street to east of Elk Vale Road. Eglin Street is classified in the Rapid City Major Street Plan as a Collector Street from LaCrosse Street to Cambell Street and east of Elk Vale Road, and as a Minor Arterial Street from Cambell Street to Elk Vale Road. When completed, Eglin Street as envisioned will provide the primary access to the planned commercial areas adjacent to I-90 from Elk Vale Road west to LaCrosse Street.

The proposed realignment will create new intersections at North Street and LaCrosse Street as well as impacting the Elk Vale Road Intersection. The proposed alignment may also impact the DM&E Railroad by revising or adding railroad crossings.

The SDDOT is concerned that reconstruction of Eglin Street as envisioned by the Rapid City Major Street Plan will have an impact on the design and Level of Service of the new interchanges proposed for Exit 60 (North Street) and Exit 61 (Elk Vale Road) on I-90. The SDDOT plans to begin reconstruction within the next two to three years.

The Eglin Street Corridor Study will develop recommendations for the Eglin Street Corridor concerning:

- Horizontal and Vertical Alignment of Eglin Street and intersecting streets.
- Intersection location, layout, and controls for Eglin Street at LaCrosse, East North, and Elk Vale Road.
- Weaving movements related to the reconstruction of Exits 60 and 61.
- The impact of the various roadway horizontal and vertical alignments on the sanitary sewer collection system
- The geometry for continuation of Eglin Street east of Elk Vale Road.

The SDDOT and the City of Rapid City identified requirements that must be met in any redevelopment of the Eglin Street Corridor. The requirements included:

- The City prefers that Eglin Street be continuous from LaCrosse Street to the eastern edge of the study area, including intersections with East North Street and Elk Vale Road.
- The SDDOT is eliminating the Dyess Avenue overpass in order for the Interstate grades to work with the reconstruction of Exit 60.

- The SDDOT is willing to allow Eglin Street to intersect with East North Street only if traffic modeling studies verify that the proposed intersection will not significantly lower the Level of Service of the proposed new Exit 60 Interchange.
- The SDDOT is purchasing Control-of-Access in addition to Right-of-Way for the widening of Elk Vale Road and Exit 61. This is based upon criteria described in the SDDOT Access Control Manual. Any intersection between Eglin Street and Elk Vale Road will need to honor this Control of Access Policy.

Three alternatives plus a No-Build alternative were developed to address the possible improvements to Eglin Street needed to transition from the existing facilities to those envisioned in the Major Street Plan. The alternatives are shown in Figure 4-1. These alternatives evolved during the course of the study based upon input from Steering Committee Members, Landowners and public comments. The revised alternatives are shown on Figure 4-2.

The final recommendations are shown on Figure 5-1, with additional details for the various intersections shown on Figures 5-2 through 5-6.

We recommend Eglin Street be constructed as a 3-lane urban section for its entire length.

The western terminus of Eglin Street is detailed in Figure 5-2. This intersection will require eliminating the existing Rapp Street / LaCrosse Street intersection, instead tee'ing Rapp off Eglin Street approximately 100 feet from the Eglin / LaCrosse intersection. The recommended alignment will also require relocating the access to the Comfort Inn located on the south side of Farnwood / Eglin. This access would be moved to a location approximately 300 feet from the Eglin / LaCrosse intersection. The recommended alignment may also require changing Rapp and Pine to One-Way streets. During peak periods, WB/SB left turning queues will extend beyond the Rapp Street / Eglin Street intersection precluding free movement between Eglin and Rapp. Creating a one-way, counterclockwise loop using Pine-Luna Rapp should allow fairly free movement.

East of Spruce Street, the recommended alignment follows the Major Street Plan alignment. This alignment will provide rear access to the desirable I-90 frontage. The other benefits include allowing development on both sides, retaining large areas for development south of Eglin, and easing the provision of sanitary sewer service.

