REPORT

The University Drive Active Transportation Concept Study

for the

TxDOT, Bryan District

January 2025

halff

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1. Introduction

Farm to Market Road 60 (FM 60), locally known as University Drive, is a major arterial road that bisects the cities of Bryan and College Station, Texas. The area between Texas Avenue to the northeast and Wellborn Road to the southwest, lies immediately adjacent to Texas A&M University campus and forms the focus of this study. The corridor is densely surrounded by commercial, residential, and institutional developments, with ongoing urbanization expected in adjacent areas north of FM 60 within Bryan and College Station. This growth has made FM 60 one of the region's busiest thoroughfares. In addition to serving as a strategic regional thoroughfare, the road's proximity to the Texas A&M campus and nearby residential and commercial areas creates high demand for pedestrian and bicycle activity.

There is an acknowledged need to improve bicycle and pedestrian connectivity and safety along the corridor. Various municipal and university transportation plans recommend enhanced active transportation facilities to improve safety by mitigating bicycle and pedestrian conflicts with motor vehicles on FM 60. These improvements are expected to encourage more trips by foot and bicycle.

In 2018, Halff developed a *FM 60/University Drive Bicycle and Pedestrian Connectivity Study (the 2018 study), which proposed* a series of facilities aiming to encourage bicycle and pedestrian travel in the vicinity of the FM 60 corridor from Welborn Road to S. College Ave./Bizzell St. The study aimed to address the needs of non-motorized travelers on FM 60 while also maintaining safe and efficient movement of motorized vehicles along the corridor. The vision presented in the report was intended as an "outside-the-box" solution to address the challenges of providing accessible, comfortable and aesthetic pedestrian and bicycle infrastructure. The study proposed rerouting the FM 60 thoroughfare via a sunken "tunnel" with a segregated at-grade deck for pedestrian and bicycle facilities along with certain local access roads. Cost estimates ranged from $565 million to $715 million for the full corridor, and $300 to $400 million (both in 2017 dollars) for the shorter 'University Boulevard' Concept. This alternative was not further considered as a result of funding constraints and unacceptable traffic operations analysis for the year 2045. See ***Appendix A*** for a report that summarizes this option.

In 2022, Halff was requested to expand on potential solutions for area. This study *(The University Drive Active Transportation Concept Study or the 2024 Study)* considered a series of grade-separated pedestrian/ bicycle focused alternatives, with a narrower focus on the 1.2-mile stretch of FM 60 between Texas Avenue and Wellborn Road. The study explored alternative concepts at targeted locations that align with the current economic constraints. These alternatives aim to minimize disruptions to FM 60 operations during construction while providing safe and efficient pedestrian and bicycle infrastructure.

The 2024 Study intends to build on *The 2018 Study* and provide alternative solutions that achieve the goals outlined in other planning studies, with an emphasis on economically feasible concepts. Additionally, this study will be used to present these alternatives to local governments, developers and the public to facilitate discussion and provide information about future development options along FM 60.

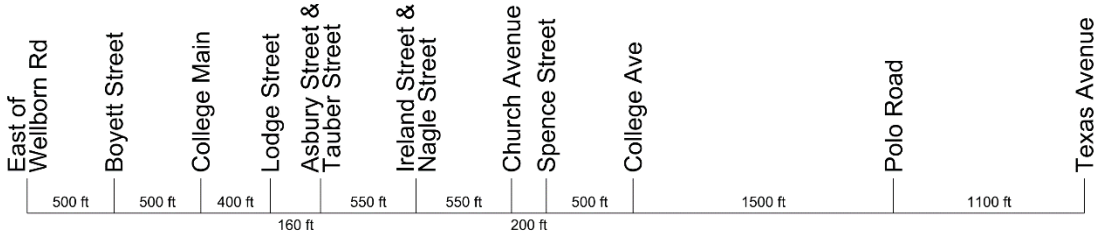
Given the major global events between 2018 and 2024, it is highly likely that prices have increased significantly over the past 6 years. Any updated cost estimates made in *the 2024 study*, will represent a significant, if not prohibitive, financial commitment. For *the 2024 Study*, the decision was taken to explore more cost-effective and less disruptive alternative concepts.

2. Study Methodology

After developing a conceptual plan to improve bicycle and pedestrian access on the north side of the Texas A&M campus, TxDOT commissioned a more detailed feasibility study of the concept of creating a deck over FM 60. It was determined that funding would not be available for such a project, and TxDOT shifted the focus of the study to explore constructing one or more underpasses along FM 60. The following is an initial description of potential underpass locations.

Due to the gentle slope required for an underpass on FM 60, along with the desirability of a straight alignment for bicyclist and pedestrian safety, most potential locations must remain within public right-of-way (cross-streets) or open space. While future land use redevelopment may create opportunities for additional underpasses, these locations are speculative at this time.

Another factor to consider when examining underpass locations is the potential impact on the existing transportation system and compatibility with regional bicycle and pedestrian facilities. If facilities are not conveniently located where bicyclists and pedestrians are currently traveling, the underpasses may not attract much demand. The following eleven locations were identified for a preliminary feasibility assessment:



In **Table 1** shown below, key characteristics of each potential underpass are outlined, including traffic controls at the surface intersection, recent bicycle and pedestrian volumes, land use conflicts, the potential for connecting to a larger bicycle/pedestrian network, the availability of public right-of-way for the underpass, and additional comments where appropriate.

Table 1: Possible FM 60 Underpass Locations

Cross Street	Traffic Control	2019 Daily Pedestrians	2019 Daily Bicycles	Existing Land Use Conflicts	Connections to Active Network	Cross – Street ROW	Comments
East of Wellborn	None	Not Available	Not Available	Surface Parking on South side	E/W Sidewalks	Wide (jug-handles)	Bike/Ped demand increases to East
Boyett	Traffic & Ped Signals (No RTOR)	670	210	Residential Dorm on South side		50’	
College Main	Traffic & Ped Signals (No Turns)	810	350		Bike/Ped Mall	49’	Would minimize impact on highway network. Highest Bike/Ped crashes 2013-16
Lodge St and Open Land between Asbury and USPO	None	Not Available	Not Available	UMC Church and on street Parking		32’	
Asbury & Tauber	Traffic & Ped Signals (No RTOR)	1,500	410			33’	Part of one-way pair linking A&M with highway network
Ireland & Nagle	Traffic & Ped Signals (No RTOR)	520	3,230			48’	Part of one-way pair linking A&M with highway network, 27 % of all Bike/Ped, and on Transit Route
Church	Traffic & Ped Signals (No RTOR)	2,140	230	Engineering Building South side		40’	
Spence	None	Not Counted	Not Counted			50’	Within short distance of Church and College Crossings – but crossed by 1/3 of all Bike/Peds
College Ave	Traffic & Ped Signals (No U or RTOR)	1,750	480			140’	
Polo Road	Traffic & Ped Signals	570	345			n/a (private)	Much undeveloped land at present
Texas	Traffic & Ped Signals	260	180			111’	Extremely busy intersection
Totals		**8,220**	**5,435**				

An initial evaluation was conducted to assess the feasibility of implementing an underpass at Spence Street, based on its proximity to existing at-grade bicycle and pedestrian crossings at Church Avenue (200 feet away) and College Avenue (500 feet away). Combined, these crossings account for 4,600 daily movements, or roughly one-third of all non-motorized traffic along the corridor. The feasibility study found that a 40-foot wide underpass could be constructed without affecting commercial properties in Northgate or University buildings on the A&M campus. Preliminary cost estimates for construction, based on 2022 unit prices, come in at just under $12 million. Although this underpass would meet existing demand in the immediate area and provide some reserve capacity for future growth, additional underpasses would be required to completely grade separate non-motorized traffic from vehicle traffic along FM 60.

The crossing at College Main currently handles less than 10 percent of the total demand for pedestrian/bicycle traffic along the FM 60 corridor (1,160 daily movements). However, it would help minimize impacts on cross-street traffic operations, as it is already configured as a bicycle/pedestrian mall. Notably, between 2013 and 2016, this crossing experienced the highest volume of bicycle/pedestrian crashes involving motorized vehicles along the corridor. By encouraging non-motorized traffic from adjacent intersections (Boyett and Asbury/Tauber) to use this crossing, nearly 30 percent of all bicycle/pedestrian traffic along the corridor could be served by this underpass. A 49-foot wide underpass could be constructed at this location without impacting existing developments. Such a facility would adequately serve existing and future demand, with some reserve capacity for additional growth in the area.

The crossing at Ireland Street and Nagle Street currently accounts for 27 percent of the total bicycle/pedestrian demand along the corridor. When including activity at the Asbury/Tauber intersection, this area is used by 42 percent of all non-motorized traffic crossing FM 60 in the campus area. A 48-foot wide underpass is viable at the existing Ireland/Nagle crossing, but this would require eliminating vehicle traffic along Ireland Street, which serves as one half of the one-way street pair serving the University in this area. The two intersections at Ireland/Nagle and Tauber/Asbury are only separated by 535 feet, making it feasible to redirect traffic from one location to the other. This proposed underpass could be constructed without impacting existing developments in the area.

The final location considered is the Polo Road/Century Square Drive intersection. This area has minimal development along either side of FM 60, which would allow for the construction of an underpass with minimal impact on the surrounding area, even during construction. Furthermore, the College Avenue/Bizzell Street crossing, which has the third largest pedestrian/bicycle count (2,230 daily movements) of all the intersections under consideration, is 1,400 feet west of the Polo Road/Century Square Drive intersection. Non-motorized vehicle traffic could be redirected to the Polo Road/Century Square Drive and Spence Street crossings to eliminate the need for pedestrian crossings at the College Avenue/Bizzell Street, greatly improving vehicle operations along FM 60.

The results of this preliminary feasibility assessment analysis resulted in the selection of the four intersection complexes to be developed for further analysis.

1. Polo Road / Century Square Drive / Century Court
2. Spence Street
3. Nagle Street / Ireland Street
4. College Main /Houston Street / Boyett Street

The study area with the selected intersections is shown in Figure 1.

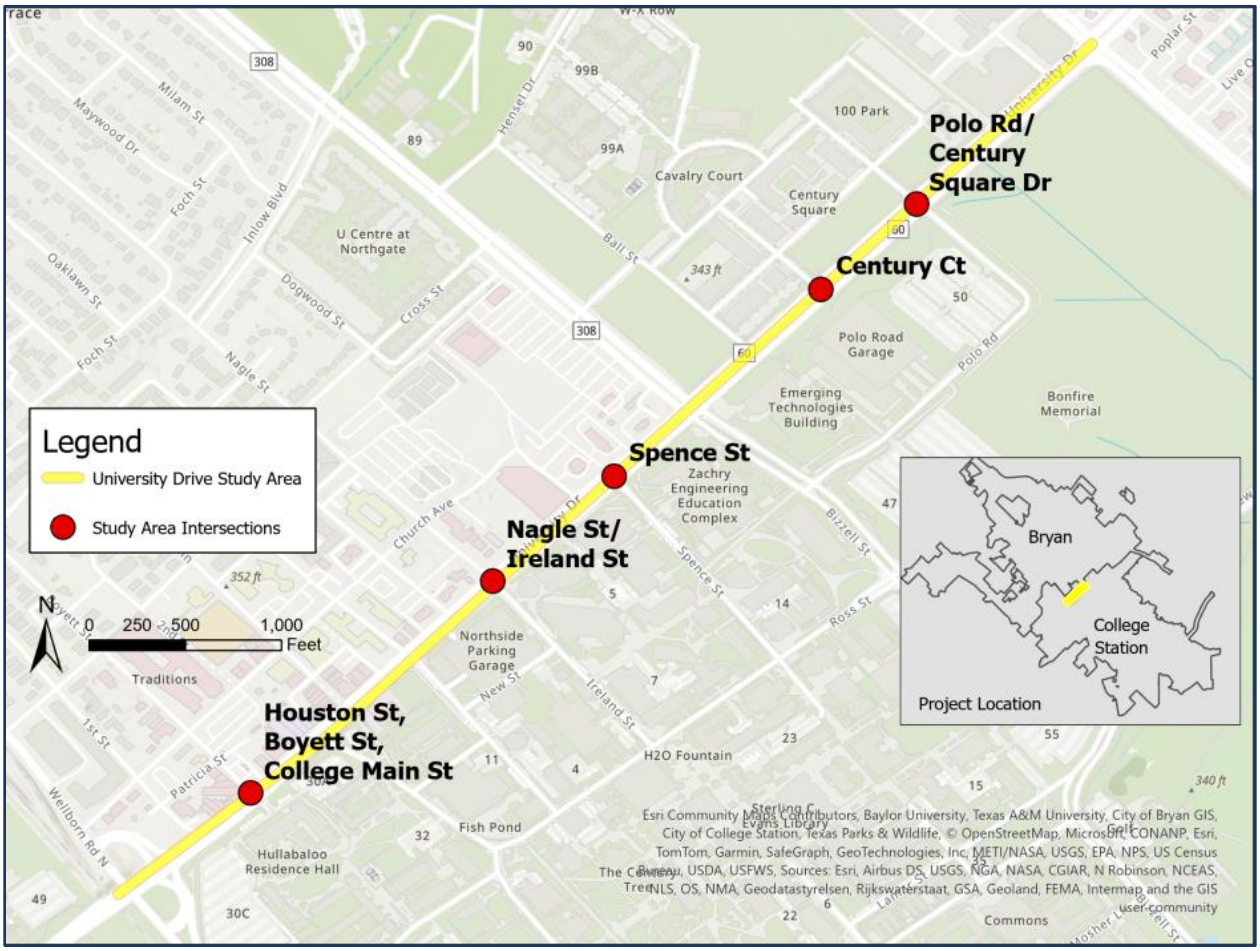


Figure 1: FM 60 / University Drive Study Area

2.1 CONCEPT OPTIONS

Not every design site has the same physical, social, or economic features, therefore it was crucial to the decision-making process to develop a method of ranking the performance of concept options for each intersection. For the purposes of this report, “concept options” are the combined design solutions that incorporate a pedestrian crossing, end node type, or inflow/outflow type that best distributes pedestrians across the intersection. The features shown in Figure 2 represent the possible configuration types. However, not all combinations are feasible based on the technical constraints and policies of projects on TxDOT roadways. As a result, a pre-screening was conducted to narrow the range of configurations to be considered.

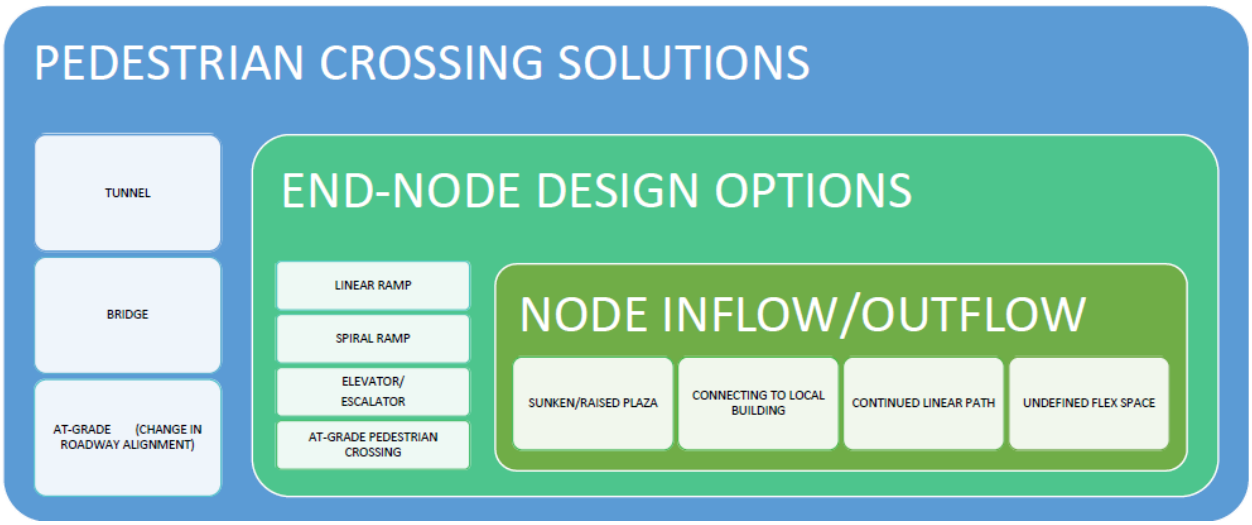


Figure 2: Crossing Solution Configuration

Concept options were screened using an objective scoring method which considered the following concept characteristics for each location:

1. Pedestrian Crossing Solutioning: the simplified concept of pedestrians means of crossing the intersection. (Ex. Tunnel, pedestrian bridge, at-grade pedestrian crossing),
2. End Node Type: the immediately adjacent mechanism that transports the pedestrian from the inflow/outflow to the crossing method (ex. Ramp, stairs, elevator, etc.)
3. Inflow/Outflow Type: the land adjacent to the crossing method that connects the crossing to the outer world (ex. Linear path, plaza, etc.) This characteristic was analyzed on both sides of FM 60.

Three Crossing Solutions were considered at each location:

1. A grade-separated tunnel underneath the existing FM 60 roadway, running approximately perpendicular to provide separated pedestrian and bicycle crossing facilities.
2. A grade-separated bridge spanning the existing FM 60 road, to provide separated pedestrian and bicycle crossing facilities.
3. An at-grade pedestrian crossing facility that adjusts the roadway alignment to a sunken “tunnel” roadway.

In order to access the crossing solution, multiple end node types were considered, yet not all end nodes were considered in the final concept development due to cost and design constraints. The following are the list of all considered end nodes:

1. A linear ramp
2. A spiral ramp
3. At-grade pedestrian crossing (where appropriate): for at-grade pedestrian crossings, this would lead to a lack of a physical end node type due to no change in elevation.
4. Stairs: not considered as a primary solution, added to concept as a secondary access method.
5. Elevator/ escalator: not considered in the final design due to limited mobility of bicyclists, crossing time constraints, and maintenance. This end node type could potentially be added to the concept as a secondary access method.
6. Upper-story building connection: not considered in the final design due to limited mobility of bicyclists, crossing time constraints, and maintenance. This end node type could potentially be added to the concept as a secondary access method.

For inflow/outflow characteristics, multiple design solutions were considered. The inflow/outflow types are categorized as follows:

1. Plaza: an open space with loosely defined pathways that acts as an intersection for multiple linear paths. May incorporate aesthetics and seating options.
2. Linear path: a singular path that does not intersect with any other primary pathways. Has limited aesthetics and seating opportunities.
3. Connection to local building: not considered in the final design due to limited mobility of bicyclists, crossing time constraints, and maintenance. This end node type could potentially be added to the concept as a secondary access method.
4. Undefined flexible space (where appropriate): this inflow/outflow option was initially considered but removed from the analysis due to maintaining realistic construction goals. The undefined flex space is distinctly for at-grade pedestrian crossing methods. It includes the lack of an end node type and focuses on maintaining whatever is physically adjacent to the at-grade pedestrian crossing. It would most likely be the intention of any developer to provide one of the previously listed inflow/outflow design solutions to maintain a functional/aesthetically pleasing design.

Each combination of crossing solution, end node and inflow/outflow types were assessed separately for each location to determine the most effective option based on the existing topography, land-use in the immediate area, and applicable policy constraints.

2.2 MATRIX ANALYSIS

The features shown in Figure 2 represent the universe of possible configuration types. However, not all types are feasible based on the technical and policy constraints of a project on the TxDOT roadway system. As a result, a pre-screening was conducted to narrow the range of configurations to be considered.

PEDESTRIAN CROSSING SOLUTIONS

Tunnel – Tunneling the bicycle and pedestrian facility beneath FM 60 was considered an appealing option. There are already three tunnel crossings beneath TxDOT facilities on campus. An example of a tunnel crossing can be seen in **Figure 3**. The icon on the left is used in the concept comparison matrices.

Figure 3: Bicycle and Pedestrian Tunnel along Old Main under FM 2154 (Wellborn Rd.)

Bridge – Bridge crossings were considered at the conceptual level. Bridge crossings were appealing due to possible reduced construction and utility disruption compared to cut-and-cover tunnels. A generation ago, there was a pedestrian bridge across FM 2154 (Wellborn Road) linking "main" campus to West Campus. However, vertical clearance requirements result in twice the approach length to achieve the elevation difference for a bridge crossing compared to a tunnel. The additional approach length would be added out-of-path travel for many potential users. The potential crossing locations are also heavily constrained by existing buildings and streets. These factors were considered in the team's evaluation of bridge crossings. An example of a bridge crossing can be seen in **Figure 4**. The icon on the left is used in the concept comparison matrices.

