



## MEMO

**TO:** Garry Ford, PE  
**FROM:** Carl Harline, PE; Kerri Collins, PE, PTOE, LEED AP  
**SUBJECT:** City of New Braunfels Major Thoroughfare Plan Amendment – Alves Lane Extension  
**DATE:** October 1, 2018

The City of New Braunfels has retained WSP to evaluate a proposed realignment of the 2012 Regional Transportation Plan in the vicinity of Alves Lane, Barbarosa Road, and FM 1101. The 2012 Regional Thoroughfare Plan is included as an Attachment to this memo. The proposed changes to the thoroughfare plan would alter plans for the extension of Alves Lane north of Barbarosa Road and its intersection with FM 1101. Due to the high residential and commercial growth anticipated for this area, Alves Lane and FM 1101 are anticipated to play a critical role in future northbound/southbound mobility.

### EXISTING CONDITIONS

The existing cross section of Alves Lane contains approximately 20-22 feet of pavement width with varying ROW between SH 46 and Barbarosa Road. It is currently a two lane roadway. An existing project will expand the pavement width of Alves Lane and provide a three-lane section, with one lane in each direction and a continuous center left-turn lane. The New Braunfels Regional Thoroughfare Plan designates Alves Lane as a Minor Arterial, with a Right-of-Way (ROW) of 120 feet. The proposed extension as specified in the Regional Thoroughfare Plan is considered a Principal Arterial with a ROW of 150' (see **Figure 1**). The thoroughfare plan section will provide up to three lanes in each direction with median, turn lanes, sidewalks and a shared-use path.

The existing cross section of FM 1101 contains one lane in each direction, both approximately 12 feet in width. Some sections south of the intersection with FM 306/Barbarosa Road contain a center left-turn lane. Shoulder treatments vary along the segment between SH 46 and FM 306. The existing Regional Thoroughfare Plan designates FM 1101 as a Major Collector with a ROW of 90 feet, though existing ROW varies on this roadway and, for some segments, exceeds the 90 foot ROW designation. The existing Hike & Bike Trails Plan shows an off-street shared-use path along FM 1101 and Alligator Creek. The thoroughfare plan section will provide up to two lanes in each direction with median, turn lanes, sidewalks and a shared-use path.

Currently, Barbarosa Road and SH 46 provide the only eastbound/westbound connectivity between Alves Lane, Three Mile Creek, and Saengerhalle Road and the FM 306/IH-35 interchange and the Creekside Crossing shopping center. The Alves Lane extension would provide alternative routes to the Barbarosa Road/FM 1101 intersection by adding additional connectivity to FM 483 and Creekside Way.