The recommended Eglin Street / North Street intersection is detailed in Figure 5-3. This detail shows Eglin Street located north of the Section Line with all of the Right-of-Way coming from the property in Section 29. The initial construction of this intersection will include two through lanes each way on North Street with single left turn lanes. Eglin Street includes one through lane each way with left turn lanes. The NB/WB left turn lane taper has been shortened to prevent left turn queues backing up past the DM&E Railroad Tracks. As traffic increases at full build out, an additional left turn lane may be required.

Figure 5-3 also shows the realignment of the approach to the SDDOT complex and the portion of existing Eglin Street fronting Menards. This intersection will not be signalized. With the construction of the Eglin / North intersection, the existing street will need to be

renamed. The recommended alignment shown at the June 9th Open House depicted the removal of this Menards frontage road railroad crossing. The City requested that this crossing be kept for continuity in the local street network.

East of the Eglin / North intersection, the recommended alignment returns quickly to the existing Eglin Street alignment and follows the existing alignment to the intersection of Eglin and Lowry Lane.

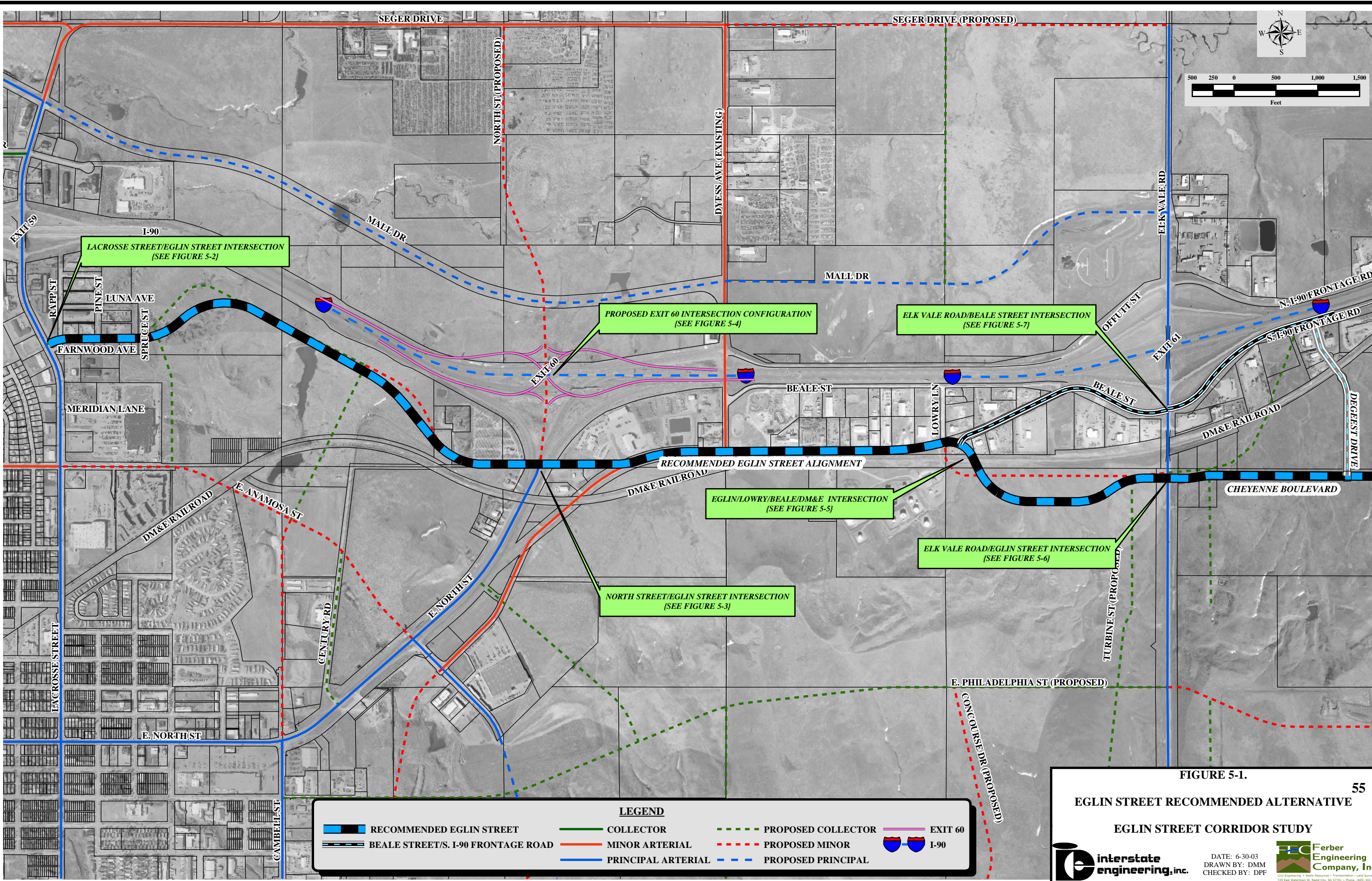
In order to provide continuity, Alternative #1 and Alternative#3 alignments both depicted Eglin Street turning southeast and crossing the DM&E Railroad between Lowry Lane and Elk Vale Road. From the outset of this study, the SDDOT has indicated that there would be restrictions placed on traffic movement at the existing intersection of Beale Street and Elk Vale Road. The SDDOT reasons that a full movement intersection between Beale and Elk Vale Road would ultimately have to be signalized, and any signalization of this intersection would impede traffic on Elk Vale Road. Figure 5-7 details the current right-in, right-out intersection proposed for this location.