Figure 4: Pedestrian Bridge over US 281 in San Antonio (Source: Google Street View)

At-Grade (change roadway profile) – An option which would depress the roadway, allowing at-grade bicycle and pedestrian crossings, was considered. That said, it is generally not practical to consider this option on a location-by-location basis. Based on roadway design constraints, it would be necessary to develop a continuous, integrated concept for the corridor. Concepts for changing the roadway profile and allowing the crossings to occur at-grade is appealing and was considered as part of this analysis. However, it may not be possible to develop individual at-grade crossings in the same way that individual bicycle and pedestrian tunnels and bridges could. An example is shown in **Figure 5**. The icon on the left is used in the concept comparison matrices.

Figure 5: At-Grade Crossing at FM 157 (Cooper St.) through the University of Texas at Arlington (Source: Google Street View)

END-NODE DESIGN OPTIONS

Linear Ramp – Linear ramps are feasible options when implementing the bicycle and pedestrian crossing along existing transportation facilities, including roadways, driveways, walkways, and shared use paths. They were considered at all locations. This is shown in **Figure 6**. The icon on the left is used in the concept comparison matrices.

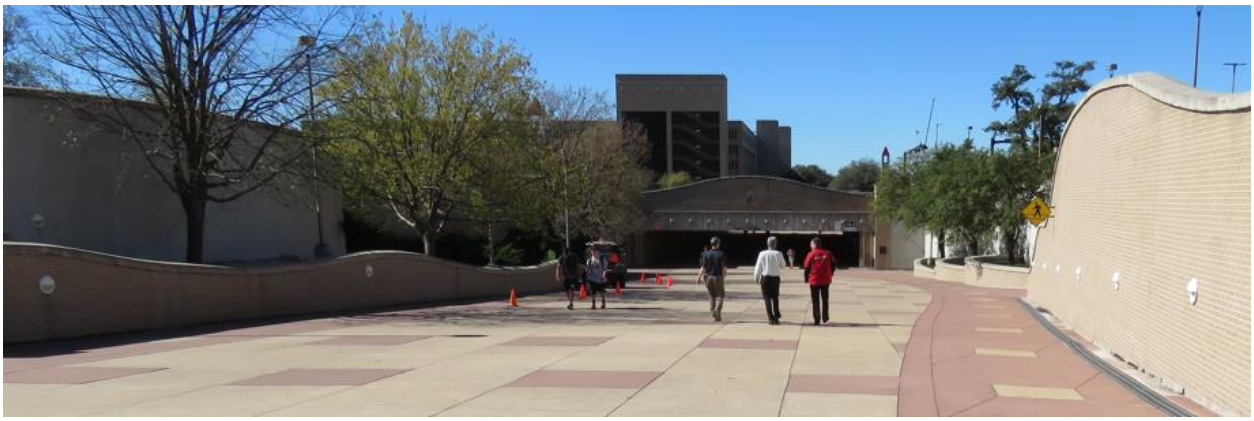


Figure 6: Linear Ramp Approach Adjacent to Kyle Field

Spiral Ramp – Spiral ramps are feasible options when space is available near the proposed crossing, and constraints are situated away from the corridor to be crossed. Spiral ramps were considered at all locations. An example is shown in **Figure** 7**7**. The icon on the left is used in the concept comparison matrices.

Figure 7: Approach to Pfluger Bridge in Austin

Elevator/Escalator – Elevators and escalators are not bicycle accommodations. It may be possible to include elevators or escalators in a grade separation design. However, they were not considered as the primary mode of connectivity during feasibility assessment. An example of an elevator provided for accessibility is included in **Figure 8**.

Figure 8: Elevator Included with Millennium Bridge in Denver, CO

At-Grade Pedestrian Crossing – At-grade crossings are an appealing option. They were considered as part of this analysis. However, due to roadway design constraints, it may not be possible to develop individual at-grade crossings in the same way that individual bicycle and pedestrian grade tunnels and bridges could. A partial example can be seen in **Figure 9**. The icon on the left is used in the concept comparison matrices.

Figure 9: Abrams Rd Depressed Below Ridgewood Trail in Dallas (Source: Google Street View)

NODE INFLOW/OUTFLOW

Sunken/Raised Plaza – Plazas are a method to increase the appeal of the grade separation for potential users. They were considered where feasible. However, they may be considered as more of an aesthetic amenity than a transportation use. TxDOT does not acquire Right-of-Way (ROW) for aesthetic improvements. As a result, plazas were considered in locations where they were not expected to require additional ROW acquisition. An example is shown in **Figure** 10**10**. The icon on the left is used in the concept comparison matrices.

Figure 10: Sunken Plaza at Blocker Building

Connecting to Local Building – These are sometimes called 'skywalks' and are found in many dense or urban areas. These were not considered feasible for two reasons. First, they are not bicycle accommodations. Second, capacity analysis indicates the proposed crossings need to be very wide, ranging from 22 to 40 feet. While this could be accommodated in new construction, it was deemed highly unlikely that existing buildings could accommodate such large crossings and the associated traffic. An example is shown in **Figure 11**.

Figure 11: "Skywalk" between Evans Library and the Annex

Continued Linear Path – Continued linear paths would be practical where the crossing parallels existing transportation facilities, similar to the linear crossings. They were considered at all locations. An example is shown in **Figure** 12**12**. The icon on the left is used in the concept comparison matrices.

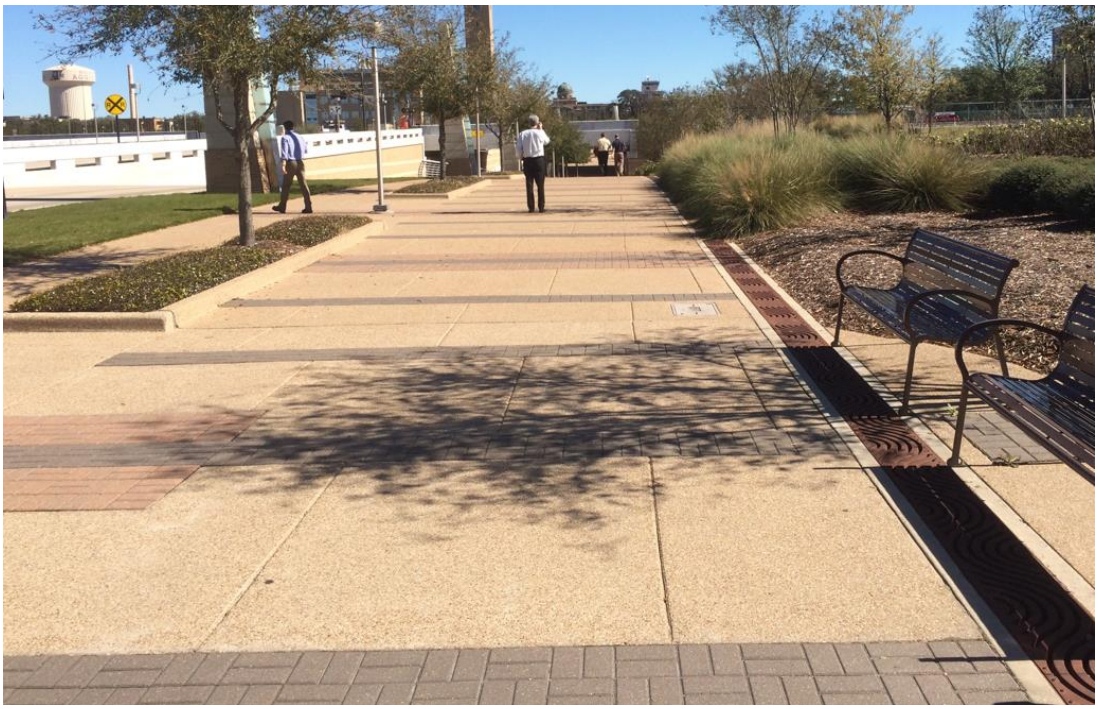


Figure 12: Approach to the Old Main Bicycle and Pedestrian Tunnel

Undefined Flex Space – Given that undefined flex space is just that - undefined, the project team did not attempt to evaluate this concept.

EXAMPLE SCREENING MATRIX

A matrix was developed to analyze each location based on the pedestrian crossing solution (tunnel, bridge or at-grade crossing), end node (linear or spiral ramp), and Inflow/outflow characteristics (plaza or linear path). Each location was then scored on qualitative rankings of Performance Parameters (width, elevation, destination and opportunities for aesthetic enhancement) and Impact Parameters (environmental, utility and ROW). Scores ranged from -5 to 5 for each scoring methods. Once a qualitative ranking score was given for both performance and impact – those scores were added together for the overall score for each configuration. For example – a tunnel (design solution) with a linear ramp (end node) at a plaza (inflow/outflow) that scored a 4 on performance and a 3 on impact would receive a score of 7. A bridge with a spiral ramp at plaza that scored a -4 on performance and a 2 on impact would revive a score of -2. Each location was given a score for each side of FM 60. The overall positive scores were favorable and negative scores were unfavorable. This method allowed each location to be scored independently for an equal comparison of alternatives. An example of this scoring matrix can be seen in **Figure 13** on the following page.

In the matrix, the following additional symbols are used:

-  **Northgate**
-  **Campus**

Ranking Description

Qualitative Rankings											
Rank	-5	-4	-3	-2	-1	0	1	2	3	4	5
Performance	Extremely Poor	Very Poor	Poor	Somewhat Poor	Mildly Poor	Neutral	Mildly Good	Somewhat Good	Good	Very Good	Extremely Good
Impact	Extremely High	High	Moderate	Low	Very Low	None	N/A	N/A	N/A	N/A	N/A

Comparison Matrix Composition

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	9
		LINEAR PATH	9
	SPIRAL RAMP	PLAZA	-11
		LINEAR PATH	-14
BRIDGE	LINEAR RAMP	PLAZA	0
		LINEAR PATH	0
	SPIRAL RAMP	PLAZA	-12
		LINEAR PATH	-14
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	4
		LINEAR PATH	1

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	22	16	-4	-9
		LINEAR PATH	22	16	-4	-9
	SPIRAL RAMP	PLAZA	2	-4	-2	-29
		LINEAR PATH	-1	-7	-27	-32
BRIDGE	LINEAR RAMP	PLAZA	3	-2	-13	-16
		LINEAR PATH	3	-2	-13	-16
	SPIRAL RAMP	PLAZA	-9	-14	-25	-28
		LINEAR PATH	-11	-16	-27	-30
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	11		5	
		LINEAR PATH	8		2	

TOTAL RANK	13	7	-13	-18	3	-2	-13	-16	7	1
INFLOW/ OUTFLOW	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
END NODE	LINEAR RAMP		SPIRAL RAMP		LINEAR RAMP		SPIRAL RAMP		AT-GRADE BIKE/ PED X-ING	
DESIGN SOLUTION	TUNNEL				BRIDGE				AT-GRADE (CHANGE IN ROADWAY PROFILE)	

Figure 13: Example Screening Matrix

3. Summary of Concepts

The matrixes show in this section, are the preferred options for each intersection listed below and discussed in Section 2 of this report. The full option matrices can be found in ***Appendix B*** and preliminary design plans of each location can be seen in ***Appendix C***.

1. Polo Road / Century Square Drive / Century Court
2. Spence Street
3. Nagle Street / Ireland Street
4. College Main / Houston Street / Boyett Street

3.1 POLO ROAD / CENTURY SQUARE DRIVE / CENTURY COURT

Polo Road, Century Square Drive and Century Court lie in the eastern portion of the study area. On the north side of FM 60, both Century Court and Century Square Drive are bordered by public street parking for the nearby hospitality and retail developments. The Century Square residential and commercial complex is set back from University Drive, with a public lawn providing a buffer between the development and highway. Land in the immediate area is currently undeveloped, however there are plans to develop the lawn on either side of Century Square Drive. On the south side of FM 60, Polo Road is flanked by sports fields to the east and a parking lot to the west. There have been discussions with Texas A&M University about potentially developing the existing sports fields on southeast corner, but the status regarding any development is not currently known.

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	8	5	6	3
		LINEAR PATH	6	3	4	1
	SPIRAL RAMP	PLAZA	23	20	21	18
		LINEAR PATH	20	17	18	15
BRIDGE	LINEAR RAMP	PLAZA	11	8	8	5
		LINEAR PATH	9	6	6	3
	SPIRAL RAMP	PLAZA	16	13	13	10
		LINEAR PATH	13	10	10	7
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	30		26	
		LINEAR PATH	27		23	

Figure 14: Polo Road / Century Square Drive / Century Court Screening Results

The screening matrix shown in **Figure 14** for Polo Road / Century Square Drive / Century Court demonstrated that nearly all options considered would have a positive overall impact on the surrounding

area. However, the Design Solutions that provided an at-grade pedestrian crossing facility performed best, largely due to the reduced footprint and impact on existing structures. This solution would require significant alteration to the existing facilities, including a vertical realignment of FM 60 to accommodate the at-grade crossing and preventing vehicle access between Century Court and FM 60. Concept designs for a bicycle/pedestrian bridge and tunnel were also developed, knowing neither was the optimal solution at this location, to compare alternatives to one another and provide multiple solutions with different advantages and disadvantages. Renderings of the bridge tunnel alternatives with linear ramps (which scored lowest in the screening matrix) can be seen in ***Appendix D***.

The bridge design option proposed a pedestrian overpass on the east side of Polo Road. This option is no longer feasible due to the ongoing development of the northeast corner of FM 60 and Polo Road. The tunnel design option scored well in screening results and proposed a pedestrian tunnel under FM 60 at the Polo Road intersection but had similar problems as the bridge design option with no space for the end nodes on the north side of FM 60.

The best performing design option for Polo Road / Century Square Drive / Century Court according to the screening matrix proposed a pedestrian at-grade crossing, shown in **Figure 15**. A deck would provide shared pedestrian and bicycle infrastructure, separated from the roadway, with unimpeded access to all entry points. Additionally, this alternative provides the option for plaza space, aesthetics, and recreational areas. This option would require redeveloping the surface-level parking lot on the southwest corner of FM 60, but it ensures that any future developments at the existing sports fields are not impeded.

Figure 15: Polo Road / Century Square Drive / Century Court Pedestrian At-Grade Crossing Concept

3.2 SPENCE STREET

The Spence Street and FM 60 intersection is located in a densely developed area of College Station, with Texas A&M University buildings on the south side of FM 60, and commercial buildings and parking lots on the north side.

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	22	16	-4	-9
		LINEAR PATH	22	16	-4	-9
	SPIRAL RAMP	PLAZA	2	-4	-24	-29
		LINEAR PATH	-1	-7	-27	-32
BRIDGE	LINEAR RAMP	PLAZA	3	-2	-13	-16
		LINEAR PATH	3	-2	-13	-16
	SPIRAL RAMP	PLAZA	-9	-14	-25	-28
		LINEAR PATH	-11	-16	-27	-30
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	11		5	
		LINEAR PATH	8		2	

Figure 16: Spence Street Screening Results

The screening matrix shown in **Figure 16** for Spence Street determined that the best performing concept design is a pedestrian tunnel. The tunnel would connect to a plaza on the Northgate side via linear ramp with a linear path on the campus side. This design is recommended due to the dense existing development on both sides of FM 60.

The concept developed for Spence Street, shown in **Figure 17**, features a separated pedestrian and bicycle tunnel running underneath FM 60. The tunnel is connected via linear ramps to the existing sidewalks to the south and to a new public plaza to the north. This concept design also includes secondary end nodes in the form of stairs to provide different options for pedestrians with varying accessibility needs.

This concept would require the removal or relocation of the existing commercial buildings on the north side of FM 60, currently occupied by chain restaurant franchises, to make space for the plaza's inflow and outflow areas that provide accessible paths. On the south side of FM 60, the institutional buildings would remain unaffected. However, this would require Spence Street to close to vehicle traffic to function as a linear pedestrian path.

Figure 17: Spence Street Tunnel Concept

3.3 NAGLE STREET / IRELAND STREET

Nagle Street (north of FM 60) and Ireland Street (south of FM 60) intersect FM 60 in a densely developed area. This area includes Texas A&M University buildings on the south side and commercial buildings, including a gas station and food outlets, on the north side.

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	9	14	-13	-16
		LINEAR PATH	12	17	-10	-13
	SPIRAL RAMP	PLAZA	-7	-2	-29	-32
		LINEAR PATH	-8	-3	-30	-33
BRIDGE	LINEAR RAMP	PLAZA	-20	-24	-26	-29
		LINEAR PATH	-19	-23	-25	-28
	SPIRAL RAMP	PLAZA	-19	-23	-25	-28
		LINEAR PATH	-20	-24	-26	-29
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	1		2	
		LINEAR PATH	2		3	

Figure 18: Nagle Street / Ireland Street Screening Results

The screening matrix shown in **Figure 18** for Nagle Street / Ireland Street determined that the best performing concept design is a pedestrian tunnel with linear ramps connecting to linear paths. In the preferred (South) option shown in **Figure 19**, placing the tunnel entrances at the northwestern and southeastern corners of the intersection helps preserve the buildings to the north of Nagle Street, requiring the removal of only one building to the south.

A secondary (North) tunnel concept was developed, which required closing Nagle Street to vehicle traffic. This was deemed a less preferable option to the (South) option when reviewed. A rendering of this option can be seen in ***Appendix E***.

Figure 19: Nagle Street / Ireland Street Concept (South Option)

3.4 COLLEGE MAIN / HOUSTON STREET / BOYETT STREET

College Main, Houston Street and Boyett Street are a series of intersections, offset from one another, along a 600-foot section of FM 60 near the west side of the study area.

College Main is located along the north side of FM 60 and primarily serves as a cyclist and pedestrian path in the study area by restricting vehicle access to FM 60 with bollards. This added benefit makes it a suitable location for an end node without disrupting vehicle traffic in the surrounding area. Additionally, there is a signalized crosswalk at this location that provides access to a shared use path on the south side of FM 60. The area is bordered by commercial properties, restaurants, and hospitality businesses.

Houston Street is located west of College Main on the south side of FM 60 and currently functions as a one-way access road for vehicles. The surrounding campus area is moderately developed with a mix of green space and surface level parking serving nearby residence halls. Texas A&M has expressed interest in removing the parking lot on the west side of Houston Street, which could create additional space for an end node or inflow/outflow designs.

Boyett Street is located west of Houston Street on the north side of FM 60 and currently functions as a two-way street for vehicle traffic. The Boyett Street and FM 60 intersection is configured as a conventional four-leg signalized intersection. The surrounding area is well developed with university residential buildings to the south, and commercial buildings to the north.

			BOYETT STREET				COLLEGE MAIN / HOUSTON STREET			
DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW				CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP		LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	21	18	19	15	-5	-7	-15	-17
		LINEAR PATH	18	15	16	12	-4	-6	-14	-16
	SPIRAL RAMP	PLAZA	20	17	18	14	10	8	0	-2
		LINEAR PATH	17	14	15	11	7	5	-3	-5
BRIDGE	LINEAR RAMP	PLAZA	4	1	5	1	-8	-10	-13	-15
		LINEAR PATH	2	-1	3	-1	-7	-9	-12	-14
	SPIRAL RAMP	PLAZA	10	7	11	7	3	1	-2	-4
		LINEAR PATH	7	4	8	4	2	0	-3	-5
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH		PLAZA		LINEAR PATH	
		PLAZA	27		23		20		16	
		LINEAR PATH	23		19		16		12	

Figure 20: College Main / Houston Street / Boyett Street Screening Results

The screening matrix shown in **Figure 20** for College Main / Houston Street / Boyett Street showed that an at-grade design solution (with subsequent changes to the roadway alignment) was most appropriate for the intersection types and surrounding land-use.

Covered Option (Figure 21)

This concept involves constructing a grade-separated tunnel for the FM 60 roadway, running from just east of College Main to the access ramps at Wellborn Road. The roadway would be covered with an accessible deck to facilitate pedestrian and bicycle movements over FM 60. Separated bicycle and pedestrian trails would be included to reduce the risk of collisions. Both cyclists and pedestrians would have access to the existing network as well as the plaza/public space occupying the remaining deck space. This concept would require the existing Houston Street access point with FM 60 to be removed.

