Traffic Noise Technical Report

Interstate Highway (IH) 30

Tarrant County, Texas
CSJ: 1068-01-214

July 2020

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

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1.0 INTRODUCTION

The Texas Department of Transportation (TxDOT) Fort Worth District is proposing to improve Interstate Highway (IH) 30 from Linkcrest Drive to IH 820 in Tarrant County, Texas. The proposed improvements would widen the existing four-lane divided highway to a six-lane divided highway plus continuous one-way frontage roads in either direction that include pedestrian and bicycle facilities along the length of the project. The project length is approximately 3.26 miles long in total. The project would also eliminate the left entrance onto the westbound I-30 main lanes at the interchange with Spur 580 and reconstruct the interchange of I-30 and SP 580, providing 18'-6" of vertical clearance at all underpasses (I-30 freeway designated as a Freight Mobility Corridor), provide an I-30 westbound exit to RM 2871 (Longvue Avenue), and would include the reconstruction of interchange I-30 and RM 2871.

2.0 TRAFFIC NOISE ANALYSIS

This analysis was accomplished in accordance with TxDOT's (Federal Highway Administration [FHWA] approved) *Guidelines for Analysis and Abatement of Roadway Traffic Noise* (2011).

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

Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as "dB(A)."

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

The traffic noise analysis process includes the following elements:

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

The FHWA has established the following Noise Abatement Criteria (NAC), shown in **Table 1**, for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur.

Table 1: FHWA Noise Abatement Criteria (NAC)

Activity Category	FHWA dB(A) Leq	Activity Description
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Residential
C	67 (exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.
Source: *Guidelines for Analysis and Abatement of Roadway Traffic Noise* (TxDOT 2011)		

A noise impact occurs when either the absolute or relative criterion is met:

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

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

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

The FHWA traffic noise modeling software was used to calculate existing and predicted traffic noise levels. The model primarily considers the number, type, and speed of vehicles; highway alignment and grade; cuts, fills, and natural berms; surrounding terrain features; and the locations of activity areas likely to be impacted by the associated traffic noise. See **Table 2** and **Appendix B** for the traffic data utilized in the IH 30 traffic noise models, as provided by TxDOT's Transportation Planning and Programming Division (TPP). The existing conditions traffic line diagram was utilized for completing parts of the proposed traffic when the proposed line diagram lacked traffic volumes. Worst-case traffic volumes were used when multiple traffic volumes were provided for the same road.

Table 2: Traffic Noise Analysis Parameters

Roadway	Speed Limit	Design Hour Volume (K-Factor)*	Average Annual Daily Traffic**		Vehicle Distribution (%)		
			2025	2045	Light Duty	Medium Duty	Heavy Duty
IH 30: From Linkcrest Dr to IH 820	60 MPH	9.4	86,200	114,950	90.1	2.9	7.0

Notes:
*Design Hour Volume (K-Factor) is defined as the proportion of annual average daily traffic occurring in an hour, which is used for designing and analyzing highway traffic flow and for weighting average annual daily traffic.
**Average annual daily traffic is the total volume of vehicle traffic of a highway or road for a year divided by 365 days, which is a used to measure how busy the road is.

Existing and predicted traffic noise levels were modeled at receiver locations (see **Table 3** and **Appendix A**) that represent the land use activity areas adjacent to the project area that might be impacted by traffic noise and might potentially benefit from feasible and reasonable noise abatement. Receiver locations are generally identified as outdoor areas that experience frequent human activity and might be impacted by traffic noise. Receivers were placed closest to the ROW for locations having more than one area of frequent human activity.

Table 3: Traffic Noise Levels [dB(A) Leq]

Receiver ID	Land Use	NAC Category	NAC Level	Predicted Traffic Noise Level [dB(A) Leq]			Noise Impact
				Existing (2025)	Predicted (2045)	Change (+/-)	
R1	Residential	B	67	72	72	0	Y
R2	Residential	B	67	66	68	+2	Y
R3	Residential	B	67	61	63	+2	N
R4	Residential	B	67	62	65	+3	N
R5	Residential	B	67	62	64	+2	N
R6	Residential	B	67	71	75	+4	Y
R7	Active Sports Area	C	67	70	71	+1	Y
R8	Active Sports Area	C	67	64	65	+1	N
R9	Residential	B	67	67	68	+1	Y
R10	Church	C	67	59	61	+2	N
R11	School (Sports Field)	C	67	69	68	-1	Y
R12	Active Sports Area	C	67	62	61	-1	N
R13a	Residential	B	67	56	56	0	N
R13b	Residential	B	67	59	59	0	N
R13c	Residential	B	67	60	60	0	N

3.0 NOISE ABATEMENT MEASURES

As indicated in **Table 3**, the proposed project would result in traffic noise impacts; therefore, the following noise abatement measures were considered: traffic management, alteration of horizontal and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone, and the construction of noise barriers.

Before any abatement measure can be proposed for incorporation into the proposed project, it must be both feasible and reasonable. In order to be "feasible," the abatement measure must be able to reduce the noise level at greater than 50% of impacted, first row receivers by at least five dB(A); and to be "reasonable," it must not exceed the cost-effectiveness criterion of $25,000 for each receiver that would benefit by a reduction of at least five dB(A) and the abatement measure must be able to reduce the noise level for at least one impacted, first row receiver by at least seven dB(A).

Traffic management - Control devices could be used to reduce the speed of the traffic; however, the minor benefit of one dB(A) per five mph reduction in speed does not outweigh the associated increase

in congestion and air pollution. Other measures such as time or use restrictions for certain vehicles are prohibited on state highways.

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

Buffer zone - The acquisition of undeveloped property to act as a buffer zone is designed to avoid rather than abate traffic noise impacts and, therefore, is not feasible.

Noise barriers - This is the most commonly used noise abatement measure. Noise barriers were evaluated for each of the impacted receiver locations.

Noise barriers would not be feasible or reasonable for the following impacted Category B and C receivers and, therefore, are not proposed for incorporation into the proposed project:

R1: This receiver represents two first row and four secondary receivers for a single-family residential neighborhood, Mary's Creek Estates, located along the frontage road on the south side of IH 30, west of SH 580. A noise barrier was modeled at the ROW line with a break at Devonaire Drive to maintain access to the neighborhood. A segmented noise barrier 20 feet in height and 320 total feet in length would not achieve the minimum feasible reduction of five dB(A) at greater than 50% of impacted, first row receivers, and would not achieve the noise reduction design goal of seven dB(A) at one or more receivers. Therefore, a noise barrier at this location is not proposed for incorporation into the project.

R2: This receiver represents six first row and seven secondary receivers for a single-family residential neighborhood with an existing barrier, Lost Creek Garden Homes, located along the frontage road on the south side of IH 30, west of SH 580. A noise barrier was modeled at the ROW line with a break at Virginia Way to maintain access to the neighborhood. A noise barrier 16 and 20 feet in height and 343 feet in length would not achieve the minimum feasible reduction of five dB(A) at greater than 50% of impacted, first row receivers, and would not achieve the noise reduction design goal of seven dB(A) at one or more receivers. Therefore, a noise barrier at this location is not proposed for incorporation into the project.

R6: This receiver represents one first row and three secondary receivers for a single-family residential neighborhood, Palmilla Springs, located along the frontage road on the north side of IH 30, west of Chapel Creek. A noise barrier was modeled at the ROW line. A noise barrier 12 feet in height and 310 feet in length would achieve the minimum feasible reduction of five dB(A) at greater than 50% of impacted, first row receivers and reduce the noise level at one or more receivers by at least seven

dB(A). However, the cost of the barrier would exceed the criteria of $25,000 per benefitted receiver. Therefore, a barrier at this location is not reasonable and is not proposed for incorporation into the project.

