

To: Nebraska Department of Roads	
From: Andy Wiest	Project: US-75 Plattsmouth to Bellevue 6th Street Connector
CC:	
Date: December 15, 2009	Job No: NH-75-2(155), CN 21849

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RE: Avoidance, Minimization, and Mitigation of Select Locations on the US-75 – Plattsmouth to Bellevue Project

The purpose of this memorandum is to summarize the alternatives analysis completed as part of the NEPA process and to analyze site specific impacts for avoidance, minimization, and mitigation strategies for the U.S. Highway 75 (US-75) Plattsmouth to Bellevue Improvements Project.

NDOR and HDR have identified four (4) locations where a site-specific review of alternatives that avoids or minimizes impacts is warranted. Those locations are:

- Stream crossing associated with the Fairview Road Interchange
- Stream crossing at Webster Blvd / Haswell Drive (Bay Road Interchange)
- Stream crossing associated with the Platteview Road Interchange
- Wetlands along the new 6th Street Connector alignment (Bay Road Interchange)

This memorandum will address the 6th Street Connector alignment (Bay Road Interchange) location only. Subsequent memorandums will be developed for each independent location requiring an avoidance, minimization, and mitigation discussion. Portions of this memorandum are anticipated for use in conjunction with Section 404 permitting when applicable.

1.0 Summary of NEPA Analysis

The original Final Environmental Impact Statement (EIS) was approved on June 6, 1979. A Final Supplemental EIS for the US-75 Project was signed on October 26, 2000. The Record of Decision for the US-75 Project was signed on May 25, 2001.

The Final Supplemental EIS identified an alternatives analysis at the corridor level at three locations along US-75: Murray (N-1) to south of Plattsmouth, through Plattsmouth, and north of Plattsmouth to Bellevue, as well as a No-Build Alternative. Four alternatives for Chicago Avenue to Webster Boulevard within Plattsmouth were analyzed, with a four-lane highway on alignment with a raised median selected as the preferred alternative. Interchange options for the three public roads located within the Platte River to Fairview Road section of US-75 were investigated. One interchange is required and a location between LaPlatte Road and Platteview Road was the preferred location. Platteview Road will be relocated south to meet the need for this new interchange. Additionally, a frontage road from the Normandy Hills subdivision is proposed to provide access to US-75 from Fairview Road.

The No-Build Alternative did not meet the need for improvements, did not improve safety, and did not provide adequate capacity to meet the projected traffic volumes within the area.

The Federal Highway Administration (FHWA) and the Nebraska Department of Roads (NDOR) coordinated with resource agencies using the Nebraska Local Operating Procedures for Integrating NEPA/404 concurrence point process. Several agencies including U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), and Nebraska Game and Parks Commission (NGPC) were involved in the NEPA/404 Merge Process. Concurrence from the resource agencies on Purpose and Need, Alternatives Carried Forward, Selected Alternative, and Impact Minimization was met during the NEPA/404 Merge Process.

Subsequent to the Final Supplemental EIS, NDOR has performed reevaluations of the Project as design progressed. FHWA recently reviewed the Project and determined that a formal NEPA reevaluation was required (FHWA, March 16, 2009). The reevaluation will be based on the change of the impact boundary from the Final Supplemental EIS, compared to the current impact footprint and will consider past reevaluations conducted by NDOR on September 13, 2003 and November 20, 2004. The Project is currently undergoing the NEPA reevaluation, which is slated for completion in January 2010.

2.0 404 (b)(1) Guidelines

The 404 (b)(1) guidelines as part of the Clean Water Act of 1977 (as amended) requires USACE to approve only the Least Environmentally Damaging Practicable* Alternative (LEDPA). Practicable is generally defined relative to the project as costs, logistics, and best available technology.

Pursuant to these guidelines, NDOR and HDR have identified four (4) locations where a site specific review of alternatives that avoids or minimizes impacts is warranted to identify the LEDPA and to supplement future 404 permitting efforts. Those locations are:

- Stream crossings associated with the Fairview Road Interchange
- Stream crossing at Webster Blvd / Haswell Drive (Bay Road Interchange)
- Stream crossing associated with the Platteview Road Interchange
- Wetlands along the new 6th Street Connector alignment (Bay Road Interchange)

3.0 Screening Criteria

Alternative roadway designs for each of the above locations were considered and evaluated in an effort to avoid or minimize the impacts to waters of the U.S. When considering alternative designs the following general criteria were applied:

- Meet NDOR highway design standards
- Minimize environmental and landowner impacts
- Cost

Evaluation and selection of alternatives are a function of each of these criteria.