Figure 21: College Main / Houston Street / Boyett Street Concept (Covered Option)

Open Option (Figure 22)

To explore all available options for this location, a more cost-effective alternative has been proposed. In this option the FM 60 alignment remains as a grade-separated tunnel running beneath an at-grade pedestrian crossing, but the deck does not cover the corridor as extensively as the covered option shown in Figure 10. Pedestrian and bicycle crossings would be provided at College Main and Boyett Street via at-grade bridges, which would connect to a proposed shared-use path along the south side of FM 60. Similar to the covered option, the existing Houston Street access point to FM 60 would be closed to vehicles.

Figure 22: College Main / Houston Street / Boyett Street Concept (Open Option)

4. Recommendations

The study area along the FM 60 corridor from east of Wellborn Road to Texas Avenue services a significant amount of the pedestrian and vehicle traffic accessing the Texas A&M campus. These numbers are only expected to grow in the future, necessitating an upgrade to the existing pedestrian facilities to ensure pedestrian safety and maintain vehicle efficiency along the corridor.

This study focuses on four intersections along the corridor, evaluating a variety of design options to identify the most compatible solutions for each location. Alternative concepts were assessed with consideration to the concepts that best complement the existing infrastructure, maximize opportunities to facility users, minimize potential disruptions to current systems, provide feasible economic costs and construction timelines, and supply potential benefits to adjacent properties.

The collected data and subsequent analysis indicate that an at-grade pedestrian and bicycle deck, combined with sunken “tunnel” vehicular facilities, is the preferred design for the Polo Road / Century Square Drive / Century Court and College Main / Houston Street / Boyett Street locations. A pedestrian tunnel with linear paths is preferred design at Spence Street and at Nagle Street / Ireland Street locations. These preferred concepts aim to provide pedestrians and bicyclists with safe and efficient means to cross FM 60 while also offering opportunities to create iconic spaces for the Bryan/College Station area.

When evaluating which intersection improvements could have the most immediate impact on FM 60 traffic, two locations stand out: Spence Street and Nagle Street/Ireland Street. With construction estimates of $12 million and $20 million, respectively, these are the lowest-cost options among those studied. Additionally, their construction timelines—18 to 24 months for Spence Street and 2 years for Nagle Street/Ireland Street—are the shortest, providing quicker benefits for both pedestrians and bicyclists as well as for vehicular traffic on FM 60.

A key consideration when selecting these locations is their potential to divert pedestrian and bicycle traffic away from the S. College Avenue / Bizzell Street intersection. This diversion would potentially eliminate the need for the all-pedestrian signal phase at the intersection, improving operations at this major entrance to Texas A&M University. Similarly, constructing the below-grade pedestrian and bicycle crossing at Nagle Street / Ireland Street is expected to improve vehicle operations significantly.

Together, these two upgrades represent “early wins” for the overall strategy of separating pedestrian and bicycle traffic from vehicle traffic along the FM 60 study corridor. The immediate benefits of these enhancements could build public and stakeholder support for implementing the other proposed design options in the future.

Table 2 below was developed to estimate the economic and scheduling feasibility for the preferred design options at each of the four focus intersections. The cost estimates are high-level figures, covering only the base infrastructure and amenities, and are represented in 2023 unit prices. Features like university branding, art installations, water features, and non-standard lighting are not included in the estimates. Additional time and funding will be required for any advance planning, ROW acquisition, utility relocation, detailed design, permitting, etc.

Location – Option	Preferred Option	Time Estimate	Cost Estimate
Polo Road / Century Square Drive / Century Court.	At-Grade Crossing	3 years	$29 million
Spence Street	Pedestrian Tunnel w/ Linear Ramps	18-24 months	$12 million
Nagle Street / Ireland Street.	Pedestrian Tunnel	2 years	$20 million
College Main / Houston Street / Boyett Street	Covered Option	3 years	$76 million
	Open Option	2 years	$46 million

Table 2: Preferred Option Construction Cost and Time Estimates

It is important to note that ongoing development continues to alter the existing conditions adjacent to the FM 60 study corridor. Certain alternatives evaluated in this study have become unfeasible due to this development, most notably at the lawn areas near the Polo Road / Century Square Drive / Century Court location. Emphasis should be placed on selecting a preferred option as soon as possible to initiate the planning and design process before further changes occur.

While cost and timeline estimates were developed to conceptualize the effort required for the proposed concepts, future inflation may render these projections outdated. This study aims to provide a basis for local governments and developers to further assess and consider these concepts and estimates. Possible funding options for any of the locations can be seen in ***Appendix F.***

Appendix A:
FM 60 Initial Findings

Initial Findings

FM 60 University Drive
Traffic Operations

Bryan District
CSJ 0506-01-114

L.V. SHORT, P.E.	69192
NAME	P.E. NO.
HALFF ASSOCIATES, INC.	#312
FIRM NAME	TBPELS ENGINEERING FIRM

Table of *Contents*

This document includes preliminary analyses that have been prepared at TXDOT's request. More detailed analyses will be forthcoming.

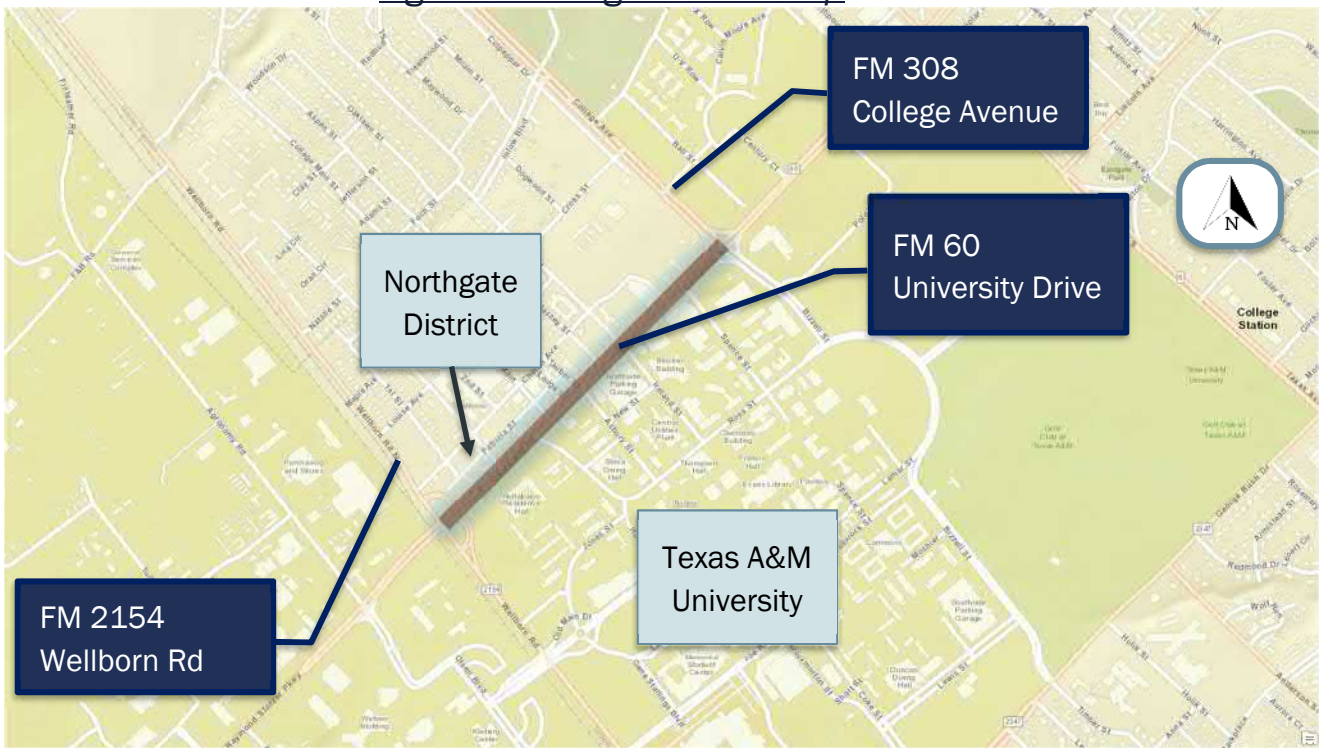
Study History

In February 2018, the Bryan/College Station Metropolitan Planning Organization adopted a Bicycle & Pedestrian Connectivity Study for the FM 60 (University Drive) corridor. FM 60 is a major arterial roadway, dividing the main campus of Texas A&M University from densely developed commercial and residential areas to the north. The study identified a number of creative solutions and improvement strategies that would encourage bicycle and pedestrian usage along and across the corridor, improving efficiency and safety for all users. One of the primary means considered was creating various forms of grade separation between motorized vehicles and other modes of transportation to transform FM 60 into a true multi-modal facility.

Existing Conditions

FM 60 separates Texas A&M University's main campus from nearby commercial and residential developments. The surrounding land uses generate high levels of bicycle and pedestrian activity. The corridor is a part of the National Highway System and is owned/maintained by the Texas Department of Transportation (TxDOT).

Figure 1: College Station Map



Infrastructure

FM 60 is a six-lane divided arterial roadway within the principal study area between FM 2154 (Wellborn Road) and SH 308 (College Avenue/Bizzell Street). This is the most constrained segment of the corridor, with right-of-way widths varying between 81 and 109 feet. There are six signalized intersections along this segment. Two additional intersections operate with stop-controls on the minor-street approaches.

Safety improvements were completed along the corridor in 2019. A raised median was added for the length of this segment restricting multiple access points to right-in, right-out only movements. At the intersection of FM 60 and Spence Street, the traffic signal was removed, and access was restricted to right-in, right-out. A new traffic signal was installed at the intersection with Church Street, 200 feet west of Spence Street. Additionally, pedestrian facility improvements such as additional crosswalks, median refuges, and decreased crossing distances were implemented.

Traffic

During 2019 daily traffic volumes along this segment varied between 35,000 and 40,000. The overwhelming majority of these vehicles are personal vehicles.

Bicycles & Pedestrians

A series of bicycle and pedestrian movement studies were conducted at signalized intersections in 2019. On a weekday during the Fall semester, there were more than 5,000 bicycle and 32,000 pedestrian movements. These counts do not include bicycles traveling in the vehicle travel lanes along FM 60 or any midblock movements.

Possible Improvements

The 2018 study concluded with several concepts to improve travel movements along the corridor. These concepts were intended to showcase different solutions and were divided into west, central, and east segments. The most intriguing concept was located in the central segment which featured four below grade travel lanes for FM 60 to reduce conflicts with bicycles and pedestrian movements while improving the efficiency of throughput, creating more public parklands, and possibly enhancing economic development. The two remaining lanes would provide local access. The concept is depicted on Figures 3 and 4. The Bryan District desired to analyze this concept first before considering other options.

Figure 3: Proposed Improvement Corridor

Figure 2: Existing Corridor

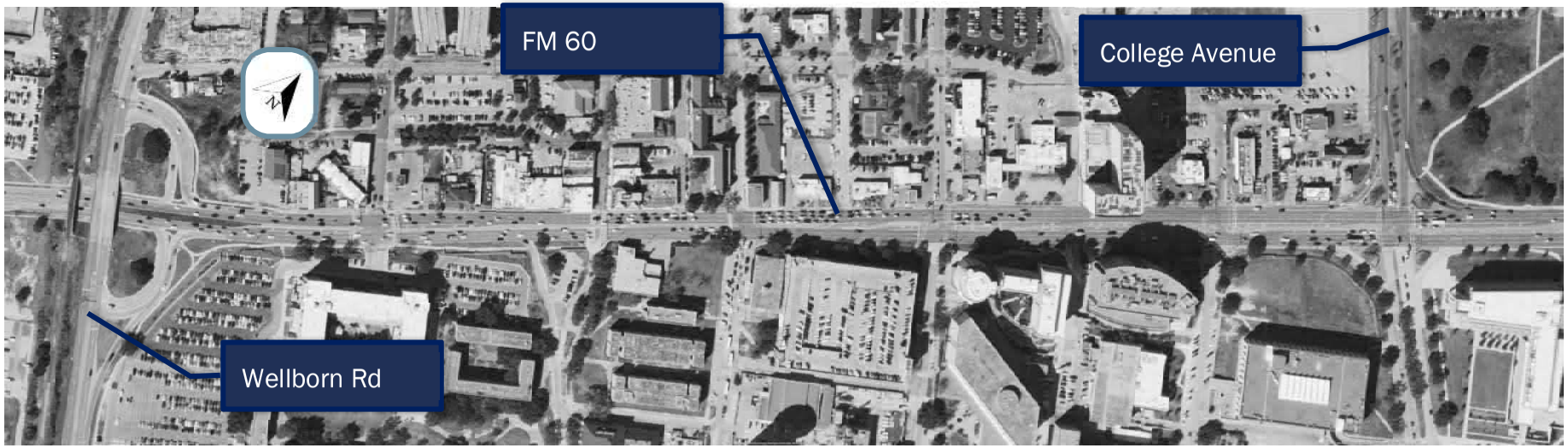
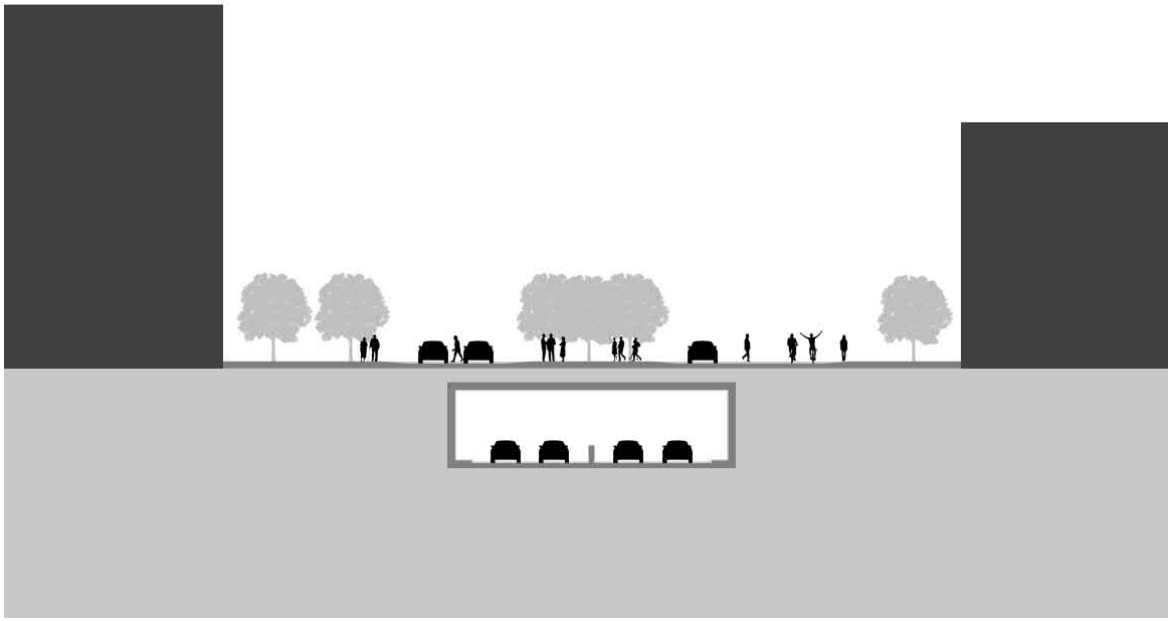


Figure 4: Typical Proposed Section



Traffic Forecasts

In order to evaluate how the concept operated and affected existing travel patterns, traffic forecasts were developed. An annual two percent growth rate was applied to existing 2019 traffic counts to develop the 2045 design year volumes. This rate was determined based on historical traffic growth, projected population and employment growth, data from the Bryan/College Station Metropolitan Planning Organization's travel demand model, and Texas A&M University's projected enrollment growth. Traffic in the proposed concept was diverted based on historical origin-destination data from 2019 obtained from StreetLight.

The proposed concept separates the through traffic traveling between FM 2154 and SH 308/Bizzell Street from the traffic that is accessing the Texas A&M University Campus or nearby commercial and residential properties in the Northgate District. The proposed concept also includes changes to the available access points for Texas A&M University and the Northgate District. These route changes that are required to navigate the proposed concept results in diverting traffic from the existing roadway. The notable traffic diversions that were applied for the design year are summarized below:

- Traffic making a continuous trip along FM 60 between FM 2154 and SH 308/Bizzell Street was routed to the tunnel section.
- Traffic with an origin and/or destination in the Texas A&M University Campus or Northgate District continued using the at-grade travel lanes or adjacent roadways.

The traffic diversions resulted in the projected volumes shown in **Table 1** on the tunnel and at-grade (local access) sections in the 2045 design year.

Table 1: 2045 Projected Traffic Volumes

FM 60	AM peak hour		PM peak hour		Daily
	Eastbound	Westbound	Eastbound	Westbound	Bi-Directional
Below-Grade	670	1,580	2,030	1,020	41,000
At-Grade	310	680	810	680	21,000

The traffic forecasts on FM 60 with existing conditions suggest that this corridor will be extremely congested by 2045. Without substantial increases in capacity, traffic will experience LOS "F" conditions during major portions of both peak periods. However, based on the design year volumes, the two tunnelled lanes in each direction should provide adequate capacity for the through traffic between FM 2154 and SH 308/Bizzell Street in 2045. The at-grade section should also be able to service the design year volumes with one lane in each direction. Local operations for the at-grade section will also be affected by the intersection control type and locations of turn bays.

Major Intersection Capacity Analysis

Forecasted traffic volumes were analyzed to determine the quality of traffic flow under the potential design at the two proposed at-grade locations (FM 2154 and College Avenue) which would be located at the end of the two tunnel portals.

At the FM 2154 intersection, the existing dual jug-handle configuration is proposed to be reconstructed as a single at-grade intersection. The FM 60 through traffic at FM 2154 currently experiences no delay as this is a free flow movement. The build condition at the SH 308/Bizzell Street intersection includes an at-grade design for through traffic using the signalized intersection within the tunnel. Local traffic is served by a ground-level roundabout. The Synchro analysis analyzed the below-ground signalized intersection. The design year (2045) peak hour Level of Service (LOS) and vehicle delay for both intersections are presented in **Table 2**.

Table 2: Build Conditions (2045) – Intersection Analysis

Intersection	Control	2045 AM		2045 PM	
		Delay	LOS	Delay	LOS
FM 60 at FM 2154	Signalized	101.1	F	98.8	F
FM 60 at SH 308/Bizzell Street	Signalized	46.7	D	116.8	F

Table 3: Synchro Queuing Analysis

Intersection	AM Peak Queue Length (feet)	PM Peak Queue Length (feet)
FM 60 @ FM 2154	1,000	1,350
FM 60 @ SH 308/Bizzell St	300	1,300

The results of these preliminary analyses suggest that the original concept will not provide adequate traffic movement along the corridor. Other strategies to improve pedestrian/bicycle safety will have to be considered.

Concept Cost

Table 4: Preliminary Cost Estimate

Item	Cost Range		
ROW Acquisition and Utility Relocation	$40,000,000	to	$60,000,000
Planning, Design and Engineering	$40,000,000	to	$60,000,000
Construction	$255,000,000	to	$385,000,000
Total	**$335,000,000**	**to**	**$505,000,000**

Costs shown are rounded in 2020 dollars. They are an order of magnitude, pre-design level effort. Allowance for design, permitting, and contingency will vary per item, location, and conditions.

Interim Findings

The initial study forecasts indicate that the existing infrastructure will not be adequate to handle daily traffic volumes between Wellborn (FM 2154) and College Avenue. The proposed 4-lane tunnel and 2-lane collector/distributor on top of the tunnel will accommodate 2045 traffic; however, the two at-grade intersections initially proposed at the entrances to the underground improvement will not operate at an acceptable LOS by 2045. It may be advisable to consider more modest improvement strategies such as providing limited grade separation between motorized and non-motorized traffic movements at discreet locations along the corridor.