R7: This receiver represents Leonard Golf Links along the south side of IH 30, east of the IH 820 interchange. The representative receiver was placed on the edge of the golfing green next to the road. This receiver was evaluated using the impact area methodology. By placing receivers in the golf parcel, a 66 dB(A) impact was determined to be 195 feet from the ROW. A contour 195 feet from the ROW resulted in a 3.1-acre impact area of the parcel. The 3.1-acre impact area was then divided by the average residential lot size in the area of 0.19-acre, resulting in16 receivers for use in the barrier analysis. The analysis determined that a noise barrier 20 feet in height and 728 feet in length would not achieve the minimum feasible reduction of five dB(A) at greater than 50% of impacted, first row receivers, and would not achieve the noise reduction design goal of seven dB(A) at one or more receivers. Therefore, a noise barrier at this location is not proposed for incorporation into the project.

R9: This receiver represents single-family residential home with a backyard trampoline located along the frontage road on the south side of IH 30, east of Chapel Creek. A noise barrier was modeled at the ROW line. A noise barrier 20 feet in height and 386 feet in length would not achieve the minimum feasible reduction of five dB(A) at greater than 50% of impacted, first row receivers, and would not achieve the noise reduction design goal of seven dB(A) at one or more receivers. Therefore, a noise barrier at this location is not proposed for incorporation into the project.

Proposed Abatement

Noise barriers would be feasible and reasonable for the following impacted receptors, and therefore, are proposed for incorporation into the project (see **Table 4**):

R11: This receiver represents All Saints Episcopal School along the south side of IH 30, west of the IH 820 interchange. The representative receiver was placed on the edge of the sports field next to the road. This receiver was evaluated using the impact area methodology. By placing receivers in the school parcel, a 66dB(A) impact was determined to be 295 feet from the ROW. A contour 295 feet from the ROW and between the eastern fence line and parking lot, resulted in a 3.7-acre impact area of the parcel. The 3.7-acre impact area was then divided by the average residential lot size in the area of 0.19 acre, resulting in 19 receivers for use in the barrier analysis. The analysis determined that a noise barrier 8 to 18 feet in height, being taller near the sports field, and 1,791 feet in total length would achieve the minimum feasible reduction of five dB(A) at greater than 50% of impacted, first row receivers and reduce the noise level at one or more receivers by at least seven dB(A) at a total cost of

$347,873. The first-row receivers achieved a five dB(A) reduction (19 total benefitted) bringing the cost to $18,309 per benefitted receiver. Therefore, a barrier at this location is proposed for incorporation into the project.

Table 4: Noise Barrier Proposal (preliminary)

Representative Receiver(s)	Total # Benefitted Receivers	Height (feet)	Length (feet)	Total Cost	Cost per Benefitted Receiver
R11	19	8-18	1,791	$347,873	$18,309

Any subsequent project design changes may require a reevaluation of this preliminary noise barrier proposal. The final decision to construct the proposed noise barrier will not be made until completion of the project design, utility evaluation, and polling of all benefited and adjacent property owners and residents.

4.0 NOISE PLANNING

To avoid noise impacts that may result from future development of properties adjacent to the proposed project, local officials responsible for land use control programs must ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted (2039) noise impact contours (see **Table 5**).

Table 5: Traffic Noise Contours [dB(A) Leq]

Location	Distance from ROW	
	NAC Category B & C 66 dB(A)	NAC Category E 71 dB(A)
North of IH 30, west of the US 580 Interchange	360 feet	140 feet
North of IH 30, east of US 580 Interchange	100 feet	ROW
South of IH 30, east of US 580 Interchange	280 feet	80 feet
North of IH 30, west of the FM 2871	260 feet	70 feet
North of IH 30, west of IH 820 interchange	50 feet	ROW

5.0 CONCLUSION

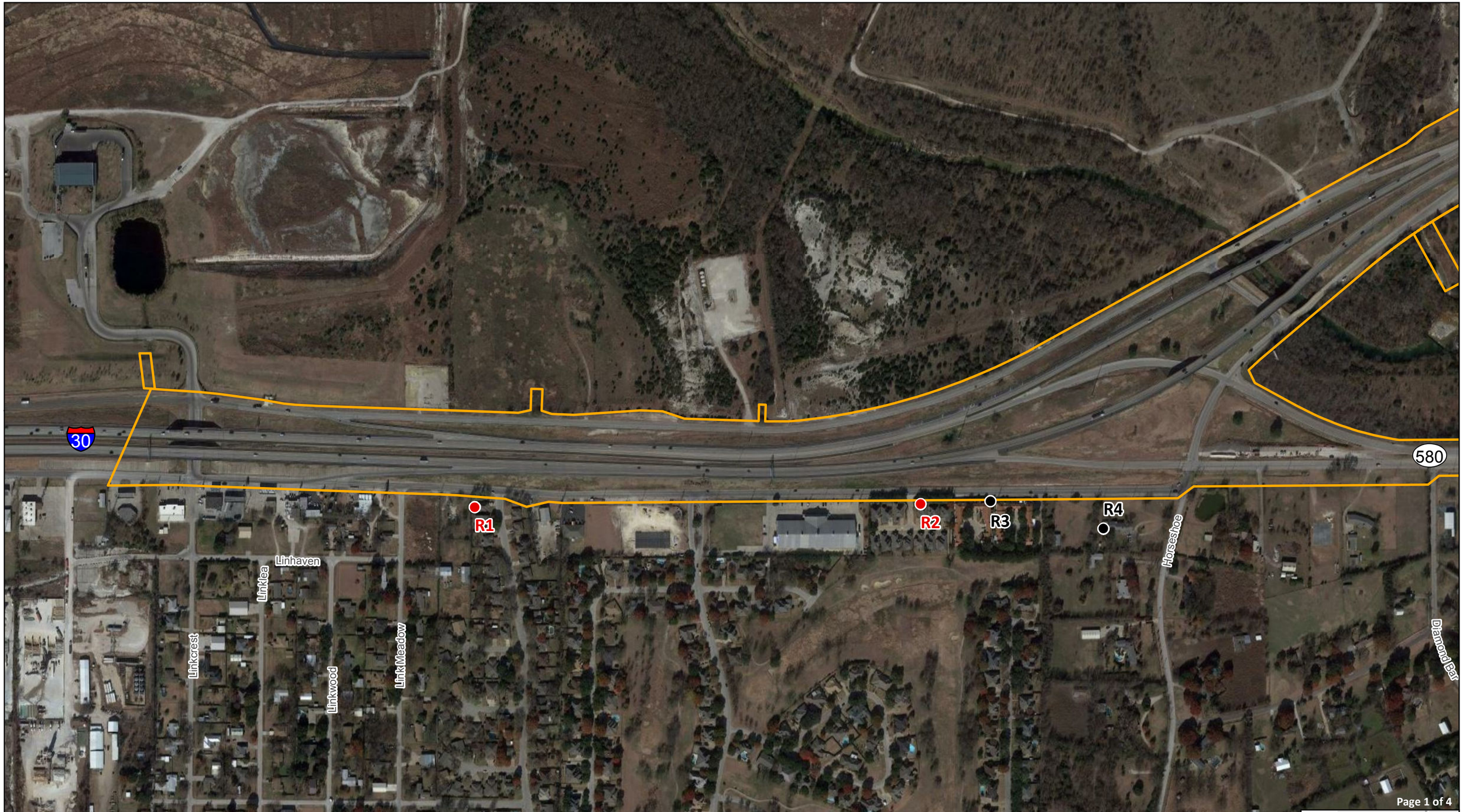
Based on this modeled noise analysis, there are 7 projected noise impacts within the corridor. Barrier analyses were conducted, and results indicated that a barrier would be feasible and reasonable for one of the impacted representative receivers.

Noise associated with the construction of the proposed project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers are expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is expected. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

A copy of this traffic noise analysis would be made available to local officials. On the date of approval of this document (Date of Public Knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new development adjacent to the proposed project.

