# PLANNING AND ZONING COMMISSION AGENDA
# MONDAY, NOVEMBER 9, 2026
# 6:00 PM

CITY OF ENNIS CITY HALL
COMMISSION CHAMBERS
107 N. SHERMAN
ENNIS, TEXAS 75119
(972) 875-1234

**As authorized by Texas Government Code Section 551.071 - this meeting may be convened into closed Executive Session for the purposes of seeking confidential legal advice from the City Attorney on any item on the agenda at any time during the meeting.**
**The City of Ennis reserves the right to re-align, recess, or reconvene the Regular Session or called Executive Session or order of business at any time prior to adjournment.**

A. CALL TO ORDER

- Roll Call
- Pledge of Allegiance
- Invocation

B. CITIZEN PUBLIC COMMENT PERIOD

*The Planning and Zoning Commission invites citizens to address the Commission on any topic not already scheduled for a Public Hearing. Citizens wishing to speak should complete a "Citizen Comment Period" form and present it to staff prior to the meeting. Speakers are limited to 3 minutes. In accordance with the Texas Open Meetings Act, the Planning and Zoning Commission cannot take action on items not listed on the agenda. However, your concerns may be addressed by City Staff, placed on a future agenda, or responded to by some other course.*

C. CONSENT ITEMS

*The following may be acted upon in one motion. A Planning and Zoning Commissioner may request items to be removed from the Consent Agenda for individual consideration.*

C.1. Approval of the October 26, 2026 Regular Meeting Minutes

2026 10 26_P&Z Minutes

D. ITEMS FOR DISCUSSION AND INDIVIDUAL CONSIDERATION

D.1. Consider approving a FINAL PLAT for Phase 3A of the Prairie View Subdivision consisting of 136 residential lots and 4 common area lots and measuring approximately 28.882 acres, located in the Owen Shannon Survey, Abstract No. 989, City of Ennis, Ellis County, Texas. 4000-Block Lakeview Drive.
P&Z Case No.: PLAT-25-17
Owner: DRP Bookbinder Multistate, LLC
Applicant: Pape-Dawson Engineers

PLAT-25-17

E. PUBLIC HEARING

E.1. Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Heavy Industrial and Manufacturing (H-IM) district for plastics manufacturing on an approximately 1.50-acre tract of land situated in the H.T. & B.B. RR Survey, Abstract No. 448, City of Ennis, Ellis County, Texas. Located at 1600

Jack McKay Blvd. Ellis CAD ID 161949.
P&Z Case No.: SUP-26-4
Owner: Long Thames Texas Enterprises LLC
Applicant: Jesse Hwong
SUP-26-4

E.2. Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion Ellis CAD ID 306692.
P&Z Case No.: SUP-26-5
Owner: Prairie View Residential Community INC
Applicant: Kimley-Horn & Associates
SUP-26-5

E.3. Conduct a public hearing to discuss and consider approving a Type II Site Plan in the Corridor Commercial (CC) zoning district for an approximately 107,000 SF structure to serve as anchor retail on Lot 1, Block 1, Ennis Gateway Addition, City of Ennis, Ellis County, Texas. Generally located at the northeast corner of E Ennis Ave and N Sonoma Trl. Ellis CAD ID 308265.
P&Z Case No.: DEV-26-7
Owner: H-E-B, LP
Applicant: Kimley-Horn & Associates
DEV-26-7

F. ADJOURNMENT

I, the undersigned authority, do hereby certify that this Notice of Meeting was posted in accordance with the regulations of the Texas Open Meetings Act on the bulletin board located at the entrance to the City of Ennis City Hall, a place convenient and readily accessible to the general public, as well as to the City's website at www.ennistx.gov and said Notice was posted prior to the following date and time: ***TUESDAY, NOVEMBER 3, 2026 AT 5:00 P.M.*** and will remain posted for at least two hours after said meeting was convened.

Jorge Barake

Jorge Barake, City Planner
Community Health and Development Department

Erica Stubbs

Erica Stubbs, Senior Planner
Community Health and Development Department

**Planning and Zoning Commission Meetings are available to all persons regardless of disability. If you require special assistance, please contact the City of Ennis at (972) 875-1234 ext. 2236 or write to: PO Box 220, Ennis, TX 75120, at least 48 hours in advance of the meeting.**

PLANNING AND ZONING COMMISSION

# AGENDA SUMMARY FORM

| | |
|---|---|
| **To:** | Planning and Zoning Commission |
| **Subject:** | Approval of the October 26, 2026 Regular Meeting Minutes |
| **Meeting:** | PLANNING AND ZONING COMMISSION - 09 Nov 2026 |
| **Department:** | Planning & Development |
| **Staff Contact:** | Jorge Barake, Planner |

## BACKGROUND INFORMATION:

Minutes for the October 26, 2026 Regular Meeting are submitted for Planning and Zoning Commission's review and approval.

## ATTACHMENTS:

2026 10 26 P&Z Meeting Minutes

# MINUTES
# CITY OF ENNIS
# PLANNING AND ZONING COMMISSION
# Monday, October 26, 2026, 6:00 P.M

## A. CALL TO ORDER

Chairperson Ian Coleman called a Regular Session of the Ennis Planning and Zoning Commission to order Monday, October 26, 2026, at 6:01 P.M. in the Ennis City Hall Commission Chambers, 107 N Sherman St, Ennis, Texas 75119.

**City Planner, Jorge Barake** called roll and verified a quorum:

| | | | |
|---|---|---|---|
| Chairperson Coleman | Present | Commissioner Sacha | Absent |
| Vice-Chairperson Hughes | Present | Commissioner Snodgrass | Absent |
| Commissioner Estes | Present | Commissioner Medina | Present |
| Commissioner McCauley | Present | | |

The Pledge of Allegiance was recited.

The Invocation was given by **Commissioner Medina.**

## B. CITIZEN PUBLIC COMMENT PERIOD

No one from the public spoke.

## C. CONSENT ITEMS

C.1 Approval of September 14, 2026 Regular Meeting Minutes

Motion by **Commissioner Medina**; second by **Vice-Chairperson Hughes** to approve the September 14, 2026, regular meeting minutes as submitted.

A vote was cast. 5 in favor, 0 against. Motion adopted.

## D. ITEMS FOR DISCUSSION AND CONSIDERATION

D.1 Consider approving a FINAL PLAT for the Ideal Storage, Phase 3 Addition consisting of 1 commercial lot and measuring approximately 2.94 acres, located in the C. Garrett Survey, Abstract No. 383, City of Ennis, Ellis County, Texas. Located at 2317 N Preston St and 2319 N Preston St. Ellis CAD IDs 183803 and 183923.
P&Z Case No.: PLAT-26-19
Owner: Erwin Properties I LP
Applicant: 8G Construction

Item presented by **Erica Stubbs, Senior Planner**

The applicant was present for questions from the commission.

Motion to approve the item as submitted made by **Commissioner Estes**; second by **Vice-Chairperson Hughes**.

**Commissioner Estes** inquired about the intended use of the 60-foot access easement. The applicant stated that he would need to consult with the surveyor and indicated that a water line would be installed to provide for the placement of a fire hydrant. Discussion followed regarding the setbacks shown on the plat. Staff clarified that setbacks are not established by the plat but are governed by the standards of the applicable zoning district in effect at the time of development.

A vote was cast. 5 in favor, 0 against. Motion adopted.

## E. ADJOURNMENT

With no other business, **Chairperson Coleman** declared the meeting adjourned at approximately 6:09 P.M.

ATTEST:

_____
Erica Stubbs, Senior Planner

_____
Jorge Barake, City Planner

APPROVED:

_____
Ian Coleman, Chairperson

ENNIS TEXAS
*The bluebonnet spirit of Texas*

PLANNING AND ZONING COMMISSION

# AGENDA SUMMARY FORM

| | |
|---|---|
| **To:** | Planning and Zoning Commission |
| **Subject:** | Consider approving a FINAL PLAT for Phase 3A of the Prairie View Subdivision consisting of 136 residential lots and 4 common area lots and measuring approximately 28.882 acres, located in the Owen Shannon Survey, Abstract No. 989, City of Ennis, Ellis County, Texas. 4000-Block Lakeview Drive.<br>P&Z Case No.: PLAT-25-17<br>Owner: DRP Bookbinder Multistate, LLC<br>Applicant: Pape-Dawson Engineers |
| **Meeting:** | PLANNING AND ZONING COMMISSION - 09 Nov 2026 |
| **Department:** | Planning & Development |
| **Staff Contact:** | Erica Stubbs, Senior Planner |

## BACKGROUND INFORMATION:

The applicant, Pape-Dawson Engineers, is requesting the approval of a Final Plat for Phase 3A consisting of 136 residential lots, zoned Single-Family Residential-5 (R-5) District, and 4 common area lots.

The Final Plat has been reviewed and approved by all applicable City departments and franchise utilities.

## RECOMMENDATION:

Staff recommends approval.

## ATTACHMENTS:

PLAT-25-17_Application
PLAT-25-17_Vicinity Map
PLAT-25-17_Drone Photo
PLAT-25-17_Zoning Map
PLAT-25-17_Prairie View 3A Final Plat

City of Ennis, TX

October 14, 2025

# PLAT-25-17

Plat Application
Status: Active
Submitted On: 8/13/2025

## Primary Location

0 LAKEVIEW DR
ENNIS, TX 75119

## Owner

DRP BOOKBINDER MULTISTATE LLC

## Applicant

Jennifer Martinson

## Application Information

**Type of Application***
Final

**Plat Name***
Prairie View Phase 3A

**Property Type***
Residential

**No. of Lots***
136

**Acreage***
28.882

**Current Zoning***
R-5

**Current Use***
Undeveloped Property

**Proposed Use***
Single Family Residential

**Is this property serviced by the City of Ennis Water/CCN?***
Yes

**Are you using an Agent/Representative***
Yes

**Do you have an approved Civil Plan Review?***
Yes

**Civil Plan Review Number ***
CIV-25-0429-PV3A

**Date of Approval of Civil Plans***

04/22/2025

**You must have an approved Civil Plan Review and approval date to proceed with the Plat Application process. If you do not have an approved Civil Plan Review and staff cannot determine approval, your application will be rejected and returned. For Civil Plan Review, please apply at ennistx.portal.opengov.com**

**Will you be using a Temporary Concrete Batch Plant? (Requires a Specific Use Permit)***

Yes

## Owner Information

**Owner Name**

DRP BOOKBINDER MULTISTATE LLC

**Owner Street Address**

**Owner City, State Zip**

**Owner Telephone***

**Owner Email***

## Agent/Representative Information

**Firm Name ***

Pape-Dawson

**Main Contact***

AJ Roscoe

**Address***

**City, State Zip**

**Telephone***

**Email***

## Surveyor/Engineer Information

**Firm Name***

Pape-Dawson

**Surveyor/Engineer Name***

AJ Roscoe

**Address***

**City, State Zip***

**Telephone***

**Email***

## Signature

**Applicant Signature***

Jennifer Martinson
Aug 13, 2025

## Attachment Requires

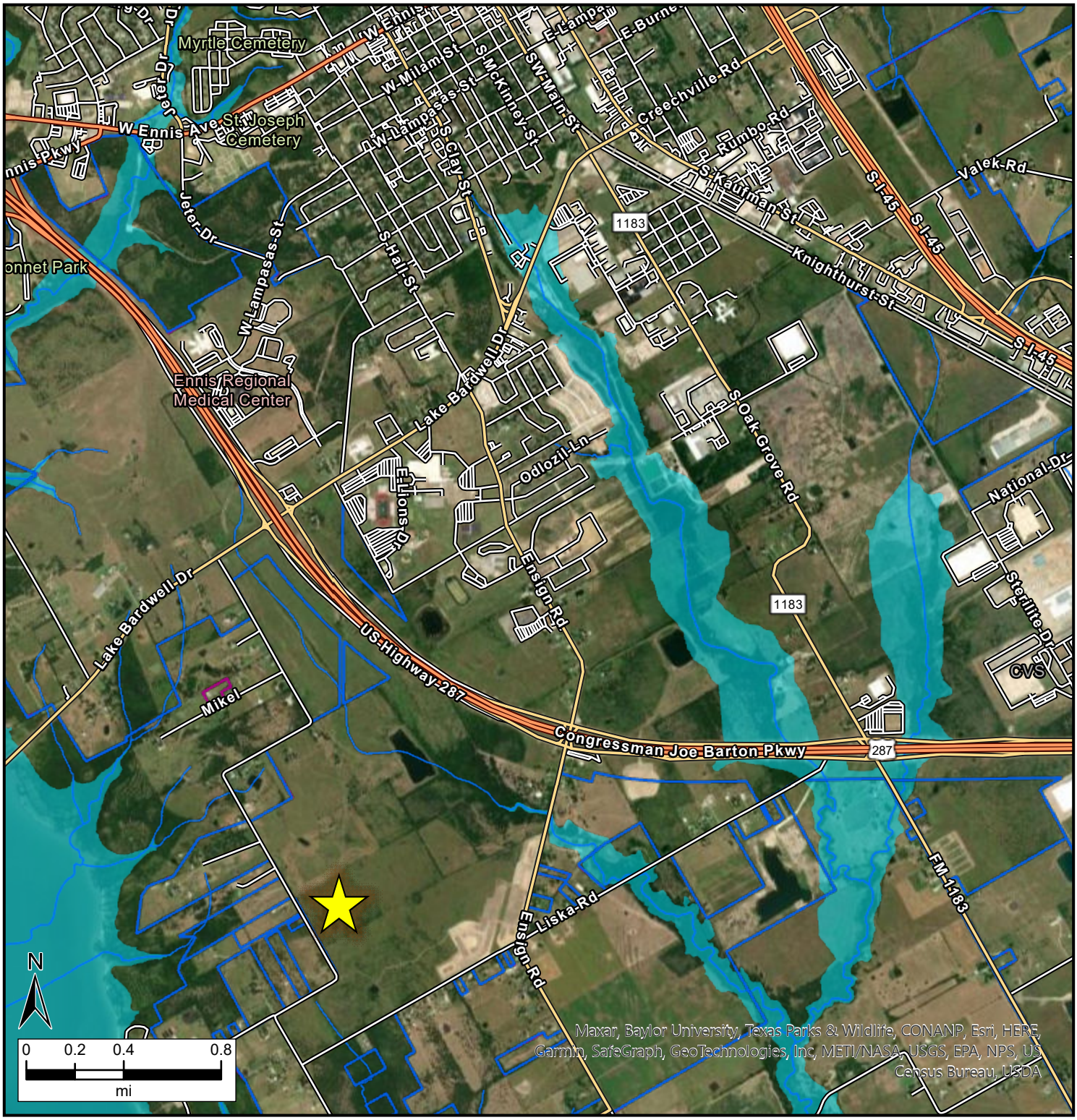
Please see the Plat Submittal Guidelines.pdf for more information on the requirements.

D.1.

**I have read and reviewed the Plat Application Requirements***

☑

# Vicinity Map



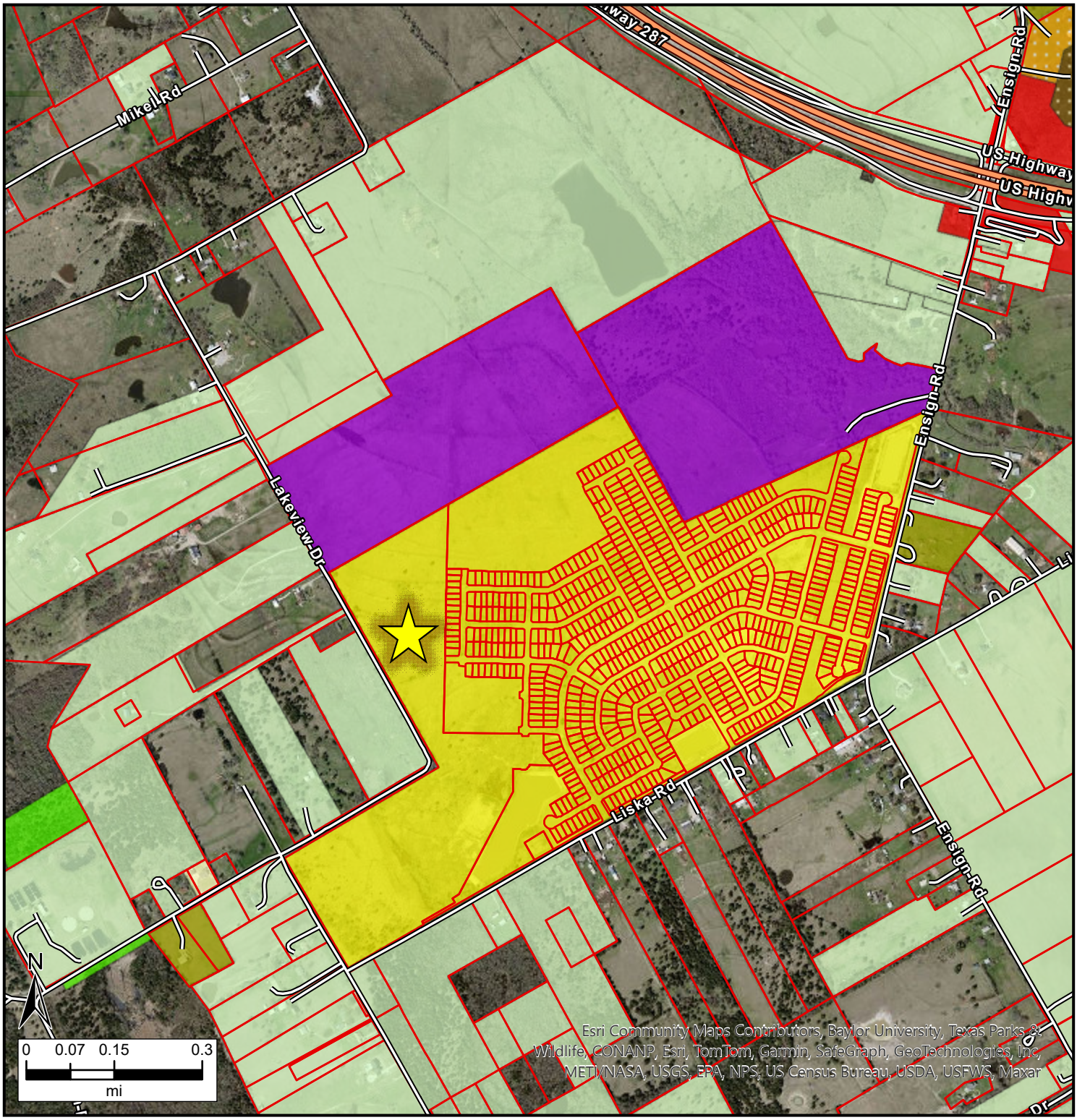

**Legend**

- Ennis ETJ
- Ennis City Limits
- Other Cities Limits
- Floodway
- 1% Annual Chance Flood Hazard Area
- 0.2% Annual Chance Flood Hazard Area
- Profile Baseline
- Water Line
- Cross Section
- Base Flood Elevation

ENNIS TEXAS
*The bluebonnet spirit of Texas*



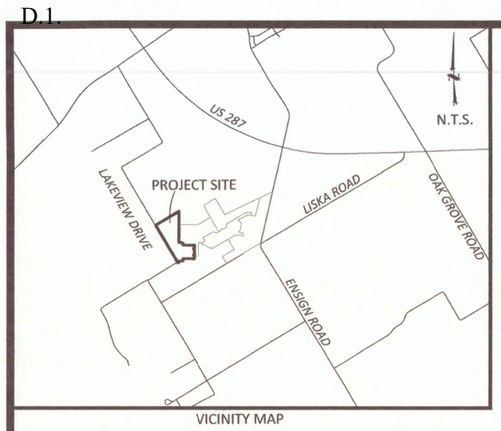
# Zoning Map




**Legend**

- Parcels
- A Agricultural
- RE Residential Estate
- R-10 Single Family Residential 10
- R-5 Single Family Residential 5
- R-5-Z Single Family Residential 5 Zero Lot Line
- R-5-PD #5 Single Family Residential 5 Planned Development
- R-5-PD #7
- NC Neighborhood Conservation
- NC-MF1 Neighborhood Multi-Family 1
- NC-MF2 Neighborhood Multi-Family 2
- NC-D Neighborhood Duplex
- D Duplex
- TH Townhome
- MF-1 Multi-Family 1
- MF-2 Multi-Family 2
- MH Manufactured Home
- C Neighborhood Commercial
- CC-PD Corridor Commercial Planned Development
- BP Business Park
- CC Corridor Commercial
- L-IM Light Industrial and Manufacturing
- H-IM Heavy Industrial and Manufacturing
- DT Downtown Core
- DT-T1 Downtown Transition 1
- DT-T2 Downtown Transition 2
- DT-A1 Downtown Approach 1
- DT-A2 Downtown Approach 2
- IC Institutional and Civic
- PP Public and Parks
- PD Planned Development
- PD-MF-2 Planned Development-Multi-Family Residential District 2
- RMU Regional Mixed Use

ENNIS TEXAS
*The bluebonnet spirit of Texas*




VICINITY MAP

R-5 ZONING DISTRICT

| | | |
|---|---|---|
| (3) | LOT DIMENSIONS | |
| | (a.) Lot Area (minimum) SQ. FT. | 5,000 |
| | (b.) Average Gross Living Area (minimum) SQ. FT./Unit | 1,000 |
| | (c.) Lot Width (minimum) SQ. FT. | 40 |
| | (d.) Lot Depth (minimum) SQ. FT. | 60 |

**LEGEND:**

| | |
|---|---|
| O.P.R.E.C.T. | OFFICIAL PUBLIC RECORDS, ELLIS COUNTY, TEXAS |
| P.R.E.C.T. | PLAT RECORDS, ELLIS COUNTY, TEXAS |
| C.M. | CONTROLLING MONUMENT |
| IRS | 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET UNLESS OTHERWISE NOTED |
| UE | UTILITY EASEMENT |
| AC. | ACRES |
| SQ. FT. | SQUARE FEET |
| MIN. FFE. | MINIMUM FINISHED FLOOR ELEVATION |
| VAM | VISIBILITY, ACCESS, AND MAINTENANCE EASEMENT |
| IRF | 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" FOUND |
| ◆ | INDICATES ROAD NAME CHANGE |

LAND USE TABLE

| | |
|---|---|
| RESIDENTIAL LOTS | 136 |
| NON-RESIDENTIAL LOTS | 4 |
| RESIDENTIAL ACREAGE | 17.779 AC. |
| NON-RESIDENTIAL ACREAGE | 4.997 AC. |
| RIGHT OF WAY DEDICATION | 6.106 AC. |
| NET ACREAGE | 22.776 AC. |
| TOTAL ACREAGE | 28.882 AC. |

| CURVE | ARC LENGTH | RADIUS | DELTA ANGLE | CHORD BEARING | CHORD LENGTH |
|---|---|---|---|---|---|
| C1 | 80.69' | 150.00' | 30°49'13" | N 74°56'59" E | 79.72' |
| C2 | 154.93' | 150.00' | 59°10'47" | N 29°56'59" E | 148.14' |
| C3 | 80.69' | 150.00' | 30°49'13" | N 74°56'59" E | 79.72' |
| C4 | 54.98' | 35.00' | 90°00'00" | N 14°32'23" E | 49.50' |
| C5 | 107.58' | 200.00' | 30°49'13" | N 74°56'59" E | 106.29' |
| C6 | 218.63' | 50.00' | 250°31'46" | N 24°16'32" E | 81.65' |
| C7 | 104.66' | 50.00' | 119°55'37" | N 00°25'24" W | 86.57' |
| C8 | 218.63' | 50.00' | 250°31'44" | N 55°05'44" E | 81.65' |
| C9 | 30.77' | 25.00' | 70°31'44" | N 65°43'29" W | 28.87' |
| C10 | 13.06' | 25.00' | 29°55'35" | N 45°25'25" W | 12.91' |
| C11 | 30.77' | 25.00' | 70°31'44" | N 34°54'16" W | 28.87' |

| LINE | BEARING | DISTANCE |
|---|---|---|
| L1 | S 44°41'45" E | 14.16' |
| L2 | S 00°14'54" W | 15.04' |
| L3 | S 89°45'06" E | 50.00' |
| L4 | S 45°21'36" W | 14.14' |
| L5 | N 89°38'24" W | 15.00' |
| L6 | S 00°21'36" W | 50.00' |
| L7 | S 89°38'24" E | 15.00' |
| L8 | S 44°38'24" E | 14.14' |
| L9 | S 45°21'36" W | 14.14' |
| L10 | N 89°38'24" W | 15.00' |
| L11 | S 00°21'36" W | 50.00' |
| L12 | S 89°38'24" E | 15.00' |
| L13 | S 44°38'24" E | 14.14' |
| L14 | N 89°38'24" W | 50.00' |
| L15 | S 00°21'36" W | 10.00' |
| L16 | S 00°14'54" W | 46.00' |
| L17 | S 55°20'21" W | 33.90' |
| L18 | N 45°21'36" E | 14.14' |
| L19 | N 44°38'24" W | 14.14' |
| L20 | N 45°21'36" E | 14.14' |
| L21 | N 44°38'24" W | 14.14' |
| L22 | N 01°44'38" E | 15.00' |
| L23 | S 75°27'37" E | 14.14' |
| L24 | N 14°32'23" E | 14.14' |
| L25 | N 14°32'23" E | 14.14' |
| L26 | N 45°21'36" E | 14.14' |
| L27 | S 44°38'24" E | 14.14' |
| L28 | N 75°27'37" W | 14.14' |
| L29 | N 14°32'23" E | 14.14' |
| L30 | S 44°38'24" E | 14.14' |
| L31 | S 43°29'50" W | 14.59' |
| L32 | N 45°21'36" E | 14.14' |
| L33 | S 14°32'23" W | 14.14' |
| L34 | S 75°27'37" E | 14.14' |
| L35 | N 59°32'23" E | 25.00' |
| L36 | N 31°24'40" E | 22.54' |
| L37 | N 69°39'53" E | 38.35' |
| L38 | S 89°38'24" E | 59.02' |
| L39 | S 75°00'19" E | 25.35' |
| L40 | N 14°32'23" E | 14.14' |
| L41 | S 47°14'54" E | 13.48' |
| L42 | N 75°27'37" W | 14.14' |
| L45 | N 89°38'24" W | 25.00' |
| L46 | S 00°21'36" W | 31.96' |
| L47 | S 75°27'37" E | 14.14' |
| L48 | N 14°32'23" E | 14.14' |
| L49 | S 89°38'24" E | 18.62' |
| L50 | S 37°09'33" E | 10.00' |
| L51 | S 30°27'37" E | 18.86' |
| L52 | S 14°32'23" W | 8.69' |
| L53 | N 30°27'37" W | 24.71' |
| L57 | N 14°32'23" E | 16.97' |
| L58 | N 30°27'37" W | 6.43' |
| L59 | S 89°38'24" E | 7.14' |

**NOTES:**

1. HOMEOWNERS ASSOCIATION SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL COMMON AREAS, OPEN SPACE, AND EASEMENTS.
2. LANDSCAPE AND IRRIGATION AS REQUIRED BY THE CITY ORDINANCE.
3. LIGHT STANDARDS AS REQUIRED BY CITY ORDINANCE.
4. STREET SIGNAGE TO COMPLY WITH CITY ORDINANCE.
5. THE PLAT SHALL NOT REGULATE SETBACKS AND BUILDING LINES. THEY ARE SHOWN FOR INFORMATIONAL PURPOSES.
6. THE OWNERS OF ALL CORNER LOTS SHALL MAINTAIN VISIBILITY/SIGHT TRIANGLES IN ACCORDANCE WITH THE CITY OF ENNIS AND/OR TXDOT ORDINANCES, RULES AND REGULATIONS.
7. ALL LOT CORNERS ARE MARKED WITH A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET UNLESS NOTED OTHERWISE.

VAM STATEMENT

THE AREA OR AREAS SHOWN ON THIS PLAT AS "VAM" (VISIBILITY, ACCESS AND MAINTENANCE) EASEMENTS ARE HEREBY GIVEN AND GRANTED TO THE CITY, ITS SUCCESSORS AND ASSIGNS, AS AN EASEMENT TO PROVIDE VISIBILITY, RIGHT OF ACCESS FOR MAINTENANCE UPON AND ACROSS SAID VAM EASEMENT, THE CITY SHALL HAVE THE RIGHT BUT NOT THE OBLIGATION TO MAINTAIN ANY AND ALL LANDSCAPING WITHIN THE VAM EASEMENT. SHOULD THE CITY EXERCISE THIS MAINTENANCE RIGHT, THEN IT SHALL BE PERMITTED TO REMOVE AND DISPOSE OF ANY AND ALL LANDSCAPING IMPROVEMENTS, INCLUDING WITHOUT LIMITATION, ANY TREES, SHRUBS, FLOWERS, GROUND COVER AND FIXTURES. THE CITY MAY WITHDRAW MAINTENANCE OF THE VAM EASEMENT AT ANY TIME. THE ULTIMATE MAINTENANCE RESPONSIBILITY FOR THE VAM EASEMENT SHALL REST WITH THE OWNERS. NO BUILDING, FENCE, SHRUB, TREE OR OTHER IMPROVEMENTS OR GROWTHS, WHICH IN ANY WAY MAY ENDANGER OR INTERFERE WITH THE VISIBILITY, SHALL BE CONSTRUCTED IN, ON, OVER OR ACROSS THE VAM EASEMENT. THE CITY SHALL ALSO HAVE THE RIGHT BUT NOT THE OBLIGATION TO ADD ANY LANDSCAPE IMPROVEMENTS TO THE VAM EASEMENT, TO ERECT ANY TRAFFIC CONTROL DEVICES OR SIGNS ON THE VAM EASEMENT AND TO REMOVE ANY OBSTRUCTION THEREON. THE CITY, ITS SUCCESSORS, ASSIGNS, OR AGENTS SHALL HAVE THE RIGHT AND PRIVILEGE AT ALL TIMES TO ENTER UPON THE VAM EASEMENT OR ANY PART THEREOF FOR THE PURPOSES AND WITH ALL RIGHTS AND PRIVILEGES SET FORTH HEREIN.

*NOTICE: SELLING A PORTION OF ANY LOT WITHIN THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE CITY ORDINANCE AND STATE LAW, AND IS SUBJECT TO FINES AND WITHHOLDING OF UTILITIES AND BUILDING PERMITS.*

PIERCE-MURRAY LAND SOLUTIONS
Engineering ⊕ Surveying
800 TALLYHO CIRCLE
TYLER, TEXAS 75703
(817) 239-5646
(903) 539-2256
TBPLS FIRM REGISTRATION NO. 10194437

**OWNER**
DRP BOOKBINDER MULTISTATE, LLC
A DELAWARE LIMITED LIABILITY COMPANY
1231 GREENWAY DR
SUITE 800
IRVING, TX 75038

**DEVELOPER**
LENNAR HOMES OF TEXAS
LAND AND CONSTRUCTION, LTD
1231 GREENWAY DR, STE 800
IRVING, TEXAS 75038
469-587-5200

**ENGINEER**
PAPE-DAWSON ENGINEERS, INC.
6105 TENNYSON PKWY, STE 210
PLANO, TX 75024
214-420-8494

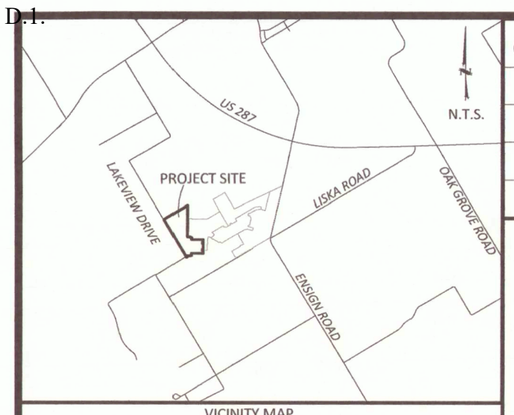
**SURVEYOR**
PIERCE-MURRAY LAND SOLUTIONS, LLC
800 TALLYHO CIR.
TYLER, TX 75703

# FINAL PLAT
# PRAIRIE VIEW, PHASE 3A

CONTAINING 136 RESIDENTIAL LOTS,
BEING 28.882 ACRES OF LAND SITUATED IN THE OWEN SHANNON SURVEY, ABSTRACT NUMBER 989,
CITY OF ENNIS,
ELLIS COUNTY, TEXAS

DATE OF PREPARATION: JUNE, 2024

R-5 ZONING DISTRICT




VICINITY MAP

| (3) LOT DIMENSIONS | |
|---|---|
| (a.) Lot Area (minimum) SQ. FT. | 5,000 |
| (b.) Average Gross Living Area (minimum) SQ. FT./Unit | 1,000 |
| (c.) Lot Width (minimum) SQ. FT. | 40 |
| (d.) Lot Depth (minimum) SQ. FT. | 60 |

LEGEND:

| | |
|---|---|
| O.P.R.E.C.T. | OFFICIAL PUBLIC RECORDS, ELLIS COUNTY, TEXAS |
| P.R.E.C.T. | PLAT RECORDS, ELLIS COUNTY, TEXAS |
| C.M. | CONTROLLING MONUMENT |
| IRS | 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET UNLESS OTHERWISE NOTED |
| UE | UTILITY EASEMENT |
| AC. | ACRES |
| SQ. FT. | SQUARE FEET |
| MIN. FFE. | MINIMUM FINISHED FLOOR ELEVATION |
| VAM | VISIBILITY, ACCESS, AND MAINTENANCE EASEMENT |
| IRF | 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" FOUND |
| ◆ | INDICATES STREET NAME CHANGE |

LAND USE TABLE

| | |
|---|---|
| RESIDENTIAL LOTS | 136 |
| NON-RESIDENTIAL LOTS | 4 |
| RESIDENTIAL ACREAGE | 17.779 AC. |
| NON-RESIDENTIAL ACREAGE | 4.997 AC. |
| RIGHT OF WAY DEDICATION | 6.106 AC. |
| NET ACREAGE | 22.776 AC. |
| TOTAL ACREAGE | 28.882 AC. |

HOMEOWNERS ASSOCIATION NOTES

i. The owner of fee simple title to every individual lot of land within the subdivision must be a member of the Homeowners Association.

ii. The Homeowners Association must have the authority to collect membership fees.

iii. The Homeowners Association must be responsible for the maintenance of all common areas and screening walls.

iv. The Homeowners Association must grant the city the right of access to common areas to abate any nuisance thereon, and attach a lien for the prorated cost of abatement upon each individual lot.

v. The Homeowners Association shall indemnify and hold the city harmless from any and all costs, expenses, suits, demands, liabilities, damages, or otherwise including attorney's fees and costs of suit, in connection with the city's maintenance of common areas.

vi. The Homeowners Association shall enter into a license agreement with the City of Ennis where additional right-of-way has been dedicated for the purpose of providing landscaping, additional areas for sidewalks, walls, or other amenities, and shall be responsible for the installation and maintenance of all landscape areas that are in the public right-of-way.

VAM STATEMENT

THE AREA OR AREAS SHOWN ON THIS PLAT AS "VAM" (VISIBILITY, ACCESS AND MAINTENANCE) EASEMENTS ARE HEREBY GIVEN AND GRANTED TO THE CITY, ITS SUCCESSORS AND ASSIGNS, AS AN EASEMENT TO PROVIDE VISIBILITY, RIGHT OF ACCESS FOR MAINTENANCE UPON AND ACROSS SAID VAM EASEMENT, THE CITY SHALL HAVE THE RIGHT BUT NOT THE OBLIGATION TO MAINTAIN ANY AND ALL LANDSCAPING WITHIN THE VAM EASEMENT. SHOULD THE CITY EXERCISE THIS MAINTENANCE RIGHT, THEN IT SHALL BE PERMITTED TO REMOVE AND DISPOSE OF ANY AND ALL LANDSCAPING IMPROVEMENTS, INCLUDING WITHOUT LIMITATION, ANY TREES, SHRUBS, FLOWERS, GROUND COVER AND FIXTURES. THE CITY MAY WITHDRAW MAINTENANCE OF THE VAM EASEMENT AT ANY TIME. THE ULTIMATE MAINTENANCE RESPONSIBILITY FOR THE VAM EASEMENT SHALL REST WITH THE OWNERS. NO BUILDING, FENCE, SHRUB, TREE OR OTHER IMPROVEMENTS OR GROWTHS, WHICH IN ANY WAY MAY ENDANGER OR INTERFERE WITH THE VISIBILITY, SHALL BE CONSTRUCTED IN, ON, OVER OR ACROSS THE VAM EASEMENT. THE CITY SHALL ALSO HAVE THE RIGHT BUT NOT THE OBLIGATION TO ADD ANY LANDSCAPE IMPROVEMENTS TO THE VAM EASEMENT, TO ERECT ANY TRAFFIC CONTROL DEVICES OR SIGNS ON THE VAM EASEMENT AND TO REMOVE ANY OBSTRUCTION THEREON. THE CITY, ITS SUCCESSORS, ASSIGNS, OR AGENTS SHALL HAVE THE RIGHT AND PRIVILEGE AT ALL TIMES TO ENTER UPON THE VAM EASEMENT OR ANY PART THEREOF FOR THE PURPOSES AND WITH ALL RIGHTS AND PRIVILEGES SET FORTH HEREIN.

OWNER'S CERTIFICATE

STATE OF TEXAS §

COUNTY OF ELLIS §

WHEREAS DRP BOOKBINDER MULTISTATE, LLC IS THE OWNER OF THAT TRACT OF LAND SITUATED IN THE OWEN SHANNON SURVEY, ABSTRACT NUMBER 989, ELLIS COUNTY, TEXAS AND BEING A PORTION OF TRACT TWO AS DESCRIBED IN WARRANTY DEED TO DRP BOOKBINDER MULTISTATE LLC, AS RECORDED IN INSTRUMENT NUMBER 2435976, OF THE OFFICIAL PUBLIC RECORDS OF ELLIS COUNTY, TEXAS AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" FOUND FOR THE NORTHWEST CORNER OF SAID DRP BOOKBINDER MULTISTATE, LLC TRACT

THENCE N 59°15'02" E, A DISTANCE OF 1043.23' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°14'54" W, A DISTANCE OF 1200.63' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 89°38'24" E, A DISTANCE OF 100.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 44°41'45" E, A DISTANCE OF 14.16' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°14'54" W, A DISTANCE OF 15.04' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 89°45'06" E, A DISTANCE OF 50.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°14'54" W, A DISTANCE OF 80.05' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 89°38'24" E, A DISTANCE OF 441.30' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°21'36" W, A DISTANCE OF 95.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 45°21'36" W, A DISTANCE OF 14.14' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE N 89°38'24" W, A DISTANCE OF 15.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°21'36" W, A DISTANCE OF 50.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 89°38'24" E, A DISTANCE OF 15.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 44°38'24" E, A DISTANCE OF 14.14' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°21'36" W, A DISTANCE OF 194.60' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 45°21'36" W, A DISTANCE OF 14.14' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE N 89°38'24" W, A DISTANCE OF 15.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°21'36" W, A DISTANCE OF 50.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 89°38'24" E, A DISTANCE OF 15.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 44°38'24" E, A DISTANCE OF 14.14' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°21'36" W, A DISTANCE OF 100.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE N 89°38'24" W, A DISTANCE OF 441.30' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°21'36" W, A DISTANCE OF 85.40' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE N 89°38'24" W, A DISTANCE OF 50.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°21'36" W, A DISTANCE OF 10.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE N 89°38'24" W, A DISTANCE OF 108.78' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 00°14'54" W, A DISTANCE OF 46.00' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET;
THENCE S 55°20'21" W, A DISTANCE OF 33.90' TO A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" FOUND;
THENCE N 30°27'37" W, A DISTANCE OF 1696.68' RETURNING TO THE POINT OF BEGINNING AND CONTAINING AN AREA OF 1,258,104 SQUARE FEET, OR 28.882 ACRES OF LAND, MORE OR LESS.

*OWNERS DEDICATION*

*NOW, THEREFORE, KNOWN ALL MEN BY THESE PRESENTS:*

*THAT DRP BOOKBINDER MULTISTATE, LLC, A DELAWARE LIMITED LIABILITY COMPANY, ACTING HEREIN BY AND THROUGH ITS DULY AUTHORIZED OFFICER, DOES HEREBY ADOPT THIS PLAT DESIGNATING THE HEREIN ABOVE DESCRIBED PROPERTY AS PRAIRIE VIEW, PHASE 3A, AN ADDITION TO THE CITY OF ENNIS, TEXAS, ELLIS COUNTY, TEXAS, AND DOES HEREBY DEDICATE, IN FEE SIMPLE, TO THE PUBLIC USE FOREVER, THE STREETS AND ALLEYS SHOWN HEREON AND DOES HEREBY DEDICATE THE EASEMENTS SHOWN ON THE PLAT FOR THE PURPOSES INDICATED TO THE PUBLIC USE FOREVER, SAID DEDICATIONS BEING FREE AND CLEAR OF ALL LIENS AND ENCUMBRANCES EXCEPT AS SHOWN HEREIN. NO BUILDINGS, FENCES, TREES, SHRUBS, OR OTHER IMPROVEMENTS SHALL BE CONSTRUCTED OR PLACED UPON, OVER, OR ACROSS THE EASEMENTS ON SAID PLAT. UTILITY EASEMENTS MAY ALSO BE USED FOR THE MUTUAL USE AND ACCOMMODATION OF ALL PUBLIC UTILITIES DESIRING TO USE OR USING THE SAME UNLESS THE EASEMENT LIMITS THE USE TO A PARTICULAR UTILITY OR UTILITIES, SAID USE BY PUBLIC UTILITIES BEING SUBORDINATE TO THE PUBLIC'S AND CITY OF ENNIS' USE THEREOF. THE CITY OF ENNIS OR ANY PUBLIC UTILITY SHALL HAVE THE RIGHT TO REMOVE AND KEEP REMOVED ALL OR PART OF ANY BUILDINGS, FENCES, TREES, SHRUBS OR OTHER IMPROVEMENTS OR GROWTHS WHICH IN ANY WAY ENDANGER OR INTERFERE WITH THE CONSTRUCTION, MAINTENANCE OR EFFICIENCY OF ITS RESPECTIVE SYSTEMS ON ANY OF THESE EASEMENTS AND THE CITY OF ENNIS OR ANY PUBLIC UTILITY SHALL AT ALL TIMES HAVE THE RIGHT OF INGRESS AND EGRESS TO AND FROM AND UPON ANY OF SAID EASEMENTS FOR THE PURPOSE OF CONSTRUCTING, RECONSTRUCTING, INSPECTING, PATROLLING, MAINTAINING, AND ADDING TO OR REMOVING ALL OR PART OF ITS RESPECTIVE SYSTEM WITHOUT THE NECESSITY AT ANY TIME OF PROCURING THE PERMISSION OF ANYONE. DRP BOOKBINDER MULTISTATE, LLC DOES HEREBY BIND ITSELF, ITS SUCCESSORS AND ASSIGNS TO FOREVER WARRANT AND DEFEND ALL AND SINGULAR THE ABOVE DESCRIBED STREETS, ALLEYS, EASEMENTS, AND RIGHTS UNTO THE PUBLIC AGAINST EVERY PERSON WHOMSOEVER LAWFULLY CLAIMING OR TO CLAIM THE SAME OF ANY PART THEREOF. THIS PLAT IS APPROVED SUBJECT TO ALL PLATTING AND SUBDIVISION ORDINANCES, RULES, REGULATIONS, AND RESOLUTIONS OF THE CITY OF ENNIS, TEXAS.*

*BY: DRP BOOKBINDER HOLDCO, LLC*
*ITS: SOLE MEMBER*

*BY: DW GENERAL PARTNER, LLC*
*ITS: MANAGER*

*BY: _____*
*NAME: HOUDIN HONARVAR*
*TITLE: AUTHORIZED SIGNATORY*

*STATE OF TEXAS §*

*COUNTY OF DALLAS §*

*BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS DAY PERSONALLY APPEARED _____, OWNER, KNOWN TO ME TO BE THE PERSON WHOSE NAME ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EACH EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATIONS THEREIN EXPRESSED.*

*GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS _____ DAY OF _____, 2026.*

*_____*
*NOTARY PUBLIC IN AND FOR STATE OF TEXAS*

*MY COMMISSION EXPIRES: _____*

*NOTES:*

*1. HOMEOWNERS ASSOCIATION SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL COMMON AREAS, OPEN SPACE, AND EASEMENTS.*

*2. LANDSCAPE AND IRRIGATION AS REQUIRED BY THE CITY ORDINANCE.*

*3. LIGHT STANDARDS AS REQUIRED BY CITY ORDINANCE.*

*4. STREET SIGNAGE TO COMPLY WITH CITY ORDINANCE.*

*5. THE PLAT SHALL NOT REGULATE SETBACKS AND BUILDING LINES. THEY ARE SHOWN FOR INFORMATIONAL PURPOSES.*

*6. THE OWNERS OF ALL CORNER LOTS SHALL MAINTAIN VISIBILITY/SIGHT TRIANGLES IN ACCORDANCE WITH THE CITY OF ENNIS AND/OR/TXDOT ORDINANCES, RULES AND REGULATIONS.*

*7. ALL LOT CORNERS ARE MARKED WITH A 1/2" IRON ROD WITH CAP STAMPED "PIERCE-MURRAY" SET UNLESS NOTED OTHERWISE.*

*8.SELLING A PORTION OF ANY LOT WITHIN THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE CITY ORDINANCE AND STATE LAW, AND IS SUBJECT TO FINES AND WITHHOLDING OF UTILITIES AND BUILDING PERMITS.*

*CERTIFICATE OF APPROVAL*

*I HEREBY CERTIFY THAT THE ABOVE AND FOREGOING PLAT OF PRAIRIE VIEW, PHASE 3A WAS APPROVED BY THE CITY OF ENNIS, TEXAS, ACCORDING TO CHAPTER 212 OF THE TEXAS LOCAL GOVERNMENT CODE ON THIS _____ DAY OF _____, 2026.*

*_____*
*CITY MANAGER*

*SURVEYORS CERTIFICATION*

*KNOW ALL MEN BY THESE PRESENTS:*

*THAT I, CAMDEN DAVID PIERCE, DO HEREBY CERTIFY THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON AS SET WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION IN ACCORDANCE WITH THE SUBDIVISION ORDINANCES, RULES, AND REGULATIONS OF THE CITY OF ENNIS, TEXAS.*

*_____*
*CAMDEN DAVID PIERCE*
*REGISTERED PROFESSIONAL LAND SURVEYOR*
*REGISTRATION NUMBER: 6791*
*DATED: 5-26-2026*

STATE OF TEXAS REGISTERED CAMDEN D. PIERCE 6791 PROFESSIONAL LAND SURVEYOR

*STATE OF TEXAS §*

*COUNTY OF SMITH §*

*BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS DAY PERSONALLY APPEARED CAMDEN D. PIERCE, SURVEYOR, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THIS PLAT.*

*GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS 26 DAY OF May, 2026.*

*_____*
*NOTARY PUBLIC IN AND FOR STATE OF TEXAS*

*MY COMMISSION EXPIRES: 3-25-2029*

NOTARY PUBLIC STATE OF TEXAS — Dylan Sims My Commission Expires 3/25/2029 Notary ID135508198

*NOTICE: SELLING A PORTION OF ANY LOT WITHIN THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE CITY ORDINANCE AND STATE LAW, AND IS SUBJECT TO FINES AND WITHOLDING OF UTILITIES AND BUILDING PERMITS.*

PIERCE-MURRAY LAND SOLUTIONS
Engineering ⊕ Surveying
800 TALLYHO CIRCLE
TYLER, TEXAS 75703
(817) 239-5646
(903) 539-2256
TBPLS FIRM REGISTRATION NO. 10194437

*OWNER*
*DRP BOOKBINDER MULTISTATE, LLC A DELAWARE LIMITED LIABILITY COMPANY 1231 GREENWAY DR SUITE 800 IRVING, TX 75038*

*DEVELOPER*
*LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD 1231 GREENWAY DR, STE 800 IRVING, TEXAS 75038 469-587-5200*

*ENGINEER*
*PAPE-DAWSON ENGINEERS, INC. 6105 TENNYSON PKWY, STE 210 PLANO, TX 75024 214-420-8494*

*SURVEYOR*
*PIERCE-MURRAY LAND SOLUTIONS, LLC 800 TALLYHO CIR. TYLER, TX 75703*

FINAL PLAT
# PRAIRIE VIEW, PHASE 3A
CONTAINING 136 RESIDENTIAL LOTS, BEING 28.882 ACRES OF LAND SITUATED IN THE OWEN SHANNON SURVEY, ABSTRACT NUMBER 989, CITY OF ENNIS, ELLIS COUNTY, TEXAS

DATE OF PREPARATION: JUNE, 2024

PLANNING AND ZONING COMMISSION

# AGENDA SUMMARY FORM

| | |
|---|---|
| **To:** | Planning and Zoning Commission |
| **Subject:** | Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Heavy Industrial and Manufacturing (H-IM) district for plastics manufacturing on an approximately 1.50-acre tract of land situated in the H.T. & B.B. RR Survey, Abstract No. 448, City of Ennis, Ellis County, Texas. Located at 1600 Jack McKay Blvd. Ellis CAD ID 161949.<br>P&Z Case No.: SUP-26-4<br>Owner: Long Thames Texas Enterprises LLC<br>Applicant: Jesse Hwong |
| **Meeting:** | PLANNING AND ZONING COMMISSION - 09 Nov 2026 |
| **Department:** | Planning & Development |
| **Staff Contact:** | Jorge Barake, Planner |

## BACKGROUND INFORMATION:

The subject property, located at 1600 Jack McKay Boulevard and encompassing approximately 1.50 acres, is zoned Heavy Industrial and Manufacturing (H-IM). The applicant, Jesse Hwong, is requesting approval of a Specific Use Permit (SUP) to allow the establishment and operation of a plastics manufacturing facility, a use that is permitted within the H-IM district by Specific Use Permit only.

The proposed plastics manufacturing facility will include plastic injection molding, printing, assembly, leak testing, quality control, packaging, warehousing, and distribution of plastic grease cartridges and plastic tubes. Plastic injection molding is a manufacturing process used to produce plastic parts in high volumes. This process is commonly used to manufacture items such as plastic tubes and automotive components.

Based on information provided by the applicant, if approved, the facility will operate on a multi-shift manufacturing schedule. Injection molding activities will occur continuously from 8:00 a.m. Monday through 8:00 a.m. Saturday and all manufacturing operations will remain indoors, limiting the potential for noise, emissions, and other operational impacts on neighboring properties.

The Future Land Use Plan designates the subject property as Industrial Transition. According to the 2015 Comprehensive Plan, the Industrial Transition land use category encompasses areas characterized by older industrial and auto-oriented development that may be underperforming or experiencing redevelopment pressures. These areas are typically located adjacent to established industrial uses or along major transportation corridors that are undergoing change and reinvestment.

Notification letters were sent to the six (6) surrounding property owners within 200 feet. One (1) approval and zero (0) protests were returned.

**RECOMMENDATION:**

Given the property's industrial zoning designation, the proposed plastics manufacturing operation, and the site's classification within the Industrial Transition Future Land Use category, staff finds the request to be generally consistent with the surrounding development pattern and supportive of the area's long-term land use vision.

Should the Planning and Zoning Commission recommend approval of the request, staff further recommends the following conditions:

1. The development shall be operated in substantial conformance with the site plan, survey, and supporting materials submitted as part of the application.
2. All required federal, state, and local permits, licenses, and approvals shall be obtained prior to commencement of operations.
3. Discontinuance of the approved use for a period exceeding 180 consecutive days shall constitute abandonment of the use.
4. The Specific Use Permit (SUP) shall expire 18 months after the effective date of the approving ordinance if the approved use has not commenced.

**ATTACHMENTS:**

SUP-26-4_Application
SUP-26-4_Vicinity Map
SUP-26-4_Drone Photo
SUP-26-4_Zoning Map
SUP-26-4_Written Narrative and Letter of Intent
SUP-26-4_SUP Exhibit_1600 Jack McKay Blvd
SUP-26-4_FLUP
SUP-26-4_SPO Responses

City of Ennis, TX

October 9, 2026

## Record No: SUP-26-4

Specific Use Permit (SUP)

Status: Active

Submitted On: 4/24/2026

### Primary Location

1600 JACK MCKAY BLVD
ENNIS, TX 75119

### Owner

LONG THAMES TEXAS

### Applicant

Jesse Hwong

## Application Information

**Type of Application***

Specific Use Permit

**Are you requesting an SUP to operate a temporary batch plant?**

No

**Subdivision Name***

Southwest Industrial Park Rev ( SW IND PARK REV)

**Property Type***

Commercial

**No. of Lots***

1

**Acreage***

1.5

**Current Zoning**

H-IM - Heavy Industrial and Manufacturing

**Current Use ***

Manufacturing

**Are you using an Agent/Representative?***

No

**Describe why the request for a SUP***

I would like to receive a construction permit and CO to operate a plastic injection factory

## Owner Information

**Owner Name***

Long Thames Texas Enterprise LLC

**Owner Street Address***

**Owner City, State Zip***

**Owner Telephone***

**Owner Email***

## Signature

**Applicant Signature***

Jesse Hwong
Apr 24, 2026

## Attachment Requires

Please see the Development Application Requirements.pdf and for more information on attachment requirements.

Please see the SUP Temp Batch Submittal Requirements.pdf for site plan requirements pertaining to temporary batch plants.

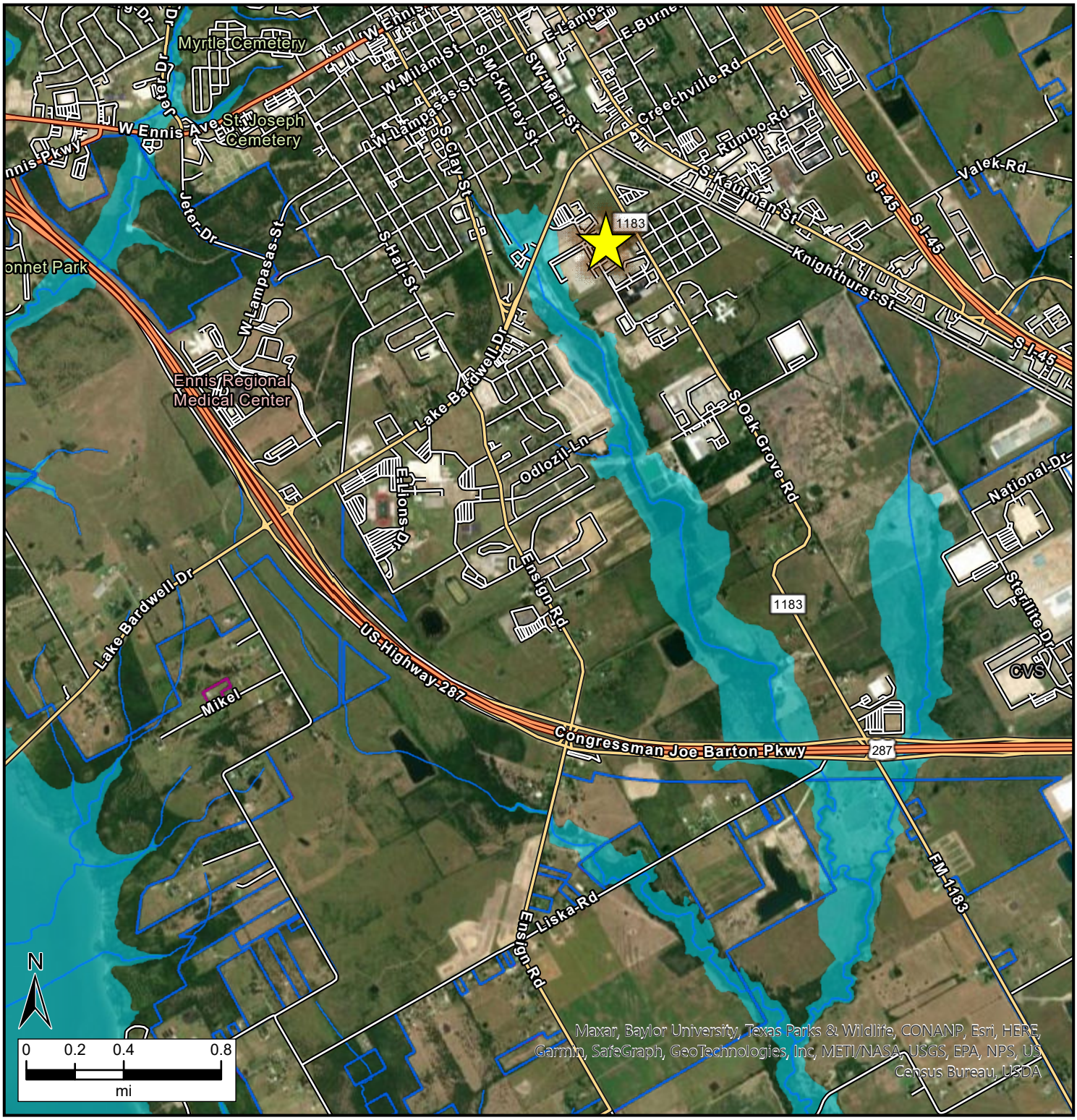
I have read and reviewed the Development Application Requirements*

☑

New Field

No File Uploaded

# Vicinity Map




## Legend

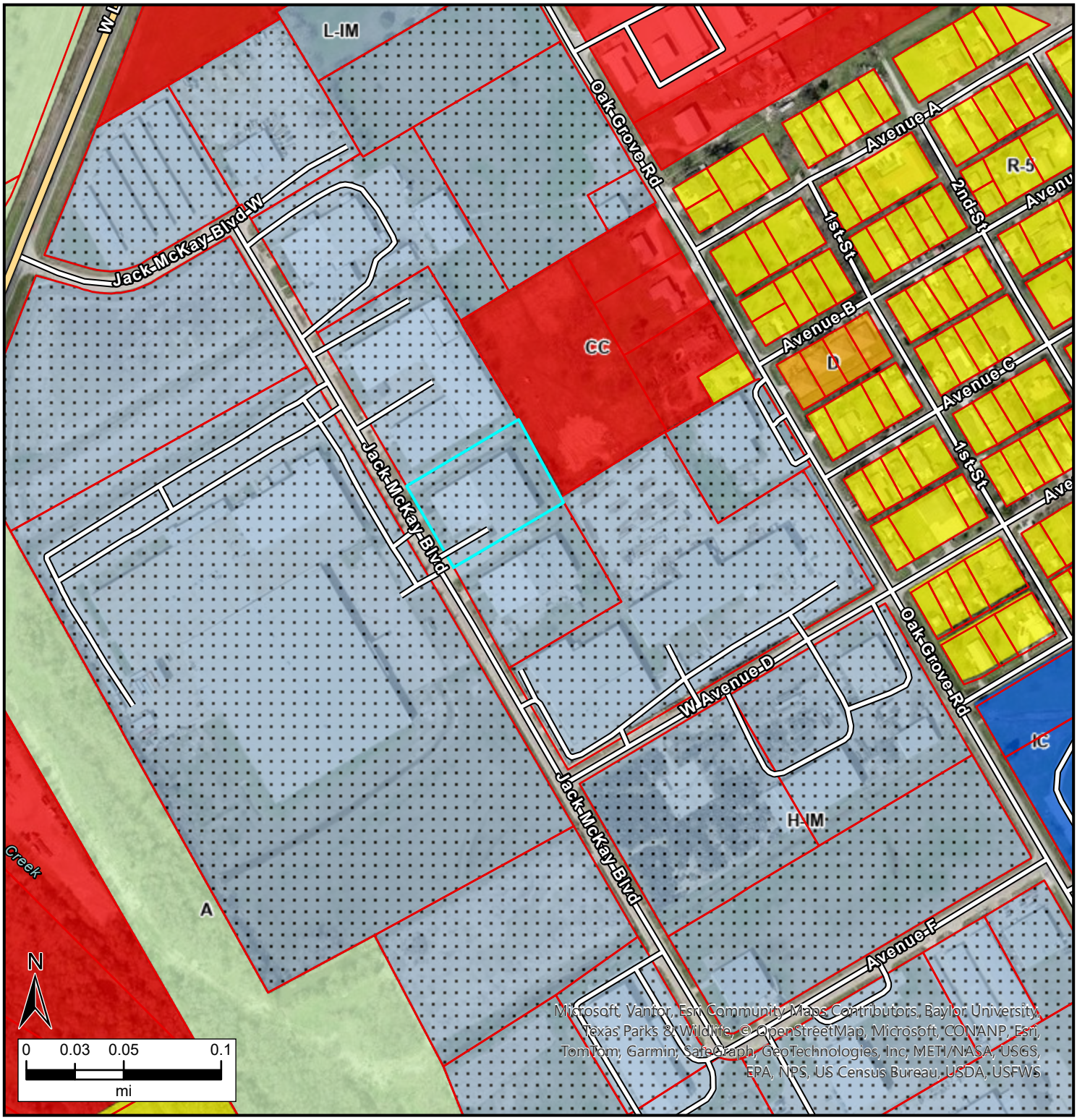
- Ennis ETJ
- Ennis City Limits
- Other Cities Limits
- Floodway
- 1% Annual Chance Flood Hazard Area
- 0.2% Annual Chance Flood Hazard Area
- Profile Baseline
- Water Line
- Cross Section
- Base Flood Elevation

ENNIS TEXAS
*The bluebonnet spirit of Texas*

E.1.



# Zoning Map




**Legend**

- Parcels
- A Agricultural
- RE Residential Estate
- R-10 Single Family Residential 10
- R-5 Single Family Residential 5
- R-5-Z Single Family Residential 5 Zero Lot Line
- R-5-PD #5 Single Family Residential 5 Planned Development #5
- R-5-PD #7 Single Family Residential 5 Planned Development #7
- R-7 Single Family Residential 7
- NC Neighborhood Conservation
- NC-MF1 Neighborhood Multi-Family 1
- NC-MF2 Neighborhood Multi-Family 2
- NC-D Neighborhood Duplex
- D Duplex
- TH Townhome
- MF-1 Multi-Family 1
- MF-2 Multi-Family 2
- MH Manufactured Home
- C Neighborhood Commercial
- CC-PD Corridor Commercial Planned Development
- BP Business Park
- CC Corridor Commercial
- L-IM Light Industrial and Manufacturing
- H-IM Heavy Industrial and Manufacturing
- DT Downtown Core
- DT-T1 Downtown Transition 1
- DT-T2 Downtown Transition 2
- DT-A1 Downtown Approach 1
- DT-A2 Downtown Approach 2
- IC Institutional and Civic
- PP Public and Parks
- PD Planned Development
- PD-MF-2 Planned Development-Multi-Family Residential District 2

ENNIS TEXAS
*The bluebonnet spirit of Texas*

# WRITTEN NARRATIVE / LETTER OF INTENT

## Specific Use Permit Request - 1600 Jack McKay Blvd, Ennis, Texas

| | |
|---|---|
| **Applicant** | Long Thames Texas Enterprise LLC |
| **Project Address** | 1600 Jack McKay Blvd, Ennis, TX 75119 |
| **Existing Building** | Approximately 25,000 square feet |
| **Proposed Addition** | Approximately 7,500 square feet |
| **Total Building Area** | Approximately 32,500 square feet after expansion |

### 1. Request Summary

Long Thames Texas Enterprise LLC requests approval of a Specific Use Permit (SUP) for operation of a plastic injection molding and related packaging manufacturing facility at 1600 Jack McKay Blvd. The project will utilize an existing approximately 25,000-square-foot industrial building and a proposed approximately 7,500-square-foot building addition, for a total building area of approximately 32,500 square feet.

Primary operations will include plastic injection molding, printing, assembly, leak testing, quality control, packaging, warehousing, and shipping of plastic grease cartridges and plastic tubes. The principal raw materials are polypropylene (PP) and polyethylene (PE) resins.

### 2. Requested Use and Modifications to Existing Standards

The requested action is approval of the manufacturing use through the City of Ennis SUP process. Based on the current application, no separate modification or deviation from applicable UDO dimensional or development standards is requested. Building, site, parking, access, landscaping, lighting, fire protection, utility, and other improvements will be designed and constructed in accordance with applicable City requirements and the plans approved through the development review and permitting process.

### 3. Operations, Hours, and Staffing

The facility is planned for multi-shift manufacturing. Injection molding will operate from Monday at 8:00 AM through Saturday at 8:00 AM. Printing operations will normally operate Monday through Friday from 8:00 AM to 5:00 PM.

| Shift / Operation | Typical Hours | Operating Days | Employees |
|---|---|---|---|
| Shift #1 | 8:00 AM - 5:00 PM | Monday - Friday | 10 |
| Shift #2 | 4:00 PM - 12:00 AM | Monday - Friday | 2 |
| Shift #3 | 12:00 AM - 8:00 AM | Tuesday - Saturday | 2 |

*Maximum anticipated employees on site at one time: approximately 12 during the overlap between Shift #1 and Shift #2.*

### 4. Water, Wastewater, and Environmental Considerations

- The plastic injection molding, printing, assembly, leak-testing, and packaging processes do not generate process wastewater.
- Cooling water used for molds and equipment is primarily recirculated through the facility's cooling systems. As part of routine preventive maintenance, cooling water may be periodically drained and replaced, typically approximately once every one to two months. The final discharge method for such periodic cooling-water discharge will be managed in accordance with applicable City of Ennis and TCEQ requirements.
- Domestic sanitary wastewater from employee restrooms and breakroom facilities is discharged to the City of Ennis sanitary sewer system.
- PP and PE are solid plastic resins. Current fire/VOC review identifies the proposed resin-based UV printing and coating materials as non-flammable or low-/near-zero-VOC formulations, with no significant VOC emissions expected under normal operations.
- No flammable gases or bulk storage of flammable liquids are proposed as part of the described manufacturing operation.

### 5. Impact on Adjacent Properties

No significant adverse impact to adjacent properties is anticipated from the requested use. The primary manufacturing activities will occur within enclosed industrial buildings. The manufacturing processes do not generate process wastewater. Cooling water is primarily recirculated, and any periodic cooling-water discharge associated with routine maintenance will be managed in accordance with applicable City of Ennis and TCEQ requirements. The current material and emissions review does not identify significant VOC emissions under normal operating conditions.

Potential impacts associated with noise, lighting, access, parking, loading, service areas, and traffic will be managed through the approved site design and applicable City standards. The project is an industrial manufacturing use within an existing industrial facility and proposed industrial addition, and is intended to operate in a manner compatible with the surrounding industrial context.

### 6. Consistency with City of Ennis UDO Review and Approval Criteria

This narrative is intended to address the Specific Use Permit review criteria in City of Ennis UDO Section 3.3.3(9)(c), together with the general approval criteria in Section 3.2.7(2). The proposed use is consistent with those criteria as summarized below:

**1. Purpose and standards of the zoning district:** The proposed use is industrial/manufacturing in nature and will be operated within an existing industrial building and proposed addition. The project will remain subject to all applicable dimensional, site-development, building, fire, utility, and other City requirements.

**2. Compatibility with surrounding uses and community facilities:** The requested use is a contained industrial manufacturing operation. Primary production activities are conducted indoors. The manufacturing processes do not generate process wastewater, cooling water is primarily recirculated, and periodic cooling-water discharge will be managed in accordance with applicable City of Ennis and TCEQ requirements. The described materials and processes are not expected to create significant off-site emissions under normal operation.

**3. Traffic impacts:** Access, parking, loading, circulation, and any required fire-lane or site improvements will be addressed through the approved site plan and applicable City standards so that traffic and service activity are accommodated on the site.

**4. Welfare of the area and adjacent properties:** The project reuses and expands an existing industrial property for manufacturing and employment while maintaining controls for wastewater, materials, fire safety, and emissions. No significant adverse effect on adjacent properties is anticipated from the proposed use as described.

**5. Scale of development:** The project consists of an existing approximately 25,000-square-foot industrial building with an approximately 7,500-square-foot addition. The addition is an expansion of the existing industrial facility rather than a separate incompatible land-use pattern.

**6. Mitigation of access, parking, service-area, and nuisance impacts:** The project will comply with applicable City standards for access, parking, service areas, lighting, fire protection, utilities, and site development. Manufacturing is primarily enclosed, the manufacturing processes do not generate process wastewater, and cooling water is primarily recirculated. Any periodic cooling-water discharge associated with routine maintenance will be managed in accordance with applicable City of Ennis and TCEQ requirements.

The applicant will also comply with applicable federal and State requirements and with City development and infrastructure standards applicable to the project, consistent with UDO Section 3.2.7(2).

### 7. Conclusion

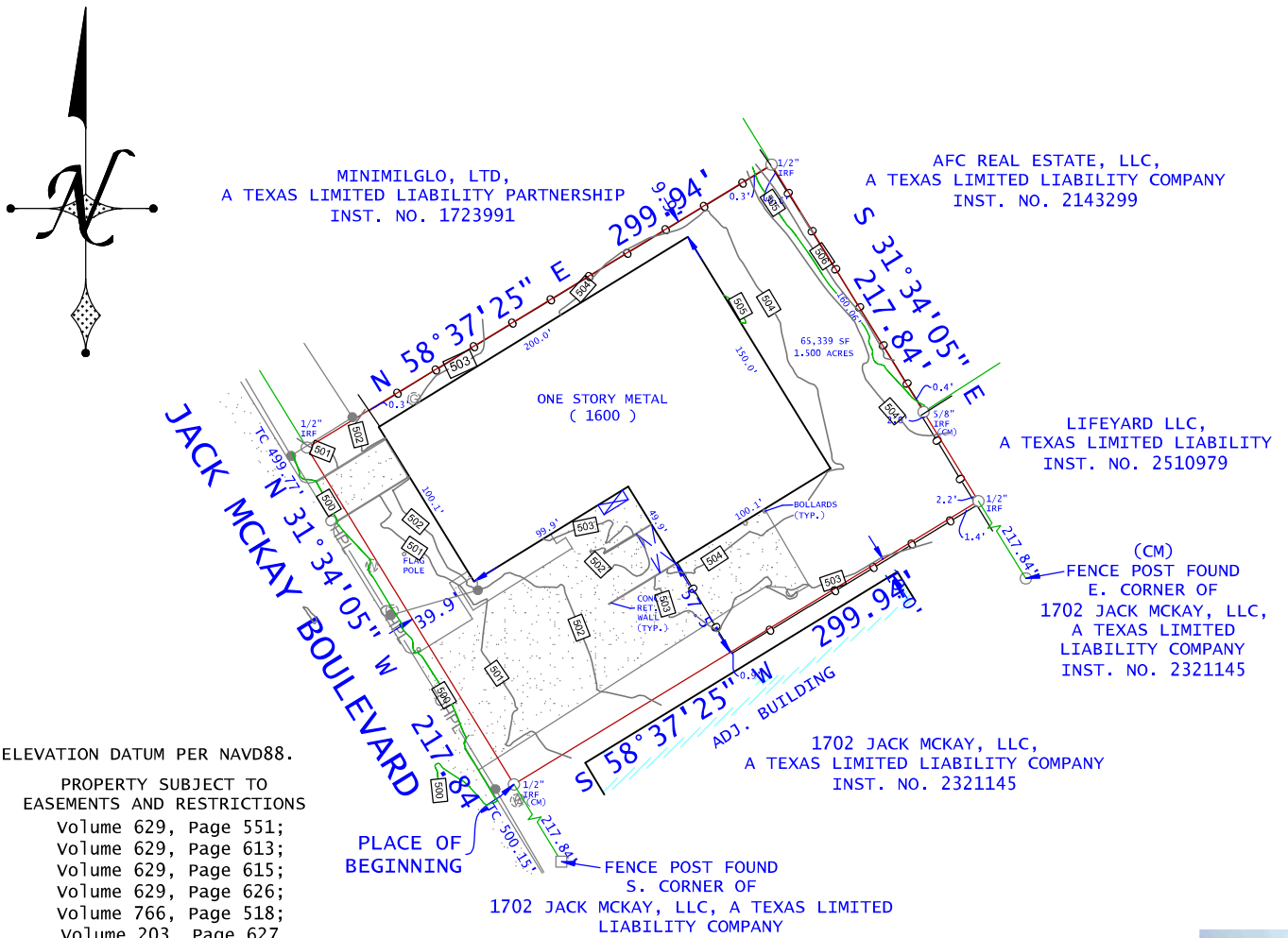
Long Thames Texas Enterprise LLC respectfully requests approval of the Specific Use Permit for the proposed plastic injection molding and related packaging manufacturing operations at 1600 Jack McKay Blvd. The proposed use will utilize and expand an existing industrial facility, is designed to comply with applicable City requirements, and is not anticipated to create significant adverse impacts on adjacent properties.

*Respectfully submitted,*
**David Chen**
CTO
Long Thames Texas Enterprise LLC
August 11, 2026

E519 East I-30 #145
Rockwall, Texas 75087

# SUP Exhibit

1600 JACK MCKAY BOULEVARD
CITY OF ENNIS,
ELLIS COUNTY, TEXAS 75119




ELEVATION DATUM PER NAVD88.

PROPERTY SUBJECT TO
EASEMENTS AND RESTRICTIONS
Volume 629, Page 551;
Volume 629, Page 613;
Volume 629, Page 615;
Volume 629, Page 626;
Volume 766, Page 518;
Volume 203, Page 627

Bearings shown hereon are referenced to the Texas Coordinate System of 1983, North Central Zone (4202), and are based upon the North American Datum of 1983 (NAD 83), 2011 Adjustment, Epoch 2010.



## NOTES:

1) Bearings shown hereon are referenced to the Texas Coordinate System of 1983, North Central Zone (4202), and are based upon the North American Datum of 1983 (NAD 83), 2011 Adjustment, Epoch 2010.

2) All distances and coordinates shown hereon are U.S. Survey Feet adjusted to grid, unless otherwise noted.

BRIAN S. RHODES (04-16-2026)
Registered Professional Land Surveyor No. 5962

## LEGEND

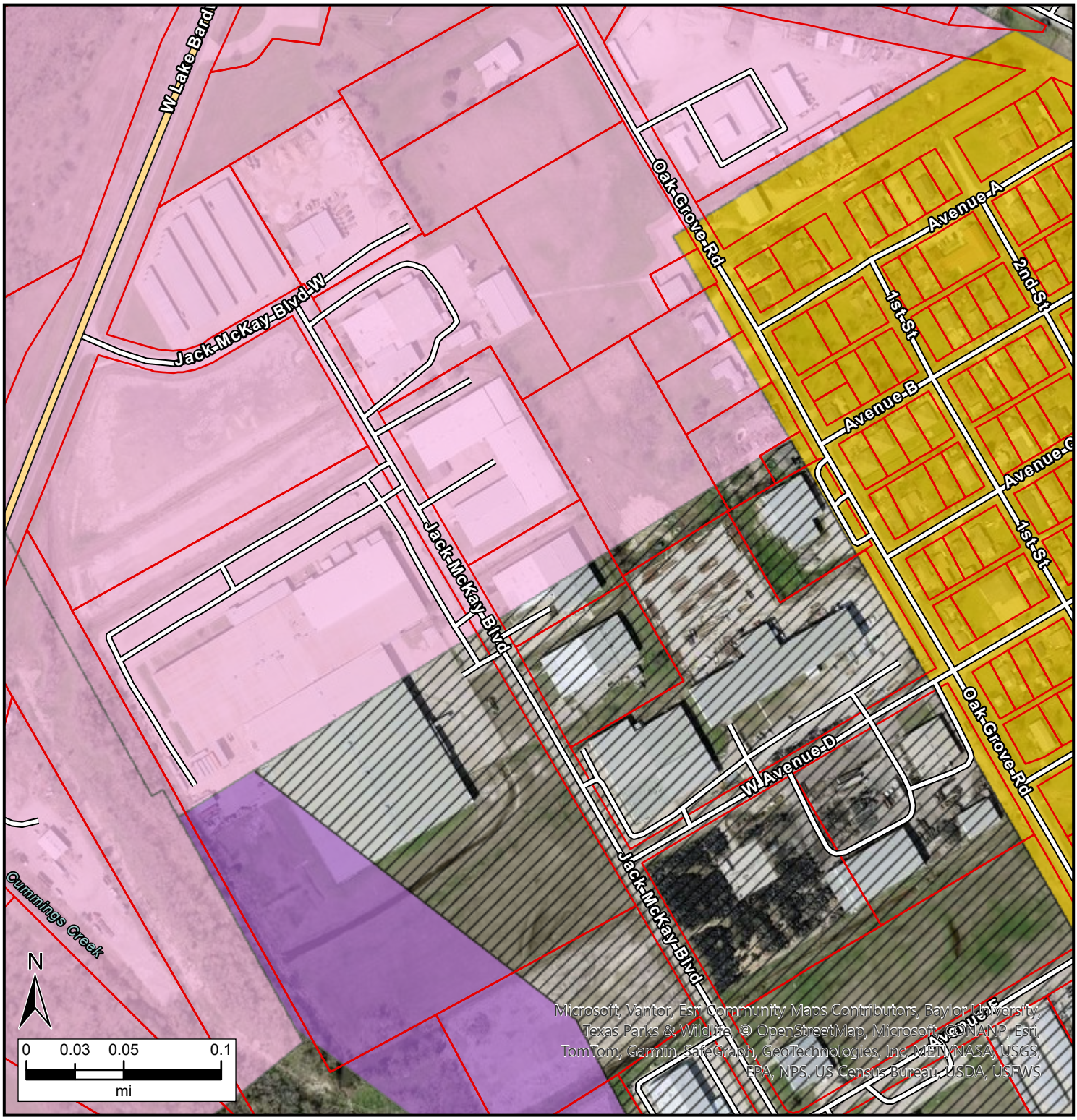
MRD - MONUMENT OF RECORD DIGNITY
CM - CONTROL MONUMENTS
○ MONUMENT FOUND (AS NOTED)
⊗ 1/2" IRON ROD WITH CAP STAMPED "BURNS SURVEYING" SET
⊕ POINT FOR CORNER

STATE OF TEXAS
REGISTERED
BRIAN S. RHODES
5962
PROFESSIONAL
LAND SURVEYOR

Scale: 1" = 100'
Job no.: 113990-02
Drawn by: BM


BRIAN S. RHODES
REGISTERED PROFESSIONAL LAND SURVEYOR
2701 SUNSET RIDGE DRIVE, STE. 303, ROCKWALL, TEXAS 75032
PHONE: 972-475-8940

# Future Land Use Plan



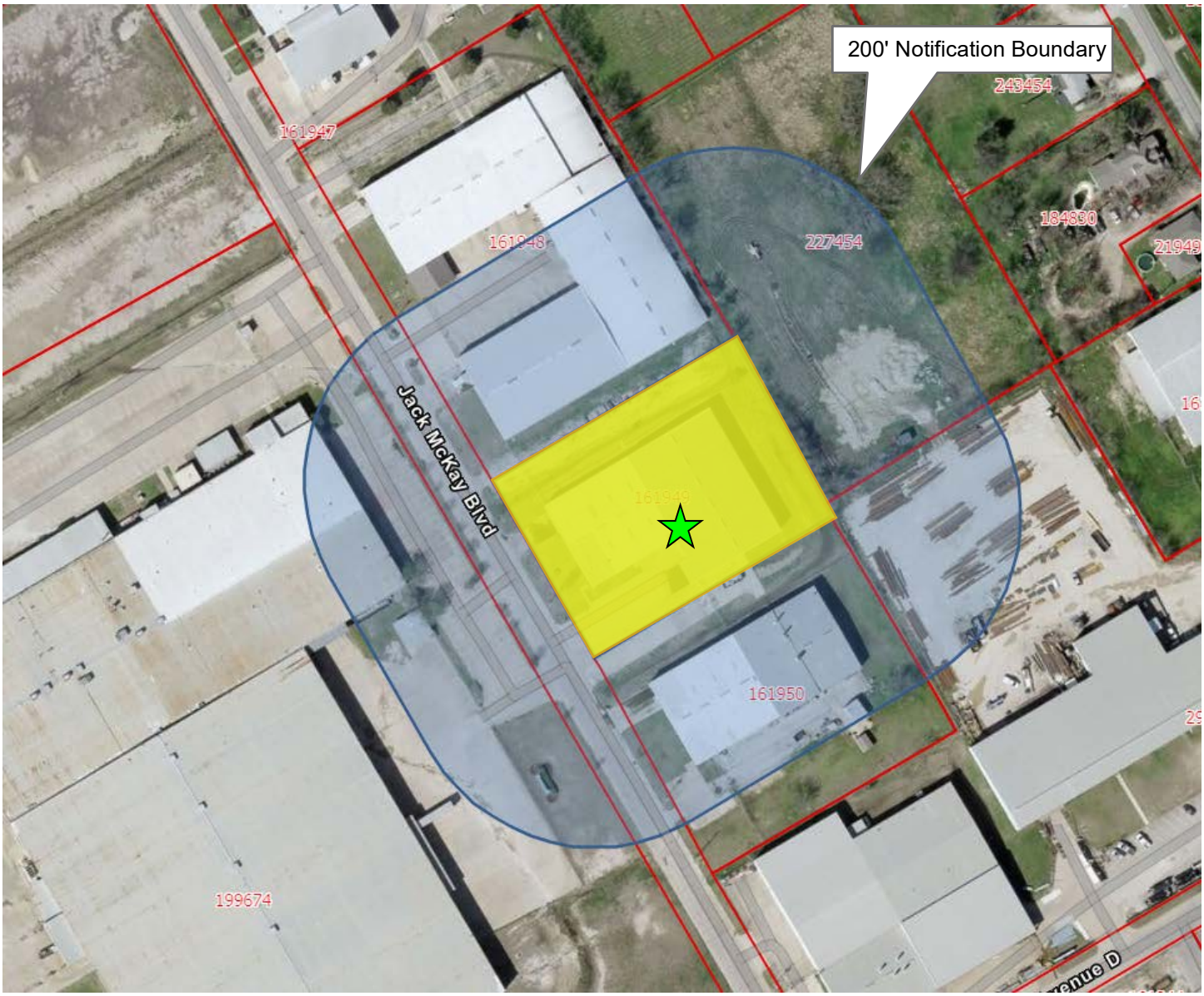

## Legend

- Parcels
- Business Park
- Cemetery
- Downtown
- Existing Neighborhoods
- Existing Traditional Neighborhoods
- Industrial
- Industrial Buffer
- Industrial Transition
- New Lakefront Neighborhoods
- New Neighborhoods
- Public-Civic
- Regional Commercia
- Rural/AG/Conservat...

ENNIS TEXAS
The bluebonnet spirit of Texas

Date: 10/23/2026

# P&Z Case No. SUP-26-4




(6) Letters Sent
(1) Approvals
(0) Protests

City of Ennis
Inspection Services
Received
OCT 21 2026

CITY OF ENNIS, TEXAS
COMMUNITY HEALTH AND DEVELOPMENT A DEPARTMENT

COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-4

PID No. 161949

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Heavy Industrial and Manufacturing (H-IM) district for plastics manufacturing on an approximately 1.50-acre tract of land situated in the H.T. & B.B. RR Survey, Abstract No. 448, City of Ennis, Ellis County, Texas. Located at 1500 Jack McKay Blvd. Ellis CAD ID 161949.**
**P&Z Case No.: SUP-26-4**
**Owner: Long Thames Texas Enterprises LLC**
**Applicant: Jesse Hwong**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

_____

_____

| _____ IN FAVOR OF | _____ IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>_____<br>Print Name<br>_____<br>Signature<br>_____<br>Print Name<br>_____<br>Signature |

PLEASE MAIL OR DELIVER TO:
CITY OF ENNIS Community Health AND DEVELOPMENT
108 W KNOX ST
ENNIS, TEXAS 75119

OR

E-MAIL TO
jbarake@ennistx.gov
estubbs@ennistx.gov

LONG THAMES TEXAS ENTERPRISES LLC
1419 DUNN DR
CARROLLTON TX 75006-6909

PLANNING AND ZONING COMMISSION

# AGENDA SUMMARY FORM

| | |
|---|---|
| **To:** | Planning and Zoning Commission |
| **Subject:** | Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion Ellis CAD ID 306692.<br>P&Z Case No.: SUP-26-5<br>Owner: Prairie View Residential Community INC<br>Applicant: Kimley-Horn & Associates |
| **Meeting:** | PLANNING AND ZONING COMMISSION - 09 Nov 2026 |
| **Department:** | Planning & Development |
| **Staff Contact:** | Jorge Barake, Planner |

## BACKGROUND INFORMATION:

The subject property, located in the 4800 Block of Volunteer Drive and encompassing 0.026 acres, is zoned Single-Family Residential-5 (R-5) District. The applicant, Kimley-Horn & Associates, on behalf of Prairie View Residential Community, Inc., has submitted a request for a Specific Use Permit (SUP) to allow the installation of a 74-foot telecommunications tower. Per the applicant, the proposed facility is intended to enhance wireless communication services in the surrounding area by improving network coverage, service reliability, and telecommunications infrastructure capacity.

Pursuant to Table 5.1-1 of the City of Ennis Unified Development Ordinance (UDO), telecommunications towers are permitted within the R-5 district only through approval of a SUP. The SUP process provides an opportunity for the Planning and Zoning Commission to review the proposed use, receive public input and evaluate the request in accordance with the applicable provisions of the Unified Development Ordinance.

Notification letters were sent to the thirty seven (37) surrounding property owners within 200 feet. One (1) approval and ten (10) protests were returned.

## RECOMMENDATION:

Upon further review of the application and supporting materials, the City of Ennis Building Official has expressed concerns regarding the proposed telecommunications tower due to its location within a residential zoning district and its close proximity to existing homes and neighboring residential subdivisions. While telecommunications infrastructure provides an important public service, the proposed 74-foot tower would introduce a substantial vertical structure into an established residential area.

The Building Official is concerned that the tower's proximity to nearby residences may present potential safety risks in the event of structural failure, collapse or damage resulting from severe

weather or other unforeseen circumstances. Accordingly, careful consideration should be given to the tower's location, separation from residential properties and overall compatibility with the surrounding neighborhood.

Should the Planning and Zoning Commission recommend approval of the request, staff recommends the following conditions:

1. The telecommunications tower shall not exceed a height of 74 feet.
2. The development shall be constructed in substantial conformance with the site plan, survey, and supporting materials submitted with the application.
3. All applicable federal, state, and local permits and approvals shall be obtained prior to construction and operation of the facility.
4. The tower and any associated ground equipment shall comply with all applicable provisions of the City of Ennis Unified Development Ordinance, including requirements related to setbacks, screening, fencing, and maintenance.
5. Any future modifications that materially alter the approved tower height, location, or site configuration shall require review and approval in accordance with the Unified Development Ordinance.
6. The telecommunications facility shall be properly maintained and kept in good working order at all times. In the event the facility is abandoned, discontinued, or ceases operation, it shall be removed in compliance with all applicable City requirements.
7. Discontinuance of the approved use for a period exceeding 180 consecutive days shall constitute abandonment of the use.
8. The Specific Use Permit (SUP) shall expire 18 months from date of approval by Ordinance if use has not commenced.

These conditions are intended to ensure compliance with applicable development standards and to address potential impacts associated with the proposed use.

**ATTACHMENTS:**

SUP-26-5_Application
SUP-26-5_Vicinity Map
SUP-26-5_Zoning Map
SUP-26-5_Drone View
SUP-26-5_Table of Uses
SUP-26-5_Survey
SUP-26-5_Prairie View Project Narrative
SUP-26-5_Proposed Construction Drawings
SUP-26-5_FLUP
SUP-26-5_SPO Responses

City of Ennis, TX

October 29, 2026

## Record No: SUP-26-5

Specific Use Permit (SUP)

Status: Active

Submitted On: 7/8/2026

### Primary Location

1030 LAKEVIEW DR
ENNIS, TX 75119

### Owner

KL LHB DSD AIV LLC

### Applicant

Shahzad Mahmood

## Application Information

**Type of Application***

Specific Use Permit

**Are you requesting an SUP to operate a temporary batch plant?**

No

**Subdivision Name***

N/A

**Property Type***

Commercial

**No. of Lots***

1

**Acreage***

0.03

**Current Zoning**

R-5

**Current Use ***

Residential

**Are you using an Agent/Representative?***

Yes

**Describe why the request for a SUP***

Installation of a 74' Monopole wireless telecommunications facility within a fenced in compound and assocaited utilities for power & fiber.

## Owner Information

**Owner Name***

**Owner Street Address***

**Owner City, State Zip***

**Owner Telephone***

**Owner Email***

## Agent/Representative Information

**Firm Name ***

**Main Contact***

**Address***

**City, State Zip**

**Telephone***

**Email***

**New Field**

## Signature

**Applicant Signature***

Shahzad Mahmood
Mar 11, 2026

## Attachment Requires

Please see the Development Application Requirements.pdf and for more information on attachment requirements.