For additional information on the FM 60 University Drive project, please contact:

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Appendix B:

FM 60 Grade Separation Configuration Screening Matrix

Configuration Screening Matrix

The configuration options which were determined to be feasible were evaluated using a screening matrix. **Table 1** through **Table 5** below summarize the screening. Details supporting the summary tables can be found in **Appendix A**, which contains separate tables for the Northgate side and the Campus side of each crossing. A qualitative description of the ranking scale can be found at the beginning of **Appendix A**. The beginning of **Appendix A** also contains an illustration of how the screening matrix was composed from the detailed tables.

In these tables, the following additional symbols are used:

-  **Northgate**
-  **Campus**

Table 1: Spence Street Concept Comparison Matrix

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	22	16	-4	-9
		LINEAR PATH	22	16	-4	-9
	SPIRAL RAMP	PLAZA	2	-4	-24	-29
		LINEAR PATH	-1	-7	-27	-32
BRIDGE	LINEAR RAMP	PLAZA	3	-2	-13	-16
		LINEAR PATH	3	-2	-13	-16
	SPIRAL RAMP	PLAZA	-9	-14	-25	-28
		LINEAR PATH	-11	-16	-27	-30
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	11		5	
		LINEAR PATH	8		2	

Table 2: Nagle Street / Ireland Street Concept Comparison Matrix

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	9	14	-13	-16
		LINEAR PATH	12	17	-10	-13
	SPIRAL RAMP	PLAZA	-7	-2	-29	-32
		LINEAR PATH	-8	-3	-30	-33
BRIDGE	LINEAR RAMP	PLAZA	-20	-24	-26	-29
		LINEAR PATH	-19	-23	-25	-28
	SPIRAL RAMP	PLAZA	-19	-23	-25	-28
		LINEAR PATH	-20	-24	-26	-29
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	1		2	
		LINEAR PATH	2		3	

Table 3: College Main / Houston Street Concept Comparison Matrix

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	-5	-7	-15	-17
		LINEAR PATH	-4	-6	-14	-16
	SPIRAL RAMP	PLAZA	10	8	0	-2
		LINEAR PATH	7	5	-3	-5
BRIDGE	LINEAR RAMP	PLAZA	-8	-10	-13	-15
		LINEAR PATH	-7	-9	-12	-14
	SPIRAL RAMP	PLAZA	3	1	-2	-4
		LINEAR PATH	2	0	-3	-5
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	20		16	
		LINEAR PATH	16		12	

Table 4: Boyett Street Concept Comparison Matrix

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	21	18	19	15
		LINEAR PATH	18	15	16	12
	SPIRAL RAMP	PLAZA	20	17	18	14
		LINEAR PATH	17	14	15	11
BRIDGE	LINEAR RAMP	PLAZA	4	1	5	1
		LINEAR PATH	2	-1	3	-1
	SPIRAL RAMP	PLAZA	10	7	11	7
		LINEAR PATH	7	4	8	4
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	27		23	
		LINEAR PATH	23		19	

Table 5: Polo Road Concept Comparison Matrix

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	8	5	6	3
		LINEAR PATH	6	3	4	1
	SPIRAL RAMP	PLAZA	23	20	21	18
		LINEAR PATH	20	17	18	15
BRIDGE	LINEAR RAMP	PLAZA	11	8	8	5
		LINEAR PATH	9	6	6	3
	SPIRAL RAMP	PLAZA	16	13	13	10
		LINEAR PATH	13	10	10	7
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	30		26	
		LINEAR PATH	27		23	

Summary

Table 1 summarizes the evaluation of the options for a crossing at Spence Street. It indicates that a depressed crossing with a linear plaza connections on campus and either type of linear connection off campus would most likely to satisfy site constraints. A linear crossing without an on-campus plaza would also be feasible, but would not fully realize the Campus Master Plan. Spiral transitions are not feasible at this location due to adjacent buildings. Bridge crossings were shown to be substantially less feasible, mainly due to longer access paths to buildings near FM 60. An at-grade crossing (changing the grade of FM 60) would be less desirable than a depressed crossing when considering Spence Street in isolation. However, it may be an appealing option as part of a broader FM 60 reprofiling.

Table 2 summarizes the evaluation of the options for a crossing at Nagle Street / Ireland Street. It indicates that a depressed crossing with linear connections (no plazas) is the configuration which is most likely to satisfy site constraints. A linear crossing with plazas may be possible, but would likely disrupt access to the Northside Parking Garage and force the closure of Nagle Street to vehicles. Spiral transitions are not feasible at this location due to adjacent buildings. Bridge crossings were shown to not be feasible, mainly due to impacts to the street grid. An at-grade crossing (changing the grade of FM 60) would be undesirable at this location due to the impact to access to the Northside Parking Garage.

Table 3 summarizes the evaluation of the options for a crossing at College Main / Houston Street. Scores for the tunnel and bridge options are low compared to other locations. This is indicative of the severe challenges to implementing a grade separated crossing at this location. It is recommended to pursue grade separated crossings at other locations. If a grade separated crossing is desired at College Main / Houston Street, options to depress FM 60 appear more feasible, and should be considered.

Table 4 summarizes the evaluation of the options for a crossing at Boyett Street. It indicates that a tunnel with linear or spiral approaches may be feasible for this crossing. Among tunnel options, linear plaza connections were shown to best satisfy the site constraints. The plaza option could be highly supportive of adjacent land uses. Spiral transitions may be feasible, but provide less direct connectivity to apartments to the north, and the Memorial Student Center (MSC). An at-grade crossing (changing the grade of FM 60) appears feasible, and scores highly compared to other options. While substantially more expensive than a tunnel crossing, an at-grade crossing could also address Northgate pedestrian safety concerns. College Station Police report routine near-miss pedestrian incidents in this area, which suggests more physical separation between modes may be warranted. Additionally, an at-grade crossing could allow a deck park or deck plaza adjacent to Northgate, which may be highly desirable to adjacent property owners and the University.

Table 5 summarizes the evaluation of the options for a crossing at Polo Road. The scoring is complicated by the different constraints on the campus side versus the private side. The campus side is not yet developed, so space is available for different crossing configurations. However, on the commercial side, linear connections are not feasible, as they would require the demolition of recently constructed buildings. Options with spiral transitions on the commercial side, and either linear or spiral transitions on the campus side, were found to be feasible based on site constraints. Tunnel, bridge, and at-grade crossings were contemplated at this location. Bridge crossings had somewhat lower total scores than

tunnel crossings. At-grade crossings, where FM 60 would be raised up and the crossing lowered slightly, had the highest scores. The at-grade crossings were expected to have the lowest ROW impacts of the three crossing types, and could provide the most options for bicycle and pedestrian connectivity. The reprofiling of FM 60, with retaining walls along the commercial frontage, was not expected to be much more visually distracting than the approaches for the other crossing types. But more convenient pedestrian and bicycle crossings was expected to be a major benefit for the mixed-use developments to the north, and supportive of the Campus Master Plan.

Appendix B– Evaluation Matrix Detail

Ranking Description

Qualitative Rankings											
Rank	-5	-4	-3	-2	-1	0	1	2	3	4	5
Performance	Extremely Poor	Very Poor	Poor	Somewhat Poor	Mildly Poor	Neutral	Mildly Good	Somewhat Good	Good	Very Good	Extremely Good
Impact	Extremely High	High	Moderate	Low	Very Low	None	N/A	N/A	N/A	N/A	N/A

Comparison Matrix Composition

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	9
		LINEAR PATH	9
	SPIRAL RAMP	PLAZA	-11
		LINEAR PATH	-14
BRIDGE	LINEAR RAMP	PLAZA	0
		LINEAR PATH	0
	SPIRAL RAMP	PLAZA	-12
		LINEAR PATH	-14
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	4
		LINEAR PATH	1

DESIGN SOLUTION	END NODE	NORTHGATE INFLOW/ OUTFLOW	CAMPUS INFLOW/OUTFLOW			
			LINEAR RAMP		SPIRAL RAMP	
			PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
TUNNEL	LINEAR RAMP	PLAZA	22	16	-4	-9
		LINEAR PATH	22	16	-4	-9
	SPIRAL RAMP	PLAZA	2	-4	-2	-29
		LINEAR PATH	-1	-7	-27	-32
BRIDGE	LINEAR RAMP	PLAZA	3	-2	-13	-16
		LINEAR PATH	3	-2	-13	-16
	SPIRAL RAMP	PLAZA	-9	-14	-25	-28
		LINEAR PATH	-11	-16	-27	-30
AT-GRADE (CHANGE IN ROADWAY ALIGNMENT)	AT-GRADE PEDESTRIAN CROSSING		PLAZA		LINEAR PATH	
		PLAZA	11		5	
		LINEAR PATH	8		2	

TOTAL RANK	13	7	-13	-18	3	-2	-13	-16	7	1
INFLOW/ OUTFLOW	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH	PLAZA	LINEAR PATH
END NODE	LINEAR RAMP		SPIRAL RAMP		LINEAR RAMP		SPIRAL RAMP		AT-GRADE BIKE/ PED X-ING	
DESIGN SOLUTION	TUNNEL				BRIDGE				AT-GRADE (CHANGE IN ROADWAY PROFILE)	

Spence Street Concept Comparison Matrix – Northgate Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS: WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	IMPACT PARAMETERS: ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	Plaza may be considered a benefit for adjacent developer.	4	Compatible with adjacent private land uses.	5	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	A former gas station was situated adjacent to the proposed crossing, but the site appears to have been remediated.	-2	A storm sewer trunk would have to be relocated. Other utilities would also be impacted.	-3	May cause impact to adjacent private property or proposed development.	-3	9
		LINEAR PATH	Adjacent developer may be able to accommodate.	5	Least practical disruption to private land uses due to smallest footprint.	4	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	A former gas station was situated adjacent to the proposed crossing, but the site appears to have been remediated.	-2	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from north of Church Ave.	-3	Impacts private street but not buildings.	-2	9
	SPIRAL RAMP	PLAZA	Would displace properties adjacent to FM 60. May be considered an amenity to nearby landowners.	-4	Depressed plaza may be considered a benefit for adjacent developer.	-2	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from north of Church Ave.	-2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	A former gas station was situated adjacent to the proposed crossing, but the site appears to have been remediated.	-2	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from north of Church Ave.	-3	Would displace adjacent commercial building	-3	-11
		LINEAR PATH	Would displace properties adjacent to FM 60. Does not seem supportive of nearby development.	-5	Depressed spiral may be considered a benefit for adjacent developer.	-3	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from north of Church Ave.	-2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	A former gas station was situated adjacent to the proposed crossing, but the site appears to have been remediated.	-2	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from north of Church Ave.	-3	Would displace adjacent commercial building	-3	-14

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Plaza may be considered a benefit for adjacent developer.	3	Requires ~400'-500' additional linear travel and twice as much grade change as depressed crossing	-5	Provides connection along anticipated desire lines. Provides stairwell connectivity to crossing shared use paths to reduce out-of-path travel. Requires more travel in the grade separation than other options.	4	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would impair access to proposed development and use space which could support redevelopment	-4	0
		LINEAR PATH	Adjacent developer may be able to accommodate.	4	Requires ~400'-500' additional linear travel and twice as much grade change as depressed crossing	-5	Provides connection along anticipated desire lines. Provides stairwell connectivity to crossing shared use paths to reduce out-of-path travel. Requires more travel in the grade separation than other options.	4	Linear path provides smaller area for aesthetics and integration with environment. Linear connection spreads effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would impair access to proposed development and use space which could support redevelopment	-4	0
	SPIRAL RAMP	PLAZA	Would displace properties adjacent to FM 60. May be considered an amenity to nearby landowners.	-4	Requires ~400'-500' additional linear travel and twice as much grade change as depressed crossing	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require substantial extra travel for the movement from north of Church Ave.	-2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Would displace adjacent commercial building	-3	-12
		LINEAR PATH	Would displace properties adjacent to FM 60. Does not seem supportive of nearby development.	-5	Requires ~400'-500' additional linear travel and twice as much grade change as depressed crossing	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require substantial extra travel for the movement from north of Church Ave.	-2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Would displace adjacent commercial building	-3	-14
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Plaza may be considered a benefit for adjacent developer.	5	Due to constraint of SH 308 / College Ave. / Bizzell St. intersection, FM 60 profile can't be fully depressed before crossing. So the bicycle/pedestrian facility will have to be a few feet above existing grade. Recommend considering an at-grade crossing at Church Ave. rather than Spence St.	-3	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	A former gas station was situated adjacent to the proposed crossing, but the site appears to have been remediated.	-2	A storm sewer trunk would have to be relocated. Other utilities would also be impacted.	-2	May cause impact to adjacent private property or proposed development. Requires closure of Church Ave. intersection, which would require extending Church Ave. to College Ave. / SH 308.	-3	4
		LINEAR PATH	Adjacent developer likely to be able to accommodate.	4	FM 60 profile can't be fully depressed at this crossing. So the bicycle/pedestrian facility will have to be a few feet above existing grade. Recommend considering an at-grade crossing at Church Ave. rather than Spence St.	-3	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	A former gas station was situated adjacent to the proposed crossing, but the site appears to have been remediated.	-2	A storm sewer trunk would have to be relocated. Other utilities would also be impacted.	-2	Impacts private street but not buildings. Requires closure of Church Ave. intersection, which would require extending Church Ave. to College Ave. / SH 308.	-3	1

Spence Street Concept Comparison Matrix – Campus Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
TUNNEL	LINEAR RAMP	PLAZA	Plaza is proposed in Campus Master Plan.	5	Compatible with adjacent Campus uses.	5	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	Requires trenching, which may encounter previous groundwater contamination.	-1	The gas supply to the University central plant and a storm sewer trunk would have to be relocated. Other utilities would also be impacted.	-3	Assumed low impact to University since supportive of Campus Master Plan, but does use space which could support a larger plaza.	-1	13
		LINEAR PATH	Compatible with existing street use on Campus.	2	Compatible with adjacent Campus uses.	4	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	Requires trenching, which may encounter previous groundwater contamination.	-1	The gas supply to the University central plant and a storm sewer trunk would have to be relocated. Other utilities would also be impacted.	-3	Assumed low impact to University since consistent with Campus Master Plan, but does use space which could support a larger plaza.	-2	7
	SPIRAL RAMP	PLAZA	Not compatible with Campus Master Plan.	-3	Depressed plaza not supportive of adjacent Campus uses.	-3	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement to the interior of campus.	-2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	Requires trenching, which may encounter previous groundwater contamination.	-1	The gas supply to the University central plant and a storm sewer trunk would have to be relocated. Other utilities would also be impacted.	-4	Would impact major buildings on campus.	-5	-13
		LINEAR PATH	Not compatible with Campus Master Plan.	-5	Depressed spiral not supportive of adjacent Campus uses.	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement to the interior of campus.	-2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	Requires trenching, which may encounter previous groundwater contamination.	-1	The gas supply to the University central plant and a storm sewer trunk would have to be relocated. Other utilities would also be impacted.	-4	Would impact major buildings on campus.	-5	-18

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Plaza is proposed in Campus Master Plan.	4	Requires ~400'-500' additional linear travel and twice as much grade change as depressed crossing	-5	Provides connection along anticipated desire lines. Provides stairwell connectivity to crossing shared use paths to reduce out-of-path travel. Requires more travel in the grade separation than other options.	4	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Assumed low impact to University since supportive of Campus Master Plan, but does use space which could support a larger plaza.	-2	3
		LINEAR PATH	Compatible with existing street use on Campus.	1	Requires ~400'-500' additional linear travel and twice as much grade change as depressed crossing	-5	Provides connection along anticipated desire lines. Provides stairwell connectivity to crossing shared use paths to reduce out-of-path travel. Requires more travel in the grade separation than other options.	4	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Assumed low impact to University since consistent with Campus Master Plan, but does use space which could support a larger plaza.	-3	-2
	SPIRAL RAMP	PLAZA	Not compatible with Campus Master Plan.	-3	Requires ~400'-500' additional linear travel and twice as much grade change as depressed crossing	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement to the interior of campus.	-2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Would impact major buildings on campus.	-5	-13
		LINEAR PATH	Not compatible with Campus Master Plan.	-5	Requires ~400'-500' additional linear travel and twice as much grade change as depressed crossing	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement to the interior of campus.	-2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Would impact major buildings on campus.	-5	-16
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Plaza is proposed in Campus Master Plan.	5	Due to constraint of SH 308 / College Ave. / Bizzell St. intersection, FM 60 profile can't be fully depressed before crossing. So the bicycle/pedestrian facility will have to be a few feet above existing grade. Recommend considering an at-grade crossing at Chruch Ave. rather than Spence St.	-3	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	Requires trenching, which may encounter previous groundwater contamination.	-1	A storm sewer trunk would have to be relocated. Other utilities would also be impacted. University central plant gas supply could likely be avoided.	-2	Assumed minimal impact to University since supportive of Campus Master Plan.	-1	7
		LINEAR PATH	Compatible with existing street use on Campus.	2	FM 60 profile can't be fully depressed at this crossing. So the bicycle/pedestrian facility will have to be a few feet above existing grade. Recommend considering an at-grade crossing at Chruch Ave. rather than Spence St.	-3	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	Requires trenching, which may encounter previous groundwater contamination.	-1	A storm sewer trunk would have to be relocated. Other utilities would also be impacted. University central plant gas supply could likely be avoided.	-2	Assumed low impact to University since consistent with Campus Master Plan, but does use space which could support a larger plaza.	-2	1

Nagle Street / Ireland Street Concept Comparison Matrix – Northgate Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS: WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	IMPACT PARAMETERS: ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	Would cause vehicular access and mobility impacts. May be complimentary to new St. Mary's church.	0	Poor support of adjacent private land uses.	2	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Requires out-of-path travel for FM 60 Shared Use Path users to cross.	4	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	A former gas station and a current gas station is adjacent. A leaking petroleum storage tank was reported at the telecom facility at Nagle and Church. The sites appear to have been remediated.	-2	Major communications duct banks would have to be relocated. Other utilities would also be impacted.	-3	Would require closing Nagle St or moving telecom facility. Parking at the private properties north of campus would be impacted.	-2	2
		LINEAR PATH	Access impact to two properties	2	Lower disruption to private land uses.	3	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Requires out-of-path travel for FM 60 Shared Use Path users to cross.	4	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	A former gas station and a current gas station is adjacent. A leaking petroleum storage tank was reported at the telecom facility at Nagle and Church. The sites appear to have been remediated.	-2	Major communications duct banks would have to be relocated. Other utilities would also be impacted.	-3	Parking at the private properties north of campus would be impacted. Does not require closing Nagle St.	-1	5
	SPIRAL RAMP	PLAZA	Would displace buildings adjacent to FM 60. May be supportive of adjacent development.	-4	Highly disruptive to adjacent private land uses.	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from the north.	-2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	A former gas station and a current gas station is adjacent. A leaking petroleum storage tank was reported at the telecom facility at Nagle and Church. The sites appear to have been remediated.	-2	Major communications duct banks would have to be relocated. Other utilities would also be impacted.	-3	Displaces a gas station and another commercial building	-3	-14
		LINEAR PATH	Would displace buildings adjacent to FM 60. Does not seem supportive of adjacent development.	-5	Disruptive to adjacent land uses.	-4	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from the north.	-2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	A former gas station and a current gas station is adjacent. A leaking petroleum storage tank was reported at the telecom facility at Nagle and Church. The sites appear to have been remediated.	-2	Major communications duct banks would have to be relocated. Other utilities would also be impacted.	-3	Displaces a gas station and another commercial building	-3	-15