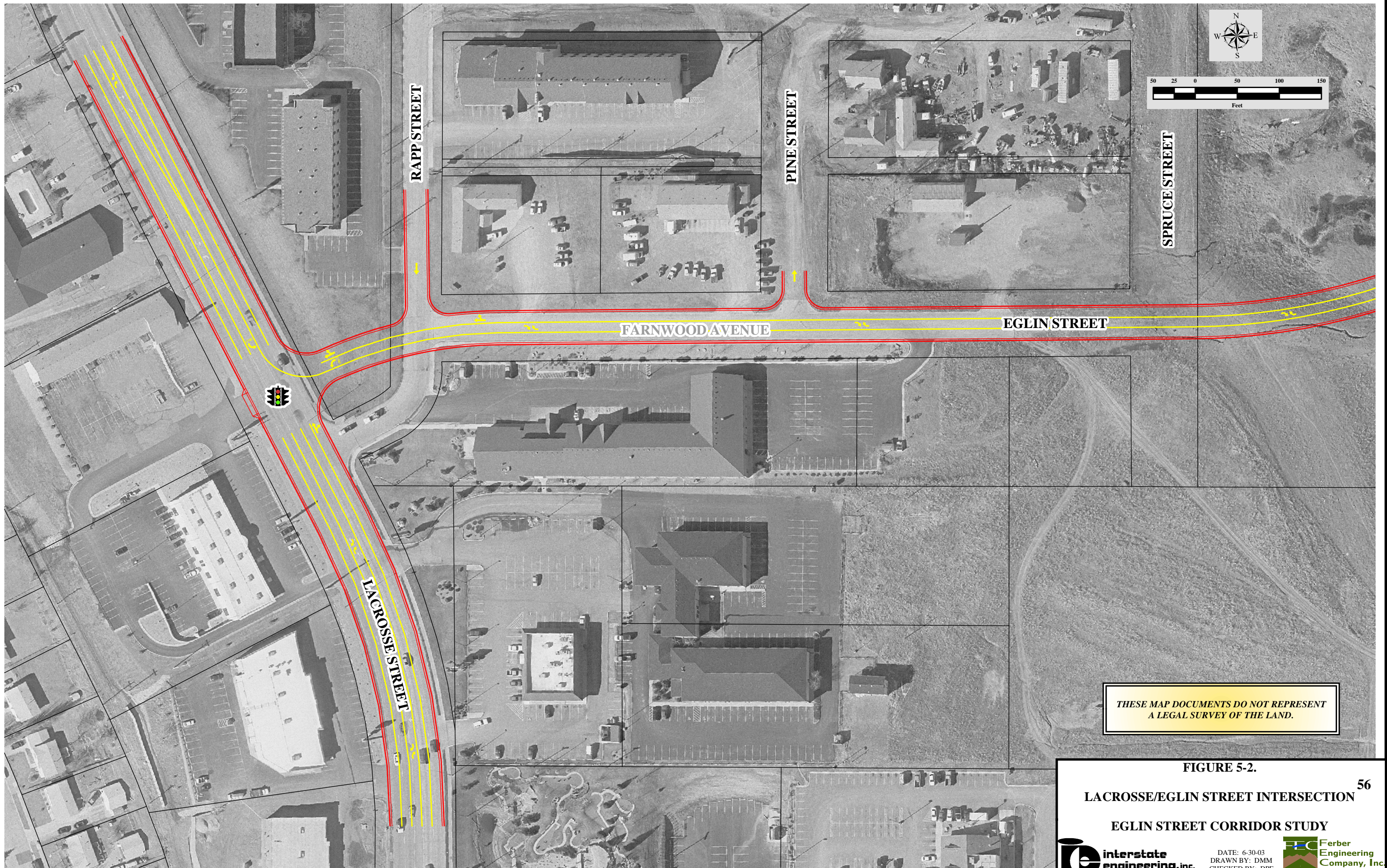
Restricting turning movements at the Beale Street intersection with Elk Vale Road will limit the function of the intersection and therefore the street to the status of a local road. In order to maintain the type of continuity envisioned in the Major Street Plan, Alternatives 1 and 3 include a railroad crossing between Lowry Lane and Elk Vale Road and intersect with Elk Vale Road at the Cheyenne Boulevard location approximately 400 feet south of the railroad.