4.0 6th Street Connector

4.1 Avoidance

A palustrine emergent wetland complex exists immediately west of the intersection of 6th Street and School Road (see Figure 1). Total avoidance of impacts to these aquatic resources is not possible if the ultimate purpose of creating controlled access along US-75, while maintaining access to residents who currently access US-75 via the at-grade intersection at and School Road (which will be terminated as part of the ultimate Project), is to be met.

The Project includes construction of a diamond interchange at US-75 and Bay Road in order to provide controlled access and improved safety along US-75. Also included is construction of a connector road from existing 6th Street to Bay Road. This new frontage road, named 6th Street Connector, would provide access to residents west of US-75 and south of Bay Road. In order to build 6th Street Connector, unavoidable impacts to the wetlands would occur. However, alternate 6th Street Connector alignments were analyzed in order to minimize impacts to these resources (see Section 4.2: Minimization).

4.2 Minimization

The alignment of 6th Street Connector, as proposed by the Preferred Alternative, is located such that impacts to the palustrine emergent wetland complex were minimized to the maximum extent practicable. The following conditions currently exist:

Existing Conditions

A palustrine emergent (PEM [Cowardin Classification]), riverine floodplain (Nebraska Wetland Subclass) wetland complex is located immediately west and north of existing 6th Street. A total of 1.12 PEM wetland acres occur west of School Road in this location.

Potential for aquatic habitat within the wetland was reviewed. Fisheries do not appear to be a viable resource, as the wetland terminates in an isolated sand pit. Fish species, which inhabit the nearby Platte River, could reach the sand pit during a Platte River flood event. It would not be possible for fish species (potentially present in the sand pit) to swim upstream to the location, as a low water crossing on East Bay Road would create an impassable barrier under normal conditions. Although the low water crossing may be fish passable during a significant storm event, these combined obstacles make the fishery potential of the location unlikely.

Table 1 – Existing Conditions

Existing Culverts (linear ft)	0
PEM Wetlands (acre)	1.12*
Fisheries Habitat	No
Aquatic Habitat	Yes

* Wetlands that exist west of School Road

Alternatives

Two alignment alternatives were considered in association with the extension of 6th Street Connector. The alignment for Alternative 1 extends north from existing 6th Street and creates a "T" intersection with School Road (see Figure 1). Alignment 2 was shifted to the east to minimize impacts to existing aquatic resources (see Figure 2), resulting in a

lengthened alignment. Both alternatives curve around the existing high ground and follow the natural terrain. This was done to minimize earthwork, right-of-way impacts, and project cost.

- **Alternative 1**

Alternative 1, the original construction alternative, was developed to provide local residents access to US-75 following the proposed closure of US-75 access via School Road. Consideration was given to right-of-way impacts and grading/construction costs. Significant topographical deviation at the location was the primary driver in selecting a corridor which minimizes grading costs associated with extending 6th Street Connector to Bay Road.

Alternative 1 generally maintains a western corridor through the location (see Figure 1). As impact minimization to aquatic resources was not the driver behind this alternative, Alternative 1 results in the following impacts to existing aquatic resources:

- 1.12 acres of permanent impact to PEM, riverine floodplain wetlands.
- Conveyance through new 7 ft x 6 ft x 98 ft box culvert at the 6th Street Connector intersection with School Road.

Alternative 1 would result in 4,300 ft of new roadway (on centerline) at the location and meets or exceeds NDOR design standards. Relevant items related to project cost are discussed in "Alternative Comparison".

- **Alternative 2**

As discussed above, Alternative 2 was developed in efforts to minimize impacts to existing aquatic resources at the location by shifting the alignment to the east, while still achieving the need to provide access to US-75 for residents affected by the School Road closure. Right-of-way impacts and project cost were considered secondary to the minimization of existing aquatic resource impacts.

Alternative 2 deviates from the first 6th Street Connector alignment in favor of an easterly alignment which acts to minimize wetland impacts and avoid open water impacts (see Figure 2). Given the consideration of, and accommodations to, existing aquatic resources, Alternative 2 results in the following, minimal impacts:

- 0.71 acre of permanent impact to PEM, riverine floodplain wetlands.
- Conveyance through new 7 ft x 6 ft x 162 ft box culvert south of the 6th Street Connector intersection with a new driveway.

Alternative 2 would result in 4,500 ft of new roadway (on centerline) at the location and meets or exceeds NDOR design standards. Relevant items related to project cost are discussed in "Alternative Comparison".

- **Alternative Comparison**

Alternative 1 results in an additional 0.41 acre of permanent wetland impacts, when compared to Alternative 2.

Alternative 2 adds an additional 64 linear feet of culvert when compared to Alternative 1. However, Alternative 2 allows the existing drainageway to function as it currently exists.

Both alternatives will require right-of-way acquisition as a result of the new alignment being constructed. Alternative 2 impacts an additional 0.74 acre of ROW when compared to Alternative 1 as a result of the increased alignment length.