APPENDIX A

Representative Noise Receivers Exhibit



Representative Noise Receivers

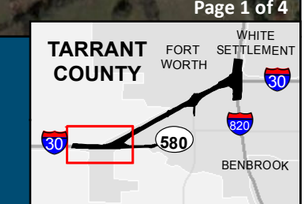
IH 30
From Linkcrest Dr to IH 820
Tarrant County, TX
CSJ: 1068-01-214

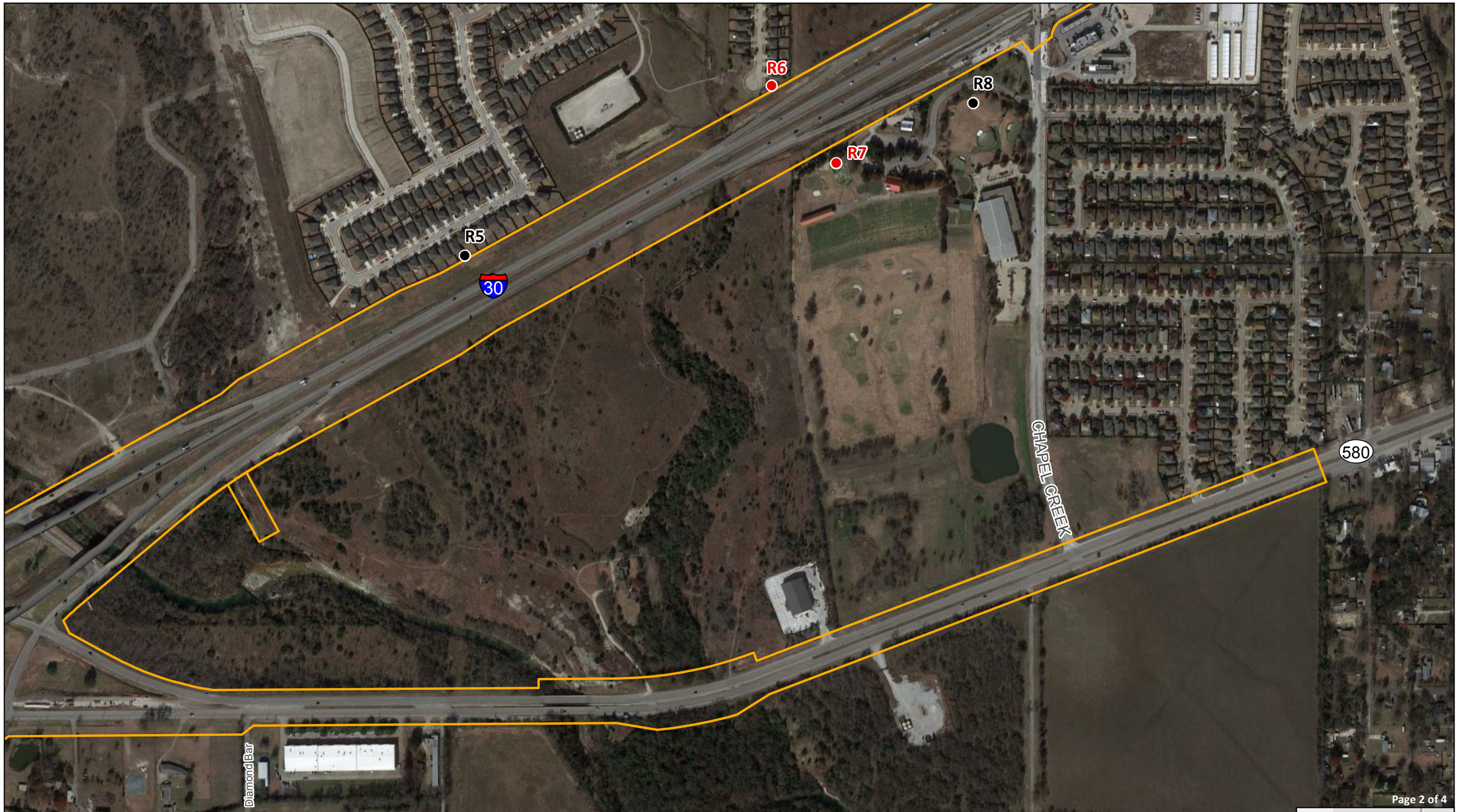
Project Area
Proposed Barrier

Noise Receiver
- Benefitted
- Impacted
- Non-Impacted

Feet
0 400 800

Source: Google Imagery (2018)





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Representative Noise Receivers

IH 30
From Linkcrest Dr to IH 820
Tarrant County, TX
CSJ: 1068-01-214

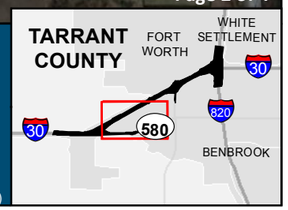
Project Area
Proposed Barrier

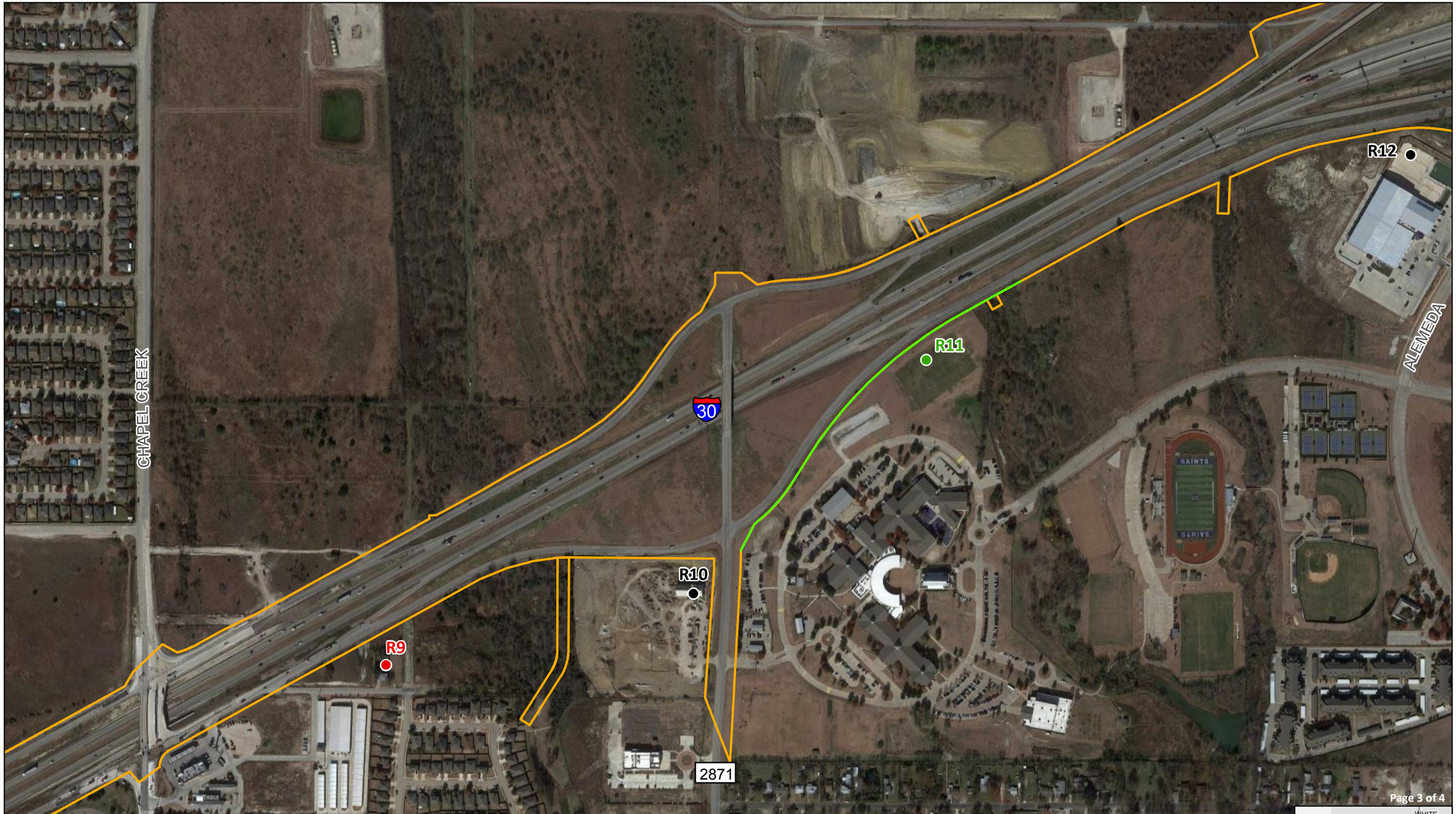
Noise Receiver
- Benefitted
- Impacted
- Non-Impacted