We recommend that Eglin Street follow the alignment depicted in Alternative #3, as shown in Figure 5-5. The proposed intersection conforms more fully to the functional classification of Eglin Street as an Urban Minor Arterial. This alignment will include an at-grade railroad crossing on a 30-degree skew located 400 feet east of the existing entrance to the Kaneb Pipeline Terminal. Beale Street and Lowry Lane will both remain as local streets and will intersect with Eglin Street at tee intersections. A new access to the Kaneb Terminal will be constructed to the east. The trucks from I-90 accessing the Kaneb Terminal will no longer be required to cross the DM&E Railroad tracks entering or leaving the facility.

This alignment also allows Eglin Street to be continuous from LaCrosse Street to Elk Vale Road. The recommended alignment for Eglin Street also addresses the continuity of the transportation network east of Elk Vale Road. Cheyenne Boulevard will intersect Elk Vale Road at this same location. Cheyenne Boulevard will continue east to the eastern limits of the study area providing access to additional undeveloped areas. Figure 5-6 details the full movement intersection planned at Eglin Street and Elk Vale Road.

Restricting turning movements at the existing South I-90 Frontage Road / Elk Vale Road intersection will limit the function of the intersection and therefore the street to the status of a local road. We recommend that a secondary access be constructed between Cheyenne Boulevard and the South I-90 Frontage Road. Current plans for the Heartland Retail Center show a local north-south street ending in a cul-de-sac at the DM&E tracks. We recommend that the street be extended to the north to intersect with the existing South I-90 Frontage Road.





THESE MAP DOCUMENTS DO NOT REPRESENT
A LEGAL SURVEY OF THE LAND.

FIGURE 5-2.