Alternative 1 is estimated to cost approximately \$1,100,000. In comparison, Alternative 2 is estimated to cost approximately \$1,650,000 which is an increase of \$550,000.

The advantage associated with Alternative 1 is cost to construct. The additional cost associated with Alternative 2 can be summarized noting the borrow quantity is significantly more. All of these individual project aspects cumulatively equate a project that satisfies the project purpose with minimal cost.

Alternative 2 will minimize impacts to wetlands. Alternative 2 also provides an advantage to the driving public, as this Alternative constitutes the LEDPA and displays NDOR's conscious effort to comply with Section 404 of the *Clean Water Act*. Consequently, Alternative 2 is more likely to receive 404 permit authorization, and ultimately facilitate a needed roadway improvement that will result in increased traffic safety on US-75.

Table 2 – Comparison of Alternatives

	Alternative 1	Alternative 2
Culvert (linear ft)	98	162
PEM Wetland Impacts (acre)	1.12	0.71
ROW Needed (acre)	39.74	40.48
Cost	\$1,100,000	\$1,650,000

4.3 Mitigation

NDOR is finalizing plans to construct the Oreapolis Wetland Mitigation Site located in the northeast ¼ of the north ½ of Section 1, Township 12 North, Range 13 East, in Cass County, Nebraska. Unavoidable impacts to wetlands associated with the 6th Street Connector will be mitigated at the Site.