Please see the SUP Temp Batch Submittal Requirements.pdf for site plan requirements pertaining to temporary batch plants.

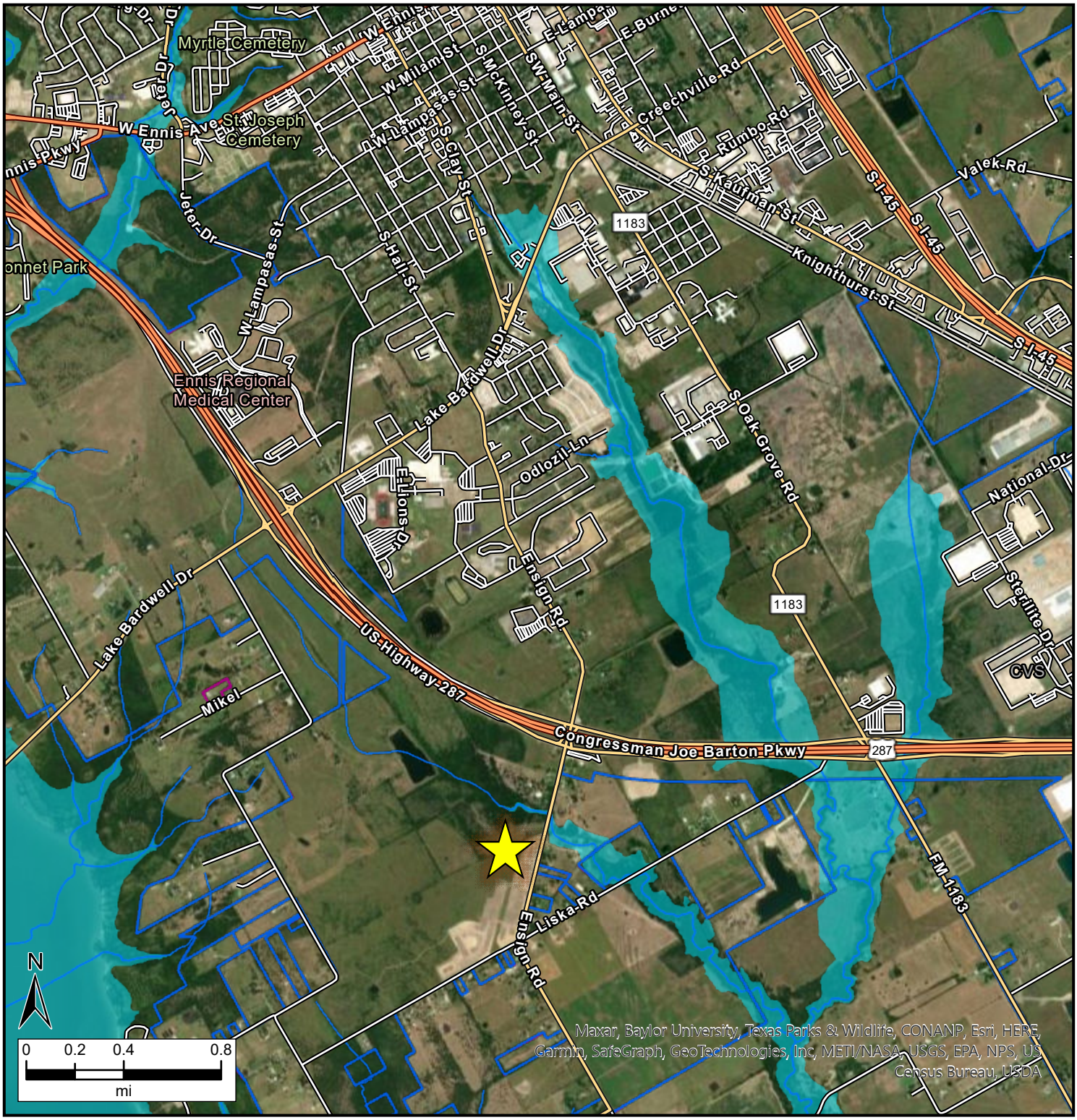
**I have read and reviewed the Development Application Requirements***

☑

**New Field**

No File Uploaded

# Vicinity Map

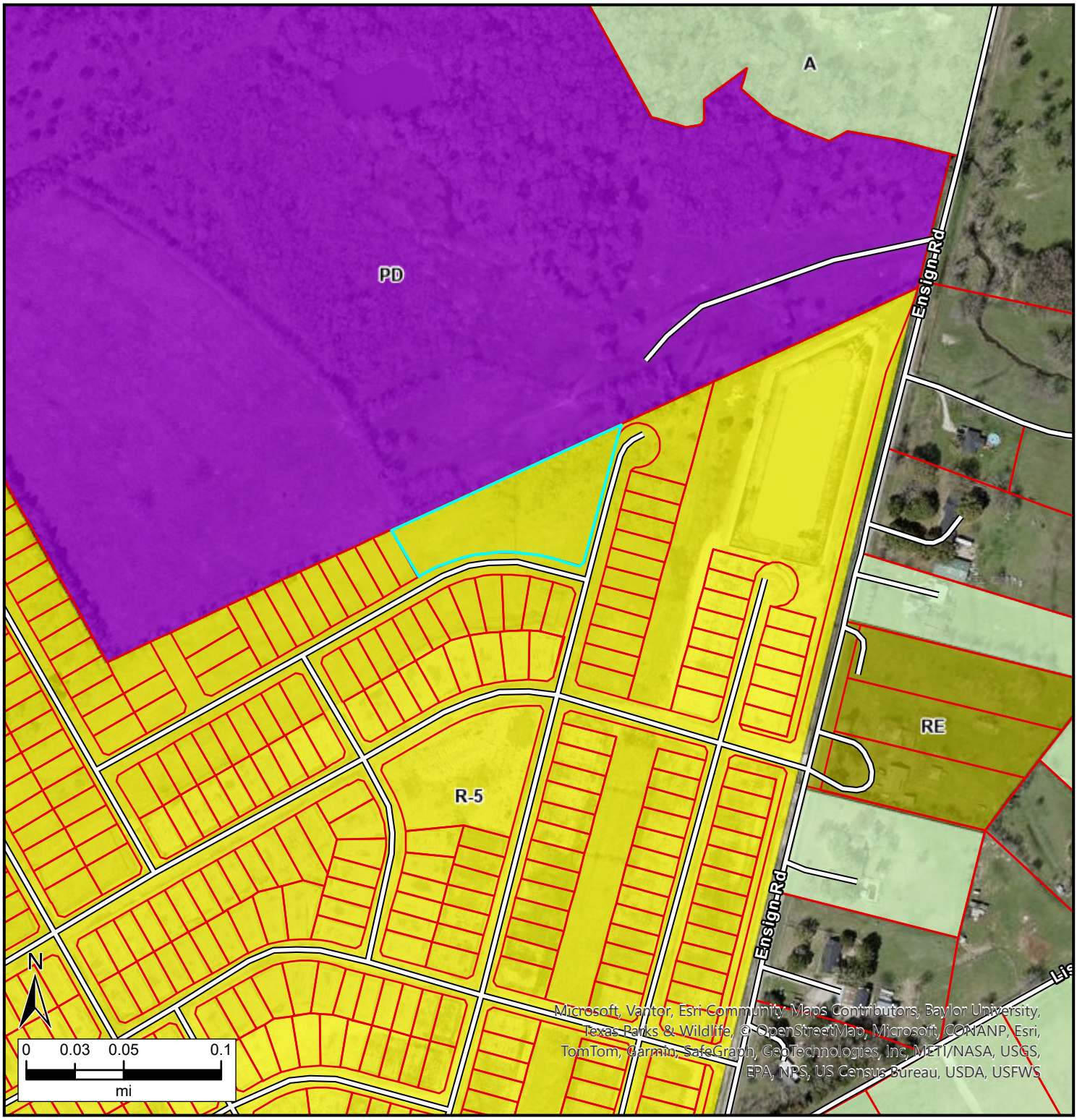



## Legend

- Ennis ETJ
- Ennis City Limits
- Other Cities Limits
- Floodway
- 1% Annual Chance Flood Hazard Area
- 0.2% Annual Chance Flood Hazard Area
- Profile Baseline
- Water Line
- Cross Section
- Base Flood Elevation

ENNIS TEXAS
*The bluebonnet spirit of Texas*

# Zoning Map




**Legend**

- Parcels
- A Agricultural
- RE Residential Estate
- R-10 Single Family Residential 10
- R-5 Single Family Residential 5
- R-5-Z Single Family Residential 5 Zero Lot Line
- R-5-PD #5 Single Family Residential 5 Planned Development #5
- R-5-PD #7 Single Family Residential 5 Planned Development #7
- R-7 Single Family Residential 7
- NC Neighborhood Conservation
- NC-MF1 Neighborhood Multi-Family 1
- NC-MF2 Neighborhood Multi-Family 2
- NC-D Neighborhood Duplex
- D Duplex
- TH Townhome
- MF-1 Multi-Family 1
- MF-2 Multi-Family 2
- MH Manufactured Home
- C Neighborhood Commercial
- CC-PD Corridor Commercial Planned Development
- BP Business Park
- CC Corridor Commercial
- L-IM Light Industrial and Manufacturing
- H-IM Heavy Industrial and Manufacturing
- DT Downtown Core
- DT-T1 Downtown Transition 1
- DT-T2 Downtown Transition 2
- DT-A1 Downtown Approach 1
- DT-A2 Downtown Approach 2
- IC Institutional and Civic
- PP Public and Parks
- PD Planned Development
- PD-MF-2 Planned Development-Multi-Family Residential District 2

ENNIS TEXAS
*The bluebonnet spirit of Texas*

Date: 10/23/2026

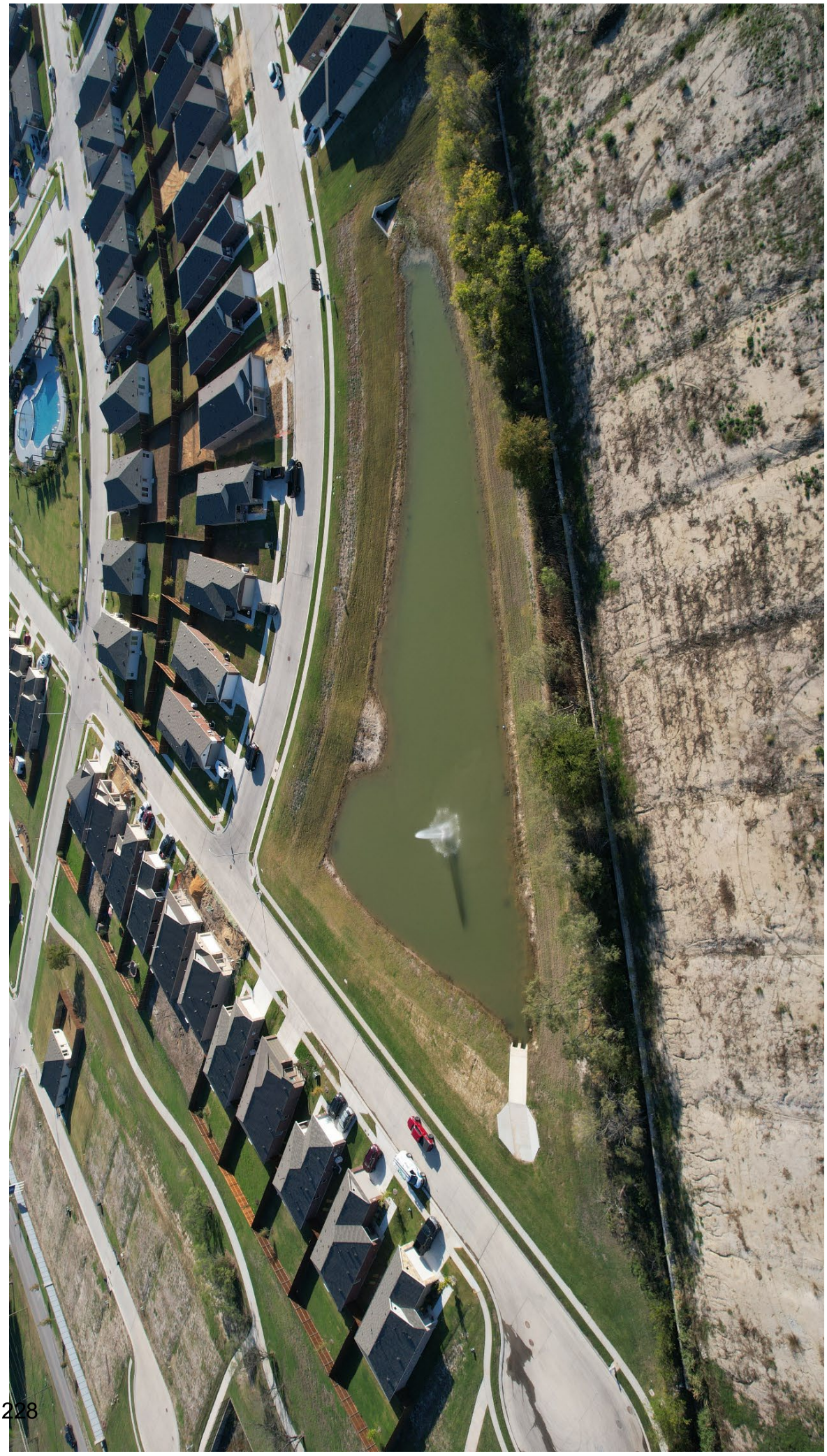
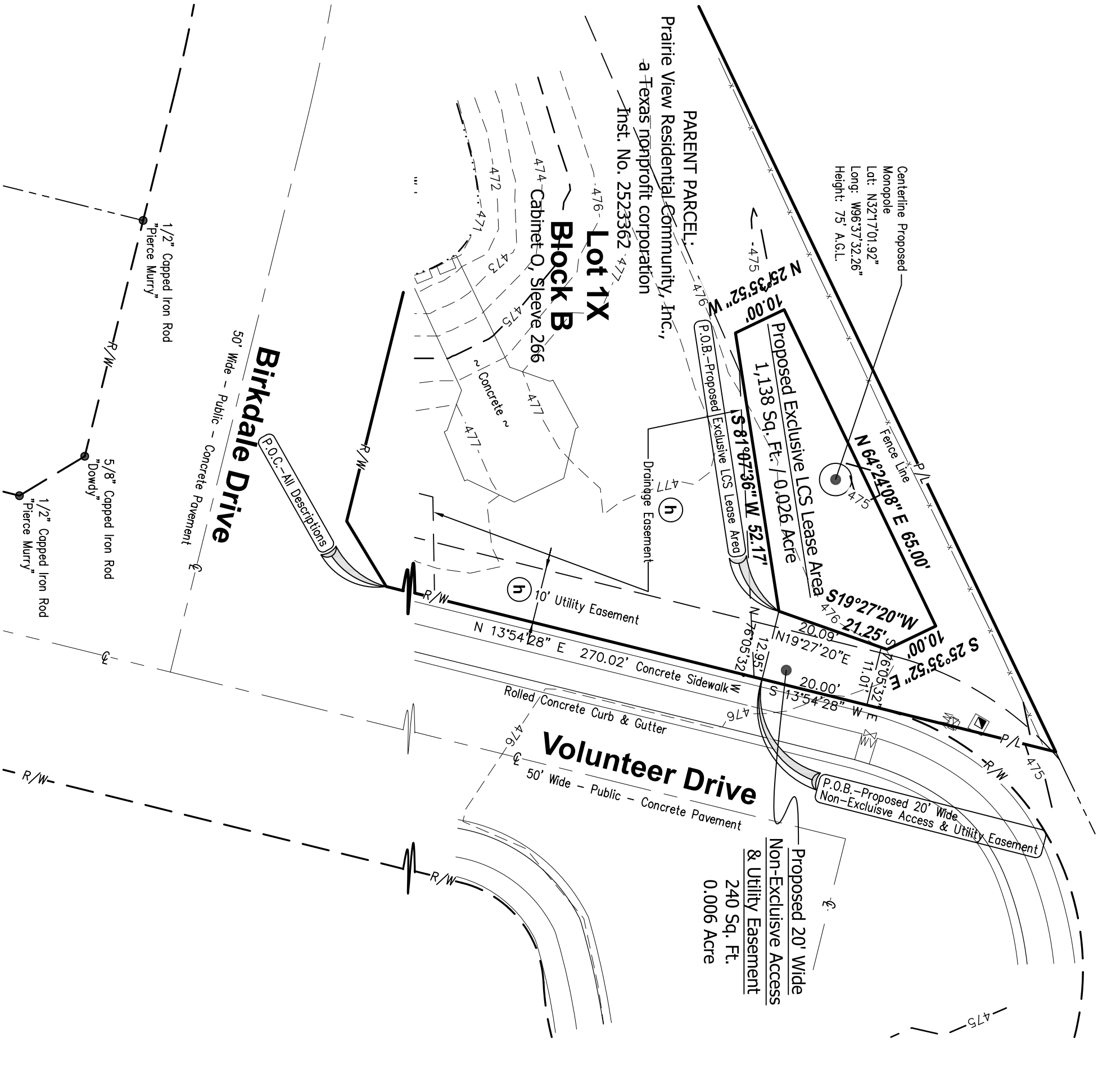


**Table 5.1-1: Allowed Uses**

■ = Permitted by Right ☐ = Permitted with a Specific Use Permit Blank Cell = Not Permitted * = Additional Standards Apply

| Use Category | Use Type | Residential Districts | | | | | | | | | | Commercial Districts | | | Industrial Districts | | Public/Civic Districts | | Special Districts | | | | | Additional Standards |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | RMU | | | KC | | |
| | | A | RE | R-10 | R-5 | NC | D | TH | MF-1 | MF-2 | MH | C | BP | CC | L-IM | H-IM | IC | PP | C | T | N | C | T | |
| | Electric utility services (includes generating plants and substations) | | | | | | | | | | | | | | ■ | ■ | | | | | | | | |
| | Telecommunications equipment and facilities (building mounted) | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | ■* | Sec 5.2.5 (4) and (5) |
| | Telecommunications towers | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | ☐* | Sec. 5.2.5 (4) and (6) |
| | All other utility related uses (other than listed) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |




STATE OF TEXAS
REGISTERED
MICHAEL W. MYERS
#6803
PROFESSIONAL
SURVEYOR

Note: This survey does not represent a boundary survey of the parent parcel.

| | |
|---|---|
| Drawn By: STP | Scale: 1"=20' |
| Date: 05.13.26 | Sheet: 3 of 3 |
| Certa Project No. 2721 | |

CERTA TOWER SERVICES LLC
911 Graham Road, Suite 45
Cuyahoga Falls, OH 44221
330.701.5850
orders@certasite.com
www.certasite.com

PROSPECT SURVEYING
P.O. Box 1822
Aledo, Texas 76008
(817) 687-9400
TX Firm No: 10194267

# PRELIMINARY SURVEY

Volunteer Drive
Ennis, TX 75119

SITE ID#: TX18C28-J
SITE NAME: Prarie View

LCS Communications, LLC
777 South Flagler Drive
Suite 800 - West Tower
West Palm Beach, FL 33401

Kimley»Horn

**PROJECT NARRATIVE**
**TX18C28-J Prairie View 1002 Liska Road, Ennis, TX 75119**
**June 9, 2026**

**Submitted to the City of Ennis, Texas**

| | |
|---|---|
| **Applicant:** | SBA Towers X, LLC<br>8051 Congress Avenue<br>Boca Raton, FL 33487<br>Office: (800) 487-7483<br>Fax: (561) 226-3572 |
| **Representative:** | Kimley-Horn and Associates<br>1920 Wekiva Way<br>West Palm Beach, FL 33411<br>Phone: (561) 845-0665 |
| **Property-Owner:** | KL LHB DSD AIV LLC<br>111 W 33rd Street<br>New York, NY 10001 |
| **Project Address:** | 1002 Liska Road<br>Ennis, TX 75119 |
| **Description & Tax Lot:** | GPS Coordinates: 32.283855, -96.625618<br>Parcel No. 290098 |
| **Zoning Classification:** | R-5 – Single Family Residential |

Kimley-Horn and Associates is submitting this application on behalf of SBA Towers X, LLC (SBA) and the underlying property owner.

## DESCRIPTION OF REQUEST

SBA Towers X, LLC proposes to construct a new wireless communications facility TX18C28-J Prarire View 1002 Liska Road, Ennis, TX 75119, aimed at addressing significant coverage and capacity gaps experienced by telecommunication customers in the area. This project aligns with SBA's primary objective of supporting carriers' coverage needs and will provide a telecommunications tower with sufficient structural integrity to support multiple carrier equipment installation as well as compound with adequate room for multiple carriers ground equipment. The facility's implementation will not only enhance connectivity but also contribute to improving the overall customer experience for telecommunication services users. SBA Towers X, LLC is committed to transparent communication and proactive engagement with the local community and stakeholders to address concerns and ensure the project's successful implementation while adhering to regulatory requirements and industry standards.

## CURRENT SITE CONDIITONS

The current site conditions for the parcel reflect an area undergoing active development and transition. The site includes established roadway infrastructure intended to support access and circulation within the broader development area. These improvements represent an interim condition as the property continues to be developed as part of a planned Lennar residential neighborhood. While the site does not yet reflect its final residential buildout, existing conditions show early-stage infrastructure elements consistent with a developing community, including internal roads and graded areas. Vegetation and permanent landscaping are currently limited, which is typical for a site in this phase of development. As construction progresses, the parcel is expected to incorporate residential lots, neighborhood amenities, and enhanced landscaping consistent with the planned community design. Overall, the site represents a transitional condition within an actively developing area that is moving toward a fully realized residential neighborhood. The current zoning for the parcel is R-5 - Single Family Residential.

## INTENDED DEVELOPMENT PLAN

The development plan for the multiple carrier telecommunications facility for SBA encompasses strategic site selection with a 74’ Monopole tower structure, a designated 85’ x 66’ x 78 tower lease space totaling 2,444 square feet.  The establishment of a 20' wide non-exclusive access easement and a 10' wide non-exclusive utility easement. The plan includes tower construction and installation, integration of essential infrastructure and utilities, and adherence to regulatory and environmental compliance.

## COVERAGE

The proposed *74*’ *monopole* is necessary to preserve the coverage for the carrier to maintain their network integrity in this area. The design of the *monopole* will allow an additional commercial carrier to be set internally in the structure. The proposed site will continue the existing coverage by not creating coverage gaps within the network, while serving their respective customers and emergency service networks. The proposed site will allow for the proposed wireless providers to upgrade existing equipment and to expand the technology within the area, which will allow for expanded service delivery to the surrounding customers.

## FLOOD ZONE INFORMATION

Parcel, tower parcel and associated easements are located within zone “X” per FEMA map #48139C0370F, Effective June 3, 2013.

## PROJECT SUMMARY

| | |
|---|---|
| SITE NAME: | PRAIRIE VIEW |
| SITE ADDRESS: | VOLUNTEER DRIVE<br>ENNIS, TX 75119 |
| JURISDICTION: | CITY OF ENNIS |
| COUNTY: | ELLIS COUNTY |
| ZONING: | SINGLE FAMILY RESIDENTIAL 5 (R-5) |
| PROPERTY OWNER: | PRAIRIE VIEW RESIDENTIAL COMMUNITY, INC. A TEXAS NONPROFIT CORPORATION |
| ADDRESS: | –<br>– |
| APPLICANT: | LCS COMMUNICATIONS, LLC, A DELAWARE LIMITED LIABILITY COMPANY<br>8051 CONGRESS AVENUE<br>BOCA RATON, FL 33487<br>OFFICE: (800) 487-7483<br>FAX: (561) 226-3572 |
| LCS COMMUNICATIONS CONTACT: | MICHAEL DAMELIO / (561) 226-0893 |
| SITE COORDINATES: | 1A |
| LATITUDE:<br>LONGITUDE:<br>ELEVATION: | 32° 17' 01.61" N (NAD 83/2011)<br>96° 37' 32.34" W (NAD 83/2011)<br>75' AMSL (NAVD 88) |
| PARCEL NUMBER: | 306692 |

### ADA REQUIREMENTS

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
ADA ACCESS NOT REQUIRED.

### PLUMBING REQUIREMENTS

FACILITY HAS NO PLUMBING.

## CONSULTING TEAM

ENGINEERING FIRM:
KIMLEY-HORN AND ASSOCIATES
1920 WEKIVA WAY
WEST PALM BEACH, FL 33411
CONTACT: SHAHZAD MAHMOOD
PHONE: (561) 404-9857

SURVEYING FIRM:
CERTA TOWER SERVICES LLC
911 GRAHAM ROAD, SUITE 45
GUYAHOGA FALLS, OH 44221
CONTACT: MICHAEL W. MYERS
PHONE: (330) 701-5850

## UTILITIES INFORMATION

POWER COMPANY:
TBD
CONTACT: TBD
PHONE: TBD

FIBER COMPANY:
TBD
CONTACT: TBD
PHONE: TBD

# LCS COMMUNICATIONS, LLC

SITE NAME
PRAIRIE VIEW

SITE I.D.
TX18C28-J

E911 ADDRESS
VOLUNTEER DRIVE
ENNIS, TX 75119

PROJECT TYPE
70' MONOPOLE CONSTRUCTION DRAWINGS

## VICINITY MAP

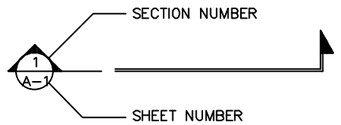

SITE LOCATION
Lennar at Prairie View
Ennis
Eastlon Rd
Eastlon Rd
Northaven
Northaven
Northaven

# ABBREVIATIONS

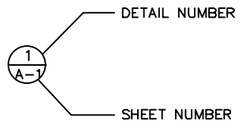
| | |
|---|---|
| AB | ANCHOR BOLT |
| AC | ASPHALTIC CONCRETE |
| A/C | AIR CONDITIONING |
| ADJ | ADJUSTABLE |
| A.F.F. | ABOVE FINISH FLOOR |
| ARCH | ARCHITECTURAL |
| APPROX | APPROXIMATELY |
| A.G.L. | ABOVE GRADE LEVEL |
| A.M.S.L. | ABOVE MEAN SEA LEVEL |
| BD | BOARD |
| BLDG | BUILDING |
| BLKG | BLOCKING |
| BOT | BOTTOM |
| BSMT | BASEMENT |
| BTS | BASE TRANSCEIVER STATION |
| C | COURSE(S) |
| CEM | CEMENT |
| CL | CHAIN LINK |
| CLG | CEILING |
| CLR | CLEAR |
| COL | COLUMN |
| CONC | CONCRETE |
| CONST | CONSTRUCTION |
| CONT | CONTINUOUS |
| CORR | CORRIDOR |
| CO | CONDUIT ONLY |
| DIA | DIAMETER |
| DBL | DOUBLE |
| DEPT | DEPARTMENT |
| DEMO | DEMOLITION |
| DIM | DIMENSION |
| DN | DOWN |
| DR | DOOR |
| DTL | DETAIL |
| DWG | DRAWING |
| (E) | EXISTING |
| EA | EACH |
| ELEC | ELECTRIC |
| ELEV | ELEVATION |
| EQUIP | EQUIPMENT |
| EXP | EXPANSION |
| EXT | EXTERIOR |
| FA | FIRE ALARM |
| FB | FLAT BAR |
| FF | FINISH FLOOR |
| FH | FLAT HEAD |
| FIN | FINISH(ED) |
| FLR | FLOOR |
| FOS | FACE OF STUDS |
| FS | FINISH SURFACE |
| FT | FOOT, FEET |
| FTG | FOOTING |
| FW | FINISH WALL |
| F.G. | FINISH GRADE |
| FUT | FUTURE |
| GA | GAUGE |
| GALV | GALVANIZED |
| GL | GLASS |
| GR | GRADE |
| GYP | GYPSUM |
| GFCI | GROUND FAULT CIRCUIT INTERRUPT |
| GND | GROUND |
| HC | HOLLOW CORE |
| HDW | HARDWARE |
| HTR | HEATER |
| HM | HOLLOW METAL |
| HORIZ | HORIZONTAL |
| HR | HOUR |
| HT | HEIGHT |
| HV | HIGH VOLTAGE |
| ID | INSIDE DIMENSION |
| INS | INSULATION |
| INT | INTERIOR |
| JT | JOINT |
| LAM | LAMINATED |
| LBS | POUNDS |
| LT | LIGHT |
| LA | LIGHTNING ARRESTOR |
| LNA | LOW NOISE AMPLIFIER |
| MFR | MANUFACTURER |
| MAT | MATERIAL |
| MAX | MAXIMUM |
| MECH | MECHANICAL |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| ML | METAL LATH |
| MO | MASONRY OPENING |
| MS | MACHINE SCREW |
| MTD | MOUNTED |
| MTL | METAL |
| (N) | PROPOSED |
| NIC | NOT IN CONTRACT |
| NO | NUMBER |
| NTS | NOT TO SCALE |
| O | OVERHEAD |
| OA | OVERALL |
| O.C. | ON CENTER |
| OPNG | OPENING |
| OPP | OPPOSITE |
| PARTN | PARTITION |
| PL | PLATE |
| PLAS | PLASTER |
| PLYWD | PLYWOOD |
| POC | POINT OF CONNECTION |
| PROP | PROPERTY |
| PT | PRESSURE TREATED |
| R | RISER |
| REQD | REQUIRED |
| RD | ROOF DRAIN |
| RM | ROOM |
| RMS | ROOMS |
| RO | ROUGH OPENING |
| SC | SOLID CORE |
| SCHED | SCHEDULE |
| SECT | SECTION |
| SHT | SHEET |
| SIM | SIMILAR |
| SPECS | SPECIFICATIONS |
| SS | STAINLESS STEEL |
| STL | STEEL |
| STOR | STORAGE |
| STRUCT | STRUCTURAL |
| SUSP | SUSPENDED |
| SW | SWITCH |
| SWBO | SWITCHBOARD |
| THK | THICK |
| TI | TENANT IMPROVEMENT |
| TMA | TOWER MOUNTED AMPLIFIER |
| TOS | TOP OF SURFACE |
| TS | TUBE STEEL |
| TYP | TYPICAL |
| U | UNDERGROUND |
| UNO | UNLESS NOTED OTHERWISE |
| VCT | VINYL COMPOSITION TILE |
| VERT | VERTICAL |
| V.I.F. | VERIFY IN FIELD |
| VG | VERTICAL GRAIN |
| W/ | WITH |
| WD | WOOD |
| WR | WATER RESISTANT |
| WT | WEIGHT |
| XFMR | TRANSFORMER |
| @ | AT |
| [ | CHANNEL |
| ℄ | CENTERLINE |
| ∠ | ANGLE |
| ℙ | PROPERTY LINE |



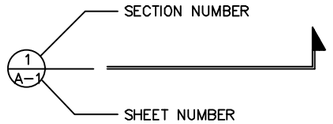

# SYMBOLS:



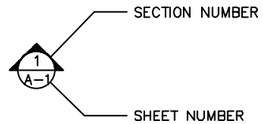

BUILDING SECTION REFERENCE




DETAIL REFERENCE




DETAIL SECTION REFERENCE




ELEVATION VIEW REFERENCE

- KEY NOTE REFERENCE
- 101 DOOR NUMBER
- 101 AREA AND/OR ROOM NUMBER
- A/2 MECHANICAL UNIT
- UTILITY POLE
- WORK POINT
- REVISION OR CONTROL POINT
- (REFERENCE POINT) (ELEVATION)

- MASONRY
- BRICK
- CONCRETE
- EARTH
- STEEL
- GRAVEL
- CENTER LINE
- PROPERTY LINE
- LEASE LINE
- EASEMENT LINE
- RIGHT-OF-WAY
- CHAIN LINK FENCE
- WOOD FENCE
- SILT FENCE
- BELOW GRADE ELECTRIC
- BELOW GRADE TELEPHONE
- OVERHEAD ELECTRIC/TELEPHONE
- OVERHEAD TELEPHONE
- OVERHEAD ELECTRIC
- CONTOUR
- TREE PROTECTION FENCE
- TREE LINE
- TREES, SHRUBS, BUSHES
- SAN — SANITARY SEWER LINE
- WL — WATER LINE
- NG — NATURAL GAS LINE

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

SITE NUMBER: TX18C28-J

SITE ADDRESS: VOLUNTEER DRIVE ENNIS, TX 75119

DESIGN TYPE: SUP EXHIBIT

SHEET TITLE: ABBREVIATIONS & SYMBOLS LEGEND

SHEET NUMBER: T-2

REVISION: 0

1 ABBREVIATIONS & SYMBOLS

## GENERAL NOTES

1. ALL REFERENCES TO OWNER HEREIN SHALL BE CONSTRUED TO MEAN LCS COMMUNICATIONS OR IT'S DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY. THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE AND/OR COUNTY IN WHICH IT IS TO BE PERFORMED.
3. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
4. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERCEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
5. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.
6. ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND THE TESTING AGENCY PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.
7. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE PROPOSED AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
9. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST EDITION OF THE LOCAL BUILDING CODE.
10. ALL PROPOSED CELLULAR EQUIPMENT AND FIXTURES SHALL BE FURNISHED BY OWNER FOR INSTALLATION BY THE CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE HEREIN.
11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
12. RADIO EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

## STRUCTURAL NOTES

1. DESIGN REQUIREMENTS PER LOCAL BUILDING CODE AND THE E1A/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNAS TOWERS AND SUPPORTING STRUCTURES.
2. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF A.I.S.C. SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS-ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN INCLUDING THE COMMENTARY AND THE A.I.S.C. CODE OF STANDARD PRACTICE.
3. STRUCTURAL STEEL PLATES AND SHAPES SHALL CONFORM TO ASTM A36. ALL STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53 GRADE B. ALL STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500 GRACE B. ALL STRUCTURAL STEEL COMPONENTS AND FABRICATED ASSEMBLIES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
4. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS) D.1.1-96. STRUCTURAL WELDING CODE-STEEL WELD ELECTRODES SHALL BE E70XX.
5. ALL COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE AS SPECIFIED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL FURNISH ALL CONNECTION HARDWARE REQUIRED TO SECURE THE CABLES. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
6. NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY NORTH AND INFORM OWNER OF ANY DISCREPANCY BEFORE STARTING CONSTRUCTION.
7. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND AC1 301, AND SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI (U.O.N.). CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL UNLESS OTHERWISE NOTED. MINIMUM CONCRETE COVER SHALL BE 3 INCHES UNLESS OTHERWISE NOTED.
8. ALL REINFORCING STEEL SHALL CONFORM TO ASTM 615 GRADE 80, DEFORMED BILLET STEEL BARS. WELDED WIRE FABRIC REINFORCING SHALL CONFORM TO ASTM A185.
9. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST A.I.S.C. SPECIFICATIONS.
10. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS.
11. HOT-DIP GALVANIZE ITEMS SPECIFIED TO BE ZINC-COATED. AFTER FABRICATION WHERE PRACTICAL. GALVANIZING: ASTM A 123, ASTM A 153/A 153M OR ASTM A 653/A 653M, G90, AS APPLICABLE.
12. REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT' CONFORMING TO ASTM A 780 OR BY APPLICATION OF STICK OR THICK PASTE MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED, AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS. IN STICK OR PASTE, SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL.
13. CONTRACTOR SHALL FOLLOW THE MANUFACTURER'S INSTRUCTIONS/ SPECIFICATIONS IF NO INFORMATION IS CONTAINED IN THESE PLANS OR IF THE MANUFACTURER'S SPECIFICATIONS ARE STRICTER.

## PERMITS

1. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM ALL APPLICABLE GOVERNMENTAL AGENCIES. (NOT SUPPLIED BY OWNER)
2. ANY PERMITS WHICH MUST BE OBTAINED SHALL BE THE CONTRACTORS RESPONSIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS. (NOT SUPPLIED BY OWNER)
3. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND THE LATEST APPLICABLE CODES AND STANDARDS.
4. THE CONTRACTOR SHALL NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY, OR CITY) ENGINEER 24 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
5. CONTRACTOR RESPONSIBLE FOR CLOSING AND FILING ALL PERMITS ASSOCIATED WITH SITE.

## UTILITIES

1. CONTRACTOR SHALL CONTACT A SUBSURFACE UTILITY LOCATOR FOR LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. LOCATION OF EXISTING SEWER, WATER LINES, GAS LINES, CONDUITS OR OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS, AND IF SHOWN ARE ONLY APPROXIMATELY CORRECT. CONTRACTOR ASSUMES SOLE RESPONSIBILITY FOR VERIFYING LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES (INCLUDING TEST PITS BY HAND IF NECESSARY) IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION DR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, OR IF THERE APPEARS TO BE A CONFLICT.
2. CONTRACTOR SHALL COORDINATE ALL UTILITY CONNECTIONS WITH APPROPRIATE UTILITY OWNERS AND CONSTRUCTION MANAGER.
3. DAMAGE BY THE CONTRACTOR TO UTILITIES OR PROPERTY OF OTHERS, INCLUDING EXISTING PAVEMENT AND OTHER SURFACES DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRE CONSTRUCTION CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CLIENT. FOR GRASSED AREAS, SEED AND MULCH SHALL BE ACCEPTABLE..
4. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER THE REQUIREMENTS FOR AND LIMITS OF OVERHEAD AND/OR UNDERGROUND ELECTRICAL SERVICE.
5. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF PROPOSED UNDERGROUND TELEPHONE SERVICE WITH THE TELEPHONE UTILITY AND THE OWNER'S REQUIREMENTS.
6. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED AND TESTED SATISFACTORY PRIOR TO COMMENCING ANY PAVING OPERATIONS WHERE SUCH UTILITIES ARE WITHIN THE LIMITS OF PAVEMENT.

## GRADING

1. THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC...) ALL MATERIAL NOT SUITABLE FOR SUB GRADE IN ITS PRESENT STATE. IF THE MATERIAL, AFTER REWORKING, REMAINS UNSUITABLE THEN THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL AT HIS EXPENSE. ALL SUB GRADES SHALL BE PROOF ROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFT MATERIAL SHALL BE REWORKED OR REPLACED.
2. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL DITCHES, PIPES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTABLE BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURES IN OPERABLE CONDITION.
3. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE.
4. ALL DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE OWNER IMMEDIATELY IF DISCREPANCIES ARE DISCOVERED. THE CONTRACTOR SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHEN WORK IS BEING PRE FORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

## LCS CONSTRUCTION REQUIREMENTS

1. AWARDED CONTRACTOR WILL BE REQUIRED TO SIGN AND RETURN A COPY OF AN AWARD LETTER FOR LCS COMMUNICATIONS' FILE.
2. CONTRACTOR WILL BE REQUIRED TO PROVIDE PROOF OF LICENSE TO PERFORM WORK IN JURISDICTION AT TIME OF BID AWARD.
3. CONTRACTOR WILL PROVIDE A CONSTRUCTION SCHEDULE PRIOR TO CONSTRUCTION STARTING AND WILL PROVIDE UPDATE/CHANGES (WITH EXPLANATIONS) TO THAT SCHEDULE WHEN/IF ITEMS ARE DELAYED OR PUSHED OUT.
4. CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONCRETE COMPRESSIVE TESTING AND REQUIRED TO SUBMIT FINAL TEST RESULTS WITH CLOSE OUT BOOK.
5. CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE LCS COMMUNICATIONS PROJECT MANAGERS WITH PHOTOS OF THE MAJOR CONSTRUCTION MILESTONES AS THEY OCCUR.
6. CONTRACTOR WILL BE RESPONSIBLE TO ASSIST IN COORDINATING AND OBTAINING PRIMARY POWER TO THE SITE PRIOR TO TOWER ERECTION, AS WELL AS TELCO SERVICE BEFORE PROJECT COMPLETION. (ON SITE VISITS WITH UTILITY COMPANY REPRESENTATIVES AS NECESSARY, ETC....).
7. CONTRACTOR WILL HAVE A REPRESENTATIVE ON A WEEKLY CONFERENCE CALL TO PROVIDE LCS COMMUNICATIONS WITH SITE SPECIFIC UPDATES. CURRENTLY, THIS CONFERENCE CALL IS HELD EACH AND EVERY THURSDAY AT 4 PM (EASTERN TIME).
8. CONTRACTOR SHOULD BE PREPARED FOR RANDOM LCS COMMUNICATIONS SAFETY INSPECTIONS AT ALL TIMES.
9. CONTRACTOR IS EXPECTED TO MAINTAIN PROPER WORKING CONDITIONS AND PROCEDURES PER OSHA STANDARDS AT ALL TIMES.
10. CONTRACTOR WILL BE REQUIRED TO OBTAIN THE NECESSARY ELECTRICAL PERMITS AND INSPECTIONS AS REQUIRED BY JURISDICTION.
11. CONTRACTOR IS EXPECTED TO CLOSE-OUT THE JOB SITE AS QUICKLY AS POSSIBLE (OBTAINING A CERTIFICATE OF OCCUPANCY AND GETTING LCS COMMUNICATIONS' REGIONAL SITE MANAGER'S SIGN-OFF/CHECKLIST APPROVAL ON THE SITE).
12. CONTRACTOR WILL PROVIDE A COMPLETED TOWER HEIGHT VERIFICATION FORM AND TAPE DROP WITHIN 24 HOURS OF REACHING OVERALL HEIGHT.
13. CONTRACTOR WILL UTILIZE ALL OF THE LCS COMMUNICATIONS PROVIDED DOCUMENTATION INCLUDING BUT NOT LIMITED TO: TOWER CONSTRUCTION ACCEPTANCE CHECKLIST, CONSTRUCTION SCHEDULE, CONSTRUCTION CLOSE-OUT LIST & TOWER HEIGHT VERIFICATION.
14. CONTRACTOR IS RESPONSIBLE FOR CONCRETE COMPRESSION TESTING.
15. CONTRACTOR IS RESPONSIBLE FOR GROUND MEG TESTING.
16. CONTRACTOR IS RESPONSIBLE FOR ALL GRADING AND FILL COMPACTION TESTING REQUIRED AS SET FORTH IN THE GEO TECHNOLOGICAL REPORT PROVIDED BY OWNER.

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

SITE NUMBER: TX18C28-J

SITE ADDRESS: VOLUNTEER DRIVE ENNIS, TX 75119

DESIGN TYPE: SUP EXHIBIT

SHEET TITLE: GENERAL NOTES

SHEET NUMBER: GN-1

REVISION: 0

## GEOTECHNICAL NOTES

1. THE SITE SHALL BE CLEARED BY MEANS OF REMOVING TREES, TREE STUMPS, SURFACE VEGETATION AND TOPSOIL MATERIALS. IT'S RECOMMENDED THAT CLEARING EXTEND AT LEAST 5 FEET BEYOND PLANNED BUILDING AREAS AND AREAS TO RECEIVE COMPACTED FILL. IN PREPARATION FOR FILL PLACEMENT, AREAS SHALL BE LEVELED OUT TO FACILITATE THE PLACEMENT OF FILL IN HORIZONTAL LIFTS. THIS SHALL BE ACHIEVED BY CUTTING INTO THE UPHILL SIDE OF AREAS TO RECEIVE FILL. AREAS TO RECEIVE FILL SHALL BE EVALUATED BY A GEOTECHNICAL ENGINEER TO VERIFY THAT THEY ARE IN FIRM, RELATIVELY DRY AND SUITABLE FOR FILL PLACEMENT.

2. WITH THE EXCEPTION OF THE UPPER 2 FEET BENEATH PLANNED FOUNDATIONS AND BUILDING PADS, FILL MATERIALS SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR METHOD (ASTM D-698). FILL WITHIN THE UPPER 2 FEET BENEATH PLANNED FOUNDATIONS AND BUILDING PADS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR METHOD (ASTM D-698).

3. TO ACCOMPLISH THIS, IT IS RECOMMENDED THAT FILL SOIL MOISTURE CONTENTS BE MAINTAINED WITHIN 3 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE STANDARD PROCTOR METHOD (ASTM D698). SOILS WITH EXCESSIVE MOISTURE SHALL BE SCARIFIED, DISCED, AND DRIED DURING THE WARMER DRYER MONTHS TO REDUCE THE MOISTURE CONTENT, AND MOISTURE SHALL BE ADDED TO INCREASE THE MOISTURE CONTENT.

4. TO ACHIEVE PROPER COMPACTION, SUITABLE MOISTURE CONDITIONED FILL MATERIALS SHALL BE PLACED IN HORIZONTAL LOOSE LIFTS (8 INCHES LOOSE IF LARGE COMPACTION EQUIPMENT IS USED, 4 INCHES IF SMALLER WALK-BEHIND EQUIPMENT IS TO BE USED). IF SANDY SOILS ARE ENCOUNTERED COMPACTION WITH A HEAVY SMOOTH DRUM SHALL BE USED. IF CLAY OR SILT SOILS ARE ENCOUNTERED A SHEEPSFOOT ROLLER SHALL BE MORE EFFECTIVE ACHIEVING COMPACTION.

5. IN-PLACE DENSITY TESTS SHALL BE PERFORMED TO VERIFY COMPACTION OF THE FILL MATERIALS. THESE TESTS ARE GENERALLY PERFORMED AT A FREQUENCY OF ONE TEST PER 2,500 SQUARE FEET AND ON EACH FOOT OF FILL BEING PLACED.

6. FOUNDATIONS FOR LIGHTLY LOADED STRUCTURES (IE. GENERATORS AND EQUIPMENT SHELTERS) SHALL BE DESIGNED TO BEAR IN THE PROPOSEDLY PLACED, COMPACTED FILL. FOUNDATIONS FOR LIGHTLY LOADED STRUCTURES SET IN FILL SHALL BE DESIGNED TO BEAR AT LEAST 2 FEET BELOW THE FINISHED GROUND SURFACE, TO HAVE A MINIMUM FOOTING WIDTH OF 18 INCHES, AND WITH A GROSS ULTIMATE BEARING PRESSURE OF 6000 PSF, PROVIDED THAT FILL MATERIALS ARE VERIFIED AS BEING SUITABLE, AND COMPACTED AS RECOMMENDED IN THESE NOTES.

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn

11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME:
PRAIRIE VIEW

SITE NUMBER:
TX18C28-J

SITE ADDRESS:
VOLUNTEER DRIVE
ENNIS, TX 75119

DESIGN TYPE:
SUP EXHIBIT

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER: GN-2

REVISION: 0

## PARENT PARCEL DESCRIPTION (AS PROVIDED)

Lot 1X, Block B, of PRAIRIE VIEW PHASE 2A, a subdivision in Ellis County, Texas, according to the map or plat thereof recorded in Volume 0, Page 266 Plat Records of Ellis County, Texas.

## PROPOSED LCS EXCLUSIVE LEASE AREA LEGAL DESCRIPTION (AS SURVEYED)

Situated in the County of Ellis, and State of Texas. Known as being a part of Lot 1X, Block B, of PRAIRIE VIEW PHASE 2A, a subdivision in Ellis County, Texas, according to the map or plat thereof recorded in Volume 0, Page 266 Plat Records of Ellis County, Texas, and being a 1,138 square foot Proposed LCS Exclusive Lease Area over and upon a parcel of land now or formerly conveyed to Prairie View Residential Community, Inc., a Texas nonprofit corporation, as recorded in Instrument No. 2523362 of Official Public Records of Ellis County, Texas and being more particularly described as follows:

COMMENCING at the northeasterly end of an angular turnout between the northerly line of Birkdale Drive and the westerly line of Volunteer Drive, thence, North 13°54'28" East, a distance of 270.02 feet to a point;
thence, North 76°05'32" West, a distance of 12.95 feet to the POINT OF BEGINNING;

thence, South 81°07'36" West, a distance of 52.17 feet to a point;
thence, North 25°35'52" West, a distance of 10.00 feet to a point;
thence, North 64°24'08" East, a distance of 65.00 feet to a point;
thence, South 25°35'52" East, a distance of 10.00 feet to a point;
thence, South 19°27'20" West, a distance of 21.25 feet to the POINT OF BEGINNING.

The Proposed LCS Exclusive Lease Area contains 0.026 acre, or 1,138 square feet, of land.

## PROPOSED 20' WIDE NON-EXCLUSIVE ACCESS & UTILITY EASEMENT LEGAL DESCRIPTION (AS SURVEYED)

Situated in the County of Ellis, and State of Texas. Known as being a part of Lot 1X, Block B, of PRAIRIE VIEW PHASE 2A, a subdivision in Ellis County, Texas, according to the map or plat thereof recorded in Volume 0, Page 266 Plat Records of Ellis County, Texas, and being a 240 square foot Proposed 20' Wide Non-Exclusive Access & Utility Easement over and upon a parcel of land now or formerly conveyed to Prairie View Residential Community, Inc., a Texas nonprofit corporation, as recorded in Instrument No. 2523362 of Official Public Records of Ellis County, Texas and being more particularly described as follows:

COMMENCING at the northeasterly end of an angular turnout between the northerly line of Birkdale Drive and the westerly line of Volunteer Drive, thence, North 13°54'28" East, a distance of 270.02 feet to the POINT OF BEGINNING;

thence, North 76°05'32" West, a distance of 12.95 feet to a point;
thence, North 19°27'20" East, a distance of 20.09 feet to a point;
thence, South 76°05'32" East, a distance of 11.01 feet to a point;
thence, South 13°54'28" West, a distance of 20.00 feet to the POINT OF BEGINNING.

The Proposed 20' Wide Non-Exclusive Access & Utility Easement contains 0.006 acre, or 240 square feet, of land.




LOCATION MAP
NO SCALE

## BASIS OF BEARINGS

The basis for all bearings shown hereon is the State of Texas Grid, North Central Zone, NAD 83 (2011).

## FLOOD ZONE

By scaled map location and graphic plotting only, the subject property appears to lie entirely in Zone X Unshaded, Areas determined to be outside the 0.2% annual chance floodplain according to the Flood Insurance Rate Map for the County of Ellis, Community Panel No. 48139C0370F, Effective Date June 3, 2013.

## ENCROACHMENTS

At the time of survey there were no visible encroachments onto or beyond the subject property.

## CERTIFICATION

I, Michael W. Myers, RPLS, a Texas State Registered Professional Land Surveyor, License No. 5803, hereby certify to LCS Communicatrions, LLC, a Delaware limited liability company and Lennar Title, Inc. the following:

Latitude and Longitude values for the center of the above-referenced tower are accurate to within +/- 15 feet horizontally:

HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88

LATITUDE NORTH 32° 17' 01.92"
LONGITUDE WEST 96° 37' 32.26"

This surveyor has received and reviewed that certain Examiner's Report No. 114729-002646 issued by Lennar Title, Inc. with an effective date of July 23, 2025 which proposes to insure the lands described under its Legal Description.

The surveyor has reviewed and determined that the lands described under said Legal Description of the Examiner's Report contain or include the lands as depicted on this survey.

The surveyor has reviewed and determined that the items of record as identified under Exceptions of said Examiner's Report do encumber the lands as described on this survey, but that said items will not interfere with the location of the insured lands, including the Exclusive Lease Area, and any and all access and utility easement areas.

By: _____
Michael W. Myers, RPLS
Texas Professional Land Surveyor No. 5803
Date of Survey: 08.18.25

PRELIMINARY SURVEY
Volunteer Drive
Ennis, TX 75119

SITE ID#: TX18C28-J
SITE NAME: Prarie View

LCS Communications, LLC
777 South Flagler Drive
Suite 800 - West Tower
West Palm Beach, FL 33401

CERTA TOWER SERVICES LLC
911 Graham Road, Suite 45
Cuyahoga Falls, OH 44221
330.701.5850
orders@certasite.com
www.certasite.com

PROSPECT SURVEYING
P.O. Box 1822 (817) 687-9400
Aledo, Texas 76008 TX Firm No: 10194267

Note: This survey does not represent a boundary survey of the parent parcel.

| Drawn By: STP | Scale: None |
|---|---|
| Date: 05.13.26 | Sheet: 1 of 3 |
| Certa Project No. 2721 | |

STATE OF TEXAS
REGISTERED
MICHAEL W. MYERS
5803
PROFESSIONAL
LAND SURVEYOR

LENNAR TITLE, INC.
EXAMINER'S REPORT No. 114729-002646
DATED: JULY 23, 2025

EXCEPTIONS:

Letters correspond with survey–related exception items contained in the above referenced examiner's report.

a. **Restrictions under Cabinet O, Slide 266, Plat records and under County Clerk's File Nos. 2406772, 2406802, 2407187, 2407428, Official Public Records of Ellis County, Texas.
**(AFFECTS PARENT PARCEL, PROPOSED LCS EXCLUSIVE LEASE AREA, AND PROPOSED 20' WIDE NON–EXCLUSIVE ACCESS & UTILITY EASEMENT – NO PLOTTABLE ITEMS)**

b. thru g. are standard exceptions.

h. All building setback lines, easements, and other matters as shown or provided for on Plat recorded in Cabinet O, Sleeve 266, Plat Records of Ellis County, Texas.
**(AFFECTS PARENT PARCEL AND PROPOSED 20' WIDE NON–EXCLUSIVE ACCESS & UTILITY EASEMENT; DOES NOT AFFECT PROPOSED LCS EXCLUSIVE LEASE AREA – PLOTTED AND SHOWN HEREON)**

i. Pipeline Easement recorded under Volume 495, Page 177, Deed records, Ellis County, Texas.
**(AFFECTS PARENT PARCEL, PROPOSED LCS EXCLUSIVE LEASE AREA, AND PROPOSED 20' WIDE NON–EXCLUSIVE ACCESS & UTILITY EASEMENT – BLANKET IN NATURE)**

j. Mineral and/or royalty interest in all of the oil, gas, and other minerals and/or other substances in and under the subject property, including royalties, bonuses, rentals, ingress/egress and all other rights as set out in Volume 2335, Page 471,Volume 330, Page 348, Volume 343, Page 274, Volume 389, Page 601, Deed Records, Ellis County, Texas, together with all rights, express or implied, in and to the subject property, arising out of or connected with said interest, reference to which instrument is here made for all purposes. Title to said interest has not been investigated subsequent to the date of the aforesaid instrument. The Company makes no representation to the present ownership of this interest.
**(AFFECTS PARENT PARCEL – NOT A SURVEY MATTER)**

k. Terms and conditions of Oil, Gas, and Mineral Lease recorded in Volume 499, Page 318, Deed records, Ellis County, Texas. Title to said lease has not been checked subsequent to date of aforesaid lease.
**(AFFECTS PARENT PARCEL – CONTAINS NO PLOTTABLE ITEMS)**

l. Terms and provisions of Memorandum of Agreement Regarding Governance between LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD., a Texas limited partnership and KL LHB DSD AIV LLC, a Delaware limited liability company, recorded in County Clerk's File No. 2407184, Official Public Records of Ellis County, Texas.
**(AFFECTS PARENT PARCEL – NOT A SURVEY MATTER)**

m. All terms, conditions, covenants, easements, restrictions, assessments, maintenance charges, and other provisions as recorded in County Clerk's File No. 2406772, Official Public Records, Ellis County, Texas, as amended, supplemented, refiled and/or restated.
**(AFFECTS PARENT PARCEL – NOT A SURVEY MATTER)**

n. Terms and provisions of Encroachment Agreement, recorded in County Clerk's File No. 2209883, Official Public Records, Ellis County, Texas.
**(AFFECTS PARENT PARCEL – CONTAINS NO PLOTTABLE ITEMS)**

o. Telecommunications Easement recorded under County Clerk's File No. 2309492 as amended under 2424497, Official Public Records, Ellis County, Texas.
**(AFFECTS PARENT PARCEL, PROPOSED LCS EXCLUSIVE LEASE AREA, AND PROPOSED 20' WIDE NON–EXCLUSIVE ACCESS & UTILITY EASEMENT – BLANKET IN NATURE)**

PRELIMINARY SURVEY
Volunteer Drive
Ennis, TX 75119
SITE ID#: TX18C28-J
SITE NAME: Prarie View

LCS Communications, LLC
777 South Flagler Drive
Suite 800 - West Tower
West Palm Beach, FL 33401

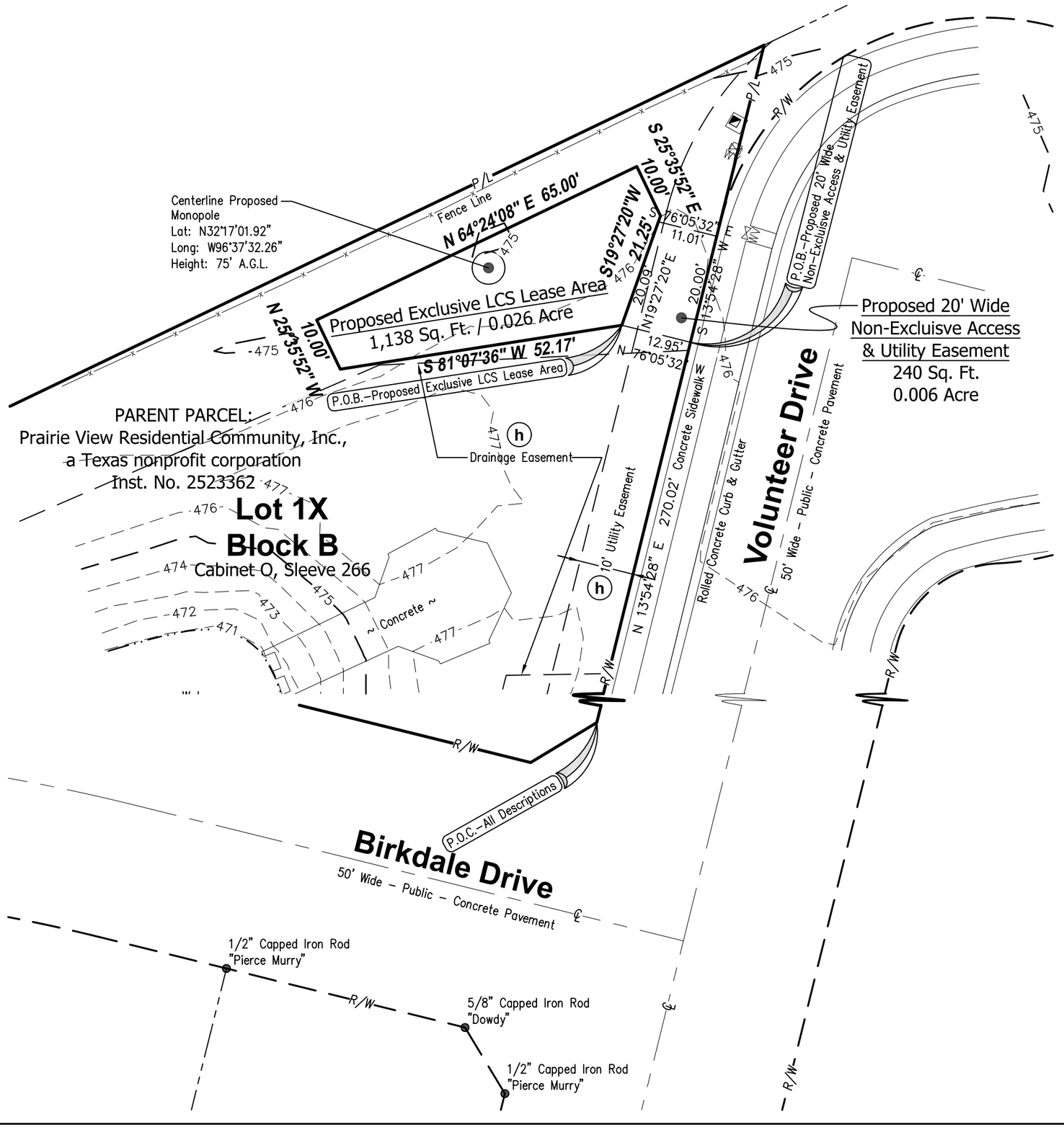
CERTA TOWER SERVICES LLC
911 Graham Road, Suite 45
Cuyahoga Falls, OH 44221
330.701.5850
orders@certasite.com
www.certasite.com

PROSPECT SURVEYING
P.O. Box 1822
Aledo, Texas 76008
(817) 687-9400
TX Firm No: 10194267

Note: This survey does not represent a boundary survey of the parent parcel.

Drawn By: STP | Scale: None
Date: 05.13.26 | Sheet: 2 of 3
Certa Project No. 2721

STATE OF TEXAS
REGISTERED
MICHAEL W. MYERS
5803
LICENSED PROFESSIONAL LAND SURVEYOR




NORTH

0 20 40

1 INCH = 20 FT.
GRAPHIC SCALE

## SYMBOL LEGEND

| | |
|---|---|
| R/W | – Right-of-Way |
| P/L | – Adjoiner Property Line |
| ℄ | – Centerline |
| P.O.B. | – Place/Point of Beginning |
| P.O.C. | – Place/Point of Commencement |
| (X) | – Schedule B-Section II Item |
| ● | – Monumentation Found as Noted |
| WV | – Water Valve |
| ◩ | – Telephone Pedestal |
| —X— | – Fence (As Noted) |

# PRELIMINARY SURVEY

Volunteer Drive
Ennis, TX 75119

SITE ID#: TX18C28-J
SITE NAME: Prarie View

LCS Communications, LLC
777 South Flagler Drive
Suite 800 - West Tower
West Palm Beach, FL 33401

CERTA TOWER SERVICES LLC
911 Graham Road, Suite 45
Cuyahoga Falls, OH 44221
330.701.5850
orders@certasite.com
www.certasite.com

PROSPECT SURVEYING
P.O. Box 1822
Aledo, Texas 76008
(817) 687-9400
TX Firm No: 10194267

Note: This survey does not represent a boundary survey of the parent parcel.

| | | | |
|---|---|---|---|
| Drawn By: | STP | Scale: | 1"=20' |
| Date: | 05.13.26 | Sheet: | 3 of 3 |
| Certa Project No. | 2721 | | |

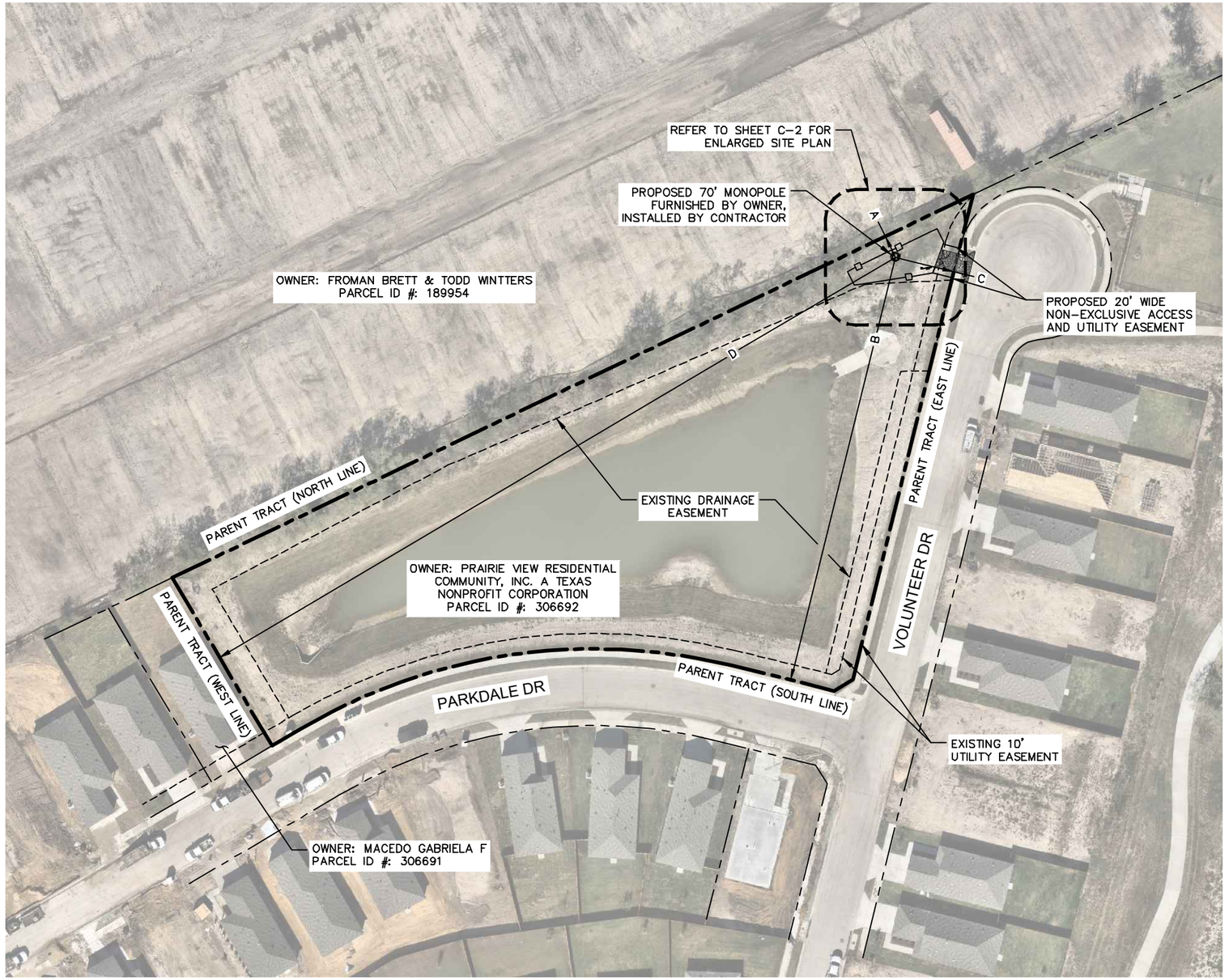
STATE OF TEXAS
REGISTERED
MICHAEL W. MYERS
5803
PROFESSIONAL
LAND SURVEYOR

NOTES:

1. FENCED SITE AREA SHALL BE CLEARED AND GRUBBED. REMOVE UNSUITABLE SOFT OR LOOSE SOILS, ORGANIC MATERIAL AND OR RUBBLE TO FIRM SUBGRADE. FILL UNDERCUT UP TO 6 INCHES BELOW FINISH GRADE.
2. THE CONTRACTOR MUST CONTACT THE SURVEYOR TO STAKE OUT THE LEASE AREA AND ALL EASEMENTS PRIOR TO CONSTRUCTION. ALL FEES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
3. IF ANY ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE CLIENT.
4. THE CONTRACTOR IS TO ENSURE THAT NO DAMAGE OR DEBRIS OCCURS ON THE ADJACENT PROPERTIES.
5. THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS WITH LOW MAINTENANCE NATIVE GRASS AND COVER WITH APPROVED STRAW.
6. UNTIL THE COMPOUND IS SURROUNDED BY A PERMANENT FENCE, THE CONTRACTOR MUST ERECT A TEMPORARY FENCE AROUND THE TOWER AND POST A "NO TRESPASSING" SIGN. ALL CLIMBING PEGS MUST BE REMOVED UP TO 20' UNTIL A PERMANENT FENCE IS INSTALLED.
7. THE CONTRACTOR MUST ENSURE THAT ALL DELIVERY TRUCKS WILL BE ABLE TO DELIVER THE MATERIAL TO THE COMPOUND. IF THE DELIVERY TRUCKS CAN NOT ACCESS THE COMPOUND THEN THE CONTRACTOR MUST MAKE OTHER ARRANGEMENTS TO GET THE MATERIAL TO THE COMPOUND. IF THIS IS REQUIRED THE CONTRACTOR MUST CONTACT KIMLEY-HORN AND ASSOCIATES IMMEDIATELY. NO ADDITIONAL FEES WILL BE PASSED ON TO THE CLIENT.
8. PROPOSED TOWER AND FOUNDATION TO BE INSTALLED IN ACCORDANCE WITH THE TOWER MANUFACTURER PLANS PROVIDED BY CLIENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE UNLOADING OF TOWER MATERIALS DELIVERED TO SITE BY THE TOWER MANUFACTURER.
9. CONTRACTOR MUST REFER TO THE GEOTECH REPORT FOR ALL COMPACTED FILL RECOMMENDATIONS. IF THE GEOTECH REPORT CONFLICTS WITH THE CONSTRUCTION DRAWINGS THEN STOP WORK AND CONTACT THE CLIENT AS SOON AS POSSIBLE.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DOT AND/OR COUNTY SPECIFICATIONS PRIOR TO BID AND CONSTRUCTION. IF THE SPECIFICATIONS DIFFER FROM THE CONSTRUCTION DRAWINGS, THEN THE SPECIFICATIONS WILL GOVERN. NO ADDITIONAL COSTS FOR ADHERING TO THE SPECIFICATIONS WILL BE ALLOWED AFTER THE BID HAS BEEN ISSUED AND ACCEPTED NOR WILL PROJECT DELAYS BE TOLERATED.
11. AT THE TIME THE CONSTRUCTION DRAWINGS WERE COMPLETED, KIMLEY-HORN AND ASSOCIATES DID NOT HAVE A COPY OF THE PROPOSED TOWER MANUFACTURER DRAWINGS THUS WE DO NOT KNOW THE EXACT SIZE OF THE OVERALL TOWER FOOTPRINT. THE CONTRACTOR MUST COMPARE THE CONSTRUCTION DRAWINGS WITH THE TOWER DRAWINGS PRIOR TO BID AND/OR CONSTRUCTION AND IF THEY FIND ANY DISCREPANCIES OR POSSIBLE ISSUES THEY MUST NOTIFY THE CLIENT IMMEDIATELY.

NOTES:

1. FCC REQUIRES SIGNS TO BE PROVIDED AND INSTALLED AS NECESSARY.
2. "HIGH VOLTAGE-DANGER" SIGN INSTALLED ON GATE AND SIGN SHALL NOT EXCEED 1 SF IN AREA.
3. WATER AND SEWER SERVICES ARE NOT REQUIRED AT THIS SITE.




FLOOD ZONE INFORMATION:

| | |
|---|---|
| FLOOD ZONE: | X |
| PANEL NUMBER: | 48139C0370F |
| EFFECTIVE DATE: | 06/03/2013 |
| FLOOD ELEV. | N/A |

PARENT TRACT DETAIL(SEE SURVEY)

PARENT TRACT SITE DATA:
SITE AREA: 85,339± SF = 1.96± AC
LEASE PARCEL AREA: 1,138 SF = 0.03± AC

COORDINATES: (CENTER OF TOWER)
LAT: 32° 17' 01.61" N (NAD 83/2011)
LON: 96° 37' 32.34" W (NAD 83/2011)
ELEVATION: 75' AMSL± NAVD 88 (PER SURVEY)

| DIRECTION | PROPOSED TOWER SETBACK |
|---|---|
| (A) NORTH | 15'-0" |
| (B) SOUTH | 284'-4" |
| (C) EAST | 39'-2" |
| (D) WEST | 512'-4" |

NOTES:

1. ALL PROPOSED ACCESS AND UTILITY EASEMENT LOCATIONS SHOWN ARE SUBJECT TO CHANGE.
2. PROPERTY LINES ARE APPROXIMATE AND SHOWN FOR REFERENCE ONLY. EXACT LOCATIONS TO BE CONFIRMED ONCE SURVEY IS ORDERED.
3. LOCATIONS OF ALL EXISTING EASEMENTS AND UNDERGROUND LINES SHOWN ARE APPROXIMATE. INFORMATION PROVIDED BY OTHERS. FIELD VERIFY PRIOR TO CONSTRUCTION.

GRAPHIC SCALE

0 40 80 160

( IN FEET )

1 SITE PLAN

SCALE: 1" = 80'

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME:
PRAIRIE VIEW

SITE NUMBER:
TX18C28-J

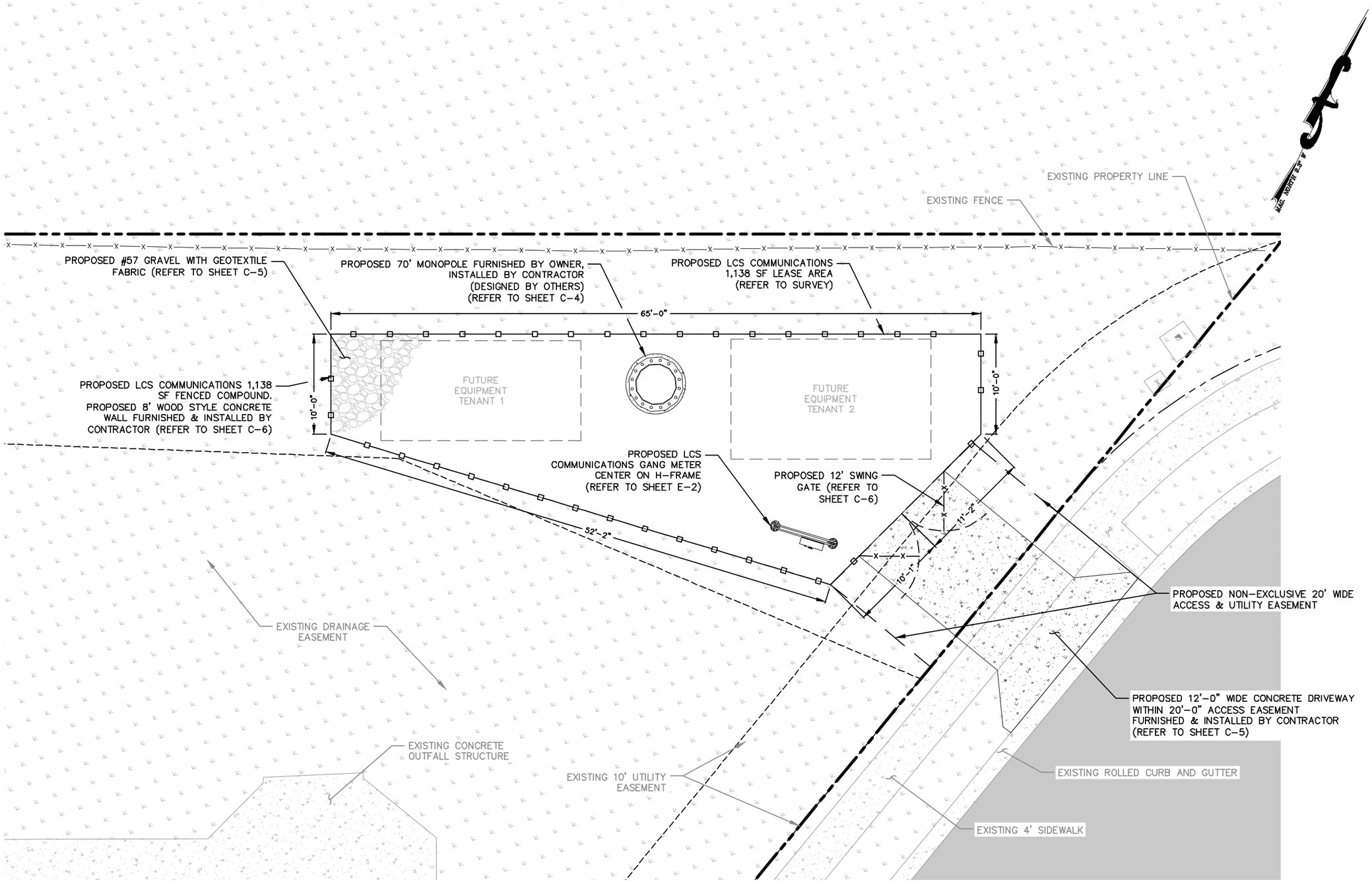
SITE ADDRESS:
VOLUNTEER DRIVE
ENNIS, TX 75119

DESIGN TYPE:
SUP EXHIBIT

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER: C-1

REVISION: 0




**GRAPHIC SCALE**

0 5 10 20

( IN FEET )

1 ENLARGED SITE PLAN

SCALE: 1" = 10'

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

SITE NUMBER: TX18C28-J

SITE ADDRESS: VOLUNTEER DRIVE ENNIS, TX 75119

DESIGN TYPE: SUP EXHIBIT

SHEET TITLE: ENLARGED SITE PLAN

SHEET NUMBER: C-2

REVISION: 0

DRAINAGE CALCULATIONS:

1. GENERAL SITE PLAN INFORMATION:
   GRAVEL COMPOUND AREA: 1,138 SQ. FT

IMPERVIOUS AREA:
   PROPOSED TOWER FOUNDATION = 50 SQ. FT.
   EQUIPMENT SLAB, 1 CARRIER @ 200 SQ. FT. EACH
   EQUIPMENT SLAB, 1 CARRIER @ 240 SQ. FT. EACH
   PROPOSED FUTURE EQUIPMENT SLABS = 440 SQ. FT.
   CONCRETE DRIVEWAY AREA = 245 SQ. FT.

TOTAL IMPERVIOUS AREA: 735 SQ. FT.
TOTAL PERVIOUS AREA: 648 SQ. FT.
TOTAL SITE AREA: 1,383 SQ. FT.

2. CALCULATED REQUIRED STORAGE RUNOFF:

   2.1 1/2" OF RUNOFF OVER TOTAL SITE
   Q = 1,383 SQ. FT. * 1/2" * 1'/12"
   Q = 57.6 CU. FT.

OR

   2.2 2.5" * % IMPERVIOUS OVER TOTAL SITE
   % IMPERVIOUS = 735 / 1,383
   % IMPERVIOUS = 0.53
   Q = 2.5" * 1'/12" * 0.53 * 1,383
   Q = 152.7 CU. FT.

3. STORAGE VOLUME PROVIDED:
   COMPOUND:
   NO. 57 STONE COMPOUND, 4" LAYER, 1,138 SQ. FT. COMPOUND.
   ASSUME 40% VOIDS RATIO.
   RETENTION VOLUME PROVIDED = (1,138 SQ. FT. – 490 SQ. FT.)
   * 0.4 * 8"/12" =171.1 CU. FT.
   RETENTION VOLUME PROVIDED = 171.1 CU. FT.

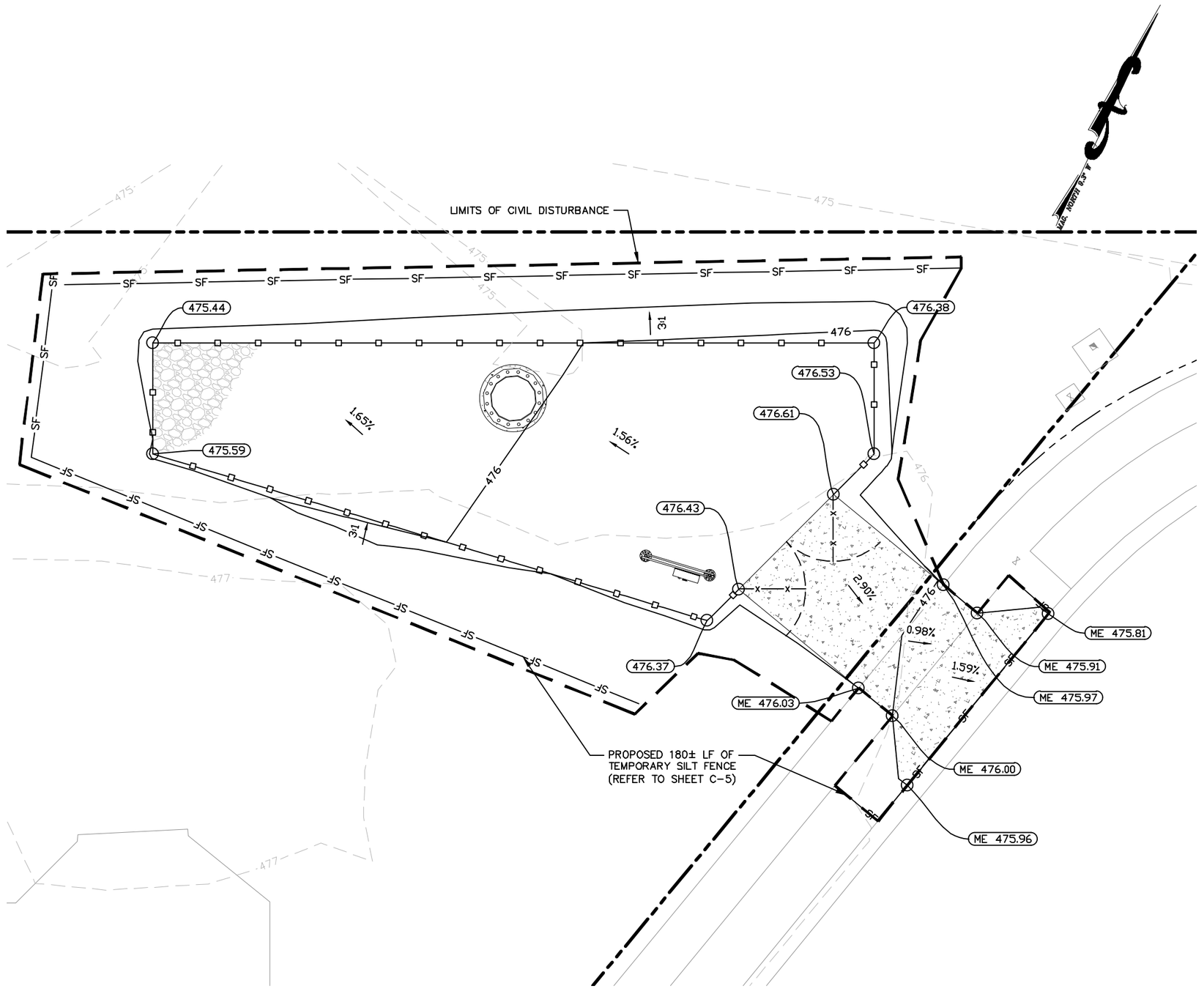
RETENTION VOLUME PROVIDED IS GREATER THAN REQUIRED STORAGE VOLUME

NOTE:

1. CONTRACTOR REQUIRED TO PROVIDE POSITIVE DRAINAGE "OFF" LEASE AREA.

GRADING NOTES:

1. ALL ELEVATIONS ARE FINISHED GRADE.
2. ENSURE POSITIVE DRAINAGE FROM SITE AT ALL TIMES.
3. PLACE GEOTEXTILE FILTER UNDER COMPOUND.
4. USE MIRAFI (#500X) OR EQUIVALENT. SLOPES 2:1 OR STEEPER MUST BE LINED WITH GEO FABRIC, MIRAFI 60 MIL OR EQUIVALENT, AND HEAVY RIP–RAP STONE PLACED ON TOP OF FABRIC TO STABILIZE SLOPE.




LEGEND

| | |
|---|---|
| ———XXX'——— | PROPOSED CONTOUR LINE |
| — —XXX'— — | EXISTING CONTOUR LINE |
| ———S/F——— | PROPOSED SILT FENCE |
| O – (125) | SPOT ELEVATION |
| O – (ME 125) | MATCH EXISTING |
| 2% → | SLOPE ARROW |
| — — — | LIMITS OF CIVIL DISTURBANCE |

GRAPHIC SCALE

0 5 10 20

( IN FEET )

1 SITE GRADING PLAN

SCALE: 1" = 10'

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487–7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597–9300
WWW.KIMLEY–HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME:
PRAIRIE VIEW

SITE NUMBER:
TX18C28-J

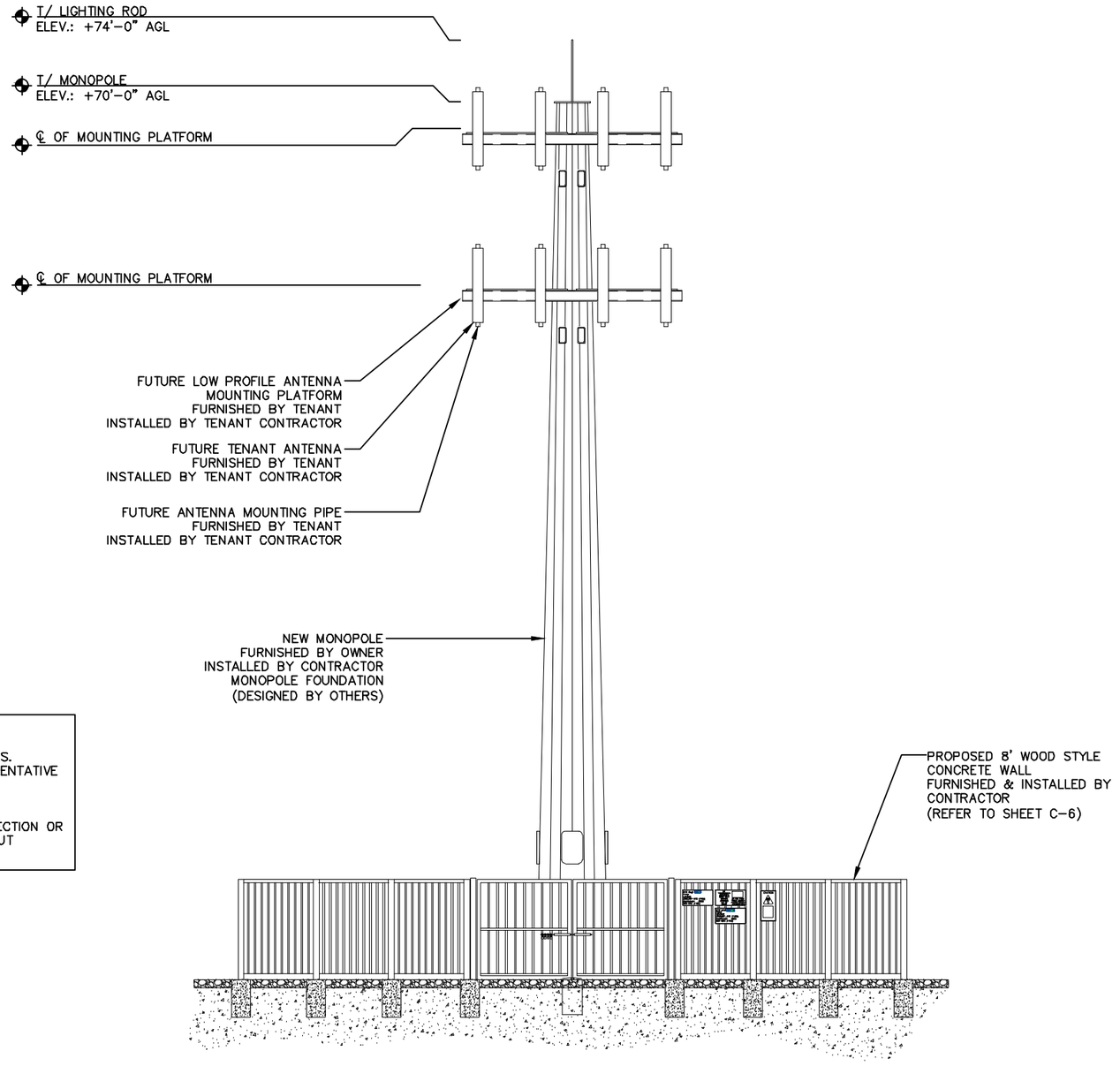
SITE ADDRESS:
VOLUNTEER DRIVE
ENNIS, TX 75119

DESIGN TYPE:
SUP EXHIBIT

SHEET TITLE:
SITE GRADING PLAN

SHEET NUMBER: C-3

REVISION: 0




STRUCTURAL NOTES:

1. STRUCTURAL CALCULATION PREPARED BY OTHERS. CONTRACTOR TO COORDINATE WITH ANB REPRESENTATIVE TO OBTAIN A COPY.
2. CONTRACTOR TO REFER TO TOWER STRUCTURAL CALCULATIONS FOR ADDITIONAL LOADS. NO ERECTION OR MODIFICATION OF TOWER SHALL BE MADE WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

1 ELEVATION VIEW

SCALE: N.T.S.