N

Feet
0 400 800

Source: Google Imagery (2018)





Representative Noise Receivers

IH 30
From Linkcrest Dr to IH 820
Tarrant County, TX
CSJ: 1068-01-214

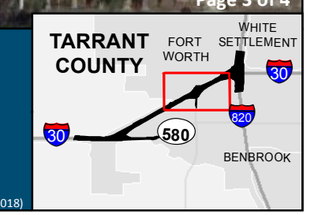
Project Area
Proposed Barrier

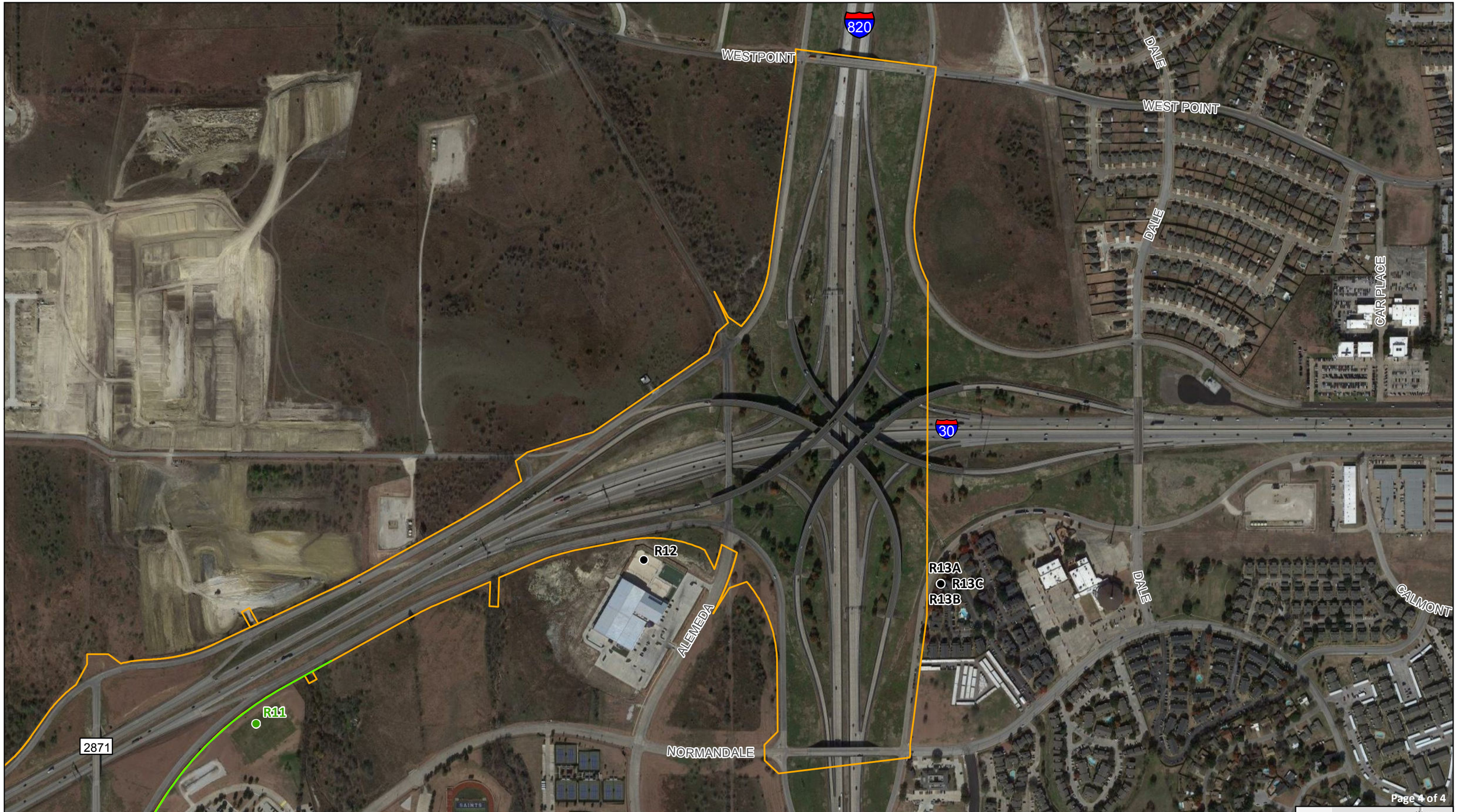
Noise Receiver
- Benefitted
- Impacted
- Non-Impacted

N

Feet
0 400 800

Source: Google Imagery (2018)





Representative Noise Receivers

IH 30
From Linkcrest Dr to IH 820
Tarrant County, TX
CSJ: 1068-01-214

Project Area
Proposed Barrier

Noise Receiver
- Benefitted
- Impacted
- Non-Impacted

N

Feet
0 400 800

Source: Google Imagery (2018)

APPENDIX B

Traffic Data Memo

Texas Department of Transportation

FILE

MEMO

December 15, 2017

To: Loyl C. Bussell, P.E., District Engineer
John Cordary Jr., P.E., Director of TPD

Through: William E. Knowles, P.E.
Traffic Analysis Section Director, TPP

From: Greg Lancaster
Planner, TPP

Subject: Traffic Data
CSJ: 1068-01-214, etc.
I-30:
From Linkcrest Drive
To Las Vegas Trail
Tarrant County

Attached are copies of schematics depicting 2025, 2045 and 2055 anticipated average daily traffic volumes and turning movements along I-30 in your request. Also attached are tabulations showing traffic analysis for highway design for the 2025 to 2045 twenty year period and 2025 to 2055 thirty year period for the described limits of the route. Included are tabulations showing data for use in air and noise analysis.

This analysis includes proposed traffic growth for the Walsh Ranch development per the Districts request.

Due to differences in traffic volumes this project was separated into two sections.

Section 1: From Linkcrest Drive to I-820
Section 2: From I-820 to Las Vegas Trail

Please refer to your original memorandum dated February 9, 2017.

If you have any questions or need additional information, please contact Greg Lancaster at (512) 486-5091.

Attachments

CC: David Fenton, Transportation Engineer, Fort Worth District
Design Division

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Fort Worth District

December 11, 2017

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Period (2025 to 2045) Flexible Pavement	S N	Rigid Pavement	SLAB
I-30 Section 1 From Linkcrest Drive To I-820 Tarrant County	86,200	114,950	58 - 42	9.4	22.0	9.9	13,600	20	75,890,000	3	104,943,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	78.0	90.1
Medium Duty	6.4	2.9
Heavy Duty	15.6	7.0

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 30 Year Period (2025 to 2055) Flexible Pavement	S N	Rigid Pavement	SLAB
I-30 Section 1 From Linkcrest Drive To I-820 Tarrant County	86,200	129,250	58 - 42	9.4	22.0	9.9	13,700	20	121,928,000	3	168,606,000	8"

NOT INTENDED FOR CONSTRUCTION
BIDDING OR PERMIT PURPOSES
William Erick Knowles, P.E.
Serial Number 84704

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

Fort Worth District

December 11, 2017

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2045	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 20 Year Period (2025 to 2045) Flexible Pavement	S N	Rigid Pavement	SLAB
I-30 Section 2 From I-820 To Las Vegas Trail Tarrant County	115,500	154,050	58 - 42	9.4	19.0	8.6	13,700	20	87,869,000	3	121,478,000	8"

Data for Use in Air & Noise Analysis

Vehicle Class	Base Year % of ADT	Base Year % of DHV
Light Duty	81.0	91.4
Medium Duty	5.6	2.5
Heavy Duty	13.4	6.1

Description of Location	Average Daily Traffic 2025	Average Daily Traffic 2055	Base Year Dir Dist %	Base Year K Factor	Base Year Percent Trucks ADT	Base Year Percent Trucks DHV	ATHWLD	Percent Tandem Axles in ATHWLD	Total Number of Equivalent 18k Single Axle Load Applications One Direction Expected for a 30 Year Period (2025 to 2055) Flexible Pavement	S N	Rigid Pavement	SLAB
I-30 Section 2 From I-820 To Las Vegas Trail Tarrant County	115,500	173,250	58 - 42	9.4	19.0	8.6	13,800	20	141,195,000	3	195,201,000	8"