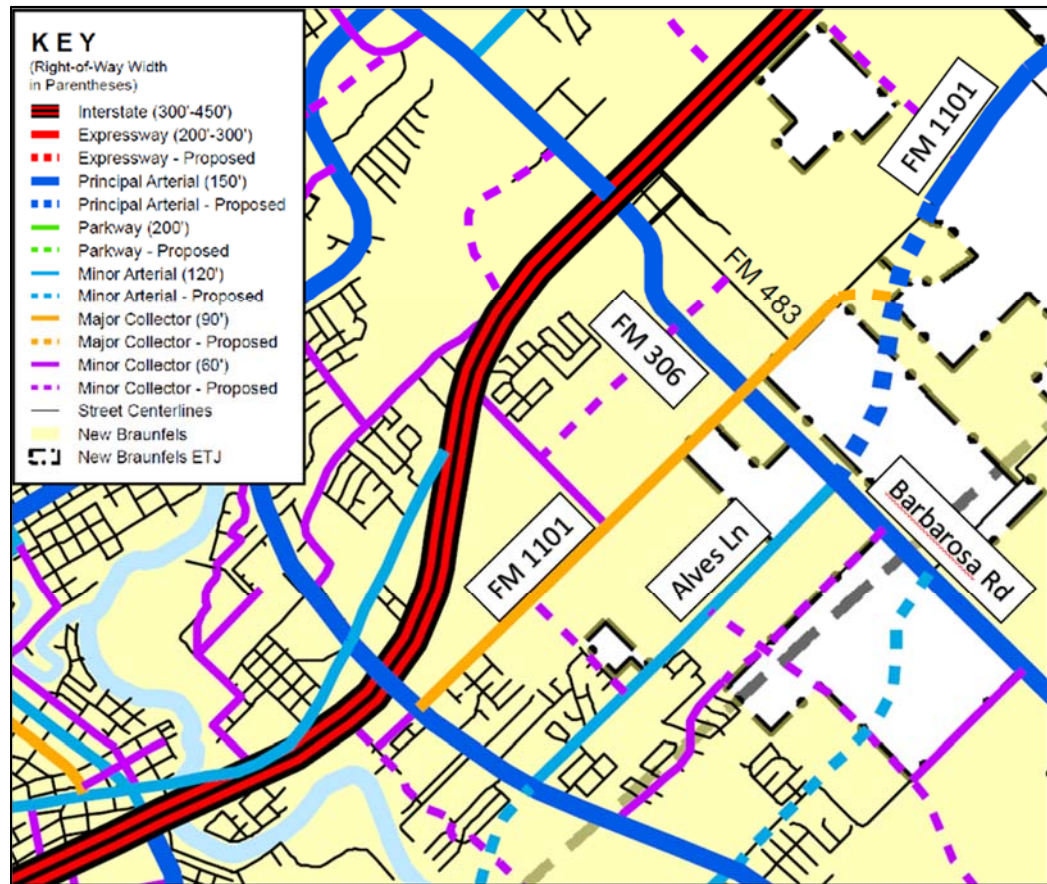


Figure 1. 2012 Regional Thoroughfare Plan within Study Area

## LOCAL CONSTRAINTS AND FUTURE LAND USE

### 2012 REGIONAL THOROUGHFARE PLAN

Both FM 1101 and Alves Lane run northbound/southbound north of SH 46, with FM 1101 currently extending beyond FM 306 and providing more intra-regional connectivity with possible access to FM 758 and SH 123 to San Marcos.

South of SH 46, FM 1101 is constrained by existing commercial and residential development and the Guadalupe River. Under the current Regional Thoroughfare Plan, a southbound extension of Alves Lane to south of SH 46 identifies a potential crossing of the Guadalupe River that may connect with County Line Road south of the river. If this alignment were to be built, traffic patterns may shift resulting in Alves Lane becoming an important northbound/southbound intra-regional connection.

### NEW DEVELOPMENT

Several new developments are anticipated for the study area, including the following:

- **City of New Braunfels Fire station** – To be located on Alves Lane near the alignment of the proposed Alves Lane/FM 1101 intersection as planned by the existing Regional Thoroughfare Plan. The fire station will need to have protected access to Alves Lane, Barbarosa Road, and FM 1101, to optimize response time to local residences and commercial/industrial uses.

- **Creeside developments** – Creekside Crossing shopping center continues to develop for multifamily and commercial land uses and will continue to expand in and around the FM 306, IH-35, and FM 1101 corridors, providing commercial services to the land that is continuing to develop for residential housing.
- **Titan Industrial** – This industrial complex has access to FM 1101 only and will be anticipating full build out in the near future and generate more traffic for the FM 1101 corridor.
- **Heatherfield/Health Commons** – These two developments will generate more local trips for the study area corridors. Heatherfield will have access on FM 1101 north of the proposed intersection with the Alves Lane extension, while Health Commons will be a mixed-use development including multifamily housing and assisted care. Health Commons will be located at the corner of FM 1101 and Barbarosa Road. Heatherfield Commons is a large residential development that is projected to generate in excess of 6,000 daily trips on FM 1101.

### ***TRAFFIC CHARACTERISTICS***

Existing traffic on FM 1101 is approximately 7,300 vehicles per day in both directions, per the Texas Department of Transportation's Transportation Planning and Programming Division and based on 2016 count data. Existing traffic on Alves Lane is approximately 2,000 vehicles per day south of Whistle Wind, and 1,700 vehicles per day north of Whistle Wind, as measured by the Alves Lane PER Traffic Analysis and counts taken in early 2014. With anticipated growth in the area, both roadways are expected to carry significantly more traffic, especially along Barbarosa Road between FM 1101 and Alves Lane. There are also approximately 350 acres of undeveloped parcels with direct access to Alves Lane and FM 1101. The City of New Braunfels Future Land Use map shows the parcels along Alves Lane and FM 1101 to be developed as residential, with a mix of commercial and residential land uses in the vicinity of the Alves Lane extension. These future land uses will add traffic demand to the roadway facilities around Alves Lane, Barbarosa Road, and FM 1101.