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn

11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME:
PRAIRIE VIEW

SITE NUMBER:
TX18C28-J

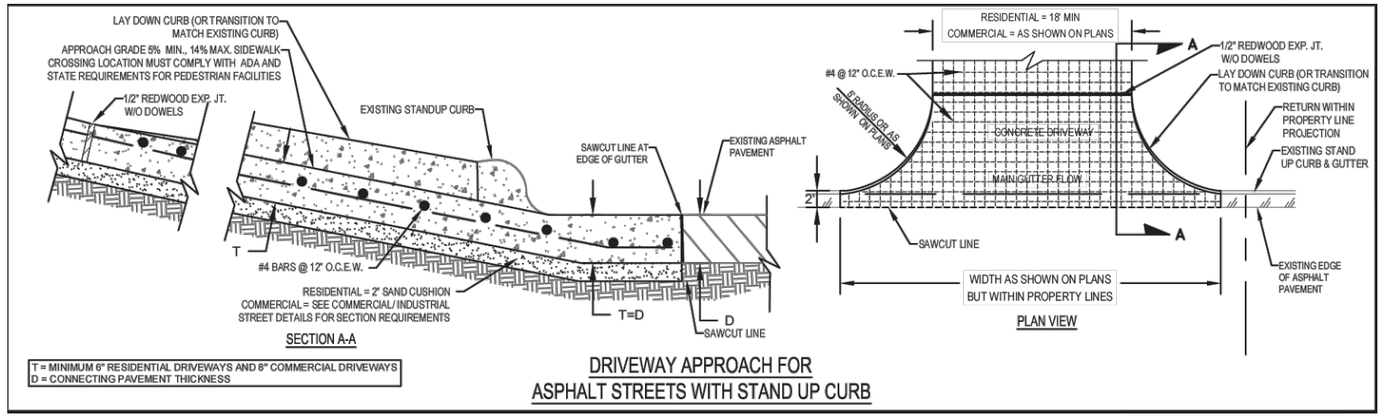
SITE ADDRESS:
VOLUNTEER DRIVE
ENNIS, TX 75119

DESIGN TYPE:
SUP EXHIBIT

SHEET TITLE:
SITE ELEVATIONS

SHEET NUMBER: C-4

REVISION: 0

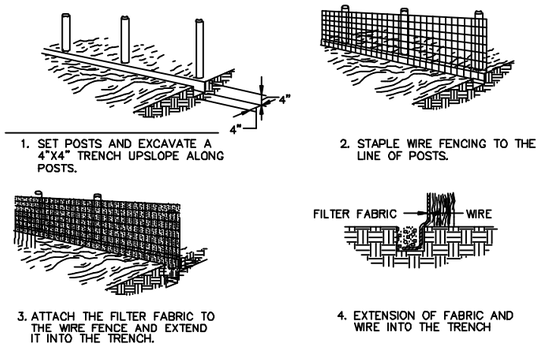



DRIVEWAY APPROACH FOR ASPHALT STREETS WITH STAND UP CURB

1 CONCRETE DRIVEWAY (CITY OF ENNIS STANDARD DETAIL) SCALE: N.T.S.

NOTES:

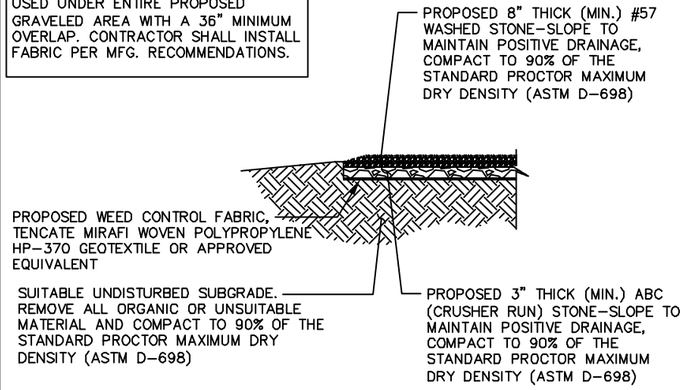
1. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION. INSTALL SILT FENCE AS SHOWN WHERE ADDITIONALLY REQUIRED FOR PROTECTION OF ADJACENT PROPERTIES, ROADWAYS, AND WATERWAYS.
2. CONTRACTOR SHALL INSPECT INSTALLED EROSION CONTROL DEVICE WEEKLY DURING CONSTRUCTION AND AFTER HEAVY RAINS FOR DAMAGE OR EXCESSIVE SILTATION. MAINTENANCE SHALL INCLUDE CLEANING BUILT-UP SEDIMENT BEHIND THE BARRIERS AND/OR REPLACING DAMAGED SECTIONS.
3. THE EROSION CONTROL DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
4. HAY BALES SHALL NOT BE USED AS EROSION CONTROL.
5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING SITE FREE OF DRAINAGE PROBLEMS.
6. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES FOR CONSTRUCTION TO PREVENT THE DIVERSION OF SEDIMENT LADEN STORM WATER RUNOFF OR ERODED MATERIALS FROM LEAVING THE CONSTRUCTION SITE.
7. CONTRACTOR SHALL PREVENT TRACKING OF SEDIMENT OUTSIDE OF CONSTRUCTION LIMITS. THIS MAY REQUIRE CLEANING AND/OR WASHING OF DEBRIS AND SEDIMENT FROM ALL VEHICLES PRIOR TO EXITING THE SITE. ANY SEDIMENT DEPOSITED ON THE ROADWAY SHALL BE SWEPT AS NECESSARY THROUGHOUT THE DAY OR AT THE END OF EVERY DAY AND DISPOSED OF IN AN APPROPRIATE MANNER. SEDIMENT SHALL NOT BE WASHED INTO STORM SEWER SYSTEMS.
8. ANY DEBRIS AND/OR SEDIMENT EXITING THE SITE DUE TO TRACKING OR FAILURE OF A SITE BMP SHALL BE CLEANED IMMEDIATELY BY THE CONTRACTOR BY A METHOD OTHER THAN FLUSHING. CONTRACTOR SHALL ALSO IMMEDIATELY REPAIR ANY BMPS THAT HAVE FAILED AND/OR INSTALL ADDITIONAL BMPS TO ENSURE SEDIMENT DOES NOT LEAVE THE SITE.



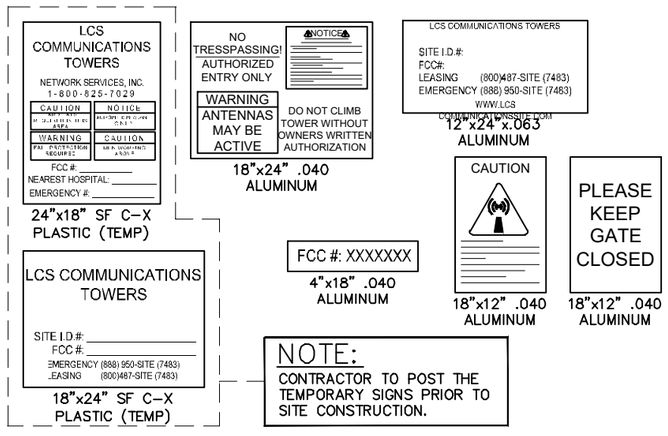

SILT FENCE

4 EROSION CONTROL DETAIL

NOTE:
WEED CONTROL FABRIC SHALL BE USED UNDER ENTIRE PROPOSED GRAVELED AREA WITH A 36" MINIMUM OVERLAP. CONTRACTOR SHALL INSTALL FABRIC PER MFG. RECOMMENDATIONS.




2 COMPOUND FINISH DETAIL SCALE: N.T.S.




NOTE:
CONTRACTOR TO POST THE TEMPORARY SIGNS PRIOR TO SITE CONSTRUCTION.

3 SIGN DETAIL SCALE: N.T.S.

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

SITE NUMBER: TX18C28-J

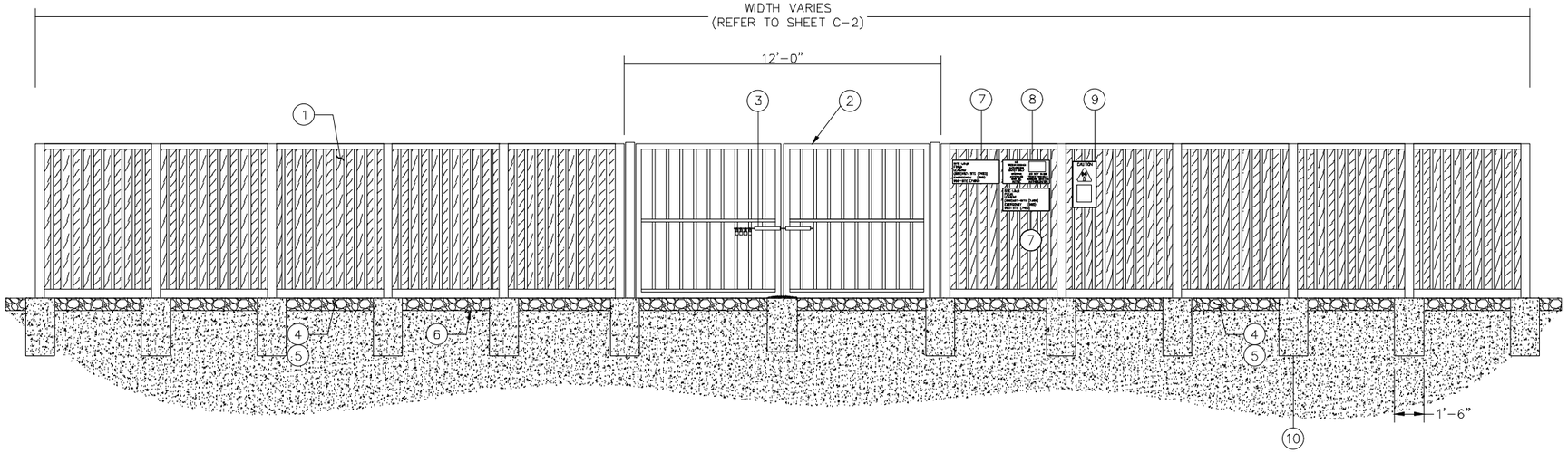
SITE ADDRESS: VOLUNTEER DRIVE ENNIS, TX 75119

DESIGN TYPE: SUP EXHIBIT

SHEET TITLE: SITE DETAILS

SHEET NUMBER: C-5

REVISION: 0




1 TYPICAL FENCING DETAIL — SCALE: N.T.S.

## BALLOON REFERENCE NOTES:

1. FENCECRETE – WOOD STYLE CONCRETE FENCE (REFER TO GENERAL NOTE 1)
2. 12' WIDE METAL DOUBLE SWING GATE (REFER TO NOTE 1 IN THIS SHEET)
3. STYMIE LOCK MULTI-TENANT LOCKING DEVICE
4. 12" COMPACTED BASE MATERIAL
5. FINISH GRADE SHALL BE UNIFORM AND LEVEL.
6. GEOTEXTILE FABRIC
7. 12" x 24" LCS COMMUNICATIONS SITE INFORMATION SIGN.
8. 12" x 24" NO TRESPASSING SIGN.
9. 12" x 24" RF CAUTION SIGN.
10. 18" DIAMETER, 24" DEEP (MIN.) 3,000 P.S.I. CONCRETE, VARIES ACCORDING TO LOCAL SOIL CONDITIONS

2 BALLOON-REFERENCE NOTES

## GENERAL NOTES:

1. FENCE AND GATE SHALL MATCH EXISTING LENNAR DEVELOPMENT STANDARDS FOR MATERIAL, STYLE, COLOR, TEXTURE, AND FINISH. CONTRACTOR SHALL VERIFY ALL REQUIREMENTS WITH HOA/DEVELOPER PRIOR TO FABRICATION AND INSTALLATION.
2. INSTALL FENCING PER ASTM F-567
3. INSTALL SWING GATES PER ASTM F- 900
4. POST & GATE PIPE SIZES ARE INDUSTRY STANDARDS. ALL PIPE TO BE GALVANIZED (HOT DIP, ASTM A120 GRADE "A" STEEL). ALL GATE FRAMES SHALL BE WELDED. ALL WELDING SHALL BE COATED WITH (3) COATS OF COLD GALV. (OR EQUIVALENT).
5. ALL OPEN POSTS SHALL HAVE END-CAPS.
6. MOUNT SIGN ON WALL USING STAINLESS STEEL ANCHORS OR APPROVED MASONRY FASTENERS. CONTRACTOR SHALL VERIFY FASTENER TYPE, SIZE, AND EMBEDMENT DEPTH BASED ON SIGN WEIGHT AND FENCE MATERIAL. INSTALL PER MANUFACTURER RECOMMENDATIONS.
7. MUSHROOM ANCHOR & PLUNGER REQUIRED FOR GATE.
8. G.C. RESPONSIBLE FOR LCS COMMUNICATIONS COMBO GATE LOCK

3 GENERAL NOTES

4 NOT USED

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn

11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

SITE NUMBER: TX18C28-J

SITE ADDRESS: VOLUNTEER DRIVE
ENNIS, TX 75119

DESIGN TYPE: SUP EXHIBIT

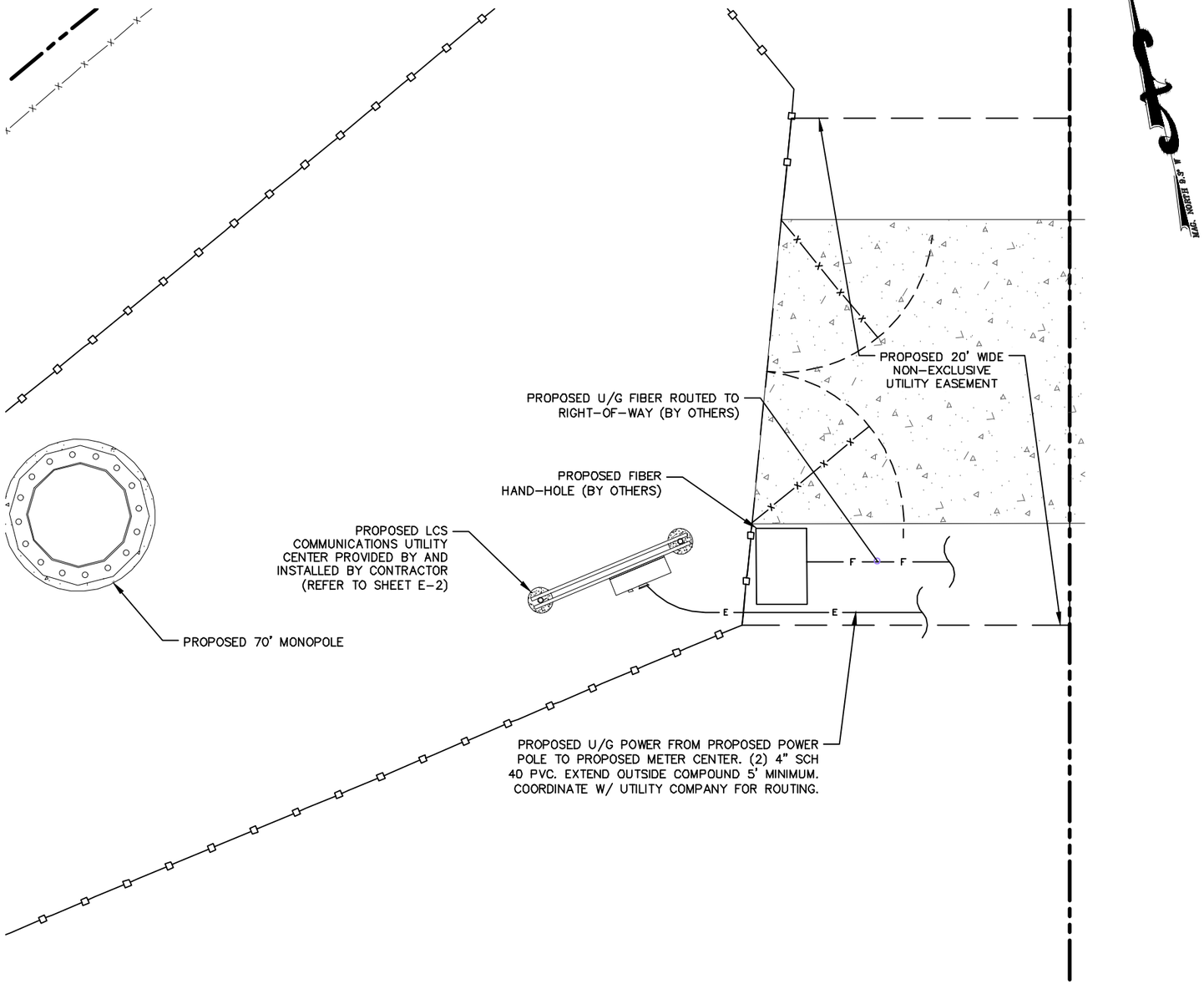
SHEET TITLE: FENCE DETAILS

SHEET NUMBER: C-6

REVISION: 0

NOTE:

1. ALL WORK, INCLUDING BUT NOT LIMITED TO ROUTES, CONDUIT SIZES, AND CONTENTS SHALL BE CONFIRMED AND COORDINATED WITH UTILITY PROVIDER BY CONTRACTOR PRIOR TO COMMENCEMENT (REFER TO UTILITY COORDINATION BY OTHERS)




**GRAPHIC SCALE**

0 2 5 10

( IN FEET )

1 UTILITY SITE PLAN

SCALE: 1" = 5'

## GENERAL ELECTRICAL NOTES

1.) ALL ELECTRICAL WORK SHALL CONFORM TO NATIONAL ELECTRIC CODE, LATEST ADOPTED EDITION, AND LOCAL CODES.

2.) ALL ELECTRICAL MATERIALS, EQUIPMENT AND INSTALLATION PROCEDURES TO CONFORM WITH LCS COMMUNICATIONS SPECIFICATIONS.

3.) CONTRACTOR SHALL PERFORM ALL VERIFICATION TESTS AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT & DISCREPANCIES.

4.) ELECTRICAL PLANS, DETAILS, AND DIAGRAMS ARE DIAGRAMMATIC ONLY. FIELD CONDITIONS DICTATE THE AMOUNT AND LOCATION OF EQUIPMENT.

5.) ALL MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NFPA, AND "UL" LISTED.

6.) THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY THE NEC, AND ALL APPLICABLE LOCAL CODES.

7.) ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE A MINIMUM INTERRUPTING RATING GREATER THAN THE UTILITY FAULT CURRENT.

8.) FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO VENDOR PRINTS AND INSTRUCTIONS.

9.) PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.

10.) PROVIDE LCS COMMUNICATIONS WITH ONE SET OF COMPLETE ELECTRICAL "AS-BUILT" DRAWINGS AT THE COMPLETION OF THE JOB SHOWING ACTUAL ROUTINGS AND WIRING CONNECTIONS.

11.) LABEL ALL ELECTRICAL EQUIPMENT PER LCS COMMUNICATIONS SPECIFICATIONS.

12.) ALL SINGLE-PHASE SELF-CONTAINED METER CONNECTION DEVICES MUST INCLUDE HORN TYPE BY-PASS PROVISION SO THAT SERVICE WILL NOT BE INTERRUPTED WHEN A METER IS REMOVED FROM THE SOCKET.

13.) ALL EQUIPMENT PUNCH OUTS AND CONDUITS (USED AND SPARE) TO BE "RODENT PROOFED" WITH CAPS, STEEL MESH, AND/OR FOAM FILL BY CONTRACTOR (AS NEEDED).

14.) ALL INTERIOR CONDUITS AND BUSHINGS SHALL BE EMT. ALL EXTERIOR SHALL BE PVC UNLESS NOTED OTHERWISE. SEE LCS COMMUNICATIONS SPECIFICATIONS.

15.) NO SPOILS TO BE LEFT ON SITE WITHOUT THE WRITTEN CONSENT OF THE LANDOWNER

16.) CONTRACTOR TO PROVIDE 2 PHENOLIC LABELS AT METER. ONE TO IDENTIFY "LCS COMMUNICATIONS DISCONNECT" AND THE OTHER TO GIVE SITE ADDRESS.

## CODES AND STANDARDS

| | |
|---|---|
| ANSI | AMERICAN NATIONAL STANDARDS INSTITUTE |
| NEC | NATIONAL ELECTRICAL CODE, LATEST ADOPTED EDITION |
| NEMA | NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION |
| NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| UL | UNDERWRITERS LABORATORIES, INC. |

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn

11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME:
PRAIRIE VIEW

SITE NUMBER:
TX18C28-J

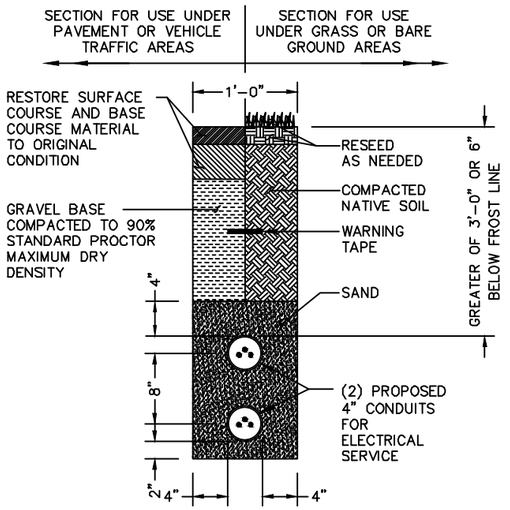
SITE ADDRESS:
VOLUNTEER DRIVE
ENNIS, TX 75119

DESIGN TYPE:
SUP EXHIBIT

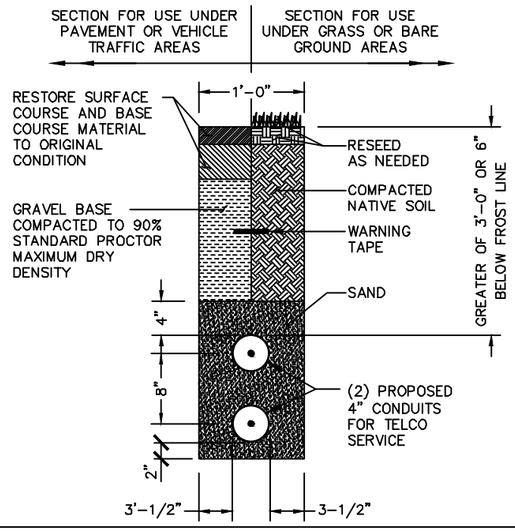
SHEET TITLE:
UTILITY SITE PLAN

SHEET NUMBER: E-1

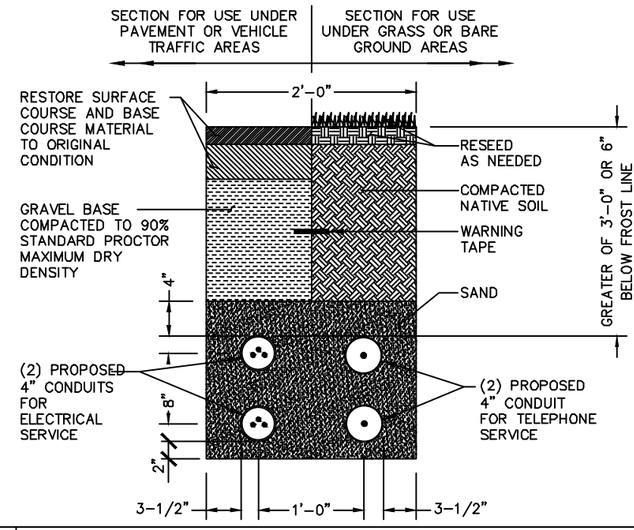
REVISION: 0



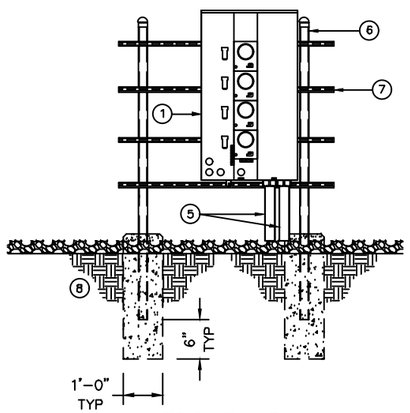

1 ELECTRICAL TRENCH DETAIL SCALE: N.T.S.



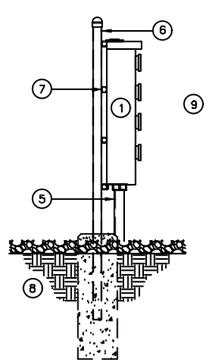

2 TELEPHONE TRENCH DETAIL SCALE: N.T.S.



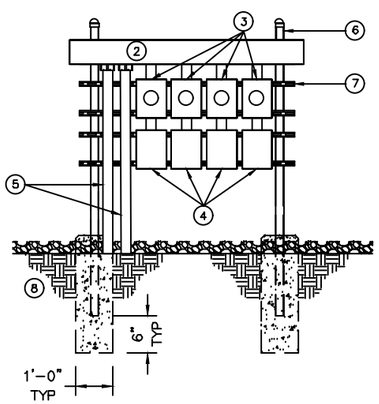

3 JOINT UTILITY TRENCH DETAIL SCALE: N.T.S.



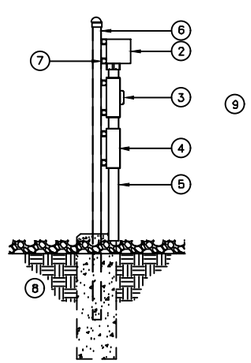

FRONT VIEW




SIDE VIEW




FRONT VIEW




SIDE VIEW

## BALLOON REFERENCE NOTES:

1. 600A, 120/240V, 1 PHASE, 3 WIRE, 4 POSITION METERING CENTER (200A MAX CIRCUIT BREAKER) (SQUARE D METER PAK MPR64200, OR EQUIVALENT)
2. PROVIDE NEW UTILITY GUTTER, 72"X12"X12" MIN., PROVIDE TAPS AS REQUIRED
3. 200A, 120/240V, 1 PHASE, 3 WIRE, METER SOCKET WITH BYPASS HANDLE (EATON UHTRS213CE, OR EQUIVALENT)
4. 200A, 120/240V, 1 PHASE, NEMA 3R, FUSIBLE DISCONNECT (SQUARE D QO CATALOG #C0224NRB, OR EQUIVALENT)
5. (2) SCH. 40 PIPE FOR ELECTRIC SERVICE (SEE ONE LINE DIAGRAM)
6. 3" NOMINAL GALVANIZED STEEL PIPE WITH PIPE CAP
7. HORIZONTAL SUPPORT MEMBER (UNISTRUT P1000, OR APPROVED EQUIVALENT)
8. FOUNDATION 3'-0" DEPTH OR 6" BELOW FROST LINE, WHICHEVER IS GREATER
9. CONTRACTOR TO MAINTAIN 5'-0" MINIMUM CLEARANCE FROM FACE OF H-FRAME TO NEAREST OBSTRUCTION. MAINTAIN A 3'-0" MINIMUM CLEARANCE FROM FACE OF METER TO NEAREST OBSTRUCTION PER N.E.C.

4 UTILITY & TELCO H-FRAME DETAIL SCALE: N.T.S.

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

SITE NUMBER: TX18C28-J

SITE ADDRESS: VOLUNTEER DRIVE ENNIS, TX 75119

DESIGN TYPE: SUP EXHIBIT

SHEET TITLE: UTILITY DETAILS

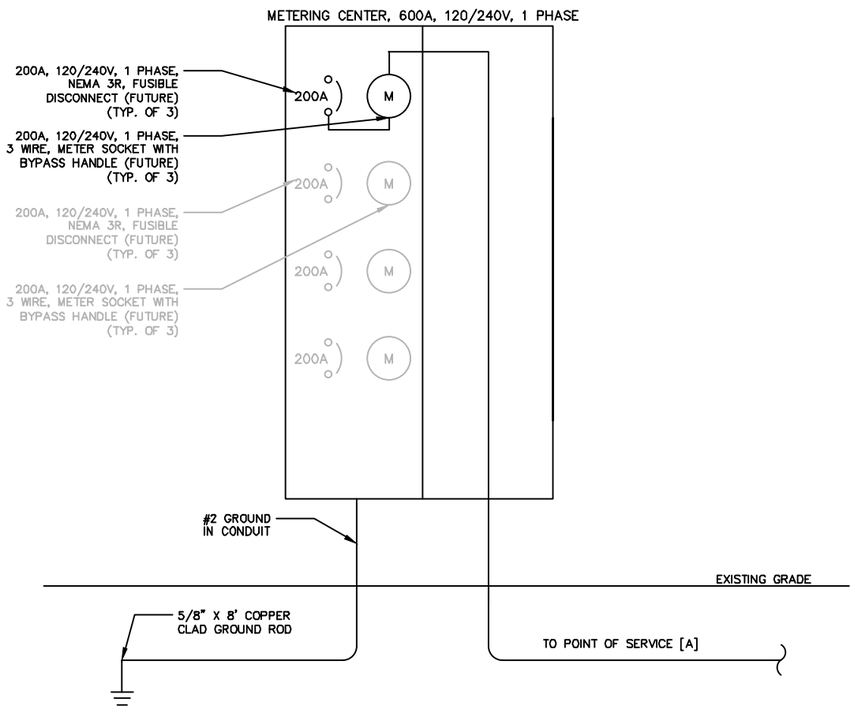
SHEET NUMBER: E-2

REVISION: 0

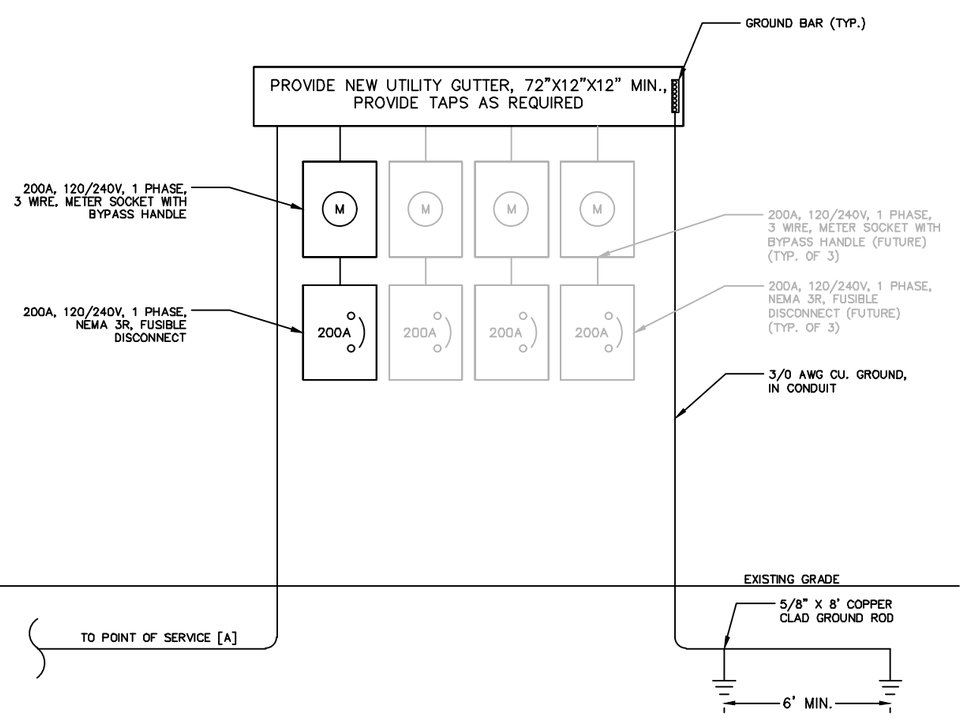
## ELECTRICAL

| CIRCUIT ID | VOLTS | MAX ONE WAY LENGTH OF RUN | CIRCUIT SIZE (2H+N) | CONDUIT ø |
|---|---|---|---|---|
| [A] | 120/240V | 300FT | 2 PARALLEL SETS (3) 350 MCM | (2) 3–1/2" |
| | | 350FT | 2 PARALLEL SETS (3) 400 MCM | (2) 3–1/2" |
| | | 450FT | 2 PARALLEL SETS (3) 500 MCM | (2) 4" |
| | | 500FT | 2 PARALLEL SETS (3) 600 MCM | (2) 4" |
| | | 600FT | 2 PARALLEL SETS (3) 700 MCM | (2) 4" |
| | | 650FT | 2 PARALLEL SETS (3) 750 MCM | (2) 4" |

– CIRCUITS SIZED FOR LESS THAN 3.0% OF VOLTAGE DROP
– PARALLEL SETS OF WIRES, EACH SET IN SEPARATE CONDUIT
– ALL CIRCUITS SHALL BE CU, AWG, THWN




1 ELECTRICAL SINGLE–LINE DIAGRAM (OPTION 1) SCALE: N.T.S.




2 ELECTRICAL SINGLE–LINE DIAGRAM (OPTION 2) SCALE: N.T.S.

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487–7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597–9300
WWW.KIMLEY–HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

SITE NUMBER: TX18C28-J

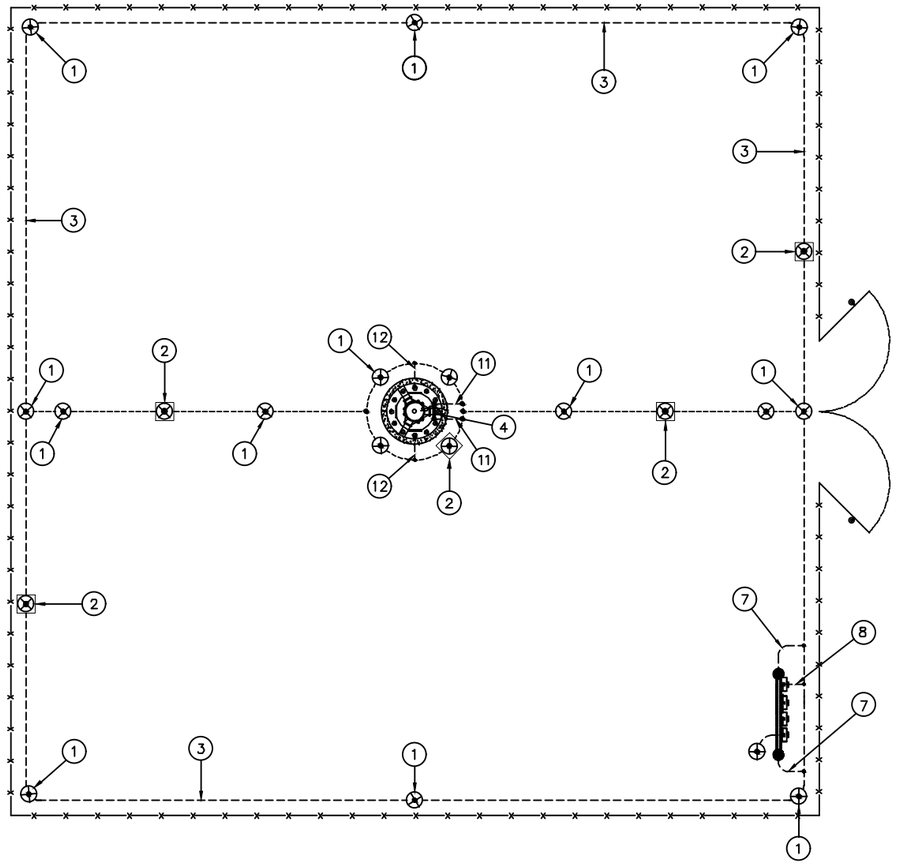
SITE ADDRESS: VOLUNTEER DRIVE ENNIS, TX 75119

DESIGN TYPE: SUP EXHIBIT

SHEET TITLE: SINGLE LINE DIAGRAM

SHEET NUMBER: E-3

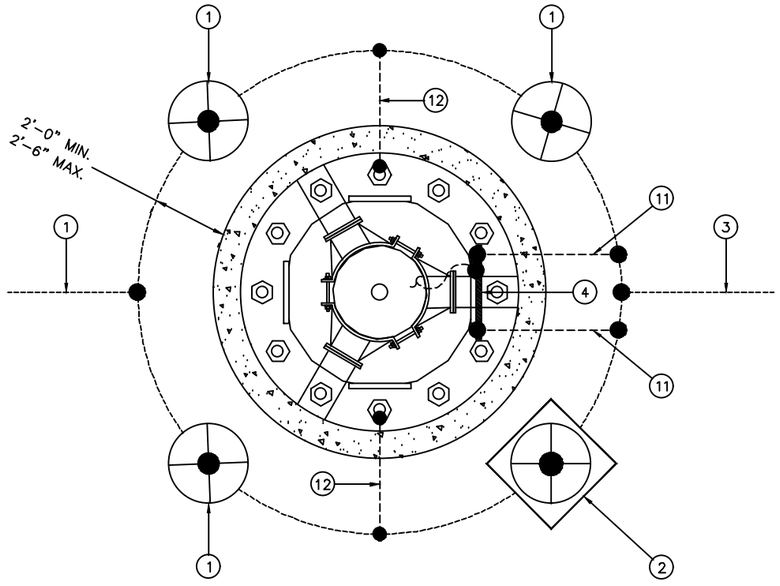
REVISION: 0



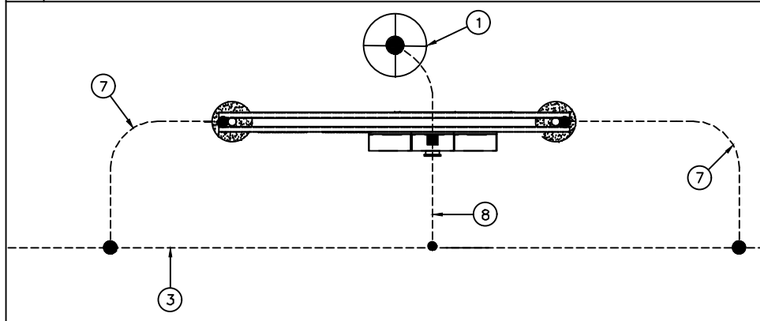
1 SITE GROUNDING PLAN (TYP.) N.T.S.

## SYMBOLS LEGEND

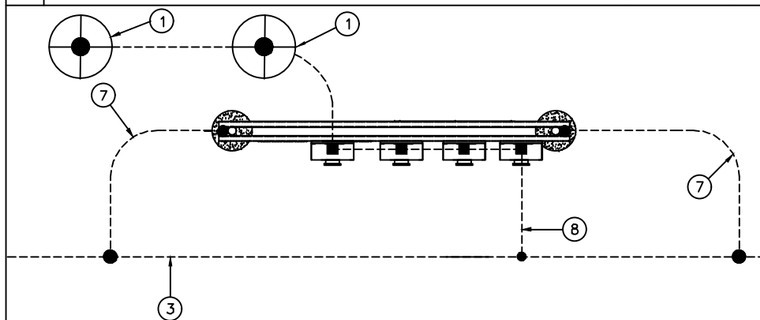
- GROUND ROD WITH ACCESS
- GROUND ROD
- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- GROUND BAR
- GROUND WIRE




2 ENLARGED GROUNDING PLAN @ TOWER BASE (TYP) N.T.S.



3 ENLARGED GROUNDING PLAN @ UTILITY H-FRAME (OPTION 1) N.T.S.



4 ENLARGED GROUNDING PLAN @ UTILITY H-FRAME (OPTION 2) N.T.S.

## BALLOON REFERENCE NOTES:

1. 5/8"~X8' COPPER CLAD GROUND ROD BURIED 36" BELOW GRADE (MIN.)
2. GROUND ROD ACCESS WELL (MIN. OF 4 EACH PER COMPOUND)
3. #2 SOLID, TINNED, BARE COPPER WIRE GROUND RING (CONTINUOUS STRAND)
4. 1/4"X4"X20" TINNED COPPER GROUND BAR. 2 TYP, AT BASE AND TOP OF TOWER. MOUNT DIRECT TO TOWER, DO NOT ISOLATE.
5. #2 SOLID, TINNED, BARE COPPER WIRE GROUND LEAD TO FENCE CORNER POST.
6. N/A
7. #2 SOLID, TINNED, BARE COPPER WIRE GROUND LEAD TO UTILITY H-FRAME SUPPORT POST
8. SERVICE ENTRANCE GROUND TO DEDICATED GROUND ROD
9. N/A
10. #2 INSULATED, STRANDED COPPER BOND STRAP FROM GATE FRAME TO GATE POST. (TYP EACH GATE)
11. #2 SOLID, TINNED, BARE COPPER GROUND LEAD FROM GROUND BAR AT MONOPOLE BASE TO GROUND RING. ROUTE IN 3/4" FLEX CONDUIT AND WEATHERPROOF OPEN END. (2 TYPICAL)
12. #2 SOLID, TINNED, BARE COPPER GROUND LEAD FROM MONOPOLE BASE TO GROUND RING. (2 TYPICAL, 180° SEPARATION)

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn

11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

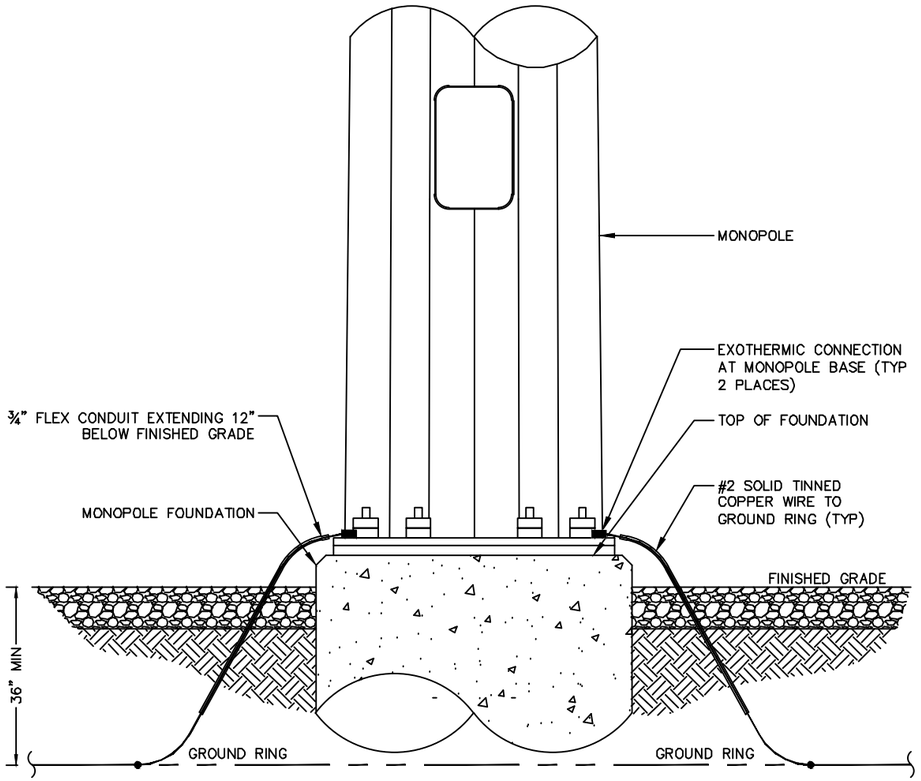
SITE NUMBER: TX18C28-J

SITE ADDRESS: VOLUNTEER DRIVE
ENNIS, TX 75119

DESIGN TYPE: SUP EXHIBIT

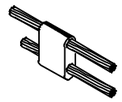
SHEET TITLE: GROUNDING PLAN & DETAILS

| SHEET NUMBER: | REVISION: |
|---|---|
| EG-1 | 0 |

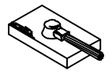



1 GROUNDING @ TOWER BASE SCALE: N.T.S.

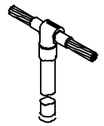
## CADWELD CONNECTIONS
(OR APPROVED EQUIVALENT)



PARALLEL HORIZONTAL CONDUCTORS
PARALLEL THROUGH CONNECTION OF HORIZONTAL CABLES TYPE PT



HORIZONTAL STEEL SURFACE
TO FLAT STEEL SURFACE OR HORIZONTAL PIPE TYPE HS



THROUGH CABLE TO GROUND ROD
THROUGH CABLE TO TOP OF GROUND ROD TYPE GT



VERTICAL STEEL SURFACE
CABLE DOWN AT 45° TO VERTICAL STEEL SURFACE INCLUDING PIPE TYPE VS

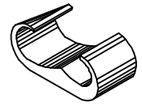


HORIZONTAL SPLICE
SPLICE OF HORIZONTAL CABLES



VERTICAL PIPE
CABLE DOWN AT 45° TO RANGE OF VERTICAL PIPES TYPE VS

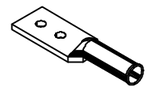
## BURNDY CONNECTIONS
(OR APPROVED EQUIVALENT)



"C" CONNECTOR
HYPRESS TYPE YGHC

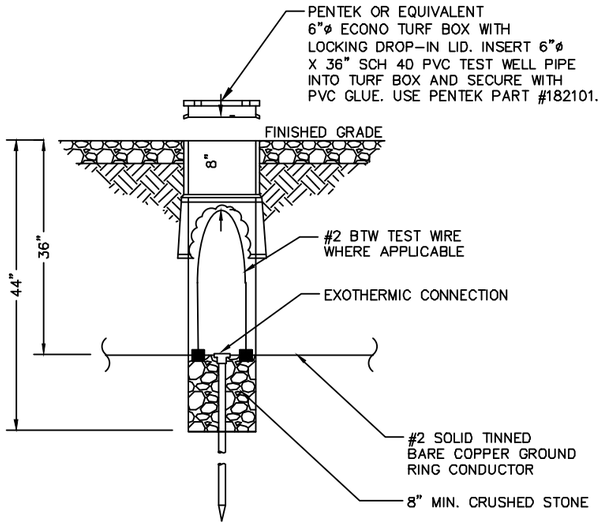


BOND JUMPER
FIELD FABRICATED GREEN STRANDED INSULATED TYPE 2-YA-2

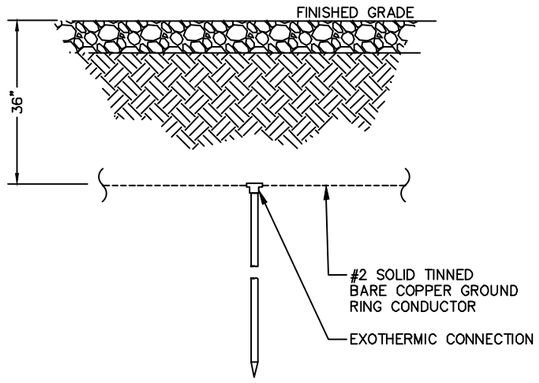


COPPER LUGS
TWO HOLE – LONG BARREL LENGTH TYPE YA-2

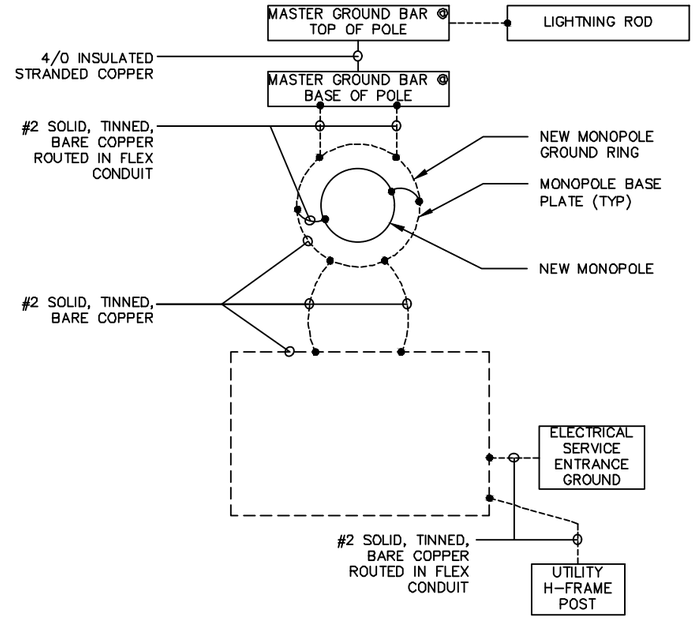
2 TYPICAL WELDING CONNECTIONS SCALE: N.T.S.




3 ACCESS WELL DETAIL SCALE: N.T.S.




4 GROUNDING ROD DETAIL SCALE: N.T.S.




5 SINGLE-LINE DIAGRAM SCALE: N.T.S.

LCS COMMUNICATIONS, LLC

LCS COMMUNICATIONS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
TEL: (800) 487-7483

Kimley»Horn
11700 KATY FREEWAY
SUITE 800
HOUSTON, TX 77079
PHONE (281) 597-9300
WWW.KIMLEY-HORN.COM
TBPELS REGISTRY NO. 928

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT IS STRICTLY PROHIBITED.

| | |
|---|---|
| A&E PROJECT #: | 241149185 |
| DRAWN BY: | JDS |
| CHECKED BY: | SHM |
| REV. 0 BY: | - |

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 0 | 06/29/26 | ISSUED FOR REVIEW |

SITE NAME: PRAIRIE VIEW

SITE NUMBER: TX18C28-J

SITE ADDRESS: VOLUNTEER DRIVE ENNIS, TX 75119

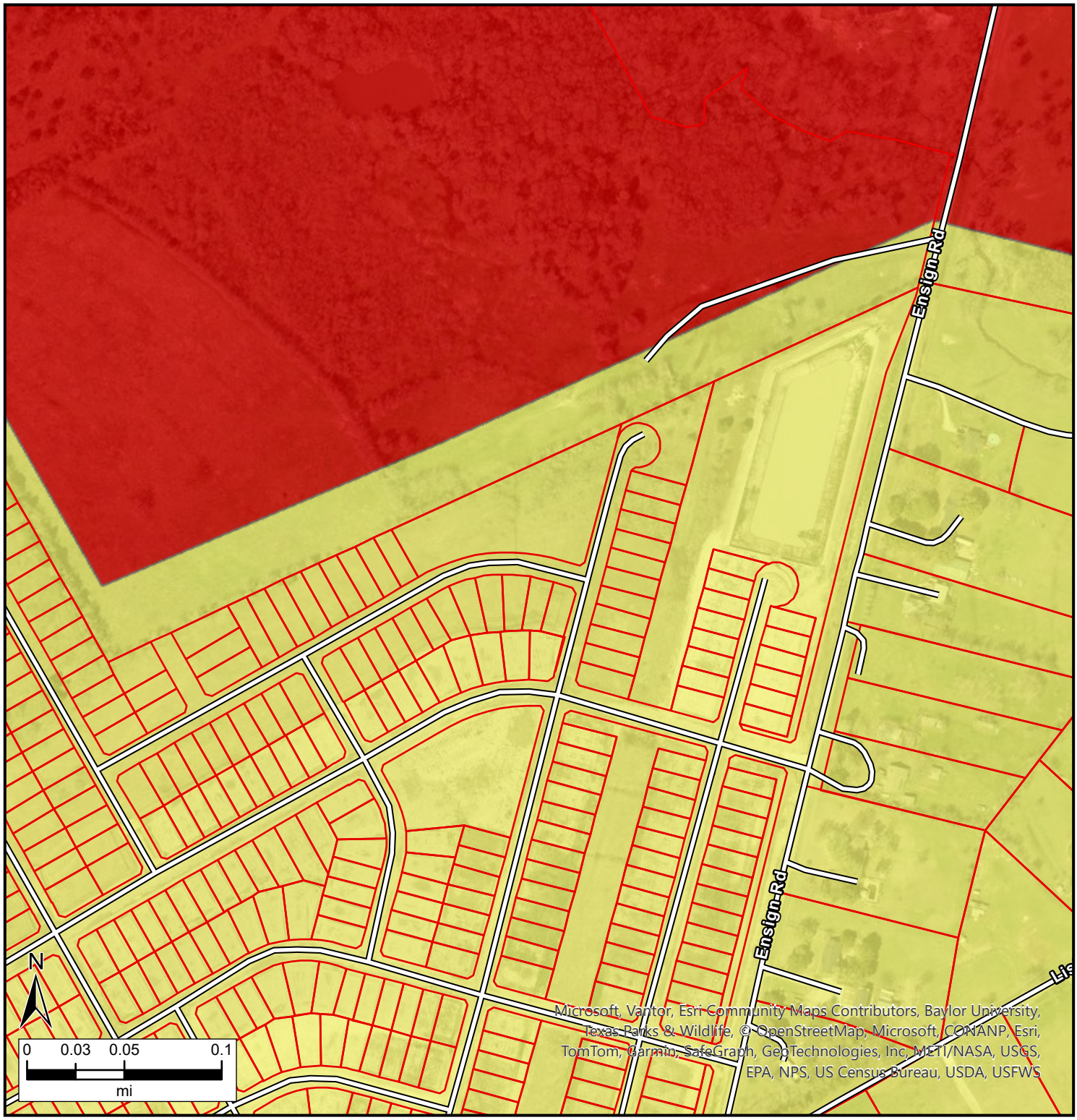
DESIGN TYPE: SUP EXHIBIT

SHEET TITLE: GROUNDING DETAILS

SHEET NUMBER: EG-2

REVISION: 0

# Future Land Use Plan




## Legend

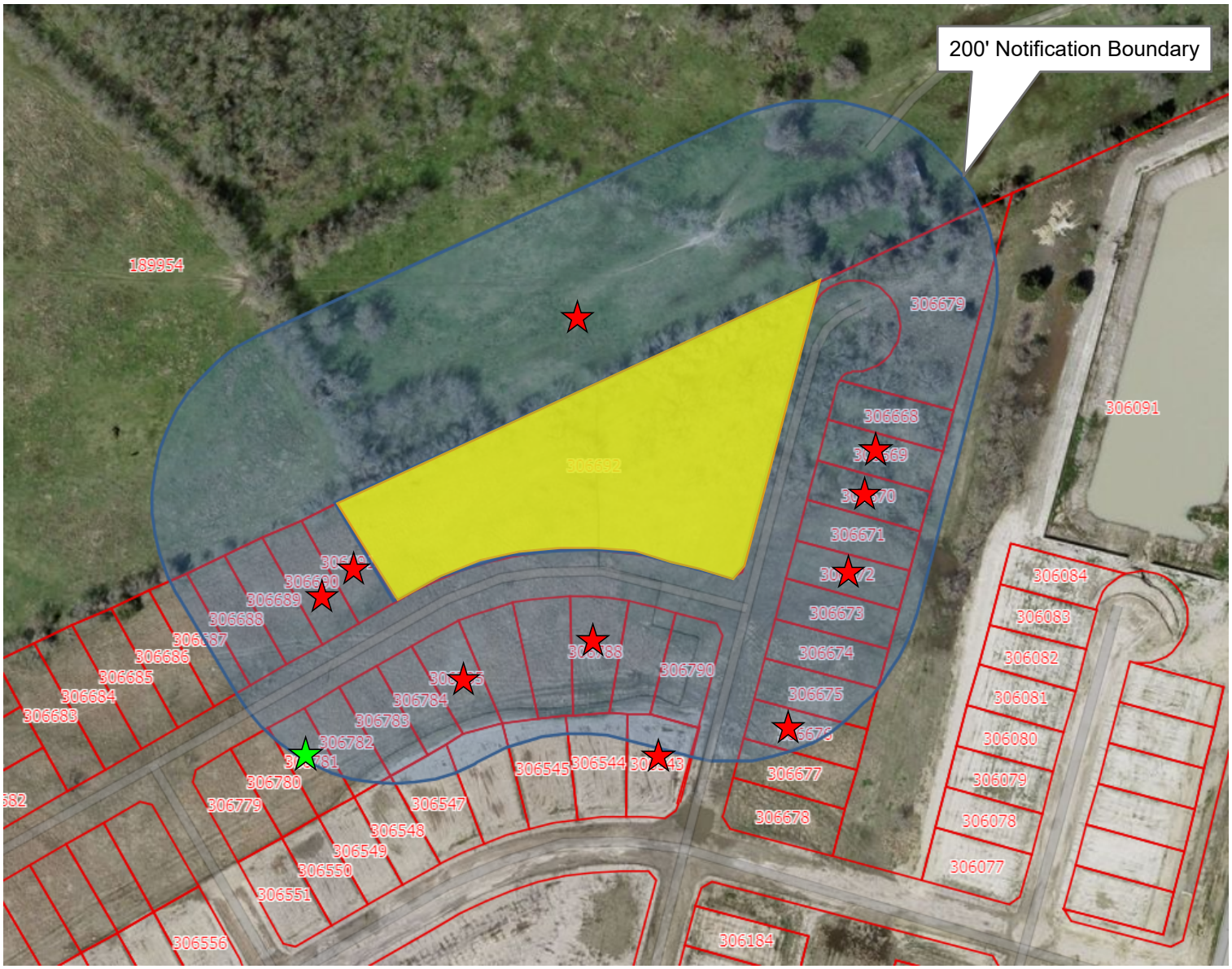
- Parcels
- Business Park
- Cemetery
- Downtown
- Existing Neighborhoods
- Existing Traditional Neighborhoods
- Industrial
- Industrial Buffer
- Industrial Transition
- New Lakefront Neighborhoods
- New Neighborhoods
- Public-Civic
- Regional Commercia
- Rural/AG/Conservat...

ENNIS TEXAS
The bluebonnet spirit of Texas



Date: 10/23/2026

# P&Z Case No. SUP-26-5




(37) Letters Sent
(1) Approvals
(10) Protests

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT**

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5**

**PID No. 306670**

City of Ennis
Inspection Services
Received
OCT 19 2026

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ **IN FAVOR OF** | SS **IN PROTEST AGAINST** |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>JASON SHOOK<br>Print Name<br>Signature<br>Megan Shook<br>Print Name<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**SHOOK JASON R & MEGAN B**
**4814 VOLUNTEER DR**
**ENNIS TX 75119-8929**

CITY OF ENNIS, TEXAS
COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT

City of Ennis
Inspection Services
Received
OCT 22 2025

COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5

PID No. 306676

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes, or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | _X_ IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Chelsea Welden<br>Print Name<br>Chelsea Welden<br>Signature<br>Juan Espino<br>Print Name<br>Juan M. Espino<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**ESPINO JUAN M & CHELSEA L WELDEN**
**4850 VOLUNTEER DR**
**ENNIS TX 75119-8929**

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT**

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5**

**PID No. 306691**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | ✓ IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Gabriela Macedo<br>Print Name<br>Gabriela<br>Signature<br>_____<br>Print Name<br>_____<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**MACEDO GABRIELA F**
**924 BIRKDALE DR**
**ENNIS TX 75119-8949**

City of Ennis
Inspection Services
Received
OCT 28 2026

City of Ennis
Inspection Services
Received
OCT 28 2026

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT**

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5**

**PID No. 306669**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes, or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | X IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Heather Glasby Fira<br>Print Name<br>Heather Glasby Fira<br>Signature<br>Richard R Fira<br>Print Name<br>Richard R Fira<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**FIRA HEATHER G & RICHARD R**
**4808 VOLUNTEER DR**
**ENNIS TX 75119-8929**

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT**

City of Ennis
Inspection Services
Received
NOV 02 2026

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5**

**PID No. 306543**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | _X_ IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Andrew Richards<br>Print Name<br>_____<br>Signature<br>_____<br>Print Name<br>_____<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**RICHARDS ANDREW W**
**904 NEYLAND DR**
**ENNIS TX 75119-8958**

CITY OF ENNIS, TEXAS
COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT

City of Ennis
Inspection Services
Received
NOV 02 2026

COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5

PID No. 306785

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | X IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Brian Brown<br>Print Name<br>_____<br>Signature<br>Samantha Brown<br>Print Name<br>_____<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**BROWN BRIAN K & SAMANTHA M**
**921 BIRKDALE DR**
**ENNIS TX 75119-8949**

City of Ennis
Inspection Services
Received
NOV 02 2026

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT**

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5**

**PID No. 306788**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | L IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Elizabeth Flores<br>Print Name<br>Elizabeth Flores<br>Signature<br>Robert Monreal<br>Print Name<br>Robert Monreal<br>Signature |

PLEASE MAIL OR DELIVER TO:
CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT
108 W KNOX ST
ENNIS, TEXAS 75119

OR

E-MAIL TO
jbarake@ennistx.gov
estubbs@ennistx.gov

CASTILLO MONREAL ROBERTO C & ELIZABETH FLORES
909 BIRKDALE DR
ENNIS TX 75119-8949

City of Ennis
Inspection Services
Received
NOV 02 2026

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT**

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5**

**PID No. 189954**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | ✓ IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Todd Winttters<br>Print Name<br>Todd Winttr<br>Signature<br>Brett Forman<br>Print Name<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**FORMAN BRETT & TODD WINTTERS**
**201 Windco Cir**
**Wylie TX 75098-5210**

CITY OF ENNIS, TEXAS
COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT

City of Ennis
Inspection Services
Received
NOV 02 2026

COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5

PID No. 306669

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary): This should have be disclosed prior to Sale of House and was Not! There are better area's than this To Put a tower if Needed!

| _____ IN FAVOR OF | X IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Michael J Chappel<br>Print Name<br>Michael J Chappel<br>Signature<br>Elizabeth Chappel<br>Print Name<br>Elizabeth Chappel<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

Michael + Elizabeth Chappel
4826
[redacted]
**[redacted] VOLUNTEER DR**
**ENNIS TX 75119-8929**

CITY OF ENNIS, TEXAS
COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT

City of Ennis
Inspection Services
Received
NOV 02 2026

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5**

**PID No. 306690**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | _X_ IN PROTEST AGAINST |
|---|---|
| _____<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>ISIDORE EDWARD McNally<br>Print Name<br>Signature<br>JANET M. WILLIAMS<br>Print Name<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**MCNALLY ISIDORE E**
**928 BIRKDALE DR**
**ENNIS TX 75119-8949**

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT DEPARTMENT**

City of Ennis
Inspection Services
Received
NOV 02 2025

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. SUP-26-5**

**PID No. 306781**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, December 15, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Specific Use Permit (SUP) in the Single-Family Residential-5 (R-5) district for a telecommunications tower 74' in height on an approximately 0.026-acre portion of Lot 1X, Block B, Prairie View Phase 2A, City of Ennis, Ellis County, Texas. Located in the 4800-Block of Volunteer Dr. Portion PID 306692.**
**P&Z Case No.: SUP-26-5**
**Owner: Prairie View Residential Community INC**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

---

---

| ✓ **IN FAVOR OF** | _____ **IN PROTEST AGAINST** |
|---|---|
| Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action. |
| | Print Name |
| | Signature |
| | Print Name |
| | Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**DODSON EMILY N**
**937 BIRKDALE DR**
**ENNIS TX 75119-8949**

PLANNING AND ZONING COMMISSION

# AGENDA SUMMARY FORM

| | |
|---|---|
| **To:** | Planning and Zoning Commission |
| **Subject:** | Conduct a public hearing to discuss and consider approving a Type II Site Plan in the Corridor Commercial (CC) zoning district for an approximately 107,000 SF structure to serve as anchor retail on Lot 1, Block 1, Ennis Gateway Addition, City of Ennis, Ellis County, Texas. Generally located at the northeast corner of E Ennis Ave and N Sonoma Trl. Ellis CAD ID 308265.<br>P&Z Case No.: DEV-26-7<br>Owner: H-E-B, LP<br>Applicant: Kimley-Horn & Associates |
| **Meeting:** | PLANNING AND ZONING COMMISSION - 09 Nov 2026 |
| **Department:** | Planning & Development |
| **Staff Contact:** | Erica Stubbs, Senior Planner |

## BACKGROUND INFORMATION:

The subject site measuring approximately 12.8003 acres is generally located at the northeast corner of Ennis Avenue and Sonoma Trail. The property is currently zoned Corridor Commercial (CC) and is part of the Ennis Gateway addition. The Ennis Gateway addition is an approximately 22 acres subdivision dedicated to retail and dining uses. 20 acres of the Ennis Gateway addition reside on the northern boundary of Ennis Avenue (E Ennis Ave & N Sonoma Trl) and 2 acres reside on the southern boundary of Ennis Avenue (E Ennis Ave & Baker Dr).

The applicant, Kimley-Horn and Associates, is requesting approval of a Type II Site Plan on behalf of H-E-B for the subject property. The Ennis Unified Development Ordinance (UDO) defines a Type II Site Plan as a site plan that does not strictly comply with the development and design standards of the UDO. Unlike a Type I Site Plan, staff does not have approval authority; the authority to approve a Type II Site Plan resides with City Commission.

The proposed site plan is uniquely tailored for H-E-B and requires minimal deviations from the design standards in the Unified Development Ordinance. Approximately half of the deviations pertain to outside display and sales and other requested deviations relate to screening, open space requirements, and aesthetics of accessory structures. The specific deviations requested include the following:

1. UDO Sec. 5.3.6 (9) (b), *“Outside Display and Sales are limited to no more than five percent of building area containing the primary use.”*

**A maximum of 8 percent of the building area may be utilized for Outside Display and Sales.**

2. UDO Sec. 5.3.6 (9) (e), *"If Outside Display and Sales are permitted to be displayed for more than 14 continuous days, then they shall be screened to meet the standards for screening of outside storage areas."*

**Outside Display and Sales shall be permitted year round without screening.**

3. UDO Sec. 5.2.4 (10), *"Outdoor storage or display of products along any highway frontage shall be prohibited. All storage areas shall be located within the rear yard and screened from adjacent properties and any public right-of-way."*

**Outside Display and Sales shall be oriented towards Sonoma Trail. Some visibility of the Outside Display and Sales will occur along Ennis Avenue / State Highway 34. No screening from the Ennis Avenue / State Highway 34 corridor will be required.**

4. UDO Sec. 7.3.3 (5) (d), *"Ground-Mounted Mechanical Equipment shall be screened from view along the primary street frontage by landscaping or by a decorative fence that is compatible with the architecture and landscaping of the site. The fence shall be of a height equal to or greater than the height of the mechanical equipment being screened."*

**Ground-mounted mechanical equipment shall be located at the rear of the building and not readily visible from the primary street frontage along Sonoma Trail. Some visibility of the Ground-mounted mechanical equipment will occur along Ennis Avenue / State Highway 34. No screening from the Ennis Avenue / State Highway 34 corridor will be required.**

5. UDO Sec. 8.3.2 (2), *"All development subject to this article shall set aside the following minimum amounts of land area as common open space that meets the standards of this section unless alternative standards are established as part of a PD or RMU development ordinance for a specific development. For non-residential and mixed-use buildings or developments with a gross floor area or cumulative area greater than 40,000 square feet: five (5) percent of total gross site area"*

**The open space requirement shall be waived for this development.**

6. UDO Sec. 5.3.5 (6) (a), *"Except where exempted, all accessory structures shall be designed to be aesthetically compatible with the primary structure. Compatibility shall be evaluated in terms of building materials, building orientation, building placement, building articulations, and building mass. Non-enclosed stables, gazebos, greenhouses, and carports ten feet or less in height with a roofed area of 120 square feet or less are exempt from this compatibility requirement."*

**Storage containers serving as accessory structures shall be permitted at the rear of the building and limited to a maximum of four (4) storage containers. Placement of containers shall meet all applicable building codes, fire codes and shall not interfere with vehicular maneuverability.**

The developer has conducted a Traffic Impact Analysis (TIA) and is actively working with TxDOT and the City of Ennis Public Works Department regarding traffic mitigation measures. An application for a replat will be coming before Planning and Zoning Commission in the near future. The replat will address any off-site easements and an updated TIA may be available at this time.

Notification letters were sent to the fifteen (15) surrounding property owners within 200 feet. Three (3) approvals and zero (0) protests were returned.

**RECOMMENDATION:**

Staff recommends approval.

**ATTACHMENTS:**

DEV-26-7_Application
DEV-26-7_Vicinity Map
DEV-26-7_Drone Photo
DEV-26-7_Zoning Map
DEV-26-7_Site Plan
DEV-26-7_Deviations from UDO
DEV-26-7_Landscape Plans
DEV-26-7_Traffic Impact Analysis
DEV-26-7_SPO Responses

City of Ennis, TX

October 19, 2026

## Record No: DEV-26-7

Development Application

Status: Active

Submitted On: 9/9/2026

### Primary Location

500 N SONOMA RD
ENNIS, TX 75119

### Owner

SONOMA TRAIL PARTNERS LTD

### Applicant

Matthew Hawkins

## Application Information

**Type of Application***

Site Plan - Type II

**Subdivision Name***

Ennis Gateway Addition

**Property Identification Number**

308269

**Property Type***

Commercial

**No. of Lots***

1

**Acreage***

12.8

**Current Zoning***

CC - Corridor Commercial

**Current Use ***

Vacant

**Are you using an Agent/Representative?***

Yes

**Describe the proposed use***

Commercial

**Will you be using a Temporary Concrete Batch Plant? (Requires a Specific Use Permit)***

No

## Agent/Representative Information

**Firm Name ***

Kimley-Horn

**Main Contact***

Matt Hawkins

**Address***

2600 N Central Expy Ste 400

**City, State Zip**

Richardson, Texas

**Telephone***

**Email***

## Signature

**Applicant Signature***

Matt Hawkins
Aug 10, 2026

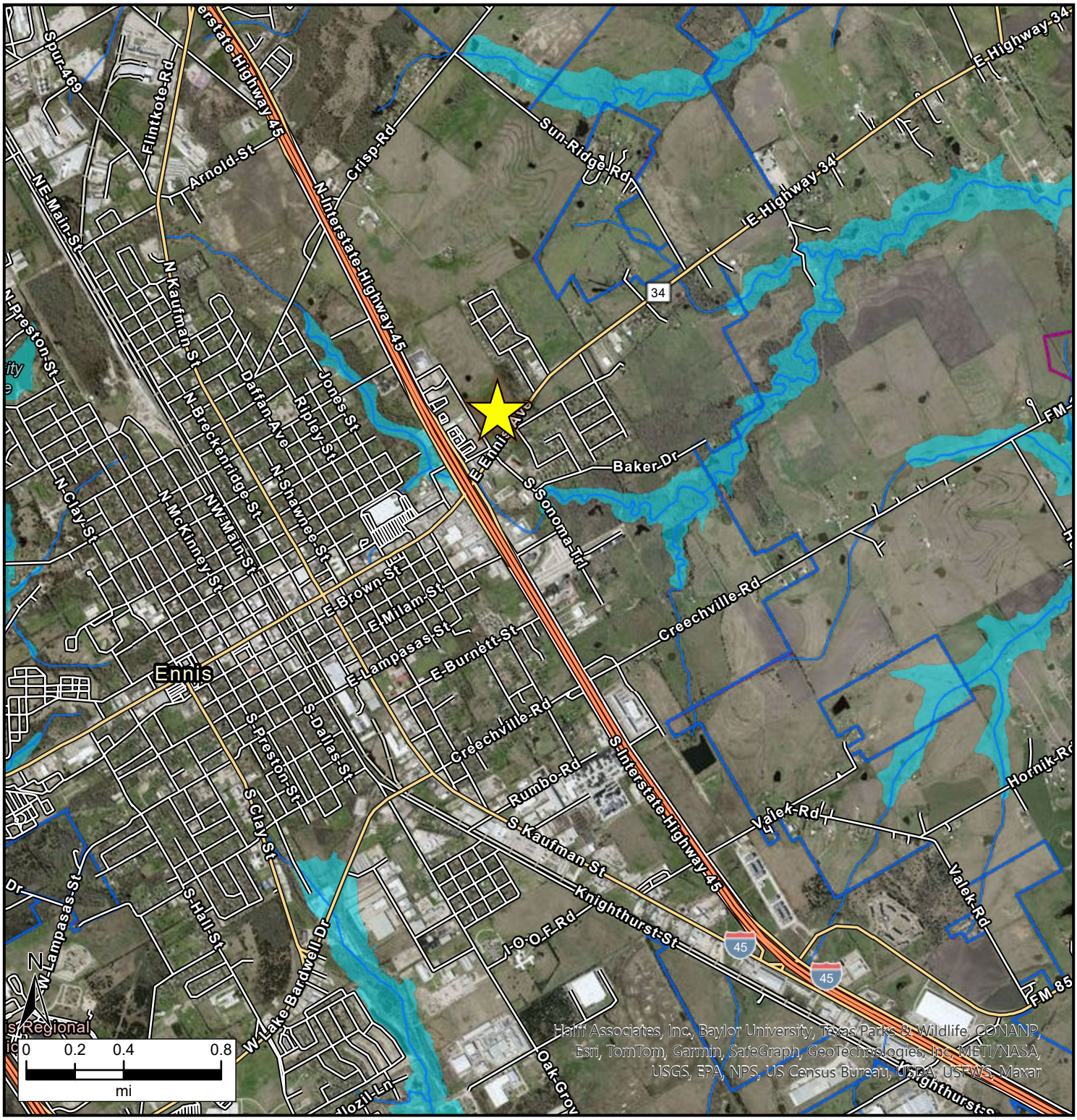
**P&Z Hearing Date**

11/09/2026

**City Commission Hearing Date**

11/17/2026

# Vicinity Map



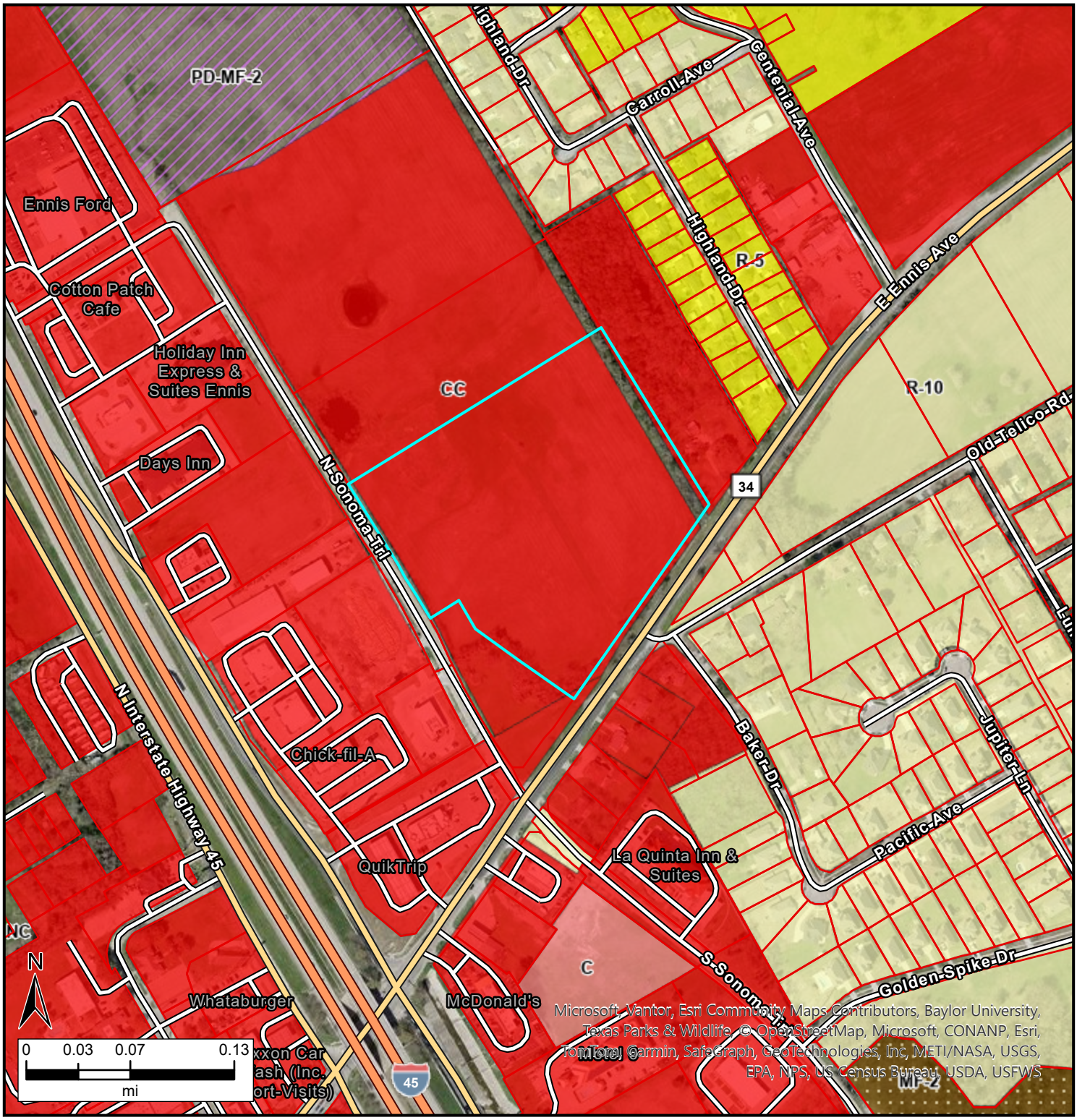

## Legend

- Ennis ETJ
- Ennis City Limits
- Other Cities Limits
- Floodway
- 1% Annual Chance Flood Hazard Area
- 0.2% Annual Chance Flood Hazard Area
- Profile Baseline
- Water Line
- Cross Section
- Base Flood Elevation

ENNIS TEXAS
*The bluebonnet spirit of Texas*



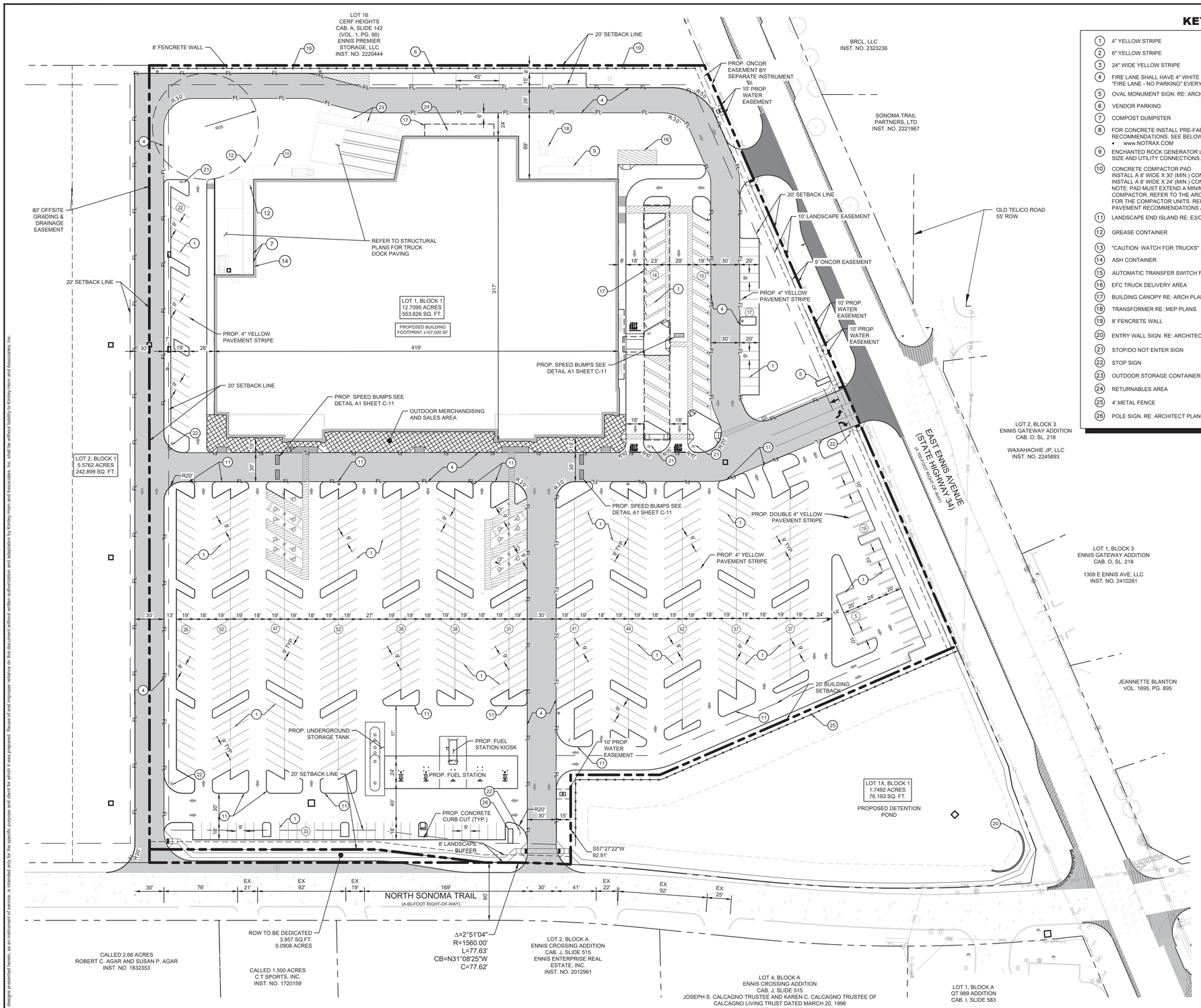
# Zoning Map




**Legend**

- Parcels
- A Agricultural
- RE Residential Estate
- R-10 Single Family Residential 10
- R-5 Single Family Residential 5
- R-5-Z Single Family Residential 5 Zero Lot Line
- R-5-PD #5 Single Family Residential 5 Planned Development #5
- R-5-PD #7 Single Family Residential 5 Planned Development #7
- R-7 Single Family Residential 7
- NC Neighborhood Conservation
- NC-MF1 Neighborhood Multi-Family 1
- NC-MF2 Neighborhood Multi-Family 2
- NC-D Neighborhood Duplex
- D Duplex
- TH Townhome
- MF-1 Multi-Family 1
- MF-2 Multi-Family 2
- MH Manufactured Home
- C Neighborhood Commercial
- CC-PD Corridor Commercial Planned Development
- BP Business Park
- CC Corridor Commercial
- L-IM Light Industrial and Manufacturing
- H-IM Heavy Industrial and Manufacturing
- DT Downtown Core
- DT-T1 Downtown Transition 1
- DT-T2 Downtown Transition 2
- DT-A1 Downtown Approach 1
- DT-A2 Downtown Approach 2
- IC Institutional and Civic
- PP Public and Parks
- PD Planned Development
- PD-MF-2 Planned Development-Multi-Family Residential District 2

ENNIS TEXAS
*The bluebonnet spirit of Texas*



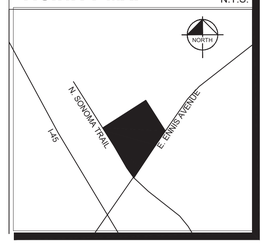

## KEY NOTES

1. 4" YELLOW STRIPE
2. 6" YELLOW STRIPE
3. 24" WIDE YELLOW STRIPE
4. FIRE LANE SHALL HAVE 4" WHITE LETTERS STENCILED ON 6" RED STRIPE STATING "FIRE LANE - NO PARKING" EVERY 25 FEET PER CITY OF ENNIS STANDARDS.
5. OVAL MONUMENT SIGN. RE: ARCHITECT PLANS
6. VENDOR PARKING
7. COMPOST DUMPSTER
8. FOR CONCRETE INSTALL PRE-FABRICATED SPEED HUMPS PER MANUFACTURERS' RECOMMENDATIONS. SEE BELOW FOR EBISTE OF APPROVED MANUFACTURERS -
   - www.NOTRAX.COM
9. ENCHANTED ROCK GENERATOR LOCATION. COORDINATE WITH MEP FOR FINAL SIZE AND UTILITY CONNECTIONS.
10. CONCRETE COMPACTOR PAD
    INSTALL A 8' WIDE X 30' (MIN.) CONCRETE PAD FOR THE MAIN WAREROOM COMPACTOR
    INSTALL A 8' WIDE X 24' (MIN.) CONCRETE PAD FOR THE PRODUCE COMPACTOR
    NOTE: PAD MUST EXTEND A MINIMUM DISTANCE OF 5 FEET IN FRONT OF THE COMPACTOR. REFER TO THE ARCHITECTS PLANS FOR DETAILS AND SPECIFICATIONS FOR THE COMPACTOR UNITS. REFER TO STRUCTURAL PLANS FOR THE COMPACTOR PAD PAVEMENT RECOMMENDATIONS AND SPECIFICATIONS.
11. LANDSCAPE END ISLAND RE: E3/C-6.0
12. GREASE CONTAINER
13. "CAUTION: WATCH FOR TRUCKS" SIGNAGE
14. ASH CONTAINER
15. AUTOMATIC TRANSFER SWITCH FOR EROCK
16. EFC TRUCK DELIVERY AREA
17. BUILDING CANOPY RE: ARCH PLANS
18. TRANSFORMER RE: MEP PLANS
19. 8' FENCRETE WALL
20. ENTRY WALL SIGN. RE: ARCHITECT PLANS
21. STOP/DO NOT ENTER SIGN
22. STOP SIGN
23. OUTDOOR STORAGE CONTAINERS
24. RETURNABLES AREA
25. 4' METAL FENCE
26. POLE SIGN. RE: ARCHITECT PLANS




## VICINITY MAP

N.T.S.




## LEGEND

| | |
|---|---|
| FL | PROPOSED FIRE LANE |
| | EXISTING CONCRETE PAVEMENT |
| | EXISTING ASPHALT PAVEMENT |
| | PROPOSED BUILDING |
| | PROPOSED TXDOT CONCRETE PAVEMENT (BY OTHERS) |
| | PROPOSED TXDOT ASPHALT PAVEMENT (BY OTHERS) |
| | OUTDOOR MERCHANDISING AND SALES AREA |
| TYP. | TYPICAL |
| PROP. | PROPOSED |
| [X] | NUMBER OF PARKING SPACES |
| EX. | EXISTING |
| BFR | BARRIER FREE RAMP |
| SSMH | SANITARY SEWER MANHOLE |
| GT | GREASE TRAP |
| IM | IRRIGATION METER |
| WM | WATER METER |
| FH | FIRE HYDRANT |
| WI | WYE INLET |
| GI | GRATE INLET |
| JB | JUNCTION BOX |
| CI | CURB INLET |
| TD | TRENCH DRAIN |
| FFE | FINISHED FLOOR ELEVATION |
| FOC | FACE OF CURB |
| TC | TOP OF CURB |

## TREE STATEMENT

NO EXISTING TREES ON THE PROPERTY.

## FLOOD STATEMENT

FLOOD STATEMENT: According to Community Panel No. 48139C0380F, effective June 3, 2013 of the National Flood Insurance Program Map, Flood Insurance Rate Map of Ellis County, Texas, Federal Emergency Management Agency, Federal Insurance Administration, all portions of this property are within Zone X, which is not a Special Flood Hazard Area.

| SITE DATA SUMMARY TABLE | |
|---|---|
| EXISITNG ZONING | CC |
| EXISTING USE | VACANT |
| PROPOSED USE | GROCERY STORE WITH GASOLINE SALES PUMP |
| SITE AREA | ±12.8003 AC (±557,581 SF) |
| BUILDING AREA | ±107,000 SF (19.19% OF LOT) (USE: GROCERY STORE)<br>±4,669 SF (0.84% OF LOT) (USE: GASOLINE SALES PUMP) |
| BUILDING AREA BY USE | 95.82% GROCERY STORE / 4.18% GASOLINE SALES PUMP |
| AREA IN SETBACKS | ±62,110 SF |
| OUTSIDE DISPLAY AREA | ±7,750 SF |
| MAXIMUM BUILDING COVERAGE | 75% |
| MINIMUM PARKING REQUIRED 1 / 300 SF | 357 |
| PROVIDED PARKING | 597 |
| REQUIRED ACCESSIBLE PARKING | 12 |
| PROVIDED ACCESSIBLE PARKING | 15 |

*FINAL SITE PLAN*
*GROCER ENNIS*
*BLOCK 1, LOT 1*
***Being ±12.8003 Acres Out Of The***
***Thomas Haven Survey, Abstract No. 489,***
***William Joice Survey, Abstract No. 573***
***City of Ennis, Ellis County, Texas***
***Preparation Date: October 30, 2026***

*Owner/Applicant:*
H-E-B, LP
646 South Main, South Building, 1st Floor
San Antonio, TX 78204
Contact: Blake Beeson
Phone: (214) 680-7600
Email: beeson.blake@heb.com

*Developer:*
H-E-B, LP
646 South Main, South Building, 1st Floor
San Antonio, TX 78204
Contact: Blake Beeson
Phone: (214) 680-7600
Email: beeson.blake@heb.com

*Engineer:*
Kimley-Horn and Associates, Inc.
2600 N Central Expy
Suite 400
Richardson, Texas 75080
Contact: Jonathan Kerby, P.E.
Phone: (214) 617-0535
Email: jonathan.kerby@kimley-horn.com

| No. | REVISIONS | DATE | BY |
|---|---|---|---|

Kimley»Horn
© 2026 KIMLEY-HORN
2600 N CENTRAL EXPRESSWAY, SUITE 400
RICHARDSON, TEXAS 75080
PHONE: 214-617-0535
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer JONATHAN C. KERBY
P.E. No. 127734 Date 10/30/2026

| KHA PROJECT 069227608 | DESIGNED BY | MTH |
|---|---|---|
| DATE OCTOBER 2026 | DRAWN BY | BJL |
| SCALE AS SHOWN | CHECKED BY | JCK |

# SITE PLAN

NEC ENNIS AVENUE & SONOMA TRAIL
ENNIS, TX

SHEET NUMBER
C-08

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

IMAGES
XREFS
ATTSYNCED
PLOT STYLE TBL
DWG PATH
PLOT DATE
xSurv - , xBnd - , xHtch - , xSite - , xSurv - Sketch - , xBndy - , xSite-TxDOT - , xSmv - , xUtil
10/30/2026 9:39 AM
K:\HCH_Civil\069227608 - GROCER ENNIS\CAD\PLANSHEETS
ktran, Kimley-Horn | Last Saved By: ktran

**Type II Site Plan - Lot 1, Block 1; Ennis Gateway Addition**
**Deviations from the Unified Development Ordinance**

1. UDO Sec. 5.3.6 (9) (b), "Outside Display and Sales are limited to no more than five percent of building area containing the primary use."

   **A maximum of 8 percent of the building area may be utilized for Outside Display and Sales.**

2. UDO Sec. 5.3.6 (9) (e), "If Outside Display and Sales are permitted to be displayed for more than 14 continuous days, then they shall be screened to meet the standards for screening of outside storage areas."

   **Outside Display and Sales shall be permitted year round without screening.**

3. UDO Sec. 5.2.4 (10), "Outdoor storage or display of products along any highway frontage shall be prohibited. All storage areas shall be located within the rear yard and screened from adjacent properties and any public right-of-way."

   **Outside Display and Sales shall be oriented towards Sonoma Trail. Some visibility of the Outside Display and Sales will occur along Ennis Avenue / State Highway 34. No screening from the Ennis Avenue / State Highway 34 corridor will be required.**

4. UDO Sec. 7.3.3 (5) (d), "Ground-Mounted Mechanical Equipment shall be screened from view along the primary street frontage by landscaping or by a decorative fence that is compatible with the architecture and landscaping of the site. The fence shall be of a height equal to or greater than the height of the mechanical equipment being screened."