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Would require closure of Church Ave., disrupting the city street grid and circulation patterns.	-5	Poor support of adjacent private land uses. Visually disruptive to adjacent businesses.	-3	Requires out-of-path travel for FM 60 and Church Ave users to cross	-3	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would require closing Nagle St or moving telecom facility. Would require closure of Church Ave.	-4	-13
		LINEAR PATH	Would require closure of Church Ave., disrupting the city street grid and circulation patterns.	-5	Visually disruptive to adjacent businesses.	-2	Requires out-of-path travel for FM 60 and Church Ave users to cross	-3	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Parking at the private properties north of campus would be impacted. Would require the closure of Church Ave.	-3	-12
	SPIRAL RAMP	PLAZA	Would displace buildings adjacent to FM 60. May be supportive of adjacent development.	-4	Highly disruptive to adjacent private land uses.	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from the north.	-2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Displaces a gas station and another commercial building	-3	-12
		LINEAR PATH	Would displace buildings adjacent to FM 60. Does not seem supportive of adjacent development.	-5	Disruptive to adjacent land uses.	-4	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for the movement from the north.	-2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Displaces a gas station and another commercial building	-3	-13
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Would cause vehiclar access and mobility impacts. May be complimentary to new St. Mary's church.	1	Lower disruption of adjacent private land uses.	2	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	A former gas station and a current gas station is adjacent. A leaking petroleum storage tank was reported at the telecom facility at Nagle and Church. The sites appear to have been remediated.	-2	Major communications duct banks would have to be relocated. Other utilities would also be impacted.	-2	Eliminates access from FM 60 to the Northside Parking Garage. Would require closing Nagle St or moving telecom facility.	-5	3
		LINEAR PATH	Minimizes impact to adjacent properties	3	Least disruption to private land uses.	3	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	A former gas station and a current gas station is adjacent. A leaking petroleum storage tank was reported at the telecom facility at Nagle and Church. The sites appear to have been remediated.	-2	Major communications duct banks would have to be relocated. Other utilities would also be impacted.	-2	Eliminates access from FM 60 to the Northside Parking Garage. Parking at the private properties north of campus would be impacted.	-5	4

Nagle Street / Ireland Street Concept Comparison Matrix – Campus Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
TUNNEL	LINEAR RAMP	PLAZA	Plaza exists nearby at Blocker Building.	3	Potentially compatible with adjacent Campus uses.	4	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Requires out-of-path travel for FM 60 Shared Use Path users to cross.	4	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	Requires trenching, which may encounter previous groundwater contamination.	-1	The gas supply to the University central plant, a storm sewer trunk, and major communications duct banks would have to be relocated. Other utilities would also be impacted.	-3	Would impact access to the Northside Parking Garage or adjacent buildings.	-3	7
		LINEAR PATH	Compatible with existing street use on Campus.	5	Compatible with adjacent Campus uses.	5	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Requires out-of-path travel for FM 60 Shared Use Path users to cross.	4	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	Requires trenching, which may encounter previous groundwater contamination.	-1	The gas supply to the University central plant, a storm sewer trunk, and major communications duct banks would have to be relocated. Other utilities would also be impacted.	-3	Minimal impact to Northside Parking Garage access - two entry lanes maintained	0	12
	SPIRAL RAMP	PLAZA	Not compatible with Campus Master Plan.	-3	Large depressed plaza not supportive of adjacent Campus uses.	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for movements into Campus.	-2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	Requires trenching, which may encounter previous groundwater contamination.	-1	The gas supply to the University central plant, a storm sewer trunk, and major communications duct banks would have to be relocated. Other utilities would also be impacted.	-4	Would impact major buildings on campus.	-5	-15
		LINEAR PATH	Not compatible with Campus Master Plan.	-5	Depressed spiral not supportive of adjacent Campus uses.	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for movements into Campus.	-2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	Requires trenching, which may encounter previous groundwater contamination.	-1	The gas supply to the University central plant, a storm sewer trunk, and major communications duct banks would have to be relocated. Other utilities would also be impacted.	-4	Would impact major buildings on campus.	-5	-18

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Would disrupt plaza in front of Blocker Building	-2	Interferes with pedestrian access between Northside Parking Garage and Blocker Building	-2	Requires out-of-path travel for FM 60 Shared Use Path users to cross, and for users to access the Blocker Building	-3	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would impact access between Northside Parking Garage and New Street to Blocker Building plaza. Crossing plaza enhancements could partially augment impact.	-2	-7
		LINEAR PATH	Would disrupt plaza in front of Blocker Building	-3	Interferes with pedestrian access between Northside Parking Garage and Blocker Building	-3	Requires out-of-path travel for FM 60 Shared Use Path users to cross, and for users to access the Blocker Building	-3	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would impact access between Northside Parking Garage and New Street to Blocker building plaza	-3	-11
	SPIRAL RAMP	PLAZA	Not compatible with Campus Master Plan.	-3	Large plaza not supportive of adjacent Campus uses.	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for movements into Campus.	-2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Would impact major buildings on campus.	-5	-13
		LINEAR PATH	Not compatible with Campus Master Plan.	-5	Large spiral not supportive of adjacent Campus uses.	-5	Would provide direct connectivity for users of the FM 60 SUPs, but would require extra travel for movements into Campus.	-2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Would impact major buildings on campus.	-5	-16
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Plaza exists nearby at Blocker Building.	2	Northside Parking Garage access would only be possible via Campus/City street grid, not FM 60.	-5	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides direct access for FM 60 Shared Use Path travelers	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	Requires trenching, which may encounter previous groundwater contamination.	-1	Major communications duct banks would have to be relocated. Other utilities would also be impacted.	-2	Eliminates access from FM 60 to the Northside Parking Garage - Access only possible via Campus/City street grid.	-5	-2
		LINEAR PATH	Compatible with existing street use on Campus.	5	Northside Parking Garage access would only be possible via Campus/City street grid, not FM 60.	-5	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides direct access for FM 60 Shared Use Path travelers	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	Requires trenching, which may encounter previous groundwater contamination.	-1	Major communications duct banks would have to be relocated. Other utilities would also be impacted.	-2	Eliminates access from FM 60 to the Northside Parking Garage - Access only possible via Campus/City street grid.	-5	-1

College Main / Houston Street Concept Comparison Matrix – Northgate Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS: WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	IMPACT PARAMETERS: ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	Not compatible with adjacent private development.	-5	Not compatible with adjacent private development.	-5	Provides direct connection along established desire lines. Replaces existing at-grade bike/ped plaza. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	Passes adjacent to former dry cleaner. Risk of TCE groundwater contamination.	-1	Impacts 12" water main under College Main	-2	Impacts access to Northgate businesses	-5	-13
		LINEAR PATH	Not compatible with adjacent private development.	-5	Not compatible with adjacent private development.	-3	Provides direct connection along established desire lines. Replaces existing at-grade bike/ped plaza. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	Passes adjacent to former dry cleaner. Risk of TCE groundwater contamination.	-1	Impacts 12" water main under College Main	-2	Impacts access to Northgate businesses	-5	-12
	SPIRAL RAMP	PLAZA	Compatible with adjacent private land uses north of Church St.	2	May be a benefit for adjacent property owners. Will make bicycle access to Northgate more difficult.	-2	Provides connectivity to more of City street grid. Provides stairwell access to crossing shared use paths to minimize out-of-path travel.	3	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	Passes adjacent to former dry cleaner. Risk of TCE groundwater contamination.	-1	Impacts 12" water main under College Main	-2	Provides option which does not impact cross-streets north of FM 60. Impacts Methodist Church parking. Trench walls may affect stability of adjacent buildings.	-3	2
		LINEAR PATH	Compatible with adjacent private land uses north of Church St.	0	May be a benefit for adjacent property owners. Will make bicycle access to Northgate more difficult.	-2	Provides connectivity to more of City street grid. Provides stairwell access to crossing shared use paths to minimize out-of-path travel.	3	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	Passes adjacent to former dry cleaner. Risk of TCE groundwater contamination.	-1	Impacts 12" water main under College Main	-2	Provides option which does not impact cross-streets north of FM 60. Impacts Methodist Church parking. Trench walls may affect stability of adjacent buildings.	-3	-1

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Not compatible with adjacent private development.	-5	Would interfere with second story windows, and potentially interfere with rooftop entertainment facilities	-5	Provides direct connection along established desire lines. Replaces existing at-grade bike/ped plaza. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Impacts access to Northgate businesses	-5	-11
		LINEAR PATH	Not compatible with adjacent private development.	-5	Would interfere with second story windows, and potentially interfere with rooftop entertainment facilities	-3	Provides direct connection along established desire lines. Replaces existing at-grade bike/ped plaza. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Impacts access to Northgate businesses	-5	-10
	SPIRAL RAMP	PLAZA	Compatible with adjacent private land uses north of Church St.	2	Would interfere with second story windows, and potentially interfere with rooftop entertainment facilities.	-5	Provides connectivity to more of City street grid. Provides stairwell access to crossing shared use paths to minimize out-of-path travel.	3	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Provides option which does not impact cross-streets north of FM 60. Impacts Methodist Church parking	-2	0
		LINEAR PATH	Compatible with adjacent private land uses north of Church St.	0	Would interfere with second story windows, and potentially interfere with rooftop entertainment facilities	-3	Provides connectivity to more of City street grid. Provides stairwell access to crossing shared use paths to minimize out-of-path travel.	3	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Provides option which does not impact cross-streets north of FM 60. Impacts Methodist Church parking	-2	-1
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Supportive of adjacent private development. Offers enhanced separation between motorized and non-motorized modes in an area where the police indicate many close-call incidents occur.	3	Complimentary to adjacent private land uses. Requires closing of Boyett St., which the City already does on weekends. Impacts Campus Bus Route 15.	2	Provides direct connection along established desire lines. Enhances existing at-grade bike/ped plaza.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	FM 60 depressed section may pass near a gas station. A leaking petroleum storage tank was identified at the gas station, but the site appears to have been remediated.	-2	Impacts 12" water main under College Main	-2	Pedestrian access and circulation can be enhanced without ROW acquisition	0	10
		LINEAR PATH	Compatible with adjacent private development. Offers enhanced separation between motorized and non-motorized modes in an area where the police indicate many close-call incidents occur.	2	Compatible with adjacent private land uses. Requires closing of Boyett St., which the City already does on weekends. Impacts Campus Bus Route 15.	1	Provides direct connection along established desire lines. Enhances existing at-grade bike/ped plaza.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	FM 60 depressed section may pass near a gas station. A leaking petroleum storage tank was identified at the gas station, but the site appears to have been remediated.	-2	Impacts 12" water main under College Main	-2	Pedestrian access and circulation can be enhanced without ROW acquisition	0	6

College Main / Houston Street Concept Comparison Matrix – Campus Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS: WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	IMPACT PARAMETERS: ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	Supportive of adjacent Campus uses.	3	Compatible with adjacent Campus uses.	2	Provides direct connection along established desire lines. Replaces existing at-grade bike/ped plaza. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	Requires trenching, which may encounter previous groundwater contamination.	-1	Along FM 60: Fiber optic and wastewater.	-1	Assumed no impact to University - Complimentary to existing pathways.	0	8
		LINEAR PATH	Compatible with adjacent Campus uses.	2	Compatible with adjacent Campus uses.	2	Provides direct connection along established desire lines. Replaces existing at-grade bike/ped plaza. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	Requires trenching, which may encounter previous groundwater contamination.	-1	Along FM 60: Fiber optic and wastewater.	-1	Assumed no impact to University - Complimentary to existing pathways.	0	6
	SPIRAL RAMP	PLAZA	Not supportive of Campus land uses.	-2	Depressed spiral not supportive of adjacent Campus uses. Poor access for cyclists.	-3	Provides stairwell access to crossing shared use paths to minimize out-of-path travel. Less direct access for many Campus destinations.	1	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	Requires trenching, which may encounter previous groundwater contamination.	-1	Along FM 60: Fiber optic and wastewater.	-1	Possible minor impact to campus vehicular access.	-1	-2
		LINEAR PATH	Not supportive of Campus land uses.	-3	Depressed spiral not supportive of adjacent Campus uses. Poor access for cyclists.	-3	Provides stairwell access to crossing shared use paths to minimize out-of-path travel. Less direct access for many Campus destinations.	1	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	Requires trenching, which may encounter previous groundwater contamination.	-1	Along FM 60: Fiber optic and wastewater.	-1	Possible minor impact to campus vehicular access.	-1	-4

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Would require closure of Hogg St., disrupting service vehicle circulation on campus.	-2	Compatible with adjacent Campus uses.	2	Provides direct connection along established desire lines. Replaces existing at-grade bike/ped plaza. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel. Less direct access to buildings close to FM 60	1	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Assumed no impact to University - Complimentary to existing pathways.	0	3
		LINEAR PATH	Would require closure of Hogg St., disrupting service vehicle circulation on campus.	-3	Compatible with adjacent Campus uses.	2	Provides direct connection along established desire lines. Replaces existing at-grade bike/ped plaza. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel. Less direct access to buildings close to FM 60	1	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Assumed no impact to University - Complimentary to existing pathways.	0	1
	SPIRAL RAMP	PLAZA	Not supportive of Campus land uses.	-1	Elevated spiral not supportive of adjacent Campus uses.	-3	Provides stairwell access to crossing shared use paths to minimize out-of-path travel. Less direct access for many Campus destinations.	1	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Possible minor impact to campus vehicular access.	-1	-2
		LINEAR PATH	Not supportive of Campus land uses.	-2	Elevated spiral not supportive of adjacent Campus uses.	-3	Provides stairwell access to crossing shared use paths to minimize out-of-path travel. Less direct access for many Campus destinations.	1	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Possible minor impact to campus vehicular access.	-1	-4
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Supportive of Campus land uses	3	Complimentary to Campus land uses. Impacts Campus Bus Route 15.	4	Provides direct connection along established desire lines. Enhances existing at-grade bike/ped plaza.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	Requires trenching, which may encounter previous groundwater contamination.	-1	Along FM 60: Fiber optic and wastewater.	-2	Potential impact to Post Office property may trigger lengthy acquisition process. Assumed no impact to University - Complimentary to existing pathways.	-3	10
		LINEAR PATH	Compatible with Campus land uses	2	Complimentary to Campus land uses. Impacts Campus Bus Route 15.	3	Provides direct connection along established desire lines. Enhances existing at-grade bike/ped plaza.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	Requires trenching, which may encounter previous groundwater contamination.	-1	Along FM 60: Fiber optic and wastewater.	-2	Potential impact to Post Office property may trigger lengthy acquisition process. Assumed no impact to University - Complimentary to existing pathways.	-3	6

Boyett Street Concept Comparison Matrix – Northgate Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS: WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	IMPACT PARAMETERS: ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	Enhanced pedestrian crossing is consistent with weekend closures of Boyett St.	4	Supportive of adjacent private land uses.	5	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	A gas station is along the proposed crossing. Leaking petroleum storage tanks may have contaminated groundwater.	-3	Utility relocations would be required along FM 60, including wastewater and a 12" water main.	-2	Requires ROW from site currently under development	-2	10
		LINEAR PATH	Enhanced pedestrian crossing is consistent with weekend closures of Boyett St.	3	Low disruption to private land uses.	4	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	A gas station is along the proposed crossing. Leaking petroleum storage tanks may have contaminated groundwater.	-3	Utility relocations would be required along FM 60, including wastewater and a 12" water main.	-2	Requires ROW from site currently under development.	-2	7
	SPIRAL RAMP	PLAZA	Could enhance access to Northgate. Increases travel distance to apartments north of Northgate.	3	Supportive of adjacent private land uses.	4	Would provide direct connectivity for users of the FM 60 SUPs and to Northgate.	4	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	A gas station is along the proposed crossing. Leaking petroleum storage tanks may have contaminated groundwater.	-3	Utility relocations would be required along FM 60, including wastewater and a 12" water main.	-2	Displaces site currently under development	-2	9
		LINEAR PATH	Could enhance access to Northgate. Increases travel distance to apartments north of Northgate.	2	Low disruption to private land uses.	3	Would provide direct connectivity for users of the FM 60 SUPs and to Northgate.	4	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	A gas station is along the proposed crossing. Leaking petroleum storage tanks may have contaminated groundwater.	-3	Utility relocations would be required along FM 60, including wastewater and a 12" water main.	-2	Displaces site currently under development	-2	6

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Would require closure of Church Ave., disrupting the city street grid and circulation patterns.	-5	Poor support of adjacent private land uses.	3	Provides direct connection along anticipated desire lines. Requires out-of-path travel for users from Church Ave. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would impact access to adjacent parking. Would require closure of Church Ave.	-4	-2
		LINEAR PATH	Would require closure of Church Ave., disrupting the city street grid and circulation patterns.	-5	Lower disruption to private land uses.	2	Provides direct connection along anticipated desire lines. Requires out-of-path travel for users from Church Ave. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would impact access to adjacent parking. Would require closure of Church Ave.	-4	-4
	SPIRAL RAMP	PLAZA	Could enhance access to Northgate. Increases travel distance to apartments north of Northgate.	3	Visually disruptive to adjacent businesses.	-3	Would provide direct connectivity for users of the FM 60 SUPs and to Northgate.	4	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Displaces site currently under development	-2	4
		LINEAR PATH	Could enhance access to Northgate. Increases travel distance to apartments north of Northgate.	2	Poor support of adjacent private land uses. Visually disruptive to adjacent businesses.	-4	Would provide direct connectivity for users of the FM 60 SUPs and to Northgate.	4	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Displaces site currently under development	-2	1
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Enhanced pedestrian crossing is consistent with weekend closures of Boyett St. Offers enhanced separation between motorized and non-motorized modes in an area where the police indicate many close-call incidents occur.	5	Supportive of adjacent private land uses.	3	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	A gas station is along the proposed crossing. Leaking petroleum storage tanks may have contaminated groundwater.	-2	Utility relocations would be required along FM 60, including fiber optic, wastewater, and a 12" water main.	-2	Minimal impact to Northgate properties	0	13
		LINEAR PATH	Enhanced pedestrian crossing is consistent with weekend closures of Boyett St. Offers enhanced separation between motorized and non-motorized modes in an area where the police indicate many close-call incidents occur.	4	Least practical disruption to private land uses.	2	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	A gas station is along the proposed crossing. Leaking petroleum storage tanks may have contaminated groundwater.	-2	Utility relocations would be required along FM 60, including fiber optic, wastewater, and a 12" water main.	-2	Minimal impact to Northgate properties	0	9

Boyett Street Concept Comparison Matrix – Campus Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS: WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	IMPACT PARAMETERS: ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	Would require closure of Church Ave., disrupting the city street grid and circulation patterns.	-5	Poor support of adjacent private land uses.	3	Provides direct connection along anticipated desire lines. Requires out-of-path travel for users from Church Ave. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would impact access to adjacent parking. Would require closure of Church Ave.	-4	-2
		LINEAR PATH	Would require closure of Church Ave., disrupting the city street grid and circulation patterns.	-5	Lower disruption to private land uses.	2	Provides direct connection along anticipated desire lines. Requires out-of-path travel for users from Church Ave. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Would impact access to adjacent parking. Would require closure of Church Ave.	-4	-4
	SPIRAL RAMP	PLAZA	Could enhance access to Northgate. Increases travel distance to apartments north of Northgate.	3	Visually disruptive to adjacent businesses.	-3	Would provide direct connectivity for users of the FM 60 SUPs and to Northgate.	4	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Displaces a gas station, which is currently for sale.	-2	4
		LINEAR PATH	Could enhance access to Northgate. Increases travel distance to apartments north of Northgate.	2	Poor support of adjacent private land uses. Visually disruptive to adjacent businesses.	-4	Would provide direct connectivity for users of the FM 60 SUPs and to Northgate.	4	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Displaces a gas station, which is currently for sale.	-2	1