### ***ALLIGATOR CREEK FLOODPLAIN***

The Alligator Creek floodplain (see **Figure 2**) currently crosses FM 1101 via four corrugated culverts approximately 3 feet in diameter. Development upstream and within Alligator Creek watershed will likely lead to the need to improve conveyance of the creek in the context of any newly built alignment. This floodplain could add cost to the realignment of a proposed intersection of FM 1101 and Alves Lane if the alignment is built as proposed by the Regional Thoroughfare Plan (as shown in **Figure 2**). The existing Hike & Bike Trails Plan shows and off-street shared-use path along Alligator Creek.

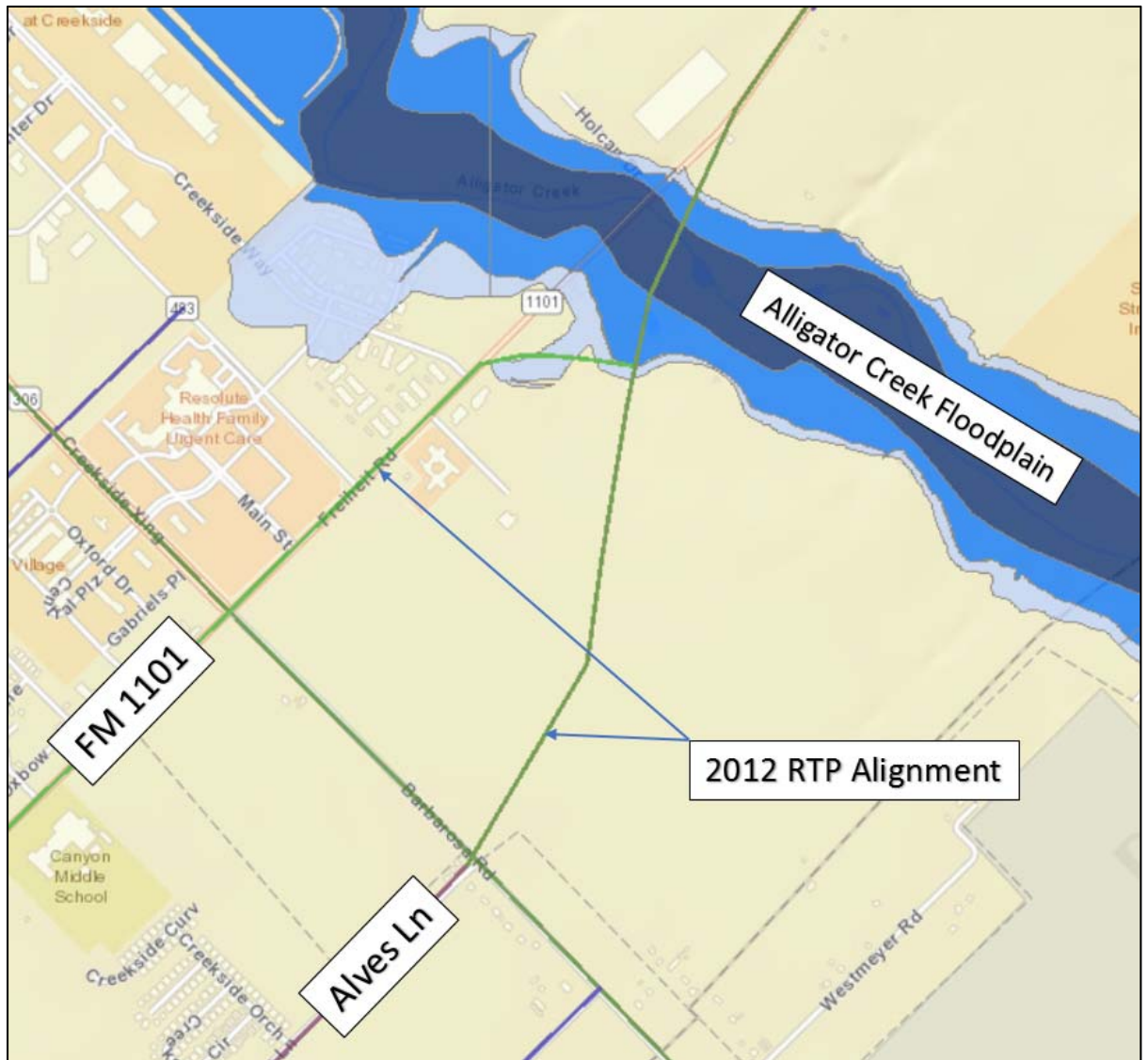


Figure 2. Alligator Creek Floodplain near Alves Ln and FM 1101 at Creekside Way.

### AIRPORT HAZARD ZONES

Due to the proximity of the study area to the New Braunfels Regional Airport, consideration must be given to runway geometry and their corresponding Runway Protection Zones (RPZs) as established by City of New Braunfels Code of Ordinances, Section 144-5.20-4 and as illustrated by **Figure 3**. The Clear Zone polygon in **Figure 3** is located closest to the Runway pavement, with Approach Zones 1 through 3 to the northwest of the Clear Zone. Of critical interest are the zones associated with Runway 13, which is aligned northwest/southeast and perpendicular to FM 1101 and Alves Lane. The City of New Braunfels also anticipates extending Runway 13 by about 600 feet to the northwest at some point in the future, which may push a future realignment of the Alves Lane/FM 1101 intersection into the Clear Zone for that runway.





Figure 3. Runway 13 Approach Zones and Clear Zone.

## PROPOSED ALTERNATIVE ALIGNMENT

In the context of the existing and future development and land use plans anticipated for the FM 1101, Alves Lane, and Barbarosa Road corridors, an alignment was developed that would serve as an alternative to the approved 2012 Regional Thoroughfare Plan. This modification of the current planned alignment would serve to:

- Reclassify FM 1101 between Holcan Drive and SH 46 as a Minor Arterial with 120 feet of planned ROW, which would provide greater traffic capacity to accommodate future development.
- Reclassify Alves Lane between Barbarosa Road and FM 1101 as a Major Collector with 90 feet of planned ROW to accommodate the anticipated development and related traffic.
- Maintain Alves Lane between Barbarosa Road and SH 46 as a Minor Arterial with 120 feet planned ROW to accommodate anticipated development, increased traffic and proposed Guadalupe River crossing.