   **Ground-mounted mechanical equipment shall be located at the rear of the building and not readily visible from the primary street frontage along Sonoma Trail. Some visibility of the Ground-mounted mechanical equipment will occur along Ennis Avenue / State Highway 34. No screening from the Ennis Avenue / State Highway 34 corridor will be required.**

5. UDO Sec. 8.3.2 (2), "All development subject to this article shall set aside the following minimum amounts of land area as common open space that meets the standards of this section unless alternative standards are established as part of a PD or RMU development ordinance for a specific development. For non-residential and mixed-use buildings or developments with a gross floor area or cumulative area greater than 40,000 square feet: five (5) percent of total gross site area"

   **The open space requirement shall be waived for this development.**

6. UDO Sec. 5.3.5 (6) (a), "Except where exempted, all accessory structures shall be designed to be aesthetically compatible with the primary structure. Compatibility shall be evaluated in terms of building materials, building orientation, building placement, building articulations, and building mass. Non-enclosed stables, gazebos, greenhouses, and carports ten feet or less in height with a roofed area of 120 square feet or less are exempt from this compatibility requirement."

   **Storage containers serving as accessory structures shall be permitted at the rear of the building and limited to a maximum of four (4) storage containers. Placement of containers shall meet all applicable building codes, fire codes and shall not interfere with vehicular maneuverability.**

L1.1

L1.2

L1.3

L1.4

H-E-B

LOT 1, BLOCK 1
12.8003 ACRES
557,582 SQ. FT.

PROPOSED BUILDING
FOOTPRINT ±107,000 SF

EAST ENNIS AVENUE
(STATE HIGHWAY 34)
(A 100-FOOT RIGHT-OF-WAY)

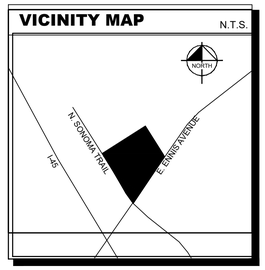
NORTH SONOMA TRAIL
(A 60-FOOT RIGHT-OF-WAY)

LOT 1X, BLOCK 1
1.7502 ACRES
76,240 SQ. FT.

PROPOSED DETENTION
POND

## VICINITY MAP

N.T.S.







## PLANT SCHEDULE

| SYMBOL | CODE | QTY | BOTANICAL / COMMON NAME | ROOT | CAL. | SIZE | REMARKS |
|---|---|---|---|---|---|---|---|
| TREES | | | | | | | |
| | UP | 43 | ULMUS PARVIFOLIA / LACEBARK ELM | B&B | 3" CAL. MIN. | 14`-16` HT | FULL AND MATCHING |
| | QS | 9 | QUERCUS SHUMARDII / SHUMARD OAK | B&B | 3" CAL. MIN. | 14`-16` HT | FULL AND MATCHING |
| | QV | 37 | QUERCUS VIRGINIANA / SOUTHERN LIVE OAK | B&B | 3" CAL. MIN. | 14`-16` HT | FULL AND MATCHING |

| SYMBOL | CODE | QTY | BOTANICAL / COMMON NAME | CONT. | SIZE | SPACING | REMARKS |
|---|---|---|---|---|---|---|---|
| SHRUBS | | | | | | | |
| | LF | 122 | LEUCOPHYLLUM FRUTESCENS 'COMPACTA' / COMPACT TEXAS SAGE | 5 GAL. | 36" HT. | AS SHOWN | FULL AND MATCHING |
| | MD | 121 | MYRICA CERIFERA 'DON'S DWARF' / DON'S DWARF WAX MYRTLE | 5 GAL. | 36" HT. | 36" O.C. | FULL AND MATCHING |
| | IB | 118 | ILEX CORNUTA 'BURFORDII NANA' / DWARF BURFORD HOLLY | 5 GAL. | 36" HT. | 36" O.C. | FULL AND MATCHING |
| | NT | 102 | NASSELLA TENUISSIMA / MEXICAN FEATHER GRASS | 5 GAL. | 36" HT. | AS SHOWN | FULL AND MATCHING |
| | MC | 66 | MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS | 5 GAL. | 36" HT. | AS SHOWN | FULL AND MATCHING |
| GROUND COVERS | | | | | | | |
| | SOD | 45,192 SF | SOD / BERMUDA SOD | N/A | N/A | N/A | TIGHT, SAND FILLED JOINTS. SOD TO BE FREE OF WEEDS AND DEBRIS |
| | RM | 9,468 SF | ROCK MULCH / ROCK MULCH | N/A | N/A | N/A | REF. DETAIL A, SHEET L2.01 |
| MISC. | CODE | QTY | BOTANICAL / COMMON NAME | | | | |
| | SE | 770 LF | STEEL EDGING | N/A | N/A | N/A | COLOR:BLACK SIZE: 3/16" X 6" INSTALL: INSTALL ALONG ALL LANDSCAPE BEDS ADJACENT TO SOD AND AS SHOWN PER PLANS. APPROVAL: CUT SHEET |
| | MT | TBD | SHREDDED HARDWOOD MULCH | N/A | N/A | N/A | COLOR:NATURAL INSTALL: PER PLANTING DETAILS AT A MIN. 3" DEPTH. |

NOTES:
1. CONTRACTOR TO SOD TO LIMITS OF DISTURBANCE.
2. IRRIGATION TO BE PROVIDED PER CITY OF ENNIS AND TCEQ STANDARDS.

| City of Ennis, TX - Landscape Data Table | | |
|---|---|---|
| *TOTAL: 12.8 AC (557,581 sf) - ZONED CC* | | |
| | REQUIRED | PROVIDED |
| *City of Ennis - Development Code* | | |
| *8.2.4 - Non-Residential and Multi-Family Landscaping and Buffering Requirements* | | |
| *(2) Parking Lot Landscaping* | | |
| b.i. Provide one (1) canopy tree for every ten (10) cars of parking provided<br><br>612 Cars of parking / 10 = 61 Canopy Trees | 61 Canopy Trees | 61 Canopy Trees |
| *(3) Landscape Buffer* | | |
| a. All development with any off-street surface parking between any building and any highway, frontage road, or arterial roadway shall provide a landscape buffer that is based on the roadway frontage specified in Table 8.2-2.<br><br>East Ennis Ave (State Highway 34) = 10' Landscape Buffer<br>North Sonoma Trail = 8' Landscape Buffer | East Ennis Ave:<br>10' Landscape Buffer<br><br>North Sonoma Trail:<br>8' Landscape Buffer | East Ennis Ave:<br>10' Landscape Buffer<br><br>North Sonoma Trail:<br>8' Landscape Buffer |
| b. One (1) Canopy Tree, three-inch (3") caliper minimum, shall be planted on fifty foot (50') centers within the required landscape buffer area. A minimum of six (6) shrubs with a minimum size of five gallons (5 gal.) each will be planted in the landscaped area for each fifty feet (50') of linear frontage.<br><br>East Ennis Ave (State Highway 34): 583 LF / 50 = 12 Canopy Trees & 70 Shrubs<br>North Sonoma Trail = 8' Landscape Buffer: 802 LF / 50 = 16 Canopy Trees & 96 Shrubs | East Ennis Ave:<br>12 Canopy Trees<br>70 Shrubs<br><br>North Sonoma Trail:<br>16 Canopy Trees<br>96 Shrubs | East Ennis Ave:<br>12 Canopy Trees<br>129 Shrubs<br><br>North Sonoma Trail:<br>16 Canopy Trees<br>110 Shrubs |

811 Know what's below. Call before you dig.

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

| No. | REVISIONS | DATE | BY |
|---|---|---|---|

Kimley»Horn
2600 N CENTRAL EXPRESSWAY, SUITE 400
RICHARDSON, TEXAS 75080
PHONE: 214-517-0535
TEXAS REGISTERED ENGINEERING FIRM F-928

© 2026 KIMLEY-HORN

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
R.L.A. LOREN L. LOCKWOOD
L.A. No. 3541 Date 08/05/2026

| | |
|---|---|
| KHA PROJECT | 069227608 |
| DATE | AUGUST 2026 |
| SCALE | AS SHOWN |
| DESIGNED BY | CJG |
| DRAWN BY | MLC |
| CHECKED BY | LLL |

H-E-B

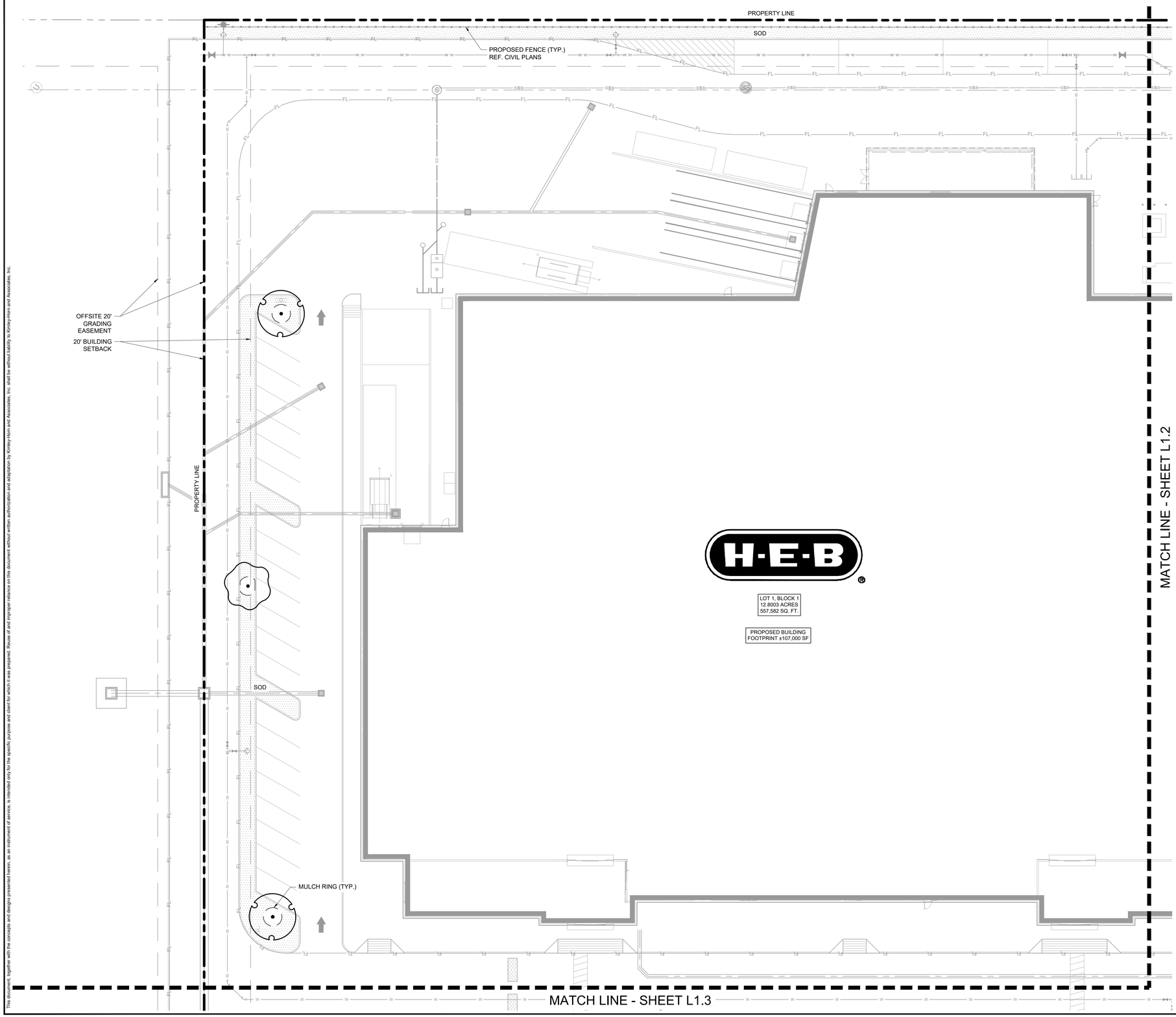
# OVERALL LANDSCAPE PLAN

HEB ENNIS - STORE XX
NEC ENNIS AVENUE & SONOMA TRAIL
ENNIS, TX

SHEET NUMBER
L1.0

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

IMAGES
XREFS
ADDITIONS
LAST SAVED
DWG NAME
DWG PATH
PLOTTED
d0=#-LA , d0=y , xLeg , x0=n , x0=m , x0=m - By Others , xSurv , x0=n - By Others , x0=
8/5/2026 4:25 PM
K:\DCH_CTX\069227401-DRC\DELIVERABLES\CAD\PLANSHEETS\LANDSCAPE
L1.0_LANDSCAPE PLAN.DWG
L1.0_LANDSCAPE PLAN

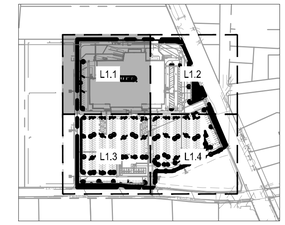






0 20' 40'

GRAPHIC SCALE 20'




KEY MAP
NOT TO SCALE

## PLANT LEGEND

| SYMBOL | CODE | BOTANICAL / COMMON NAME |
|---|---|---|
| TREES | | |
| | UP | ULMUS PARVIFOLIA / LACEBARK ELM |
| | QS | QUERCUS SHUMARDII / SHUMARD OAK |
| | QV | QUERCUS VIRGINIANA / SOUTHERN LIVE OAK |
| SHRUBS | | |
| | LF | LEUCOPHYLLUM FRUTESCENS 'COMPACTA' / COMPACT TEXAS SAGE |
| | MD | MYRICA CERIFERA 'DON'S DWARF' / DON'S DWARF WAX MYRTLE |
| | IB | ILEX CORNUTA 'BURFORDII NANA' / DWARF BURFORD HOLLY |
| | NT | NASSELLA TENUISSIMA / MEXICAN FEATHER GRASS |
| | MC | MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS |
| GROUND COVERS | | |
| | SOD | SOD / BERMUDA SOD |
| | RM | ROCK MULCH / ROCK MULCH |
| MISC. | CODE | BOTANICAL / COMMON NAME |
| | SE | STEEL EDGING |
| | MT | SHREDDED HARDWOOD MULCH |

NOTES:
1. CONTRACTOR TO SOD TO LIMITS OF DISTURBANCE.
2. SEE SHEET L1.0 FOR FULL PLANT SCHEDULE
3. IRRIGATION TO BE PROVIDED PER CITY OF ENNIS AND TCEQ STANDARDS.

Know what's below. Call before you dig.

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| | | | |

Kimley»Horn
© 2026 KIMLEY-HORN
2600 N CENTRAL EXPRESSWAY, SUITE 400
RICHARDSON, TEXAS 75080
PHONE: 214-517-0535
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
R.L.A. LOREN L. LOCKWOOD
L.A. No. 3541 Date 08/05/2026

| | |
|---|---|
| KHA PROJECT | 069227608 |
| DATE | AUGUST 2026 |
| SCALE | AS SHOWN |
| DESIGNED BY | CJG |
| DRAWN BY | MLC |
| CHECKED BY | LLL |

H-E-B

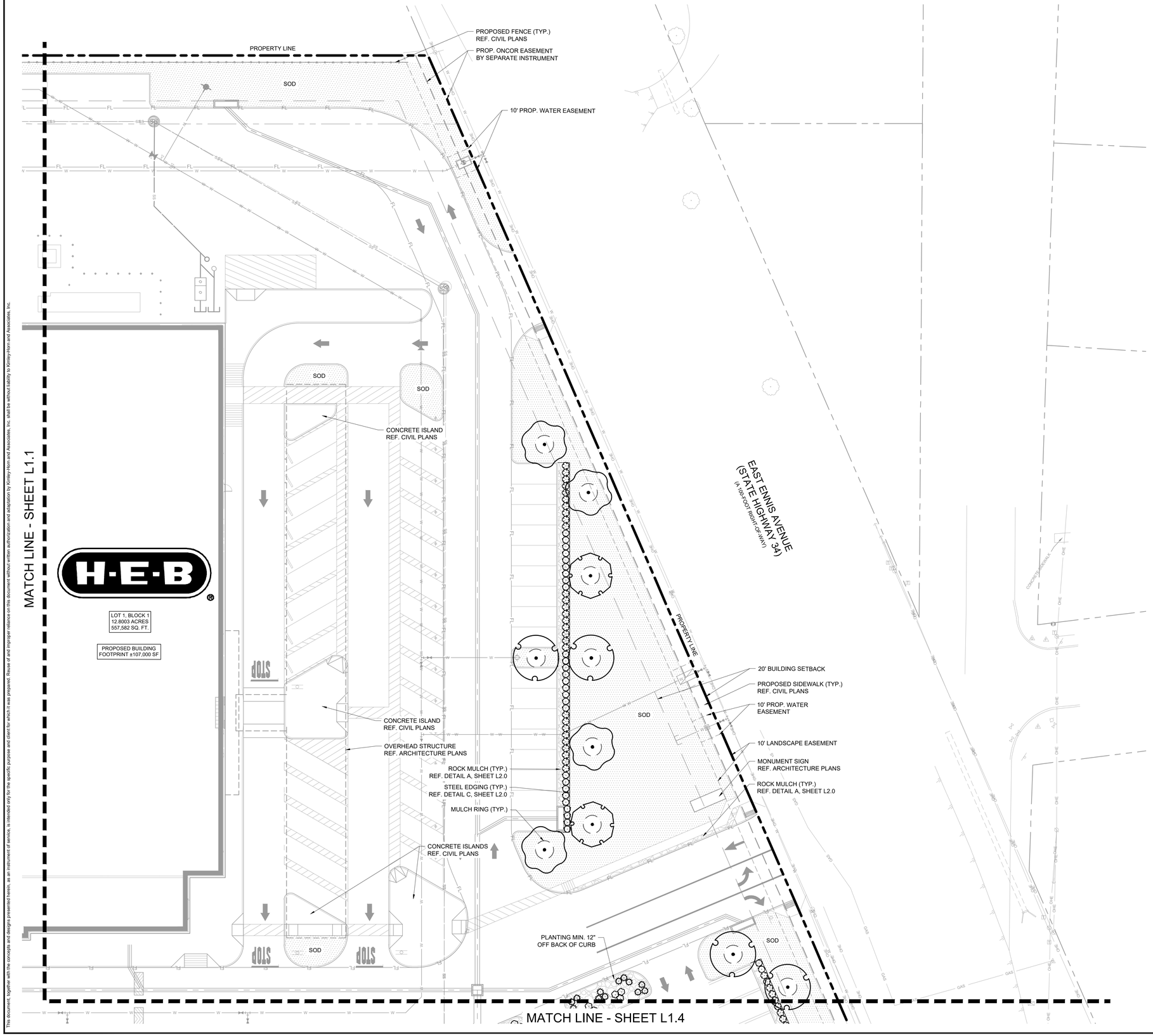
# LANDSCAPE PLAN

HEB ENNIS - STORE XX
NEC ENNIS AVENUE & SONOMA TRAIL
ENNIS, TX

SHEET NUMBER
L1.1

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for this specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

IMAGES
XREFS
LAST SAVED BY
PLOT DATE
DWG PATH
PLOT STYLE
Drawing
xBldg - LA - xBndy - xLeap - xSite - xStm - By Others - xSan - xUtil - By Others - xUtil
BAXTER, CARRIN 8/5/2026 4:29 PM
K:\RCH_CIV\069227601 - ENNIS\CAD\LANDSHEETS\LANDSCAPE
K:\RCH_CIV\069227601 - ENNIS\CAD\LANDSHEETS\L1.1.DWG
L1.1 - LANDSCAPE PLAN

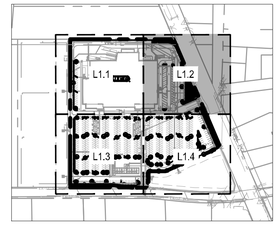






0 20' 40'

GRAPHIC SCALE 20'




KEY MAP
NOT TO SCALE

## PLANT LEGEND

| SYMBOL | CODE | BOTANICAL / COMMON NAME |
|---|---|---|
| TREES | | |
| | UP | ULMUS PARVIFOLIA / LACEBARK ELM |
| | QS | QUERCUS SHUMARDII / SHUMARD OAK |
| | QV | QUERCUS VIRGINIANA / SOUTHERN LIVE OAK |
| SHRUBS | | |
| | LF | LEUCOPHYLLUM FRUTESCENS 'COMPACTA' / COMPACT TEXAS SAGE |
| | MD | MYRICA CERIFERA 'DON'S DWARF' / DON'S DWARF WAX MYRTLE |
| | IB | ILEX CORNUTA 'BURFORDII NANA' / DWARF BURFORD HOLLY |
| | NT | NASSELLA TENUISSIMA / MEXICAN FEATHER GRASS |
| | MC | MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS |
| GROUND COVERS | | |
| | SOD | SOD / BERMUDA SOD |
| | RM | ROCK MULCH / ROCK MULCH |
| MISC. | CODE | BOTANICAL / COMMON NAME |
| | SE | STEEL EDGING |
| | MT | SHREDDED HARDWOOD MULCH |

NOTES:
1. CONTRACTOR TO SOD TO LIMITS OF DISTURBANCE.
2. SEE SHEET L1.0 FOR FULL PLANT SCHEDULE
3. IRRIGATION TO BE PROVIDED PER CITY OF ENNIS AND TCEQ STANDARDS.

Know what's below.
Call before you dig.

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

| No. | REVISIONS | DATE | BY |
|---|---|---|---|

Kimley»Horn
© 2026 KIMLEY-HORN
2600 N CENTRAL EXPRESSWAY, SUITE 400
RICHARDSON, TEXAS 75080
PHONE: 214-617-0535
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
R.L.A. LOREN L. LOCKWOOD
L.A. No. 3541 Date 08/05/2026

| | |
|---|---|
| KHA PROJECT | 069227608 |
| DATE | AUGUST 2026 |
| SCALE | AS SHOWN |
| DESIGNED BY | CJG |
| DRAWN BY | MLC |
| CHECKED BY | LLL |

H-E-B

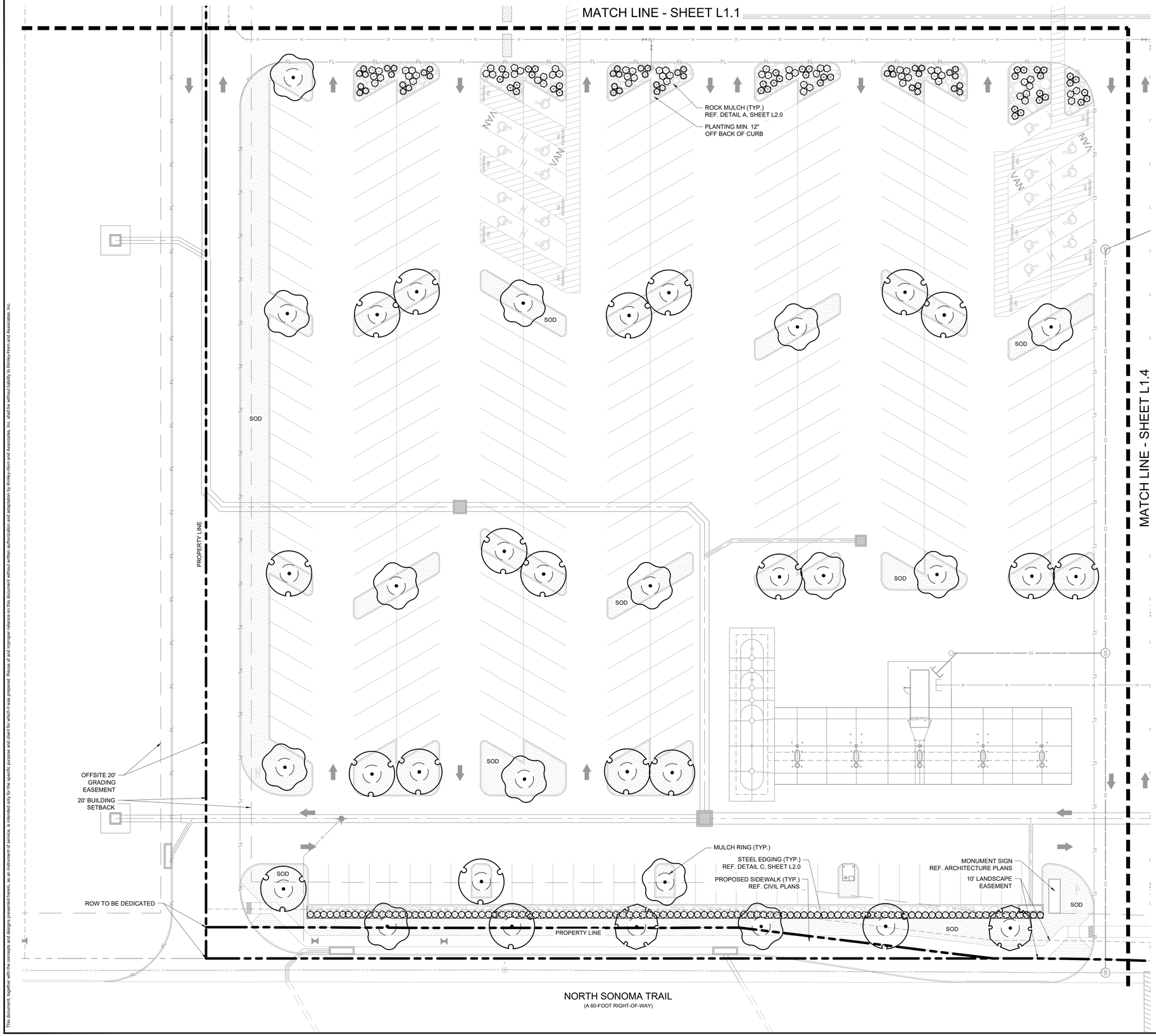
# LANDSCAPE PLAN

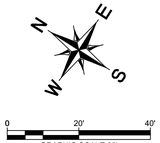
HEB ENNIS - STORE XX
NEC ENNIS AVENUE & SONOMA TRAIL
ENNIS, TX

SHEET NUMBER
L1.2

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

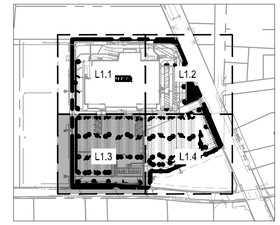
PLOTTED: 8/5/2026 4:25 PM
BY: LOREN LOCKWOOD
FILE: C:\DCA_CIVIL\069227608\1-DRC\SHEETS\LANDSCAPE\LANDSCAPE PLAN.DWG
LAYOUT: L1.2 LANDSCAPE PLAN
USER: loren.lockwood
XREFS
xBldr - LA , xBndy , xLscp , xSite , xStm - By Others , xStm - xSrv , xUtil - By Others , xUtil




0 20' 40'

GRAPHIC SCALE 20'




KEY MAP
NOT TO SCALE

## PLANT LEGEND

| SYMBOL | CODE | BOTANICAL / COMMON NAME |
|---|---|---|
| TREES | | |
| | UP | ULMUS PARVIFOLIA / LACEBARK ELM |
| | QS | QUERCUS SHUMARDII / SHUMARD OAK |
| | QV | QUERCUS VIRGINIANA / SOUTHERN LIVE OAK |
| SHRUBS | | |
| | LF | LEUCOPHYLLUM FRUTESCENS 'COMPACTA' / COMPACT TEXAS SAGE |
| | MD | MYRICA CERIFERA 'DON'S DWARF' / DON'S DWARF WAX MYRTLE |
| | IB | ILEX CORNUTA 'BURFORDII NANA' / DWARF BURFORD HOLLY |
| | NT | NASSELLA TENUISSIMA / MEXICAN FEATHER GRASS |
| | MC | MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS |
| GROUND COVERS | | |
| | SOD | SOD / BERMUDA SOD |
| | RM | ROCK MULCH / ROCK MULCH |
| MISC. | CODE | BOTANICAL / COMMON NAME |
| | SE | STEEL EDGING |
| | MT | SHREDDED HARDWOOD MULCH |

NOTES:
1. CONTRACTOR TO SOD TO LIMITS OF DISTURBANCE.
2. SEE SHEET L1.0 FOR FULL PLANT SCHEDULE
3. IRRIGATION TO BE PROVIDED PER CITY OF ENNIS AND TCEQ STANDARDS.

Know what's **below.**
**Call** before you dig.

CAUTION!!

EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

| No. | REVISIONS | DATE | BY |
|---|---|---|---|

Kimley»Horn
© 2026 KIMLEY-HORN
2600 N CENTRAL EXPRESSWAY, SUITE 400
RICHARDSON, TEXAS 75080
PHONE: 214-617-0535
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
R.L.A. LOREN L. LOCKWOOD
L.A. No. 3541 Date 08/05/2026

| | |
|---|---|
| KHA PROJECT | 069227608 |
| DATE | AUGUST 2026 |
| SCALE | AS SHOWN |
| DESIGNED BY | CJG |
| DRAWN BY | MLC |
| CHECKED BY | LLL |

H-E-B

# LANDSCAPE PLAN

HEB ENNIS - STORE XX
NEC ENNIS AVENUE & SONOMA TRAIL
ENNIS, TX

SHEET NUMBER
L1.3

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

PLOTTED BY xBldr - LA , xBody , xLeg , xSite , xStm - By:Others , xSrv , xUtil - By:Others , xVal
LAST SAVED BY BAILEY.ZIEGLER
PLOT DATE 8/5/2026 4:25 PM
DWG PATH K:\DFW_CIVIL\069227608\1 - DWG\SR1 ENNIS\CAD\PLANSHEETS\LANDSCAPE
DWG NAME L1.3 - LANDSCAPE PLAN.dwg
File Name L1.3 - LANDSCAPE PLAN.dwg

MATCH LINE - SHEET L1.2

MATCH LINE - SHEET L1.3

PLANTING MIN. 12" OFF BACK OF CURB

MULCH RING (TYP.)

STEEL EDGING (TYP.) REF. DETAIL C, SHEET L2.0

ROCK MULCH (TYP.) REF. DETAIL A, SHEET L2.0

PROPERTY LINE

EAST ENNIS AVENUE (STATE HIGHWAY 34) (A 100-FOOT RIGHT-OF-WAY)

PROPOSED SIDEWALK (TYP.) REF. CIVIL PLANS

20' BUILDING SETBACK

10' LANDSCAPE EASEMENT

PROP. ONCOR EASEMENT BY SEPARATE INSTRUMENT

SOD

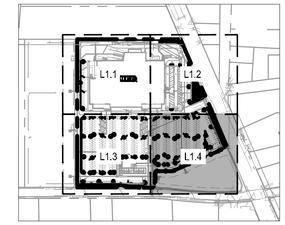
LOT 1X, BLOCK 1
1.7502 ACRES
76,240 SQ. FT.

PROPOSED DETENTION POND

NORTH SONOMA TRAIL
(A 60-FOOT RIGHT-OF-WAY)

N W E S

0 20' 40'
GRAPHIC SCALE 20'




KEY MAP
NOT TO SCALE

## PLANT LEGEND

| SYMBOL | CODE | BOTANICAL / COMMON NAME |
|---|---|---|
| TREES | | |
| | UP | ULMUS PARVIFOLIA / LACEBARK ELM |
| | QS | QUERCUS SHUMARDII / SHUMARD OAK |
| | QV | QUERCUS VIRGINIANA / SOUTHERN LIVE OAK |
| SHRUBS | | |
| | LF | LEUCOPHYLLUM FRUTESCENS 'COMPACTA' / COMPACT TEXAS SAGE |
| | MD | MYRICA CERIFERA 'DON'S DWARF' / DON'S DWARF WAX MYRTLE |
| | IB | ILEX CORNUTA 'BURFORDII NANA' / DWARF BURFORD HOLLY |
| | NT | NASSELLA TENUISSIMA / MEXICAN FEATHER GRASS |
| | MC | MUHLENBERGIA CAPILLARIS / PINK MUHLY GRASS |
| GROUND COVERS | | |
| | SOD | SOD / BERMUDA SOD |
| | RM | ROCK MULCH / ROCK MULCH |
| MISC. | CODE | BOTANICAL / COMMON NAME |
| | SE | STEEL EDGING |
| | MT | SHREDDED HARDWOOD MULCH |

NOTES:
1. CONTRACTOR TO SOD TO LIMITS OF DISTURBANCE.
2. SEE SHEET L1.0 FOR FULL PLANT SCHEDULE
3. IRRIGATION TO BE PROVIDED PER CITY OF ENNIS AND TCEQ STANDARDS.

811 Know what's below. Call before you dig.

CAUTION!!
EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

| No. | REVISIONS | DATE | BY |
|---|---|---|---|

Kimley»Horn
© 2026 KIMLEY-HORN
2600 N CENTRAL EXPRESSWAY, SUITE 400
RICHARDSON, TEXAS 75080
PHONE: 214-617-0535
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
R.L.A. LOREN L. LOCKWOOD
L.A. No. 3541 Date 08/05/2026

| | |
|---|---|
| KHA PROJECT | 069227608 |
| DATE | AUGUST 2026 |
| SCALE | AS SHOWN |
| DESIGNED BY | CJG |
| DRAWN BY | MLC |
| CHECKED BY | LLL |

H-E-B

# LANDSCAPE PLAN

HEB ENNIS - STORE XX
NEC ENNIS AVENUE & SONOMA TRAIL
ENNIS, TX

SHEET NUMBER
L1.4

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for this specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

IMAGES
XREFS
LAST SAVED
PLOTTED
DWG PATH
DWG NAME
PLOT STYLE

xBldg - LA , xBndy , xLeap , xSite , xStm - By Others , xSnr , xUtil - By Others , xUtil
8/5/2026 4:29 PM
8/5/2026 4:29 PM
K:\HOU_CIVIL\069227608 - ENNIS\CAD\PLANSHEETS\LANDSCAPE
L1.4 - LANDSCAPE PLAN.DWG
L1.4 - LANDSCAPE PLAN

# GENERAL NOTES:

1. WRITTEN DIMENSIONS PREVAIL OVER SCALED DIMENSIONS. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
2. THE CONTRACTOR BEARS ALL RESPONSIBILITY FOR VERIFYING ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES, AND LINE RUNS IN THE FIELD PRIOR TO CONSTRUCTION. ANY DAMAGE TO UTILITIES THAT ARE TO REMAIN SHALL BE REPAIRED IMMEDIATELY AT NO EXPENSE TO THE OWNER. LANDSCAPE ARCHITECT ASSUMES NO RESPONSIBILITY FOR ANY NOT SHOWN ON PLANS.
3. PRIOR TO COMMENCEMENT OF HARDSCAPE CONSTRUCTION, ALL PIERS, FOOTINGS, AND WALLS ARE TO BE SURVEYED, LAID OUT, AND STAKED IN FIELD FOR REVIEW BY LANDSCAPE ARCHITECT. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DEMOLITION, ADJUSTMENTS, OR RECONSTRUCTION RESULTING FROM UNAUTHORIZED CONSTRUCTION ACTIVITIES.
4. CONTRACTOR IS RESPONSIBLE FOR ALL QUANTITIES PER DRAWINGS AND SPECIFICATIONS. ANY QUANTITIES PROVIDED BY LANDSCAPE ARCHITECT ARE PROVIDED FOR CONVENIENCE ONLY. CONTRACTORS ARE TO BID THEIR OWN VERIFIED QUANTITIES. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
5. EASEMENTS-SETBACKS, BUILDING, CURB AND GUTTER, UNDERGROUND UTILITIES HAVE BEEN SUPPLIED TO LANDSCAPE ARCHITECT BY THE PROJECT CIVIL ENGINEER. REFER TO CIVIL ENGINEERS DRAWINGS FOR ADDITIONAL INFORMATION.

# PLANTING NOTES:

1. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES, AND LINE RUNS IN THE FIELD PRIOR TO THE INSTALLATION OF ANY PLANT MATERIAL.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADVISE THE LANDSCAPE ARCHITECT OF ANY CONDITION FOUND ON THE SITE WHICH PROHIBITS INSTALLATION AS SHOWN ON THESE DRAWINGS.
3. ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AND MUST BE REPLACED WITH PLANT MATERIAL OF SAME VARIETY AND SIZE IF DAMAGED, DESTROYED, OR REMOVED.
4. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING AND REMOVAL OF DEBRIS PRIOR TO PLANTING IN ALL AREAS.
5. FINAL FINISH GRADING SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL TOPSOIL REQUIRED TO CREATE A SMOOTH CONDITION PRIOR TO PLANTING.
6. LANDSCAPE CONTRACTOR TO PROVIDE STEEL EDGING (REFER TO MATERIALS PAGE) BETWEEN ALL PLANTING BEDS AND LAWN AREAS.
7. ALL PLANT MATERIAL SHALL CONFORM TO THE SPECIFICATIONS AND SIZES GIVEN IN THE PLANT LIST AND SHALL BE NURSERY GROWN IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK. LATEST EDITION AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS. ANY PLANT SUBSTITUTION SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PURCHASE.
8. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ANY COORDINATION WITH OTHER CONTRACTORS ON SITE AS REQUIRED TO ACCOMPLISH ALL PLANTING OPERATIONS.
9. ALL NEW PLANTING AREAS TO BE AMENDED PER SPECIFICATIONS.
10. ANY PLANT MATERIAL THAT DOES NOT SURVIVE SHALL BE REPLACED WITH AN EQUIVALENT SIZE AND SPECIES WITHIN THIRTY (30) DAYS.
11. PLANT MATERIAL SHALL BE PRUNED AS NECESSARY TO CONTROL SIZE BUT NOT TO DISRUPT THE NATURAL GROWTH PATTERN OR CHARACTERISTIC FORM OF THE PLANT EXCEPT AS NECESSARY TO ACHIEVE HEIGHT CLEARANCE FOR VISIBILITY AND PEDESTRIAN PASSAGE OR TO ACHIEVE A CONTINUOUS OPAQUE HEDGE IF REQUIRED.
12. LANDSCAPED AREAS SHALL BE KEPT FREE OF TRASH, WEEDS, DEBRIS, AND DEAD PLANT MATERIAL.
13. ALL LIME STABILIZED SOIL & INORGANIC SELECT FILL FOR BUILDING SHOULD BE REMOVED FROM PLANTING AREAS TO A DEPTH OF 24" & REPLACED WITH ORGANIC IMPORTED TOPSOIL FILL.
14. **ALL PLANT QUANTITIES LISTED ARE FOR INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE FULL COVERAGE IN ALL PLANTING AREAS AS SPECIFIED IN THE PLANT SCHEDULE AND VERIFY ALL QUANTITIES.**
15. CONTRACTOR TO PROVIDE 12 MONTH WARRANTY AND MAINTENANCE AFTER ALL CONSTRUCTION IS COMPLETE.
16. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITY (NOT ALREADY INCLUDED IN PLANTING PLANS) TO BE FINE GRADED, AND PLANTED WITH PLANTS OR SOD TO MATCH EXISTING CONDITIONS.
17. CONTRACTOR TO INSTALL WEED BARRIER IN ALL PLANTING BEDS
18. ALL TREES OVERHANGING PEDESTRIAN PATHWAYS TO BE PRUNED TO BE 7' CLEAR. ALL TREES OVERHANGING FIRE LANE / VEHICULAR STREET TO BE PRUNED TO BE 14' CLEAR.

# MATERIAL LEGEND:

## AGGREGATES

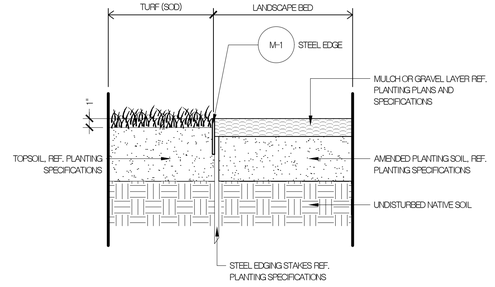
AG-1 — RIVER ROCK

| | |
|---|---|
| TYPE: | COLORADO RIVER ROCK |
| SIZE: | 2" - 4" |
| INSTALL: | INSTALL AT 6" MIN DEPTH WITH WEED BARRIER FABRIC. RIVER ROCK AREAS MUST BE CONFINED WITH EITHER STEEL EDGE OR CONCRETE BARRIERS |
| SUPPLIER: | TBD |
| CONTACT: | TBD |
| ***APPROVAL:*** | ***SAMPLE, MOCKUP*** |

## METALS

M-1 — STEEL EDGE

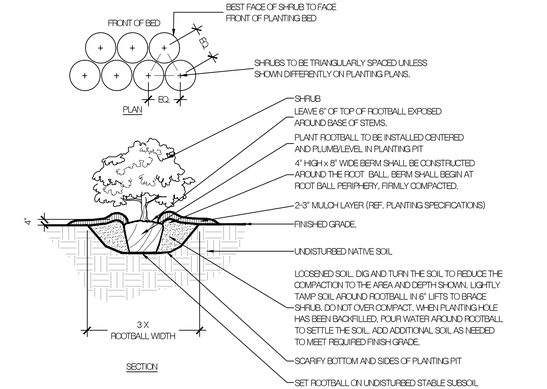
| | |
|---|---|
| MATERIAL: | REYRSON STEEL EDGING 1/8" x 4" W/ 12" STAKES |
| COLOR: | POWDERCOATED (COLOR GREEN) |
| SIZE: | LENGTHS PER PLAN |
| INSTALL: | REF. DETAILS. ALL JOINTS TO BE FLUSH AND LEVEL. INSTALL AT BED AREAS ADJACENT TO TURF AND /OR RIVER ROCK AREAS |
| ***APPROVAL:*** | ***CUT SHEET, SAMPLE*** |




STEEL EDGING — C

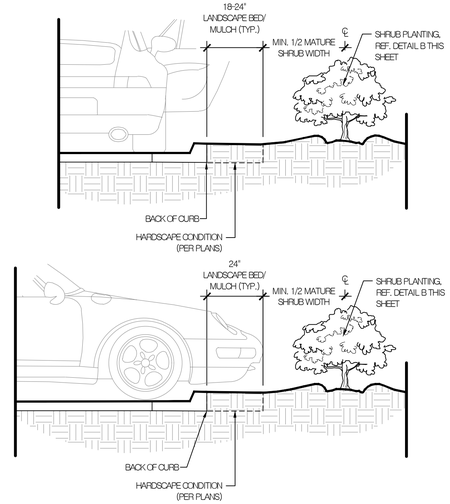
Scale: 1 1/2" = 1'-0"

NOTES:
1. REF. PLANTING SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. WHEN SHRUBS MASSED TOGETHER WITH GROUNDCOVER BEDS, ALL SOIL IN BED TO BE AMENDED. (REF. PLANTING SPECIFICATIONS)
3. WHEN SHRUBS ARE USED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS/HEIGHT.
4. REF. TO PLANT SCHEDULE AND PLANTING PLANS FOR SPACING/LAYOUT.



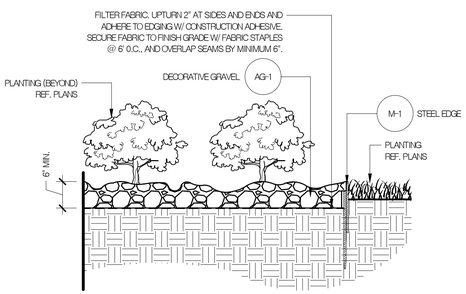

TYPICAL SHRUB PLANTING — B

Scale: NTS




SHRUB PLANTING AT CURB — D

Scale: NTS




ROCK MULCH | PLANTING — A

SCALE: NTS

BY | DATE | REVISIONS | No.

Kimley»Horn
© 2026 KIMLEY-HORN
2800 N CENTRAL EXPRESSWAY, SUITE 400
RICHARDSON, TEXAS 75080
PHONE: 214-817-0535
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
R.L.A. LOREN L. LOCKWOOD
L.A. No. 3541 Date 08/05/2026

KHA PROJECT 069227608
DATE AUGUST 2026
SCALE AS SHOWN
DESIGNED BY CJG
DRAWN BY MLC
CHECKED BY LLL

H-E-B

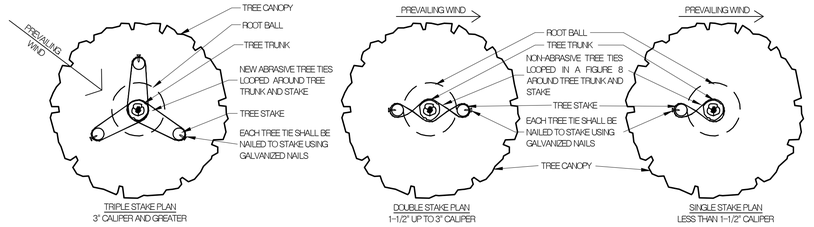
# LANDSCAPE NOTES & DETAILS

HEB ENNIS - STORE XX
NEC ENNIS AVENUE & SONOMA TRAIL
ENNIS, TX

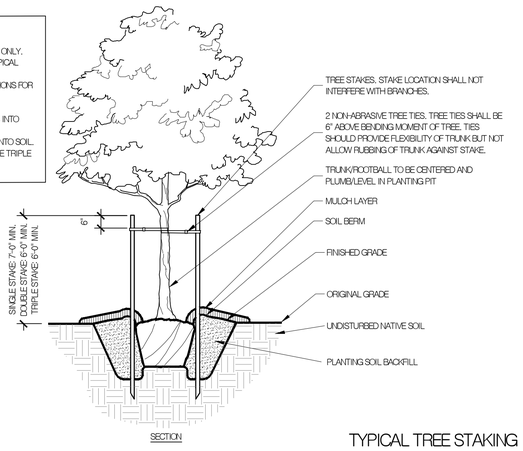
SHEET NUMBER
L2.0

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

IMAGES
XREFS
PLOT STAMP BY
LAST SAVED BY
DWG NAME
DWG PATH
DWG LAYOUT
xfrm -LA xLisp
BAYLIAN, CAMRYN
BAYLIAN, CAMRYN 8/5/2026 4:25 PM
L:\PROJECTS\069227608 - STROOPER ESSENSO\ADP\LANDSHEETS\LANDSCAPE
L2.0 - LANDSCAPE NOTES & DETAILS



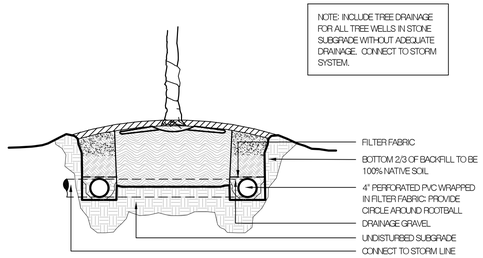

NOTES:
1. THIS DETAIL IS FOR TREE STAKING ONLY. REF. DETAIL A THIS SHEET FOR TYPICAL TREE PLANTING.
2. REFERENCE PLANTING SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. LOCATE ALL STAKES OUTSIDE OF ROOTBALL. DO NOT DRIVE STAKES INTO ROOTBALL.
4. STAKE MUST BE DRIVEN MIN. 24" INTO SOIL.
5. ALL MULTI-TRUNK TREES SHALL BE TRIPLE STAKED.




## TYPICAL TREE STAKING B

Scale: NTS

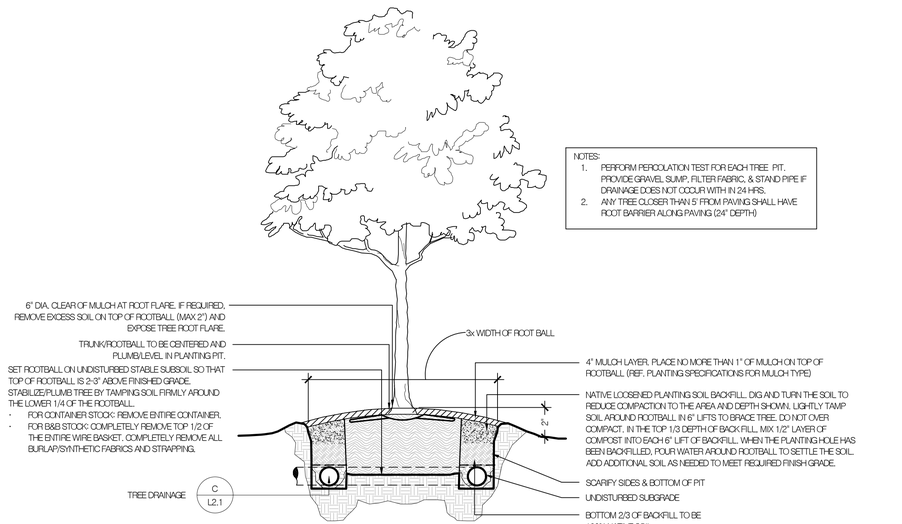
NOTE: INCLUDE TREE DRAINAGE FOR ALL TREE WELLS IN STONE SUBGRADE WITHOUT ADEQUATE DRAINAGE. CONNECT TO STORM SYSTEM.




## TREE DRAINAGE ENLARGEMENT C

Scale: 1/2" = 1'-0"

NOTES:
1. PERFORM PERCOLATION TEST FOR EACH TREE PIT. PROVIDE GRAVEL SUMP, FILTER FABRIC, & STAND PIPE IF DRAINAGE DOES NOT OCCUR WITH IN 24 HRS.
2. ANY TREE CLOSER THAN 5' FROM PAVING SHALL HAVE ROOT BARRIER ALONG PAVING (24" DEPTH)




## CANOPY TREE A

Scale: 1/2" = 1'-0"

IMAGES
XREFS
LAST EDIT BY
PLOT DATE
DWG PATH
DWG NAME
LAYOUT NAME
xlfmp - LA xl.xsp
GRAHAM.CLARITY 8/5/2026 4:25 PM
L:\HCAD_DATA\08922601\L-DRG\CIR ENNIS\ACAD\LANDSHEETS\LANDSCAPE DETAILS.DWG
LANDSCAPE DETAILS - L2.1
L2.1

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

| No. | REVISIONS | DATE | BY |
|---|---|---|---|

Kimley»Horn
© 2026 KIMLEY-HORN
2600 N CENTRAL EXPRESSWAY, SUITE 400
RICHARDSON, TEXAS 75080
PHONE: 214-817-0535
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
R.L.A. LOREN L. LOCKWOOD
L.A. No. 3541 Date 08/05/2026

KHA PROJECT 089227608
DATE AUGUST 2026
SCALE AS SHOWN
DESIGNED BY CJG
DRAWN BY MLC
CHECKED BY LLL

H-E-B

# LANDSCAPE DETAILS

HEB ENNIS - STORE XX
NEC ENNIS AVENUE & SONOMA TRAIL
ENNIS, TX

SHEET NUMBER
L2.1

GENERAL LANDSCAPE SPECIFICATIONS AND NOTES:

A. SCOPE OF WORK

1. THE WORK CONSISTS OF: FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE PLANT LIST, AND AS HEREIN SPECIFIED.
2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL CONTRACT PLANTING AREAS UNTIL CERTIFICATION OF ACCEPTABILITY BY THE OWNER.

B. PROTECTION OF EXISTING STRUCTURES

ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, OTHER SITE CONSTRUCTION ITEMS, AND PLANTING ALREADY COMPLETED OR ESTABLISHED SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE OWNER.

C. PROTECTION OF EXISTING PLANT MATERIALS OUTSIDE LIMIT OF WORK

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS EQUIPMENT OPERATION, MATERIAL STOCKPILING, ETCETERA. THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE AND SPILLING OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED WHERE HEAT WILL DAMAGE ANY PLANT. EXISTING TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF ONE HUNDRED DOLLARS ($100) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PERCENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.

D. MATERIALS

1. GENERAL

MATERIALS LISTED BELOW SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL. UPON SUBMITTALS' APPROVAL, DELIVERY OF MATERIALS MAY COMMENCE.

| MATERIAL | SUBMITTAL |
|---|---|
| MULCH | PRODUCT DATA + ONE (1) GAL. SAMPLE (MIN.) |
| TOPSOIL MIX | AMENDMENT MIX/PRODUCT DATA/TEST RESULTS + ONE (1) GAL. SAMPLE (MIN.) |
| PLANTS | PHOTOGRAPHS OF ONE (1) OF EACH SPECIES (OR TAGGED IN NURSERY) |
| FERTILIZER | PRODUCT DATA + APPLICATION SCHEDULE |
| INOCULANT | PRODUCT DATA |
| HERBICIDE | PRODUCT DATA |

CLIENT-REQUESTED TAGGING MAY SUBSTITUTE PHOTOGRAPHS OF PLANT MATERIAL. INCLUDE PRODUCT DATA FOR ALL PLANT SPECIES IN SUBMITTAL.

STAKING/GUYING FOR ALTERNATE TO DETAILS: SEND PRODUCT DATA AND DETAILS.

2. PLANT MATERIALS INDICATE SIZES (HEIGHT/WIDTH) AND QUALITY PER SPEC.

i. PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS. NOMENCLATURE SHALL CONFORM TO STANDARDIZED PLANT NAMES, 1942 EDITION. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, PUBLISHED BY THE AMERICAN STANDARD NURSERY STOCK. ALL PLANTS SHALL BE HEALTHY, VIGOROUS, SOUND, WELL-BRANCHED, AND FREE OF DISEASE AND INSECTS, INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY WITH APPROVAL FROM OWNER OR OWNER'S REPRESENTATIVE. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION FROM THE OWNER'S REPRESENTATIVE.

ii. MEASUREMENTS: THE HEIGHT AND/OR WIDTH OF TREES SHALL BE MEASURED FROM THE GROUND OR ACROSS THE NORMAL SPREAD OF BRANCHES WITH THE PLANTS IN THEIR NORMAL POSITION. THIS MEASUREMENT SHALL NOT INCLUDE THE IMMEDIATE TERMINAL GROWTH. PLANTS LARGER IN SIZE THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED IF APPROVED BY THE OWNER. IF THE USE OF LARGER PLANTS IS APPROVED, THE BALL OF EARTH OR SPREAD OF ROOTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.

iii. INSPECTION: PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY; SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF ROOT BALLS OR ROOTS, LATENT DEFECTS, OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.

E. SOIL MIXTURE (PLANTING MEDIUM, PLANTING MIX, TOPSOIL MIX)

1. ALL PLANTING BED PIT BACKFILL AREAS TO BE PREPARED USING COMPOST, SHARP SCREENED SAND AND EXPANDED SHALE BY MISSOURI ORGANIC OR APPROVED EQUAL. TILL SOIL AMENDMENTS INTO EXISTING SOIL TO DEPTHS PER PLANTING DETAILS (6" DEPTH MIN). FINISHED GRADES OF PLANTING BEDS TO BE 1" BELOW FINISHED GRADE OF ADJACENT CONCRETE MOW STRIP OR AS SHOWN ON GRADING PLAN. PLANTING BED PIT SOIL SHALL BE A MIXTURE OF APPROXIMATELY 50% WEED-FREE EXISTING SOIL, 35% COMPOST, 10% EXPANDED SHALE, AND 5% SCREENED SHARP SAND. 98.5% OF THE PLANTING BED PIT SOIL PARTICLES WILL PASS THROUGH A 1/2 INCH SCREEN AND 99% OR MORE SHALL PASS THROUGH A 3/4 INCH SCREEN. COLOR TO BE A MEDIUM BROWN WITH A WEIGHT OF 1900-2250 LBS. PER CUBIC YARD (DEPENDING ON THE MOISTURE CONTENT).
2. ALL SOD AND SEED AREAS TO BE PREPARED USING COMPOST AND SHARP SCREENED SAND, BY MISSOURI ORGANIC OR APPROVED EQUAL. TILL SOIL AMENDMENTS INTO EXISTING SOIL TO DEPTHS PER PLANTING DETAILS (2" DEPTH MINIMUM). TOPSOIL SHALL BE A MIXTURE OF APPROXIMATELY 50% WEED-FREE EXISTING SOIL, 40% COMPOST, AND 10% SHARP SCREENED SAND. TOPSOIL SHALL BE NATURAL, FRIABLE, FERTILE, pH RANGE OF 7.0-7.5 WITH 25% (MIN.) ORGANIC MATERIAL, AND FREE OF TRASH, DEBRIS, STONES, WEEDS AND TWIGS/BRANCHES. THE PARTICLE SIZES SHALL BE SUCH THAT 98.5% OF THE TOPSOIL WILL PASS THROUGH A 1/2 INCH SCREEN AND 99% OR MORE SHALL PASS THROUGH A 3/4 INCH SCREEN. TOPSOIL SHALL BE REVIEWED/APPROVED BY OWNER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. CONTRACTOR TO SUBMIT SAMPLES IN 1 GAL. (MIN.) CONTAINER.
3. THE CONTRACTOR SHALL REESTABLISH ANY ADDITIONAL DISTURBED AREAS NOT SHOWN ON THE PLANS WITH A FULL COVERING OF SOD OR SEED. THE CONTRACTOR SHALL PROVIDE 2" DEPTH (MIN) PREPARED TOPSOIL TILLED INTO EXISTING SOIL IN ALL AREAS TO RECEIVE SEED OR SOD AT NO ADDITIONAL COST.
4. TREE PLANTING PITS SHALL BE BACKFILLED WITH COMPOST BY MISSOURI ORGANIC OR APPROVED EQUAL AND NATIVE SOIL. THE TOP 1/3 OF EACH TREE PIT SHALL RECEIVE BACKFILL MATERIAL OF 80% WEED FREE NATIVE SOIL AND 20% COMPOST. THE BOTTOM 2/3 OF EACH TREE PIT SHALL RECEIVE BACKFILL MATERIAL OF 100% WEED FREE NATIVE SOIL.
5. EXISTING SOIL USED IN PLANT BACKFILL AND TOPSOIL PREP SHALL BE REASONABLY FREE OF STONES, LIME, LUMPS OF CLAY, ROOTS, AND OTHER FOREIGN MATTER. EXISTING SOIL SHALL HAVE A MINIMUM ORGANIC COMPOSITION OF 25% AND THE ACIDITY SHALL BE BETWEEN 7.0 AND 8.0 pH. CONTRACTOR SHALL SUBMIT A 1 GAL. MINIMUM SAMPLE OF THE EXISTING SOIL TO AN APPROVED TESTING FACILITY TO VERIFY COMPOSITION, ACIDITY AND ORGANIC CONTENT.
6. IF SOIL FAILS TO ACHIEVE THE AFOREMENTIONED pH AND ORGANIC COMPOSITION QUANTITIES, THE CONTRACTOR SHALL TILL AN ADEQUATE AMOUNT OF COMPOST IN TO THE EXISTING SOIL UNTIL IT MEETS THE REQUIREMENTS PRIOR TO COMBINING WITH OTHER SPECIFIED SOIL AMENDMENTS.
7. CONTRACTOR TO SUBMIT SAMPLES OF SOIL MIXTURE AND AMENDMENTS TO THE OWNER'S REPRESENTATIVE AND THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PLANT INSTALLATION OPERATIONS COMMENCE.
8. WHERE LIME STABILIZED SOIL IS ENCOUNTERED, LAWN AREAS SHALL BE EXCAVATED TO A DEPTH OF 12", PLANT BEDS SHALL BE EXCAVATED TO A DEPTH OF 24", AND TREE PITS SHALL BE EXCAVATED TO A DEPTH OF 36", AND BACKFILLED WITH CLEAN NATIVE SOIL (E.5) AND APPROVED PLANTING SOIL (E.1-4).

F. WATER

WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN AN ADEQUATE PLANT GROWTH AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE OBTAINED ON THE SITE, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETCETERA. ALL COSTS FOR WATER SUPPLY AND WATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE. IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

*WATERING/IRRIGATION RESTRICTIONS MAY APPLY—REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

G. FERTILIZER

CONTRACTOR SHALL PROVIDE FERTILIZER APPLICATION SCHEDULE TO OWNER, AS APPLICABLE TO SOIL TYPE, PLANT INSTALLATION TYPE, AND SITE'S PROPOSED USE. SUGGESTED FERTILIZER TYPES SHALL BE ORGANIC OR OTHERWISE NATURALLY DERIVED.

*FERTILIZER RESTRICTIONS MAY APPLY—REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

H. MULCH

1. MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF THREE (3) INCHES FOR ALL PLANTINGS AS NOTED. MULCH AT ALL PLANTING BEDS SHALL BE TRIPLE-SHREDDED HARDWOOD MULCH.
2. CONTRACTOR TO SUBMIT ONE (1) GALLON MINIMUM SAMPLE OF MULCH PRODUCT TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PURCHASE.

I. DIGGING AND HANDLING

1. PROTECT ROOTS OR ROOT BALLS OF PLANTS AT ALL TIMES FROM SUN, DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT DAMAGE DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO SITE SHALL BE SPRAYED WITH AN ANTITRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.
2. BALLED AND BURLAPPED PLANTS (B & B) SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A ROOT BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS BALLED AND BURLAPPED OR CONTAINER GROWN SHALL NOT BE HANDLED BY STEMS.
3. EXCAVATION OF TREE PITS SHALL BE PERFORMED USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES, HARDSCAPE ELEMENTS, FOOTERS, AND PREPARED SUBBASES.

J. CONTAINER GROWN STOCK

1. ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.
2. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.
3. PLANT ROOTS BOUND IN CONTAINERS ARE NOT ACCEPTABLE.
4. SUBSTITUTION OF NON-CONTAINER GROWN MATERIAL FOR MATERIAL EXPLICITLY SPECIFIED TO BE CONTAINER GROWN WILL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL IS OBTAINED FROM THE OWNER OR OWNER'S REPRESENTATIVE.

K. COLLECTED STOCK

1. WHEN THE USE OF COLLECTED STOCK IS PERMITTED AS INDICATED BY THE OWNER OR OWNER'S REPRESENTATIVE, THE MINIMUM SIZES OF ROOTBALLS SHALL BE EQUAL TO THAT SPECIFIED FOR THE NEXT LARGER SIZE OF NURSERY GROWN STOCK OF THE SAME VARIETY.

L. NATIVE STOCK

1. PLANTS COLLECTED FROM WILD OR NATIVE STANDS SHALL BE CONSIDERED NURSERY GROWN WHEN THEY HAVE BEEN SUCCESSFULLY RE-ESTABLISHED IN A NURSERY ROW AND GROWN UNDER REGULAR NURSERY CULTURAL PRACTICES FOR A MINIMUM OF TWO (2) GROWING SEASONS AND HAVE ATTAINED ADEQUATE ROOT AND TOP GROWTH TO INDICATE FULL RECOVERY FROM TRANSPLANTING INTO THE NURSERY ROW.

M. MATERIALS LIST

1. QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE PLANS AND THE PLANT LIST QUANTITY, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION PRIOR TO BIDDING OR INSTALLATION. ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE

N. FINE GRADING

1. FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF LAWN AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS. BERMING AS SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH. THIS CONTRACTOR SHALL FINE GRADE BY HAND AND/OR WITH ALL EQUIPMENT NECESSARY INCLUDING A GRADING TRACTOR WITH FRONT-END LOADER FOR TRANSPORTING SOIL WITHIN THE SITE.
3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED FOR POSITIVE DRAINAGE TO SURFACE/SUBSURFACE STORM DRAIN SYSTEMS. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS. REFER TO CIVIL ENGINEER'S PLANS FOR FINAL GRADES.

O. PLANTING PROCEDURES

1. CLEANING UP BEFORE COMMENCING WORK: THE CONTRACTOR SHALL CLEAN WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER. ALL MORTAR, CEMENT, AND TOXIC MATERIAL SHALL BE REMOVED FROM THE SURFACE OF ALL PLANT BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, HE SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.
2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER SYSTEMS, CABLE, AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES. CALL - 811 - TO LOCATE UTILITIES.
3. SUBGRADE EXCAVATION: CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED ROCK AND ROCK SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36". CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF ROCK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY THE CONTRACTOR, AND ADEQUATE PERCOLATION CAN NOT BE ACHIEVED, CONTRACTOR SHALL UTILIZE PLANTING DETAIL THAT ADDRESSES POOR DRAINAGE.
4. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS HEREIN SPECIFIED AND REQUIRED. INSPECT AND SELECT PLANT MATERIALS BEFORE PLANTS ARE DUG AT NURSERY/GROWING SITE.
5. GENERAL; COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE. UPON ARRIVAL AT THE SITE, PLANTS SHALL BE THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED. PLANTS STORED ON-SITE SHALL NOT REMAIN UNPLANTED FOR A PERIOD EXCEEDING TWENTY-FOUR (24) HOURS. AT ALL TIMES, METHODS CUSTOMARY IN GOOD HORTICULTURAL PRACTICES SHALL BE EXERCISED.
6. ALL PLANTING PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACKFILLED WITH THE PREPARED PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER PERCOLATION. IF POOR PERCOLATION EXISTS, UTILIZE "POOR DRAINAGE CONDITION" PLANTING DETAIL. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURES AND UNDER THE SUPERVISION OF A QUALIFIED LANDSCAPE FOREMAN.
7. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES WHILE INSTALLING TREES.
8. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION E OF THESE SPECIFICATIONS.
9. TREES SHALL BE SET WITH ROOT BALL CENTERED IN PLANTING PIT WITH ROOT FLARE 2" ABOVE ADJACENT SOIL ELEVATION. SHRUBS SHALL BE SET STRAIGHT AT AN ELEVATION THAT—AFTER SETTLEMENT—THE TOP OF ROOT BALL SHALL BE EVEN WITH TOP OF PLANTING BED. PLANTING SOIL MIXTURE SHALL BE BACKFILLED, THOROUGHLY TAMPED AROUND THE BALL, AND SETTLED BY WATER (AFTER TAMPING).
10. AMEND PINE AND OAK PLANT PITS WITH ECTOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. ALL OTHER PLANT PITS SHALL BE AMENDED WITH ENDOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. PROVIDE PRODUCT INFORMATION SUBMITTAL FOR SOILNOC SRT ADVANCED MYCORRHIZAL INOCULUM (OR EQUAL) PRIOR TO INOCULATION.
11. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES, STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET. ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE, ONLY WITH MULCH. ALL BURLAP, ROPE, WIRES, BASKETS, ETCETERA, SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.
12. PRUNING: TREES SHALL BE PRUNED, AT THE DIRECTION OF THE OWNER OR OWNER'S REPRESENTATIVE, TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT. ALL PRUNING TO BE PERFORMED BY LICENSED ARBORIST, IN ACCORDANCE WITH ANSI A-300.
13. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 12"; REMOVE AND DISPOSE OF ALL DEBRIS AND MIX TO ACHIEVE SOIL MIXTURE AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.
14. TREE STAKING, PER THE TREE PLANTING DETAIL(S), SHALL CONSIST OF ARBORSTAKES™ INSTALLED 4" MIN. FROM EDGE OF ROOTBALL (UNLESS OTHERWISE STATED IN THE PLANS) AND SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO ENSURE STABILITY AND MAINTAIN TREES IN AN UPRIGHT POSITION. IF THE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE STAKING AND FORGO TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING AND AGREE TO INDEMNIFY AND HOLD HARMLESS THE LANDSCAPE ARCHITECT IN THE EVENT UNSUPPORTED TREES PLANTED UNDER THIS CONTRACT FALL AND DAMAGE PERSON OR PROPERTY. CONTRACTOR SHALL REPLACE, PLANT, OR UPRIGHT ANY TREES BLOWN OVER OR DAMAGED DUE TO INADEQUATE STAKING/GUYING AND BRACING AT NO ADDITIONAL COST TO THE OWNER.
15. MULCHING: PROVIDE A THREE INCH (MINIMUM) LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED, AND TREE PIT PLANTED UNDER THIS CONTRACT.
16. HERBICIDE WEED CONTROL: ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S PRECAUTIONS AND SPECIFICATIONS. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER AS ALLOWED BY JURISDICTIONAL AUTHORITY.

P. LAWN SODDING/SEEDING

1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A TURF GRASS LAWN ACCEPTABLE TO THE OWNER.
2. LAWN BED PREPARATION: ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, DEBRIS, HAVE SOIL PREPARED PER SECTION E, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE ENTIRE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE.
3. SOIL PREPARATION: ALL SOIL TO BE PREPARED PER SECTION E.
4. SODDING:

i. THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.

ii. THE SOD SHALL BE CERTIFIED TO MEET AMERICAN STANDARD FOR NURSERY STOCK SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE, AND FREE FROM WEEDS, FUNGUS, INSECTS, AND DISEASES OF ANY KIND.

iii. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS. ADJACENT TO BUILDINGS, A 24 INCH STONE OR MULCH STRIP SHALL BE PROVIDED—REFER TO DETAILS. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY IRRIGATED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND, AS APPROVED BY THE OWNER'S REPRESENTATIVE, SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN. FERTILIZE INSTALLED SOD AS ALLOWED BY PROPERTY'S JURISDICTIONAL AUTHORITY.

iv. CONTRACTOR SHALL REFERENCE PLANTING SCHEDULE FOR SEEDING VARIETY AND RATES.

v. CONTRACTOR TO SUBMIT SOD SPECIES AND PRODUCT INFORMATION TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PURCHASE.

vi. WATER SODDED AREAS DAILY AND UP TO TWICE A DAY DURING HOT, DRY WEATHER.

vii. DO NOT LAY SOD WHEN DAILY HIGH TEMPERATURE IS FORECASTED TO BE ABOVE 80 DEGREES F. WATER SOD FOR FOUR (4) WEEKS OR UP UNTIL ROOTS ARE FIRMLY ESTABLISHED IN THE SOIL. DO NOT ALLOW SOIL MOISTURE TO DROP BELOW 15% ON ANY GIVEN DAY DURING THE ROOT ESTABLISHMENT PERIOD.

viii. IF, AFTER INSPECTION BY THE OWNER, SOD IS DEAD OR STRESSED, REMOVE AND REPLACE AT NO COST TO THE OWNER. ALL ESTABLISHMENT PROCEDURES AS LISTED ABOVE APPLY TO SECOND PLACEMENT SOD.

5. SEEDING:

i. IF TURF SEED INSTALLATION FALLS BETWEEN SEPTEMBER 16TH AND MARCH 14TH, THE CONTRACTOR SHALL INSTALL EITHER SOD OR A NATIVE COLD SEASON VARIETY SEED MIX. IF A NATIVE COOL SEASON VARIETY MIX IS INSTALLED BETWEEN SEPTEMBER 16TH AND MARCH 14TH, THE CONTRACTOR SHALL RESEED THE AREA WITH THE ORIGINAL SPECIFIED SEED MIX PER THE PLANS AND SPECIFICATIONS BETWEEN MARCH 15TH AND SEPTEMBER 15TH. NEITHER WINTER WHEAT NOR WINTER RYE SHALL BE USED. CONTRACTOR TO SUBMIT ALL NURSE/COVER CROP SPECIES DATA TO THE LANDSCAPE ARCHITECT PRIOR TO PURCHASE.

ii. CONTRACTOR TO SUBMIT SEED SPECIES AND PRODUCT INFORMATION TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PURCHASE.

iii. CHECK SOIL MOISTURE WEEKLY WITH A MOISTURE PROBE FOR 6 WEEKS AFTER SEEDINGG. SHOULD THE SOIL MOISTURE LEVEL FALL BELOW 15%, WATER ALL SEEDED AREAS, BUT DO NOT EXCEED 45% MOISTURE AT ANY GIVEN TIME.

6. DURING DELIVERY, PRIOR TO, AND DURING THE PLANTING OF THE LAWN AREAS, THE SOD PANELS SHALL AT ALL TIMES BE PROTECTED FROM EXCESSIVE DRYING AND UNNECESSARY EXPOSURE OF THE ROOTS TO THE SUN. ALL SOD SHALL BE STACKED SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.
7. LAWN MAINTENANCE:

i. WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL-ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS (LARGER THAN 12"X12") UNTIL CERTIFICATION OF ACCEPTABILITY BY THE OWNER'S REPRESENTATIVE. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY).

ii. CONTRACTOR RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SOD/LAWN UNTIL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE

# Ennis Grocer

Traffic Impact Analysis

April 2026

Prepared By:

Kimley»Horn

*Texas Firm Registration Number F-928*

801 Cherry Street, Suite 1300, Unit 11

Fort Worth, TX 76102

(817) 335-6511

# Ennis Grocer

TRAFFIC IMPACT ANALYSIS

Prepared By:

Kimley»Horn

*Texas Firm Registration Number F-928*

801 Cherry Street, Suite 1300

Fort Worth, TX 76102

(817) 339-2243

Contact: Douglas Arnold, P.E.

Job Number: 069227461

**APRIL 2026**




04/08/2026

# Contents

Executive Summary ..... iii
Introduction ..... 1
Purpose ..... 1
Methodology ..... 1
Existing and Proposed Land Use ..... 2
Site Location / Study Area ..... 2
Proposed Development ..... 2
Existing and Planned Transportation System ..... 2
Existing Traffic Volumes ..... 3
TxDOT Roadway Construction Projects ..... 3
Project Traffic Characteristics ..... 7
Site Trip Generation ..... 7
Trip Distribution and Assignment ..... 8
Development of Background Traffic ..... 14
Development of Total Traffic ..... 14
Site Access Evaluation ..... 19
Deceleration Lane Analysis ..... 19
Driveway Access Spacing ..... 20
Sight Distance ..... 20
Traffic Operations Analysis ..... 21
Intersection Analysis Methodology ..... 21
Intersection Capacity Analysis ..... 21
Intersection Capacity Analysis Results ..... 22
Signal Warrant Analysis ..... 23
Conclusions and Recommendations ..... 25
Deceleration Lane Analysis ..... 25
Driveway Access Spacing ..... 25
Sight Distance ..... 26
Traffic Operations Analysis ..... 26
Appendix ..... 27

## Exhibits

Exhibit 1. Vicinity Map ..... 4
Exhibit 2. Existing Lane Assignment and Traffic Control ..... 5
Exhibit 3. Existing (2026) Traffic Volumes ..... 6
Exhibit 4. Trip Distribution ..... 9
Exhibit 5. Net New External Trip Assignment ..... 10
Exhibit 6. Pass-By Trip Distribution ..... 11
Exhibit 7. Pass-By Trip Assignment ..... 12
Exhibit 8. Total Site Traffic ..... 13
Exhibit 9. Build Out Background (2028) Traffic Volumes ..... 15
Exhibit 10. Horizon Background (2033) Traffic Volumes ..... 16
Exhibit 11. Build Out (2028) Traffic Volumes ..... 17
Exhibit 12. Horizon (2033) Traffic Volumes ..... 18

## Tables

Table 1. Analysis Scenarios ..... 1
Table 2. Trip Generation Rates ..... 7
Table 3. Trip Generation ..... 7
Table 4. Historical Count Data ..... 14
Table 5. Sight Distance Requirements ..... 20
Table 6. Level of Service Definitions ..... 21
Table 7. Peak Hour Intersection Capacity Analysis ..... 22
Table 8. Mitigated Intersection Capacity Analysis ..... 22

# EXECUTIVE SUMMARY

This report documents a traffic impact analysis (TIA) performed for the proposed Ennis Grocer development located northeast of Ennis Avenue & Sonoma Trail in the City of Ennis, Texas.

The development proposes to provide approximately 102,500 square feet (SF) of supermarket along with a twelve (12) vehicle fueling pump gasoline/service station. Access to the development is proposed via two (2) full-access driveways along Sonoma Trial and three (3) full-access driveways along Ennis Avenue. The development is anticipated with a build out year of 2028. This study is intended to identify traffic generation characteristics, potential traffic related impacts on the surrounding street system, and to develop mitigation measures for identified impacts if necessary.

Based on the trip generation calculation the Ennis Grocer development is anticipated to generate 352 AM peak hour trips (203 inbound / 149 outbound) and 975 PM peak hour trips (488 inbound / 487 outbound) at Build Out (2028).

The traffic evaluation was comprised of five (5) scenarios for which weekday AM and PM peak hour intersection level of service analyses were performed. The five (5) analysis scenarios evaluated can be found in the table below.

**Analysis Scenario Summary Table**

| Scenario | Roadway Conditions | Development Assumptions | Traffic Volumes |
|---|---|---|---|
| Existing (2026) | Existing | Existing | Existing (2026) Volumes |
| Build Out Background (2028) | Existing | Existing | Existing (2026) Volumes + 2 years of growth at 2.0% per year |
| Build Out (2028) | Existing + Site Access | Existing + Ennis Grocer | Build Out Background (2028) + Ennis Grocer Site Traffic |
| Horizon Background (2033) | Existing | Existing | Existing (2026) Volumes + 7 years of growth at 2.0% per year |
| Horizon (2033) | Existing + Site Access | Existing + Ennis Grocer | Horizon Background (2033) + Ennis Grocer Site Traffic |

Based on the TIA presented in this report, we offer the following conclusions and recommendations:

## DECELERATION LANE ANALYSIS

Deceleration lane analysis was completed for the proposed site access locations based on the anticipated traffic volumes at Build Out (2028). The need for deceleration lanes along Ennis Avenue was analyzed via TxDOT criteria and site access along Sonoma Trail was analyzed via NCHRP Report 457 criteria. Note that left-turn analysis along Sonoma Trail was not conducted as little, if any, site traffic is anticipated form the north along this facility.

## RIGHT-TURN LANE METHODOLOGY

Based on projected volumes at Build Out (2028), no right-turn lanes are warranted based on volume thresholds provided by TxDOT. While no right-turn lanes are warranted based on volumes, the development proposes to construct right-turn lanes at Drive 3 and Drive 4 to better facilitate ingress traffic accessing the site. Additionally, right-turn lanes are not anticipated to be warranted at the proposed driveways along Sonoma Trail. Although turn-lanes are not warranted along Sonoma Trail, the development proposes to construct a right-turn lane at Drive 1 to better facilitate ingress traffic accessing the site.

## LEFT-TURN LANE METHODOLOGY

Based on the analysis, peak hour major road volumes along Ennis Avenue exceed 200 vphpl and projected left-turn volumes at all driveways along Ennis Avenue exceed 5 vph, therefore an eastbound left-turn lane is warranted at all proposed drives along Ennis Avenue. To accommodate warranted left-turn lanes along Ennis Avenue, the development proposes to widen Ennis Avenue to feature a two-way-left-turn lane (TWLTL) along the sites southern frontage to approximately 150 feet west of the Ennis Avenue & Sonoma Trail intersection. The construction of a TWLTL along Ennis Avenue would provide for dedicated left and through-right lanes at the existing intersection.

## DRIVEWAY ACCESS SPACING

To evaluate access spacing, criteria from TxDOT's *Access Management Manual* was applied to the proposed site access. Based on TxDOT standards, the minimum allowable distance between two connections along a 30 mph (Sonoma Trail) and a 40 mph (Ennis Avenue) facility is 200 and 305 feet, respectively. *Note that TxDOT access spacing criteria was applied to Sonoma Trail as the City does not provide specific access spacing requirements*. Based on this requirement, spacing along Sonoma Trail is anticipated to be satisfied. Spacing provided along Ennis Avenue is approximately the following:

- ~ 278 feet between Drive 3 and Sonoma Trail
- ~ 213 feet between Drive 3 and Drive 4
- ~ 301 feet between Drive 4 and Drive 5

Based on available spacing along Ennis Avenue, a variance of 27 feet, 92 feet, and 4 feet will be requested for the proposed drives along Ennis Avenue. While access spacing is not satisfied along Ennis Avenue it should be noted that Drive 5 is anticipated to facilitate a limited amount of site traffic as the entrance is intended for primarily staff and deliver truck traffic. Additionally, Drive 3 and Drive 4 are proposed with additional deceleration lanes to provide for improved operations for ingress vehicles accessing the site. Thus, it is not anticipated that substandard spacing along Ennis Avenue will produce adverse traffic operations at the proposed site access locations.

## SIGHT DISTANCE

Guidelines provided by AASHTO were used to determine adequacy of sight distance at the proposed site access locations. The guidelines are based on the speed of the roadway access is being taken from.

Based on aerial overview, adequate sight distance is anticipated to be available at all site access locations. Ennis Avenue and Sonoma Trail both exist with relatively flat grades and curvature is not anticipated to impede sight triangles at the proposed drives. It is recommended that the proposed site access locations be designed to provide adequate sight distance (i.e. clear sight with no obstructing object, signs, landscaping, etc.).

## TRAFFIC OPERATIONS ANALYSIS

Based on the analysis for the five (5) scenarios, all intersections are anticipated to operate with acceptable LOS with the exception of the following:

- **IH-45 NBFR & Ennis Avenue** exhibits operational failures at the westbound approach during the PM peak hour once site traffic is introduced in both the Build Out (2028) and Horizon (2033) scenarios. The interchange currently facilitates all westbound traffic via a dedicated through lane and a through-right lane which shortly narrows approximately 400 feet east of the IH-45 NBFR.

- **Ennis Avenue & Sonoma Trail** is projected to operate with failing LOS in both the AM and PM peak hours under Build Out (2028) conditions. Failures at this location are anticipated to worsen under Horizon analysis. As such, signal warrants were conducted at this location utilizing Build Out (2028) volumes. Based on projected volumes at Build Out (2028), peak hour signal warrants at this location are met. As such, additional analysis was conducted assuming signalization at this location. Signalization at this location assumed a dedicated left-turn and a through-right lane at approaches along Ennis Avenue consistent with site access improvements. Based on the signal warrant analysis, a traffic signal is recommended at this intersection at project Build-Out.

# INTRODUCTION

## PURPOSE

Kimley-Horn and Associates, Inc. (Kimley-Horn), prepared a Traffic Impact Analysis (TIA) of future traffic conditions associated with the Ennis Grocer development located northeast of Ennis Avenue & Sonoma Trail in the City of Ennis, Texas.

The development proposes to provide approximately 102,500 square feet (SF) of supermarket along with a twelve (12) vehicle fueling pump gasoline/service station. The development is anticipated with a build out year of 2028. This study is intended to identify traffic generation characteristics, potential traffic related impacts on the surrounding street system, and to develop mitigation measures for identified impacts if necessary.

## METHODOLOGY

This report has been prepared in accordance with the City of Ennis *Code of Ordinances* and standards set forth by Texas Department of Transportation (TxDOT).

The traffic evaluation was comprised of five (5) scenarios for which weekday AM and PM peak hour intersection level of service analyses were performed. The five (5) analysis scenarios evaluated can be found in **Table 1** below.

**Table 1. Analysis Scenarios**

| Scenario | Roadway Conditions | Development Assumptions | Traffic Volumes |
|---|---|---|---|
| Existing (2026) | Existing | Existing | Existing (2026) Volumes |
| Build Out Background (2028) | Existing | Existing | Existing (2026) Volumes + 2 years of growth at 2.0% per year |
| Build Out (2028) | Existing + Site Access | Existing + Ennis Grocer | Build Out Background (2028) + Ennis Grocer Site Traffic |
| Horizon Background (2033) | Existing | Existing | Existing (2026) Volumes + 7 years of growth at 2.0% per year |
| Horizon (2033) | Existing + Site Access | Existing + Ennis Grocer | Horizon Background (2033) + Ennis Grocer Site Traffic |

For all intersections, the capacity analyses were conducted using *Synchro 12*$^{TM}$ and its associated *Highway Capacity Manual* reports.

# EXISTING AND PROPOSED LAND USE

## SITE LOCATION / STUDY AREA

The Ennis Grocer development is located northeast of Ennis Avenue & Sonoma Trail in the City of Ennis, Texas. **Exhibit 1** presents the study area, the approximate site boundaries, and the vicinity of the site. Currently the site is undeveloped and does not generate any traffic.

The study intersections analyzed, and their existing traffic controls are presented below:

- Signalized
  - IH-45 northbound frontage road (NBFR) & Ennis Avenue
  - IH-45 southbound frontage road (SBFR) & Ennis Avenue
- Unsignalized
  - Ennis Avenue & Sonoma Trail

In addition, all proposed site driveways will be analyzed in the future conditions.

## PROPOSED DEVELOPMENT

The Ennis Grocer development is proposed northeast of Ennis Avenue & Sonoma Trail in the City of Ennis, Texas. The development proposes to provide approximately 102,500 square feet (SF) of supermarket along with a twelve (12) vehicle fueling pump gasoline/service station. The development is anticipated with a build out year of 2028. A conceptual site plan is provided in the **Appendix**.

Access to the development is proposed via two (2) full-access driveways along Sonoma Trial and three (3) full-access driveways along Ennis Avenue.

# EXISTING AND PLANNED TRANSPORTATION SYSTEM

**Exhibit 2** displays the existing thoroughfares, lane assignments, and traffic controls within the study area. The following is a general description of the major roadways within the study area.

IH-45 northbound (**IH-45 NBFR**) and southbound (**IH-45 SBFR**) frontage roads are one-way TxDOT facilities currently running parallel to IH-45 and provide for a signalized interchange at Ennis Avenue. Both frontage roads are considered two-lane one-way facilities. Both frontage roads are considered as north-south orientation with a posted speed limit of 45 mph. Based on information provided by TxDOT's *Statewide Planning Map* the interchange located at Ennis Avenue is anticipated to undergo improvements (see *Planned Roadway Improvements* section).

**Ennis Avenue** is a five-lane undivided roadway featuring a two-way-left-turn lane (TWLTL) west of IH-45. To the east of IH-45 Ennis Avenue transitions from a five-lane undivided facility to a four-lane undivided facility then eventually narrowing to a two-lane undivided section with its intersection with Sonoma Trail. The posted speed limit along Ennis Avenue is 35 mph and 40 mph to the west and east of IH-45, respectively. Ennis Avenue is assumed as east-west orientation for analysis purposes. Three (3) full-access driveways are proposed along this facility.

**Sonoma Trail** is a two-lane undivided roadway considered with a north-south orientation and speed limit of 30 mph for analysis purposes. Two (2) full-access driveways are proposed along this facility.

## EXISTING TRAFFIC VOLUMES

**Exhibit 3** presents the existing AM and PM peak hour traffic volumes. Counts were collected on Tuesday, November 18th, 2025 at the study intersections. Traffic data is provided in the **Appendix**.

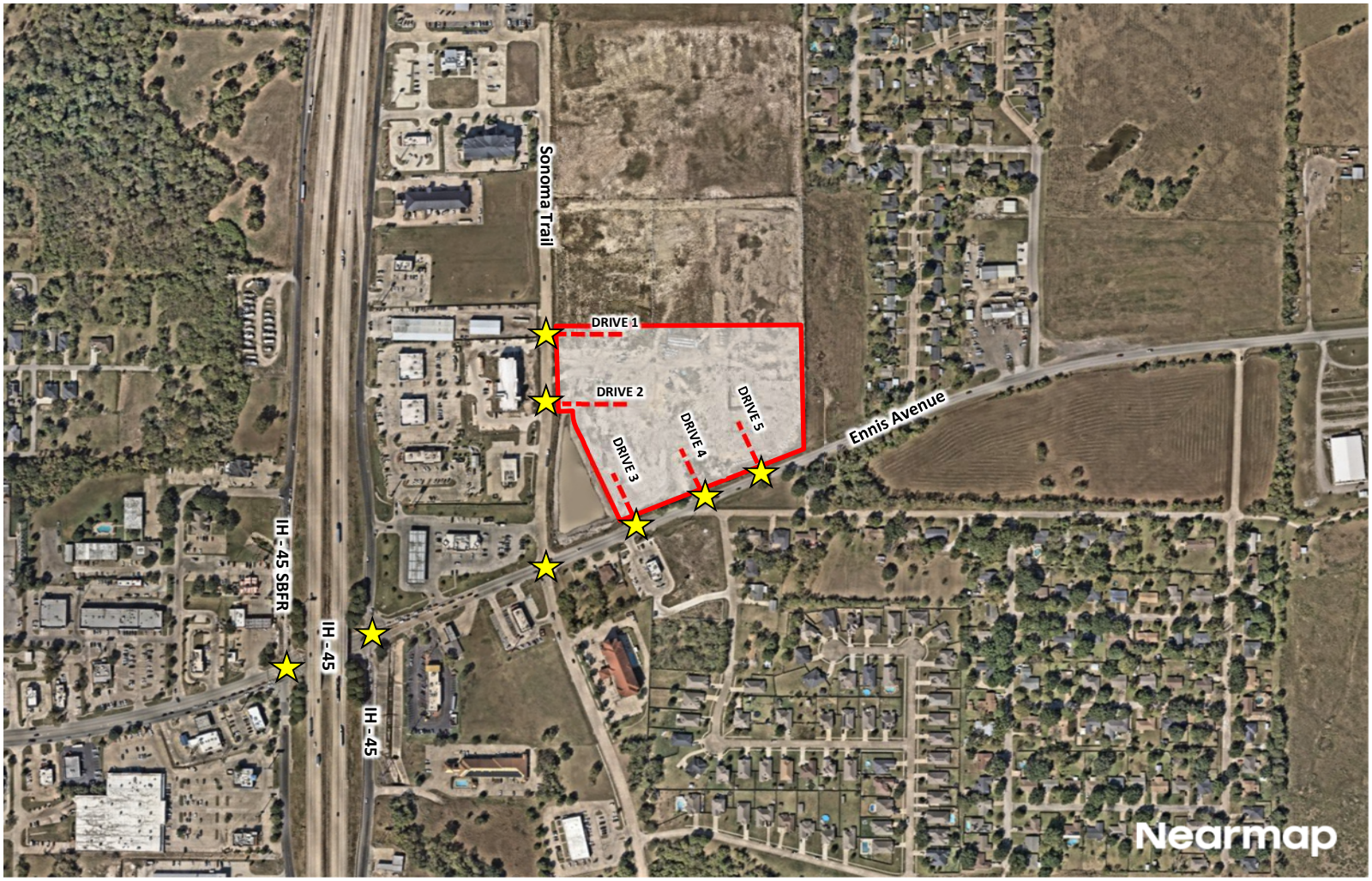
## TXDOT ROADWAY CONSTRUCTION PROJECTS

According to TxDOT Project Tracker, the IH-45 & Ennis Avenue interchange is anticipated to undergo improvements within the study area (CSJ: 0092-04-077). With construction observed via aerial imagery and a TxDOT letting date of March 2025. the IH-45 & Ennis Avenue interchange improvements are assumed in Build Out Background (2028) and all subsequent scenarios.