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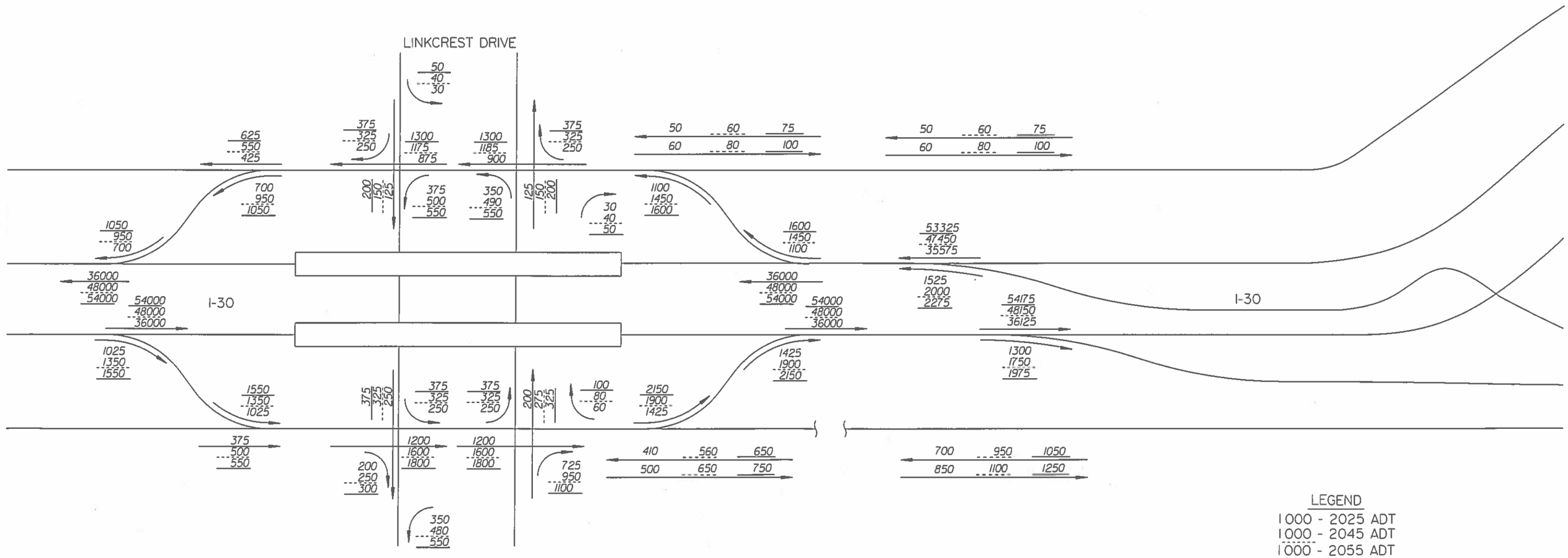
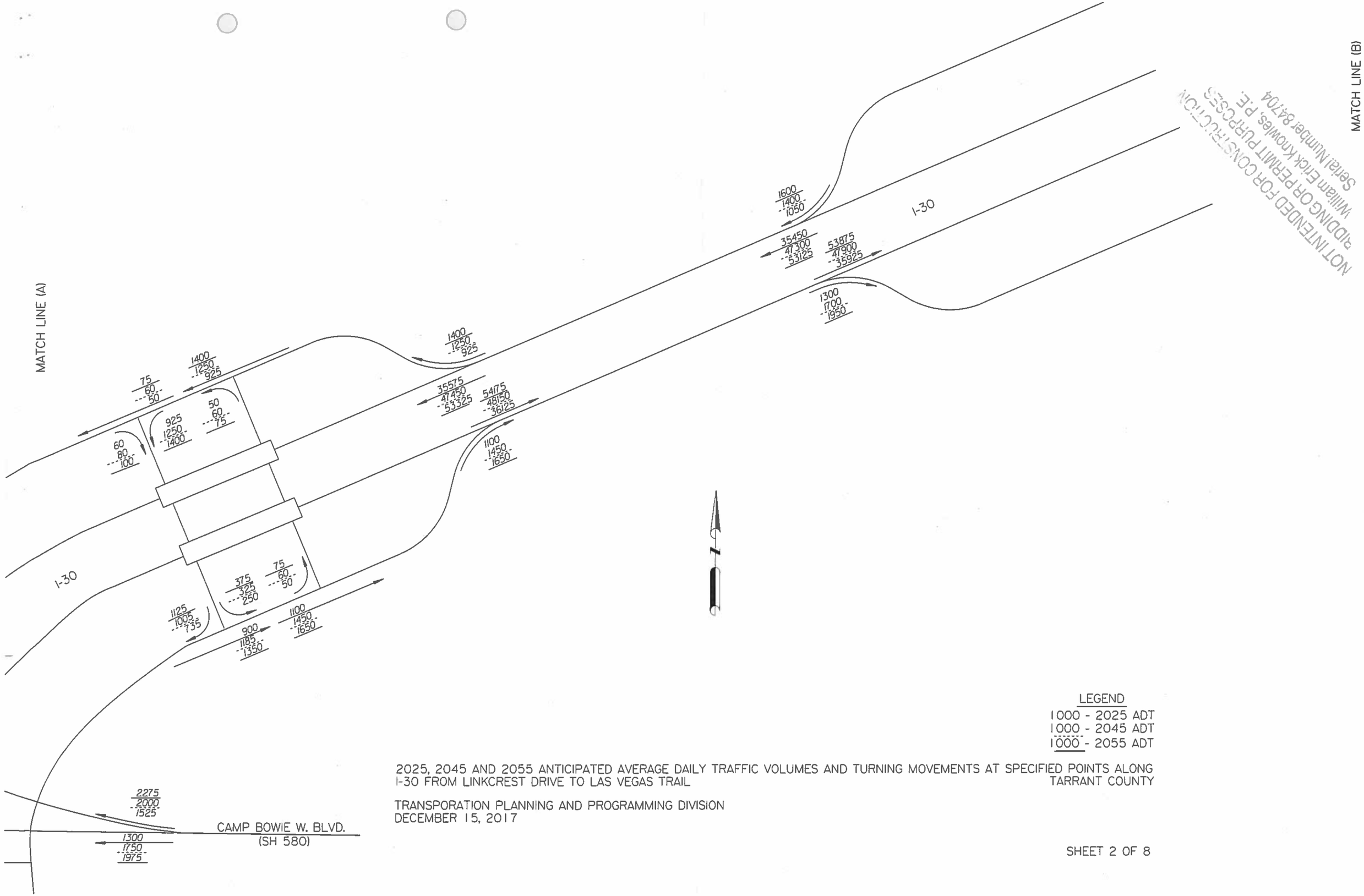
Serial Number 84704



LEGEND
1000 - 2025 ADT
1000 - 2045 ADT
1000 - 2055 ADT

2025, 2045 AND 2055 ANTICIPATED AVERAGE DAILY TRAFFIC VOLUMES AND TURNING MOVEMENTS AT SPECIFIED POINTS ALONG I-30 FROM LINKCREST DRIVE TO LAS VEGAS TRAIL
TARRANT COUNTY

TRANSPORATION PLANNING AND PROGRAMMING DIVISION
DECEMBER 15, 2017



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William Erick Knowles, P.E.
Serial Number 84704