- Realign Alves Lane between Barbarosa Road and FM 1101 to a T-intersection geometry with FM 1101, generally following existing property lines to minimize the impact of ROW dedication on property owners and to locate the intersection at a greater distance from both the New Braunfels Airport Runway Protection Zones and Alligator Creek floodplain.
- The proposed realignment of the Alves Lane extension would significantly reduce the distance needed to cross the Alligator Creek floodplain as compared to the current planned alignment.
- Provide access for planned developments, including a future City of New Braunfels fire station



The attached **Thoroughfare Roadway Alignment Alternative Alves Lane Extension** illustrates the proposed realignment, which proposes to reclassify Alves Lane as a Major Collector with 90 feet of ROW. In this alternative, FM 1101 would also be reclassified as a Minor Arterial with 120 feet of ROW. The attached alignment also shows a new roadway as an extension of FM 483 to provide east/west connectivity with the Alves Lane extension.

North of Barbarosa Road, Alves Lane would turn 90 degrees to the northwest with curve geometry as specified by AASHTO's *Geometric Design of Highways and Streets*. In order to provide adequate sight distance for the Alves Lane curve, the extension of Alves Lane was assumed to meet the curve specifications for a Minor Arterial classification. The larger radius curve will also serve to provide enhanced sight distance in the event future developments require driveways within the vicinity of the curve.

The Alves Lane extension is proposed to align perpendicularly to FM 1101, offset from the intersection of Creekside Way by about 160 feet to the northeast. While the offset intersection is not ideal, it is the type of offset that allows the left turn movements from Alves Lane to occur without conflict with each other. If the intersection were offset from Creekside Way to the southwest, the left turn movements from Alves Lane would be conflicting. Either the left-turn movements would be prohibited or Alves Lane would need to be widened to allow for side-by-side left-turn lanes. An offset intersection can be a concern for traffic traveling "through" the intersection or traffic traveling between Creekside Way and the Alves Lane extension. If these volumes of through traffic movements become significant, a future signal may need to be evaluated for this intersection.