LACROSSE/EGLIN STREET INTERSECTION

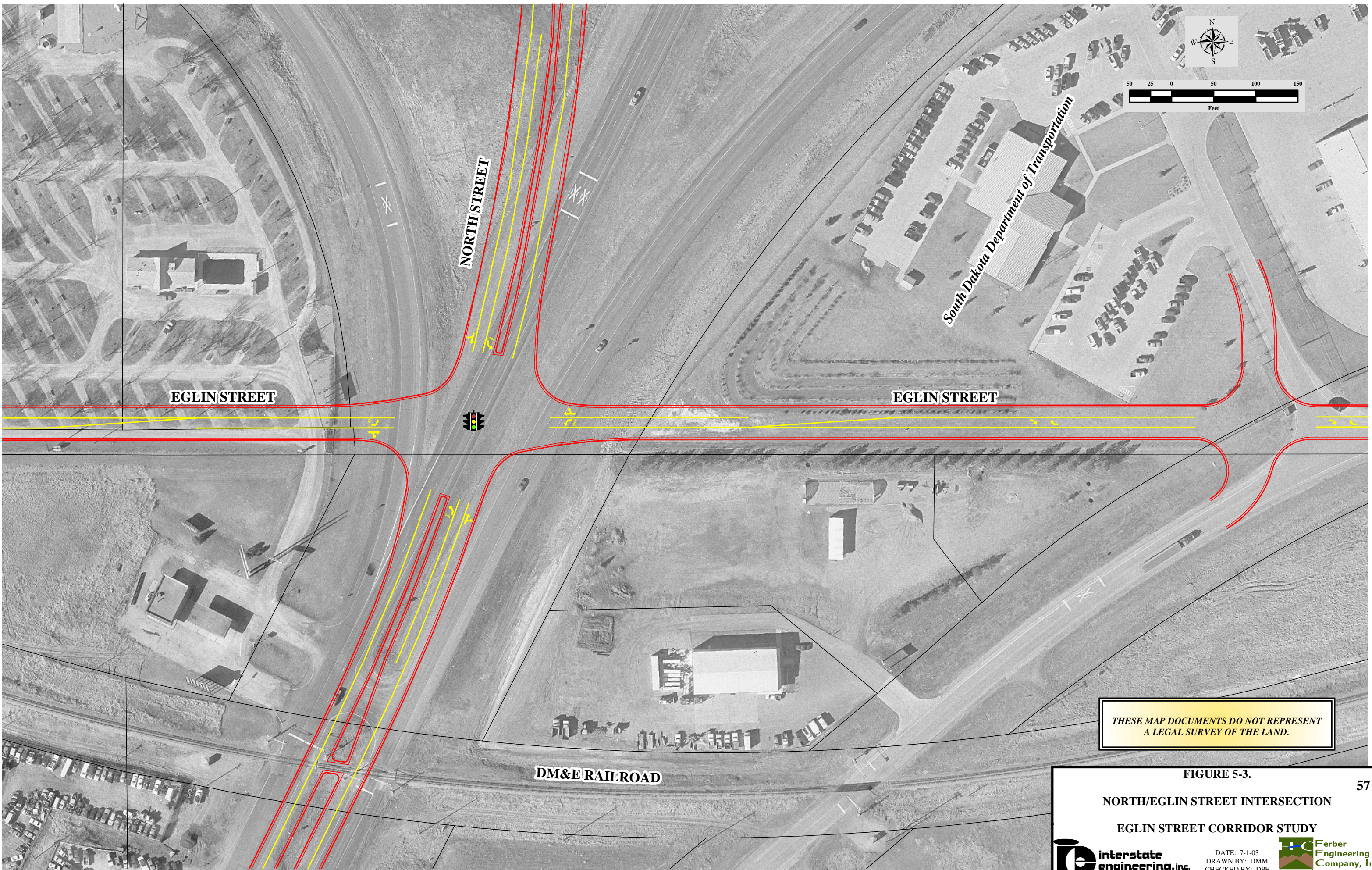
EGLIN STREET CORRIDOR STUDY

interstate engineering, inc.

DATE: 6-30-03
DRAWN BY: DMM
CHECKED BY: DPF

Ferfer Engineering Company, Inc.

Civil Engineering • Water Resources • Transportation • Land Surveying
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FIGURE 5-3.