TxDOT schematics detailing the future signal layout are provided in the **Appendix**.

N

NOT TO SCALE




LEGEND

Proposed Site Access

Site Boundary

Study Intersection

**Exhibit 1**

Vicinity Map

Ennis Grocer TIA

Kimley»Horn

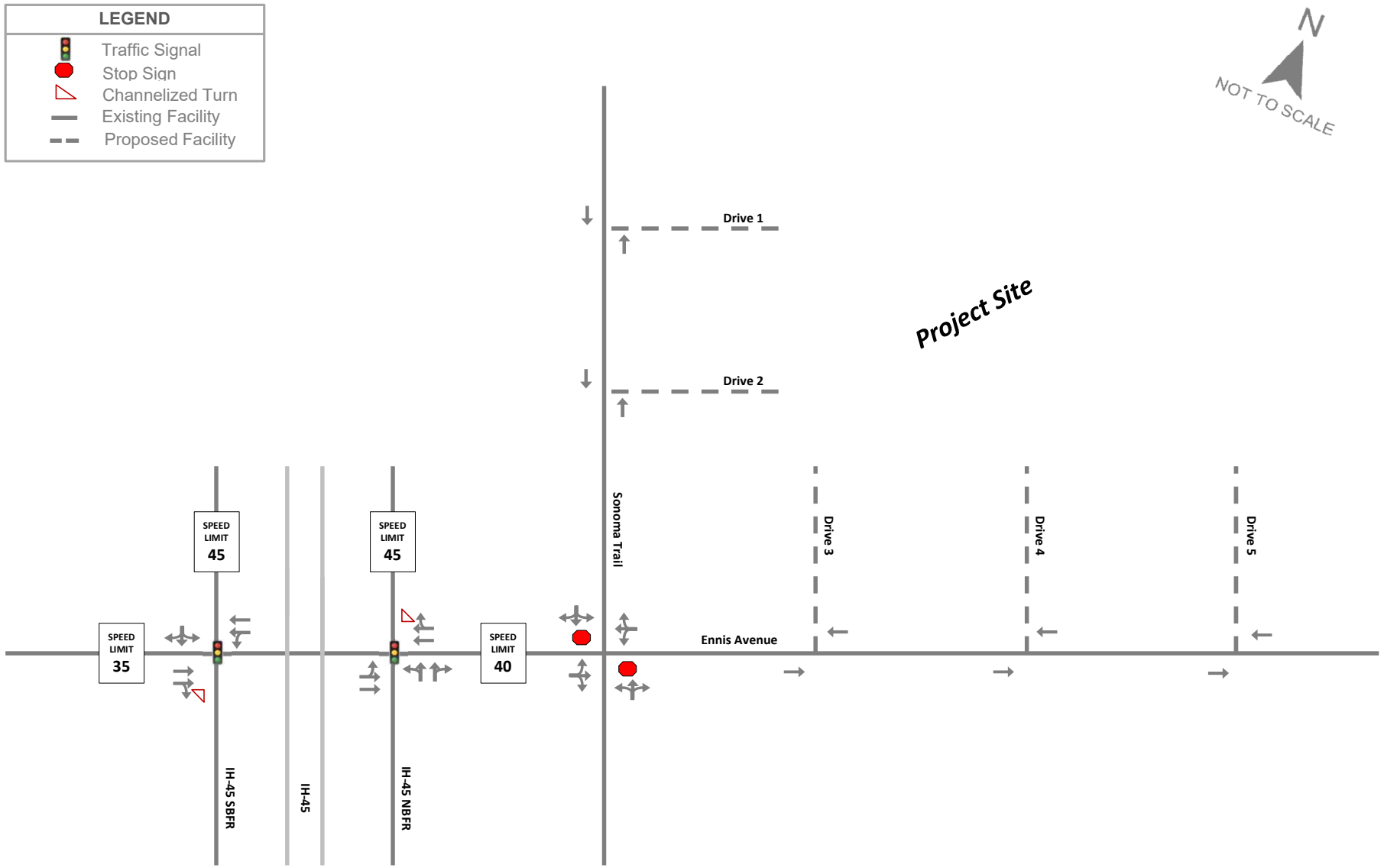



**Exhibit 2**

Existing Lane Assignment and Traffic Control

Ennis Grocer TIA

Kimley»Horn

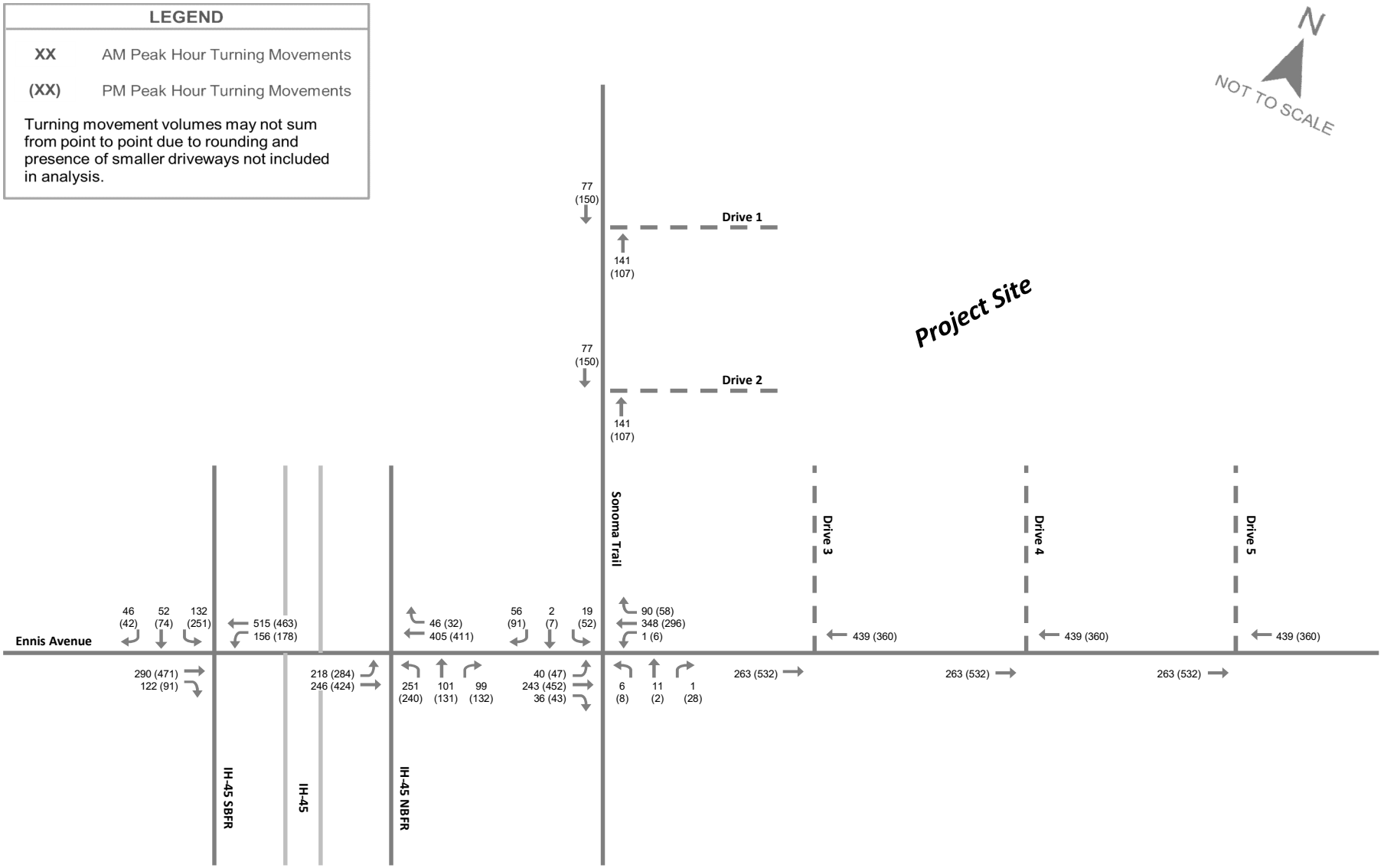



**Exhibit 3**

Existing (2026) Traffic Volumes

Ennis Grocer TIA

Kimley»Horn

# PROJECT TRAFFIC CHARACTERISTICS

## SITE TRIP GENERATION

Site-generated traffic estimates are determined through a process known as trip generation. Rates are applied to the proposed land uses to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the current edition of the *Trip Generation Manual* published by the *Institute of Transportation Engineers* (ITE). ITE has established trip rates in nationwide studies of similar land uses. Applying these trip generation rates to the proposed site development results in daily, AM peak hour, and PM peak hour trips. Each trip shown is a "one-way trip" which is defined as the entry or exit of a vehicle from the site. Therefore, each vehicle visiting the site is counted as two one-way trips, one inbound and one outbound.

**Table 2** provides the rates included in the ITE *Trip Generation Manual* in addition to the entering and exiting distribution splits for each land use proposed on site.

**Table 2. Trip Generation Rates**

| Land Uses | ITE Code | Units | Daily Rate | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | % IN | % OUT | Rate | % IN | % OUT | Rate |
| Supermarket | 850 | 1,000 SF | 92.29 | 59% | 41% | 2.95 | 50% | 50% | 8.79 |
| Gasoline/Service Station | 944 | VFP | 172.01 | 50% | 50% | 11.32 | 50% | 50% | 14.23 |

*Rates provided in the ITE Trip Generation Manual, 12th Edition .*

Reductions to the base trip generation are applied based on the nature of the site and land uses because of diverted/pass-by trips:

- Diverted/pass-by capture rates for the proposed land uses were based on information consistent with the *ITE Trip Generation Manual*. AM and PM pass-by rates of 63% and 57%, respectively, for Gasoline/Service Station (ITE #944) were utilized.

**Table 3** summarizes the total number of trips that are projected to be generated by the proposed development daily, and during the AM and PM peak hours through the build out of the development. The number of trips generated represents the number of vehicles entering and exiting the proposed development to and from the adjacent street system.

**Table 3. Trip Generation**

| Land Uses | Intensity | Units | ITE Code | Daily Trips | AM Peak Hour Site Trips | | | PM Peak Hour Site Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | IN | OUT | TOTAL | IN | OUT | TOTAL |
| Supermarket | 102.5 | 1,000 SF | 850 | 9,460 | 178 | 124 | 302 | 451 | 450 | 901 |
| Gasoline/Service Station | 12 | VFP | 944 | 2,064 | 68 | 68 | 136 | 86 | 85 | 171 |
| | | | | ***Total External Site Traffic:*** | 246 | 192 | 438 | 537 | 535 | 1,072 |
| | | | | ***Pass-By Trips:*** | 43 | 43 | ***86*** | 49 | 48 | ***97*** |
| | | | | ***Total Net New Site Traffic:*** **11,524** | **203** | **149** | **352** | **488** | **487** | **975** |

*Number of trips generated = Trip Rate (Development Unit); X=1,000 SF, Vehicle Fueling Positions*

Based on the trip generation calculation the Ennis Grocer development is anticipated to generate 352 AM peak hour trips (203 inbound / 149 outbound) and 975 PM peak hour trips (488 inbound / 487 outbound).

## TRIP DISTRIBUTION AND ASSIGNMENT

The distribution and assignment of the site-generated traffic to the study area roadway network was performed for the proposed development based on examination of the existing traffic volumes, existing roadway network, major attractions and destinations in the study area and anticipated site access locations.

All scenarios utilize the same global distribution in the analysis and are as follows:

- 30% to/from the north via IH-45
- 30% to/from the south via IH-45
- 30% to/from the west via Ennis Avenue
- 10% to/from the east via Ennis Avenue

**Exhibit 4** presents the inbound and outbound directional distribution percentages for the Ennis Grocer development. The resulting net new external traffic assignment is presented in **Exhibit 5**. **Exhibit 6** presents the assumed pass-by distribution for the Ennis Grocer development. The resulting pass-by assignment is presented in **Exhibit 7**. Total site traffic is presented in **Exhibit 8**, which consists of net new external site traffic volumes (**Exhibit 5**) and pass-by volumes (**Exhibit 7**).

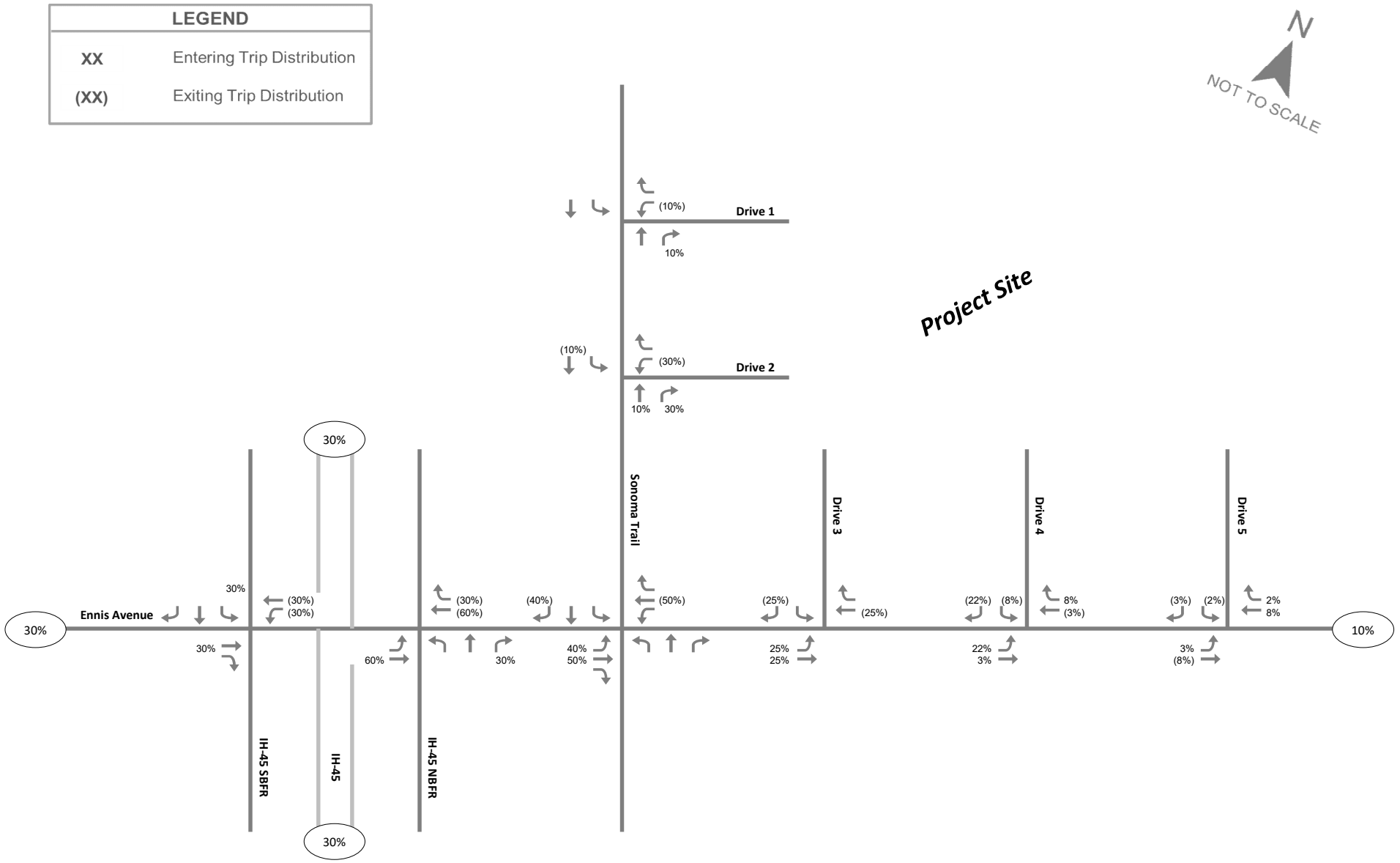



**Exhibit 4**
Trip Distribution
Ennis Grocer TIA

Kimley»Horn

| LEGEND | |
|---|---|
| XX | AM Peak Hour Turning Movements |
| (XX) | PM Peak Hour Turning Movements |

Turning movement volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

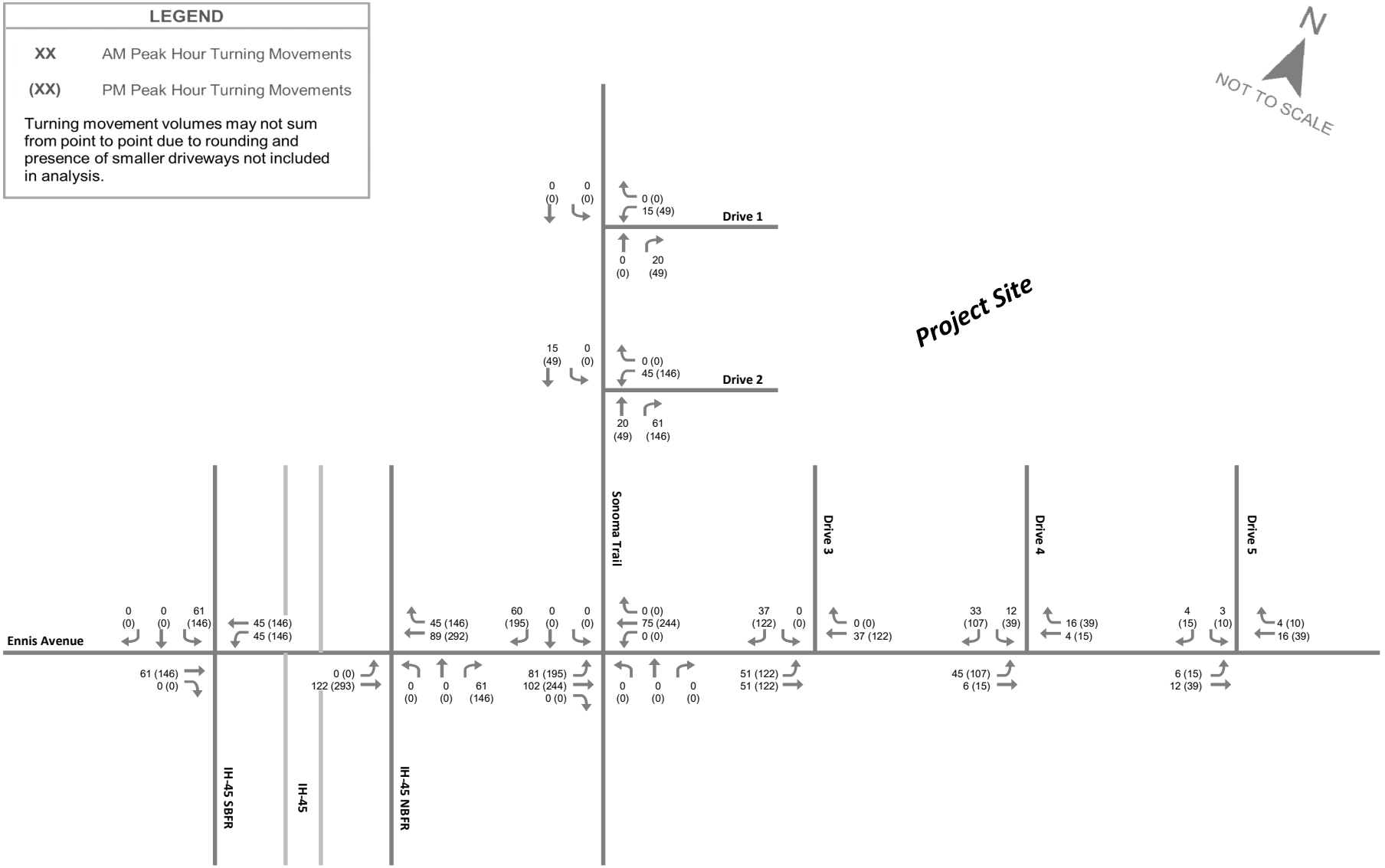



**Exhibit 5**

Net New External Trip Assignment

Ennis Grocer TIA

Kimley»Horn

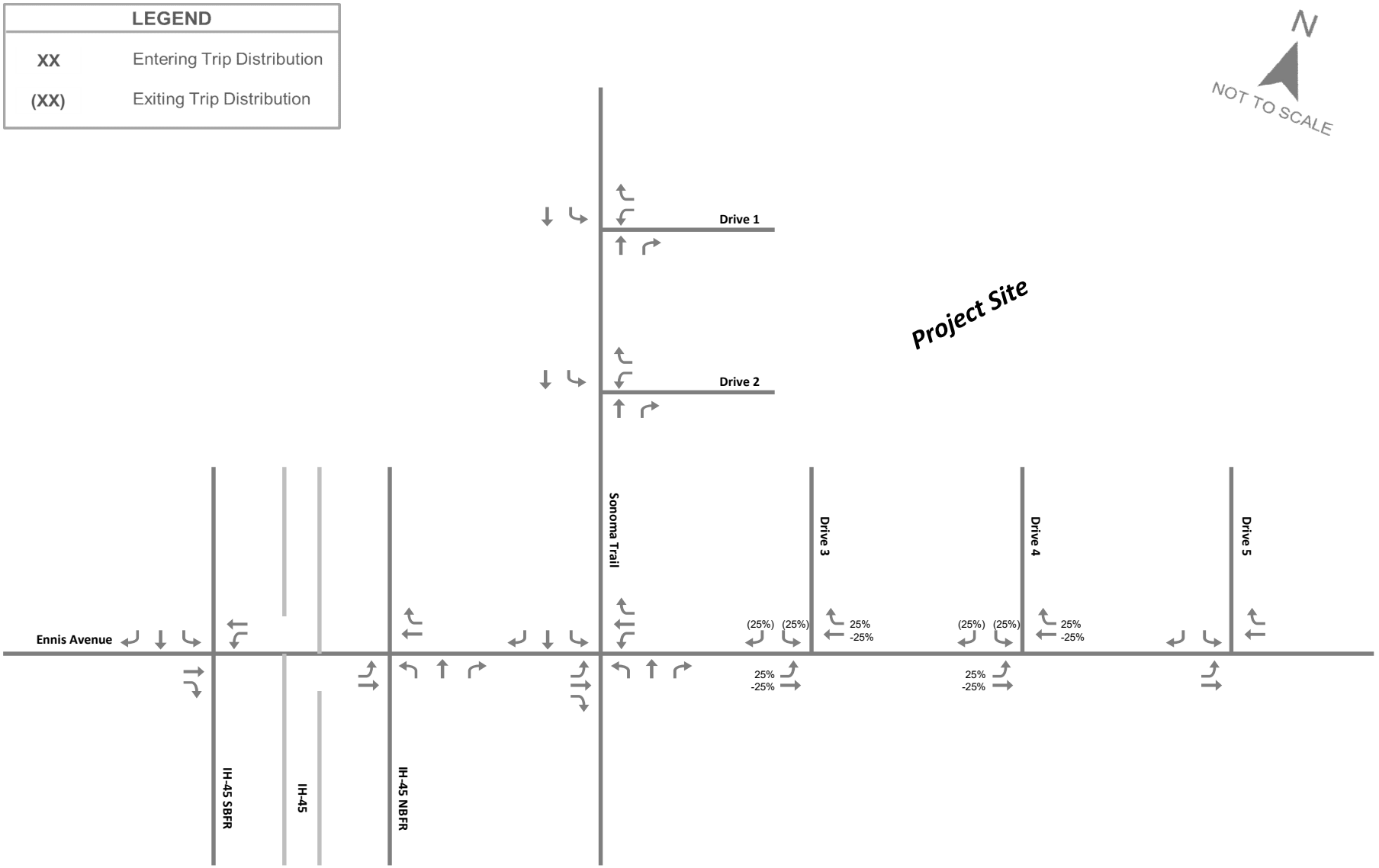



**Exhibit 6**

Pass-By Trip Distribution

Ennis Grocer TIA

Kimley»Horn

| LEGEND | |
|---|---|
| XX | AM Peak Hour Turning Movements |
| (XX) | PM Peak Hour Turning Movements |

Turning movement volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

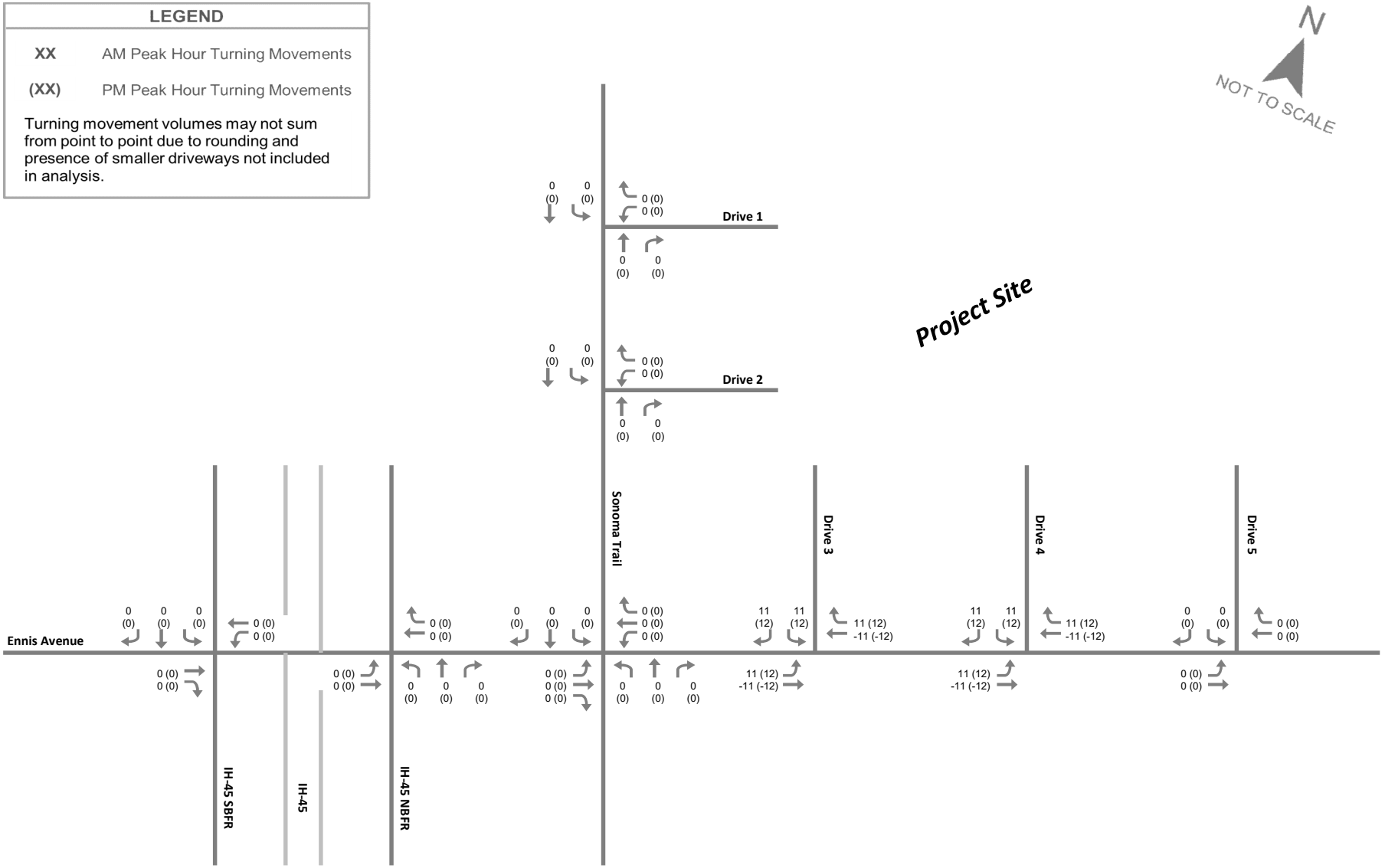



**Exhibit 7**

Pass-By Trip Assignment

Ennis Grocer TIA

Kimley»Horn

| LEGEND | |
|---|---|
| XX | AM Peak Hour Turning Movements |
| (XX) | PM Peak Hour Turning Movements |

Turning movement volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

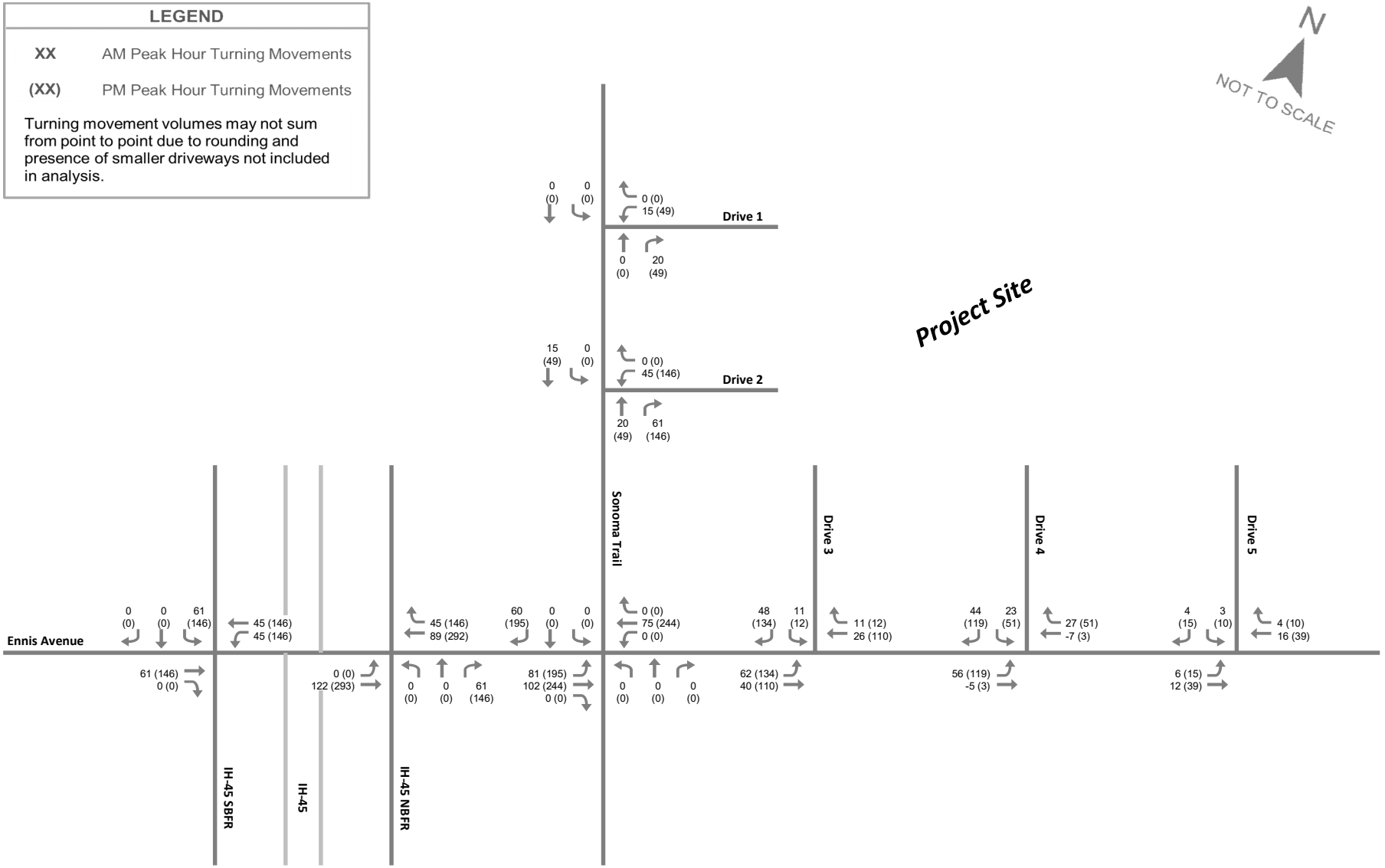



**Exhibit 8**
Total Site Traffic
Ennis Grocer TIA

Kimley»Horn

## DEVELOPMENT OF BACKGROUND TRAFFIC

To determine background growth at the study intersections, historical volume counts along Ennis Avenue, west of IH-45, were utilized. These counts were provided by the Texas Department of Transportation (TxDOT) Traffic Count Database System (TCDS). Based on this information, an average annual growth rate of 1.5% was calculated. To provide for a conservative analysis, this growth rate was rounded to 2.0% and used in background growth calculations. **Table 4** presents this historical count data.

**Table 4. Historical Count Data**

| Ennis Avenue, west of IH-45 | | | |
|---|---|---|---|
| **Year** | **Source** | **Volume** | **Annual Growth Rate** |
| 2014 | TxDOT | 16,840 | - |
| 2019 | | 18,126 | 1.5% |
| *Average Annual Growth Rate* | | | *1.5%* |
| **Conservative Annual Growth Rate** | | | **2.0%** |

As the proposed development is anticipated to generate between 500-1,000 peak hour trips, TxDOT requires that the TIA analyzes five (5) years after Build Out (2028) of the development, as stated in Chapter 16 of the *Traffic and Safety Analysis Procedures Manual* (TSAP). As such, Existing (2026) traffic volumes were grown at the previously determined growth rate of 2.0% for two (2) and seven (7) years to produce the Build Out Background (2028) (**Exhibit 9**) and Horizon Background (2033) (**Exhibit 10**) traffic volumes, respectively.

## DEVELOPMENT OF TOTAL TRAFFIC

To produce Build Out (2028) and Horizon (2033) traffic volumes for weekday AM and PM peak hours, total site traffic (**Exhibit 8**) was added to each respective background scenario. Build Out (2028) traffic volumes are presented in **Exhibit 11.** Horizon (2033) traffic volumes are presented in **Exhibit 12.**

**Exhibit 9. Build Out Background (2028) Traffic Volumes**

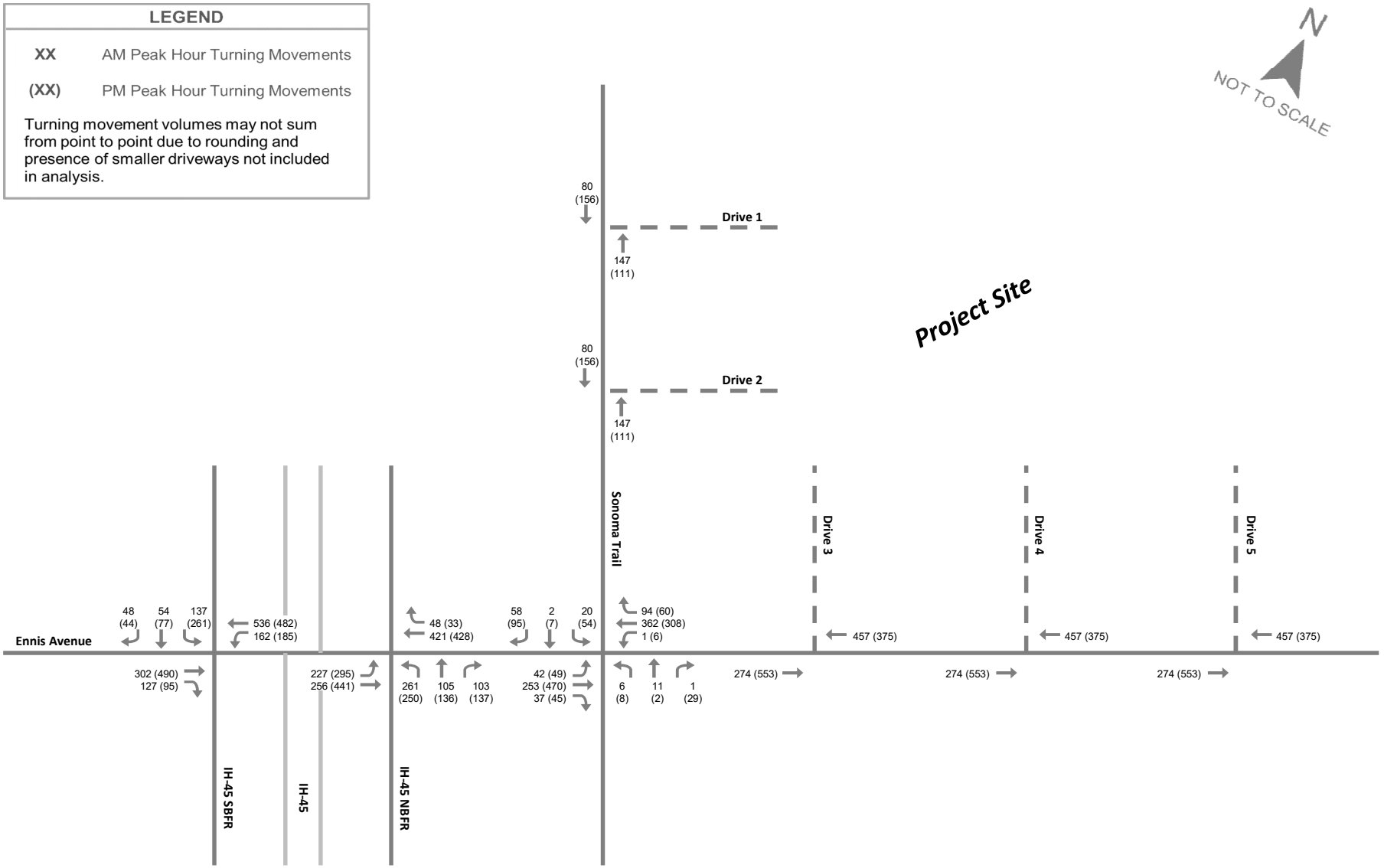



**Exhibit 9**

Build Out Background (2028) Traffic Volumes

Ennis Grocer TIA

Kimley»Horn

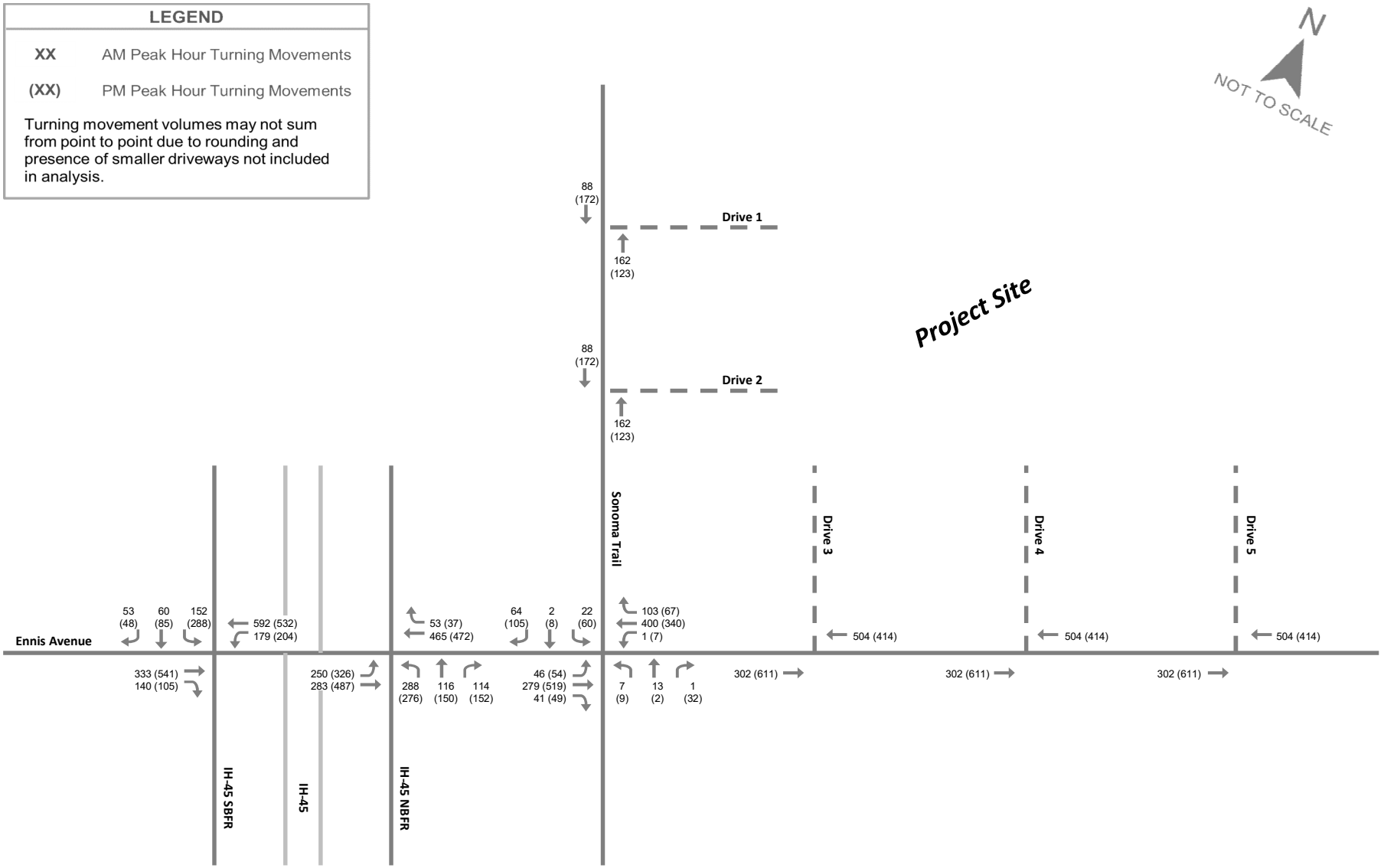



**Exhibit 10**

Horizon Background (2033) Traffic Volumes

Ennis Grocer TIA

Kimley»Horn

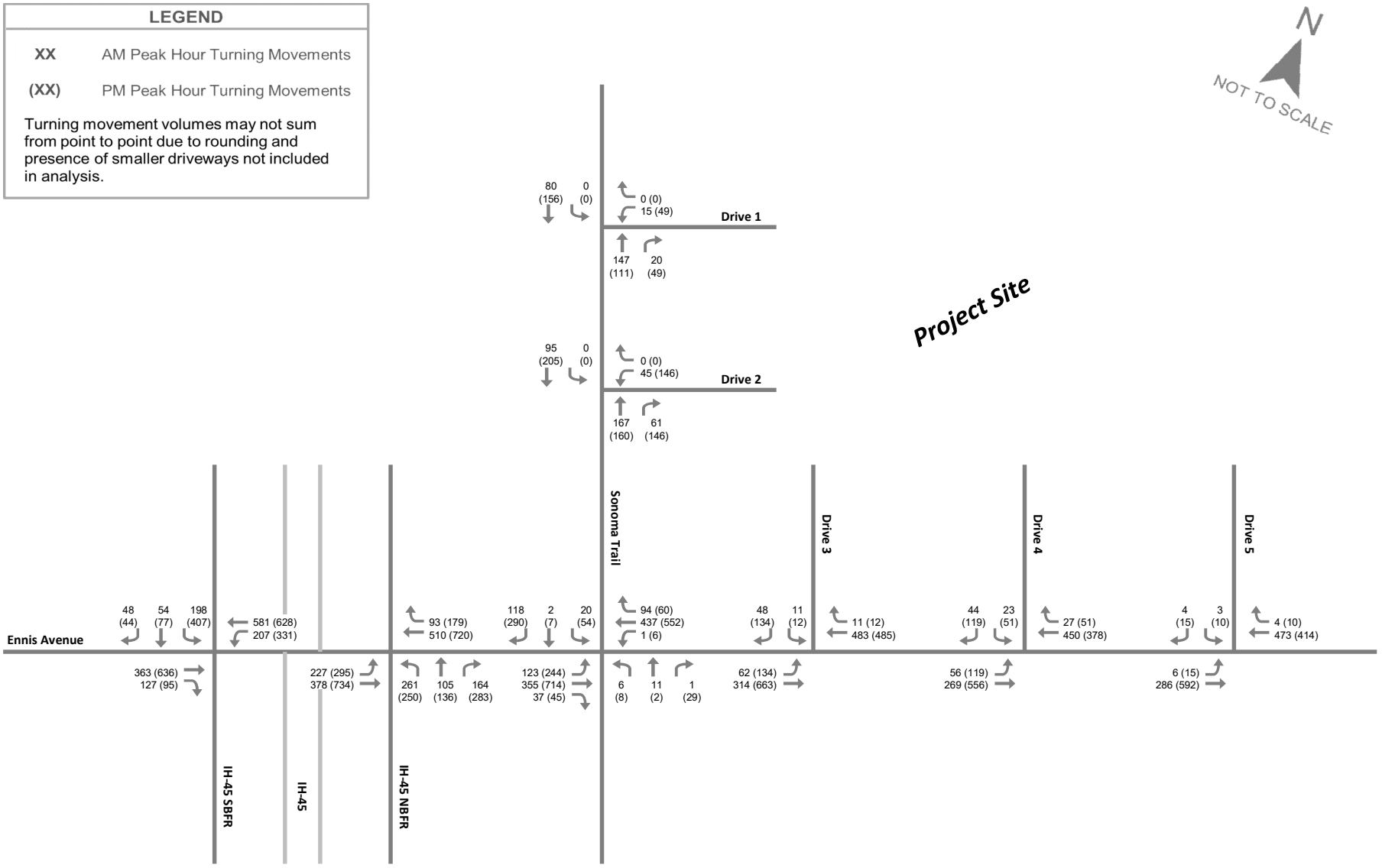



**Exhibit 11**

Build Out (2028) Traffic Volumes

Ennis Grocer TIA

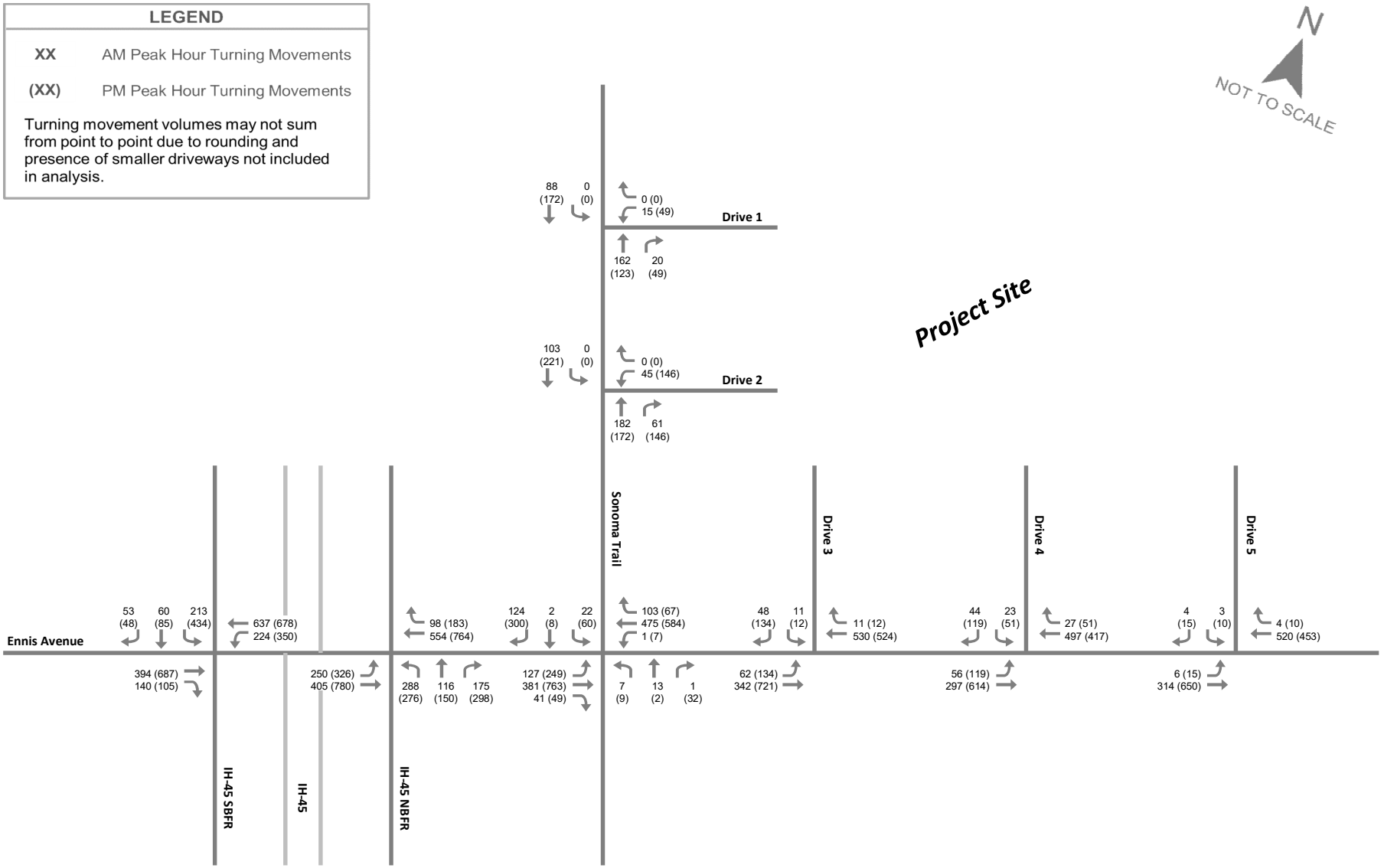



**Exhibit 12**

Horizon (2033) Traffic Volumes

Ennis Grocer TIA

Kimley»Horn

## DRIVEWAY ACCESS SPACING

To evaluate access spacing, criteria from TxDOT's *Access Management Manual* was applied to the proposed site access. Based on TxDOT standards, the minimum allowable distance between two connections along a 30 mph (Sonoma Trail) and a 40 mph (Ennis Avenue) facility is 200 and 305 feet, respectively. *Note that TxDOT access spacing criteria was applied to Sonoma Trail as the City does not provide specific access spacing requirements*. Based on this requirement, spacing along Sonoma Trail is anticipated to be satisfied. Spacing provided along Ennis Avenue is approximately the following:

- ~ 278 feet between Drive 3 and Sonoma Trail
- ~ 213 feet between Drive 3 and Drive 4
- ~ 301 feet between Drive 4 and Drive 5

Based on available spacing along Ennis Avenue, a variance of 27 feet, 92 feet, and 4 feet will be requested for the proposed drives along Ennis Avenue. While access spacing is not satisfied along Ennis Avenue it should be noted that Drive 5 is anticipated to facilitate a limited amount of site traffic as the entrance is intended for primarily staff and deliver truck traffic. Additionally, Drive 3 and Drive 4 are proposed with additional deceleration lanes to provide for improved operations for ingress vehicles accessing the site. Thus, it is not anticipated that substandard spacing along Ennis Avenue will produce adverse traffic operations at the proposed site access locations.

## SIGHT DISTANCE

Guidelines provided by AASHTO were used to determine adequacy of sight distance at the proposed site access locations. The guidelines, as provided in **Table 5**, are based on the speed of the roadway access is being taken from.

**Table 5. Sight Distance Requirements**

| Minor Road | Major Road | Speed Limit (mph) | Scenario | Required Distance (ft) |
|---|---|---|---|---|
| Drive 1<br>Drive 2 | Sonoma Trail | 30 | Left-Turn from Stop | 335 |
| | | | Left-Turn from Major Road | 245 |
| | | | Right-Turn from Stop | 290 |
| Drive 3<br>Drive 4<br>Drive 5 | Ennis Avenue | 40 | Left-Turn from Stop | 445 |
| | | | Left-Turn from Major Road | 325 |
| | | | Right-Turn from Stop | 385 |

Based on aerial overview, adequate sight distance is anticipated to be available at all site access locations. Ennis Avenue and Sonoma Trail both exist with relatively flat grades and curvature is not anticipated to impede sight triangles at the proposed drives. It is recommended that the proposed site access locations be designed to provide adequate sight distance (i.e. clear sight with no obstructing object, signs, landscaping, etc.).

# TRAFFIC OPERATIONS ANALYSIS

## INTERSECTION ANALYSIS METHODOLOGY

The evaluation of the existing roadway system was comprised of the Weekday AM and PM peak hour level of service analysis. For the study area intersections, analysis was conducted via *Synchro 12™* software. The purpose of this analysis was to analyze any potential deficiencies within the network and to establish a baseline condition. The acknowledged source for determining overall capacity is the Highway Capacity Manual (HCM). HCM 2000 was utilized to analyze capacity at the study intersections, as the most current edition of the *Highway Capacity Manual* (HCM 7th Edition) does not permit the analysis of clustered intersections, such as the IH-45 and Ennis Avenue interchange.

Capacity analysis results are listed in terms of level of service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a specific street or highway during a specific time interval. It ranges from A (very little delay) to F (longer delays and congestion). LOS D is considered the target LOS of TxDOT for design and evaluation purposes. **Table 6** shows the delay criteria for LOS at unsignalized intersections.

**Table 6. Level of Service Definitions**

| Level of Service | Signalized Intersection Average Total Delay (sec/veh) | Unsignalized Intersection Average Total Delay (sec/veh) |
|---|---|---|
| A | ≤10 | ≤10 |
| B | >10 and ≤20 | >10 and ≤15 |
| C | >20 and ≤35 | >15 and ≤25 |
| D | >35 and ≤55 | >25 and ≤35 |
| E | >55 and ≤80 | >35 and ≤50 |
| F | >80 | >50 |

## INTERSECTION CAPACITY ANALYSIS

Kimley-Horn conducted a traffic operations analysis using *Synchro 12™* to determine potential capacity deficiencies for the following scenarios:

- Existing (2026) – **Exhibit 3**
- Build Out Background (2028) – **Exhibit 9**
- Horizon Background (2033) – **Exhibit 10**
- Build Out (2028) – **Exhibit 11**
- Horizon (2033) – **Exhibit 12**

Overall intersection peak hour factors and heavy vehicle factors were obtained based on the data collection. Lane assignments, traffic controls, and signal timings during the peak hours were verified based on aerial observation and traffic data video. Deceleration lanes were included in the analysis consistent with the recommendations determined in the Site Access Considerations section.

**Table 7** presents the results of the analysis for the study area intersections for the Weekday AM and PM peak hours. The *Synchro 12™* output sheets are provided in **Appendix**.

**Table 7. Peak Hour Intersection Capacity Analysis**

| INTERSECTION | Approach | Existing (2026) | | | | Build Out Background (2028) | | | | Build Out (2028) | | | | Horizon Background (2033) | | | | Horizon (2033) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AM Peak | | PM Peak | | AM Peak | | PM Peak | | AM Peak | | PM Peak | | AM Peak | | PM Peak | | AM Peak | | PM Peak | |
| | | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS |
| **Signalized** | | | | | | | | | | | | | | | | | | | | | |
| *IH-45 SBFR & Ennis Avenue* | EB | 34.9 | C | 33.6 | C | 30.9 | C | 32.7 | C | 38.1 | D | 43.9 | D | 34.2 | C | 35.6 | D | 41.1 | D | 45.1 | D |
| | WB | 4.7 | A | 5.3 | A | 2.4 | A | 2.5 | A | 2.2 | A | 1.8 | A | 2.2 | A | 2.4 | A | 2.2 | A | 2.0 | A |
| | SB | 27.4 | C | 46.4 | D | 25.6 | C | 29.1 | C | 30.9 | C | 45.7 | D | 28.6 | C | 32.6 | C | 32.8 | C | 50.2 | D |
| | *Overall* | 18.1 | B | 25.1 | C | 15.4 | B | 19.5 | B | 18.8 | B | 26.1 | C | 16.9 | B | 21.3 | C | 20.0 | B | 27.7 | C |
| *IH-45 NBFR & Ennis Avenue* | EB | 5.2 | A | 4.5 | A | 4.0 | A | 2.6 | A | 3.2 | A | 3.6 | A | 3.8 | A | 2.7 | A | 3.1 | A | 4.0 | A |
| | WB | 36.9 | D | 35.2 | D | 32.2 | C | 34.8 | C | 38.6 | D | 62.7 | E | 35.8 | D | 37.0 | D | 47.4 | D | 84.5 | F |
| | NB | 27.6 | C | 30.2 | C | 23.8 | C | 29.1 | C | 29.2 | C | 46.8 | D | 26.4 | C | 33.6 | C | 31.3 | C | 54.8 | D |
| | *Overall* | 23.0 | C | 20.5 | C | 19.9 | B | 19.3 | B | 23.4 | C | 35.2 | D | 21.8 | C | 21.4 | C | 27.1 | C | 44.7 | D |
| **Unsignalized** | | | | | | | | | | | | | | | | | | | | | |
| *Ennis Avenue & Sonoma Trail* | NB | 19.2 | C | 16.1 | C | 20.1 | C | 16.7 | C | 19.9 | C | 100+ | F | 23.2 | C | 19.6 | C | 22.1 | C | 100+ | F |
| | SB | 14.4 | B | 22.6 | C | 15.0 | B | 25.1 | D | 15.6 | C | 100+ | F | 16.7 | C | 36.6 | E | 17.0 | C | 100+ | F |
| *Sonoma Trail & Drive 1* | WB | N/A | | | | | | | | 10.0 | A | 10.6 | B | N/A | | | | 10.1 | B | 10.8 | B |
| *Sonoma Trail & Drive 2* | WB | | | | | | | | | 10.7 | B | 14.3 | B | | | | | 11.0 | B | 14.8 | B |
| *Ennis Avenue & Drive 3* | SB | | | | | | | | | 12.7 | B | 15.4 | C | | | | | 13.2 | B | 16.4 | C |
| *Ennis Avenue & Drive 4* | SB | | | | | | | | | 12.1 | B | 13.9 | B | | | | | 12.6 | B | 14.7 | B |
| *Ennis Avenue & Drive 5* | SB | | | | | | | | | 11.7 | B | 12.3 | B | | | | | 12.1 | B | 12.8 | B |

## INTERSECTION CAPACITY ANALYSIS RESULTS

Based on the analysis for the five (5) scenarios, all intersections are anticipated to operate with acceptable LOS with the exception of the following:

- **IH-45 NBFR & Ennis Avenue** exhibits operational failures at the westbound approach during the PM peak hour once site traffic is introduced in both the Build Out (2028) and Horizon (2033) scenarios. The interchange currently facilitates all westbound traffic via a dedicated through lane and a through-right lane which shortly narrows approximately 400 feet east of the IH-45 NBFR.

- **Ennis Avenue & Sonoma Trail** is projected to operate with failing LOS in both the AM and PM peak hours under Build Out (2028) conditions. Failures at this location are anticipated to worsen under Horizon analysis. As such, a traffic signal would improve operating conditions. As such, additional analysis was conducted assuming signalization at this location. Signalization at this location assumed a dedicated left-turn and a through-right lane at approaches along Ennis Avenue consistent with site access improvements (See *Deceleration Lanes* section). Operations under signal control for the Build Out (2028) and Horizon (2033) scenarios are presented in **Table 8** below. The following section provides a summary of a detailed signal warrant analysis.

**Table 8. Mitigated Intersection Capacity Analysis**

| INTERSECTION | Approach | Build Out (2028) | | | | Horizon (2033) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM Peak | | AM Peak | | AM Peak | | AM Peak | |
| | | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS | DELAY (Sec/Veh) | LOS |
| *Ennis Avenue & Sonoma Trail* | EB | 7.1 | A | 15.5 | B | 7.1 | A | 18.9 | B |
| | WB | 13.0 | B | 21.8 | C | 15.3 | B | 25.7 | C |
| | NB | 23.9 | C | 27.7 | C | 25.7 | C | 29.3 | C |
| | SB | 24.4 | C | 41.1 | D | 26.2 | C | 47.6 | D |
| | *Overall* | 11.9 | B | 22.1 | C | 13.2 | B | 26.2 | C |

## SIGNAL WARRANT ANALYSIS

A Signal warrant analysis was performed at the current intersection of Ennis Avenue (SH 34) & Sonoma Trail. The need for a traffic signal was identified as part of the intersection capacity analysis. Weekday 13-hour turning movement counts were collected at the existing intersection of Ennis Avenue (SH 34) & Sonoma Trail on Thursday, March 26, 2026. Turning movement counts recorded at this location serve as the basis for signal warrant analyses at the study intersections.

Accounting for site traffic associated with the proposed development, time-of-day distributions developed by the Institute of Transportation Engineers (ITE) were utilized for Supermarket (ITE #850) and Gasoline-Service Station (ITE #944) land uses. Site-generated traffic was applied to the intersection consistent with trip distribution values at the study intersections consistent with the traffic impact analysis. These volumes were added to the Build-Out Background traffic volumes to determine the Build-Out volumes once the development is completed.

TMUTCD Signal Warrant Process

The *Texas Manual on Uniform Traffic Control Devices* (TMUTCD) provides guidelines for performing a traffic signal warrant analysis. A traffic signal may be warranted based on traffic volumes, pedestrian volumes, school crossings, vehicle progression, crash history, roadway network, or nearby grade crossings. The Texas MUTCD defines nine (9) warrants or justifying set of conditions. For this analysis, Warrant 1, Warrant 2, and Warrant 3 were evaluated as described below:

- Warrant 1 (Eight-Hour Vehicular Volume) requires that either a minimum vehicular volume or interruption of continuous traffic condition is met for at least eight (8) hours of an average day. Also, there is a third condition which requires that a combination of the first two conditions be met for eight (8) hours on an average day. Reductions can be made to warranting volumes based on the posted or 85$^{th}$ percentile speed and population of the area. The Texas MUTCD defines the volumes required for the major and minor street approaches.
- Warrant 2 (Four-Hour Vehicular Volume) requires that the vehicles per hour on the major street and the corresponding vehicles per hour on the higher volume minor street approach exceed a provided threshold for any four (4) hours on an average day. The Texas MUTCD defines the volumes required for the major and minor street approaches. As with Warrant 1, reductions can be made to warranting volumes based on the posted or 85$^{th}$ percentile speed and population of the area.
- Warrant 3 (Peak Hour) requires that:
    - The total stopped time delay experienced by the traffic on one minor-street approach controlled by a stop sign equals or exceeds four (4) vehicle-hours for a one-lane approach or five (5) vehicle-hours for a two-lane approach; and
    - The volume on the same minor street approach equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and
    - The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
    - Alternatively, Warrant 3 is also satisfied if the vehicles per hour on the major street and the corresponding vehicles per hour on the higher-volume minor street approach for one hour falls above the curve presented in Figure 4C-4 of the TMUTCD.
    - As with Warrants 1 and 2, reductions can be made to warranting volumes based on the posted or 85th percentile speed and population of the area.

TMUTCD Signal Warrant Process

The Existing Conditions signal warrant analysis utilized Existing (2026) weekday 13-hour turning movement counts at Ennis Avenue (SH 34) & Sonoma Trail. The intersection was evaluated with one-lane approaches based on the existing configuration present. Based on the Existing analysis, signal warrants are **not met**.

To evaluate future traffic control at Ennis Avenue (SH 34) & Sonoma Trail, signal warrant analyses were conducted for both Build-Out Background and Build-Out conditions. The analysis assumed two-lane approaches for both the major street and minor street. No reductions in warrant thresholds were assumed since the posted speed of Ennis Avenue (SH 34) is 40 mph. The following provides a summary of the warrant analysis:

- Based on forecasted Build-Out Background volumes anticipated at Ennis Avenue (SH 34) & Sonoma Trail, signal warrants are **met for Warrant 1**. Signal warrants were not met with Warrant 2 or Warrant 3.
- Based on forecasted Build-Out volumes anticipated at Ennis Avenue (SH 34) & Sonoma Trail, signal warrants are **met for Warrant 1, Warrant 2, and Warrant 3**.

Based on this information, it is recommended that Ennis Avenue (SH 34) & Sonoma Trail be signalized at the time of the development opening. A signal warrant worksheet is provided in the **Appendix**.

# CONCLUSIONS AND RECOMMENDATIONS

Based on the TIA presented in this report, we offer the following conclusions and recommendations:

## DECELERATION LANE ANALYSIS

Deceleration lane analysis was completed for the proposed site access locations based on the anticipated traffic volumes at Build Out (2028). The need for deceleration lanes along Ennis Avenue was analyzed via TxDOT criteria and site access along Sonoma Trail was analyzed via NCHRP Report 457 criteria. Note that left-turn analysis along Sonoma Trail was not conducted as little, if any, site traffic is anticipated form the north along this facility.

## RIGHT-TURN LANE METHODOLOGY

Based on projected volumes at Build Out (2028), no right-turn lanes are warranted based on volume thresholds provided by TxDOT. While no right-turn lanes are warranted based on volumes, the development proposes to construct right-turn lanes at Drive 3 and Drive 4 to better facilitate ingress traffic accessing the site. Additionally, right-turn lanes are not anticipated to be warranted at the proposed driveways along Sonoma Trail. Although turn-lanes are not warranted along Sonoma Trail, the development proposes to construct a right-turn lane at Drive 1 to better facilitate ingress traffic accessing the site.

## LEFT-TURN LANE METHODOLOGY

Based on the analysis, peak hour major road volumes along Ennis Avenue exceed 200 vphpl and projected left-turn volumes at all driveways along Ennis Avenue exceed 5 vph, therefore an eastbound left-turn lane is warranted at all proposed drives along Ennis Avenue. To accommodate warranted left-turn lanes along Ennis Avenue, the development proposes to widen Ennis Avenue to feature a two-way-left-turn lane (TWLTL) along the sites southern frontage to approximately 150 feet west of the Ennis Avenue & Sonoma Trail intersection. The construction of a TWLTL along Ennis Avenue would provide for dedicated left and through-right lanes at the existing intersection.

## DRIVEWAY ACCESS SPACING

To evaluate access spacing, criteria from TxDOT's *Access Management Manual* was applied to the proposed site access. Based on TxDOT standards, the minimum allowable distance between two connections along a 30 mph (Sonoma Trail) and a 40 mph (Ennis Avenue) facility is 200 and 305 feet, respectively. *Note that TxDOT access spacing criteria was applied to Sonoma Trail as the City does not provide specific access spacing requirements*. Based on this requirement, spacing along Sonoma Trail is anticipated to be satisfied. Spacing provided along Ennis Avenue is approximately the following:

- ~ 278 feet between Drive 3 and Sonoma Trail
- ~ 213 feet between Drive 3 and Drive 4
- ~ 301 feet between Drive 4 and Drive 5

Based on available spacing along Ennis Avenue, a variance of 27 feet, 92 feet, and 4 feet will be requested for the proposed drives along Ennis Avenue. While access spacing is not satisfied along Ennis Avenue it should be noted that Drive 5 is anticipated to facilitate a limited amount of site traffic as the entrance is intended for primarily staff and deliver truck traffic. Additionally, Drive 3 and Drive 4 are proposed with additional deceleration lanes to provide for improved operations for ingress vehicles accessing the site.

Thus, it is not anticipated that substandard spacing along Ennis Avenue will produce adverse traffic operations at the proposed site access locations.

## SIGHT DISTANCE

Guidelines provided by AASHTO were used to determine adequacy of sight distance at the proposed site access locations. The guidelines are based on the speed of the roadway access is being taken from.

Based on aerial overview, adequate sight distance is anticipated to be available at all site access locations. Ennis Avenue and Sonoma Trail both exist with relatively flat grades and curvature is not anticipated to impede sight triangles at the proposed drives. It is recommended that the proposed site access locations be designed to provide adequate sight distance (i.e. clear sight with no obstructing object, signs, landscaping, etc.).

## TRAFFIC OPERATIONS ANALYSIS

Based on the analysis for the five (5) scenarios, all intersections are anticipated to operate with acceptable LOS with the exception of the following:

- **IH-45 NBFR & Ennis Avenue** exhibits operational failures at the westbound approach during the PM peak hour once site traffic is introduced in both the Build Out (2028) and Horizon (2033) scenarios. The interchange currently facilitates all westbound traffic via a dedicated through lane and a through-right lane which shortly narrows approximately 400 feet east of the IH-45 NBFR.

- **Ennis Avenue & Sonoma Trail** is projected to operate with failing LOS in both the AM and PM peak hours under Build Out (2028) conditions. Failures at this location are anticipated to worsen under Horizon analysis. As such, signal warrants were conducted at this location utilizing Build Out (2028) volumes. Based on projected volumes at Build Out (2028), peak hour signal warrants at this location are met. As such, additional analysis was conducted assuming signalization at this location. Signalization at this location assumed a dedicated left-turn and a through-right lane at approaches along Ennis Avenue consistent with site access improvements. Based on the signal warrant analysis, a traffic signal is recommended at this intersection at project Build-Out.

# APPENDIX

A. CONCEPTUAL SITE PLAN

B. TRAFFIC DATA

C. TXDOT SCHEMATICS

D. NCHRP REPORT 457 SPREADSHEETS

E. TXDOT EXHIBIT

F. SYNCHRO OUTPUT SHEETS

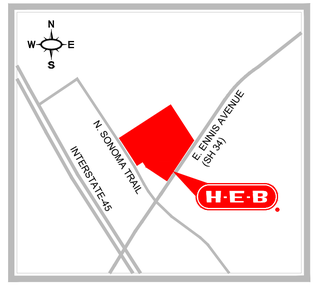
G. SIGNAL WARRANT WORKSHEET

# A. CONCEPTUAL SITE PLAN




## Legend

- HEB, C-Store, Fuel & Carwash
- HEB Expansion Area
- Retail Building
- Landscape/ Rock, Pad & Lot
- Floodplain
- Pavement Area
- Hardscape & Off-Site Area




Vicinity Map

N.T.S.

## Building Summary

| | |
|---|---|
| Store Size | 102,500 SF EST. |
| Mezzanine | 0 SF EST. |
| Total Store Size | 102,500 SF EST. |
| Enclosed Vestibule | 4,800 SF EST. |
| Building Footprint | 107,300 SF EST. |
| Total Enclosed Building | 107,300 SF EST. |

## Land Use Summary

| | |
|---|---|
| HEB Area | 11.87 ac |
| Fuel Station Area | 0.94 ac |
| Pad Site | N/A |
| Total Site Area | 12.81 ac |

## Parking Summary

| | |
|---|---|
| Store | 537 |
| Curbside Drive-Thru | 24 |
| Pharmacy Drive-Thru | 5 |
| Barbeque Drive-Thru | N/A |
| Fuel | 20 |
| Retail | N/A |
| Off-Site | N/A |
| **Total** | 586 |
| **Total Parking Ratio*** | **1:175** |
| Parking Within 300 Feet | 470 |
| Count Required for 1:150 | 684 |
| Count Required for 1:175 | 586 |
| Minimum Count per Code | 308 (1:333) |

***Total Parking Ratio is measured using Total Store Size Square Footage.**




0 30' 60' 120'

H-E-B

P

REVIEW

# Ennis

Site Plan

102.5K EST.

DATE:
01/06/2026

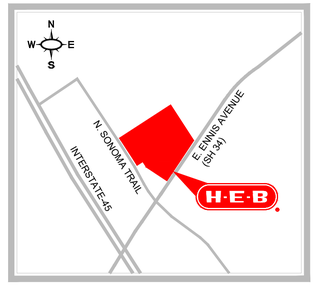
DRAWN BY:
KIMLEY-HORN

SCALE
1:60




## Legend

- HEB, C-Store, Fuel & Carwash
- HEB Expansion Area
- Retail Building
- Landscape/ Rock, Pad & Lot
- Floodplain
- Pavement Area
- Hardscape & Off-Site Area




Vicinity Map

N.T.S.

## Building Summary

| | |
|---|---|
| Store Size | 102,500 SF EST. |
| Mezzanine | 0 SF EST. |
| Total Store Size | 102,500 SF EST. |
| Enclosed Vestibule | 4,800 SF EST. |
| Building Footprint | 107,300 SF EST. |
| Total Enclosed Building | 107,300 SF EST. |

## Land Use Summary

| | |
|---|---|
| HEB Area | 11.87 ac |
| Fuel Station Area | 0.94 ac |
| Pad Site | N/A |
| Total Site Area | 12.81 ac |

## Parking Summary

| | |
|---|---|
| Store | 537 |
| Curbside Drive-Thru | 24 |
| Pharmacy Drive-Thru | 5 |
| Barbeque Drive-Thru | N/A |
| Fuel | 20 |
| Retail | N/A |
| Off-Site | N/A |
| **Total** | 586 |
| **Total Parking Ratio*** | **1:175** |
| Parking Within 300 Feet | 470 |
| Count Required for 1:150 | 684 |
| Count Required for 1:175 | 586 |
| Minimum Count per Code | 308 (1:333) |

***Total Parking Ratio is measured using Total Store Size Square Footage.**

North

0 30' 60' 120'

H-E-B

T

REVIEW

# Ennis

Site Plan

102.5K EST.

DATE:
01/06/2026

DRAWN BY:
KIMLEY-HORN

SCALE
1:60

# B. TRAFFIC DATA

## 1. IH 45 SBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355761, Location: 32.334114, -96.616078

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

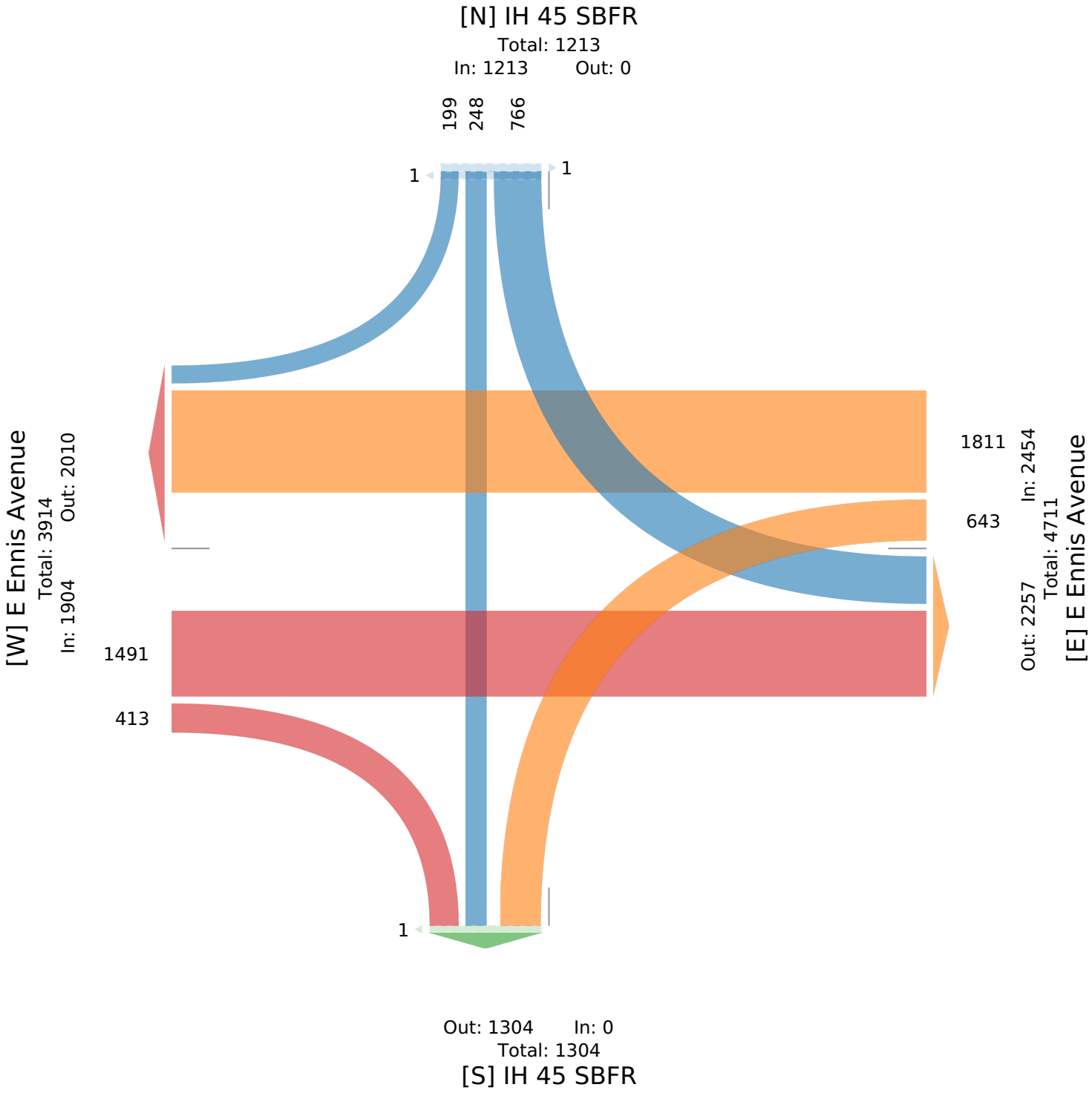
| Leg | E Ennis Avenue | | | | | | E Ennis Avenue | | | | | | IH 45 SBFR | | | | | | IH 45 SBFR | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | Int |
| 2025-11-18 7:00AM | 20 | 58 | 0 | 0 | **78** | 0 | 0 | 115 | 25 | 0 | **140** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | 12 | 13 | 36 | 0 | **61** | 0 | **279** |
| 7:15AM | 27 | 72 | 0 | 0 | **99** | 0 | 0 | 148 | 39 | 0 | **187** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 12 | 14 | 29 | 0 | **55** | 1 | **341** |
| 7:30AM | 38 | 73 | 0 | 0 | **111** | 0 | 0 | 130 | 37 | 0 | **167** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 11 | 13 | 33 | 0 | **57** | 0 | **335** |
| 7:45AM | 30 | 71 | 0 | 0 | **101** | 0 | 0 | 135 | 40 | 0 | **175** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 15 | 15 | 35 | 0 | **65** | 0 | **341** |
| Hourly Total | 115 | 274 | 0 | 0 | **389** | 0 | 0 | 528 | 141 | 0 | **669** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | 50 | 55 | 133 | 0 | **238** | 1 | **1296** |
| 8:00AM | 27 | 74 | 0 | 0 | **101** | 0 | 0 | 102 | 40 | 0 | **142** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 8 | 10 | 35 | 0 | **53** | 1 | **296** |
| 8:15AM | 18 | 77 | 0 | 0 | **95** | 0 | 0 | 92 | 43 | 0 | **135** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 17 | 10 | 42 | 0 | **69** | 0 | **299** |
| 8:30AM | 28 | 75 | 0 | 0 | **103** | 0 | 0 | 93 | 31 | 0 | **124** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 11 | 9 | 42 | 0 | **62** | 0 | **289** |
| 8:45AM | 30 | 85 | 0 | 0 | **115** | 0 | 0 | 96 | 42 | 0 | **138** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 8 | 14 | 48 | 0 | **70** | 0 | **323** |
| Hourly Total | 103 | 311 | 0 | 0 | **414** | 0 | 0 | 383 | 156 | 0 | **539** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 44 | 43 | 167 | 0 | **254** | 1 | **1207** |
| 4:00PM | 32 | 103 | 0 | 0 | **135** | 0 | 0 | 114 | 37 | 0 | **151** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 16 | 19 | 53 | 0 | **88** | 0 | **374** |
| 4:15PM | 27 | 116 | 0 | 0 | **143** | 0 | 0 | 109 | 52 | 0 | **161** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 13 | 16 | 45 | 0 | **74** | 0 | **378** |
| 4:30PM | 20 | 112 | 0 | 0 | **132** | 0 | 0 | 100 | 35 | 0 | **135** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 24 | 17 | 54 | 0 | **95** | 0 | **362** |
| 4:45PM | 25 | 104 | 0 | 0 | **129** | 0 | 0 | 114 | 44 | 0 | **158** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 10 | 24 | 63 | 0 | **97** | 0 | **384** |
| Hourly Total | 104 | 435 | 0 | 0 | **539** | 0 | 0 | 437 | 168 | 0 | **605** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 63 | 76 | 215 | 0 | **354** | 0 | **1498** |
| 5:00PM | 27 | 118 | 0 | 0 | **145** | 0 | 0 | 115 | 48 | 0 | **163** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 7 | 19 | 68 | 0 | **94** | 0 | **402** |
| 5:15PM | 19 | 116 | 0 | 0 | **135** | 0 | 0 | 129 | 46 | 0 | **175** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 13 | 19 | 59 | 0 | **91** | 0 | **401** |
| 5:30PM | 22 | 117 | 0 | 0 | **139** | 0 | 0 | 113 | 36 | 0 | **149** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 9 | 24 | 61 | 0 | **94** | 0 | **382** |
| 5:45PM | 23 | 120 | 0 | 0 | **143** | 0 | 0 | 106 | 48 | 0 | **154** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 13 | 12 | 63 | 0 | **88** | 0 | **385** |
| Hourly Total | 91 | 471 | 0 | 0 | **562** | 0 | 0 | 463 | 178 | 0 | **641** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 42 | 74 | 251 | 0 | **367** | 0 | **1570** |
| **Total** | 413 | 1491 | 0 | 0 | **1904** | 0 | 0 | 1811 | 643 | 0 | **2454** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | 199 | 248 | 766 | 0 | **1213** | 2 | **5571** |
| **% Approach** | 21.7% | 78.3% | 0% | 0% | **-** | - | 0% | 73.8% | 26.2% | 0% | **-** | - | 0% | 0% | 0% | 0% | **-** | - | 16.4% | 20.4% | 63.1% | 0% | **-** | - | **-** |
| **% Total** | 7.4% | 26.8% | 0% | 0% | **34.2%** | - | 0% | 32.5% | 11.5% | 0% | **44.0%** | - | 0% | 0% | 0% | 0% | **0%** | - | 3.6% | 4.5% | 13.7% | 0% | **21.8%** | - | **-** |
| **Lights** | 395 | 1446 | 0 | 0 | **1841** | - | 0 | 1752 | 585 | 0 | **2337** | - | 0 | 0 | 0 | 0 | **0** | - | 178 | 237 | 695 | 0 | **1110** | - | 5288 |
| **% Lights** | 95.6% | 97.0% | 0% | 0% | **96.7%** | - | 0% | 96.7% | 91.0% | 0% | **95.2%** | - | 0% | 0% | 0% | 0% | **-** | - | 89.4% | 95.6% | 90.7% | 0% | **91.5%** | - | 94.9% |
| **Articulated Trucks** | 13 | 23 | 0 | 0 | **36** | - | 0 | 34 | 39 | 0 | **73** | - | 0 | 0 | 0 | 0 | **0** | - | 12 | 5 | 54 | 0 | **71** | - | 180 |
| **% Articulated Trucks** | 3.1% | 1.5% | 0% | 0% | **1.9%** | - | 0% | 1.9% | 6.1% | 0% | **3.0%** | - | 0% | 0% | 0% | 0% | **-** | - | 6.0% | 2.0% | 7.0% | 0% | **5.9%** | - | 3.2% |
| **Buses and Single-Unit Trucks** | 5 | 22 | 0 | 0 | **27** | - | 0 | 25 | 19 | 0 | **44** | - | 0 | 0 | 0 | 0 | **0** | - | 9 | 6 | 17 | 0 | **32** | - | 103 |
| **% Buses and Single-Unit Trucks** | 1.2% | 1.5% | 0% | 0% | **1.4%** | - | 0% | 1.4% | 3.0% | 0% | **1.8%** | - | 0% | 0% | 0% | 0% | **-** | - | 4.5% | 2.4% | 2.2% | 0% | **2.6%** | - | 1.8% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | - | - | - | - | - | 1 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 100% | - | - | - | - | - | 50.0% | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0% | - | - | - | - | - | 50.0% | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 1. IH 45 SBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355761, Location: 32.334114, -96.616078

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 1. IH 45 SBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355761, Location: 32.334114, -96.616078

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

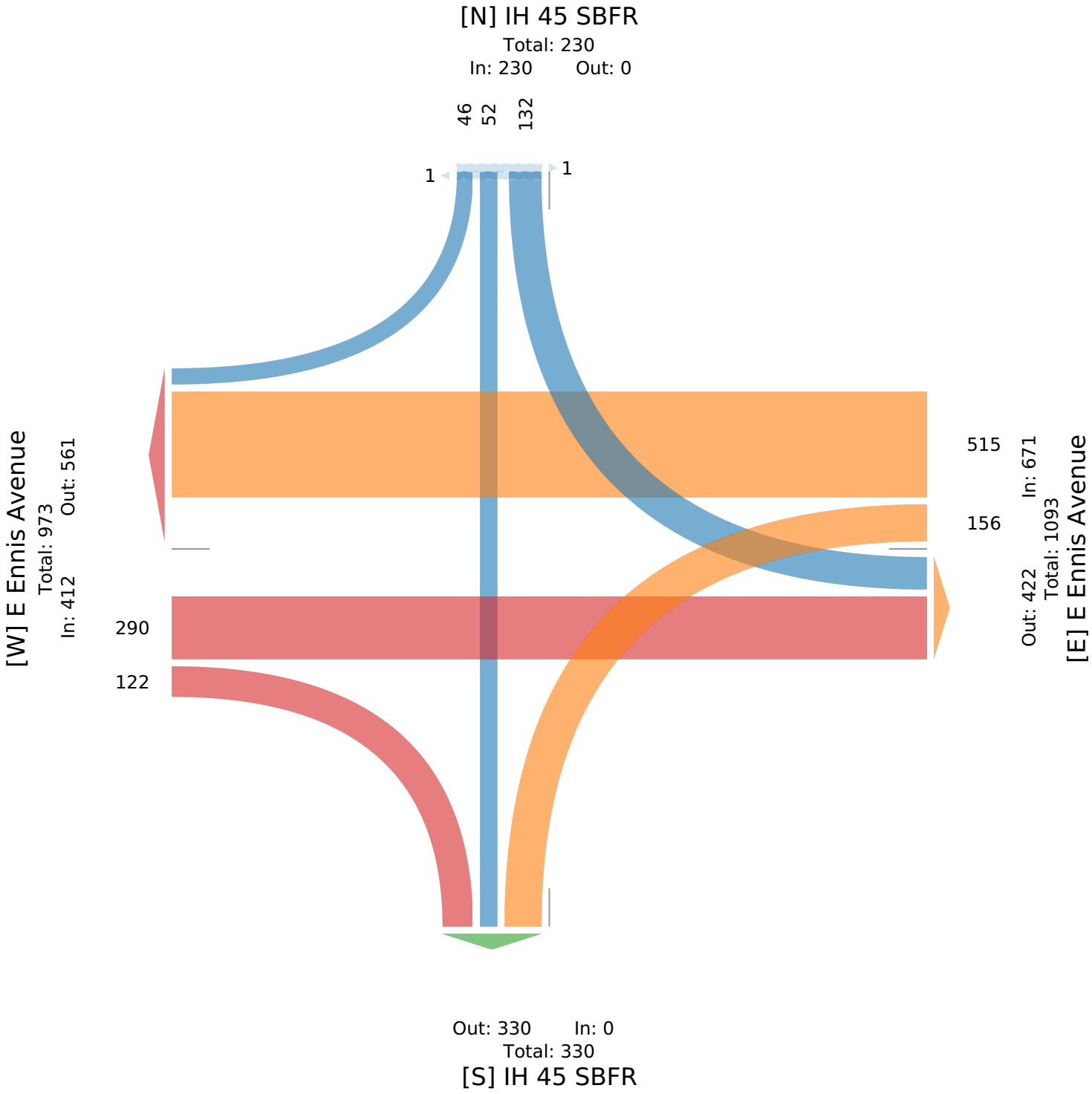
| Leg | E Ennis Avenue | | | | | | E Ennis Avenue | | | | | | IH 45 SBFR | | | | | | IH 45 SBFR | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | **Int** |
| 2025-11-18 7:15AM | 27 | 72 | 0 | 0 | **99** | 0 | 0 | 148 | 39 | 0 | **187** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 12 | 14 | 29 | 0 | **55** | 1 | **341** |
| 7:30AM | 38 | 73 | 0 | 0 | **111** | 0 | 0 | 130 | 37 | 0 | **167** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 11 | 13 | 33 | 0 | **57** | 0 | **335** |
| 7:45AM | 30 | 71 | 0 | 0 | **101** | 0 | 0 | 135 | 40 | 0 | **175** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 15 | 15 | 35 | 0 | **65** | 0 | **341** |
| 8:00AM | 27 | 74 | 0 | 0 | **101** | 0 | 0 | 102 | 40 | 0 | **142** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 8 | 10 | 35 | 0 | **53** | 1 | **296** |
| **Total** | 122 | 290 | 0 | 0 | **412** | 0 | 0 | 515 | 156 | 0 | **671** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 46 | 52 | 132 | 0 | **230** | 2 | **1313** |
| **% Approach** | 29.6% | 70.4% | 0% | 0% | **-** | - | 0% | 76.8% | 23.2% | 0% | **-** | - | 0% | 0% | 0% | 0% | **-** | - | 20.0% | 22.6% | 57.4% | 0% | **-** | - | **-** |
| **% Total** | 9.3% | 22.1% | 0% | 0% | **31.4%** | - | 0% | 39.2% | 11.9% | 0% | **51.1%** | - | 0% | 0% | 0% | 0% | **0%** | - | 3.5% | 4.0% | 10.1% | 0% | **17.5%** | - | **-** |
| **PHF** | 0.803 | 0.980 | - | - | **0.928** | - | - | 0.870 | 0.975 | - | **0.897** | - | - | - | - | - | **-** | - | 0.767 | 0.867 | 0.943 | - | **0.885** | - | 0.963 |
| **Lights** | 117 | 275 | 0 | 0 | **392** | - | 0 | 496 | 145 | 0 | **641** | - | 0 | 0 | 0 | 0 | **0** | - | 41 | 50 | 108 | 0 | **199** | - | 1232 |
| **% Lights** | 95.9% | 94.8% | 0% | 0% | **95.1%** | - | 0% | 96.3% | 92.9% | 0% | **95.5%** | - | 0% | 0% | 0% | 0% | **-** | - | 89.1% | 96.2% | 81.8% | 0% | **86.5%** | - | 93.8% |
| **Articulated Trucks** | 4 | 11 | 0 | 0 | **15** | - | 0 | 10 | 6 | 0 | **16** | - | 0 | 0 | 0 | 0 | **0** | - | 2 | 0 | 21 | 0 | **23** | - | 54 |
| **% Articulated Trucks** | 3.3% | 3.8% | 0% | 0% | **3.6%** | - | 0% | 1.9% | 3.8% | 0% | **2.4%** | - | 0% | 0% | 0% | 0% | **-** | - | 4.3% | 0% | 15.9% | 0% | **10.0%** | - | 4.1% |
| **Buses and Single-Unit Trucks** | 1 | 4 | 0 | 0 | **5** | - | 0 | 9 | 5 | 0 | **14** | - | 0 | 0 | 0 | 0 | **0** | - | 3 | 2 | 3 | 0 | **8** | - | 27 |
| **% Buses and Single-Unit Trucks** | 0.8% | 1.4% | 0% | 0% | **1.2%** | - | 0% | 1.7% | 3.2% | 0% | **2.1%** | - | 0% | 0% | 0% | 0% | **-** | - | 6.5% | 3.8% | 2.3% | 0% | **3.5%** | - | 2.1% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - 50.0% | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - 50.0% | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 1. IH 45 SBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355761, Location: 32.334114, -96.616078