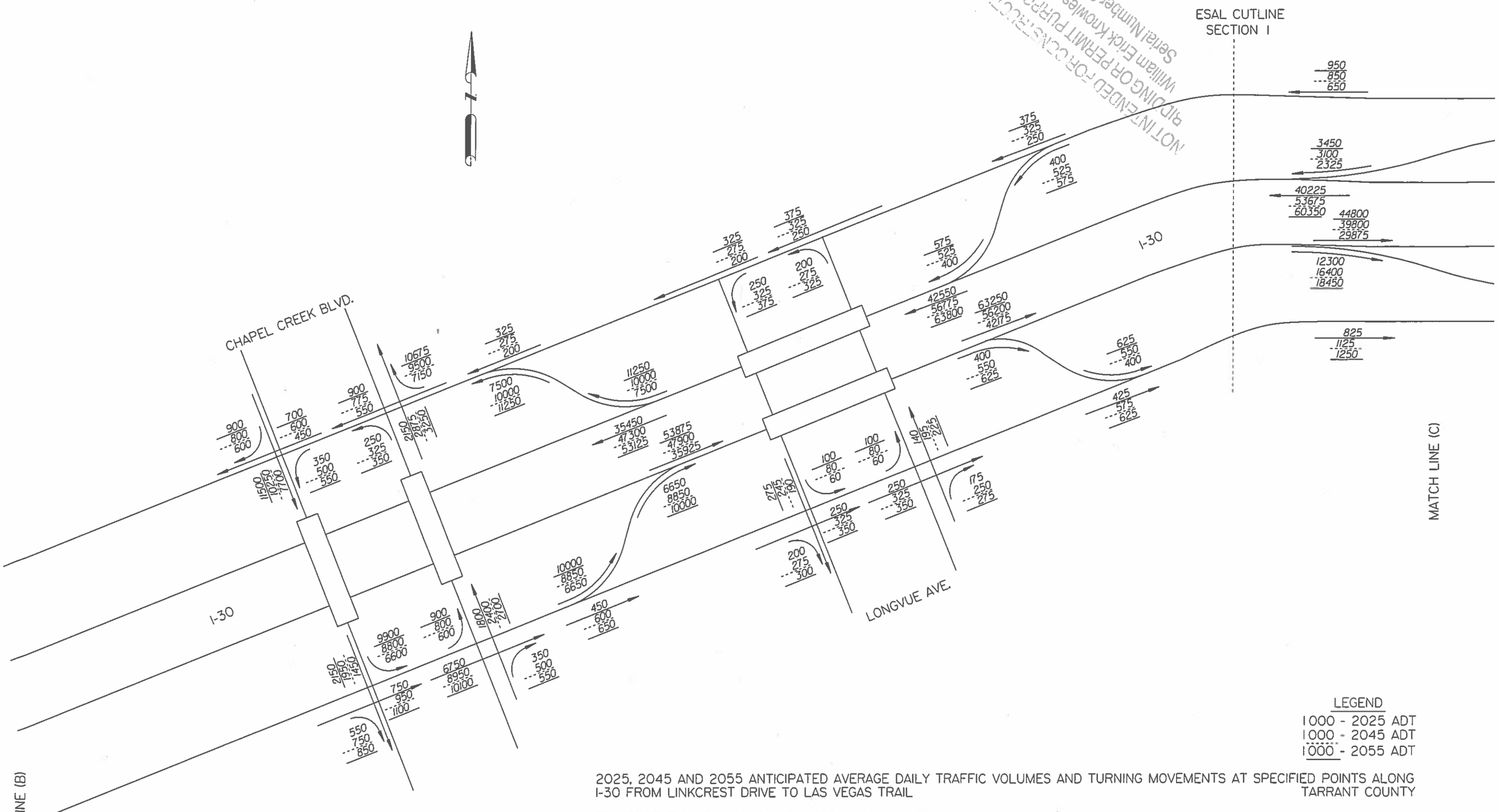
LEGEND

1000 - 2025 ADT
1000 - 2045 ADT
1000 - 2055 ADT

2025, 2045 AND 2055 ANTICIPATED AVERAGE DAILY TRAFFIC VOLUMES AND TURNING MOVEMENTS AT SPECIFIED POINTS ALONG I-30 FROM LINKCREST DRIVE TO LAS VEGAS TRAIL

TARRANT COUNTY

TRANSPORATION PLANNING AND PROGRAMMING DIVISION
DECEMBER 15, 2017



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LEGEND
1000 - 2025 ADT
1000 - 2045 ADT
1000 - 2055 ADT

2025, 2045 AND 2055 ANTICIPATED AVERAGE DAILY TRAFFIC VOLUMES AND TURNING MOVEMENTS AT SPECIFIED POINTS ALONG I-30 FROM LINKCREST DRIVE TO LAS VEGAS TRAIL
TARRANT COUNTY

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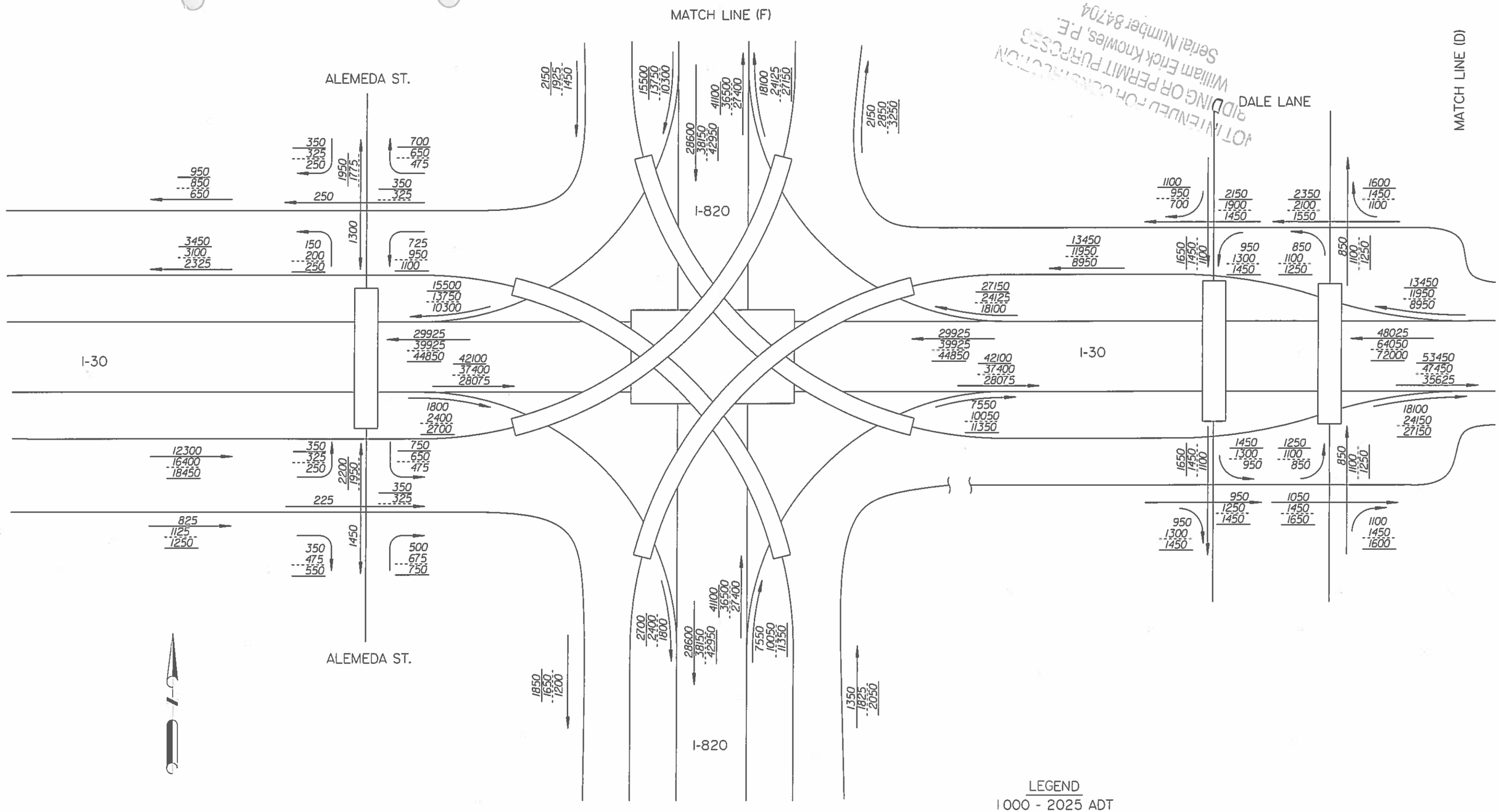