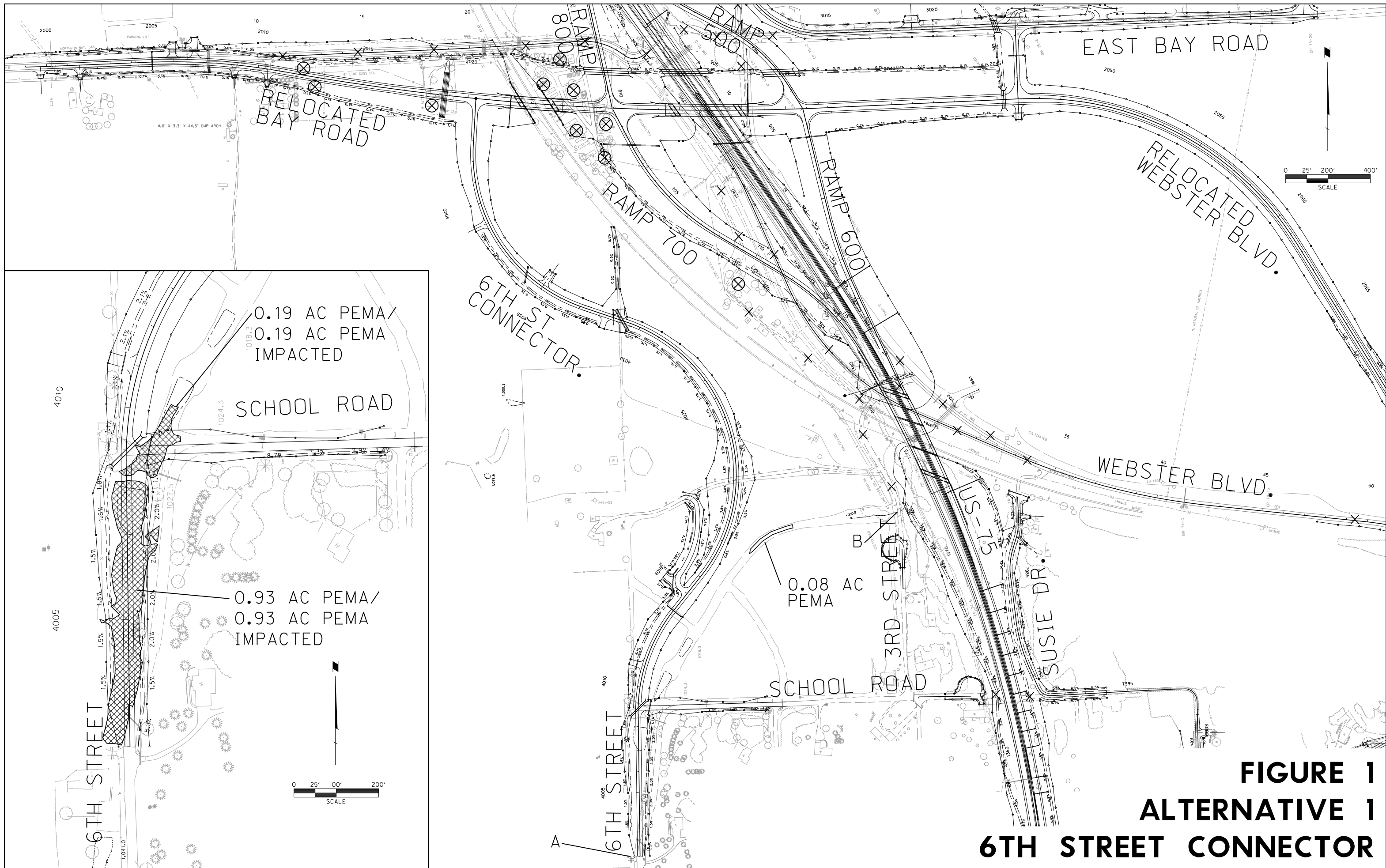


FIGURE 1
ALTERNATIVE 1
6TH STREET CONNECTOR

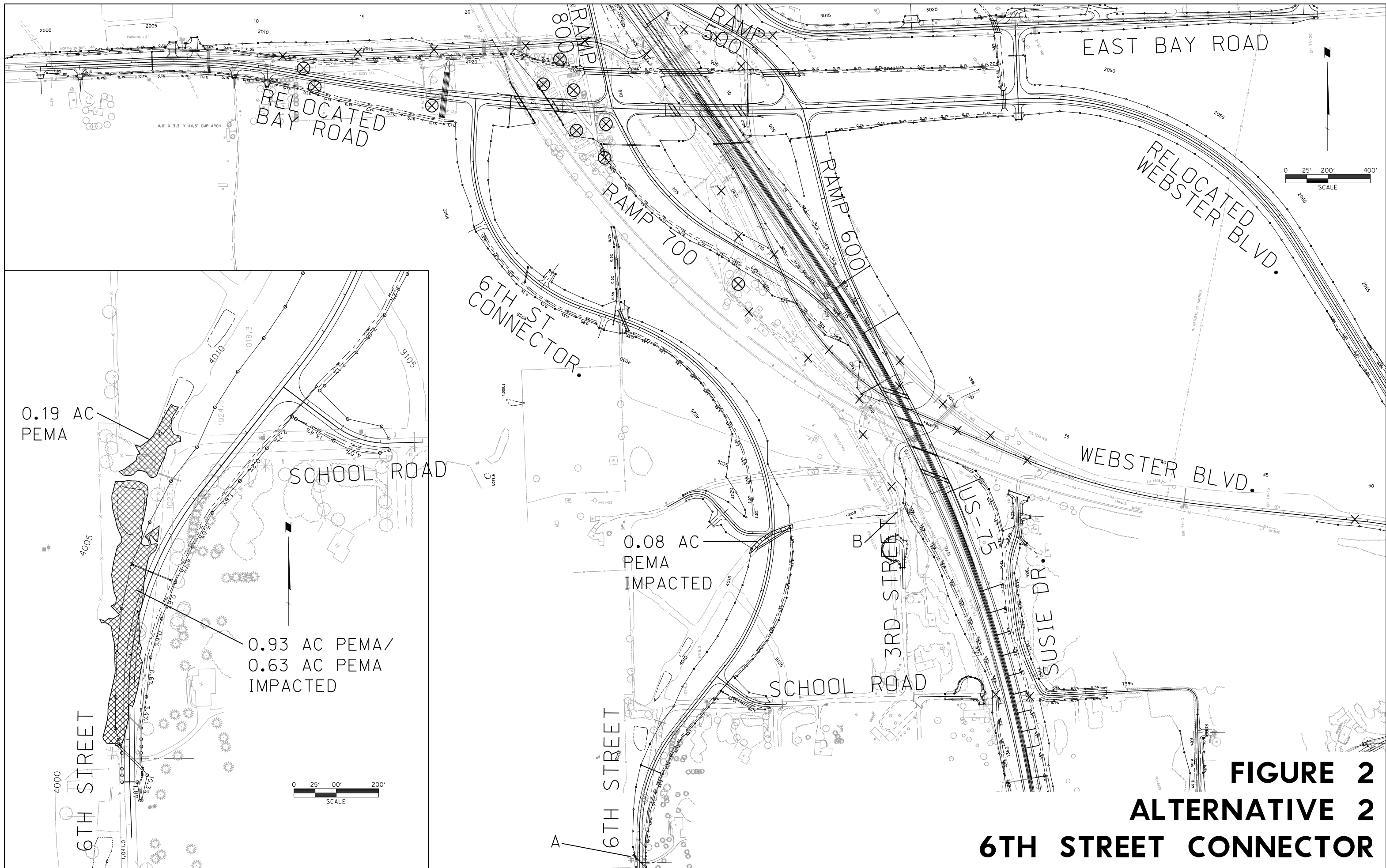


FIGURE 2
ALTERNATIVE 2
6TH STREET CONNECTOR