## **ATTACHMENTS**

City of New Braunfels 2012 Regional Thoroughfare Plan

Thoroughfare Roadway Alignment Alternative for Alves Lane Extension



**KEY**

- (Right-of-Way Width in Parentheses)
- Interstate (300'-450')
  - Expressway (200'-300')
  - Expressway - Proposed
  - Principal Arterial (150')
  - Principal Arterial - Proposed
  - Parkway (200')
  - Parkway - Proposed
  - Minor Arterial (120')
  - Minor Arterial - Proposed
  - Major Collector (90')
  - Major Collector - Proposed
  - Minor Collector (60')
  - Minor Collector - Proposed
  - Street Centerlines
  - New Braunfels
  - New Braunfels ETJ

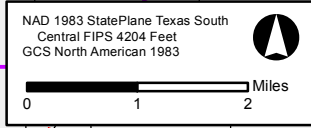
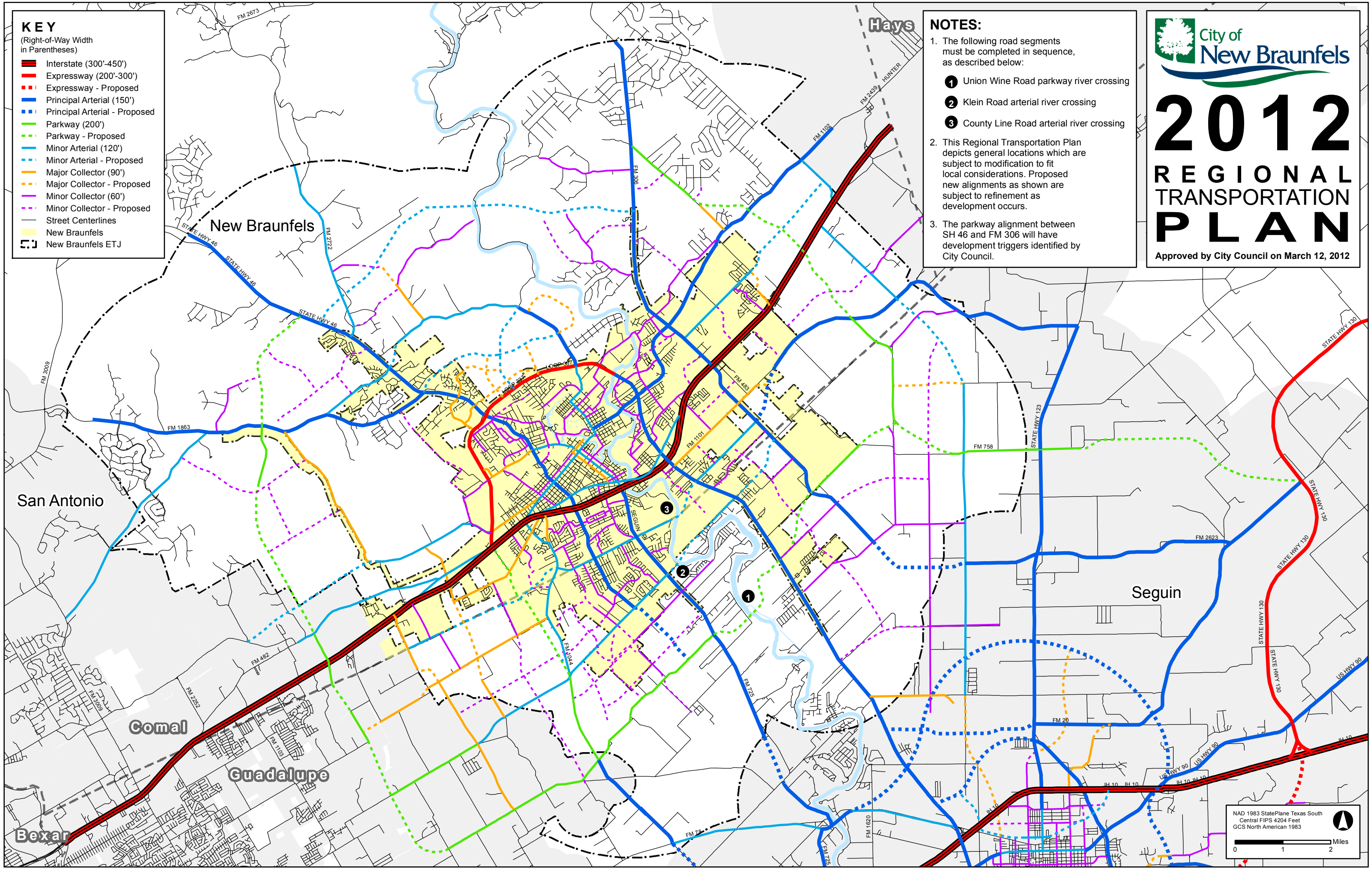
**NOTES:**