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 1. IH 45 SBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355761, Location: 32.334114, -96.616078

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

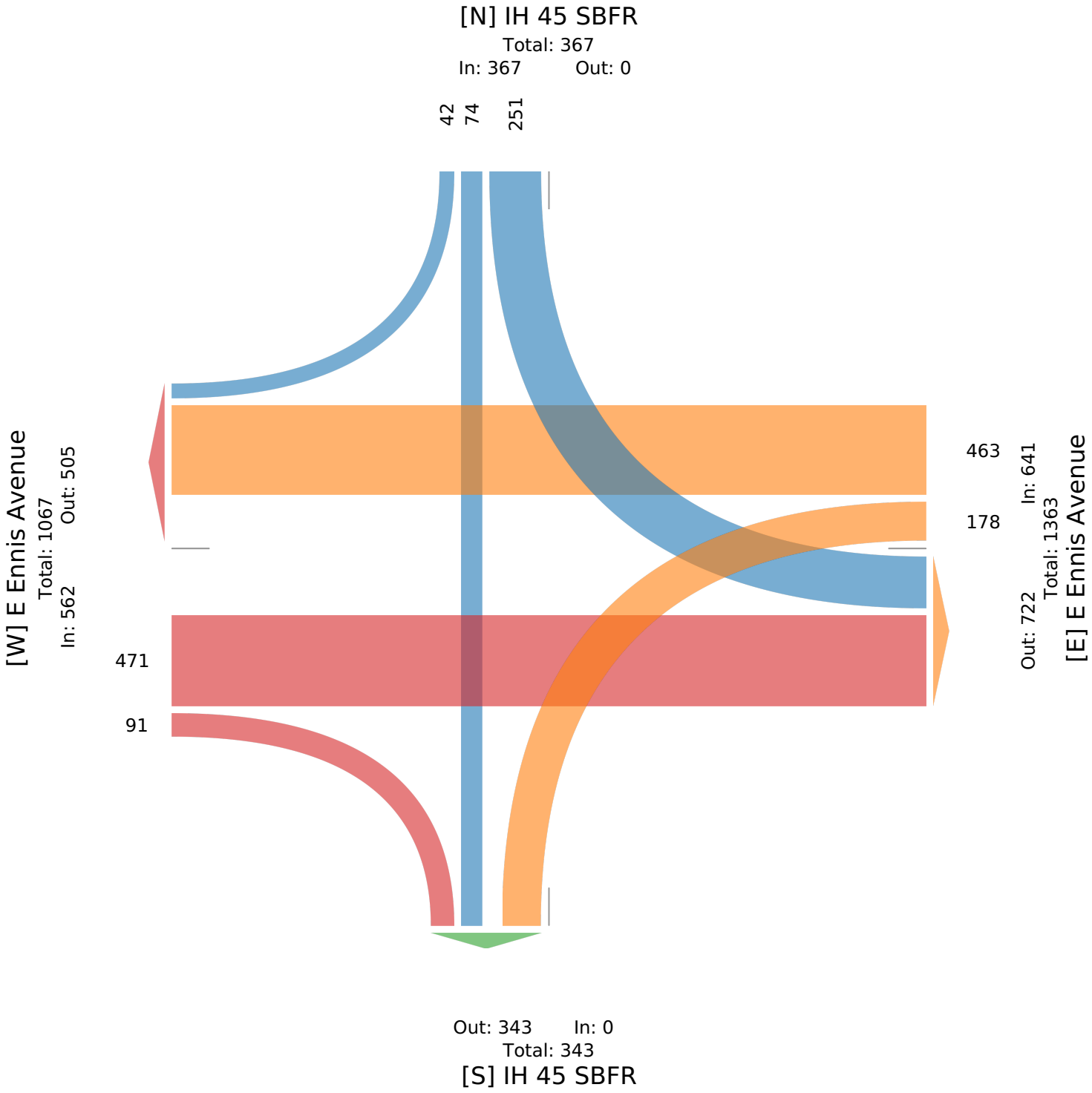
| Leg / Direction | E Ennis Avenue Eastbound | | | | | | E Ennis Avenue Westbound | | | | | | IH 45 SBFR Northbound | | | | | | IH 45 SBFR Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | **Int** |
| 2025-11-18 5:00PM | 27 | 118 | 0 | 0 | **145** | 0 | 0 | 115 | 48 | 0 | **163** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 7 | 19 | 68 | 0 | **94** | 0 | **402** |
| 5:15PM | 19 | 116 | 0 | 0 | **135** | 0 | 0 | 129 | 46 | 0 | **175** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 13 | 19 | 59 | 0 | **91** | 0 | **401** |
| 5:30PM | 22 | 117 | 0 | 0 | **139** | 0 | 0 | 113 | 36 | 0 | **149** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 9 | 24 | 61 | 0 | **94** | 0 | **382** |
| 5:45PM | 23 | 120 | 0 | 0 | **143** | 0 | 0 | 106 | 48 | 0 | **154** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 13 | 12 | 63 | 0 | **88** | 0 | **385** |
| **Total** | 91 | 471 | 0 | 0 | **562** | 0 | 0 | 463 | 178 | 0 | **641** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 42 | 74 | 251 | 0 | **367** | 0 | **1570** |
| **% Approach** | 16.2% | 83.8% | 0% | 0% | **-** | - | 0% | 72.2% | 27.8% | 0% | **-** | - | 0% | 0% | 0% | 0% | **-** | - | 11.4% | 20.2% | 68.4% | 0% | **-** | - | - |
| **% Total** | 5.8% | 30.0% | 0% | 0% | **35.8%** | - | 0% | 29.5% | 11.3% | 0% | **40.8%** | - | 0% | 0% | 0% | 0% | **0%** | - | 2.7% | 4.7% | 16.0% | 0% | **23.4%** | - | - |
| **PHF** | 0.843 | 0.981 | - | - | **0.969** | - | - | 0.897 | 0.927 | - | **0.916** | - | - | - | - | - | **-** | - | 0.808 | 0.771 | 0.923 | - | **0.976** | - | 0.976 |
| **Lights** | 88 | 465 | 0 | 0 | **553** | - | 0 | 455 | 162 | 0 | **617** | - | 0 | 0 | 0 | 0 | **0** | - | 38 | 72 | 244 | 0 | **354** | - | 1524 |
| **% Lights** | 96.7% | 98.7% | 0% | 0% | **98.4%** | - | 0% | 98.3% | 91.0% | 0% | **96.3%** | - | 0% | 0% | 0% | 0% | **-** | - | 90.5% | 97.3% | 97.2% | 0% | **96.5%** | - | 97.1% |
| **Articulated Trucks** | 2 | 1 | 0 | 0 | **3** | - | 0 | 5 | 11 | 0 | **16** | - | 0 | 0 | 0 | 0 | **0** | - | 3 | 2 | 1 | 0 | **6** | - | 25 |
| **% Articulated Trucks** | 2.2% | 0.2% | 0% | 0% | **0.5%** | - | 0% | 1.1% | 6.2% | 0% | **2.5%** | - | 0% | 0% | 0% | 0% | **-** | - | 7.1% | 2.7% | 0.4% | 0% | **1.6%** | - | 1.6% |
| **Buses and Single-Unit Trucks** | 1 | 5 | 0 | 0 | **6** | - | 0 | 3 | 5 | 0 | **8** | - | 0 | 0 | 0 | 0 | **0** | - | 1 | 0 | 6 | 0 | **7** | - | 21 |
| **% Buses and Single-Unit Trucks** | 1.1% | 1.1% | 0% | 0% | **1.1%** | - | 0% | 0.6% | 2.8% | 0% | **1.2%** | - | 0% | 0% | 0% | 0% | **-** | - | 2.4% | 0% | 2.4% | 0% | **1.9%** | - | 1.3% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

1. IH 45 SBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355761, Location: 32.334114, -96.616078

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 2. IH 45 NBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355762, Location: 32.334786, -96.615478

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

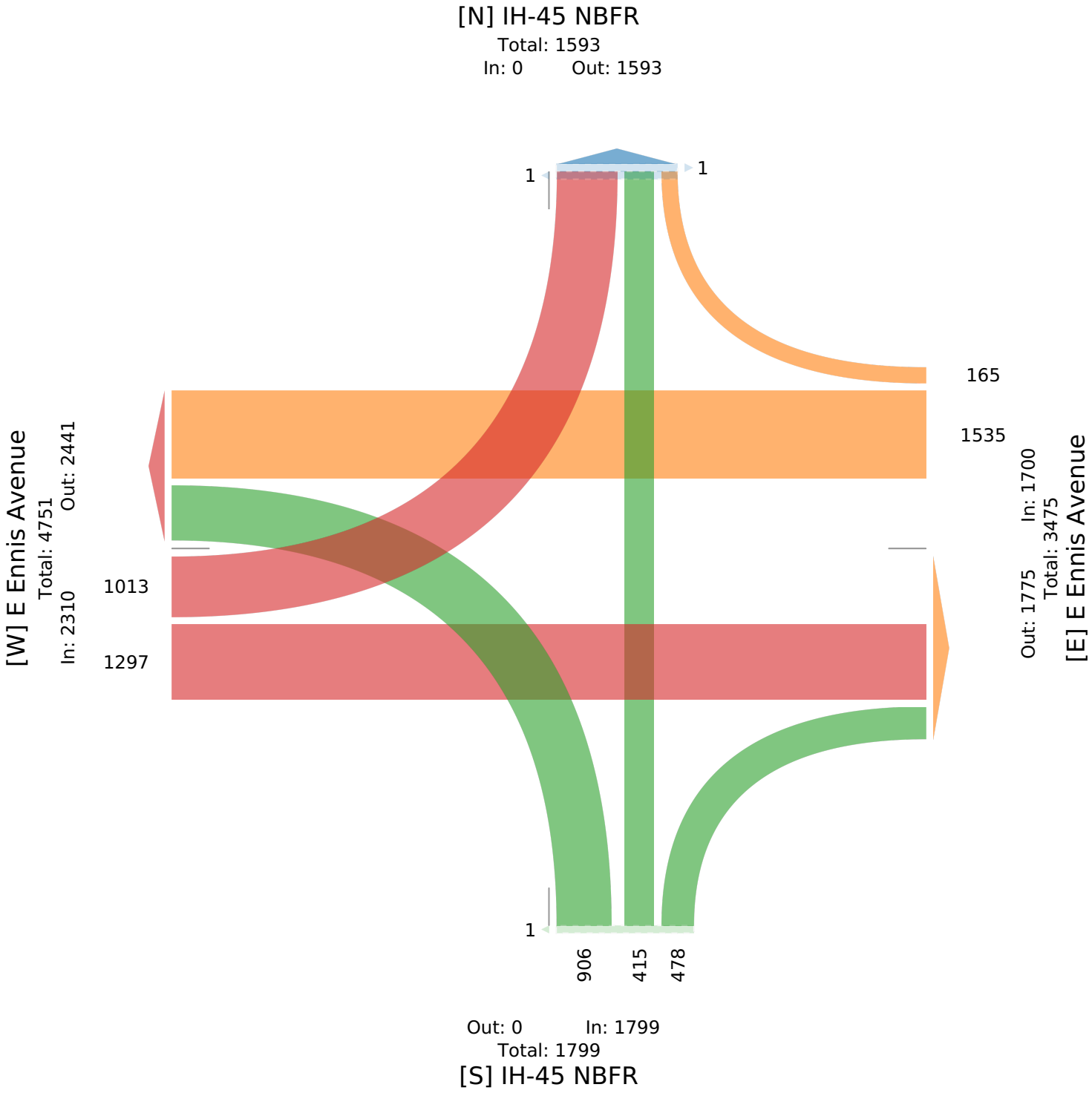
| Leg | E Ennis Avenue | | | | | | E Ennis Avenue | | | | | | IH-45 NBFR | | | | | | IH-45 NBFR | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | **Int** |
| 2025-11-18 7:00AM | 0 | 47 | 49 | 0 | **96** | 0 | 14 | 103 | 0 | 0 | **117** | 0 | 21 | 18 | 50 | 0 | **89** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **302** |
| 7:15AM | 0 | 51 | 49 | 0 | **100** | 0 | 5 | 113 | 0 | 0 | **118** | 0 | 24 | 28 | 70 | 0 | **122** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | **340** |
| 7:30AM | 0 | 63 | 56 | 0 | **119** | 0 | 13 | 102 | 0 | 0 | **115** | 0 | 27 | 28 | 63 | 0 | **118** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **352** |
| 7:45AM | 0 | 67 | 58 | 0 | **125** | 0 | 12 | 97 | 0 | 0 | **109** | 0 | 27 | 19 | 69 | 0 | **115** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **349** |
| Hourly Total | 0 | 228 | 212 | 0 | **440** | 0 | 44 | 415 | 0 | 0 | **459** | 0 | 99 | 93 | 252 | 0 | **444** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | **1343** |
| 8:00AM | 0 | 65 | 55 | 0 | **120** | 0 | 16 | 93 | 0 | 0 | **109** | 0 | 21 | 26 | 49 | 0 | **96** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | **325** |
| 8:15AM | 0 | 63 | 64 | 0 | **127** | 0 | 10 | 91 | 0 | 0 | **101** | 0 | 22 | 20 | 38 | 0 | **80** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **308** |
| 8:30AM | 0 | 59 | 57 | 0 | **116** | 0 | 8 | 75 | 0 | 0 | **83** | 0 | 26 | 21 | 49 | 0 | **96** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **295** |
| 8:45AM | 0 | 77 | 62 | 0 | **139** | 0 | 6 | 84 | 0 | 0 | **90** | 0 | 24 | 18 | 51 | 0 | **93** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **322** |
| Hourly Total | 0 | 264 | 238 | 0 | **502** | 0 | 40 | 343 | 0 | 0 | **383** | 0 | 93 | 85 | 187 | 0 | **365** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | **1250** |
| 4:00PM | 0 | 81 | 66 | 0 | **147** | 0 | 14 | 99 | 0 | 0 | **113** | 0 | 39 | 23 | 57 | 0 | **119** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **379** |
| 4:15PM | 0 | 103 | 62 | 0 | **165** | 0 | 9 | 91 | 0 | 0 | **100** | 0 | 42 | 25 | 67 | 0 | **134** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **399** |
| 4:30PM | 0 | 101 | 69 | 0 | **170** | 0 | 12 | 88 | 0 | 0 | **100** | 0 | 44 | 29 | 49 | 0 | **122** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **392** |
| 4:45PM | 0 | 96 | 82 | 0 | **178** | 0 | 14 | 88 | 0 | 0 | **102** | 0 | 29 | 29 | 54 | 0 | **112** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **392** |
| Hourly Total | 0 | 381 | 279 | 0 | **660** | 0 | 49 | 366 | 0 | 0 | **415** | 0 | 154 | 106 | 227 | 0 | **487** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **1562** |
| 5:00PM | 0 | 108 | 79 | 0 | **187** | 0 | 6 | 81 | 0 | 0 | **87** | 0 | 31 | 26 | 71 | 0 | **128** | 1 | 0 | 0 | 0 | 0 | **0** | 0 | **402** |
| 5:15PM | 0 | 98 | 70 | 0 | **168** | 0 | 10 | 107 | 0 | 0 | **117** | 0 | 38 | 32 | 65 | 0 | **135** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **420** |
| 5:30PM | 0 | 116 | 61 | 0 | **177** | 0 | 9 | 114 | 0 | 0 | **123** | 0 | 33 | 35 | 51 | 0 | **119** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **419** |
| 5:45PM | 0 | 102 | 74 | 0 | **176** | 0 | 7 | 109 | 0 | 0 | **116** | 0 | 30 | 38 | 53 | 0 | **121** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **413** |
| Hourly Total | 0 | 424 | 284 | 0 | **708** | 0 | 32 | 411 | 0 | 0 | **443** | 0 | 132 | 131 | 240 | 0 | **503** | 1 | 0 | 0 | 0 | 0 | **0** | 0 | **1654** |
| **Total** | 0 | 1297 | 1013 | 0 | **2310** | 0 | 165 | 1535 | 0 | 0 | **1700** | 0 | 478 | 415 | 906 | 0 | **1799** | 1 | 0 | 0 | 0 | 0 | **0** | 2 | **5809** |
| **% Approach** | 0% | 56.1% | 43.9% | 0% | **-** | - | 9.7% | 90.3% | 0% | 0% | **-** | - | 26.6% | 23.1% | 50.4% | 0% | **-** | - | 0% | 0% | 0% | 0% | **-** | - | **-** |
| **% Total** | 0% | 22.3% | 17.4% | 0% | **39.8%** | - | 2.8% | 26.4% | 0% | 0% | **29.3%** | - | 8.2% | 7.1% | 15.6% | 0% | **31.0%** | - | 0% | 0% | 0% | 0% | **0%** | - | **-** |
| **Lights** | 0 | 1201 | 993 | 0 | **2194** | - | 122 | 1441 | 0 | 0 | **1563** | - | 414 | 398 | 885 | 0 | **1697** | - | 0 | 0 | 0 | 0 | **0** | - | 5454 |
| **% Lights** | 0% | 92.6% | 98.0% | 0% | **95.0%** | - | 73.9% | 93.9% | 0% | 0% | **91.9%** | - | 86.6% | 95.9% | 97.7% | 0% | **94.3%** | - | 0% | 0% | 0% | 0% | **-** | - | 93.9% |
| **Articulated Trucks** | 0 | 67 | 8 | 0 | **75** | - | 40 | 62 | 0 | 0 | **102** | - | 44 | 7 | 9 | 0 | **60** | - | 0 | 0 | 0 | 0 | **0** | - | 237 |
| **% Articulated Trucks** | 0% | 5.2% | 0.8% | 0% | **3.2%** | - | 24.2% | 4.0% | 0% | 0% | **6.0%** | - | 9.2% | 1.7% | 1.0% | 0% | **3.3%** | - | 0% | 0% | 0% | 0% | **-** | - | 4.1% |
| **Buses and Single-Unit Trucks** | 0 | 29 | 12 | 0 | **41** | - | 3 | 32 | 0 | 0 | **35** | - | 20 | 10 | 12 | 0 | **42** | - | 0 | 0 | 0 | 0 | **0** | - | 118 |
| **% Buses and Single-Unit Trucks** | 0% | 2.2% | 1.2% | 0% | **1.8%** | - | 1.8% | 2.1% | 0% | 0% | **2.1%** | - | 4.2% | 2.4% | 1.3% | 0% | **2.3%** | - | 0% | 0% | 0% | 0% | **-** | - | 2.0% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | - | - | - | - | - | 1 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 100% | - | - | - | - | - | 50.0% | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0% | - | - | - | - | - | 50.0% | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 2. IH 45 NBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355762, Location: 32.334786, -96.615478

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 2. IH 45 NBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355762, Location: 32.334786, -96.615478

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

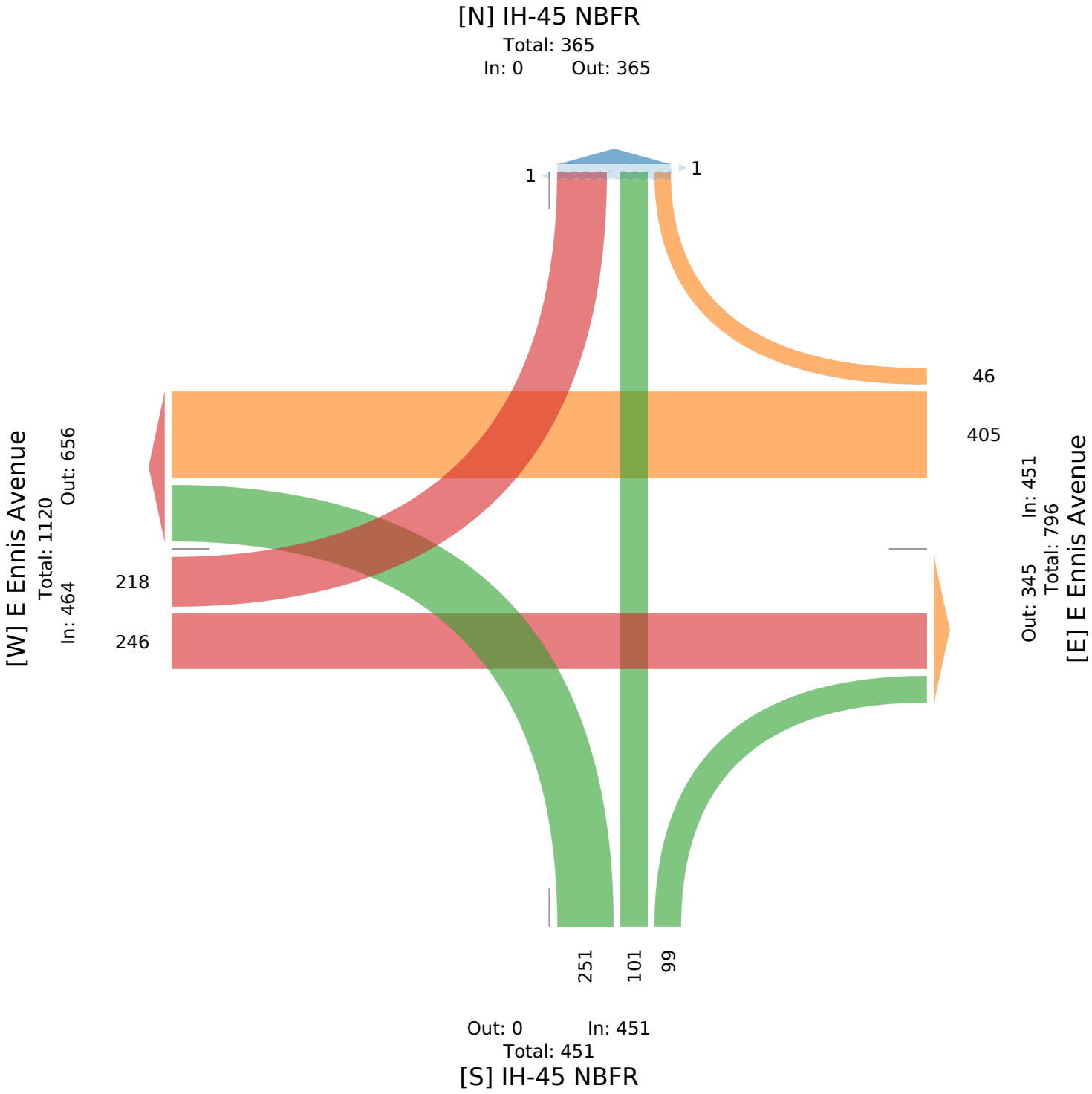
| Leg / Direction | E Ennis Avenue Eastbound | | | | | | E Ennis Avenue Westbound | | | | | | IH-45 NBFR Northbound | | | | | | IH-45 NBFR Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | **Int** |
| 2025-11-18 7:15AM | 0 | 51 | 49 | 0 | **100** | 0 | 5 | 113 | 0 | 0 | **118** | 0 | 24 | 28 | 70 | 0 | **122** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | **340** |
| 7:30AM | 0 | 63 | 56 | 0 | **119** | 0 | 13 | 102 | 0 | 0 | **115** | 0 | 27 | 28 | 63 | 0 | **118** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **352** |
| 7:45AM | 0 | 67 | 58 | 0 | **125** | 0 | 12 | 97 | 0 | 0 | **109** | 0 | 27 | 19 | 69 | 0 | **115** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **349** |
| 8:00AM | 0 | 65 | 55 | 0 | **120** | 0 | 16 | 93 | 0 | 0 | **109** | 0 | 21 | 26 | 49 | 0 | **96** | 0 | 0 | 0 | 0 | 0 | **0** | 1 | **325** |
| **Total** | 0 | 246 | 218 | 0 | **464** | 0 | 46 | 405 | 0 | 0 | **451** | 0 | 99 | 101 | 251 | 0 | **451** | 0 | 0 | 0 | 0 | 0 | **0** | 2 | **1366** |
| **% Approach** | 0% | 53.0% | 47.0% | 0% | **-** | - | 10.2% | 89.8% | 0% | 0% | **-** | - | 22.0% | 22.4% | 55.7% | 0% | **-** | - | 0% | 0% | 0% | 0% | **-** | - | **-** |
| **% Total** | 0% | 18.0% | 16.0% | 0% | **34.0%** | - | 3.4% | 29.6% | 0% | 0% | **33.0%** | - | 7.2% | 7.4% | 18.4% | 0% | **33.0%** | - | 0% | 0% | 0% | 0% | **0%** | - | **-** |
| **PHF** | - | 0.918 | 0.940 | - | **0.928** | - | 0.719 | 0.896 | - | - | **0.956** | - | 0.917 | 0.902 | 0.896 | - | **0.924** | - | - | - | - | - | **-** | - | 0.970 |
| **Lights** | 0 | 210 | 216 | 0 | **426** | - | 25 | 384 | 0 | 0 | **409** | - | 75 | 96 | 241 | 0 | **412** | - | 0 | 0 | 0 | 0 | **0** | - | 1247 |
| **% Lights** | 0% | 85.4% | 99.1% | 0% | **91.8%** | - | 54.3% | 94.8% | 0% | 0% | **90.7%** | - | 75.8% | 95.0% | 96.0% | 0% | **91.4%** | - | 0% | 0% | 0% | 0% | **-** | - | 91.3% |
| **Articulated Trucks** | 0 | 29 | 1 | 0 | **30** | - | 20 | 13 | 0 | 0 | **33** | - | 17 | 4 | 3 | 0 | **24** | - | 0 | 0 | 0 | 0 | **0** | - | 87 |
| **% Articulated Trucks** | 0% | 11.8% | 0.5% | 0% | **6.5%** | - | 43.5% | 3.2% | 0% | 0% | **7.3%** | - | 17.2% | 4.0% | 1.2% | 0% | **5.3%** | - | 0% | 0% | 0% | 0% | **-** | - | 6.4% |
| **Buses and Single-Unit Trucks** | 0 | 7 | 1 | 0 | **8** | - | 1 | 8 | 0 | 0 | **9** | - | 7 | 1 | 7 | 0 | **15** | - | 0 | 0 | 0 | 0 | **0** | - | 32 |
| **% Buses and Single-Unit Trucks** | 0% | 2.8% | 0.5% | 0% | **1.7%** | - | 2.2% | 2.0% | 0% | 0% | **2.0%** | - | 7.1% | 1.0% | 2.8% | 0% | **3.3%** | - | 0% | 0% | 0% | 0% | **-** | - | 2.3% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 50.0% | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 50.0% | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 2. IH 45 NBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355762, Location: 32.334786, -96.615478

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 2. IH 45 NBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355762, Location: 32.334786, -96.615478

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

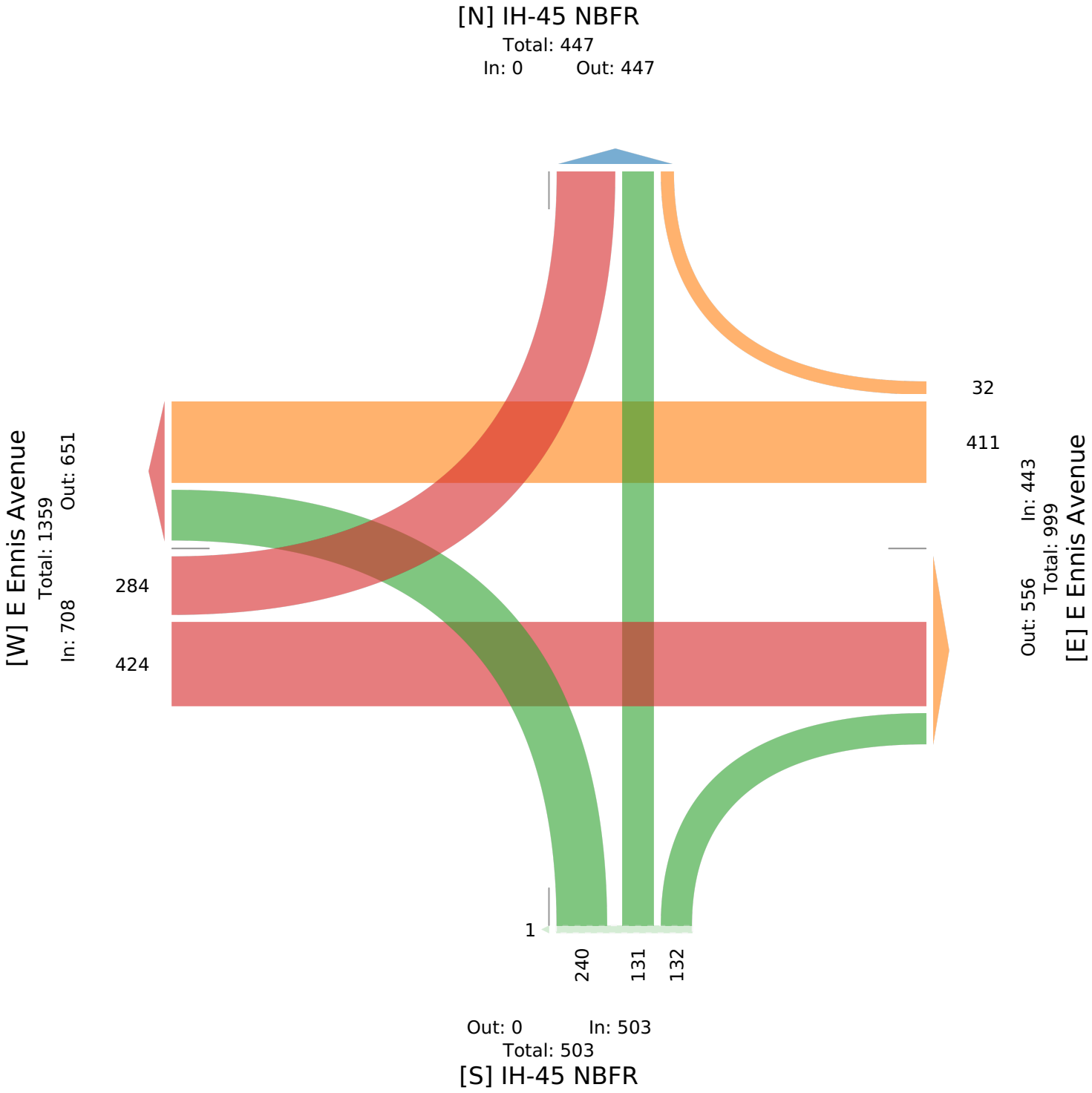
| Leg / Direction | E Ennis Avenue Eastbound | | | | | | E Ennis Avenue Westbound | | | | | | IH-45 NBFR Northbound | | | | | | IH-45 NBFR Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | **Int** |
| 2025-11-18 5:00PM | 0 | 108 | 79 | 0 | **187** | 0 | 6 | 81 | 0 | 0 | **87** | 0 | 31 | 26 | 71 | 0 | **128** | 1 | 0 | 0 | 0 | 0 | **0** | 0 | **402** |
| 5:15PM | 0 | 98 | 70 | 0 | **168** | 0 | 10 | 107 | 0 | 0 | **117** | 0 | 38 | 32 | 65 | 0 | **135** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **420** |
| 5:30PM | 0 | 116 | 61 | 0 | **177** | 0 | 9 | 114 | 0 | 0 | **123** | 0 | 33 | 35 | 51 | 0 | **119** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **419** |
| 5:45PM | 0 | 102 | 74 | 0 | **176** | 0 | 7 | 109 | 0 | 0 | **116** | 0 | 30 | 38 | 53 | 0 | **121** | 0 | 0 | 0 | 0 | 0 | **0** | 0 | **413** |
| **Total** | 0 | 424 | 284 | 0 | **708** | 0 | 32 | 411 | 0 | 0 | **443** | 0 | 132 | 131 | 240 | 0 | **503** | 1 | 0 | 0 | 0 | 0 | **0** | 0 | **1654** |
| **% Approach** | 0% | 59.9% | 40.1% | 0% | **-** | - | 7.2% | 92.8% | 0% | 0% | **-** | - | 26.2% | 26.0% | 47.7% | 0% | **-** | - | 0% | 0% | 0% | 0% | **-** | - | - |
| **% Total** | 0% | 25.6% | 17.2% | 0% | **42.8%** | - | 1.9% | 24.8% | 0% | 0% | **26.8%** | - | 8.0% | 7.9% | 14.5% | 0% | **30.4%** | - | 0% | 0% | 0% | 0% | **0%** | - | - |
| **PHF** | - | 0.914 | 0.899 | - | **0.947** | - | 0.800 | 0.901 | - | - | **0.900** | - | 0.868 | 0.862 | 0.845 | - | **0.931** | - | - | - | - | - | **-** | - | 0.985 |
| **Lights** | 0 | 417 | 278 | 0 | **695** | - | 32 | 387 | 0 | 0 | **419** | - | 123 | 124 | 238 | 0 | **485** | - | 0 | 0 | 0 | 0 | **0** | - | 1599 |
| **% Lights** | 0% | 98.3% | 97.9% | 0% | **98.2%** | - | 100% | 94.2% | 0% | 0% | **94.6%** | - | 93.2% | 94.7% | 99.2% | 0% | **96.4%** | - | 0% | 0% | 0% | 0% | **-** | - | 96.7% |
| **Articulated Trucks** | 0 | 1 | 1 | 0 | **2** | - | 0 | 15 | 0 | 0 | **15** | - | 4 | 1 | 1 | 0 | **6** | - | 0 | 0 | 0 | 0 | **0** | - | 23 |
| **% Articulated Trucks** | 0% | 0.2% | 0.4% | 0% | **0.3%** | - | 0% | 3.6% | 0% | 0% | **3.4%** | - | 3.0% | 0.8% | 0.4% | 0% | **1.2%** | - | 0% | 0% | 0% | 0% | **-** | - | 1.4% |
| **Buses and Single-Unit Trucks** | 0 | 6 | 5 | 0 | **11** | - | 0 | 9 | 0 | 0 | **9** | - | 5 | 6 | 1 | 0 | **12** | - | 0 | 0 | 0 | 0 | **0** | - | 32 |
| **% Buses and Single-Unit Trucks** | 0% | 1.4% | 1.8% | 0% | **1.6%** | - | 0% | 2.2% | 0% | 0% | **2.0%** | - | 3.8% | 4.6% | 0.4% | 0% | **2.4%** | - | 0% | 0% | 0% | 0% | **-** | - | 1.9% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | - | - | - | - | - | 0 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 100% | - | - | - | - | - | - | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0% | - | - | - | - | - | - | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 2. IH 45 NBFR at E Ennis Avenue - TMC

Tue Nov 18, 2025
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355762, Location: 32.334786, -96.615478

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 3. E Ennis Avenue at N Sonoma Trail - TMC

Wed Nov 5, 2025
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355763, Location: 32.336233, -96.614323

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

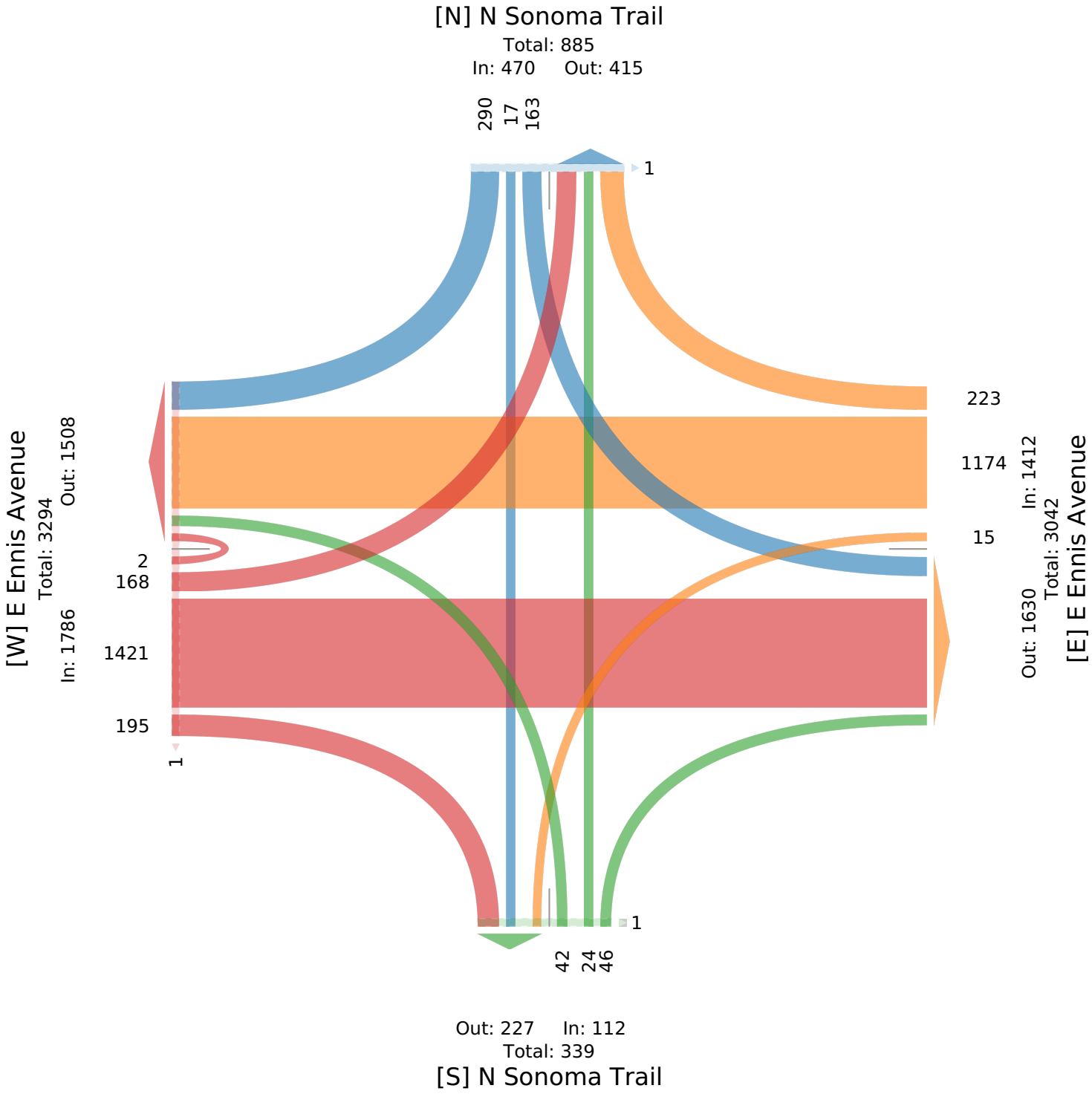
| Leg | E Ennis Avenue | | | | | | E Ennis Avenue | | | | | | N Sonoma Trail | | | | | | N Sonoma Trail | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | Int |
| 2025-11-05 7:00AM | 8 | 48 | 3 | 0 | **59** | 0 | 24 | 88 | 0 | 0 | **112** | 0 | 0 | 2 | 1 | 0 | **3** | 0 | 19 | 0 | 6 | 0 | **25** | 0 | **199** |
| 7:15AM | 7 | 53 | 12 | 0 | **72** | 0 | 31 | 102 | 0 | 0 | **133** | 0 | 1 | 3 | 0 | 0 | **4** | 0 | 15 | 0 | 3 | 0 | **18** | 0 | **227** |
| 7:30AM | 11 | 76 | 10 | 0 | **97** | 0 | 20 | 71 | 1 | 0 | **92** | 0 | 0 | 5 | 1 | 0 | **6** | 0 | 9 | 2 | 6 | 0 | **17** | 0 | **212** |
| 7:45AM | 10 | 66 | 15 | 0 | **91** | 0 | 15 | 87 | 0 | 0 | **102** | 0 | 0 | 1 | 4 | 0 | **5** | 0 | 13 | 0 | 4 | 0 | **17** | 0 | **215** |
| Hourly Total | 36 | 243 | 40 | 0 | **319** | 0 | 90 | 348 | 1 | 0 | **439** | 0 | 1 | 11 | 6 | 0 | **18** | 0 | 56 | 2 | 19 | 0 | **77** | 0 | **853** |
| 8:00AM | 12 | 59 | 16 | 0 | **87** | 0 | 10 | 72 | 0 | 0 | **82** | 0 | 0 | 1 | 2 | 0 | **3** | 0 | 13 | 0 | 10 | 0 | **23** | 1 | **195** |
| 8:15AM | 12 | 77 | 9 | 1 | **99** | 0 | 9 | 58 | 0 | 0 | **67** | 0 | 0 | 0 | 1 | 0 | **1** | 0 | 21 | 1 | 13 | 0 | **35** | 0 | **202** |
| 8:30AM | 10 | 89 | 15 | 1 | **115** | 0 | 8 | 53 | 1 | 0 | **62** | 0 | 1 | 0 | 7 | 0 | **8** | 0 | 15 | 0 | 19 | 0 | **34** | 0 | **219** |
| 8:45AM | 9 | 77 | 10 | 0 | **96** | 0 | 5 | 75 | 2 | 0 | **82** | 0 | 2 | 0 | 3 | 0 | **5** | 0 | 13 | 1 | 16 | 0 | **30** | 0 | **213** |
| Hourly Total | 43 | 302 | 50 | 2 | **397** | 0 | 32 | 258 | 3 | 0 | **293** | 0 | 3 | 1 | 13 | 0 | **17** | 0 | 62 | 2 | 58 | 0 | **122** | 1 | **829** |
| 4:00PM | 25 | 90 | 2 | 0 | **117** | 0 | 8 | 64 | 1 | 0 | **73** | 0 | 6 | 3 | 2 | 0 | **11** | 0 | 7 | 1 | 6 | 0 | **14** | 0 | **215** |
| 4:15PM | 15 | 130 | 11 | 0 | **156** | 0 | 11 | 71 | 1 | 0 | **83** | 0 | 3 | 2 | 7 | 0 | **12** | 0 | 21 | 1 | 9 | 0 | **31** | 0 | **282** |
| 4:30PM | 18 | 103 | 12 | 0 | **133** | 1 | 7 | 68 | 1 | 0 | **76** | 0 | 2 | 1 | 4 | 0 | **7** | 1 | 19 | 2 | 8 | 0 | **29** | 0 | **245** |
| 4:45PM | 15 | 101 | 6 | 0 | **122** | 0 | 17 | 69 | 2 | 0 | **88** | 0 | 3 | 4 | 2 | 0 | **9** | 0 | 34 | 2 | 11 | 0 | **47** | 0 | **266** |
| Hourly Total | 73 | 424 | 31 | 0 | **528** | 1 | 43 | 272 | 5 | 0 | **320** | 0 | 14 | 10 | 15 | 0 | **39** | 1 | 81 | 6 | 34 | 0 | **121** | 0 | **1008** |
| 5:00PM | 8 | 126 | 8 | 0 | **142** | 0 | 16 | 78 | 3 | 0 | **97** | 0 | 6 | 0 | 2 | 0 | **8** | 0 | 27 | 4 | 10 | 0 | **41** | 0 | **288** |
| 5:15PM | 8 | 117 | 12 | 0 | **137** | 0 | 16 | 55 | 1 | 0 | **72** | 0 | 14 | 2 | 2 | 0 | **18** | 0 | 17 | 2 | 13 | 0 | **32** | 0 | **259** |
| 5:30PM | 8 | 100 | 12 | 0 | **120** | 0 | 12 | 77 | 0 | 0 | **89** | 0 | 7 | 0 | 2 | 0 | **9** | 0 | 29 | 0 | 9 | 0 | **38** | 0 | **256** |
| 5:45PM | 19 | 109 | 15 | 0 | **143** | 0 | 14 | 86 | 2 | 0 | **102** | 0 | 1 | 0 | 2 | 0 | **3** | 0 | 18 | 1 | 20 | 0 | **39** | 0 | **287** |
| Hourly Total | 43 | 452 | 47 | 0 | **542** | 0 | 58 | 296 | 6 | 0 | **360** | 0 | 28 | 2 | 8 | 0 | **38** | 0 | 91 | 7 | 52 | 0 | **150** | 0 | **1090** |
| **Total** | 195 | 1421 | 168 | 2 | **1786** | 1 | 223 | 1174 | 15 | 0 | **1412** | 0 | 46 | 24 | 42 | 0 | **112** | 1 | 290 | 17 | 163 | 0 | **470** | 1 | **3780** |
| **% Approach** | 10.9% | 79.6% | 9.4% | 0.1% | **-** | - | 15.8% | 83.1% | 1.1% | 0% | **-** | - | 41.1% | 21.4% | 37.5% | 0% | **-** | - | 61.7% | 3.6% | 34.7% | 0% | **-** | - | - |
| **% Total** | 5.2% | 37.6% | 4.4% | 0.1% | **47.2%** | - | 5.9% | 31.1% | 0.4% | 0% | **37.4%** | - | 1.2% | 0.6% | 1.1% | 0% | **3.0%** | - | 7.7% | 0.4% | 4.3% | 0% | **12.4%** | - | - |
| **Lights** | 192 | 1268 | 163 | 2 | **1625** | - | 203 | 1036 | 15 | 0 | **1254** | - | 46 | 24 | 42 | 0 | **112** | - | 283 | 16 | 161 | 0 | **460** | - | 3451 |
| **% Lights** | 98.5% | 89.2% | 97.0% | 100% | **91.0%** | - | 91.0% | 88.2% | 100% | 0% | **88.8%** | - | 100% | 100% | 100% | 0% | **100%** | - | 97.6% | 94.1% | 98.8% | 0% | **97.9%** | - | 91.3% |
| **Articulated Trucks** | 0 | 128 | 5 | 0 | **133** | - | 14 | 111 | 0 | 0 | **125** | - | 0 | 0 | 0 | 0 | **0** | - | 4 | 0 | 2 | 0 | **6** | - | 264 |
| **% Articulated Trucks** | 0% | 9.0% | 3.0% | 0% | **7.4%** | - | 6.3% | 9.5% | 0% | 0% | **8.9%** | - | 0% | 0% | 0% | 0% | **0%** | - | 1.4% | 0% | 1.2% | 0% | **1.3%** | - | 7.0% |
| **Buses and Single-Unit Trucks** | 3 | 25 | 0 | 0 | **28** | - | 6 | 27 | 0 | 0 | **33** | - | 0 | 0 | 0 | 0 | **0** | - | 3 | 1 | 0 | 0 | **4** | - | 65 |
| **% Buses and Single-Unit Trucks** | 1.5% | 1.8% | 0% | 0% | **1.6%** | - | 2.7% | 2.3% | 0% | 0% | **2.3%** | - | 0% | 0% | 0% | 0% | **0%** | - | 1.0% | 5.9% | 0% | 0% | **0.9%** | - | 1.7% |
| Pedestrians | - | - | - | - | - | 1 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | - | - | - | - | - | 1 | |
| % Pedestrians | - | - | - | - | - | - 100% | - | - | - | - | - | - | - | - | - | - | - | - 100% | - | - | - | - | - | - 100% | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | 0% | - | - | - | - | - | - | - | - | - | - | - | 0% | - | - | - | - | - | 0% | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

### 3. E Ennis Avenue at N Sonoma Trail - TMC

Wed Nov 5, 2025
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355763, Location: 32.336233, -96.614323

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 3. E Ennis Avenue at N Sonoma Trail - TMC

Wed Nov 5, 2025
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355763, Location: 32.336233, -96.614323

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

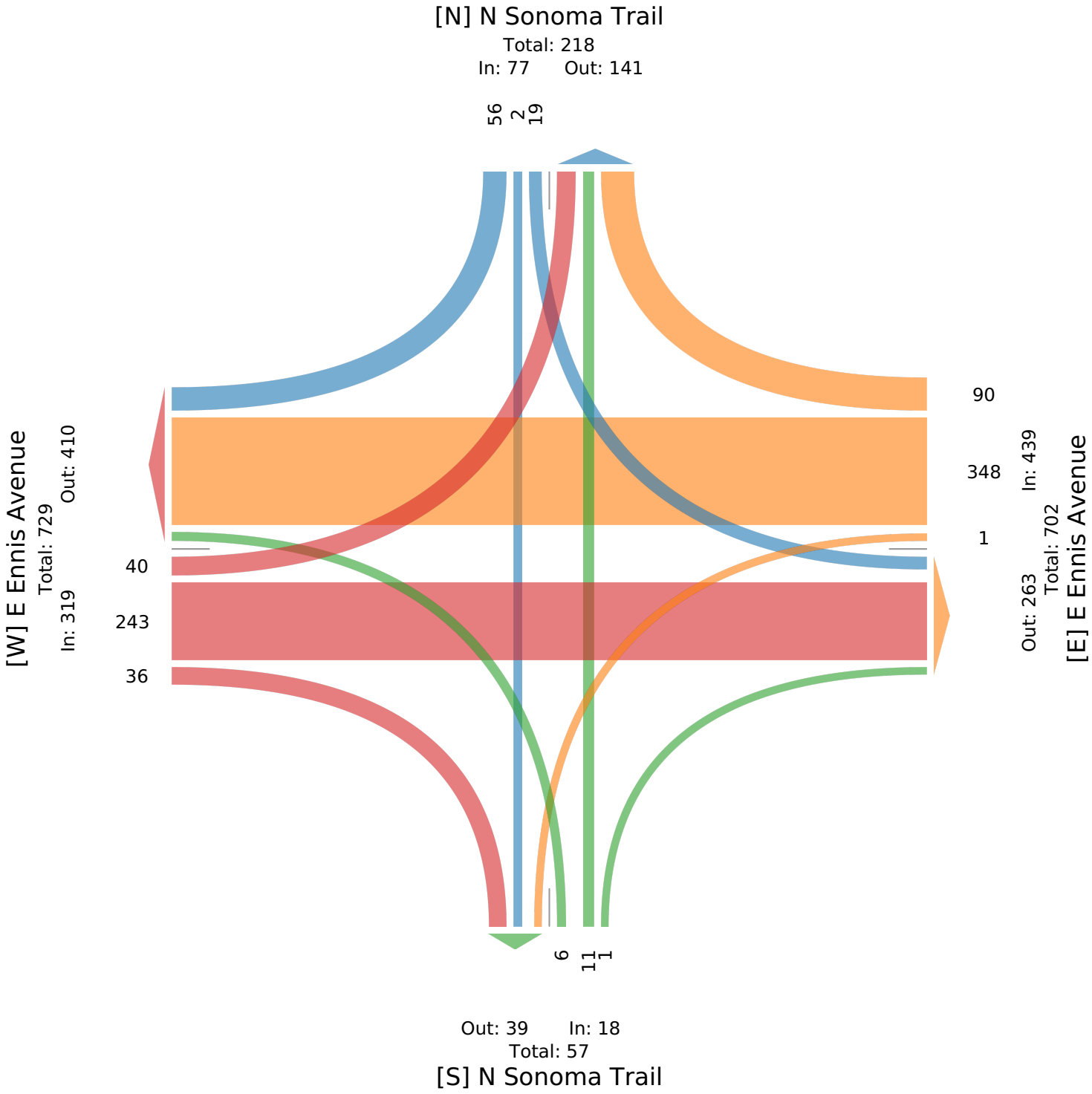
| Leg / Direction | E Ennis Avenue Eastbound | | | | | | E Ennis Avenue Westbound | | | | | | N Sonoma Trail Northbound | | | | | | N Sonoma Trail Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | **Int** |
| 2025-11-05 7:00AM | 8 | 48 | 3 | 0 | **59** | 0 | 24 | 88 | 0 | 0 | **112** | 0 | 0 | 2 | 1 | 0 | **3** | 0 | 19 | 0 | 6 | 0 | **25** | 0 | **199** |
| 7:15AM | 7 | 53 | 12 | 0 | **72** | 0 | 31 | 102 | 0 | 0 | **133** | 0 | 1 | 3 | 0 | 0 | **4** | 0 | 15 | 0 | 3 | 0 | **18** | 0 | **227** |
| 7:30AM | 11 | 76 | 10 | 0 | **97** | 0 | 20 | 71 | 1 | 0 | **92** | 0 | 0 | 5 | 1 | 0 | **6** | 0 | 9 | 2 | 6 | 0 | **17** | 0 | **212** |
| 7:45AM | 10 | 66 | 15 | 0 | **91** | 0 | 15 | 87 | 0 | 0 | **102** | 0 | 0 | 1 | 4 | 0 | **5** | 0 | 13 | 0 | 4 | 0 | **17** | 0 | **215** |
| **Total** | 36 | 243 | 40 | 0 | **319** | 0 | 90 | 348 | 1 | 0 | **439** | 0 | 1 | 11 | 6 | 0 | **18** | 0 | 56 | 2 | 19 | 0 | **77** | 0 | **853** |
| **% Approach** | 11.3% | 76.2% | 12.5% | 0% | **-** | - | 20.5% | 79.3% | 0.2% | 0% | **-** | - | 5.6% | 61.1% | 33.3% | 0% | **-** | - | 72.7% | 2.6% | 24.7% | 0% | **-** | - | - |
| **% Total** | 4.2% | 28.5% | 4.7% | 0% | **37.4%** | - | 10.6% | 40.8% | 0.1% | 0% | **51.5%** | - | 0.1% | 1.3% | 0.7% | 0% | **2.1%** | - | 6.6% | 0.2% | 2.2% | 0% | **9.0%** | - | - |
| **PHF** | 0.818 | 0.799 | 0.667 | - | **0.822** | - | 0.726 | 0.853 | 0.250 | - | **0.825** | - | 0.250 | 0.550 | 0.375 | - | **0.750** | - | 0.737 | 0.250 | 0.792 | - | **0.770** | - | 0.939 |
| **Lights** | 35 | 197 | 39 | 0 | **271** | - | 78 | 298 | 1 | 0 | **377** | - | 1 | 11 | 6 | 0 | **18** | - | 55 | 2 | 19 | 0 | **76** | - | 742 |
| **% Lights** | 97.2% | 81.1% | 97.5% | 0% | **85.0%** | - | 86.7% | 85.6% | 100% | 0% | **85.9%** | - | 100% | 100% | 100% | 0% | **100%** | - | 98.2% | 100% | 100% | 0% | **98.7%** | - | 87.0% |
| **Articulated Trucks** | 0 | 43 | 1 | 0 | **44** | - | 11 | 41 | 0 | 0 | **52** | - | 0 | 0 | 0 | 0 | **0** | - | 1 | 0 | 0 | 0 | **1** | - | 97 |
| **% Articulated Trucks** | 0% | 17.7% | 2.5% | 0% | **13.8%** | - | 12.2% | 11.8% | 0% | 0% | **11.8%** | - | 0% | 0% | 0% | 0% | **0%** | - | 1.8% | 0% | 0% | 0% | **1.3%** | - | 11.4% |
| **Buses and Single-Unit Trucks** | 1 | 3 | 0 | 0 | **4** | - | 1 | 9 | 0 | 0 | **10** | - | 0 | 0 | 0 | 0 | **0** | - | 0 | 0 | 0 | 0 | **0** | - | 14 |
| **% Buses and Single-Unit Trucks** | 2.8% | 1.2% | 0% | 0% | **1.3%** | - | 1.1% | 2.6% | 0% | 0% | **2.3%** | - | 0% | 0% | 0% | 0% | **0%** | - | 0% | 0% | 0% | 0% | **0%** | - | 1.6% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

### 3. E Ennis Avenue at N Sonoma Trail - TMC

Wed Nov 5, 2025
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355763, Location: 32.336233, -96.614323

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 3. E Ennis Avenue at N Sonoma Trail - TMC

Wed Nov 5, 2025
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355763, Location: 32.336233, -96.614323

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

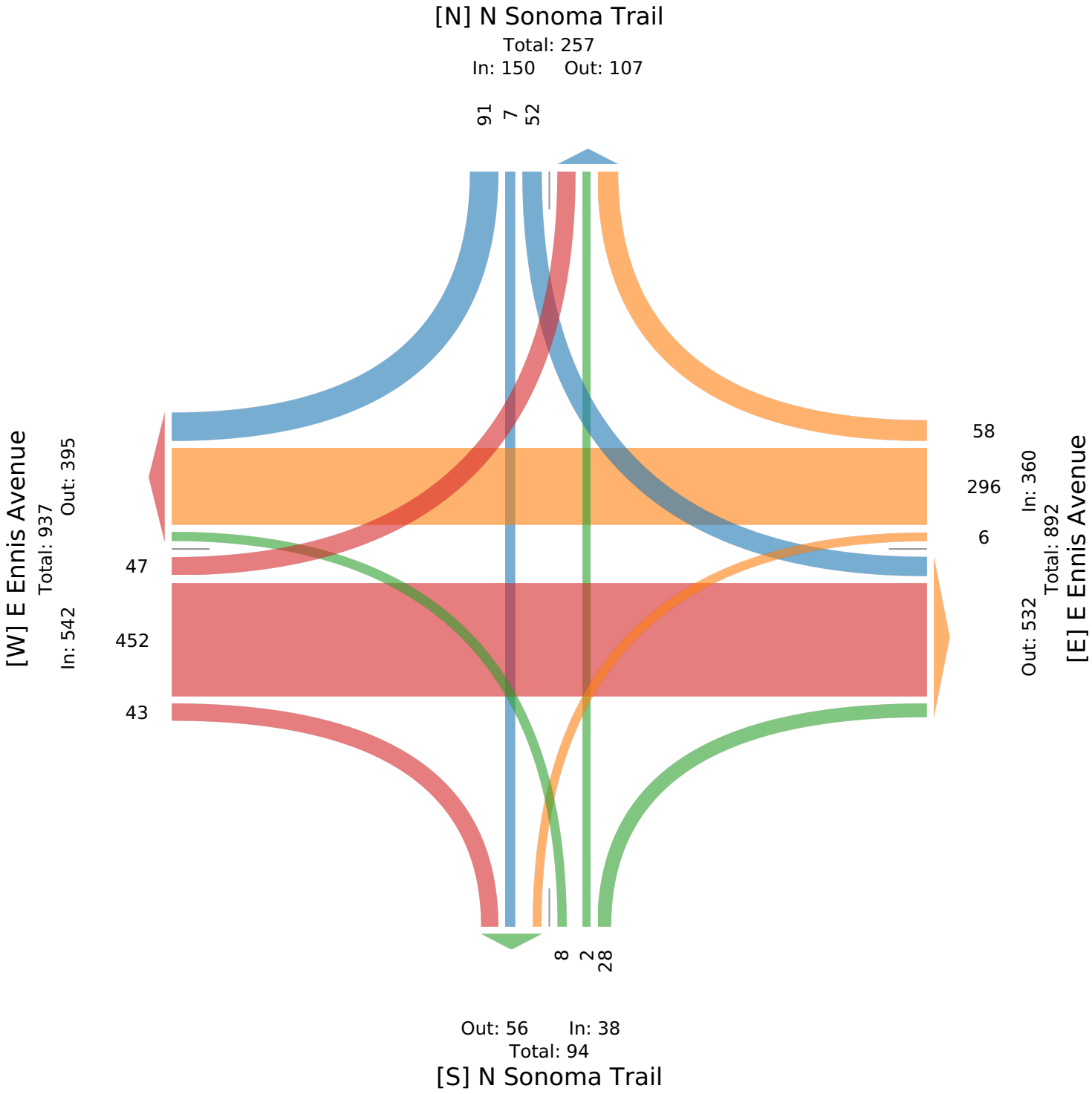
| Leg | E Ennis Avenue | | | | | | E Ennis Avenue | | | | | | N Sonoma Trail | | | | | | N Sonoma Trail | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | Int |
| 2025-11-05 5:00PM | 8 | 126 | 8 | 0 | **142** | 0 | 16 | 78 | 3 | 0 | **97** | 0 | 6 | 0 | 2 | 0 | **8** | 0 | 27 | 4 | 10 | 0 | **41** | 0 | **288** |
| 5:15PM | 8 | 117 | 12 | 0 | **137** | 0 | 16 | 55 | 1 | 0 | **72** | 0 | 14 | 2 | 2 | 0 | **18** | 0 | 17 | 2 | 13 | 0 | **32** | 0 | **259** |
| 5:30PM | 8 | 100 | 12 | 0 | **120** | 0 | 12 | 77 | 0 | 0 | **89** | 0 | 7 | 0 | 2 | 0 | **9** | 0 | 29 | 0 | 9 | 0 | **38** | 0 | **256** |
| 5:45PM | 19 | 109 | 15 | 0 | **143** | 0 | 14 | 86 | 2 | 0 | **102** | 0 | 1 | 0 | 2 | 0 | **3** | 0 | 18 | 1 | 20 | 0 | **39** | 0 | **287** |
| **Total** | 43 | 452 | 47 | 0 | **542** | 0 | 58 | 296 | 6 | 0 | **360** | 0 | 28 | 2 | 8 | 0 | **38** | 0 | 91 | 7 | 52 | 0 | **150** | 0 | **1090** |
| **% Approach** | 7.9% | 83.4% | 8.7% | 0% | **-** | - | 16.1% | 82.2% | 1.7% | 0% | **-** | - | 73.7% | 5.3% | 21.1% | 0% | **-** | - | 60.7% | 4.7% | 34.7% | 0% | **-** | - | - |
| **% Total** | 3.9% | 41.5% | 4.3% | 0% | **49.7%** | - | 5.3% | 27.2% | 0.6% | 0% | **33.0%** | - | 2.6% | 0.2% | 0.7% | 0% | **3.5%** | - | 8.3% | 0.6% | 4.8% | 0% | **13.8%** | - | - |
| **PHF** | 0.566 | 0.897 | 0.783 | - | **0.948** | - | 0.906 | 0.860 | 0.500 | - | **0.882** | - | 0.500 | 0.250 | 1.000 | - | **0.528** | - | 0.784 | 0.438 | 0.650 | - | **0.915** | - | 0.946 |
| **Lights** | 43 | 427 | 47 | 0 | **517** | - | 55 | 280 | 6 | 0 | **341** | - | 28 | 2 | 8 | 0 | **38** | - | 91 | 7 | 52 | 0 | **150** | - | 1046 |
| **% Lights** | 100% | 94.5% | 100% | 0% | **95.4%** | - | 94.8% | 94.6% | 100% | 0% | **94.7%** | - | 100% | 100% | 100% | 0% | **100%** | - | 100% | 100% | 100% | 0% | **100%** | - | 96.0% |
| **Articulated Trucks** | 0 | 17 | 0 | 0 | **17** | - | 0 | 15 | 0 | 0 | **15** | - | 0 | 0 | 0 | 0 | **0** | - | 0 | 0 | 0 | 0 | **0** | - | 32 |
| **% Articulated Trucks** | 0% | 3.8% | 0% | 0% | **3.1%** | - | 0% | 5.1% | 0% | 0% | **4.2%** | - | 0% | 0% | 0% | 0% | **0%** | - | 0% | 0% | 0% | 0% | **0%** | - | 2.9% |
| **Buses and Single-Unit Trucks** | 0 | 8 | 0 | 0 | **8** | - | 3 | 1 | 0 | 0 | **4** | - | 0 | 0 | 0 | 0 | **0** | - | 0 | 0 | 0 | 0 | **0** | - | 12 |
| **% Buses and Single-Unit Trucks** | 0% | 1.8% | 0% | 0% | **1.5%** | - | 5.2% | 0.3% | 0% | 0% | **1.1%** | - | 0% | 0% | 0% | 0% | **0%** | - | 0% | 0% | 0% | 0% | **0%** | - | 1.1% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

### 3. E Ennis Avenue at N Sonoma Trail - TMC

Wed Nov 5, 2025
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1355763, Location: 32.336233, -96.614323

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 1. SH 34 at Sonoma Trail - TMC

Thu Mar 26, 2026
Full Length (6 AM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1387744, Location: 32.33618, -96.614329

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

| Leg | Sonoma Trail | | | | | | Sonoma Trail | | | | | | SH 34 | | | | | | SH 34 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | Int |
| 2026-03-26 6:00AM | 9 | 1 | 5 | 0 | **15** | 0 | 1 | 3 | 4 | 0 | **8** | 0 | 1 | 23 | 7 | 0 | **31** | 0 | 13 | 67 | 1 | 0 | **81** | 0 | **135** |
| 6:15AM | 5 | 0 | 1 | 0 | **6** | 0 | 2 | 5 | 4 | 0 | **11** | 0 | 4 | 32 | 5 | 0 | **41** | 0 | 20 | 84 | 0 | 0 | **104** | 0 | **162** |
| 6:30AM | 8 | 0 | 7 | 0 | **15** | 0 | 2 | 3 | 5 | 0 | **10** | 1 | 3 | 39 | 10 | 0 | **52** | 1 | 11 | 80 | 0 | 0 | **91** | 0 | **168** |
| 6:45AM | 4 | 2 | 4 | 0 | **10** | 0 | 3 | 4 | 3 | 0 | **10** | 0 | 3 | 37 | 9 | 0 | **49** | 0 | 12 | 92 | 0 | 0 | **104** | 0 | **173** |
| Hourly Total | 26 | 3 | 17 | 0 | **46** | 0 | 8 | 15 | 16 | 0 | **39** | 1 | 11 | 131 | 31 | 0 | **173** | 1 | 56 | 323 | 1 | 0 | **380** | 0 | **638** |
| 7:00AM | 8 | 2 | 3 | 0 | **13** | 0 | 5 | 8 | 4 | 0 | **17** | 0 | 3 | 38 | 11 | 0 | **52** | 0 | 27 | 91 | 0 | 0 | **118** | 0 | **200** |
| 7:15AM | 9 | 0 | 3 | 0 | **12** | 0 | 6 | 4 | 3 | 0 | **13** | 0 | 6 | 40 | 4 | 0 | **50** | 0 | 32 | 87 | 0 | 0 | **119** | 0 | **194** |
| 7:30AM | 12 | 2 | 5 | 0 | **19** | 0 | 4 | 3 | 3 | 0 | **10** | 0 | 13 | 60 | 8 | 0 | **81** | 0 | 31 | 86 | 5 | 0 | **122** | 0 | **232** |
| 7:45AM | 13 | 0 | 11 | 0 | **24** | 0 | 6 | 4 | 6 | 0 | **16** | 0 | 7 | 53 | 9 | 1 | **70** | 0 | 20 | 60 | 0 | 0 | **80** | 0 | **190** |
| Hourly Total | 42 | 4 | 22 | 0 | **68** | 0 | 21 | 19 | 16 | 0 | **56** | 0 | 29 | 191 | 32 | 1 | **253** | 0 | 110 | 324 | 5 | 0 | **439** | 0 | **816** |
| 8:00AM | 10 | 1 | 5 | 0 | **16** | 0 | 5 | 2 | 6 | 0 | **13** | 0 | 8 | 58 | 4 | 0 | **70** | 0 | 20 | 65 | 1 | 0 | **86** | 0 | **185** |
| 8:15AM | 9 | 0 | 2 | 0 | **11** | 0 | 5 | 4 | 3 | 0 | **12** | 0 | 11 | 59 | 11 | 0 | **81** | 0 | 14 | 73 | 1 | 0 | **88** | 0 | **192** |
| 8:30AM | 15 | 1 | 3 | 0 | **19** | 0 | 5 | 5 | 5 | 0 | **15** | 0 | 11 | 48 | 7 | 0 | **66** | 0 | 14 | 63 | 2 | 0 | **79** | 0 | **179** |
| 8:45AM | 15 | 0 | 4 | 0 | **19** | 0 | 3 | 2 | 7 | 0 | **12** | 0 | 4 | 37 | 6 | 0 | **47** | 0 | 15 | 73 | 3 | 0 | **91** | 0 | **169** |
| Hourly Total | 49 | 2 | 14 | 0 | **65** | 0 | 18 | 13 | 21 | 0 | **52** | 0 | 34 | 202 | 28 | 0 | **264** | 0 | 63 | 274 | 7 | 0 | **344** | 0 | **725** |
| 9:00AM | 14 | 0 | 4 | 0 | **18** | 0 | 13 | 3 | 8 | 0 | **24** | 1 | 8 | 45 | 7 | 0 | **60** | 3 | 19 | 62 | 3 | 0 | **84** | 0 | **186** |
| 9:15AM | 12 | 0 | 5 | 0 | **17** | 0 | 7 | 3 | 4 | 0 | **14** | 0 | 10 | 50 | 9 | 0 | **69** | 2 | 9 | 62 | 3 | 0 | **74** | 0 | **174** |
| 9:30AM | 21 | 0 | 1 | 0 | **22** | 0 | 6 | 5 | 5 | 0 | **16** | 0 | 14 | 51 | 12 | 1 | **78** | 0 | 14 | 75 | 2 | 0 | **91** | 0 | **207** |
| 9:45AM | 15 | 3 | 5 | 0 | **23** | 0 | 10 | 4 | 6 | 0 | **20** | 0 | 13 | 37 | 9 | 0 | **59** | 0 | 15 | 65 | 1 | 0 | **81** | 0 | **183** |
| Hourly Total | 62 | 3 | 15 | 0 | **80** | 0 | 36 | 15 | 23 | 0 | **74** | 1 | 45 | 183 | 37 | 1 | **266** | 5 | 57 | 264 | 9 | 0 | **330** | 0 | **750** |
| 10:00AM | 11 | 1 | 5 | 0 | **17** | 0 | 5 | 3 | 11 | 0 | **19** | 0 | 8 | 40 | 11 | 0 | **59** | 0 | 16 | 69 | 3 | 0 | **88** | 0 | **183** |
| 10:15AM | 15 | 0 | 0 | 0 | **15** | 0 | 4 | 3 | 6 | 0 | **13** | 0 | 10 | 46 | 10 | 0 | **66** | 0 | 14 | 54 | 4 | 0 | **72** | 0 | **166** |
| 10:30AM | 16 | 3 | 5 | 0 | **24** | 0 | 2 | 5 | 5 | 0 | **12** | 1 | 16 | 47 | 12 | 0 | **75** | 0 | 14 | 53 | 2 | 0 | **69** | 0 | **180** |
| 10:45AM | 19 | 2 | 9 | 0 | **30** | 0 | 14 | 5 | 11 | 0 | **30** | 0 | 8 | 50 | 7 | 0 | **65** | 0 | 21 | 51 | 3 | 0 | **75** | 0 | **200** |
| Hourly Total | 61 | 6 | 19 | 0 | **86** | 0 | 25 | 16 | 33 | 0 | **74** | 1 | 42 | 183 | 40 | 0 | **265** | 0 | 65 | 227 | 12 | 0 | **304** | 0 | **729** |
| 11:00AM | 11 | 1 | 8 | 0 | **20** | 0 | 8 | 4 | 3 | 0 | **15** | 0 | 7 | 41 | 2 | 0 | **50** | 0 | 10 | 56 | 4 | 0 | **70** | 0 | **155** |
| 11:15AM | 28 | 0 | 5 | 0 | **33** | 0 | 9 | 6 | 12 | 0 | **27** | 0 | 8 | 49 | 8 | 0 | **65** | 0 | 19 | 55 | 3 | 0 | **77** | 0 | **202** |
| 11:30AM | 31 | 1 | 6 | 0 | **38** | 0 | 8 | 7 | 3 | 0 | **18** | 0 | 9 | 42 | 12 | 0 | **63** | 0 | 20 | 57 | 2 | 0 | **79** | 0 | **198** |
| 11:45AM | 21 | 2 | 4 | 0 | **27** | 0 | 8 | 10 | 11 | 0 | **29** | 0 | 10 | 40 | 6 | 0 | **56** | 0 | 21 | 59 | 5 | 0 | **85** | 0 | **197** |
| Hourly Total | 91 | 4 | 23 | 0 | **118** | 0 | 33 | 27 | 29 | 0 | **89** | 0 | 34 | 172 | 28 | 0 | **234** | 0 | 70 | 227 | 14 | 0 | **311** | 0 | **752** |
| 12:00PM | 27 | 3 | 3 | 0 | **33** | 0 | 12 | 14 | 13 | 0 | **39** | 0 | 14 | 51 | 10 | 0 | **75** | 0 | 13 | 55 | 3 | 0 | **71** | 0 | **218** |
| 12:15PM | 29 | 0 | 9 | 0 | **38** | 0 | 17 | 12 | 14 | 0 | **43** | 0 | 10 | 52 | 10 | 0 | **72** | 0 | 16 | 52 | 2 | 0 | **70** | 0 | **223** |
| 12:30PM | 21 | 2 | 5 | 0 | **28** | 0 | 14 | 6 | 15 | 0 | **35** | 0 | 11 | 58 | 8 | 0 | **77** | 0 | 17 | 51 | 0 | 0 | **68** | 0 | **208** |
| 12:45PM | 25 | 2 | 6 | 0 | **33** | 0 | 9 | 6 | 12 | 0 | **27** | 0 | 12 | 56 | 9 | 0 | **77** | 0 | 15 | 60 | 2 | 0 | **77** | 0 | **214** |
| Hourly Total | 102 | 7 | 23 | 0 | **132** | 0 | 52 | 38 | 54 | 0 | **144** | 0 | 47 | 217 | 37 | 0 | **301** | 0 | 61 | 218 | 7 | 0 | **286** | 0 | **863** |
| 1:00PM | 28 | 3 | 7 | 0 | **38** | 0 | 17 | 10 | 7 | 0 | **34** | 0 | 11 | 52 | 14 | 0 | **77** | 0 | 15 | 56 | 1 | 0 | **72** | 0 | **221** |
| 1:15PM | 18 | 4 | 10 | 0 | **32** | 0 | 17 | 8 | 14 | 0 | **39** | 0 | 18 | 50 | 12 | 0 | **80** | 0 | 20 | 64 | 4 | 0 | **88** | 0 | **239** |
| 1:30PM | 24 | 1 | 6 | 0 | **31** | 0 | 9 | 6 | 13 | 0 | **28** | 0 | 6 | 43 | 11 | 0 | **60** | 0 | 9 | 53 | 2 | 0 | **64** | 0 | **183** |
| 1:45PM | 25 | 0 | 6 | 0 | **31** | 0 | 22 | 16 | 8 | 0 | **46** | 0 | 9 | 47 | 4 | 0 | **60** | 0 | 13 | 52 | 2 | 0 | **67** | 0 | **204** |
| Hourly Total | 95 | 8 | 29 | 0 | **132** | 0 | 65 | 40 | 42 | 0 | **147** | 0 | 44 | 192 | 41 | 0 | **277** | 0 | 57 | 225 | 9 | 0 | **291** | 0 | **847** |
| 2:00PM | 12 | 3 | 7 | 0 | **22** | 0 | 8 | 10 | 13 | 0 | **31** | 0 | 15 | 58 | 9 | 0 | **82** | 0 | 11 | 47 | 2 | 0 | **60** | 0 | **195** |
| 2:15PM | 19 | 1 | 7 | 0 | **27** | 0 | 13 | 8 | 19 | 0 | **40** | 0 | 6 | 46 | 6 | 0 | **58** | 1 | 4 | 55 | 3 | 0 | **62** | 0 | **187** |
| 2:30PM | 17 | 2 | 4 | 0 | **23** | 0 | 14 | 10 | 11 | 0 | **35** | 0 | 11 | 48 | 5 | 0 | **64** | 0 | 16 | 53 | 3 | 0 | **72** | 0 | **194** |
| 2:45PM | 22 | 0 | 6 | 0 | **28** | 0 | 17 | 13 | 18 | 0 | **48** | 0 | 17 | 65 | 6 | 0 | **88** | 0 | 15 | 57 | 2 | 0 | **74** | 0 | **238** |
| Hourly Total | 70 | 6 | 24 | 0 | **100** | 0 | 52 | 41 | 61 | 0 | **154** | 0 | 49 | 217 | 26 | 0 | **292** | 1 | 46 | 212 | 10 | 0 | **268** | 0 | **814** |
| 3:00PM | 31 | 4 | 8 | 0 | **43** | 0 | 20 | 6 | 10 | 0 | **36** | 0 | 17 | 72 | 13 | 0 | **102** | 0 | 26 | 62 | 1 | 0 | **89** | 0 | **270** |
| 3:15PM | 21 | 3 | 7 | 1 | **32** | 0 | 9 | 6 | 10 | 0 | **25** | 0 | 15 | 72 | 11 | 0 | **98** | 0 | 16 | 72 | 2 | 0 | **90** | 0 | **245** |
| 3:30PM | 18 | 2 | 8 | 0 | **28** | 0 | 13 | 8 | 7 | 0 | **28** | 0 | 18 | 69 | 9 | 0 | **96** | 0 | 16 | 65 | 2 | 0 | **83** | 0 | **235** |
| 3:45PM | 25 | 0 | 9 | 0 | **34** | 0 | 5 | 7 | 14 | 0 | **26** | 0 | 24 | 74 | 7 | 0 | **105** | 0 | 20 | 64 | 2 | 0 | **86** | 0 | **251** |
| Hourly Total | 95 | 9 | 32 | 1 | **137** | 0 | 47 | 27 | 41 | 0 | **115** | 0 | 74 | 287 | 40 | 0 | **401** | 0 | 78 | 263 | 7 | 0 | **348** | 0 | **1001** |
| 4:00PM | 20 | 0 | 16 | 0 | **36** | 0 | 18 | 5 | 9 | 0 | **32** | 0 | 14 | 84 | 11 | 0 | **109** | 0 | 8 | 52 | 0 | 0 | **60** | 0 | **237** |
| 4:15PM | 26 | 4 | 8 | 0 | **38** | 0 | 25 | 13 | 9 | 0 | **47** | 0 | 23 | 94 | 8 | 0 | **125** | 0 | 21 | 73 | 0 | 0 | **94** | 0 | **304** |
| 4:30PM | 22 | 1 | 9 | 0 | **32** | 0 | 19 | 12 | 8 | 0 | **39** | 0 | 16 | 110 | 20 | 0 | **146** | 0 | 17 | 65 | 0 | 0 | **82** | 0 | **299** |
| 4:45PM | 21 | 3 | 14 | 0 | **38** | 0 | 15 | 8 | 9 | 0 | **32** | 0 | 12 | 102 | 10 | 0 | **124** | 0 | 13 | 56 | 2 | 0 | **71** | 0 | **265** |
| Hourly Total | 89 | 8 | 47 | 0 | **144** | 0 | 77 | 38 | 35 | 0 | **150** | 0 | 65 | 390 | 49 | 0 | **504** | 0 | 59 | 246 | 2 | 0 | **307** | 0 | **1105** |
| 5:00PM | 27 | 2 | 6 | 0 | **35** | 0 | 18 | 6 | 7 | 0 | **31** | 0 | 15 | 100 | 9 | 0 | **124** | 0 | 24 | 65 | 0 | 0 | **89** | 0 | **279** |
| 5:15PM | 22 | 1 | 6 | 0 | **29** | 0 | 8 | 3 | 10 | 0 | **21** | 0 | 8 | 81 | 2 | 0 | **91** | 0 | 18 | 74 | 0 | 0 | **92** | 0 | **233** |
| 5:30PM | 33 | 2 | 13 | 0 | **48** | 0 | 9 | 6 | 6 | 0 | **21** | 0 | 8 | 82 | 5 | 0 | **95** | 0 | 19 | 72 | 0 | 0 | **91** | 0 | **255** |
| 5:45PM | 15 | 3 | 11 | 0 | **29** | 0 | 10 | 9 | 9 | 0 | **28** | 0 | 18 | 82 | 10 | 0 | **110** | 0 | 13 | 78 | 3 | 0 | **94** | 0 | **261** |

E.3.