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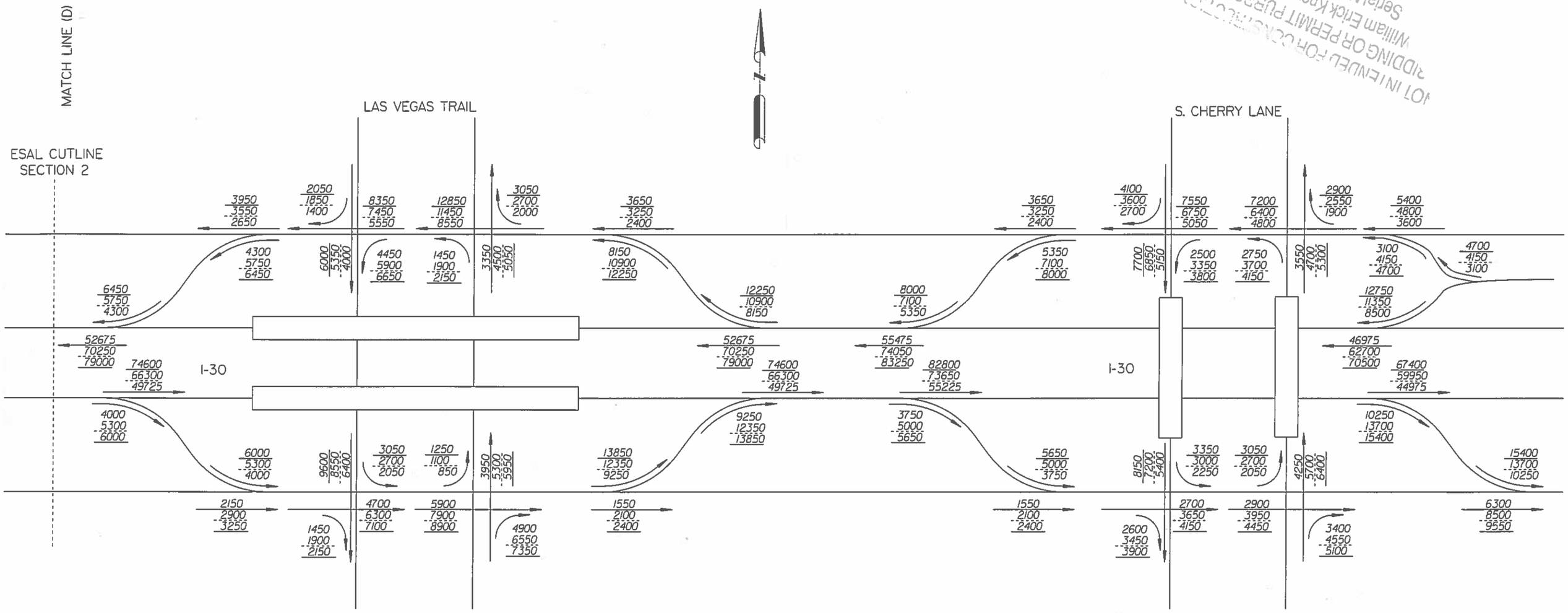
DECEMBER 15, 2017



LEGEND

1000 - 2025 ADT
1000 - 2045 ADT
1000 - 2055 ADT

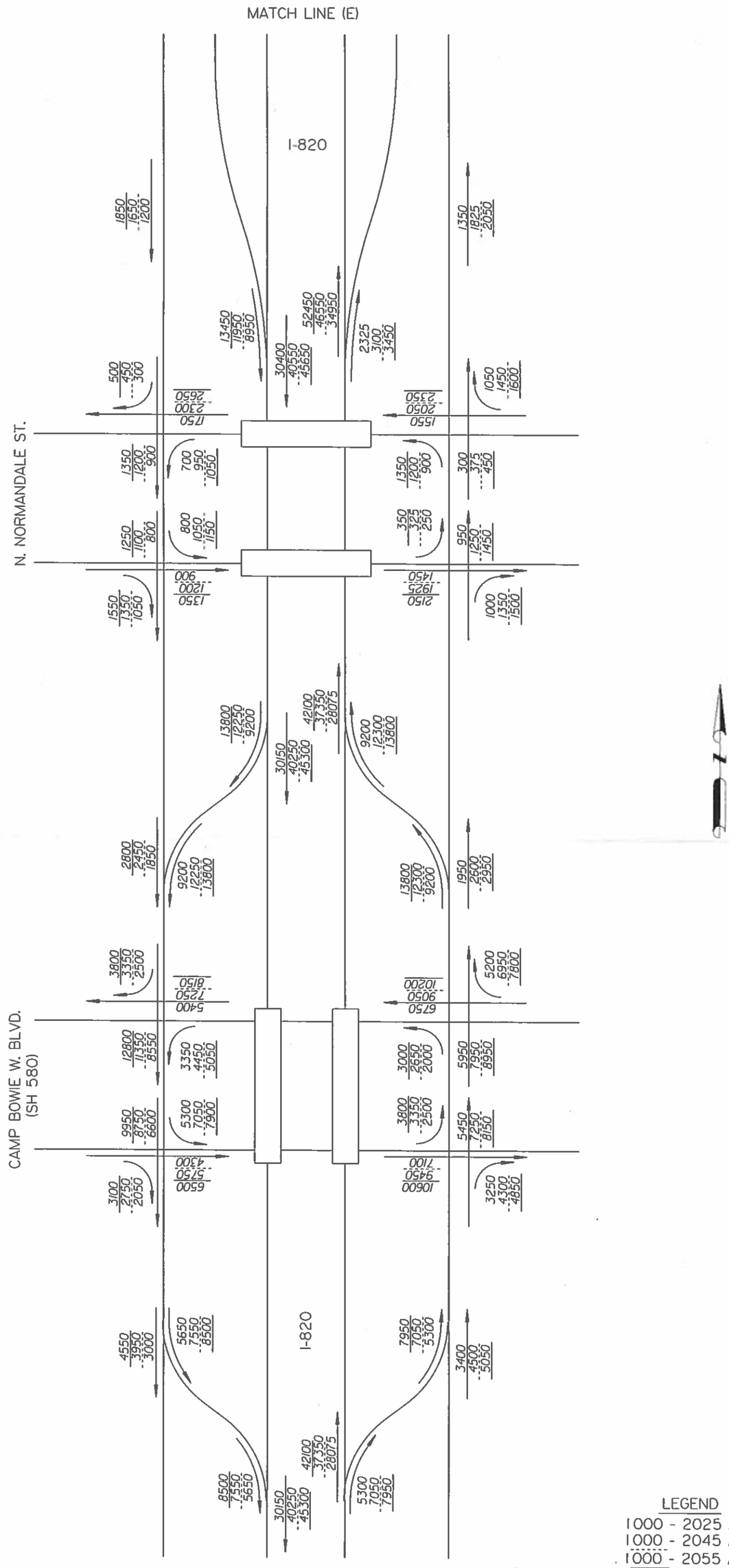
2025, 2045 AND 2055 ANTICIPATED AVERAGE DAILY TRAFFIC VOLUMES AND TURNING MOVEMENTS AT SPECIFIED POINTS ALONG I-30 FROM LINKCREST DRIVE TO LAS VEGAS TRAIL

TARRANT COUNTY

TRANSPORATION PLANNING AND PROGRAMMING DIVISION
DECEMBER 15, 2017

NOT IN ENDEL FOR CONSTRUCTION
BIDDING OR PERMIT PURPOSES
William Erick Knowles, P.E.
Serial Number 84704

NOT INTENDED FOR CONSTRUCTION
BIDDING OR PERMIT PURPOSES
William Erick Knowles, P.E.
Serial Number 84704