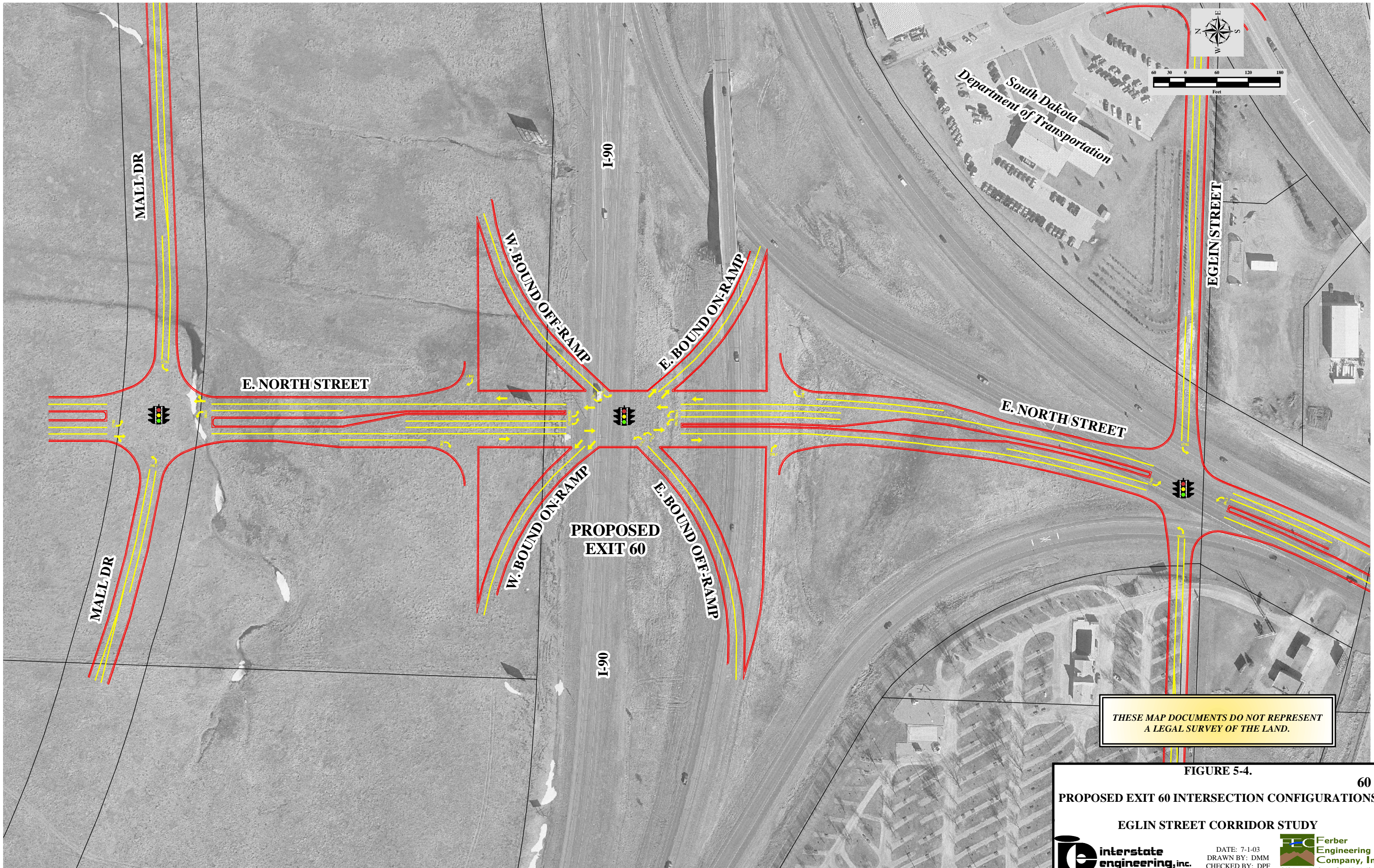
NORTH/EGLIN STREET INTERSECTION

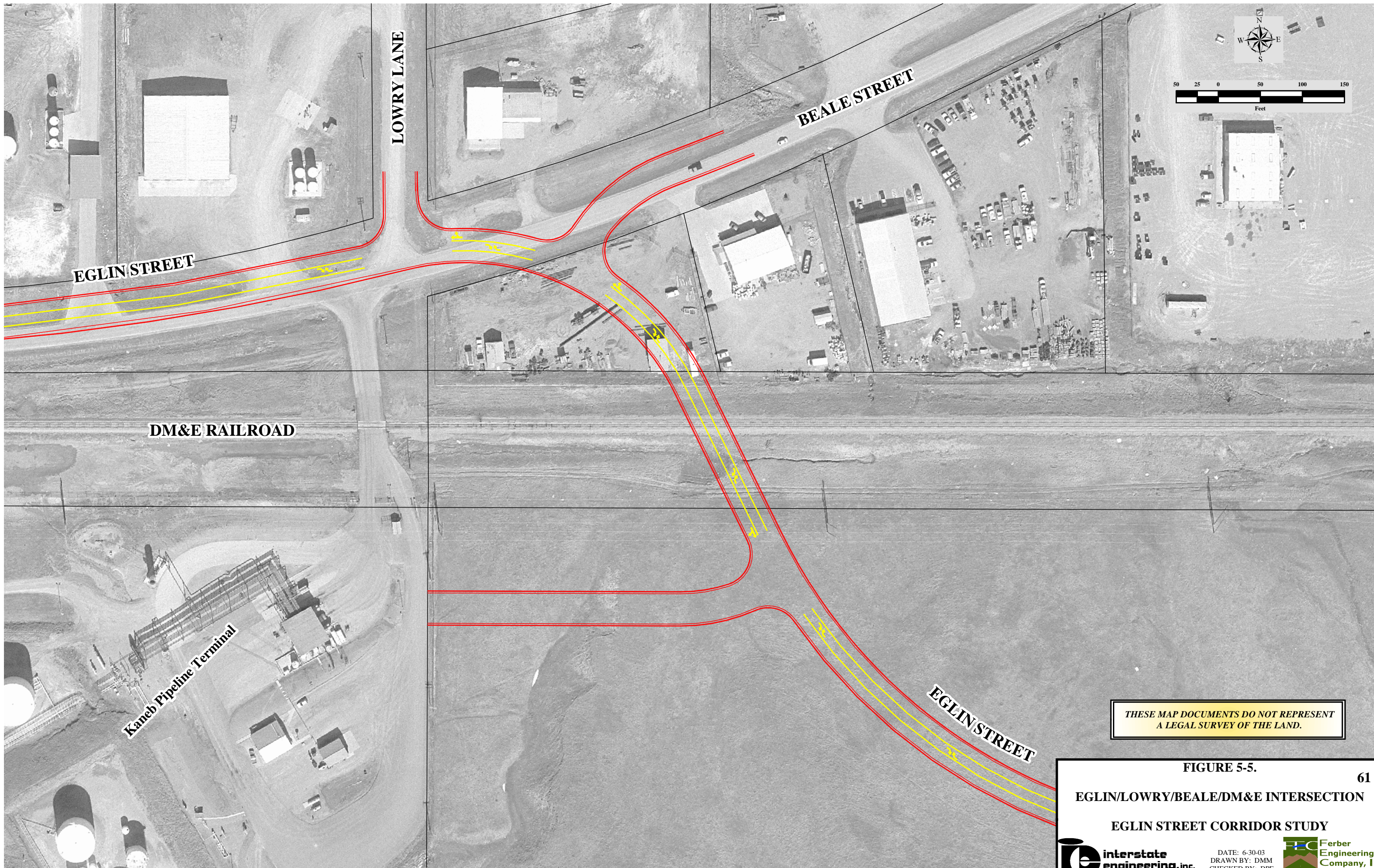
EGLIN STREET CORRIDOR STUDY



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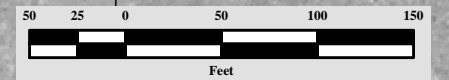




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FIGURE 5-5. 61
EGLIN/LOWRY/BEALE/DM&E INTERSECTION
EGLIN STREET CORRIDOR STUDY

DM&E RAILROAD



CHEYENNE BOULEVARD

EGLIN STREET

TURBINE DRIVE EXTENSION

ELK VALE ROAD

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FIGURE 5-6.