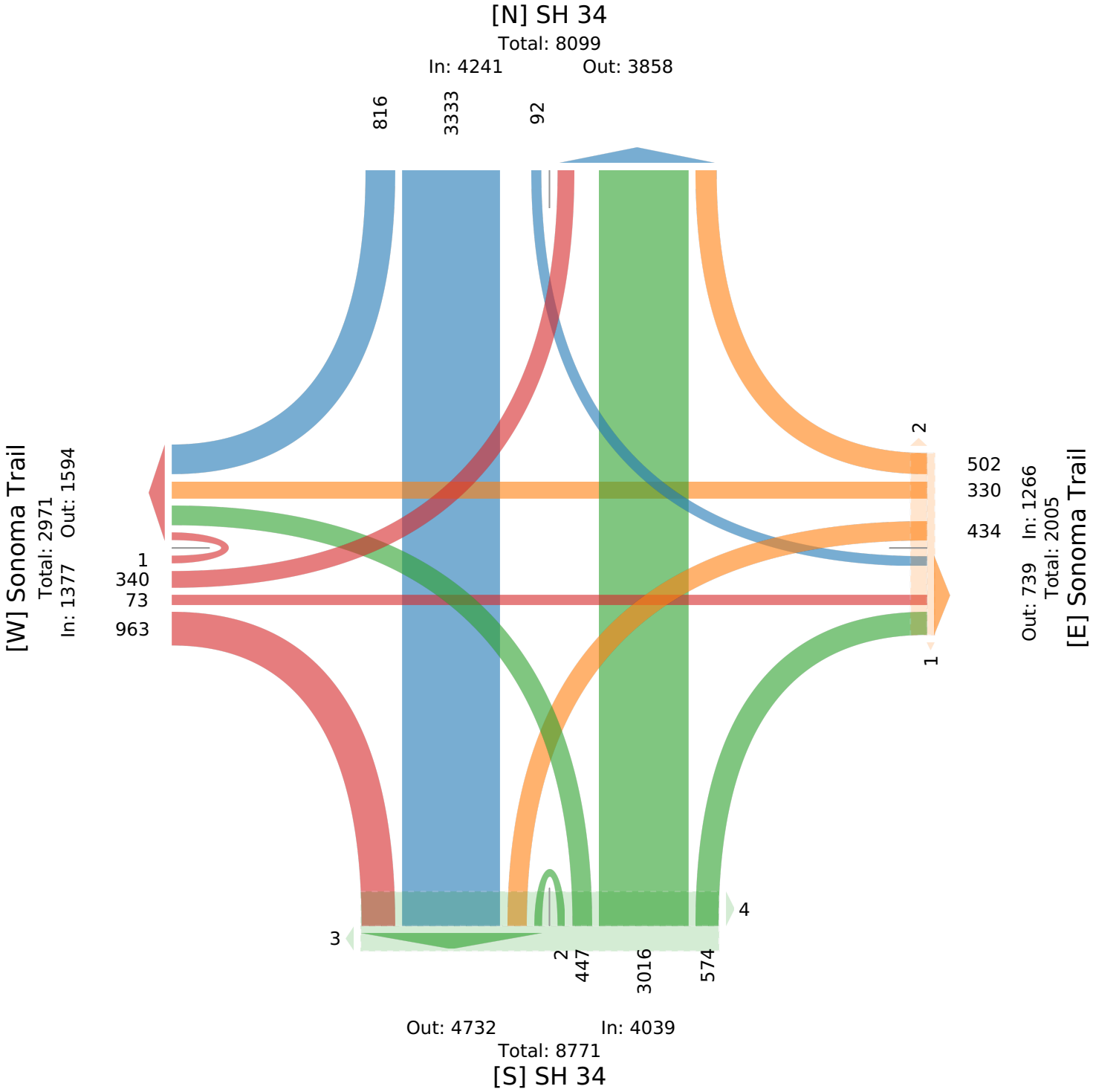
| Leg | Sonoma Trail | | | | | | Sonoma Trail | | | | | | SH 34 | | | | | | SH 34 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | Int |
| Hourly Total | 97 | 8 | 36 | 0 | **141** | 0 | 45 | 24 | 32 | 0 | **101** | 0 | 49 | 345 | 26 | 0 | **420** | 0 | 74 | 289 | 3 | 0 | **366** | 0 | **1028** |
| 6:00PM | 21 | 1 | 9 | 0 | **31** | 0 | 6 | 4 | 10 | 0 | **20** | 0 | 22 | 69 | 8 | 0 | **99** | 0 | 6 | 63 | 2 | 0 | **71** | 0 | **221** |
| 6:15PM | 21 | 2 | 9 | 0 | **32** | 0 | 5 | 2 | 4 | 0 | **11** | 0 | 13 | 81 | 6 | 0 | **100** | 0 | 7 | 63 | 1 | 0 | **71** | 0 | **214** |
| 6:30PM | 24 | 0 | 7 | 0 | **31** | 0 | 5 | 4 | 9 | 0 | **18** | 0 | 6 | 74 | 5 | 0 | **85** | 0 | 5 | 61 | 2 | 0 | **68** | 0 | **202** |
| 6:45PM | 18 | 2 | 14 | 0 | **34** | 0 | 7 | 7 | 8 | 0 | **22** | 0 | 10 | 82 | 13 | 0 | **105** | 0 | 2 | 54 | 1 | 0 | **57** | 0 | **218** |
| Hourly Total | 84 | 5 | 39 | 0 | **128** | 0 | 23 | 17 | 31 | 0 | **71** | 0 | 51 | 306 | 32 | 0 | **389** | 0 | 20 | 241 | 6 | 0 | **267** | 0 | **855** |
| **Total** | 963 | 73 | 340 | 1 | **1377** | 0 | 502 | 330 | 434 | 0 | **1266** | 3 | 574 | 3016 | 447 | 2 | **4039** | 7 | 816 | 3333 | 92 | 0 | **4241** | 0 | **10923** |
| **% Approach** | 69.9% | 5.3% | 24.7% | 0.1% | **-** | - | 39.7% | 26.1% | 34.3% | 0% | **-** | - | 14.2% | 74.7% | 11.1% | 0% | **-** | - | 19.2% | 78.6% | 2.2% | 0% | **-** | - | **-** |
| **% Total** | 8.8% | 0.7% | 3.1% | 0% | **12.6%** | - | 4.6% | 3.0% | 4.0% | 0% | **11.6%** | - | 5.3% | 27.6% | 4.1% | 0% | **37.0%** | - | 7.5% | 30.5% | 0.8% | 0% | **38.8%** | - | **-** |
| **Lights** | 929 | 70 | 319 | 1 | **1319** | - | 469 | 323 | 426 | 0 | **1218** | - | 566 | 2575 | 427 | 2 | **3570** | - | 627 | 2928 | 88 | 0 | **3643** | - | 9750 |
| **% Lights** | 96.5% | 95.9% | 93.8% | 100% | **95.8%** | - | 93.4% | 97.9% | 98.2% | 0% | **96.2%** | - | 98.6% | 85.4% | 95.5% | 100% | **88.4%** | - | 76.8% | 87.8% | 95.7% | 0% | **85.9%** | - | 89.3% |
| **Articulated Trucks** | 10 | 0 | 11 | 0 | **21** | - | 11 | 0 | 1 | 0 | **12** | - | 0 | 349 | 11 | 0 | **360** | - | 166 | 267 | 3 | 0 | **436** | - | 829 |
| **% Articulated Trucks** | 1.0% | 0% | 3.2% | 0% | **1.5%** | - | 2.2% | 0% | 0.2% | 0% | **0.9%** | - | 0% | 11.6% | 2.5% | 0% | **8.9%** | - | 20.3% | 8.0% | 3.3% | 0% | **10.3%** | - | 7.6% |
| **Buses and Single-Unit Trucks** | 24 | 3 | 10 | 0 | **37** | - | 22 | 7 | 7 | 0 | **36** | - | 8 | 92 | 9 | 0 | **109** | - | 23 | 138 | 1 | 0 | **162** | - | 344 |
| **% Buses and Single-Unit Trucks** | 2.5% | 4.1% | 2.9% | 0% | **2.7%** | - | 4.4% | 2.1% | 1.6% | 0% | **2.8%** | - | 1.4% | 3.1% | 2.0% | 0% | **2.7%** | - | 2.8% | 4.1% | 1.1% | 0% | **3.8%** | - | 3.1% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 3 | - | - | - | - | - | 7 | - | - | - | - | - | 0 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | 100% | - | - | - | - | - | 100% | - | - | - | - | - | - | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | 0% | - | - | - | - | - | 0% | - | - | - | - | - | - | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 1. SH 34 at Sonoma Trail - TMC

Thu Mar 26, 2026
Full Length (6 AM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1387744, Location: 32.33618, -96.614329

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 1. SH 34 at Sonoma Trail - TMC

Thu Mar 26, 2026
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1387744, Location: 32.33618, -96.614329

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

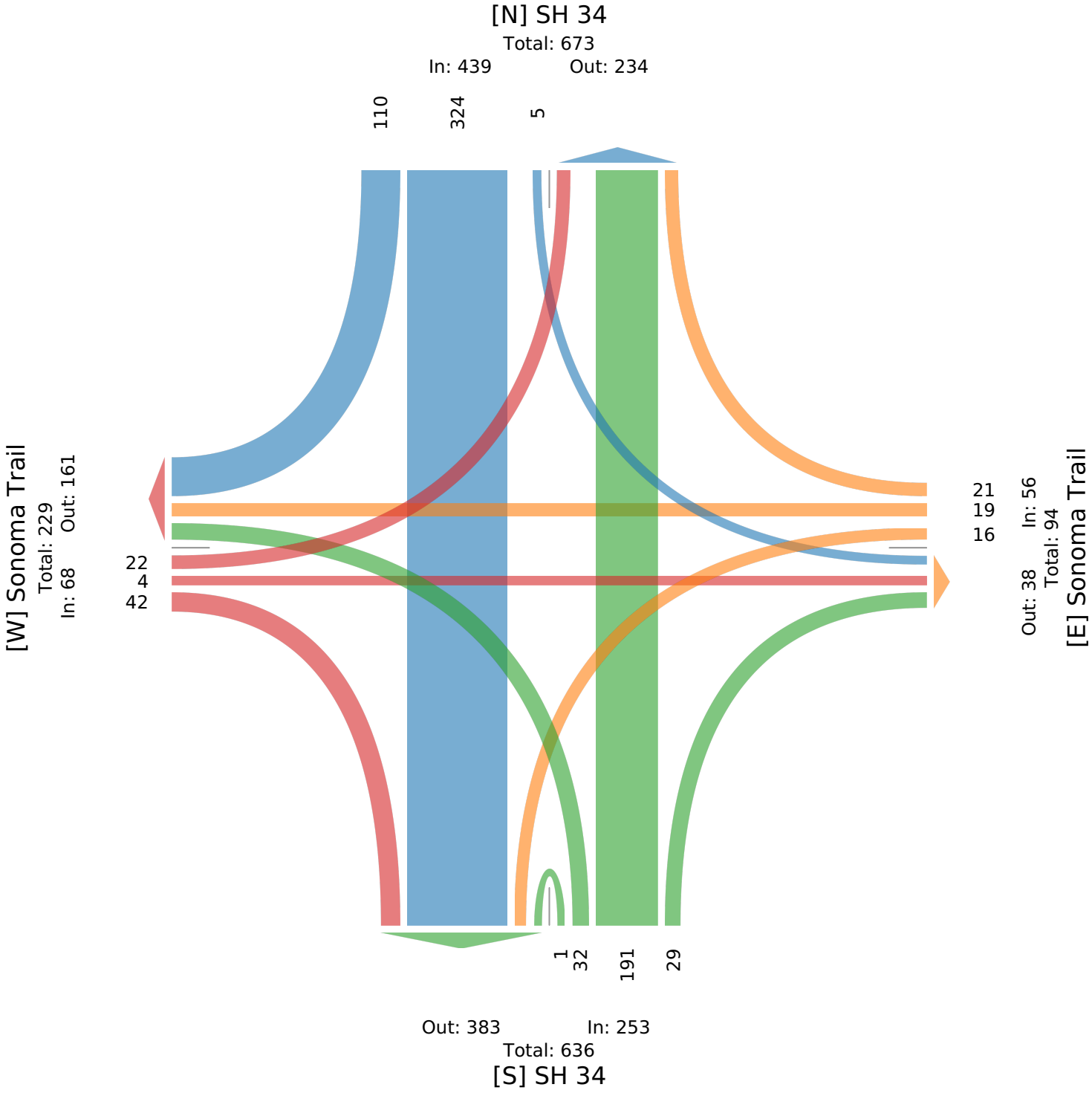
| Leg | Sonoma Trail | | | | | | Sonoma Trail | | | | | | SH 34 | | | | | | SH 34 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | R | T | L | U | App | Ped* | Int |
| 2026-03-26 7:00AM | 8 | 2 | 3 | 0 | **13** | 0 | 5 | 8 | 4 | 0 | **17** | 0 | 3 | 38 | 11 | 0 | **52** | 0 | 27 | 91 | 0 | 0 | **118** | 0 | **200** |
| 7:15AM | 9 | 0 | 3 | 0 | **12** | 0 | 6 | 4 | 3 | 0 | **13** | 0 | 6 | 40 | 4 | 0 | **50** | 0 | 32 | 87 | 0 | 0 | **119** | 0 | **194** |
| 7:30AM | 12 | 2 | 5 | 0 | **19** | 0 | 4 | 3 | 3 | 0 | **10** | 0 | 13 | 60 | 8 | 0 | **81** | 0 | 31 | 86 | 5 | 0 | **122** | 0 | **232** |
| 7:45AM | 13 | 0 | 11 | 0 | **24** | 0 | 6 | 4 | 6 | 0 | **16** | 0 | 7 | 53 | 9 | 1 | **70** | 0 | 20 | 60 | 0 | 0 | **80** | 0 | **190** |
| **Total** | 42 | 4 | 22 | 0 | **68** | 0 | 21 | 19 | 16 | 0 | **56** | 0 | 29 | 191 | 32 | 1 | **253** | 0 | 110 | 324 | 5 | 0 | **439** | 0 | **816** |
| **% Approach** | 61.8% | 5.9% | 32.4% | 0% | **-** | - | 37.5% | 33.9% | 28.6% | 0% | **-** | - | 11.5% | 75.5% | 12.6% | 0.4% | **-** | - | 25.1% | 73.8% | 1.1% | 0% | **-** | - | - |
| **% Total** | 5.1% | 0.5% | 2.7% | 0% | **8.3%** | - | 2.6% | 2.3% | 2.0% | 0% | **6.9%** | - | 3.6% | 23.4% | 3.9% | 0.1% | **31.0%** | - | 13.5% | 39.7% | 0.6% | 0% | **53.8%** | - | - |
| **PHF** | 0.808 | 0.500 | 0.500 | - | **0.708** | - | 0.875 | 0.594 | 0.667 | - | **0.824** | - | 0.558 | 0.796 | 0.727 | 0.250 | **0.781** | - | 0.859 | 0.890 | 0.250 | - | **0.900** | - | 0.879 |
| **Lights** | 42 | 4 | 19 | 0 | **65** | - | 16 | 18 | 15 | 0 | **49** | - | 29 | 154 | 30 | 1 | **214** | - | 95 | 291 | 4 | 0 | **390** | - | 718 |
| **% Lights** | 100% | 100% | 86.4% | 0% | **95.6%** | - | 76.2% | 94.7% | 93.8% | 0% | **87.5%** | - | 100% | 80.6% | 93.8% | 100% | **84.6%** | - | 86.4% | 89.8% | 80.0% | 0% | **88.8%** | - | 88.0% |
| **Articulated Trucks** | 0 | 0 | 3 | 0 | **3** | - | 0 | 0 | 0 | 0 | **0** | - | 0 | 25 | 2 | 0 | **27** | - | 14 | 20 | 1 | 0 | **35** | - | 65 |
| **% Articulated Trucks** | 0% | 0% | 13.6% | 0% | **4.4%** | - | 0% | 0% | 0% | 0% | **0%** | - | 0% | 13.1% | 6.3% | 0% | **10.7%** | - | 12.7% | 6.2% | 20.0% | 0% | **8.0%** | - | 8.0% |
| **Buses and Single-Unit Trucks** | 0 | 0 | 0 | 0 | **0** | - | 5 | 1 | 1 | 0 | **7** | - | 0 | 12 | 0 | 0 | **12** | - | 1 | 13 | 0 | 0 | **14** | - | 33 |
| **% Buses and Single-Unit Trucks** | 0% | 0% | 0% | 0% | **0%** | - | 23.8% | 5.3% | 6.3% | 0% | **12.5%** | - | 0% | 6.3% | 0% | 0% | **4.7%** | - | 0.9% | 4.0% | 0% | 0% | **3.2%** | - | 4.0% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 1. SH 34 at Sonoma Trail - TMC

Thu Mar 26, 2026
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1387744, Location: 32.33618, -96.614329

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 1. SH 34 at Sonoma Trail - TMC

Thu Mar 26, 2026
Midday Peak (12:30 PM - 1:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1387744, Location: 32.33618, -96.614329

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

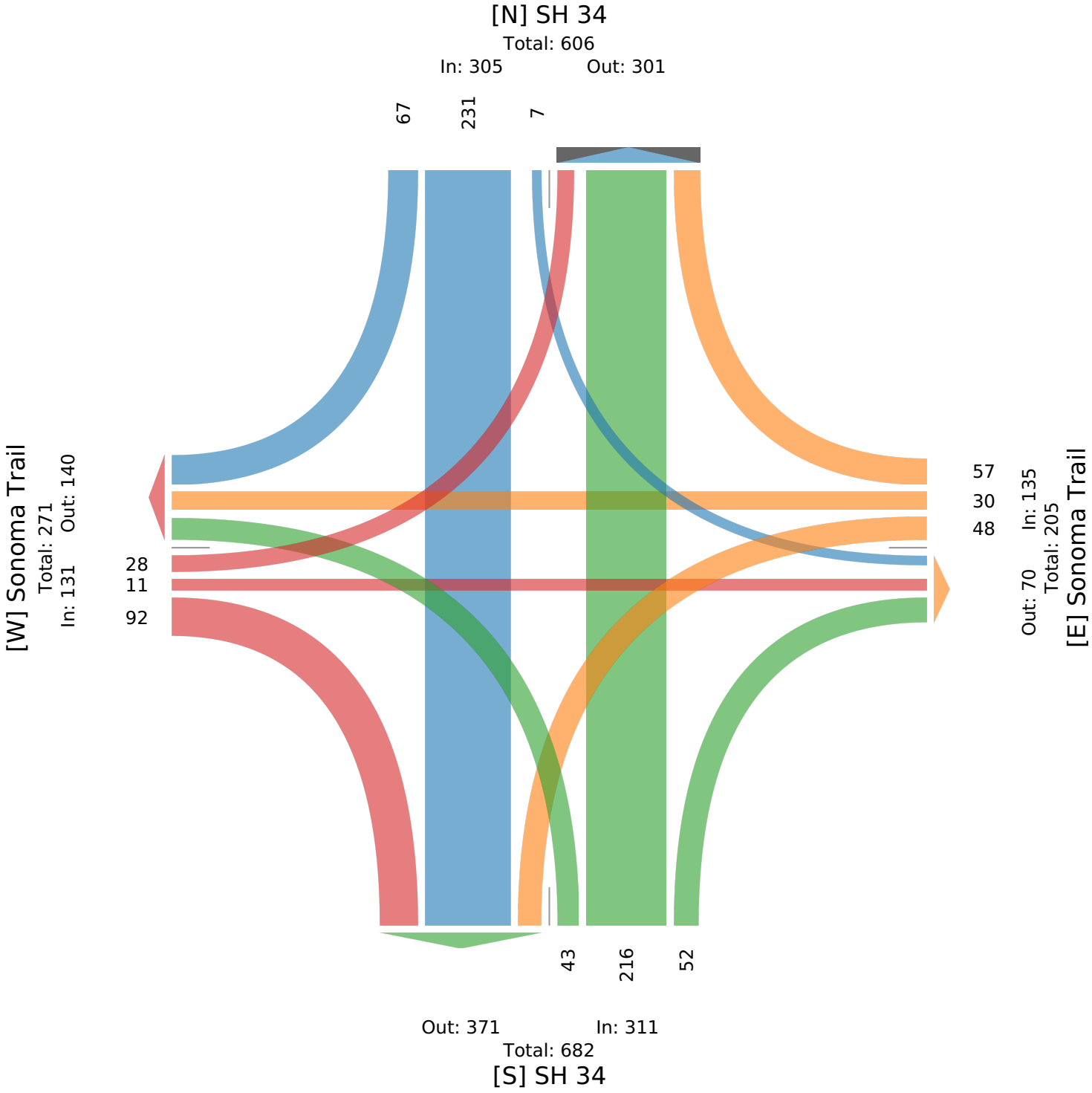
| Leg / Direction | Sonoma Trail Eastbound | | | | | | Sonoma Trail Westbound | | | | | | SH 34 Northbound | | | | | | SH 34 Southbound | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | **Int** |
| 2026-03-26 12:30PM | 21 | 2 | 5 | 0 | **28** | 0 | 14 | 6 | 15 | 0 | **35** | 0 | 11 | 58 | 8 | 0 | **77** | 0 | 17 | 51 | 0 | 0 | **68** | 0 | **208** |
| 12:45PM | 25 | 2 | 6 | 0 | **33** | 0 | 9 | 6 | 12 | 0 | **27** | 0 | 12 | 56 | 9 | 0 | **77** | 0 | 15 | 60 | 2 | 0 | **77** | 0 | **214** |
| 1:00PM | 28 | 3 | 7 | 0 | **38** | 0 | 17 | 10 | 7 | 0 | **34** | 0 | 11 | 52 | 14 | 0 | **77** | 0 | 15 | 56 | 1 | 0 | **72** | 0 | **221** |
| 1:15PM | 18 | 4 | 10 | 0 | **32** | 0 | 17 | 8 | 14 | 0 | **39** | 0 | 18 | 50 | 12 | 0 | **80** | 0 | 20 | 64 | 4 | 0 | **88** | 0 | **239** |
| **Total** | 92 | 11 | 28 | 0 | **131** | 0 | 57 | 30 | 48 | 0 | **135** | 0 | 52 | 216 | 43 | 0 | **311** | 0 | 67 | 231 | 7 | 0 | **305** | 0 | **882** |
| **% Approach** | 70.2% | 8.4% | 21.4% | 0% | **-** | - | 42.2% | 22.2% | 35.6% | 0% | **-** | - | 16.7% | 69.5% | 13.8% | 0% | **-** | - | 22.0% | 75.7% | 2.3% | 0% | **-** | - | - |
| **% Total** | 10.4% | 1.2% | 3.2% | 0% | **14.9%** | - | 6.5% | 3.4% | 5.4% | 0% | **15.3%** | - | 5.9% | 24.5% | 4.9% | 0% | **35.3%** | - | 7.6% | 26.2% | 0.8% | 0% | **34.6%** | - | - |
| **PHF** | 0.821 | 0.688 | 0.700 | - | **0.862** | - | 0.838 | 0.750 | 0.800 | - | **0.865** | - | 0.722 | 0.931 | 0.768 | - | **0.972** | - | 0.838 | 0.902 | 0.438 | - | **0.866** | - | 0.923 |
| **Lights** | 89 | 11 | 27 | 0 | **127** | - | 54 | 29 | 47 | 0 | **130** | - | 52 | 185 | 40 | 0 | **277** | - | 48 | 203 | 7 | 0 | **258** | - | 792 |
| **% Lights** | 96.7% | 100% | 96.4% | 0% | **96.9%** | - | 94.7% | 96.7% | 97.9% | 0% | **96.3%** | - | 100% | 85.6% | 93.0% | 0% | **89.1%** | - | 71.6% | 87.9% | 100% | 0% | **84.6%** | - | 89.8% |
| **Articulated Trucks** | 1 | 0 | 1 | 0 | **2** | - | 0 | 0 | 0 | 0 | **0** | - | 0 | 25 | 1 | 0 | **26** | - | 18 | 14 | 0 | 0 | **32** | - | 60 |
| **% Articulated Trucks** | 1.1% | 0% | 3.6% | 0% | **1.5%** | - | 0% | 0% | 0% | 0% | **0%** | - | 0% | 11.6% | 2.3% | 0% | **8.4%** | - | 26.9% | 6.1% | 0% | 0% | **10.5%** | - | 6.8% |
| **Buses and Single-Unit Trucks** | 2 | 0 | 0 | 0 | **2** | - | 3 | 1 | 1 | 0 | **5** | - | 0 | 6 | 2 | 0 | **8** | - | 1 | 14 | 0 | 0 | **15** | - | 30 |
| **% Buses and Single-Unit Trucks** | 2.2% | 0% | 0% | 0% | **1.5%** | - | 5.3% | 3.3% | 2.1% | 0% | **3.7%** | - | 0% | 2.8% | 4.7% | 0% | **2.6%** | - | 1.5% | 6.1% | 0% | 0% | **4.9%** | - | 3.4% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 1. SH 34 at Sonoma Trail - TMC

Thu Mar 26, 2026
Midday Peak (12:30 PM - 1:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1387744, Location: 32.33618, -96.614329

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



## 1. SH 34 at Sonoma Trail - TMC

Thu Mar 26, 2026
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1387744, Location: 32.33618, -96.614329

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

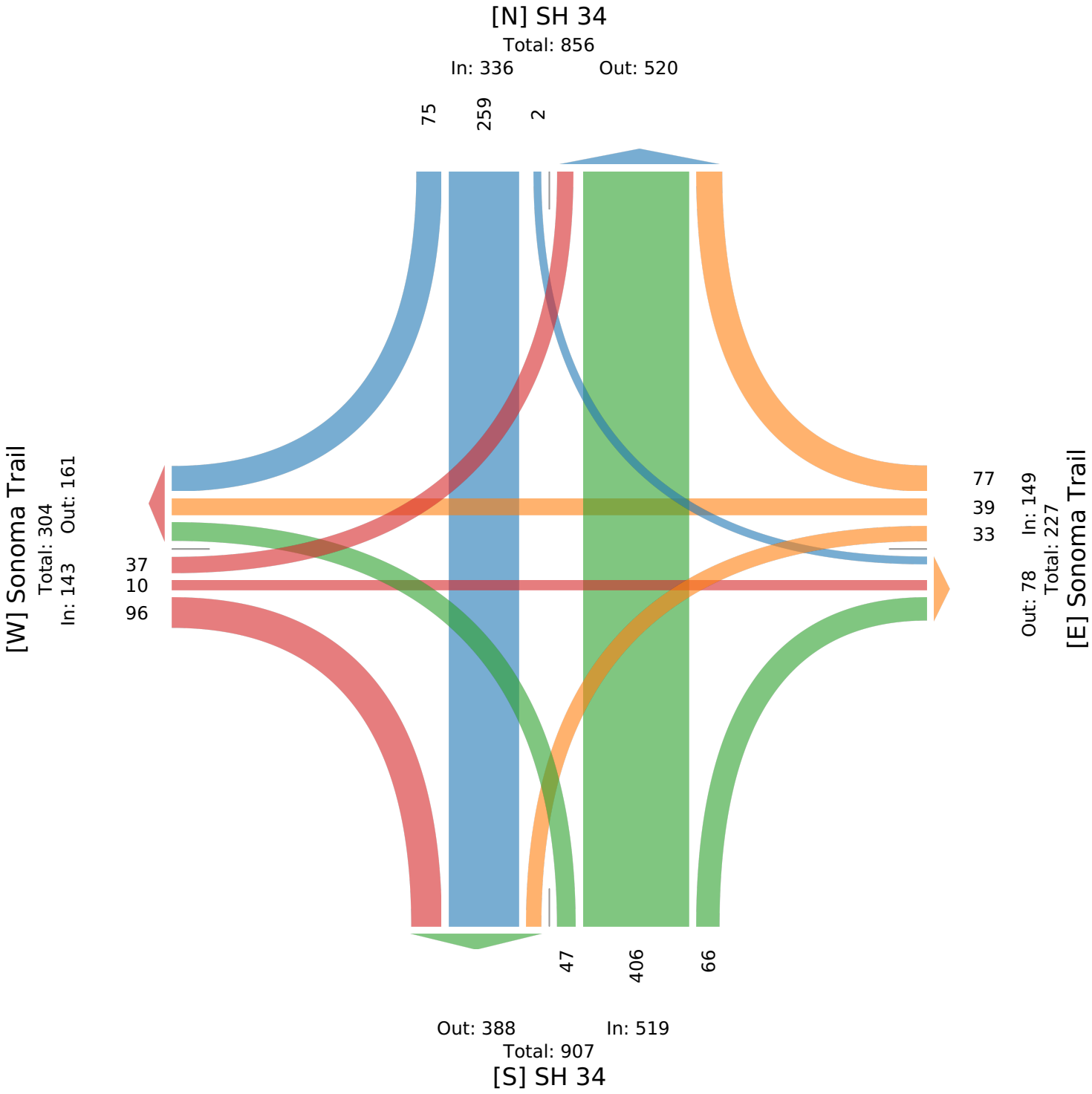
| Leg | Sonoma Trail | | | | | | Sonoma Trail | | | | | | SH 34 | | | | | | SH 34 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Eastbound | | | | | | Westbound | | | | | | Northbound | | | | | | Southbound | | | | | | |
| Time | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | R | T | L | U | **App** | Ped* | **Int** |
| 2026-03-26 4:15PM | 26 | 4 | 8 | 0 | **38** | 0 | 25 | 13 | 9 | 0 | **47** | 0 | 23 | 94 | 8 | 0 | **125** | 0 | 21 | 73 | 0 | 0 | **94** | 0 | **304** |
| 4:30PM | 22 | 1 | 9 | 0 | **32** | 0 | 19 | 12 | 8 | 0 | **39** | 0 | 16 | 110 | 20 | 0 | **146** | 0 | 17 | 65 | 0 | 0 | **82** | 0 | **299** |
| 4:45PM | 21 | 3 | 14 | 0 | **38** | 0 | 15 | 8 | 9 | 0 | **32** | 0 | 12 | 102 | 10 | 0 | **124** | 0 | 13 | 56 | 2 | 0 | **71** | 0 | **265** |
| 5:00PM | 27 | 2 | 6 | 0 | **35** | 0 | 18 | 6 | 7 | 0 | **31** | 0 | 15 | 100 | 9 | 0 | **124** | 0 | 24 | 65 | 0 | 0 | **89** | 0 | **279** |
| **Total** | 96 | 10 | 37 | 0 | **143** | 0 | 77 | 39 | 33 | 0 | **149** | 0 | 66 | 406 | 47 | 0 | **519** | 0 | 75 | 259 | 2 | 0 | **336** | 0 | **1147** |
| **% Approach** | 67.1% | 7.0% | 25.9% | 0% | **-** | - | 51.7% | 26.2% | 22.1% | 0% | **-** | - | 12.7% | 78.2% | 9.1% | 0% | **-** | - | 22.3% | 77.1% | 0.6% | 0% | **-** | - | - |
| **% Total** | 8.4% | 0.9% | 3.2% | 0% | **12.5%** | - | 6.7% | 3.4% | 2.9% | 0% | **13.0%** | - | 5.8% | 35.4% | 4.1% | 0% | **45.2%** | - | 6.5% | 22.6% | 0.2% | 0% | **29.3%** | - | - |
| **PHF** | 0.889 | 0.625 | 0.661 | - | **0.941** | - | 0.770 | 0.750 | 0.917 | - | **0.793** | - | 0.717 | 0.923 | 0.588 | - | **0.889** | - | 0.781 | 0.887 | 0.250 | - | **0.894** | - | 0.943 |
| **Lights** | 93 | 10 | 37 | 0 | **140** | - | 71 | 39 | 32 | 0 | **142** | - | 63 | 383 | 45 | 0 | **491** | - | 68 | 235 | 2 | 0 | **305** | - | 1078 |
| **% Lights** | 96.9% | 100% | 100% | 0% | **97.9%** | - | 92.2% | 100% | 97.0% | 0% | **95.3%** | - | 95.5% | 94.3% | 95.7% | 0% | **94.6%** | - | 90.7% | 90.7% | 100% | 0% | **90.8%** | - | 94.0% |
| **Articulated Trucks** | 1 | 0 | 0 | 0 | **1** | - | 2 | 0 | 0 | 0 | **2** | - | 0 | 16 | 0 | 0 | **16** | - | 4 | 18 | 0 | 0 | **22** | - | 41 |
| **% Articulated Trucks** | 1.0% | 0% | 0% | 0% | **0.7%** | - | 2.6% | 0% | 0% | 0% | **1.3%** | - | 0% | 3.9% | 0% | 0% | **3.1%** | - | 5.3% | 6.9% | 0% | 0% | **6.5%** | - | 3.6% |
| **Buses and Single-Unit Trucks** | 2 | 0 | 0 | 0 | **2** | - | 4 | 0 | 1 | 0 | **5** | - | 3 | 7 | 2 | 0 | **12** | - | 3 | 6 | 0 | 0 | **9** | - | 28 |
| **% Buses and Single-Unit Trucks** | 2.1% | 0% | 0% | 0% | **1.4%** | - | 5.2% | 0% | 3.0% | 0% | **3.4%** | - | 4.5% | 1.7% | 4.3% | 0% | **2.3%** | - | 4.0% | 2.3% | 0% | 0% | **2.7%** | - | 2.4% |
| Pedestrians | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bicycles on Crosswalk | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

## 1. SH 34 at Sonoma Trail - TMC

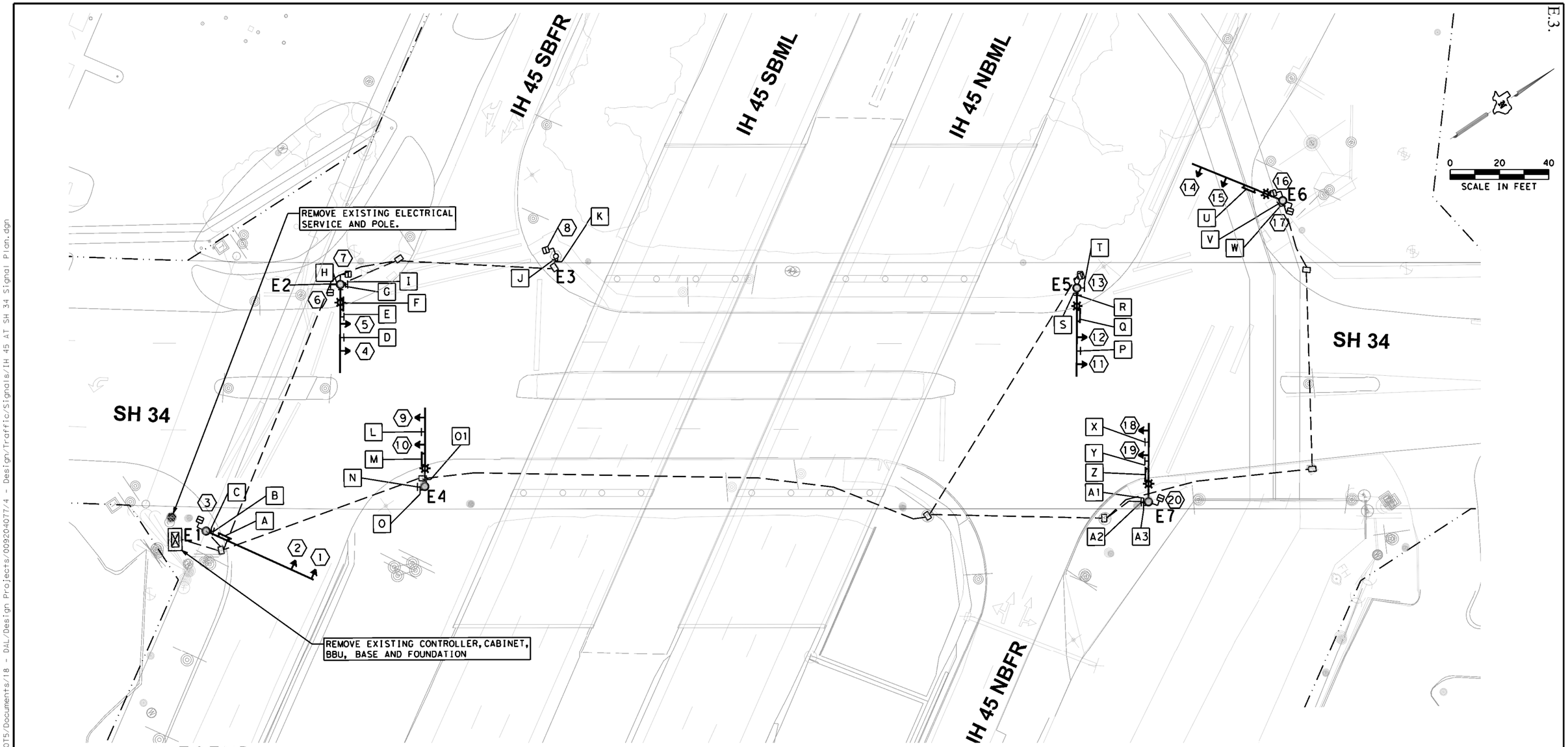
Thu Mar 26, 2026
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1387744, Location: 32.33618, -96.614329

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US



# C. TXDOT SCHEMATICS

FILE: pw://txdot.projectwiseonline.com:TXDOT5/Documents/18 - DAL/Design Projects/0092040774 - Design/Traffic/Signals/IH 45 AT SH 34 Signal Plan.dgn




## LEGEND

- EXISTING MAST ARM SIGNAL WITH SIGNAL HEAD NUMBERS TO BE REMOVED
- EXISTING PED POLE WITH LED COUNTDOWN AND PED CALL TO BE REMOVED
- EXISTING CONDUIT
- EXISTING GROUND BOX
- ROW — RIGHT OF WAY
- EXISTING SIGNAL POLE NUMBER
- A — SIGN LABEL

## EXISTING SIGNS

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1200 E Ennis Ave 1100 D3-1G 18"× 90" | | 1100 E Ennis Ave 1200 D3-1G 18"× 90" | | 100 IH 45 100 D3-1G 18"× 72" | | R9-3 24"× 24" | | ONE WAY R6-2L 30"× 36" | | ONE WAY R6-2R 30"× 36" | | LEFT TURN YIELD ON GREEN R10-12 30"× 36" | | PUSH BUTTON ON R10-4bR 9"×12" | | PUSH BUTTON ON R10-4bL 9"×12" | |
| A | | U | | F | M | B | K | E | I | L | N | D | X | C | H | G | J |
| | | | | Q | Z | O | O1 | Y | A2 | P | T | | | S | V | W | A1 |
| | | | | | | R | A3 | | | | | | | | | | |

## EXISTING SIGNAL HEADS

| H3 | H5LT | H3A | PED SIGNAL |
|---|---|---|---|
| 1 2 10 | 4 18 | 5 9 | |
| 12 14 15 | | 11 19 | |
| 3 6 7 | | | |
| 8 13 16 | | | |
| 17 20 | | | |

STATE OF TEXAS
CODY R. YEAROUT
139576
LICENSED PROFESSIONAL ENGINEER

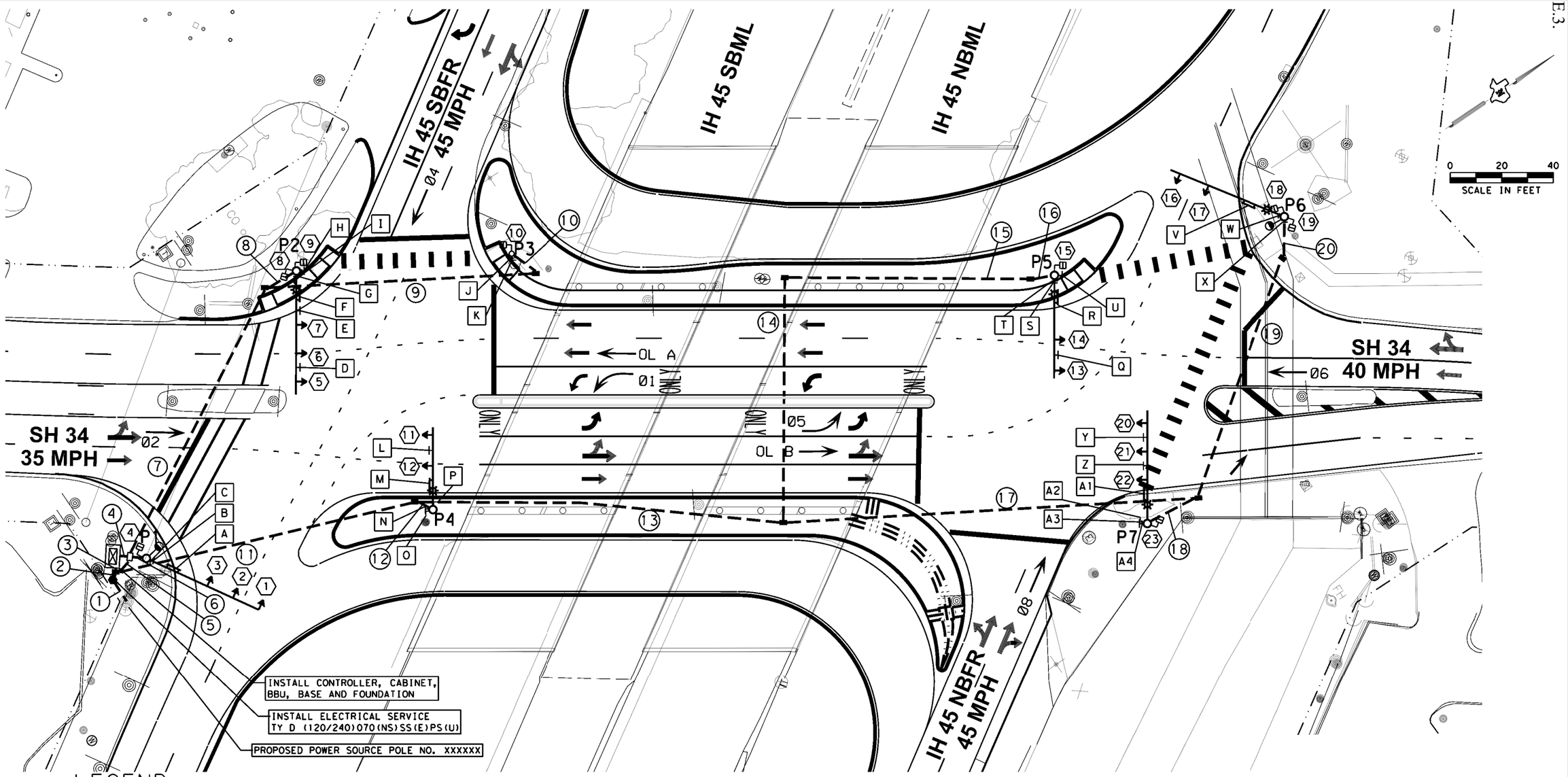
Cody R. Yearout, P.E. 7/30/2024
Digitally signed by CODY R YEAROUT, P.E. Date

Texas Department of Transportation
©2024

# IH 45
# EXISTING TRAFFIC SIGNAL LAYOUT

SCALE: 1"=40' SHEET 1 OF 1

| DESIGN | FED. RD. DIV. NO. | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| CY | 6 | (SEE TITLE SHEET) | | IH 45 |
| GRAPHICS CY | STATE | DISTRICT | COUNTY | SHEET NO. |
| CHECK CY | TEXAS | DAL | ELLIS | |
| CHECK EF | CONTROL | SECTION | JOB | |
| | 0092 | 04 | 077 | 164 |




## LEGEND

- PROPOSED MAST ARM SIGNAL WITH SIGNAL HEAD NUMBERS, 250 WATT EQ LED LUMINAIRE
- PED POLE WITH LED COUNTDOWN AND PED CALL
- CONDUIT WITH RUN NUMBER
- PROPOSED TYPE D GROUND BOX
- PROPOSED TYPE C GROUND BOX
- ROW — RIGHT OF WAY
- P1 — SIGNAL POLE NUMBER
- A — SIGN LABEL
- PROPOSED OPTICOM SENSOR

## PROPOSED SIGNS

A — D3-1G 18"× 78" — E 1200 Ennis Ave 1100

V — D3-1G 18"× 78" — E 1100 Ennis Ave 1200

F M R A1 — D3-1G 18"× 72" — 100 IH 45 100

B K O P S A3 — R9-3 24"× 24"

E H Z A2 — R6-2L 30"× 36" — ONE WAY

L N Q U — R6-2R 30"× 36" — ONE WAY

D Y — R10-17T 36"× 42" — LEFT TURN YIELD ON FLASHING YELLOW ARROW

C G T W — R10-3eR 9"×15"

I J X A4 — R10-3eL 9"×15"

STATE OF TEXAS
CODY R. YEAROUT
139576
LICENSED PROFESSIONAL ENGINEER

Cody R. Yearout, P.E. 7/30/2024
Digitally signed by CODY R YEAROUT, P.E. Date

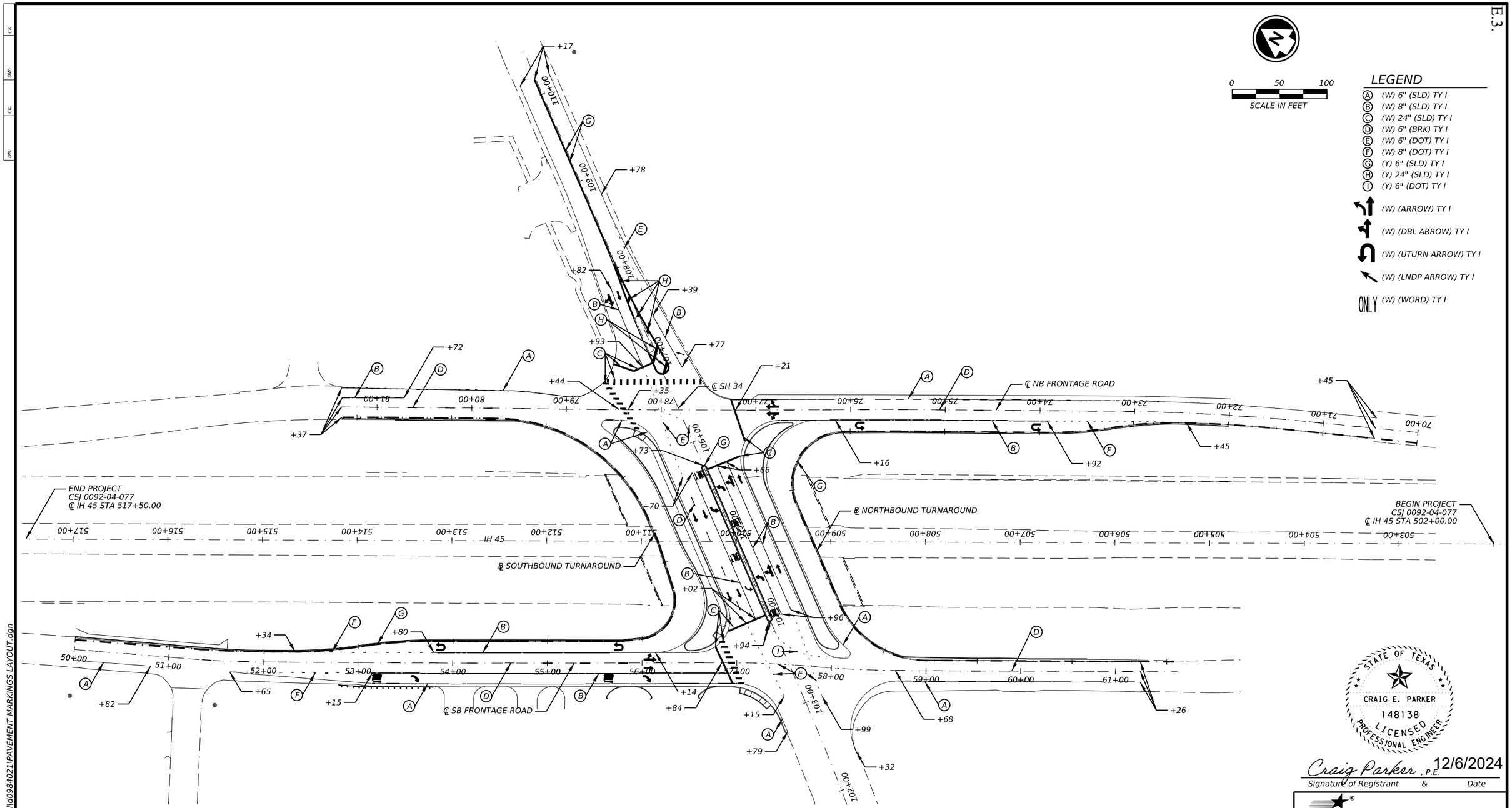
Texas Department of Transportation
©2024

# IH 45
# PROPOSED TRAFFIC SIGNAL LAYOUT

SCALE: 1"=40' SHEET 1 OF 3

| DESIGN | FED.RD. DIV.NO. | PROJECT NO. | | HIGHWAY NO. |
|---|---|---|---|---|
| CY | 6 | (SEE TITLE SHEET) | | IH 45 |
| GRAPHICS CY | STATE | DISTRICT | COUNTY | SHEET NO. |
| CHECK CY | TEXAS | DAL | ELLIS | |
| CHECK EF | CONTROL 0092 | SECTION 04 | JOB 077 | 171 |

FILE: pw://txdot.projectwiseonline.com:TXDOT5/Documents/18 - DAL/Design Projects/009204077/4 - Design/Traffic/Signals/IH 45 AT SH 34 Signal Plan.dgn




STATE OF TEXAS
CRAIG E. PARKER
148138
LICENSED
PROFESSIONAL ENGINEER

Craig Parker, P.E. 12/6/2024
Signature of Registrant & Date

Texas Department of Transportation

# IH 45

## PAVEMENT MARKINGS LAYOUT

SHEET 1 OF 1

| CONT | SECT | JOB | HIGHWAY |
|---|---|---|---|
| 0092 | 04 | 077 | IH 45 |
| DIST | COUNTY | | SHEET NO. |
| DAL | ELLIS | | 177 |

DATE: 12/4/2024 3:48:28 PM
FILE: c:\txdot\pw_online\txdot5\julia.campbell\d0984021\PAVEMENT MARKINGS LAYOUT.dgn

# D. NCHRP REPORT 457 SPREADSHEETS

**Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.**

INPUT

| Roadway geometry: | 2-lane roadw ay |
|---|---|

| Variable | Value |
|---|---|
| Major-road speed, mph: | 30 |
| Major-road volume (one direction), veh/h: | 167 |
| Right-turn volume, veh/h: | 20 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h: | 108803 |
| **Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:** | |
| **Do NOT add right-turn bay.** | |

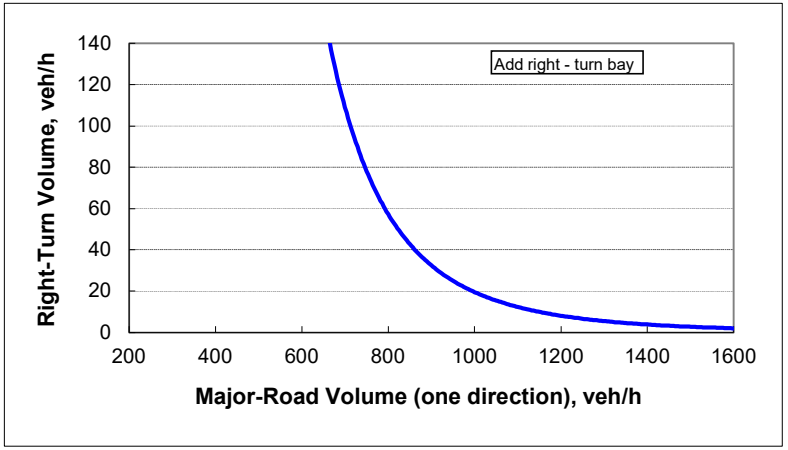


**Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.**

INPUT

| Roadway geometry: | 2-lane roadw ay |
|---|---|

| Variable | Value |
|---|---|
| Major-road speed, mph: | 30 |
| Major-road volume (one direction), veh/h: | 160 |
| Right-turn volume, veh/h: | 49 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h: | 133739 |
| **Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:** | |
| **Do NOT add right-turn bay.** | |

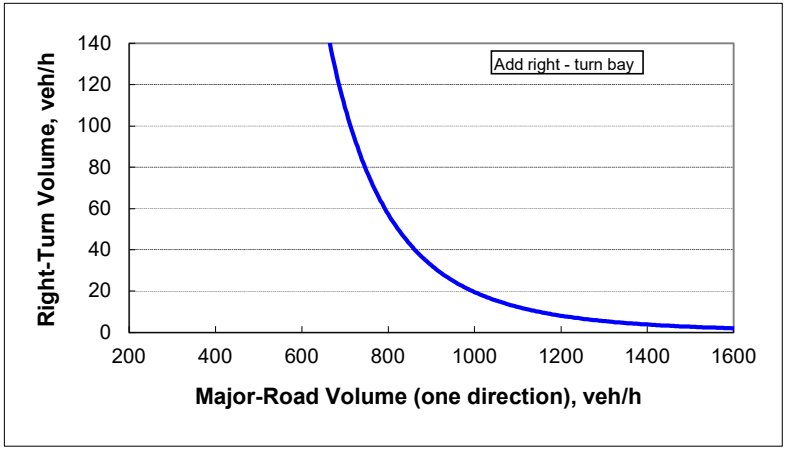


**Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.**

INPUT

| Roadway geometry: | 2-lane roadw ay |
|---|---|

| Variable | Value |
|---|---|
| Major-road speed, mph: | 30 |
| Major-road volume (one direction), veh/h: | 228 |
| Right-turn volume, veh/h: | 61 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h: | 24267 |
| **Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:** | |
| **Do NOT add right-turn bay.** | |

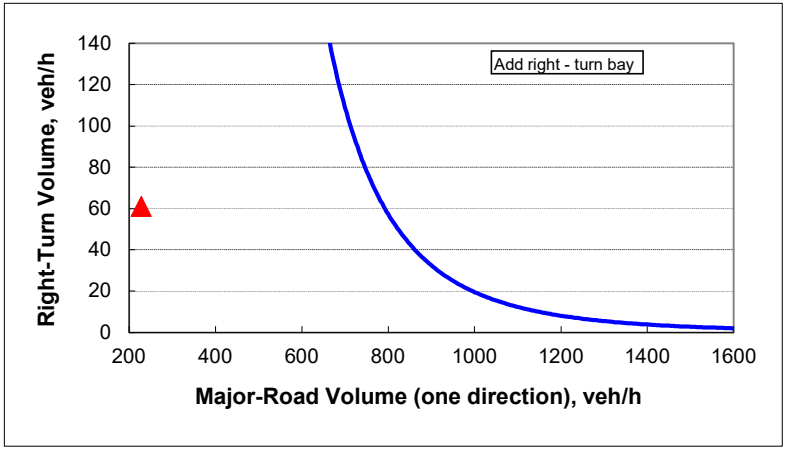


**Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.**

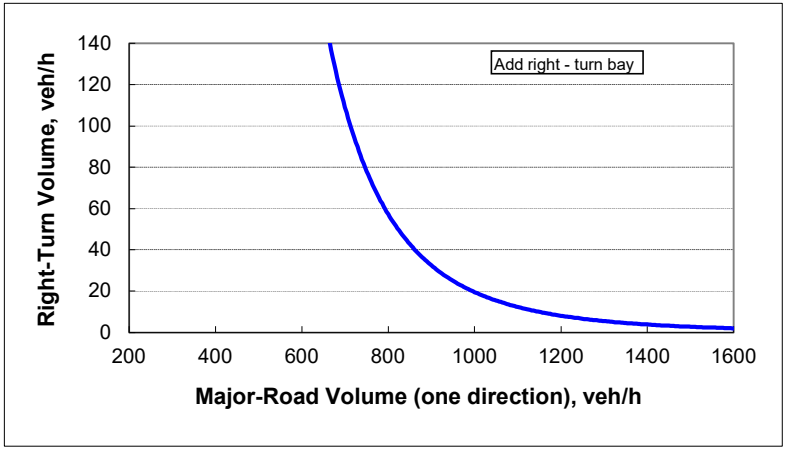
INPUT

| Roadway geometry: | 2-lane roadw ay |
|---|---|

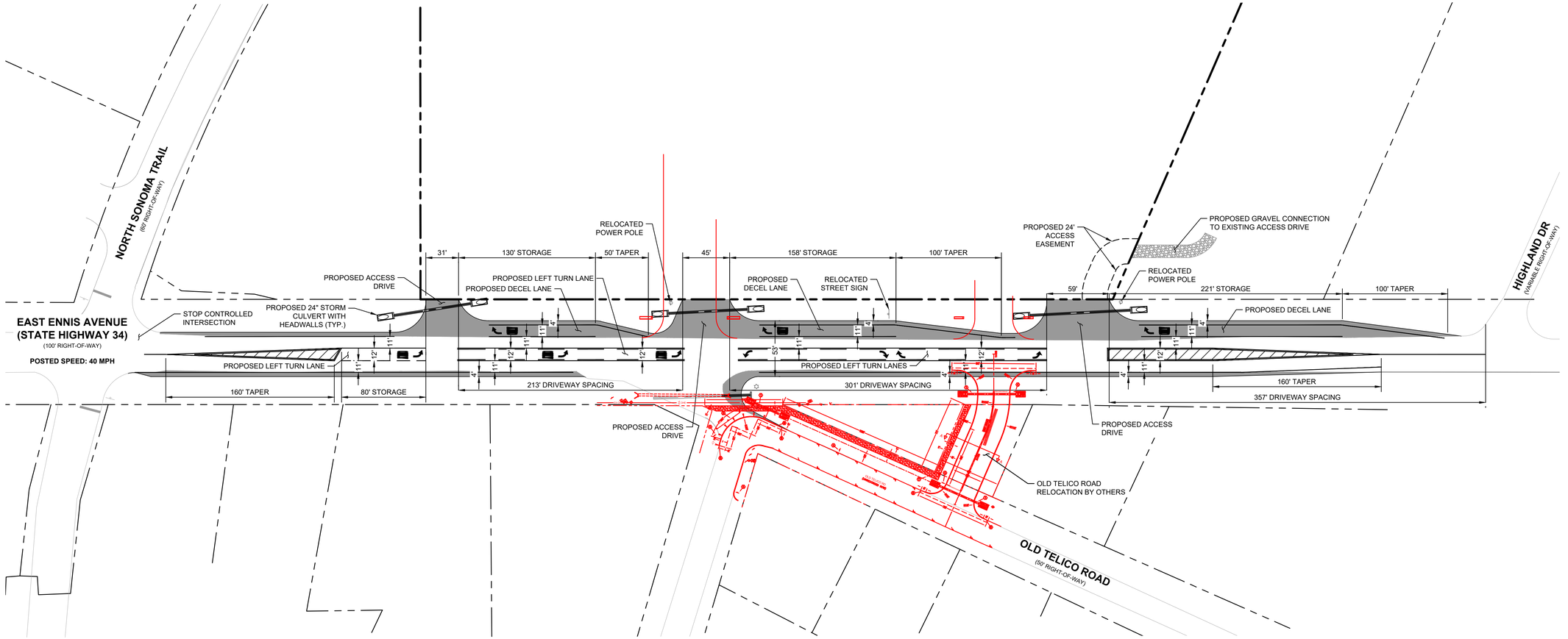
| Variable | Value |
|---|---|
| Major-road speed, mph: | 30 |
| Major-road volume (one direction), veh/h: | 306 |
| Right-turn volume, veh/h: | 146 |

OUTPUT

| Variable | Value |
|---|---|
| Limiting right-turn volume, veh/h: | 5878 |
| **Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:** | |
| **Do NOT add right-turn bay.** | |



# E. TXDOT EXHIBIT

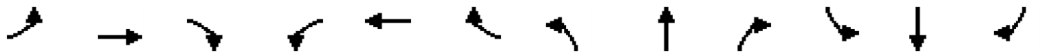



# TXDOT EXHIBIT
# N SONOMA TRAIL & ENNIS AVENUE
# CITY OF ENNIS, TX

DATE: 10/29/2025

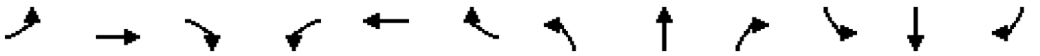
Kimley»Horn

# F. SYNCHRO OUTPUT SHEETS



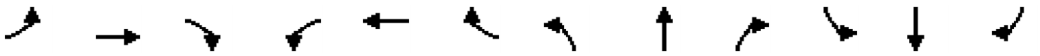
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 290 | 122 | 156 | 515 | 0 | 0 | 0 | 0 | 132 | 52 | 46 |
| Future Volume (vph) | 0 | 290 | 122 | 156 | 515 | 0 | 0 | 0 | 0 | 132 | 52 | 46 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | | 6.0 | | | | | | 6.0 | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | | | | | 1.00 | |
| Frt | | 0.96 | | | 1.00 | | | | | | 0.97 | |
| Flt Protected | | 1.00 | | | 0.99 | | | | | | 0.97 | |
| Satd. Flow (prot) | | 3254 | | | 3366 | | | | | | 1695 | |
| Flt Permitted | | 1.00 | | | 0.67 | | | | | | 0.97 | |
| Satd. Flow (perm) | | 3254 | | | 2271 | | | | | | 1695 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 0 | 302 | 127 | 162 | 536 | 0 | 0 | 0 | 0 | 138 | 54 | 48 |
| RTOR Reduction (vph) | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 0 | 390 | 0 | 0 | 699 | 0 | 0 | 0 | 0 | 0 | 232 | 0 |
| Heavy Vehicles (%) | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | |
| Actuated Green, G (s) | | 17.8 | | | 47.4 | | | | | | 25.9 | |
| Effective Green, g (s) | | 17.8 | | | 47.4 | | | | | | 25.9 | |
| Actuated g/C Ratio | | 0.19 | | | 0.52 | | | | | | 0.28 | |
| Clearance Time (s) | | 6.0 | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | | | | | | | | | |
| Lane Grp Cap (vph) | | 634 | | | 1534 | | | | | | 480 | |
| v/s Ratio Prot | | c0.12 | | | c0.15 | | | | | | | |
| v/s Ratio Perm | | | | | 0.09 | | | | | | 0.14 | |
| v/c Ratio | | 0.62 | | | 0.46 | | | | | | 0.48 | |
| Uniform Delay, d1 | | 33.6 | | | 13.8 | | | | | | 27.1 | |
| Progression Factor | | 1.00 | | | 0.33 | | | | | | 1.00 | |
| Incremental Delay, d2 | | 1.3 | | | 0.1 | | | | | | 0.3 | |
| Delay (s) | | 34.9 | | | 4.7 | | | | | | 27.4 | |
| Level of Service | | C | | | A | | | | | | C | |
| Approach Delay (s/veh) | | 34.9 | | | 4.7 | | | 0.0 | | | 27.4 | |
| Approach LOS | | C | | | A | | | A | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 18.1 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.55 | | |
| Actuated Cycle Length (s) | 91.3 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 58.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 218 | 246 | 0 | 0 | 405 | 46 | 251 | 101 | 99 | 0 | 0 | 0 |
| Future Volume (vph) | 218 | 246 | 0 | 0 | 405 | 46 | 251 | 101 | 99 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | | 0.95 | | | | |
| Frt | | 1.00 | | | 0.98 | | | 0.97 | | | | |
| Flt Protected | | 0.98 | | | 1.00 | | | 0.97 | | | | |
| Satd. Flow (prot) | | 3236 | | | 3262 | | | 3116 | | | | |
| Flt Permitted | | 0.58 | | | 1.00 | | | 0.97 | | | | |
| Satd. Flow (perm) | | 1933 | | | 3262 | | | 3116 | | | | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 225 | 254 | 0 | 0 | 418 | 47 | 259 | 104 | 102 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 22 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 479 | 0 | 0 | 458 | 0 | 0 | 443 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | | 47.5 | | | 18.2 | | | 25.8 | | | | |
| Effective Green, g (s) | | 47.5 | | | 18.2 | | | 25.8 | | | | |
| Actuated g/C Ratio | | 0.52 | | | 0.20 | | | 0.28 | | | | |
| Clearance Time (s) | | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | | 1423 | | | 650 | | | 880 | | | | |
| v/s Ratio Prot | | c0.11 | | | c0.14 | | | | | | | |
| v/s Ratio Perm | | 0.07 | | | | | | 0.14 | | | | |
| v/c Ratio | | 0.34 | | | 0.70 | | | 0.50 | | | | |
| Uniform Delay, d1 | | 12.7 | | | 34.0 | | | 27.4 | | | | |
| Progression Factor | | 0.41 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | | 0.0 | | | 2.8 | | | 0.2 | | | | |
| Delay (s) | | 5.2 | | | 36.9 | | | 27.6 | | | | |
| Level of Service | | A | | | D | | | C | | | | |
| Approach Delay (s/veh) | | 5.2 | | | 36.9 | | | 27.6 | | | 0.0 | |
| Approach LOS | | A | | | D | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 23.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 91.3 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 54.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

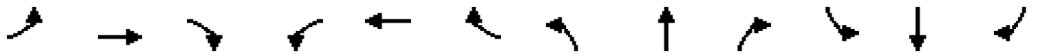


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 40 | 243 | 36 | 1 | 348 | 90 | 6 | 11 | 1 | 19 | 2 | 56 |
| Future Volume (Veh/h) | 40 | 243 | 36 | 1 | 348 | 90 | 6 | 11 | 1 | 19 | 2 | 56 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 43 | 259 | 38 | 1 | 370 | 96 | 6 | 12 | 1 | 20 | 2 | 60 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.94 | | | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | |
| vC, conflicting volume | 466 | | | 297 | | | 845 | 832 | 278 | 791 | 803 | 418 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 466 | | | 215 | | | 800 | 786 | 194 | 742 | 755 | 418 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.3 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 96 | | | 100 | | | 97 | 96 | 100 | 93 | 99 | 90 |
| cM capacity (veh/h) | 1040 | | | 1210 | | | 236 | 279 | 767 | 278 | 291 | 612 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 340 | 467 | 19 | 82 |
| Volume Left | 43 | 1 | 6 | 20 |
| Volume Right | 38 | 96 | 1 | 60 |
| cSH | 1040 | 1210 | 273 | 464 |
| Volume to Capacity | 0.04 | 0.00* | 0.07 | 0.18 |
| Queue Length 95th (ft) | 3 | 0 | 6 | 16 |
| Control Delay (s/veh) | 1.5 | 0.0 | 19.2 | 14.4 |
| Lane LOS | A | A | C | B |
| Approach Delay (s/veh) | 1.5 | 0.0 | 19.2 | 14.4 |
| Approach LOS | | | C | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.3 | | | |
| Intersection Capacity Utilization | 56.6% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |

* Value less than 0.01.

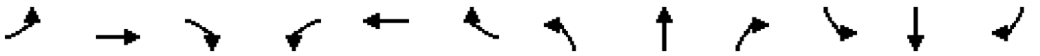


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 471 | 91 | 178 | 463 | 0 | 0 | 0 | 0 | 251 | 74 | 42 |
| Future Volume (vph) | 0 | 471 | 91 | 178 | 463 | 0 | 0 | 0 | 0 | 251 | 74 | 42 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | | 6.0 | | | | | | 6.0 | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | | | | | 1.00 | |
| Frt | | 0.98 | | | 1.00 | | | | | | 0.98 | |
| Flt Protected | | 1.00 | | | 0.99 | | | | | | 0.97 | |
| Satd. Flow (prot) | | 3420 | | | 3457 | | | | | | 1756 | |
| Flt Permitted | | 1.00 | | | 0.59 | | | | | | 0.97 | |
| Satd. Flow (perm) | | 3420 | | | 2057 | | | | | | 1756 | |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 0 | 481 | 93 | 182 | 472 | 0 | 0 | 0 | 0 | 256 | 76 | 43 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 560 | 0 | 0 | 654 | 0 | 0 | 0 | 0 | 0 | 371 | 0 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | |
| Actuated Green, G (s) | | 22.7 | | | 51.8 | | | | | | 23.4 | |
| Effective Green, g (s) | | 22.7 | | | 51.8 | | | | | | 23.4 | |
| Actuated g/C Ratio | | 0.24 | | | 0.56 | | | | | | 0.25 | |
| Clearance Time (s) | | 6.0 | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | | | | | | | | | |
| Lane Grp Cap (vph) | | 832 | | | 1580 | | | | | | 440 | |
| v/s Ratio Prot | | c0.16 | | | c0.13 | | | | | | | |
| v/s Ratio Perm | | | | | 0.10 | | | | | | 0.21 | |
| v/c Ratio | | 0.67 | | | 0.41 | | | | | | 0.84 | |
| Uniform Delay, d1 | | 31.9 | | | 11.9 | | | | | | 33.2 | |
| Progression Factor | | 1.00 | | | 0.44 | | | | | | 1.00 | |
| Incremental Delay, d2 | | 1.7 | | | 0.1 | | | | | | 13.2 | |
| Delay (s) | | 33.6 | | | 5.3 | | | | | | 46.4 | |
| Level of Service | | C | | | A | | | | | | D | |
| Approach Delay (s/veh) | | 33.6 | | | 5.3 | | | 0.0 | | | 46.4 | |
| Approach LOS | | C | | | A | | | A | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 25.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 93.2 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 69.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 284 | 424 | 0 | 0 | 411 | 32 | 240 | 131 | 132 | 0 | 0 | 0 |
| Future Volume (vph) | 284 | 424 | 0 | 0 | 411 | 32 | 240 | 131 | 132 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | | 0.95 | | | | |
| Frt | | 1.00 | | | 0.99 | | | 0.96 | | | | |
| Flt Protected | | 0.98 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (prot) | | 3436 | | | 3467 | | | 3288 | | | | |
| Flt Permitted | | 0.61 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (perm) | | 2126 | | | 3467 | | | 3288 | | | | |
| Peak-hour factor, PHF | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Adj. Flow (vph) | 287 | 428 | 0 | 0 | 415 | 32 | 242 | 132 | 133 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 28 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 715 | 0 | 0 | 442 | 0 | 0 | 479 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | | 50.8 | | | 18.9 | | | 24.4 | | | | |
| Effective Green, g (s) | | 50.8 | | | 18.9 | | | 24.4 | | | | |
| Actuated g/C Ratio | | 0.55 | | | 0.20 | | | 0.26 | | | | |
| Clearance Time (s) | | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | | 1607 | | | 703 | | | 860 | | | | |
| v/s Ratio Prot | | c0.15 | | | c0.13 | | | | | | | |
| v/s Ratio Perm | | 0.09 | | | | | | 0.15 | | | | |
| v/c Ratio | | 0.44 | | | 0.63 | | | 0.56 | | | | |
| Uniform Delay, d1 | | 12.7 | | | 33.9 | | | 29.7 | | | | |
| Progression Factor | | 0.35 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | | 0.1 | | | 1.3 | | | 0.4 | | | | |
| Delay (s) | | 4.5 | | | 35.2 | | | 30.2 | | | | |
| Level of Service | | A | | | D | | | C | | | | |
| Approach Delay (s/veh) | | 4.5 | | | 35.2 | | | 30.2 | | | 0.0 | |
| Approach LOS | | A | | | D | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 20.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.57 | | |
| Actuated Cycle Length (s) | 93.2 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 62.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

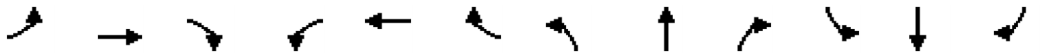


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 47 | 452 | 43 | 6 | 296 | 58 | 8 | 2 | 28 | 52 | 7 | 91 |
| Future Volume (Veh/h) | 47 | 452 | 43 | 6 | 296 | 58 | 8 | 2 | 28 | 52 | 7 | 91 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 49 | 476 | 45 | 6 | 312 | 61 | 8 | 2 | 29 | 55 | 7 | 96 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.87 | | | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | |
| vC, conflicting volume | 373 | | | 521 | | | 1051 | 982 | 499 | 981 | 974 | 343 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 373 | | | 372 | | | 982 | 903 | 346 | 902 | 893 | 343 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 99 | | | 95 | 99 | 95 | 73 | 97 | 86 |
| cM capacity (veh/h) | 1175 | | | 1020 | | | 159 | 228 | 601 | 203 | 230 | 696 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 570 | 379 | 39 | 158 |
| Volume Left | 49 | 6 | 8 | 55 |
| Volume Right | 45 | 61 | 29 | 96 |
| cSH | 1175 | 1020 | 364 | 359 |
| Volume to Capacity | 0.04 | 0.00* | 0.11 | 0.44 |
| Queue Length 95th (ft) | 3 | 0 | 9 | 54 |
| Control Delay (s/veh) | 1.2 | 0.2 | 16.1 | 22.6 |
| Lane LOS | A | A | C | C |
| Approach Delay (s/veh) | 1.2 | 0.2 | 16.1 | 22.6 |
| Approach LOS | | | C | C |

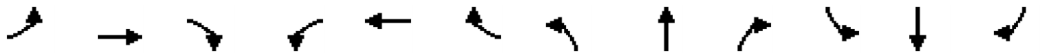
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.3 | | |
| Intersection Capacity Utilization | 73.1% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.



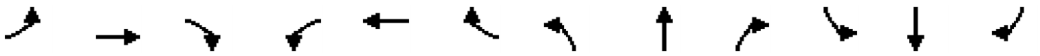
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 302 | 127 | 162 | 536 | 0 | 0 | 0 | 0 | 137 | 54 | 48 |
| Future Volume (vph) | 0 | 302 | 127 | 162 | 536 | 0 | 0 | 0 | 0 | 137 | 54 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | | | | 6.0 | 6.0 |
| Lane Util. Factor | | 0.95 | | 1.00 | 0.95 | | | | | | 0.95 | 1.00 |
| Frt | | 0.96 | | 1.00 | 1.00 | | | | | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | | 0.97 | 1.00 |
| Satd. Flow (prot) | | 3255 | | 1703 | 3406 | | | | | | 3288 | 1524 |
| Flt Permitted | | 1.00 | | 0.38 | 1.00 | | | | | | 0.97 | 1.00 |
| Satd. Flow (perm) | | 3255 | | 684 | 3406 | | | | | | 3288 | 1524 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 0 | 315 | 132 | 169 | 558 | 0 | 0 | 0 | 0 | 143 | 56 | 50 |
| RTOR Reduction (vph) | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| Lane Group Flow (vph) | 0 | 409 | 0 | 169 | 558 | 0 | 0 | 0 | 0 | 0 | 199 | 12 |
| Heavy Vehicles (%) | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | 4 12 |
| Actuated Green, G (s) | | 17.1 | | 45.4 | 51.4 | | | | | | 19.4 | 19.4 |
| Effective Green, g (s) | | 17.1 | | 45.4 | 51.4 | | | | | | 19.4 | 19.4 |
| Actuated g/C Ratio | | 0.21 | | 0.55 | 0.62 | | | | | | 0.23 | 0.23 |
| Clearance Time (s) | | 6.0 | | 6.0 | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | 2.0 | | | | | | | | |
| Lane Grp Cap (vph) | | 672 | | 723 | 2114 | | | | | | 770 | 357 |
| v/s Ratio Prot | | c0.13 | | 0.08 | c0.16 | | | | | | | |
| v/s Ratio Perm | | | | 0.05 | | | | | | | 0.06 | 0.01 |
| v/c Ratio | | 0.61 | | 0.23 | 0.26 | | | | | | 0.26 | 0.03 |
| Uniform Delay, d1 | | 29.8 | | 9.5 | 7.1 | | | | | | 25.8 | 24.5 |
| Progression Factor | | 1.00 | | 0.25 | 0.34 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.1 | | 0.1 | 0.0 | | | | | | 0.1 | 0.0 |
| Delay (s) | | 30.9 | | 2.4 | 2.4 | | | | | | 25.9 | 24.5 |
| Level of Service | | C | | A | A | | | | | | C | C |
| Approach Delay (s/veh) | | 30.9 | | | 2.4 | | | 0.0 | | | 25.6 | |
| Approach LOS | | C | | | A | | | A | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 15.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.40 | | |
| Actuated Cycle Length (s) | 82.8 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 41.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 227 | 256 | 0 | 0 | 421 | 48 | 261 | 105 | 103 | 0 | 0 | 0 |
| Future Volume (vph) | 227 | 256 | 0 | 0 | 421 | 48 | 261 | 105 | 103 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | 0.91 | 0.91 | | | 0.95 | | | 0.95 | | | | |
| Frt | 1.00 | 1.00 | | | 0.98 | | | 0.97 | | | | |
| Flt Protected | 0.95 | 0.99 | | | 1.00 | | | 0.97 | | | | |
| Satd. Flow (prot) | 1507 | 3131 | | | 3262 | | | 3116 | | | | |
| Flt Permitted | 0.35 | 0.73 | | | 1.00 | | | 0.97 | | | | |
| Satd. Flow (perm) | 555 | 2309 | | | 3262 | | | 3116 | | | | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 234 | 264 | 0 | 0 | 434 | 49 | 269 | 108 | 106 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 21 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 140 | 358 | 0 | 0 | 476 | 0 | 0 | 462 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | 39.8 | 39.8 | | | 17.7 | | | 25.0 | | | | |
| Effective Green, g (s) | 39.8 | 39.8 | | | 17.7 | | | 25.0 | | | | |
| Actuated g/C Ratio | 0.48 | 0.48 | | | 0.21 | | | 0.30 | | | | |
| Clearance Time (s) | 6.0 | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | 520 | 1329 | | | 697 | | | 940 | | | | |
| v/s Ratio Prot | 0.07 | c0.07 | | | c0.15 | | | | | | | |
| v/s Ratio Perm | 0.06 | 0.06 | | | | | | 0.15 | | | | |
| v/c Ratio | 0.27 | 0.27 | | | 0.68 | | | 0.49 | | | | |
| Uniform Delay, d1 | 12.5 | 12.8 | | | 30.0 | | | 23.7 | | | | |
| Progression Factor | 0.29 | 0.32 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | 0.1 | 0.0 | | | 2.2 | | | 0.1 | | | | |
| Delay (s) | 3.7 | 4.2 | | | 32.2 | | | 23.8 | | | | |
| Level of Service | A | A | | | C | | | C | | | | |
| Approach Delay (s/veh) | | 4.0 | | | 32.2 | | | 23.8 | | | 0.0 | |
| Approach LOS | | A | | | C | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 19.9 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 82.8 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 41.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

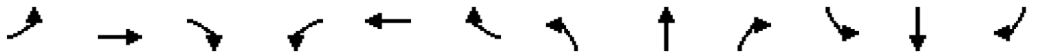


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 42 | 253 | 37 | 1 | 362 | 94 | 6 | 11 | 1 | 20 | 2 | 58 |
| Future Volume (Veh/h) | 42 | 253 | 37 | 1 | 362 | 94 | 6 | 11 | 1 | 20 | 2 | 58 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 45 | 269 | 39 | 1 | 385 | 100 | 6 | 12 | 1 | 21 | 2 | 62 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.93 | | | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | |
| vC, conflicting volume | 485 | | | 308 | | | 879 | 866 | 289 | 823 | 835 | 435 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 485 | | | 218 | | | 832 | 818 | 197 | 771 | 785 | 435 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.3 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 96 | | | 100 | | | 97 | 95 | 100 | 92 | 99 | 90 |
| cM capacity (veh/h) | 1023 | | | 1198 | | | 221 | 265 | 760 | 263 | 277 | 598 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 353 | 486 | 19 | 85 |
| Volume Left | 45 | 1 | 6 | 21 |
| Volume Right | 39 | 100 | 1 | 62 |
| cSH | 1023 | 1198 | 258 | 446 |
| Volume to Capacity | 0.04 | 0.00* | 0.07 | 0.19 |
| Queue Length 95th (ft) | 3 | 0 | 6 | 17 |
| Control Delay (s/veh) | 1.5 | 0.0 | 20.1 | 15.0 |
| Lane LOS | A | A | C | B |
| Approach Delay (s/veh) | 1.5 | 0.0 | 20.1 | 15.0 |
| Approach LOS | | | C | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.3 | | | |
| Intersection Capacity Utilization | 58.5% | ICU Level of Service | | B |
| Analysis Period (min) | 15 | | | |

* Value less than 0.01.

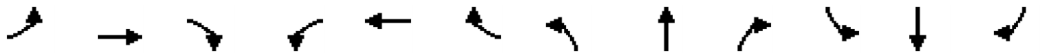


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 490 | 95 | 185 | 482 | 0 | 0 | 0 | 0 | 261 | 77 | 44 |
| Future Volume (vph) | 0 | 490 | 95 | 185 | 482 | 0 | 0 | 0 | 0 | 261 | 77 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | | | | 6.0 | 6.0 |
| Lane Util. Factor | | 0.95 | | 1.00 | 0.95 | | | | | | 0.95 | 1.00 |
| Frt | | 0.98 | | 1.00 | 1.00 | | | | | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (prot) | | 3419 | | 1752 | 3505 | | | | | | 3375 | 1568 |
| Flt Permitted | | 1.00 | | 0.27 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (perm) | | 3419 | | 493 | 3505 | | | | | | 3375 | 1568 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 0 | 500 | 97 | 189 | 492 | 0 | 0 | 0 | 0 | 266 | 79 | 45 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Lane Group Flow (vph) | 0 | 583 | 0 | 189 | 492 | 0 | 0 | 0 | 0 | 0 | 345 | 11 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | 4 12 |
| Actuated Green, G (s) | | 22.5 | | 51.0 | 57.0 | | | | | | 21.6 | 21.6 |
| Effective Green, g (s) | | 22.5 | | 51.0 | 57.0 | | | | | | 21.6 | 21.6 |
| Actuated g/C Ratio | | 0.25 | | 0.56 | 0.63 | | | | | | 0.24 | 0.24 |
| Clearance Time (s) | | 6.0 | | 6.0 | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | 2.0 | | | | | | | | |
| Lane Grp Cap (vph) | | 849 | | 673 | 2205 | | | | | | 804 | 373 |
| v/s Ratio Prot | | c0.17 | | c0.09 | 0.14 | | | | | | | |
| v/s Ratio Perm | | | | 0.07 | | | | | | | 0.10 | 0.01 |
| v/c Ratio | | 0.69 | | 0.28 | 0.22 | | | | | | 0.43 | 0.03 |
| Uniform Delay, d1 | | 30.9 | | 10.2 | 7.2 | | | | | | 29.3 | 26.5 |
| Progression Factor | | 1.00 | | 0.31 | 0.31 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.9 | | 0.1 | 0.0 | | | | | | 0.1 | 0.0 |
| Delay (s) | | 32.7 | | 3.2 | 2.3 | | | | | | 29.4 | 26.5 |
| Level of Service | | C | | A | A | | | | | | C | C |
| Approach Delay (s/veh) | | 32.7 | | | 2.5 | | | 0.0 | | | 29.1 | |
| Approach LOS | | C | | | A | | | A | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 19.5 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 90.6 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 51.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 295 | 441 | 0 | 0 | 428 | 33 | 250 | 136 | 137 | 0 | 0 | 0 |
| Future Volume (vph) | 295 | 441 | 0 | 0 | 428 | 33 | 250 | 136 | 137 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | 0.91 | 0.91 | | | 0.95 | | | 0.95 | | | | |
| Frt | 1.00 | 1.00 | | | 0.99 | | | 0.96 | | | | |
| Flt Protected | 0.95 | 0.99 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (prot) | 1595 | 3329 | | | 3468 | | | 3289 | | | | |
| Flt Permitted | 0.34 | 0.79 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (perm) | 577 | 2647 | | | 3468 | | | 3289 | | | | |
| Peak-hour factor, PHF | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Adj. Flow (vph) | 298 | 445 | 0 | 0 | 432 | 33 | 253 | 137 | 138 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 28 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 206 | 537 | 0 | 0 | 460 | 0 | 0 | 500 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | 48.3 | 48.3 | | | 18.4 | | | 24.3 | | | | |
| Effective Green, g (s) | 48.3 | 48.3 | | | 18.4 | | | 24.3 | | | | |
| Actuated g/C Ratio | 0.53 | 0.53 | | | 0.20 | | | 0.27 | | | | |
| Clearance Time (s) | 6.0 | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | 643 | 1636 | | | 704 | | | 882 | | | | |
| v/s Ratio Prot | 0.11 | c0.11 | | | c0.13 | | | | | | | |
| v/s Ratio Perm | 0.07 | 0.07 | | | | | | 0.15 | | | | |
| v/c Ratio | 0.32 | 0.33 | | | 0.65 | | | 0.57 | | | | |
| Uniform Delay, d1 | 11.6 | 12.0 | | | 33.2 | | | 28.6 | | | | |
| Progression Factor | 0.21 | 0.22 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | 0.1 | 0.0 | | | 1.7 | | | 0.5 | | | | |
| Delay (s) | 2.5 | 2.7 | | | 34.8 | | | 29.1 | | | | |
| Level of Service | A | A | | | C | | | C | | | | |
| Approach Delay (s/veh) | | 2.6 | | | 34.8 | | | 29.1 | | | 0.0 | |
| Approach LOS | | A | | | C | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 19.3 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 90.6 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 51.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

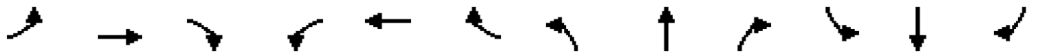


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 49 | 470 | 45 | 6 | 308 | 60 | 8 | 2 | 29 | 54 | 7 | 95 |
| Future Volume (Veh/h) | 49 | 470 | 45 | 6 | 308 | 60 | 8 | 2 | 29 | 54 | 7 | 95 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 52 | 495 | 47 | 6 | 324 | 63 | 8 | 2 | 31 | 57 | 7 | 100 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 387 | | | 542 | | | 1094 | 1022 | 519 | 1022 | 1014 | 356 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 387 | | | 407 | | | 1036 | 954 | 380 | 955 | 945 | 356 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 99 | | | 95 | 99 | 95 | 70 | 97 | 85 |
| cM capacity (veh/h) | 1161 | | | 1000 | | | 146 | 214 | 581 | 187 | 216 | 684 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 594 | 393 | 41 | 164 |
| Volume Left | 52 | 6 | 8 | 57 |
| Volume Right | 47 | 63 | 31 | 100 |
| cSH | 1161 | 1000 | 349 | 339 |
| Volume to Capacity | 0.04 | 0.00* | 0.12 | 0.48 |
| Queue Length 95th (ft) | 4 | 0 | 10 | 63 |
| Control Delay (s/veh) | 1.2 | 0.2 | 16.7 | 25.1 |
| Lane LOS | A | A | C | D |
| Approach Delay (s/veh) | 1.2 | 0.2 | 16.7 | 25.1 |
| Approach LOS | | | C | D |

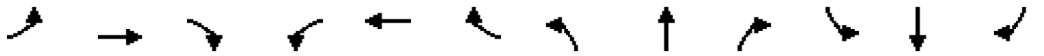
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.7 | | | |
| Intersection Capacity Utilization | 75.8% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

* Value less than 0.01.



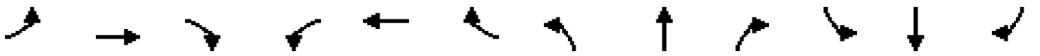
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 363 | 127 | 207 | 581 | 0 | 0 | 0 | 0 | 198 | 54 | 48 |
| Future Volume (vph) | 0 | 363 | 127 | 207 | 581 | 0 | 0 | 0 | 0 | 198 | 54 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | | | | 6.0 | 6.0 |
| Lane Util. Factor | | 0.95 | | 1.00 | 0.95 | | | | | | 0.95 | 1.00 |
| Frt | | 0.96 | | 1.00 | 1.00 | | | | | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (prot) | | 3273 | | 1703 | 3406 | | | | | | 3277 | 1524 |
| Flt Permitted | | 1.00 | | 0.29 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (perm) | | 3273 | | 525 | 3406 | | | | | | 3277 | 1524 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 0 | 378 | 132 | 216 | 605 | 0 | 0 | 0 | 0 | 206 | 56 | 50 |
| RTOR Reduction (vph) | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| Lane Group Flow (vph) | 0 | 481 | 0 | 216 | 605 | 0 | 0 | 0 | 0 | 0 | 262 | 11 |
| Heavy Vehicles (%) | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | 4 12 |
| Actuated Green, G (s) | | 19.6 | | 55.8 | 61.8 | | | | | | 21.3 | 21.3 |
| Effective Green, g (s) | | 19.6 | | 55.8 | 61.8 | | | | | | 21.3 | 21.3 |
| Actuated g/C Ratio | | 0.21 | | 0.59 | 0.65 | | | | | | 0.22 | 0.22 |
| Clearance Time (s) | | 6.0 | | 6.0 | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | 2.0 | | | | | | | | |
| Lane Grp Cap (vph) | | 674 | | 756 | 2213 | | | | | | 733 | 341 |
| v/s Ratio Prot | | c0.15 | | c0.11 | c0.18 | | | | | | | |
| v/s Ratio Perm | | | | 0.06 | | | | | | | 0.08 | 0.01 |
| v/c Ratio | | 0.71 | | 0.29 | 0.27 | | | | | | 0.36 | 0.03 |
| Uniform Delay, d1 | | 35.1 | | 9.7 | 7.1 | | | | | | 31.1 | 28.8 |
| Progression Factor | | 1.00 | | 0.23 | 0.30 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 3.0 | | 0.1 | 0.0 | | | | | | 0.1 | 0.0 |
| Delay (s) | | 38.1 | | 2.3 | 2.1 | | | | | | 31.2 | 28.9 |
| Level of Service | | D | | A | A | | | | | | C | C |
| Approach Delay (s/veh) | | 38.1 | | | 2.2 | | | 0.0 | | | 30.9 | |
| Approach LOS | | D | | | A | | | A | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 18.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.46 | | |
| Actuated Cycle Length (s) | 95.1 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 47.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 227 | 378 | 0 | 0 | 510 | 93 | 261 | 105 | 164 | 0 | 0 | 0 |
| Future Volume (vph) | 227 | 378 | 0 | 0 | 510 | 93 | 261 | 105 | 164 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | 0.91 | 0.91 | | | 0.95 | | | 0.95 | | | | |
| Frt | 1.00 | 1.00 | | | 0.98 | | | 0.95 | | | | |
| Flt Protected | 0.95 | 0.99 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (prot) | 1507 | 3149 | | | 3235 | | | 3082 | | | | |
| Flt Permitted | 0.23 | 0.78 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (perm) | 370 | 2480 | | | 3235 | | | 3082 | | | | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 234 | 390 | 0 | 0 | 526 | 96 | 269 | 108 | 169 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 43 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 166 | 458 | 0 | 0 | 611 | 0 | 0 | 503 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | 49.6 | 49.6 | | | 22.9 | | | 27.5 | | | | |
| Effective Green, g (s) | 49.6 | 49.6 | | | 22.9 | | | 27.5 | | | | |
| Actuated g/C Ratio | 0.52 | 0.52 | | | 0.24 | | | 0.29 | | | | |
| Clearance Time (s) | 6.0 | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | 512 | 1481 | | | 778 | | | 891 | | | | |
| v/s Ratio Prot | c0.09 | 0.09 | | | c0.19 | | | | | | | |
| v/s Ratio Perm | 0.08 | 0.07 | | | | | | 0.16 | | | | |
| v/c Ratio | 0.32 | 0.31 | | | 0.78 | | | 0.56 | | | | |
| Uniform Delay, d1 | 12.9 | 13.0 | | | 33.8 | | | 28.7 | | | | |
| Progression Factor | 0.21 | 0.26 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | 0.1 | 0.0 | | | 4.8 | | | 0.5 | | | | |
| Delay (s) | 2.9 | 3.3 | | | 38.6 | | | 29.2 | | | | |
| Level of Service | A | A | | | D | | | C | | | | |
| Approach Delay (s/veh) | | 3.2 | | | 38.6 | | | 29.2 | | | 0.0 | |
| Approach LOS | | A | | | D | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 23.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.59 | | |
| Actuated Cycle Length (s) | 95.1 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 47.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 123 | 355 | 37 | 1 | 437 | 94 | 6 | 11 | 1 | 20 | 2 | 118 |
| Future Volume (Veh/h) | 123 | 355 | 37 | 1 | 437 | 94 | 6 | 11 | 1 | 20 | 2 | 118 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 131 | 378 | 39 | 1 | 465 | 100 | 6 | 12 | 1 | 21 | 2 | 126 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | TWLTL | | | | | | | |
| Median storage veh) | | 2 | | | 2 | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.92 | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| vC, conflicting volume | 565 | | | 417 | | | 1254 | 1227 | 398 | 1164 | 1196 | 515 |
| vC1, stage 1 conf vol | | | | | | | 660 | 660 | | 517 | 517 | |
| vC2, stage 2 conf vol | | | | | | | 594 | 567 | | 647 | 679 | |
| vCu, unblocked vol | 565 | | | 319 | | | 1231 | 1202 | 298 | 1134 | 1169 | 515 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| tC, 2 stage (s) | | | | | | | 6.2 | 5.6 | | 6.2 | 5.6 | |
| tF (s) | 2.3 | | | 2.3 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 86 | | | 100 | | | 97 | 96 | 100 | 93 | 99 | 77 |
| cM capacity (veh/h) | 954 | | | 1083 | | | 206 | 285 | 657 | 320 | 321 | 539 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 131 | 417 | 1 | 565 | 19 | 149 |
| Volume Left | 131 | 0 | 1 | 0 | 6 | 21 |
| Volume Right | 0 | 39 | 0 | 100 | 1 | 126 |
| cSH | 954 | 1700 | 1083 | 1700 | 261 | 487 |
| Volume to Capacity | 0.14 | 0.25 | 0.00* | 0.33 | 0.07 | 0.31 |
| Queue Length 95th (ft) | 12 | 0 | 0 | 0 | 6 | 32 |
| Control Delay (s/veh) | 9.4 | 0.0 | 8.3 | 0.0 | 19.9 | 15.6 |
| Lane LOS | A | | A | | C | C |
| Approach Delay (s/veh) | 2.2 | | 0.0 | | 19.9 | 15.6 |
| Approach LOS | | | | | C | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.1 | | | |
| Intersection Capacity Utilization | 54.8% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

* Value less than 0.01.