- The following road segments must be completed in sequence, as described below:
  - 1 Union Wine Road parkway river crossing
  - 2 Klein Road arterial river crossing
  - 3 County Line Road arterial river crossing
- This Regional Transportation Plan depicts general locations which are subject to modification to fit local considerations. Proposed new alignments as shown are subject to refinement as development occurs.
- The parkway alignment between SH 46 and FM 306 will have development triggers identified by City Council.



# 2012 REGIONAL TRANSPORTATION PLAN

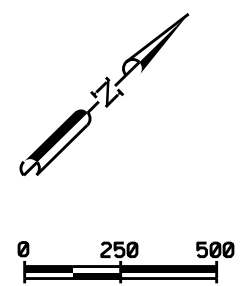
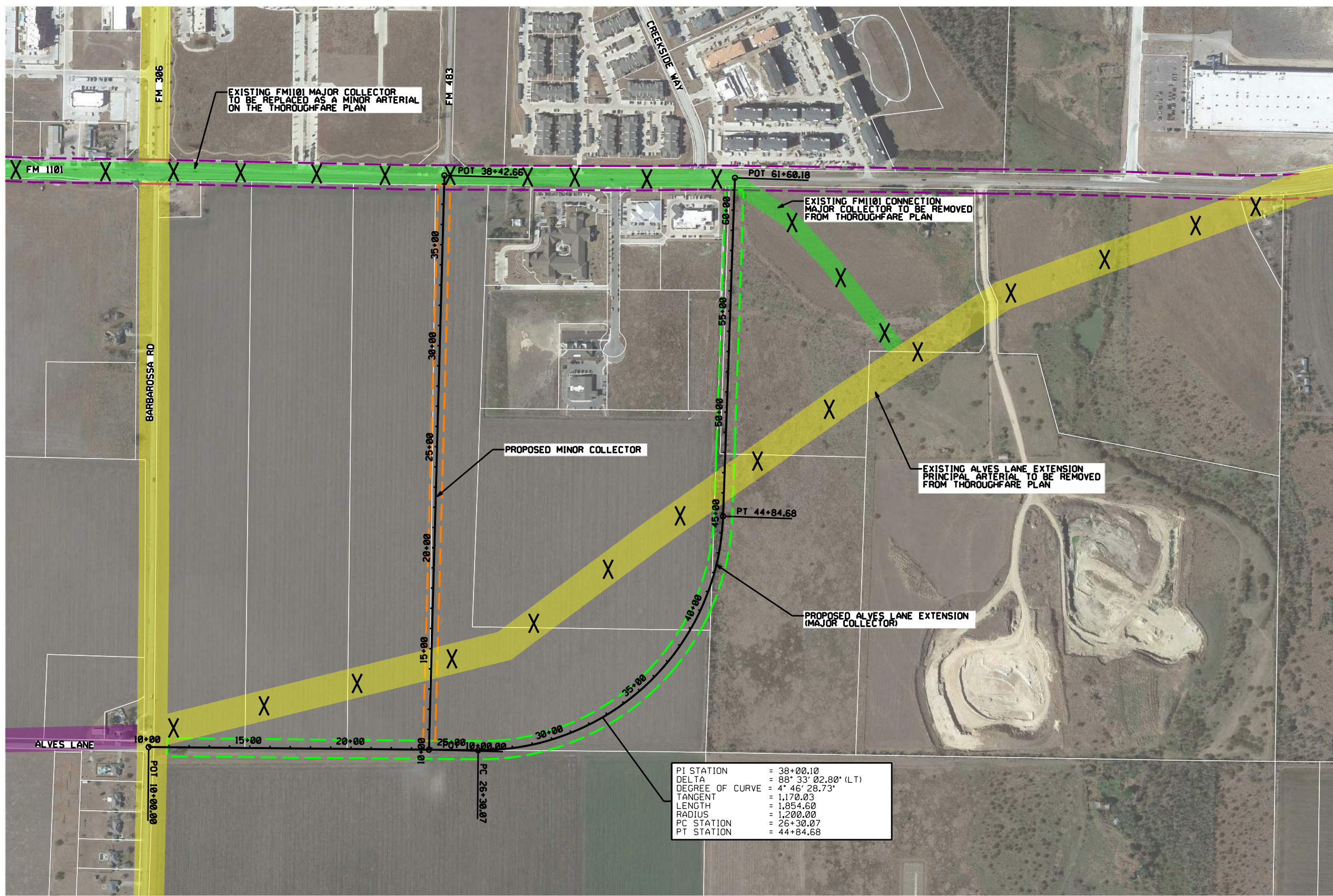
Approved by City Council on March 12, 2012