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Compatible with Campus Master Plan. Extends into pedestrian promenade south of Hullabaloo Hall	3	Supportive of adjacent Campus uses. Provides visibility into adjacent dorm rooms.	-2	Provides direct connection along anticipated desire lines. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel. Extends into pedestrian promenade south of Hullabaloo Hall	4	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Assumed low impact to University since supportive of Campus Master Plan, but does use space which could support a larger plaza.	-1	6
		LINEAR PATH	Compatible with Campus Master Plan. Extends into pedestrian promenade south of Hullabaloo Hall	2	Compatible with adjacent Campus uses. Provides visibility into adjacent dorm rooms.	-3	Provides direct connection along anticipated desire lines. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel. Extends into pedestrian promenade south of Hullabaloo Hall	4	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to avoid/minimize utility impacts	0	Assumed low impact to University since supportive of Campus Master Plan, but does use space which could support a larger plaza.	-1	3
	SPIRAL RAMP	PLAZA	Compatible with Campus Master Plan.	4	Compatible with Campus Master Plan. Provides visibility into adjacent dorm rooms.	-1	Would provide direct connectivity for users of the FM 60 SUPs and to Northgate, but would require extra travel for the movement from the north and to the MSC.	3	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Assumed low impact to University since supportive of Campus Master Plan, but does use land designated as a green space.	-1	7
		LINEAR PATH	Compatible with Campus Master Plan.	3	Compatible with Campus Master Plan. Provides visibility into adjacent dorm rooms.	-2	Would provide direct connectivity for users of the FM 60 SUPs and to Northgate, but would require extra travel for the movement from the north and to the MSC.	3	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	Minimal impact anticipated from wall footings and bridge foundations	0	Bridge could be designed to minimize utility impacts	-1	Assumed low impact to University since supportive of Campus Master Plan, but does use land designated as a green space.	-2	3
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Consistent with existing walkways and bike parking on campus. Offers enhanced separation between motorized and non-motorized modes in an area where the police indicate many close-call incidents occur.	5	Supportive of adjacent Campus uses	5	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	FM 60 depressed section would pass by a gas station. A leaking petroleum storage tank was identified at the gas station, but the site appears to have been remediated.	-2	Utility relocations would be required along FM 60, including fiber optic, wastewater, and a 12" water main.	-2	Eliminates access from FM 60 to parking adjacent to Hullabaloo Hall. Assumed no other impact to University - Complimentary to existing walkways and proposed land uses.	-1	14
		LINEAR PATH	Consistent with existing walkways and bike parking on campus. Offers enhanced separation between motorized and non-motorized modes in an area where the police indicate many close-call incidents occur.	4	Supportive of adjacent Campus uses	4	Provides direct connection along anticipated desire lines. Adjacent to existing at-grade crosswalks.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	FM 60 depressed section would pass by a gas station. A leaking petroleum storage tank was identified at the gas station, but the site appears to have been remediated.	-2	Utility relocations would be required along FM 60, including fiber optic, wastewater, and a 12" water main.	-2	Eliminates access from FM 60 to parking adjacent to Hullabaloo Hall. Assumed no other impact to University - Complimentary to existing walkways and proposed land uses.	-1	10

Polo Road Concept Comparison Matrix – Northgate Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS: WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	IMPACT PARAMETERS: ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	Provides capacity for future growth. Plazas may be complimentary to adjacent commercial land uses.	4	Would displace recently constructed mixed-use building and impair internal site circulation.	-3	Provides direct connection to mixed-use development and University Apartments. Requires substantial out-of-path travel for users along FM 60 on north side. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" and 12" water mains, storm sewer, and several fiber optic lines.	-3	Displaces recently constructed mixed-use building.	-5	-2
		LINEAR PATH	Provides capacity for future growth. Linear paths provide direct connectivity to existing travel paths.	3	Would displace recently constructed mixed-use building and impair internal site circulation.	-3	Provides direct connection to mixed-use development and University Apartments. Requires substantial out-of-path travel for users along FM 60 on north side. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" and 12" water mains, storm sewer, and several fiber optic lines.	-3	Displaces recently constructed mixed-use building.	-5	-4
	SPIRAL RAMP	PLAZA	Provides capacity for future growth. Plaza at spiral ramp minimizes impacts while providing a potential space for additional amenities.	5	Supportive of adjacent private land uses.	5	Provides good connectivity for travelers on the shared use path wishing to cross FM 60. Requires substantial out-of-path travel for users from the north.	3	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" and 12" water mains, storm sewer, and several fiber optic lines.	-3	Situated on currently undeveloped commercial pad on north side. Plaza likely complimentary to adjacent commerical land uses.	-2	13
		LINEAR PATH	Provides capacity for future growth. Spiral ramp minimizes impacts.	4	Compatible with adjacent private land uses.	4	Provides good connectivity for travelers on the shared use path wishing to cross FM 60. Requires substantial out-of-path travel for users from the north.	3	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" and 12" water mains, storm sewer, and several fiber optic lines.	-3	Situated on currently undeveloped commercial pad on north side.	-2	10

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Provides capacity for future growth. Linear ramp will cause substantial out-of-path travel for users on FM 60. Plazas are potential amenities for commercial development.	3	Large retaining wall likely less desirable to commercial property owners. May not be conducive for a plaza.	-2	Requires substantial out-of-path travel for users along FM 60. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	1	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	No environmental constraints were identified during preliminary analysis	0	Utility impacts likely to be minimized with careful placement of bridge abutments and bents.	0	Displaces recently constructed commercial building.	-3	1
		LINEAR PATH	Provides capacity for future growth. Linear ramp will cause substantial out-of-path travel for users on FM 60.	2	Large retaining wall likely less desirable to commercial property owners. Linear facility may reduce impacts.	-2	Requires substantial out-of-path travel for users along FM 60. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	1	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	No environmental constraints were identified during preliminary analysis	0	Utility impacts likely to be minimized with careful placement of bridge abutments and bents.	0	Displaces recently constructed commercial building.	-3	-1
	SPIRAL RAMP	PLAZA	Provides capacity for future growth. Plaza at spiral ramp on commercial side minimizes impacts while providing a potential space for additional amenities.	3	Spiral reduces the extent of visual impact of the facility. Plaza may be supportive of adjacent land uses.	-1	Provides good connectivity for travelers on the shared use path wishing to cross FM 60. Requires substantial out-of-path travel for users from the north.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	No environmental constraints were identified during preliminary analysis	0	Utility impacts likely to be minimized with careful placement of bridge abutments and bents.	0	Situated on currently undeveloped commercial pad. Plaza likely complimentary to adjacent commerical land uses.	-1	6
		LINEAR PATH	Provides capacity for future growth. Spiral ramp minimizes impacts.	2	Spiral reduces the extent of visual impact of the facility. Linear path may further minimize visual impact.	-1	Provides good connectivity for travelers on the shared use path wishing to cross FM 60. Requires substantial out-of-path travel for users from the north.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	No environmental constraints were identified during preliminary analysis	0	Utility impacts likely to be minimized with careful placement of bridge abutments and bents.	0	Situated on currently undeveloped commercial pad.	-2	3
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED X-ING	PLAZA	Provides ample capacity for future growth. Provides crossings at all approaches, minimizing out-of-path travel. Plazas may be complimentary to adjacent commercial development and are complimentary to the Campus Master Plan.	5	Supportive of adjacent private land uses. Minimizes grade change for non-motorized users. Retaining wall adjacent to private development may be less desirable.	4	Provides a crossing at all four approaches. Minimizes out-of-path travel for all users.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" and 12" water mains, storm sewer, and several fiber optic lines.	-3	Minimal impact to private property. Plaza likely complimentary to adjacent commercial land uses.	-1	14
		LINEAR PATH	Provides ample capacity for future growth. Provides crossings at all approaches, minimizing out-of-path travel.	4	Compatible with adjacent private land uses. Minimizes grade change for non-motorized users. Retaining wall adjacent to private development may be less desirable. Least feasible disruption to adjacent land use.	4	Provides a crossing at all four approaches. Minimizes out-of-path travel for all users.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" and 12" water mains, storm sewer, and several fiber optic lines.	-3	Minimal impact to private property.	-1	11

Polo Road Concept Comparison Matrix – Campus Side

DESIGN SOLUTION	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS: WIDTH PARAMETERS	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	IMPACT PARAMETERS: ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	TOTAL RANK
TUNNEL	LINEAR RAMP	PLAZA	Provides capacity for future growth. Plazas may be complimentary to adjacent campus land uses.	4	Supportive of adjacent Campus uses.	4	Provides direct connection to shared use paths. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	3	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	3	Requires extension of an enclosed storm drainage system	-1	Requires relocation of 4" water main, fiber optic, and storm sewer. May require relocation of mid-pressure gas supply to University power plant.	-3	Assumed no impact to University - complimentary to existing pathways.	0	10
		LINEAR PATH	Provides capacity for future growth. Linear paths provide direct connectivity to existing travel paths.	3	Compatible with adjacent Campus land uses.	3	Provides direct connection to shared use paths. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	3	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Tunnel provides less of a visual barrier.	2	Requires extension of an enclosed storm drainage system	-1	Requires relocation of 4" water main, fiber optic, and storm sewer. May require relocation of mid-pressure gas supply to University power plant.	-3	Assumed no impact to University - complimentary to existing pathways.	0	7
	SPIRAL RAMP	PLAZA	Provides capacity for future growth. Plaza at spiral ramp provides a potential space for additional amenities. Results in substantial out-of-path travel for most users.	3	Supportive of adjacent Campus uses.	3	Provides good connectivity for travelers wishing on the shared use path wishing to cross FM 60. Requires substantial out-of-path travel for users on Polo Rd.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	5	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" water main, fiber optic, and storm sewer. May require relocation of mid-pressure gas supply to University power plant.	-4	Assumed compatible with Campus Master Plan. May cause slight relocation of future buildings.	-1	8
		LINEAR PATH	Provides capacity for future growth. Spiral ramp may require slight relocation of future buildings in Campus Master Plan. Results in substantial out-of-path travel for most users.	2	Compatible with adjacent Campus uses.	2	Provides good connectivity for travelers wishing on the shared use path wishing to cross FM 60. Requires substantial out-of-path travel for users on Polo Rd.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Tunnel provides less of a visual barrier.	4	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" water main, fiber optic, and storm sewer. May require relocation of mid-pressure gas supply to University power plant.	-4	Assumed compatible with Campus Master Plan. May cause slight relocation of future buildings.	-1	5

DESIGN SOLUTION (CONT.)	END NODE	INFLOW/ OUTFLOW	PERFORMANCE PARAMETERS								IMPACT PARAMETERS						TOTAL RANK
			WIDTH PARAMETER	RANK	ELEVATION PARAMETER	RANK	DESTINATION	RANK	OPPORTUNITIES FOR AESTHETIC ENHANCEMENT	RANK	ENVIRONMENTAL	RANK	UTILITY	RANK	ROW	RANK	
BRIDGE	LINEAR RAMP	PLAZA	Provides capacity for future growth. Linear ramp out-of-path travel can be avoided with additional legs paralleling FM 60. Plazas are potential amenities for future campus land uses.	3	Large retaining wall may not be conducive for a plaza.	3	Provides direct connection to shared use paths. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Plaza provides larger area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	No environmental constraints were identified during preliminary analysis	0	Utility impacts likely to be minimized with careful placement of bridge abutments and bents.	0	Assumed no impact to University - complimentary to existing pathways.	0	10
		LINEAR PATH	Provides capacity for future growth. Linear ramp out-of-path travel can be avoided with additional legs paralleling FM 60.	2	Linear facility may reduce impacts of large above-ground retaining walls.	2	Provides direct connection to shared use paths. Provides stairwell connectivity to crossing shared use paths to minimize out-of-path travel.	2	Linear path provides smaller area for aesthetic enhancement and integration with environment. Linear connection spreads that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	1	No environmental constraints were identified during preliminary analysis	0	Utility impacts likely to be minimized with careful placement of bridge abutments and bents.	0	Assumed no impact to University - complimentary to existing pathways.	0	7
	SPIRAL RAMP	PLAZA	Provides capacity for future growth. Plaza at spiral ramp provides a potential space for additional amenities. Results in substantial out-of-path travel for most users.	2	Spiral reduces the extent of visual impact of the facility. Plaza may be supportive of adjacent land uses.	2	Provides good connectivity for travelers wishing on the shared use path wishing to cross FM 60. Requires substantial out-of-path travel for users on Polo Rd.	1	Plaza provides larger area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	3	No environmental constraints were identified during preliminary analysis	0	Utility impacts likely to be minimized with careful placement of bridge abutments and bents.	0	Assumed compatible with Campus Master Plan. May cause slight relocation of future buildings.	-1	7
		LINEAR PATH	Provides capacity for future growth. Spiral ramp may require slight relocation of future buildings in Campus Master Plan. Results in substantial out-of-path travel for most users.	1	Spiral reduces the extent of visual impact of the facility. Linear path may further minimize visual impact.	1	Provides good connectivity for travelers wishing on the shared use path wishing to cross FM 60. Requires substantial out-of-path travel for users on Polo Rd.	1	Linear path provides smaller area for aesthetic enhancement and integration with environment. Spiral connection concentrates that effect. Bridge acts as a visual barrier, making it more challenging to provide aesthetic enhancement.	2	No environmental constraints were identified during preliminary analysis	0	Utility impacts likely to be minimized with careful placement of bridge abutments and bents.	0	Assumed compatible with Campus Master Plan. May cause slight relocation of future buildings.	-1	4
AT-GRADE (CHANGE IN ROADWAY PROFILE)	AT-GRADE BIKE/ PED	PLAZA	Provides ample capacity for future growth. Provides crossings at all approaches, minimizing out-of-path travel. Plazas may be complimentary to the Campus Master Plan.	5	Supportive of adjacent Campus uses. Minimizes grade change for non-motorized users.	5	Provides a crossing at all four approaches. Minimzies out-of-path travel for all users.	5	Plaza provides larger area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	4	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" water main, fiber optic, and storm sewer. May require relocation of mid-pressure gas supply to University power plant.	-3	Assumed no impact to University - complimentary to existing pathways.	0	16
		LINEAR PATH	Provides ample capacity for future growth. Provides crossings at all approaches, minimizing out-of-path travel.	4	Compatible with adjacent Campus land uses. Minimizes grade change for non-motorized users.	4	Provides a crossing at all four approaches. Minimzies out-of-path travel for all users.	5	Linear path provides smaller area for aesthetic enhancement and integration with environment. At-grade connection provides a more natural transition to surrounding environment.	2	No environmental constraints were identified during preliminary analysis	0	Requires relocation of 4" water main, fiber optic, and storm sewer. May require relocation of mid-pressure gas supply to University power plant.	-3	Assumed no impact to University - complimentary to existing pathways.	0	12

Appendix C:

FM 60 Preliminary Design Plan Concepts

PRELIMINARY
CONCEPT SUBJECT TO CHANGE

APPROXIMATE PROPOSED DEVELOPMENT BOUNDARY (BY OTHERS)

CIRCULATION UNKNOWN PENDING FUTURE DEVELOPMENT

POT 10+00.00

10+00

RELOCATE DUMPSTER

APPROXIMATE PROPOSED DEVELOPMENT BOUNDARY (BY OTHERS)

CHURCH AVE

FM 60 (UNIVERSITY DR)

EXIST ROW

PROP ROW

15+00

16+29.00

RELOCATE 8" HP GAS (ATMOS SERVICE TO A&M POWER PLANT)

RELOCATE 42" SS APPROX 0.8% SLOPE

20+00

POT 21+98.82

SPENCE ST

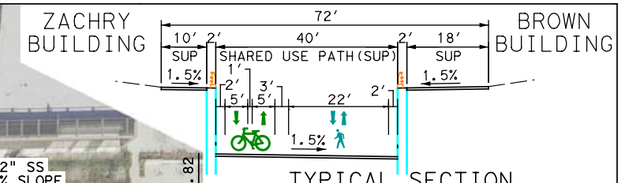
MIN 75'

POTENTIAL PEDESTRIAN PROMENADE IN CAMPUS MASTER PLAN

REMOVE TRAFFIC SIGNAL, MEDIAN OPENING, AND CROSSWALKS

ZACHRY BUILDING

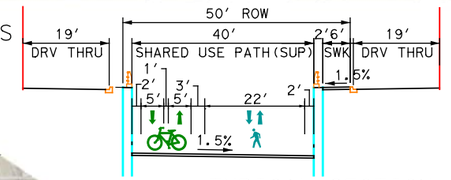
BROWN BUILDING



TYPICAL SECTION
ALONG SPENCE ST (N.T.S.)

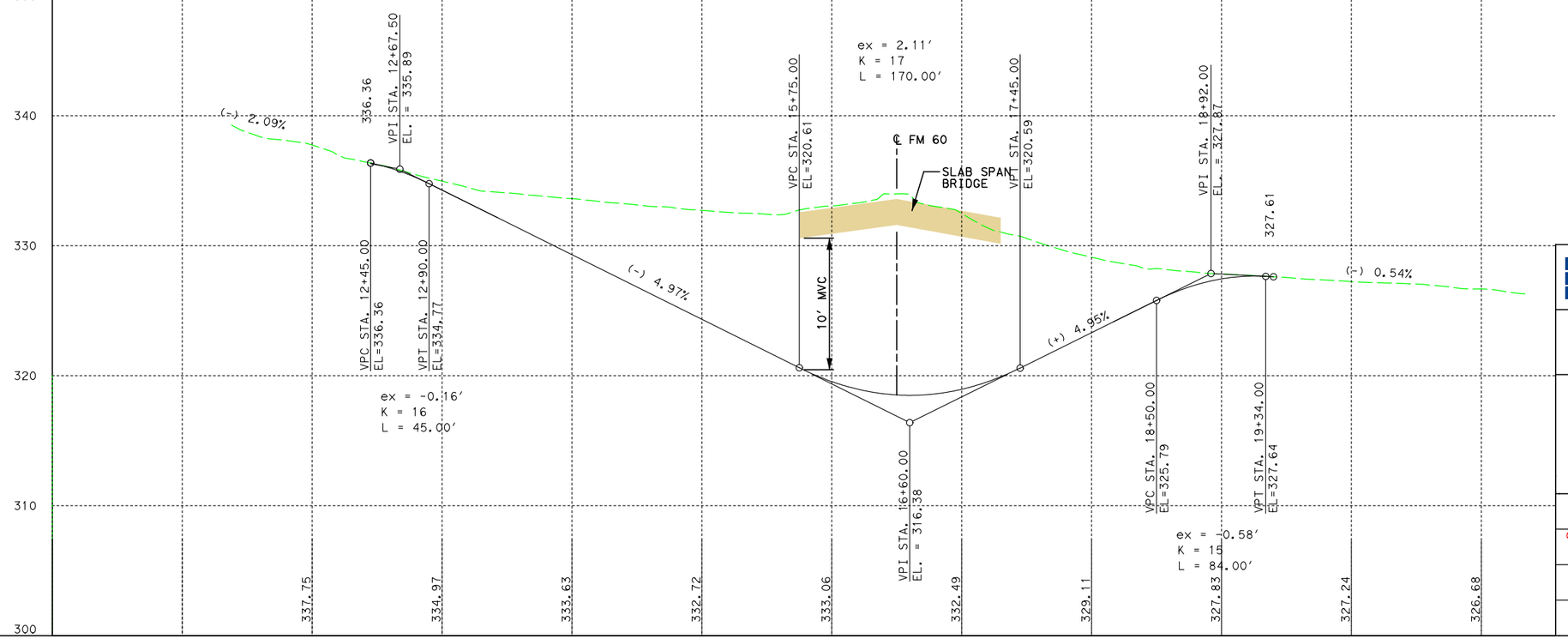
McDONALDS

TACO BELL



TYPICAL SECTION
NORTH OF CAMPUS (N.T.S.)