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 0 | 147 | 20 | 0 | 80 |
| Future Volume (Veh/h) | 15 | 0 | 147 | 20 | 0 | 80 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 16 | 0 | 160 | 22 | 0 | 87 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 1002 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 247 | 160 | | | 182 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 247 | 160 | | | 182 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 98 | 100 | | | 100 | |
| cM capacity (veh/h) | 741 | 885 | | | 1393 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|
| Volume Total | 16 | 160 | 22 | 87 |
| Volume Left | 16 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 22 | 0 |
| cSH | 741 | 1700 | 1700 | 1393 |
| Volume to Capacity | 0.02 | 0.09 | 0.01 | 0.00 |
| Queue Length 95th (ft) | 2 | 0 | 0 | 0 |
| Control Delay (s/veh) | 10.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | | |
| Approach Delay (s/veh) | 10.0 | 0.0 | | 0.0 |
| Approach LOS | A | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.6 | | |
| Intersection Capacity Utilization | 17.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

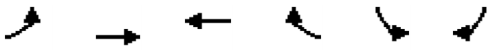


| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 45 | 0 | 167 | 61 | 0 | 95 |
| Future Volume (Veh/h) | 45 | 0 | 167 | 61 | 0 | 95 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 49 | 0 | 182 | 66 | 0 | 103 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 518 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 318 | 215 | | | 248 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 318 | 215 | | | 248 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 93 | 100 | | | 100 | |
| cM capacity (veh/h) | 675 | 825 | | | 1318 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 49 | 248 | 103 |
| Volume Left | 49 | 0 | 0 |
| Volume Right | 0 | 66 | 0 |
| cSH | 675 | 1700 | 1318 |
| Volume to Capacity | 0.07 | 0.15 | 0.00 |
| Queue Length 95th (ft) | 6 | 0 | 0 |
| Control Delay (s/veh) | 10.7 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s/veh) | 10.7 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 22.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

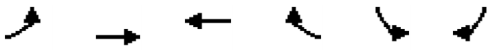


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 62 | 314 | 483 | 11 | 11 | 48 |
| Future Volume (Veh/h) | 62 | 314 | 483 | 11 | 11 | 48 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 67 | 341 | 525 | 12 | 12 | 52 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (ft) | | 995 | | | | |
| pX, platoon unblocked | | | | | 0.97 | |
| vC, conflicting volume | 537 | | | | 1000 | 525 |
| vC1, stage 1 conf vol | | | | | 525 | |
| vC2, stage 2 conf vol | | | | | 475 | |
| vCu, unblocked vol | 537 | | | | 984 | 525 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 94 | | | | 97 | 91 |
| cM capacity (veh/h) | 1031 | | | | 465 | 552 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 67 | 341 | 525 | 12 | 64 |
| Volume Left | 67 | 0 | 0 | 0 | 12 |
| Volume Right | 0 | 0 | 0 | 12 | 52 |
| cSH | 1031 | 1700 | 1700 | 1700 | 534 |
| Volume to Capacity | 0.06 | 0.20 | 0.31 | 0.00* | 0.12 |
| Queue Length 95th (ft) | 5 | 0 | 0 | 0 | 10 |
| Control Delay (s/veh) | 8.7 | 0.0 | 0.0 | 0.0 | 12.7 |
| Lane LOS | A | | | | B |
| Approach Delay (s/veh) | 1.4 | | 0.0 | | 12.7 |
| Approach LOS | | | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.4 | | |
| Intersection Capacity Utilization | 42.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

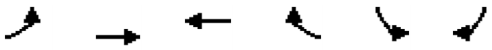


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 56 | 269 | 450 | 27 | 23 | 44 |
| Future Volume (Veh/h) | 56 | 269 | 450 | 27 | 23 | 44 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 61 | 292 | 489 | 29 | 25 | 48 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (ft) | | 1238 | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 518 | | | | 903 | 489 |
| vC1, stage 1 conf vol | | | | | 489 | |
| vC2, stage 2 conf vol | | | | | 414 | |
| vCu, unblocked vol | 518 | | | | 903 | 489 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 94 | | | | 95 | 92 |
| cM capacity (veh/h) | 1048 | | | | 499 | 579 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 61 | 292 | 489 | 29 | 25 | 48 |
| Volume Left | 61 | 0 | 0 | 0 | 25 | 0 |
| Volume Right | 0 | 0 | 0 | 29 | 0 | 48 |
| cSH | 1048 | 1700 | 1700 | 1700 | 499 | 579 |
| Volume to Capacity | 0.06 | 0.17 | 0.29 | 0.02 | 0.05 | 0.08 |
| Queue Length 95th (ft) | 5 | 0 | 0 | 0 | 4 | 7 |
| Control Delay (s/veh) | 8.6 | 0.0 | 0.0 | 0.0 | 12.6 | 11.8 |
| Lane LOS | A | | | | B | B |
| Approach Delay (s/veh) | 1.5 | | 0.0 | | 12.1 | |
| Approach LOS | | | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.5 | | |
| Intersection Capacity Utilization | 40.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

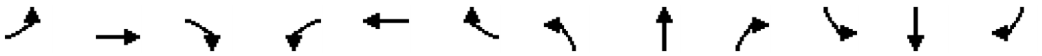


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 6 | 286 | 473 | 4 | 3 | 4 |
| Future Volume (Veh/h) | 6 | 286 | 473 | 4 | 3 | 4 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 7 | 311 | 514 | 4 | 3 | 4 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | None | | | |
| Median storage veh) | | 2 | | | | |
| Upstream signal (ft) | | 820 | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 518 | | | | 841 | 516 |
| vC1, stage 1 conf vol | | | | | 516 | |
| vC2, stage 2 conf vol | | | | | 325 | |
| vCu, unblocked vol | 518 | | | | 841 | 516 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 99 | | | | 99 | 99 |
| cM capacity (veh/h) | 1048 | | | | 529 | 559 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 7 | 311 | 518 | 7 |
| Volume Left | 7 | 0 | 0 | 3 |
| Volume Right | 0 | 0 | 4 | 4 |
| cSH | 1048 | 1700 | 1700 | 546 |
| Volume to Capacity | 0.00* | 0.18 | 0.30 | 0.01 |
| Queue Length 95th (ft) | 1 | 0 | 0 | 1 |
| Control Delay (s/veh) | 8.5 | 0.0 | 0.0 | 11.7 |
| Lane LOS | A | | | B |
| Approach Delay (s/veh) | 0.2 | | 0.0 | 11.7 |
| Approach LOS | | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 35.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

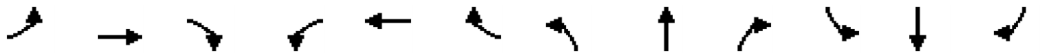


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 636 | 95 | 331 | 628 | 0 | 0 | 0 | 0 | 407 | 77 | 44 |
| Future Volume (vph) | 0 | 636 | 95 | 331 | 628 | 0 | 0 | 0 | 0 | 407 | 77 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | | | | 6.0 | 6.0 |
| Lane Util. Factor | | 0.95 | | 1.00 | 0.95 | | | | | | 0.95 | 1.00 |
| Frt | | 0.98 | | 1.00 | 1.00 | | | | | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (prot) | | 3436 | | 1752 | 3505 | | | | | | 3364 | 1568 |
| Flt Permitted | | 1.00 | | 0.16 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (perm) | | 3436 | | 294 | 3505 | | | | | | 3364 | 1568 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 0 | 649 | 97 | 338 | 641 | 0 | 0 | 0 | 0 | 415 | 79 | 45 |
| RTOR Reduction (vph) | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Lane Group Flow (vph) | 0 | 736 | 0 | 338 | 641 | 0 | 0 | 0 | 0 | 0 | 494 | 9 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | 4 12 |
| Actuated Green, G (s) | | 30.7 | | 73.7 | 79.7 | | | | | | 23.0 | 23.0 |
| Effective Green, g (s) | | 30.7 | | 73.7 | 79.7 | | | | | | 23.0 | 23.0 |
| Actuated g/C Ratio | | 0.27 | | 0.64 | 0.69 | | | | | | 0.20 | 0.20 |
| Clearance Time (s) | | 6.0 | | 6.0 | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | 2.0 | | | | | | | | |
| Lane Grp Cap (vph) | | 919 | | 735 | 2435 | | | | | | 674 | 314 |
| v/s Ratio Prot | | c0.21 | | c0.17 | 0.18 | | | | | | | |
| v/s Ratio Perm | | | | 0.12 | | | | | | | 0.15 | 0.01 |
| v/c Ratio | | 0.80 | | 0.46 | 0.26 | | | | | | 1.18dl | 0.03 |
| Uniform Delay, d1 | | 39.1 | | 13.4 | 6.5 | | | | | | 43.0 | 36.9 |
| Progression Factor | | 1.00 | | 0.18 | 0.22 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 4.8 | | 0.1 | 0.0 | | | | | | 3.6 | 0.0 |
| Delay (s) | | 43.9 | | 2.4 | 1.4 | | | | | | 46.5 | 36.9 |
| Level of Service | | D | | A | A | | | | | | D | D |
| Approach Delay (s/veh) | | 43.9 | | | 1.8 | | | 0.0 | | | 45.7 | |
| Approach LOS | | D | | | A | | | A | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 26.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 114.7 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 92.6% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

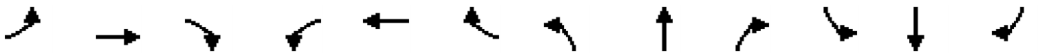
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 295 | 734 | 0 | 0 | 720 | 179 | 250 | 136 | 283 | 0 | 0 | 0 |
| Future Volume (vph) | 295 | 734 | 0 | 0 | 720 | 179 | 250 | 136 | 283 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | 0.91 | 0.91 | | | 0.95 | | | 0.95 | | | | |
| Frt | 1.00 | 1.00 | | | 0.97 | | | 0.94 | | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (prot) | 1595 | 3345 | | | 3400 | | | 3222 | | | | |
| Flt Permitted | 0.13 | 0.71 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (perm) | 216 | 2385 | | | 3400 | | | 3222 | | | | |
| Peak-hour factor, PHF | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Adj. Flow (vph) | 298 | 741 | 0 | 0 | 727 | 181 | 253 | 137 | 286 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 108 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 238 | 801 | 0 | 0 | 890 | 0 | 0 | 568 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | 70.8 | 70.8 | | | 31.1 | | | 25.9 | | | | |
| Effective Green, g (s) | 70.8 | 70.8 | | | 31.1 | | | 25.9 | | | | |
| Actuated g/C Ratio | 0.62 | 0.62 | | | 0.27 | | | 0.23 | | | | |
| Clearance Time (s) | 6.0 | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | 610 | 1804 | | | 921 | | | 727 | | | | |
| v/s Ratio Prot | 0.13 | c0.15 | | | c0.26 | | | | | | | |
| v/s Ratio Perm | 0.11 | 0.12 | | | | | | 0.18 | | | | |
| v/c Ratio | 0.39 | 0.44 | | | 0.97 | | | 0.78 | | | | |
| Uniform Delay, d1 | 14.6 | 11.6 | | | 41.3 | | | 41.7 | | | | |
| Progression Factor | 0.39 | 0.25 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | 0.1 | 0.0 | | | 21.5 | | | 5.0 | | | | |
| Delay (s) | 5.8 | 3.0 | | | 62.7 | | | 46.8 | | | | |
| Level of Service | A | A | | | E | | | D | | | | |
| Approach Delay (s/veh) | | 3.6 | | | 62.7 | | | 46.8 | | | 0.0 | |
| Approach LOS | | A | | | E | | | D | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 35.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.75 | | |
| Actuated Cycle Length (s) | 114.7 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 92.6% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 244 | 714 | 45 | 6 | 552 | 60 | 8 | 2 | 29 | 54 | 7 | 290 |
| Future Volume (Veh/h) | 244 | 714 | 45 | 6 | 552 | 60 | 8 | 2 | 29 | 54 | 7 | 290 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 257 | 752 | 47 | 6 | 581 | 63 | 8 | 2 | 31 | 57 | 7 | 305 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | TWLTL | | | | | | | |
| Median storage veh) | | 2 | | | 2 | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.85 | | | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | |
| vC, conflicting volume | 644 | | | 799 | | | 2191 | 1946 | 776 | 1923 | 1938 | 613 |
| vC1, stage 1 conf vol | | | | | | | 1290 | 1290 | | 625 | 625 | |
| vC2, stage 2 conf vol | | | | | | | 902 | 656 | | 1298 | 1313 | |
| vCu, unblocked vol | 644 | | | 679 | | | 2309 | 2022 | 651 | 1995 | 2012 | 613 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | 6.1 | 5.5 | | 6.1 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 72 | | | 99 | | | 0 | 98 | 92 | 46 | 95 | 38 |
| cM capacity (veh/h) | 931 | | | 772 | | | 6 | 121 | 397 | 105 | 131 | 489 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 257 | 799 | 4 | 646 | 41 | 369 |
| Volume Left | 257 | 0 | 4 | 2 | 8 | 57 |
| Volume Right | 0 | 47 | 0 | 63 | 31 | 305 |
| cSH | 931 | 1700 | 772 | 772 | 30 | 302 |
| Volume to Capacity | 0.28 | 0.47 | 0.00* | 0.00* | 1.35 | 1.22 |
| Queue Length 95th (ft) | 28 | 0 | 1 | 1 | 116 | 416 |
| Control Delay (s/veh) | 10.3 | 0.0 | 9.7 | 0.2 | 480.7 | 161.4 |
| Lane LOS | B | | A | A | F | F |
| Approach Delay (s/veh) | 2.5 | | 0.2 | | 480.7 | 161.4 |
| Approach LOS | | | | | F | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 38.8 | | | |
| Intersection Capacity Utilization | 106.0% | ICU Level of Service | G | |
| Analysis Period (min) | 15 | | | |

* Value less than 0.01.



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 49 | 0 | 111 | 49 | 0 | 156 |
| Future Volume (Veh/h) | 49 | 0 | 111 | 49 | 0 | 156 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 53 | 0 | 121 | 53 | 0 | 170 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 1002 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 291 | 121 | | | 174 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 291 | 121 | | | 174 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 92 | 100 | | | 100 | |
| cM capacity (veh/h) | 700 | 930 | | | 1403 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|
| Volume Total | 53 | 121 | 53 | 170 |
| Volume Left | 53 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 53 | 0 |
| cSH | 700 | 1700 | 1700 | 1403 |
| Volume to Capacity | 0.08 | 0.07 | 0.03 | 0.00 |
| Queue Length 95th (ft) | 6 | 0 | 0 | 0 |
| Control Delay (s/veh) | 10.6 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | |
| Approach Delay (s/veh) | 10.6 | 0.0 | | 0.0 |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.4 | | |
| Intersection Capacity Utilization | 18.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

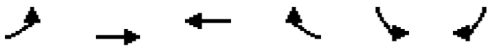


| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 146 | 0 | 160 | 146 | 0 | 205 |
| Future Volume (Veh/h) | 146 | 0 | 160 | 146 | 0 | 205 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 159 | 0 | 174 | 159 | 0 | 223 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 518 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 477 | 254 | | | 333 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 477 | 254 | | | 333 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 71 | 100 | | | 100 | |
| cM capacity (veh/h) | 547 | 785 | | | 1226 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 159 | 333 | 223 |
| Volume Left | 159 | 0 | 0 |
| Volume Right | 0 | 159 | 0 |
| cSH | 547 | 1700 | 1226 |
| Volume to Capacity | 0.29 | 0.20 | 0.00 |
| Queue Length 95th (ft) | 30 | 0 | 0 |
| Control Delay (s/veh) | 14.3 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s/veh) | 14.3 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.2 | | |
| Intersection Capacity Utilization | 32.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

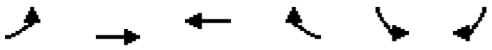


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 134 | 663 | 485 | 12 | 12 | 134 |
| Future Volume (Veh/h) | 134 | 663 | 485 | 12 | 12 | 134 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 146 | 721 | 527 | 13 | 13 | 146 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (ft) | | 995 | | | | |
| pX, platoon unblocked | | | | | 0.88 | |
| vC, conflicting volume | 540 | | | | 1540 | 527 |
| vC1, stage 1 conf vol | | | | | 527 | |
| vC2, stage 2 conf vol | | | | | 1013 | |
| vCu, unblocked vol | 540 | | | | 1546 | 527 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 86 | | | | 95 | 74 |
| cM capacity (veh/h) | 1028 | | | | 260 | 551 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 146 | 721 | 527 | 13 | 159 |
| Volume Left | 146 | 0 | 0 | 0 | 13 |
| Volume Right | 0 | 0 | 0 | 13 | 146 |
| cSH | 1028 | 1700 | 1700 | 1700 | 505 |
| Volume to Capacity | 0.14 | 0.42 | 0.31 | 0.00* | 0.31 |
| Queue Length 95th (ft) | 12 | 0 | 0 | 0 | 33 |
| Control Delay (s/veh) | 9.1 | 0.0 | 0.0 | 0.0 | 15.4 |
| Lane LOS | A | | | | C |
| Approach Delay (s/veh) | 1.5 | | 0.0 | | 15.4 |
| Approach LOS | | | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 51.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

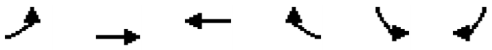


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 119 | 556 | 378 | 51 | 51 | 119 |
| Future Volume (Veh/h) | 119 | 556 | 378 | 51 | 51 | 119 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 129 | 604 | 411 | 55 | 55 | 129 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (ft) | | 1238 | | | | |
| pX, platoon unblocked | | | | | 0.92 | |
| vC, conflicting volume | 466 | | | | 1273 | 411 |
| vC1, stage 1 conf vol | | | | | 411 | |
| vC2, stage 2 conf vol | | | | | 862 | |
| vCu, unblocked vol | 466 | | | | 1253 | 411 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 88 | | | | 83 | 80 |
| cM capacity (veh/h) | 1095 | | | | 328 | 641 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 129 | 604 | 411 | 55 | 55 | 129 |
| Volume Left | 129 | 0 | 0 | 0 | 55 | 0 |
| Volume Right | 0 | 0 | 0 | 55 | 0 | 129 |
| cSH | 1095 | 1700 | 1700 | 1700 | 328 | 641 |
| Volume to Capacity | 0.12 | 0.36 | 0.24 | 0.03 | 0.17 | 0.20 |
| Queue Length 95th (ft) | 10 | 0 | 0 | 0 | 15 | 19 |
| Control Delay (s/veh) | 8.7 | 0.0 | 0.0 | 0.0 | 18.2 | 12.0 |
| Lane LOS | A | | | | C | B |
| Approach Delay (s/veh) | 1.5 | | 0.0 | | 13.9 | |
| Approach LOS | | | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.7 | | |
| Intersection Capacity Utilization | 39.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

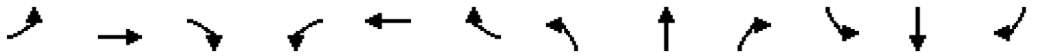


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 592 | 414 | 10 | 10 | 15 |
| Future Volume (Veh/h) | 15 | 592 | 414 | 10 | 10 | 15 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 16 | 643 | 450 | 11 | 11 | 16 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | None | | | |
| Median storage veh) | | 2 | | | | |
| Upstream signal (ft) | | 820 | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 461 | | | | 1131 | 456 |
| vC1, stage 1 conf vol | | | | | 456 | |
| vC2, stage 2 conf vol | | | | | 675 | |
| vCu, unblocked vol | 461 | | | | 1131 | 456 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 99 | | | | 97 | 97 |
| cM capacity (veh/h) | 1100 | | | | 430 | 605 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 16 | 643 | 461 | 27 |
| Volume Left | 16 | 0 | 0 | 11 |
| Volume Right | 0 | 0 | 11 | 16 |
| cSH | 1100 | 1700 | 1700 | 519 |
| Volume to Capacity | 0.01 | 0.38 | 0.27 | 0.05 |
| Queue Length 95th (ft) | 1 | 0 | 0 | 4 |
| Control Delay (s/veh) | 8.3 | 0.0 | 0.0 | 12.3 |
| Lane LOS | A | | | B |
| Approach Delay (s/veh) | 0.2 | | 0.0 | 12.3 |
| Approach LOS | | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.4 | | |
| Intersection Capacity Utilization | 41.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

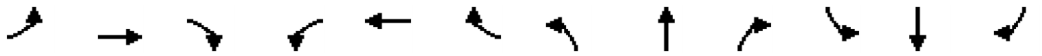


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 333 | 140 | 179 | 592 | 0 | 0 | 0 | 0 | 152 | 60 | 53 |
| Future Volume (vph) | 0 | 333 | 140 | 179 | 592 | 0 | 0 | 0 | 0 | 152 | 60 | 53 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | | | | 6.0 | 6.0 |
| Lane Util. Factor | | 0.95 | | 1.00 | 0.95 | | | | | | 0.95 | 1.00 |
| Frt | | 0.96 | | 1.00 | 1.00 | | | | | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | | 0.97 | 1.00 |
| Satd. Flow (prot) | | 3254 | | 1703 | 3406 | | | | | | 3288 | 1524 |
| Flt Permitted | | 1.00 | | 0.33 | 1.00 | | | | | | 0.97 | 1.00 |
| Satd. Flow (perm) | | 3254 | | 583 | 3406 | | | | | | 3288 | 1524 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 0 | 347 | 146 | 186 | 617 | 0 | 0 | 0 | 0 | 158 | 63 | 55 |
| RTOR Reduction (vph) | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| Lane Group Flow (vph) | 0 | 455 | 0 | 186 | 617 | 0 | 0 | 0 | 0 | 0 | 221 | 12 |
| Heavy Vehicles (%) | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | 4 12 |
| Actuated Green, G (s) | | 18.9 | | 51.4 | 57.4 | | | | | | 20.0 | 20.0 |
| Effective Green, g (s) | | 18.9 | | 51.4 | 57.4 | | | | | | 20.0 | 20.0 |
| Actuated g/C Ratio | | 0.21 | | 0.57 | 0.64 | | | | | | 0.22 | 0.22 |
| Clearance Time (s) | | 6.0 | | 6.0 | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | 2.0 | | | | | | | | |
| Lane Grp Cap (vph) | | 687 | | 742 | 2186 | | | | | | 735 | 340 |
| v/s Ratio Prot | | c0.14 | | 0.09 | c0.18 | | | | | | | |
| v/s Ratio Perm | | | | 0.05 | | | | | | | 0.07 | 0.01 |
| v/c Ratio | | 0.66 | | 0.25 | 0.28 | | | | | | 0.30 | 0.04 |
| Uniform Delay, d1 | | 32.3 | | 9.3 | 7.0 | | | | | | 28.9 | 27.2 |
| Progression Factor | | 1.00 | | 0.22 | 0.31 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 1.9 | | 0.1 | 0.0 | | | | | | 0.1 | 0.0 |
| Delay (s) | | 34.2 | | 2.1 | 2.2 | | | | | | 29.0 | 27.2 |
| Level of Service | | C | | A | A | | | | | | C | C |
| Approach Delay (s/veh) | | 34.2 | | | 2.2 | | | 0.0 | | | 28.6 | |
| Approach LOS | | C | | | A | | | A | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 16.9 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.44 | | |
| Actuated Cycle Length (s) | 89.4 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 44.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 250 | 283 | 0 | 0 | 465 | 53 | 288 | 116 | 114 | 0 | 0 | 0 |
| Future Volume (vph) | 250 | 283 | 0 | 0 | 465 | 53 | 288 | 116 | 114 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | 0.91 | 0.91 | | | 0.95 | | | 0.95 | | | | |
| Frt | 1.00 | 1.00 | | | 0.98 | | | 0.97 | | | | |
| Flt Protected | 0.95 | 0.99 | | | 1.00 | | | 0.97 | | | | |
| Satd. Flow (prot) | 1507 | 3132 | | | 3261 | | | 3116 | | | | |
| Flt Permitted | 0.29 | 0.66 | | | 1.00 | | | 0.97 | | | | |
| Satd. Flow (perm) | 467 | 2102 | | | 3261 | | | 3116 | | | | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 258 | 292 | 0 | 0 | 479 | 55 | 297 | 120 | 118 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 21 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 155 | 395 | 0 | 0 | 527 | 0 | 0 | 514 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | 44.4 | 44.4 | | | 19.7 | | | 27.0 | | | | |
| Effective Green, g (s) | 44.4 | 44.4 | | | 19.7 | | | 27.0 | | | | |
| Actuated g/C Ratio | 0.50 | 0.50 | | | 0.22 | | | 0.30 | | | | |
| Clearance Time (s) | 6.0 | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | 519 | 1328 | | | 718 | | | 941 | | | | |
| v/s Ratio Prot | c0.08 | 0.08 | | | c0.16 | | | | | | | |
| v/s Ratio Perm | 0.07 | 0.07 | | | | | | 0.16 | | | | |
| v/c Ratio | 0.30 | 0.30 | | | 0.73 | | | 0.55 | | | | |
| Uniform Delay, d1 | 13.0 | 13.3 | | | 32.4 | | | 26.1 | | | | |
| Progression Factor | 0.26 | 0.29 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | 0.1 | 0.0 | | | 3.4 | | | 0.3 | | | | |
| Delay (s) | 3.5 | 3.9 | | | 35.8 | | | 26.4 | | | | |
| Level of Service | A | A | | | D | | | C | | | | |
| Approach Delay (s/veh) | | 3.8 | | | 35.8 | | | 26.4 | | | 0.0 | |
| Approach LOS | | A | | | D | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 21.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.56 | | |
| Actuated Cycle Length (s) | 89.4 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 44.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

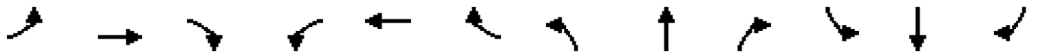


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 46 | 279 | 41 | 1 | 400 | 103 | 7 | 13 | 1 | 22 | 2 | 64 |
| Future Volume (Veh/h) | 46 | 279 | 41 | 1 | 400 | 103 | 7 | 13 | 1 | 22 | 2 | 64 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 49 | 297 | 44 | 1 | 426 | 110 | 7 | 14 | 1 | 23 | 2 | 68 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.92 | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| vC, conflicting volume | 536 | | | 341 | | | 969 | 955 | 319 | 908 | 922 | 481 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 536 | | | 241 | | | 923 | 908 | 217 | 857 | 872 | 481 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.3 | | | 2.3 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 95 | | | 100 | | | 96 | 94 | 100 | 90 | 99 | 88 |
| cM capacity (veh/h) | 979 | | | 1163 | | | 185 | 231 | 733 | 224 | 242 | 563 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 390 | 537 | 22 | 93 |
| Volume Left | 49 | 1 | 7 | 23 |
| Volume Right | 44 | 110 | 1 | 68 |
| cSH | 979 | 1163 | 220 | 401 |
| Volume to Capacity | 0.05 | 0.00* | 0.10 | 0.23 |
| Queue Length 95th (ft) | 4 | 0 | 8 | 22 |
| Control Delay (s/veh) | 1.6 | 0.0 | 23.2 | 16.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s/veh) | 1.6 | 0.0 | 23.2 | 16.7 |
| Approach LOS | | | C | C |

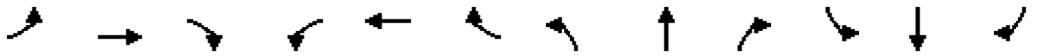
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.6 | | |
| Intersection Capacity Utilization | 63.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.



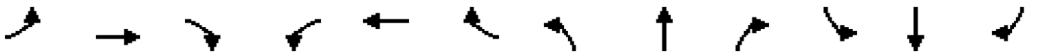
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 541 | 105 | 204 | 532 | 0 | 0 | 0 | 0 | 288 | 85 | 48 |
| Future Volume (vph) | 0 | 541 | 105 | 204 | 532 | 0 | 0 | 0 | 0 | 288 | 85 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | | | | 6.0 | 6.0 |
| Lane Util. Factor | | 0.95 | | 1.00 | 0.95 | | | | | | 0.95 | 1.00 |
| Frt | | 0.98 | | 1.00 | 1.00 | | | | | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (prot) | | 3419 | | 1752 | 3505 | | | | | | 3375 | 1568 |
| Flt Permitted | | 1.00 | | 0.22 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (perm) | | 3419 | | 411 | 3505 | | | | | | 3375 | 1568 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 0 | 552 | 107 | 208 | 543 | 0 | 0 | 0 | 0 | 294 | 87 | 49 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| Lane Group Flow (vph) | 0 | 645 | 0 | 208 | 543 | 0 | 0 | 0 | 0 | 0 | 381 | 11 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | 4 12 |
| Actuated Green, G (s) | | 25.3 | | 57.4 | 63.4 | | | | | | 22.2 | 22.2 |
| Effective Green, g (s) | | 25.3 | | 57.4 | 63.4 | | | | | | 22.2 | 22.2 |
| Actuated g/C Ratio | | 0.26 | | 0.59 | 0.65 | | | | | | 0.23 | 0.23 |
| Clearance Time (s) | | 6.0 | | 6.0 | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | 2.0 | | | | | | | | |
| Lane Grp Cap (vph) | | 886 | | 682 | 2276 | | | | | | 767 | 356 |
| v/s Ratio Prot | | c0.19 | | c0.10 | 0.15 | | | | | | | |
| v/s Ratio Perm | | | | 0.08 | | | | | | | 0.11 | 0.01 |
| v/c Ratio | | 0.73 | | 0.30 | 0.24 | | | | | | 0.50 | 0.03 |
| Uniform Delay, d1 | | 33.0 | | 10.3 | 7.1 | | | | | | 32.8 | 29.3 |
| Progression Factor | | 1.00 | | 0.32 | 0.29 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 2.6 | | 0.1 | 0.0 | | | | | | 0.2 | 0.0 |
| Delay (s) | | 35.6 | | 3.4 | 2.0 | | | | | | 33.0 | 29.3 |
| Level of Service | | D | | A | A | | | | | | C | C |
| Approach Delay (s/veh) | | 35.6 | | | 2.4 | | | 0.0 | | | 32.6 | |
| Approach LOS | | D | | | A | | | A | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 21.3 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 97.6 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 55.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 326 | 487 | 0 | 0 | 472 | 37 | 276 | 150 | 152 | 0 | 0 | 0 |
| Future Volume (vph) | 326 | 487 | 0 | 0 | 472 | 37 | 276 | 150 | 152 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | 0.91 | 0.91 | | | 0.95 | | | 0.95 | | | | |
| Frt | 1.00 | 1.00 | | | 0.99 | | | 0.96 | | | | |
| Flt Protected | 0.95 | 0.99 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (prot) | 1595 | 3328 | | | 3467 | | | 3288 | | | | |
| Flt Permitted | 0.30 | 0.70 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (perm) | 497 | 2364 | | | 3467 | | | 3288 | | | | |
| Peak-hour factor, PHF | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Adj. Flow (vph) | 329 | 492 | 0 | 0 | 477 | 37 | 279 | 152 | 154 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 28 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 224 | 597 | 0 | 0 | 509 | 0 | 0 | 557 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | 54.3 | 54.3 | | | 21.0 | | | 25.3 | | | | |
| Effective Green, g (s) | 54.3 | 54.3 | | | 21.0 | | | 25.3 | | | | |
| Actuated g/C Ratio | 0.56 | 0.56 | | | 0.22 | | | 0.26 | | | | |
| Clearance Time (s) | 6.0 | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | 651 | 1644 | | | 745 | | | 852 | | | | |
| v/s Ratio Prot | 0.12 | c0.12 | | | c0.15 | | | | | | | |
| v/s Ratio Perm | 0.07 | 0.08 | | | | | | 0.17 | | | | |
| v/c Ratio | 0.34 | 0.36 | | | 0.68 | | | 0.65 | | | | |
| Uniform Delay, d1 | 11.6 | 12.0 | | | 35.2 | | | 32.2 | | | | |
| Progression Factor | 0.22 | 0.22 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | 0.1 | 0.0 | | | 2.1 | | | 1.4 | | | | |
| Delay (s) | 2.6 | 2.7 | | | 37.3 | | | 33.6 | | | | |
| Level of Service | A | A | | | D | | | C | | | | |
| Approach Delay (s/veh) | | 2.7 | | | 37.3 | | | 33.6 | | | 0.0 | |
| Approach LOS | | A | | | D | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 21.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.58 | | |
| Actuated Cycle Length (s) | 97.6 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 55.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

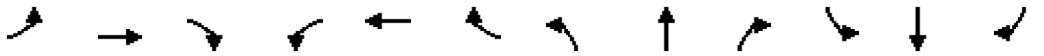


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 54 | 519 | 49 | 7 | 340 | 67 | 9 | 2 | 32 | 60 | 8 | 105 |
| Future Volume (Veh/h) | 54 | 519 | 49 | 7 | 340 | 67 | 9 | 2 | 32 | 60 | 8 | 105 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 57 | 546 | 52 | 7 | 358 | 71 | 9 | 2 | 34 | 63 | 8 | 111 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.87 | | | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | |
| vC, conflicting volume | 429 | | | 598 | | | 1209 | 1129 | 572 | 1129 | 1120 | 394 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 429 | | | 461 | | | 1164 | 1073 | 431 | 1072 | 1062 | 394 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 99 | | | 92 | 99 | 94 | 58 | 96 | 83 |
| cM capacity (veh/h) | 1120 | | | 946 | | | 113 | 179 | 538 | 151 | 181 | 651 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 655 | 436 | 45 | 182 |
| Volume Left | 57 | 7 | 9 | 63 |
| Volume Right | 52 | 71 | 34 | 111 |
| cSH | 1120 | 946 | 292 | 289 |
| Volume to Capacity | 0.05 | 0.00* | 0.15 | 0.63 |
| Queue Length 95th (ft) | 4 | 1 | 13 | 99 |
| Control Delay (s/veh) | 1.3 | 0.2 | 19.6 | 36.6 |
| Lane LOS | A | A | C | E |
| Approach Delay (s/veh) | 1.3 | 0.2 | 19.6 | 36.6 |
| Approach LOS | | | C | E |

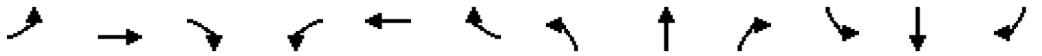
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.5 | | |
| Intersection Capacity Utilization | 82.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.



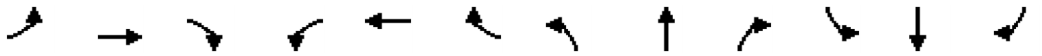
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 394 | 140 | 224 | 637 | 0 | 0 | 0 | 0 | 213 | 60 | 53 |
| Future Volume (vph) | 0 | 394 | 140 | 224 | 637 | 0 | 0 | 0 | 0 | 213 | 60 | 53 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | | | | 6.0 | 6.0 |
| Lane Util. Factor | | 0.95 | | 1.00 | 0.95 | | | | | | 0.95 | 1.00 |
| Frt | | 0.96 | | 1.00 | 1.00 | | | | | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (prot) | | 3272 | | 1703 | 3406 | | | | | | 3278 | 1524 |
| Flt Permitted | | 1.00 | | 0.25 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (perm) | | 3272 | | 449 | 3406 | | | | | | 3278 | 1524 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 0 | 410 | 146 | 233 | 664 | 0 | 0 | 0 | 0 | 222 | 63 | 55 |
| RTOR Reduction (vph) | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| Lane Group Flow (vph) | 0 | 527 | 0 | 233 | 664 | 0 | 0 | 0 | 0 | 0 | 285 | 12 |
| Heavy Vehicles (%) | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% | 6% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | 4 12 |
| Actuated Green, G (s) | | 21.2 | | 59.7 | 65.7 | | | | | | 22.0 | 22.0 |
| Effective Green, g (s) | | 21.2 | | 59.7 | 65.7 | | | | | | 22.0 | 22.0 |
| Actuated g/C Ratio | | 0.21 | | 0.60 | 0.66 | | | | | | 0.22 | 0.22 |
| Clearance Time (s) | | 6.0 | | 6.0 | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | 2.0 | | | | | | | | |
| Lane Grp Cap (vph) | | 695 | | 753 | 2244 | | | | | | 723 | 336 |
| v/s Ratio Prot | | c0.16 | | c0.12 | c0.19 | | | | | | | |
| v/s Ratio Perm | | | | 0.07 | | | | | | | 0.09 | 0.01 |
| v/c Ratio | | 0.76 | | 0.31 | 0.30 | | | | | | 0.39 | 0.04 |
| Uniform Delay, d1 | | 36.8 | | 9.9 | 7.2 | | | | | | 33.2 | 30.5 |
| Progression Factor | | 1.00 | | 0.23 | 0.29 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 4.2 | | 0.1 | 0.0 | | | | | | 0.1 | 0.0 |
| Delay (s) | | 41.1 | | 2.3 | 2.1 | | | | | | 33.3 | 30.5 |
| Level of Service | | D | | A | A | | | | | | C | C |
| Approach Delay (s/veh) | | 41.1 | | | 2.2 | | | 0.0 | | | 32.8 | |
| Approach LOS | | D | | | A | | | A | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 20.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 99.7 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 50.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 250 | 405 | 0 | 0 | 554 | 98 | 288 | 116 | 175 | 0 | 0 | 0 |
| Future Volume (vph) | 250 | 405 | 0 | 0 | 554 | 98 | 288 | 116 | 175 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | 0.91 | 0.91 | | | 0.95 | | | 0.95 | | | | |
| Frt | 1.00 | 1.00 | | | 0.98 | | | 0.95 | | | | |
| Flt Protected | 0.95 | 0.99 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (prot) | 1507 | 3146 | | | 3237 | | | 3085 | | | | |
| Flt Permitted | 0.18 | 0.68 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (perm) | 286 | 2144 | | | 3237 | | | 3085 | | | | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 258 | 418 | 0 | 0 | 571 | 101 | 297 | 120 | 180 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 40 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 175 | 501 | 0 | 0 | 661 | 0 | 0 | 557 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 9% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | 52.5 | 52.5 | | | 23.3 | | | 29.2 | | | | |
| Effective Green, g (s) | 52.5 | 52.5 | | | 23.3 | | | 29.2 | | | | |
| Actuated g/C Ratio | 0.53 | 0.53 | | | 0.23 | | | 0.29 | | | | |
| Clearance Time (s) | 6.0 | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | 508 | 1422 | | | 756 | | | 903 | | | | |
| v/s Ratio Prot | 0.10 | c0.10 | | | c0.20 | | | | | | | |
| v/s Ratio Perm | 0.08 | 0.08 | | | | | | 0.18 | | | | |
| v/c Ratio | 0.34 | 0.35 | | | 0.87 | | | 0.62 | | | | |
| Uniform Delay, d1 | 13.8 | 13.7 | | | 36.8 | | | 30.4 | | | | |
| Progression Factor | 0.18 | 0.23 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | 0.1 | 0.0 | | | 10.6 | | | 0.9 | | | | |
| Delay (s) | 2.6 | 3.3 | | | 47.4 | | | 31.3 | | | | |
| Level of Service | A | A | | | D | | | C | | | | |
| Approach Delay (s/veh) | | 3.1 | | | 47.4 | | | 31.3 | | | 0.0 | |
| Approach LOS | | A | | | D | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 27.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 99.7 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 50.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 127 | 381 | 41 | 1 | 475 | 103 | 7 | 13 | 1 | 22 | 2 | 124 |
| Future Volume (Veh/h) | 127 | 381 | 41 | 1 | 475 | 103 | 7 | 13 | 1 | 22 | 2 | 124 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 135 | 405 | 44 | 1 | 505 | 110 | 7 | 14 | 1 | 23 | 2 | 132 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | TWLTL | | | | | | | |
| Median storage veh) | | 2 | | | 2 | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.91 | | | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | |
| vC, conflicting volume | 615 | | | 449 | | | 1337 | 1314 | 427 | 1245 | 1281 | 560 |
| vC1, stage 1 conf vol | | | | | | | 697 | 697 | | 562 | 562 | |
| vC2, stage 2 conf vol | | | | | | | 640 | 617 | | 683 | 719 | |
| vCu, unblocked vol | 615 | | | 342 | | | 1320 | 1295 | 318 | 1219 | 1259 | 560 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| tC, 2 stage (s) | | | | | | | 6.2 | 5.6 | | 6.2 | 5.6 | |
| tF (s) | 2.3 | | | 2.3 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 85 | | | 100 | | | 96 | 95 | 100 | 92 | 99 | 74 |
| cM capacity (veh/h) | 913 | | | 1051 | | | 176 | 262 | 633 | 296 | 300 | 507 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 135 | 449 | 1 | 615 | 22 | 157 |
| Volume Left | 135 | 0 | 1 | 0 | 7 | 23 |
| Volume Right | 0 | 44 | 0 | 110 | 1 | 132 |
| cSH | 913 | 1700 | 1051 | 1700 | 232 | 456 |
| Volume to Capacity | 0.15 | 0.26 | 0.00* | 0.36 | 0.09 | 0.34 |
| Queue Length 95th (ft) | 13 | 0 | 0 | 0 | 8 | 38 |
| Control Delay (s/veh) | 9.6 | 0.0 | 8.4 | 0.0 | 22.1 | 17.0 |
| Lane LOS | A | | A | | C | C |
| Approach Delay (s/veh) | 2.2 | | 0.0 | | 22.1 | 17.0 |
| Approach LOS | | | | | C | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.2 | | | |
| Intersection Capacity Utilization | 58.1% | ICU Level of Service | | B |
| Analysis Period (min) | 15 | | | |

* Value less than 0.01.



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 0 | 162 | 20 | 0 | 88 |
| Future Volume (Veh/h) | 15 | 0 | 162 | 20 | 0 | 88 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 16 | 0 | 176 | 22 | 0 | 96 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 272 | 176 | | | 198 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 272 | 176 | | | 198 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 98 | 100 | | | 100 | |
| cM capacity (veh/h) | 717 | 867 | | | 1375 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|
| Volume Total | 16 | 176 | 22 | 96 |
| Volume Left | 16 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 22 | 0 |
| cSH | 717 | 1700 | 1700 | 1375 |
| Volume to Capacity | 0.02 | 0.10 | 0.01 | 0.00 |
| Queue Length 95th (ft) | 2 | 0 | 0 | 0 |
| Control Delay (s/veh) | 10.1 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | |
| Approach Delay (s/veh) | 10.1 | 0.0 | | 0.0 |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.5 | | |
| Intersection Capacity Utilization | 18.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

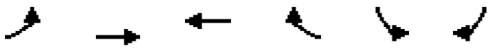


| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 45 | 0 | 182 | 61 | 0 | 103 |
| Future Volume (Veh/h) | 45 | 0 | 182 | 61 | 0 | 103 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 49 | 0 | 198 | 66 | 0 | 112 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 343 | 231 | | | 264 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 343 | 231 | | | 264 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 92 | 100 | | | 100 | |
| cM capacity (veh/h) | 653 | 808 | | | 1300 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 49 | 264 | 112 |
| Volume Left | 49 | 0 | 0 |
| Volume Right | 0 | 66 | 0 |
| cSH | 653 | 1700 | 1300 |
| Volume to Capacity | 0.08 | 0.16 | 0.00 |
| Queue Length 95th (ft) | 6 | 0 | 0 |
| Control Delay (s/veh) | 11.0 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s/veh) | 11.0 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 23.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

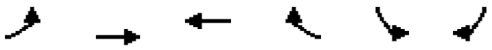


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 62 | 342 | 530 | 11 | 11 | 48 |
| Future Volume (Veh/h) | 62 | 342 | 530 | 11 | 11 | 48 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 67 | 372 | 576 | 12 | 12 | 52 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (ft) | | 995 | | | | |
| pX, platoon unblocked | | | | | 0.95 | |
| vC, conflicting volume | 588 | | | | 1082 | 576 |
| vC1, stage 1 conf vol | | | | | 576 | |
| vC2, stage 2 conf vol | | | | | 506 | |
| vCu, unblocked vol | 588 | | | | 1062 | 576 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 93 | | | | 97 | 90 |
| cM capacity (veh/h) | 987 | | | | 439 | 517 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 67 | 372 | 576 | 12 | 64 |
| Volume Left | 67 | 0 | 0 | 0 | 12 |
| Volume Right | 0 | 0 | 0 | 12 | 52 |
| cSH | 987 | 1700 | 1700 | 1700 | 500 |
| Volume to Capacity | 0.07 | 0.22 | 0.34 | 0.00* | 0.13 |
| Queue Length 95th (ft) | 5 | 0 | 0 | 0 | 11 |
| Control Delay (s/veh) | 8.9 | 0.0 | 0.0 | 0.0 | 13.2 |
| Lane LOS | A | | | | B |
| Approach Delay (s/veh) | 1.4 | | 0.0 | | 13.2 |
| Approach LOS | | | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 44.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

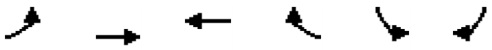


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 56 | 297 | 497 | 27 | 23 | 44 |
| Future Volume (Veh/h) | 56 | 297 | 497 | 27 | 23 | 44 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 61 | 323 | 540 | 29 | 25 | 48 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (ft) | | 1238 | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 569 | | | | 985 | 540 |
| vC1, stage 1 conf vol | | | | | 540 | |
| vC2, stage 2 conf vol | | | | | 445 | |
| vCu, unblocked vol | 569 | | | | 985 | 540 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 94 | | | | 95 | 91 |
| cM capacity (veh/h) | 1003 | | | | 471 | 542 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 61 | 323 | 540 | 29 | 25 | 48 |
| Volume Left | 61 | 0 | 0 | 0 | 25 | 0 |
| Volume Right | 0 | 0 | 0 | 29 | 0 | 48 |
| cSH | 1003 | 1700 | 1700 | 1700 | 471 | 542 |
| Volume to Capacity | 0.06 | 0.19 | 0.32 | 0.02 | 0.05 | 0.09 |
| Queue Length 95th (ft) | 5 | 0 | 0 | 0 | 4 | 7 |
| Control Delay (s/veh) | 8.8 | 0.0 | 0.0 | 0.0 | 13.1 | 12.3 |
| Lane LOS | A | | | | B | B |
| Approach Delay (s/veh) | 1.4 | | 0.0 | | 12.6 | |
| Approach LOS | | | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.4 | | |
| Intersection Capacity Utilization | 42.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

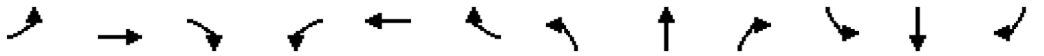


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 6 | 314 | 520 | 4 | 3 | 4 |
| Future Volume (Veh/h) | 6 | 314 | 520 | 4 | 3 | 4 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 7 | 341 | 565 | 4 | 3 | 4 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | None | | | |
| Median storage veh) | | 2 | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 569 | | | | 922 | 567 |
| vC1, stage 1 conf vol | | | | | 567 | |
| vC2, stage 2 conf vol | | | | | 355 | |
| vCu, unblocked vol | 569 | | | | 922 | 567 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 99 | | | | 99 | 99 |
| cM capacity (veh/h) | 1003 | | | | 499 | 523 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 7 | 341 | 569 | 7 |
| Volume Left | 7 | 0 | 0 | 3 |
| Volume Right | 0 | 0 | 4 | 4 |
| cSH | 1003 | 1700 | 1700 | 512 |
| Volume to Capacity | 0.00* | 0.20 | 0.33 | 0.01 |
| Queue Length 95th (ft) | 1 | 0 | 0 | 1 |
| Control Delay (s/veh) | 8.6 | 0.0 | 0.0 | 12.1 |
| Lane LOS | A | | | B |
| Approach Delay (s/veh) | 0.2 | | 0.0 | 12.1 |
| Approach LOS | | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 37.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

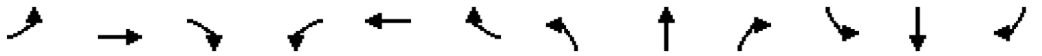


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 687 | 105 | 350 | 678 | 0 | 0 | 0 | 0 | 434 | 85 | 48 |
| Future Volume (vph) | 0 | 687 | 105 | 350 | 678 | 0 | 0 | 0 | 0 | 434 | 85 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | | | | 6.0 | 6.0 |
| Lane Util. Factor | | 0.95 | | 1.00 | 0.95 | | | | | | 0.95 | 1.00 |
| Frt | | 0.98 | | 1.00 | 1.00 | | | | | | 1.00 | 0.85 |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (prot) | | 3435 | | 1752 | 3505 | | | | | | 3364 | 1568 |
| Flt Permitted | | 1.00 | | 0.14 | 1.00 | | | | | | 0.96 | 1.00 |
| Satd. Flow (perm) | | 3435 | | 249 | 3505 | | | | | | 3364 | 1568 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 0 | 701 | 107 | 357 | 692 | 0 | 0 | 0 | 0 | 443 | 87 | 49 |
| RTOR Reduction (vph) | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| Lane Group Flow (vph) | 0 | 798 | 0 | 357 | 692 | 0 | 0 | 0 | 0 | 0 | 530 | 10 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | | NA | | D.P+P | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 2 | | 1 | 1 2 | | | | | | 4 12 | |
| Permitted Phases | | | | 2 | | | | | | 4 12 | | 4 12 |
| Actuated Green, G (s) | | 32.8 | | 75.9 | 81.9 | | | | | | 23.0 | 23.0 |
| Effective Green, g (s) | | 32.8 | | 75.9 | 81.9 | | | | | | 23.0 | 23.0 |
| Actuated g/C Ratio | | 0.28 | | 0.65 | 0.70 | | | | | | 0.20 | 0.20 |
| Clearance Time (s) | | 6.0 | | 6.0 | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | | 2.0 | | | | | | | | |
| Lane Grp Cap (vph) | | 963 | | 715 | 2455 | | | | | | 661 | 308 |
| v/s Ratio Prot | | c0.23 | | c0.18 | 0.20 | | | | | | | |
| v/s Ratio Perm | | | | 0.14 | | | | | | | 0.16 | 0.01 |
| v/c Ratio | | 0.83 | | 0.50 | 0.28 | | | | | | 1.29dl | 0.03 |
| Uniform Delay, d1 | | 39.4 | | 16.8 | 6.5 | | | | | | 44.8 | 37.9 |
| Progression Factor | | 1.00 | | 0.17 | 0.22 | | | | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | 5.7 | | 0.0 | 0.0 | | | | | | 6.6 | 0.0 |
| Delay (s) | | 45.1 | | 3.0 | 1.4 | | | | | | 51.3 | 38.0 |
| Level of Service | | D | | A | A | | | | | | D | D |
| Approach Delay (s/veh) | | 45.1 | | | 2.0 | | | 0.0 | | | 50.2 | |
| Approach LOS | | D | | | A | | | A | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 27.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 116.9 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 98.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

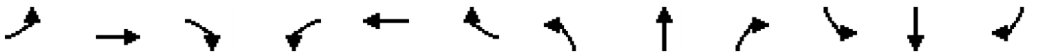
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 326 | 780 | 0 | 0 | 764 | 183 | 276 | 150 | 298 | 0 | 0 | 0 |
| Future Volume (vph) | 326 | 780 | 0 | 0 | 764 | 183 | 276 | 150 | 298 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | | 6.0 | | | 6.0 | | | | |
| Lane Util. Factor | 0.91 | 0.91 | | | 0.95 | | | 0.95 | | | | |
| Frt | 1.00 | 1.00 | | | 0.97 | | | 0.94 | | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (prot) | 1595 | 3343 | | | 3403 | | | 3227 | | | | |
| Flt Permitted | 0.13 | 0.61 | | | 1.00 | | | 0.98 | | | | |
| Satd. Flow (perm) | 217 | 2040 | | | 3403 | | | 3227 | | | | |
| Peak-hour factor, PHF | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Adj. Flow (vph) | 329 | 788 | 0 | 0 | 772 | 185 | 279 | 152 | 301 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 104 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 253 | 864 | 0 | 0 | 940 | 0 | 0 | 628 | 0 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | D.P+P | NA | | | NA | | Perm | NA | | | | |
| Protected Phases | 5 | 5 6 | | | 6 | | | 8 16 | | | | |
| Permitted Phases | 6 | | | | | | 8 16 | | | | | |
| Actuated Green, G (s) | 72.8 | 72.8 | | | 31.0 | | | 26.1 | | | | |
| Effective Green, g (s) | 72.8 | 72.8 | | | 31.0 | | | 26.1 | | | | |
| Actuated g/C Ratio | 0.62 | 0.62 | | | 0.27 | | | 0.22 | | | | |
| Clearance Time (s) | 6.0 | | | | 6.0 | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 2.0 | | | | | | | |
| Lane Grp Cap (vph) | 627 | 1736 | | | 902 | | | 720 | | | | |
| v/s Ratio Prot | 0.14 | c0.18 | | | c0.28 | | | | | | | |
| v/s Ratio Perm | 0.11 | 0.13 | | | | | | 0.19 | | | | |
| v/c Ratio | 0.40 | 0.50 | | | 1.04 | | | 0.87 | | | | |
| Uniform Delay, d1 | 15.6 | 12.1 | | | 43.0 | | | 43.8 | | | | |
| Progression Factor | 0.41 | 0.27 | | | 1.00 | | | 1.00 | | | | |
| Incremental Delay, d2 | 0.1 | 0.1 | | | 41.5 | | | 11.0 | | | | |
| Delay (s) | 6.4 | 3.3 | | | 84.5 | | | 54.8 | | | | |
| Level of Service | A | A | | | F | | | D | | | | |
| Approach Delay (s/veh) | | 4.0 | | | 84.5 | | | 54.8 | | | 0.0 | |
| Approach LOS | | A | | | F | | | D | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 44.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 116.9 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 98.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 249 | 763 | 49 | 7 | 584 | 67 | 9 | 2 | 32 | 60 | 8 | 300 |
| Future Volume (Veh/h) | 249 | 763 | 49 | 7 | 584 | 67 | 9 | 2 | 32 | 60 | 8 | 300 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 262 | 803 | 52 | 7 | 615 | 71 | 9 | 2 | 34 | 63 | 8 | 316 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | TWLTL | | | | | | | |
| Median storage veh) | | 2 | | | 2 | | | | | | | |
| Upstream signal (ft) | | 647 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.84 | | | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | |
| vC, conflicting volume | 686 | | | 855 | | | 2302 | 2053 | 829 | 2027 | 2044 | 651 |
| vC1, stage 1 conf vol | | | | | | | 1353 | 1353 | | 665 | 665 | |
| vC2, stage 2 conf vol | | | | | | | 949 | 700 | | 1362 | 1379 | |
| vCu, unblocked vol | 686 | | | 733 | | | 2454 | 2158 | 702 | 2126 | 2146 | 651 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | 6.1 | 5.5 | | 6.1 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 71 | | | 99 | | | 0 | 98 | 91 | 29 | 93 | 32 |
| cM capacity (veh/h) | 898 | | | 725 | | | 4 | 106 | 366 | 89 | 115 | 465 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 262 | 855 | 7 | 686 | 45 | 387 |
| Volume Left | 262 | 0 | 7 | 0 | 9 | 63 |
| Volume Right | 0 | 52 | 0 | 71 | 34 | 316 |
| cSH | 898 | 1700 | 725 | 1700 | 19 | 265 |
| Volume to Capacity | 0.29 | 0.50 | 0.00* | 0.40 | 2.31 | 1.46 |
| Queue Length 95th (ft) | 30 | 0 | 1 | 0 | 150 | 546 |
| Control Delay (s/veh) | 10.6 | 0.0 | 10.0 | 0.0 | 1014.2 | 261.6 |
| Lane LOS | B | | B | | F | F |
| Approach Delay (s/veh) | 2.5 | | 0.1 | | 1014.2 | 261.6 |
| Approach LOS | | | | | F | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 66.8 | | | |
| Intersection Capacity Utilization | 86.3% | ICU Level of Service | | E |
| Analysis Period (min) | 15 | | | |

* Value less than 0.01.



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 49 | 0 | 123 | 49 | 0 | 172 |
| Future Volume (Veh/h) | 49 | 0 | 123 | 49 | 0 | 172 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 53 | 0 | 134 | 53 | 0 | 187 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 321 | 134 | | | 187 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 321 | 134 | | | 187 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 92 | 100 | | | 100 | |
| cM capacity (veh/h) | 673 | 915 | | | 1387 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|
| Volume Total | 53 | 134 | 53 | 187 |
| Volume Left | 53 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 53 | 0 |
| cSH | 673 | 1700 | 1700 | 1387 |
| Volume to Capacity | 0.08 | 0.08 | 0.03 | 0.00 |
| Queue Length 95th (ft) | 6 | 0 | 0 | 0 |
| Control Delay (s/veh) | 10.8 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | |
| Approach Delay (s/veh) | 10.8 | 0.0 | | 0.0 |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 19.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

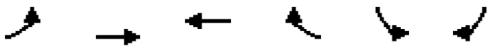


| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 146 | 0 | 172 | 146 | 0 | 221 |
| Future Volume (Veh/h) | 146 | 0 | 172 | 146 | 0 | 221 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 159 | 0 | 187 | 159 | 0 | 240 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 507 | 267 | | | 346 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 507 | 267 | | | 346 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 70 | 100 | | | 100 | |
| cM capacity (veh/h) | 526 | 772 | | | 1213 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 159 | 346 | 240 |
| Volume Left | 159 | 0 | 0 |
| Volume Right | 0 | 159 | 0 |
| cSH | 526 | 1700 | 1213 |
| Volume to Capacity | 0.30 | 0.20 | 0.00 |
| Queue Length 95th (ft) | 32 | 0 | 0 |
| Control Delay (s/veh) | 14.8 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s/veh) | 14.8 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.2 | | |
| Intersection Capacity Utilization | 32.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

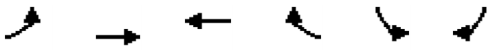


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 134 | 721 | 524 | 12 | 12 | 134 |
| Future Volume (Veh/h) | 134 | 721 | 524 | 12 | 12 | 134 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 146 | 784 | 570 | 13 | 13 | 146 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (ft) | | 995 | | | | |
| pX, platoon unblocked | | | | | 0.86 | |
| vC, conflicting volume | 583 | | | | 1646 | 570 |
| vC1, stage 1 conf vol | | | | | 570 | |
| vC2, stage 2 conf vol | | | | | 1076 | |
| vCu, unblocked vol | 583 | | | | 1669 | 570 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 85 | | | | 95 | 72 |
| cM capacity (veh/h) | 991 | | | | 237 | 521 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 146 | 784 | 570 | 13 | 159 |
| Volume Left | 146 | 0 | 0 | 0 | 13 |
| Volume Right | 0 | 0 | 0 | 13 | 146 |
| cSH | 991 | 1700 | 1700 | 1700 | 475 |
| Volume to Capacity | 0.15 | 0.46 | 0.34 | 0.00* | 0.34 |
| Queue Length 95th (ft) | 13 | 0 | 0 | 0 | 36 |
| Control Delay (s/veh) | 9.3 | 0.0 | 0.0 | 0.0 | 16.4 |
| Lane LOS | A | | | | C |
| Approach Delay (s/veh) | 1.5 | | 0.0 | | 16.4 |
| Approach LOS | | | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 54.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

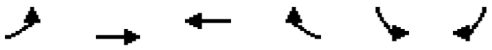


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 119 | 614 | 417 | 51 | 51 | 119 |
| Future Volume (Veh/h) | 119 | 614 | 417 | 51 | 51 | 119 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 129 | 667 | 453 | 55 | 55 | 129 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (ft) | | 1238 | | | | |
| pX, platoon unblocked | | | | | 0.90 | |
| vC, conflicting volume | 508 | | | | 1378 | 453 |
| vC1, stage 1 conf vol | | | | | 453 | |
| vC2, stage 2 conf vol | | | | | 925 | |
| vCu, unblocked vol | 508 | | | | 1364 | 453 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 88 | | | | 82 | 79 |
| cM capacity (veh/h) | 1057 | | | | 300 | 607 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 129 | 667 | 453 | 55 | 55 | 129 |
| Volume Left | 129 | 0 | 0 | 0 | 55 | 0 |
| Volume Right | 0 | 0 | 0 | 55 | 0 | 129 |
| cSH | 1057 | 1700 | 1700 | 1700 | 300 | 607 |
| Volume to Capacity | 0.12 | 0.39 | 0.27 | 0.03 | 0.18 | 0.21 |
| Queue Length 95th (ft) | 10 | 0 | 0 | 0 | 16 | 20 |
| Control Delay (s/veh) | 8.9 | 0.0 | 0.0 | 0.0 | 19.7 | 12.5 |
| Lane LOS | A | | | | C | B |
| Approach Delay (s/veh) | 1.4 | | 0.0 | | 14.7 | |
| Approach LOS | | | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.6 | | |
| Intersection Capacity Utilization | 42.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.

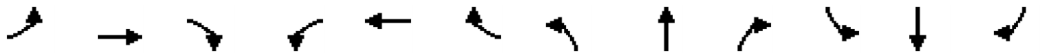


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 650 | 453 | 10 | 10 | 15 |
| Future Volume (Veh/h) | 15 | 650 | 453 | 10 | 10 | 15 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 16 | 707 | 492 | 11 | 11 | 16 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | None | | | |
| Median storage veh) | | 2 | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 503 | | | | 1237 | 498 |
| vC1, stage 1 conf vol | | | | | 498 | |
| vC2, stage 2 conf vol | | | | | 739 | |
| vCu, unblocked vol | 503 | | | | 1237 | 498 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 98 | | | | 97 | 97 |
| cM capacity (veh/h) | 1061 | | | | 399 | 573 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 16 | 707 | 503 | 27 |
| Volume Left | 16 | 0 | 0 | 11 |
| Volume Right | 0 | 0 | 11 | 16 |
| cSH | 1061 | 1700 | 1700 | 487 |
| Volume to Capacity | 0.02 | 0.42 | 0.30 | 0.06 |
| Queue Length 95th (ft) | 1 | 0 | 0 | 4 |
| Control Delay (s/veh) | 8.4 | 0.0 | 0.0 | 12.8 |
| Lane LOS | A | | | B |
| Approach Delay (s/veh) | 0.2 | | 0.0 | 12.8 |
| Approach LOS | | | | B |

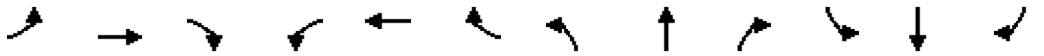
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.4 | | |
| Intersection Capacity Utilization | 44.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

* Value less than 0.01.



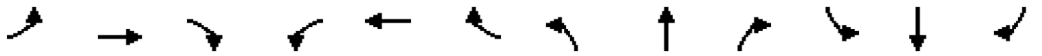
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 123 | 355 | 37 | 1 | 437 | 94 | 6 | 11 | 1 | 20 | 2 | 118 |
| Future Volume (vph) | 123 | 355 | 37 | 1 | 437 | 94 | 6 | 11 | 1 | 20 | 2 | 118 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.97 | | | 0.99 | | | 0.89 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.98 | | | 0.99 | |
| Satd. Flow (prot) | 1597 | 1658 | | 1597 | 1637 | | | 1644 | | | 1479 | |
| Flt Permitted | 0.34 | 1.00 | | 0.49 | 1.00 | | | 0.87 | | | 0.95 | |
| Satd. Flow (perm) | 568 | 1658 | | 829 | 1637 | | | 1449 | | | 1409 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 131 | 378 | 39 | 1 | 465 | 100 | 6 | 12 | 1 | 21 | 2 | 126 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 112 | 0 |
| Lane Group Flow (vph) | 131 | 414 | 0 | 1 | 558 | 0 | 0 | 18 | 0 | 0 | 37 | 0 |
| Heavy Vehicles (%) | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% |
| Turn Type | D.P+P | NA | | D.P+P | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 8 | | | 4 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 35.0 | 34.3 | | 35.0 | 30.0 | | | 6.7 | | | 6.7 | |
| Effective Green, g (s) | 35.0 | 34.3 | | 35.0 | 30.0 | | | 6.7 | | | 6.7 | |
| Actuated g/C Ratio | 0.59 | 0.57 | | 0.59 | 0.50 | | | 0.11 | | | 0.11 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | 419 | 952 | | 495 | 822 | | | 162 | | | 158 | |
| v/s Ratio Prot | c0.03 | c0.25 | | 0.00 | c0.34 | | | | | | | |
| v/s Ratio Perm | 0.16 | | | 0.00 | | | | 0.01 | | | c0.03 | |
| v/c Ratio | 0.31 | 0.43 | | 0.00 | 0.68 | | | 0.11 | | | 0.24 | |
| Uniform Delay, d1 | 6.1 | 7.2 | | 5.1 | 11.2 | | | 23.8 | | | 24.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 0.2 | 0.1 | | 0.0 | 1.8 | | | 0.1 | | | 0.3 | |
| Delay (s) | 6.3 | 7.3 | | 5.1 | 13.0 | | | 23.9 | | | 24.4 | |
| Level of Service | A | A | | A | B | | | C | | | C | |
| Approach Delay (s/veh) | | 7.1 | | | 13.0 | | | 23.9 | | | 24.4 | |
| Approach LOS | | A | | | B | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 11.9 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.58 | | |
| Actuated Cycle Length (s) | 59.7 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 59.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



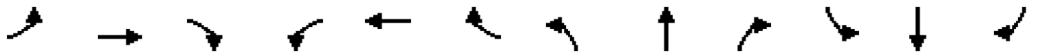
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 244 | 714 | 45 | 6 | 552 | 60 | 8 | 2 | 29 | 54 | 7 | 290 |
| Future Volume (vph) | 244 | 714 | 45 | 6 | 552 | 60 | 8 | 2 | 29 | 54 | 7 | 290 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.99 | | | 0.90 | | | 0.89 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.99 | | | 0.99 | |
| Satd. Flow (prot) | 1736 | 1811 | | 1736 | 1800 | | | 1625 | | | 1611 | |
| Flt Permitted | 0.22 | 1.00 | | 0.20 | 1.00 | | | 0.83 | | | 0.94 | |
| Satd. Flow (perm) | 402 | 1811 | | 366 | 1800 | | | 1366 | | | 1520 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 257 | 752 | 47 | 6 | 581 | 63 | 8 | 2 | 31 | 57 | 7 | 305 |
| RTOR Reduction (vph) | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 25 | 0 | 0 | 145 | 0 |
| Lane Group Flow (vph) | 257 | 797 | 0 | 6 | 641 | 0 | 0 | 16 | 0 | 0 | 224 | 0 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| Turn Type | D.P+P | NA | | D.P+P | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 8 | | | 4 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 50.0 | 49.3 | | 50.0 | 39.8 | | | 16.6 | | | 16.6 | |
| Effective Green, g (s) | 50.0 | 49.3 | | 50.0 | 39.8 | | | 16.6 | | | 16.6 | |
| Actuated g/C Ratio | 0.59 | 0.58 | | 0.59 | 0.47 | | | 0.20 | | | 0.20 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | 398 | 1055 | | 227 | 846 | | | 268 | | | 298 | |
| v/s Ratio Prot | c0.08 | c0.44 | | 0.00 | 0.36 | | | | | | | |
| v/s Ratio Perm | 0.30 | | | 0.02 | | | | 0.01 | | | c0.15 | |
| v/c Ratio | 0.65 | 0.76 | | 0.03 | 0.76 | | | 0.06 | | | 0.75 | |
| Uniform Delay, d1 | 11.5 | 13.2 | | 10.0 | 18.4 | | | 27.7 | | | 32.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 2.7 | 2.8 | | 0.0 | 3.5 | | | 0.0 | | | 9.1 | |
| Delay (s) | 14.2 | 15.9 | | 10.1 | 21.9 | | | 27.7 | | | 41.1 | |
| Level of Service | B | B | | B | C | | | C | | | D | |
| Approach Delay (s/veh) | | 15.5 | | | 21.8 | | | 27.7 | | | 41.1 | |
| Approach LOS | | B | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 22.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 84.6 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 87.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 127 | 381 | 41 | 1 | 475 | 103 | 7 | 13 | 1 | 22 | 2 | 124 |
| Future Volume (vph) | 127 | 381 | 41 | 1 | 475 | 103 | 7 | 13 | 1 | 22 | 2 | 124 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.97 | | | 0.99 | | | 0.89 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.98 | | | 0.99 | |
| Satd. Flow (prot) | 1597 | 1657 | | 1597 | 1636 | | | 1645 | | | 1480 | |
| Flt Permitted | 0.29 | 1.00 | | 0.47 | 1.00 | | | 0.83 | | | 0.94 | |
| Satd. Flow (perm) | 493 | 1657 | | 789 | 1636 | | | 1390 | | | 1407 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 135 | 405 | 44 | 1 | 505 | 110 | 7 | 14 | 1 | 23 | 2 | 132 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 117 | 0 |
| Lane Group Flow (vph) | 135 | 445 | 0 | 1 | 608 | 0 | 0 | 21 | 0 | 0 | 40 | 0 |
| Heavy Vehicles (%) | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 13% |
| Turn Type | D.P+P | NA | | D.P+P | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 8 | | | 4 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 38.5 | 37.8 | | 38.5 | 32.1 | | | 7.0 | | | 7.0 | |
| Effective Green, g (s) | 38.5 | 37.8 | | 38.5 | 32.1 | | | 7.0 | | | 7.0 | |
| Actuated g/C Ratio | 0.61 | 0.60 | | 0.61 | 0.51 | | | 0.11 | | | 0.11 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | 410 | 986 | | 487 | 827 | | | 153 | | | 155 | |
| v/s Ratio Prot | c0.03 | c0.27 | | 0.00 | c0.37 | | | | | | | |
| v/s Ratio Perm | 0.17 | | | 0.00 | | | | 0.02 | | | c0.03 | |
| v/c Ratio | 0.33 | 0.45 | | 0.00 | 0.73 | | | 0.14 | | | 0.26 | |
| Uniform Delay, d1 | 6.4 | 7.1 | | 5.0 | 12.4 | | | 25.5 | | | 25.9 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 0.2 | 0.1 | | 0.0 | 2.9 | | | 0.2 | | | 0.3 | |
| Delay (s) | 6.6 | 7.2 | | 5.0 | 15.3 | | | 25.7 | | | 26.2 | |
| Level of Service | A | A | | A | B | | | C | | | C | |
| Approach Delay (s/veh) | | 7.1 | | | 15.3 | | | 25.7 | | | 26.2 | |
| Approach LOS | | A | | | B | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 13.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.62 | | |
| Actuated Cycle Length (s) | 63.5 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 63.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 249 | 763 | 49 | 7 | 584 | 67 | 9 | 2 | 32 | 60 | 8 | 300 |
| Future Volume (vph) | 249 | 763 | 49 | 7 | 584 | 67 | 9 | 2 | 32 | 60 | 8 | 300 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.98 | | | 0.90 | | | 0.89 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.99 | | | 0.99 | |
| Satd. Flow (prot) | 1736 | 1810 | | 1736 | 1799 | | | 1624 | | | 1612 | |
| Flt Permitted | 0.18 | 1.00 | | 0.16 | 1.00 | | | 0.84 | | | 0.93 | |
| Satd. Flow (perm) | 334 | 1810 | | 301 | 1799 | | | 1372 | | | 1516 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 262 | 803 | 52 | 7 | 615 | 71 | 9 | 2 | 34 | 63 | 8 | 316 |
| RTOR Reduction (vph) | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 27 | 0 | 0 | 134 | 0 |
| Lane Group Flow (vph) | 262 | 853 | 0 | 7 | 682 | 0 | 0 | 18 | 0 | 0 | 253 | 0 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| Turn Type | D.P+P | NA | | D.P+P | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 8 | | | 4 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 55.0 | 54.3 | | 55.0 | 43.7 | | | 19.3 | | | 19.3 | |
| Effective Green, g (s) | 55.0 | 54.3 | | 55.0 | 43.7 | | | 19.3 | | | 19.3 | |
| Actuated g/C Ratio | 0.60 | 0.59 | | 0.60 | 0.47 | | | 0.21 | | | 0.21 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Grp Cap (vph) | 370 | 1064 | | 190 | 851 | | | 286 | | | 316 | |
| v/s Ratio Prot | c0.09 | c0.47 | | 0.00 | 0.38 | | | | | | | |
| v/s Ratio Perm | 0.33 | | | 0.02 | | | | 0.01 | | | c0.17 | |
| v/c Ratio | 0.71 | 0.80 | | 0.04 | 0.80 | | | 0.06 | | | 0.80 | |
| Uniform Delay, d1 | 13.7 | 14.8 | | 12.0 | 20.6 | | | 29.3 | | | 34.7 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 5.0 | 4.2 | | 0.0 | 5.2 | | | 0.0 | | | 12.9 | |
| Delay (s) | 18.7 | 19.0 | | 12.0 | 25.8 | | | 29.3 | | | 47.6 | |
| Level of Service | B | B | | B | C | | | C | | | D | |
| Approach Delay (s/veh) | | 18.9 | | | 25.7 | | | 29.3 | | | 47.6 | |
| Approach LOS | | B | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 26.2 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 92.3 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 91.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

# G. SIGNAL WARRANT WORKSHEET

**TRAFFIC SIGNAL WARRANT ANALYSIS (TMUTCD)**

| | | | | | |
|---|---|---|---|---|---|
| MAJOR STREET: | Ennis Avenue | EB | WB | # OF APPROACH LANES: | 1 |
| MINOR STREET: | Sonoma Trail | NB | SB | # OF APPROACH LANES: | 1 |
| CITY, STATE: | Ennis, Texas | | | | |
| COMMENTS: | Existing (2026) Conditions | | | | |

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED OR POSTED SPEED LIMIT GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

| | | | Ennis Avenue | | | Sonoma Trail | | |
|---|---|---|---|---|---|---|---|---|
| | | | EB Approach | WB Approach | Total | NB Approach | SB Approach | Minor Street Heavy Leg |
| 07:00 AM | TO | 07:00 AM | 173 | 380 | 553 | 39 | 46 | 46 |
| 08:00 AM | TO | 08:00 AM | 253 | 439 | 692 | 56 | 68 | 68 |
| 09:00 AM | TO | 09:00 AM | 264 | 344 | 608 | 52 | 65 | 65 |
| 10:00 AM | TO | 10:00 AM | 266 | 330 | 596 | 74 | 80 | 80 |
| 11:00 AM | TO | 11:00 AM | 265 | 304 | 569 | 74 | 86 | 86 |
| 12:00 PM | TO | 12:00 PM | 234 | 311 | 545 | 89 | 118 | 118 |
| 01:00 PM | TO | 01:00 PM | 301 | 286 | 587 | 144 | 132 | 144 |
| 02:00 PM | TO | 02:00 PM | 277 | 291 | 568 | 147 | 132 | 147 |
| 03:00 PM | TO | 03:00 PM | 292 | 268 | 560 | 154 | 100 | 154 |
| 04:00 PM | TO | 04:00 PM | 401 | 348 | 749 | 115 | 137 | 137 |
| 05:00 PM | TO | 05:00 PM | 504 | 307 | 811 | 150 | 144 | 150 |
| 06:00 PM | TO | 06:00 PM | 420 | 366 | 786 | 101 | 141 | 141 |
| 07:00 PM | TO | 07:00 PM | 389 | 267 | 656 | 71 | 128 | 128 |

| Warrant | Description | Warrant Met? |
|---|---|---|
| 1 | Eight-Hour Volume | Warrant NOT Met |
| 2 | Four-Hour Volume | Warrant NOT Met |
| 3 | Peak Hour Volume | Warrant NOT Met |
| 4 | Pedestrian Volume | Not Evaluated |
| 5 | School Crossing | N/A |
| 6 | Coordinated Signal System | N/A |
| 7 | Crash Experience | Not Evaluated |
| 8 | Roadway Network | N/A |
| 9 | Intersection Near a Grade Crossing | N/A |

04/06/26

Kimley-Horn and Associates, Inc.

**TRAFFIC SIGNAL WARRANT ANALYSIS (TMUTCD)**

| | | | | | |
|---|---|---|---|---|---|
| MAJOR STREET: | Ennis Avenue | EB | WB | # OF APPROACH LANES: | 1 |
| MINOR STREET: | Sonoma Trail | NB | SB | # OF APPROACH LANES: | 1 |
| CITY, STATE: | Ennis, Texas | | | | |
| COMMENTS: | Build Out Background (2028) | | | | |

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED OR POSTED SPEED LIMIT GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

| | | | Ennis Avenue | | | Sonoma Trail | | |
|---|---|---|---|---|---|---|---|---|
| | | | EB Approach | WB Approach | Total | NB Approach | SB Approach | Minor Street Heavy Leg |
| 07:00 AM | TO | 07:00 AM | 179 | 395 | 574 | 41 | 48 | 48 |
| 08:00 AM | TO | 08:00 AM | 263 | 456 | 719 | 59 | 71 | 71 |
| 09:00 AM | TO | 09:00 AM | 274 | 358 | 632 | 55 | 68 | 68 |
| 10:00 AM | TO | 10:00 AM | 276 | 343 | 619 | 77 | 84 | 84 |
| 11:00 AM | TO | 11:00 AM | 276 | 316 | 592 | 77 | 89 | 89 |
| 12:00 PM | TO | 12:00 PM | 243 | 324 | 567 | 92 | 123 | 123 |
| 01:00 PM | TO | 01:00 PM | 313 | 297 | 610 | 150 | 137 | 150 |
| 02:00 PM | TO | 02:00 PM | 289 | 302 | 591 | 154 | 137 | 154 |
| 03:00 PM | TO | 03:00 PM | 304 | 279 | 583 | 160 | 104 | 160 |
| 04:00 PM | TO | 04:00 PM | 418 | 362 | 780 | 120 | 142 | 142 |
| 05:00 PM | TO | 05:00 PM | 525 | 319 | 844 | 156 | 150 | 156 |
| 06:00 PM | TO | 06:00 PM | 437 | 381 | 818 | 105 | 146 | 146 |
| 07:00 PM | TO | 07:00 PM | 404 | 278 | 682 | 74 | 133 | 133 |

| Warrant | Description | Warrant Met? |
|---|---|---|
| 1 | Eight-Hour Volume | WARRANT MET |
| 2 | Four-Hour Volume | Warrant NOT Met |
| 3 | Peak Hour Volume | Warrant NOT Met |
| 4 | Pedestrian Volume | Not Evaluated |
| 5 | School Crossing | N/A |
| 6 | Coordinated Signal System | N/A |
| 7 | Crash Experience | Not Evaluated |
| 8 | Roadway Network | N/A |
| 9 | Intersection Near a Grade Crossing | N/A |

04/06/26

Kimley-Horn and Associates, Inc.

**TRAFFIC SIGNAL WARRANT ANALYSIS (TMUTCD)**

| | | | | | |
|---|---|---|---|---|---|
| MAJOR STREET: | Ennis Avenue | EB | WB | # OF APPROACH LANES: | 2 |
| MINOR STREET: | Sonoma Trail | NB | SB | # OF APPROACH LANES: | 2 |
| CITY, STATE: | Ennis, Texas | | | | |
| COMMENTS: | Build Out (2028) | | | | |

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED OR POSTED SPEED LIMIT GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

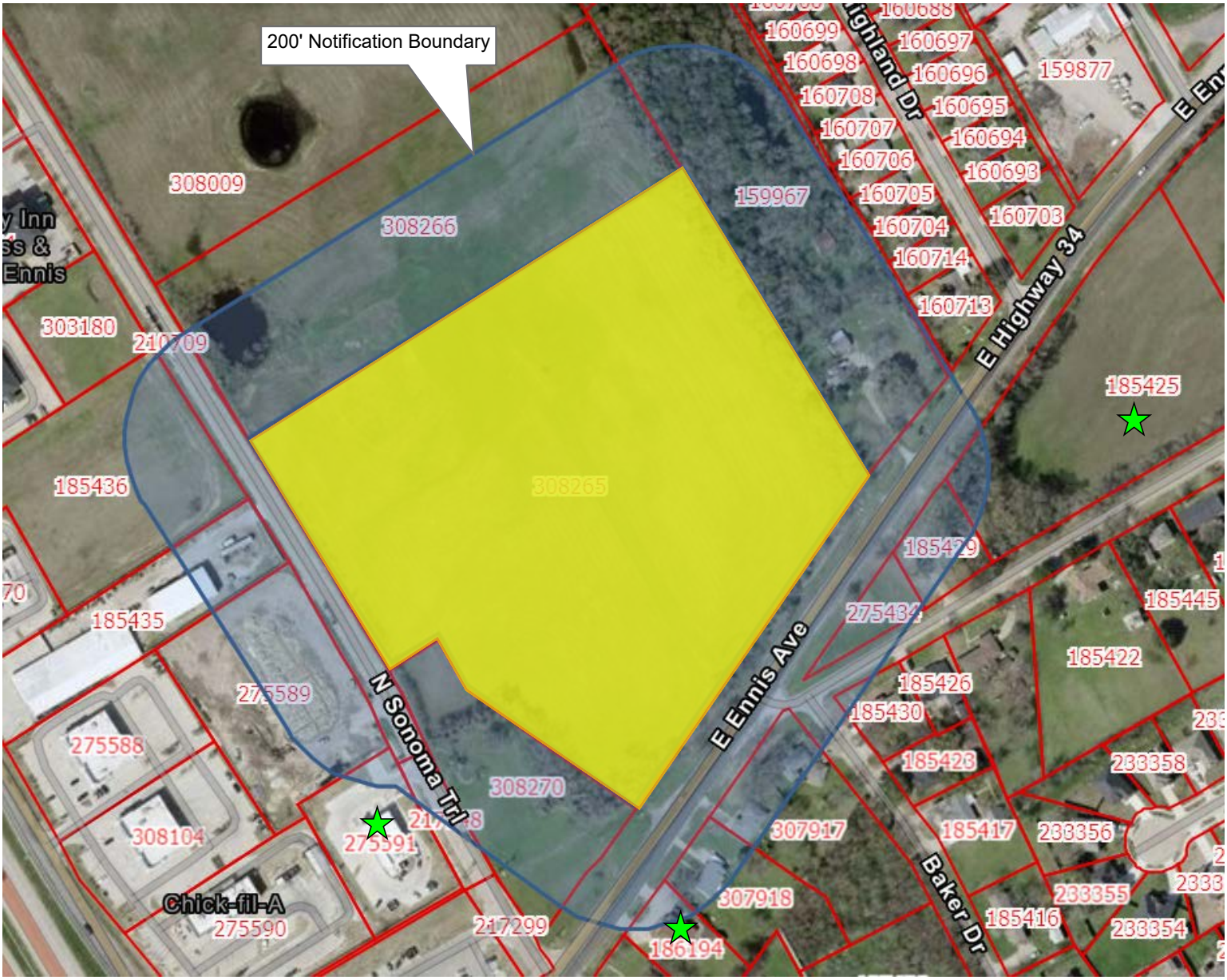
| | | | Ennis Avenue | | | Sonoma Trail | | |
|---|---|---|---|---|---|---|---|---|
| | | | EB Approach | WB Approach | Total | NB Approach | SB Approach | Minor Street Heavy Leg |
| 07:00 AM | TO | 07:00 AM | 231 | 407 | 638 | 41 | 63 | 63 |
| 08:00 AM | TO | 08:00 AM | 375 | 504 | 879 | 59 | 131 | 131 |
| 09:00 AM | TO | 09:00 AM | 508 | 443 | 951 | 55 | 175 | 175 |
| 10:00 AM | TO | 10:00 AM | 539 | 447 | 986 | 77 | 214 | 214 |
| 11:00 AM | TO | 11:00 AM | 590 | 436 | 1026 | 77 | 239 | 239 |
| 12:00 PM | TO | 12:00 PM | 617 | 487 | 1104 | 92 | 327 | 327 |
| 01:00 PM | TO | 01:00 PM | 769 | 513 | 1282 | 150 | 406 | 406 |
| 02:00 PM | TO | 02:00 PM | 716 | 468 | 1184 | 154 | 344 | 344 |
| 03:00 PM | TO | 03:00 PM | 736 | 477 | 1213 | 160 | 352 | 352 |
| 04:00 PM | TO | 04:00 PM | 864 | 552 | 1416 | 120 | 379 | 379 |
| 05:00 PM | TO | 05:00 PM | 1010 | 532 | 1542 | 156 | 416 | 416 |
| 06:00 PM | TO | 06:00 PM | 909 | 591 | 1500 | 105 | 409 | 409 |
| 07:00 PM | TO | 07:00 PM | 807 | 484 | 1291 | 74 | 391 | 391 |

| Warrant | Description | Warrant Met? |
|---|---|---|
| 1 | Eight-Hour Volume | WARRANT MET |
| 2 | Four-Hour Volume | WARRANT MET |
| 3 | Peak Hour Volume | WARRANT MET |
| 4 | Pedestrian Volume | Not Evaluated |
| 5 | School Crossing | N/A |
| 6 | Coordinated Signal System | N/A |
| 7 | Crash Experience | Not Evaluated |
| 8 | Roadway Network | N/A |
| 9 | Intersection Near a Grade Crossing | N/A |

04/06/26

Kimley-Horn and Associates, Inc.

P&Z Case No. DEV-26-7




(15) Letters Sent
(3) Approvals
(0) Protests

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT A DEPARTMENT**

City of Ennis Inspection Services Received
OCT 20 2026

## COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. DEV-26-7

**PID No. 185425**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, November 17, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Type II Site Plan in the Corridor Commercial (CC) zoning district for an approximately 107,000 SF structure to serve as anchor retail on Lot 1, Block 1, Ennis Gateway Addition, City of Ennis, Ellis County, Texas. Generally located at the northeast corner of E Ennis Ave and N Sonoma Trl. Ellis CAD ID 308265.**
**P&Z Case No.: DEV-26-7**
**Owner: H-E-B, LP**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| ✓ IN FAVOR OF | _____ IN PROTEST AGAINST |
|---|---|
| Adam Sanders<br>Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>Print Name<br>Signature<br>Print Name<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**CORSICANA MULTI-FAMILY & RETAIL PARK LLC**
**PO BOX 2363**
**COPPELL TX 75019-8301**

City of Ennis
Inspection Services
Received
OCT 26 2026

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT A DEPARTMENT**

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. DEV-26-7**

**PID No. 186194**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, November 17, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Type II Site Plan in the Corridor Commercial (CC) zoning district for an approximately 107,000 SF structure to serve as anchor retail on Lot 1, Block 1, Ennis Gateway Addition, City of Ennis, Ellis County, Texas. Generally located at the northeast corner of E Ennis Ave and N Sonoma Trl. Ellis CAD ID 308265.**
**P&Z Case No.: DEV-26-7**
**Owner: H-E-B, LP**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

| _____ IN FAVOR OF | _____ IN PROTEST AGAINST |
|---|---|
| Signature | I/we, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.<br>_____<br>Print Name<br>_____<br>Signature<br>_____<br>Print Name<br>_____<br>Signature |

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**BLANTON JEANNETTE M &**
**1307 E ENNIS AVE**
**ENNIS TX 75119-5212**

City of Ennis
Inspection Services
Received
NOV 01 2026

**CITY OF ENNIS, TEXAS**
**COMMUNITY HEALTH AND DEVELOPMENT A DEPARTMENT**

**COMMENT SOLICITATION SHEET FOR PLANNING & ZONING CASE No. DEV-26-7**

**PID No. 275591**

The Planning and Zoning Commission of the City of Ennis will hold a Public Hearing for the above referenced planning case on **Monday, November 9, 2026 at 6:00 PM** in the City of Ennis City Hall, Commission Chambers and the City Commission on **Tuesday, November 17, 2026 at 6:00PM** in the City of Ennis City Hall, Commission Chambers, located at 107 N Sherman St. in the City of Ennis, Texas.

During the Public Hearings, the following request(s) will be considered:

**Conduct a public hearing to discuss and consider approving a Type II Site Plan in the Corridor Commercial (CC) zoning district for an approximately 107,000 SF structure to serve as anchor retail on Lot 1, Block 1, Ennis Gateway Addition, City of Ennis, Ellis County, Texas. Generally located at the northeast corner of E Ennis Ave and N Sonoma Trl. Ellis CAD ID 308265.**
**P&Z Case No.: DEV-26-7**
**Owner: H-E-B, LP**
**Applicant: Kimley-Horn & Associates**

Please be advised that the deadline to return this comment sheet in order to have your vote counted is **12:00 Noon on November 3, 2026**.

*In accordance with Texas Local Government Code 211.007(c), as the owner of the subject tract or as an owner of real property located within a radius of two hundred (200) feet of the perimeter of the subject tract, you are eligible to return your written comments whether in favor of or in protest against this zoning case. In accordance with Texas Local Government Code 211.0061, when the protests received by the deadline date as stated above contain the signatures of: (1) at least 20 percent of the area of the lots or land covered by the proposed changes; or (2) except as provided by Subdivision 3, at least 20 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area, to require a favorable vote of three-fourths (3/4) of all members of City Commission.*

*In accordance with Texas Local Government Code 211.0061(3) protests must be received from at least 60 percent of the area of the lots or land immediately adjoining the area covered by the proposed change and extending 200 feet from that area if the proposed change has the effect of allowing more residential development than the existing zoning regulation or district boundary and does not have the effect of allowing additional commercial or industrial uses unless the additional use is limited to the first floor of any residential development and does not exceed 35 percent of the overall development, to require a favorable vote of a majority of all members of City Commission.*

Please complete and sign only the appropriate box below to indicate whether you are "In Favor Of" or "In Protest Against."

COMMENTS (attach additional sheets if necessary):

_____

_____

✓ _____ **IN FAVOR OF**

Signature

_____ **IN PROTEST AGAINST**

I/We, verify that being the undersigned owner/s of real property affected by the proposed action, which is the subject of the above numbered P&Z case, do/does hereby desire to formally protest such proposed action.

Print Name

Signature

Print Name

Signature

**PLEASE MAIL OR DELIVER TO:**
**CITY OF ENNIS COMMUNITY HEALTH AND DEVELOPMENT**
**108 W KNOX ST**
**ENNIS, TEXAS 75119**

**OR**

**E-MAIL TO**
**jbarake@ennistx.gov**
**estubbs@ennistx.gov**

**M7 LAND INVESTMENTS LLC**
**400 E RANDOLPH ST APT 2507**
**CHICAGO IL 60601-5038**