LEGEND
1000 - 2025 ADT
1000 - 2045 ADT
1000 - 2055 ADT

2025, 2045 AND 2055 ANTICIPATED AVERAGE DAILY TRAFFIC VOLUMES AND TURNING MOVEMENTS AT SPECIFIED POINTS ALONG I-30 FROM LINKCREST DRIVE TO LAS VEGAS TRAIL
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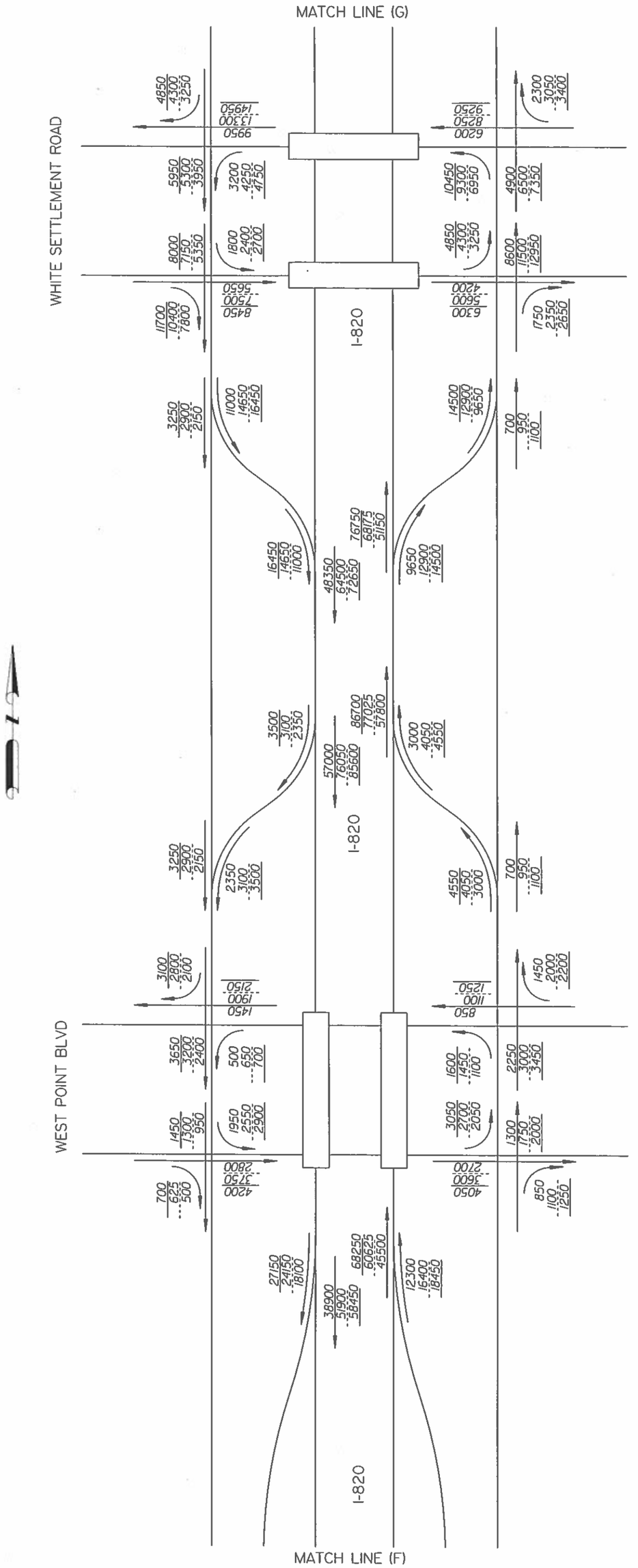


LEGEND
1000 - 2025 ADT
1000 - 2045 ADT
1000 - 2055 ADT

2025, 2045 AND 2055 ANTICIPATED AVERAGE DAILY TRAFFIC VOLUMES AND TURNING MOVEMENTS AT SPECIFIED POINTS ALONG I-30 FROM LINKCREST DRIVE TO LAS VEGAS TRAIL
TARRANT COUNTY

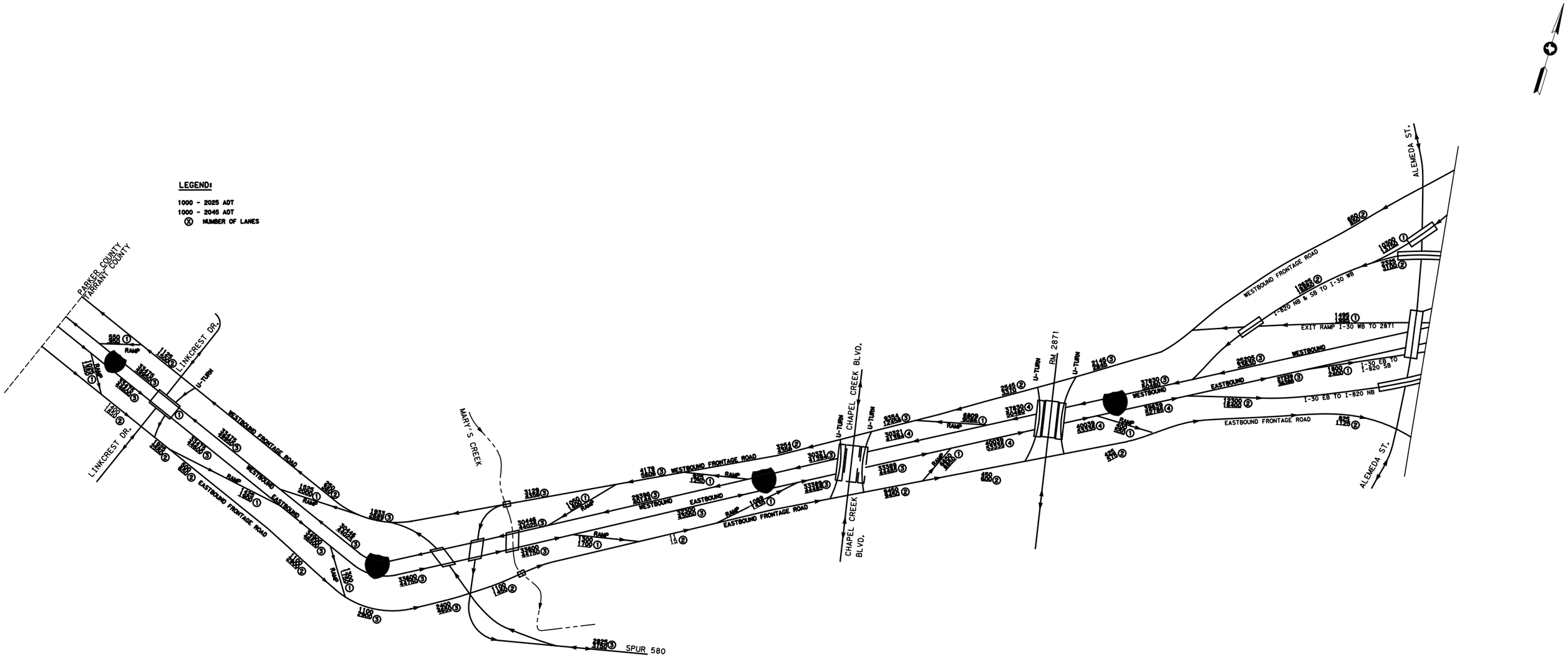
TRANSPORATION PLANNING AND PROGRAMMING DIVISION
DECEMBER 15, 2017

NOT INTENDED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES
William Erick Knowles, P.E.
Serial Number 84794

LEGEND
1000 - 2025 ADT
1000 - 2045 ADT
1000 - 2055 ADT

2025, 2045 AND 2055 ANTICIPATED AVERAGE DAILY TRAFFIC VOLUMES AND TURNING MOVEMENTS AT SPECIFIED POINTS ALONG I-30 FROM LINKCREST DRIVE TO LAS VEGAS TRAIL
TARRANT COUNTY

TRANSPORATION PLANNING AND PROGRAMMING DIVISION
DECEMBER 15, 2017



NOTE:

- 2025, 2045 AND 2055 ANTICIPATED AVERAGE DAILY TRAFFIC VOLUMES AND TURNING MOVEMENTS AT SPECIFIED POINTS ALONG I-30 FROM LINKCREST DRIVE TO I-820
- K FACTOR=9.6%
- PERCENTAGE OF TRUCK= 16.1
- DIRECTIONAL DISTRIBUTION= 52%-48%