NOTES:
1. DEPRESSED SECTION IS BELOW NEARBY STORM SEWER TRUNK LINES. ADDITIONAL ANALYSIS REQUIRED TO DETERMINE DRAINGE FEASIBILITY.
2. OTHER UTILITY RELOCATIONS REQUIRED, INCLUDING MID-PRESSURE GAS, 10" W, 12" W, FIBER, AND ELECTRIC



0 50 100 150 200
HORIZONTAL SCALE: 1"=100'

0 5 10 15 20
VERTICAL SCALE: 1"=10'

HALFF
TBPELS FIRM #F-312
13620 BRIARWICK DR
SUITE 100
AUSTIN, TEXAS 78729
TEL (512) 777-4600
FAX (512) 252-8141

SPENCE STREET PEDESTRIAN UNDERPASS CONCEPTUAL LAYOUT

DESIGN	FED. RD. DIV. NO.	STATE PROJECT NO.		HIGHWAY NO.
GRAPHICS				FM 60
	STATE	DISTRICT	COUNTY	
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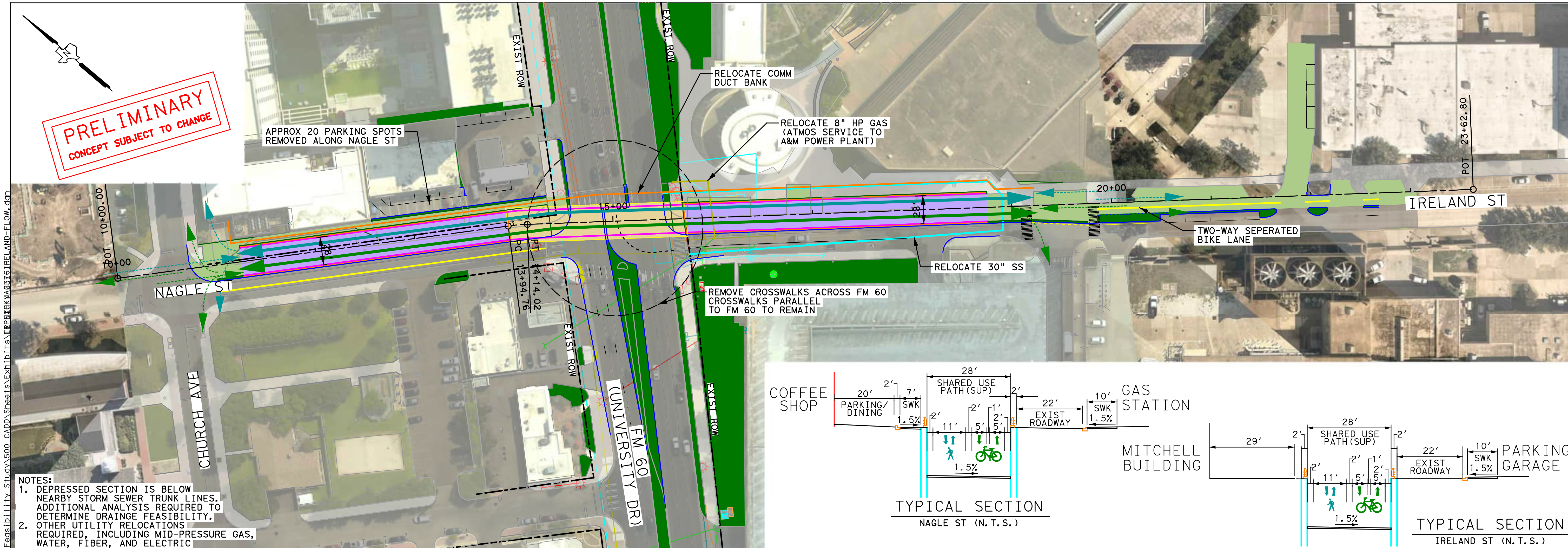
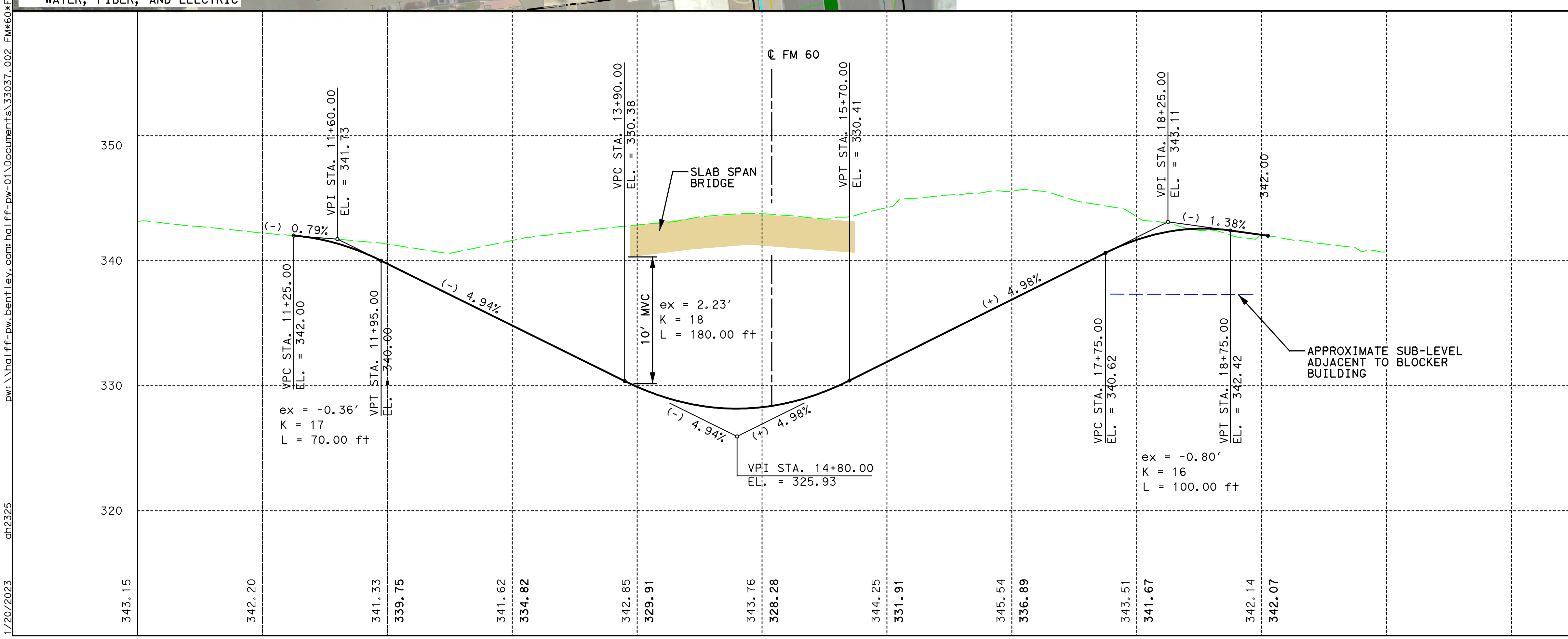
	CONTROL	SECTION	JOB	SHEET NO.
CHECK	0506	01	114	


PRELIMINARY
CONCEPT SUBJECT TO CHANGE
APPROX 20 PARKING SPOTS REMOVED ALONG NAGLE ST
EXIST ROW
RELOCATE COMM DUCT BANK
RELOCATE 8" HP GAS (ATMOS SERVICE TO A&M POWER PLANT)
20+00
POT 23+62.80
IRELAND ST
TWO-WAY SEPERATED BIKE LANE
RELOCATE 30" SS
15+00
POT 10+00.00
10+00
NAGLE ST
PC 13+94.76
PT 14+14.02
REMOVE CROSSWALKS ACROSS FM 60 CROSSWALKS PARALLEL TO FM 60 TO REMAIN
CHURCH AVE
FM 60 (UNIVERSITY DR)
NOTES:
1. DEPRESSED SECTION IS BELOW NEARBY STORM SEWER TRUNK LINES. ADDITIONAL ANALYSIS REQUIRED TO DETERMINE DRAINGE FEASIBILITY.
2. OTHER UTILITY RELOCATIONS REQUIRED, INCLUDING MID-PRESSURE GAS, WATER, FIBER, AND ELECTRIC
COFFEE SHOP
PARKING/ DINING
SWK
SHARED USE PATH (SUP)
EXIST ROADWAY
GAS STATION
TYPICAL SECTION
NAGLE ST (N.T.S.)
MITCHELL BUILDING
PARKING GARAGE
TYPICAL SECTION
IRELAND ST (N.T.S.)


℄ FM 60
VPI STA. 11+60.00 EL. = 341.73
VPC STA. 13+90.00 EL. = 330.38
VPT STA. 15+70.00 EL. = 330.41
VPI STA. 18+25.00 EL. = 343.11
342.00
SLAB SPAN BRIDGE
(-) 0.79%
(-) 4.94%
(+) 4.98%
(-) 1.38%
VPC STA. 11+25.00 EL. = 342.00
VPT STA. 11+95.00 EL. = 340.00
ex = -0.36'
K = 17
L = 70.00 ft
10' MVC
ex = 2.23'
K = 18
L = 180.00 ft
VPI STA. 14+80.00 EL. = 325.93
VPC STA. 17+75.00 EL. = 340.62
VPT STA. 18+75.00 EL. = 342.42
ex = -0.80'
K = 16
L = 100.00 ft
APPROXIMATE SUB-LEVEL ADJACENT TO BLOCKER BUILDING
350
340
330
320
343.15
342.20
341.33 339.75
341.62 334.82
342.85 329.91
343.76 328.28
344.25 331.91
345.54 336.89
343.51 341.67
342.14 342.07
10+00
15+00
20+00

0 50 100 150 200

HORIZONTAL SCALE: 1"=100'

0 5 10 15 20

VERTICAL SCALE: 1"=10'

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AUSTIN, TEXAS 78729
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Texas Department of Transportation

NAGLE & IRELAND STREET
PEDESTRIAN UNDERPASS
CONCEPTUAL LAYOUT

DESIGN	FED. RD. DIV. NO.	STATE PROJECT NO.		HIGHWAY NO.
GRAPHICS	STATE	DISTRICT	COUNTY	FM 60
	TEXAS	BRY	BRAZOS	
CHECK	CONTROL	SECTION	JOB	SHEET NO.
CHECK	0506	01	114	

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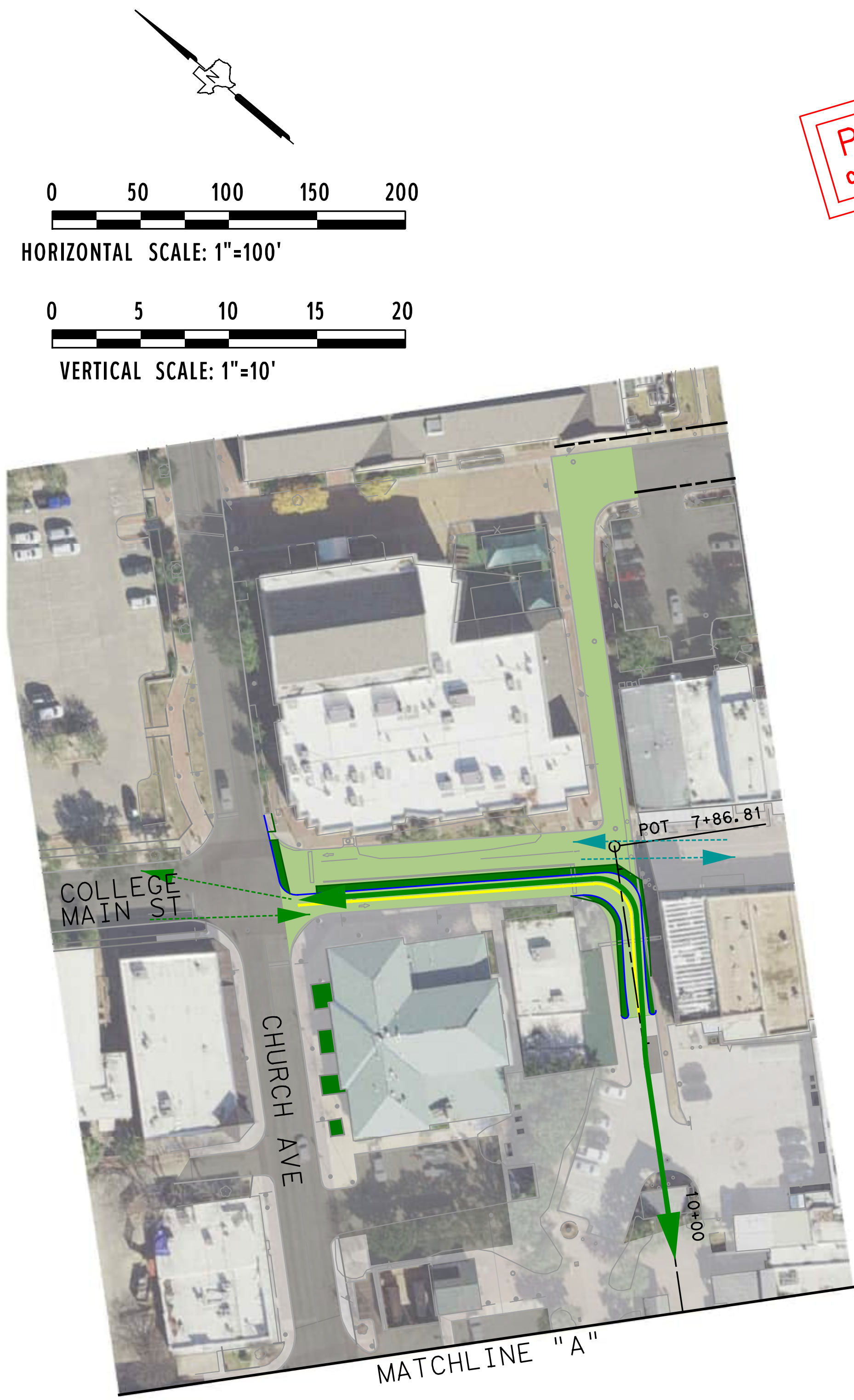
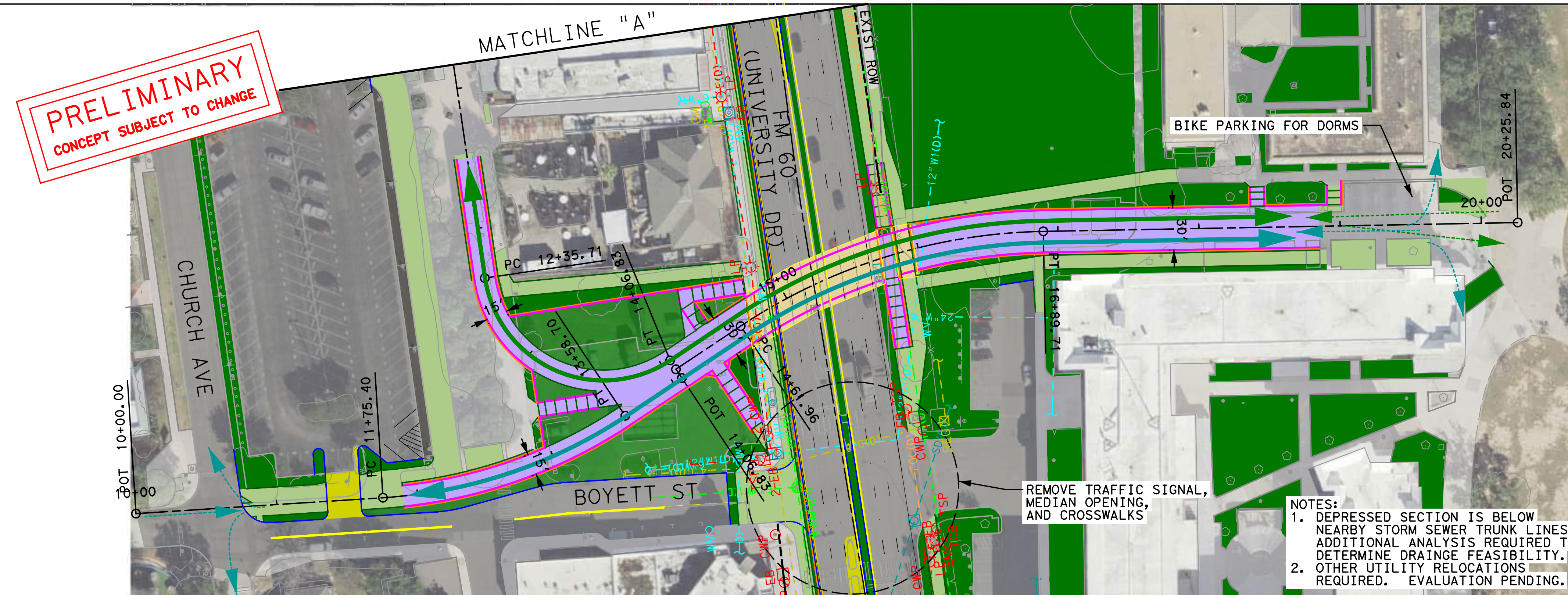
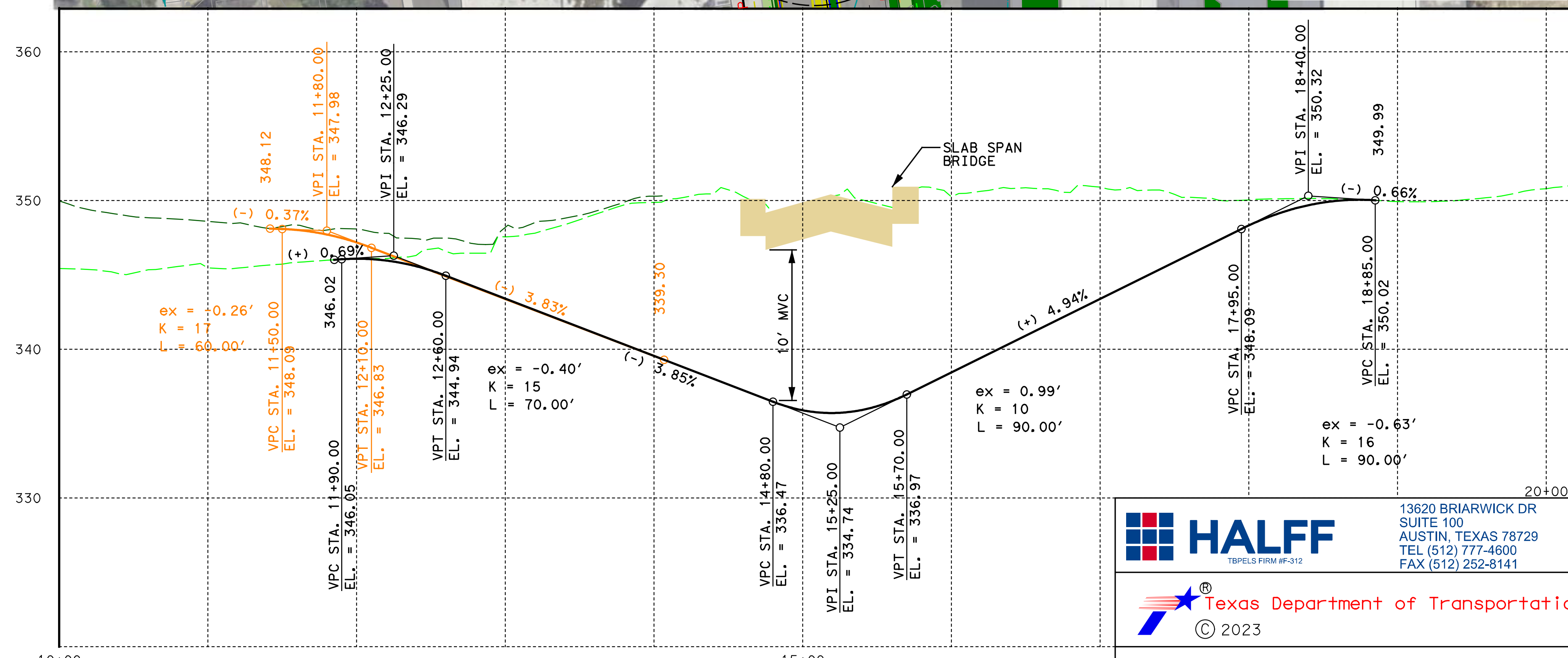
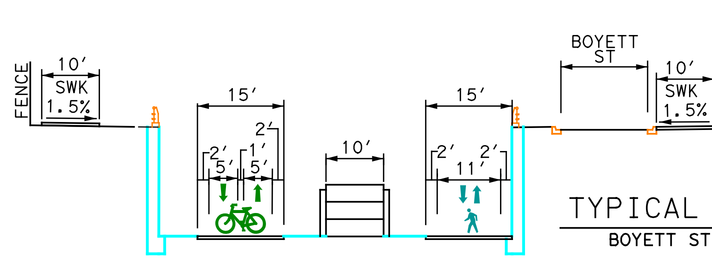
gh2325
1/20/2023

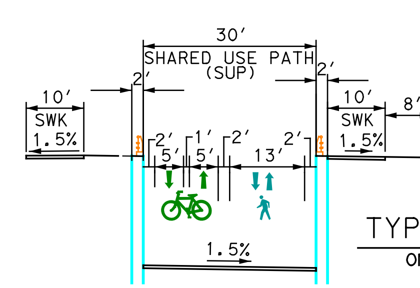








TYPICAL SECTION
BOYETT ST (N.T.S.)