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LEGEND

- EXIST PRINCIPAL ARTERIAL 150 FT ROW
- EXIST MINOR ARTERIAL 120 FT ROW
- EXIST MAJOR COLLECTOR 90 FT ROW
- PROPOSED MINOR ARTERIAL 120 FT ROW
- PROPOSED MAJOR COLLECTOR 90 FT ROW
- PROPOSED MINOR COLLECTOR 60 FT ROW
- XXX EXISTING THOROUGHFARE CLASSIFICATION TO BE REMOVED/REPLACED

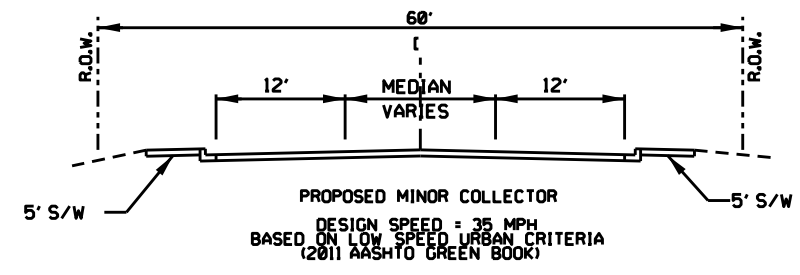
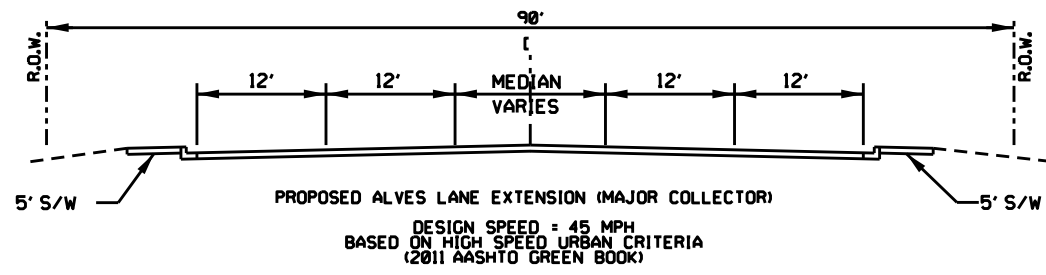
INTERIM REVIEW ONLY  
DOCUMENT INCOMPLETE; NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION

ENGINEER: WILLIAM T. MARTINEZ, P.E.  
P.E. SERIAL NO. #113929  
DATE: 9/20/2018

**PRELIMINARY  
SUBJECT TO CHANGE**

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CITY OF NEW BRAUNFELS  
THOROUGHFARE ROADWAY ALIGNMENT  
ALTERNATIVE ALVES LANE EXTENSION



SHEET 1 OF 1					
FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
	TEXAS				
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.

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