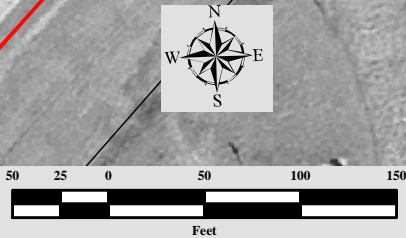
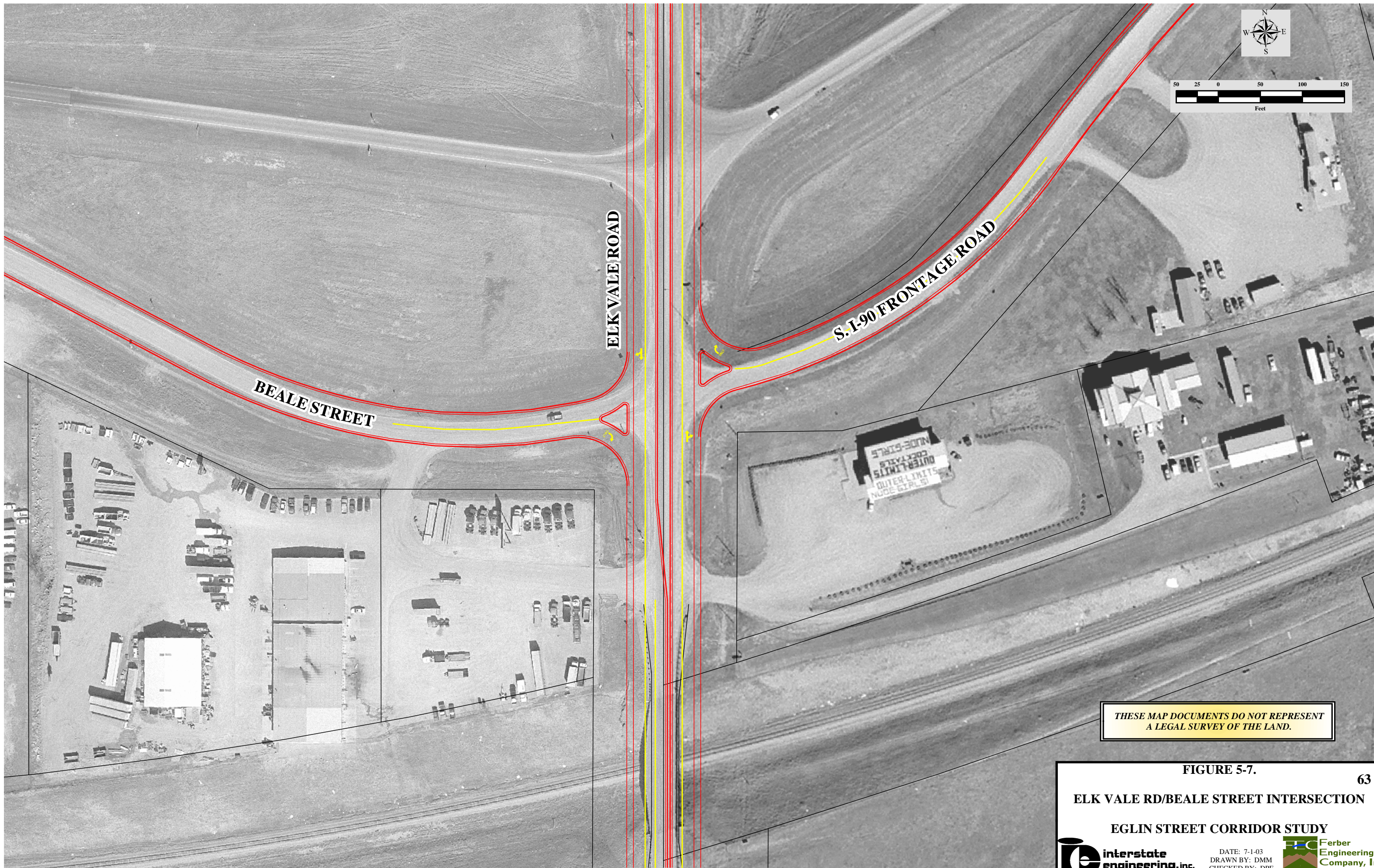
ELK VALE ROAD/EGLIN STREET INTERSECTION

EGLIN STREET CORRIDOR STUDY



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