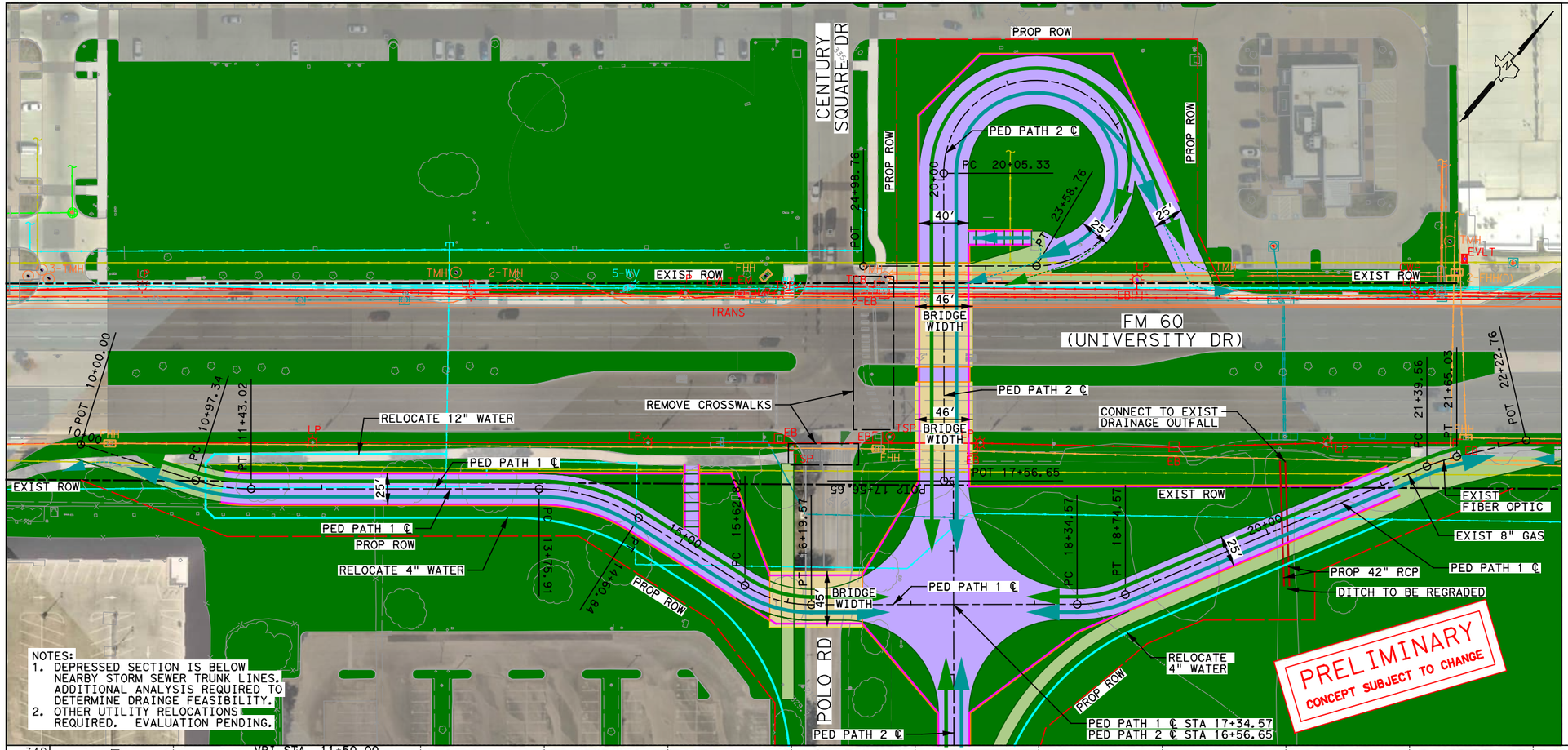
TYPICAL SECTION
ON CAMPUS (N.T.S.)

HALFF
TBPELS FIRM #F-312
13620 BRIARWICK DR
SUITE 100
AUSTIN, TEXAS 78729
TEL (512) 777-4600
FAX (512) 252-8141

Texas Department of Transportation

BOYETT-SCHUMACHER PEDESTRIAN UNDERPASS CONCEPTUAL LAYOUT

DESIGN	FED. RD. DIV. NO.	STATE PROJECT NO.		HIGHWAY NO.
GRAPHICS	STATE	DISTRICT	COUNTY	FM 60
	TEXAS	BRY	BRAZOS	
CHECK	CONTROL	SECTION	JOB	SHEET NO.
CHECK	0506	01	114	

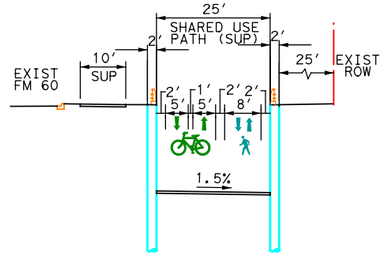


0 50 100 150 200

HORIZONTAL SCALE: 1"=100'

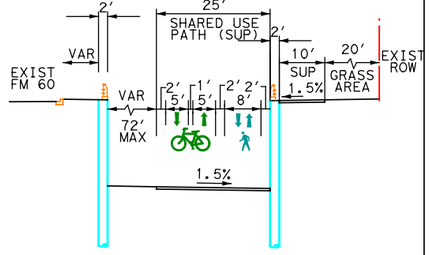
0 5 10 15 20

VERTICAL SCALE: 1"=10'



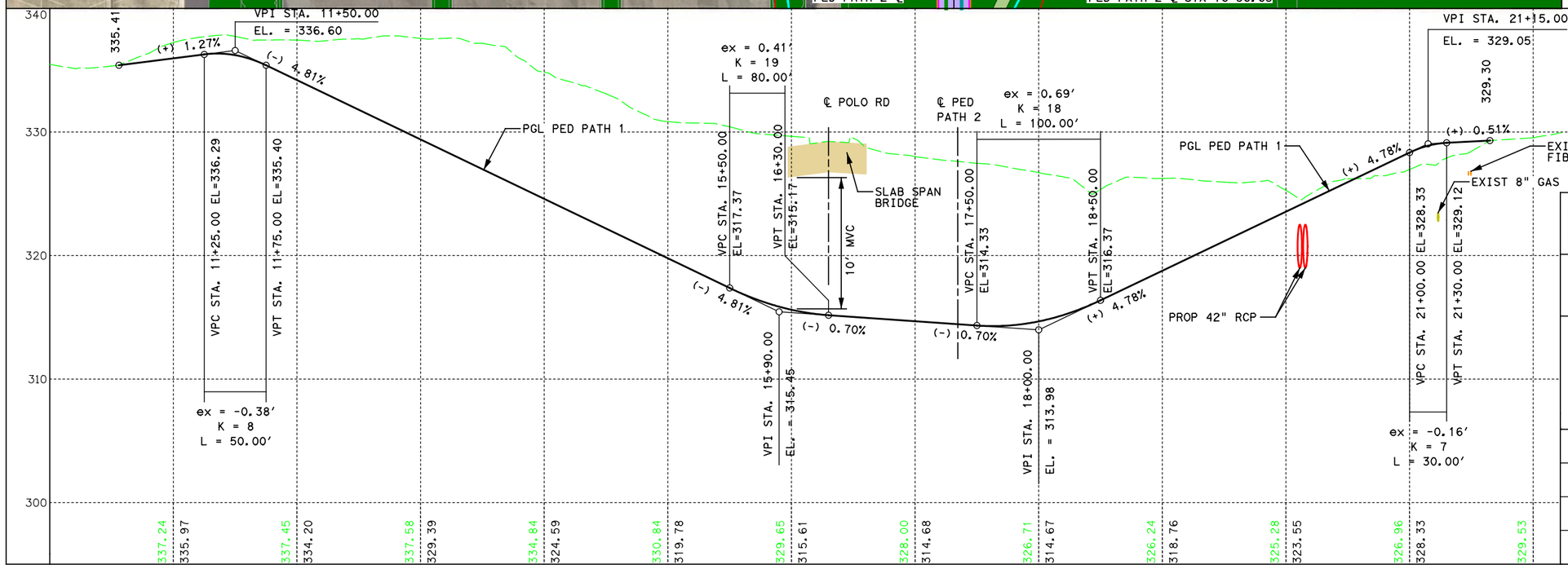
TYPICAL SECTION

WEST OF POLO RD (N.T.S.)



TYPICAL SECTION

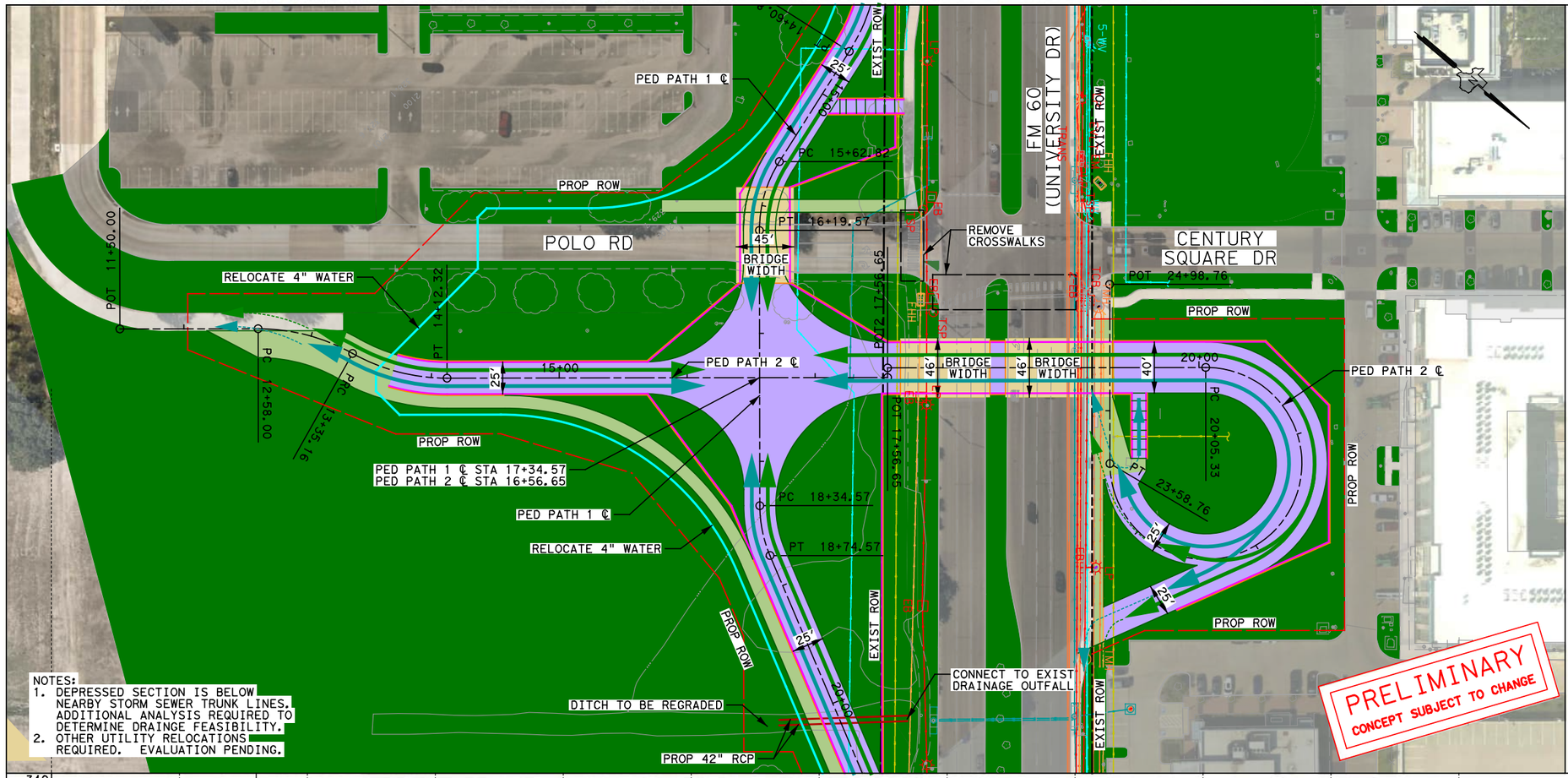
EAST OF POLO RD (N.T.S.)



HALFF
TBPELS FIRM #F-312
13620 BRIARWICK DR
SUITE 100
AUSTIN, TEXAS 78729
TEL (512) 777-4600
FAX (512) 252-8141

POLO RD & CENTURY SQUARE DR PEDESTRIAN UNDERPASS CONCEPTUAL LAYOUT

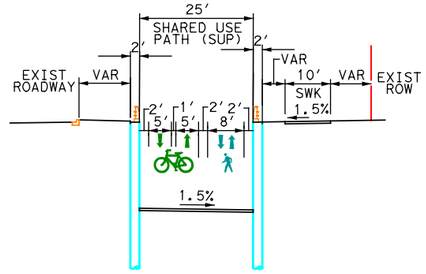
DESIGN	FED. RD. DIV. NO.	STATE PROJECT NO.		HIGHWAY NO.
GRAPHICS				FM 60
	STATE	DISTRICT	COUNTY	
CHECK	TEXAS	BRY	BRAZOS	
	CONTROL	SECTION	JOB	SHEET NO.
CHECK	0506	01	114	1



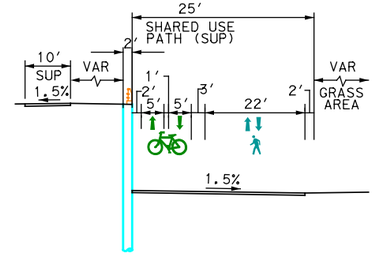
NOTES:
1. DEPRESSED SECTION IS BELOW NEARBY STORM SEWER TRUNK LINES. ADDITIONAL ANALYSIS REQUIRED TO DETERMINE DRAINGE FEASIBILITY.
2. OTHER UTILITY RELOCATIONS REQUIRED. EVALUATION PENDING.

HORIZONTAL SCALE: 1"=100'

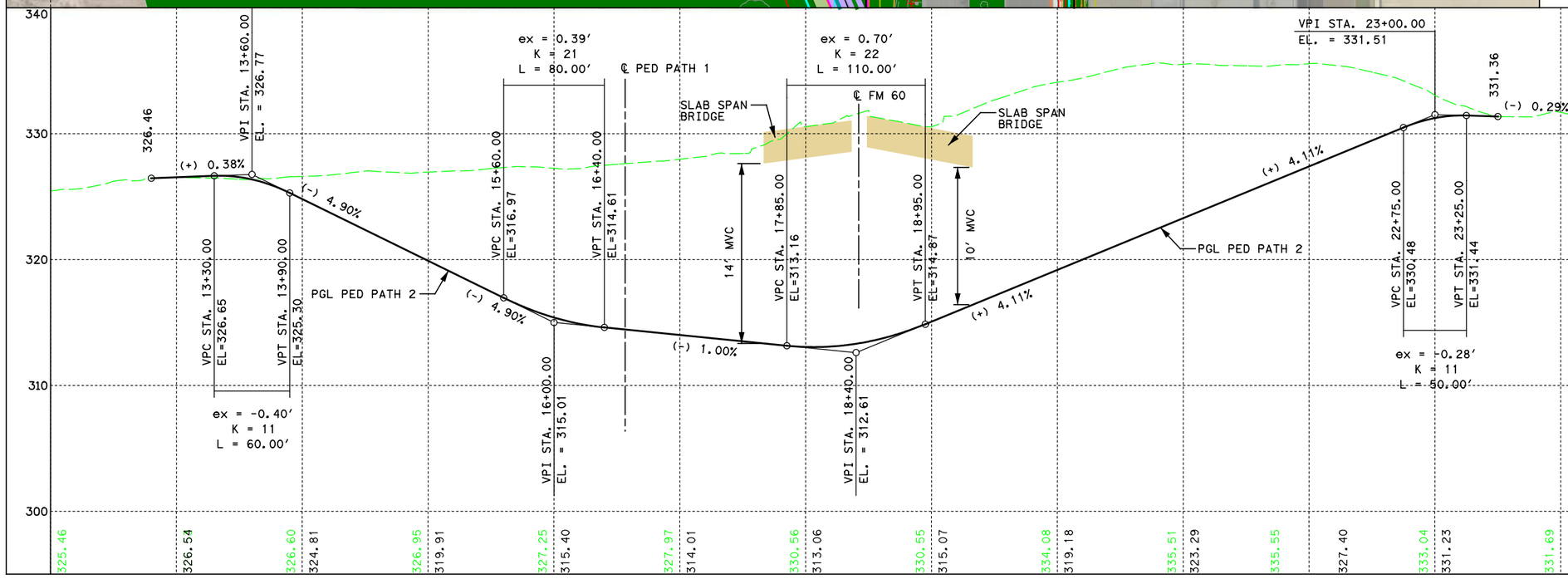
VERTICAL SCALE: 1"=10'



TYPICAL SECTION
POLO RD (N.T.S.)



TYPICAL SECTION
CENTURY SQUARE (N.T.S.)



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DESIGN	FED. RD. DIV. NO.	STATE PROJECT NO.		HIGHWAY NO.
GRAPHICS				FM 60
	STATE	DISTRICT	COUNTY	
CHECK	TEXAS	BRY	BRAZOS	
	CONTROL	SECTION	JOB	SHEET NO.
CHECK	0506	01	114	2

Appendix D:

Polo Road / Century Square Drive / Century Court Bridge and Tunnel Option Renderings

Polo Road / Century Square Drive / Century Court Bridge option

Polo Road / Century Square Drive / Century Court Tunnel option with linear ramps

Appendix E:
Nagle Stret / Ireland Street (north) Option Rendering

Nagle Street / Ireland Street North option

Appendix F:

FM 60 Funding Options

Funding

The concepts outlined in this document currently have no construction timescale or source of funding allocated to them, however, there are several possible funding sources available to TxDOT and local governments that could help achieve the concepts outlined above. These funding sources are summarized below.

1. U.S. DOT – INFRASTRUCTURE FOR REBUILDING AMERICA (INFRA) PROGRAM

• Purpose: Supports major multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of freight and passenger movement across both rural and urban areas.

• Time: May deadline annually in 2025 and 2026

• Funding Range: $5 million - $25 million

• Match: 80% Federal / 20% Local

2. U.S. DOT – NATIONAL INFRASTRUCTURE PROJECT ASSISTANCE PROGRAM (MEGA)

• Purpose: A highly competitive program that supports large, complex projects that are difficult to fund by other means and likely to generate national or regional economic, mobility, or safety benefits. Eligible projects include highway, bridge, freight, port, passenger rail, and public transportation projects that are part of one of the other project types.

• Time: May deadline annually in 2025 and 2026

• Funding Range: No award minimum

• Match: 80% Federal / 20% Local

3. U.S. DOT – REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY (RAISE) GRANT PROGRAM

• Purpose: Aim to close the funding gap for surface transportation infrastructure projects that have a significant local or regional impact. The program provides for USDOT to invest in road, rail, transit, and port projects that align with national objectives.

• Time: February deadline annually in 2025 and 2026

• Funding Range: Maximum Award - $25 million; Capital Projects - Minimum Award: $5 million;

Planning – No minimum award

• Match: 80% Federal / 20% Local

4. BRYAN/COLLEGE STATION METROPOLITAN PLANNING ORGANIZATION (BCSMPO) - CARBON REDUCTION PROGRAM

• Purpose: This program falls under the U.S. Department of Transportation - Federal Highway Administration, filtering funds down to the state's MPO (Bryan/College Station MPO). The program funds a wide range of projects designed to reduce transportation emissions from on-road highway sources. Eligible projects will support the reduction of transportation emissions, including the construction, planning, and design of trial facilities for pedestrians, cyclists, and other nonmotorized forms of transportation, public transportation projects, and congestion management technologies.

• Time: Spring deadline, subject to change in the future

• Funding Range: Undetermined

• Match: 80% Federal / 20% Local

5. U.S. DOT – SAFE STREETS FOR ALL (SS4A) GRANT PROGRAM

• Purpose: Funds local, regional and tribal initiatives through grants to prevent roadway deaths and serious injuries. Eligible projects include developing or updating a comprehensive safety action plan, conducting planning, design, or development activities in support of an action plan, or carrying out projects and strategies identified in an action plan.

• Time: April, May, and August deadlines annually

• Funding Range: Planning - $100,000 - $10 million; Implementation - $2.5 million - $25 million

• Match: 80% Federal / 20% Local

6. ACTIVE TRANSPORTATION INFRASTRUCTURE INVESTMENT PROGRAM (ATIIP)

• Purpose: This program funds the planning, design, and construction of active transportation facilities to provide safe and connected active transportation networks or active transportation spines. Active transportation networks include facilities that connect between destinations within a community or metropolitan region, including schools, workplaces, residences, businesses, recreation areas, medical facilities, and other community areas. Active transportation spines are active transportation facilities that connect communities, metropolitan regions, or States.

• Time: June deadline, subject to change.

• Funding Range: Planning & Design – $100,000 minimum total costs; Construction - $15 million total costs

• Match: 80% Federal / 20% Local, unless the project is in a disadvantaged community.